CONSTRUCTION PLANS - FOR BID, ISSUED NOVEMBER 22, 2024

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT (CPS) CAHOKIA HEIGHTS, ST. CLAIR COUNTY, ILLINOIS

IDA PROJECT NO.: CPS-5078

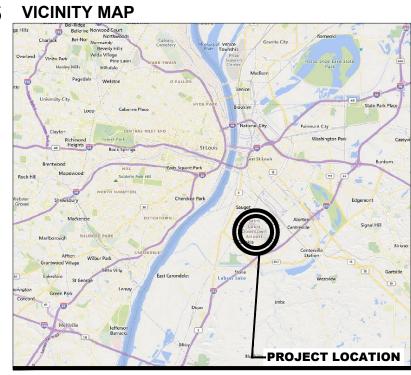
SBG PROJECT NO.: 3-17-SBGP-TBD

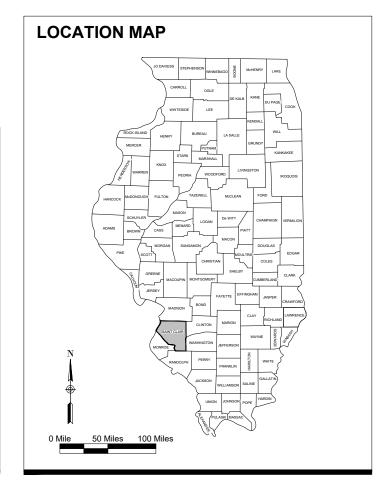
SCOPE OF WORK:

THIS PROJECT CONSISTS OF RELOCATION/RECONSTRUCTION OF A PORTION OF TAXIWAY B AND ASSOCIATED TAXIWAY CONNECTORS. THE PROJECT INCLUDES PAVEMENT MILLING AND REMOVAL, EARTHWORK GRADING, AGGREGATE PLACEMENT, CONCRETE PAVING, BITUMINOUS PAVING, AIRFIELD LIGHTING AND SIGNAGE SYSTEMS INSTALLATION, PAVEMENT MARKING, **EROSION CONTROL ITEMS AND INCIDENTALS.**

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













CUEET	INDEX TO SHEETS
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	INDEX TO SHEETS
3 4	SUMMARY OF QUANTITIES SCOPE OF WORK
5	CONSTRUCTION SAFETY AND PHASING PLAN OVERALL
6	CONSTRUCTION SAFETY AND PHASING PLAN - WORK AREA 1
7	CONSTRUCTION SAFETY AND PHASING PLAN - WORK AREA 2
8	CONSTRUCTION SAFETY AND PHASING PLAN - WORK AREA 3
9 10	CONSTRUCTION SAFETY AND PHASING PLAN - WORK AREA 4 CONSTRUCTION SAFETY DETAILS AND NOTES - SHEET 1
11	CONSTRUCTION SAFETY DETAILS AND NOTES - SHEET 2
12	TYPICAL SECTIONS
13	DRAINAGE DETAILS - SHEET 1
14	DRAINAGE DETAILS - SHEET 2
15 16	EXISTING ALIGNMENT LAYOUT PLAN PROPOSED ALIGNMENT LAYOUT PLAN
17	DEMOLITION PLAN STA. 100+00 TO STA. 109+00
18	DEMOLITION PLAN STA. 150+50 TO STA. 160+50
19	DEMOLITION PLAN STA. 160+50 TO STA. 170+50
20	CONSTRUCTION PLAN STA. 100+00 TO STA. 109+00
21	CONSTRUCTION PLAN STA. 150+50 TO STA. 160+50 CONSTRUCTION PLAN STA. 160+50 TO STA. 170+50
23	PAVEMENT GEOMETRY COORDINATE DATA TABLE
24	PROPOSED PLAN AND PROFILE - ALIGNMENT TRANSITION
25	PROPOSED PLAN AND PROFILE - STA. 150+50 TO STA. 160+50
26	PROPOSED PLAN AND PROFILE - STA. 160+50 TO STA. 170+50
27 28	PROPOSED PLAN AND PROFILE - TAXIWAY B6 PROPOSED PLAN AND PROFILE - TAXIWAY B7
29	PROPOSED PLAN & PROFILE - NORTHWEST UNDERDRAINS
30	PROPOSED PLAN & PROFILE - NORTHEAST UNDERDRAINS SHEET 1
31	PROPOSED PLAN & PROFILE - NORTHEAST UNDERDRAINS SHEET 2
32	PROPOSED PLAN & PROFILE - SOUTHWEST UNDERDRAINS
33 34	PROPOSED PLAN & PROFILE - SOUTHEAST UNDERDRAINS SHEET 1 PROPOSED PLAN & PROFILE - SOUTHEAST UNDERDRAINS SHEET 2
35	PROPOSED PLAN & PROFILE - SOOTHEAST SNOETKING STILET 2
36	PROPOSED UNDERDRAIN SCHEDULES
37	PROPOSED UNDERDRAIN ALIGNMENT DATA TABLES
38	PROPOSED JOINTING PLAN STA. 100+00 TO STA. 104+50
39 40	PROPOSED JOINTING PLAN STA. 150+00 TO STA. 155+50 PROPOSED JOINTING PLAN STA. 155+50 TO STA. 160+50
41	PROPOSED JOINTING PLAN STA. 160+50 TO STA. 165+30
42	PROPOSED JOINTING PLAN STA. 165+30 TO STA. 170+50
43	PROPOSED JOINTING PLAN DETAILS AND NOTES
44	PROPOSED MARKING PLAN STA. 100+00 TO STA. 105+00 PROPOSED MARKING PLAN STA. 150+50 TO STA. 160+50
45 46	PROPOSED MARKING PLAN STA. 150+50 TO STA. 150+50 PROPOSED MARKING PLAN STA. 160+50 TO STA. 170+50
47	PAVEMENT MARKING DETAILS - SHEET 1
48	PAVEMENT MARKING DETAILS - SHEET 2
49	STORM WATER POLLUTION PREVENTION PLAN
50	PROPOSED CROSS SECTION STA. 153+36 TO STA. 155+50
51 52	PROPOSED CROSS SECTION STA. 156+00 TO STA. 158+50 PROPOSED CROSS SECTION STA. 159+00 TO STA. 161+50
53	PROPOSED CROSS SECTION STA. 162+00 TO STA. 164+50
54	PROPOSED CROSS SECTION STA. 165+00 TO STA. 167+50
55	PROPOSED CROSS SECTION STA. 168+00 TO STA. 169+97
56 57	PROPOSED CROSS SECTION - TRANSITION AREA PROPOSED CROSS SECTION - TWY B6 SOUTH
58	PROPOSED CROSS SECTION - TWY B6 SOUTH
59	PROPOSED CROSS SECTION - TWY B7 NORTH
60	EXISTING ELECTRICAL PLAN STA. 150+50 TO STA. 160+50
61	EXISTING ELECTRICAL PLAN STA. 160+50 TO STA. 170+50
62 63	PROPOSED ELECTRICAL VAULT HOMERUN PLAN PROPOSED ELECTRICAL PLAN STA. 110+50 TO STA. 120+50
64	PROPOSED ELECTRICAL PLAN STA. 110+50 TO STA. 120+50 PROPOSED ELECTRICAL PLAN STA. 120+50 TO STA. 130+50
65	PROPOSED ELECTRICAL PLAN STA. 130+50 TO STA. 140+50
66	PROPOSED ELECTRICAL PLAN STA. 140+50 TO STA. 150+50
67	PROPOSED ELECTRICAL PLAN STA. 150+50 TO STA. 160+50
68	PROPOSED ELECTRICAL PLAN STA. 160+50 TO STA. 170+50
70	AIRFIELD LIGHTING NOTES LIGHT LOCATION TABLE
71	TAXI GUIDANCE SIGN SCHEDULE
72	AIRFIELD LIGHT DETAILS
73	TAXI GUIDANCE SIGN DETAILS - SHEET 1

75	L-806 WIND CONE DETAILS
76	HANDHOLE AND SPLICE CAN DETAILS
77	AIRFIELD LIGHTING CABLE SPLICE DETAILS
78	CONDUIT TRENCH DETAIL
79	DUCT BANK DETAILS AND NOTES
80	CABLE AND DUCT MARKER DETAILS
81	ELECTRICAL NOTES SHEET 1
82	ELECTRICAL NOTES SHEET 2
83	GROUNDING DETAILS
84	GROUND RESISTANCE TESTING DETAILS
85	GROUNDING NOTES
86	ELECTRICAL LEGEND AND ABBREVIATIONS
87	PROPOSED ELECTRIAL PLAN FOR VAULT
88	EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR AIRPORT VAULT
89	EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS
90	EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS
91	PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR AIRPORT VAULT
92	PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAY 5-23
93	PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS
94	HIGH VOLTAGE WIRING SCHEMATIC FOR TWY B CKT 3 LIGHTING
95	SERIES CIRCUIT CABLE TESTING DETAILS
96	LEGEND PLATE SCHEDULES - 1
97	LEGEND PLATE AND SIGNAGE SCHEDULES - 2
98	EXISTING WIRING SCHEMATIC FOR RUNWAY 30R REILS
99	EXISTING ONELINE DIAGRAM FOR RWY 30R REILS

GENERAL NOTES:

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

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

MATERIAL CERTIFICATIONS

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



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Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Telephone: 217.788.2450 Fax: 217.788.2503



BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

	NO.	DATE	DES	CRIPT	ION	
	NO.	DATE	DES	DWN	REV	
į	ISSUE: NOVEMBER 22, 2024					
i	PROJECT NO: 23A0001D					
	CAD FILE: G-002-FLP.DWG					

DESIGN BY: JRH 3/22/2024

DRAWN BY: JRH 3/22/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

INDEX TO SHEETS

	SUMMARY OF QUANTITIES	- BASE BID		
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUIL QUANTIT
AR107508	L-806 WC 8' INTERNALLY LIT	EACH	1	
AR108066	REIL CABLE	FOOT	540	
AR108108	1/C #8 5 KV UG CABLE	FOOT	25,260	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1	
AR110012	2" DIRECTIONAL BORE	FOOT	960	
AR110202	2" PVC DUCT, DIRECT BURY	FOOT	13,590	
AR125416	MITL-BASE MOUNTED-LED	EACH	98	
AR125565	SPLICE CAN	EACH	21	
AR125964	RELOCATE TAXI GUIDANCE SIGN	EACH	7	
AR150510	ENGINEER'S FIELD OFFICE	L SUM	1	
AR150520	MOBILIZATION	L SUM	1	
AR150530	TRAFFIC MAINTENANCE	L SUM	1	
AR152410	UNCLASSIFIED EXCAVATION	CU YD	17,221	
AR156500	TEMPORARY EROSION CONTROL	L SUM	1	
AR156530	TEMPORARY SEEDING	ACRE	7.21	
AR208540	OVERSIZE AGGREGATE	TON	21.073	
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	7.306	
AR306606	LEAN CONCRETE BASE COURSE - 6"	SQ YD	11,744	
AR401613	BIT, SURF, CSEMETHOD I, SUPERPAVE	TON	945	
AR401650	BITUMINOUS PAVEMENT MILLING	SQ YD	3,857	
AR403613	BIT. BASE CSEMETHOD I, SUPERPAVE	TON	638	
AR501512	12" PCC PAVEMENT	SQ YD	11.399	
AR501530	PCC TEST BATCH	EACH	1	
AR501910	REMOVE & REPLACE PCC PAVEMENT	SQ YD	192	
AR602510	BITUMINOUS PRIME COAT	GALLON	779	
AR603510	BITUMINOUS TACK COAT	GALLON	512	
AR620520	PAVEMENT MARKING-WATERBORNE	SQ FT	3,313	
AR620525	PAVEMENT MARKING-BLACK BORDER	SQ FT	4.212	
AR701900	REMOVE PIPE	FOOT	610	
AR705506	6" PERFORATED UNDERDRAIN	FOOT	4,186	
AR705548	8" NON PERFORATED UNDERDRAIN	FOOT	210	
AR705620	UNDERDRAIN END SECTION	EACH	2	
AR705635	UNDERDRAIN COLLECTION STRUCTURE	EACH	2	
AR705640	UNDERDRAIN CLEANOUT	EACH	8	
AR800469	REMOVE BITUMINOUS & PCC PAVEMENT	SQ YD	11,473	
AR800409 AR800476	REMOVE AIRFIELD LIGHTING	L SUM	11,473	
	TAXI SIGN 2 MODULE, LED UPGRADE		*	
AR800538	TAXI SIGN 2 MODULE, LED UPGRADE	EACH EACH	11	
AR800539	TAXI SIGN 3 MODULE, LED UPGRADE		7 2	
AR800540		EACH		
AR800564	CABLE & CCR TESTING & CALIBRATION	L SUM	1	
AR901510	SEEDING	ACRE	7.21	
AR908514	LIGHT-DUTY HYDRAULIC MULCH	ACRE	7.21	I

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE BID					
ITEM NO. DESCRIPTION UNIT QUANTITY QUANTITY QUANTITY					
AS109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1		

EARTHWORK QUANTITY SUMMARY					
CALCULATION	CUT (CY)	FILL (CY)	FILL + 20% (CY)	NET (CY)	
CPS-5078	17,221	5,338	6,405	10,816 (EXCESS)	
TOTAL	17,221**	5,338	6,405	10,816 (EXCESS)	

^{**} USED TO CALCULATE AR152410 PAY ITEM QUANTITY

EARTHWORK NOTES:

- 1. EARTHWORK QUANTITIES (CUT/FILL VOLUMES) SHOWN ABOVE WERE CALCULATED UTILIZING AUTODESK CIVIL3D SOFTWARE THROUGH AUTOCAD. THE CALCULATION METHOD WAS BY A COMPARISON OF SURFACE MODELS CREATED WITH EXISTING SURVEY DATA AND PROPOSED DESIGN GRADES. THE VOLUMES WERE CALCULATED IN TWO PARTS: THE CUT/FILL VOLUME REQUIRED TO CORE OUT AND FILL FOR THE PROPOSED PAVEMENT SECTION AS COMPARED TO THE EXISTING SUBGRADE DATUM, AND THE CUT/FILL VOLUMES REQUIRED FOR PROPOSED GRADING WORK OUTSIDE OF THE PROPOSED PAVEMENT LIMITS AS COMPARED TO THE EXISTING GROUND SURFACE. THE NUMBERS IN THE SUMMARY TABLES ABOVE REPRESENT A TOTAL OF THESE TWO PARTS ADDED TOGETHER FOR CLARITY.
- 2. ANOTHER PROJECT (CPS-4839) WITHIN THIS PROJECT'S CONSTRUCTION AREA IS ANTICIPATED TO BE CONSTRUCTED PRIOR TO OR CONCURRENT WITH THIS PROJECT. THE PROPOSED DRAINAGE IMPROVEMENTS AND GRADING HAVE BEEN REFLECTED IN THIS PROJECT AS EXISTING, HOWEVER THE ACTUAL ITEMS LOCATION AND ELEVATIONS MAY VARY SLIGHTLY. THE CONTRACTOR WILL BE PROVIDED A COPY OF THE RECORD DRAWINGS ONCE AVAILABLE.
- FOLLOWING THE PROJECT AWARD, THE ENGINEER CAN PROVIDE THE RELEVANT AUTOCAD AND CIVIL 3D SURFACE MODEL FILES TO THE AWARDED CONTRACTOR UPON REQUEST TO ASSIST WITH CONSTRUCTION LAYOUT.
- 3. EXCESS MATERIAL TO BE PLACED ON STOCKPILE AS IDENTIFIED ON THE PLANS, AND GRADED TO DRAIN AT A MAINTAINABLE SLOPE (MAX 4:1). DISTURBED AREAS OF STOCKPILE SHALL BE RESTORED WITH TEMPORARY SEEDING, SEEDING AND MULCHING IN ACCORDANCE WITH THE SPECIFICATIONS AND PAID FOR UNDER THE RESPECTIVE 156, 901 AND 908 PAY ITEMS. AN ESTIMATED QUANTITY OF 1.50 ACRES OF TEMPORARY SEEDING, SEEDING AND MULCHING EACH HAVE BEEN INCLUDED WITHIN THE BID QUANTITIES FOR STOCKPILE RESTORATION.
- 4. IF THE CONTRACTOR DOES NOT AGREE TO THE QUANTITIES DERIVED WITH THIS METHOD, THE CONTRACTOR MAY ELECT TO SURVEY THE EXISTING GRADES PRIOR TO BEGINNING EARTHWORK OPERATIONS AS PART OF THE PROJECT FOR THE ENGINEER TO REVIEW FOR A POTENTIAL ADJUSTMENT TO THE PAY ITEM QUANTITY. ANY COSTS ASSOCIATED WITH THE CONTRACTOR-PROVIDED SURVEY SHALL BE INCLUDED IN THE ORIGINAL BID AMOUNT, AND NO ADDITIONAL PAYMENT SHALL BE MADE. FOLLOWING THE CONTRACTOR'S VERIFICATION OF THE QUANTITIES, IF A DISAGREEMENT STILL EXISTS, THE MEASUREMENT OF THE EARTHWORK FOR PAYMENT SHALL BE MADE BY THE RESIDENT ENGINEER, PER THE 152 SPECIFICATION, WHO SHALL TAKE CROSS-SECTIONAL ELEVATIONS AND MEASUREMENTS OF THE EXISTING GROUND SURFACE AND THE FINAL GROUND GRADED SURFACE FOR COMPARISON.



Offices Nationwide www.hanson-inc.com

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

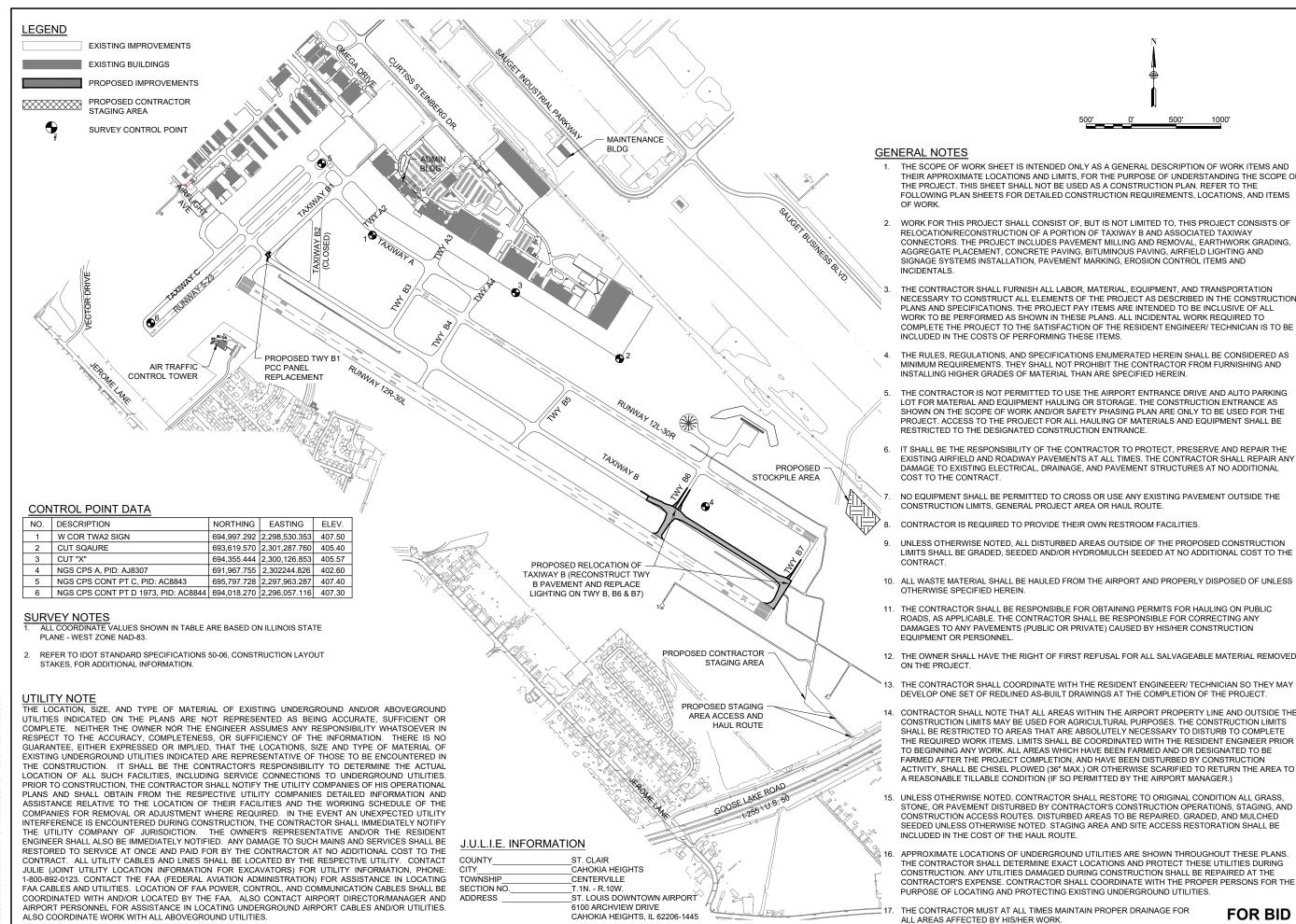
IDA NO.: CPS-5078 CONTRACT NO.: SD064

	NO.	DATE	DESCRIPTION				
	NO. DATE		DES	DWN	REV		
	ISSUE: NOVEMBER 22, 2024						
i	PROJECT NO: 23A0001D						
	CAD FILE: G-002-FLP.DWG						
	DESIGN BY: JRH 1/16/2024						

DRAWN BY: NLD 1/16/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

SUMMARY OF QUANTITIES





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CAD FILE: G-003-SOW.DWG

DESIGN BY: .IRH 1/16/2024 DRAWN BY: NLD 1/16/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

SCOPE OF WORK

GENERAL NOTES

- AIRPORT SECURITY SHALL BE MAINTAINED THROUGHOUT THE PROJECT. THE CONTRACTOR SHALL BE RESTRICTED TO THE DESIGNATED WORK AREAS. THE CONTRACTOR SHALL ENSURE THAT ACCESS POINTS USED BY CONSTRUCTION VEHICLES AND PERSONNEL ARE CLOSED WHEN NOT IN USE AND LOCKED AT THE END OF THE WORKING DAY TO PREVENT UNAUTHORIZED ACCESS TO THE AIRPORT MOVEMENT AREA.
- 2. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
- AT THE COMPLETION OF ALL CONSTRUCTION, THE HAUL ROUTE AND CONSTRUCTION EQUIPMENT PARKING AREA SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS PER THE SPECIFICATIONS.
- 4. THE COSTS FOR PROVISION, PLACEMENT, MAINTENANCE AND REMOVAL OF BARRICADES, CLOSURE CROSSES, TRAFFIC CONTROL SIGNAGE. AND ALL ASSOCIATED INCIDENTALS SHALL BE PAID FOR UNDER TRAFFIC MAINTENANCE.
- 5. THE COSTS FOR CONSTRUCTION, MAINTENANCE OF ACCESS GATE, HAUL ROUTE AND EQUIPMENT STAGING AREA, AND ALL ASSOCIATED INCIDENTALS SHALL BE PAID FOR UNDER MOBILIZATION.

SAFETY PLAN COMPLIANCE DOCUMENT

PRIOR TO THE ISSUANCE OF A CONSTRUCTION NOTICE-TO-PROCEED (NTP), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING A SAFETY PLAN COMPLIANCE DOCUMENT IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5370-2G, PARAGRAPH 2.4.2, OR EQUIVALENT SECTION IN SUBSEQUENT/CURRENT ISSUE. THE AIRPORT DIRECTOR SHALL APPROVE THIS DOCUMENT AND SUBMIT TO THE AIRPORT FOR APPROVAL PRIOR TO THE NTP ISSUANCE.

SEQUENCE OF CONSTRUCTION

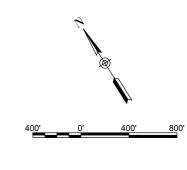
- 1. THIS PROJECT WILL BE BROKEN INTO FOUR SEPARATE WORK AREAS IN AN EFFORT TO MINIMIZE IMPACTS TO AIRPORT OPERATIONS. THE CONTRACTOR SHALL EXPEDITE WORK TO ENSURE THE AIRCRAFT MOVEMENT AREAS ARE OPEN WHEN
- 2. TAXIWAY CONNECTORS B6 AND B7 SHALL BE CLOSED TO AIRCRAFT FOR THE DURATION OF THE PROJECT. A PORTION OF TAXIWAY B SHALL BE CLOSED FOR THE DURATION OF THE PROJECT, AND THE INTERSECTION OF TAXIWAY B AND B1 SHALL BE CLOSED FOR A PORTION OF THE PROJECT. DURING INSTALLATION OF THE AIRFIELD ELECTRICAL HOMERUN PORTIONS OF TAXIWAY B AND ASSOCIATED CONNECTOR TAXIWAYS WILL BE CLOSED.
- 3. THE CONTRACTOR IS REQUIRED TO COMPLETE ALL WORK AREAS, HOWEVER:
 - WORK AREAS 1 AND 3 MAY NOT BE PERFORMED SIMULTANEOUSLY.
 - WORK AREAS 2A AND 2B MAY NOT BE PERFORMED SIMULTANEOUSLY
 - WORK AREA 4A SHALL BE PERFORMED WHILE WORK AREA 2A IS BEING PERFORMED TO MINIMIZE RUNWAY DOWNTIME
 - WORK AREAS 4B THROUGH 4F SHALL BE PERFORMED CONSECUTIVELY TO MINIMIZE TAXIWAY B DOWNTIME

NO DEVIATION FROM THESE PROVISIONS WILL BE ALLOWED UNLESS THE CONTRACTOR CAN PROVIDE A SIGNIFICANT BENEFIT TO THE OWNER FOR.

	CRITICAL POINTS							
	T	CRITICAL	OINT	э Г	1	Γ		
POINT #	LATITUDE	LONGITUDE	SE	AGL	AMSL	DESCRIPTION		
1	038° 34' 29.09"	-090° 09' 50.30"	411'	25'	436'	EQUIPMENT		
2	038° 34' 30.01"	-090° 09' 51.43"	405'	25'	430'	EQUIPMENT		
3	038° 34' 35.53"	-090° 09' 41.50"	410'	2'	412'	BARRICADES		
4	038° 34' 20.90"	-090° 09' 34.27"	411'	2'	413'	BARRICADES		
5	038° 34' 10.04"	-090° 09' 12.32"	410'	2'	412'	BARRICADES		
6	038° 34' 03.97"	-090° 08' 50.60"	404'	2'	406'	BARRICADES		
7	038° 33' 59.63"	-090° 08' 54.20"	407'	25'	432'	EQUIPMENT		
8	038° 33' 51.77"	-090° 08' 38.32"	406'	25'	431'	EQUIPMENT		
9	038° 33' 56.08"	-090° 08' 34.61"	403'	2'	405'	BARRICADES		
10	038° 34' 23.87"	-090° 09' 21.31"	401'	2'	403'	BARRICADES		
11	038° 34' 27.15"	-090° 09' 27.88"	402'	2'	404'	BARRICADES		
12	038° 34' 28.29"	-090° 09' 51.38"	411'	2'	413'	BARRICADES		
13	038° 33' 49.02"	-090° 08' 32.76"	406'	25'	431'	HAUL ROUTE		
14	038° 33' 43.77"	-090° 08' 33.97"	399'	25'	424'	HAUL ROUTE		
15	038° 33' 41.37"	-090° 08' 34.55"	397'	25'	422'	STAGING AREA		
16	038° 33' 58.98"	-090° 08' 46.93"	402'	25'	427'	WIND CONE		
17	038° 34' 22.20"	-090° 09' 38.19"	410'	25'	435'	EQUIPMENT		
18	038° 34' 32.78"	-090° 09' 58.77"	410'	25'	435'	STAGING AREA		

WORK AREA 2A

DOWNTOWN GROUND FREQUENCY = 121.80

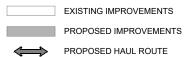


LEGEND

CP#14)

CONSTRUCTION

ENTRANCE



PROPOSED EQUIPMENT PARKING AREA EXISTING FENCE

PROPOSED BARRICADES

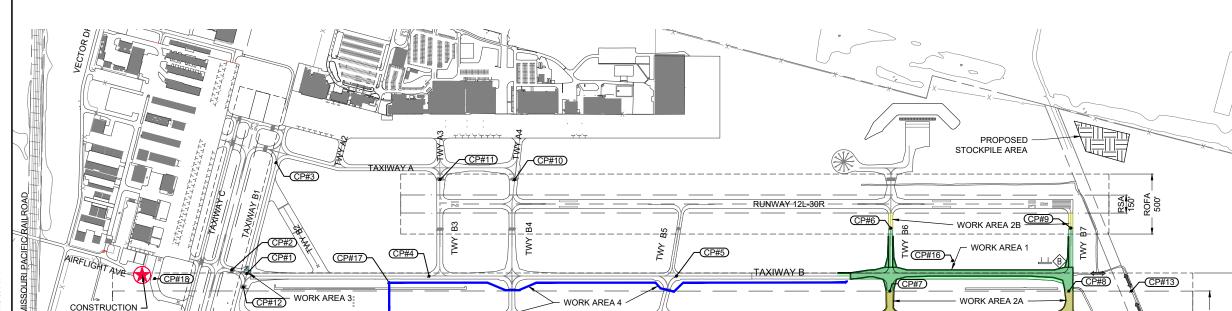
⊕ ⊤⊤ CONSTRUCTION SIGN

PROPOSED CLOSURE CROSS

(5) CRITICAL POINT RUNWAY SAFETY AREA

RUNWAY OBJECT FREE AREA

AIRFIELD SECURITY GATE



WORK AREA

ELECTRICAL VAULT

RUNWAY 12R-30L

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DOWNTOWN AIRPORT BI-STATE DEVELOPMENT

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SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D CAD FILE: G-004-SFY.DWG DESIGN BY: BSS 3/22/2024

SHEET TITLE

CONSTRUCTION ENTRANCE

FOR BID

(WORK AREA 1 & 2)

CONSTRUCTION SAFETY AND PHASING PLAN **OVERALL**

DRAWN BY: CWS 3/22/2024

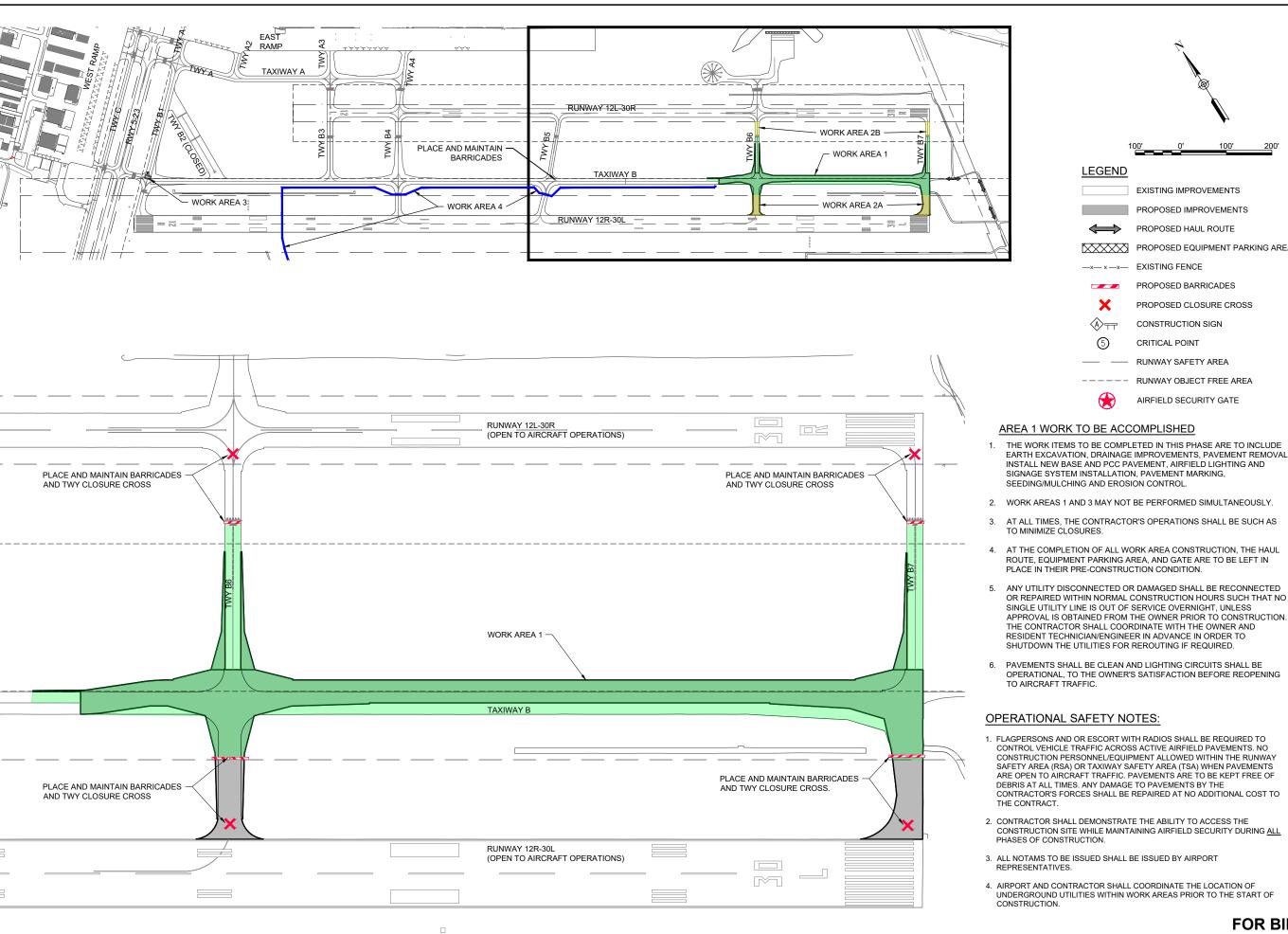
REVIEWED BY: BSS 4/19/2024

CONSTRUCTION -

(WORK AREA 3)

JEROME LANE

ENTRANCE





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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCINITION REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D

CAD FILE: G-004-SFY.DWG DESIGN BY: BSS 3/22/2024

DRAWN BY: CWS 3/22/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION SAFETY AND PHASING PLAN -WORK AREA 1

3. ALL NOTAMS TO BE ISSUED SHALL BE ISSUED BY AIRPORT

LEGEND

 \bigcirc

(5)

EXISTING IMPROVEMENTS

PROPOSED IMPROVEMENTS

PROPOSED EQUIPMENT PARKING AREA

PROPOSED HAUL ROUTE

PROPOSED BARRICADES PROPOSED CLOSURE CROSS

CONSTRUCTION SIGN

CRITICAL POINT RUNWAY SAFETY AREA RUNWAY OBJECT FREE AREA AIRFIELD SECURITY GATE

EARTH EXCAVATION, DRAINAGE IMPROVEMENTS, PAVEMENT REMOVAL,

INSTALL NEW BASE AND PCC PAVEMENT, AIRFIELD LIGHTING AND

ROUTE, EQUIPMENT PARKING AREA, AND GATE ARE TO BE LEFT IN

SINGLE UTILITY LINE IS OUT OF SERVICE OVERNIGHT, UNLESS APPROVAL IS OBTAINED FROM THE OWNER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND

OPERATIONAL, TO THE OWNER'S SATISFACTION BEFORE REOPENING

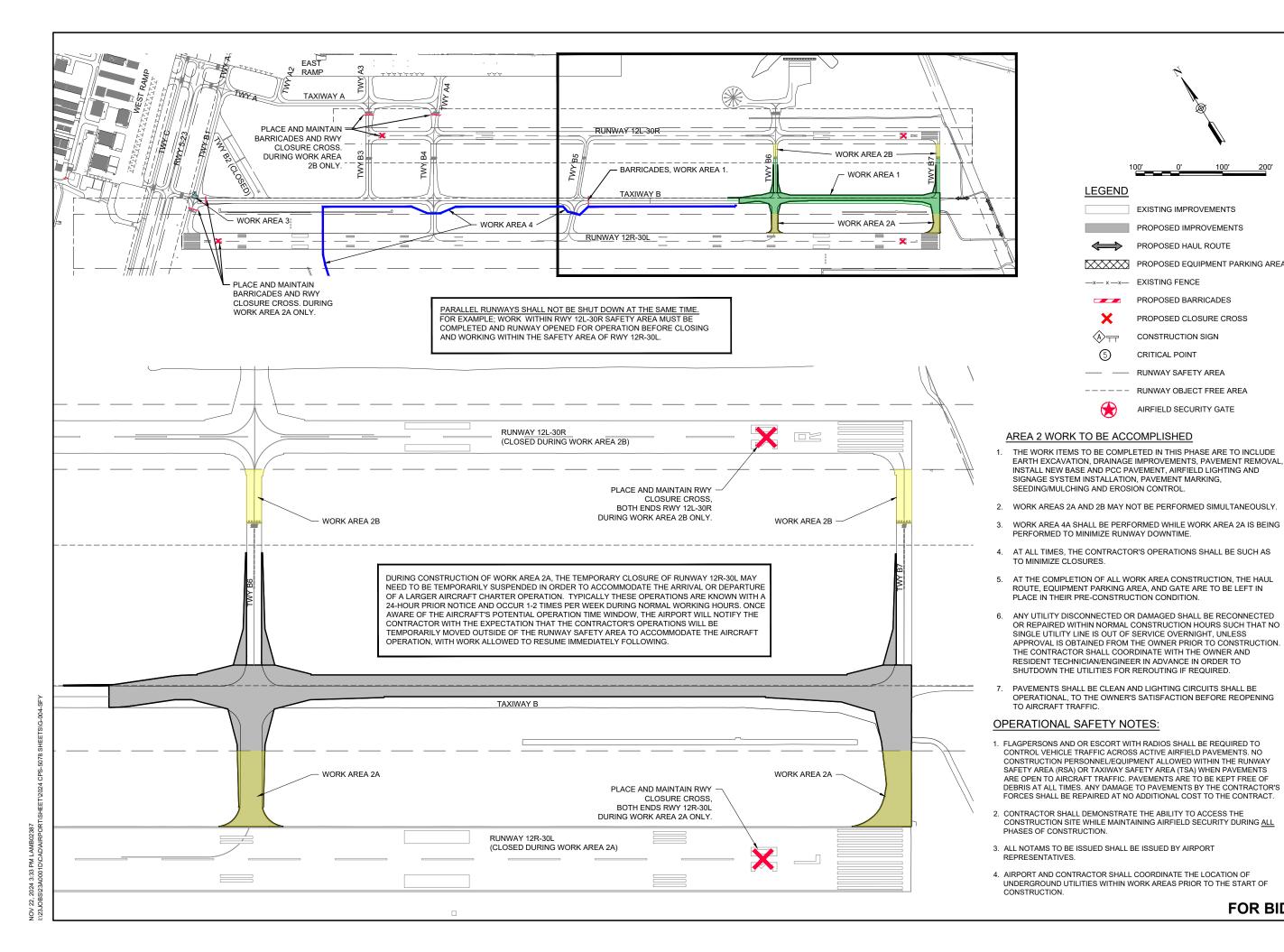
SIGNAGE SYSTEM INSTALLATION, PAVEMENT MARKING,

SEEDING/MULCHING AND EROSION CONTROL

TO AIRCRAFT TRAFFIC.

EXISTING FENCE

4. AIRPORT AND CONTRACTOR SHALL COORDINATE THE LOCATION OF UNDERGROUND UTILITIES WITHIN WORK AREAS PRIOR TO THE START OF CONSTRUCTION





Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Telephone: 217,788,2450 Fax: 217.788.2503



EXISTING IMPROVEMENTS

PROPOSED IMPROVEMENTS

PROPOSED EQUIPMENT PARKING AREA

PROPOSED HAUL ROUTE

PROPOSED BARRICADES

CONSTRUCTION SIGN

CRITICAL POINT RUNWAY SAFETY AREA RUNWAY OBJECT FREE AREA AIRFIELD SECURITY GATE

PROPOSED CLOSURE CROSS

EXISTING FENCE

BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

JE OF ILL BARRY S. 062-057281

SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCION ...

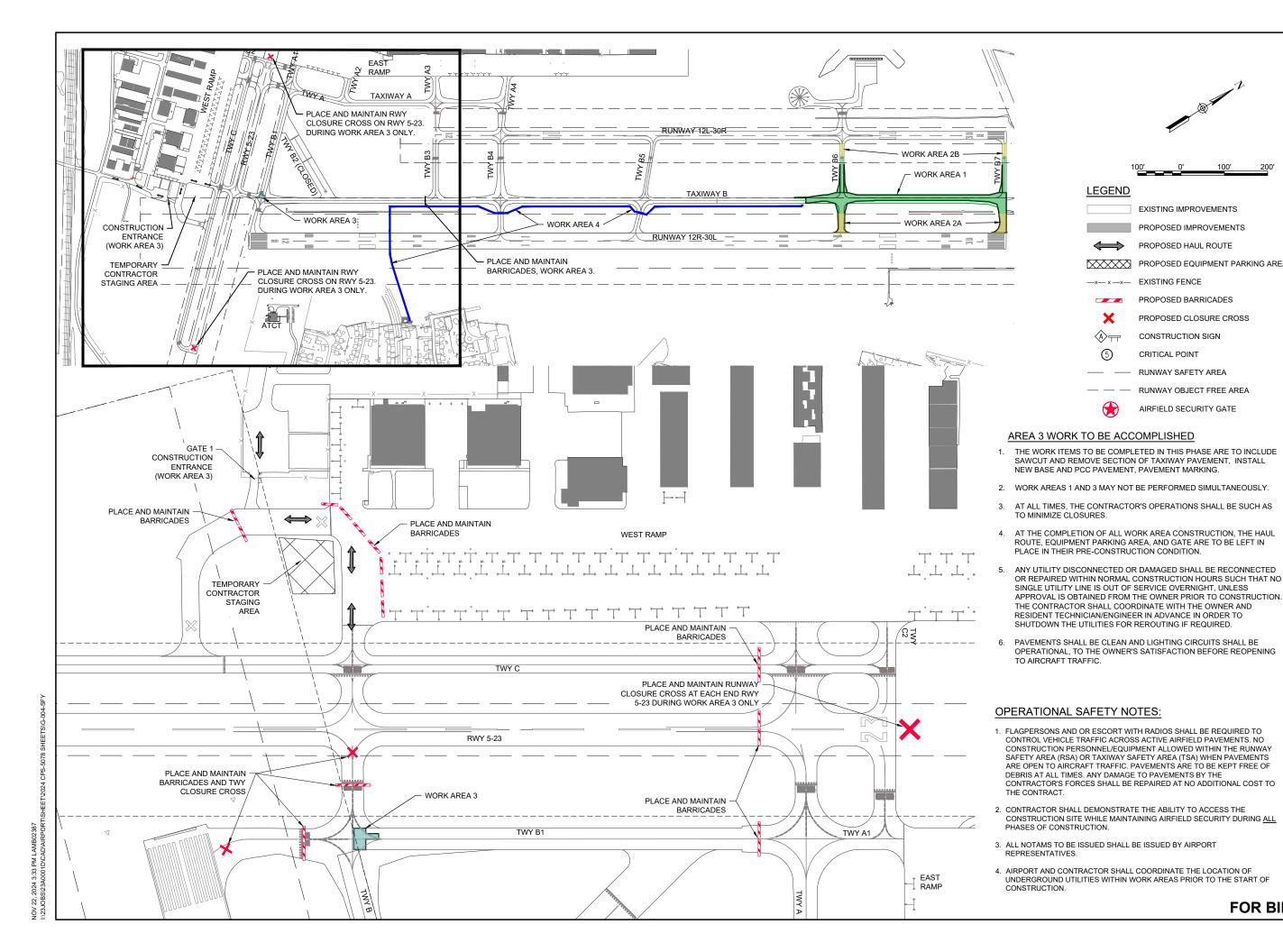
DES DWN REV ISSUE: NOVEMBER 22, 2024

PROJECT NO: 23A0001D

CAD FILE: G-004-SFY.DWG DESIGN BY: BSS 3/22/2024 DRAWN BY: CWS 3/22/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION SAFETY AND PHASING PLAN -WORK AREA 2





LEGEND

 \bigcirc

(5)

EXISTING IMPROVEMENTS

PROPOSED IMPROVEMENTS

PROPOSED EQUIPMENT PARKING AREA

PROPOSED HAUL ROUTE

PROPOSED BARRICADES PROPOSED CLOSURE CROSS

CONSTRUCTION SIGN

CRITICAL POINT RUNWAY SAFETY AREA RUNWAY OBJECT FREE AREA AIRFIELD SECURITY GATE

EXISTING FENCE

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SHEET TITLE

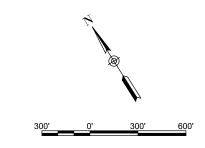
CONSTRUCTION SAFETY AND PHASING PLAN -WORK AREA 3

AREA 4 WORK TO BE ACCOMPLISHED

- THE WORK ITEMS TO BE COMPLETED IN THIS PHASE ARE TO INCLUDE INSTALLATION OF THE AIRFIELD LIGHTING HOMERUN FROM THE TAXIWAY B WORK AREA BACK TO THE AIRFIELD ELECTRICAL VAULT BUILDING.
- 2. WORK AREA 4A SHALL BE PERFORMED WHILE WORK AREA 2A IS BEING PERFORMED TO MINIMIZE RUNWAY DOWNTIME.
- 3. WORK AREAS 4B THROUGH 4F SHALL BE PERFORMED CONSECUTIVELY TO MINIMIZE TAXIWAY B DOWNTIME.
- 4. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS
- 5. AT THE COMPLETION OF ALL WORK AREA CONSTRUCTION, THE HAUL ROUTE, EQUIPMENT PARKING AREA, AND GATE ARE TO BE LEFT IN PLACE IN THEIR PRE-CONSTRUCTION CONDITION
- 6. ANY UTILITY DISCONNECTED OR DAMAGED SHALL BE RECONNECTED OR REPAIRED WITHIN NORMAL CONSTRUCTION HOURS SUCH THAT NO SINGLE UTILITY LINE IS OUT OF SERVICE OVERNIGHT, UNLESS APPROVAL IS OBTAINED FROM THE OWNER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND RESIDENT TECHNICIAN/ENGINEER IN ADVANCE IN ORDER TO SHUTDOWN THE UTILITIES FOR REROUTING IF REQUIRED.
- PAVEMENTS SHALL BE CLEAN AND LIGHTING CIRCUITS SHALL BE OPERATIONAL, TO THE OWNER'S SATISFACTION BEFORE REOPENING TO AIRCRAFT TRAFFIC.

OPERATIONAL SAFETY NOTES:

- 1. FLAGPERSONS AND OR ESCORT WITH RADIOS SHALL BE REQUIRED TO CONTROL VEHICLE TRAFFIC ACROSS ACTIVE AIRFIELD PAVEMENTS. NO CONSTRUCTION PERSONNEL/EQUIPMENT ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR TAXIWAY SAFETY AREA (TSA) WHEN PAVEMENTS ARE OPEN TO AIRCRAFT TRAFFIC. PAVEMENTS ARE TO BE KEPT FREE OF DEBRIS AT ALL TIMES. ANY DAMAGE TO PAVEMENTS BY THE CONTRACTOR'S FORCES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
- CONTRACTOR SHALL DEMONSTRATE THE ABILITY TO ACCESS THE CONSTRUCTION SITE WHILE MAINTAINING AIRFIELD SECURITY DURING <u>ALL</u> PHASES OF CONSTRUCTION.
- 3. ALL NOTAMS TO BE ISSUED SHALL BE ISSUED BY AIRPORT REPRESENTATIVES
- AIRPORT AND CONTRACTOR SHALL COORDINATE THE LOCATION OF UNDERGROUND UTILITIES WITHIN WORK AREAS PRIOR TO THE START OF CONSTRUCTION.





EXISTING IMPROVEMENTS

PROPOSED IMPROVEMENTS

PROPOSED HAUL ROUTE

PROPOSED EQUIPMENT PARKING AREA

—x— x—x— EXISTING FENCE

PROPOSED BARRICADES

PROPOSED CLOSURE CROSS

→ CONSTRUCTION SIGN

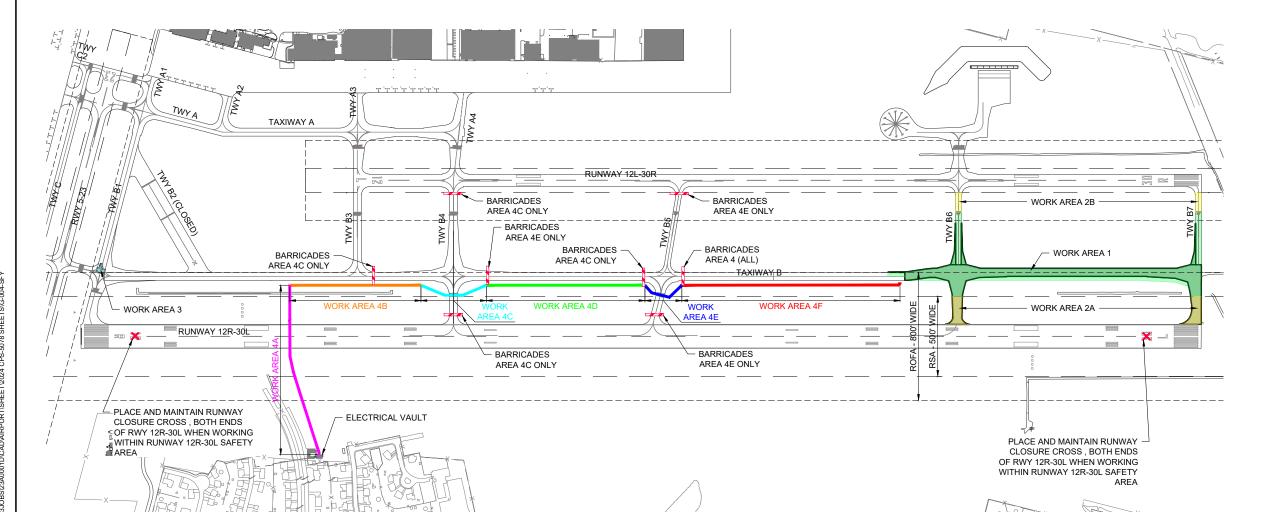
CONSTRUCTION

(5) CRITICAL POINT

- RUNWAY SAFETY AREA

-- RUNWAY OBJECT FREE AREA

AIRFIELD SECURITY GATE





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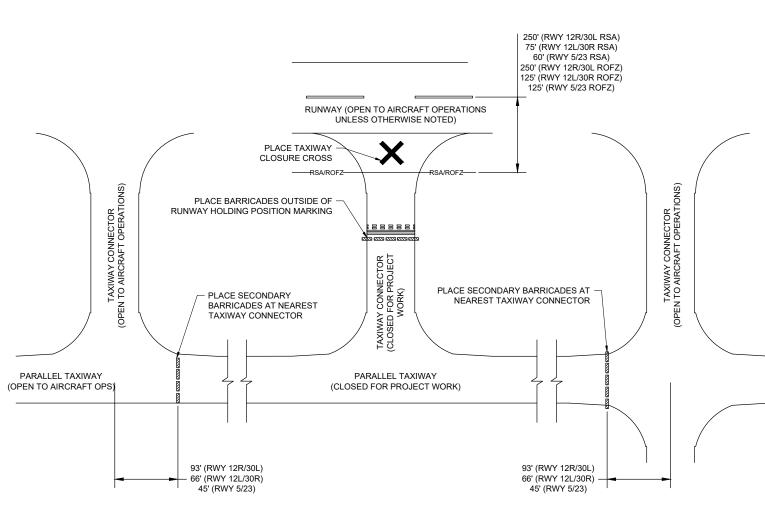
DESIGN BY: BSS 3/22/2024

DRAWN BY: JRH 3/22/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION SAFETY AND PHASING PLAN -WORK AREA 4



PLACEMENT OF BARRICADES AROUND WORK AREAS

NOT TO SCALE

SAFETY NOTES

- 1. FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEET AND THIS SHEET.
- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER/TECHNICIAN AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEETS.
- 4. NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE AIRPORT MANAGER RESERVES THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- 5. CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW. EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A
 CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING,
 MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- 7. NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' OF ANY ACTIVE RUNWAY, WITHIN 93' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE RESIDENT ENGINEER/TECHNICIAN) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- 8. CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "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.
- NO OPEN TRENCHES WITHIN 250' OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 93' OF ANY AIRPORT OPERATIONS AREA
 WILL BE PERMITTED UNLESS PROPERLY MARKED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR
 COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
- 10. OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- 11. NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL WILL BE PERMITTED ON THE AIRPORT. HOWEVER OTHER EQUIPMENT TALLER THAN 25' MAY BE PERMITTED WITH THE APPROVAL OF THE AIRPORT MANAGER AND AIRSPACE APPROVAL BY THE FAA
- 12. NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER NO FLARE POTS ARE ALLOWED ON THE PROJECT
- 13. SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEPT, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- 14. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER/TECHNICIAN. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS. STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- 15. ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- 16. CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER/TECHNICIAN.
- 17. CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- 18. THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- 19. CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
- 20. CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
- 21. CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- 22. THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
- 23. NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE RUNWAY, INCLUDING TURF RUNWAYS. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN 250' OF ANY ACTIVE RUNWAY CENTERLINE (150' FOR RUNWAY 5-23) OR WITHIN 93' OF ANY OTHER ACTIVE AIRPORT TAXIWAY OR APRON. HOWEVER, CONSTRUCTION MAY BE PERMITTED IN THESE AREAS IF THE CONTRACTOR HAS GAINED APPROVAL FROM THE AIRPORT MANAGER AT LEAST 7 DAYS IN ADVANCE OF THE SCHEDULED CONSTRUCTION PERIOD AND THE OPERATIONAL AREA IS CLOSED TO TRAFFIC AND PROPER NOTAMS ARE ISSUED BY THE AIRPORT MANAGER TO THE APPROPRIATE FLIGHT SERVICE STATION.
- 24. UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.

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	CAD FILE: G-004-SFY.DWG						
	DESIGN BY: JRH 1/16/2024						

DRAWN BY: NLD 1/16/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION SAFETY DETAILS AND NOTES - SHEET 1

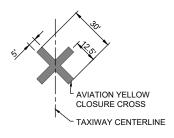


LIGHTED RUNWAY CLOSURE MARKER

NOT TO SCALE

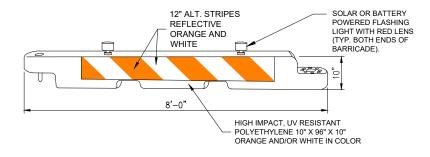
NOTES:

- THE AIRPORT HAS TWO LIGHTED RUNWAY CLOSURE MARKERS AVAILABLE FOR USE ON THIS PROJECT. THE COST OF PLACING, OPERATING, MAINTAINING, AND REMOVING THE LIGHTED RUNWAY CLOSURE MARKERS WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL RETURN THE AIRPORT-OWNED LIGHTED RUNWAY CLOSURE MARKERS IN THE SAME OR BETTER CONDITION THAN AT THE START OF
- 2. THE CONTRACTOR SHALL MAKE FREQUENT INSPECTION OF THE LIGHTED CROSSES AND MAKE PROMPT REPAIRS AS NECESSARY
- 3. THE CONTRACTOR SHALL BE ON-CALL FOR 24-HOUR EMERGENCY MAINTENANCE WHEN LIGHTED CROSSES ARE BEING USED
- 4. THE LIGHTED MARKERS SHALL BE PLACED OVER THE RUNWAY NUMERALS AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.
- 5. LIGHTED MARKERS SHALL BE SECURED FROM WIND EFFECTS BY THE CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.
- 6. THE LIGHTED MARKERS SHALL BE IN PLACE AND OPERATING WHENEVER THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED.



TAXIWAY CLOSURE CROSS MARKER DETAIL

NOT TO SCALE



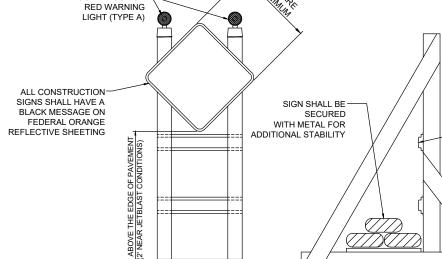
LOW-PROFILE BARRICADE DETAIL

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.





CONSTRUCTION SIGNS



SIGNAGE NOTES

FRONT VIEW

CONSTRUCTION

ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.

SIDE VIEW

- 2. UNLESS OTHERWISE SPECIFIED, CONSTRUCTION SIGNS SHALL BE MOUNTED ON PORTABLE OR NON-PORTABLE SUPPORTS. A PORTABLE SUPPORT IS DEFINED AS A TYPICAL SIGN STANDARD AS SHOWN ON THIS SHEET, OR A SMALL LIGHT WEIGHT TRAILER. A NON-PORTABLE SUPPORT IS DEFINED AS DRIVEN METAL OR WOOD POST. ALL SIGNS, REGARDLESS OF THE TYPE OF SUPPORTS USED, SHALL BE MOUNTED SUCH THAT THE MESSAGE ON THE SIGN IS LEVEL IN THE HORIZONTAL PLANE AFTER PLACEMENT. THE COST OF CONSTRUCTION WARNING LIGHTS SHALL BE INCLUDED IN THE COST OF THE CONSTRUCTION SIGNS
- 3 CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY ARE TO BE USED IN A LOW INTENSITY FLASHING MODE (TYPE A).
- 4. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- 5. COST FOR PROVIDING, PLACING, MAINTAINING, AND REMOVING SIGNS SHALL BE INCLUDED IN ITEM AR150540 HAUL ROUTE

BARRICADE NOTES

- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- 2. BARRICADES SHALL BE "LOW-PROFILE" WITH A MAXIMUM HEIGHT OF 18" ABOVE GROUND, EXCLUSIVE OF ASSOCIATED WARNING LIGHTS AND FLAGS.
- 3. BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT, WITH GAPS BETWEEN BARRICADES NOT TO EXCEED 4' WIDE. BARRICADES ARE TO BE SET BACK 66' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS
- 4. CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE
- 5. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR BEFORE SUNSET AND 1/2 HOUR AFTER SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- 6. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND
- 7. THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- 8. COST FOR PROVIDING, PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE PAID FOR UNDER ITEM AR150530 - TRAFFIC MAINTENANCE.



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SIGN SHALL BE BRACED

AND CONSTRUCTED

2" x 4" AND 4" x 4" IN

ACCORDANCE WITH

TOGETHER USING

IDOT DETAILS

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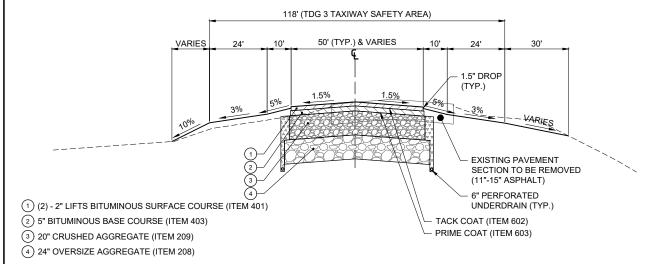
CONSTRUCTION SAFETY DETAILS AND NOTES - SHEET

(4) 24" OVERSIZE AGGREGATE (ITEM 208)

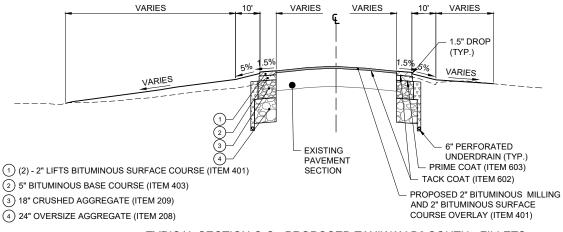
TYPICAL SECTION A-A - PROPOSED TAXIWAY B

NOT TO SCALE

THE CONTRACTOR MAY CHOOSE TO WIDEN THE LEAN CONCRETE BASE COURSE TO SUPPORT THE PAVING MACHINE TRACK IN ACCORDANCE WITH ITEM 501 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS; HOWEVER ANY WIDENING OF THE LEAN CONCRETE BASE COURSE BEYOND THE WIDTH SHOWN IN THE TYPICAL CROSS SECTION IN THE PLAN SET SHALL BE AT THE CONTRACTOR'S EXPENSE, AND NO ADDITIONAL PAYMENT SHALL BE MADE.

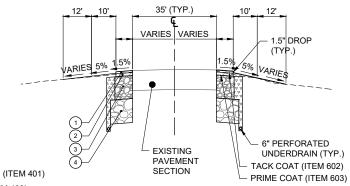


TYPICAL SECTION B-B - PROPOSED TAXIWAY B TRANSITION NOT TO SCALE



TYPICAL SECTION C-C - PROPOSED TAXIWAY B6 SOUTH - FILLETS

NOT TO SCALE

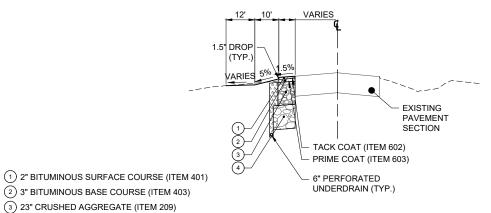


- 1) 2" BITUMINOUS SURFACE COURSE (ITEM 401)
- 2 3" BITUMINOUS BASE COURSE (ITEM 403)
- (3) 23" CRUSHED AGGREGATE (ITEM 209)
- (4) 24" OVERSIZE AGGREGATE (ITEM 208)

4) 24" OVERSIZE AGGREGATE (ITEM 208)

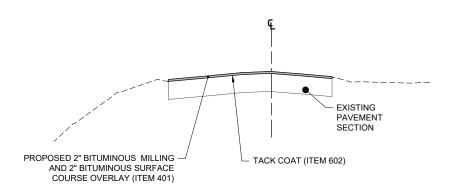
TYPICAL SECTION D-D - PROPOSED TAXIWAY B6 NORTH - FILLETS

NOT TO SCALE



TYPICAL SECTION E-E - PROPOSED TAXIWAY B7 NORTH - FILLET

NOT TO SCALE



TYPICAL SECTION F-F - PROPOSED TAXIWAY B7 SOUTH - MILL & OVERLAY

HMA MIXTURE REQUIREMENTS							
APPLICATION	DESIGN AIR VOIDS	AC / PG	AGG. QUALITY	MAX. RAP	DENSITY ACCEPTANCE		
AR401613 BIT. SURF. COURSE-METHOD I, SUPERPAVE	3.0% @ Ndesign = 50	SBS PG 70-22	A	0%	MAT: NUCLEAR GAUGE PER 401-6.1 JOINT: CORES PER 401-6.1		
AR403613 BIT. BASE COURSE-METHOD I, SUPERPAVE	3.0% @ Ndesign = 50	SBS PG 70-22	B OR BETTER	30% PER 403-3.4	MAT: NUCLEAR GAUGE PER 403-6.1 JOINT: CORES PER 403-6.1		

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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

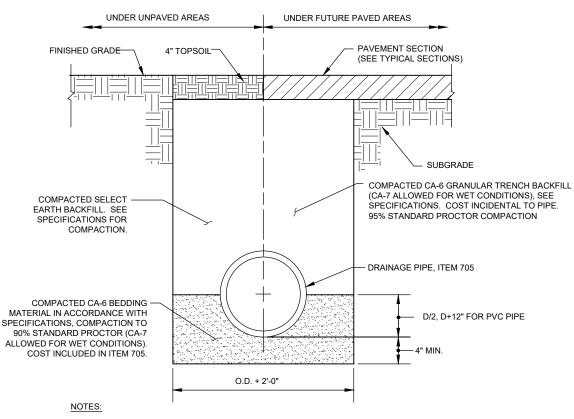
NO.	DATE	DES	CRIPT	ION	
INO.	DAIL	DES	DWN	REV	
ISSUE: NOVEMBER 22, 2024					
PROJECT NO: 23A0001D					
CAD FILE: C-301-TYP.DWG					

SHEET TITLE

TYPICAL SECTIONS

DESIGN BY: JRH 3/20/2024 DRAWN BY: JRH 3/22/2024

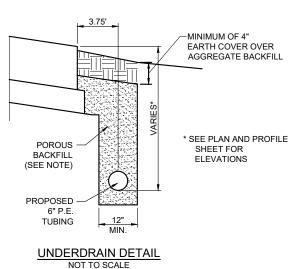
REVIEWED BY: BSS 4/19/2024



- UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
- 2. WITHIN 3 FEET OF PAVED AREA, GRANULAR BACKFILL IS TO BE USED INSTEAD OF EARTH BACKFILL.
- 3. AT CONTRACTOR'S OPTION IDOT CONTROLLED LOW STRENGTH MATERIAL WITH A HIGH EARLY STRENGTH, "FLASH FILL", MAY BE USED INSTEAD OF GRANULAR TRENCH BACKFILL UNDER PAVEMENTS AT NO ADDITIONAL COST TO THE CONTRACT.

PIPE TRENCH 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.

UNDERDRAIN NOTES

- 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.
- 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.



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DRAINAGE DETAILS -SHEET 1

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

EUNDERDRAIN TUBING

ITEM 610 PCC

CONCRETE PIPE OR MANHOLE

STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION

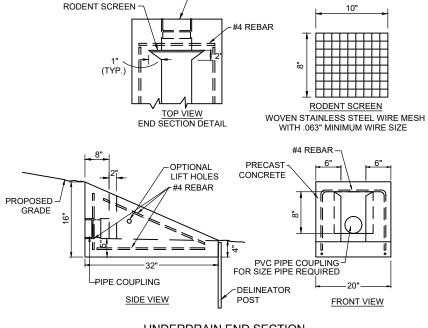
NOT TO SCALE

NOT TO SCALE

EXPANSION

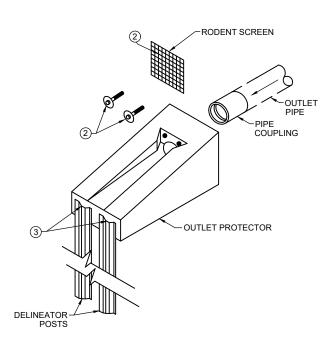
CLEANOUT TYPE B

NOT TO SCALE



-PIPE COUPLING

UNDERDRAIN END SECTION NOT TO SCALE





9-3/4"

EAST JORDAN 6206 DRAINAGE GRATE, OR APPROVED EQUAL

NOTE: CONTRACTOR TO VERIFY FRAME/GRATE WILL WORK WITH PROPOSED PIPE PRIOR TO ORDERING.

CLEANOUT NOTES

DIAMETER OF PIPE AS SPECIFIED.

24" DIA. X 18" DEEP -

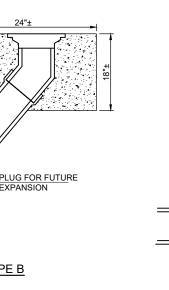
CLASS SI CONCRETE

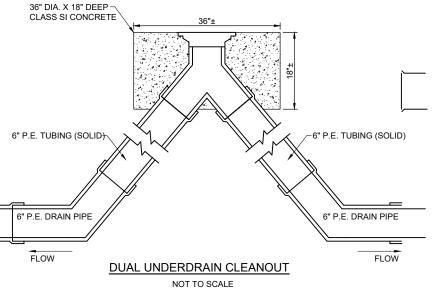
6" P.E. TUBING (SOLID) -

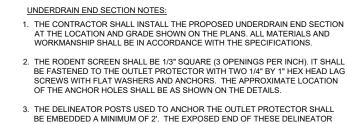
6" P.E. DRAIN PIPE

- TOP OF CLEANOUTS SHALL BE FLUSH WITH FINISHED GROUND LINE AT LOCATION SHOWN ON PLANS.
- 1/2" CHAMFER TO BE USED ON ALL EXPOSED EDGES OF CLEANOUTS
- THE CONCRETE SHALL BE STRUCTURAL PORTLAND CEMENT CONCRETE (NON-REINFORCED) IN ACCORDANCE WITH SPECIFICATION

FLOW







AR705620 UNDERDRAIN END SECTION.

POSTS SHALL NOT PROTRUDE ABOVE THE TOP EDGE OF THE DOWNSTREAM END OF THE OUTLET PROTECTOR. 4. THE PROPOSED UNDERDRAIN END SECTION WILL BE PAID FOR UNDER ITEM

UNDERDRAIN END SECTION ISOMETRIC DETAIL NOT TO SCALE

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IDA NO.: CPS-5078 CONTRACT NO.: SD064

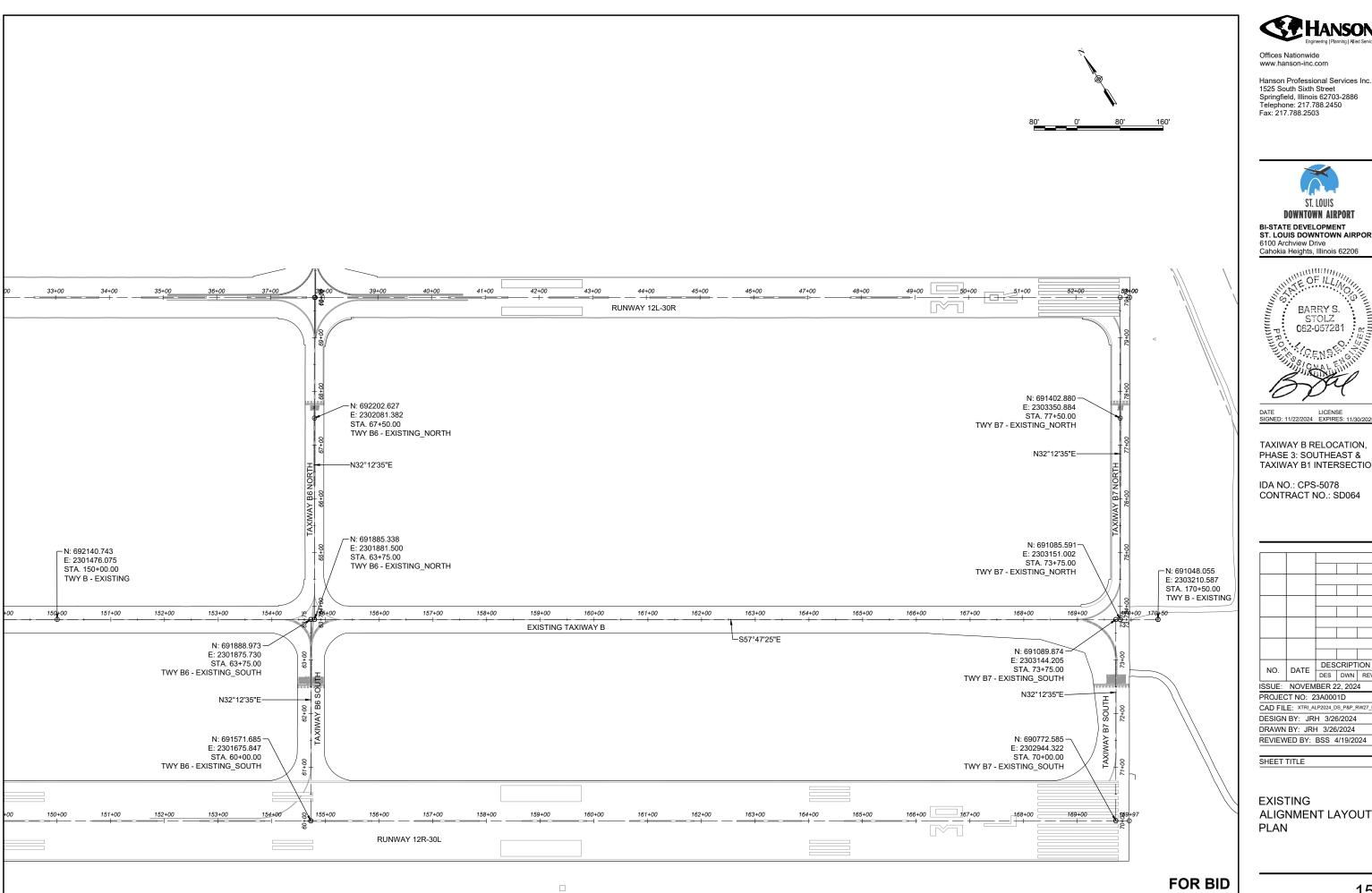
NO. DATE DESCRIPTION REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D

CAD FILE: C-301-TYP.DWG DESIGN BY: JRH 3/26/2024 DRAWN BY: JRH 3/26/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

DRAINAGE DETAILS -SHEET 2





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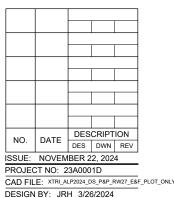
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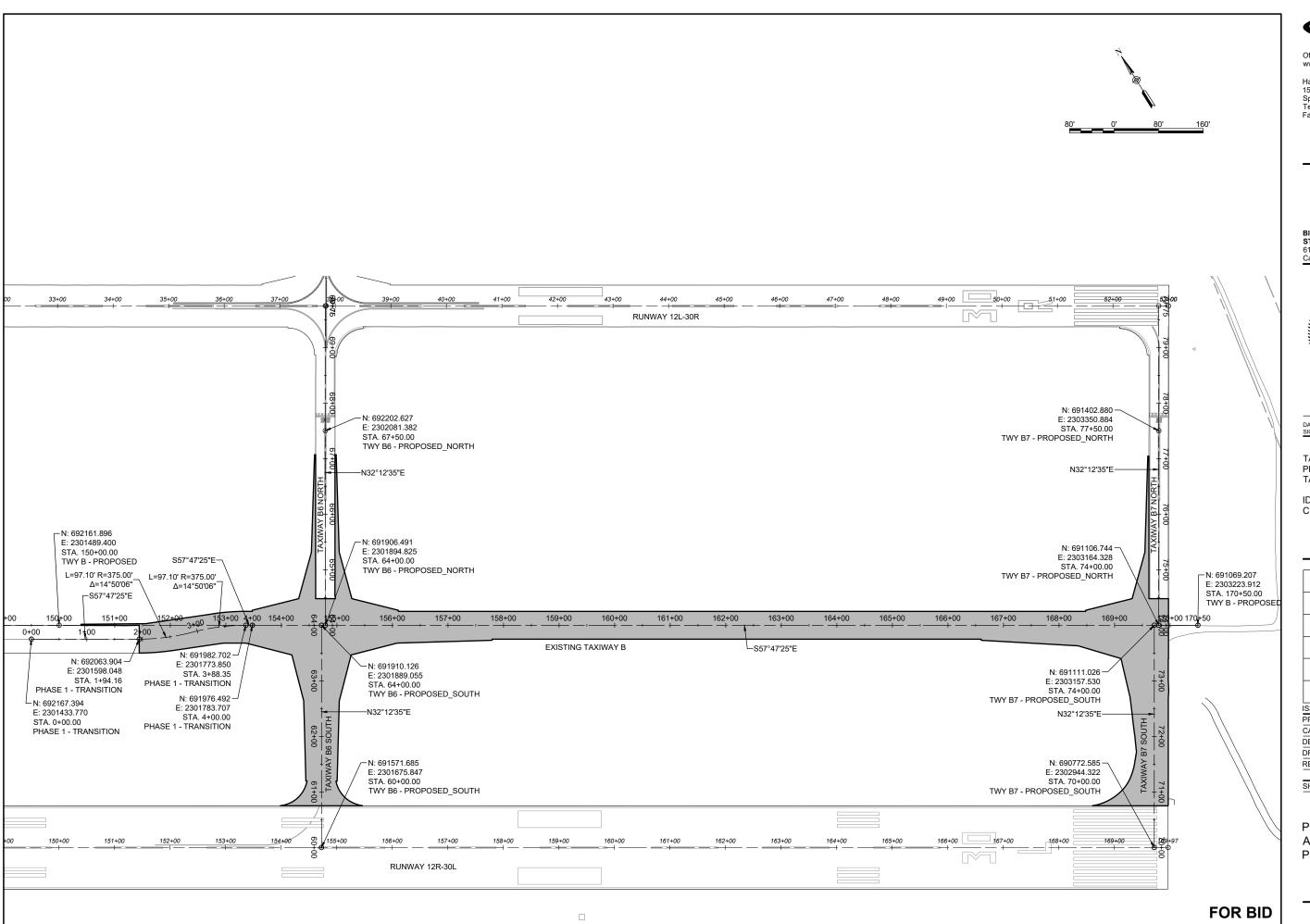
LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



EXISTING ALIGNMENT LAYOUT PLAN





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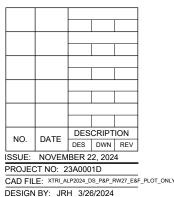
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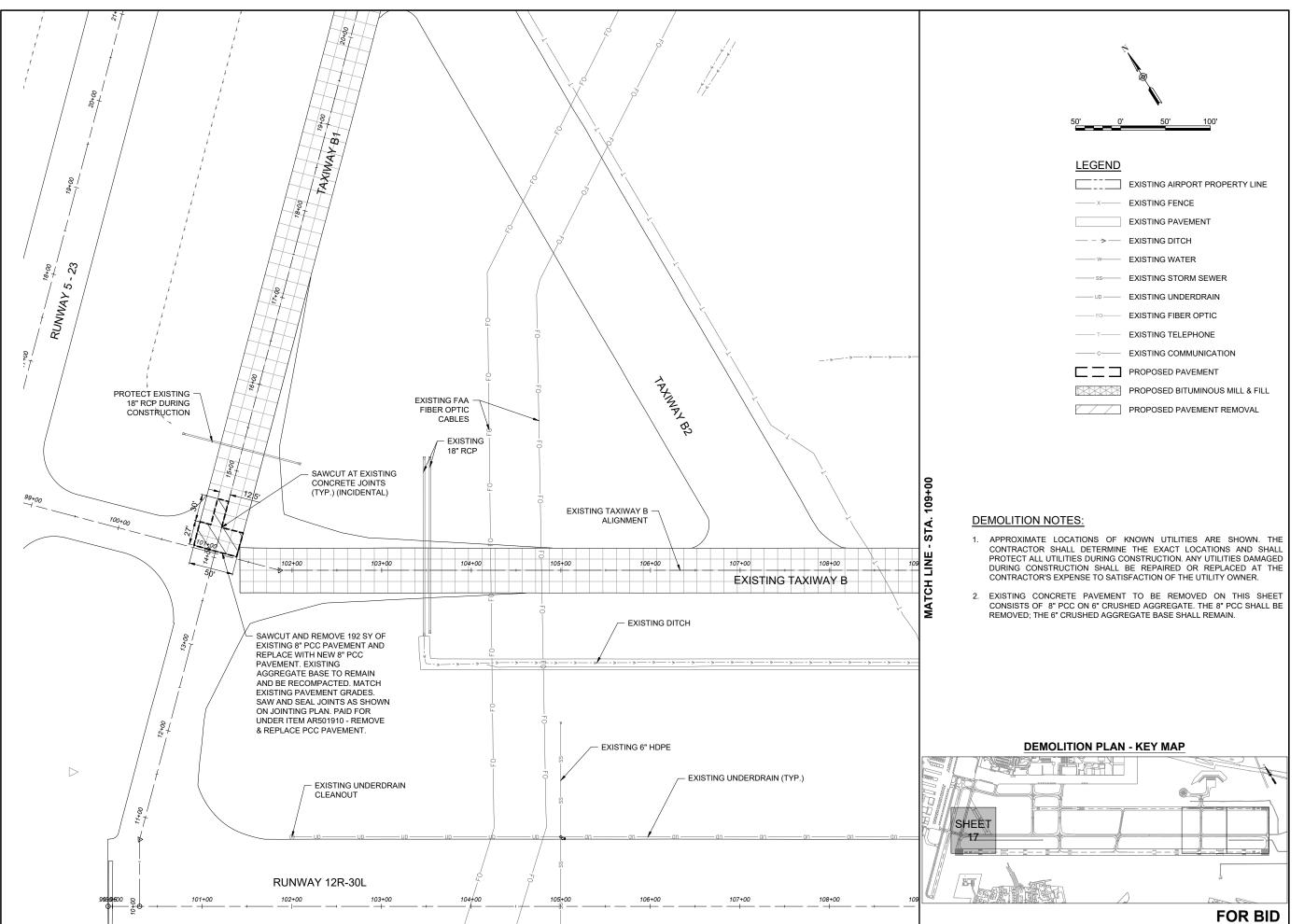
IDA NO.: CPS-5078 CONTRACT NO.: SD064



DRAWN BY: JRH 3/26/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED ALIGNMENT LAYOUT PLAN





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NO.	DATE	DESCRIPTI		ION	
NO.	DATE	DES	DWN	REV	
ISSUE: NOVEMBER 22, 2024					

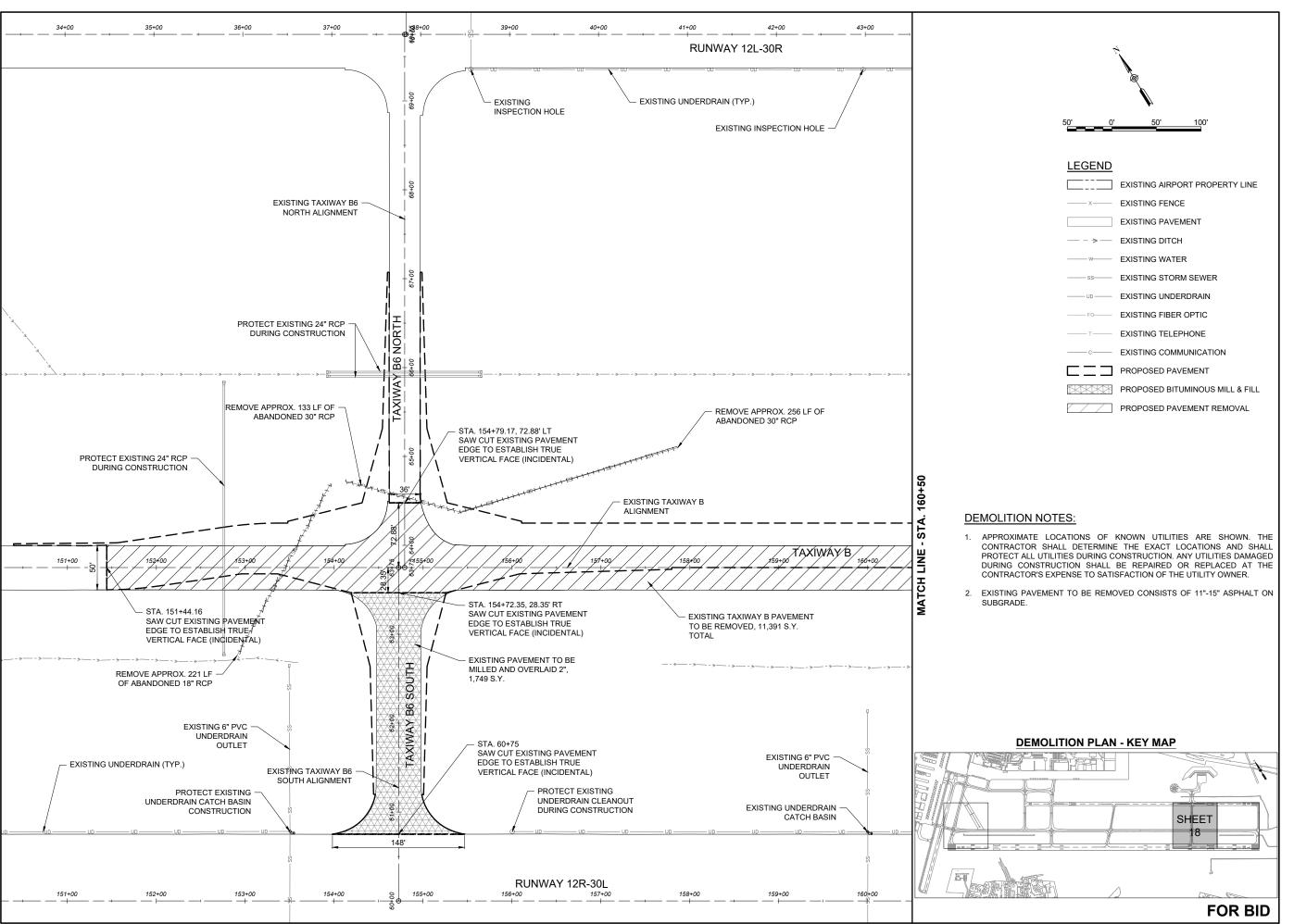
PROJECT NO: 23A0001D

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DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/25/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

DEMOLITION PLAN STA. 100+00 TO STA. 109+00





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NO. DATE DESCRIPTION DES DWN REV

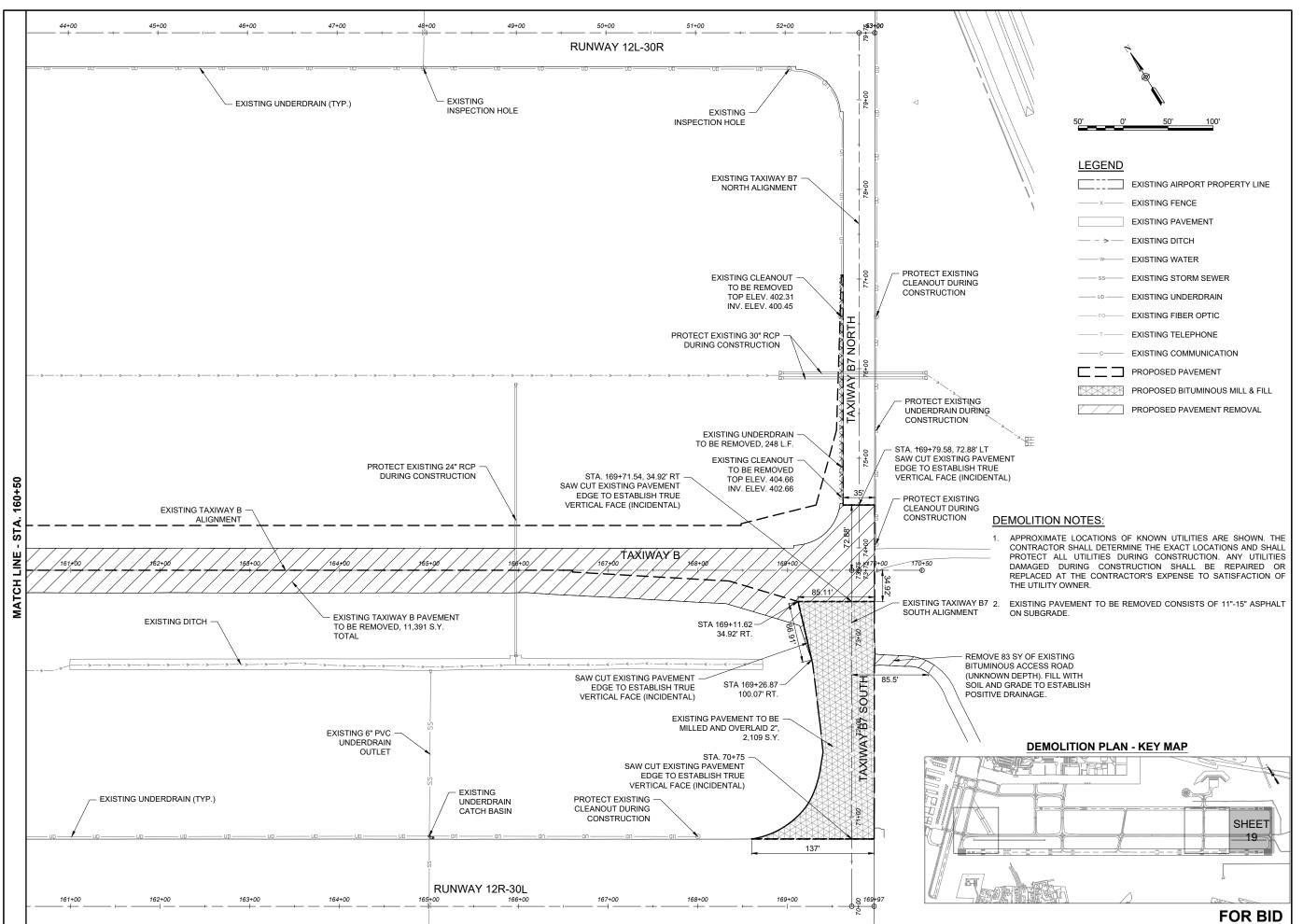
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SHEET TITLE

DEMOLITION PLAN STA. 150+50 TO STA. 160+50





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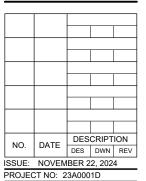
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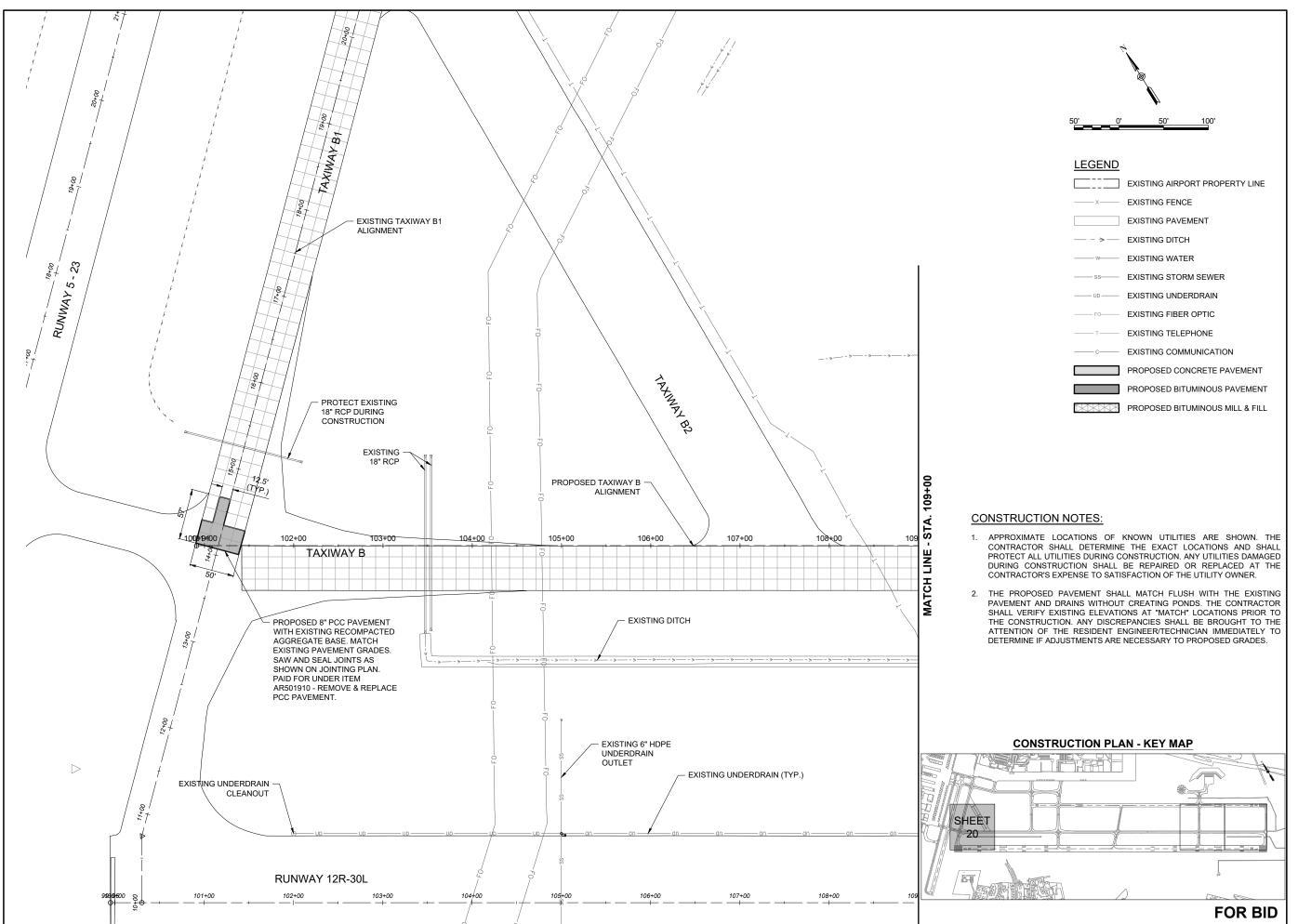


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DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/25/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

DEMOLITION PLAN STA. 160+50 TO STA. 170+50





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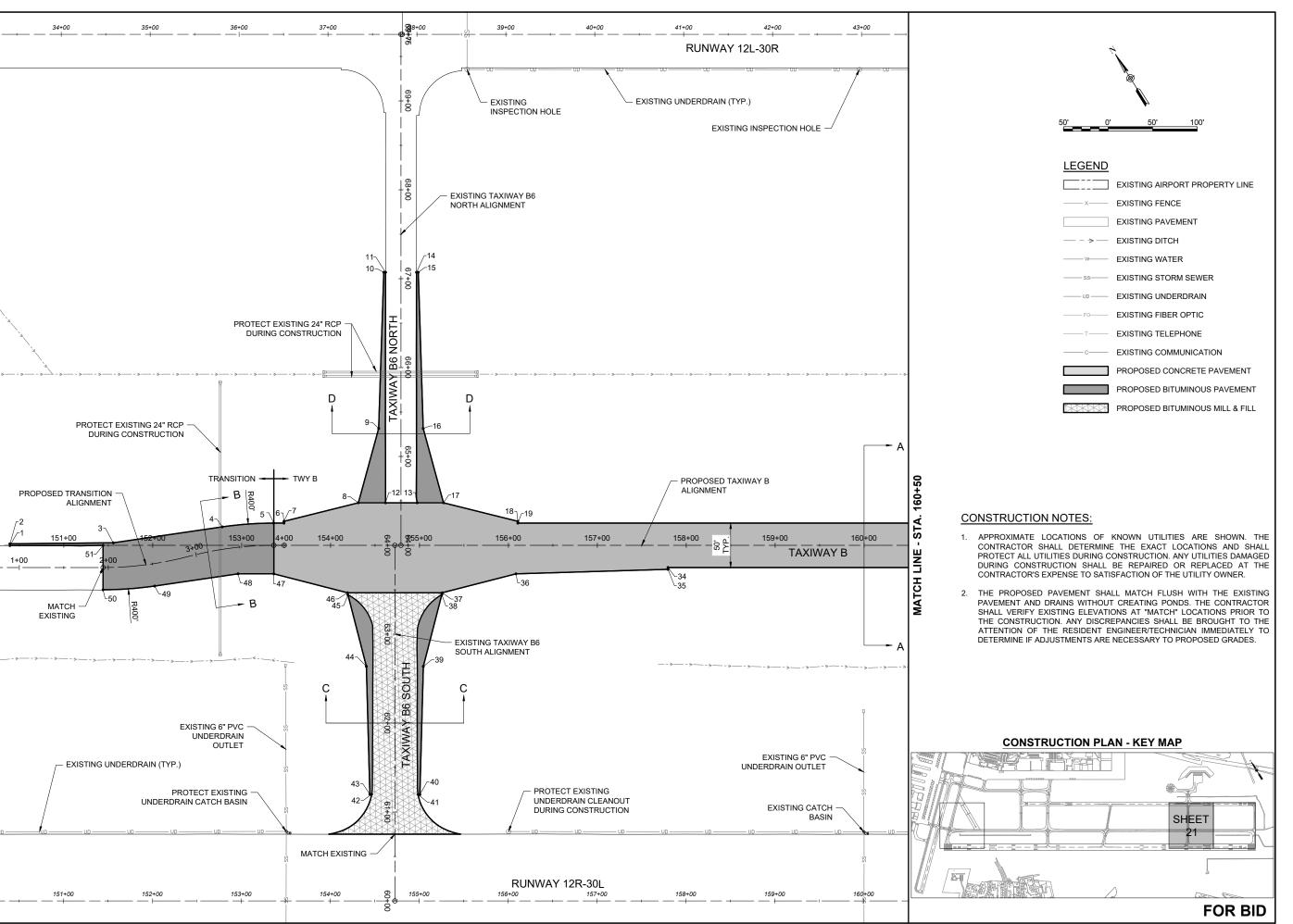
DESIGN BY: JRH 3/17/2024

DRAWN BY: AJL 3/24/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION PLAN STA. 100+00 TO STA. 109+00





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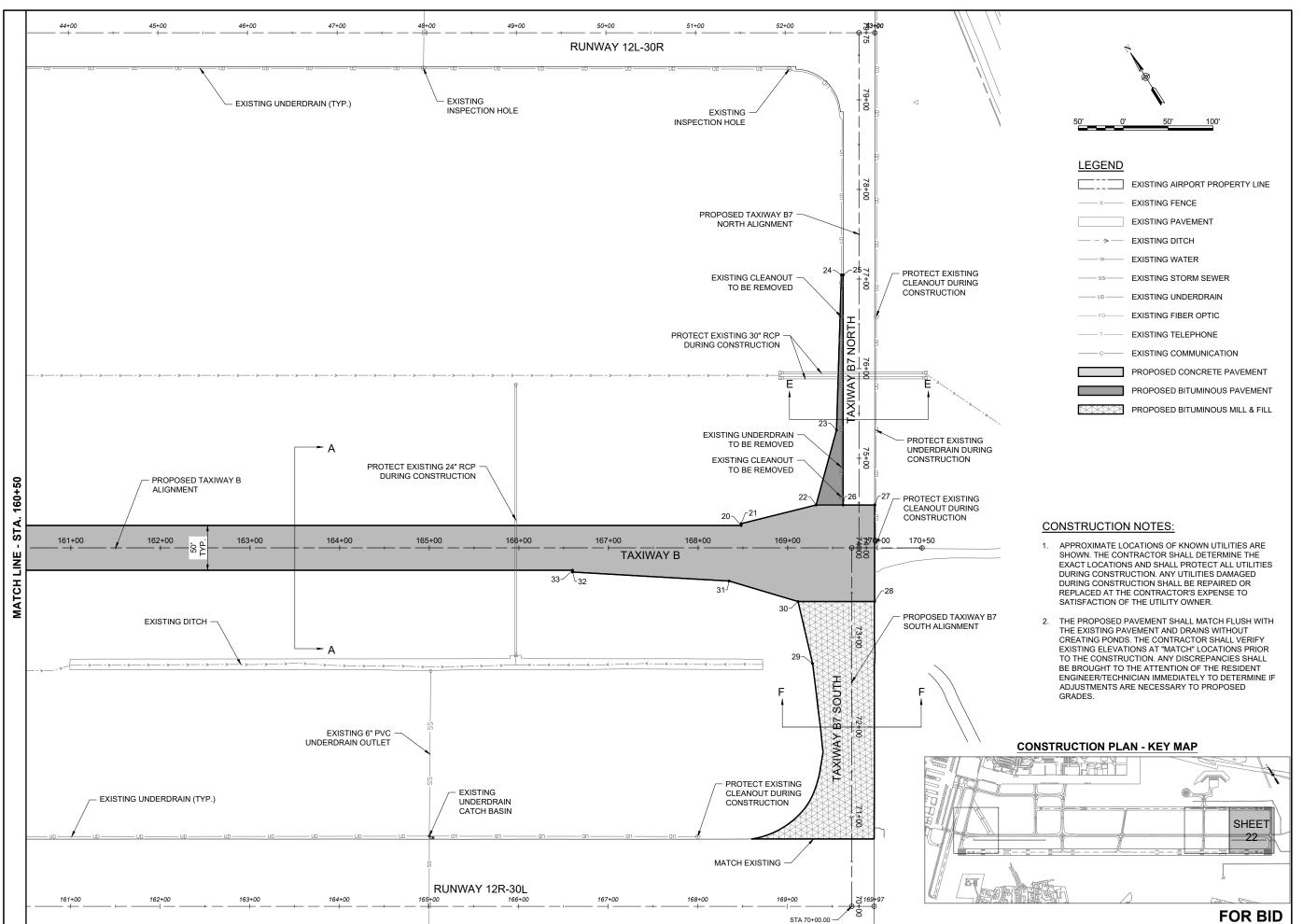
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DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/24/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION PLAN STA. 150+50 TO STA. 160+50





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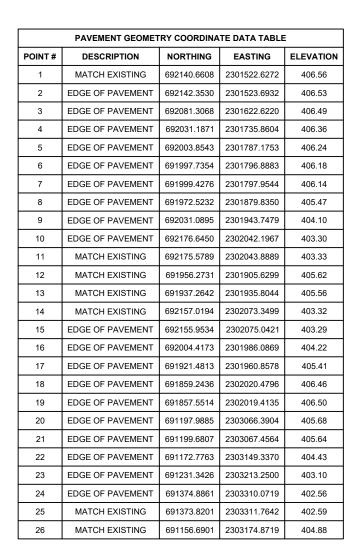
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DRAWN BY: AJL 3/24/2024
REVIEWED BY: BSS 4/19/2024

SHEET TITLE

CONSTRUCTION PLAN STA. 160+50 TO STA. 170+50



	PAVEMENT GEOMETRY COORDINATE DATA TABLE							
POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION				
27	MATCH EXISTING	691137.9263	2303204.6572	404.58				
28	MATCH EXISTING	691046.7164	2303147.1978	405.67				
29	MATCH EXISTING	691024.9360	2303051.6890	405.61				
30	MATCH EXISTING	691092.2661	2303074.8931	405.69				
31	EDGE OF PAVEMENT	691152.6755	2303021.9744	405.90				
32	EDGE OF PAVEMENT	691254.2534	2302879.5191	405.73				
33	EDGE OF PAVEMENT	691255.9456	2302880.5851	405.95				
34	EDGE OF PAVEMENT	691725.2352	2302135.6443	406.48				
35	EDGE OF PAVEMENT	691723.5430	2302134.5783	406.26				
36	EDGE OF PAVEMENT	691810.4408	2301987.1828	406.30				
37	EDGE OF PAVEMENT	691836.5497	2301905.7583	406.68				
38	EDGE OF PAVEMENT	691835.0703	2301904.1917	406.66				
39	EDGE OF PAVEMENT	691777.8425	2301843.5886	406.30				
40	EDGE OF PAVEMENT	691657.8908	2301763.3688	406.36				
41	MATCH EXISTING	691658.9568	2301761.6766	406.53				
42	MATCH EXISTING	691687.0527	2301717.6609	406.56				
43	EDGE OF PAVEMENT	691688.1187	2301715.9687	406.33				
44	EDGE OF PAVEMENT	691811.9983	2301789.3703	406.35				
45	EDGE OF PAVEMENT	691890.9955	2301814.7008	406.67				
46	EDGE OF PAVEMENT	691893.4228	2301815.4791	406.70				
47	EDGE OF PAVEMENT	691955.5925	2301756.7719	406.42				
48	EDGE OF PAVEMENT	691977.0713	2301722.6769	406.41				
49	EDGE OF PAVEMENT	692015.4193	2301636.0360	406.56				
50	MATCH EXISTING	692042.7514	2301584.7228	406.69				



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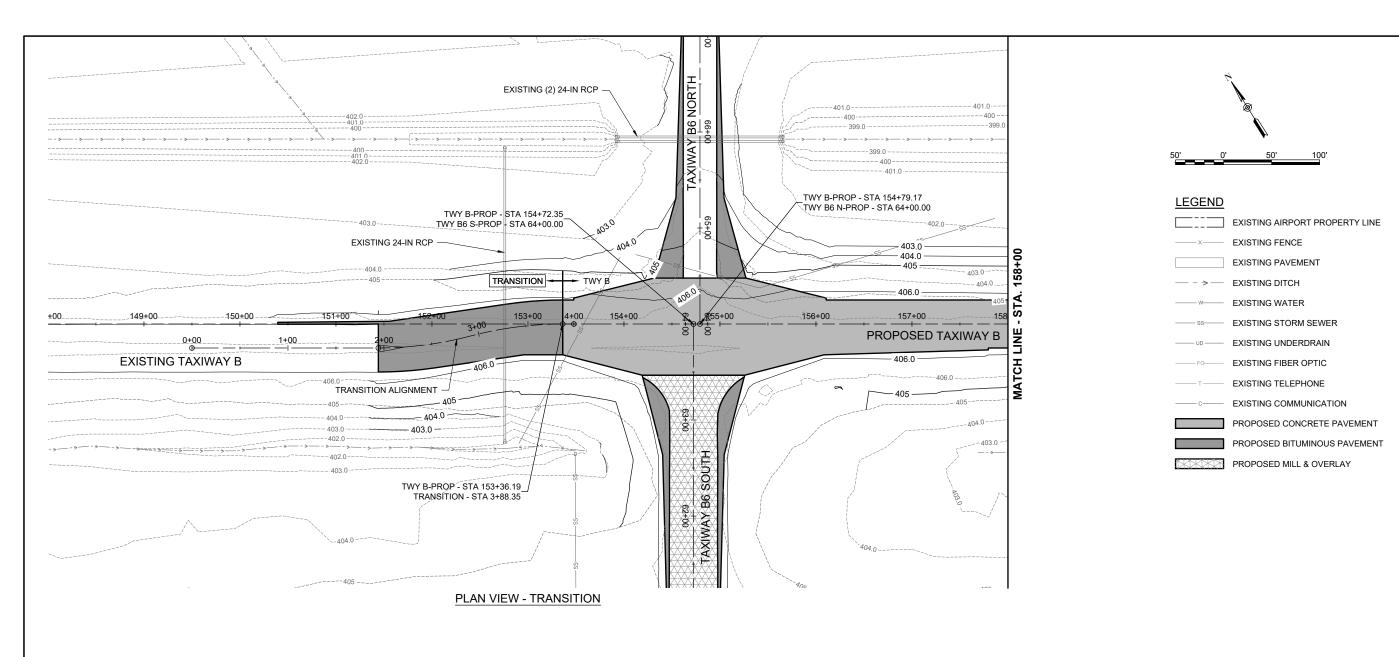
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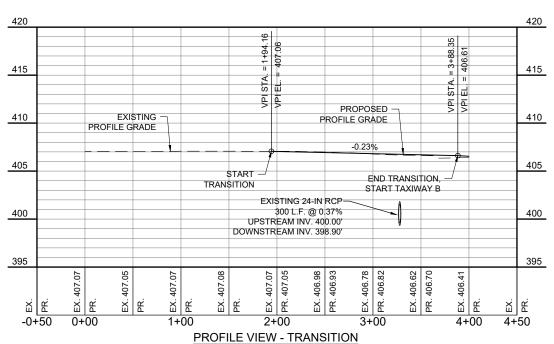
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PAVEMENT GEOMETRY COORDINATE DATA TABLE





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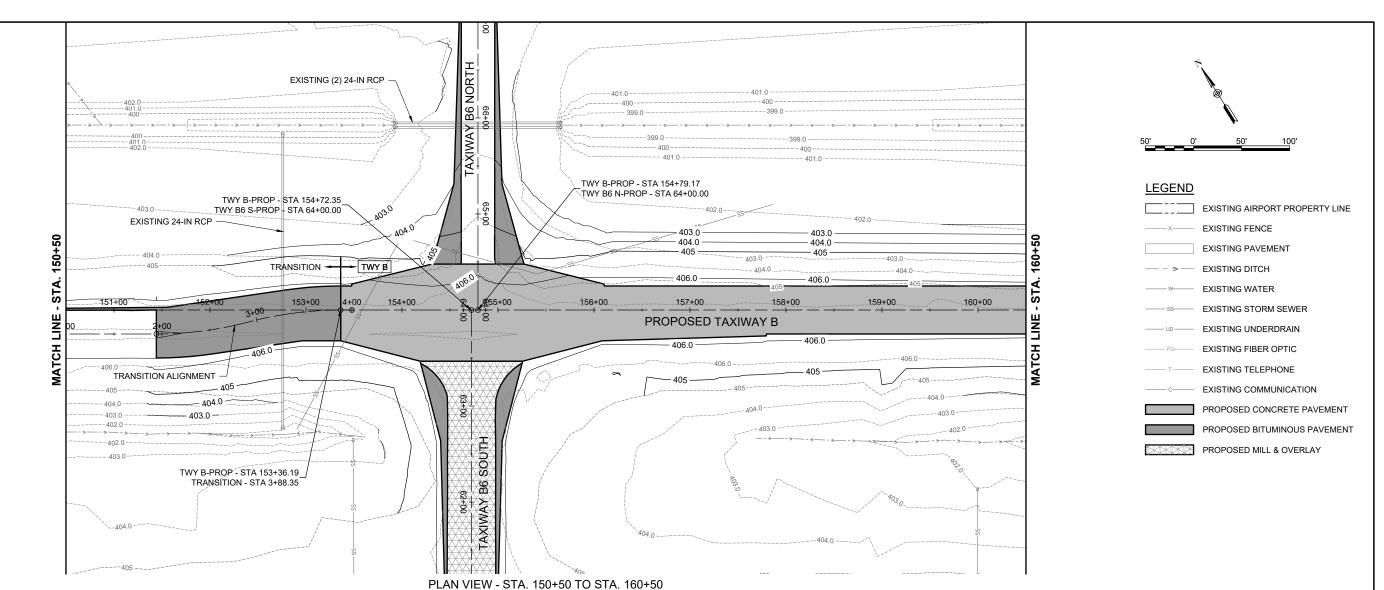
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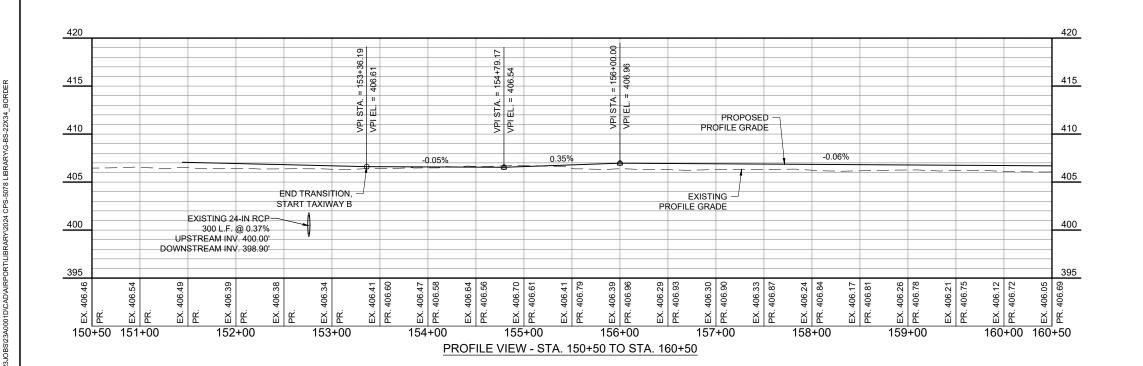
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DESIGN BY: JRH 3/17/2024
DRAWN BY: JRH 3/24/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED PLAN AND PROFILE -ALIGNMENT TRANSITION







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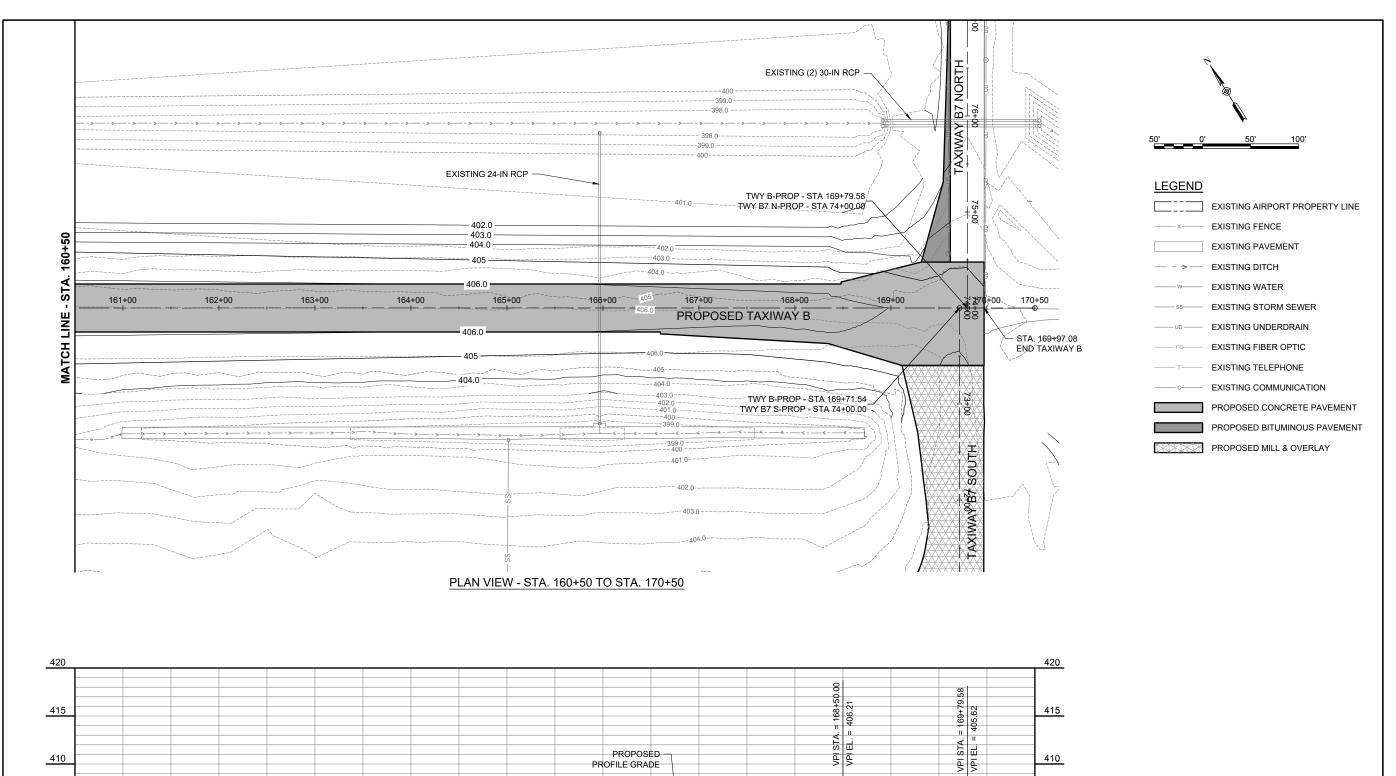
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PROJECT NO: 23A0001D				

CAD FILE: XTRI_ALP2024_DS_P&P_RW5_E&F_CLIMB.DV DESIGN BY: JRH 3/17/2024 DRAWN BY: JRH 3/24/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED PLAN AND PROFILE - STA. 150+50 TO STA. 160+50



EXISTING PROFILE GRADE

164+00

2 | 2

405. 406.

지 뿐

163+00

405.84 406.57

162+00

EXISTING 24-IN RCP-

405. 406.

PROFILE VIEW - STA. 160+50 TO STA. 170+50

405. 406.

X K

166+00

167+00

297 L.F. @ 0.11% UPSTREAM INV. 397.81' DOWNSTREAM INV. 397.49'

165+00

405

400

160+50 161+00

-0.45%

照 K

169+00

405. 406.

168+00

VPI STA. = 169+97.08-

VPI EL. = 405.37

END TAXIWAY B

405

400

395

170+00 170+50

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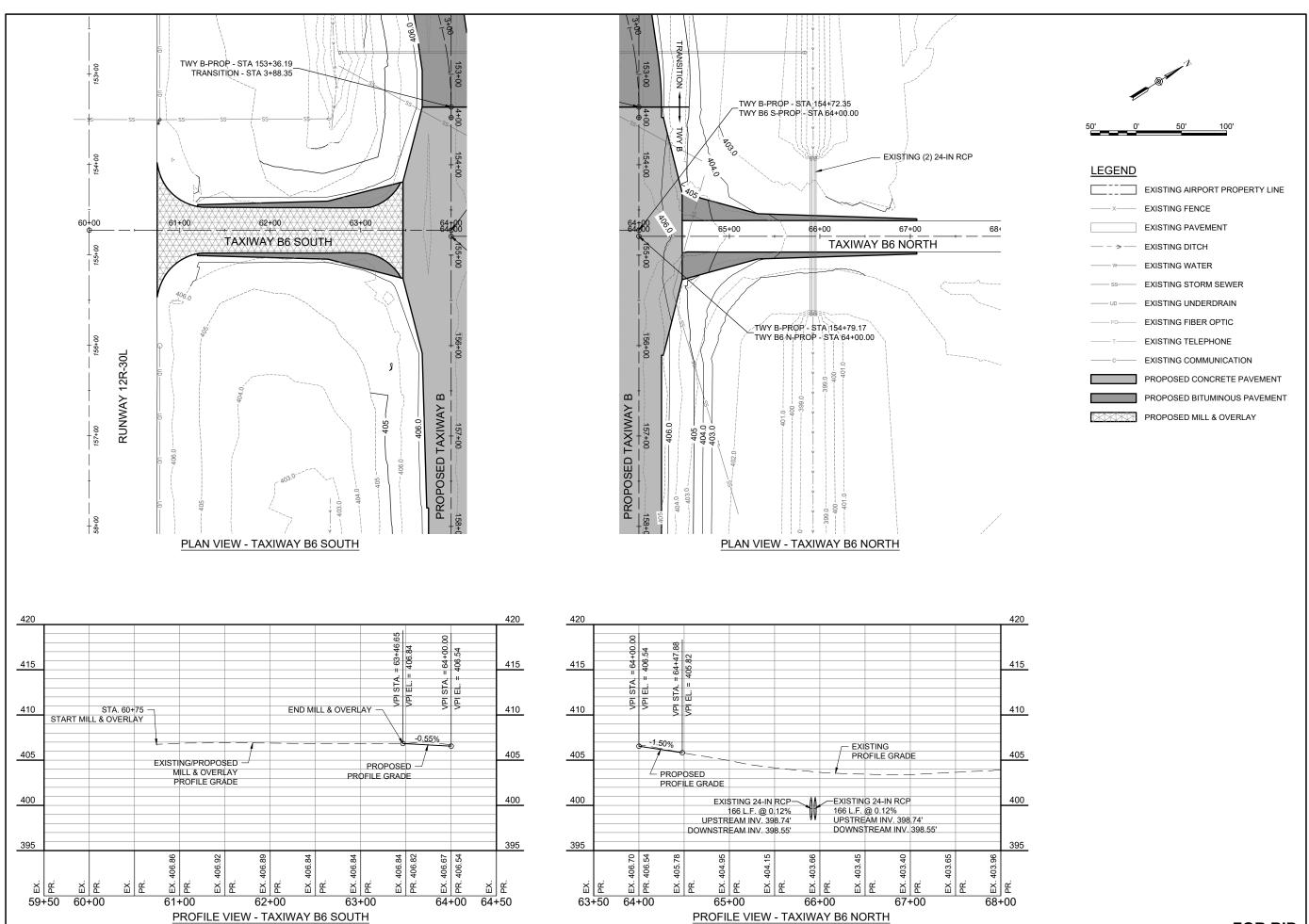
DESIGN BY: JRH 3/17/2024

DRAWN BY: JRH 3/24/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED PLAN AND PROFILE - STA. 160+50 TO STA. 170+50



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

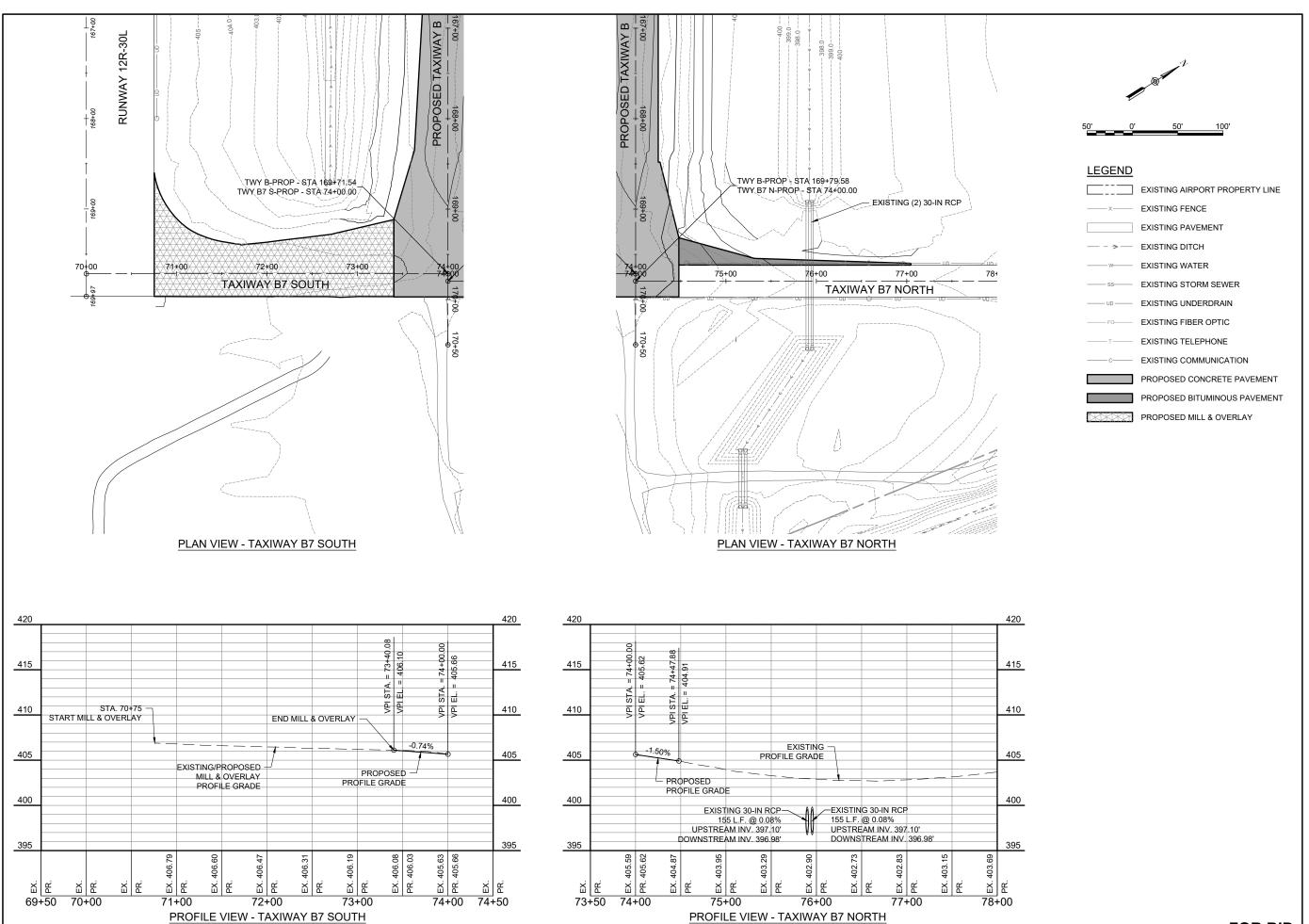
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PROJECT NO: 23A0001D

CAD FILE: XTRI_ALP2024_DS_P&P_RW5_E&F_CLIMB.DV DESIGN BY: JRH 3/17/2024 DRAWN BY: JRH 3/24/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED PLAN AND PROFILE -**TAXIWAY B6**



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

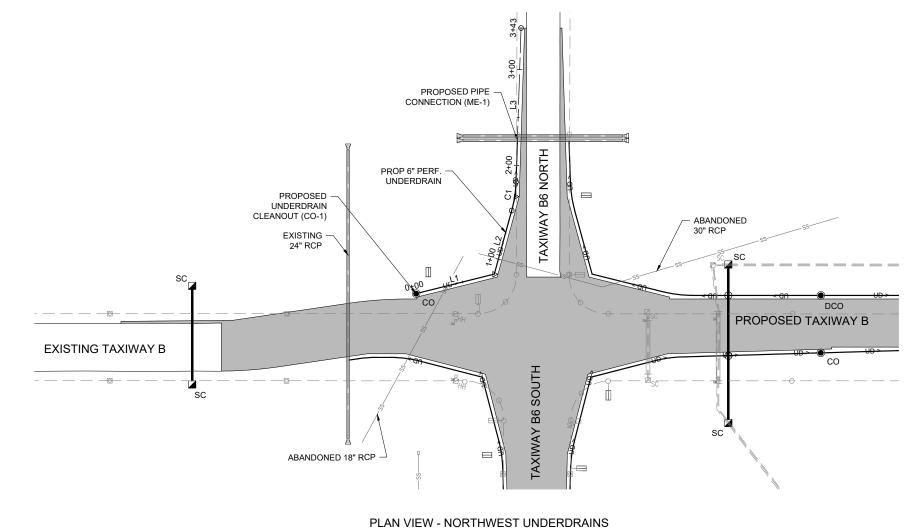
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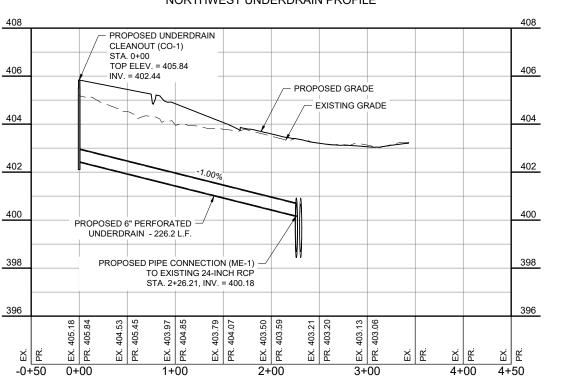
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DRAWN BY: JRH 3/24/2024
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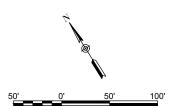
SHEET TITLE

PROPOSED PLAN AND PROFILE -TAXIWAY B7



NORTHWEST UNDERDRAIN PROFILE





NOTES:

- SEE ELECTRICAL PLANS FOR LOCATIONS OF ALL PROPOSED ELECTRICAL ITEMS.
- 2. SEE PROPOSED UNDERDRAIN SCHEDULES SHEET FOR FURTHER INFORMATION.



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IDA NO.: CPS-5078 CONTRACT NO.: SD064

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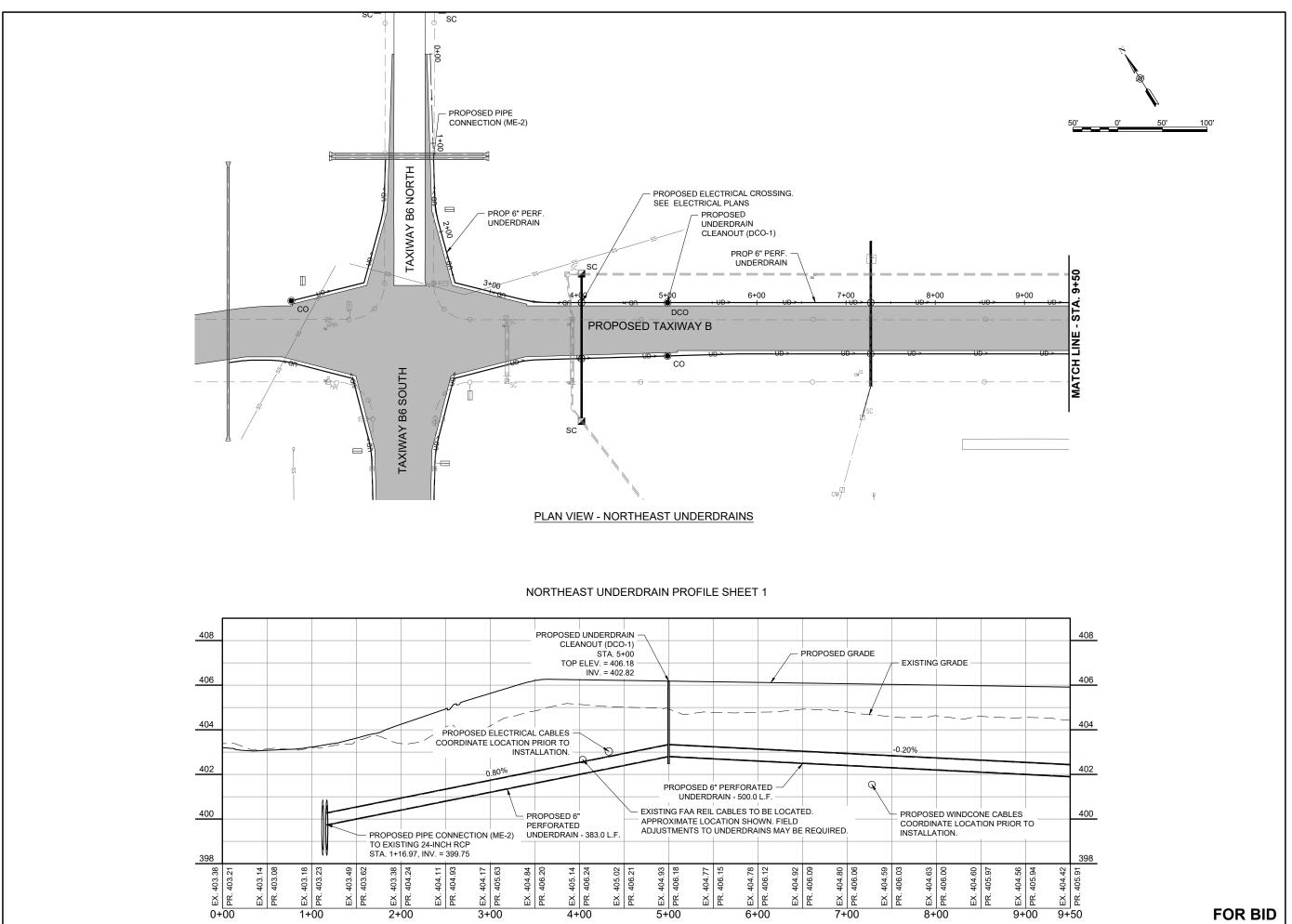
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SHEET TITLE

PROPOSED PLAN & PROFILE -NORTHWEST UNDERDRAINS





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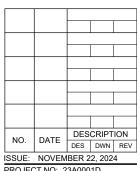
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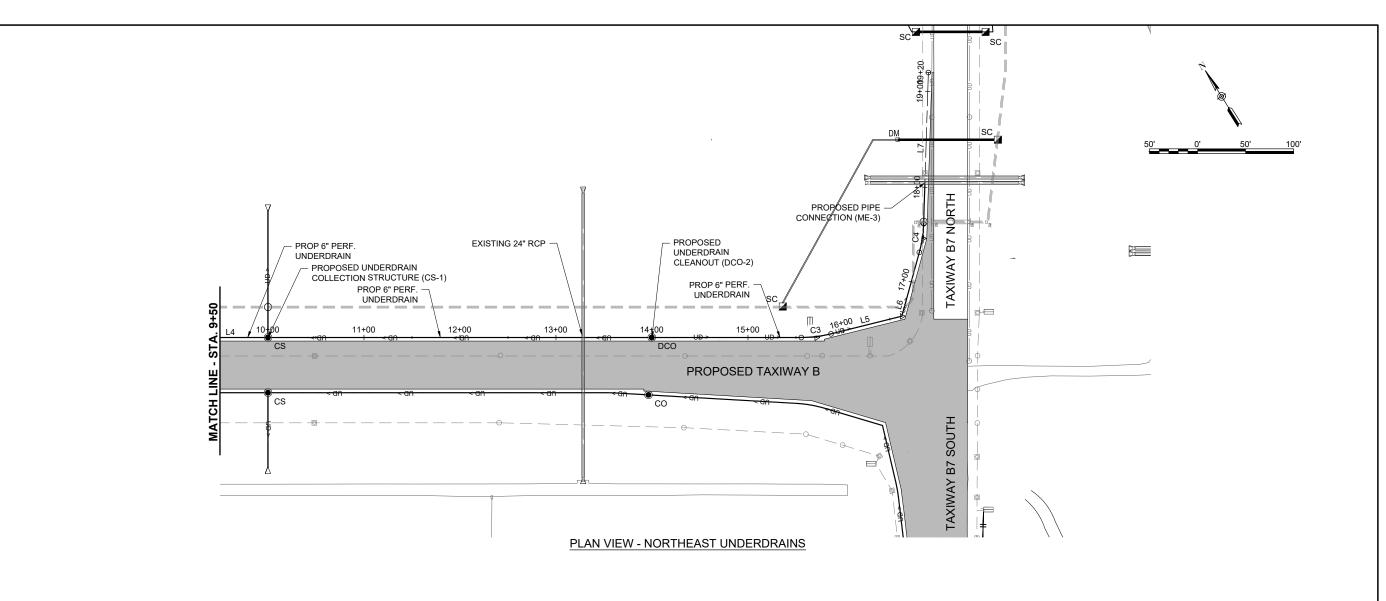
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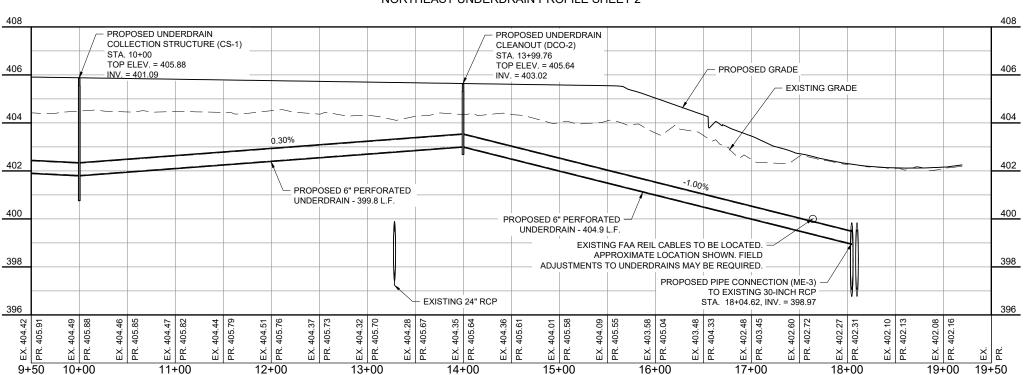
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SHEET TITLE

PROPOSED PLAN & PROFILE -**NORTHEAST UNDERDRAINS** SHEET 1



NORTHEAST UNDERDRAIN PROFILE SHEET 2



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST &

IDA NO.: CPS-5078 CONTRACT NO.: SD064

TAXIWAY B1 INTERSECTION

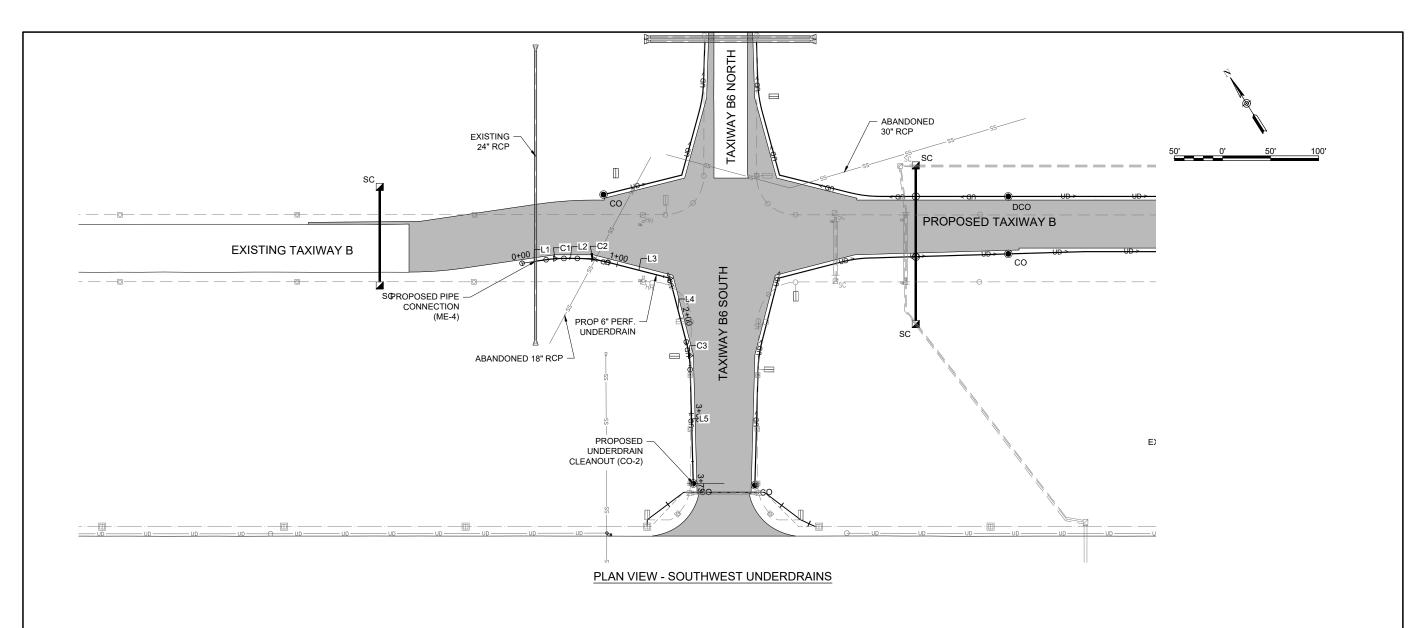
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ISSUE: NOVEMBER 22, 2024

PROJECT NO: 23A0001D

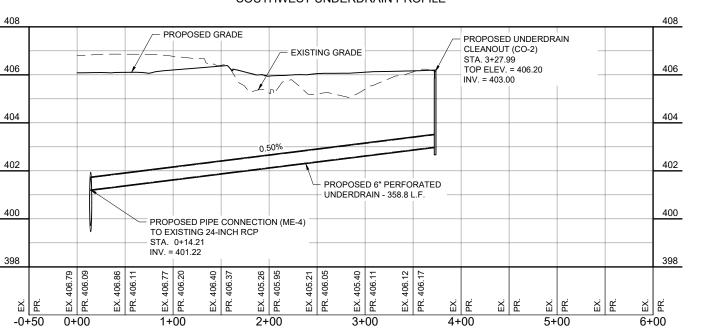
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PROPOSED PLAN & PROFILE -NORTHEAST UNDERDRAINS SHEET 2







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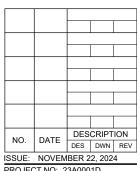
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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



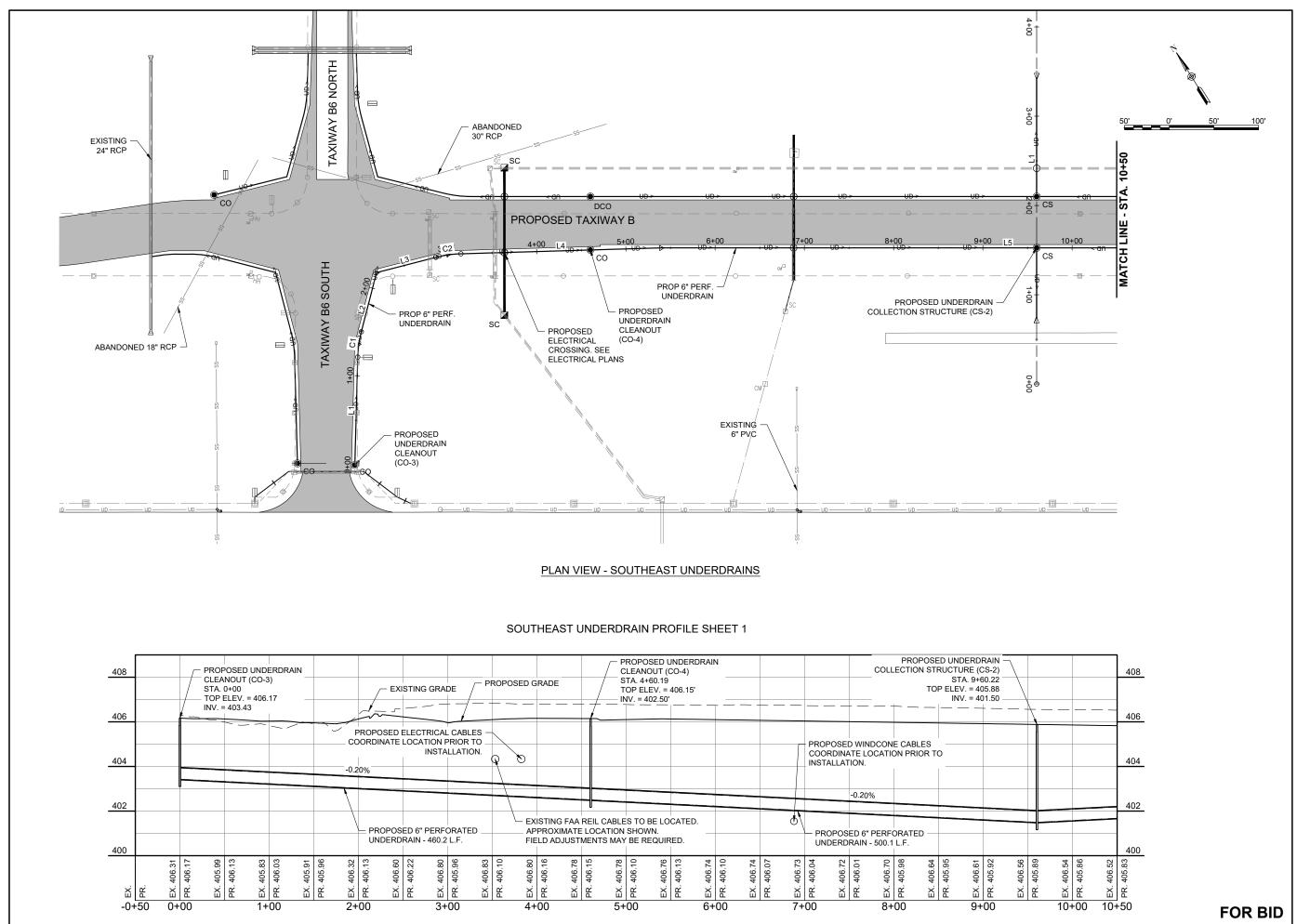
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SHEET TITLE

PROPOSED PLAN & PROFILE -SOUTHWEST **UNDERDRAINS**



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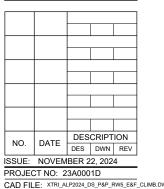
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TAXIWAY B RELOCATION,

TAXIWAY B1 INTERSECTION IDA NO.: CPS-5078

PHASE 3: SOUTHEAST &

CONTRACT NO.: SD064

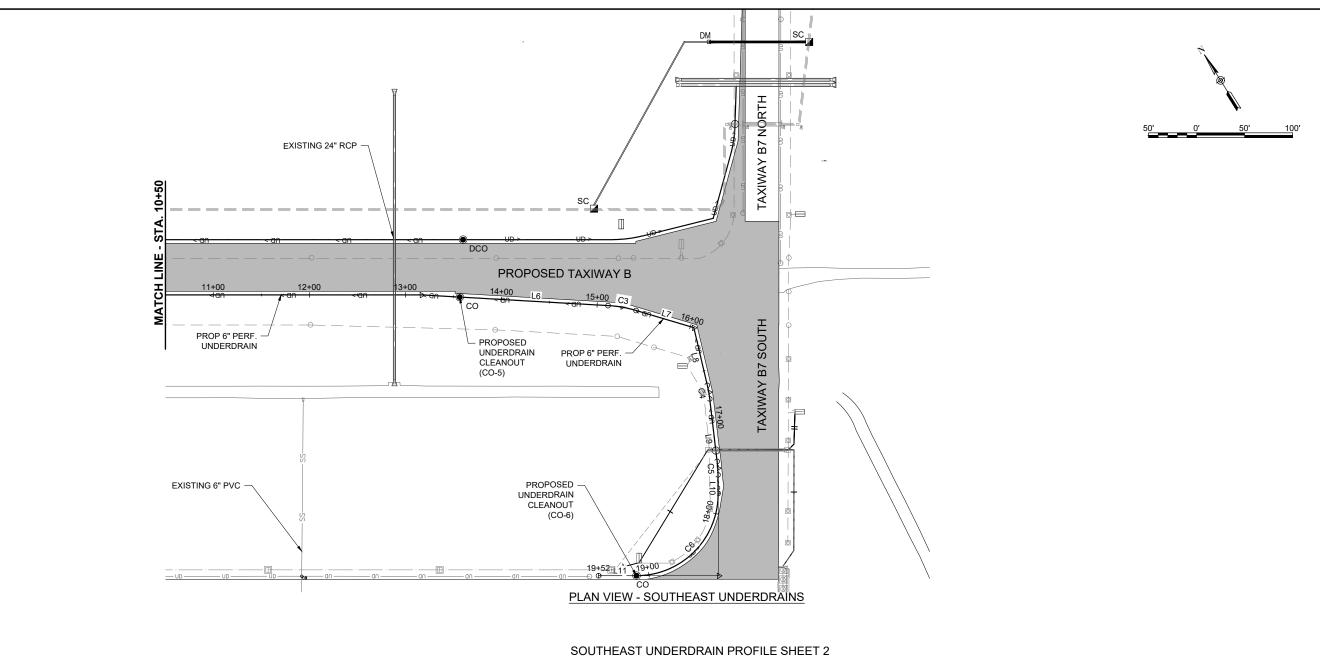


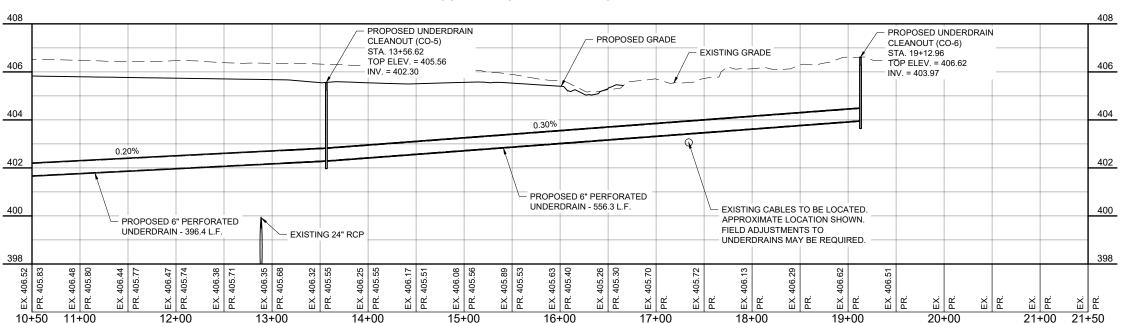
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SHEET TITLE

PROPOSED PLAN & PROFILE -SOUTHEAST **UNDERDRAINS** SHEET 1







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IDA NO.: CPS-5078 CONTRACT NO.: SD064

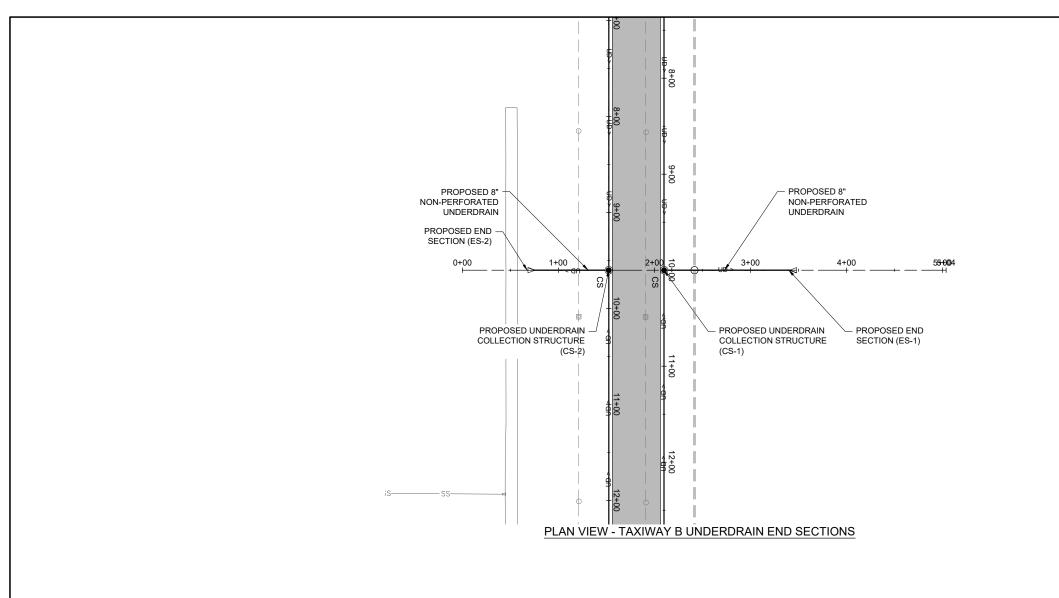
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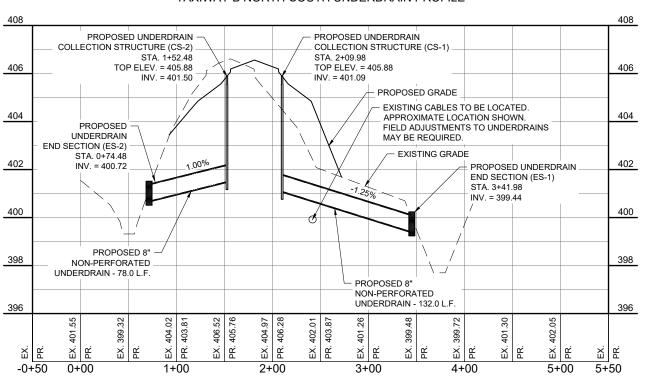
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SHEET TITLE

PROPOSED PLAN & PROFILE -SOUTHEAST **UNDERDRAINS** SHEET 2



TAXIWAY B NORTH-SOUTH UNDERDRAIN PROFILE





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IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION
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SHEET TITLE

PROPOSED PLAN & PROFILE -NORTH-SOUTH **UNDERDRAINS**

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35

	UNDERDRAIN SCHEDULE - NORTHWEST								
	STRUCTURE	STATION	TYPE	RIM ELEV.	INVERT ELEV,	PAY LENGTH	SLOPE %		
	CO-1	0+00	CLEANOUT	405.84	402.44				
						226.2	-1.00		
Ī	ME-1	2+26.21	RCP CONNECTION	-	400.18				

	UNDERDRAIN SCHEDULE - NORTHEAST										
STRUCTURE	STATION	TYPE	RIM ELEV.	INVERT ELEV. (IN)	INVERT ELEV.(OUT)	PAY LENGTH	SLOPE %				
ME-2	1+16.97	RCP CONNECTION	-	399.75	399.75						
						383.0	0.80				
DCO-1	5+00	DOUBLE CLEANOUT	406.18	402.82	402.82						
						500.0	-0.20				
CS-1	10+00	COLLECTION STRUCTURE	405.88	401.82(NEUD-3A) 401.09 (OUTLET UD-1)	401.09						
						399.8	0.30				
DCO-2	13+99.76	DOUBLE CLEANOUT	405.64	403.02	403.02						
						404.9	-1.00				
ME-3	18+04.62	RCP CONNECTION	ı	398.97	398.97						

UNDERDRAIN SCHEDULE - NORTH-SOUTH							
STRUCTURE	STATION	TYPE	RIM ELEV.	INVERT ELEV.	PAY LENGTH	SLOPE %	
ES-2	0+74.48	END SECTION	-	400.72			
					78.0	1.00	
CS-2	1+52.48	COLLECTION STRUCTURE	405.88	401.5			
CS-1	2+09.98	COLLECTION STRUCTURE	405.88	401.09			
					132.0	-1.25	
ES-1	3+41.98	END SECTION	-	399.44			

UNDERDRAIN SCHEDULE - SOUTHWEST							
STRUCTURE	STATION	TYPE	RIM ELEV.	INVERT ELEV.	PAY LENGTH	SLOPE %	
ME-4	0+14.21	RCP CONNECTION	-	401.22			
					358.8	0.50	
CO-2	3+72.99	CLEANOUT	406.2	403.00			

UNDERDRAIN SCHEDULE - SOUTHEAST							
STRUCTURE	STATION	TYPE	RIM ELEV.	INVERT ELEV,	PAY LENGTH	SLOPE %	
CO-3	0+00	CLEANOUT	406.17	403.43			
					460.2	-0.20	
CO-4	4+60.19	CLEANOUT	406.15	402.50			
					500.1	-0.20	
CS-2	9+60.22	COLLECTION STRUCTURE	405.88	401.50			
					396.4	0.20	
CO-5	13+56.62	CLEANOUT	405.56	402.30			
					556.3	0.30	
CO-6	19+12.96	CLEANOUT	406.62	403.97			



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DESCRIPTION			
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ISSUE:	SSUE: NOVEMBER 22, 2024				
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PROJECT NO: 23A0001D

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SHEET TITLE

PROPOSED UNDERDRAIN SCHEDULES

	ALIGNMENT DATA NORTHWEST UNDERDRAINS								
LABEL	LABEL START STATION END STATION LENGTH AZIMUTH START (N,E) END (N,E)								
L1	0+00.00	0+83.99	83.99	108° 11' 22"	692002.990, 2301799.125	691976.771, 2301878.919			
L2	0+83.99	1+52.69	68.70	47° 32' 21"	691976.771, 2301878.919	692023.151, 2301929.603			
C1	1+52.69	1+82.78	30.08	IN=N47° 32' 21"E OUT=N34° 04' 23"E DEL=13°27'58"	692023.15, 2301929.603	692045.870, 2301949.218			
L3	1+82.78	3+43.19	160.42	34° 04' 23"	692045.870, 2301949.218	692178.746, 2302039.091			

	ALIGNMENT DATA NORTHEAST UNDERDRAINS								
LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)			
L1	0+00.00	1+60.13	160.13	210° 24' 50"	692154.055, 2302078.276	692015.961, 2301997.212			
C1	1+60.13	1+90.28	30.15	IN=S30° 24' 50"W OUT=S16° 55' 11"W DEL=13°29'39"	692015.96, 2301997.212	691988.414, 2301985.138			
L2	1+90.28	2+59.18	68.91	196° 55' 11"	691988.414, 2301985.138	691922.490, 2301965.084			
L3	2+59.18	3+35.23	76.05	136° 13' 47"	691922.490, 2301965.084	691867.575, 2302017.692			
C2	3+35.23	3+66.55	31.32	IN=S43° 46' 13"E OUT=S57° 47' 25"E DEL=14°01'12"	691867.57, 2302017.692	691847.820, 2302041.896			
L4	3+66.55	15+55.54	1188.99	122° 12' 35"	691847.820, 2302041.896	691214.066, 2303047.905			
C3	15+55.54	15+86.86	31.32	IN=S57° 47' 25"E OUT=S71° 48' 38"E DEL=14°01'12"	691214.07, 2303047.905	691200.763, 2303076.175			
L5	15+86.86	16+62.91	76.05	108° 11' 22"	691200.763, 2303076.175	691177.024, 2303148.422			
L6	16+62.91	17+31.81	68.90	47° 29' 58"	691177.024, 2303148.422	691223.573, 2303199.220			
C4	17+31.81	17+61.97	30.16	IN=N47° 29' 58"E OUT=N34° 00' 01"E DEL=13°29'58"	691223.57, 2303199.220	691246.367, 2303218.861			
L7	17+61.97	19+19.52	157.55	34° 00' 01"	691246.367, 2303218.861	691376.983, 2303306.963			

	ALIGNMENT DATA NORTH-SOUTH UNDERDRAINS								
LABEL	LABEL START STATION END STATION LENGTH AZIMUTH START (N,E) END (N,E)								
L1	L1 0+00.00 5+03.80 503.80 32° 12' 35" 691332.512, 2302465.935 691758.777, 2302734.469								

	ALIGNMENT DATA SOUTHWEST UNDERDRAINS								
LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)			
L1	0+00.00	0+25.30	25.30	113° 52' 28"	691987.767, 2301689.248	691977.528, 2301712.381			
C1	0+25.30	0+43.92	18.62	IN=S66° 07' 32"E OUT=S57° 47' 25"E DEL=8°20'06"	691977.53, 2301712.381	691968.781, 2301728.801			
L2	0+43.92	0+57.93	14.02	122° 12' 35"	691968.781, 2301728.801	691961.311, 2301740.660			
C2	0+57.93	0+90.17	32.24	IN=S57° 47' 25"E OUT=S43° 21' 33"E DEL=14°25'52"	691961.31, 2301740.660	691940.890, 2301765.498			
L3	0+90.17	1+56.56	66.39	136° 38' 27"	691940.890, 2301765.498	691892.621, 2301811.079			
L4	1+56.56	2+25.17	68.61	197° 38' 38"	691892.621, 2301811.079	691827.239, 2301790.283			
C3	2+25.17	2+54.27	29.10	IN=S17° 38' 38"W OUT=S30° 40' 10"W DEL=13°01'32"	691827.24, 2301790.283	691800.745, 2301778.400			
L5	2+54.27	3+72.99	118.72	210° 40' 10"	691800.745, 2301778.400	691698.631, 2301717.843			

ALIGNMENT DATA SOUTHEAST UNDERDRAINS							
LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)	
L1	0+00.00	1+20.89	120.89	33° 46' 24"	691662.919, 2301771.243	691763.408, 2301838.4	
C1	1+20.89	1+49.64	28.75	IN=N33° 46' 24"E OUT=N46° 38' 27"E DEL=12°52'03"	691763.41, 2301838.447	691785.316, 2301856.9	
L2	1+49.64	2+18.07	68.44	46° 38' 27"	691785.316, 2301856.965	691832.302, 2301906.7	
L3	2+18.07	2+86.65	68.58	107° 46' 43"	691832.302, 2301906.723	691811.362, 2301972.0	
C2	2+86.65	3+15.12	28.47	IN=S72° 13' 17"E OUT=S59° 28' 42"E DEL=12°44'36"	691811.36, 2301972.028	691799.739, 2301997.9	
L4	3+15.12	5+39.36	224.24	120° 31' 18"	691799.739, 2301997.952	691685.857, 2302191.	
L5	5+39.36	13+16.88	777.53	122° 12' 35"	691685.857, 2302191.116	691271.421, 2302848.9	
L6	13+16.88	15+11.33	194.44	125° 29' 27"	691271.421, 2302848.984	691158.534, 2303007.2	
C3	15+11.33	15+41.02	29.69	IN=S54° 30' 33"E OUT=S41° 13' 06"E DEL=13°17'27"	691158.53, 2303007.299	691138.658, 2303029.2	
L7	15+41.02	16+03.80	62.78	138° 46' 54"	691138.658, 2303029.268	691091.431, 2303070.0	
L8	16+03.80	16+65.43	61.62	199° 00' 56"	691091.431, 2303070.639	691033.170, 2303050.	
C4	16+65.43	16+79.82	14.40	IN=S19° 00' 56"W OUT=S25° 27' 36"W DEL=6°26'40"	691033.17, 2303050.560	691019.851, 2303045.	
L9	16+79.82	17+45.37	65.55	205° 27' 36"	691019.851, 2303045.115	690960.667, 2303016.	
C5	17+45.37	17+59.38	14.01	IN=S25° 27' 36"W OUT=S31° 43' 54"W DEL=6°16'18"	690960.67, 2303016.936	690948.371, 2303010.2	
L10	17+59.38	17+78.73	19.35	211° 43' 54"	690948.371, 2303010.233	690931.916, 2303000.	
C6	17+78.73	19+12.96	134.23	IN=S31° 43' 54"W OUT=N57° 47' 25"W DEL=90°28'40"	690931.92, 2303000.058	690904.703, 2302882.	
L11	19+12.96	19+52.48	39.52	302° 12' 35"	690904.703, 2302882.457	690925.769, 2302849.	



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

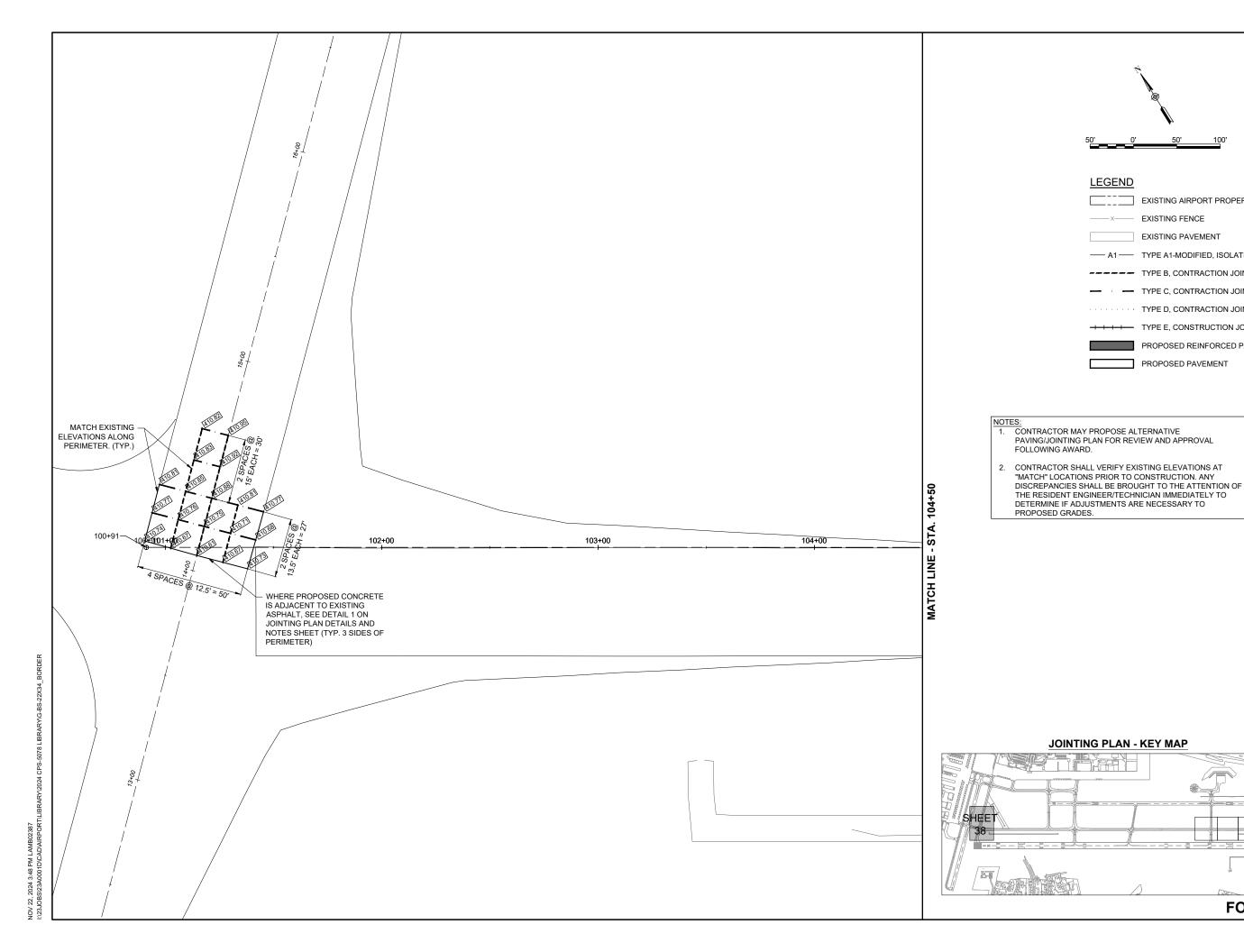
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SHEET TITLE

PROPOSED UNDERDRAIN

ALIGNMENT DATA **TABLES**





LEGEND

EXISTING AIRPORT PROPERTY LINE

EXISTING PAVEMENT

TYPE B, CONTRACTION JOINT TYPE C, CONTRACTION JOINT · · · · · · · · · TYPE D, CONTRACTION JOINT TYPE E, CONSTRUCTION JOINT

— A1 — TYPE A1-MODIFIED, ISOLATION JOINT

PROPOSED REINFORCED PANEL

PROPOSED PAVEMENT

——×—— EXISTING FENCE

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024

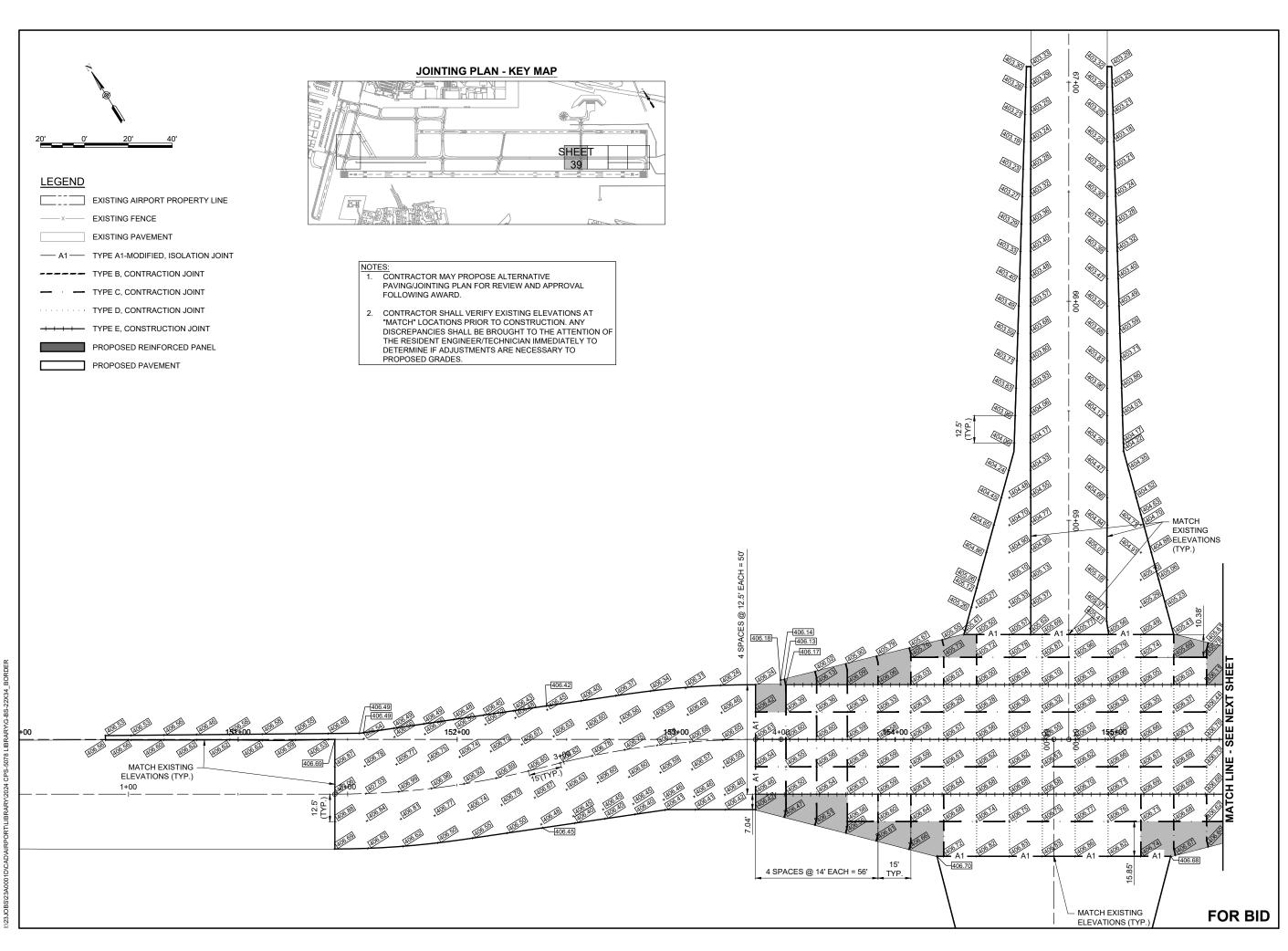
PROJECT NO: 23A0001D CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/20/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED JOINTING PLAN STA. 100+00 TO STA. 104+50

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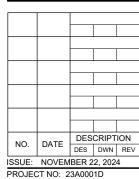
BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



PROJECT NO: 23A0001D

CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/20/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED JOINTING PLAN STA. 150+00 TO STA. 155+50

JOINTING PLAN - KEY MAP

LEGEND

EXISTING AIRPORT PROPERTY LINE

— A1 — TYPE A1-MODIFIED, ISOLATION JOINT

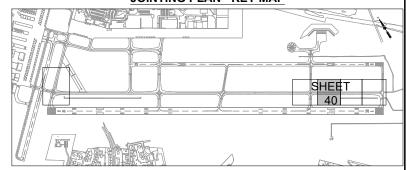
PROPOSED REINFORCED PANEL

PROPOSED PAVEMENT

——×—— EXISTING FENCE

EXISTING PAVEMENT

TYPE B, CONTRACTION JOINT
TYPE C, CONTRACTION JOINT
TYPE D, CONTRACTION JOINT
TYPE E, CONSTRUCTION JOINT



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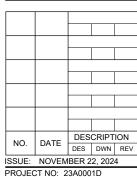
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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



PROJECT NO: 23A0001D

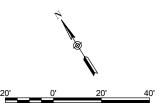
CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/20/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED JOINTING PLAN STA. 155+50 TO STA. 160+50

- CONTRACTOR MAY PROPOSE ALTERNATIVE PAVING/JOINTING PLAN FOR REVIEW AND APPROVAL FOLLOWING AWARD.
- 2. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AT "MATCH" LOCATIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER/TECHNICIAN IMMEDIATELY TO DETERMINE IF ADJUSTMENTS ARE NECESSARY TO PROPOSED GRADES.



LEGEND

EXISTING AIRPORT PROPERTY LINE

——×—— EXISTING FENCE

EXISTING PAVEMENT

— A1 — TYPE A1-MODIFIED, ISOLATION JOINT

---- TYPE B, CONTRACTION JOINT — TYPE C, CONTRACTION JOINT

· · · · · · · · · TYPE D, CONTRACTION JOINT

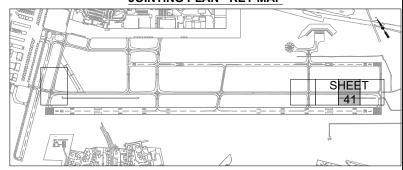
TYPE E, CONSTRUCTION JOINT

PROPOSED REINFORCED PANEL

PROPOSED PAVEMENT

(TYP.)

JOINTING PLAN - KEY MAP



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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SSUE:	NOVEM	BER 2	2, 202	4

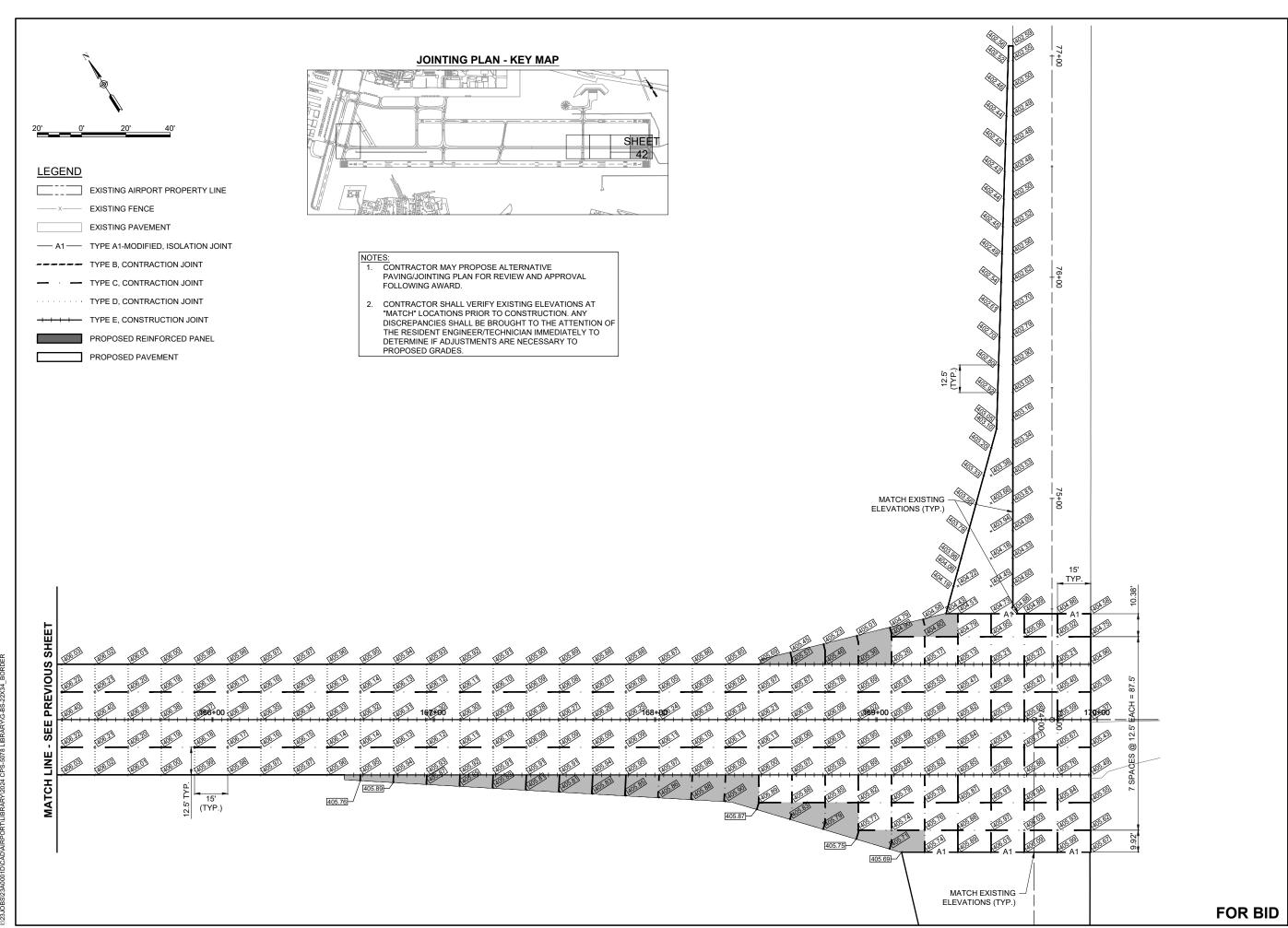
PROJECT NO: 23A0001D

CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/20/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED JOINTING PLAN STA. 160+50 TO STA. 165+30



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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

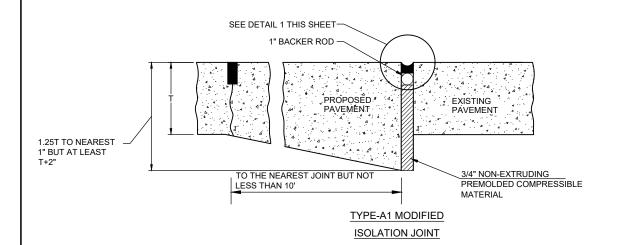
NO.	DATE	DES	CRIPT	ION	
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ISSUE:	NOVEM	BER 2	2, 202	4	
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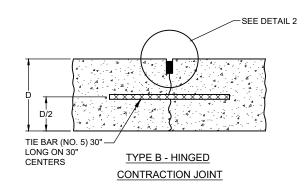
DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/20/2024 REVIEWED BY: BSS 4/19/2024

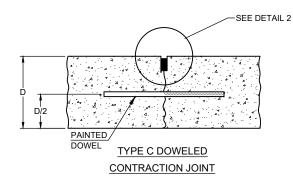
SHEET TITLE

PROPOSED JOINTING PLAN STA. 165+30 TO STA. 170+50



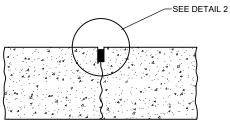




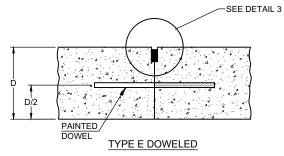


JOINTING NOTES

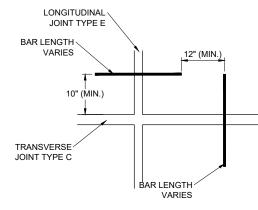
- 1. ALL JOINT EDGES SHALL BE SAWCUT TO PRODUCE THE 1/4" CHAMFER.
- 2. ALL LONGITUDINAL AND TRANSVERSE CONTRACTION JOINTS SHALL BE SAWED.
- 3. ALL DOWEL BARS SHALL BE SECURELY HELD IN PLACE BY MEANS OF A DOWEL BAR ASSEMBLY WHICH WILL ENSURE THAT THEY WILL REMAIN PARALLEL TO THE SURFACE OF THE PAVEMENT AND TO THE CENTERLINES OF THE PAVEMENT LANES. THE DOWEL BAR ASSEMBLIES SHALL BE APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN PRIOR TO INSTALLATION.
- 4. DOWEL BARS FOR 12 IN. & 8 IN. THICK PAVEMENT SHALL BE 1 IN. DIAMETER, 18 IN. LONG AT 12 IN. SPACING.
- 5. ALL TIE BARS SHALL BE HELD IN PLACE BY SUPPORT PINS OR OTHER METHODS TO PREVENT SHIFTING DURING AND AFTER CONCRETE PLACEMENT. SUPPORT PINS SHALL BE OF SUFFICIENT LENGTH TO PENETRATE AT LEAST 6" INTO THE
- 6. ALL TIE BARS SHALL BE PLACED AT A POINT NOT LESS THAN 6" OR MORE THAN 15" FROM A TRANSVERSE OR EXPANSION JOINT.
- 7. DOWELS IN TRANSVERSE CONTRACTION AND LONGITUDINAL CONSTRUCTION JOINTS SHALL BE COATED WITH A RUSTPROOFING COMPOUND AND HALF THE LENGTH GREASED WITH A HEAVY GREASE
- 8. ALLOWABLE TOLERANCES FOR GROOVE DEPTH WILL BE ±1/8" FOR CONSTRUCTION JOINTS AND ±1/4" FOR CONTRACTION JOINTS.
- 9. THE CONTRACTOR IS REQUIRED TO DRILL AND EPOXY THE PROPOSED DOWELS IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS. THE EPOXY MATERIAL MUST BE APPROVED BY THE DIVISION OF AERONAUTICS PRIOR TO
- 10. THE COST OF ALL DOWEL BARS, TIE-BARS, SAWING AND SEALING SHALL BE INCLUDED IN THE COST OF THE PCC PAVEMENT.
- 11. WHEN CONSTRUCTING "FILL-IN" PAVEMENT LANES THE CONTRACTOR SHALL USE BELTING OR OTHER PROTECTIVE MATERIAL FOR THE PAVING MACHINE TO TRAVEL ON AND WILL PROTECT THE TRANSVERSE JOINTS.
- 12. JOINT SEALANT SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
- 13. CURING COMPOUND SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS, ITEM 501-2.9, AND SHALL BE APPROVED PRIOR TO THE PAVING OPERATION BY THE RESIDENT ENGINEER/TECHNICIAN.
- 14. ALL NON-ALIGNED EDGES WILL BE SAWED FULL DEPTH.



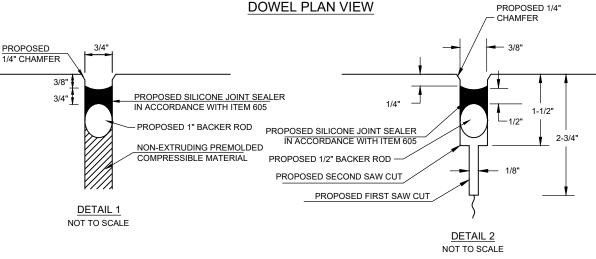
TYPE D DUMMY **CONTRACTION JOINT**

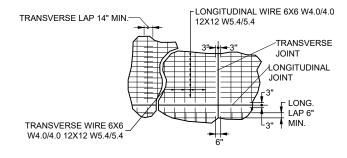


CONSTRUCTION JOINT



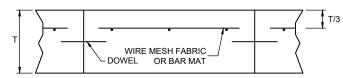
POSITION OF DOWELS AT EDGE OF JOINT TYPE C OR E





REINFORCEMENT SHEET WIRE FABRIC DETAIL

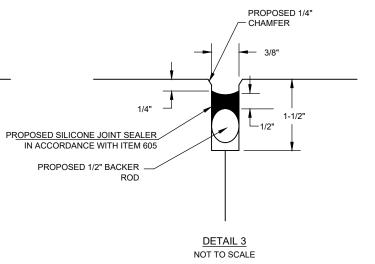
DIFFERENT WIRE MESH SIZES/CONFIGURATIONS ARE PERMITTED TO PROVIDE A MINIMUM OF 0.05% OF THE PANEL CROSS-SECTIONAL AREA IN BOTH DIRECTIONS.



PAVEMENT REINFORCING DETAIL

REINFORCING NOTES:

- 1. END LAPS SHALL BE A MINIMUM OF 12", BUT NOT LESS THAN 30 TIMES THE DIAMETER OF THE LONGITUDINAL WIRE OR BAR
- 2. SIDE LAPS SHALL BE A MINIMUM OF 6", BUT NOT LESS THAN 20 TIMES THE DIAMETER OF TRANSVERSE WIRE OR BAR.
- 3. END AND SIDE CLEARANCES SHALL BE A MAXIMUM OF 6" AND A MINIMUM
- 4. LONGITUDINAL MEMBERS SHALL BE SPACED NOT LESS THAN 4" NOR MORE
- 5. TRANSVERSE MEMBERS SHALL BE SPACED NOT LESS THAN 4" NOR MORE
- 6. REINFORCING SHALL CONSIST OF WELDED STEEL WIRE FABRIC CONFORMING TO THE REQUIREMENTS OF ASTM A 185 OR BAR MATS CONFORMING TO THE REQUIREMENTS OF ASTM A 184 OR A 704.
- 7. PAVEMENT REINFORCING SHALL BE INCIDENTAL TO ITEM 501 PCC



JOINT SEALING DETAILS NOT TO SCALE

PROPOSED 1/4"

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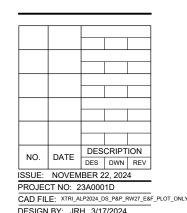
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LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

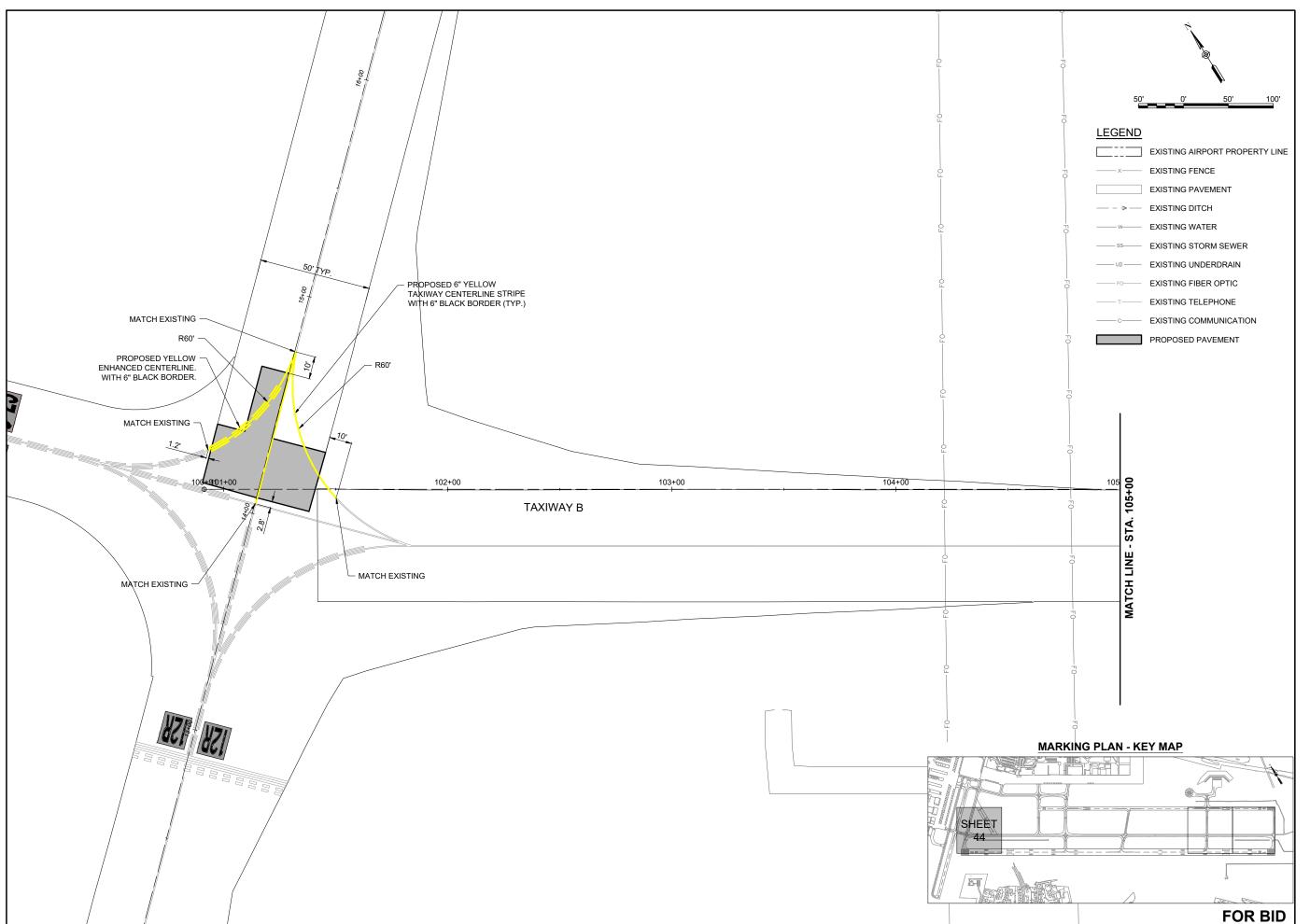
IDA NO.: CPS-5078 CONTRACT NO.: SD064



DRAWN BY: AJL 3/22/2024 REVIEWED BY: BSS 4/19/2024 SHEET TITLE

PROPOSED JOINTING PLAN DETAILS AND

NOTES





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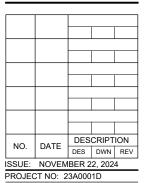
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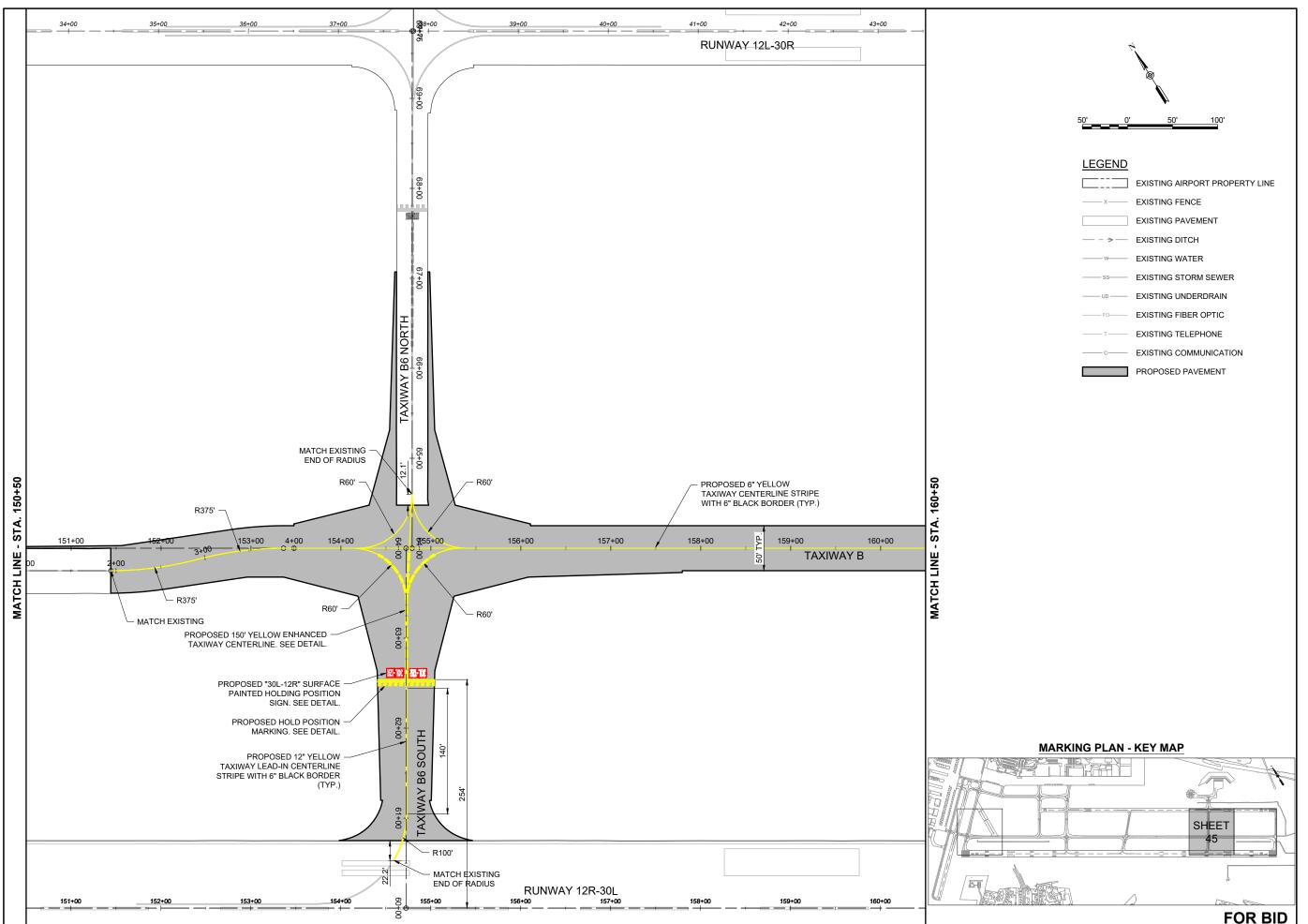


CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/18/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED MARKING PLAN STA. 100+00 TO STA. 105+00





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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

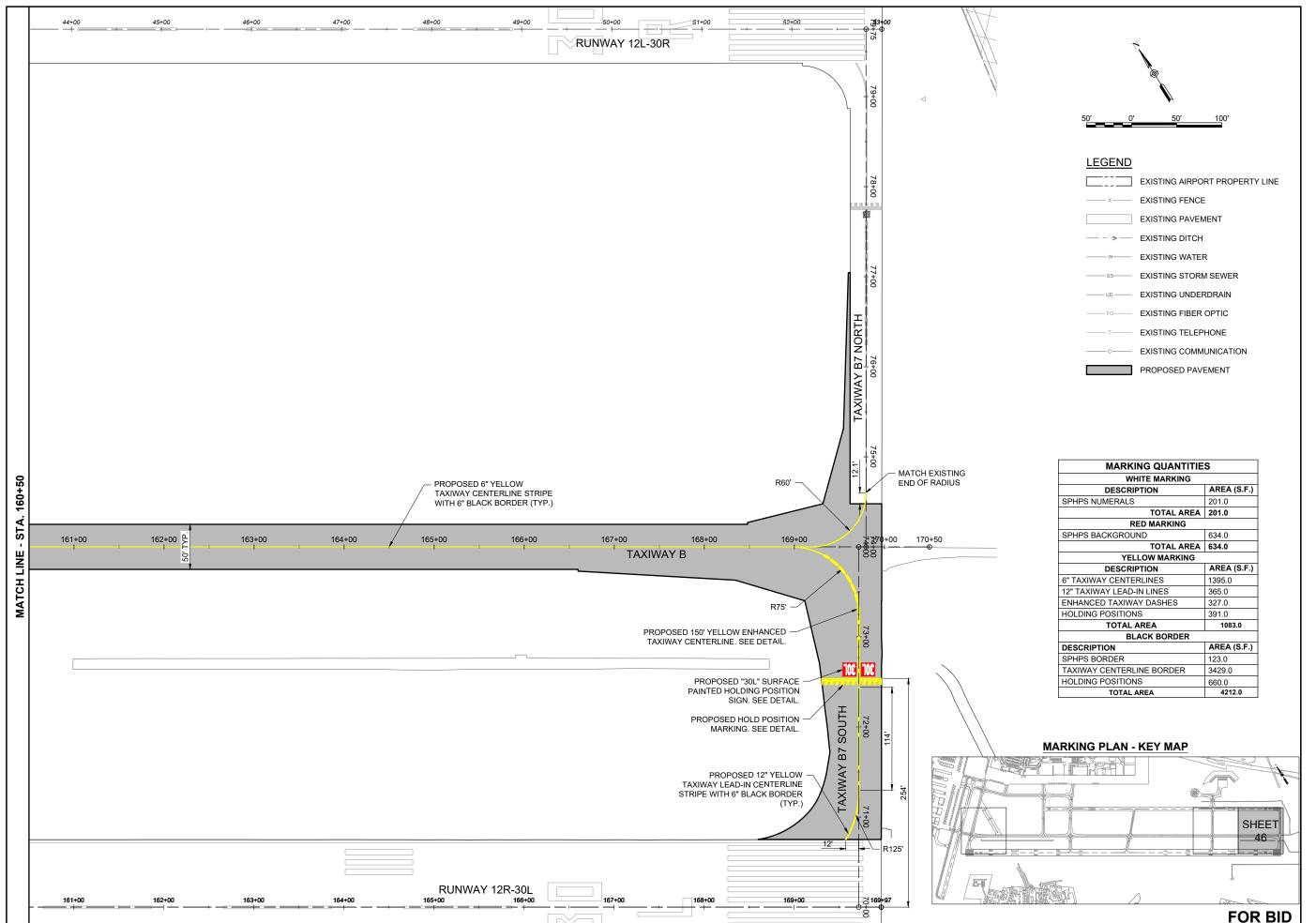
IDA NO.: CPS-5078 CONTRACT NO.: SD064



DESIGN BY: JRH 3/17/2024 DRAWN BY: AJL 3/18/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED MARKING PLAN STA. 150+50 TO STA. 160+50





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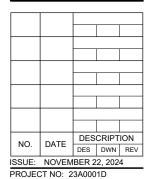
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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



PROJECT NO: 23A0001D

CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

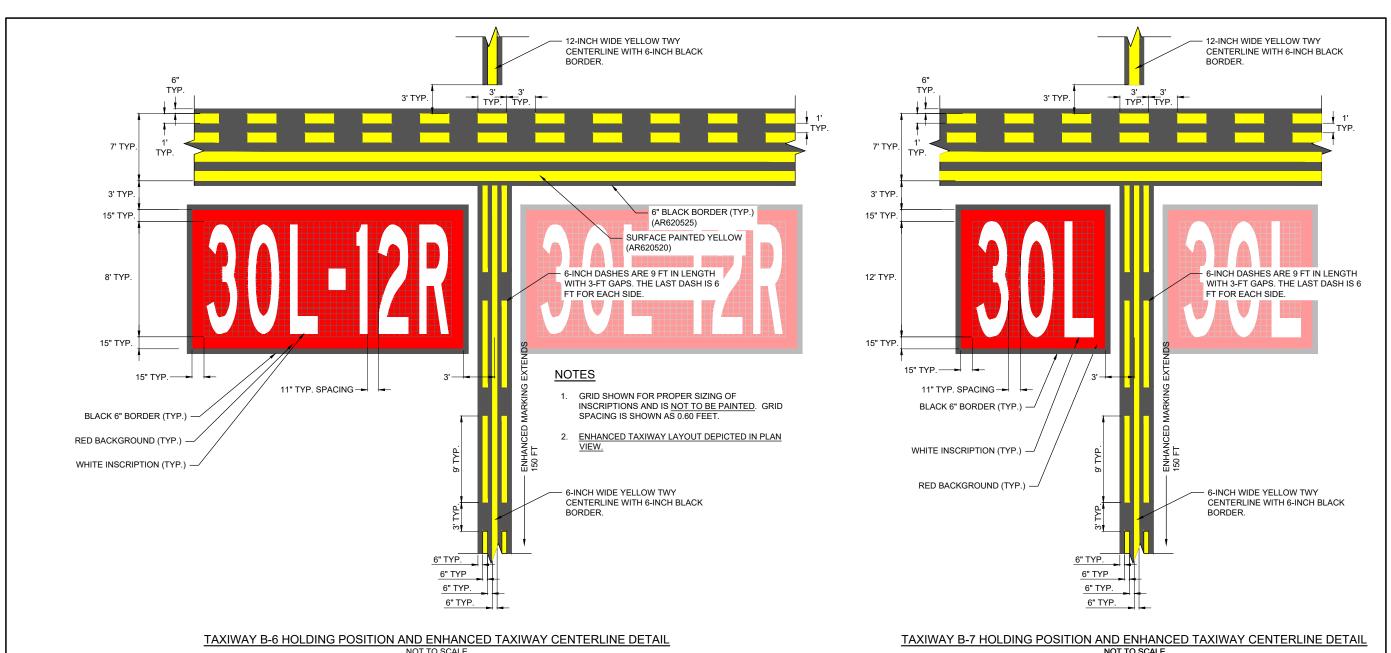
DESIGN BY: JRH 3/17/2024

DRAWN BY: AJL 3/18/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED MARKING PLAN STA. 160+50 TO STA. 170+50



SURFACE PAINTED HOLDING POSITION SIGN NOTES:

- SURFACE PAINTED HOLDING POSITION SIGNS SHALL BE PAINTED AT THE LOCATIONS SHOWN ON THE PAVEMENT MARKING PLAN SHEETS. THE CONTRACTOR SHALL FIELD VERIFY THAT THE SURFACE PAINTED HOLDING POSITION SIGNS MEET THE STANDARD DIMENSIONS SHOWN. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER OF ANY VARIATION FROM THE DIMENSIONS AND LOCATIONS SHOWN.
- THE STENCILS FOR THE SURFACE PAINTED HOLDING POSITION SIGNS SHALL BE THE RESPONSIBILITY OF THE
 CONTRACTOR. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SET
 OF STENCILS TO THE AIRPORT THAT MATCH THE SIGN DIMENSIONS PAINTED AT THIS AIRPORT.
- THE SURFACE PAINTED HOLDING POSITION SIGNS SHALL BE ORIENTED PARALLEL TO THE RUNWAY HOLDING POSITION MARKING.
- 4. SURFACE PAINTED HOLDING POSITIONS SIGNS SHALL BE LOCATED BASED ON DIMENSIONS FROM THE TAXIWAY CENTERLINE AND RUNWAY HOLDING POSITION MARKING. IF THE TAXIWAY CENTERLINE AND THE RUNWAY HOLDING POSITION MARKING ARE NOT PERPENDICULAR TO TO EACH OTHER, THE DIMENSION FROM THE CENTERLINE SHALL BE MEASURED TO THE NEAREST POINT ON THE SURFACE PAINTED SIGN.



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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

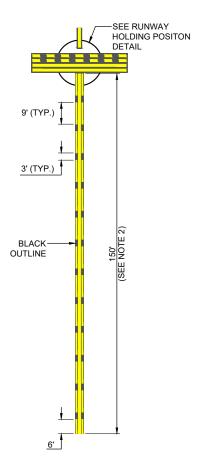
IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION
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ISSUE:	NOVEM	BER 2	2, 202	4
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DESIGN	BY: JR	H 3/18	8/2024	
DRAWN	BY: AJL	. 3/19	/2024	

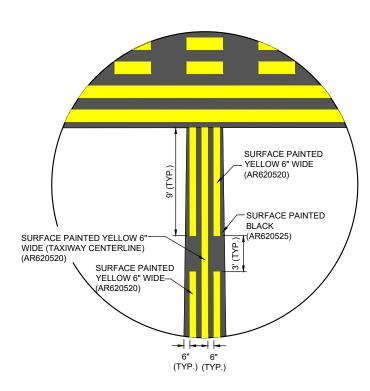
PAVEMENT MARKING DETAILS - SHEET 1

REVIEWED BY: BSS 4/19/2024

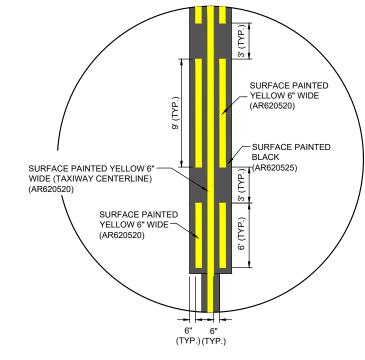
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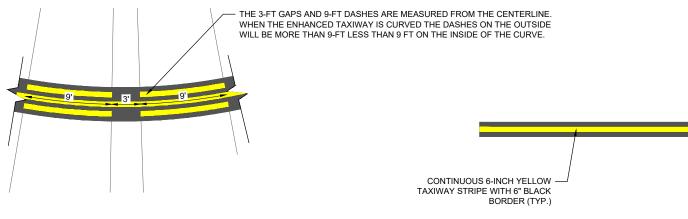
ENHANCED TAXIWAY MARKING DETAIL (BEGIN)
NOT TO SCALE



ENHANCED TAXIWAY MARKING DETAIL (END)
NOT TO SCALE

ENHANCED TAXIWAY CENTERLINE MARKING NOTES:

- TAXIWAY CENTERLINE MARKINGS SHALL BE YELLOW IN COLOR AND OUTLINED IN BLACK.
- TAXIWAY CENTERLINE MARKINGS SHALL BE ENHANCED FOR 150-FT PRIOR TO A RUNWAY HOLDING POSITION MARKING, UNLESS NOTED OTHERWISE. FOR A CURVED TAXIWAY CENTERLINE, THIS DISTANCE SHALL BE MEASURED ALONG THE CENTERLINE BEING ENHANCED TO A DISTANCE OF 150-FT.
- 3. WHERE TWO TAXIWAY CENTERLINES CONVERGE AT OR BEFORE THE RUNWAY HOLDING POSITION MARKING, PARTIAL INNER DASHED LINES LESS THAN 5 FEET AT THE POINT OF CONVERGENCE MAY BE OMITTED.
- 4. DASHES ON EITHER SIDE OF THE TAXIWAY CENTERLINE MUST BE ALIGNED, STARTING AND STOPPING WITH THE DASHES ON THE OPPOSITE SIDE OF THE CENTERLINE. TO ACCOMPLISH THIS FOR CURVED TAXIWAY CENTERLINES, THE MEASUREMENTS FOR THE DASHES AND GAPS SHALL BE MADE AT THE CENTERLINE AND EXTENDED PERPENDICULAR FROM THE CENTERLINE TO OBTAIN THE LOCATIONS OF THE DASHES.
- ENHANCED TAXIWAY CENTERLINE MARKINGS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF FAA AC 150/5340-1, "STANDARDS FOR AIRPORT MARKING".
- 6. IF THE CONTRACTOR ELECTS TO "BLOCK PAINT" THE BLACK PAINT AND THEN PAINT EITHER YELLOW, RED, OR WHITE PAINT OVER THE BLACK PAINT; ONLY THE VISIBLE BLACK PAINT WILL BE ELIGIBLE FOR PAYMENT.



ENHANCED TAXIWAY CENTERLINE DETAIL ON CURVE

TAXIWAY CENTERLINE DETAIL

NOT TO SCALE

CONTINUOUS 12-INCH YELLOW TAXIWAY LEAD-IN STRIPE WITH 6" BLACK BORDER FROM HOLDING POSITION MARKING TO RWY 12R-30L. -6" TYP.

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DOWNTOWN AIRPORT

BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCRIPTION
DES DWN REV

ISSUE: NOVEMBER 22, 2024
PROJECT NO: 23A0001D

CAD FILE: C-901-MRK DWG

DESIGN BY: JRH 4/19/2024

DRAWN BY: JRH 4/19/2024

PAVEMENT MARKING DETAILS - SHEET 2

SHEET TITLE

REVIEWED BY: BSS 4/19/2024

STORM WATER POLLUTION PREVENTION NOTES 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 DAMAGE FEATURES AND VEGETATIVE MEASURES SHALL BE EXISTING PAVEMENT PROVIDED AS SOON AS POSSIBLE. UD — EXISTING UNDERDRAIN THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT AND MAINTAIN STORM WATER POLLUTION PREVENTION PRACTICES ---- EXISTING DITCH 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 EXISTING MANHOLE/INLET B O 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 EXISTING STORM SEWER 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 PROPOSED SEEDING/MULCHING PROPOSED PAVEMENT 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. 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. 44+00 49+00 50+00 51+00 RUNWAY 12L-30R

160+00

RUNWAY 12R-30L

161+00

SEED AND MULCH ALL----DISTURBED AREAS (TYP.) HANSON Engineering | Planning | Allied Service

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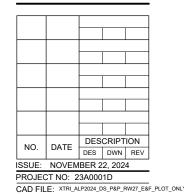
BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



DESIGN BY: JRH 3/25/2024 DRAWN BY: AJL 3/25/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

STORM WATER
POLLUTION
PREVENTION PLAN

FOR BID

B7 SOUTH

+00 170+50

167+00

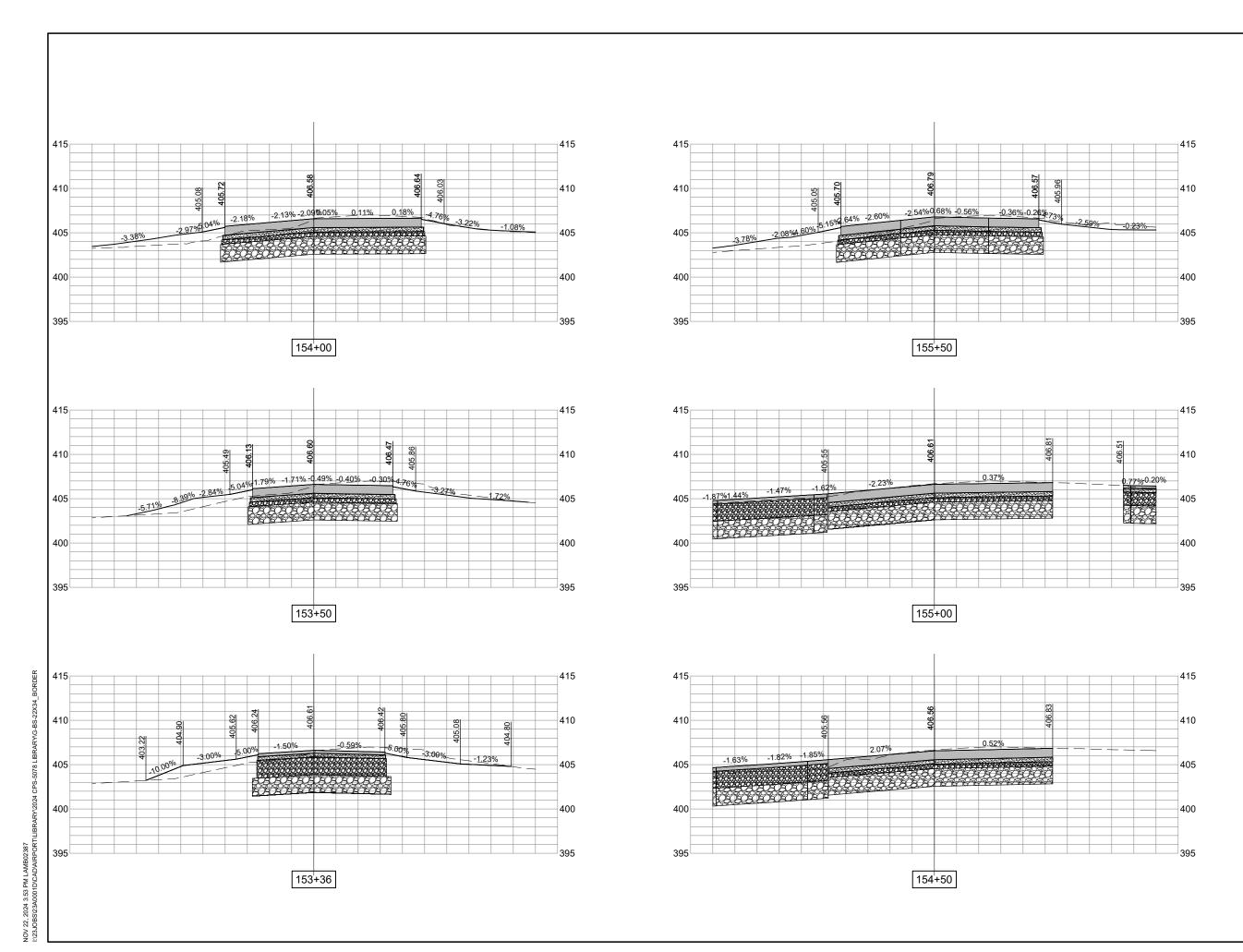
149+00

TAXIWAY B

150+00

404.0

403.0





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IDA NO.: CPS-5078 CONTRACT NO.: SD064

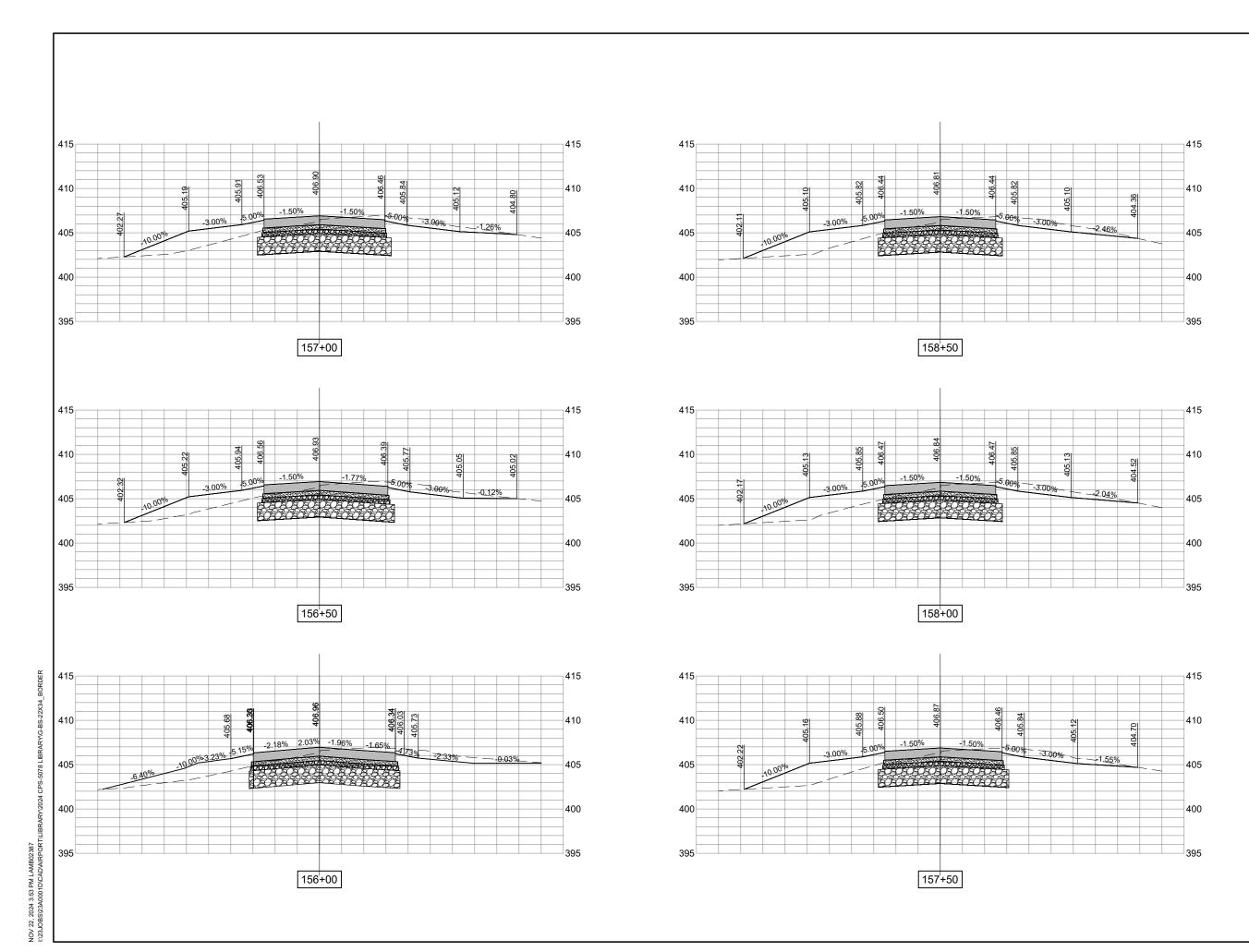
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DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION STA. 153+36 TO STA. 155+50

FOR BID





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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

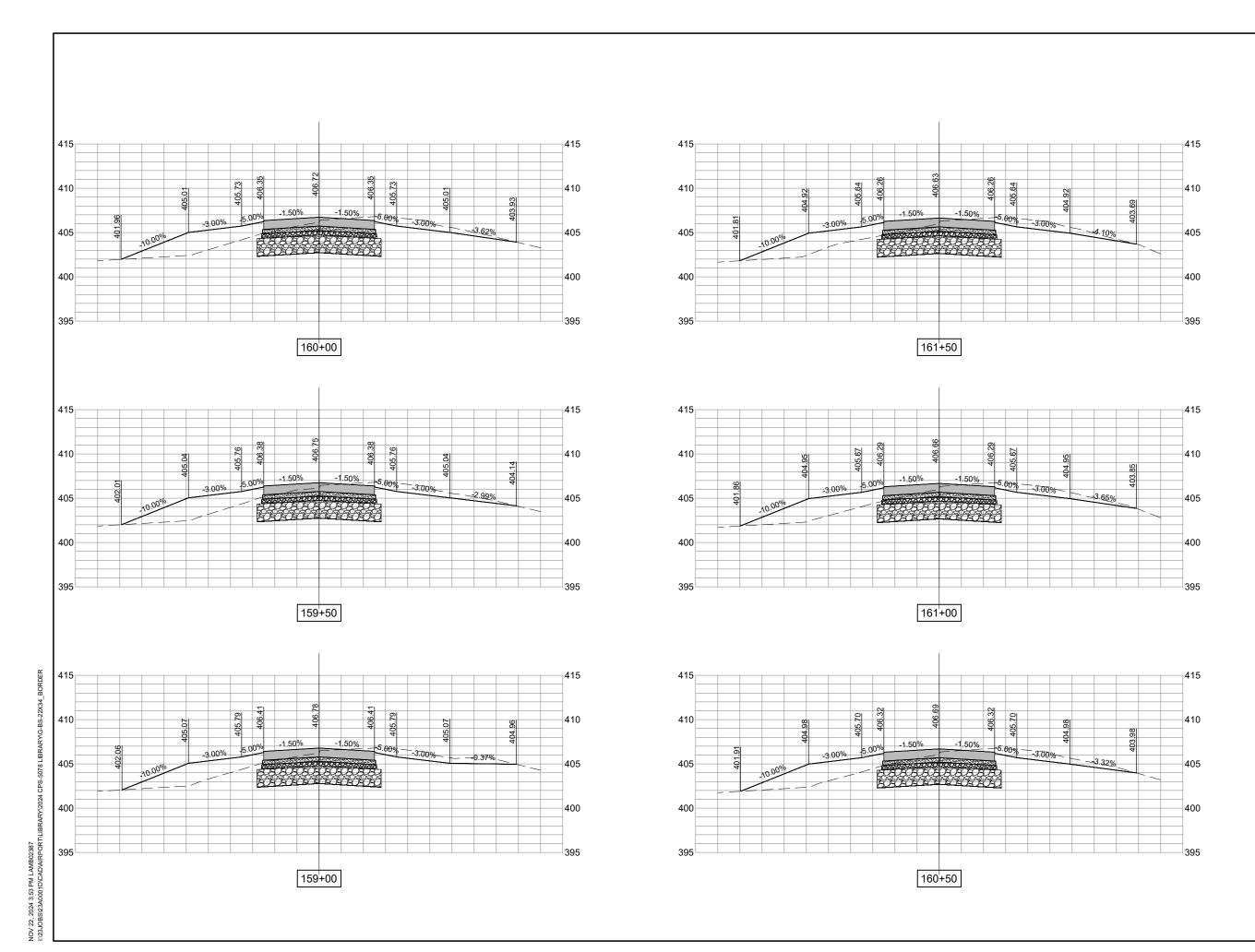
IDA NO.: CPS-5078 CONTRACT NO.: SD064

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Ī	DESIGN	BY: JR	H 03/2	24/202	4

SHEET TITLE

PROPOSED CROSS SECTION STA. 156+00 TO STA. 158+50

DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024





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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

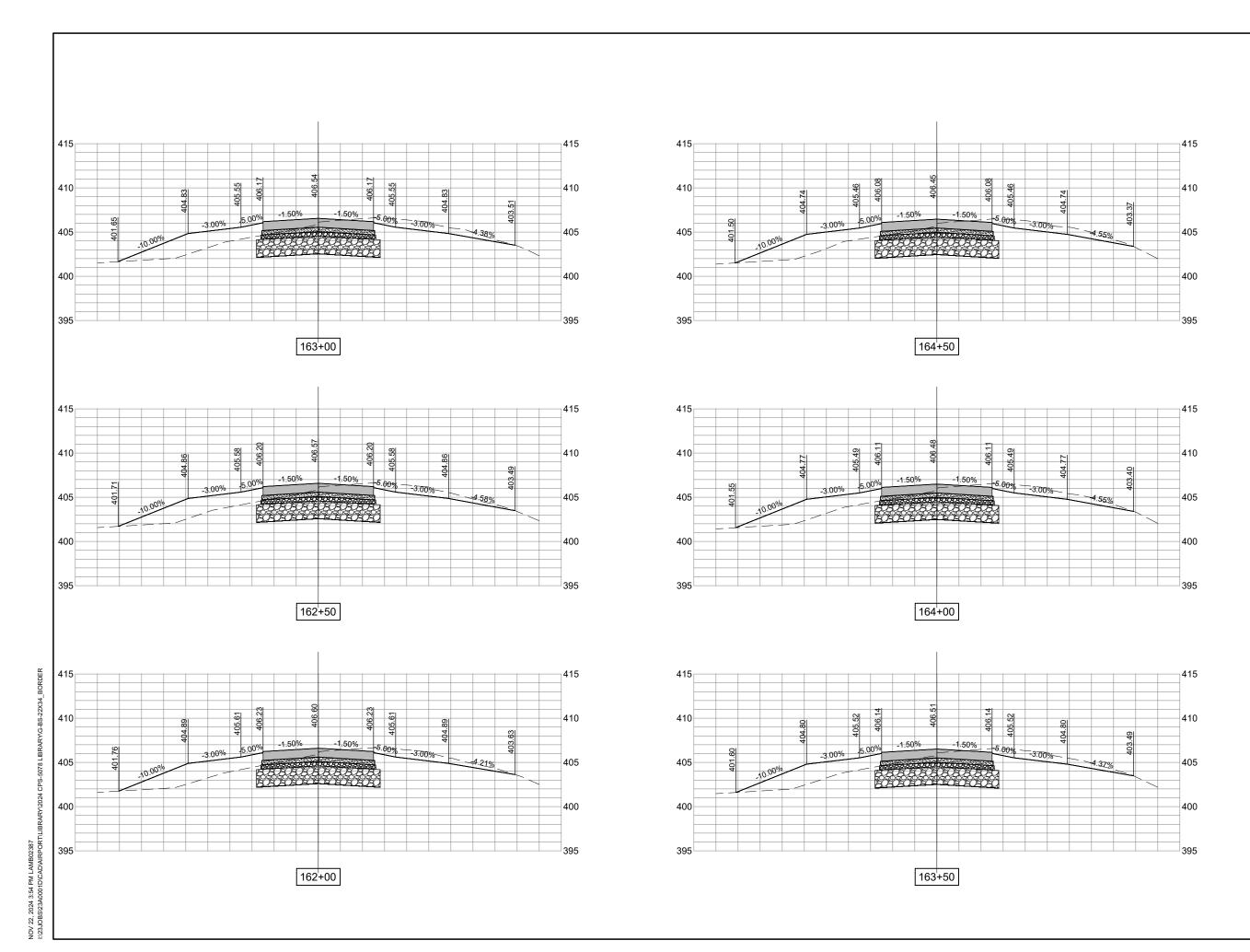
IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION
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DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION STA. 159+00 TO STA. 161+50





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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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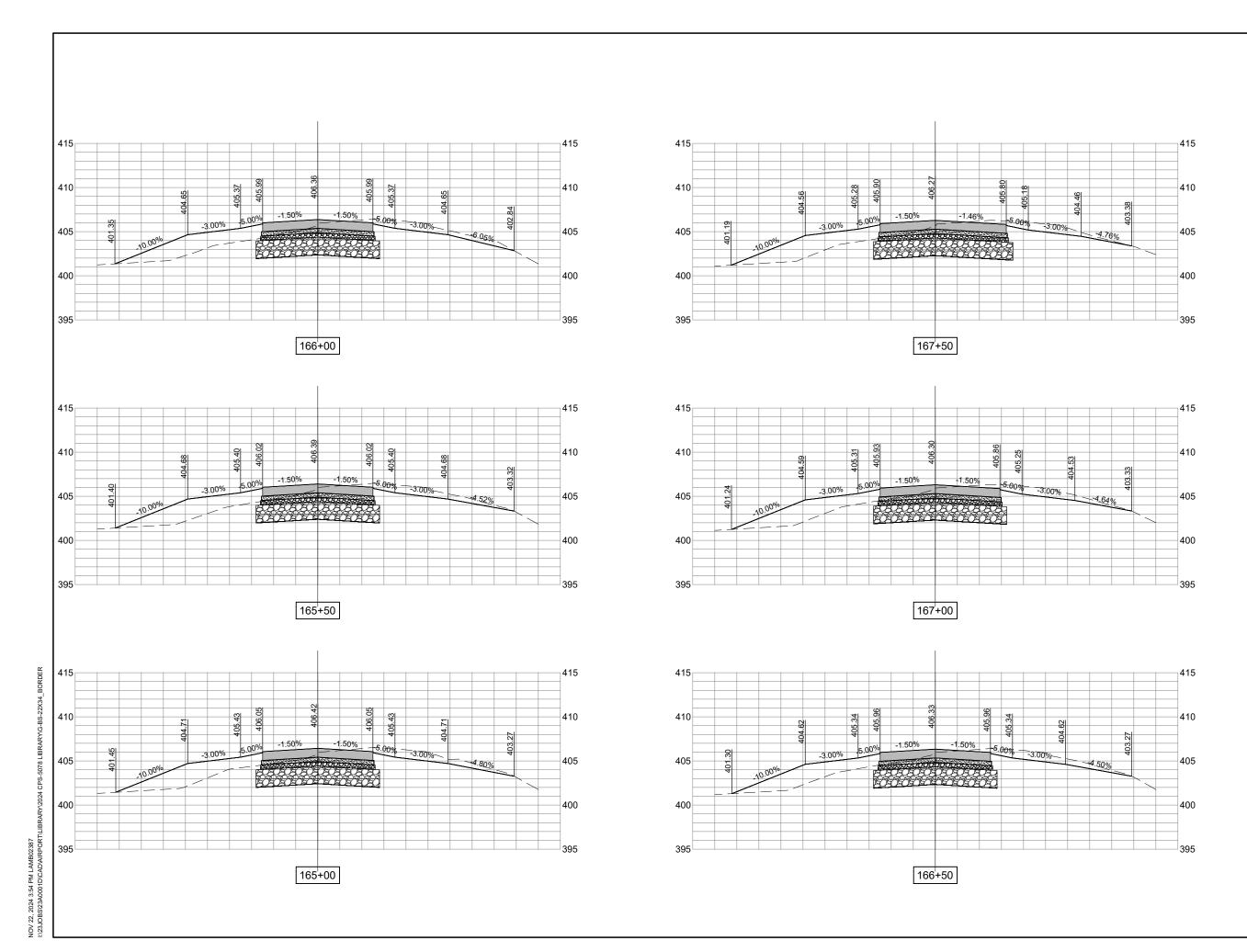
DESIGN BY: JRH 03/24/2024

DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION STA. 162+00 TO STA. 164+50

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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

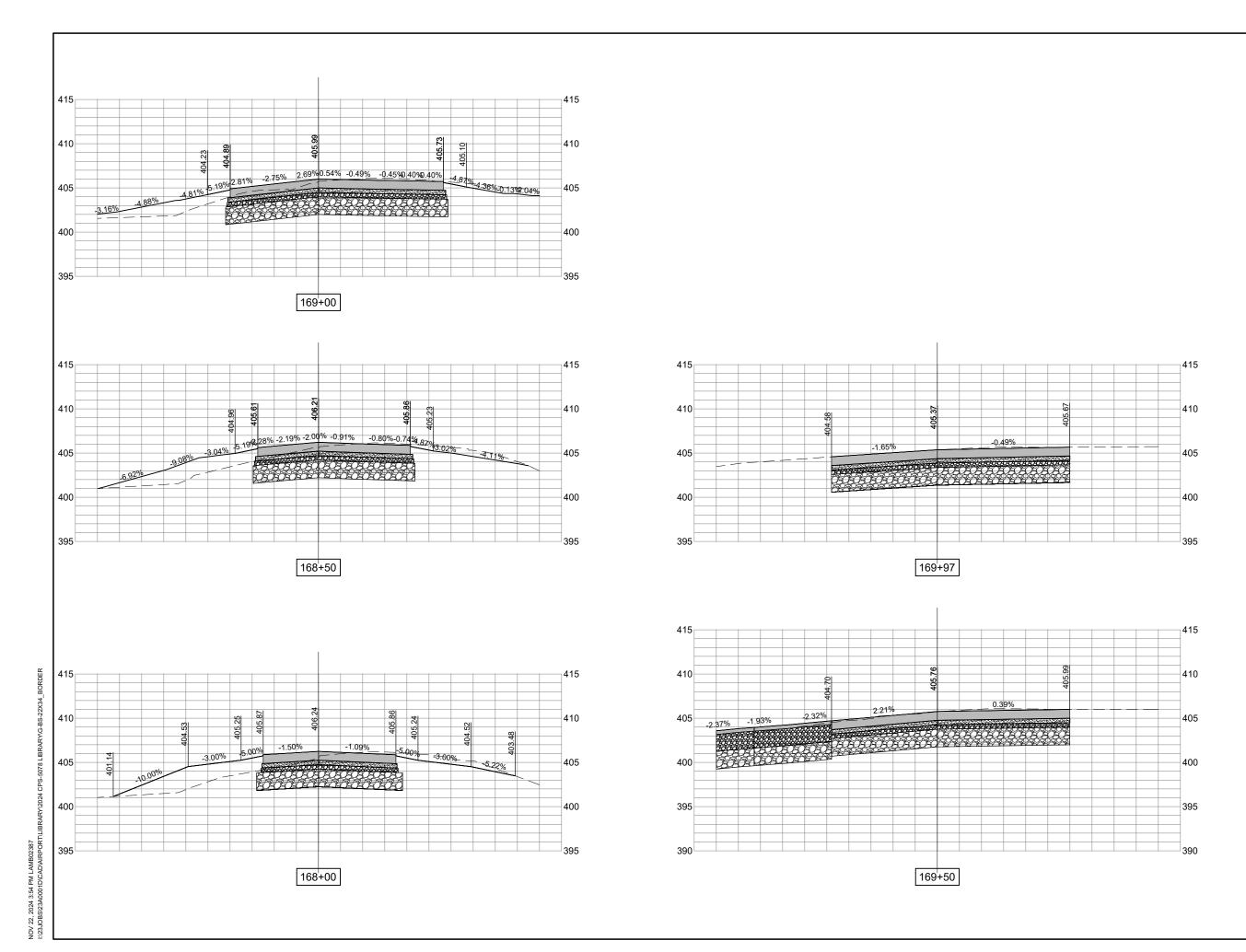
IDA NO.: CPS-5078 CONTRACT NO.: SD064

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	NO.	DATE	DES	DWN	REV
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	CAD FIL	E: XTRI_AI	LP2024_D	S_P&P_F	RW27_E&

DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION STA. 165+00 TO STA. 167+50





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DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

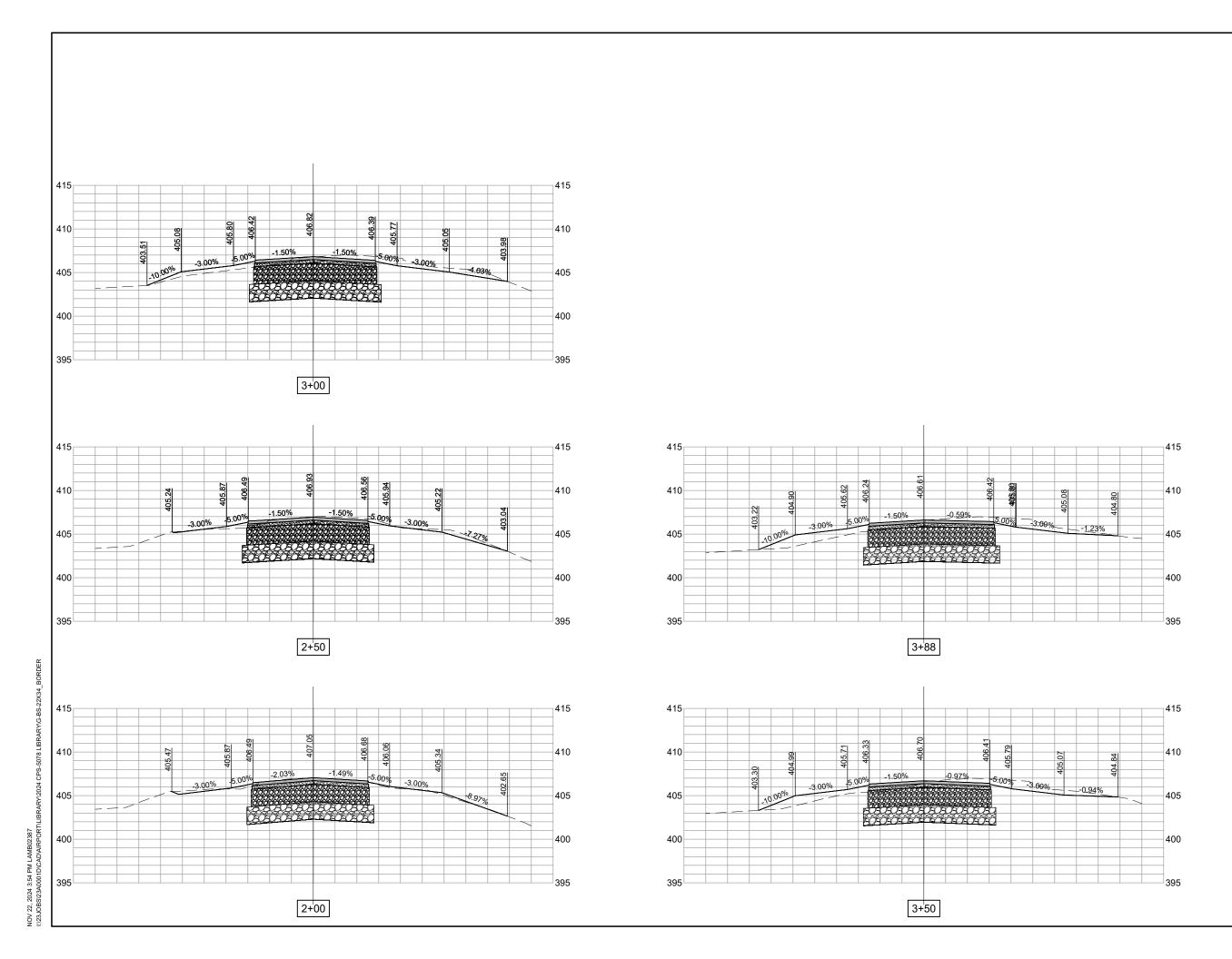
IDA NO.: CPS-5078 CONTRACT NO.: SD064

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DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION STA. 168+00 TO STA. 169+97





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IDA NO.: CPS-5078 CONTRACT NO.: SD064

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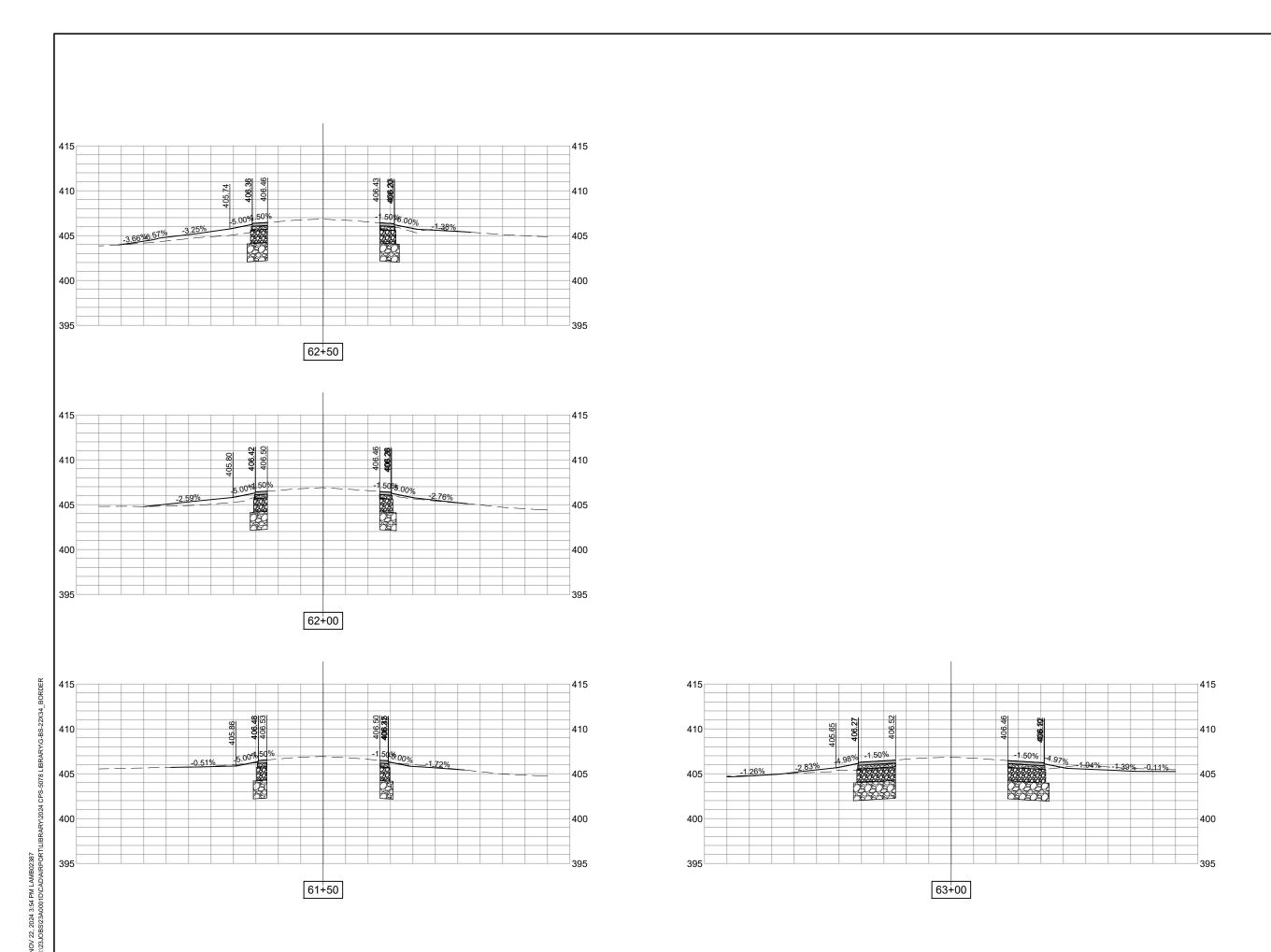
CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION -TRANSITION AREA

FOR BID





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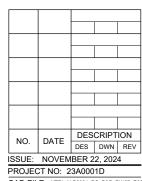
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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

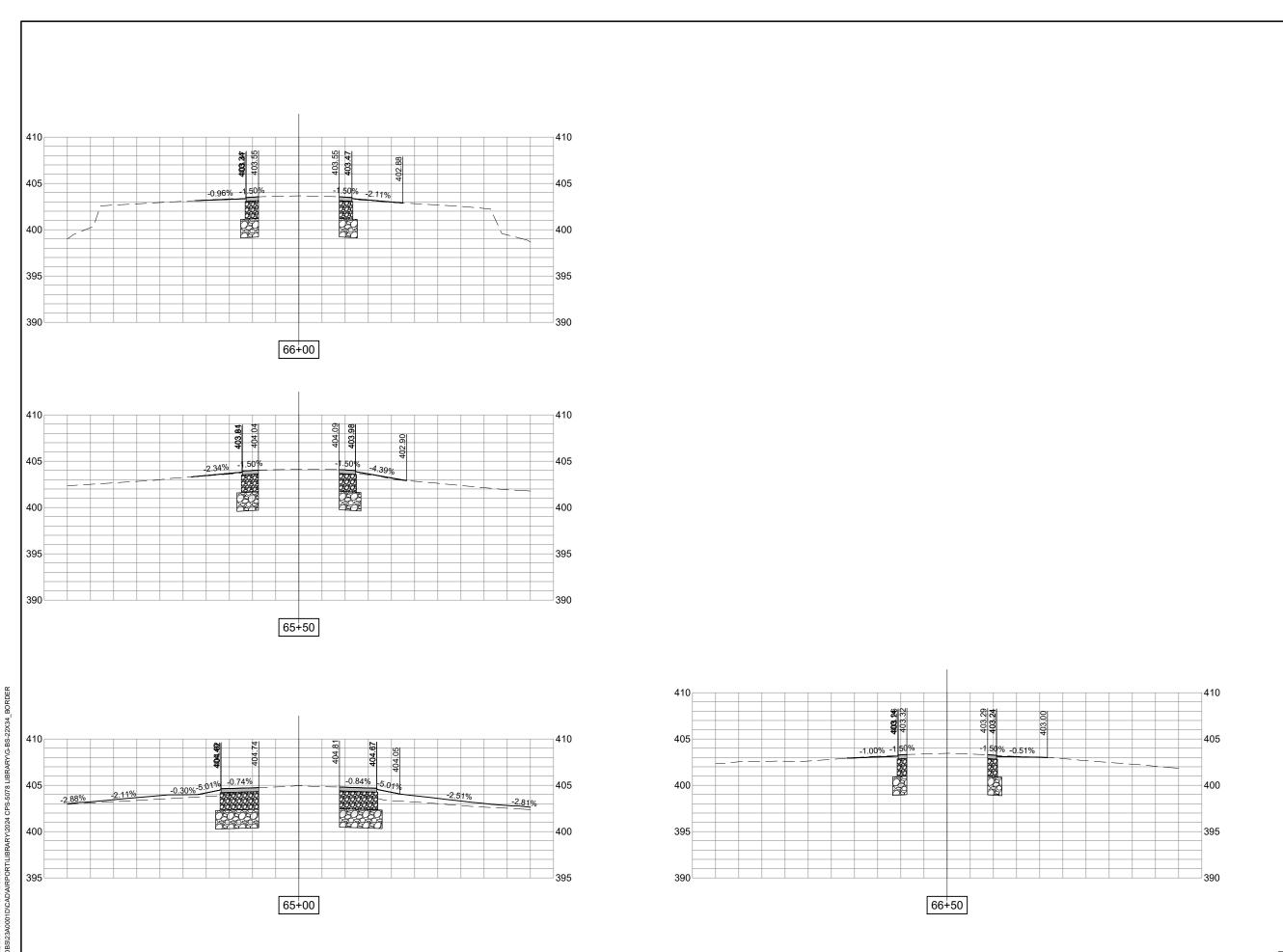


CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION - TWY B6 SOUTH





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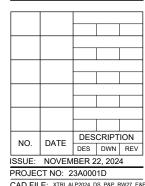
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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

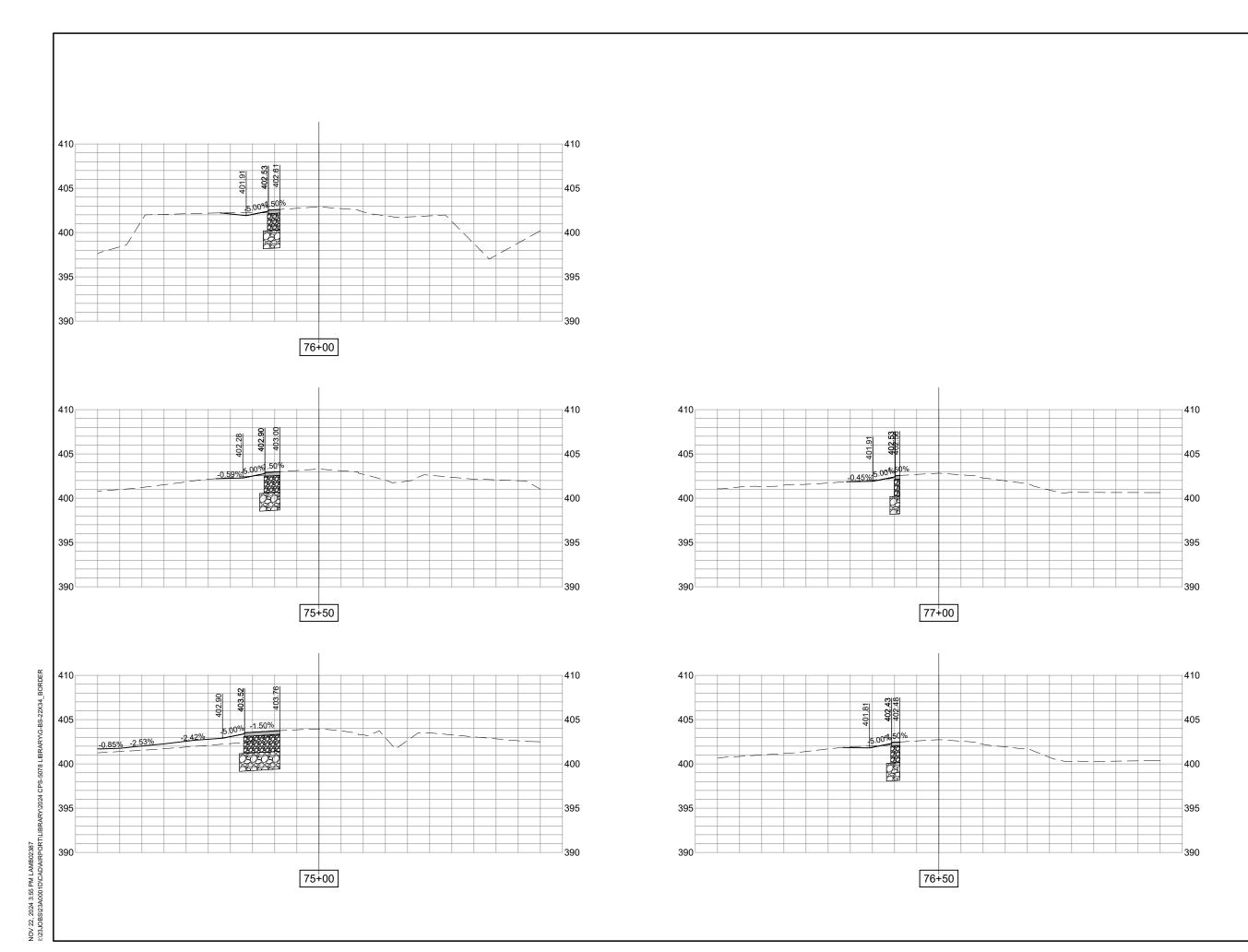


CAD FILE: XTRI_ALP2024_DS_P&P_RW27_E&F_PLOT_ONLY

DESIGN BY: JRH 03/24/2024 DRAWN BY: JRH 4/19/2024 REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION - TWY B6 NORTH





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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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CAD FILE: XTRI_ALP2024_DS_P&P_RW27,
DESIGN BY: JRH 03/24/2024

DESIGN BY: JRH 03/24/2024

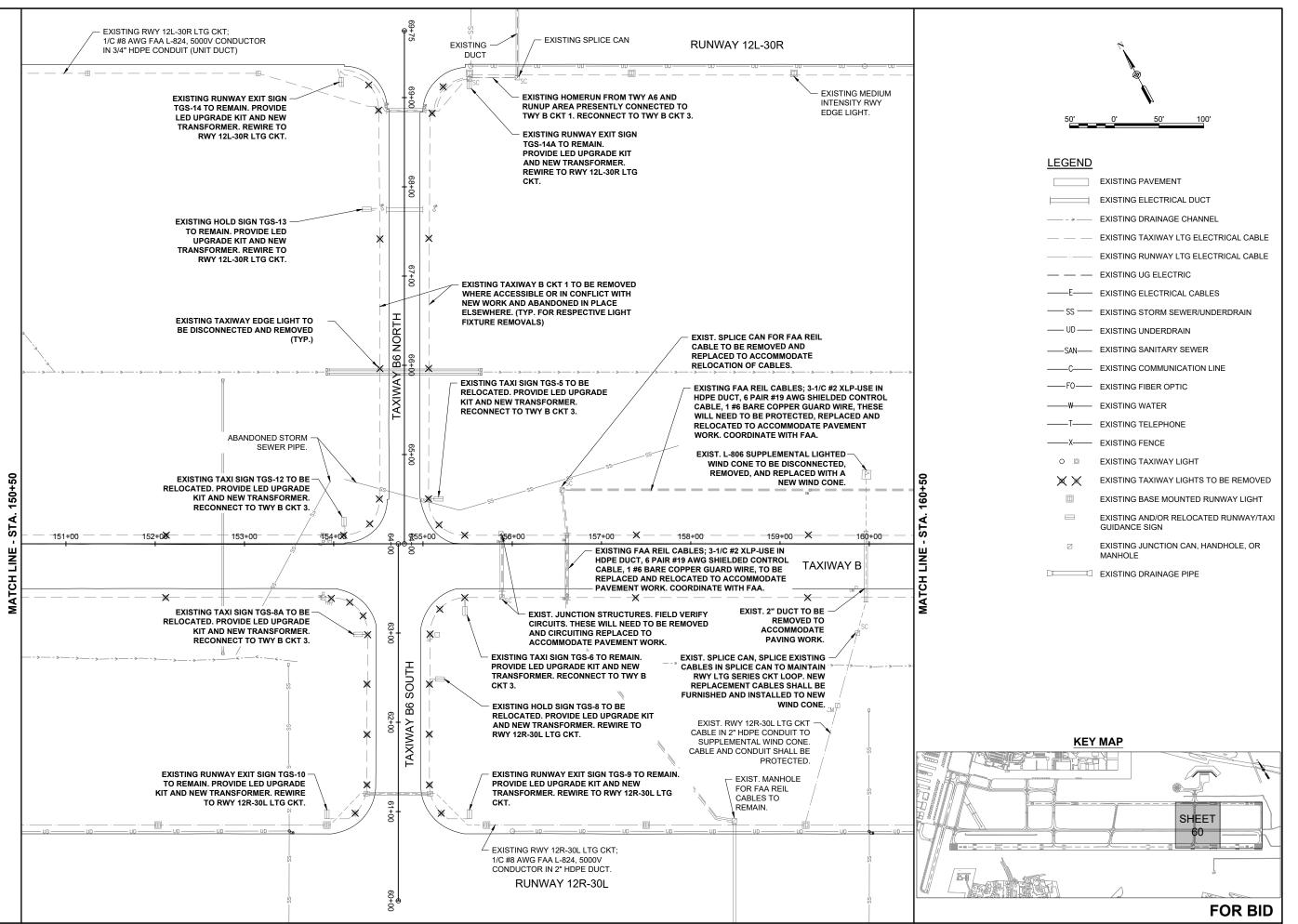
DRAWN BY: JRH 4/19/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED CROSS SECTION - TWY B7 NORTH

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COVERING ELECTRICAL DESIGN



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

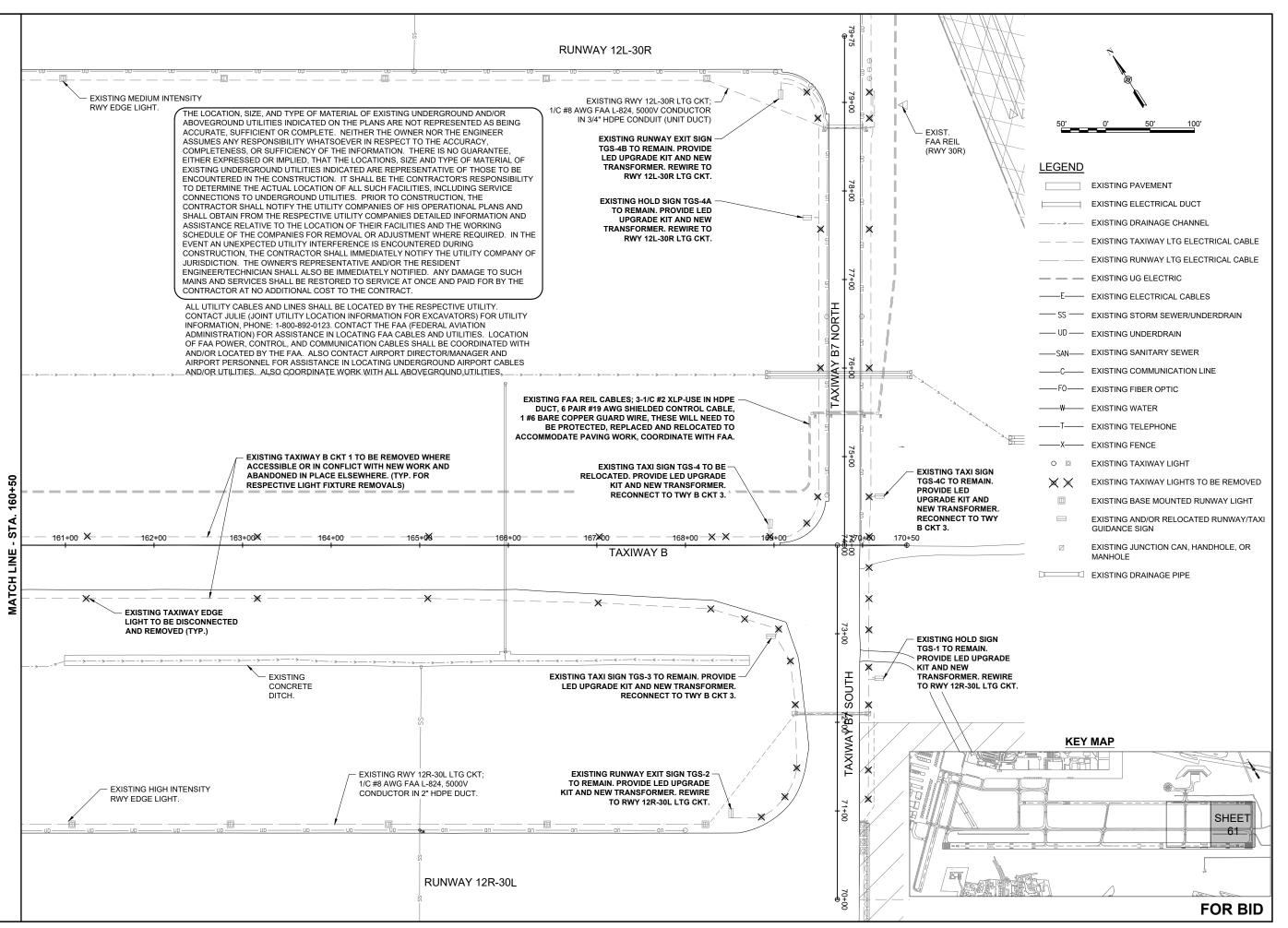
IDA NO.: CPS-5078 CONTRACT NO.: SD064

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DESIGN	BY: KN	L 3/2	2/2024	
DRAWN	BY: CW	S 3/22	2/2024	

SHEET TITLE

EXISTING ELECTRICAL PLAN STA. 150+50 TO STA. 160+50

REVIEWED BY: BSS 4/19/2024





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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST &

TAXIWAY B1 INTERSECTION IDA NO.: CPS-5078 CONTRACT NO.: SD064

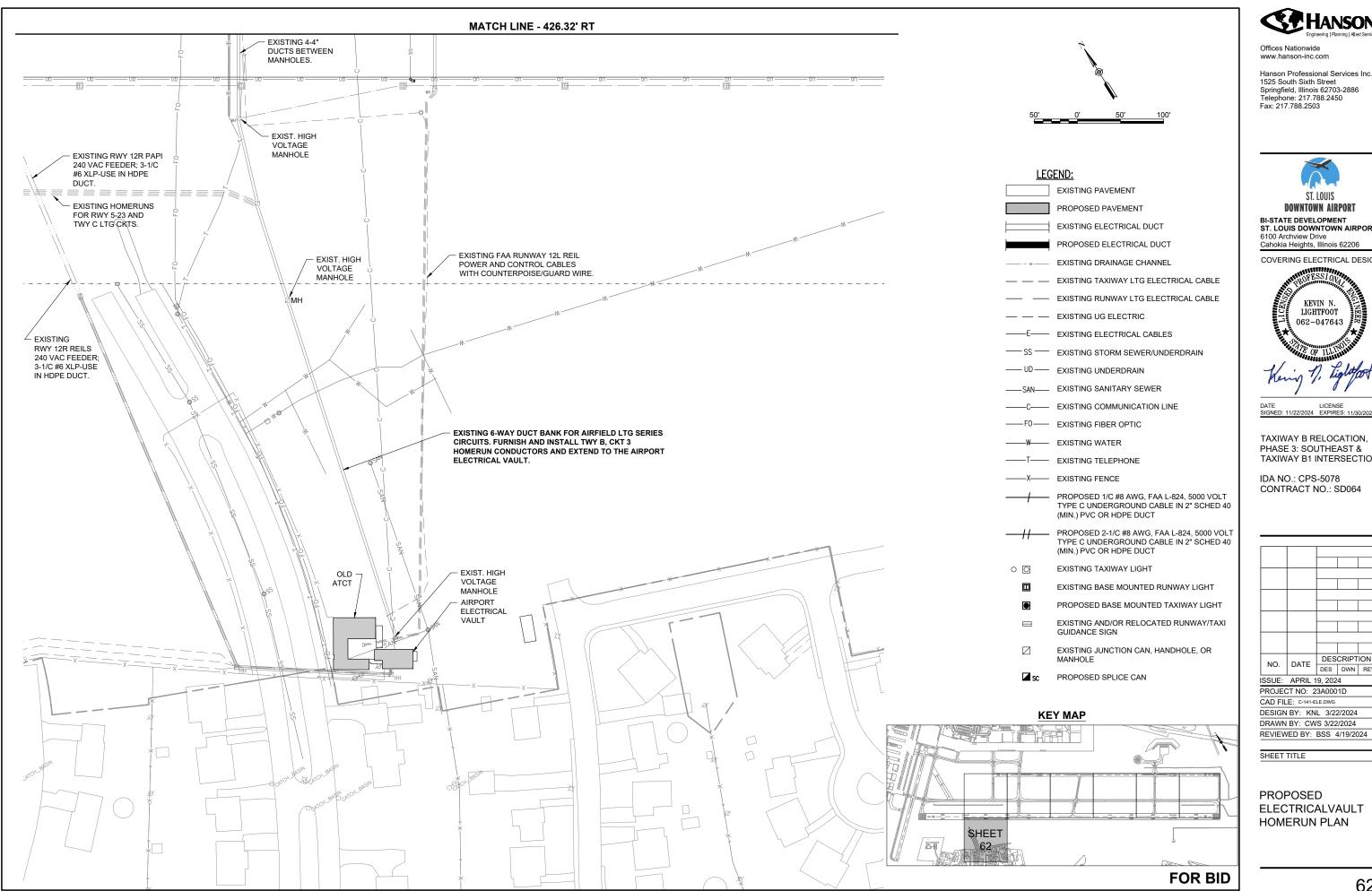
NO. DATE DESCRIPTION
DES DWN REV
ISSUE: NOVEMBER 22, 2024
PROJECT NO: 23A0001D
CAD FILE: C-141-ELE.DWG

SHEET TITLE

EXISTING ELECTRICAL PLAN STA. 160+50 TO STA. 170+50

DESIGN BY: KNI 3/22/2024

DRAWN BY: CWS 3/22/2024
REVIEWED BY: BSS 4/19/2024





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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

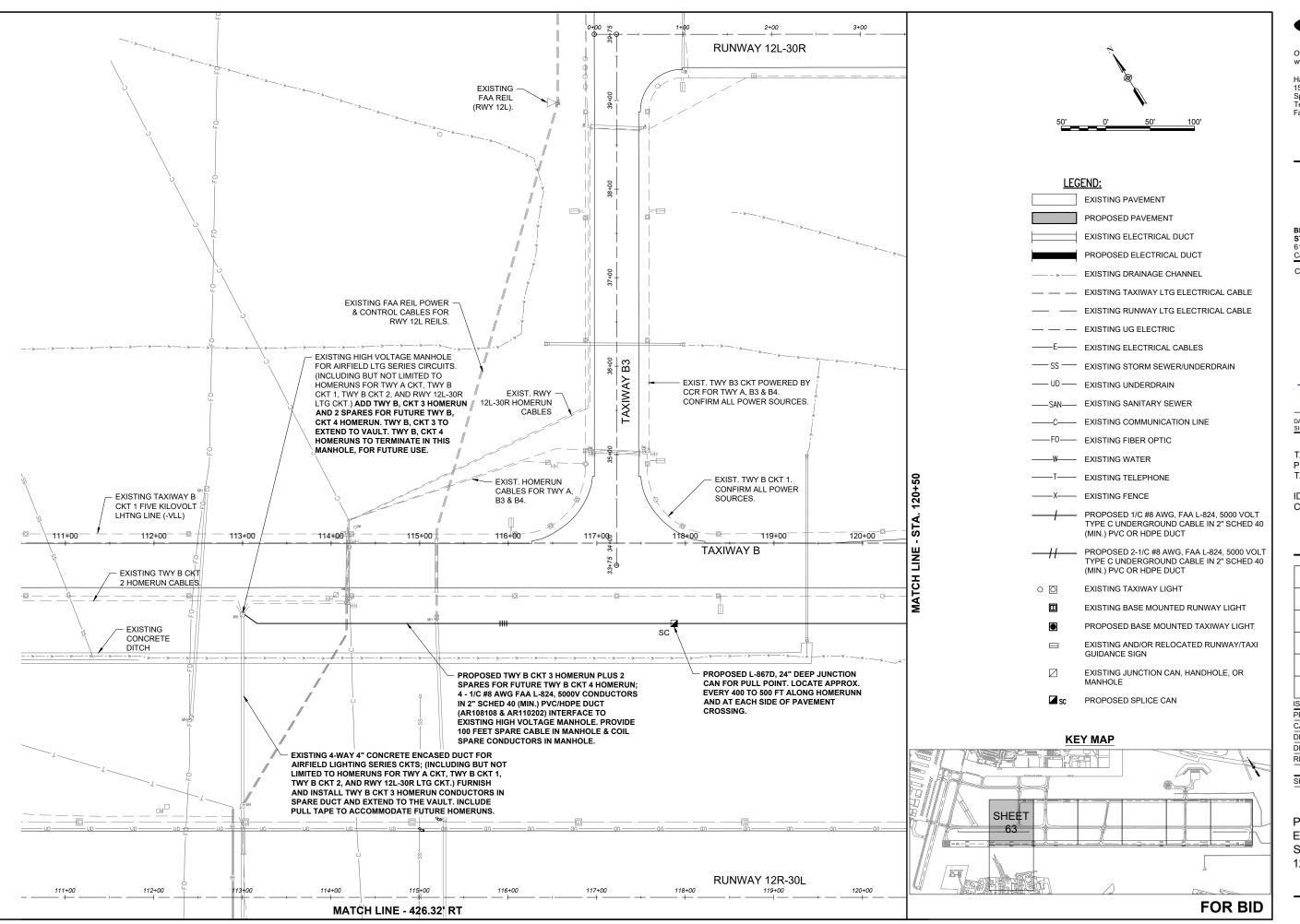
IDA NO.: CPS-5078 CONTRACT NO.: SD064

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DES DWN REV ISSUE: APRIL 19, 2024 PROJECT NO: 23A0001D CAD FILE: C-141-ELE.DWG DESIGN BY: KNL 3/22/2024 DRAWN BY: CWS 3/22/2024

SHEET TITLE

PROPOSED ELECTRICALVAULT HOMERUN PLAN





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ATE LICENSE

SIGNED: 12/05/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCRIPTION DES DWN REV

ISSUE: NOVEMBER 22, 2024

PROJECT NO: 23A0001D

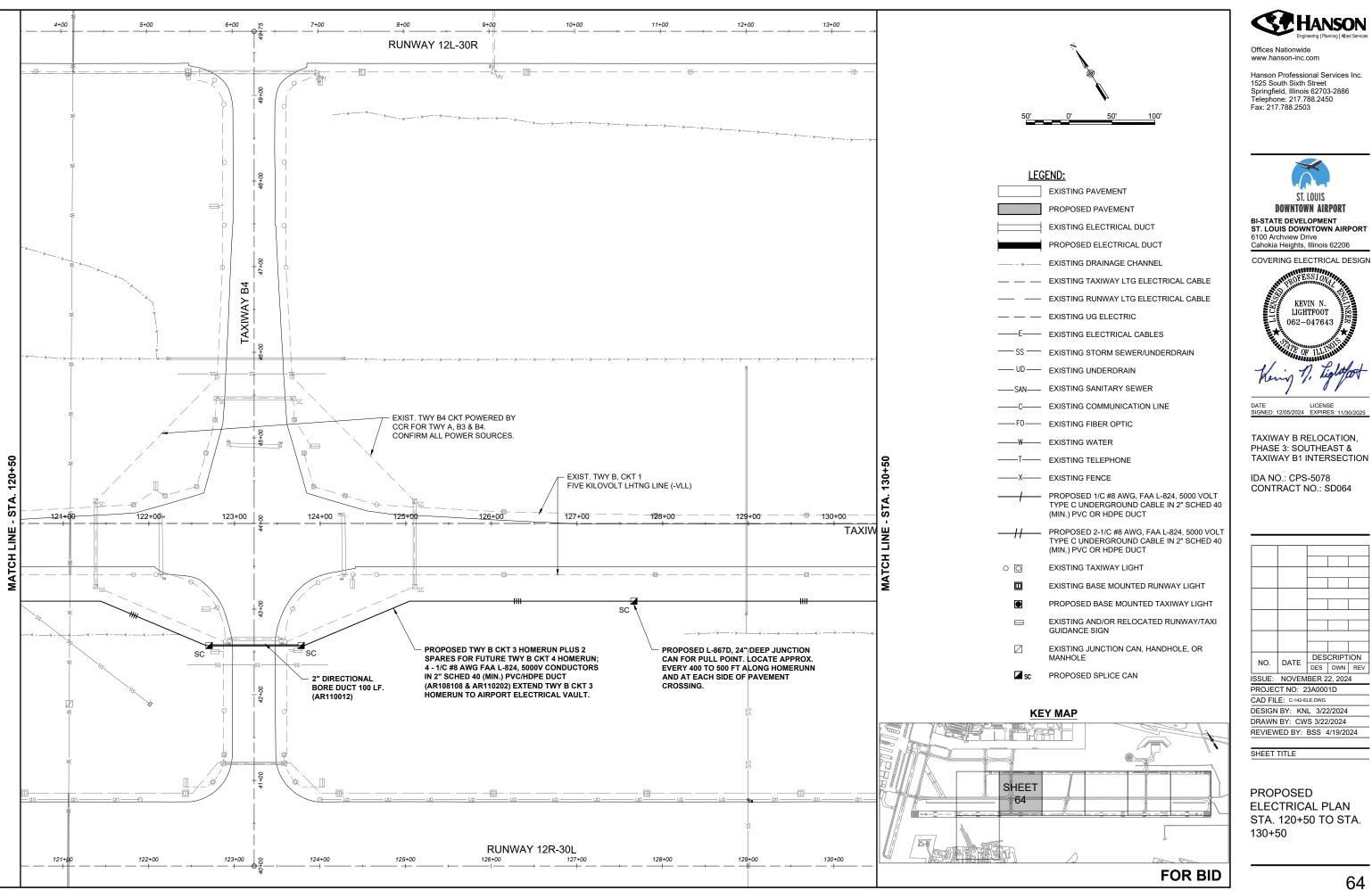
CAD FILE: C-142-ELE.DWG
DESIGN BY: KNL 3/22/2024

DESIGN BY: KNL 3/22/2024
DRAWN BY: CWS 3/22/2024
REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED ELECTRICAL PLAN STA. 110+50 TO STA. 120+50

63



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DOWNTOWN AIRPORT

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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST &

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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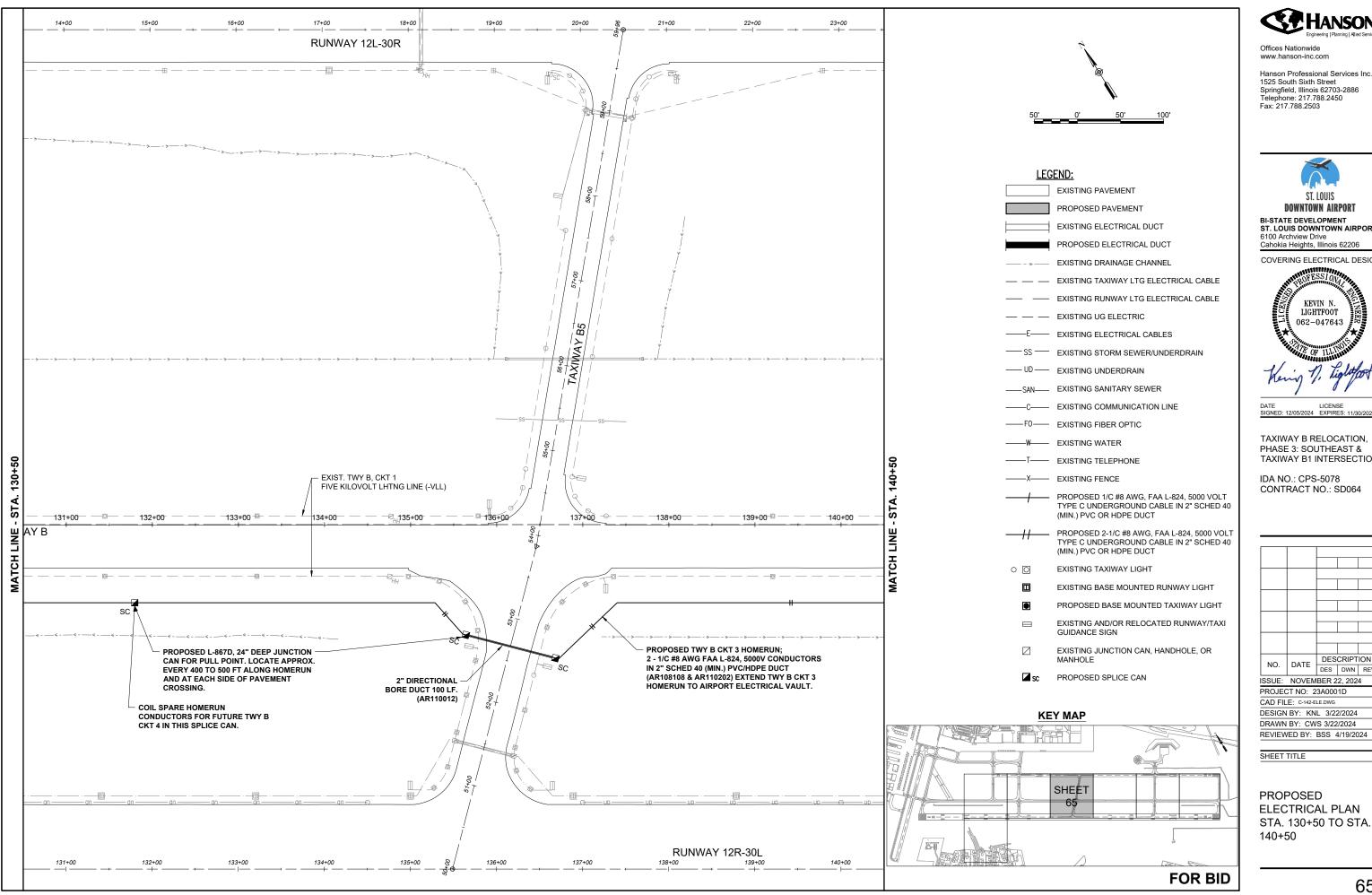
CAD FILE: C-142-ELE.DWG

DESIGN BY: KNL 3/22/2024 DRAWN BY: CWS 3/22/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED ELECTRICAL PLAN STA. 120+50 TO STA. 130+50





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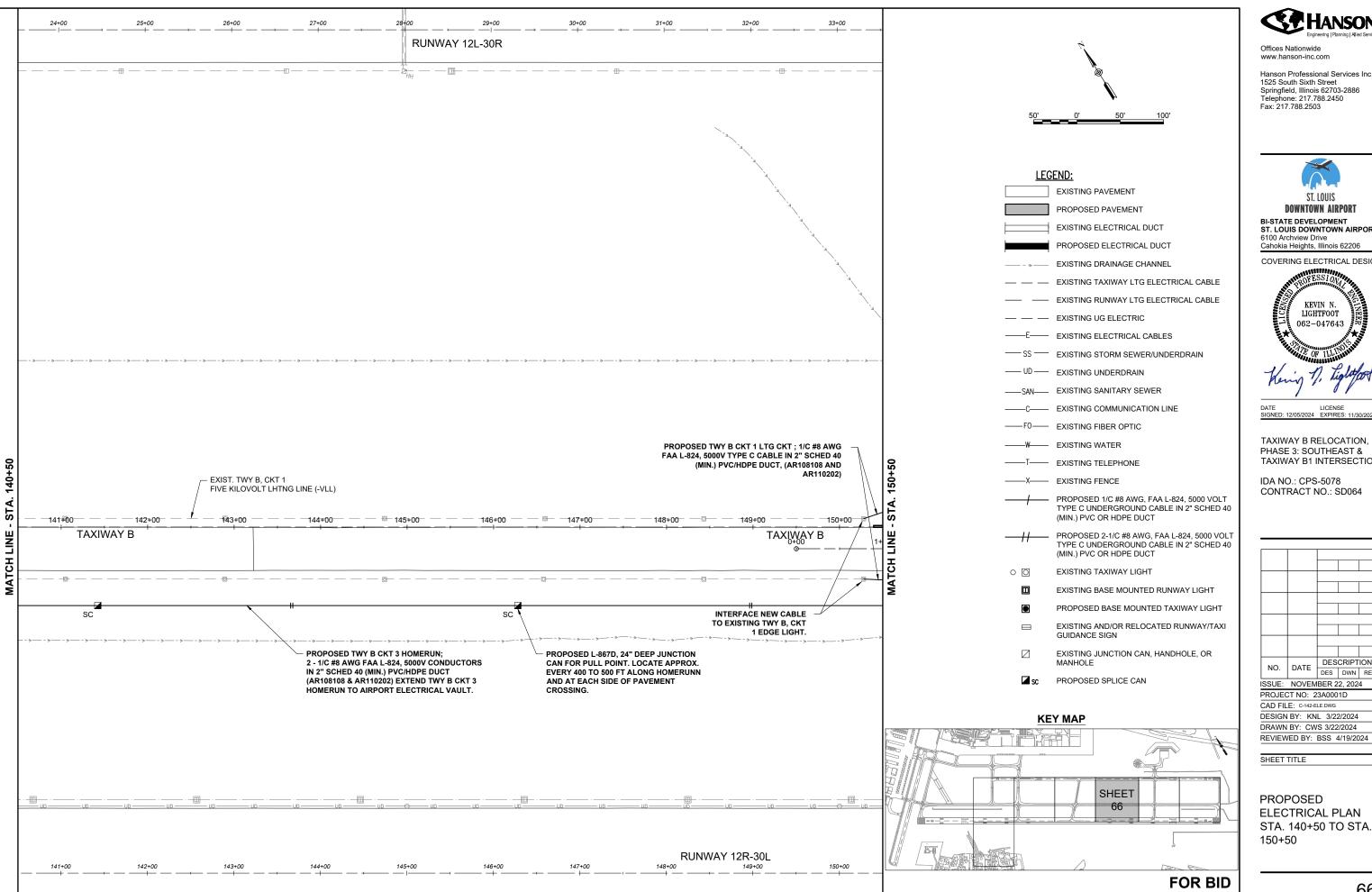
TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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ESIGN BY: KNL 3/22/2024							

PROPOSED

ELECTRICAL PLAN STA. 130+50 TO STA. 140+50





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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

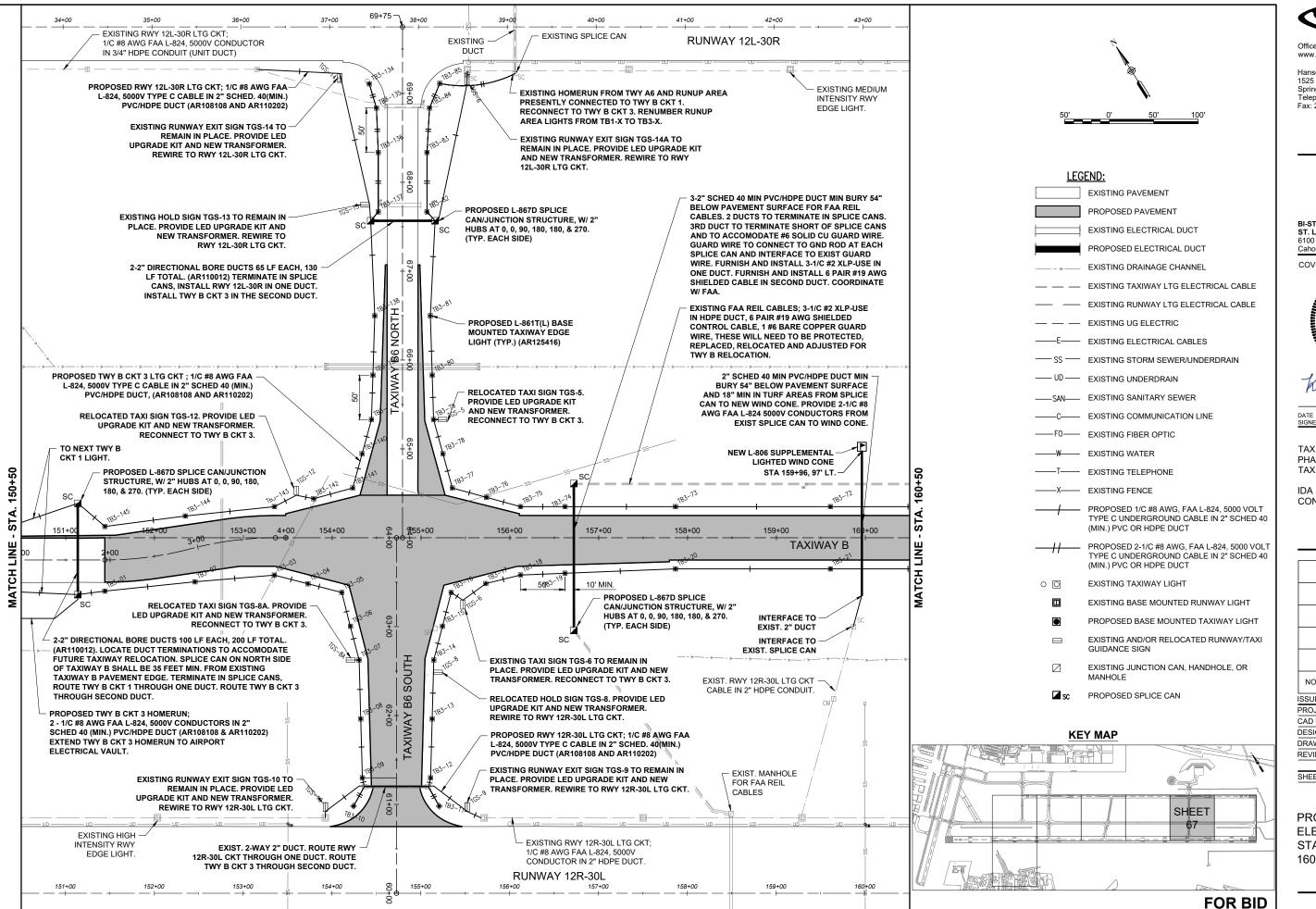
IDA NO.: CPS-5078 CONTRACT NO.: SD064

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SHEET TITLE

PROPOSED ELECTRICAL PLAN STA. 140+50 TO STA. 150+50



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SIGNED: 12/05/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024

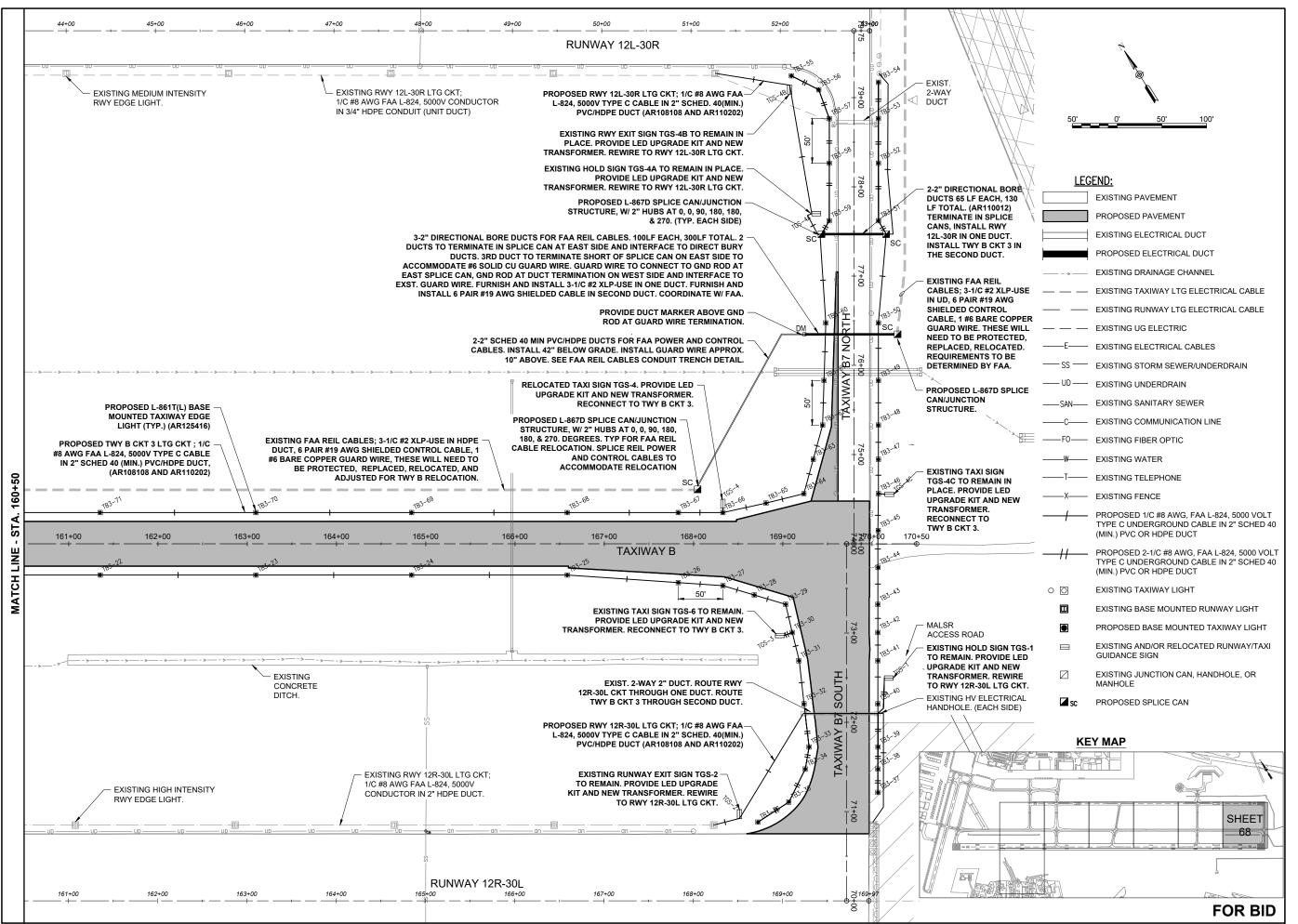
PROJECT NO: 23A0001D CAD FILE: C-142-ELE.DWG

DESIGN BY: KNI 3/22/2024 DRAWN BY: CWS 3/22/2024

REVIEWED BY: BSS 4/19/2024

SHEET TITLE

PROPOSED ELECTRICAL PLAN STA. 150+50 TO STA. 160+50





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SIGN	BY: KN	L 3/22	2/2024						
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SHEET TITLE

PROPOSED ELECTRICAL PLAN STA. 160+50 TO STA. 170+50

REVIEWED BY: BSS 4/19/2024

- 2. EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK, CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.
- 3. VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, INSTALLING, CONNECTING OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, DISTANCE REMAINING SIGN, RUNWAY SIGN, TAXI SIGN, NAVAID VALILT EQUIPMENT OR OTHER DEVICE
- 4. INSTALL AIRFIELD LIGHTING, SIGNS, SPLICE CANS, ELECTRICAL DUCTS, HANDHOLES, MANHOLES, AND CABLE AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S
- NEW AIRFIELD LIGHTING SYSTEM INSTALLATIONS, ADJUSTMENTS, RELOCATIONS, REINSTALLATIONS, AND/OR UPGRADES SHALL USE BASE (L-867 OR L-868) MOUNTED AND STAKE MOUNTED FIXTURES AND 1/C #8, FAA L-824 5000V TYPE C CABLE IN UNIT DUCT.
- 6. LIGHTING CABLE FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN 3/4" (MIN.) UNIT DUCT. CABLE SHALL BE
- 7. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE. THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED
- GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE AND RUNWAY/TAXI SIGN. 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. PER NATIONAL ELECTRICAL CODE ARTICLE 250.53 "GROUNDING ELECTRODE SYSTEM INSTALLATION" RESISTANCE FROM THE GROUND ROD/ELECTRODE TO EARTH GROUND MUST BE 25 OHMS OR LESS VIA MEASUREMENT WITH A GROUND TESTER. GROUNDS RODS FOR LIGHT BASE GROUNDS SHALL BE 3/4-INCH BY 10-FEET MINIMUM LENGTH UL LISTED COPPER-CLAD STEEL SECTIONAL RODS. GROUND RODS SHALL BE PRODUCED FROM 100% DOMESTIC STEEL. EACH GROUND ROD SHALL BE TESTED AND THE RESULTS RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND RUNWAY/TAXI SIGN INSTALLATION, COPIES OF GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER AND/OR THE RESIDENT ENGINEER/TECHNICIAN.
- 9. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT
- 10. THE CONTRACTOR SHALL TEST THE RESPECTIVE AIRFIELD LIGHTING CIRCUITS IN AREAS OF WORK WHERE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S (FOR THE AREAS OF WORK ON THIS PROJECT) SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, AND/OR ADDITIONS AND AFTER THE NEW CABLES AND LIGHTING SYSTEM MODIFICATIONS AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/
- 11. FAA AC 150/5370-10G "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS", ITEM L-108 "UNDERGROUND POWER CABLE FOR AIRPORTS", REQUIRES THAT EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED ABOVE 5.000 VOLTS AC. CABLE SPLICING/TERMINATING PERSONNEL SHALL HAVE A MINIMUM OF THREE (3) YEARS CONTINUOUS EXPERIENCE IN TERMINATING/SPLICING MEDIUM VOLTAGE CABLE.
- 12 OTHER CONSTRUCTION PROJECTS MIGHT BE IN PROGRESS AT THE AIRPORT AT THE SAME TIME AS THIS PROJECT. THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH ALL OTHER CONTRACTORS AND THE AIRPORT MANAGER IN THE COORDINATION OF
- 13. OBTAIN APPROVAL FROM THE AIRPORT MANAGER PRIOR TO SHUTTING DOWN A RUNWAY OR TAXIWAY. WHEN A RESPECTIVE RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. WHEN A RESPECTIVE TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING FOR THAT TAXIWAY SHALL BE

- 14. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY
- 15. IN THE EVENT A CONFLICT IS DETERMINED WITH RESPECT TO MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION.
- 16. SEE SAFETY PLAN AND NOTES FOR SAFETY AND CONSTRUCTION COORDINATION
- 17. EXISTING AIRFIELD LIGHTS AND/OR SIGNS DESIGNATED FOR REMOVAL SHALL BE CAREFULLY REMOVED IN THEIR ENTIRETY. THE CONTRACTOR SHALL DISCONNECT AND REMOVE THE EXISTING LIGHTS AND SIGNS, AS NOT TO DAMAGE THEM, INCLUDING MOUNTING STAKES, BASES, FOUNDATIONS AND TRANSFORMERS, THE EXISTING AIRFIELD LIGHTS, TRANSFORMERS, LIGHT BASES, COVERS AND MOUNTING STAKES SHALL BE TURNED OVER TO THE AIRPORT. SIGNS SHALL BE TURNED OVER TO THE AIRPORT FOR THEIR RIGHT OF FIRST REFUSAL. LIGHT BASES AND SIGN FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF OFF SITE. ANY MATERIAL NOT SALVAGED BY THE AIRPORT SHALL BE DISPOSED OF OFF THE AIRPORT SITE, IN A LEGAL MANNER, AT THE CONTRACTOR'S OWN EXPENSE. EXISTING DUCTS AND CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS, RELOCATIONS, REPLACEMENTS AND/OR CABLE OR DUCT REPLACEMENTS SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT WHERE ACCESSIBLE AND ABANDONED IN PLACE ELSEWHERE. PROVIDE TEMPORARY CABLES AND DUCTS TO ACCOMMODATE AIRFIELD LIGHTING CIRCUITS THAT ARE TO REMAIN ACTIVE DURING CONSTRUCTION. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES. REMOVAL OF EXISTING AIRFIELD LIGHTING WILL BE PAID FOR UNDER ITEM AR800476 REMOVE AIRFIELD LIGHTING PER
- 18. OWNER SHALL BE KEPT INFORMED OF WORK AND SCHEDULES.
- 19. ROUTE NEW CABLES AND DUCTS TO AVOID INTERFERENCES WITH OTHER UTILITIES, LINES, CABLES AND STRUCTURES.
- 20. ALL ELECTRICAL EQUIPMENT (INCLUDING AIRFIELD LIGHTING AND NAVADS) AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRIC CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS, AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERNEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE
- 21. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION"
- 22. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E -STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
- 23. RUNWAY AND TAXIWAY LIGHTING CIRCUITS SHALL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY FOR AN OPEN RUNWAY OR AN OPEN TAXIWAY. THE CONTRACTOR SHALL PROVIDE TEMPORARY CABLE & CONNECTIONS WHERE NECESSARY TO MAINTAIN A RUNWAY OR TAXIWAY LIGHTING SYSTEM TEMPORARY CARLE FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE 1/C #8 FAA L-824 5KV UG CABLE IN DUCT OR UNIT DUCT.
- 24. WHEN A RUNWAY IS CLOSED THE LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. KEEP RESPECTIVE NAVAIDS ACTIVE DURING TIMES WHEN RESPECTIVE RUNWAY IS OPEN NAVAIDS RECEIVING MAINTENANCE SHALL BE SHUT OFF UNTIL OPERATING PROPERLY COORDINATE WITH AIRPORT MANAGER TO ISSUE NOTAMS WHEN AIRFIELD LIGHTING AND/OR NAVAIDS ARE OUT OF SERVICE.
- 25. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2G, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS". ALL LABOR MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE
- 26. CONTRACTOR SHALL INTERFACE EXISTING AIRFIELD LIGHTING AND/OR SIGNS TO THE NEW, REMOVED, REINSTALLED, ADJUSTED, REPLACED, AND/OR RELOCATED AIRFIELD LIGHTING AND ASSOCIATED CIRCUITS
- 27. ALL AIRFIELD LIGHT FIXTURES SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE RESPECTIVE LIGHT FIXTURE NUMBERS. CONFIRM LIGHT FIXTURE NUMBERING WITH THE AIRPORT MANAGER/MAINTENANCE SUPERVISOR.
- 28. 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.
- 29. THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED PAVEMENT ASSOCIATED VITH REMOVAL WORK AND/OR NEW AIRFIELD LIGHTING INSTALLATIONS
- 30. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1

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

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

Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Telephone: 217,788,2450 Fax: 217.788.2503



BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D

CAD FILE: E-001-NOTES.DWG

DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/7/2024 REVIEWED BY: KNL 3/21/2024

SHEET TITLE

AIRFIELD LIGHTING NOTES

	LIGHT LC	OCATION TAE	BLE
LIGHT NUMBER	NORTHING	EASTING	GROUND RESISTANCE
TB3-01	692034.29	2301579.39	
TB3-02	691989.10	2301670.81	
TB3-03	691947.81	2301750.37	
TB3-04	691919.41	2301777.19	
TB3-05	691890.85	2301804.15	
TB3-06	691853.49	2301792.17	
TB3-07	691816.13	2301780.19	
TB3-08	691759.08	2301746.39	
TB3-09	691702.06	2301712.60	
TB3-10	691680.39	2301687.28	
TB3-11	691629.02	2301768.81	
TB3-12	691661.10	2301777.55	
TB3-13	691716.23	2301814.42	
TB3-14	691771.35	2301851.27	
TB3-15	691798.29	2301879.80	
TB3-16	691825.22	2301908.33	
TB3-17	691812.92	2301946.70	
TB3-18	691800.23	2301984.89	
TB3-19	691775.25	2302028.25	
TB3-20	691713.10	2302136.14	
TB3-21	691620.14	2302283.72	
TB3-22	691527.17	2302431.29	
TB3-23	691434.21	2302578.86	
TB3-24	691341.24	2302726.44	
TB3-25	691248.27	2302874.01	
TB3-26	691174.75	2302974.74	
TB3-27	691145.21	2303015.22	
TB3-28	691117.63	2303039.39	
TB3-29	691090.04	2303063.56	
TB3-30	691059.39	2303052.98	
TB3-31	691028.67	2303042.41	
TB3-32	690984.80	2303021.50	
TB3-33	690940.87	2303000.59	
TB3-34	690922.22	2302983.79	
TB3-35	690900.75	2302948.49	
TB3-36	690899.56	2302907.80	
TB3-37	690856.68	2303038.67	
TB3-38	690878.85	2303052.63	
TB3-39	690899.72	2303065.90	
TB3-40	690940.66	2303091.57	

	LIGHT LC	CATION TAE	BLE
LIGHT NUMBER	NORTHING	EASTING	GROUND RESISTANCE
TB3-41	690981.54	2303117.32	
TB3-42	691008.25	2303134.15	
TB3-43	691034.96	2303150.98	
TB3-44	691069.84	2303173.16	
TB3-45	691104.72	2303195.35	
TB3-46	691139.61	2303217.53	
TB3-47	691172.11	2303238.01	
TB3-48	691204.61	2303258.48	
TB3-49	691246.92	2303285.14	
TB3-50	691301.49	2303319.51	
TB3-51	691398.29	2303380.67	
TB3-52	691452.94	2303414.93	
TB3-53	691495.25	2303441.58	
TB3-54	691529.64	2303463.24	
TB3-55	691587.73	2303384.59	
TB3-56	691558.19	2303402.22	
TB3-57	691524.57	2303395.04	
TB3-58	691482.26	2303368.39	
TB3-59	691427.76	2303333.99	
TB3-60	691332.89	2303269.68	
TB3-61	691279.39	2303233.59	
TB3-62	691237.92	2303205.62	
TB3-63	691211.01	2303176.26	
TB3-64	691184.10	2303146.90	
TB3-65	691197.74	2303105.40	
TB3-66	691214.53	2303058.89	
TB3-67	691241.18	2303016.59	
TB3-68	691307.50	2302911.32	
TB3-69	691400.46	2302763.74	
TB3-70	691493.43	2302616.17	
TB3-71	691586.40	2302468.60	
TB3-72	691679.36	2302321.03	
TB3-73	691772.33	2302173.45	
TB3-74	691838.65	2302068.19	
TB3-75	691865.30	2302025.88	
TB3-76	691894.66	2301998.98	
TB3-77	691924.03	2301972.09	
TB3-78	691962.20	2301983.70	
TB3-79	692000.38	2301995.31	
TB3-80	692043.52	2302020.63	
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LIGHT NUMBER	NORTHING	EASTING	GROUND RESISTANCI
TB3-81	692101.21	2302054.50	
TB3-82	692202.10	2302113.61	
TB3-83	692258.68	2302149.23	
TB3-84	692299.46	2302178.29	
TB3-85	692316.70	2302202.78	
TB3-134	692358.59	2302135.40	
TB3-135	692331.29	2302127.78	
TB3-136	692287.93	2302102.81	
TB3-137	692231.32	2302067.22	
TB3-138	692134.57	2302001.56	
TB3-139	692079.10	2301964.15	
TB3-140	692037.67	2301936.13	
TB3-141	692010.71	2301906.71	
TB3-142	691983.75	2301877.29	
TB3-143	691997.02	2301833.63	
TB3-144	692013.10	2301791.26	
TB3-145	692057.52	2301701.09	
TB3-146	692095.82	2301618.16	



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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

	NO.	DATE	DES	CRIPT	ION
	INO.	DATE	DES	DWN	REV
	ISSUE: NOVEMBER 22, 2024				
	PROJECT NO: 23A0001D				
	CAD FILE: E-641-SCHED DWG				

SHEET TITLE

LIGHT LOCATION **TABLE**

DESIGN BY: KNL 3/2/2024 DRAWN BY: CWS 3/11/2024 REVIEWED BY: KNL 3/21/2024

		TAXI GU	JIDANCE SIGN SCHEDULE		
SIGN NUMBER	LOCATION	EXIS SIDE A	STING SIDE B	REMARKS	
TGS-1	TAXIWAY B7 INTERSECTION WITH RUNWAY 30L AT HOLD LINE	B7 30L	SIDE D	EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO BE POWERED FROM RUNWAY 12R-30L LIGHTING CKT. PROVIDE LED UPGRADE KIT BY ORIGINAL EQUIPMENT MANUFACTURER. PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-2	RUNWAY 12R INTERSECTION WITH TAXIWAY B7.	← B7		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO BE POWERED FROM RUNWAY 12R-30L LIGHTING CKT. PROVIDE LED UPGRADE KIT BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-3	TAXIWAY B7 INTERSECTION WITH TAXIWAY B WEST OF TAXIWAY B7.	←B B7		EXISTING SIGN TO REMAIN IN PLACE. RECONNECT TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-4	TAXIWAY B INTERSECTION WITH TAXIWAY B7 NORTH SIDE OF TAXIWAY B. NORTHING: 691218.76 EASTING: 2303061.55	← B7 B B7 →		EXISTING SIGN TO BE RELOCATED. RECONNECT TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER FOR EACH SIGN. THIS SIGN ARRAY HAS A 2 MODULE SIGN AND A 3 MODULE SIGN.	
TGS-4A	TAXIWAY B7 INTERSECTION WITH RUNWAY 30R AT HOLD LINE.	B7 30R		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12L-30R LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-4B	RUNWAY 12L INTERSECTION WITH TAXIWAY B7	B7 →		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12L-30R LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-4C	TAXIWAY B7 INTERSECTION WITH TAXIWAY B EAST SIDE OF TAXIWAY B7	B7 B→		EXISTING SIGN TO REMAIN IN PLACE. RECONNECT TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-5	TAXIWAY B6 INTERSECTION WITH TAXIWAY B EAST SIDE OF TAXIWAY B6 NORTHING: 691997.71 EASTING: 2301999.54	←B B 6 B→		EXISTING SIGN TO BE RELOCATED. RECONNECT TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER FOR EACH SIGN.	
TGS-6	TAXIWAY B INTERSECTION WITH TAXIWAY B6 SOUTH SIDE OF TAXIWAY B	← B6 B B6 →		EXISTING SIGN TO REMAIN IN PLACE. REWIRE TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER FOR EACH SIGN. THIS SIGN ARRAY HAS A 2 MODULE SIGN AND A 3 MODULE SIGN.	
TGS-8	TAXIWAY B6 INTERSECTION WITH RUNWAY 12R-30L AT HOLD LINE NORTHING: 691759.76 EASTING: 2301843.71	B6 30L - 12R		EXISTING SIGN TO BE RELOCATED. RECONNECT TO RUNWAY 12R-30L LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-8A	TAXIWAY B6 INTERSECTION WITH TAXIWAY B WEST SIDE OF TAXIWAY B6 NORTHING: 691818.58 EASTING: 2301776.28	←B B 6 B→		EXISTING SIGN TO BE RELOCATED. RECONNECT TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT(5) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-9	RUNWAY 30L INTERSECTION WITH TAXIWAY B6	B6 →		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12R-30L LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-10	RUNWAY 12L INTERSECTION WITH TAXIWAY B6	← B6		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12R-30L LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-12	TAXIWAY B INTERSECTION WITH TAXIWAY B6 AT NORTH SIDE OF TAXIWAY B NORTHING: 692010.90 EASTING: 2301819.29	← B6 B B6 →		EXISTING SIGN TO BE RELOCATED. RECONNECT TO TAXIWAY B CIRCUIT 3. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER. PROVIDE NEW FAA L-830-4 100W TRANSFORMER FOR EACH SIGN. THIS SIGN ARRAY HAS A 2 MODULE SIGN AND A 3 MODULE SIGN.	
TGS-13	TAXIWAY B6 INTERSECTION WITH TAXIWAY RUNWAY 12L-30R AT HOLD LINE	B6 12 L - 3 OR		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12L-30R LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-14	RUNWAY 12L INTERSECTION WITH TAXIWAY B6	B6 →		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12L-30R LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	
TGS-14A	RUNWAY 30R INTERSECTION WITH TAXIWAY B6	← B6		EXISTING SIGN TO REMAIN IN PLACE. REWIRE SIGN TO RUNWAY 12L-30R LIGHTING CIRCUIT. PROVIDE LED UPGRADE KIT(S) BY ORIGINAL EQUIPMENT MANUFACTURER, PROVIDE NEW FAA L-830-4 100W TRANSFORMER.	

NOTES:

- THE TAXI GUIDANCE SIGNS IN THE SCHEDULE ARE EXISTING SIGNS SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT WITH QUARTZ OR INCANDESCENT LAMPS AND ARE/MANUFACTURED BY LUMACURVE.
- 2. PROVIDE TETHERS FOR EACH TAXI SIGN IN ACCORDANCE WITH FAA AC 150/5345-44K (OR LATEST ISSUE IN FORCE). SIGN TETHER ANCHOR HARD POINTS MUST BE PROVIDED ON ONE SIGN MOUNTING LEG ABOVE THE FRANGIBLE BREAKING POINT. TETHER ANCHOR HARD POINTS MUST BE PROVIDED SO THAT ONE END OF THE TETHER ATTACHES TO THE SIGN STRUCTURE, AND THE OTHER END ATTACHES BELOW THE FRANGIBLE POINT ON THE COUPLING TO EITHER ONE OF THE LEG MOUNTING BOLTS OR AN INDEPENDENT BOLT IN THE SIGN CONCRETE MOUNTING PAD. SIGNS THAT CONSIST OF MULTIPLE SEPARATE HOUSINGS (NOT CONNECTED TOGETHER IN A CONTINUOUS FRAME) MUST HAVE A MINIMUM OF ONE TETHER PER HOUSING. SIGNS THAT USE MULTIPLE MODULES CONNECTED TOGETHER IN A CONTINUOUS FRAME MUST USE A TETHER AT BOTH ENDS.
 - PROVIDE A LEGEND PLATE/LABEL FOR EACH SIGN THAT NOTES THE RESPECTIVE POWER SOURCE. EXAMPLE: "THIS SIGN IS CONNECTED TO LIGHTING CIRCUIT. CONFIRM AND DISCONNECT POWER SOURCE PRIOR TO WORKING ON THIS SIGN." IDENTIFY THE RESPECTIVE AIRFIELD LIGHTING CIRCUIT FOR EACH SIGN. LOCATE ON SIGN ABOVE OR BELOW SIGN NUMBER LABEL
- RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIING ROUTE) OR RUNWAY EXIT/TAXIWAY ENTRANCE LIGHTS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY CIRCUIT TO BE ILLUMINATED WHEN THE RUNWAY EDGE LIGHTS ARE ON TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION", AND/OR FAA AC 150/5340-30 J PART 2 5 3 4
- HOLDING POSITION SIGNS FOR RUNWAYS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE ASSOCIATED RUNWAY LIGHTS ARE ILLUMINATED TO COMPLY WITH FAA AC150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".
- CONCRETE STEEL REINFORCEMENT SHALL BE TYPE ASTM A615 OR A706 GRADE 60 WELDED STEEL WIRE FABRIC SHALL CONFORM TO AASHTO M55 OR AASHTO M221. ALL REINFORCEMENT SHALL HAVE A 3" MINIMUM CONCRETE COVER. REINFORCEMENT MAY BE ADJUSTED TO MISS INTERFERENCES. CONCRETE SHALL CONFORM TO ITEM P-610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- 7. SEE SPECIFICATION ITEM L-125 FOR ADDITIONAL REQUIREMENTS ON TAXI GUIDANCE SIGNS.
- 8. SEE "AIRFIELD LIGHTING NOTES" SHEET FOR ADDITIONAL REQUIREMENT ON TAXI GUIDANCE SIGNS.
- 9. CONTRACTOR SHALL TEST AND RECORD THE EARTH GROUND RESISTANCE FOR THE GROUND ROD AT EACH AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN.
- 10. FAA AC 150/5340-26C, PART 3.6.6 USE OF ORIGINAL EQUIPMENT MANUFACTURER (OEM) PART, NOTES THE FOLLOWING: "THE USE OF NON-OEM PARTS OR LAMPS IN FAA APPROVED EQUIPMENT IS STRONGLY DISCOURAGED. THE FAA HAS STRICT SPECIFICATIONS FOR APPROVAL OF ALL AIRPORT LIGHTING EQUIPMENT AND USE OF NON-OEM PARTS OR LAMPS IN SUCH FOUIPMENT OR SYSTEMS CAN RENDER THE FOUIPMENT TO BE FUNCTIONALLY NON-FAA APPROVED. THIS COULD POSSIBLY LEAD TO SERIOUS LIABILITY CONSEQUENCES IN CASE OF AN AIRCRAFT INCIDENT AT AN AIRPORT FOLLOWING THESE PRACTICES."

TAXI GUIDANCE SIGN LEGEND



TYPE L-858L(L) LOCATION SIGN - YELLOW LEGEND AND BORDER ON A BLACK



TYPE L-858R(L) MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND



TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGN - BLACK LEGEND ON A YELLOW BACKGROUND



BLANK - BLACK BACKGROUND

FOR BID



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SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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NO.	DATE	DESCRIPTION						
NO.	DATE	DES	DWN	REV				
ISSUE: NOVEMBER 22, 2024								
PROJECT NO: 23A0001D								
CAD FILE: E-643-SCHED.DWG								
DESIGN BY: KNL 3/2/2024								
DRAWN BY: CWS 3/11/2024								

TAXI GUIDANCE SIGN SCHEDULE

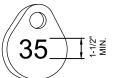
REVIEWED BY: KNL 3/21/2024

SHEET TITLE

71

^{*} COORDINATE SIGN NUMBERING WITH AIRPORT DIRECTOR/MANAGER. EACH TAXI SIGN SHALL HAVE A TAG WITH ID NUMBER; 3" HIGH PERMANENT WHITE REFLECTIVE LETTERING/NUMBERING LOCATED ON THE EDGE OF THE SIGN.

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

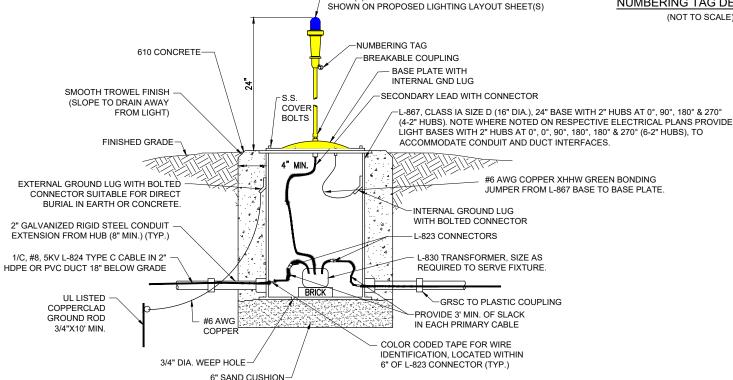


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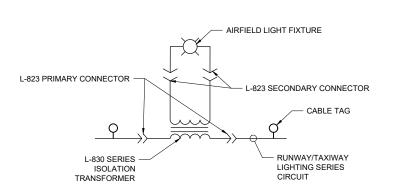
AFFIX NON-CORROSIVE, NON-BREAKABLE, TAG TO FIXTURE FACING RUNWAY/TAXIWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY. STAINLESS STEEL OR BRASS TAGS WITH 1/2" HIGH STAMPED LETTERING WILL ALSO BE ACCEPTABLE.

NUMBERING TAG DETAIL

(NOT TO SCALE)



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



NOT TO SCALE

NOTES:

- SEE ELECTRICAL NOTES SHEETS.
- 2. SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING
- 3. SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
- WHERE GROUND LUGS ARE NOT ACCESSIBLE ON BASE CANS, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.
- THE PROPOSED AIRFIELD LIGHT FIXTURES SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-46 (CURRENT ISSUE(S) IN EFFECT) AND BE FAA APPROVED FOR TYPE L-861T(L) FOR TAXIWAY EDGE LIGHTS. AIRFIELD LIGHT FIXTURES SHALL HAVE LED (LIGHT EMITTING DIODE) ILLUMINATION AND SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF FAA ENGINEERING BRIEF NO. 67D LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES.
- LIGHT BASE CANS FOR THE AIRFIELD LIGHT FIXTURES SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUE IN EFFECT), FOR TYPE L-867, CLASS IA, SIZE B (12 IN. NOMINAL DIAMETER) OR SIZE D (16 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH LIGHT BASE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. LIGHT BASE PLATES SHALL BE SIZED AND COMPATIBLE WITH THE RESPECTIVE LIGHT BASES AND LIGHT FIXTURES WITH STAINLESS STEEL BOLTS.
- PRIOR TO INSTALLING THE AIRFIELD LIGHT FIXTURES, APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, BREAKABLE COUPLING, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL
- SERIES CIRCUIT ISOLATION TRANSFORMERS FOR THE AIRFIELD LIGHTING SHALL BE MANUFACTURED TO FAA SPECIFICATION AC 150/5345-47, (CURRENT EDITION IN EFFECT), AND SHALL BE FAA-APPROVED (ETL/INTERTEK TESTING SERVICES-CERTIFIED). SERIES CIRCUIT TRANSFORMER SHALL BE PROPERLY SIZED FOR THE RESPECTIVE AIRFIELD LIGHTING DEVICE, AND SHALL BE AS RECOMMENDED BY THE RESPECTIVE EQUIPMENT MANUFACTURER CONFIRM PROPER TRANSFORMER SELECTION AND SIZING WITH THE RESPECTIVE EQUIPMENT MANUFACTURER.
- 9. THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING AND SPLICE CANS SHALL BE IN ACCORDANCE WITH ITEM 610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- 10. IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE
- 11. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, RUBBER AND PLASTIC ELECTRICAL TAPES SHALL BE SCOTCH ELECTRICAL TAPE NUMBERS 130C LINERLESS RUBBER SPLICING TAPE (2" WIDE) AND 88 (1.5" WIDE) RESPECTIVELY, AS MANUFACTURED THE MINNESOTA MINING AND MANUFACTURING COMPANY, OR EQUIVALENT.

LIGHTING CONNECTION SCHEMATIC

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TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

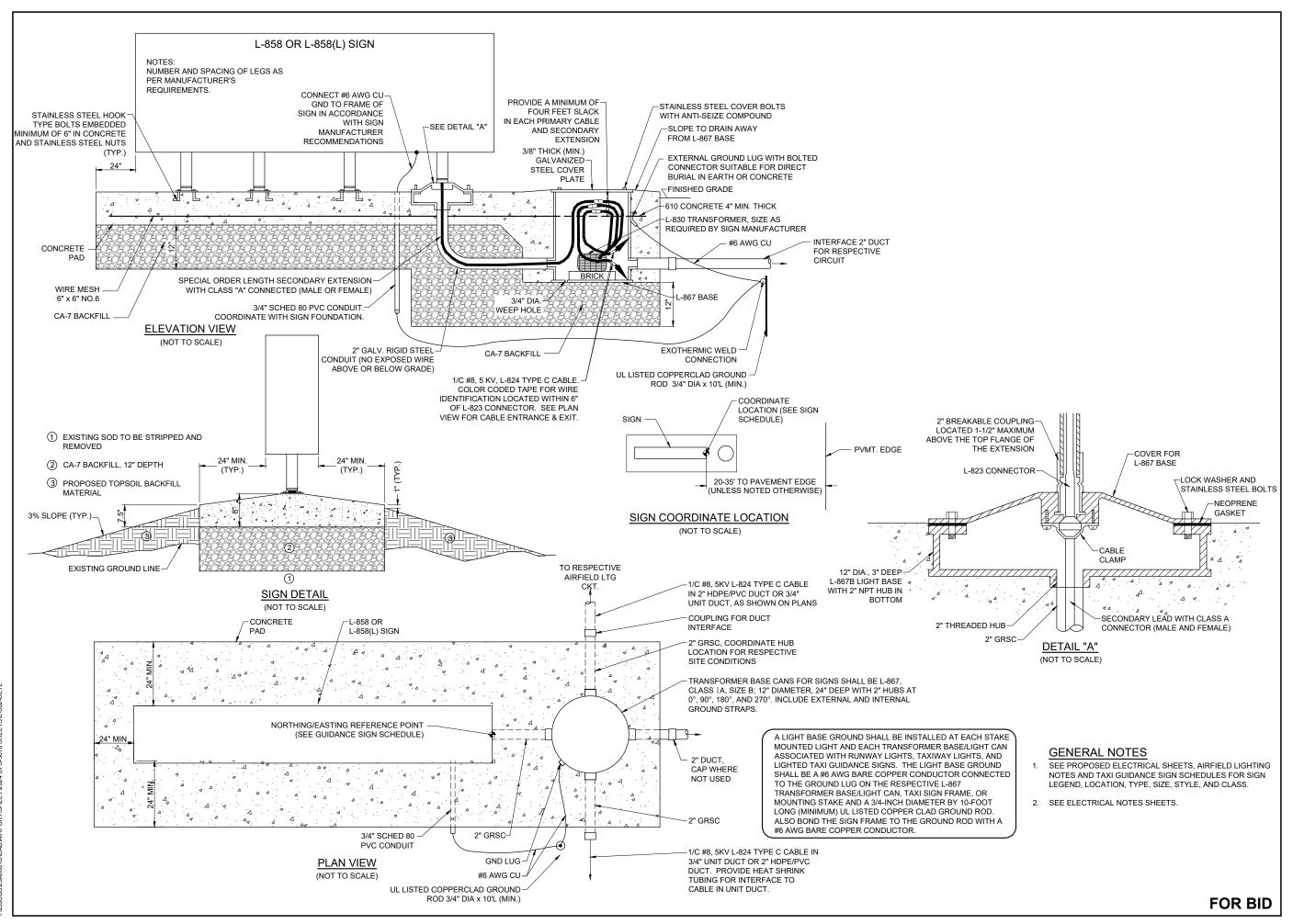
IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D CAD FILE: E-501-DETL.DWG DESIGN BY: KNL 3/2/2024

SHEET TITLE

AIRFIELD LIGHT **DETAILS**

DRAWN BY: CWS 3/7/2024 REVIEWED BY: KNL 3/21/2024



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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D

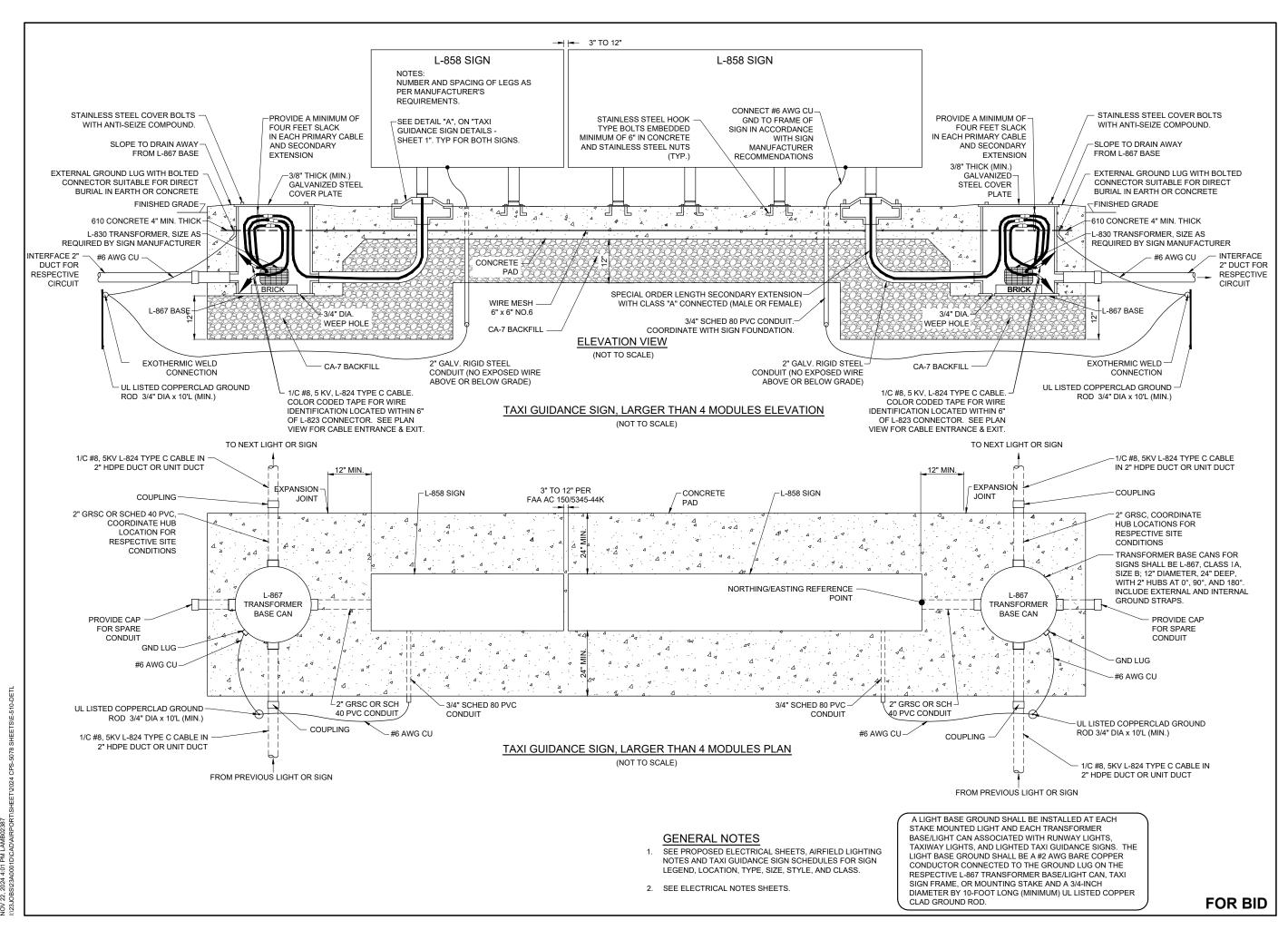
CAD FILE: E-502-DETL.DWG

DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/7/2024

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

TAXI GUIDANCE SIGN **DETAILS - SHEET 1**





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SIGNED: 11/22/2024 EXPIRES: 11/30/2025

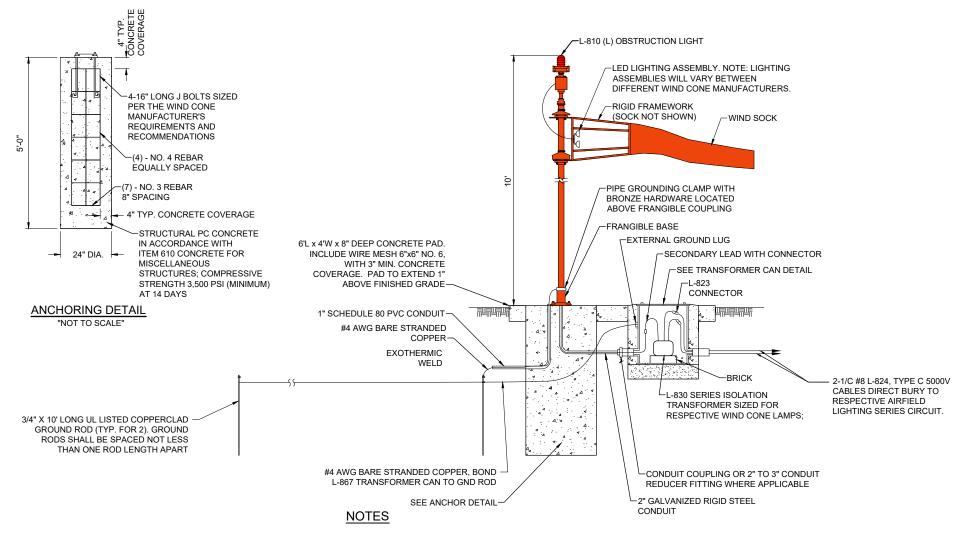
TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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REVIEW	/ED BY:	KNL :	3/21/20	124

TAXI GUIDANCE SIGN **DETAILS - SHEET 2**

SHEET TITLE



- 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 RESPECTIVE RUNWAY LIGHTING CIRCUIT IS POWERED BY AN L-828, CLASS 1 6.6 AMP OUTPUT CURRENT, STYLE 2; 5 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.
- 7. 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 PROJECT ENGINEER OF
- 8. RESTORE TURF AREAS AFFECTED BY WIND CONE INSTALLATION.

3/8" THICK (MIN.) GALVANIZED STEEL COVER PLATE WITH

SMOOTH TROWEL FINISH

SIZE B. 24" BASE WITH 2"

2" GALVANIZED RIGID STEEL

CONDUIT EXTENSION

(8" MIN. LENGTH) (TYP.)

HUBS AT 0°, 90°, & 180°

(SLOPE TO DRAIN)

L-867, CLASS IA,

STAINLESS STEEL BOLTS.

 \bigcirc

6" SAND CUSHION

WIND CONE TRANSFORMER CAN DETAIL

"NOT TO SCALE"

INTERNALLY LIGHTED L806 WIND CONE (SERIES CIRCUIT TYPE)

"NOT TO SCALE"

12"

24"

-WIND CONE FOUNDATION

CONCRETE PAD PLAN VIEW 'NOT TO SCALE"



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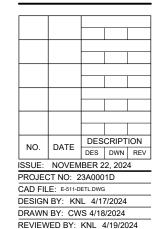
COVERING ELECTRICAL DESIGN



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064



L-806 WIND CONE **DETAILS**

SHEET TITLE

FOR BID

-STRUCTURAL PC

ACCORDANCE WITH

ITEM 610. PAD TO BE

INCLUDE WIRE MESH

TRANSFORMER/SPLICE

8" DEEP (MINIMUM)

CONCRETE IN

6" X 6" NO. 6

INCLUDE INTERNAL & EXTERNAL GROUND

LUGS (REQUIRED PER FAA AC 150/5345-42H)

PROVIDE

COUPLING TO

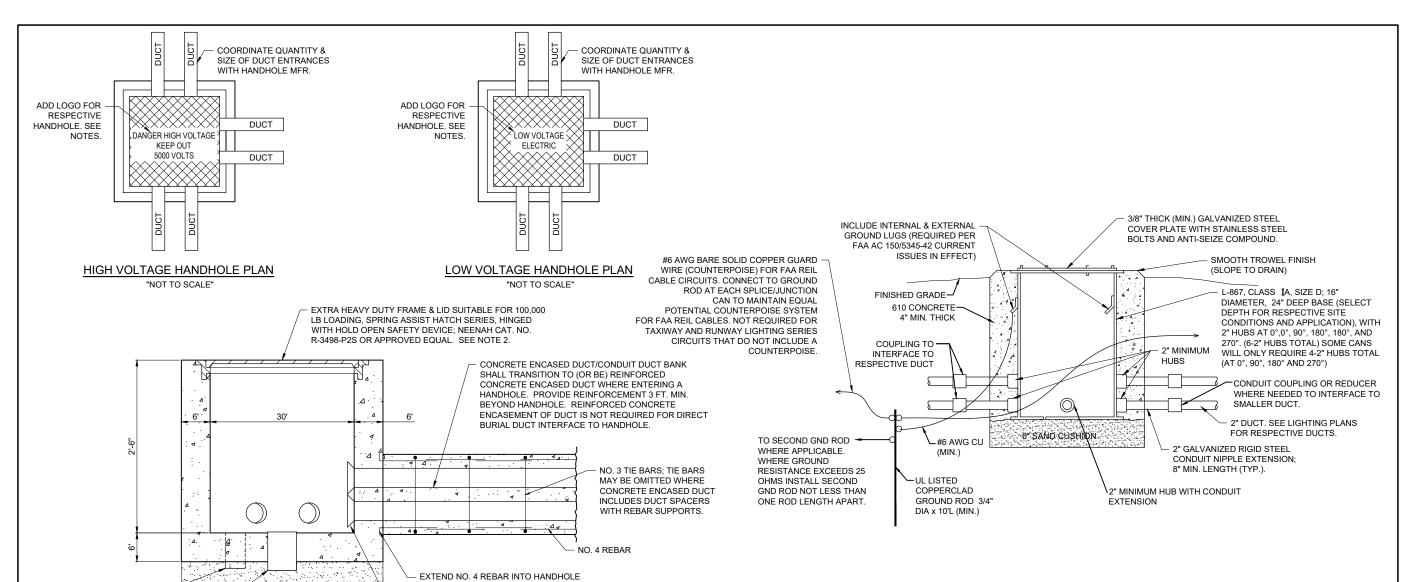
INTERFACE TO

DUCT/CONDUIT

FINISHED GRADE-

610 CONCRETE

4" MIN. THICK



SPLICE CAN/JUNCTION CAN DETAIL

"NOT TO SCALE"

NOTES FOR SPLICE CAN/JUNCTION CAN DETAIL:

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

HANDHOLE NOTES:

2" MIN. SCHED 40 PVC

CONDUIT SLEEVE TO

6" SCHED 40 PVC DRAIN PIPE.

FILL WITH PEA GRAVEL TO

ACCOMMODATE DRAINAGE

ACCOMMODATE

GROUND ROD.

1. LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.

APPROX 3". PROVIDE ANCHOR AND REBAR

INSERT OR COORDINATE 90° "L" HOOK ON

REBAR TERMINATION IN HANDHOLE WITH HANDHOLE MANUFACTURER. (TYP.)

PROVIDE CONDUIT BUSHING OR BELL AT TERMINATION IN

HANDHOLE (TYP.)

- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY
 CIRCULAR AC 150/5320-6F APPENDIX B, ITEM B.2.4 DIRECT LOADING, 1.A. AIRPORT HANDHOLE FRAME & LID SHALL BE NEENAH CATALOG NO.
 R-3498-P2S, EAST JORDAN IRON WORKS CAT NO. 8096 OR APPROVED EQUAL.
- 3. REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.

... 6" SAND CUSHION

- 4. CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- 5. HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURER MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
- 7. COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
- 8. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 9. HANDHOLES WITH SIMILAR DIMENSIONS MEETING STRENGTH AND LOADING REQUIREMENTS WILL BE CONSIDERED.

ELECTRICAL HANDHOLE
"NOT TO SCALE"

FOR BID

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ATE LICE

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION	
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DESIGN BY: KNL 3/2/2024					
ADAMAN DV. CIME SIZIONSA					

HANDHOLE AND SPLICE CAN DETAILS

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR CONTINUOUS HEAT SHRINK TUBING -JUNCTIONS BOXES 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 -WRAP WITH AT LEAST ONE LAYER OF RUBBER OR 6 INCHES OF MASTIC ON BOTH ENDS SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE. ONE-HALF LAPPED, EXTENDED AT AND VOID OF MASTIC IN MIDDLE OF TUBE RATED FOR 5KV. LEAST 1-1/2 INCHES ON EACH SIDE OF JOINT ADDITIONAL ADHESIVE 2" (TYP.)
AFTER SHRINKING COMPOUND FILLER-L-823 RECEPTACLE END L-823 PLUG END ∠UNDERGROUND CABLE

SPEC. L-824, TYPICAL

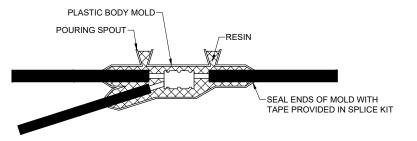
FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES

TYPE B

HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE. HEAT SHRINKABLE TUBING SHALL EXTEND FROM THE CABLE TO AT LEAST AN INCH PAST THE COMPLETED CONNECTION. ADDITIONAL ADHESIVE L-823 RECEPTACLE END-COMPOUND FILLER === 2" (TYP.) AFTER SHRINKING -L-823 PLUG END WRAP WITH AT LEAST ONE LAYER OF RUBBER OR FACTORY MOLDED SYNTHETIC RUBBER TAPE AND ONE LAYER OF TRANSFORMER LEADS PLASTIC TAPE ONE-HALF LAPPED EXTENDED AT LEAST 1-1/2 INCHES ON EACH SIDE OF JOINT HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE. HEAT SHRINKABLE TUBING SHALL EXTEND FROM THE CABLE TO AT LEAST AN INCH PAST THE COMPLETED CONNECTION. AFTER SHRINKING L-823 PLUG END-TYPE C ADDITIONAL ADHESIVE FOR SPLICES AT COMPOUND FILLER **RUNWAY AND TAXIWAY** LIGHTS AND TAXI SIGNS ∽L-823 RECEPTACLE END

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

> > CABLE SPLICES "NOT TO SCALE"

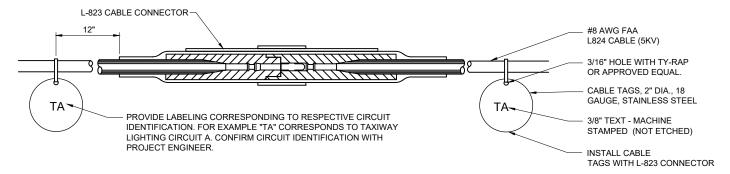


LOW VOLTAGE UNDERGROUND TAP SPLICE

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

NOTES:

- SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CARLES
- 2. KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
- 3. EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5 000 VOLTS AC TO COMPLY WITH THE REQUIREMENTS OF FAA AC. 50/5370-10G ITEM L-108.
- INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
- WHEN PREPARING CABLE FOR SPLICES. THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE
- WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE (2 INCHES WIDE) OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 (1.5 INCHES WIDE) OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THÉ 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.



- CONTRACTOR SHALL PROVIDE CABLE CIRCUIT IDENTIFICATION MARKERS ATTACHED TO BOTH SIDES OF EACH CABLE CONNECTION
- 2. CABLE IDENTIFICATION TAGS SHALL BE STAINLESS STEEL OR BRASS.
- 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.
- 5. CABLE TAGS SHALL BE PROVIDED AT ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
- 6. CABLE TAGS SHALL BE LABELED AS FOLLOWS FOR RESPECTIVE AIRFIELD LIGHTING CIRCUITS, RUNWAY 12R-30L LIGHTING: R1 RUNWAY 12L-30R LIGHTING: R2 RUNWAY 5-23 LIGHTING: R3 CABLE TAG DETAIL TAXIWAY A LIGHTING: TA

TAXIWAY A6 & RUNUP AREA LIGHTING: TB3 TAXIWAY B CKT 1 LIGHTING: TB1 TAXIWAY B CKT 2 LIGHTING: TB2 TAXIWAY B CKT 3 LIGHTING: TB3 TAXIWAY C LIGHTING: TC

"NOT TO SCALE"

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCRIMENT DESCRIMENT DESCRIPTION ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D CAD FILE: E-503-DETL.DWG DESIGN BY: KNI 3/2/2024

SHEET TITLE

AIRFIELD LIGHTING CABLE SPLICE **DETAILS**

DRAWN BY: CWS 3/7/2024

CONDUIT IN TRENCH - NON-PAVEMENT AREAS

"NOT TO SCALE"

NOTES:

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

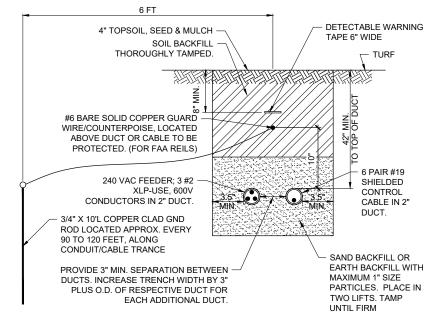
DUCT

CONDUIT IN TRENCH - PAVED AREAS

"NOT TO SCALE"

- 2. TRENCHES WITH MORE THAN TWO DUCTS OR CABLE IN UNIT DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, DUCT, OR CABLE IN UNIT DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE
- 3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5. AND 300 50 MINIMUM COVER REQUIREMENTS FOR DUCTS CONTAINING FAA NAVAID FEEDER CIRCUITS SHALL BE 42". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED BELOW NEW TAXIWAY PAVEMENT OR ROADWAYS IS 54". 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
- 5. 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.
- 9. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH
- 10. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES LAWS ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING INTERTEK TESTING SERVICES VERIFICATION/ETI. LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

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



FAA REIL CABLES CONDUIT TRENCH

"NOT TO SCALE"

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

Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Felephone: 217,788,2450 Fax: 217.788.2503



DOWNTOWN AIRPOR

BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DESCRIPTION		
NO.	DATE	DES	DWN	REV
ISSUE:	NOVEM	BER 2	2, 202	4
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CAD FIL	E: E-504-D	ETL.DWG	3	
DESIGN	BY: KN	L 3/2	2024	
DRAWN	BY: CW	'S 3/7/	2024	

CONDUIT TRENCH DETAIL

SHEET TITLE

3-WAY DUCT BANK - HORIZONTAL

2" I.D.
CONDUIT
REBAR IN 4-WAY DUCT BANK

3-WAY DUCT BANK - VERTICAL

1/2" Ø REBAR IN — 4-WAY [
EACH CORNER
WHERE APPLICABLE

1/2" Ø REBAR IN — 4-WAY [
N.T.S.

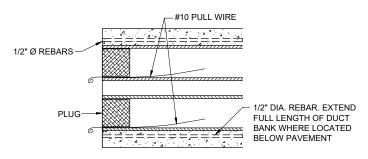
NTS

1/2" Ø REBAR IN EACH

CORNER WHERE APPLICABLE (TYP.) 1/2" Ø REBAR IN EACH **CORNER WHERE** 2" I.D. DUCT (WITH 2.375" O.D.) APPLICABLE (TYP.) IS FOR 2" DUCT, SIZE OF DUCT SHALL BE AS DETAILED HEREIN FOR RESPECTIVE 2" I.D. DUCT (WITH 2.375" O.D.) IS APPLICATION. FOR 2" DUCT, SIZE OF DUCT SHALL BE AS DETAILED HEREIN 610 CONCRETE FOR FOR RESPECTIVE APPLICATION MISCELLANEOUS STRUCTURES, 3.500 PSI (MIN.) AT 14 DAYS (TYPICAL FOR CONCRETE 610 CONCRETE FOR **ENCASED DUCT)** MISCELL ANEOUS STRUCTURES 3.500 PSI (MIN.) AT 14 DAYS (TYPICAL FOR CONCRETE 3" 2.375" 3" 3" 2.375" 3" ENCASED DUCT)

2-WAY DUCT BANK - VERTICAL

N.T.S.



TYPICAL SECTION

DUCT INSTALLATION NOTES

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

DUCT INSTALLATION NOTES

- 1. ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- 2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- 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 WHATEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED. THAT THE LOCATIONS SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY INFORMATION FOR EXCAVATORS) FOR INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
- 5. ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
- 6. CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESIDENT PROJECT REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT PROJECT REPRESENTATIVE AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES
- PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
- 8. THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. HE WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED UNDERGROUND IMPROVEMENTS
- 9. CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 (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.

- 10. CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE SDR 13.5 OR SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.
- 11. INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
- 12. DUCTS INSTALLED IN TRENCH SHALL BE INSTALLED 18 IN. MINIMUM BELOW GRADE IN TURF AREAS NOT SUBJECT TO FARMING. DUCTS LOCATED IN AREAS SUBJECT TO FARMING SHALL BE 42 IN. MINIMUM BELOW GRADE. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 24" IN AREAS UNDER AIRFIELD PAVEMENTS. WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER.
- 13. WHERE CONCRETE-ENCASED DUCT INTERFACES TO AN ELECTRICAL HANDHOLE OR MANHOLE, THE CONCRETE ENCASEMENT SHALL BE INSTALLED UP TO THE RESPECTIVE HANDHOLE OR MANHOLE. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
- 14. UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED LINDER
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- 16. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
- 18. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- 19. COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION. AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION.
- 20. CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- 21. ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

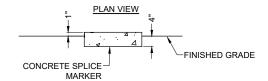
NO. DATE | DESCRIPTION | DES | DWN | REV |
ISSUE: NOVEMBER 22, 2024 |
PROJECT NO: 23A0001D

CAD FILE: E-505-DETL.DWG
DESIGN BY: KNL 3/2/2024
DRAWN BY: CWS 3/7/2024

DRAWN BY: CWS 3/7/2024
REVIEWED BY: KNL 3/21/2024

SHEET TITLE

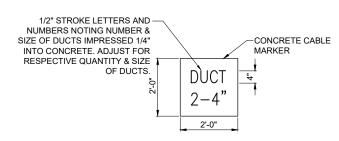
DUCT BANK DETAILS AND NOTES

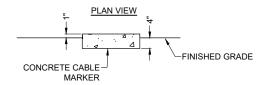


SECTION VIEW

TURF CABLE MARKERS

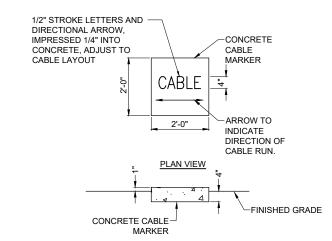
"NOT TO SCALE"





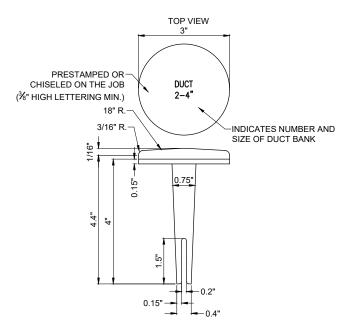
SECTION VIEW

TURF CABLE MARKERS "NOT TO SCALE"



SECTION VIEW

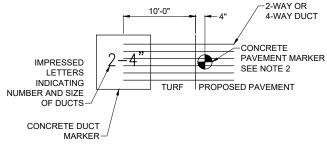
TURF CABLE MARKERS "NOT TO SCALE"



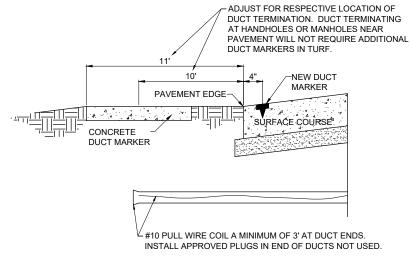
BITUMINOUS PAVEMENT DUCT MARKERS

NOTE:

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



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
- 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:
 - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE
 - B. INCREASE THE MARKER SIZE TO 30" X 30".
 - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE
- 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 12L-30R PAPI-12R, PAPI-30L.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS

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COVERING ELECTRICAL DESIGN



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D CAD FILE: E-507-DETL.DWG

DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/7/2024

SHEET TITLE

CABLE AND DUCT MARKER DETAILS

- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
- IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE **EQUIPMENT COST**
- THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE
- WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES STYLES, CLASSES, ETC. MAY BE APPROVED.
- ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT TECHNICIAN TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS. THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT TECHNICIAN REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
- A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:
 - A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL
 - THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT
 - INSTALLATION INSTRUCTION.
 - START-UP INSTRUCTIONS.
 - PREVENTATIVE MAINTENANCE REQUIREMENTS.
 - CHART FOR TROUBLE-SHOOTING
 - COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT - "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.
 - PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER
- SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

- PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 208/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
- ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
- IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS
- LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS
- NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND
- THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
 - A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
 - IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
- A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
- EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE
- SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE
- CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE,
- DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
- ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMENTATIONS.
- SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE

- CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
- 16. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT
- UNLESS OTHERWISE SHOWN. ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
- 18. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
- USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS
- 20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION
- WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125 AND FAA AC 150/5370-10H ITEM L-108, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 130C (2 INCHES WIDE) OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 (1.5 INCHES WIDE) OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
- UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
- 23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
 - FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
 - THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
 - ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
 - WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS
 - ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK
 - EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
 - A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE
 - THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL
 - ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
 - MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "ARC FLASH HAZARD

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



SIGNED: 11/22/2024 EXPIRES: 11/30/202

TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/7/2024 REVIEWED BY: KNL 3/21/2024

SHEET TITLE

ELECTRICAL NOTES SHEET 1

- NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, FTC.
- 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.
- 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.
- L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
- 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.
- ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
- 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.
- 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.

- 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
- 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
- 28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
- 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.
- 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 EAA. 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.
- 22. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

- 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.
- 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.
- STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.
- CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS.
 METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF
 ALL NON-CONDUCTIVE MATERIAL PER 2020 NATIONAL ELECTRICAL CODE
 ADDICULE 265 429.
- 5. THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
- 6. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, DISTANCE REMAINING SIGN, JUNCTION STRUCTURE/L-867 BASE/L-868 BASE, OR OTHER AIRFIELD LIGHT FIXTURE, THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MIGHT BE REQUIRED. IF GROUND RESISTANCE EXCEEDS 25 OHMS CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS WHERE APPLICABLE. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER.

Offices Nationwide

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



DATE LI

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCRIPTION
DES DWN REV
ISSUE: NOVEMBER 22, 2024
PROJECT NO: 23A0001D
CAD FILE: E-003-NOTES.DWG

DESIGN BY: KNI 3/2/2024

DRAWN BY: CWS 3/7/2024

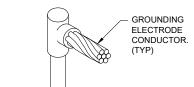
REVIEWED BY: KNL 3/21/2024

SHEET TITLE

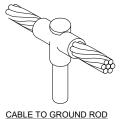
ELECTRICAL NOTES SHEET 2



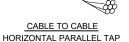


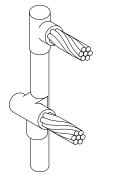


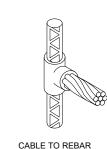
CABLE TO GROUND ROD











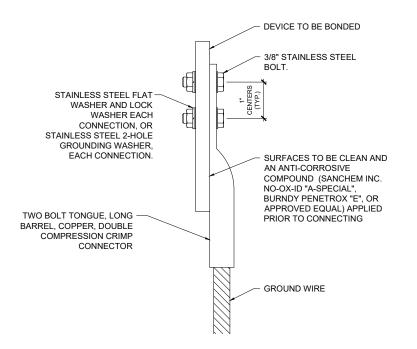
CABLES TO GROUND ROD

DETAIL NOTES

- 1. 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.
- 2. INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 80 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. 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.

3. 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

EXOTHERMIC WELD DETAILS

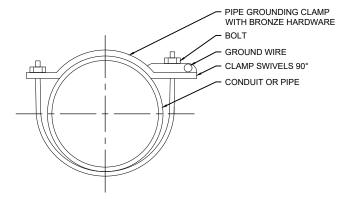


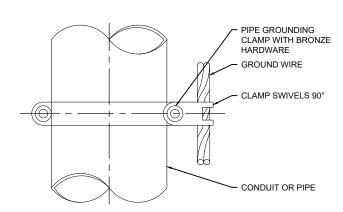
2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)					
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.		
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38		
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1	(CONTACT MFR)	(CONTACT MFR)		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	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.
- 3. 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.
- 2. 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.
- 4. 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



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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



DATE

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST &

TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCRIPTION
DES DWN REV
ISSUE: NOVEMBER 22, 2024
PROJECT NO: 23A0001D

CAD FILE: E-508-DETL.DWG
DESIGN BY: KNL 3/2/2024
DRAWN BY: CWS 3/7/2024

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

GROUNDING DETAILS

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.
- 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.
- 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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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT

6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION
NO.	DAIL	DES	DWN	REV
ISSUE:	NOVEM	BER 2	2, 202	4
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DESIGN BY: KNL 3/2/2024

DRAWN BY: CWS 3/7/2024

REVIEWED BY: KNL 3/21/2024

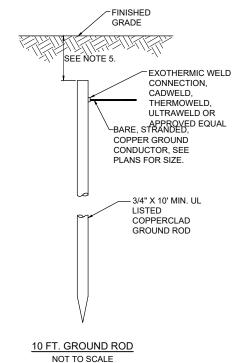
SHEET TITLE

GROUND RESISTANCE **TESTING DETAILS**

- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING LIGHT BASE GROUNDS FOR (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR COUNTERPOISE/LIGHTNING PROTECTION SYSTEM ON THE AIRFIELD SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT, LONG UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS. AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, THERMOWELD BY CONTINENTAL INDUSTRIES, ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER OF RECORD FOR FURTHER DIRECTIONS. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS, WHERE APPLICABLE, COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT PROJECT REPRESENTATIVE. AND THE PROJECT ENGINEER OF RECORD.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR APPROVED EQUAL
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2020 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC. ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE **ENCLOSURES**
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2020 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2020 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2020 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- 13. PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, <u>DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS.</u> USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2020 NEC 250-102 AND/OR 2020 NEC 250.64(E). NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS. CONFIRM REQUIREMENTS WITH AUTHORITY HAVING JURISDICTION
- GROUNDING WORK AFFECTING OPERATIONS AT A FACILITY SHALL BE COORDINATED WITH THE OWNER'S DESIGNATED REPRESENTATIVE(S) AND TO MINIMIZE DOWNTIME TO EXISTING SYSTEMS. THE RESPECTIVE PERSONNEL SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE OWNER'S DESIGNATED REPRESENTATIVE(S). ANY SHUTDOWN OF EXISTING SYSTEMS SHALL BE SCHEDULED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO SHUT DOWN. ALL POWER SYSTEMS (AC OR DC) SHALL HAVE PROVISIONS TO LOCKOUT AND TAGOUT ANY CIRCUIT TO HELP ENSURE THE CIRCUIT IS SAFE TO WORK ON FOR PROTECTION OF PERSONNEL. 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). WHERE A FACILITY DOES NOT HAVE LOCKOUT/TAGOUT KITS THE RESPECTIVE PERSONNEL SHALL PROVIDE ADEQUATE QUANTITIES OF LOCKOUT/TAGOUT KITS SUITABLE FOR USE WITH THE RESPECTIVE EQUIPMENT. WHERE EXISTING ELECTRICAL EQUIPMENT DOES NOT HAVE FEATURES FOR LOCKOUT/TAGOUT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT AND MEASURES TO COMPLY WITH OSHA LOCKOUT/TAGOUT REQUIREMENTS. ALL PADLOCKS FOR USE WITH LOCKOUT/TAGOUT PROCEDURES SHALL HAVE A DIFFERENT KEY. PROVIDE LOCKOUT HASPS TO ACCOMMODATE MULTIPLE PADLOCKS WHERE MULTIPLE PEOPLE ARE WORKING ON THE SAME SYSTEM. INCLUDE LOCKOUT TAGS FOR EACH PIECE OF EQUIPMENT REQUIRING SERVICING AND SHUTDOWN. COMPLIANCE WITH LOCKOUT/TAGOUT PROCEDURES AND ALL OTHER SAFETY PROCEDURES AND REQUIREMENTS ARE THE RESPONSIBILITY OF THE RESPECTIVE PERSONNEL WORKING AT THE FACILITY

- NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT LINTIL ALL POWER IS REMOVED FROM FOLIPMENT. WARN ALL PERSONNEL OF THE UNGROUNDED CONDITION OF THE EQUIPMENT. DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS, TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.
- GROUNDING WORK AND MODIFICATIONS SHALL NOT BE PERFORMED DURING A THUNDERSTORM OR WHEN A THUNDERSTORM IS PREDICTED IN THE AREA.
- PER NFPA 70E STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE IT DEFINES ELECTRICALLY SAFE WORK CONDITION AS "A STATE IN WHICH AN ELECTRICAL CONDUCTOR OR CIRCUIT PART HAS BEEN DISCONNECTED FROM ENERGIZED PARTS, LOCKED/TAGGED IN ACCORDANCE WITH ESTABLISHED STANDARDS, TESTED TO VERIFY THE ABSENCE OF VOLTAGE, AND, IF NECESSARY, TEMPORARILY GROUNDED FOR PERSONNEL PROTECTION." PRIOR TO CONDUCTING TESTS OR WORKING ON EQUIPMENT, VERIFY EQUIPMENT ENCLOSURES AND FRAMES HAVE A GOOD AND SECURE GROUND CONNECTION, FAILURE TO PROPERLY GROUND THIS EQUIPMENT PRESENTS A DANGEROUS HAZARD FOR PERSONNEL WORKING ON THIS SYSTEM.
- 24. WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER OF RECORD; KEVIN LIGHTFOOT FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE PRODUCED FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENT. THE BUY AMERICAN PREFERENCE REQUIREMENTS ESTABLISHED WITHIN 49 USC 50101 REQUIRE THAT ALL STEEL AND MANUFACTURED GOODS USED ON AIP PROJECTS MUST BE PRODUCED IN THE UNITED STATES.



NOTES

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED
- GROUND RODS FOR SPLICE CANS AND AIRFIELD LIGHTING SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.
- FOR OTHER GROUNDING APPLICATIONS NOT DETAILED HEREIN, CONTACT ENGINEER OF RECORD: KEVIN LIGHTFOOT FOR DIRECTIONS.

GROUND RODS NOT TO SCALE

Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Telephone: 217,788,2450 Fax: 217.788.2503



BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024

PROJECT NO: 23A0001D

CAD FILE: E-004-NOTES.DWG DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/7/2024

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

GROUNDING NOTES

			_
ELEC1	FRICAL LEGEND - ONE-LINE DIAGRAM	EL	.E
-	CABLE TERMINATOR/LUG	⊣⊢	L
***	TRANSFORMER	₩	L
__	DISCONNECT SWITCH	<u></u> ⑤ •	L
<u> </u>	FUSIBLE DISCONNECT SWITCH	- }/-	L
	CIRCUIT BREAKER	©R*	L
<u> </u>	THERMAL MAGNETIC CIRCUIT BREAKER	R*	L
	FUSE	~°	
→ → 	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE	OFF AUTO	
₩	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL	OFF AUTO	
Ø	INDICATING LIGHT		
M	MOTOR	<u> </u>	
#	LOAD, MOTOR, # = HORSEPOWER		
0	ELECTRIC UTILITY METER BASE	° %	
0	JUNCTION BOX WITH SPLICE	्रु	
xxx	EQUIPMENT, XXX = DEVICE DESCRIPTION	- - - -	
GND	GROUND BUS OR TERMINAL		
S/N	NEUTRAL BUS	<u></u>	L
<u> </u>			L
	PANELBOARD WITH MAIN LUGS		L
			L
\ _	PANELBOARD WITH MAIN BREAKER		
ī		GND	
		S/N	Ī
	FUSE PANEL WITH MAIN FUSE PULLOUT	#	l
			l
#	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE		١
	CONTROL STATION	0 0	
N EM	TRANSFER SWITCH	<u> </u>	
	ENGINE GENERATOR SET		

_		
	EL	ECTRICAL LEGEND - SCHEMATIC
	⊣⊢	NORMALLY OPEN (N.O.) CONTACT
	}/-	NORMALLY CLOSED (N.C.) CONTACT
	§•)	STARTER COIL, * = STARTER NUMBER
	OL _	OVERLOAD RELAY CONTACT
	(CR*)	CONTROL RELAY, * = CONTROL RELAY NUMBER
	(R*)	RELAY, * = RELAY NUMBER
-		TOGGLE SWITCH / 2 POSITION SWITCH
_	OFF_ AUTO	
R	o ox	2-POSITION SELECTOR SWITCH
	HAND XOO OOX	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	§ %.	N.O. THERMAL SWITCH
	Ţ,	N.C. THERMAL SWITCH
		2 POLE DISCONNECT SWITCH
		3 POLE DISCONNECT SWITCH
+	>	PHOTOCELL
	-	TERMINAL BLOCK, * = TERMINAL NUMBER
_	-	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
		INTERNAL PANEL WIRING
		FIELD WIRING
		FUSE
	GND	GROUND BUS OR TERMINAL
	S/N	NEUTRAL BUS
	<u></u>	GROUND, GROUND ROD, GROUND BUS
	₹	GROOMB, GROOMB ROB, GROOMB BOO
	0 0	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	+ 1 - P	TYPE S1 CUTOUT HANDLE REMOVED (MFRD BY CROUSE-HINDS, MANAIRCO, AND OTHERS)
	#	TYPE S1 CUTOUT HANDLE INSERTED (MFRD BY CROUSE-HINDS, MANAIRCO, AND OTHERS)
	3 3 3	TYPE SCO CUTOUT (MFRD BY ADB)
	****	TYPE ALSC AIRFIELD LIGHTING SAFETY CUTOUT (MFRD BY ADB)
		L-830 SERIES ISOLATION TRANSFORMER

	ELECTRICAL ABBREVIATIONS
A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
С	CONDUIT
СВ	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EOR	ENGINEER OF RECORD
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KNL	KEVIN NEIL LIGHTFOOT
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LED	LIGHT EMITTING DIODE
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LHTNG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MIL
	MAIN DISTRIBUTION PANEL
MDP	MANUFACTURER
MFR	METAL HALIDE
MH	
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

l	ELECT	TRICAL ABBREVIATIONS (CONTINUED)
Ī	РВ	PULL BOX
Ì	PC	PHOTO CELL
ľ	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
	-	DASH, HYPHEN, OR MINUS SIGN
	XXX	LETTERS AND / OR NUMBERS (TO BE DETERMINED)
	AIRPORT	EQUIPMENT/FACILITY ABBREVIATIONS
l		

AIRPORT	EQUIPMENT/FACILITY ABBREVIATIONS	
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM	
ATCT	AIR TRAFFIC CONTROL TOWER	
AWOS	AUTOMATED WEATHER OBSERVING SYSTEM	
CCR	CONSTANT CURRENT REGULATOR	
DME	DISTANCE MEASURING EQUIPMENT	
FAR	FEDERAL AVIATION REGULATION	
GS	GLIDE SLOPE FACILITY	
HIRL	HIGH INTENSITY RUNWAY LIGHT	
ILS	INSTRUMENT LANDING SYSTEM	
IM	INNER MARKER	6.
LIR	LOW IMPACT-RESISTANT	
LOC	LOCALIZER FACILITY	7.
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM	
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATING LIGHTS	
MIRL	MEDIUM INTENSITY RUNWAY LIGHT	8.
MITL	MEDIUM INTENSITY TAXIWAY LIGHT	
NDB	NON-DIRECTIONAL BEACON	
PAPI	PRECISION APPROACH PATH INDICATOR	
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR	9.
RAIL	RUNWAY ALIGNMENT INDICATING LIGHTS	
REIL	RUNWAY END IDENTIFIER LIGHT	
RVR	RUNWAY VISUAL RANGE	

VISUAL APPROACH DESCENT INDICATOR

VISUAL APPROACH SLOPE INDICATOR

OMNIDIRECTIONAL RANGE FACILITY

VERY HIGH FREQUENCY

WIND CONE

VOR

WC

NOTES:

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- 2. KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
- 3. NEW 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).
- 4. 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 LIFMC THAT IS NOT UL LISTED. CONFIRM LIFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- 5. INSULATED CONDUCTORS SHALL COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

120/240 VAC, 1 PHASE, 3 WIRE

PHASE A BLACK
PHASE C BLUE
NEUTRAL WHITE
GROUND GREEN

- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- 7. 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
- 8. 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".
- 9. RESPECTIVE POWER SOURCES FOR EACH PANEL, EQUIPMENT, AIRFIELD LIGHT, SIGN, NAVAID, OR OTHER DEVICE SHALL BE VERIFIED PRIOR TO WORKING ON, RELOCATING, REMOVING, DISCONNECTING, AND/OR INSTALLING THE RESPECTIVE DEVICES. SHUT OFF, LOCKOUT, AND TAGOUT FOR PROTECTION OF PERSONNEL.
- 10. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.



Offices Nationwide www.hanson-inc.com

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BI-STATE DEVELOPMENT
ST. LOUIS DOWNTOWN AIRPORT
6100 Archylew Drive

Cahokia Heights, Illinois 62206



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

	NO.	DATE	DESCRIPTION		
	NO.	DATE	DES	DWN	REV
	ISSUE: NOVEMBER 22, 2024				4
i	PROJECT NO: 23A0001D				
	CAD FILE: E-005-LGND.DWG				

DESIGN BY: KNL 3/2/2024
DRAWN BY: CWS 3/7/2024

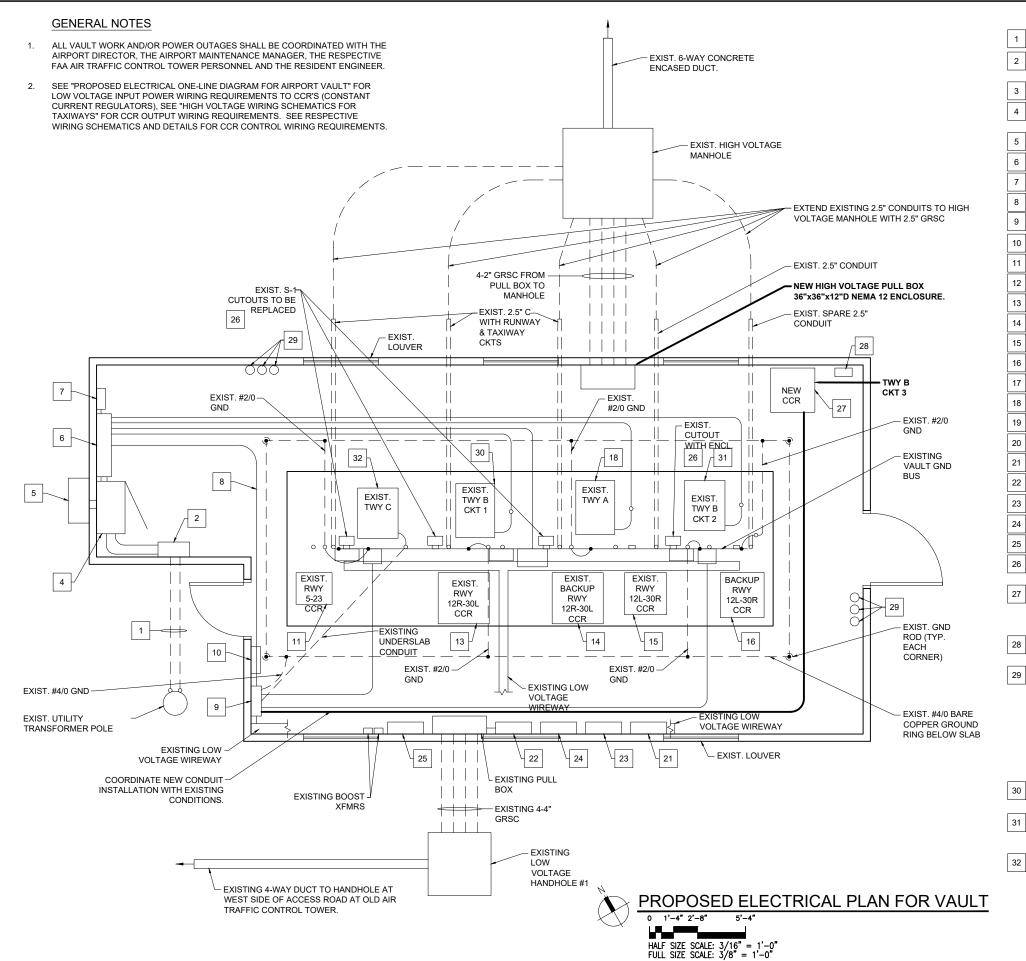
REVIEWED BY: KNL 3/21/2024

SHEET TITLE

ELECTRICAL LEGEND AND ABBREVIATIONS

NOV 22, 2024 4:04 PM LAMB02387

FOR BID



KEYED NOTES

- 1 EXIST. UNDERGROUND 800 AMP, 120/240 VAC, 1PH, 3W SERVICE;
- 2 EXIST. 800 AMP, 2 POLE CIRCUIT BREAKER SERVICE ENTRANCE DISCONNECT
- 3 RESERVED.
- 4 EXIST. 800 AMP, 120/240 VAC, 1 PHASE AUTO TRANSFER SWITCH IN A NEMA 12
- 5 EXIST. 800 AMP, 120/240 VAC, 1 PHASE PORTABLE GENERATOR CONNECTION BOX.
- EXIST. MAIN DISTRIBUTION PANELBOARD "A".
- 7 EXIST. TRANSIENT VOLTAGE SURGE SUPPRESSOR.
- 8 EXIST. 400 AMP FEEDER FROM PANEL A TO PANEL B.
- 9 EXIST. DISTRIBUTION PANELBOARD "B".
- 10 EXIST. TVSS.
- 11 EXIST. 4KW RWY 5-23 CCR.
- 12 RESERVED.
- 13 EXIST. RWY 12R-30L CCR.
- 14 EXIST. RWY 12R-30L BACKUP CCR.
- 15 EXIST. 7.5KW RWY 12L-30R CCR; PRIMARY CCR FOR RWY 12L-30R.
- 16 EXIST. 10KW RWY 12R-30L CCR; BACKUP UNIT FOR RWY 12L-30R CCR.
- 17 RESERVED
- 18 EXIST, 30KW TWY A CCR.
- 19 RESERVED
- RESERVED
- 21 EXIST. TRANSFER RELAY PANEL
- 22 EXIST. TERMINAL PANEL FOR 50 PAIR CONTROL CABLE.
- 23 EXIST. 48VDC PILOT RELAY PANEL #1.
- 24 EXIST. 48VDC PILOT RELAY PANEL #2
- 25 EXIST. LIGHTING CONTACTOR PANEL
- 26 REMOVE EXISTING S-1 CUTOUT AND FURNISH AND INSTALL NEW TYPE S-1
 CUTOUT IN EXISTING ENCLOSURE. (TYP EACH TAXIWAY CCR)(BASE BID)
- 27 NEW TAXIWAY B CIRCUIT 3 CCR. INTERFACE CONTROL WIRING TO EXISTING TAXIWAY "B" CIRCUIT 2 CCR SUCH THAT TAXIWAY B CIRCUIT 3 LIGHTING IS CONTROLLED BY L-821 PANEL AT ATCT BY TAXIWAY "B" CONTROL SELECTOR SWITCH. (BASE BID)
- NEW S-1 CUTOUT WITH NEMA 12 ENCLOSURE FOR TAXIWAY "B" CIRCUIT 3 LIGHTING. (BASE BID)
- PROVIDE TWO 10LB UL RATING 10B:C CARBON DIOXIDE FIRE EXTINGUISHERS FOR VAULT LOCATE NEAR EACH EXIT. INCLUDE PLACARD/SIGN "FOR ELECTRICAL FIRES" WITH ARROW POINTING TO EXTINGUISHER. PROVIDE TWO 10 LB UL RATING 1A: 10B:C HALOTRON FIRE EXTINGUISHERS LOCATE ADJACENT TO EACH CARBON DIOXIDE FIRE EXTINGUISHER. INCLUDE PLACARD/SIGN "FOR ELECTRICAL FIRES" WITH ARROW POINTING TO EXTINGUISHER. PROVIDE TWO 10LB UL RATING 4A:80B:C ABC DRY CHEMICAL FIRE EXTINGUISHERS. LOCATE ADJACENT TO OTHER FIRE EXTINGUISHERS. INCLUDE PLACARD/SIGN "FOR BUILDING FIRES" WITH ARROW POINTING TO ABC DRY CHEMICAL FIRE EXTINGUISHER. (BASE BID)
- EXISTING 30KW TWY B CKT 1 CCR TO BE REPLACED WITH A NEW 15KW L-829 CCR. RELOCATE EXISTING CCR TO STORAGE. (ADD. ALT BID)
- EXISTING 15KW TWY B CKT 2 CCR TO BE REPLACED WITH A NEW 15KW L-829 CCR. RELOCATE EXISTING TWY B, CKT 2 CCR FOR USE AS TWY C CCR. (ADD. ALT BID)
- 32 EXISTING 7.5KW TWY C CCR TO BE REPLACED WITH EXISTING TWY B CKT 2 CCR. RELOCATE EXISTING TWY C CCR FOR USE AS BACKUP CCR FOR RWY 5-23. (ADD. ALT BID)

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



TE WEENER

SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

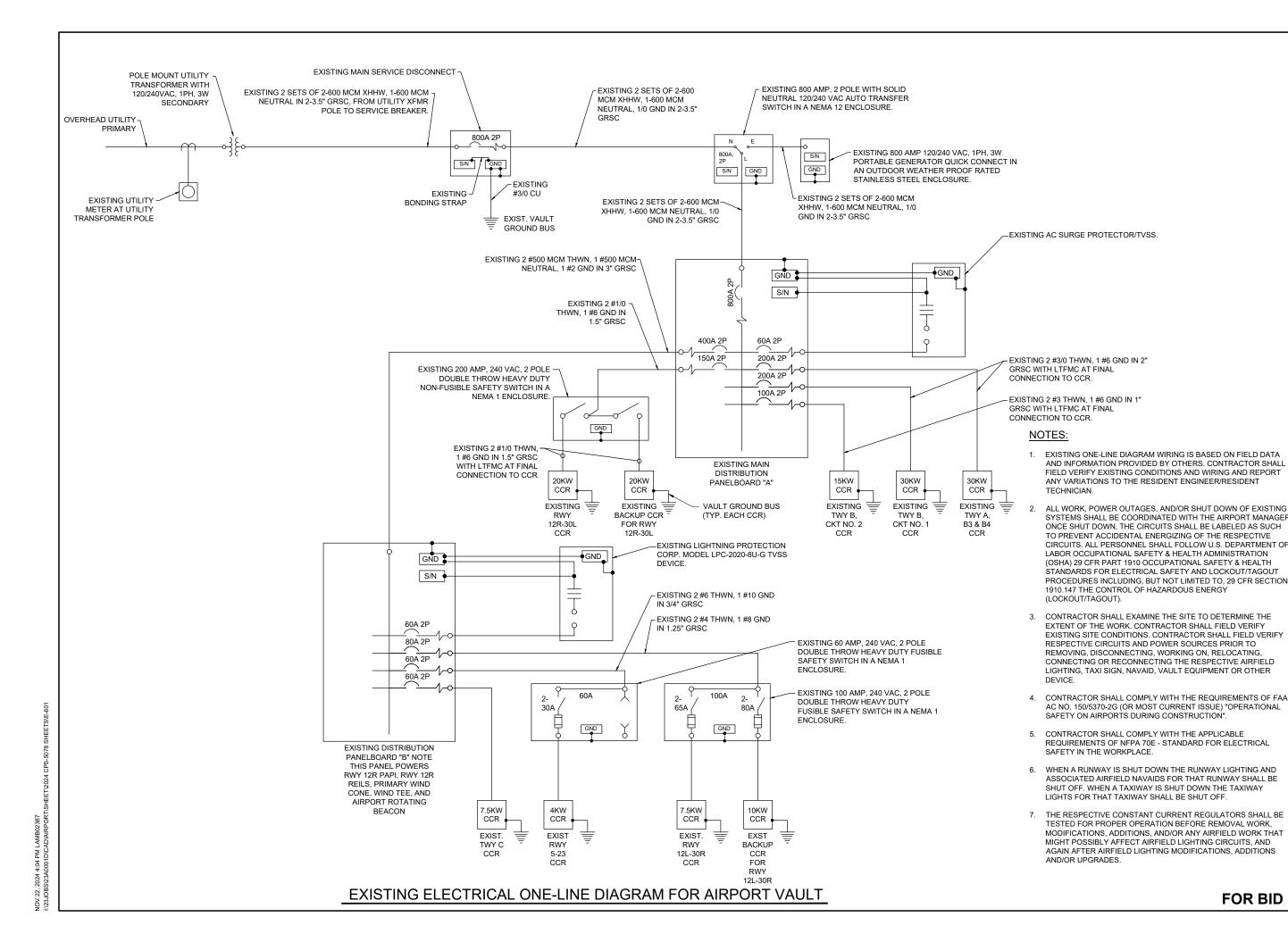
IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION	
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ISSUE:	NOVEM	BER 2	2, 202	4	
PROJECT NO: 23A0001D					
CAD FILE: E-101.DWG					
DESIGN BY: KNL 3/2/2024					

PROPOSED ELECTRIAL PLAN FOR VAULT

DRAWN BY: CWS 3/7/2024

SHEET TITLE





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SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D

CAD FILE: E-601.DWG

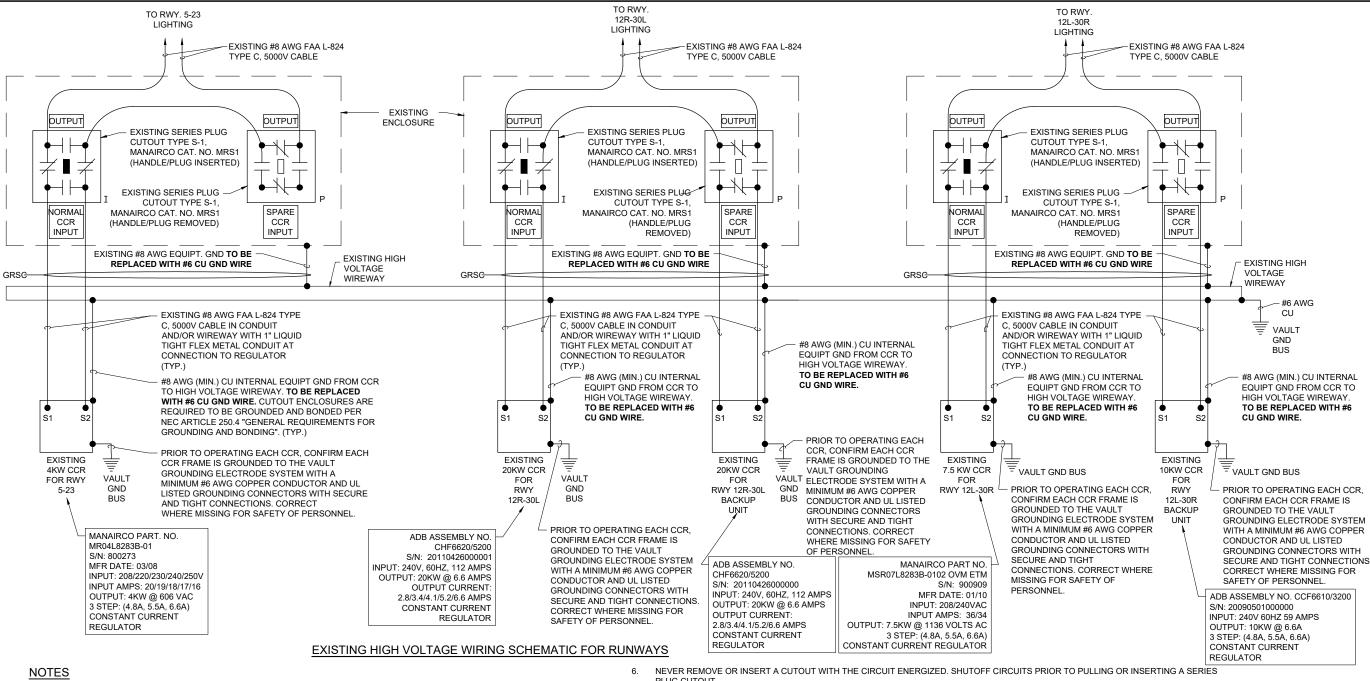
DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/7/2024

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR AIRPORT VAULT

FOR BID



- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT). WHERE THE FACILITY IS NOT EQUIPPED WITH LOCKOUT/TAGOUT EQUIPMENT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT, WHERE EXISTING ELECTRICAL EQUIPMENT DOES NOT HAVE FEATURES FOR LOCKOUT/TAGOUT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT AND MEASURES TO ENSURE THE COMPLIANCE WITH OSHA LOCKOUT/TAGOUT PROCEDURES. FAILURE TO SHUT DOWN AND LOCKOUT THE CIRCUIT PRESENTS A DANGEROUS HAZARD FOF PERSONNEL WORKING ON THE SYSTEM. COMPLIANCE WITH LOCKOUT/TAGOUT PROCEDURES AND ALL OTHER SAFETY PROCEDURES AND REQUIREMENTS ARE THE RESPONSIBILITY OF EACH INDIVIDUAL, THE CONTRACTOR, THE RESPECTIVE MAINTENANCE PERSONNEL AND ANY OTHER PERSONNEL WORKING ON THE EQUIPMENT OR ELECTRICAL SYSTEM.
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD, CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER OF RECORD AND THE RESIDENT PROJECT REPRESENTATIVE. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES TO COMPLY WITH OSHA REQUIREMENTS.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT. CONTRACTOR SHALL ARRANGE TO SHUTOFF DISCONNECT, AND LOCKOUT/TAGOUT CIRCUITS WHEN WORKING ON THE RESPECTIVE AIRFIELD LIGHTING SYSTEMS FOR SAFETY OF
- NOTE: SOME OF THE EXISTING RUNWAY LIGHTING CIRCUITS HAVE BEEN OBSERVED TO BE IN VERY POOR TO DANGEROUS CONDITIONS EXERCISE CAUTION AND SAFETY PROCEDURES WHEN WORKING ON AIRFIELD LIGHTING SYSTEMS

- 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. NEC DEFINES A QUALIFIED PERSON AS "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.
- 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
- OVERSEE AND CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO CABLE WORK OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES AND/OR OTHER WORK HAS BEEN COMPLETED. PROVIDE 5KV INSULATION TESTER FOR 5,000 VOLT SERIES CIRCUIT CABLES. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER. PROVIDE COPY OF TEST RESULTS TO THE ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TOT HE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR)

LEGEND

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

FOR BID

1525 South Sixth Street Springfield, Illinois 62703-2886 Telephone: 217,788,2450 Fax: 217.788.2503



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COVERING ELECTRICAL DESIGN



TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

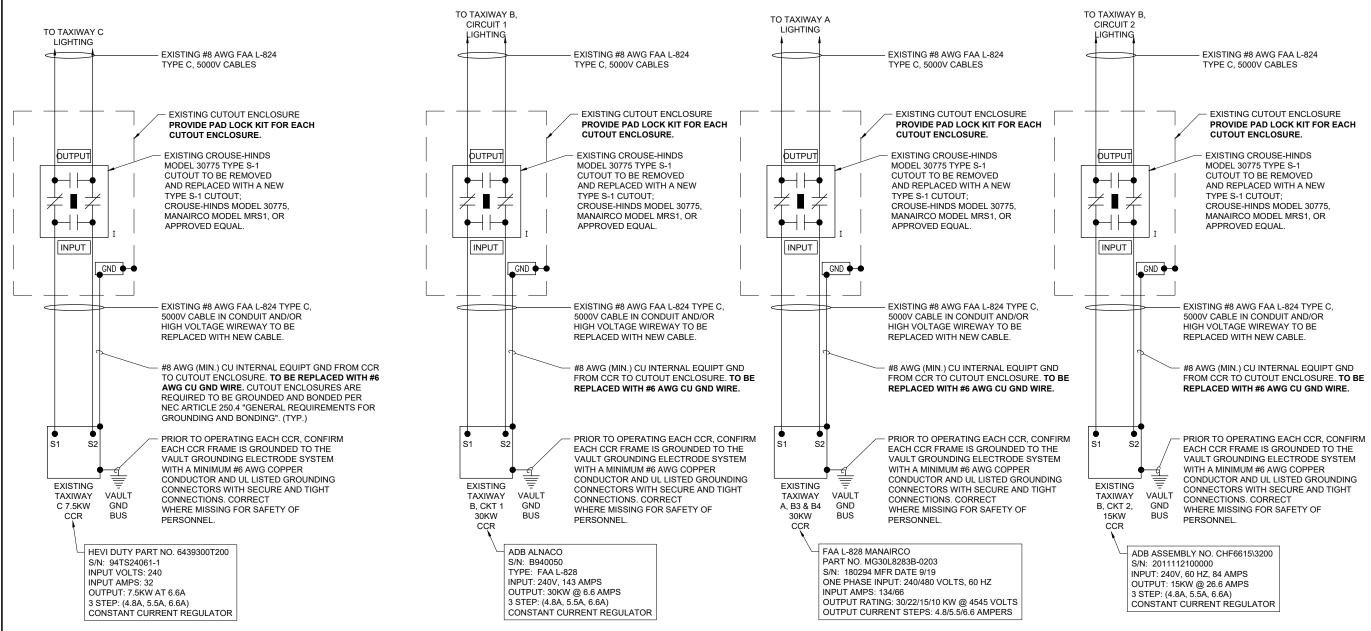
IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DESCRIPTION			
NO.	DATE	DES	DWN	REV	
SSUE: NOVEMBER 22, 2024					
PROJECT NO: 23A0001D					
CAD FILE: E-602.DWG					
DESIGN BY: KNL 3/2/2024					

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR **RUNWAYS**

DRAWN BY: CWS 3/7/2024

SHEET TITLE



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS

NOTES

- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT). WHERE THE FACILITY IS NOT EQUIPPED WITH LOCKOUT/TAGOUT EQUIPMENT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT, WHERE EXISTING ELECTRICAL EQUIPMENT DOES NOT HAVE FEATURES FOR LOCKOUT/TAGOUT THE RESPECTIVE PERSONNEL WILL BE RESPONSIBLE FOR PROVIDING THE APPROPRIATE LOCKOUT/TAGOUT EQUIPMENT AND MEASURES TO ENSURE THE COMPLIANCE WITH OSHA LOCKOUT/TAGOUT PROCEDURES. FAILURE TO SHUT DOWN AND LOCKOUT THE CIRCUIT PRESENTS A DANGEROUS HAZARD FOF PERSONNEL WORKING ON THE SYSTEM. COMPLIANCE WITH LOCKOUT/TAGOUT PROCEDURES AND ALL OTHER SAFETY PROCEDURES AND REQUIREMENTS ARE THE RESPONSIBILITY OF EACH INDIVIDUAL, THE CONTRACTOR, THE RESPECTIVE MAINTENANCE PERSONNEL AND ANY OTHER PERSONNEL WORKING ON THE EQUIPMENT OR ELECTRICAL SYSTEM.
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD, CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER OF RECORD AND THE RESIDENT PROJECT REPRESENTATIVE. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES TO COMPLY WITH OSHA REQUIREMENTS.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT. CONTRACTOR SHALL ARRANGE TO SHUTOFF DISCONNECT, AND LOCKOUT/TAGOUT CIRCUITS WHEN WORKING ON THE RESPECTIVE AIRFIELD LIGHTING SYSTEMS FOR SAFETY OF
- NOTE: SOME OF THE EXISTING TAXIWAY LIGHTING CIRCUITS HAVE BEEN OBSERVED TO BE IN VERY POOR TO DANGEROUS CONDITIONS EXERCISE CAUTION AND SAFETY PROCEDURES WHEN WORKING ON AIRFIELD LIGHTING SYSTEMS

- NEVER REMOVE OR INSERT A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING OR INSERTING A SERIES
- 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. NEC DEFINES A QUALIFIED PERSON AS "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.
- 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
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- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TOT HE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR)

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

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TAXIWAY B RELOCATION PHASE 3: SOUTHEAST &

TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

DESCRIPTION NO. DATE DES DWN REV ISSUE: NOVEMBER 22, 2024 PROJECT NO: 23A0001D CAD FILE: E-603-SCHM.DW

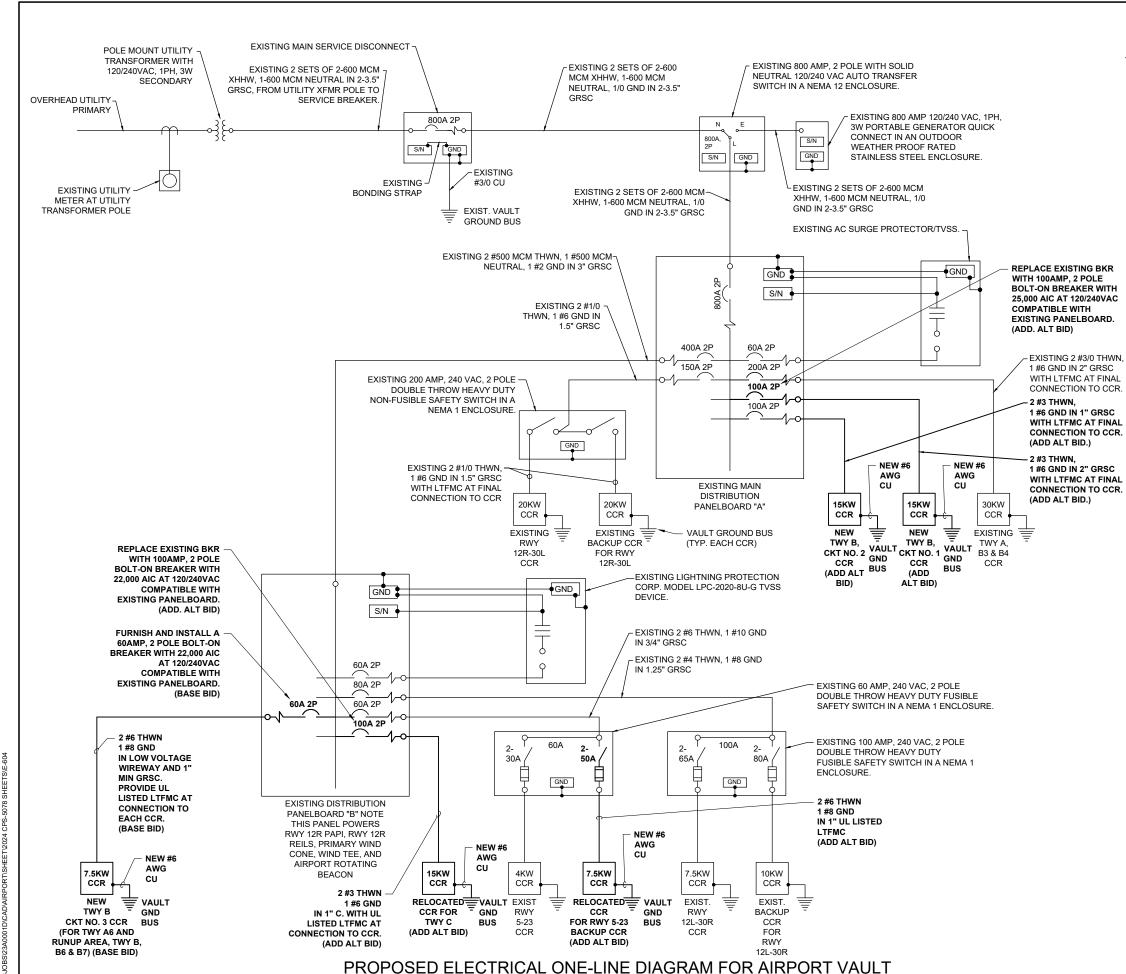
DESIGN BY: KNL 3/2/2024

DRAWN BY: CWS 3/7/2024 REVIEWED BY: KNL 3/21/2024

SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR **TAXIWAYS**

FOR BID



NOTES

- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE THE RESPECTIVE FOUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- 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 B RED NEUTRAL WHITE GROUND GREEN

- CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, FUSES WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, JUNCTION BOX, OR
- 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
- EQUIPMENT AND MATERIALS NOT LABELED AS "EXISTING" ARE NEW

lanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 elephone: 217.788.2450 Fax: 217.788.2503



DOWNTOWN AIRPORT

BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

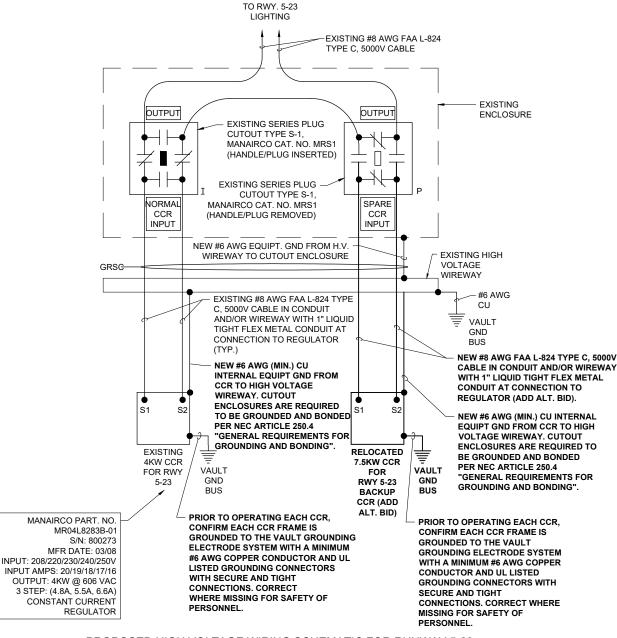
TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO.	DATE	DES	CRIPT	ION	
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ISSUE:	NOVEM	BER 2	2, 202	4	
PROJECT NO: 23A0001D					
CAD FILE: E-604.DWG					
DESIGN BY: KNL 3/2/2024					
DRAWN BY: CWS 3/11/2024					

SHEET TITLE

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR AIRPORT VAULT



PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAY 5-23

LEGEND

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

NOTES:

- 1. KNOW RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER OF RECORD AND THE RESIDENT PROJECT REPRESENTATIVE. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY PERSONNEL.
- EQUIPMENT AND MATERIALS NOT LABELED AS EXISTING ARE NEW.
- VERIFY EACH CUTOUT IS PROVIDED WITH LEGEND PLATES TO IDENTIFY THE RESPECTIVE CUTOUT INPUT AND OUTPUT.
- INCLUDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
- 5. NOTE SOME OF THE EXISTING RUNWAY LIGHTING CIRCUITS HAVE BEEN OBSERVED TO BE IN VERY POOR TO DANGEROUS CONDITION. DANGEROUS CONDITION INDICATES LIGHTING FAILURES, GROUND FAULTS, TRANSFORMER FAILURES, BAD CONNECTIONS, UNSAFE CONDITIONS, RISK OF ELECTRIC SHOCK, INJURY AND/OR DEATH, AND OTHER FAILURE CONDITIONS CAN BE EXPECTED OR PRESENTLY EXIST. PERSONNEL ARE AT RISK OF ELECTRIC SHOCK, INJURY, AND DEATH WHEN ON THE AIRFIELD AREAS THAT CONTAIN THE LIGHTING SYSTEMS. THE AIRFIELD LIGHTING SERIES CIRCUIT CABLES ARE UNSAFE, AND THAT BEING NEAR ACTIVE CIRCUITS WITH STANDING WATER ON THE GROUND COULD BE LIFE-THREATENING. CAUTION NEEDS TO BE EXERCISED WHEN WORKING ON OR AROUND THESE CIRCUITS. THE AIRFIELD LIGHTING SERIES CIRCUITS ARE IN SUCH BAD CONDITION THAT THEY ARE A SAFETY HAZARD TO PERSONNEL WORKING ON THE AIRFIELD, AND SAFETY MEASURES NEED TO BE PERFORMED WHEN WORKING AROUND THESE CIRCUITS. SHUT OFF AND LOCK OFF THE RESPECTIVE AIRFIELD LIGHTING CIRCUITS WHEN WORKING IN AREAS THAT HAVE AIRFIELD LIGHTING CIRCUITS.
- 6. NEVER REMOVE OR INSERT A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING OR INSERTING A SERIES PLUG CUTOUT.
- 7. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM), DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
- 8. INSTALL UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE (EXISTING AND NEW).
- 9. SERIES CIRCUIT DISCONNECTS/CUTOUTS ARE REQUIRED TO ACCOMODATE MAINENANCE PROCEDURES AS NOTED IN FAA AC 150/5340-26C AND IN ACCORDANCE WITH FAA AC 150/5340-30J, PART 3.5.5 CONSTANT CURRENT REGULATORS (CCRS). SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATIONS WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, OR APPROVED EQUAL THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
- 10. EACH REGULATOR FRAME SHALL BE BONDED TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
- 11. OTHER PROJECTS MAY BE UNDER CONSTRUCTION DURING THIS PROJECT. COORDINATE WORK WITH OTHER CONTRACTORS.
- 2. RESPECTIVE LOW VOLTAGE WIRING SHALL ENTER RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HIGH VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION. MAINTAIN SEPERATION OF HIGH VOLTAGE WIRING (AIRFIELD LIGHTING 5000 VOLTS SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) FROM LOW VOLTAGE WIRING (RATED 600 VOLTS AND BELOW) TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR MANHOLE.
- 13. WORK NOT LABELED AS "ADD ALT. BID" IS BASE BID WORK.



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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

NO. DATE DESCRIPTION
DES DWN REV
ISSUE: NOVEMBER 22, 2024
PROJECT NO: 23A0001D

CAD FILE: E-610.DWG

DESIGN BY: KNL 3/2/2024

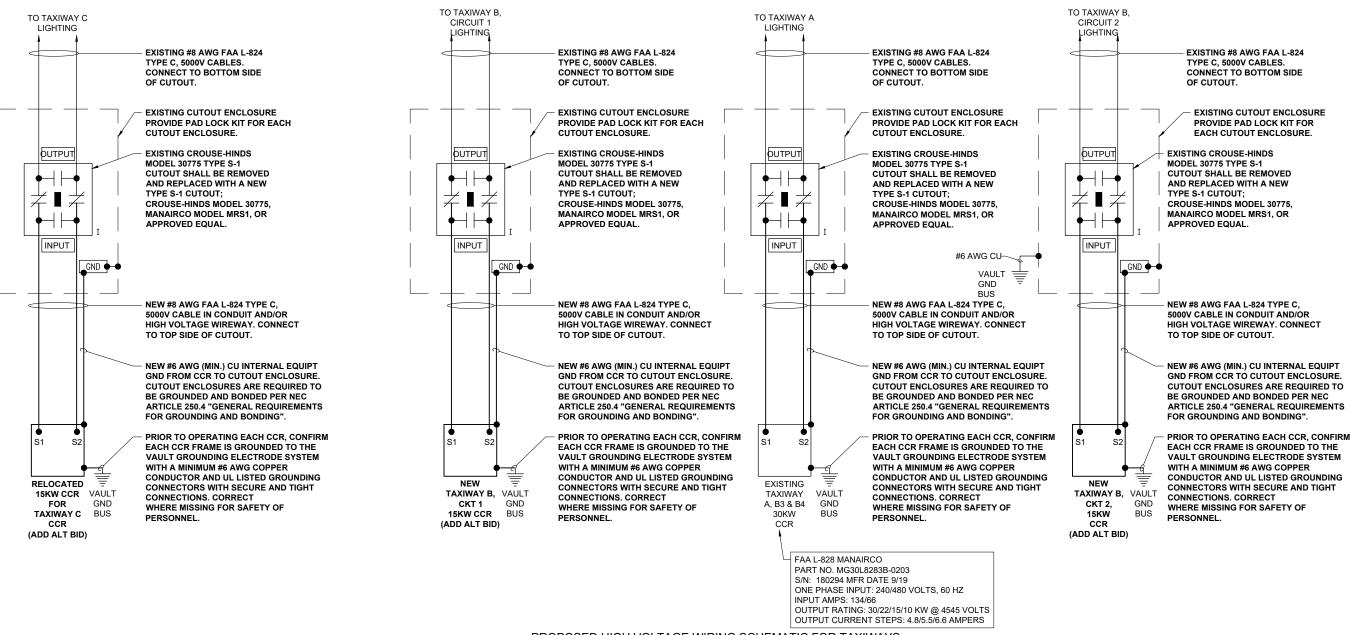
DRAWN BY: CWS 3/11/2024

DRAWN BY: CWS 3/11/2024 REVIEWED BY: KNL 3/21/2024

SHEET TITLE

PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAY 5-23





PROPOSED HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS

NOTES:

- KNOW RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD, CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER OF RECORD AND THE RESIDENT PROJECT REPRESENTATIVE. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY PERSONNEL
- EQUIPMENT AND MATERIALS NOT LABELED AS EXISTING ARE NEW.
- VERIFY EACH CUTOUT IS PROVIDED WITH LEGEND PLATES TO IDENTIFY THE RESPECTIVE CUTOUT INPUT AND OUTPUT.
- INCLUDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
- NOTE THE EXISTING TAXIWAY LIGHTING CIRCUITS HAVE BEEN OBSERVED TO BE IN VERY POOR TO DANGEROUS CONDITION DANGEROUS CONDITION INDICATES LIGHTING FAILURES, GROUND FAULTS, TRANSFORMER FAILURES, BAD CONNECTIONS, UNSAFE CONDITIONS, RISK OF ELECTRIC SHOCK, INJURY AND/OR DEATH, AND OTHER FAILURE CONDITIONS CAN BE EXPECTED OR PRESENTLY EXIST. PERSONNEL ARE AT RISK OF ELECTRIC SHOCK, INJURY, AND DEATH WHEN ON THE AIRFIELD AREAS THAT CONTAIN THE LIGHTING SYSTEMS. THE AIRFIELD LIGHTING SERIES CIRCUIT CABLES ARE UNSAFE, AND THAT BEING NEAR ACTIVE CIRCUITS WITH STANDING WATER ON THE GROUND COULD BE LIFE-THREATENING. CAUTION NEEDS TO BE EXERCISED WHEN WORKING ON OR AROUND THESE CIRCUITS. THE AIRFIELD LIGHTING SERIES CIRCUITS ARE IN SUCH BAD CONDITION THAT THEY ARE A SAFETY HAZARD TO PERSONNEL WORKING ON THE AIRFIELD. AND SAFETY MEASURES NEED TO BE PERFORMED WHEN WORKING AROUND THESE CIRCUITS. SHUT OFF AND LOCK OFF THE RESPECTIVE AIRFIELD LIGHTING CIRCUITS WHEN WORKING IN AREAS THAT HAVE AIRFIELD LIGHTING CIRCUITS.
- NEVER REMOVE OR INSERT A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING OR INSERTING A SERIES PLUG CUTOUT.

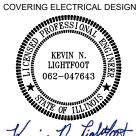
- LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
- INSTALL UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE (EXISTING AND NEW).
- SERIES CIRCUIT DISCONNECTS/CUTOUTS ARE REQUIRED TO ACCOMODATE MAINENANCE PROCEDURES AS NOTED IN FAA AC 150/5340-26C AND IN ACCORDANCE WITH FAA AC 150/5340-30J, PART 3.5.5 CONSTANT CURRENT REGULATORS (CCRS). SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, SERIES PLUG CUTOUTS SHALL BE RATED SUÌTABLÉ FOR NORMAL OPERATIONS WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT, NO. 30775, MANAIRCO CAT, NO. MRS1, OR APPROVED EQUAL THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION
- EACH REGULATOR FRAME SHALL BE BONDED TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
- 11. OTHER PROJECTS MAY BE UNDER CONSTRUCTION DURING THIS PROJECT. COORDINATE WORK WITH OTHER CONTRACTORS.
- RESPECTIVE LOW VOLTAGE WIRING SHALL ENTER RESPECTIVE CCR AT THE LOW VOLTAGE SECTION, HIGH VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION. MAINTAIN SEPERATION OF HIGH VOLTAGE WIRING (AIRFIELD LIGHTING 5000 VOLTS SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) FROM LOW VOLTAGE . WIRING (RATED 600 VOLTS AND BELOW) TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BÓX, SPLICE CAN, HANDHOLE, OR MANHOLE
- 13. WORK NOT LABELED AS "ADD ALT. BID" IS BASE BID WORK

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

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SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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	CAD FILE: E-605-SCHM.DWG					
	DESIGN BY: KNL 3/2/2024					

SHEET TITLE

PROPOSED HIGH **VOLTAGE WIRING** SCHEMATIC FOR **TAXIWAYS**

DRAWN BY: CWS 3/12/2024

REVIEWED BY: KNL 3/21/2024

FOR BID

NOTES:

- PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION AND THE RUNWAY OR TAXIWAY SERVED.
- 2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF". FURNISH & INSTALL A WARNING LABEL FOR CUTOUT ENCLOSURE TO WARN PERSONS OF POTENTIAL ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE RESPECTIVE CUTOUT INPUT CONNECTION AND THE RESPECTIVE CUTOUT OUTPUT CONNECTION
- 3. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS
- LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLATION
- SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND VERIFIED BY THE MANUFACTURER AS SUITABLE FOR THE RESPECTIVE APPLICATION. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, MANAIRCO CAT. NO. MRS1 OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE
- MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) FROM LOW VOLTAGE WIRING (RATED 600 VOLTS AND BELOW) TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR
- LOW VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HIGH
- PROVIDE UL LISTED FIRE STOP MATERIAL AT EACH CONDUIT ENTRY AND EXIT TO EACH RESPECTIVE CUTOUT ENCLOSURE
- BONDING JUMPER FOR EACH REGULATOR.

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TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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CAD FILE: E-606-SCHM.DWG DESIGN BY: KNI 3/2/2024 DRAWN BY: CWS 3/12/2024

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

HIGH VOLTAGE WIRING SCHEMATIC FOR TWY B CKT 3 LIGHTING

TO TWY B

CKT 3

LIGHTING

DUTPUT

INPUT

TWY B

CKT 3

AREA. B. B6 &

B7) CCR

(BASE BID)

(TWY A6-RUNUP BUS

#8 AWG FAA L-824

#6 AWG EQUIPT GND WIRE

WIREWAY/PULL BOX.

CONNECT CCR OUTPUT WIRING

#6 AWG (MIN.) CU INTERNAL EQUIPT GND

CUTOUT ENCLOSURES ARE REQUIRED TO

ARTICLE 250.4 "GENERAL REQUIREMENTS

HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY TWY B CKT 3

(TAXIWAY A6-RUNUP AREA, B, B6 & B7) LIGHTING

DENOTES PLUG CUTOUT WITH PLUG INSERTED

DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

BE GROUNDED AND BONDED PER NEC

FROM CCR TO CUTOUT ENCLOSURE.

FOR GROUNDING AND BONDING".

"I"

#6 AWG CU

VAULT

TO TOP SIDE OF CUTOUT.

CONNECT FIELD WIRING TO

BOTTOM SIDE OF CUTOUT.

TERMINATE ON HIGH VOLTAGE

TYPE C, 5000V

CABLE

NEMA 12 ENCLOSURE WITH

HINGED COVER AND BACK

PAD LOCKABLE AND

UL LISTED FIRESTOP

SERIES PLUG CUTOUT -

CAT. NO. MRS1, OR

APPROVED EQUAL

SEE NOTE 5

TYPE S-1 CROUSE HINDS

CAT NO 30775, MANAIRCO

(HANDLE/PLUG INSERTED)

2 #8 AWG FAA L-824 TYPE C, 5000V CONDUCTORS, 1 #8 **GROUND IN CONDUIT** AND/OR WIREWAY. PROVIDE

TIGHT FLEX METAL CONDUIT

1.25" UL LISTED LIQUID

AT CONNECTION TO

REGULATOR (TYP.)

ENCLOSURE

PANEL. ENCLOSURE SHALL BE

ADEQUATELY SIZED FOR TYPE

S-1 PLUG CUTOUTS. PROVIDE

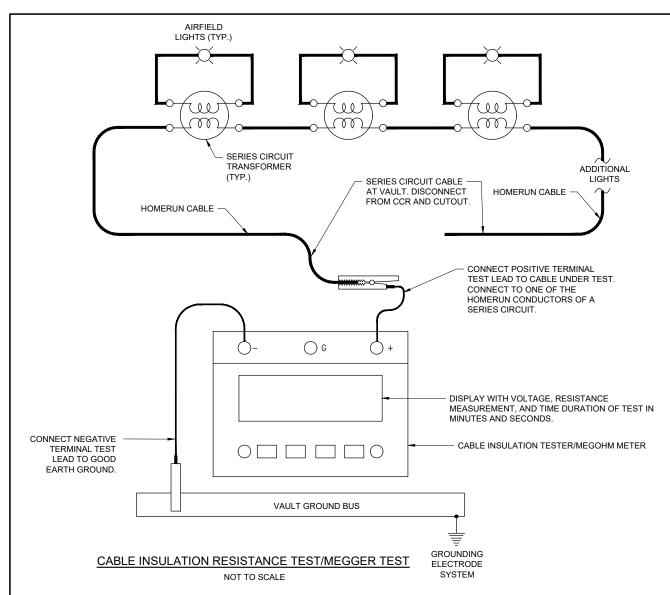
MATERIAL AT EACH CONDUIT

ENTRY AND EXIT TO CUTOUT

VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION

BOND ALL REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG

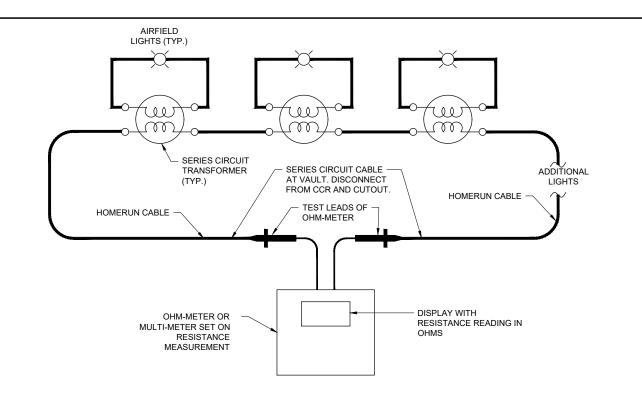
FOR BID



CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

- PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, ALL EXISTING SERIES CIRCUIT LIGHTING CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE RESPECTIVE AIRPORT ELECTRICAL VAULT.
- AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR OTHER
 WORK AND ADDITIONS HAVE BEEN COMPLETED ALL EXISTING SERIES CIRCUIT LIGHTING
 CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND
 RECORDED AT THE RESPECTIVE AIRPORT ELECTRICAL VAULT.
- 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.
- FAA ADVISORY CIRCULAR 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES PROVIDES GUIDANCE ON INSULATION RESISTANCE TESTS. ALSO REFER TO THE USER MANUAL FOR THE RESPECTIVE CABLE INSULATION RESISTANCE TESTER. REASONABLY NEW SERIES CIRCUIT CABLES AND TRANSFORMERS WITH GOOD CONNECTIONS SHOULD READ 500 MEGA-OHMS TO 1,000 MEGA-OHMS OR HIGHER. THE READINGS SHOULD DECREASE WITH AGE. THE RESISTANCE VALUE DECLINES OVER THE SERVICE LIFE OF THE CIRCUIT; A 10-20 PERCENT DECLINE PER YEAR MAY BE CONSIDERED NORMAL. A YEARLY DECLINE OF 50 PERCENT (4 PERCENT MONTHLY) OR GREATER INDICATES THE EXISTENCE OF A PROBLEM, SUCH AS A HIGH RESISTANCE GROUND, SERIOUS DETERIORATION OF THE CIRCUIT INSULATION, LIGHTNING DAMAGE, BAD CONNECTIONS, BAD SPLICES, CABLE INSULATION DAMAGE, OR OTHER FAILURE. FAA ADVISORY CIRCULAR 150/5340-26C NOTES "GENERALLY SPEAKING, ANY CIRCUIT THAT MEASURES LESS THAN 1 MEGOHM IS CERTAINLY DESTINED FOR RAPID FAILURE." AIRFIELD LIGHTING SERIES CIRCUITS WITH CABLE INSULATION READINGS OF LESS THAN 1 MEGOHM ARE NOT UNCOMMON FOR OLDER CIRCUITS THAT ARE 20 YEARS OR MORE OF AGE.
- BASED ON INFORMATION IN FAA AC NO. 150/5340-26C MAINTENANCE OF AIRPORT VISUAL AID FACILITIES, THE CABLE INSULATION RESISTANCE VALUE INEVITABLY DECLINES OVER THE SERVICE LIFE OF THE CIRCUIT; A 10-20 PERCENT DECLINE PER YEAR MAY BE CONSIDERED NORMAL. IN THE EVENT THAT THE CABLE INSULATION RESISTANCE READINGS HAVE DECLINED MORE THAN 2 PERCENT PER MONTH IT MIGHT INDICATE CABLE DAMAGE DUE TO LIGHTNING OR DAMAGE AS A RESULT OF CONTRACTOR OPERATIONS. WHERE THE CABLE INSULATION RESISTANCE READINGS HAVE DECLINED MORE THAN 2 PERCENT PER MONTH OVER THE PROJECT CONSTRUCTION DURATION AS A RESULT OF CONTRACTOR OPERATIONS, CONTRACTOR WILL NEED TO INVESTIGATE, ADDRESS, AND REPAIR THE RESPECTIVE CABLE CIRCUITS.



MEASURE RESISTANCE OF SERIES CIRCUIT LOOP.

NOT TO SCALE

SERIES CIRCUIT LOOP RESISTANCE MEASUREMENT NOTES

- PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, THE RESPECTIVE SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT.
- AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR OTHER WORK AND ADDITIONS HAVE BEEN COMPLETED THE RESPECTIVE SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT.
- 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 TOOP AND THEREFORE THE MEASUREMENTS MIGHT BE SLIGHTLY HIGHER THAN THE CALCULATED RESISTANCE FOR THE RESPECTIVE LENGTH OF CABLE.



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Cahokia Heights, Illinois 62206



DATE SIGNED: 11/2

> TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST &

TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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PROJECT NO: 23A0001D				
CAD FILE: E-607.DWG				

SHEET TITLE

SERIES CIRCUIT CABLE TESTING DETAILS

DESIGN BY: KNI 3/2/2024

DRAWN BY: CWS 3/12/2024

LEGEND PLAT	E SCHEDULE
DEVICE	LABEL
VAULT MAIN SERVICE DISCONNECT	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BE AMPS LINE TO LINE AMPS LINE TO NEUTRAL ON (DATE)
VAULT TRANSFER SWITCH	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BE AMPS LINE TO LINE AMPS LINE TO NEUTRAL ON (DATE)
VAULT MAIN DIST. PANEL "A"	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BEAMPS LINE TO LINEAMPS LINE TO NEUTRAL ON (DATE). FAULT CURRENT AT VAULT MAIN DIST PANEL WAS CALCULATED TO BEAMPS LINE TO LINEAMPS LINE TO NEUTRAL ON (DATE).
VAULT MAIN DISTRIBUTION PANEL "A"	VAULT MAIN DIST. PANEL "A" 120/240 VAC, 1 PH, 3W FED FROM TERMINAL BUILDING AUTO TRANSFER SWITCH
VAULT MAIN DISTRIBUTION PANEL "A"	CONDUCTOR COLOR CODING SHALL BE AS FOLLOWS: PHASE A - BLACK PHASE B - RED NEUTRAL - WHITE GROUND - GREEN
VAULT DIST. PANEL "B"	MAX AVAILABLE FAULT CURRENT AT UTILITY XFMR SECONDARY CALCULATED TO BEAMPS LINE TO LINEAMPS LINE TO NEUTRAL ON (DATE). FAULT CURRENT AT VAULT DIST PANEL "B" WAS CALCULATED TO BEAMPS LINE TO LINEAMPS LINE TO NEUTRAL ON (DATE).
NEW TAXIWAY B CKT 3 (TWY A6-RUNUP, B, B6 & B7) CCR	TAXIWAY B CKT 3 (TWY A6-RUNUP, B, B6 & B7) CCR
CUTOUT ENCLOSURE FOR TWY B CKT 3 (TWY A6-RUNUP, B, B6 & B7) CCR	TAXIWAY B CKT 3 (TWY A6-RUNUP, B, B6 & B7) CCR
TOP OF EACH CCR (PROVIDE 12 LEGEND PLATES)	KEEP CLEAR DO NOT STORE MATERIALS ON TOP OF CCR
EACH CUTOUT INPUT SIDE CONNECTION	INPUT
EACH CUTOUT OUTPUT SIDE CONNECTION	OUTPUT
EACH CUTOUT ENCLOSURE	CAUTION OPERATE CUTOUT WITH CCRS SHUT OFF

CAUTION

AREA IN FRONT OF THIS ELECTRICAL PANEL MUST BE KEPT CLEAR FOR 36 INCHES OSHA-NEC REGULATIONS

OSHA-NEC CLEARANCE LABEL FOR PANELBOARDS AND LOAD CENTERS. LABELS SHALL BE APPROXIMATELY 3.5" BY 5". PROVIDE THESE LABELS (OR EQUIVALENT) FOR ALL 120/240 VAC PANELBOARDS AND LOAD CENTERS.

OSHA WARNING LABEL DETAIL

NOTES:

- 1. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- 2. PER NEC 110.22 "IDENTIFICATION OF DISCONNECTING MEANS", EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE AND IDENTIFY THE POWER SOURCE THAT SUPPLIES THE DISCONNECTING MEANS.
- 3. PER NEC 408.4 "FIELD MARKING REQUIRED" PART (B)
 "SOURCE OF SUPPLY", ALL SWITCHBOARDS,
 SWITCHGEAR, AND PANELBOARDS SUPPLIED BY A
 FEEDER(S) SHALL BE PERMANENTLY MARKED TO
 INDICATED EACH DEVICE OR EQUIPMENT WHERE THE
 POWER ORIGINATES.
- 4. PER NEC 110.24 "AVAILABLE FAULT CURRENT" PART (A)
 "FIELD MARKING", SERVICE EQUIPMENT SHALL BE
 LEGIBLY MARKED IN THE FIELD WITH THE AVAILABLE
 FAULT CURRENT.
- PER NEC 408.6 "SHORT-CIRCUIT CURRENT RATING", THE AVAILABLE FAULT CURRENT AND THE DATE THE CALCULATION WAS PERFORMED SHALL BE FIELD MARKED ON THE ENCLOSURE AT THE POINT OF SUPPLY.
- 6. VERIFY ALL POWER SOURCES TO EQUIPMENT, REPORT ANY VARIATIONS FROM THE SCHEDULE TO AIRPORT MANAGER AND ENGINEER OF RECORD, PROVIDE CORRECTIVE LABELING FOR RESPECTIVE POWER SOURCE WHERE APPLICABLE. SAFETY OF PERSONNEL IS THE PRIORITY.

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DATE L

SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

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ISSUE:	ISSUE: NOVEMBER 22, 2024				
PROJECT NO: 23A0001D					
CAD FILE: E-608.DWG					
DESIGN BY: KNL 3/2/2024					

SHEET TITLE

LEGEND PLATE SCHEDULES - 1

DRAWN BY: CWS 3/12/2024 REVIEWED BY: KNL 3/21/2024



Arc Flash and Shock Hazard Appropriate PPE Required

NOMINAL VOLTAGE: 120/240 VAC, SINGLE-PHASE, 3-WIRE ARC FLASH BOUNDARY: 19 INCHES ARC FLASH PPE CATEGORY: 1



Refer to NFPA 70E for minimum PPE Requirements

ARC FLASH AND SHOCK HAZARD RISK LABEL

EXAMPLE OF ARC FLASH AND SHOCK HAZARD RISK LABEL FOR 120/240 VAC, SINGLE-PHASE, 3-WIRE PANELBOARD OR OTHER EQUIPMENT WHERE THE MAXIMUM AVAILABLE FAULT CURRENT IS LESS THAN 25,000 AMPS.

PROVIDE THESE LABELS FOR THE FOLLOWING EQUIPMENT:

- 1. VAULT MAIN SERVICE DISCONNECT.
- 2. VAULT TRANSFER SWITCH.
- 3. VAULT MAIN DISTRIBUTION PANEL "A"
- 4. VAULT MAIN DISTRIBUTION PANEL "B"
- CONTROL PANEL FOR AIRFIELD NAVAIDS.
- 6. EACH RELAY INTERFACE PANEL FOR CCRS.
- 7. DOUBLE THROW SAFETY SWITCH FOR RUNWAY 5-23 CCRS.
- 8. DOUBLE THROW SAFETY SWITCH FOR RUNWAY 12L-30R CCRS.
- 9. DOUBLE THROW SAFETY SWTICH FOR RUNWAY 12R-30L CCRS.

NOTES:

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

"DANGER HIGH VOLTAGE KEEP OUT" LABELS, MARKINGS, AND/OR SIGNS ARE REQUIRED FOR EQUIPMENT RATED OVER 1000 VOLTS AC IN ACCORDANCE WITH THE FOLLOWING:

- 2020/2023 NEC 110.34(C) "LOCKED ROOMS OR ENCLOSURES".
- 2020 NEC 300.45 "DANGER SIGNS".
- 2023 NEC 305.12 "DANGER SIGNS".
- 2020/2023 NEC 314.72(E) "SUITABLE COVERS".
- 2020 NEC 490.35 (A) "HIGH-VOLTAGE EQUIPMENT".
- 2023 NEC 495.35 (A) "HIGH-VOLTAGE EQUIPMENT".
- AC 150/5340-26C "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES".



"DANGER - HIGH VOLTAGE UNAUTHORIZED PERSONNEL KEEP OUT" SIGN

STOP

CHECK EACH CCR
TO MAKE SURE
IT IS IN THE
PROPER MODE
OF OPERATION
BEFORE LEAVING
THE VAULT

CCR CHECK SIGN

NOT TO SCALE

PROVIDE ONE SIGN FOR EACH INTERIOR DOOR AT THE VAULT.

PROVIDE WEATHERPROOF WARNING SIGN FOR EACH DOOR TO AIRPORT ELECTRICAL VAULT LABELED "DANGER - HIGH VOLTAGE UNAUTHORIZED PERSONNEL KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). SIGN SHALL BE APPROXIMATELY 10"H X 14"W OR 14" H X 20" W. NEW SIGNS SHALL REPLACE EXISTING SIGNS ON VAULT DOORS



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

NOT TO SCALE

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE KEEP OUT"
LABELS/SIGNS FOR HIGH VOLTAGE SECTION OF CONSTANT
CURRENT REGULATORS, SERIES CIRCUIT DISCONNECT/CUTOUT
ENCLOSURES, HIGH VOLTAGE WIREWAYS, AND HIGH VOLTAGE
PULL BOXES. LABELS SHALL BE MINIMUM 3.5" W.

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

201/50110 51 505010 11 55010



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/3

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

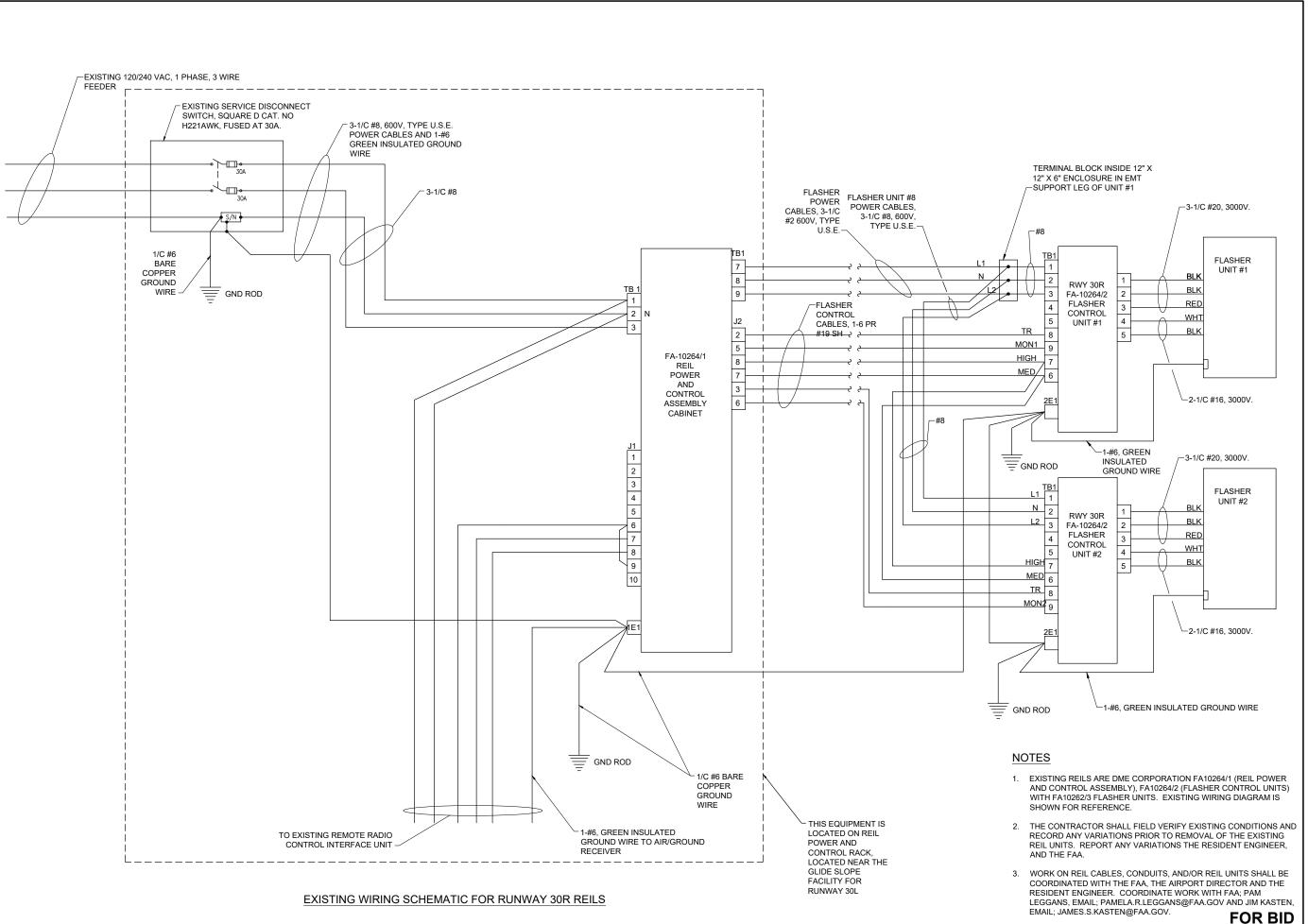
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PROJECT NO: 23A0001D						
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DRAWN BY: CWS 3/12/2024						

LEGEND PLATE AND SIGNAGE SCHEDULES - 2

REVIEWED BY: KNL 3/21/2024

SHEET TITLE

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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT

6100 Archview Drive Cahokia Heights, Illinois 62206



DATE LICENSE SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION,

PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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	PROJECT NO: 23A0001D				
CAD FILE: E-611.DWG					

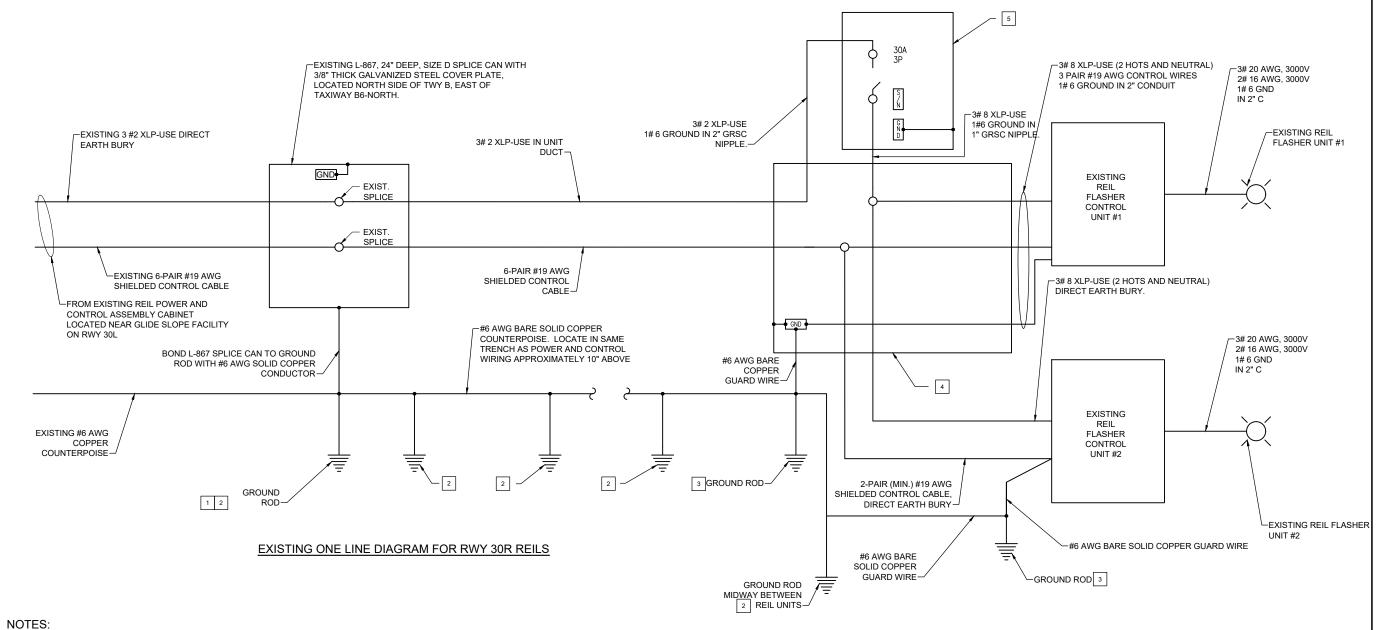
DESIGN BY: KNL 4/24/2024

DRAWN BY: CWS 4/24/2024

REVIEWED BY: KNL 4/24/2024

SHEET TITLE

EXISTING WIRING SCHEMATIC FOR RUNWAY 30R REILS



- 1. EXISTING ONE LINE DIAGRAM FOR RUNWAY 30R REILS IS PROVIDED FOR REFERENCE. FIELD VERIFY EXISTING CONDITIONS.
- 2. REIL RELOCATION SHALL BE COORDINATED WITH THE FAA, THE AIRPORT DIRECTOR AND THE RESIDENT ENGINEER.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 (NEC MOST CURRENT ISSUE IN FORCE), THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIRÉMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

KEYED NOTES

- EXISTING 3/4" DIA X 10' LONG UL LISTED COPPERCIAD GROUND ROD. LOCATED AT SPLICE CAN. SPLICE CAN IS BONDED TO GROUND ROD AND COUNTERPOISE CONDUCTORS ARE CONNECTED TO GROUND ROD. CONNECTIONS TO GROUND ROD ARE EXOTHERMIC WELD.
- 2 EXISTING COUNTERPOISE IS BONDED TO GROUND RODS AT APPROXIMATELY 90-FOOT INTERVALS. GROUND RODS ARE 3/4" DIA X 10' LONG UL LISTED COPPERCLAD. THE SPACING OF GROUND RODS WAS VARIED BY 10% TO 20% TO PREVENT RESONANCE. INSTALL GROUND RODS 6 FEET ON EITHER SIDE OF THE TRENCH. ALL BELOW GRADE CONNECTIONS TO GROUND RODS AND COUNTERPOISE SHALL BE EXOTHERMIC WELD. THIS APPLIES TO NEW GUARD WIRE/COUNTERPOISE INSTALLATIONS FOR FAA REIL CABLES
- 3 | EXISTING 3/4" X 10' LONG UL LISTED COPPERCLAD GROUND ROD LOCATED AT EACH REIL UNIT. EACH REIL UNIT IS BONDED TO GROUND ROD WITH #6 COPPER CONDUCTOR. GUARD WIRE TERMINATES AT EACH GROUND ROD LOCATED AT REIL UNITS.
- EXISTING 12" X 12" X 6" NEMA 4 JUNCTION BOX.
- EXISTING 30 AMP, 3 POLE, 600 VAC, UL LISTED HEAVY DUTY NOT FUSIBLE SAFETY SWITCH IN A NEMA 3R & 12 ENCLOSURE.



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BI-STATE DEVELOPMENT ST. LOUIS DOWNTOWN AIRPORT 6100 Archview Drive Cahokia Heights, Illinois 62206

COVERING ELECTRICAL DESIGN



SIGNED: 11/22/2024 EXPIRES: 11/30/2025

TAXIWAY B RELOCATION, PHASE 3: SOUTHEAST & TAXIWAY B1 INTERSECTION

IDA NO.: CPS-5078 CONTRACT NO.: SD064

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DESIGN BY: KNL 4/24/2024					
DRAWN BY: CWS 4/24/2024					

EXISTING ONELINE DIAGRAM FOR RWY 30R REILS

REVIEWED BY: KNL 4/24/2024

SHEET TITLE