















NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: C-501-SFY.DWG

DESIGN BY: MJD 08/13/2024

DRAWN BY: AJC 08/13/2024

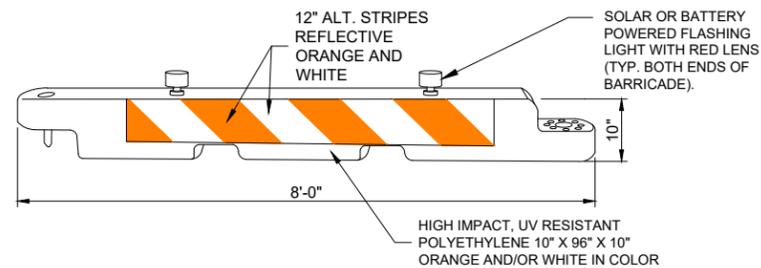
REVIEWED BY: BSS 12/13/2024

SHEET TITLE

CONSTRUCTION SAFETY DETAILS AND NOTES - SHEET 2

**BARRICADE NOTES**

1. CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
2. BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS. BARRICADES ARE TO BE SET BACK 66' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS.
3. CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
4. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR BEFORE SUNSET AND 1/2 HOUR AFTER SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
5. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
6. THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
7. COST FOR PROVIDING, PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE INCLUDED IN THE COST OF THE TRAFFIC MAINTENANCE.



**LOW-PROFILE BARRICADE DETAIL**  
NOT TO SCALE

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







SOUTHERN ILLINOIS AIRPORT

665 North Airport Road  
Murphysboro, IL, 62966



DATE SIGNED: 1/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST AIRCRAFT PARKING APRON

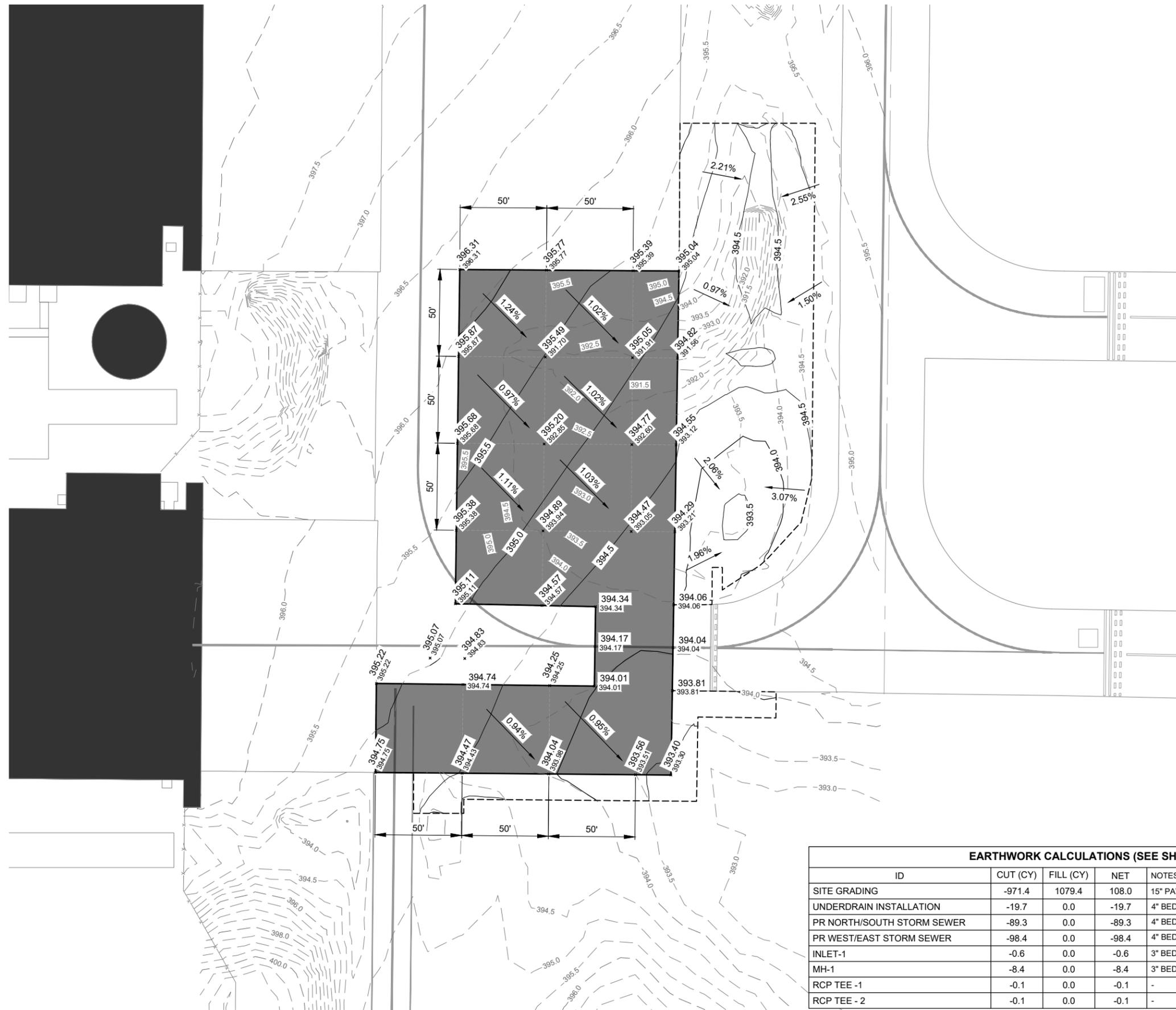
IDA No: MDH-5036


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025  
PROJECT NO: 22A0056  
CAD FILE: C-151-STAKE.DWG  
DESIGN BY: MJD 08/13/2024  
DRAWN BY: AJC 08/14/2024  
REVIEWED BY: BSS 12/13/2024

SHEET TITLE

PROPOSED STAKING PLAN



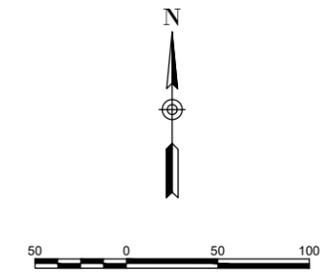
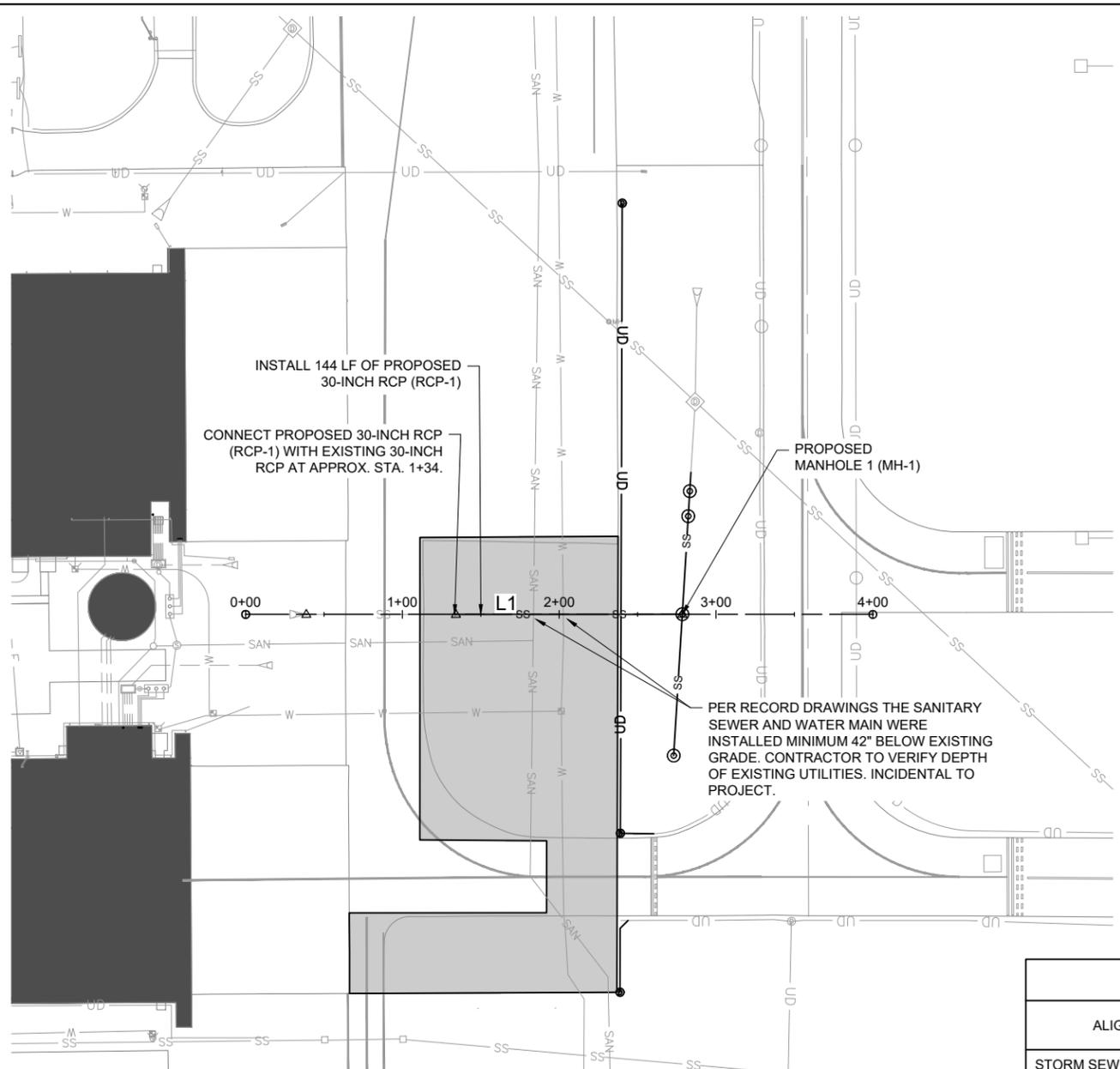
- LEGEND:**
- EXISTING PAVEMENT
  - █ EXISTING BUILDINGS
  - x EXISTING FENCE
  - █ PROPOSED ASPHALT PAVEMENT
  - - - - - LIMIT OF DISTURBANCE
  - - - - - EXISTING CONTOUR
  - PROPOSED CONTOUR
  - EXISTING SURFACE ELEVATION
  - PROPOSED SURFACE ELEVATION

EARTHWORK CALCULATIONS (SEE SHEET 2 FOR PAY ITEMS)				
ID	CUT (CY)	FILL (CY)	NET	NOTES/ASSUMPTIONS
SITE GRADING	-971.4	1079.4	108.0	15" PAVEMENT STRUCTURE AND SITE GRADING
UNDERDRAIN INSTALLATION	-19.7	0.0	-19.7	4" BEDDING, 1.5' WIDE TRENCH, 8" CA-16 FILL
PR NORTH/SOUTH STORM SEWER	-89.3	0.0	-89.3	4" BEDDING, 4.25' WIDE TRENCH (21" RCP), 5.0' WIDE TRENCH (30" RCP)
PR WEST/EAST STORM SEWER	-98.4	0.0	-98.4	4" BEDDING, 5.0' WIDE (30" RCP), AGGREGATE FILL UNDER PAVEMENT
INLET-1	-0.6	0.0	-0.6	3" BEDDING, SEE STRUCTURE TABLE
MH-1	-8.4	0.0	-8.4	3" BEDDING, SEE STRUCTURE TABLE
RCP TEE -1	-0.1	0.0	-0.1	-
RCP TEE - 2	-0.1	0.0	-0.1	-

**FOR BID**

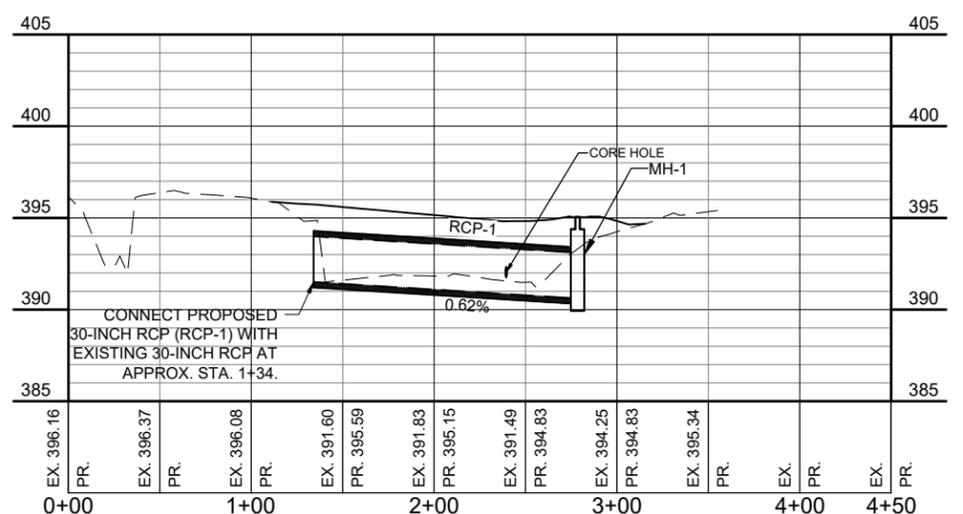


NO.	DATE	DESCRIPTION		
		DES	DWN	REV



- LEGEND:**
- EXISTING PAVEMENT
  - █ EXISTING BUILDINGS
  - X- EXISTING FENCE
  - SS- EXISTING STORM SEWER
  - UD- EXISTING UNDERDRAIN
  - ⊙ EXISTING UNDERDRAIN STRUCTURE
  - █ PROPOSED BITUMINOUS PAVEMENT
  - SS- PROPOSED STORM SEWER
  - UD- PROPOSED UNDERDRAIN
  - ⊙ PROPOSED UNDERDRAIN STRUCTURE
  - ⊙ PROPOSED STORM STRUCTURE

PROPOSED WEST-EAST STORM SEWER PROFILE



ALIGNMENT	NAME	START STATION	END STATION	SIZE	LENGTH	START INVERT	END INVERT	SLOPE	PIPE COVER (MIN.)	PIPE COVER (MAX.)
STORM SEWER - WEST-EAST	RCP-1	STA. 1+34.09	STA. 2+78.44	30-IN	144'	391.50'	390.60'	0.62%	1.17'	1.66'

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	1+34.09	2+78.44	144.36	90° 43' 31"	403477.560, 2561405.286	403475.732, 2561549.631

NAME	STATION	RIM ELEV.	DESCRIPTION
MH-1	2+90.43	RIM = 395.048'	PRECAST MANHOLE TYPE A 6' DIAMETER (602406-11) NEENAH FOUNDRY - R-3492-A1 FRAME & GRATE, EJ (EAST JORDAN) - 1895 FRAME & GRATE, OR APPROVED EQUAL.

FOR BID

JAN 10, 2025 5:54 PM SCHUB01446  
I:\22A0056\22A0056D\CAD\AIRPORT\SHEETC-131-DRN.DWG







SOUTHERN ILLINOIS AIRPORT

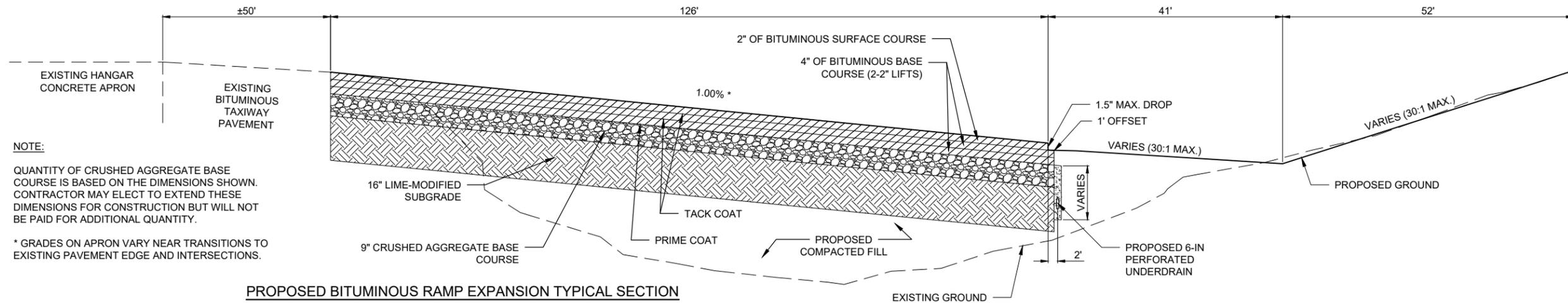
665 North Airport Road  
Murphysboro, IL, 62966



DATE SIGNED: 1/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST AIRCRAFT PARKING APRON

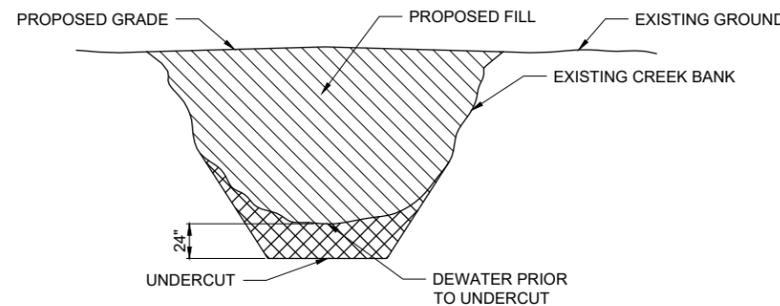
IDA No: MDH-5036



**NOTE:**  
QUANTITY OF CRUSHED AGGREGATE BASE COURSE IS BASED ON THE DIMENSIONS SHOWN. CONTRACTOR MAY ELECT TO EXTEND THESE DIMENSIONS FOR CONSTRUCTION BUT WILL NOT BE PAID FOR ADDITIONAL QUANTITY.  
\* GRADES ON APRON VARY NEAR TRANSITIONS TO EXISTING PAVEMENT EDGE AND INTERSECTIONS.

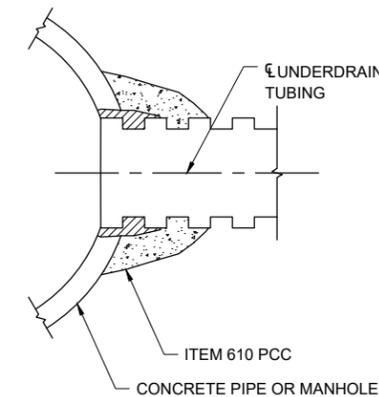
**PROPOSED BITUMINOUS RAMP EXPANSION TYPICAL SECTION**  
NOT TO SCALE

HMA MIXTURE REQUIREMENTS					
APPLICATION	DESIGN AIR VOIDS	AC / PG	AGG. QUALITY	MAX. RAP	DENSITY ACCEPTANCE
401613 BIT. SURF. COURSE-METHOD I, SUPERPAVE	3.0% @ Ndesign = 50	64-22	B OR BETTER	0%	MAT: NUCLEAR GAUGE PER 401-4.15 JOINT: CORES PER 401-4.12
403613 BIT. BASE COURSE-METHOD I, SUPERPAVE	3.0% @ Ndesign = 50	64-22	CA: C OR BETTER FA: B OR BETTER	25%	MAT: NUCLEAR GAUGE PER 403-4.13 JOINT: CORES PER 403-4.11



**UNDERCUT EXISTING DITCH TYPICAL SECTION**  
NOT TO SCALE

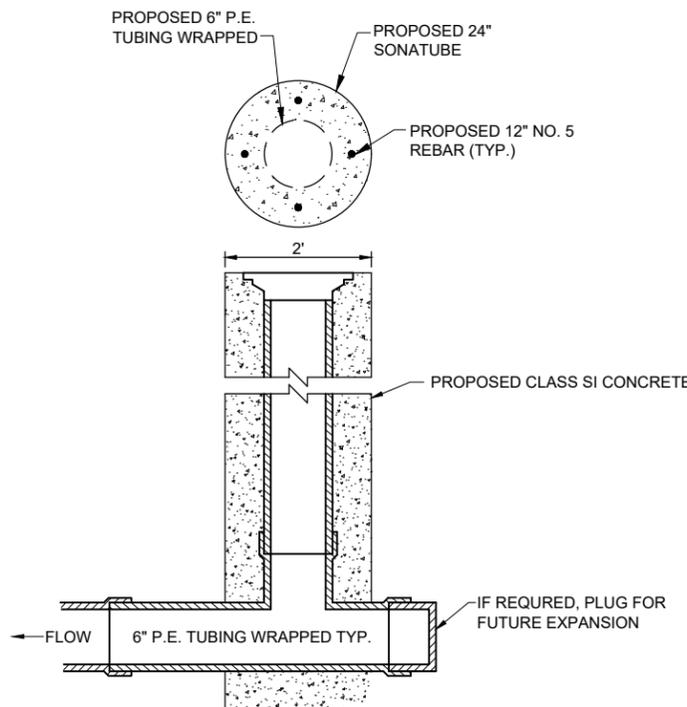
NOTE: UNDERCUT MATERIAL MAY BE USED AS TOPSOIL OR HAULED TO A STOCKPILE



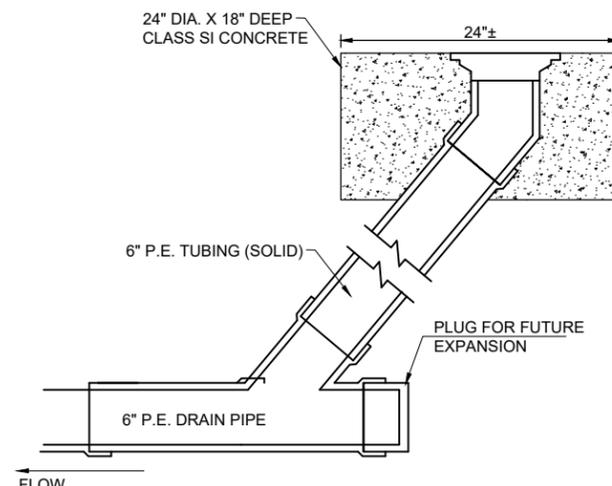
**STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION**  
NOT TO SCALE

**UNDERDRAIN NOTES**

1. THE CONTRACTOR SHALL INSTALL THE PROPOSED 6" P.E. TUBING UNDERDRAINS TO THE DEPTH AND GRADES SHOWN ON THE PLANS. THE UNDERDRAINS SHALL BE INSTALLED AFTER THE LIME SUBGRADE PROCESSING HAS BEEN COMPLETED.
2. THE 6" P.E. TUBING SHALL BE CAPPED AT THE ENDS WHICH DO NOT CONNECT INTO EXISTING STRUCTURES.
3. CONNECTING UNDERDRAINS TO EXISTING STRUCTURES SHALL BE INCLUDED IN THE COST OF THE UNDERDRAINS THEMSELVES, AND MAY INCLUDE CORING INTO THE EXISTING STRUCTURE WALL AND GROUTING THE UNDERDRAIN IN PLACE.
4. THE TRENCH SHALL BE BACKFILLED AND COMPACTED WITH POROUS BACKFILL NO. 1 MATERIAL. THE TRENCH LOCATED IN THE PROPOSED PAVEMENT AREAS WILL BE BACKFILLED AS SHOWN IN THE DETAIL ON THIS SHEET. THE TRENCH LOCATED IN TURF AREAS SHALL BE BACKFILLED UP TO WITHIN 12" OF THE EXISTING GROUND ELEVATION. THE REMAINING 12" OF TRENCH WILL BE BACKFILLED AND COMPACTED WITH EARTH MATERIAL.
5. POROUS BACKFILL SHALL CONFORM TO THE REQUIREMENTS FOR IDOT CA-14 OR IDOT CA-16 AND WILL BE CONSIDERED INCIDENTAL TO AR705506 6" PERFORATED UNDERDRAIN AND NO ADDITIONAL COMPENSATION ALLOWED. CONTRACTOR SHALL PLACE AND CONSOLIDATE THE POROUS BACKFILL TO THE SATISFACTION OF THE RESIDENT ENGINEER/TECHNICIAN.

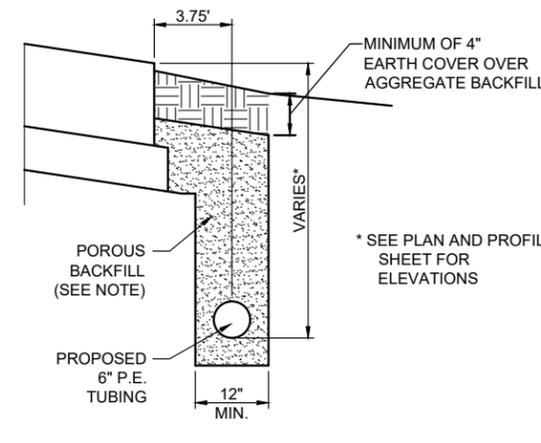


**INSPECTION HOLE-TYPE A**  
"NOT TO SCALE"



**CLEANOUT TYPE B**

NOT TO SCALE



**UNDERDRAIN DETAIL**

NOT TO SCALE

NOTE: POROUS BACKFILL SHALL CONFORM TO THE REQUIREMENTS FOR IDOT CA-14 OR IDOT CA-16 AND WILL BE CONSIDERED INCIDENTAL TO AR705506 6" PERF. UNDERDRAIN AND NO ADDITIONAL COMPENSATION ALLOWED. CONTRACTOR SHALL PLACE AND CONSOLIDATE THE POROUS BACKFILL TO THE SATISFACTION OF THE RESIDENT ENGINEER/TECHNICIAN.



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: C-141-MRK.DWG

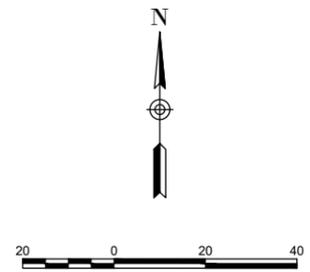
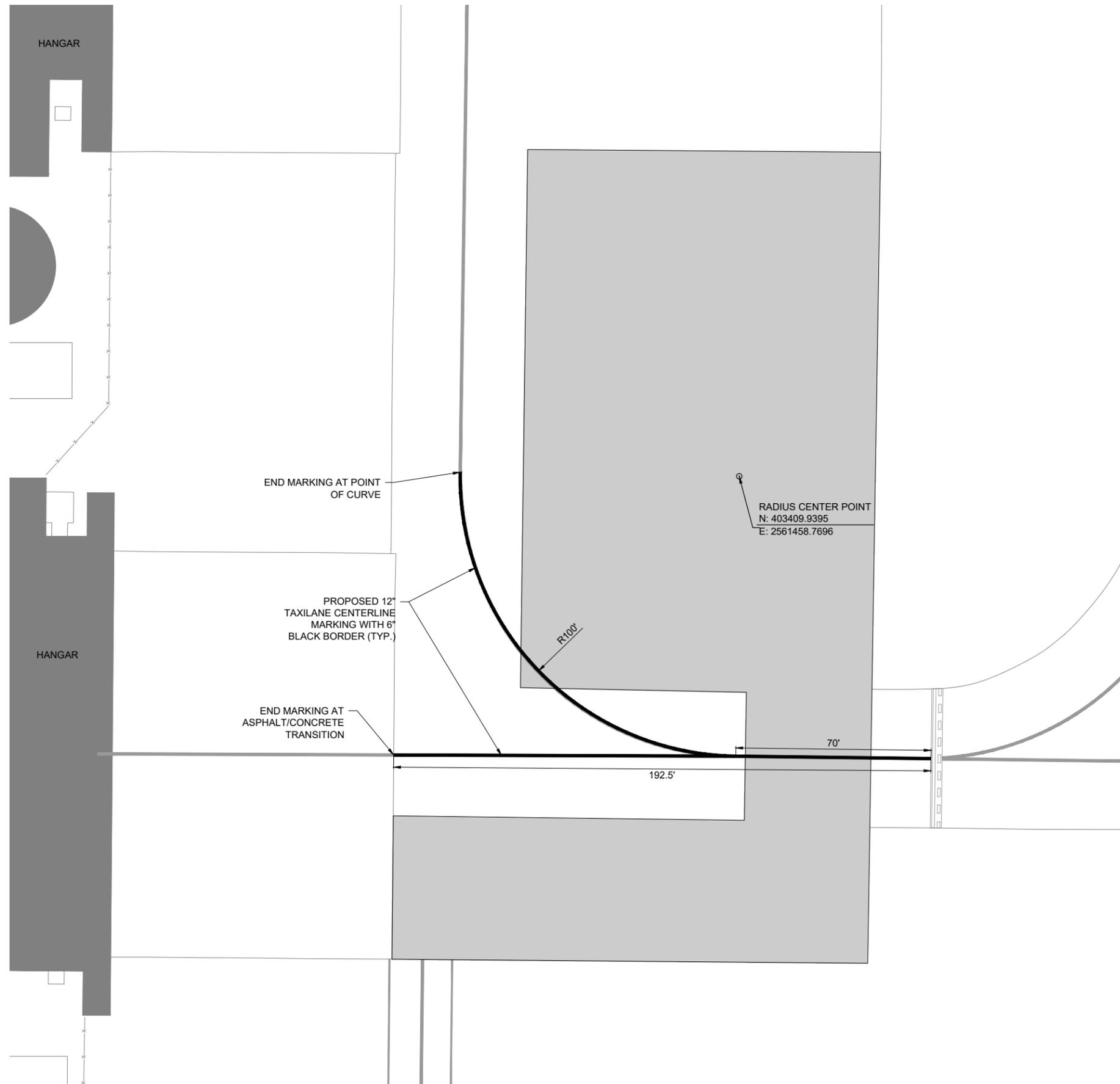
DESIGN BY: BSS 10/31/2022

DRAWN BY: JAR 10/31/2022

REVIEWED BY: BSS 12/13/2024

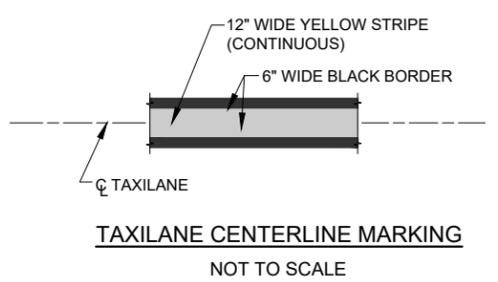
SHEET TITLE

PROPOSED MARKING PLAN



**LEGEND:**

- EXISTING PAVEMENT
- █ EXISTING BUILDINGS
- x- EXISTING FENCE
- x— EXISTING TAXIWAY CENTERLINE MARKING
- █ PROPOSED BITUMINOUS PAVEMENT
- x— PROPOSED TAXIWAY CENTERLINE MARKING



**PAVEMENT MARKING NOTES**

1. GLASS BEADS SHALL BE REQUIRED FOR ALL YELLOW PERMANENT PAINT MARKINGS. GLASS BEADS ARE NOT REQUIRED FOR TEMPORARY MARKINGS OR BLACK PAINT. REFER TO SPECIFICATION ITEM 620 FOR ADDITIONAL INFORMATION.
2. PAINT SHALL MEET REQUIREMENTS OF TECHNICAL SPECIFICATION 620, WATERBORNE PAINT.
3. IMMEDIATELY PRIOR TO THE APPLICATION OF PAINT, ALL SURFACES SHALL BE DRY AND FREE FROM DIRT, GREASE, OIL, LAITANCE, OR OTHER FOREIGN MATERIAL WHICH WOULD REDUCE THE BOND BETWEEN THE PAINT AND THE PAVEMENT. THIS SHALL INCLUDE PAINTED AREAS ON THE EXISTING PAVEMENTS. REFER TO SPECIFICATION ITEM 620-3.3 FOR ADDITIONAL INFORMATION.
4. EXISTING PAVEMENT MARKINGS OUTSIDE THE LIMITS OF THE MARKINGS SHOWN ON THE MARKING PLAN WHICH ARE REMOVED OR WORN DUE TO CONSTRUCTION ACTIVITY SHALL BE REPAINTED. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR THIS WORK.
5. IF THE CONTRACTOR ELECTS TO "BLOCK PAINT" THE BLACK PAINT AND THEN PAINT YELLOW OVER THE BLACK PAINT; ONLY THE VISIBLE BLACK PAINT WILL BE ELIGIBLE FOR PAYMENT.

MARKING SCHEDULE	
<b>AR620520 - PAVEMENT MARKING - WATERBORNE (YELLOW)</b>	
DESCRIPTION	TOTAL AREA (S.F.)
12" TAXILANE CENTERLINE	350.0
<b>AR620520 - PAVEMENT MARKING - BLACK BORDER</b>	
DESCRIPTION	TOTAL AREA (S.F.)
12" TAXILANE CENTERLINE	350.0

**FOR BID**

JAN 10, 2025 5:55 PM SCHUB01446 1\22\JOBS\22A0056\CAD\AIRPORT\SHHEETC-141-MRK.DWG



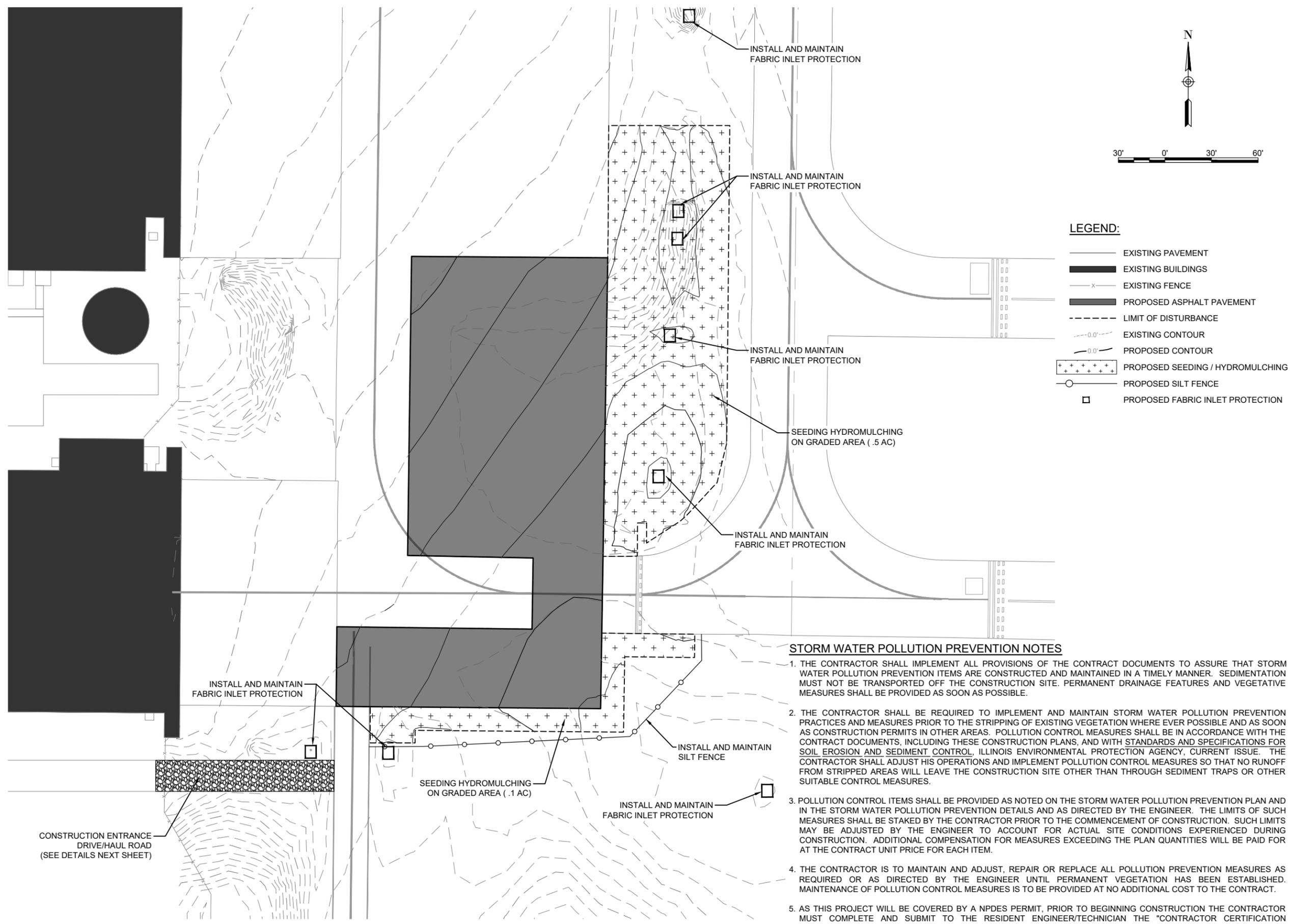
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025  
PROJECT NO: 22A0056  
CAD FILE: C-181-SWP.DWG  
DESIGN BY: BSS 1/10/2025  
DRAWN BY: CWS 1/10/2025  
REVIEWED BY: BSS 1/10/2025

SHEET TITLE

**PROPOSED STORMWATER POLLUTION PREVENTION PLAN**

**FOR BID**



**LEGEND:**

- EXISTING PAVEMENT
- █ EXISTING BUILDINGS
- x- EXISTING FENCE
- █ PROPOSED ASPHALT PAVEMENT
- - - - - LIMIT OF DISTURBANCE
- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- + + + + + PROPOSED SEEDING / HYDROMULCHING
- PROPOSED SILT FENCE
- PROPOSED FABRIC INLET PROTECTION

**STORM WATER POLLUTION PREVENTION NOTES**

1. THE CONTRACTOR SHALL IMPLEMENT ALL PROVISIONS OF THE CONTRACT DOCUMENTS TO ASSURE THAT STORM WATER POLLUTION PREVENTION ITEMS ARE CONSTRUCTED AND MAINTAINED IN A TIMELY MANNER. SEDIMENTATION MUST NOT BE TRANSPORTED OFF THE CONSTRUCTION SITE. PERMANENT DRAINAGE FEATURES AND VEGETATIVE MEASURES SHALL BE PROVIDED AS SOON AS POSSIBLE.
2. THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT AND MAINTAIN STORM WATER POLLUTION PREVENTION PRACTICES AND MEASURES PRIOR TO THE STRIPPING OF EXISTING VEGETATION WHERE EVER POSSIBLE AND AS SOON AS CONSTRUCTION PERMITS IN OTHER AREAS. POLLUTION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THESE CONSTRUCTION PLANS, AND WITH STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, CURRENT ISSUE. THE CONTRACTOR SHALL ADJUST HIS OPERATIONS AND IMPLEMENT POLLUTION CONTROL MEASURES SO THAT NO RUNOFF FROM STRIPPED AREAS WILL LEAVE THE CONSTRUCTION SITE OTHER THAN THROUGH SEDIMENT TRAPS OR OTHER SUITABLE CONTROL MEASURES.
3. POLLUTION CONTROL ITEMS SHALL BE PROVIDED AS NOTED ON THE STORM WATER POLLUTION PREVENTION PLAN AND IN THE STORM WATER POLLUTION PREVENTION DETAILS AND AS DIRECTED BY THE ENGINEER. THE LIMITS OF SUCH MEASURES SHALL BE STAKED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SUCH LIMITS MAY BE ADJUSTED BY THE ENGINEER TO ACCOUNT FOR ACTUAL SITE CONDITIONS EXPERIENCED DURING CONSTRUCTION. ADDITIONAL COMPENSATION FOR MEASURES EXCEEDING THE PLAN QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH ITEM.
4. THE CONTRACTOR IS TO MAINTAIN AND ADJUST, REPAIR OR REPLACE ALL POLLUTION PREVENTION MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. MAINTENANCE OF POLLUTION CONTROL MEASURES IS TO BE PROVIDED AT NO ADDITIONAL COST TO THE CONTRACT.
5. AS THIS PROJECT WILL BE COVERED BY A NPDES PERMIT, PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR MUST COMPLETE AND SUBMIT TO THE RESIDENT ENGINEER/TECHNICIAN THE "CONTRACTOR CERTIFICATION STATEMENT" AS PROVIDED ON FORM BDE 2342, STORM WATER POLLUTION PROTECTION PLAN (SWPPP). SEE CERTIFICATION STATEMENT ON NEXT SHEET.

JAN 12, 2025 1:24 PM STOLZ01547  
I:\22\JOBS\22A0056\CAD\AIRPORT\181-SWP.DWG

CONSTRUCTION ENTRANCE DRIVE/HAUL ROAD (SEE DETAILS NEXT SHEET)



SOUTHERN ILLINOIS AIRPORT

665 North Airport Road  
Murphysboro, IL, 62966



DATE SIGNED: 1/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST AIRCRAFT PARKING APRON

IDA No: MDH-5036


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025  
PROJECT NO: 22A0056  
CAD FILE: C-181-SWP.DWG  
DESIGN BY: BSS 1/10/2025  
DRAWN BY: CWS 1/10/2025  
REVIEWED BY: BSS 1/10/2025

SHEET TITLE

PROPOSED STORMWATER POLLUTION DETAILS

**CONTRACTOR'S CERTIFICATION STATEMENT**

THIS CERTIFICATION STATEMENT IS A PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR THE PROJECT DESCRIBED BELOW IN ACCORDANCE WITH NPDES PERMIT NO. ILR10 ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

PROJECT INFORMATION:

AIRPORT: \_\_\_\_\_ PROJECT: \_\_\_\_\_

PROJECT NO: \_\_\_\_\_ COUNTY: \_\_\_\_\_

CONTRACT NUMBER: \_\_\_\_\_

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (ILR10) THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

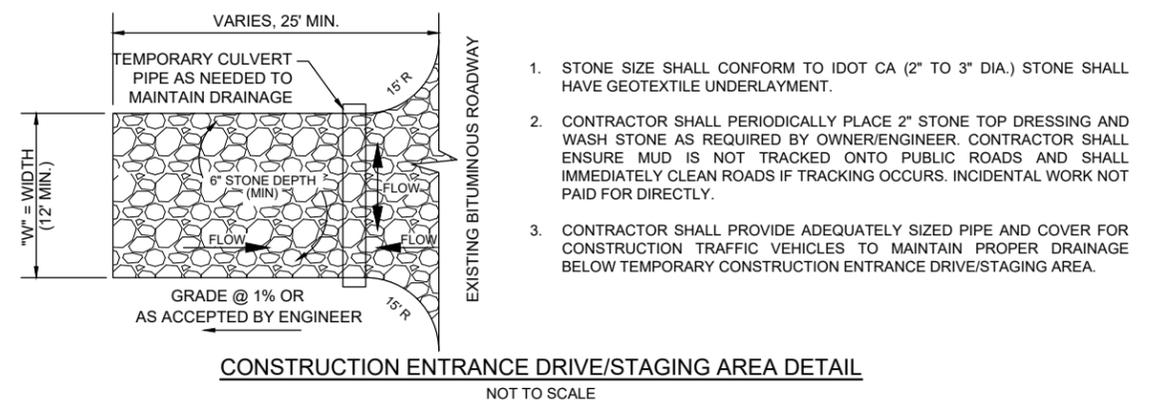
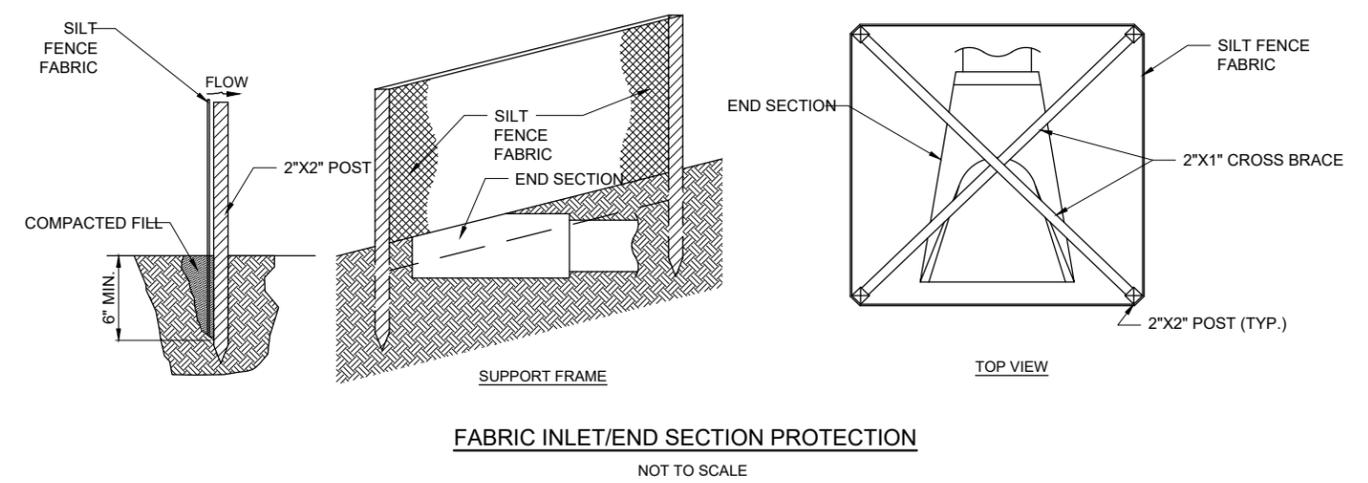
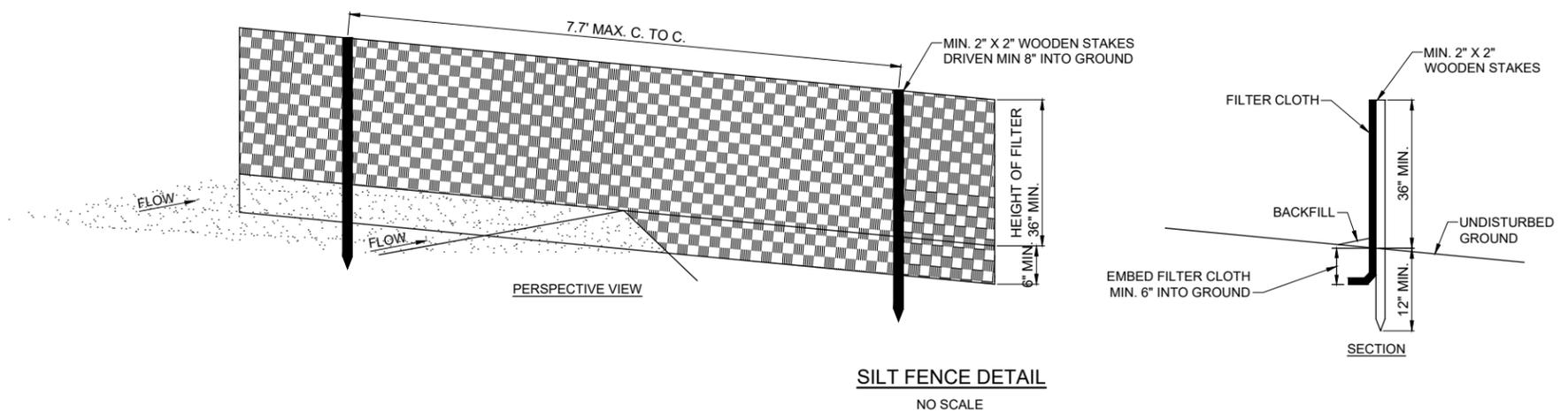
NAME OF FIRM: \_\_\_\_\_

STREET ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

THE INFORMATION WITHIN THIS BOX SHALL BE COMPLETED BY THE CONTRACTOR AFTER THE AWARD OF THE CONTRACT TO OBTAIN THE REQUIRED NPDES PERMIT FROM IEPA. COMPLETION OF THIS IS A CONTRACT REQUIREMENT.



1. STONE SIZE SHALL CONFORM TO IDOT CA (2" TO 3" DIA.) STONE SHALL HAVE GEOTEXTILE UNDERLAYMENT.
2. CONTRACTOR SHALL PERIODICALLY PLACE 2" STONE TOP DRESSING AND WASH STONE AS REQUIRED BY OWNER/ENGINEER. CONTRACTOR SHALL ENSURE MUD IS NOT TRACKED ONTO PUBLIC ROADS AND SHALL IMMEDIATELY CLEAN ROADS IF TRACKING OCCURS. INCIDENTAL WORK NOT PAID FOR DIRECTLY.
3. CONTRACTOR SHALL PROVIDE ADEQUATELY SIZED PIPE AND COVER FOR CONSTRUCTION TRAFFIC VEHICLES TO MAINTAIN PROPER DRAINAGE BELOW TEMPORARY CONSTRUCTION ENTRANCE DRIVE/STAGING AREA.

JAN 12, 2025 1:24 PM STOLZ01547 1:22JOBS22A0056D\CAD\AIRPORT\181-SWP.DWG

**FOR BID**


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: E-101-PLAN.DWG

DESIGN BY: KNL 3/28/2023

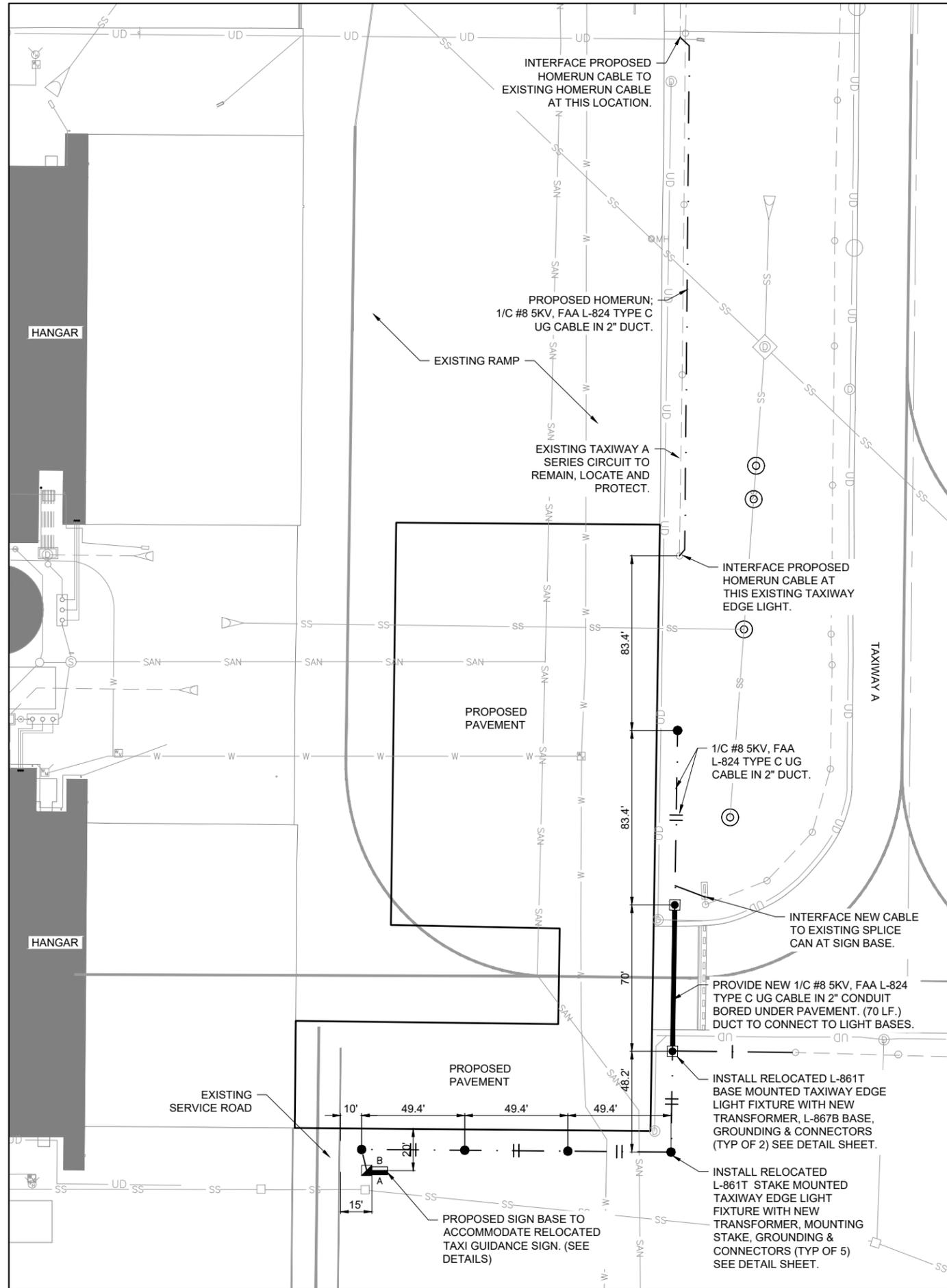
DRAWN BY: CWS 3/28/2023

REVIEWED BY: KNL 11/25/2024

SHEET TITLE

PROPOSED ELECTRICAL PLAN

**FOR BID**

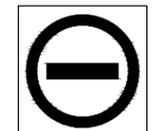


**NOTES:**

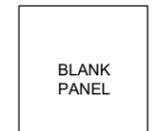
- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT). WHERE THE FACILITY IS NOT EQUIPPED WITH LOCK/TAGOUT EQUIPMENT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT. FAILURE TO SHUT DOWN AND LOCKOUT THE CIRCUIT(S) PRESENTS A DANGEROUS HAZARD FOR PERSONNEL WORKING ON THIS SYSTEM.
- EACH RESPECTIVE PERSON 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. ONLY QUALIFIED ELECTRICAL CONTRACTORS SHALL PERFORM ELECTRICAL WORK ON THIS PROJECT. NEC DEFINES A QUALIFIED PERSON AS FOLLOWS; "ONE WHO HAS SKILLS AND KNOWLEDGE RELATED TO THE CONSTRUCTION AND OPERATION OF THE ELECTRICAL EQUIPMENT AND INSTALLATIONS AND HAS RECEIVED SAFETY TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED".
- VERIFY RESPECTIVE CIRCUITS, POWER SOURCES AND SITE CONDITIONS PRIOR TO REMOVING, DISCONNECTING, RELOCATING, INSTALLING, CONNECTING OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, DISTANCE REMAINING SIGN, RUNWAY SIGN, TAXI SIGN, NAVAID, VAULT EQUIPMENT OR OTHER DEVICE.
- RELOCATED GUIDANCE SIGN BASE SHALL BE CONSTRUCTED AT THE LOCATION SHOWN ON THE PROPOSED AIRFIELD ELECTRICAL & SIGNAGE PLANS AND IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.
- WHERE TEMPORARY WIRING IS REQUIRED, ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2G, - OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 2.18.3 "LIGHTING AND VISUAL NAVAIDS".
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

**LEGEND**

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



SIDE A



SIDE B

**DETAIL - EXISTING NO ENTRY TAXI GUIDANCE SIGN**

SCALE: NONE

**TAXI GUIDANCE SIGN NOTES:**

- THE EXISTING "NO ENTRY" GUIDANCE SIGN SHALL BE INSTALLED ON THE NEW BASE LOCATED ON THE ELECTRICAL PLANS AND AS SHOWN ON THE ELECTRICAL DETAIL SHEETS.




NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: E-503-DETL.DWG

DESIGN BY: KNL 3/28/2023

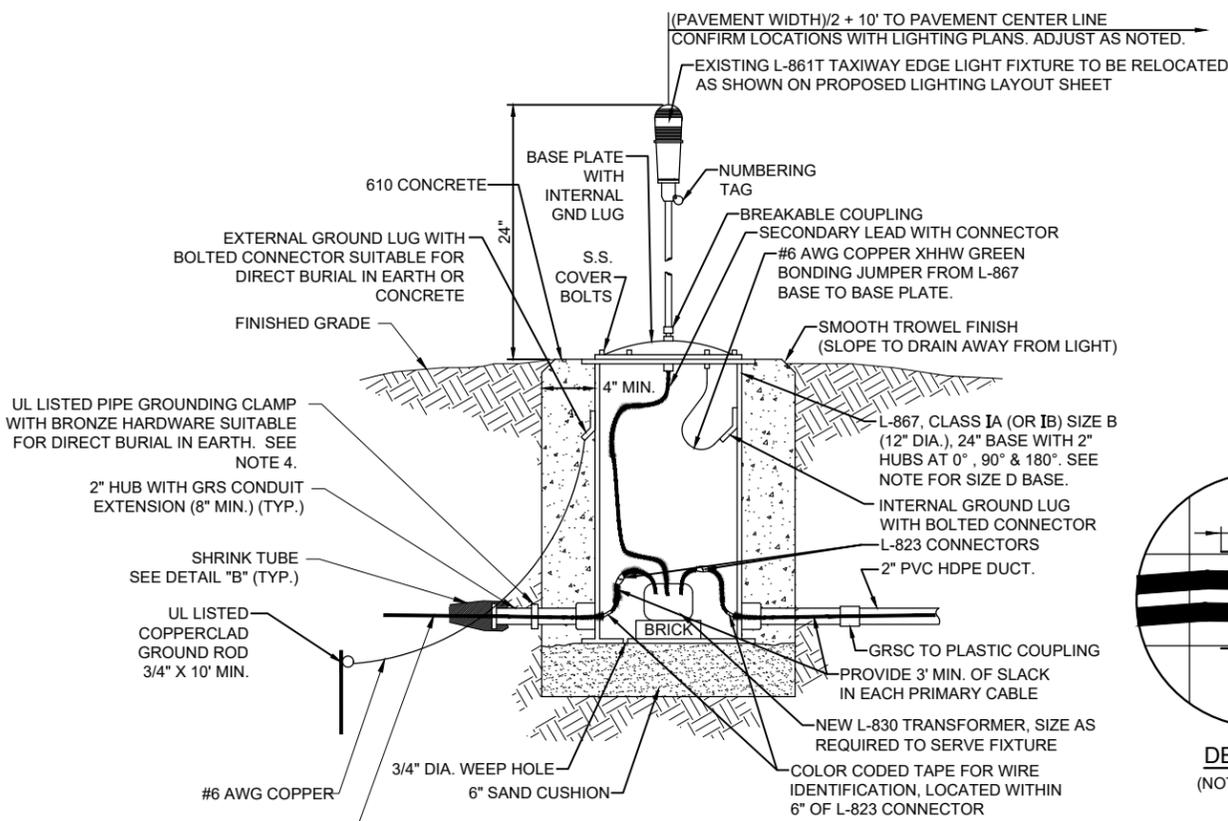
DRAWN BY: CWS 3/28/2023

REVIEWED BY: KNL 11/25/2024

SHEET TITLE

TAXIWAY LIGHT DETAILS

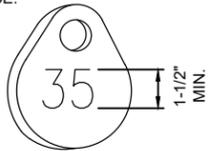
**FOR BID**



**MEDIUM INTENSITY TAXIWAY EDGE LIGHT - BASE MOUNTED**

(NOT TO SCALE)

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

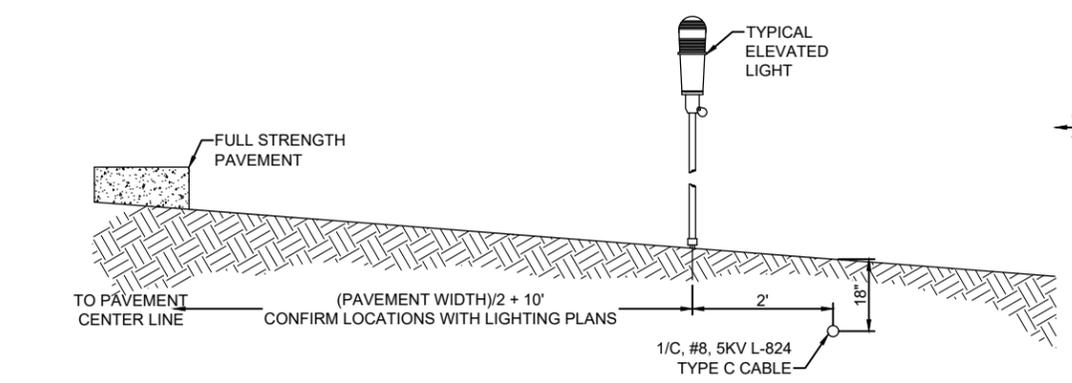


**NUMBERING TAG DETAIL**

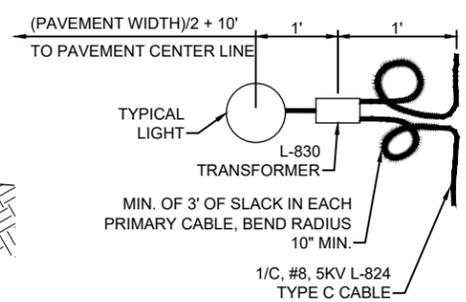
(NOT TO SCALE)

**NOTE:**

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



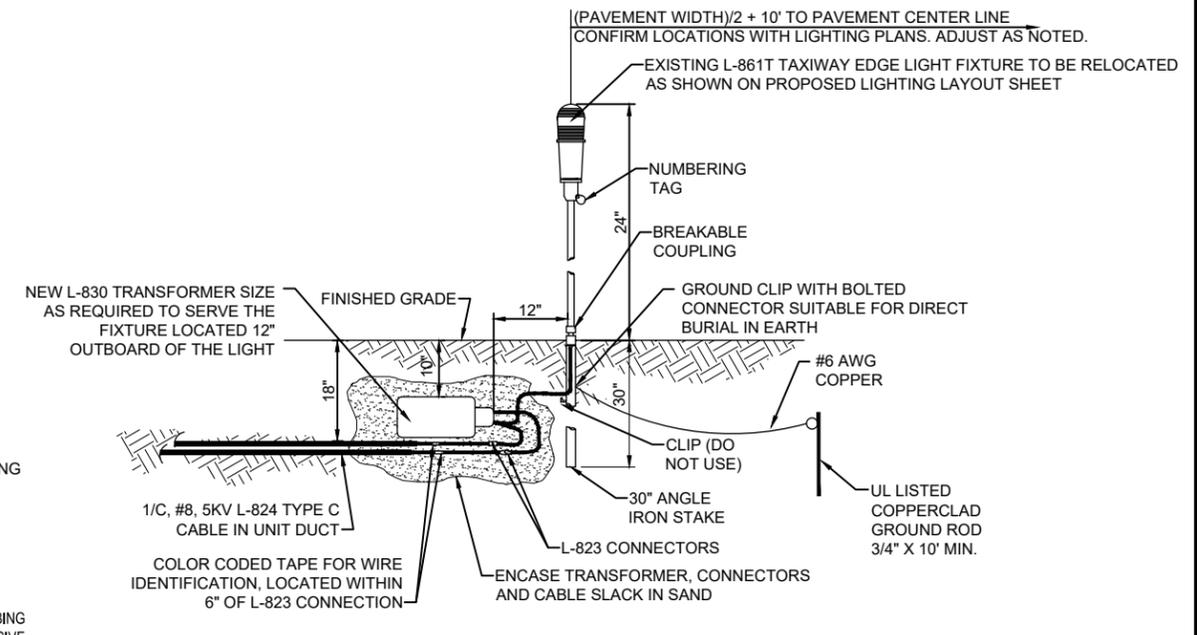
**PROFILE VIEW**



**PLAN VIEW**

**LIGHT AND CABLE INSTALLATION DETAIL**

(NOT TO SCALE)



**MEDIUM INTENSITY TAXIWAY EDGE LIGHT - STAKE MOUNTED**

(NOT TO SCALE)

**NOTES:**

- SEE ELECTRICAL NOTES SHEETS.
- SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
- SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
- WHERE GROUND LUGS ARE NOT ACCESSIBLE ON BASE CANS, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.
- THE EXISTING LIGHTS DESIGNATED FOR RELOCATION SHALL INCLUDE NEW L-867 BASES/BASE PLATES OR MOUNTING STAKES, CONNECTORS, TRANSFORMERS, GROUND RODS, GROUNDING ELECTRODE CONDUCTORS/BONDING JUMPERS AND ASSOCIATED CONNECTIONS.
- LIGHT BASE CANS FOR THE AIRFIELD LIGHT FIXTURES SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUE IN EFFECT), FOR TYPE L-867, CLASS IA, SIZE B (12 IN. NOMINAL DIAMETER), OR SIZE D (16 IN. NOMINAL DIAMETER) AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH LIGHT BASE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. LIGHT BASE PLATES SHALL BE SIZED AND COMPATIBLE WITH THE RESPECTIVE LIGHT BASES AND LIGHT FIXTURES WITH STAINLESS STEEL BOLTS.
- PRIOR TO INSTALLING THE AIRFIELD LIGHT FIXTURES, APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, BREAKABLE COUPLING, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- SERIES CIRCUIT ISOLATION TRANSFORMERS FOR THE AIRFIELD LIGHTING SHALL BE MANUFACTURED TO FAA SPECIFICATION AC 150/5345-47, (CURRENT EDITION IN EFFECT), AND SHALL BE FAA-APPROVED (ETL/INTERTEK TESTING SERVICES-CERTIFIED). SERIES CIRCUIT TRANSFORMER SHALL BE PROPERLY SIZED FOR THE RESPECTIVE AIRFIELD LIGHTING DEVICE, AND SHALL BE AS RECOMMENDED BY THE RESPECTIVE EQUIPMENT MANUFACTURER. CONFIRM PROPER TRANSFORMER SELECTION AND SIZING WITH THE RESPECTIVE EQUIPMENT MANUFACTURER.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING AND SPLICE CANS SHALL BE IN ACCORDANCE WITH ITEM 610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE.
- PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, RUBBER AND PLASTIC ELECTRICAL TAPES SHALL BE SCOTCH ELECTRICAL TAPE NUMBERS 130C LINERLESS RUBBER SPLICING TAPE (2" WIDE) AND 88 (1.5" WIDE) RESPECTIVELY, AS MANUFACTURED THE MINNESOTA MINING AND MANUFACTURING COMPANY, OR EQUIVALENT.

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



*Kevin N. Lightfoot*

DATE SIGNED: 11/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST AIRCRAFT PARKING APRON

IDA No: MDH-5036

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: E-502-DTL.DWG

DESIGN BY: KNL 3/28/2023

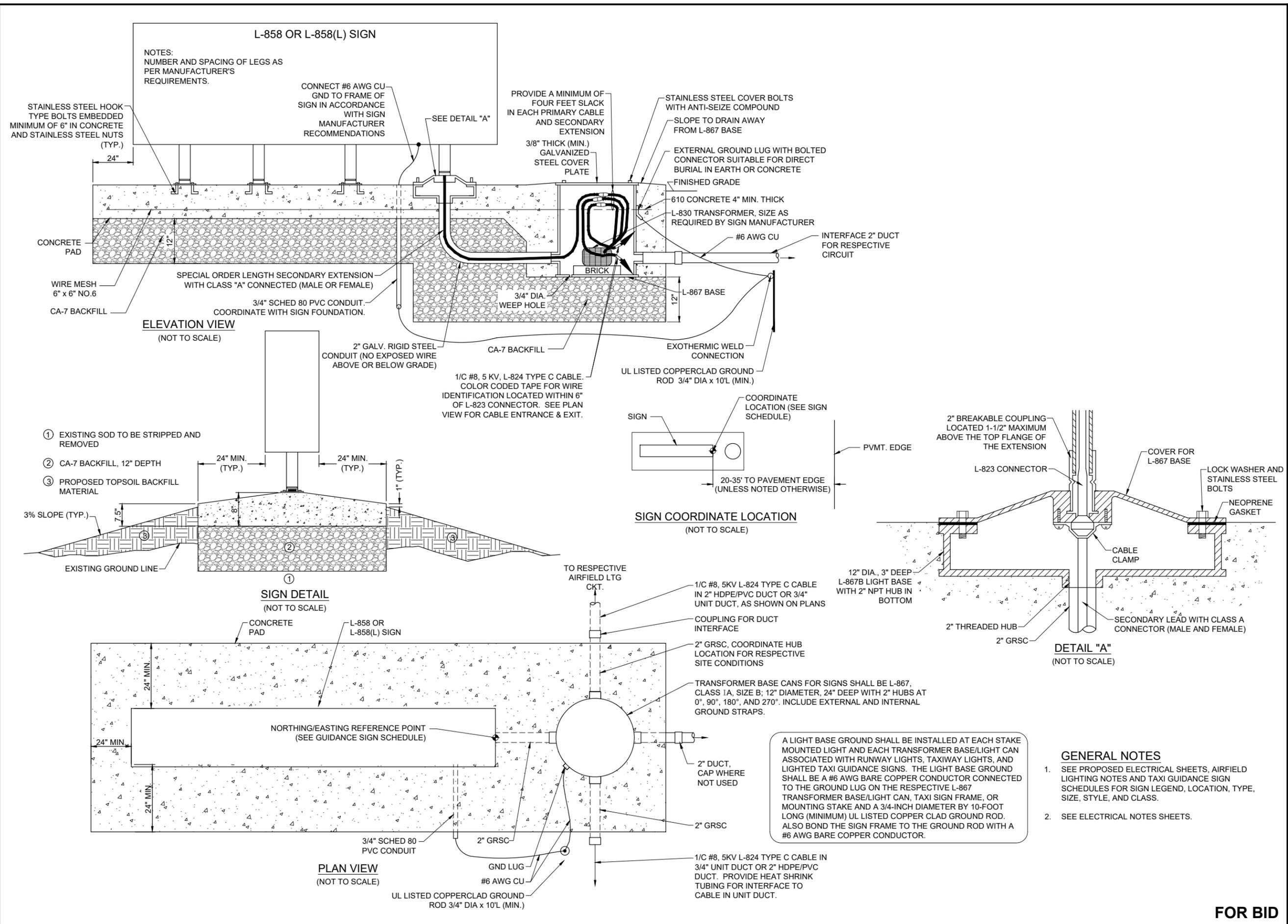
DRAWN BY: CWS 3/28/2023

REVIEWED BY: KNL 11/25/2024

SHEET TITLE

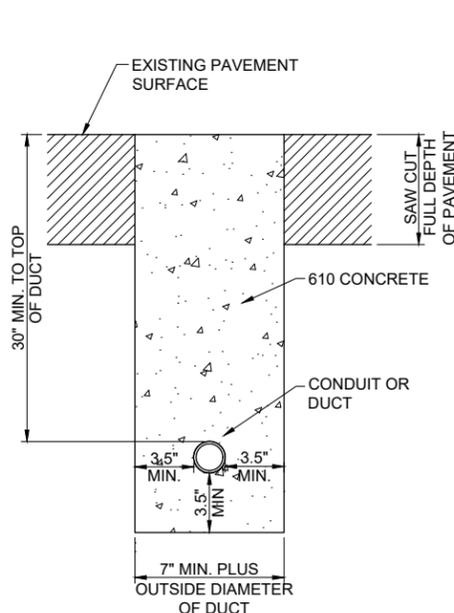
TAXI GUIDANCE SIGN DETAILS

FOR BID



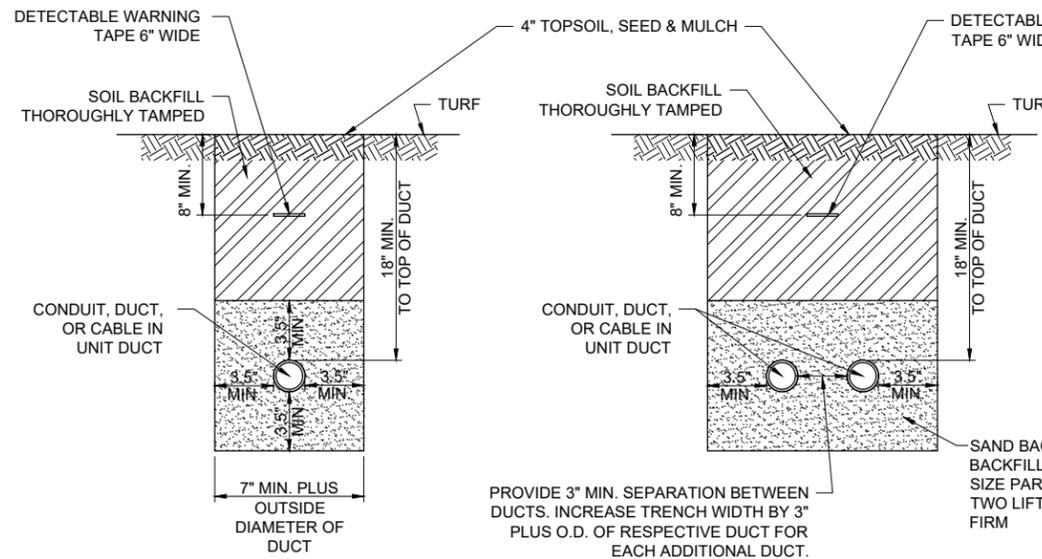
JAN 10, 2025 5:56 PM SCHUB01446  
1:22:05S22A0056D\CAD\AIRPORT\SHEETE-502-DTL.DWG





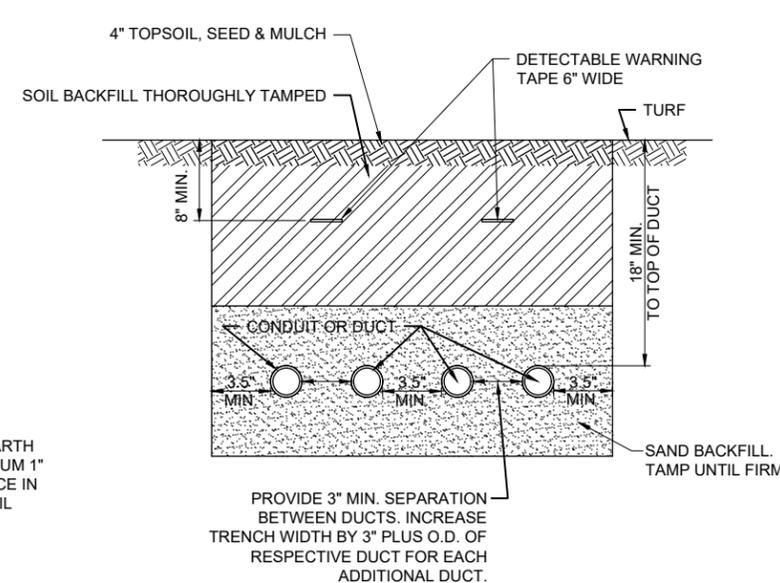
CONDUIT IN TRENCH - PAVED AREAS

"NOT TO SCALE"



CONDUIT IN TRENCH - NON-PAVEMENT AREAS

"NOT TO SCALE"



NOTES:

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

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

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



Offices Nationwide  
www.hanson-inc.com

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

Illinois Licensed  
Professional Service Corporation  
#184-001084



665 North Airport Road  
Murphysboro, IL, 62966



DATE SIGNED: 1/10/2025  
LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST  
AIRCRAFT PARKING  
APRON

IDA No: MDH-5036

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025  
PROJECT NO: 22A0056  
CAD FILE: E-505-DETL5.DWG  
DESIGN BY: KNL 3/28/2023  
DRAWN BY: CWS 3/28/2023  
REVIEWED BY: KNL 11/25/2024

SHEET TITLE

CONDUIT TRENCH  
DETAILS

FOR BID



SOUTHERN ILLINOIS AIRPORT

665 North Airport Road  
Murphysboro, IL, 62966



*Kevin N. Lightfoot*

DATE SIGNED: 11/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST AIRCRAFT PARKING APRON

IDA No: MDH-5036


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: E-506-DETL.DWG

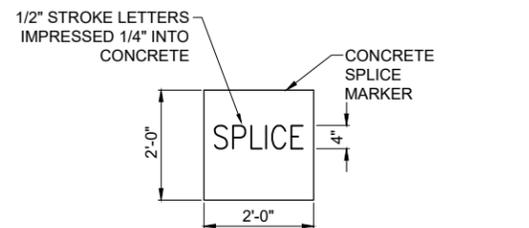
DESIGN BY: KNL 3/28/2023

DRAWN BY: CWS 3/28/2023

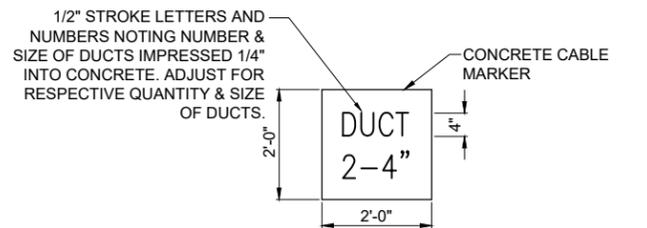
REVIEWED BY: KNL 11/25/2024

SHEET TITLE

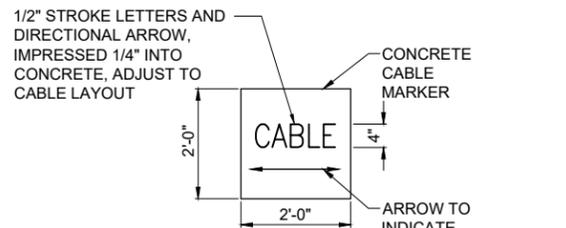
CABLE AND DUCT MARKER DETAILS



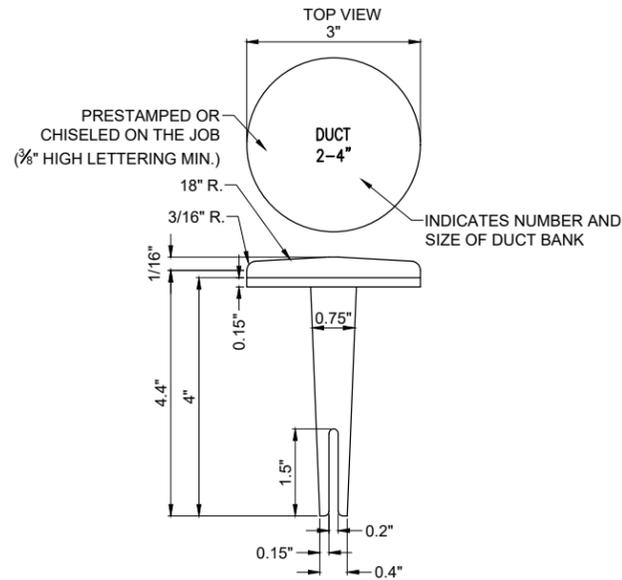
**TURF SPLICE MARKERS**  
"NOT TO SCALE"



**TURF DUCT MARKERS**  
"NOT TO SCALE"



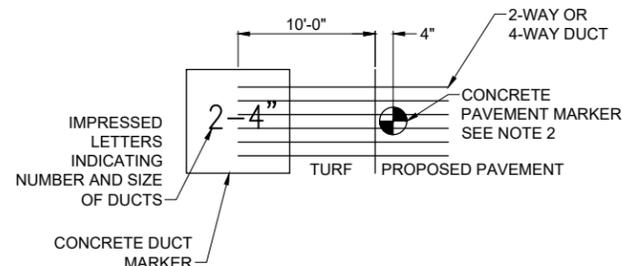
**TURF CABLE MARKERS**  
"NOT TO SCALE"



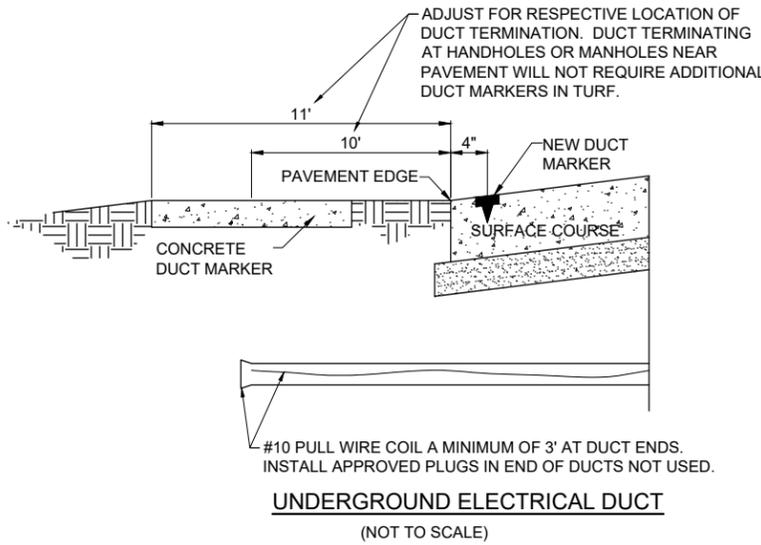
**BITUMINOUS PAVEMENT DUCT MARKERS**  
"NOT TO SCALE"

**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 BERNTSEN INTERNATIONAL INC., P.O. BOX 8670, MADISON, WI. 53708-8670, PHONE: 1-877-959-8556, SURV-KAP, 3225 E. 47TH ST., TUCSON, AZ 85713, PHONE: (502)-622-6011, OR OTHER EQUIVALENT MANUFACTURERS.



**DUCT MARKER DETAIL-PLAN**  
"NOT TO SCALE"



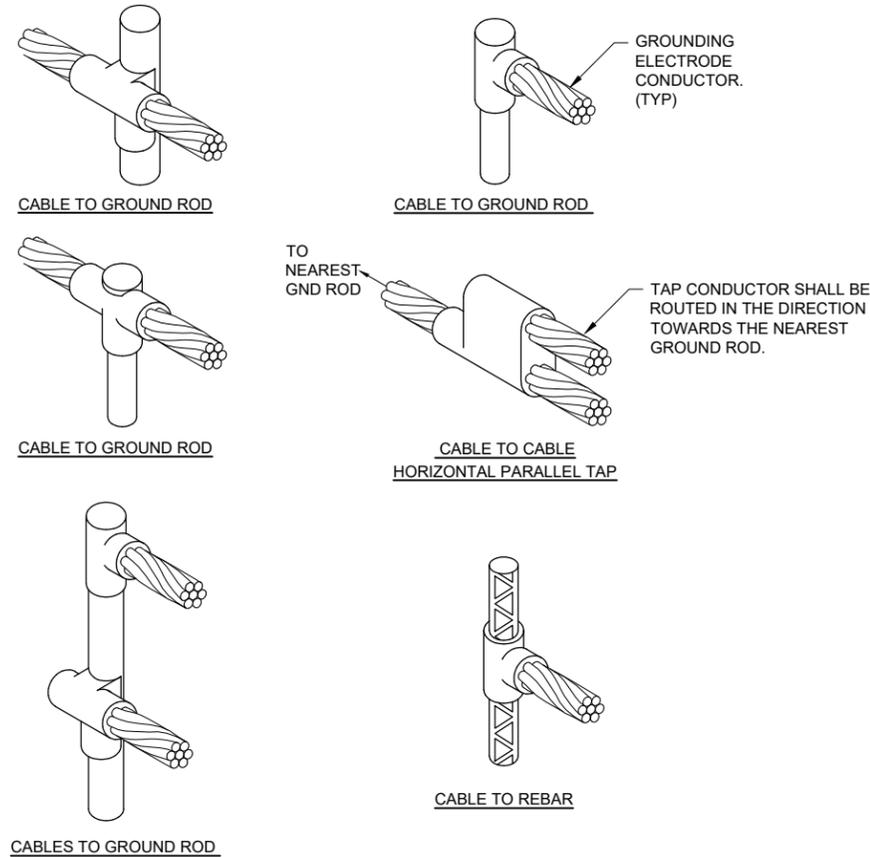
**UNDERGROUND ELECTRICAL DUCT**  
(NOT TO SCALE)

**CABLE & DUCT MARKER NOTES:**

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



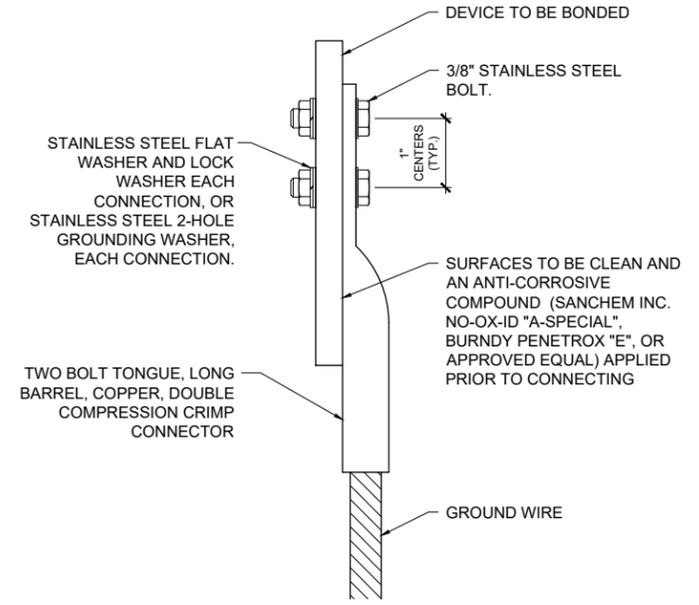




**DETAIL NOTES**

- KNOWLEDGEABLE AND QUALIFIED PERSONNEL SHALL PERFORM EXOTHERMIC WELD CONNECTIONS TO ENSURE GOOD, SAFE, & RELIABLE CONNECTIONS. 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.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 80 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENIRCLE 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. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- ALL APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, SHALL REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.

**EXOTHERMIC WELD DETAILS**



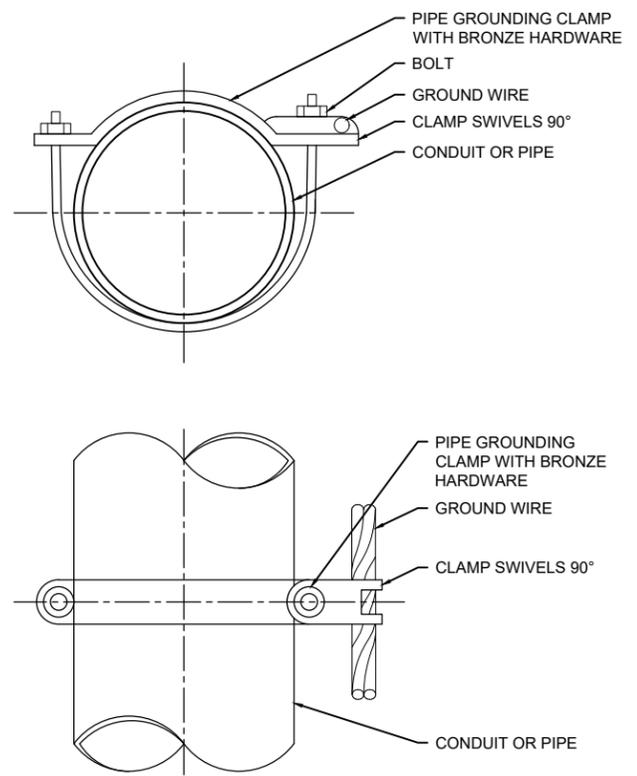
2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)

WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1	(CONTACT MFR)	(CONTACT MFR)
#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**

- IT IS IMPORTANT TO HAVE GOOD SECURE GROUND CONNECTIONS THAT WILL WITHSTAND WEATHER CONDITIONS AND MAINTAIN CONTINUITY TO GROUND. OFTEN WEATHER CONDITIONS CAN AFFECT GROUNDING CONNECTIONS THAT RESULT IN LOOSE CONNECTIONS AND UNSAFE CONDITIONS.
- SAFETY OF PERSONNEL IS THE PRIORITY. PROTECTION OF EQUIPMENT IS SECONDARY. PLEASE BE AWARE THAT GROUNDING DOES NOT GUARANTEE YOU WILL NOT RECEIVE A SHOCK, BE INJURED, OR KILLED FROM DEFECTIVE OR DAMAGED EQUIPMENT OR MATERIALS. PROPER GROUNDING WILL HOWEVER SIGNIFICANTLY REDUCE THE POSSIBILITY OF SHOCK, INJURY, OR DEATH. PLEASE FOCUS ON SAFETY OF PERSONNEL AT ALL TIMES
- THE GROUND WIRE CONNECTIONS TO EQUIPMENT LOCATED ABOVE GRADE, SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE WITH 3/8-INCH STAINLESS STEEL BOLTS, NUTS, AND WASHERS OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE. THIS ALSO APPLIES TO CONNECTIONS TO GROUND BUS BARS.
- HARGER LIGHTING PROTECTION AND GROUNDING EQUIPMENT ALSO MANUFACTURERS TWO HOLE LONG BARREL COMPRESSION LUGS.
- EACH CONNECTION SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR APPROVED EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

**GROUNDING LUG CONNECTION DETAIL**



PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)

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

**NOTES**

- EACH PIPE GROUNDING CLAMP SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL 467 LISTED.
- FOR APPLICATIONS SUBJECT TO ADDITIONAL CORROSION, PROVIDE PIPE GROUNDING CLAMPS WITH TINNED COATED BRONZE HARDWARE
- HARGER CPC AND APC SERIES PIPE GROUNDING CLAMPS PROPERLY SIZED FOR THE RESPECTIVE PIPE AND GROUND WIRE ARE ALSO ACCEPTABLE.
- PENN-UNION TYPE "GPL" SERIES PIPE GROUNDING CLAMPS PROPERLY SIZED FOR THE RESPECTIVE PIPE AND GROUND WIRE ARE ALSO ACCEPTABLE.

**PIPE/CONDUIT GROUNDING CLAMP DETAIL**

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025  
PROJECT NO: 22A0056  
CAD FILE: E-507-DETLDWG  
DESIGN BY: KNL 2/6/2024  
DRAWN BY: HLE 2/6/2024  
REVIEWED BY: KNL 11/25/2024

SHEET TITLE

**GROUNDING DETAILS**

**FOR BID**



SOUTHERN ILLINOIS AIRPORT

665 North Airport Road  
Murphysboro, IL, 62966



*Kevin N. Lightfoot*

DATE SIGNED: 1/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST  
AIRCRAFT PARKING  
APRON

IDA No: MDH-5036


NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: E-508-DETL.DWG

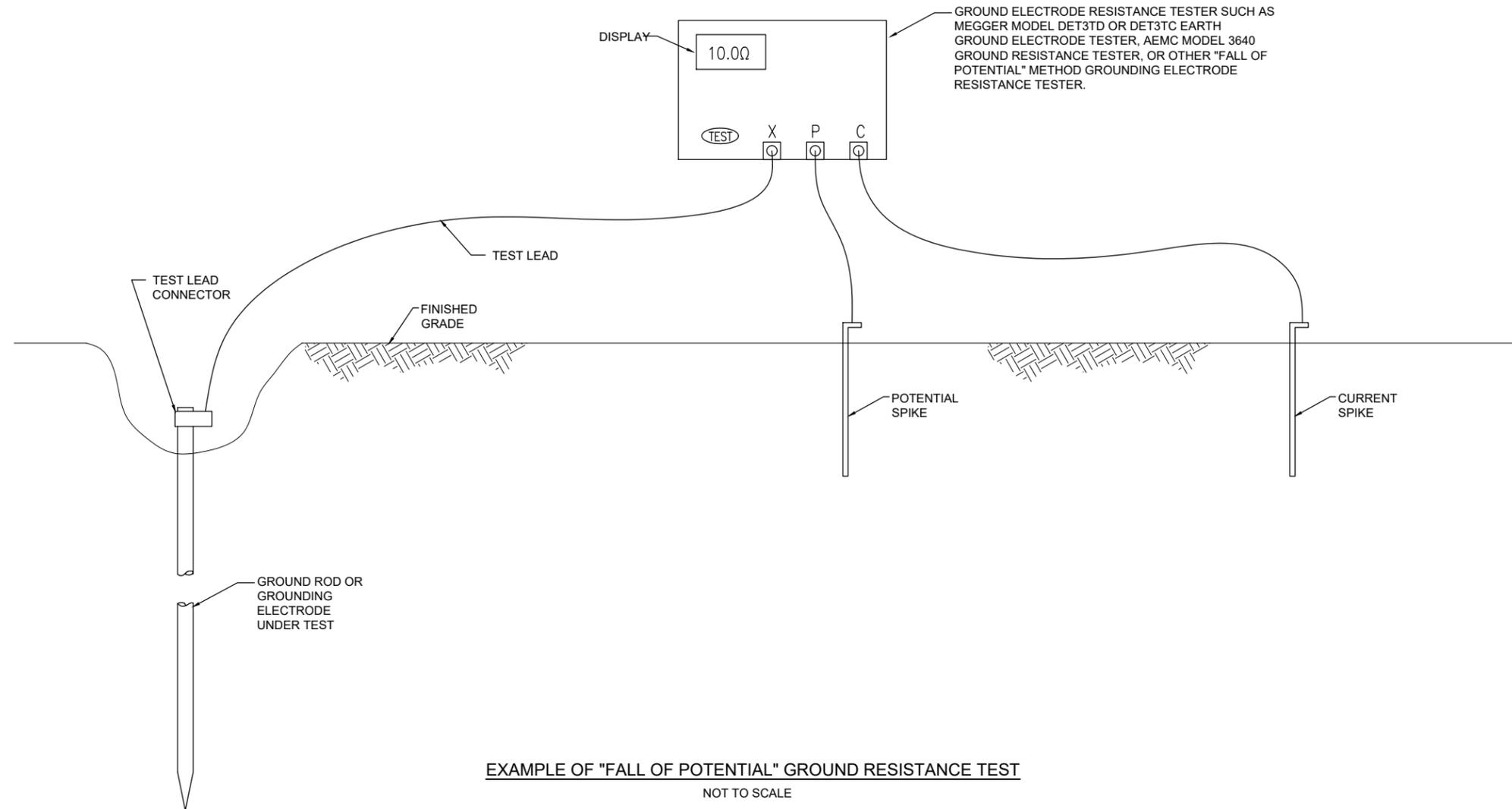
DESIGN BY: KNL 3/28/2023

DRAWN BY: CWS 3/28/2023

REVIEWED BY: KNL 11/25/2024

SHEET TITLE

GROUNDING  
RESISTANCE  
TESTING DETAILS



**EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST**

NOT TO SCALE

**NOTES**

1. CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER OF RECORD.
2. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, SPLICE CAN AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS WHERE APPLICABLE. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER / RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER OF RECORD.
3. GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
4. RECORD SITE CONDITIONS DURING TESTS.
5. "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

**FOR BID**







SOUTHERN ILLINOIS AIRPORT

665 North Airport Road  
Murphysboro, IL, 62966



*Kevin N. Lightfoot*

DATE SIGNED: 1/10/2025 LICENSE EXPIRES: 11/30/2025

EXPAND SOUTHEAST  
AIRCRAFT PARKING  
APRON

IDA No: MDH-5036

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JANUARY 10, 2025

PROJECT NO: 22A0056

CAD FILE: E-604.DWG

DESIGN BY: KNL 3/28/2023

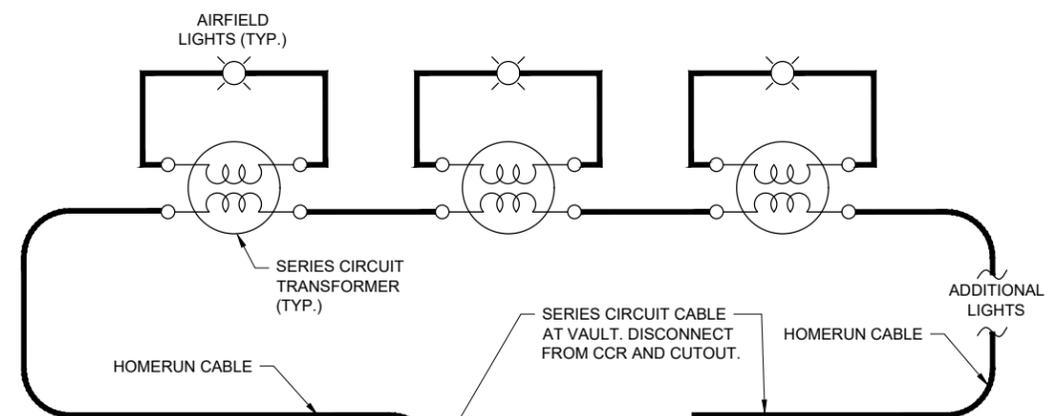
DRAWN BY: CWS 3/28/2023

REVIEWED BY: KNL 11/25/2024

SHEET TITLE

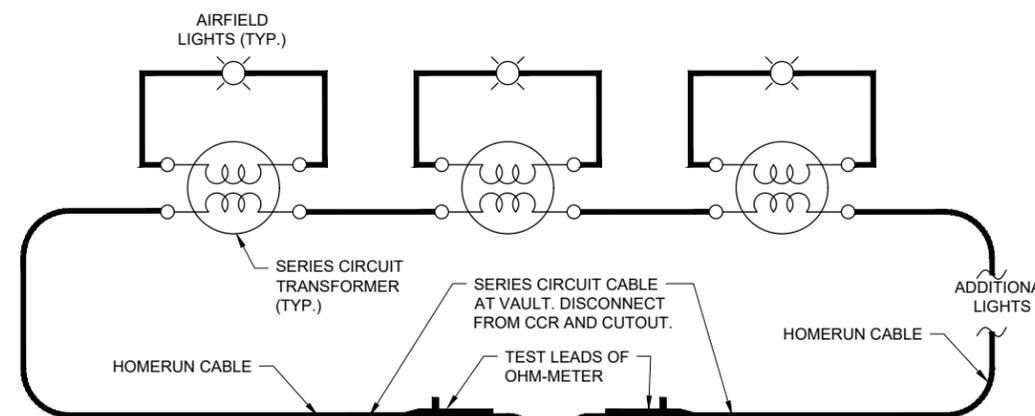
SERIES CIRCUIT  
CABLE TESTING  
DETAILS

FOR BID



CABLE INSULATION RESISTANCE TEST/MEGGER TEST

NOT TO SCALE



MEASURE RESISTANCE OF SERIES CIRCUIT LOOP.

NOT TO SCALE

SERIES CIRCUIT LOOP RESISTANCE MEASUREMENT NOTES

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

CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

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