

CONSTRUCTION PLANS - ISSUED SEPTEMBER 14, 2018

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS  
SERVING RUNWAY 6-24

COLES COUNTY MEMORIAL AIRPORT (MTO)  
MATTOON-CHARLESTON, COLES COUNTY, ILLINOIS

IDA PROJECT NO. MTO-4679  
SBG PROJECT NO. 3-17-SBGP-TBD

SCOPE OF WORK:

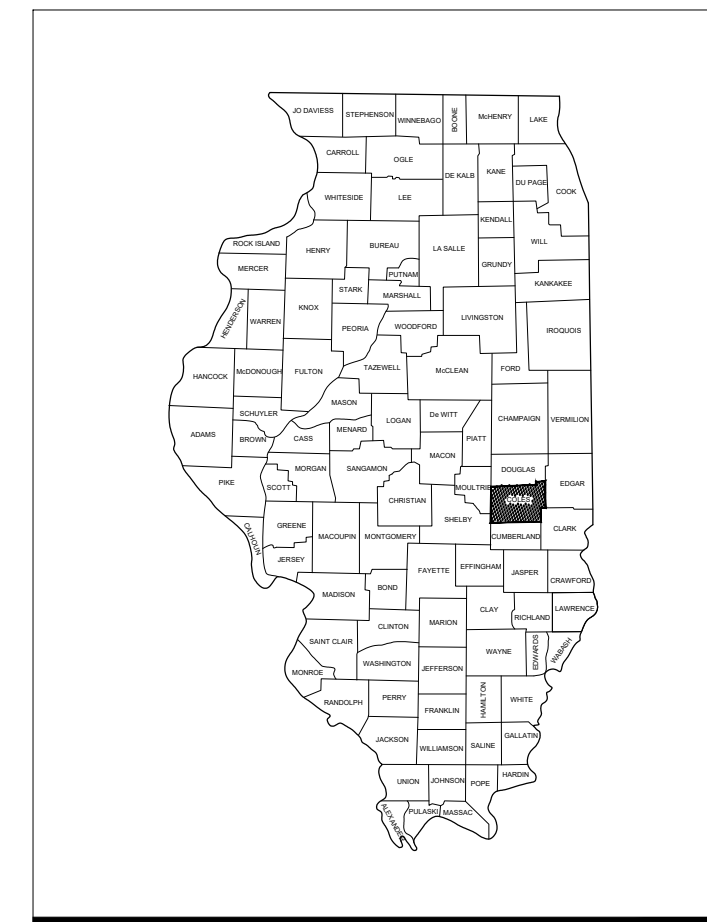
THIS PROJECT CONSIST OF REMOVING AND REPLACING THE MEDIUM INTENSITY TAXIWAY LIGHTING SYSTEMS ON TAXIWAY A EAST OF THE APRON, TAXIWAY C, TAXIWAY D AND THE CONNECTING TAXIWAYS WITH THE ASSOCIATED CABLING, DUCT WORK, HANDHOLES, MANHOLES, AND VAULT WORK. THIS PROJECT WILL ALSO INCLUDE NEW L-806(L) SUPPLEMENTAL LIGHTED WIND CONES WITH THE ASSOCIATED CABLING AND DUCT WORK.

NOTICE TO CONTRACTORS AND BIDDERS

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





VICINITY MAP



LOCATION MAP


No.	Issue/Description	Sheets Changed	Date	By

  
 KEVIN N. LIGHTFOOT  
 062-047643  
 STATE OF ILLINOIS

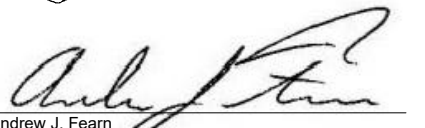
  
 Kevin N. Lightfoot, P.E. Lic. Exp. 11/30/2019  
 Electrical Engineer

SEPTEMBER 10, 2018  
 Date

  
**HANSON**  
 HANSON PROFESSIONAL SERVICES INC.  
 1525 S. Sixth St.  
 Springfield, Illinois 62703  
 Telephone: 217.788.2450  
 Fax: 217.788.2503

  
**COLES COUNTY AIRPORT AUTHORITY**  
 COLES COUNTY MEMORIAL AIRPORT

COLES COUNTY MEMORIAL AIRPORT  
 432 Airport Road  
 Mattoon, Illinois 61938  
 Telephone: 217.234.7120  
 Fax: 217.234.7116

  
 Andrew J. Fearn  
 Airport Manager

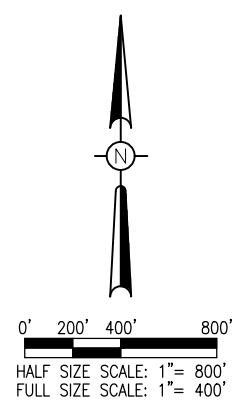
9-10-18  
 Date

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AIRPORT CTAF/UNICOM FREQUENCY = 122.70

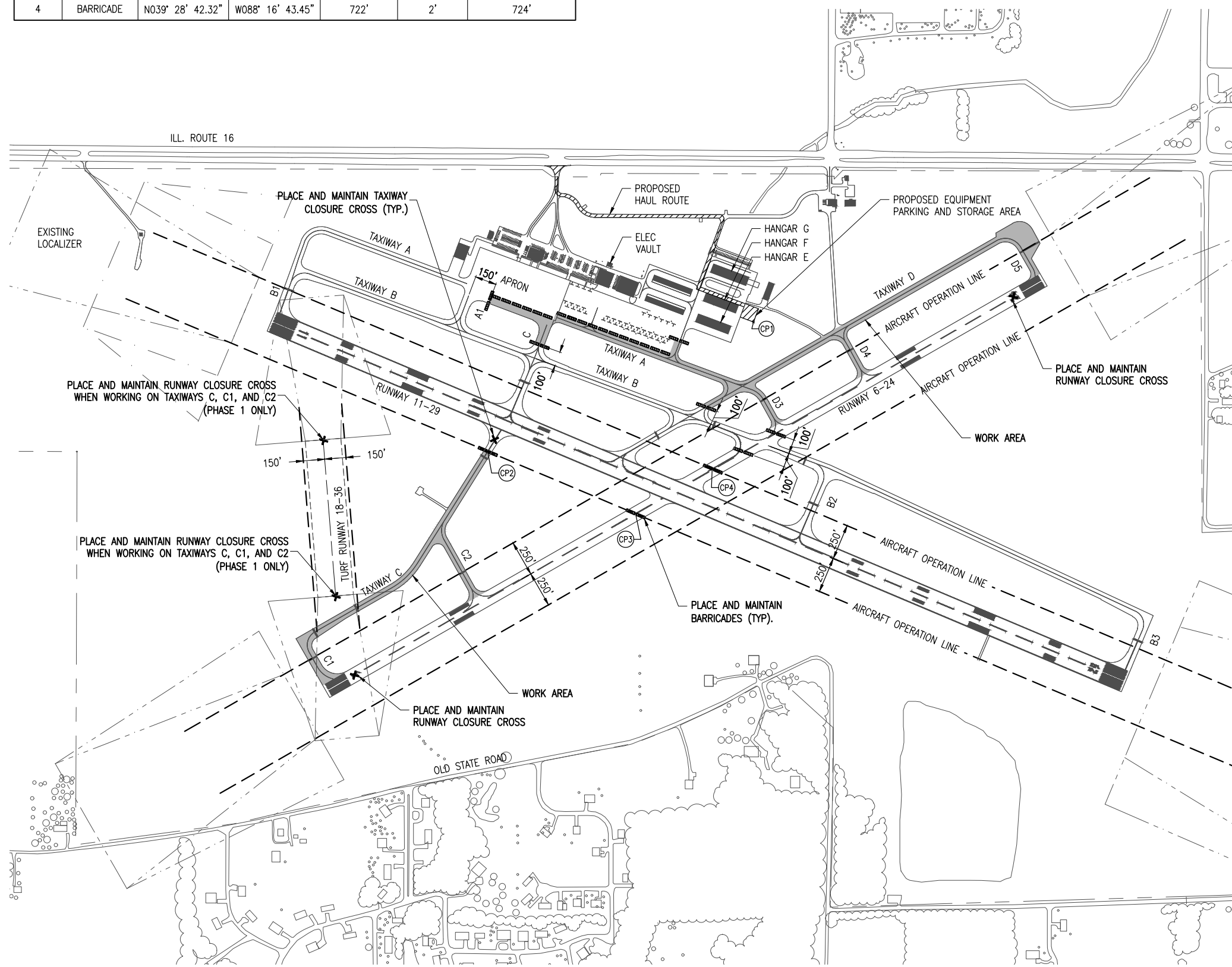
CRITICAL POINTS						
POINT #	DESCRIPTION	LATITUDE	LONGITUDE	GROUND (MSL)	HEIGHT (AGL)	EQUIPMENT ELEVATION
1	CONST. EQUIP.	N039° 28' 52.48"	W088° 16' 39.74"	706'	15'	721'
2	BARRICADE	N039° 28' 43.52"	W088° 17' 03.52"	720'	15'	735'
3	BARRICADE	N039° 28' 39.20"	W088° 16' 50.30"	721'	2'	723'
4	BARRICADE	N039° 28' 42.32"	W088° 16' 43.45"	722'	2'	724'



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fax: 217-788-2503

Illinois Licensed  
Professional Service Corporation  
#184-001084



- LEGEND**
- EXISTING PAVEMENTS
  - PROPOSED WORK AREA
  - EXISTING BUILDINGS
  - PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
  - AIRCRAFT OPERATION LINE
  - PROPOSED BARRICADES

- PHASE 1 NOTES**
1. PHASE 1 INCLUDES REMOVAL AND INSTALLATION OF AIRFIELD LIGHTING AND CABLES ALONG TAXIWAY C, C1, C2, D, D3, D4, AND D5, THE EAST PORTIONS OF TAXIWAY A.
  2. IT IS ANTICIPATED THAT WORK IN AND NEAR THE ELECTRICAL VAULT WILL OCCUR CONCURRENTLY WITH WORK ON THE AIRFIELD. THEREFORE THE VAULT WORK SHALL BE COMPLETED WITHIN THE OVERALL PROJECT CONTRACT TIME.
  3. RUNWAY 18-36 SHALL BE CLOSED WHEN WORK IS BEING PERFORMED ON TAXIWAYS C, C1, AND C2. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE AIRPORT AT LEAST 48 HOURS BEFORE BEGINNING WORK ON TAXIWAYS C, C1, AND C2.
  4. RUNWAY 6-24 WILL REQUIRE A NOTAM FOR CLOSURE. THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK.
  5. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
  6. AT ALL TIMES THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
  6. WHEN A RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. COORDINATE SHUT OFF OF NAVAIDS WITH THE AIRPORT MANAGER.
  7. THE AIRPORT WILL REMAIN OPEN DURING ALL CONSTRUCTION PHASES TO ACCOMMODATE AGRICULTURAL AIR OPERATIONS AND HELICOPTER OPERATIONS. THE AIRPORT MANAGER WILL RETAIN THE RIGHT TO OPEN TAXIWAYS WHERE NECESSARY TO ACCOMMODATE AGRICULTURAL AIR OPERATIONS.
  8. MAINTAIN ARFF (AIRCRAFT RESCUE AND FIRE FIGHTING) FACILITY ACCESS TO THE AIRFIELD FOR ALL PHASES OF WORK. CONTRACTOR SHALL COORDINATE LOCATIONS AND SPACING OF BARRICADES WITH THE AIRPORT MANAGER TO MAINTAIN ARFF EMERGENCY ACCESS ROUTES TO THE AIRFIELD. THE MATTOON FIRE DEPARTMENT ARFF FACILITY PERSONNEL WILL COORDINATE WITH THE AIRPORT MANAGER THROUGHOUT THE PROJECT.
  9. COORDINATION WITH THE AIRPORT WILL BE REQUIRED WHEN ENTERING ACTIVE AIRCRAFT OPERATION AREAS.



*Michael J. Dudas*  
09/09/2018  
EXPIRES: 11/30/2019

**PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24**

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: G-101-SFY.DWG  
DESIGN BY: MJD 07/11/2018  
DRAWN BY: MJD 07/13/2018  
REVIEWED BY: KNL/MJD 08/06/18

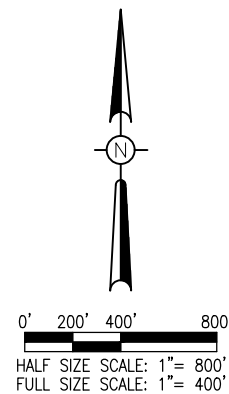
SHEET TITLE

**CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 1**

SEP 10 2018 8:41 PM DUDAS01844  
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AIRPORT CTAF/UNICOM FREQUENCY = 122.70

CRITICAL POINTS						
POINT #	DESCRIPTION	LATITUDE	LONGITUDE	GROUND (MSL)	HEIGHT (AGL)	EQUIPMENT ELEVATION
5	BARRICADE	N039° 28' 29.22"	W088° 17' 19.21"	717'	2'	719'
6	BARRICADE	N039° 28' 35.16"	W088° 17' 05.81"	719'	2'	721'
7	BARRICADE	N039° 28' 41.95"	W088° 16' 50.52"	718'	2'	720'
8	BARRICADE	N039° 28' 39.54"	W088° 16' 43.13"	721'	2'	723'
9	BARRICADE	N039° 28' 45.26"	W088° 16' 43.06"	713'	15'	728'



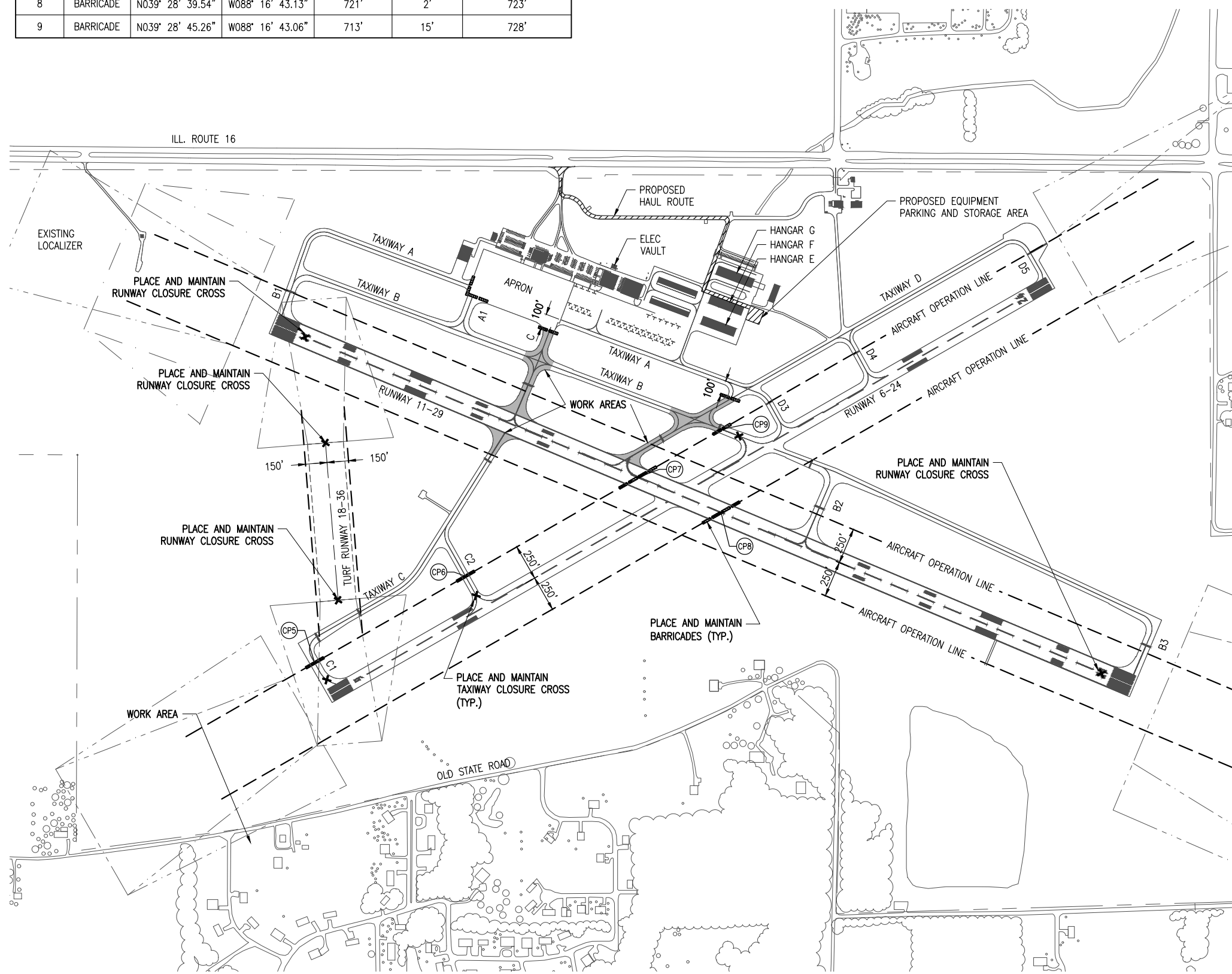
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- LEGEND**
- EXISTING PAVEMENTS
  - PROPOSED WORK AREA
  - EXISTING BUILDINGS
  - PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
  - AIRCRAFT OPERATION LINE
  - PROPOSED BARRICADES



**PHASE 2 NOTES**

1. PHASE 2 INCLUDES REMOVAL AND INSTALLATION OF AIRFIELD LIGHTING AND CABLES ALONG PORTIONS OF TAXIWAY C AND D. RUNWAY 6-24 SHALL REMAIN OPEN. RUNWAY 11-29 AND 18-36 WILL BE CLOSED DURING THE DAY AND WILL BE OPENED AT THE END OF THE WORKDAY.
2. IT IS ANTICIPATED THAT WORK IN AND NEAR THE ELECTRICAL VAULT WILL OCCUR CONCURRENTLY WITH WORK ON THE AIRFIELD. THEREFORE THE VAULT WORK SHALL BE COMPLETED WITHIN THE OVERALL PROJECT CONTRACT TIME.
3. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
4. RUNWAY 11-29 WILL REQUIRE A NOTAM FOR CLOSURE. THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK.
5. AT ALL TIMES THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
6. WHEN A RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. COORDINATE SHUT OFF OF NAVAIDS WITH THE AIRPORT MANAGER.
7. THE AIRPORT WILL REMAIN OPEN DURING ALL CONSTRUCTION PHASES TO ACCOMMODATE AGRICULTURAL AIR OPERATIONS AND HELICOPTER OPERATIONS. THE AIRPORT MANAGER WILL RETAIN THE RIGHT TO OPEN TAXIWAYS WHERE NECESSARY TO ACCOMMODATE AGRICULTURAL AIR OPERATIONS.
8. MAINTAIN ARFF (AIRCRAFT RESCUE AND FIRE FIGHTING) FACILITY ACCESS TO THE AIRFIELD FOR ALL PHASES OF WORK. CONTRACTOR SHALL COORDINATE LOCATIONS AND SPACING OF BARRICADES WITH THE AIRPORT MANAGER TO MAINTAIN ARFF EMERGENCY ACCESS ROUTES TO THE AIRFIELD. THE MATTOON FIRE DEPARTMENT ARFF FACILITY PERSONNEL WILL COORDINATE WITH THE AIRPORT MANAGER THROUGHOUT THE PROJECT.
9. COORDINATION WITH THE AIRPORT WILL BE REQUIRED WHEN ENTERING ACTIVE AIRCRAFT OPERATION AREAS.



*Michael J. Dudas*  
09/09/2018  
EXPIRES: 11/30/2019

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IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: G-101-SFY.DWG  
DESIGN BY: MJD 07/11/2018  
DRAWN BY: MJD 07/13/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

**CONSTRUCTION SAFETY AND PHASING PLAN - PHASE 2**

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*Kevin Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
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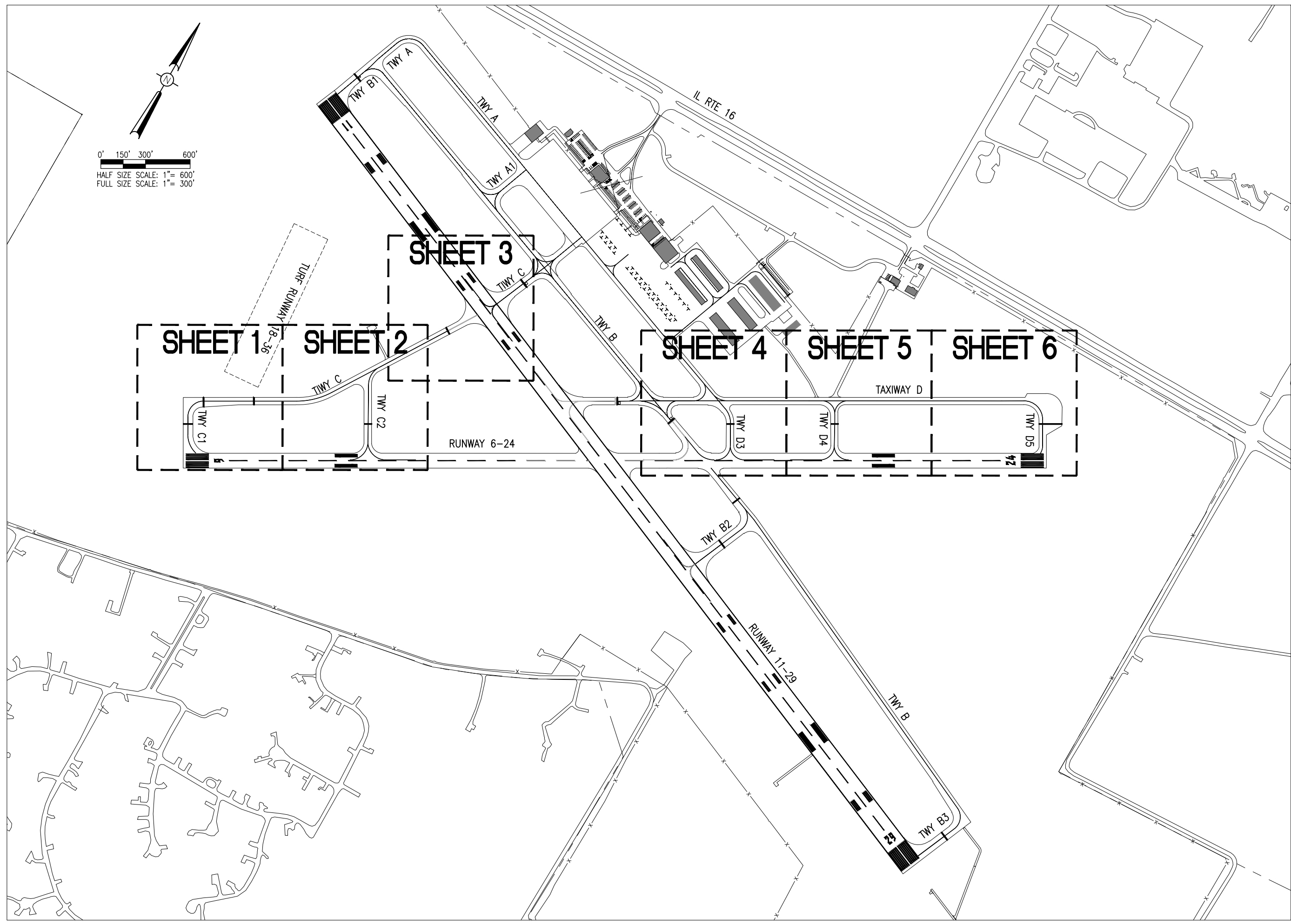

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D  
CAD FILE: E-101-KEY.DWG  
DESIGN BY: KNL 06/23/2018  
DRAWN BY: MJD 07/12/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

KEY PLAN SHEET 1



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



*Kevin Lightfoot*

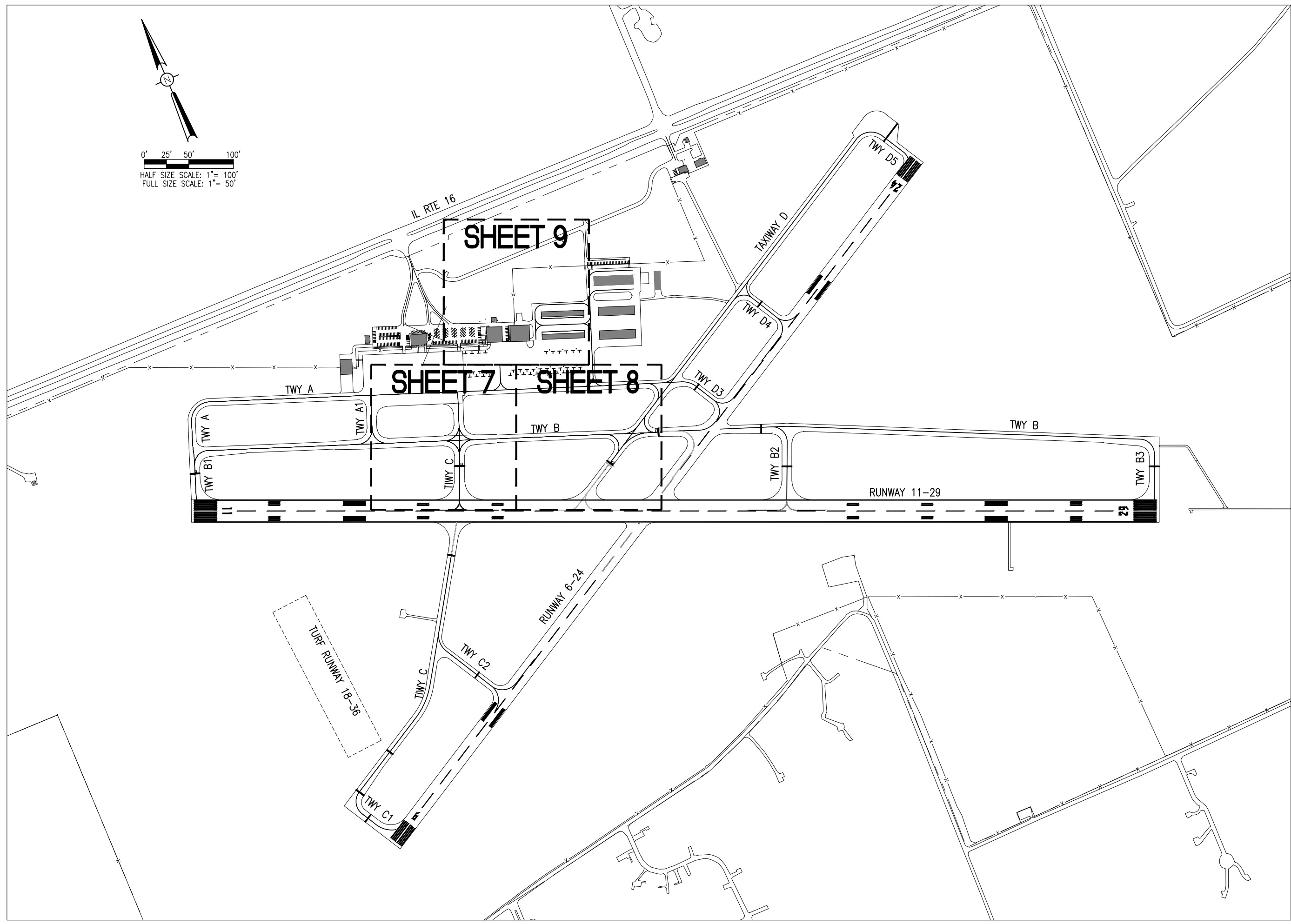
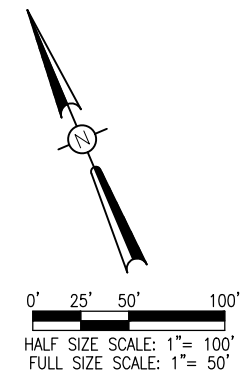
PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No:  
3-17-SBGP-TBD  
Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV
ISSUE: SEPTEMBER 14, 2018				
PROJECT NO: 18A0014D				
CAD FILE: E-101-KEY.DWG				
DESIGN BY: KNL 06/23/2018				
DRAWN BY: MJD 07/12/2018				
REVIEWED BY: KNL/MJD 08/06/18				

SHEET TITLE

KEY PLAN SHEET 2

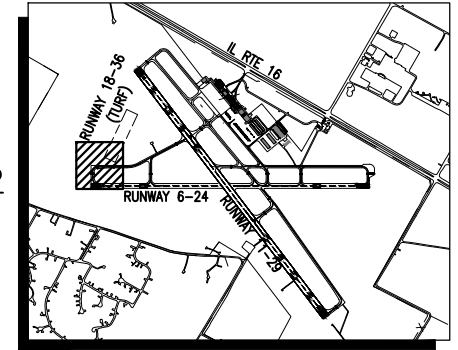
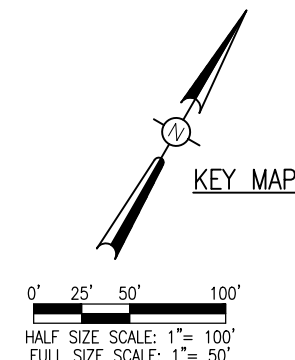


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**AIRFIELD LIGHTING REMOVAL NOTES**

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. BASED ON RECORD DRAWINGS, EXISTING TAXIWAY LIGHT FIXTURES ON TAXIWAY A AND TAXIWAY C APPEAR TO HAVE BEEN INSTALLED IN 1982 AND EXISTING TAXIWAY LIGHT FIXTURES ON TAXIWAY D APPEAR TO HAVE BEEN INSTALLED IN 1981 AND 1990. SOME FIXTURES ARE MISSING AND MIGHT HAVE A STAKE, BASE, AND/OR TRANSFORMER REMAINING. EXISTING STAKE MOUNT FIXTURES HAVE CONCRETE BASES. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICE.
3. THE EXISTING TAXIWAY EDGE LIGHTS LOCATED ON THE TAXIWAY B AND TAXIWAY A-WEST SHALL REMAIN IN PLACE.
4. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
5. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
6. THE EXISTING AIRFIELD LIGHTS, THEIR ISOLATION TRANSFORMERS, MOUNTING STAKES, CONCRETE BASES, AND LIGHT BASES DESIGNATED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER. REMOVAL OF THE EXISTING AIRFIELD LIGHTS WILL BE PAID FOR UNDER ITEM AR800476 REMOVE AIRFIELD LIGHTING PER LUMP SUM.
7. EXISTING SPLICE CANS, HANDHOLES AND/OR MANHOLES DESIGNATED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE IN A LEGAL MANNER. REMOVAL OF SPLICE CANS, HANDHOLES AND/OR MANHOLES WILL BE PAID FOR UNDER ITEM AR800476 REMOVE AIRFIELD LIGHTING PER LUMP SUM.

8. THE EXISTING TAXI GUIDANCE SIGNS, SHALL REMAIN IN PLACE. TAXI GUIDANCE SIGNS ON CIRCUITS SCHEDULED FOR REMOVAL AND/OR REPLACEMENT SHALL BE RECONNECTED TO THE RESPECTIVE NEW CIRCUIT.
9. THE EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
10. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2G, OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS."
11. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
12. WHEN A RESPECTIVE RUNWAY IS CLOSED THE NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
13. CONTRACTOR SHALL CONFIRM RESPECTIVE LIGHTS TO BE REMOVED WITH RESIDENT ENGINEER/RESIDENT TECHNICIAN PRIOR TO REMOVAL.
14. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT SHALL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH THE ABOVE NOTE 1.



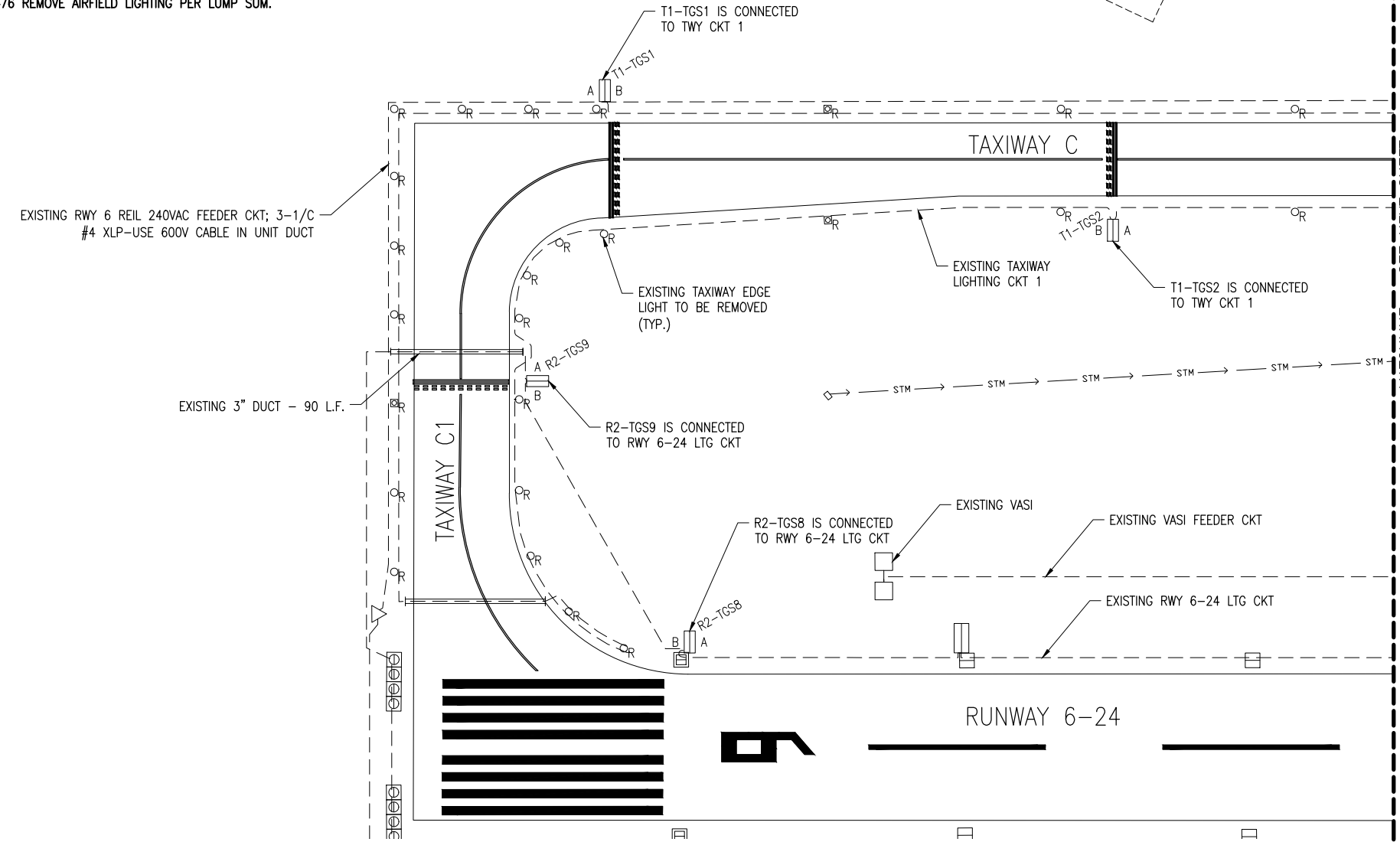
THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY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

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

**LEGEND**

- [Symbol] EXISTING PAVEMENT
- [Symbol] EXISTING BUILDING
- [Symbol] EXISTING ELECTRICAL DUCT
- [Symbol] EXISTING ELECTRICAL CABLE
- [Symbol] EXISTING WATER
- [Symbol] EXISTING TELEPHONE
- [Symbol] EXISTING UNDERDRAIN
- [Symbol] EXISTING STORM SEWER
- [Symbol] EXISTING GAS LINE
- [Symbol] EXISTING SANITARY
- [Symbol] EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- [Symbol] EXISTING REIL
- [Symbol] EXISTING TAXI GUIDANCE SIGN
- [Symbol] EXISTING SLICE CAN
- [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT
- [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT
- [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- [Symbol] EXISTING STAKE MOUNTED RUNWAY LIGHT
- [Symbol] EXISTING BASE MOUNTED RUNWAY LIGHT
- [Symbol] EXISTING STAKE MOUNTED THRESHOLD LIGHT
- [Symbol] EXISTING BASE MOUNTED THRESHOLD LIGHT
- [Symbol] EXISTING AIRPORT ROTATING BEACON
- [Symbol] EXISTING UTILITY TRANSFORMER
- [Symbol] EXISTING ELECTRICAL HANDHOLE
- [Symbol] EXISTING ELECTRICAL MANHOLE
- [Symbol] EXISTING CLEAN-OUT

MATCHLINE - SEE NEXT SHEET



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fax: 217-788-2503

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**COLES COUNTY AIRPORT AUTHORITY**  
COLES COUNTY MEMORIAL AIRPORT

9-3-2018 EXPIRES: 11/30/2019  
LICENSED PROFESSIONAL ENGINEER  
**KEVIN N. LIGHTFOOT**  
062-047643  
STATE OF ILLINOIS

*Kevin Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
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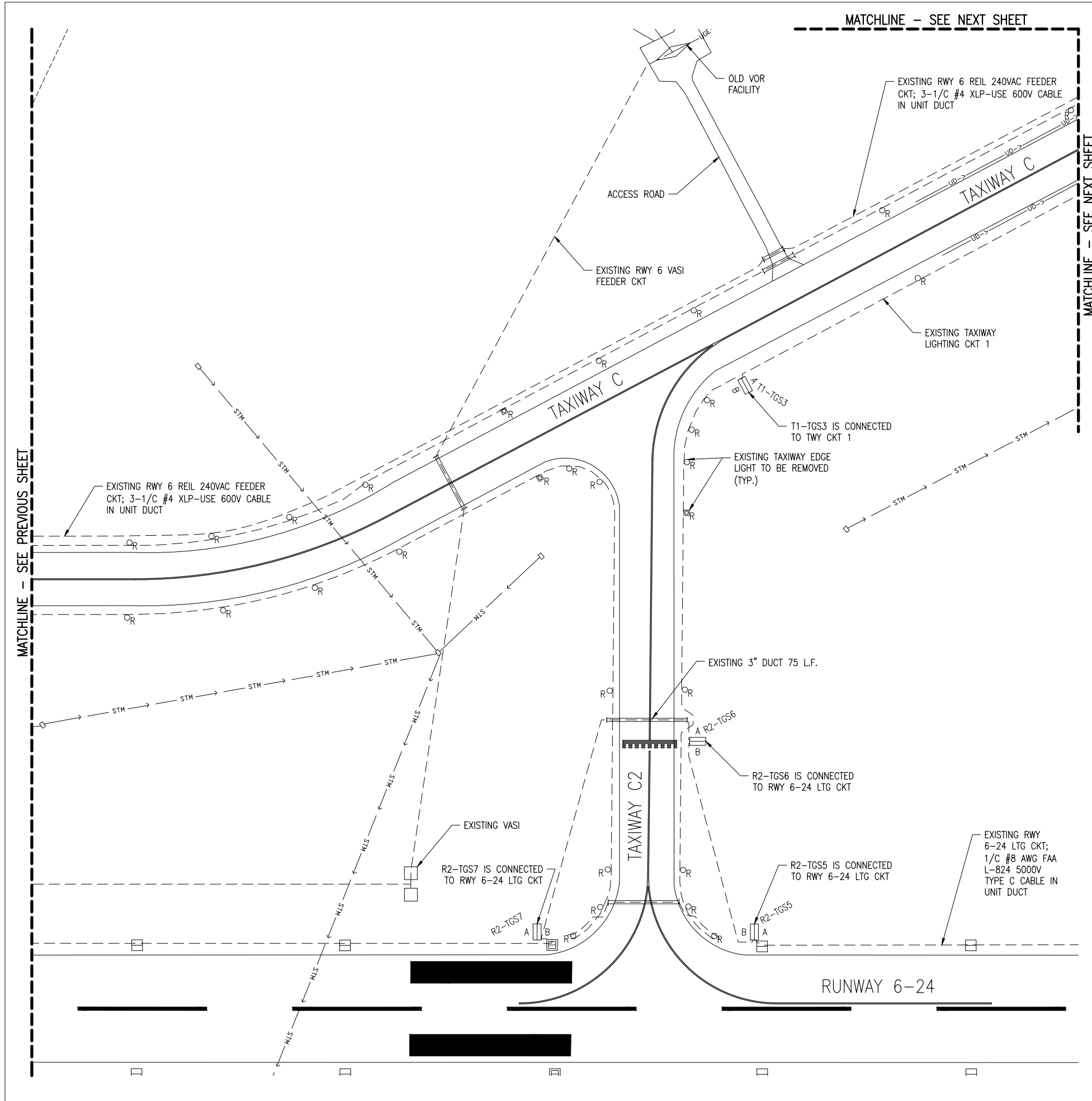

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-141-ELE.DWG  
DESIGN BY: KNL 07/14/2018  
DRAWN BY: MJD 07/16/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE  
**EXISTING AIRFIELD LIGHTING PLAN SHEET 1**



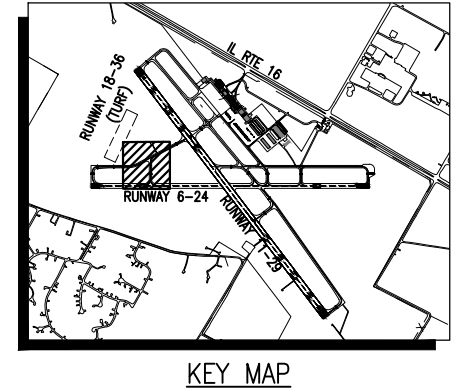
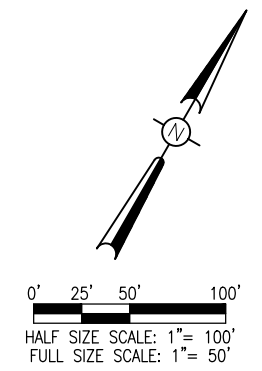
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MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET

MATCHLINE - SEE NEXT SHEET



**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT

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 #184-001084

**COLES COUNTY AIRPORT AUTHORITY**  
 COLES COUNTY MEMORIAL AIRPORT

9-3-2018 EXPIRES: 11/30/2019

LICENSED PROFESSIONAL ENGINEER

**KEVIN N. LIGHTFOOT**  
 062-047643

STATE OF ILLINOIS

*Kevin Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679

SBG Project No: 3-17-SBGP-TBD

Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D

CAD FILE: E-141-ELE.DWG

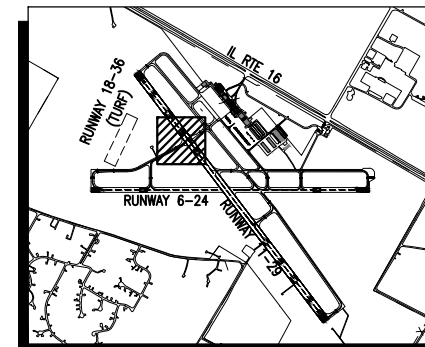
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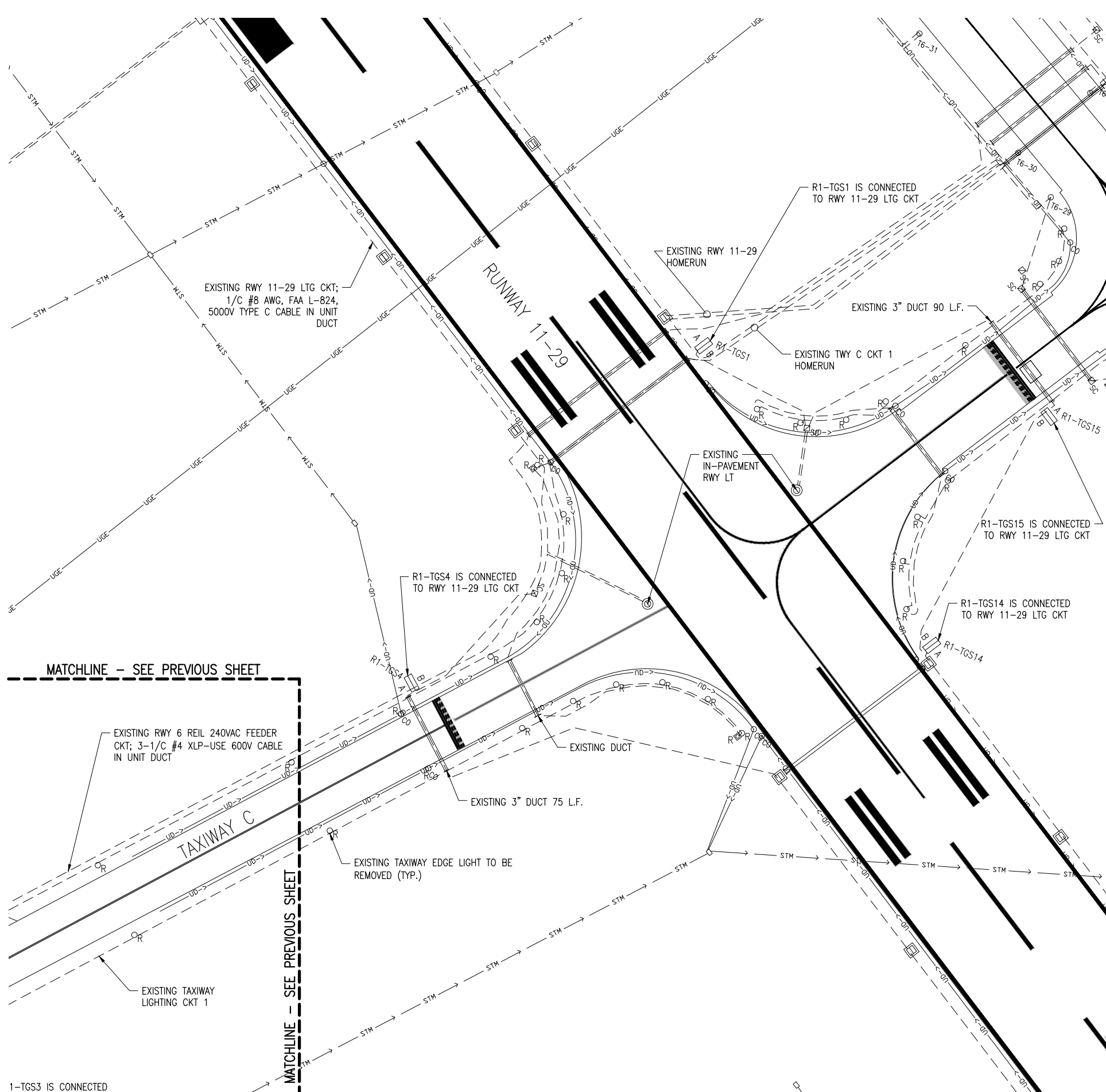
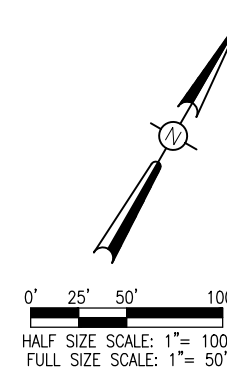
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SHEET TITLE

**EXISTING AIRFIELD LIGHTING PLAN SHEET 2**



KEY MAP



**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT



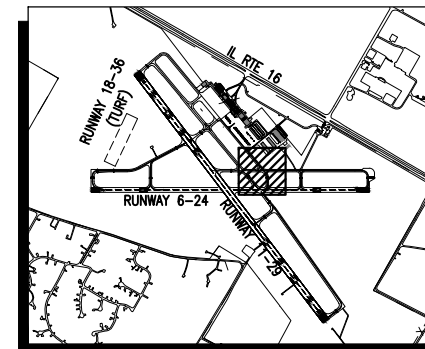
PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065

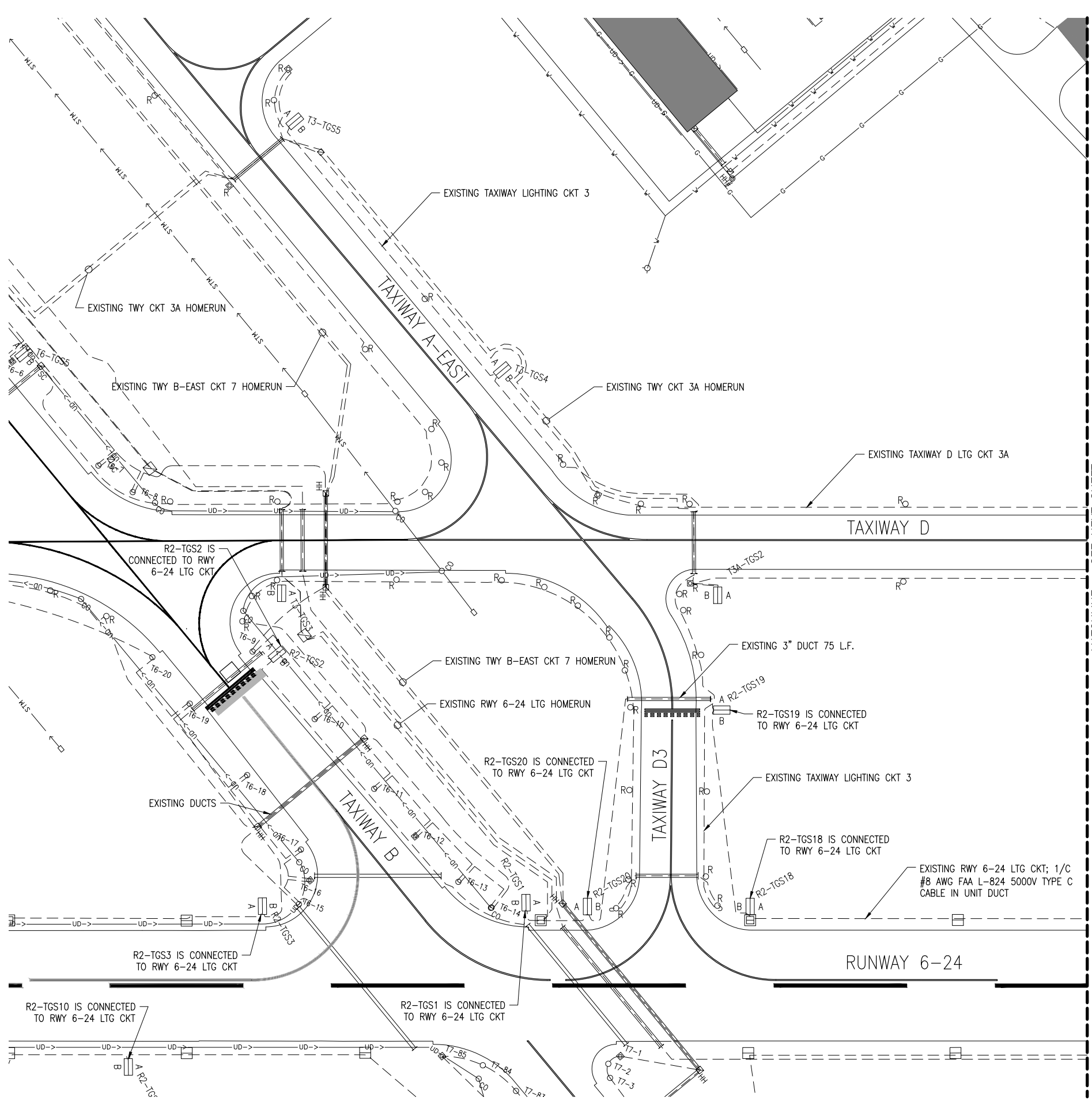
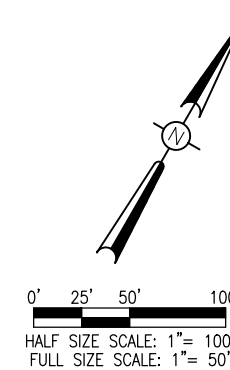

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-141-ELE.DWG  
DESIGN BY: KNL 07/14/2018  
DRAWN BY: MJD 07/16/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE  
**EXISTING AIRFIELD LIGHTING PLAN SHEET 3**



KEY MAP



MATCHLINE - SEE NEXT SHEET

**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D

CAD FILE: E-141-ELE.DWG

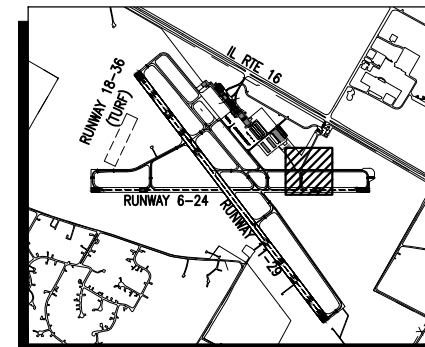
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DRAWN BY: MJD 07/16/2018

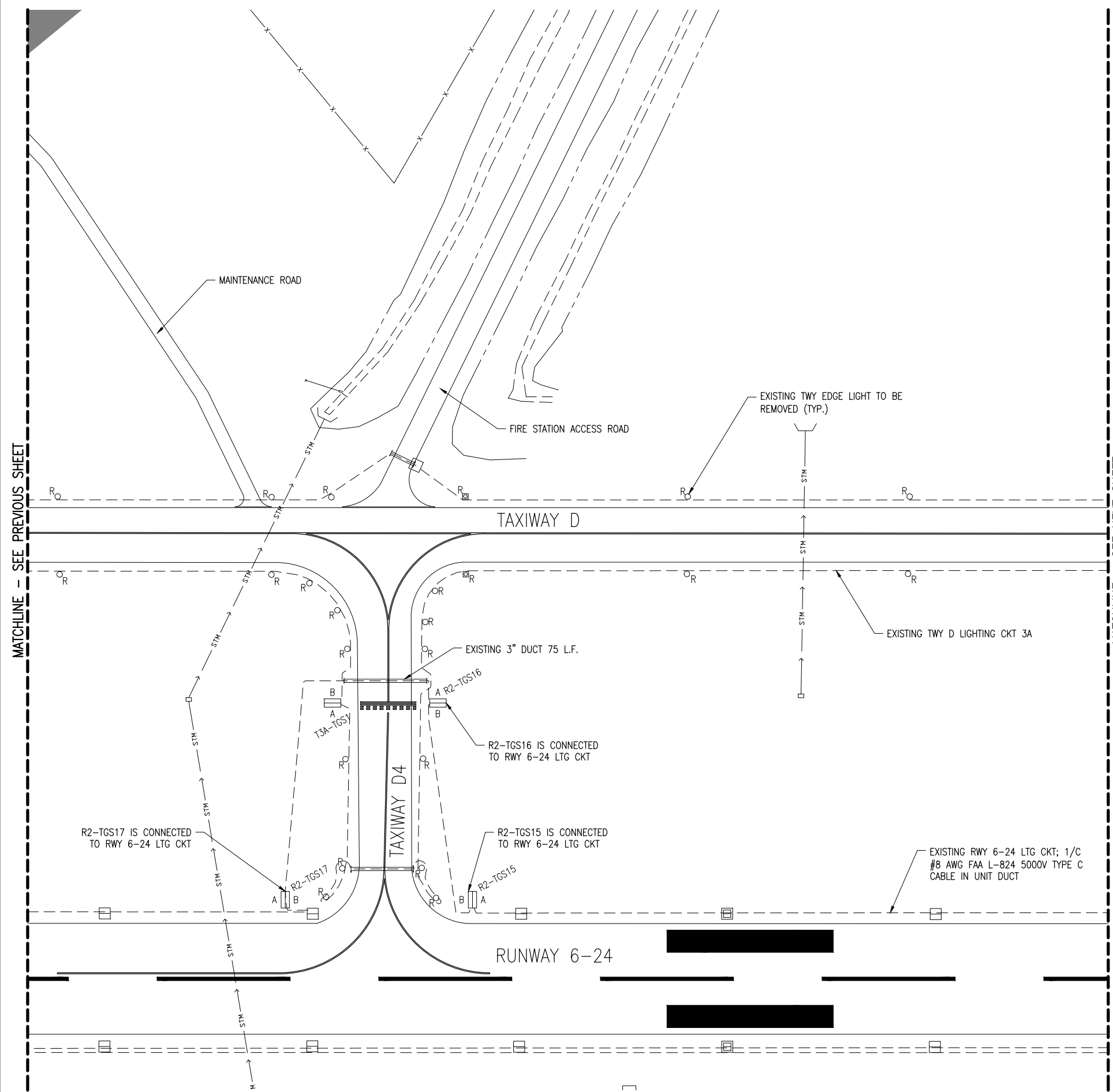
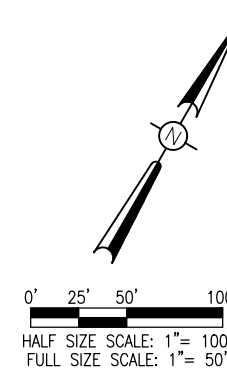
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

EXISTING AIRFIELD LIGHTING PLAN SHEET 4



KEY MAP



MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET

**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- W EXISTING WATER
- T EXISTING TELEPHONE
- UD EXISTING UNDERDRAIN
- STM EXISTING STORM SEWER
- G EXISTING GAS LINE
- SAN EXISTING SANITARY
- UGE EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- SC EXISTING SLICE CAN
- O EXISTING STAKE MOUNTED TAXIWAY LIGHT
- RO EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- B EXISTING BASE MOUNTED TAXIWAY LIGHT
- RB EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- S EXISTING STAKE MOUNTED RUNWAY LIGHT
- BS EXISTING BASE MOUNTED RUNWAY LIGHT
- T EXISTING STAKE MOUNTED THRESHOLD LIGHT
- BT EXISTING BASE MOUNTED THRESHOLD LIGHT
- R EXISTING AIRPORT ROTATING BEACON
- ET EXISTING UTILITY TRANSFORMER
- HH EXISTING ELECTRICAL HANDHOLE
- MH EXISTING ELECTRICAL MANHOLE
- CO EXISTING CLEAN-OUT



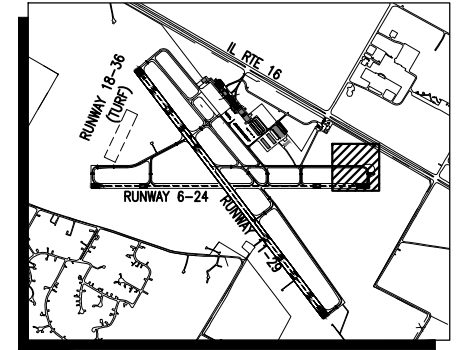
PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065

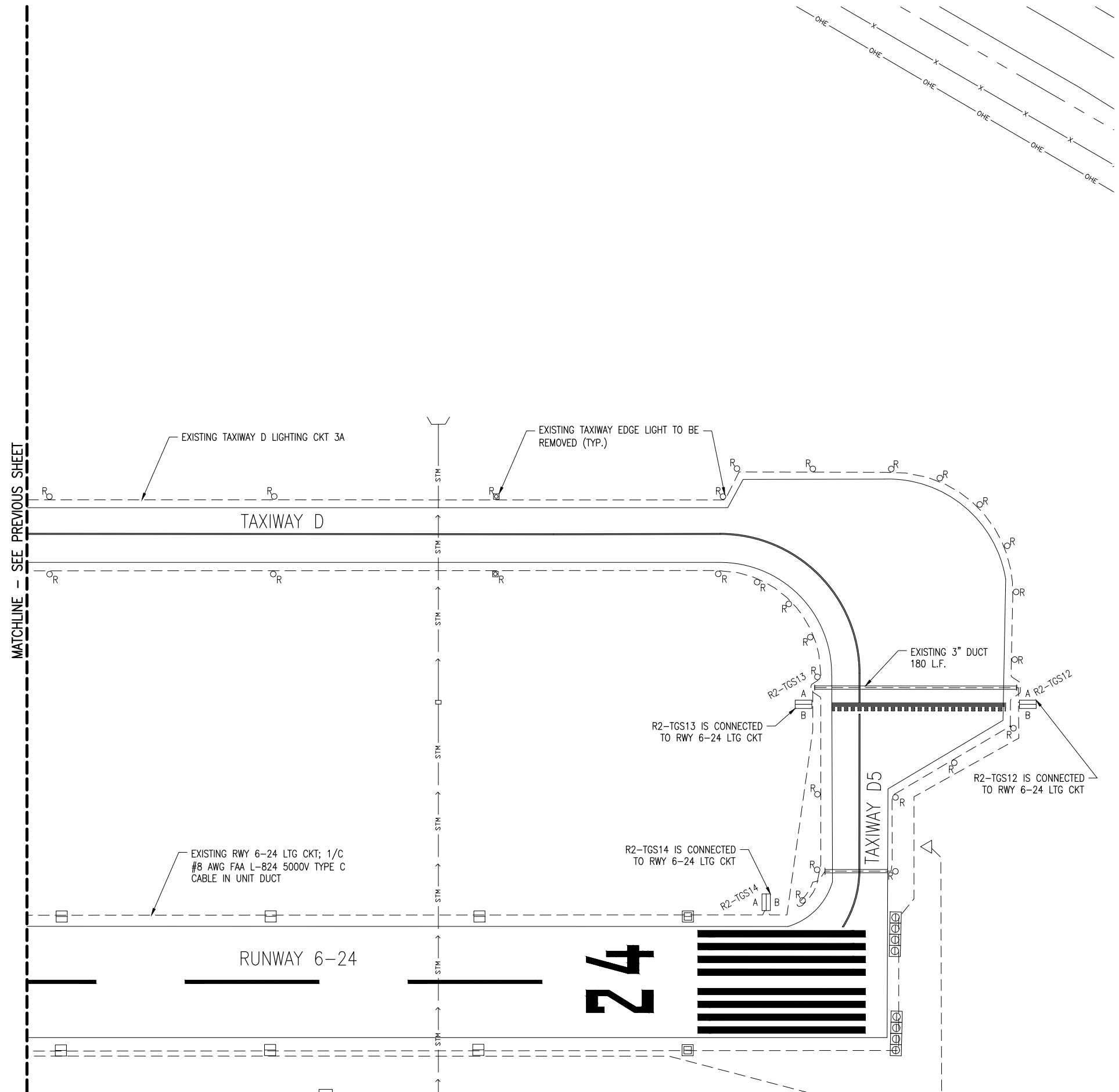
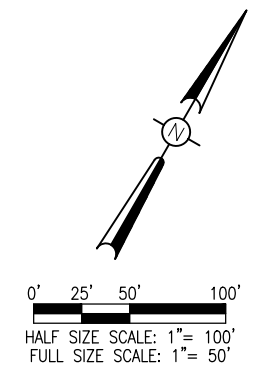

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PROJECT NO: 18A0014D  
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DRAWN BY: MJD 07/16/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE  
**EXISTING AIRFIELD LIGHTING PLAN SHEET 5**



KEY MAP



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065


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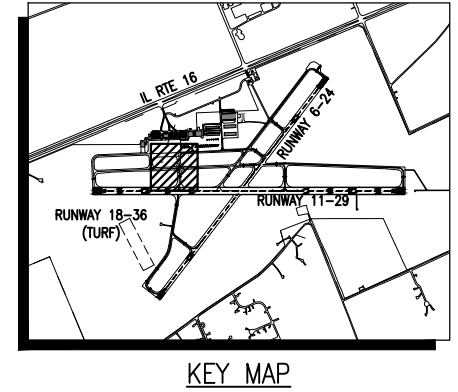
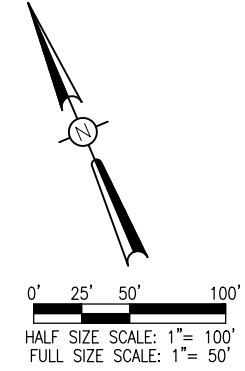
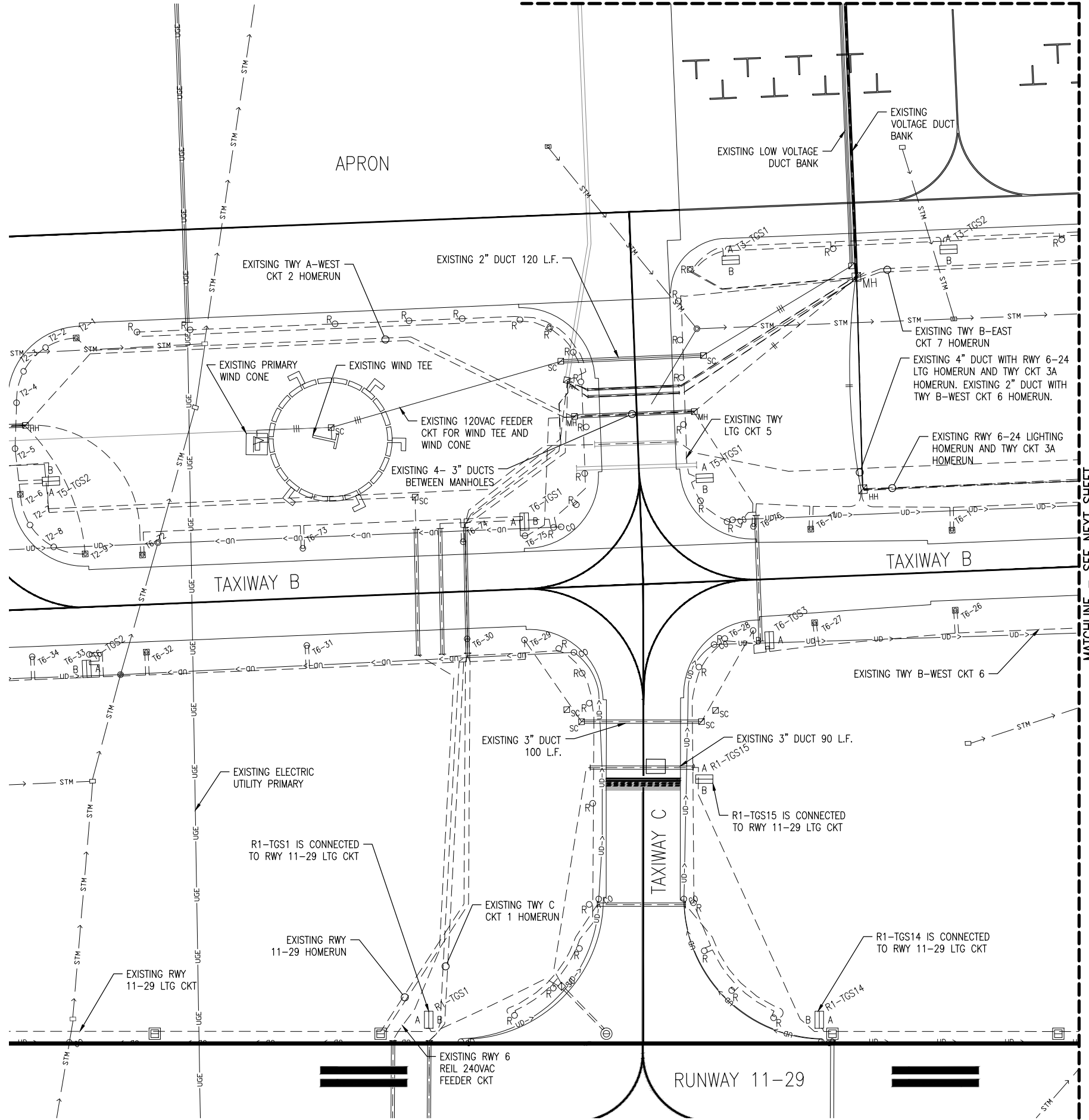
SHEET TITLE

EXISTING AIRFIELD LIGHTING PLAN

SHEET 6

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MATCHLINE - SEE SHEET 9



KEY MAP

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT



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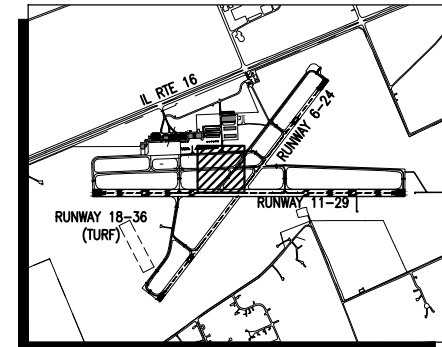
PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
 SBG Project No: 3-17-SBGP-TBD  
 Contract No. CO065

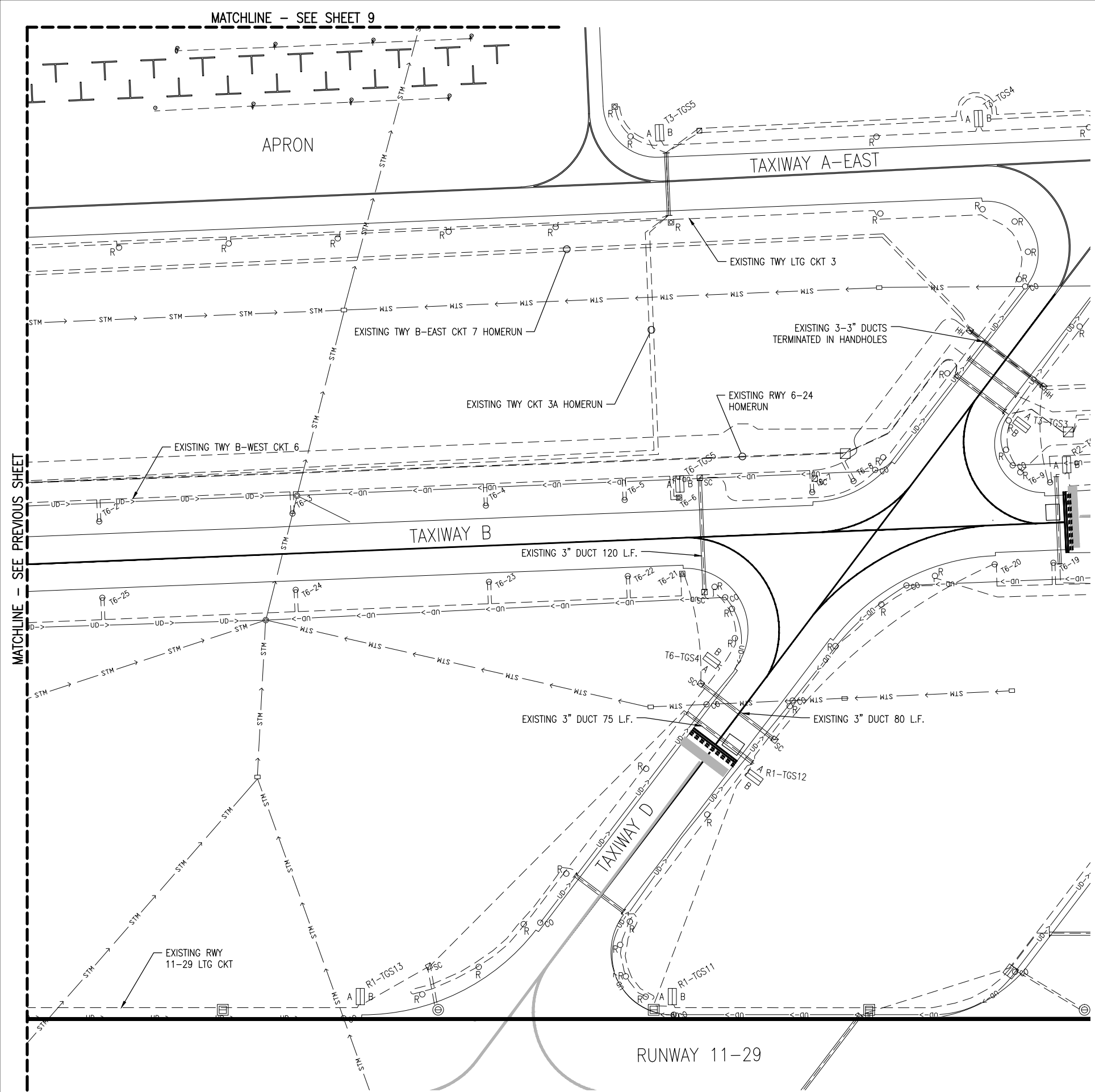
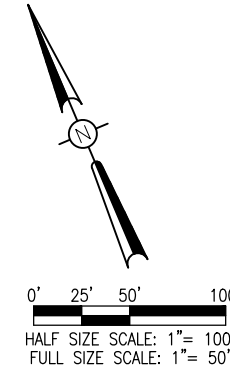

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 PROJECT NO: 18A0014D  
 CAD FILE: E-141-ELE.DWG  
 DESIGN BY: KNL 07/14/2018  
 DRAWN BY: MJD 07/17/2018  
 REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE  
 EXISTING AIRFIELD LIGHTING PLAN SHEET 7



KEY MAP



**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT



PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No:  
3-17-SBGP-TBD  
Contract No. CO065


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ISSUE: SEPTEMBER 14, 2018

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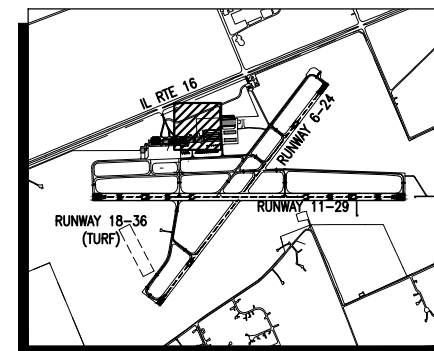
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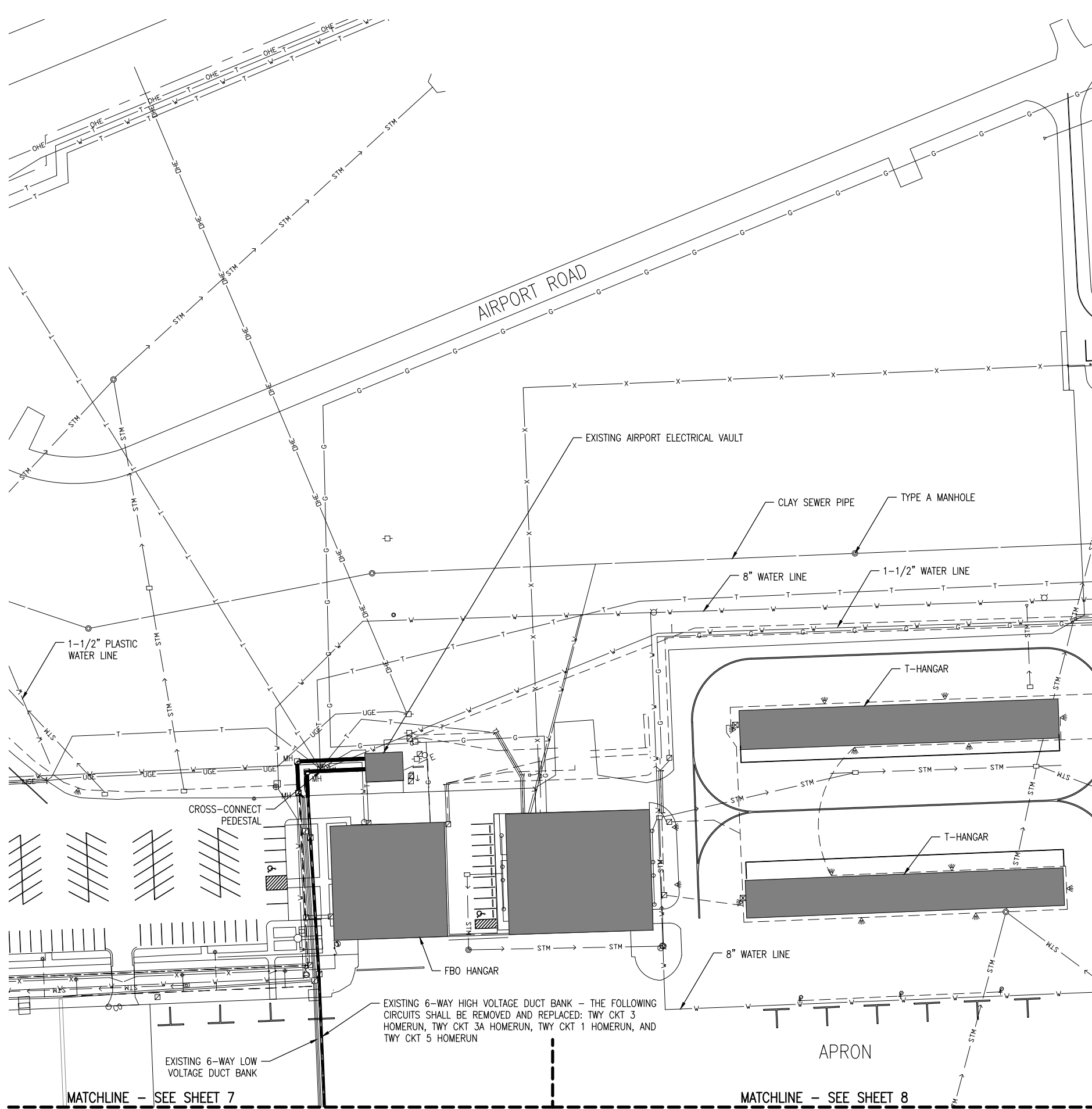
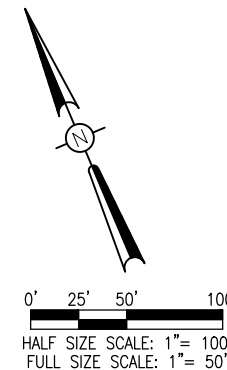
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

EXISTING AIRFIELD  
LIGHTING PLAN  
SHEET 8



KEY MAP



**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT



**PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24**

IDA No: MTO-4679  
SBG Project No:  
3-17-SBGP-TBD  
Contract No. CO065


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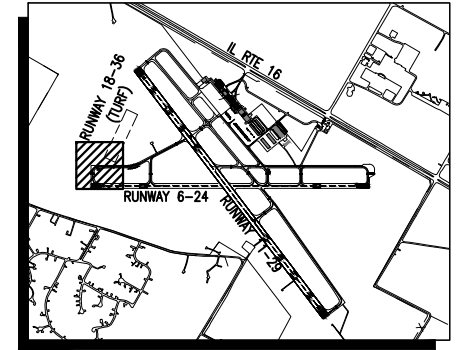
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**EXISTING AIRFIELD  
LIGHTING PLAN  
SHEET 9**

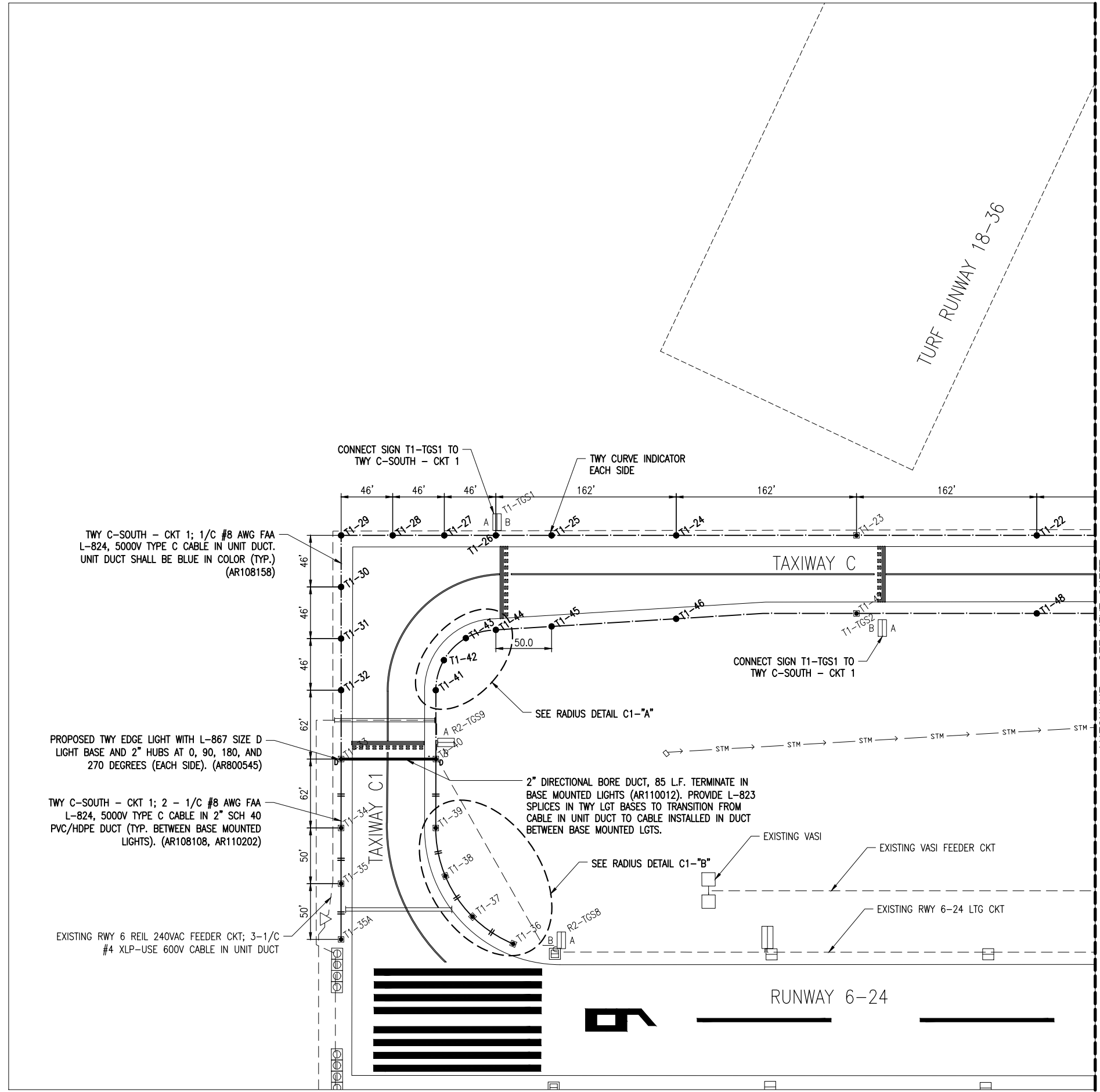
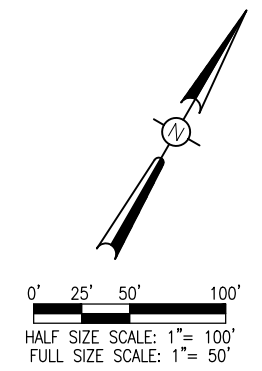
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KEY MAP



MATCHLINE - SEE NEXT SHEET

**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000V CABLE IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE



*Kevin N. Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
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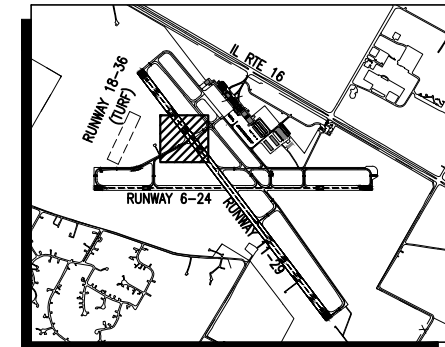
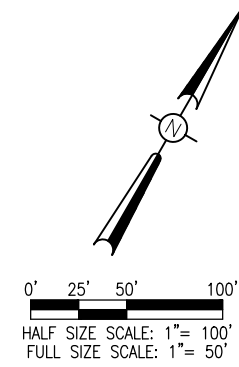
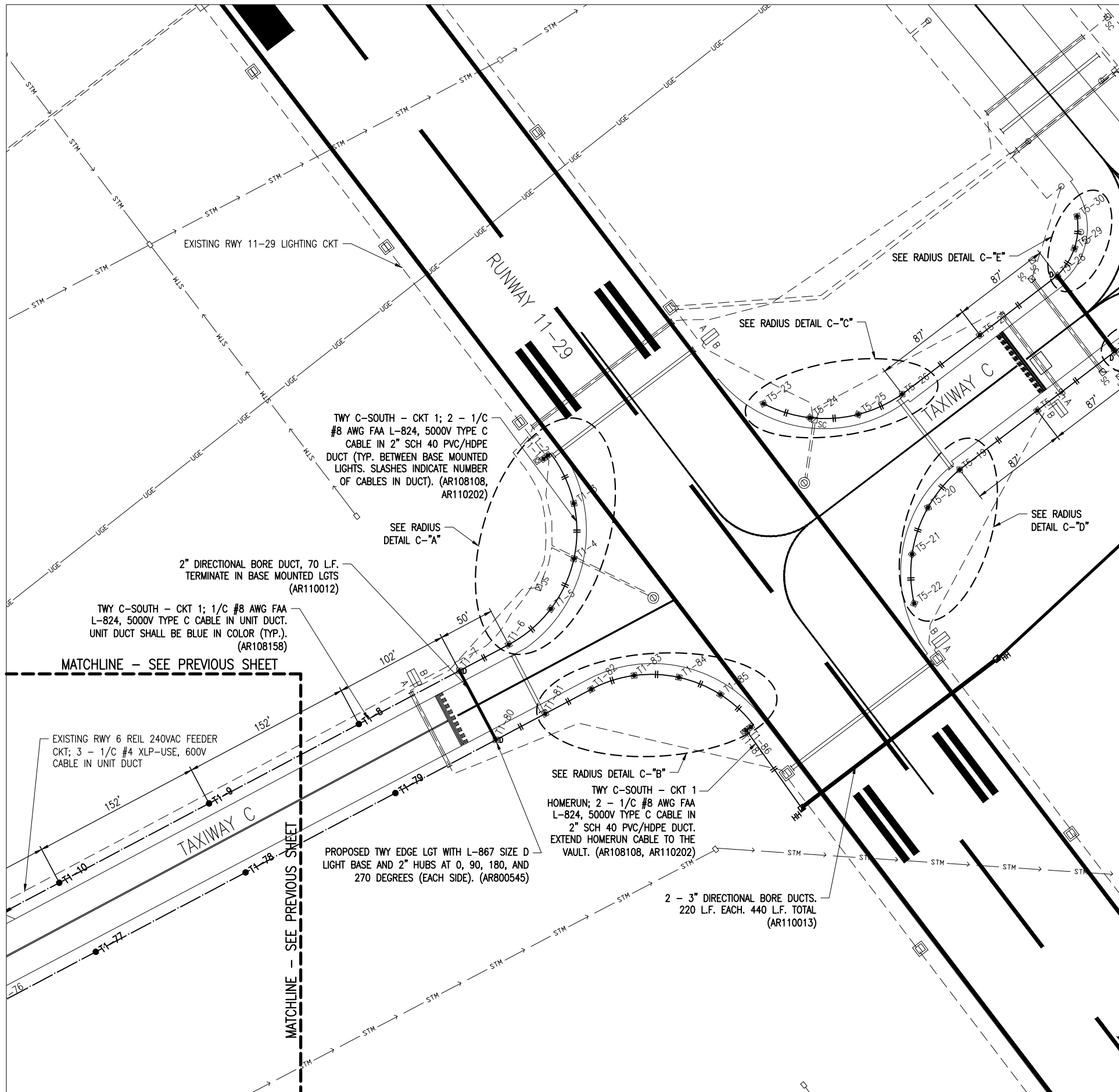
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DESIGN BY: KNL 07/14/2018  
DRAWN BY: MJD 07/17/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

PROPOSED AIRFIELD LIGHTING PLAN  
SHEET 1



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**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000V CABLE IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE



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phone: 217-788-2450  
fax: 217-788-2503

Illinois Licensed  
Professional Service Corporation  
#184-001084



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBG-P-TBD  
Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D  
CAD FILE: E-142-ELE.DWG

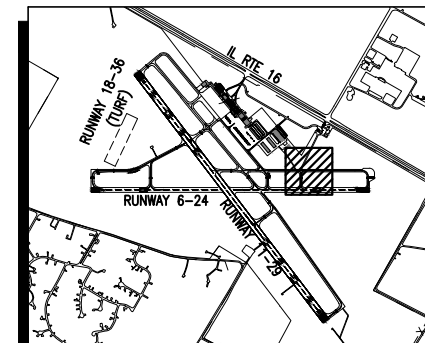
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DRAWN BY: MJD 07/17/2018

REVIEWED BY: KNL/MJD 08/06/18

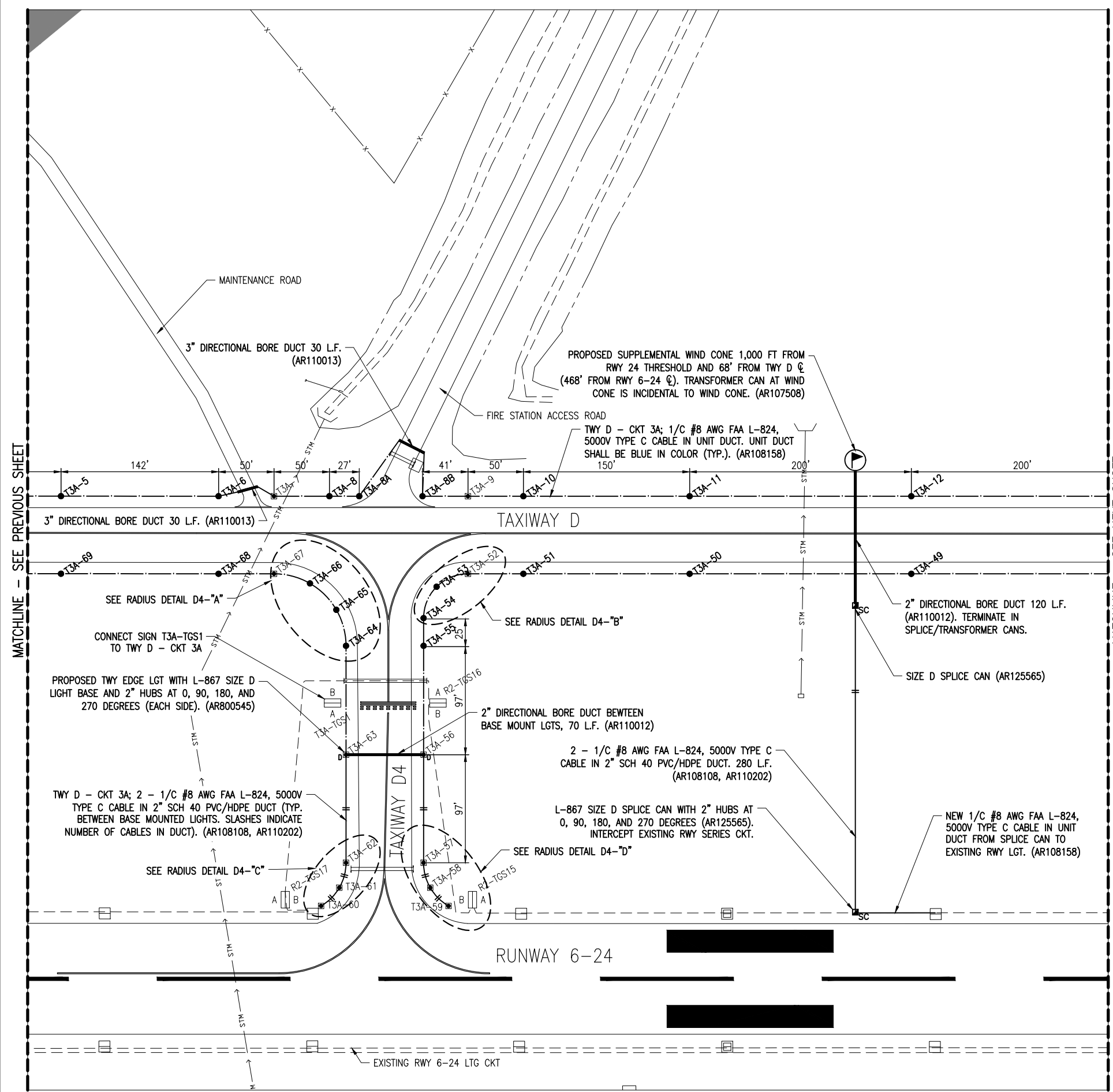
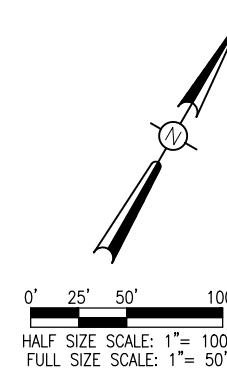
SHEET TITLE

PROPOSED AIRFIELD LIGHTING PLAN  
SHEET 3





KEY MAP



MATCHLINE - SEE NEXT SHEET

MATCHLINE - SEE PREVIOUS SHEET

**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000V CABLE IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

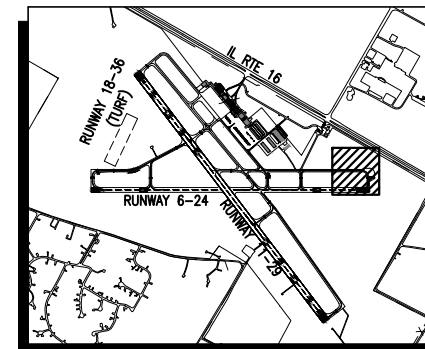
IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

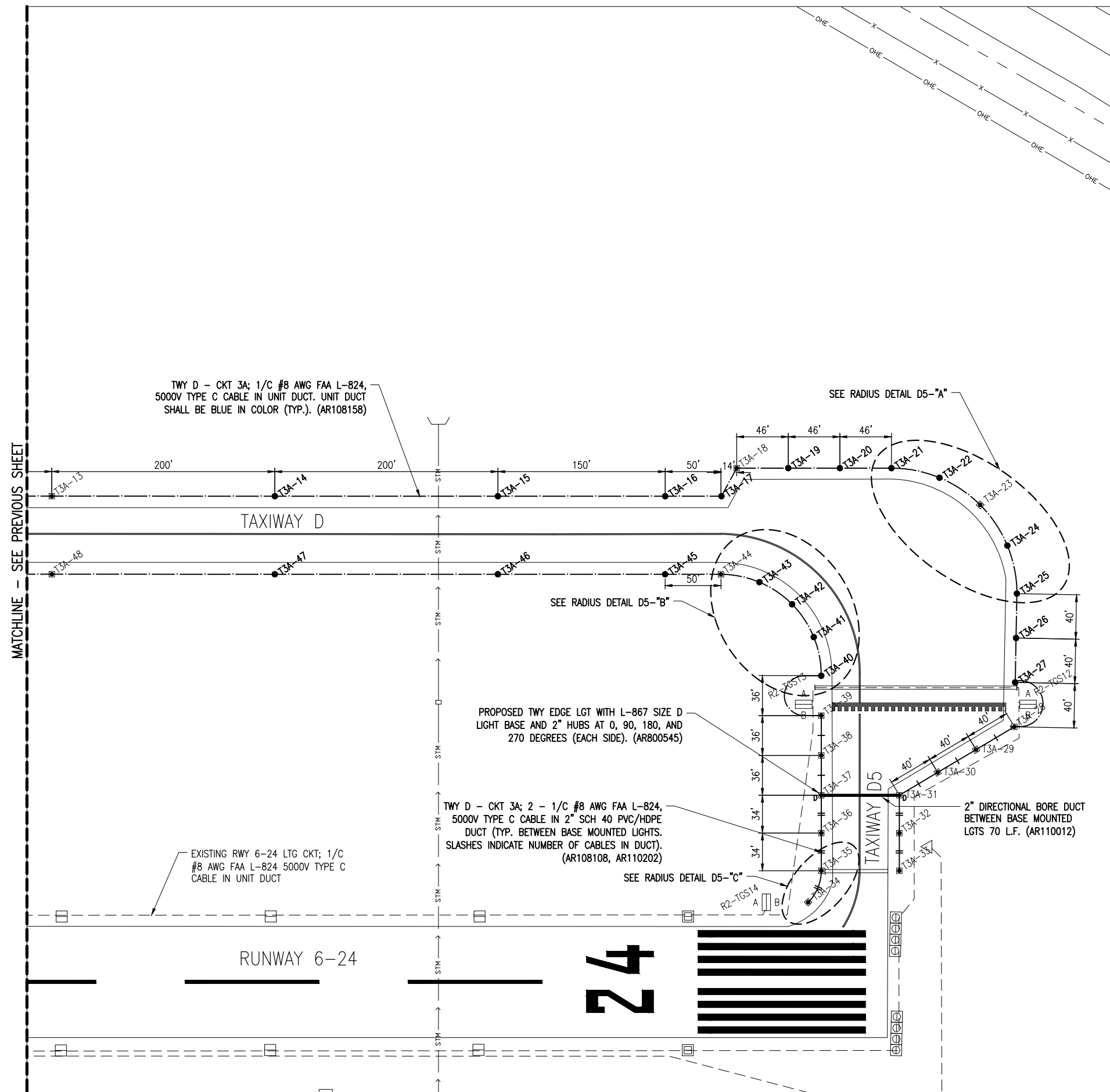
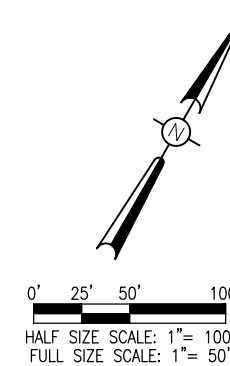
ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-142-ELE.DWG  
DESIGN BY: KNL 07/14/2018  
DRAWN BY: MJD 07/18/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

**PROPOSED AIRFIELD LIGHTING PLAN  
SHEET 5**



KEY MAP



**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000V CABLE IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE



*Kevin Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065


NO.	DATE	DESCRIPTION
		DES DWN REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D

CAD FILE: E-142-ELE.DWG

DESIGN BY: KNL 07/14/2018

DRAWN BY: MJD 07/17/2018

REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

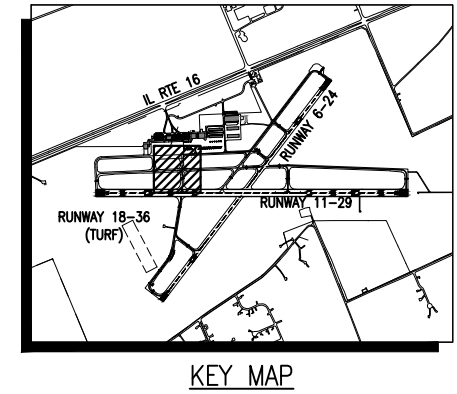
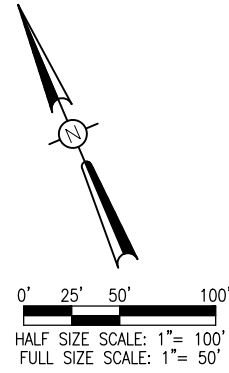
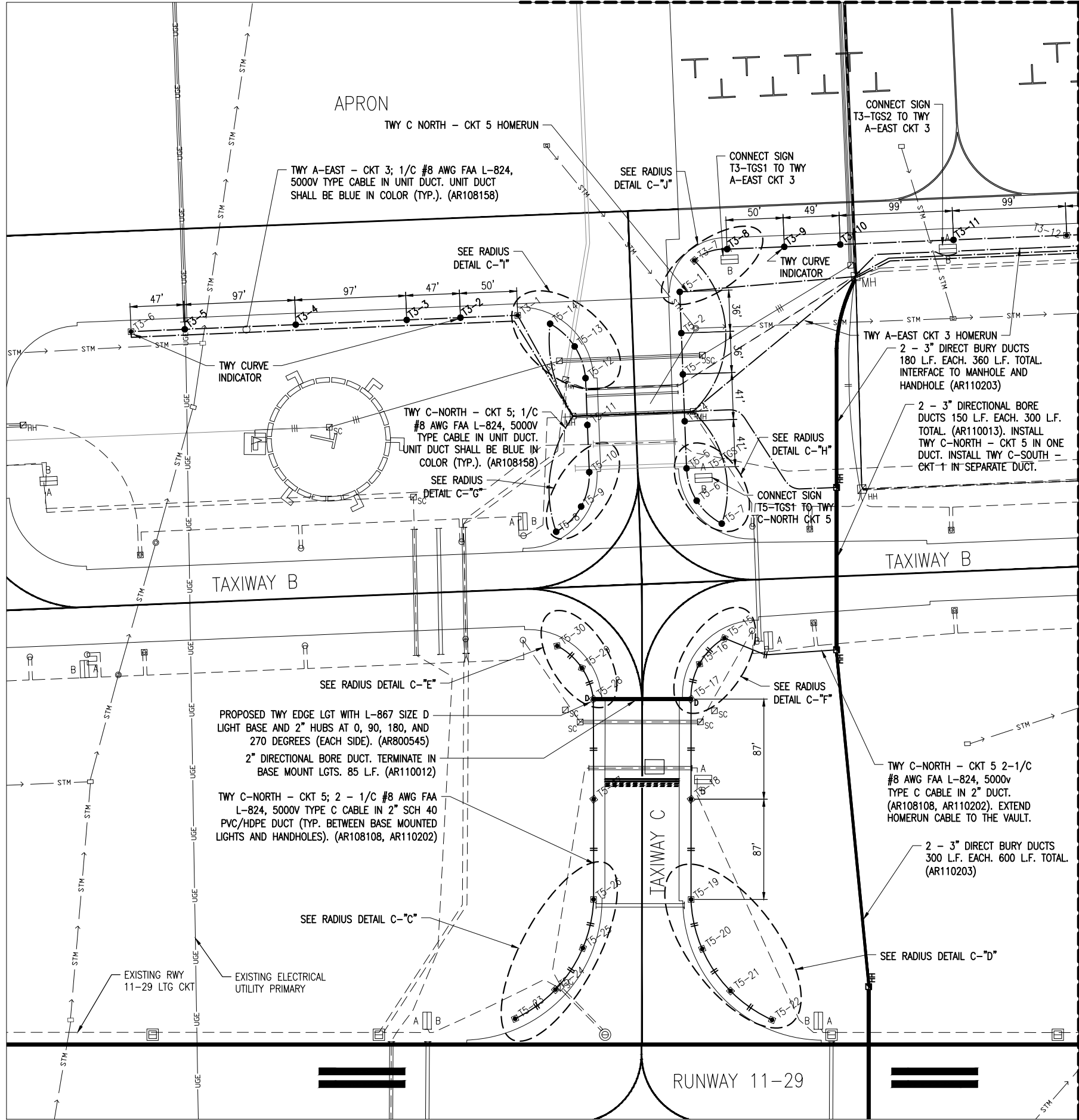
PROPOSED AIRFIELD LIGHTING PLAN

SHEET 6

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MATCHLINE - SEE SHEET 9



- LEGEND**
- EXISTING PAVEMENT
  - EXISTING BUILDING
  - EXISTING ELECTRICAL DUCT
  - PROPOSED ELECTRICAL DUCT
  - EXISTING ELECTRICAL CABLE
  - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
  - PROPOSED 1/C #8 AWG, FAA L-824, 5000V CABLE IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
  - EXISTING WATER
  - EXISTING TELEPHONE
  - EXISTING UNDERDRAIN
  - EXISTING STORM SEWER
  - EXISTING GAS LINE
  - EXISTING SANITARY
  - EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
  - EXISTING REIL
  - EXISTING TAXI GUIDANCE SIGN
  - EXISTING SLICE CAN
  - EXISTING STAKE MOUNTED TAXIWAY LIGHT
  - PROPOSED STAKE MOUNTED TAXIWAY LIGHT
  - EXISTING BASE MOUNTED TAXIWAY LIGHT
  - PROPOSED BASE MOUNTED TAXIWAY LIGHT
  - PROPOSED TAXIWAY LIGHT WITH L-867 SIZE D BASE
  - EXISTING STAKE MOUNTED RUNWAY LIGHT
  - EXISTING BASE MOUNTED RUNWAY LIGHT
  - EXISTING STAKE MOUNTED THRESHOLD LIGHT
  - EXISTING BASE MOUNTED THRESHOLD LIGHT
  - EXISTING AIRPORT ROTATING BEACON
  - EXISTING UTILITY TRANSFORMER
  - EXISTING ELECTRICAL MANHOLE
  - EXISTING ELECTRICAL HANDHOLE
  - EXISTING CLEAN-OUT
  - PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
  - PROPOSED ELECTRICAL HANDHOLE

MATCHLINE - SEE NEXT SHEET

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 Springfield, IL 62568  
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 Illinois Licensed  
 Professional Service Corporation  
 #184-001084

**COLES COUNTY AIRPORT AUTHORITY**  
 COLES COUNTY MEMORIAL AIRPORT



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
 SBG Project No: 3-17-SBGP-TBD  
 Contract No. CO065

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

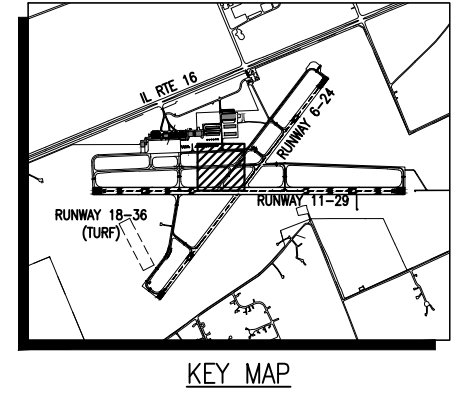
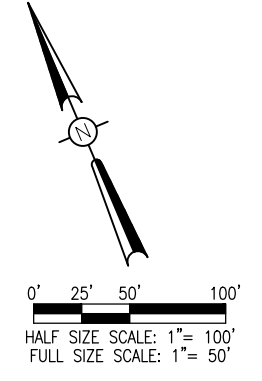
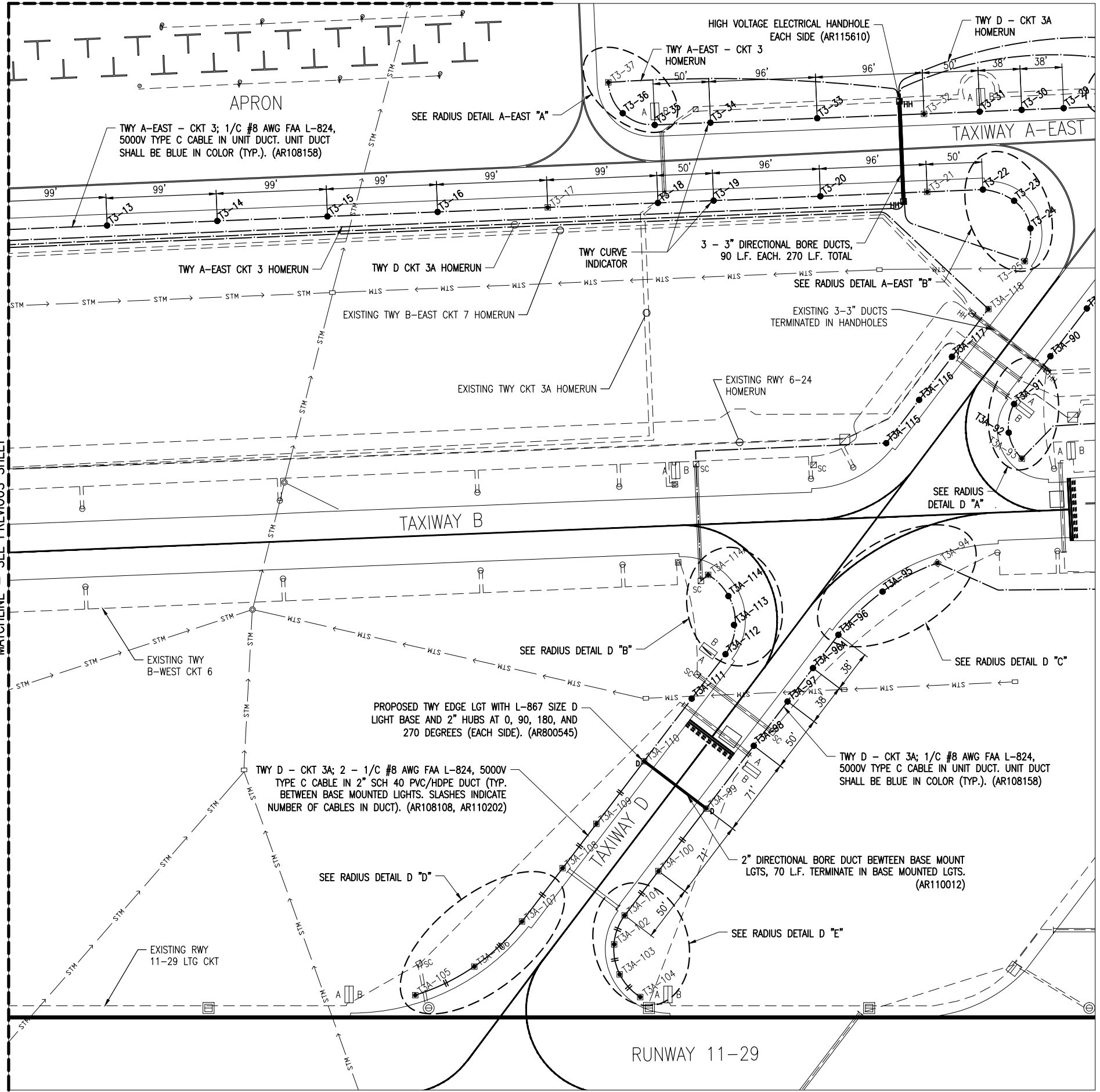
ISSUE: SEPTEMBER 14, 2018  
 PROJECT NO: 18A0014D  
 CAD FILE: E-142-ELE.DWG  
 DESIGN BY: KNL 07/14/2018  
 DRAWN BY: MJD 07/18/2018  
 REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

PROPOSED AIRFIELD LIGHTING PLAN SHEET 7



MATCHLINE - SEE SHEET SHEET 9



**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000V CABLE IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING RAIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXIWAY LIGHT WITH L-867 SIZE D BASE
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE

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Illinois Licensed  
Professional Service Corporation  
#184-001084

**COLES COUNTY AIRPORT AUTHORITY**  
COLES COUNTY MEMORIAL AIRPORT

9-3-2018 EXPIRES: 11/30/2019

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

*Kevin Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-142-ELE.DWG  
DESIGN BY: KNL 07/14/2018  
DRAWN BY: MJD 07/18/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

PROPOSED AIRFIELD LIGHTING PLAN SHEET 8

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*Kevin Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D

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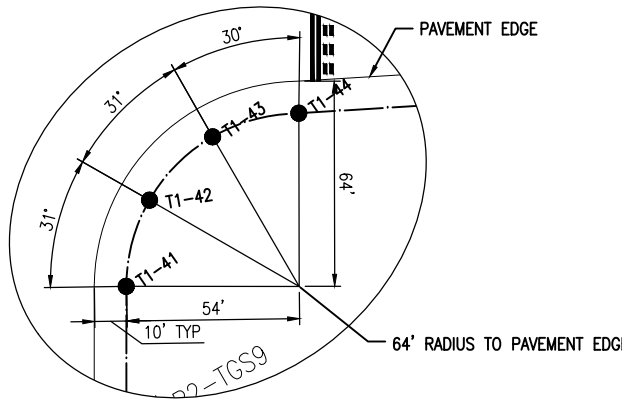
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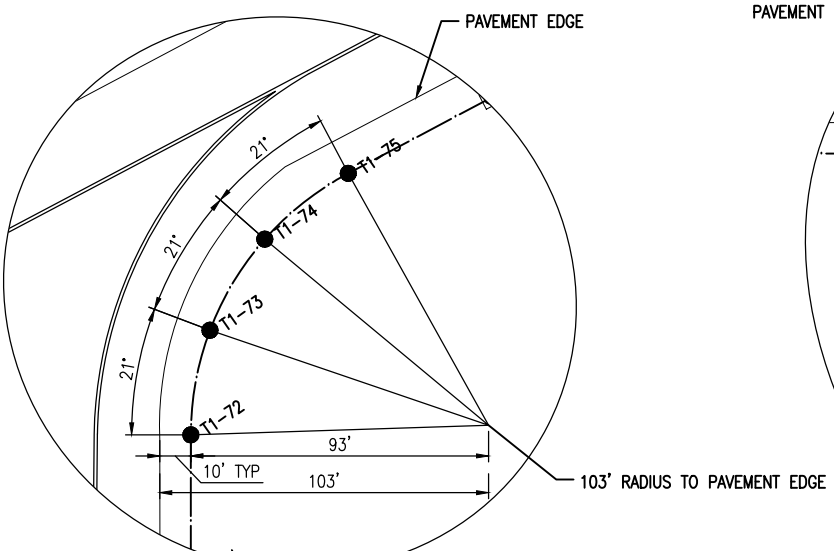
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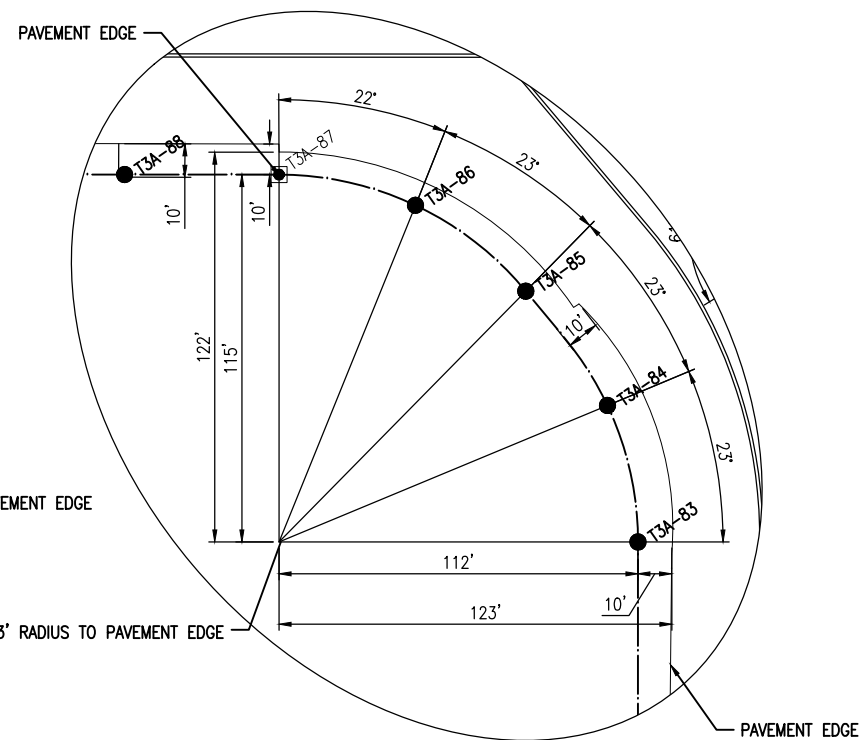
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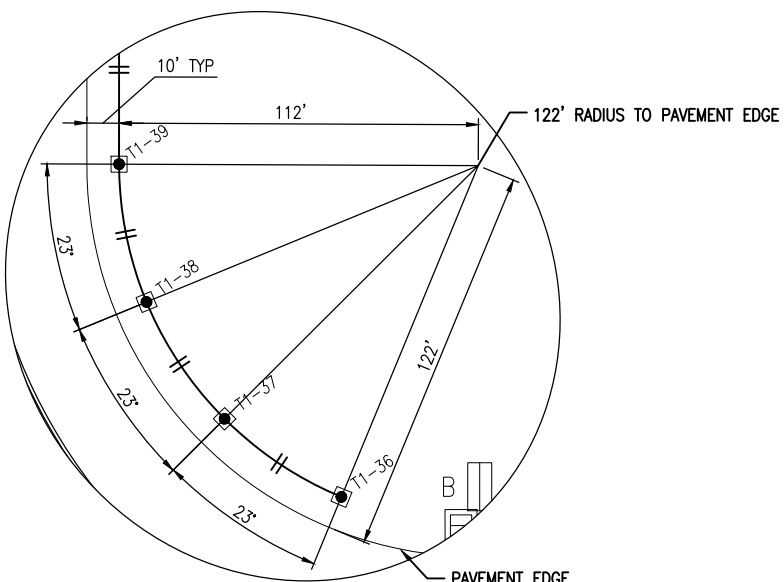
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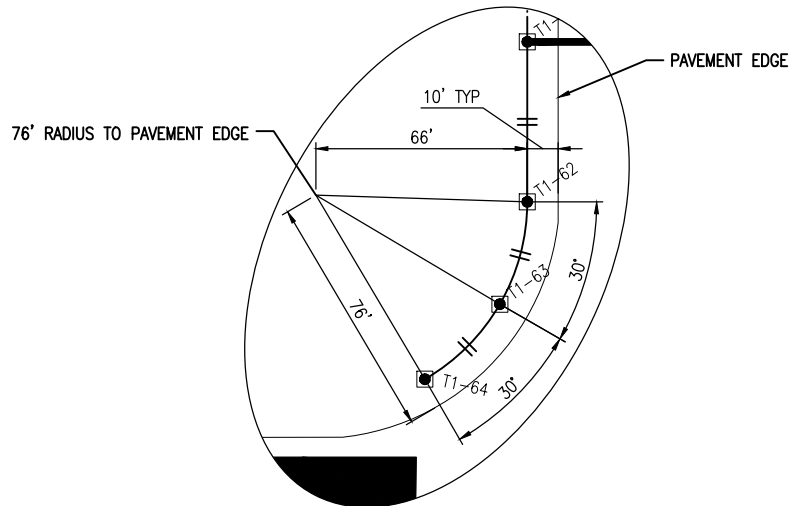
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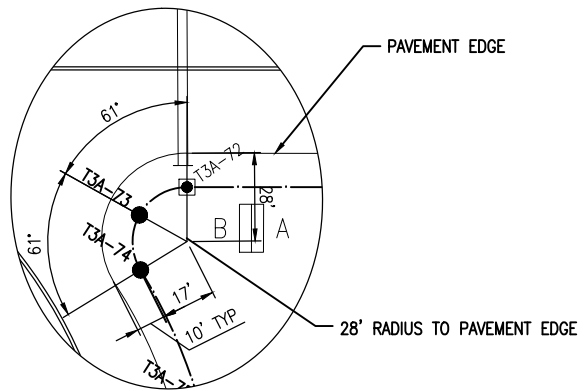
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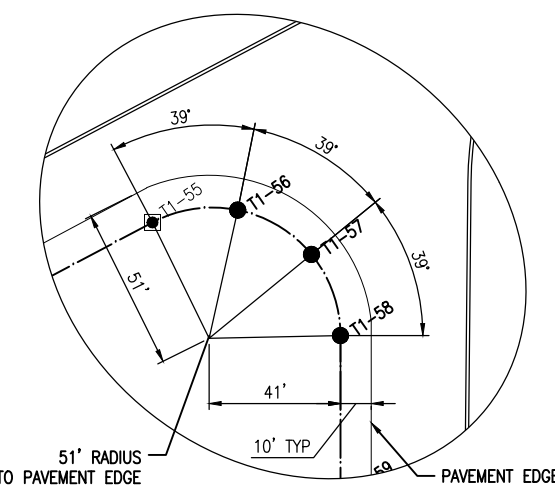
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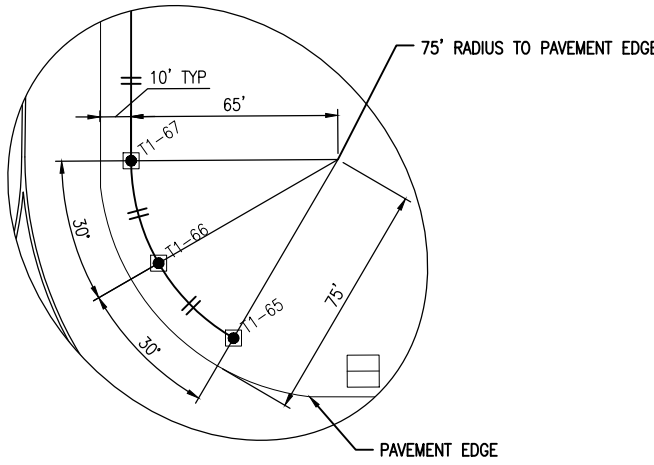
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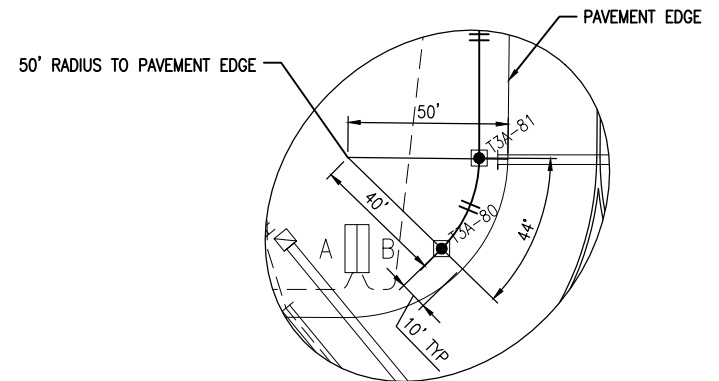
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*Kevin Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D

CAD FILE: E-511-DETL.DWG

DESIGN BY: KNL 08/04/2018

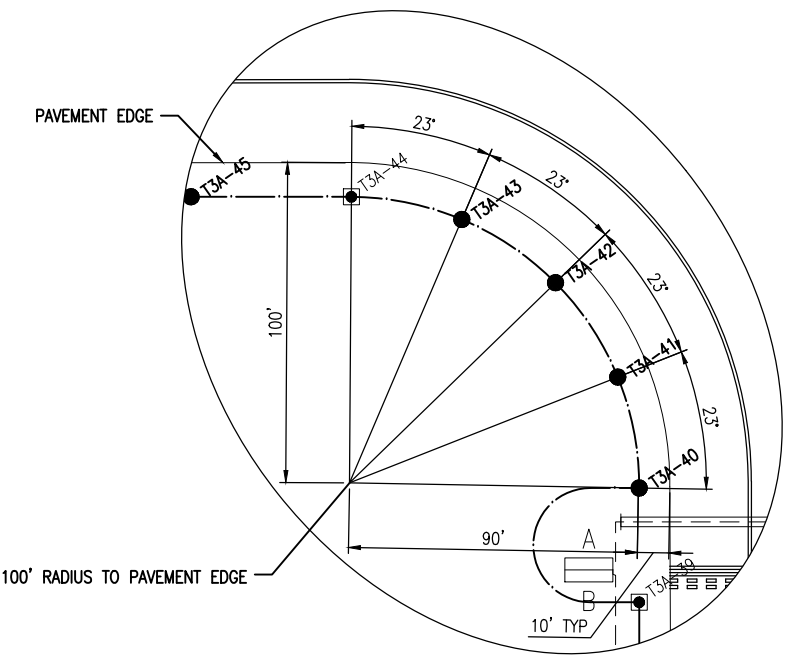
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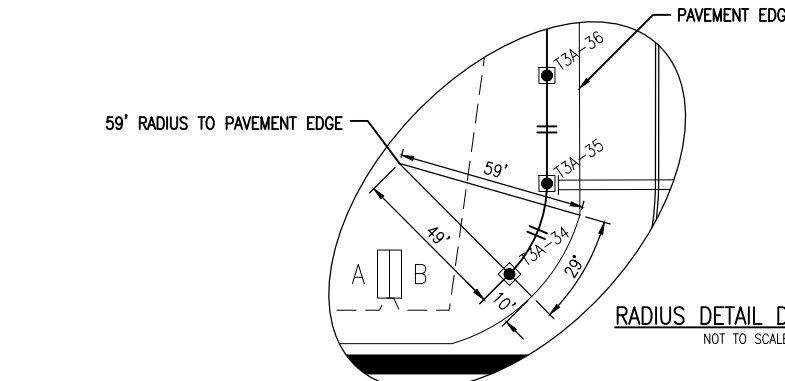
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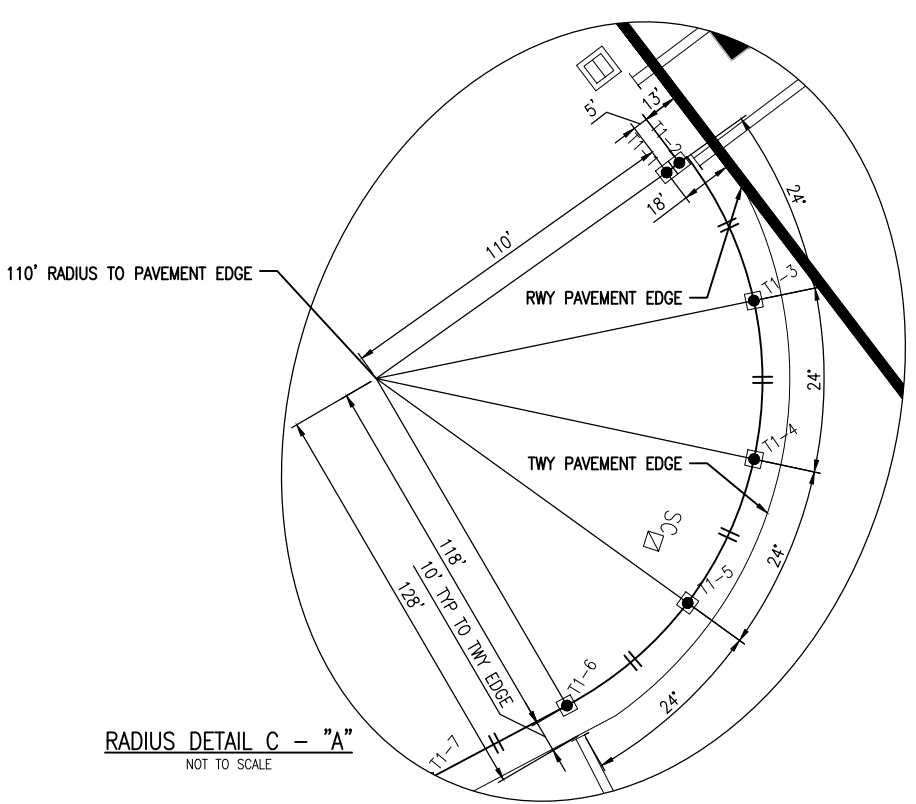
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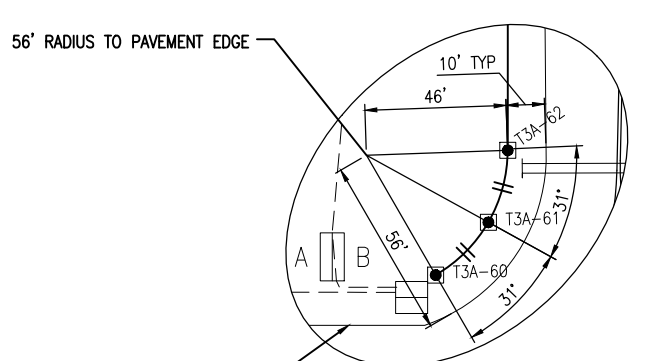
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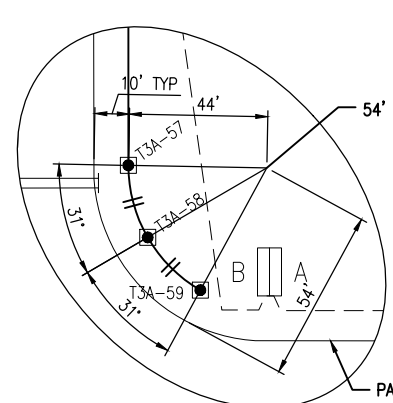
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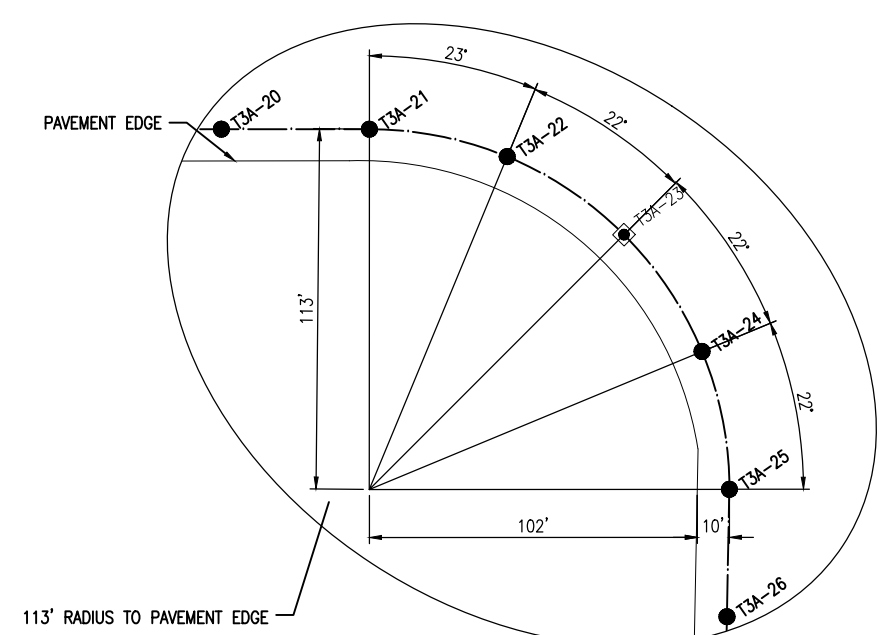
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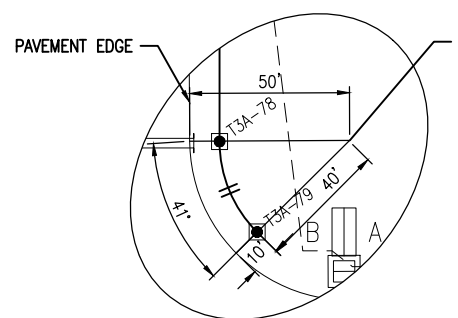
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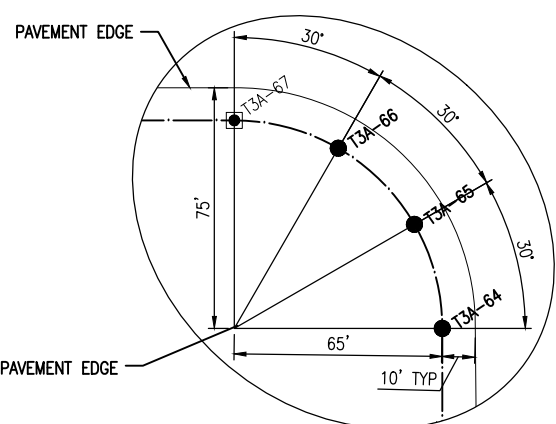
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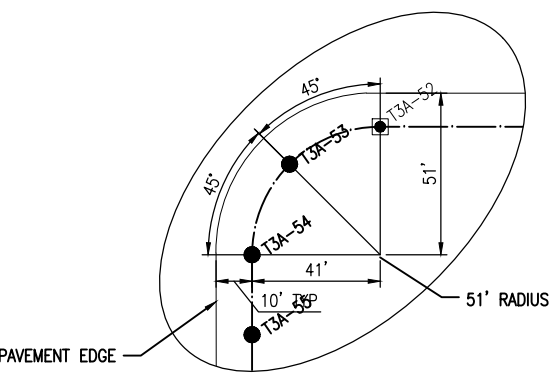
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*Kevin Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D  
CAD FILE: E-511-DETL.DWG

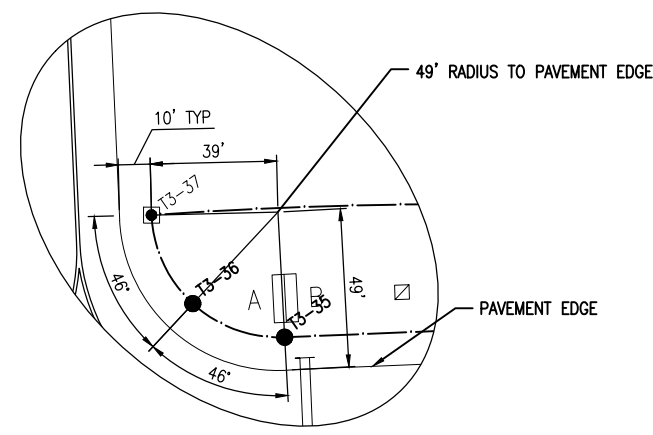
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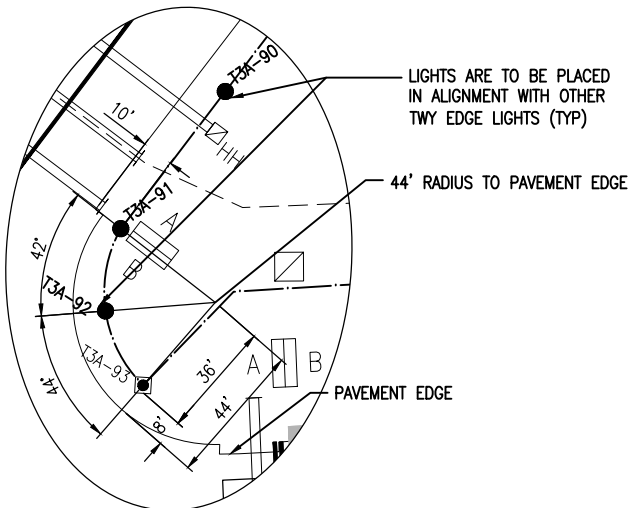
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SHEET TITLE

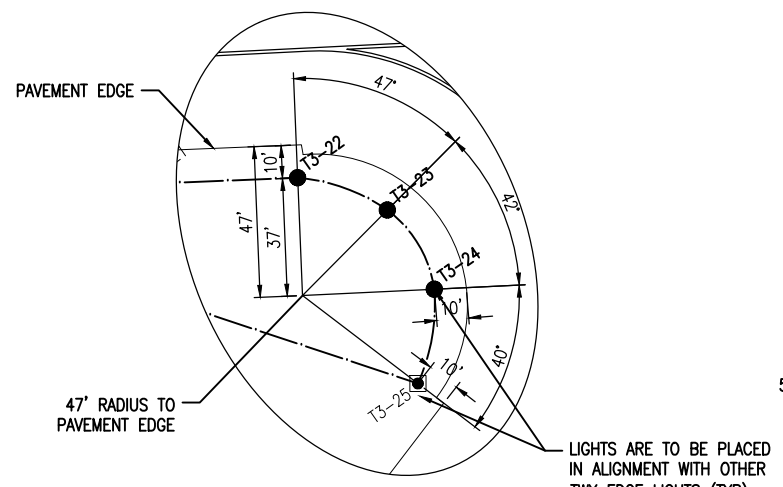
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SHEET 4**



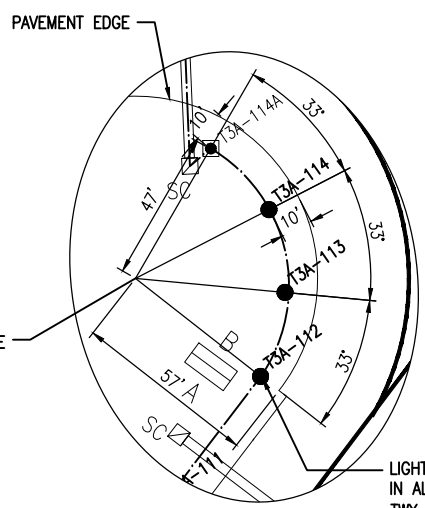
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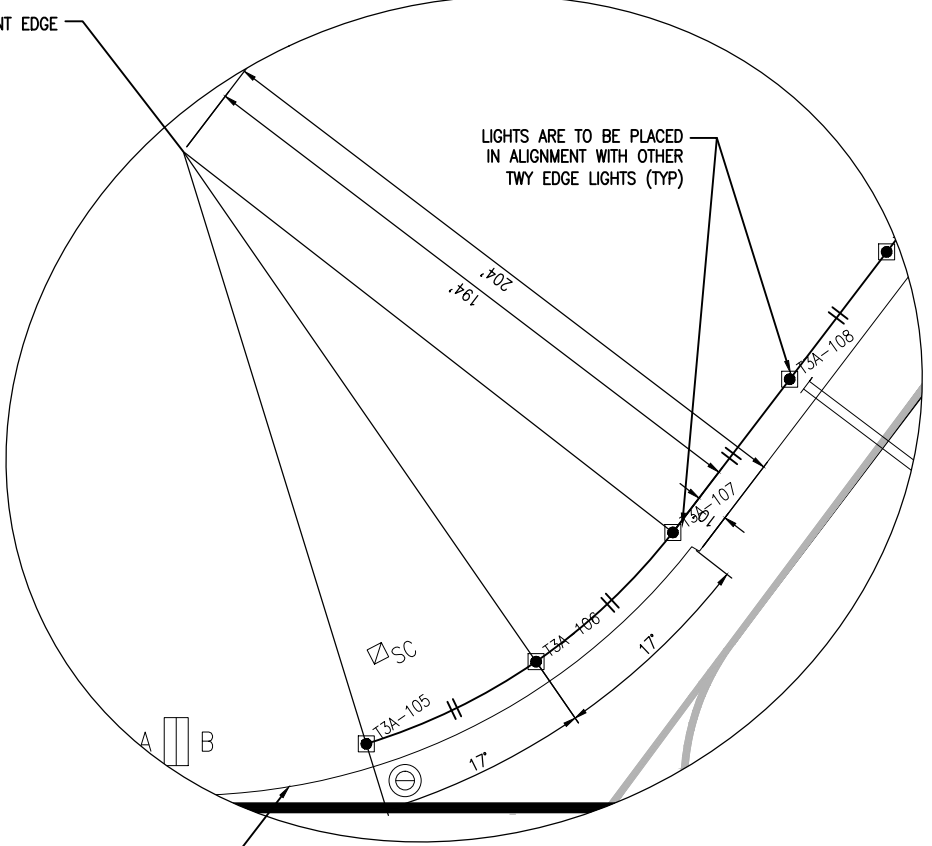
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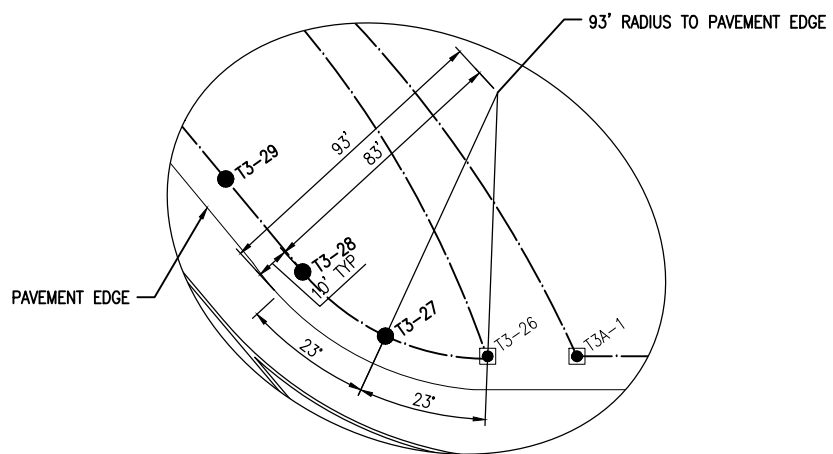
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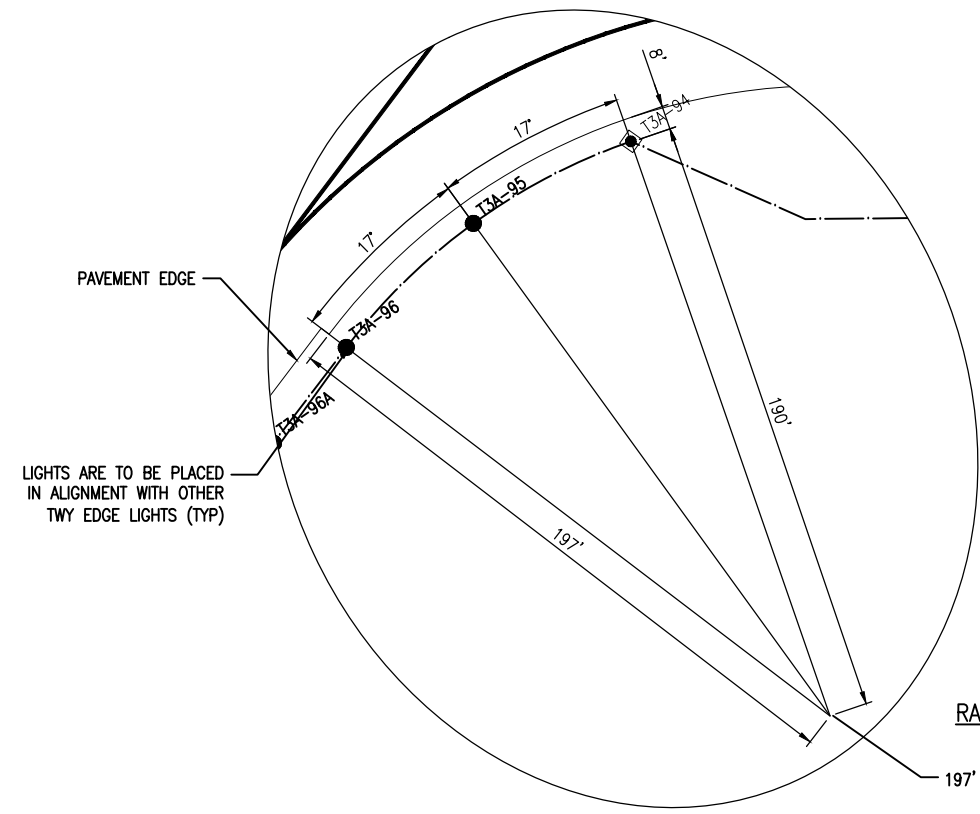
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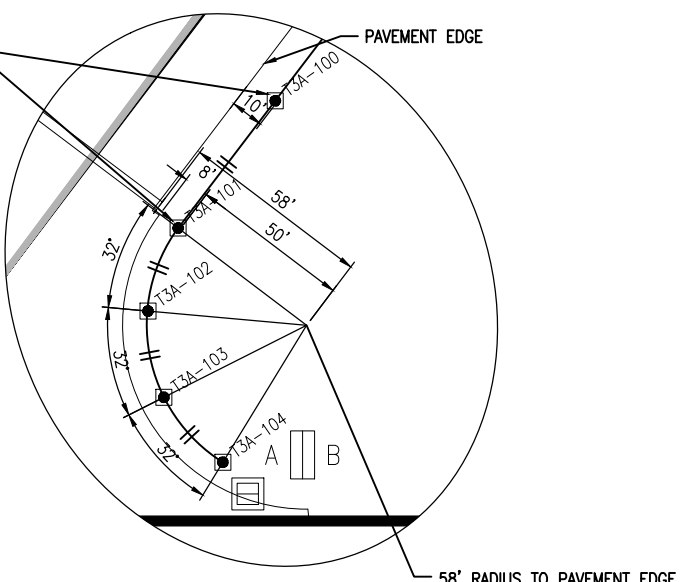
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**RADIUS DETAIL A-EAST - "C"**  
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**RADIUS DETAIL D - "C"**  
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NOT TO SCALE

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*Kevin Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

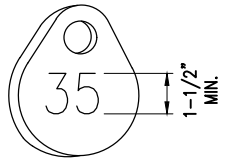
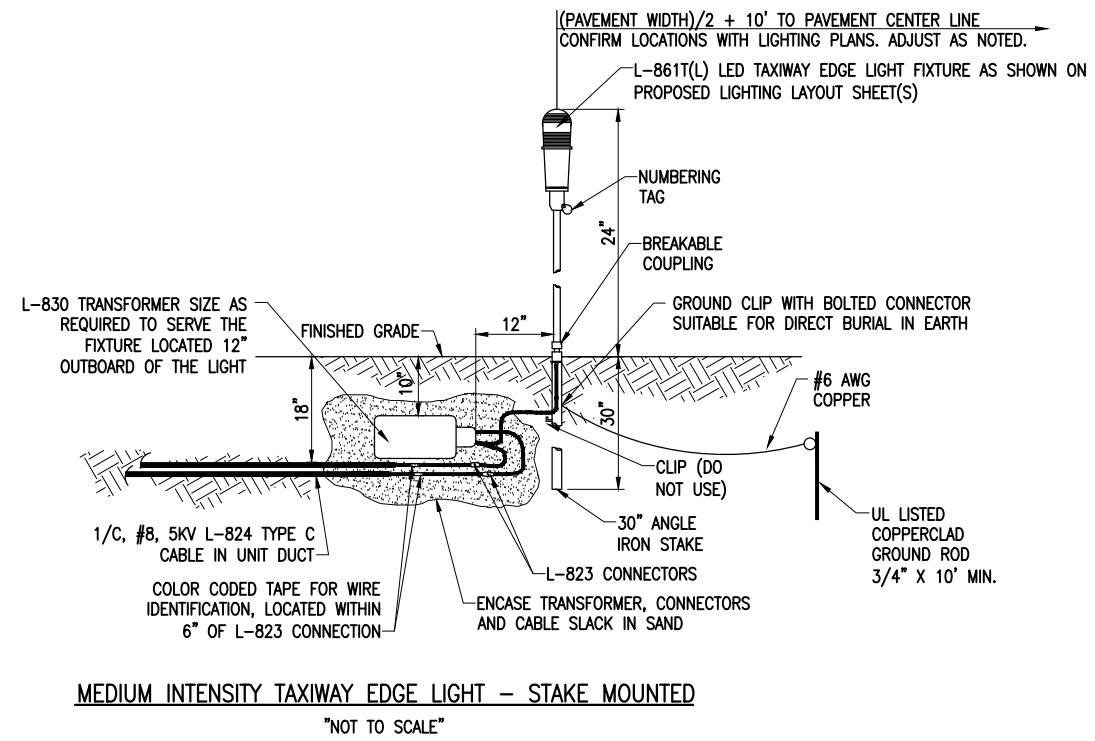
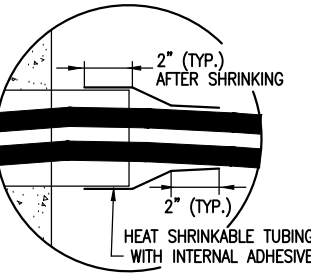
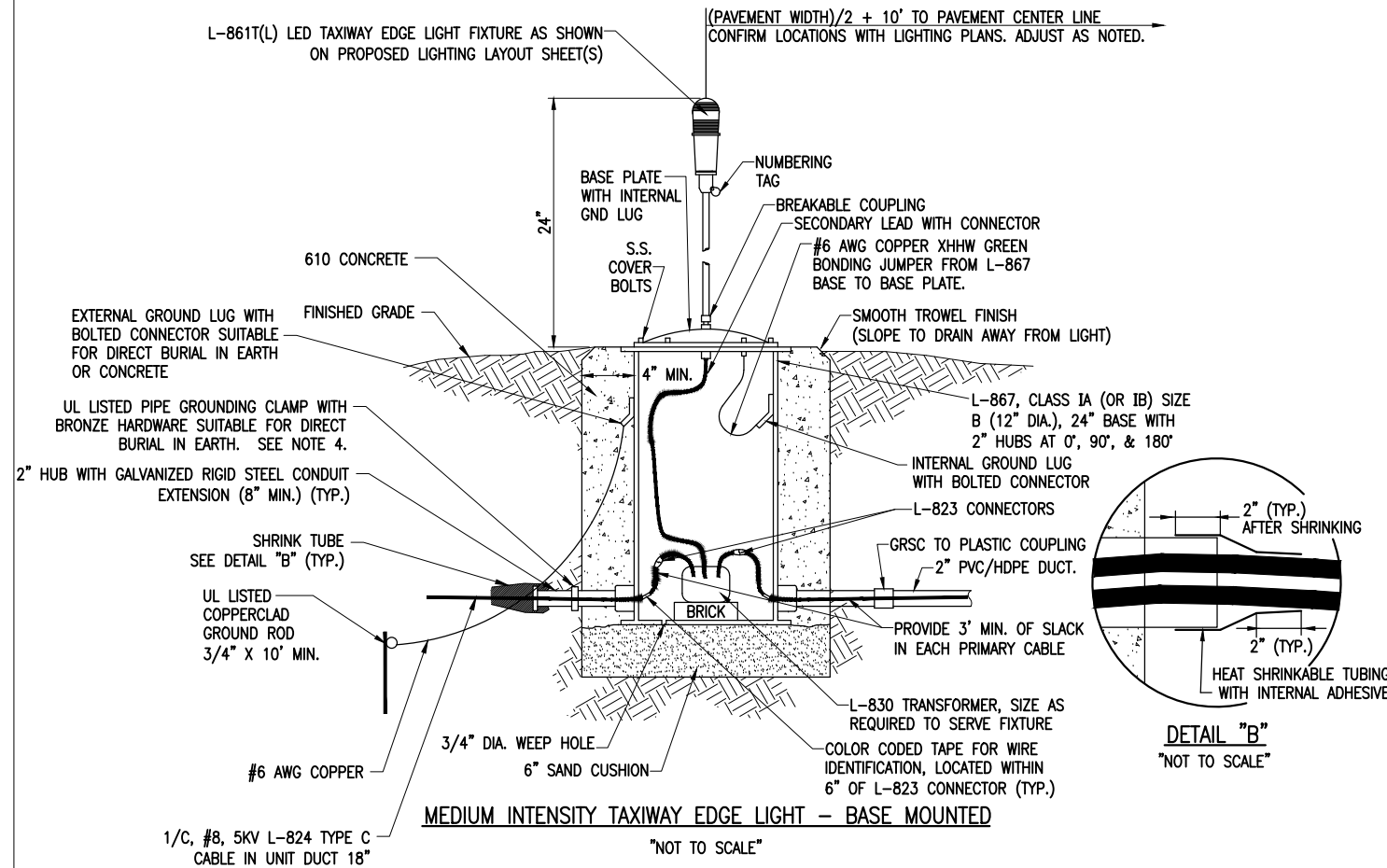
Contract No. CO065


NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-501-DETL.DWG  
DESIGN BY: KNL 06/23/2018  
DRAWN BY: MJD 07/10/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

AIRFIELD LIGHTING  
DETAILS SHEET 1

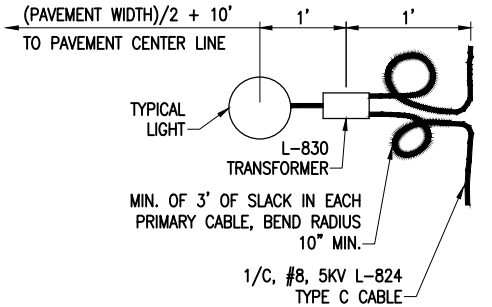
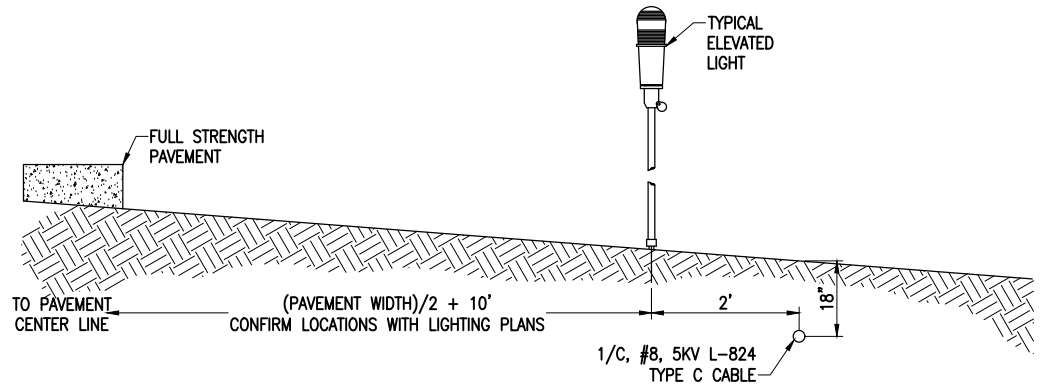


NOTE:  
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.

NUMBERING TAG DETAIL  
'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.

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



PROFILE VIEW

PLAN VIEW

LIGHT AND CABLE INSTALLATION DETAIL  
'NOT TO SCALE'

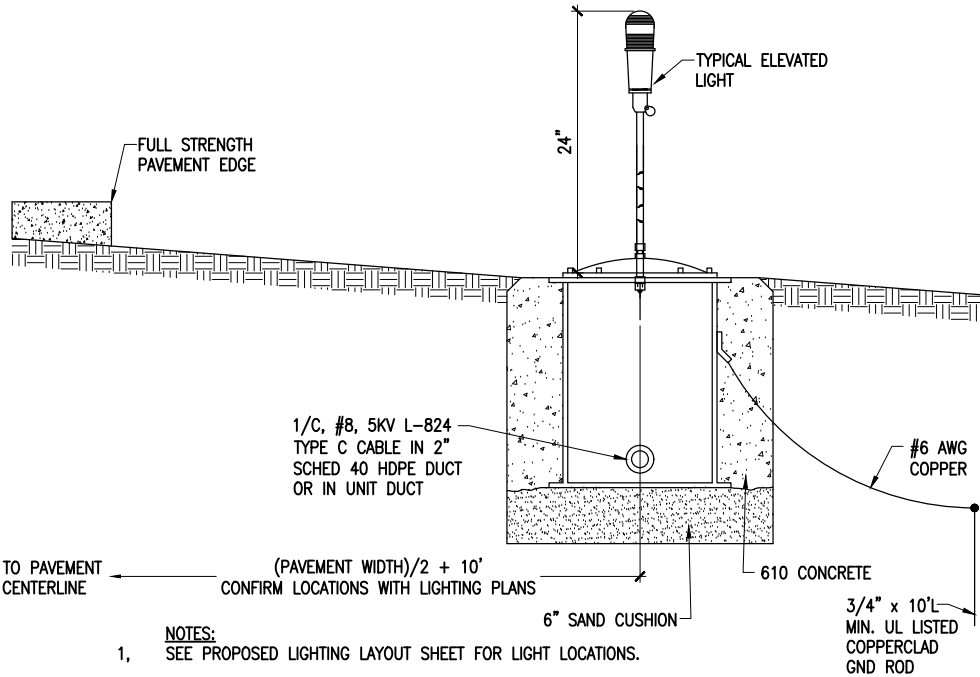
NOTES:  
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.



*Kevin Lightfoot*

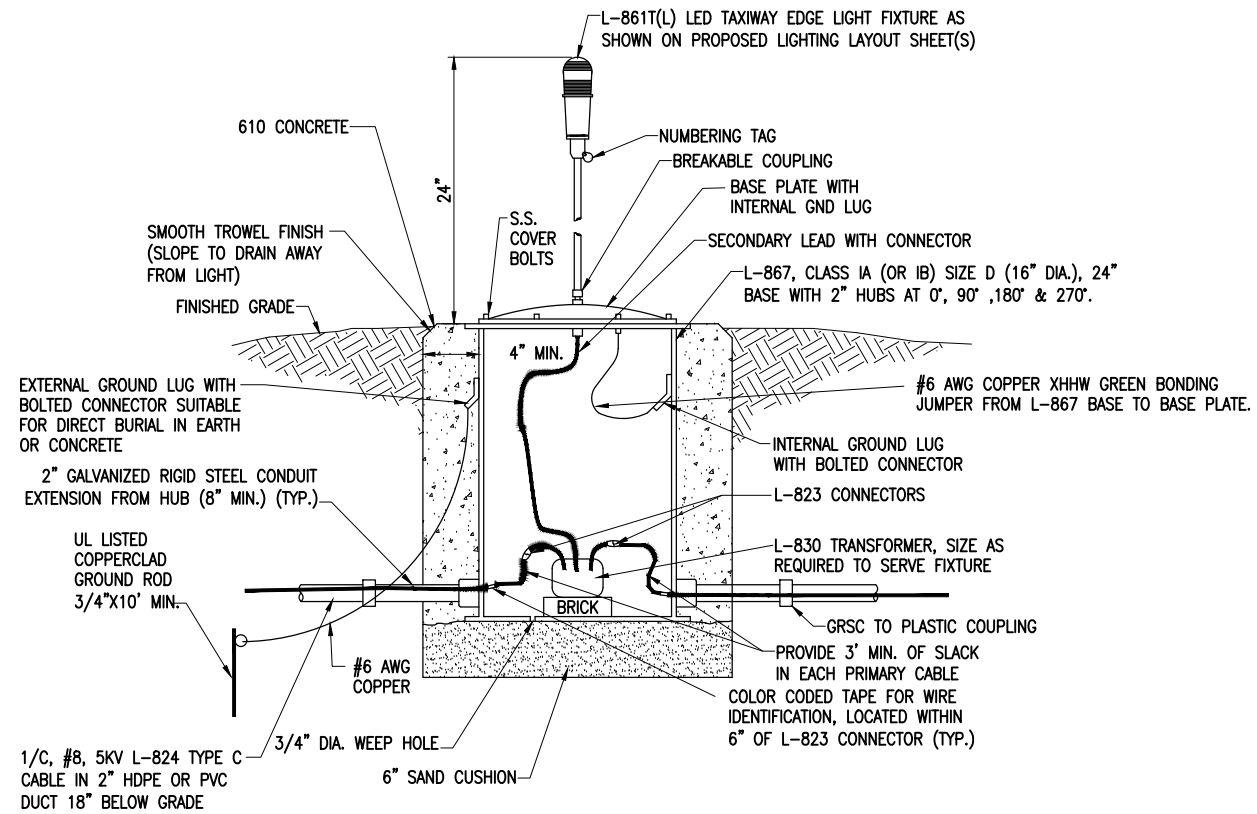
PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679  
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NOTES:  
1. SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

**PROFILE VIEW  
LIGHT AND INSTALLATION DETAIL**



**MEDIUM INTENSITY TAXIWAY EDGE LIGHT - BASE MOUNTED WITH L-867D CAN**  
"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.

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


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REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

**AIRFIELD LIGHTING  
DETAILS SHEET 2**



PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

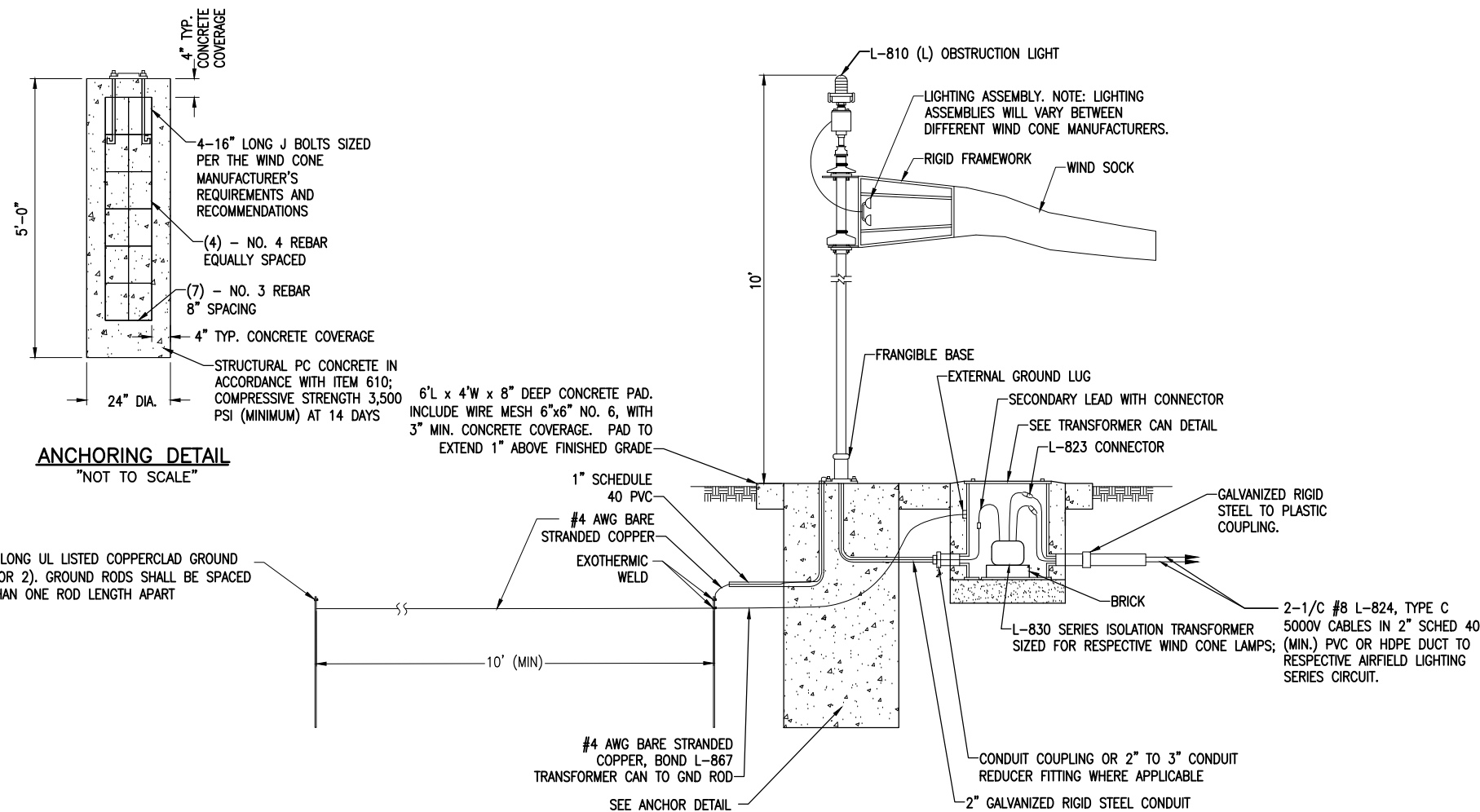
SBG Project No:  
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Contract No. CO065


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

SHEET TITLE

L-806 WIND CONE  
DETAILS



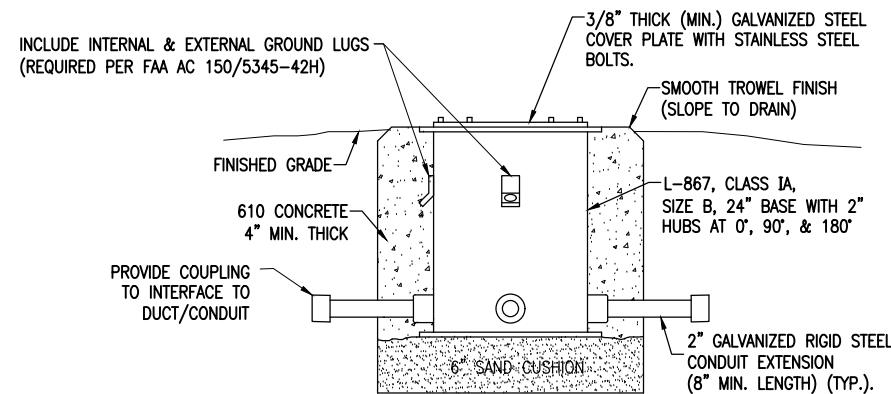
**ANCHORING DETAIL**  
"NOT TO SCALE"

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

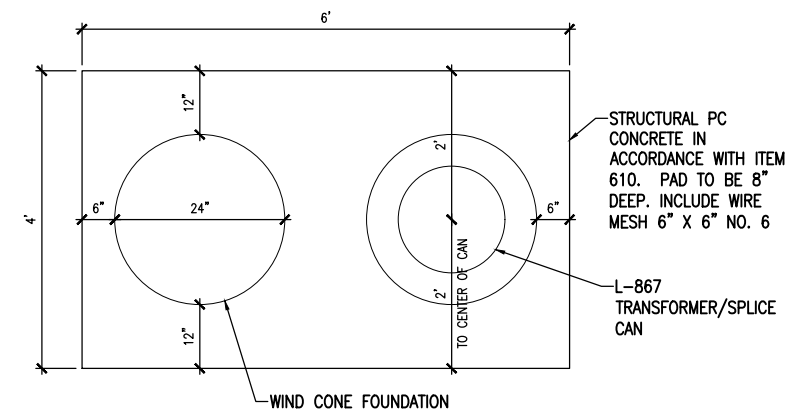
**NOTES**

- 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.
- THE RUNWAY 6-24 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**  
"NOT TO SCALE"



**CONCRETE PAD PLAN VIEW**  
"NOT TO SCALE"



*Kevin N. Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

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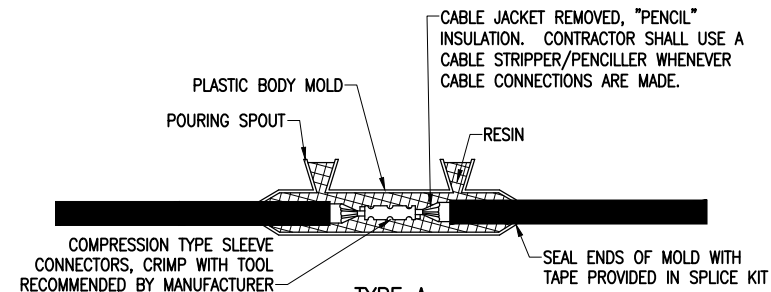
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DRAWN BY: MJD 07/11/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

AIRFIELD LIGHTING  
CABLE SPLICE  
DETAILS

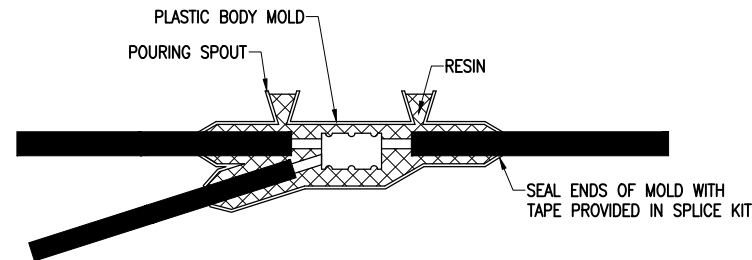
**NOTES:**

- SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
- CONTRACTOR SHALL KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
- EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5,000 VOLTS AC TO COMPLY WITH THE REQUIREMENTS OF FAA AC 150/5370-10G ITEM L-108.
- WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
- INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
- WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10G ITEM L-108, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 23, 3M SCOTCH 130C OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
- PROVIDE CABLE TAGS TO IDENTIFY THE RESPECTIVE CIRCUITS ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
- CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. FOR THE L-823 CONNECTORS, THE CRIMPING TOOL USED MUST BE LISTED BY THE L-823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.



**TYPE A**

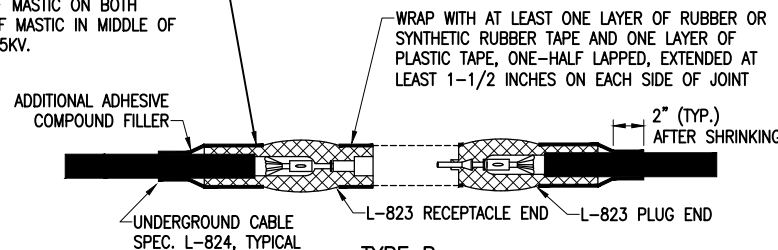
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTION BOXES



**LOW VOLTAGE UNDERGROUND TAP SPLICE**

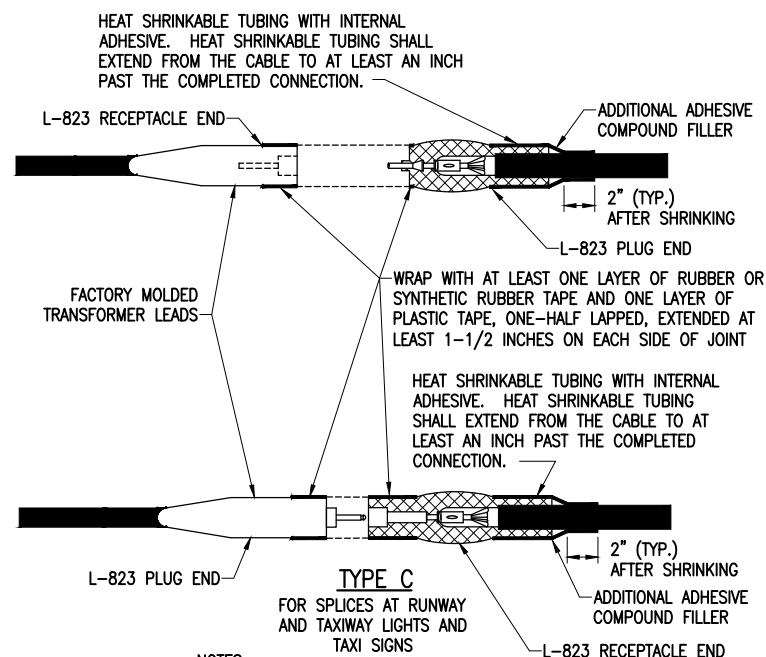
FOR TAP SPLICES IN LOW VOLTAGE (600V) CABLE. SPLICES SHALL BE RATED AND LISTED SUITABLE FOR DIRECT BURIAL LOCATIONS. FOR SPLICES UP TO #2 AWG CONDUCTOR, SPLICES SHALL BE WYE RESIN TYPE POWER CABLE TAP SPLICE KIT SUITABLE FOR THE RESPECTIVE CABLES AND RESPECTIVE APPLICATION.

CONTINUOUS HEAT SHRINK TUBING PLACED OVER THE ENTIRE L-823 CONNECTOR(S) BOTH MALE AND FEMALE AT ALL 5KV JUNCTIONS. THE HEAT SHRINK TUBING SHALL BE APPROXIMATELY 18" IN LENGTH WITH 6 INCHES OF MASTIC ON BOTH ENDS AND VOID OF MASTIC IN MIDDLE OF TUBE RATED FOR 5KV.



**TYPE B**

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

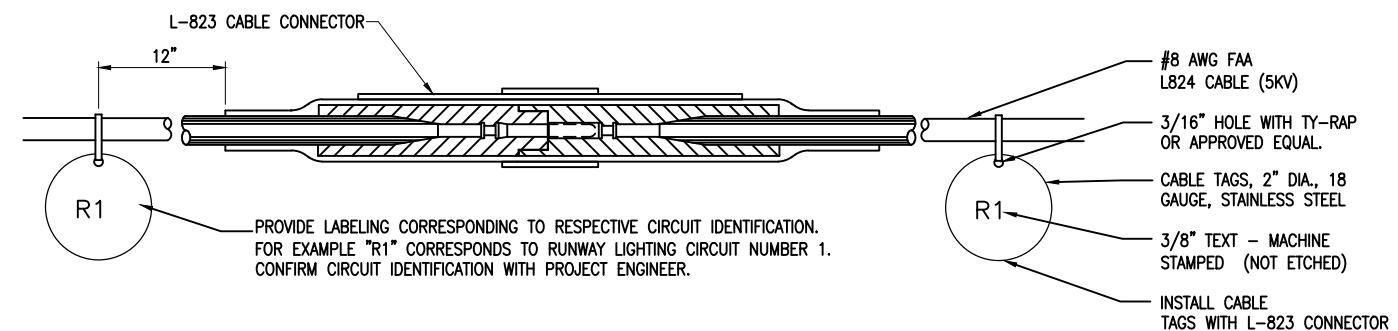


**TYPE C**

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

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

**CABLE SPLICES**  
"NOT TO SCALE"



**CABLE TAG DETAIL**  
"NOT TO SCALE"

- CONTRACTOR SHALL PROVIDE CABLE CIRCUIT IDENTIFICATION MARKERS ATTACHED TO BOTH SIDES OF EACH CABLE CONNECTION.
- CABLE IDENTIFICATION TAGS SHALL BE STAINLESS STEEL OR BRASS.
- THE CABLE SHALL THOROUGHLY BE CLEANED PRIOR TO THE INSTALLATION OF THE L-823 CONNECTOR KIT.
- ATTACH EACH CABLE TIE ENOUGH TO HOLD IN PLACE WITHOUT COMPRESSING EDGE OF CABLE TAG INTO CONDUCTOR. TRIM OFF EXCESS CABLE TIE.
- CABLE TAGS SHALL BE PROVIDED AT ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.



*Kevin Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

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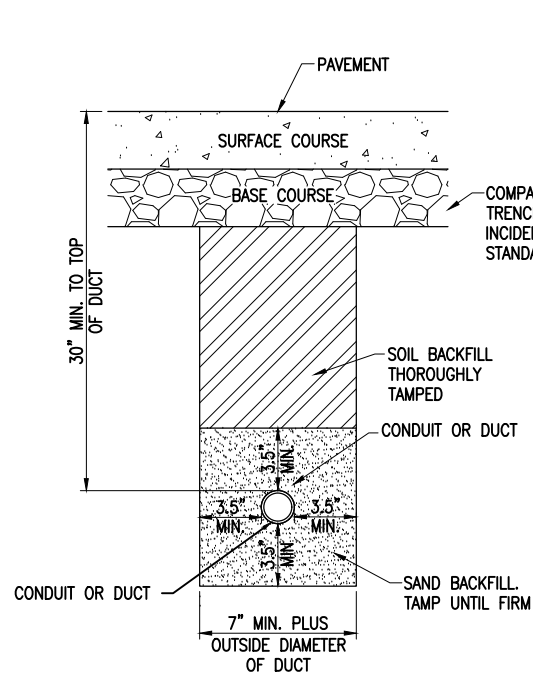
DESIGN BY: KNL 06/23/2018

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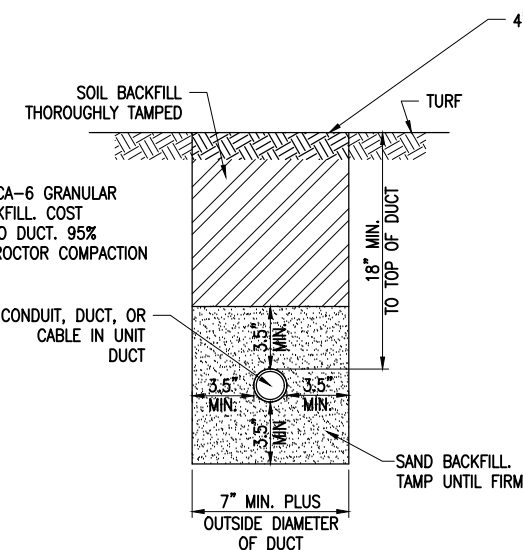
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SHEET TITLE

CONDUIT AND CABLE  
TRENCH DETAILS

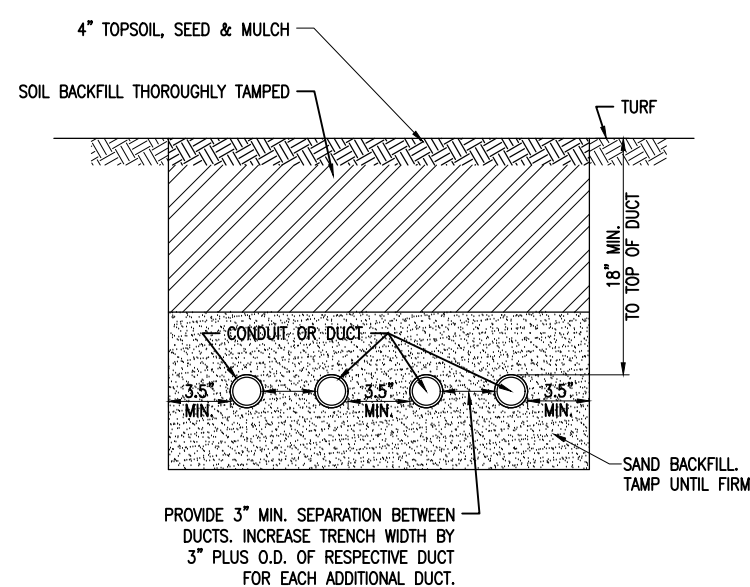
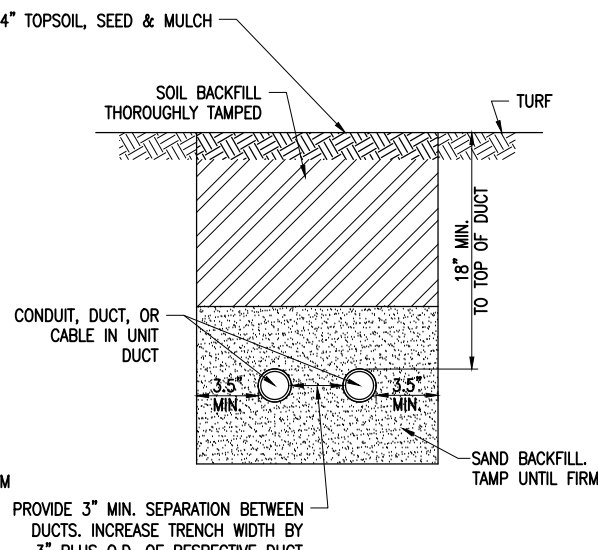


CONDUIT IN TRENCH – PAVED AREAS  
"NOT TO SCALE"

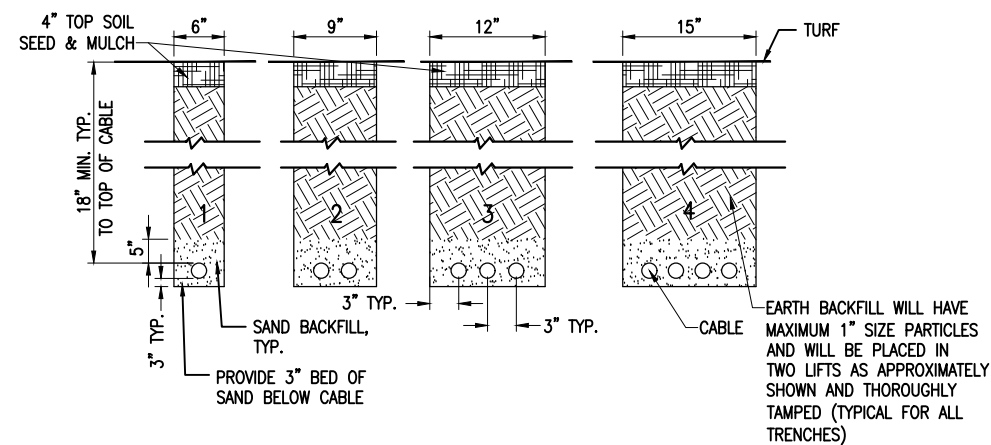


PROVIDE 3" MIN. SEPARATION BETWEEN  
DUCTS. INCREASE TRENCH WIDTH BY  
3" PLUS O.D. OF RESPECTIVE DUCT  
FOR EACH ADDITIONAL DUCT.

CONDUIT IN TRENCH – NON-PAVED AREAS  
"NOT TO SCALE"



PROVIDE 3" MIN. SEPARATION BETWEEN  
DUCTS. INCREASE TRENCH WIDTH BY  
3" PLUS O.D. OF RESPECTIVE DUCT  
FOR EACH ADDITIONAL DUCT.



CABLE TRENCHES  
"NOT TO SCALE"

CABLE TRENCH NOTES:

1. DETAIL NUMBERS INDICATE NUMBER OF CABLES.
2. TRENCHES WITH MORE THAN FOUR CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED BELOW PAVEMENT OR ROADWAYS IS 30". COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
4. HIGH VOLTAGE 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.
5. CONDUIT, DUCT, CABLE, AND/OR CABLE IN UNIT DUCT INTERFACE TO HANDHOLES, MANHOLES, SPLICE CANS, OR OTHER JUNCTION STRUCTURES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE CABLE PAY ITEM OR RESPECTIVE DUCT PAY ITEM.
6. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

CONDUIT IN TRENCH NOTES:

1. DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
3. 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.
4. 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 LOCATED BELOW PAVEMENT OR ROADWAYS IS 30". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED IN AREAS SUBJECT TO FARMING IS 42". 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.
5. 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.
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7. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.



PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

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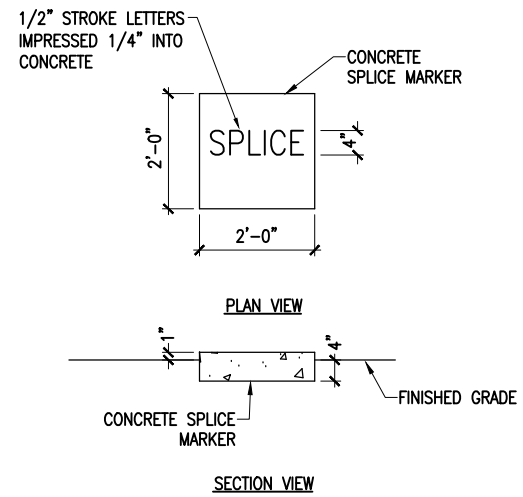
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DRAWN BY: MJD 07/11/2018

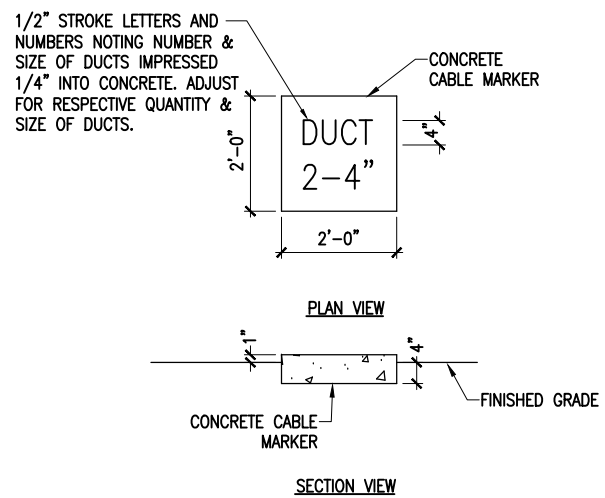
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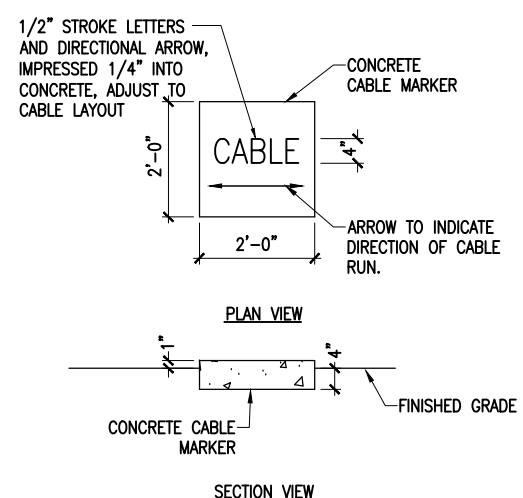
CABLE AND DUCT  
MARKER DETAILS



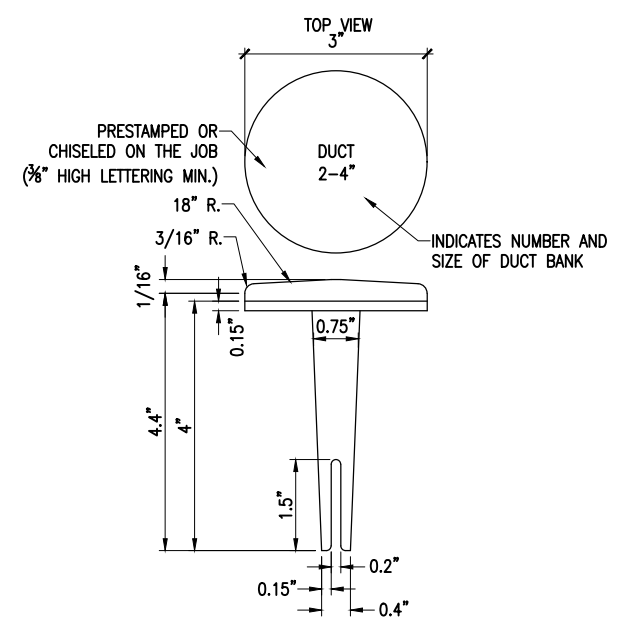
**TURF CABLE MARKERS**  
"NOT TO SCALE"



**TURF CABLE MARKERS**  
"NOT TO SCALE"

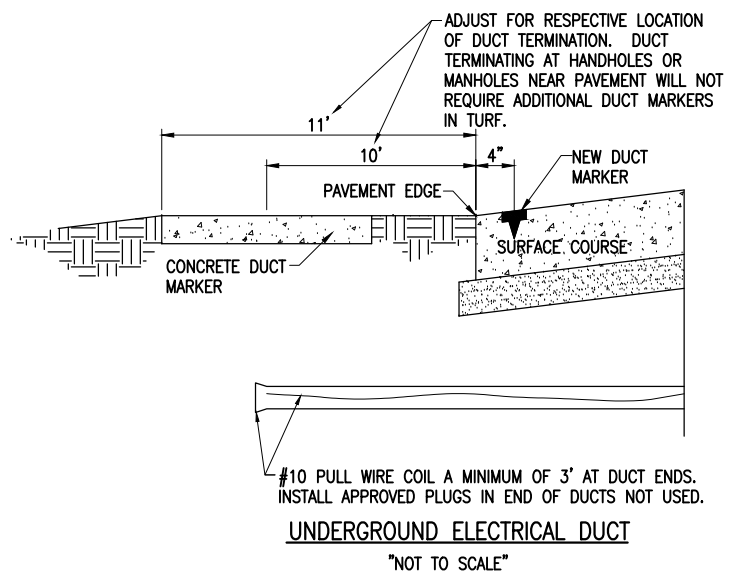
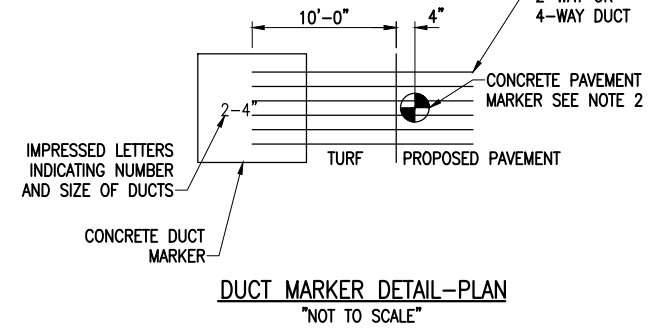


**TURF CABLE MARKERS**  
"NOT TO SCALE"



**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 G&S FOUNDRY & MANUFACTURING CO. INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114, 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, OR DETAILED ON THE PLANS.
- THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: RWY 6-24, TWY C-CKT 1, TWY AE-CKT 3, AND TWY D-CKT 3A
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.



*Kevin Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

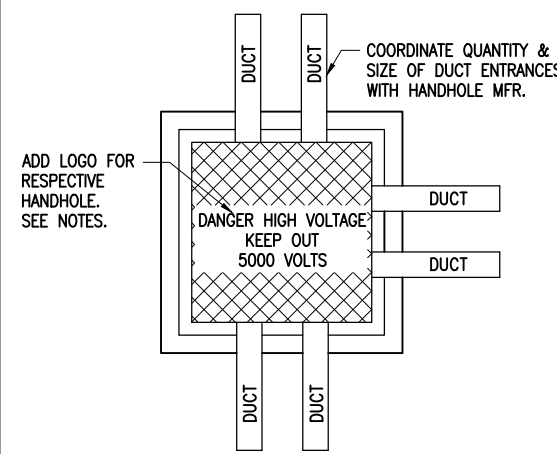
Contract No. CO065

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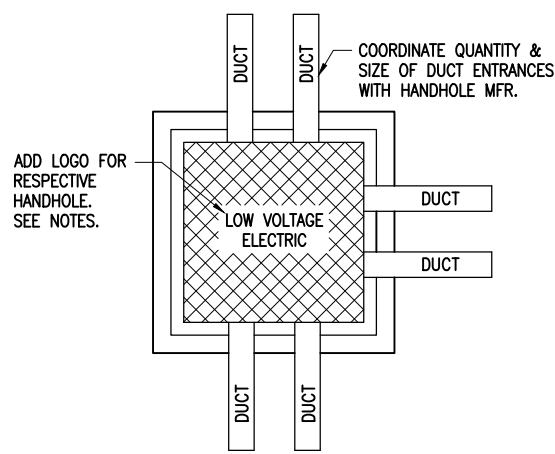
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PROJECT NO: 18A0014D  
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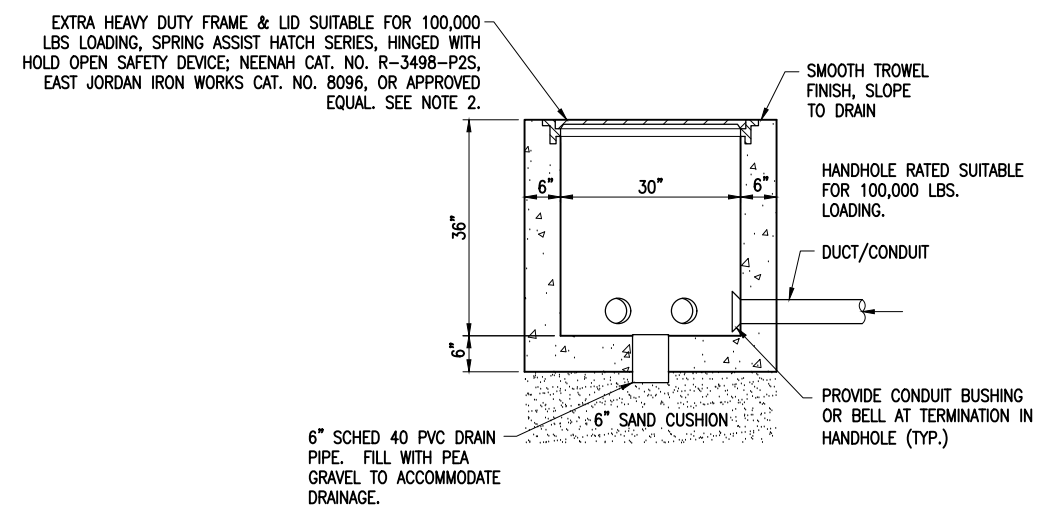
ELECTRICAL  
HANDHOLE AND  
SPlice CAN DETAILS



**HIGH VOLTAGE HANDHOLE PLAN**  
"NOT TO SCALE"



**LOW VOLTAGE HANDHOLE PLAN**  
"NOT TO SCALE"

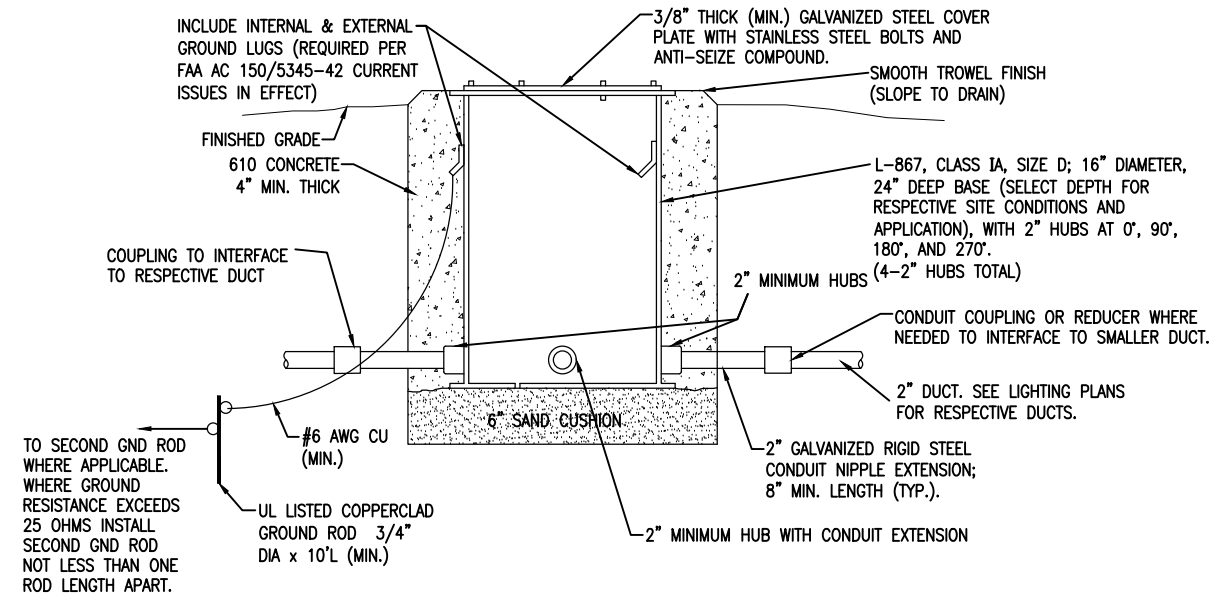


**ELEVATION**  
"NOT TO SCALE"

**HANDHOLE NOTES:**

- LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR AC 150/5320-6E APPENDIX 3 ITEM 2.d. (1). AIRPORT HANDHOLE HOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3498-P2S, EAST JORDAN IRON WORKS CAT. NO. 8096, OR APPROVED EQUAL.
- REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
- CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- HANDHOLES SHALL BE PRECAST.
- 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.

**ELECTRICAL HANDHOLE**  
"NOT TO SCALE"



**SPlice CAN DETAIL**  
"NOT TO SCALE"

**NOTES FOR SPlice 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.







**AIRFIELD LIGHTING NOTES**

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
4. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.
5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.
6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
10. A SLACK OF THREE (3') FEET, MINIMUM, PLUS DEPTH OF BASE CAN (IF APPLICABLE), SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER. THERE SHALL BE NO ADDITIONAL PAYMENT FOR CABLE SLACK AND THEREFORE THE QUANTITY OF PROPOSED CABLE SLACK HAS NOT BEEN INCLUDED IN THE RESPECTIVE CABLE PAY ITEMS.
11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK.
21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "I" SPLICES SHALL BE OF THE CAST TYPE.
29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI (MINIMUM) AT 14 DAYS, IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
31. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.
32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

**GROUNDING NOTES FOR AIRFIELD LIGHTING**

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. A GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE, TAXI GUIDANCE SIGN AND L-867/L-868 BASE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR. CONNECTIONS TO LIGHT BASES MAY ALSO BE MADE WITH A UL 467 LISTED PIPE CLAMP CONNECTED TO THE GRSC NIPPLE EXTENDING FROM A THREADED LIGHT BASE HUB. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. PER THE REQUIREMENTS OF FAA AC 150/5340-30J DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6 "LIGHT FIXTURE BONDING" IT NOTES THE FOLLOWING: BOND THE LIGHT FIXTURE TO THE LIGHT BASE INTERNAL GROUND LUG VIA A NO. 6 AWG STRANDED COPPER WIRE RATED 600 VOLTS WITH GREEN XHHW, THWN-2, OR OTHER SUITABLE INSULATION, BARE STRANDED CONDUCTOR OR A BRAIDED GROUND STRAP OF EQUIVALENT CURRENT RATING. THE BONDING CONDUCTOR LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE TO THE FIXTURE.
3. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.
4. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2017 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
5. THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
6. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, JUNCTION STRUCTURE/L-867 BASE/L-868 BASE, OR OTHER AIRFIELD LIGHT FIXTURE, THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MIGHT BE REQUIRED. IF GROUND RESISTANCE EXCEEDS 25 OHMS CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER.



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Illinois Licensed  
Professional Service Corporation  
#184-001084



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679  
SBG Project No: 3-17-SBG-P-TBD  
Contract No. CO065

NO.	DATE	DESCRIPTION		
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ELECTRICAL NOTES SHEET 2

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PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679  
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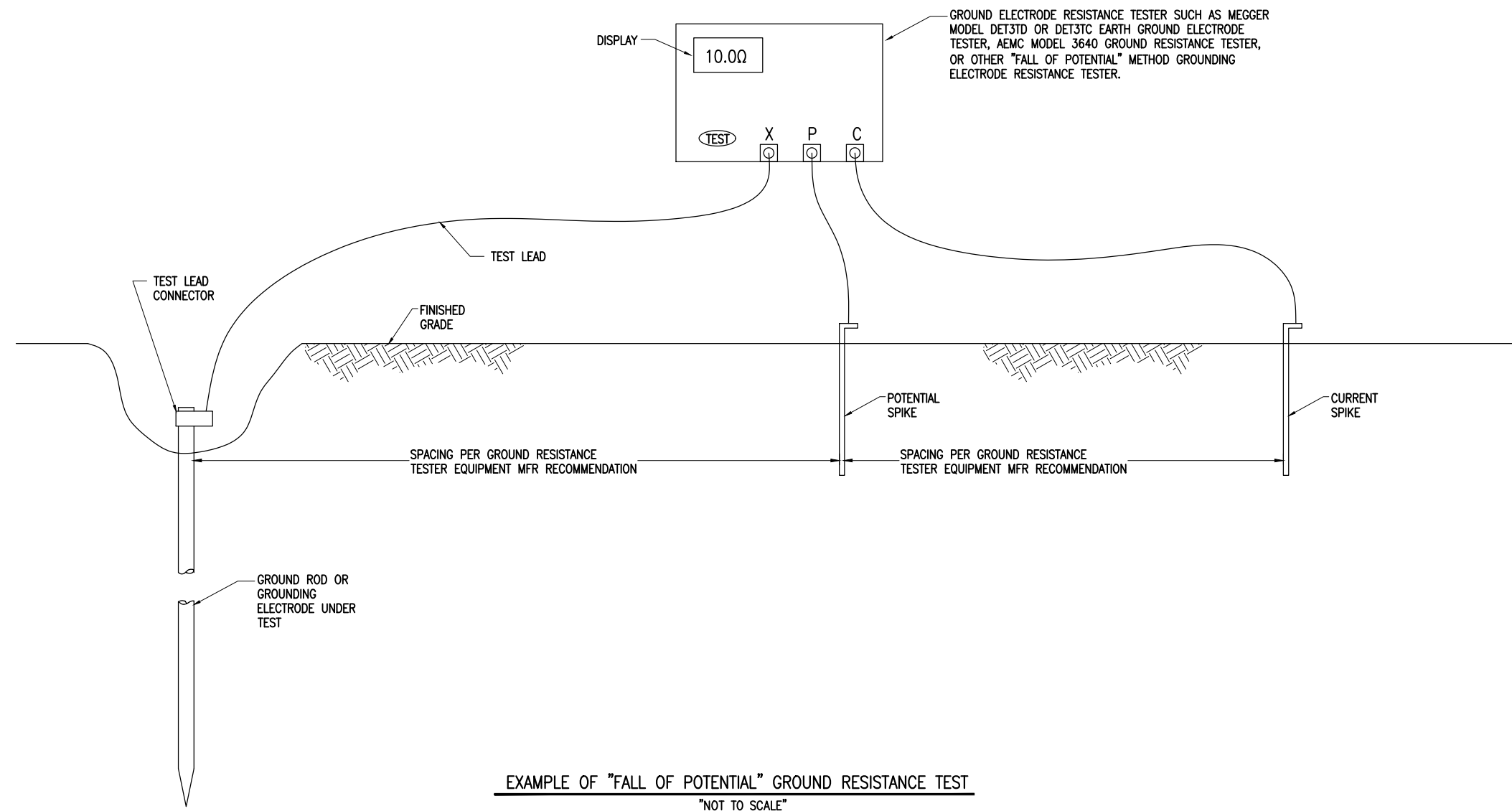
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SHEET TITLE

GROUND  
RESISTANCE  
TESTING DETAILS



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

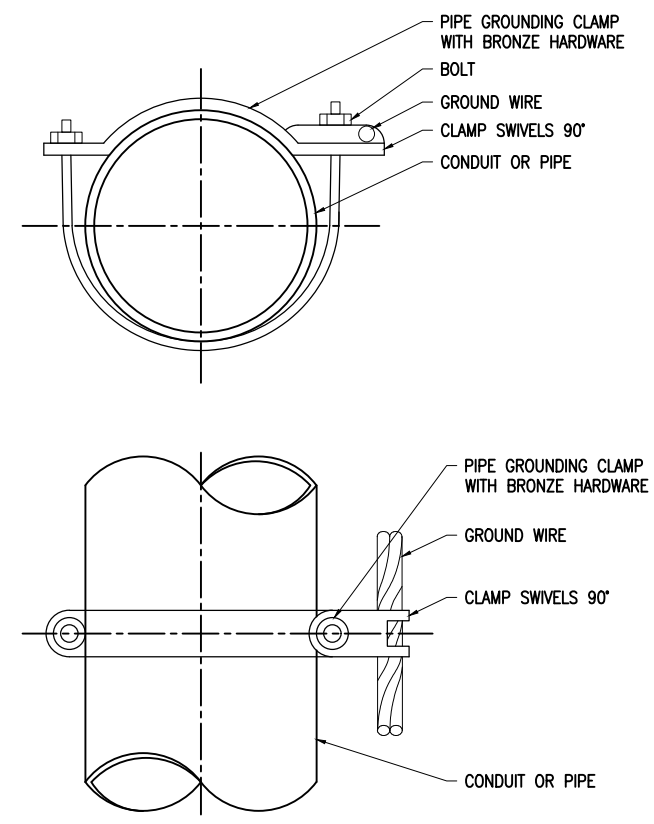
NOTES

- CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
- FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, SPLICE CAN AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER / RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
- GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
- RECORD SITE CONDITIONS DURING TESTS.
- "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

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SHEET TITLE

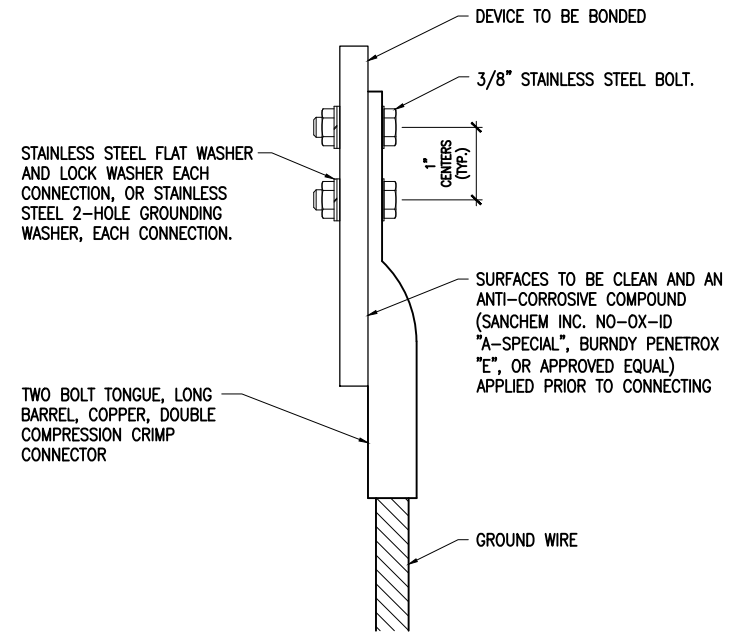


PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)

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, & UL467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL

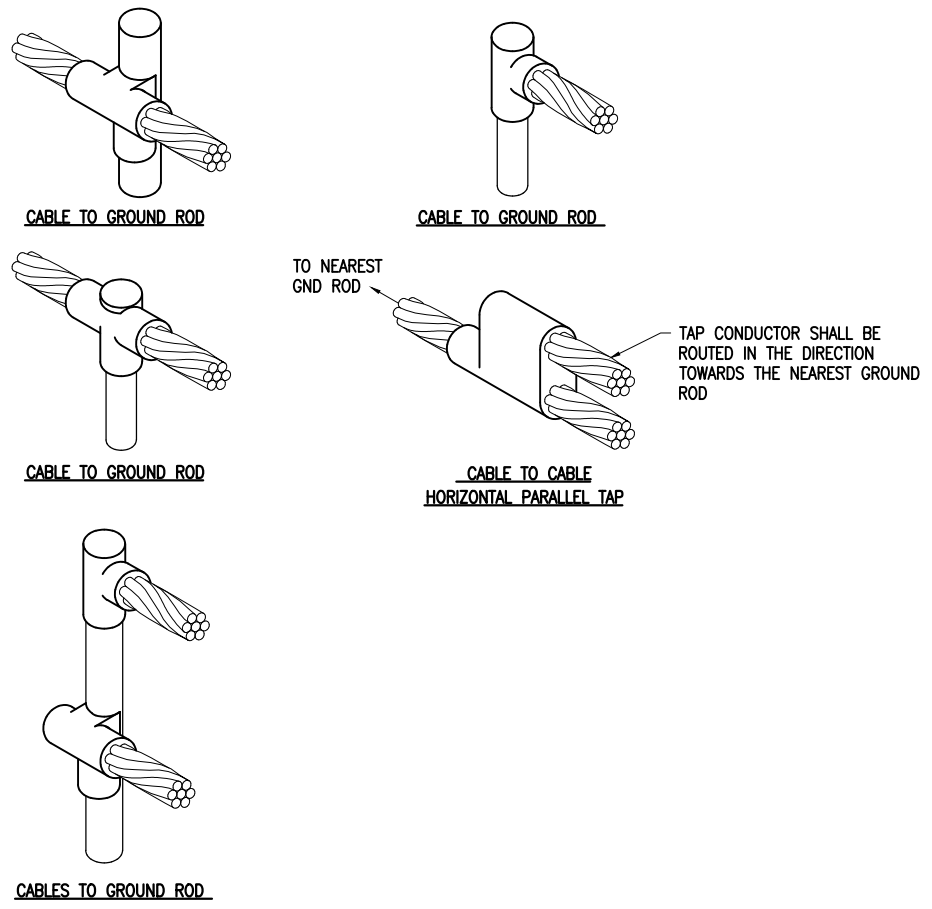


2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)

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

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

GROUNDING LUG CONNECTION DETAIL



- DETAIL NOTES**
- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY PENTAIR ERICO PRODUCTS, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
  - FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
  - INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 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





PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

Contract No. CO065

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-004-LGND.DWG  
DESIGN BY: KNL 06/23/2018  
DRAWN BY: MJD 07/11/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

ELECTRICAL LEGEND  
AND ABBREVIATIONS

	CABLE TERMINATOR/LUG
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	GROUND – GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH
	ENGINE GENERATOR SET

	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK – ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

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

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

**NOTES:**

- KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
- 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.
- 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).
- INSULATION ON PHASE AND NEUTRAL CONDUCTORS SHALL BE COLOR CODED FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:  
  
120/240 VAC, 1 PHASE, 3 WIRE  
PHASE A      BLACK  
PHASE B      RED  
NEUTRAL      WHITE  
GROUND      GREEN
- NO EXPOSED POWER OR CONTROL WIRING WILL BE PERMITTED UNLESS APPROVED BY THE PROJECT ENGINEER.
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, WORKING ON, OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICE.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.







PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

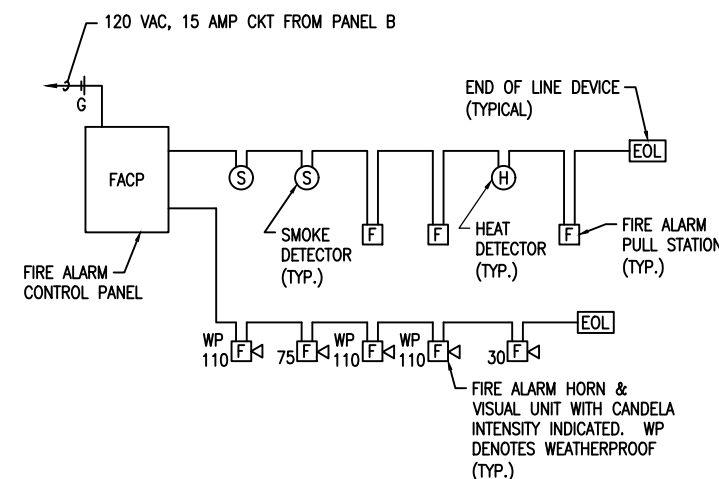
IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

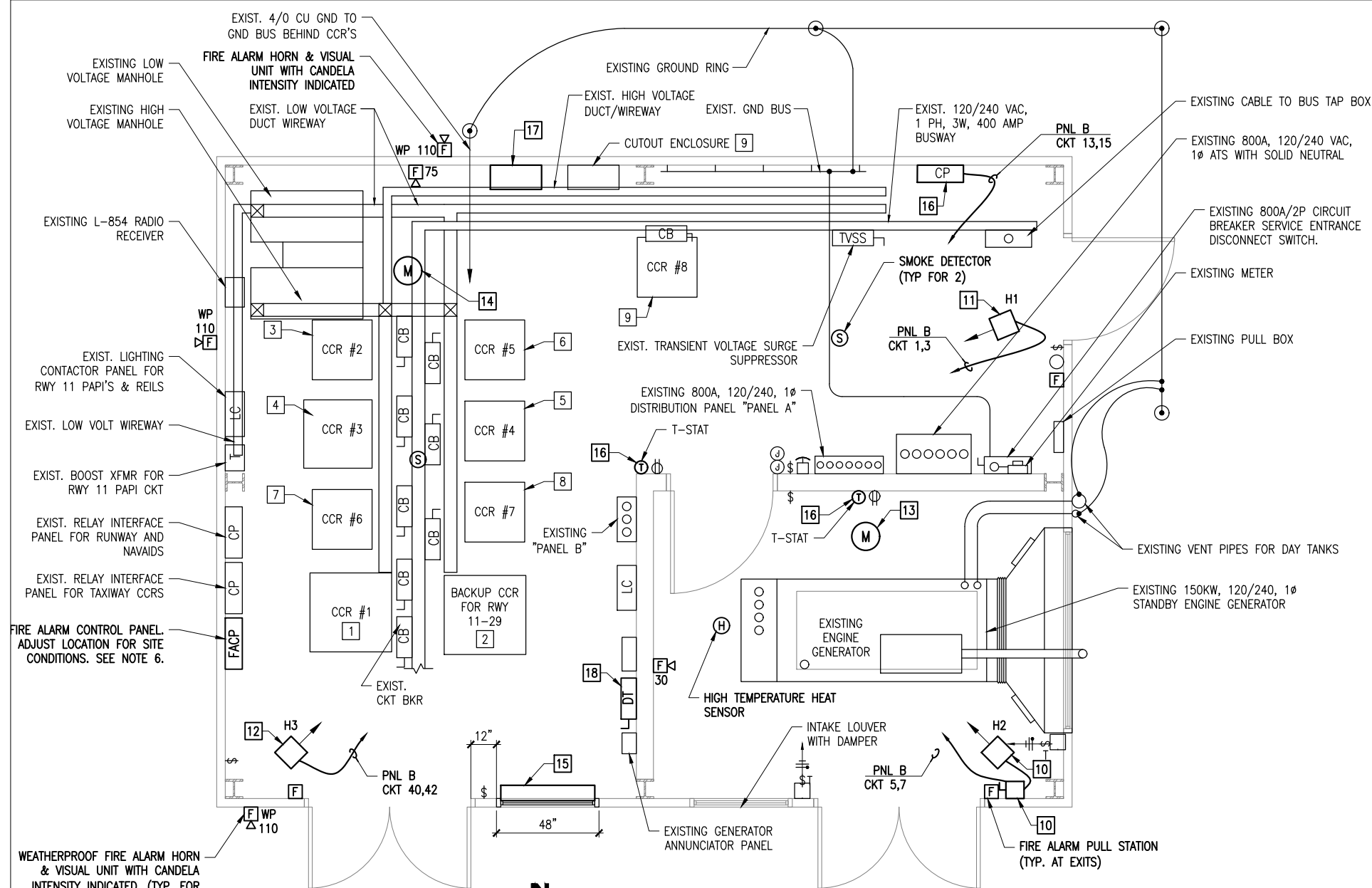
Contract No. CO065

**GENERAL NOTES:**

- CONTRACTOR SHALL COORDINATE WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS WITH THE AIRPORT MANAGER AND THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE. ANY SHUTDOWN OF EXISTING SYSTEMS SHALL BE SCHEDULED WITH AND APPROVED BY THE AIRPORT MANAGER PRIOR TO SHUTDOWN. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- SEE "ELECTRICAL ONE-LINE DIAGRAM FOR PANEL B AND MECHANICAL EQUIPMENT" FOR INPUT POWER WIRING REQUIREMENTS.
- SEE "EXHAUST FAN WIRING SCHEMATICS" FOR POWER AND CONTROL OF VENTILATION SYSTEMS.
- FURNISH AND INSTALL CONDUIT, FITTINGS, RACEWAYS, WIRING, ADJUSTMENTS, RELOCATIONS, AND ACCESSORIES TO ACCOMMODATE THE RESPECTIVE WORK.
- ALL WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.
- FIRE DETECTION AND ALARM SYSTEM SHALL BE JOHNSON CONTROLS INC., SIMPLEX-GRIFFINELL 4007ES SERIES, HONEYWELL NOTIFIER, EQUIVALENT BY EDWARDS, OR APPROVED EQUAL. ALL WIRING SHALL BE IN EMT (INTERIOR) AND GRSC (EXTERIOR) AND ALL BOXES PAINTED RED AND MARKED FIRE ALARM. INSTALL IN ACCORDANCE WITH NFPA 72 AND MANUFACTURERS RECOMMENDATIONS.



**FIRE ALARM ONE-LINE DIAGRAM**



**ELECTRICAL VAULT NEW FLOOR PLAN**  
0 1'-4" 2'-8" 5'-4"  
HALF SIZE SCALE: 3/16" = 1'-0"  
FULL SIZE SCALE: 3/8" = 1'-0"

**KEYED NOTES:**

- EXISTING CCR NO. 1 FOR RUNWAY 11-29.
- EXISTING BACKUP CCR FOR RUNWAY 11-29.
- EXISTING CCR NO. 2 FOR RUNWAY 6-24.
- EXISTING CCR NO. 3 FOR TAXIWAY CIRCUIT 7.
- EXISTING CCR NO. 4 FOR TAXIWAY C SOUTH OF RUNWAY 11-29, CIRCUIT 1. EXISTING CCR #4 OUTPUT SHALL BE REWIRED TO POWER TWO SERIES CIRCUITS; TAXIWAY C SOUTH-CIRCUIT 1 AND TAXIWAY C NORTH-CIRCUIT 5. CCR NO. 4 IS A 10 KW UNIT. ADJUST TAPS FOR 5 KW OUTPUT TO ACCOMMODATE REDUCTION IN TAXIWAY LIGHTING LOADS.
- EXISTING CCR NO. 5 FOR CIRCUITS 3 AND 3A. CIRCUITS 3 IS FOR EAST HALF OF APRON, TAXIWAY A-EAST, TAXIWAY D3, AND PART OF TAXIWAY D. CIRCUIT 3A IS FOR TAXIWAY D EAST OF TAXIWAY D3. EXISTING CCR NO. 5 OUTPUT SHALL BE REWIRED TO POWER ONE CIRCUIT FOR TAXIWAY D (INCLUDING CONNECTING TAXIWAYS D3, D4, AND D5). CCR NO. 4 IS A 10 KW UNIT. ADJUST TAPS FOR 5 KW OUTPUT TO ACCOMMODATE REDUCTION IN TAXIWAY LIGHTING LOADS.
- EXISTING TAXIWAY CCR NO. 6 FOR CIRCUIT 5; TAXIWAY C NORTH OF RUNWAY 11-29 AND AREA BY WEST HALF OF APRON. THE EXISTING CCR NO. 6 OUTPUT SHALL BE REWIRED TO POWER TAXIWAY A-EAST CIRCUIT 3. CCR NO. 6 IS A 7.5 KW UNIT. ADJUST TAPS FOR 4 KW OUTPUT TO ACCOMMODATE REDUCTION IN TAXIWAY LIGHTING LOADS.
- EXISTING CCR NO. 7 FOR TAXIWAY B-WEST CIRCUIT 6.
- EXISTING CCR NO. 8 TAXIWAY A-WEST CIRCUIT 2. CCR NO. 8 IS A 7.5 KW UNIT. ADJUST TAPS FOR 4 KW OUTPUT TO ACCOMMODATE RESPECTIVE TAXIWAY LIGHTING LOADS.
- NEW UNIT HEATER H-2 FOR ENGINE GENERATOR ROOM. UNIT HEATER FOR ENGINE ROOM SHALL BE 5KW, 240VAC, 1 PHASE, WITH THERMOSTAT CONTROL AND MOUNTING HARDWARE; MARLEY ENGINEERED PRODUCTS CAT. NO. HUH-524SA WITH HUHTA-1 THERMOSTAT KIT AND CWB-1 WALL/CEILING BRACKET, EQUIVALENT BY BERKO, EQUIVALENT BY CHROMALOX, OR OTHER APPROVED EQUAL. PROVIDE A NEW 30AMP, 2P, 240VAC HEAVY DUTY NOT FUSIBLE SAFETY SWITCH FOR UNIT HEATER.
- NEW UNIT HEATER H-1 FOR CCR ROOM. UNIT HEATER FOR CCR ROOM SHALL BE 7.5KW, 240VAC, 1 PHASE, WITH THERMOSTAT CONTROL AND MOUNTING HARDWARE; MARLEY ENGINEERED PRODUCTS CAT. NO. HUH-724SA WITH HUHTA-1 THERMOSTAT KIT AND CWB-1 WALL/CEILING BRACKET, EQUIVALENT BY BERKO, EQUIVALENT BY CHROMALOX, OR OTHER APPROVED EQUAL.
- NEW UNIT HEATER H-3 FOR CCR ROOM. UNIT HEATER FOR CCR ROOM SHALL BE 7.5KW, 240VAC, 1 PHASE, WITH THERMOSTAT CONTROL AND MOUNTING HARDWARE; MARLEY ENGINEERED PRODUCTS CAT. NO. HUH-724SA WITH HUHTA-1 THERMOSTAT KIT AND CWB-1 WALL/CEILING BRACKET, EQUIVALENT BY BERKO, EQUIVALENT BY CHROMALOX, OR OTHER APPROVED EQUAL.
- NEW ROOF MOUNTED EXHAUST FAN FOR ENGINE GENERATOR ROOM; 1000 CFM (MINIMUM) AT 0.25" STATIC PRESSURE WITH 1/2 HP, 120VAC MOTOR, GREENHECK MODEL G-123-B DIRECT DRIVE CENTRIFUGAL ROOF EXHAUST FAN WITH CURB CAP ADAPTER, EQUIVALENT EXHAUST FAN BY COOK, OR APPROVED EQUAL. PROVIDE INSECT SCREEN AND FRACTIONAL HP DISCONNECT SWITCH. SELECT CURB ADAPTER TO INTERFACE TO THE ROOF. SEE "EXHAUST FAN WIRING SCHEMATICS".

- NEW ROOF MOUNTED EXHAUST FAN FOR CCR ROOM; 1000 CFM (MINIMUM) AT 0.25" STATIC PRESSURE WITH 1/2 HP, 120VAC MOTOR, GREENHECK MODEL G-123-B DIRECT DRIVE CENTRIFUGAL ROOF EXHAUST FAN WITH CURB CAP ADAPTER, EQUIVALENT EXHAUST FAN BY COOK, OR APPROVED EQUAL. PROVIDE INSECT SCREEN AND FRACTIONAL HP DISCONNECT SWITCH. SELECT CURB ADAPTER TO INTERFACE TO THE ROOF. SEE "EXHAUST FAN WIRING SCHEMATICS".
- EXISTING INTAKE LOUVER APPROXIMATELY 48" WIDE BY 23.25" HIGH. PROVIDE 120VAC LOW LEAK MOTORIZED DAMPER SIZED TO MATCH THE RESPECTIVE LOUVER. DAMPER SHALL BE RUSKIN CD40 SERIES WITH RUS-M120(5) ELECTRIC 120VOLT CONTROL DAMPER ACTUATOR, LEADER INDUSTRIES MODEL 438-SD SERIES WITH 120VOLT MOTOR ACTUATOR, OR APPROVED EQUAL. PROVIDE ALL HARDWARE TO INTERFACE TO EXISTING LOUVER.
- NEW CONTROL PANEL FOR EXHAUST FANS. INTERFACE TO EXHAUST FAN AND THERMOSTAT FOR EACH ROOM. CONFIRM MOUNTING LOCATION WITH AIRPORT MANAGER. SEE "EXHAUST FAN WIRING SCHEMATICS".
- NEW LOCKOUT/TAGOUT KIT. CONFORMING TO OSHA STANDARD 1910.147, SUITABLE FOR WALL MOUNTING WITH 20 LOCKOUT PADLOCKS EACH WITH A DIFFERENT KEY, 5 LOCKOUT HASPS TO ACCOMMODATE MULTIPLE PADLOCKS AND 100 LOCKOUT TAGS.
- NEW 200 AMP, 240VAC, 2P DTSS, FOR RWY 11-29 CCR'S. SEE "ELECTRICAL ONE LINE DIAGRAM FOR VAULT."


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-104-VLT.DWG  
DESIGN BY: KNL 07/15/2018  
DRAWN BY: SKB 07/25/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

**NEW FLOOR PLAN  
FOR VAULT**



*Kevin Lightfoot*

PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

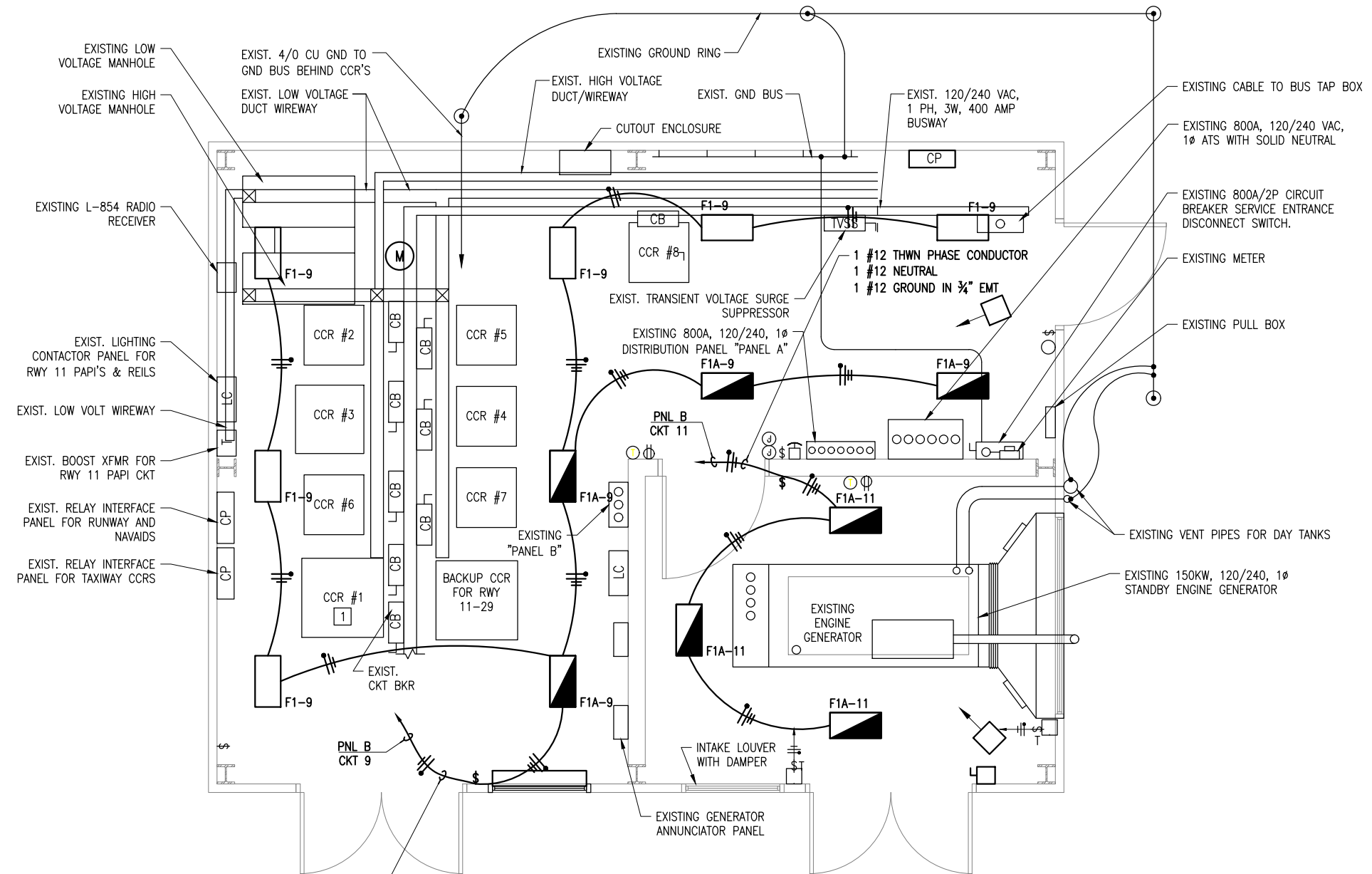
IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065

**GENERAL NOTES:**

- 15 AMP & 20 AMP BRANCH CIRCUITS FOR LIGHTING & RECEPTACLES SHALL USE #12 AWG THWN (MIN.). EMT MAY BE USED FOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS.
- LIGHT FIXTURES 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 DRAWINGS SUBMITTAL.
- ADJUST LIGHT FIXTURE LOCATIONS WHERE NECESSARY TO ACCOMMODATE EQUIPMENT LAYOUT, OR AVOID INTERFERENCES.
- TEST EMERGENCY LIGHTING AND CONFIRM PROPER OPERATION.
- "USPOM" SUFFIX ON LITHONIA LIGHT FIXTURE CATALOG NUMBERS INDICATES UNITED STATES POINT OF MANUFACTURE.
- ALL WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.

	CONDUIT (EXPOSED)
	CONDUIT OR DUCT (CONCEALED OR BURIED)
	WALL OR CEILING MTD. JUNCTION BOX. CONFIGURATION VARIES WITH USE
	SINGLE THROW DISCONNECT SWITCH
	CONTROL PANEL
	MOTOR
	ENCLOSURE
	CIRCUIT BREAKER PANEL-SEE SCHEDULES
	GROUND ROD
	#12 AWG THWN COPPER UNLESS NOTED OTHERWISE. LONG SLASHES INDICATE NEUTRAL. SHORT SLASHES INDICATE HOT OR SWITCHED LEG. "G" OR SLASHES WITH DOT INDICATE SEPARATE GROUND WIRE.
	HOMERUN TO PANEL PNL A INDICATES PANEL 1,3,5 INDICATES CIRCUIT NUMBERS
	SURFACE MOUNTED LED FIXTURE. LETTER WITH NUMBER INDICATES FIXTURE TYPE. X= CIRCUIT NUMBER
	SURFACE MOUNTED LED FIXTURE WITH EMERGENCY BATTERY BACKUP. LETTER WITH NUMBER INDICATES FIXTURE TYPE. X= CIRCUIT NUMBER
	SINGLE POLE SWITCH

FIXT. TYPE	DESCRIPTION	MANUFACTURER & CATALOG NO.	VOLTS	MOUNTING	REMARKS
F1	LED HIGH BAY FIXTURE SUITABLE FOR AMBIENT TEMPERATURES UP TO 55 DEG C, SUITABLE FOR PENDANT MOUNT, CHAIN OR CABLE SUSPENSION 5 YEAR WARRANTY.	LITHONIA: IBG-8000LM-SEF-AFL-FD-120-40K-80CRI-USPOM, PHILIPS DAY-BRITE CAT. NO. FBX-08L-L-40-UNV-LFA, EQUIVALENT BY H.E. WILLIAMS, OR OTHER APPROVED EQUIVALENT.	120	PENDANT, CHAIN, OR CABLE MOUNT 10 FEET ABOVE FINISHED FLOOR	ADJUST LOCATIONS TO AVOID INTERFERENCES AND REASONABLY MAINTAIN LIGHT DISTRIBUTION
F1A	SAME AS F1 EXCEPT PROVIDE AN EMERGENCY BATTERY PACK CAPABLE OF OPERATING THE LIGHT FIXTURE FOR 90 MINUTES. SUITABLE FOR AMBIENT TEMPERATURES UP TO 45 DEG C. CONFIRM BATTERY PACK OPTION WITH MANUFACTURER.	LITHONIA: IBG-8000LM-SEF-AFL-FD-120-40K-80CRI-BPK-PS1050-USPOM, PHILIPS DAY-BRITE CAT. NO. FBX-08L-L-40-UNV-LFA-EMLED, EQUIVALENT BY H.E. WILLIAMS, OR OTHER APPROVED EQUIVALENT.	120	PENDANT, CHAIN, OR CABLE MOUNT 10 FEET ABOVE FINISHED FLOOR	ADJUST LOCATIONS TO AVOID INTERFERENCES AND REASONABLY MAINTAIN LIGHT DISTRIBUTION



**ELECTRICAL VAULT LIGHTING PLAN**

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

HALF SIZE SCALE: 3/16" = 1'-0"  
FULL SIZE SCALE: 3/8" = 1'-0"

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
CAD FILE: E-105-VLT.DWG  
DESIGN BY: KNL 07/15/2018  
DRAWN BY: SKB 07/25/2018  
REVIEWED BY: KNL/MJD 08/06/18

**VAULT LIGHTING PLAN**





PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

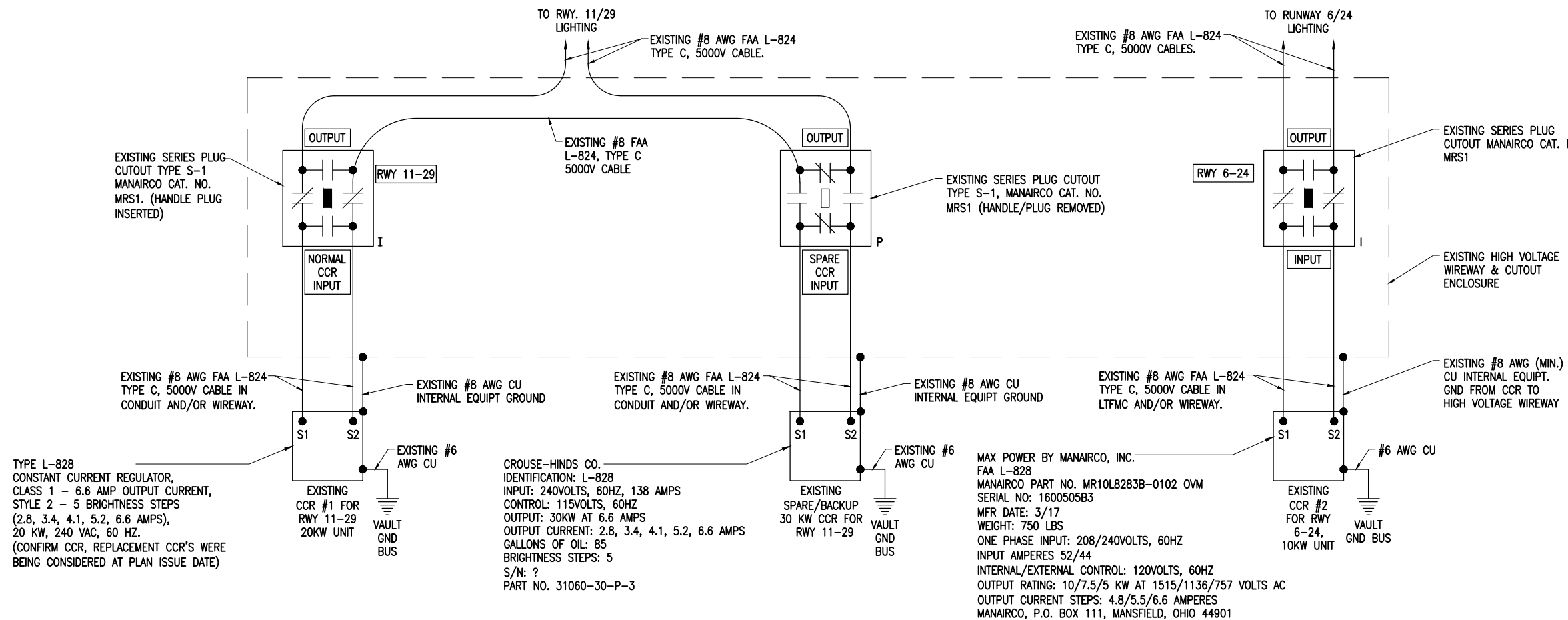
Contract No. CO065

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		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
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DRAWN BY: MJD 07/11/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

EXISTING HIGH  
VOLTAGE WIRING  
SCHEMATIC FOR  
RUNWAYS



**EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS**

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

NOTE: INFORMATION SHOWN ON THIS SHEET IS  
TO HELP WITH IDENTIFYING EXISTING CONDITIONS.

**NOTES:**

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE 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).
2. CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE RESIDENT ENGINEER/TECHNICIAN.
3. 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.
4. CONTRACTOR SHALL 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.
5. MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE, (WITH AN OHMMETER).
6. THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS, AND/OR OTHER WORK AND AFTER THE RESPECTIVE WORK HAS BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/TECHNICIAN WITHIN 5 BUSINESS DAYS.
7. REFER TO INSTRUCTIONS IN THE VAULT FOR TRANSFER PROCEDURE TO BACKUP CCR FOR RUNWAY 11-29.

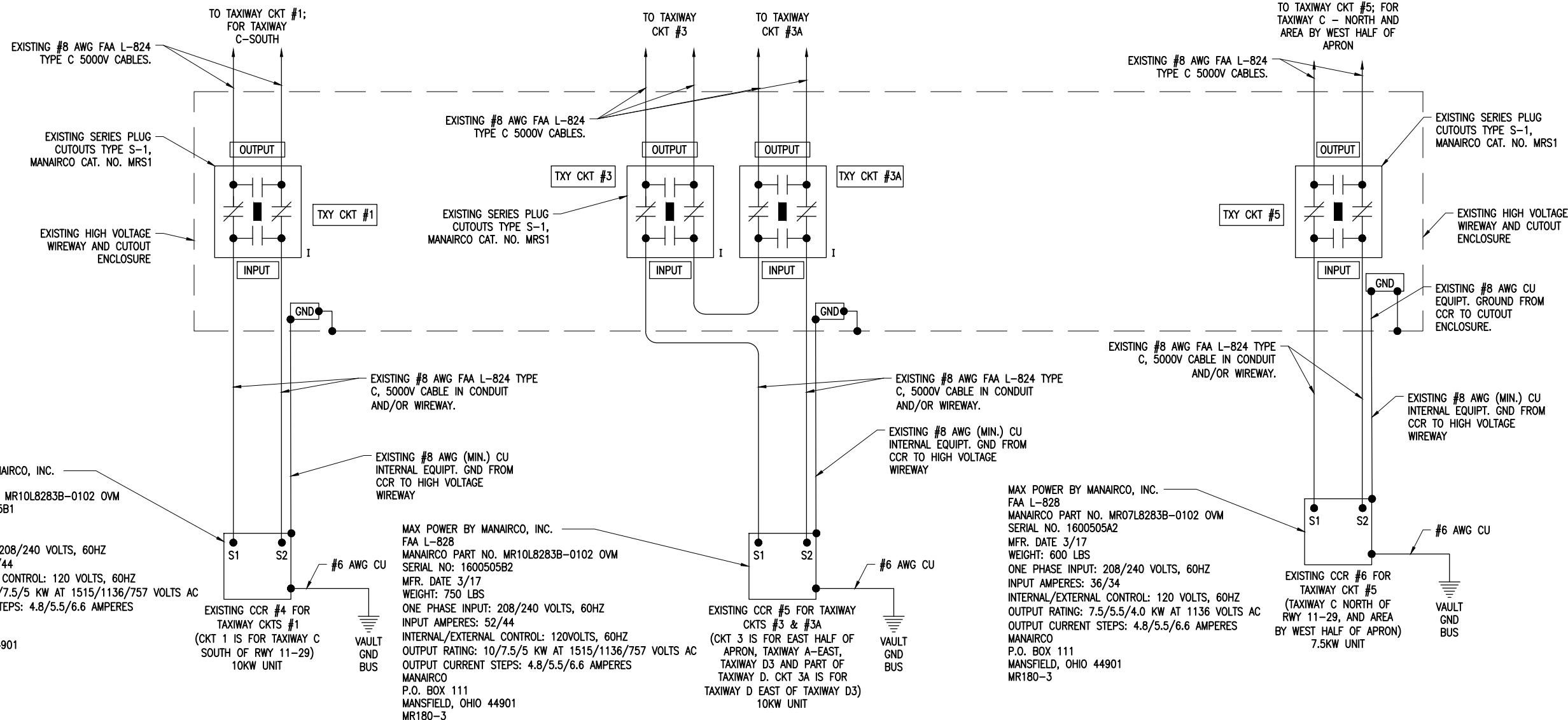


PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24

IDA No: MTO-4679

SBG Project No: 3-17-SBGP-TBD

Contract No. CO065



**EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY CKTS 1, 3, 3A, & 5**

**NOTES:**

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING LIGHTING SYSTEMS SHALL BE 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).
- CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE RESIDENT ENGINEER/TECHNICIAN.
- 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.
- CONTRACTOR SHALL 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.
- MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE, (WITH AN OHMMETER).
- THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS, AND/OR OTHER WORK, AND AFTER THE RESPECTIVE WORK HAS BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/TECHNICIAN WITHIN 5 BUSINESS DAYS.

**LEGEND**

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

NOTE: INFORMATION SHOWN ON THIS SHEET IS TO HELP WITH IDENTIFYING EXISTING CONDITIONS.

NO.	DATE	DESCRIPTION		
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CAD FILE: E-603.DWG

DESIGN BY: KNL 06/23/2018

DRAWN BY: MJD 07/11/2018

REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TWY CKTS 1, 3, 3A & 5



*Kevin N. Lightfoot*

PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

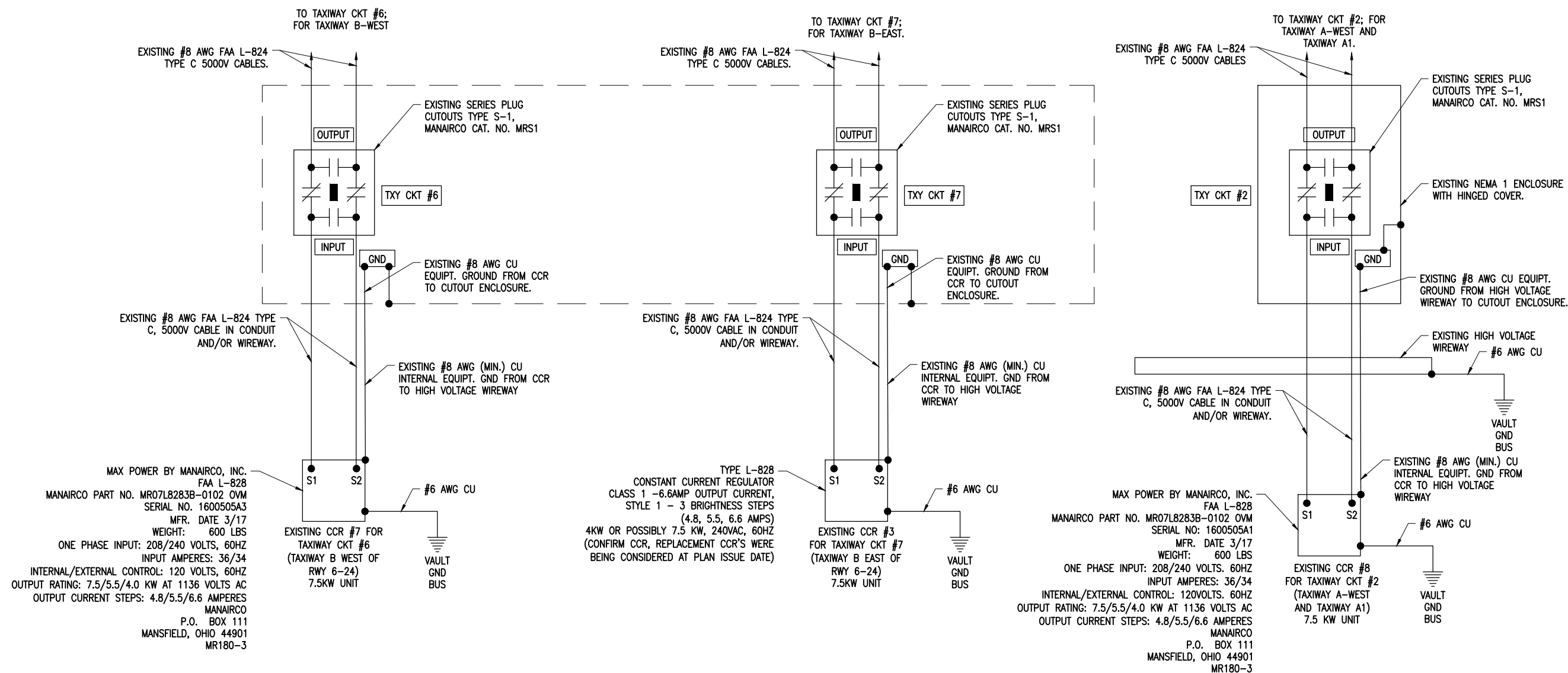
Contract No. CO065

NO.	DATE	DESCRIPTION		
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ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
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SHEET TITLE

EXISTING HIGH  
VOLTAGE WIRING  
SCHEMATIC FOR  
TWY CKTS 2, 6, & 7



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY CKTS 2, 6, & 7

NOTES:

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE 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).
- CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE RESIDENT ENGINEER/TECHNICIAN.
- 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.
- CONTRACTOR SHALL 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.
- MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE, (WITH AN OHMMETER).
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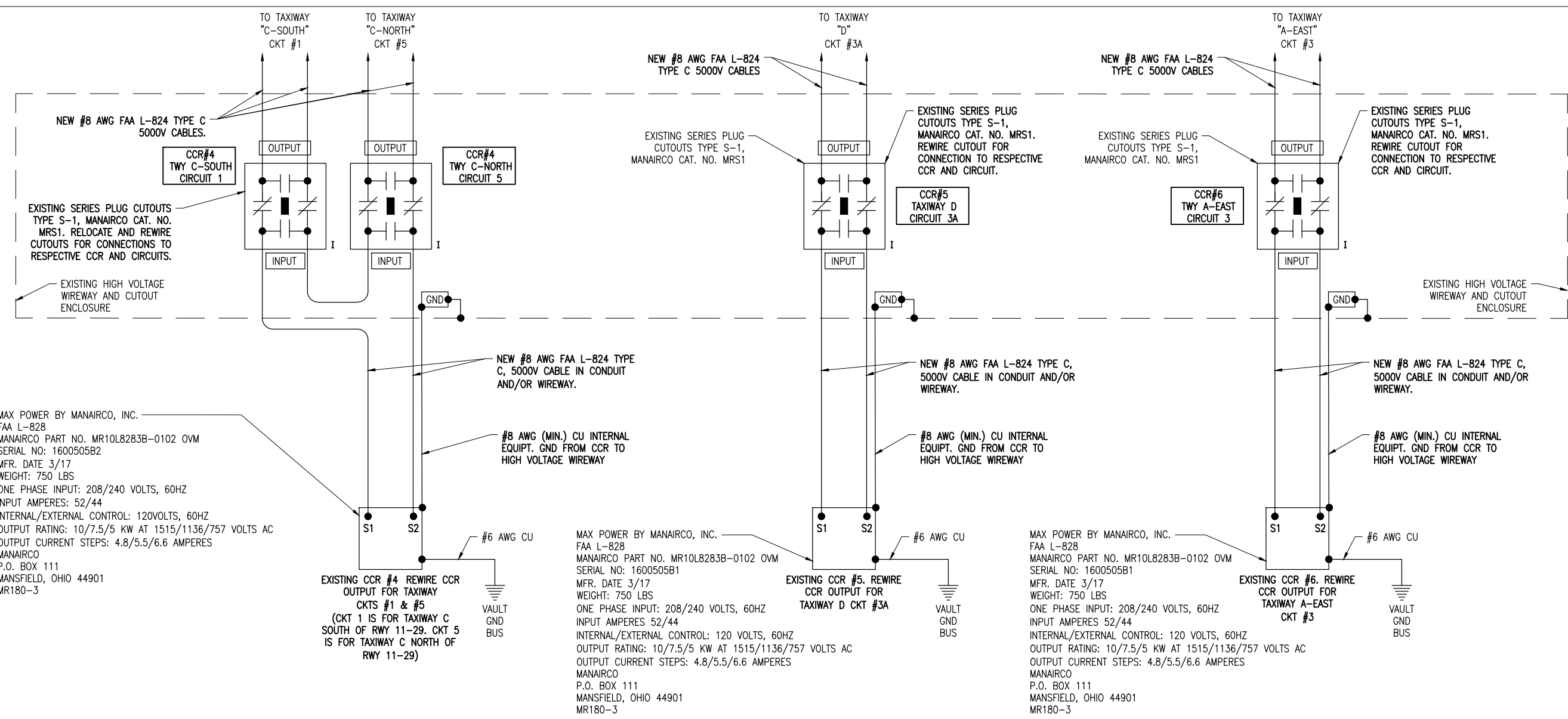
LEGEND

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

NOTE: INFORMATION SHOWN ON THIS SHEET IS TO HELP WITH IDENTIFYING EXISTING CONDITIONS.



PHASE 2: REPLACE TAXIWAY LIGHTING SYSTEMS SERVING RUNWAY 6-24  
IDA No: MTO-4679  
SBG Project No: 3-17-SBGP-TBD  
Contract No. CO065



MAX POWER BY MANAIRCO, INC.  
FAA L-828  
MANAIRCO PART NO. MR10L8283B-0102 OVM  
SERIAL NO: 1600505B2  
MFR. DATE 3/17  
WEIGHT: 750 LBS  
ONE PHASE INPUT: 208/240 VOLTS, 60HZ  
INPUT AMPERES: 52/44  
INTERNAL/EXTERNAL CONTROL: 120VOLTS, 60HZ  
OUTPUT RATING: 10/7.5/5 KW AT 1515/1136/757 VOLTS AC  
OUTPUT CURRENT STEPS: 4.8/5.5/6.6 AMPERES  
MANAIRCO  
P.O. BOX 111  
MANSFIELD, OHIO 44901  
MR180-3

MAX POWER BY MANAIRCO, INC.  
FAA L-828  
MANAIRCO PART NO. MR10L8283B-0102 OVM  
SERIAL NO: 1600505B1  
MFR. DATE 3/17  
WEIGHT: 750 LBS  
ONE PHASE INPUT: 208/240 VOLTS, 60HZ  
INPUT AMPERES 52/44  
INTERNAL/EXTERNAL CONTROL: 120 VOLTS, 60HZ  
OUTPUT RATING: 10/7.5/5 KW AT 1515/1136/757 VOLTS AC  
OUTPUT CURRENT STEPS: 4.8/5.5/6.6 AMPERES  
MANAIRCO  
P.O. BOX 111  
MANSFIELD, OHIO 44901  
MR180-3

MAX POWER BY MANAIRCO, INC.  
FAA L-828  
MANAIRCO PART NO. MR10L8283B-0102 OVM  
SERIAL NO: 1600505B1  
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WEIGHT: 750 LBS  
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INPUT AMPERES 52/44  
INTERNAL/EXTERNAL CONTROL: 120 VOLTS, 60HZ  
OUTPUT RATING: 10/7.5/5 KW AT 1515/1136/757 VOLTS AC  
OUTPUT CURRENT STEPS: 4.8/5.5/6.6 AMPERES  
MANAIRCO  
P.O. BOX 111  
MANSFIELD, OHIO 44901  
MR180-3

**PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY CKTS 1, 3, 3A, & 5**

**NOTES:**

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE 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).
- CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE RESIDENT ENGINEER/TECHNICIAN.
- 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.
- CONTRACTOR SHALL 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.
- CCR #4 SHALL BE RECONNECTED TO POWER TAXIWAY C-SOUTH CKT #1 AND TAXIWAY C-NORTH CKT #5.
- CCR #5 SHALL BE RECONNECTED TO POWER TAXIWAY D CKT #3A.
- CCR #6 SHALL BE RECONNECTED TO POWER TAXIWAY A-EAST CKT #3.
- ALL WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.

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

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: SEPTEMBER 14, 2018  
PROJECT NO: 18A0014D  
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DESIGN BY: KNL 06/23/2018  
DRAWN BY: MJD 07/11/2018  
REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR TWY CKTS 1,3,3A,&5



PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

Contract No. CO065

NO.	DATE	DESCRIPTION	
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ISSUE: SEPTEMBER 14, 2018

PROJECT NO: 18A0014D

CAD FILE: E-608.DWG

DESIGN BY: KNL 07/23/2018

DRAWN BY: SKB 07/23/2018

REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

PROPOSED  
ELECTRICAL  
ONE-LINE FOR  
HEATERS & EXHAUST  
FANS

**NOTES**

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

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

3. ALL CONDUCTORS/WIRING SHALL BE COPPER.

4. COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 4 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 3 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

**120/240 VAC, 1 PHASE, 3 WIRE**

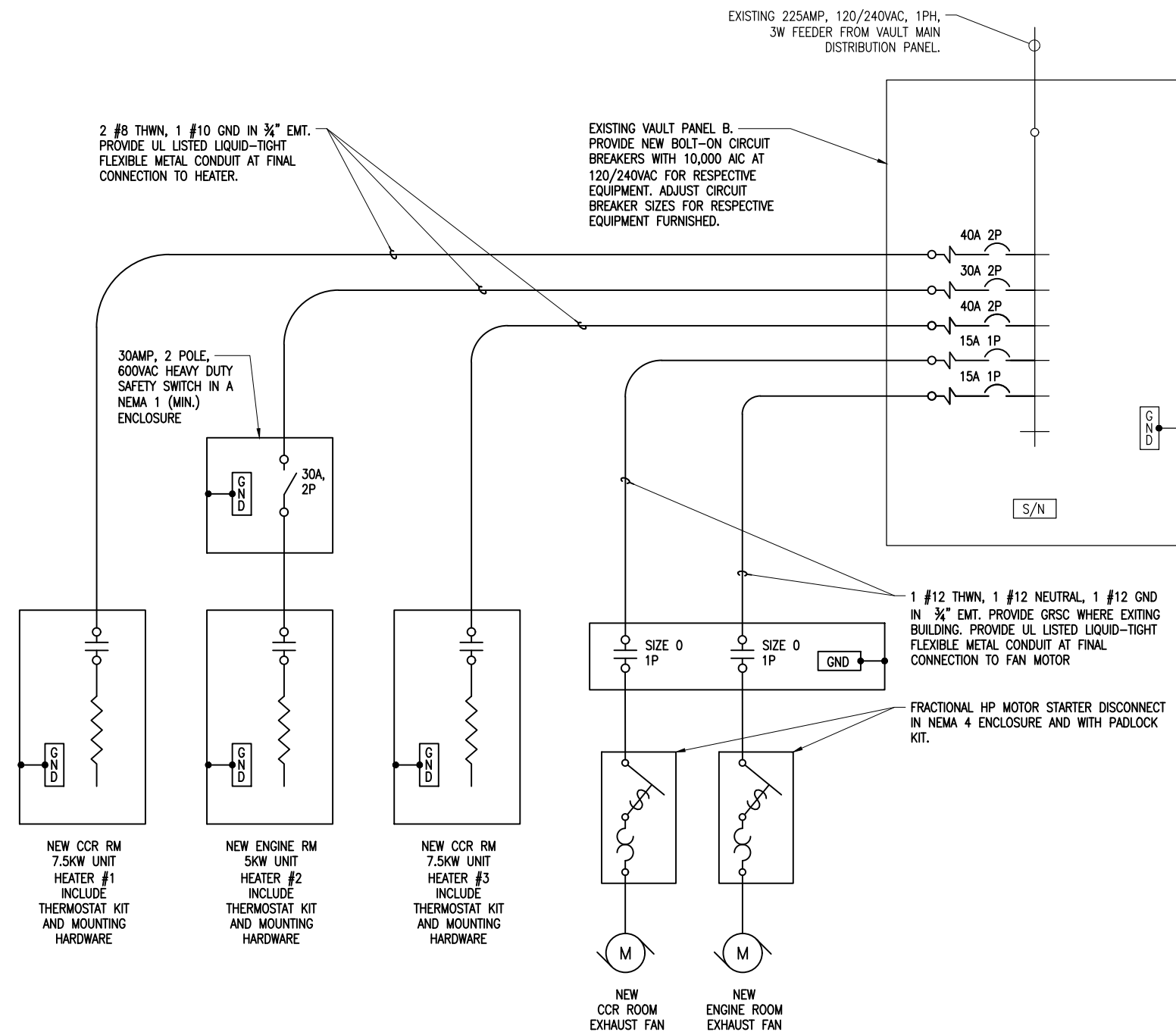
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN

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

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

7. FURNISH AND INSTALL A 15 AMP, 1-POLE BOLT-ON CIRCUIT BREAKER WITH 10,000 AIC AT 120 VAC IN PANEL B FOR THE FIRE ALARM CONTROL PANEL.

8. ALL WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.



**PROPOSED ELECTRICAL ONE-LINE FOR HEATERS & EXHAUST FANS**





PHASE 2: REPLACE  
TAXIWAY LIGHTING  
SYSTEMS SERVING  
RUNWAY 6-24

IDA No: MTO-4679

SBG Project No:  
3-17-SBGP-TBD

Contract No. CO065


NO.	DATE	DESCRIPTION		
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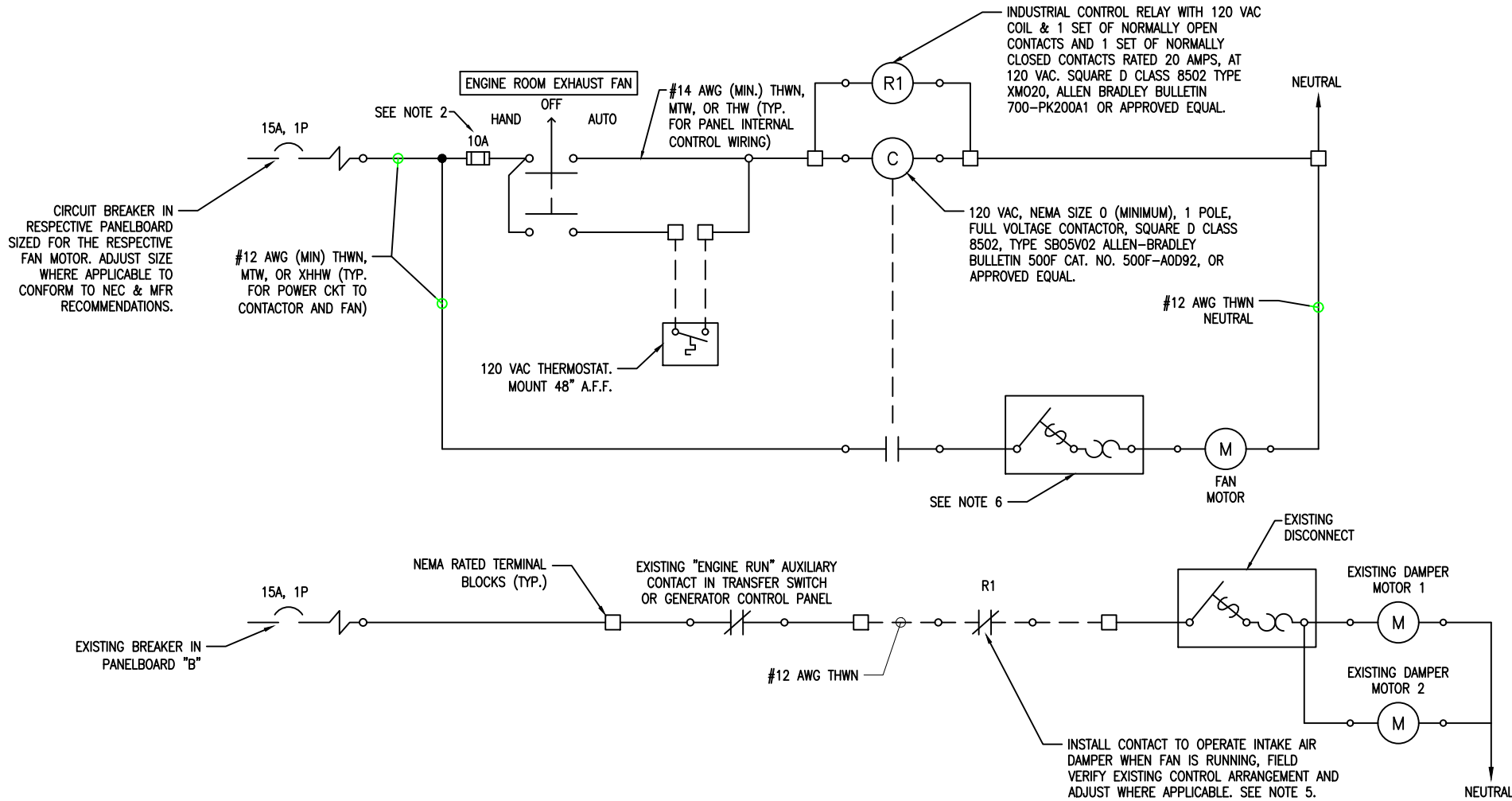
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PROJECT NO: 18A0014D  
CAD FILE: E-606.DWG  
DESIGN BY: KNL 07/23/2018  
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REVIEWED BY: KNL/MJD 08/06/18

SHEET TITLE

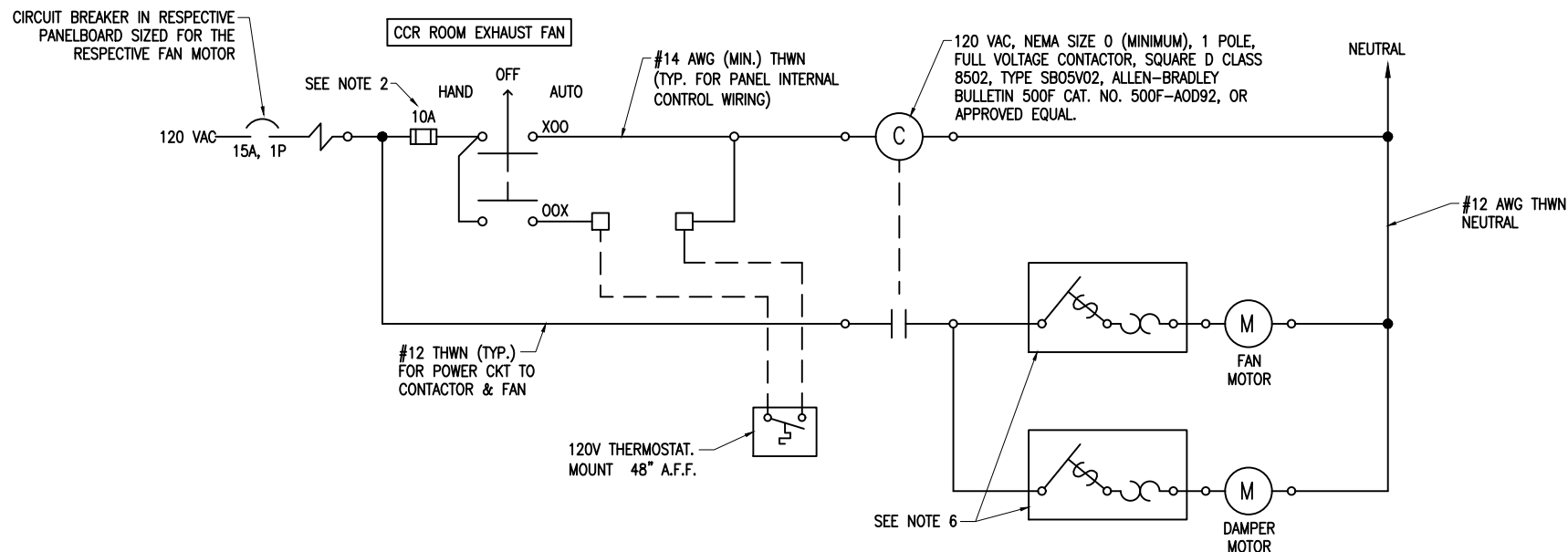
EXHAUST FAN  
WIRING SCHEMATICS

**NOTES:**

- CONTROL PANEL FOR VAULT EXHAUST FANS SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER OR AN FAA APPROVED L-821 PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENT. WHERE THE PANEL IS MANUFACTURED BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL.
- FUSING FOR FAN CIRCUIT CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMAN CATALOG FNQ-R-10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR FAN CONTACTOR & MOUNT ON CONTROL PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, ALLEN-BRADLEY CAT. NO. 800T-J2A OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY EACH EXHAUST FAN; "CCR ROOM EXHAUST FAN" AND "ENGINE ROOM EXHAUST FAN".
- INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTOR HAS REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME."
- FIELD VERIFY CONTROL OF EXISTING DAMPER MOTOR FOR ENGINE GENERATOR INTAKE AIR. IF DAMPER MOTOR IS POWERED TO OPEN, CONNECT R1 NORMALLY OPEN CONTACT IN PARALLEL WITH EXISTING AUXILIARY CONTACT. IF DAMPER MOTOR IS POWERED TO CLOSE, CONNECT R1 NORMALLY CLOSED CONTACT IN SERIES WITH EXISTING AUXILIARY CONTACT.
- PROVIDE FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER, WITH HANDLE/GUARD/LOCK OFF, IN NEMA 4 ENCLOSURE FOR FAN MOTOR. INCLUDE MELTING ALLOY TYPE THERMAL OVERLOADS SIZED AS REQUIRED TO PROTECT THE RESPECTIVE MOTOR. 120 VAC MOTORS SHALL HAVE SINGLE POLE STARTERS.
- TERMINAL BLOCKS FOR CONTROL PANEL SHALL BE NEMA RATED TERMINAL BLOCKS SIZED FOR RESPECTIVE WIRES AND AMPERAGE.
- ALL WORK SHOWN ON THIS SHEET WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.



**ENGINE ROOM EXHAUST FAN CONTROL SCHEMATIC**



**CCR ROOM EXHAUST FAN CONTROL SCHEMATIC**

