Illinois Department of Transportation
Office of Intermodal Project Implementation / Division of Aeronautics
1 Langhorne Bond Drive / Springfield, Illinois 62707-8415

January 11, 2024

SUBJECT: Crawford County Airport
Robinson, Illinois
Crawford County
Illinois Project Number: RSV-4820
SBG Project Number: N/A
Contract No. RB023
Item No. 07A, January 19, 2024, Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

Reason for Addendum:

The addendum addresses revisions for an existing electrical handhole that will require adjustment, quantifying lime, clarifying scope of work for east and west haul routes, and providing appendices for cable and constant current regulator testing forms, soil boring logs, and an existing handhole detail.

To All Plan Holders:

Replace plan sheets with the attached documents and note the schedule of price changes.

1. SHEET 2- SUMMARY OF QUANTITIES AND INDEX OF SHEETS

    a. Pay Item AR110946 ADJUST ELECTRICAL HANDOLE was added to the “SUMMARY OF QUANTITIES – BASE BID” table.

2. SHEETS 4,5,6 - CONSTRUCTION PHASING PLAN PHASES 1-3
    a. Added callout notes for haul route.

        i. West haul route is existing, installed in 2007, and is to be maintained and remain in place

Source: Google Earth 2007

        ii. East haul route is to be relocated at the proposed location shown per typical at the dimensions shown on the plans, to remain in place.

3. SHEET 51 - PROPOSED ELECTRICAL PLAN – STA. 146+00 TO 156+00

    a. Added callout for existing handhole to be adjusted.

Special Provisions Changes:

1. Add the following to Spec Section Item 115 ELECTRICAL MANHOLES AND JUNCTION STRUCTURES, CONSTRUCTION METHODS

    115-3.12 ELECTRICAL HANDHOLE ELEVATION ADJUSTMENTS.

    The Contractor shall adjust the tops of existing handholes in areas designated in the Contract Documents to the new elevations shown. The Contractor shall be responsible for determining the exact height adjustment required to raise or lower the top of each handhole to the new elevations. The existing top elevation of each handhole to be adjusted shall be determined in the field and subtracted/added from the proposed top elevation.

    The Contractor shall remove/extend the existing top section or ring and cover on the handhole structure or handhole access. The Contractor shall install precast concrete sections or grade rings of the required dimensions to adjust the handhole top to the new proposed elevation or shall cut the existing handhole walls to shorten the existing structure, as required by final grades. The Contractor shall reinstall the handhole top section or ring and cover on top and check the new top elevation.

    The Contractor shall construct a concrete slab around the top of adjusted structures located in graded areas that are not to be paved. The concrete slab shall conform to the dimensions shown on the plans.

    The existing Electrical handhole to be adjusted is a precast unit manufactured by McCann Concrete Products, Inc. with Neenah R-6662-PP Frame and Lid lettered “HIGH VOLTAGE”. If casting is removed in satisfactory condition, the

existing casting may be used. In the event the casting is damaged, the contractor shall furnish a new, approved casting. McCann Concrete Products, Dorsey, IL, Precast Electrical Handhole with Neenah R-6662-PP Frame and Lid lettered “HIGH VOLTAGE”. The handhole outer dimensions are 3’-6” by 3’-6” by 3’-6” with 6” thick walls and 6” thick bottom. The walls and bottom include #4 Rebar at 12” center each way.

2. Add the following to Spec Section to Item 115 ELECTRICAL MANHOLES AND JUNCTION STRUCTURES, BASIS OF PAYMENT under Payment will be made under:

   Item AR110946 Adjust Electrical Handhole - per EACH.

3. Add the following to Item 155 LIME TREATED SUBGRADE

   155-3.1 Add the following:

   The assumed soil type required for subgrade stabilization varies but is primarily “brown/gray clayey silt.” For lime quantity with a maximum dry density (PCF) of 118.3 at an optimum moisture content of 12.5% for quantity purposes.

   The estimated rate is 53 lb/sq yd of lime.

   155-8.1 Remove and replace with the following:

   Payment will be made at the at the contract unit price per square yard for the lime processing of the thickness specified. The quantity of lime required will be considered incidental and no separate payment shall be made. These prices shall be full compensation for furnishing all material, water, lime, and for all mobilization, preparation, delivering, placing and mixing these materials, and all labor, equipment, tools and incidentals necessary to complete this item.

4. Add the following Appendices:

   a. Appendix A – Cable and Constant Current Regulator Testing Forms

   b. Appendic B – Soil Boring Logs

   c. Appendix C – Existing Handhole Detail (For Pay Item AR110946)

Schedule of Prices Changes:

1. Add Pay Item AR110946 ADJUST ELECTRICAL HANDOLE. Add 1 EACH.

Prime contractors must utilize the enclosed material when preparing their bid and must include any changes to the Schedule of Prices in their bid.

Questions on this addendum may be directed to Jeff Olson of Hanson Professional Services Inc. at 217-747-9278 or JOlson@hanson-inc.com

END OF ADDENDUM A

INDEX OF SHEETS

EARTHWORK QUANTITY SUMMARY

WORK AREA	CUT (CY)	FILL (CY)	FILL + 20% (CY)	NET (CY)
WEST OF RUNWAY 17-35	22,768	15,320	18,384	4,384 (EXCESS)
EAST OF RUNWAY 17-35	531	2,688	3,225	2,694 (BORROW)
TOTAL	23,299**	18,008	21,609	1,690 (EXCESS)

** USED TO CALCULATE AR152410 PAY ITEM QUANTITIES

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. 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.

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.

CERITIFIED 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/TECHNICIAN 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.

SUMMARY OF QUANTITIES - BASE BID

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AR108158	1/C #8 5 KV UG CABLE IN UD	FOOT	3,845	
AR108756	1/C #6 GROUND	FOOT	3,845	
AR110012	2" DIRECTIONAL BORE	FOOT	120	
AR110501	1-WAY CONC. ENCASED DUCT	FOOT	120	
AR110503	3-WAY CONCRETE ENCASED DUCT	FOOT	210	
AR110946	ADJUST ELECTRICAL HANDHOLE	EACH	1	
AR115610	ELECTRICAL HANDHOLE	EACH	6	
AR125100	ELEVATED RETROREFLECTIVE MARKER	EACH	75	
AR125411	MITL-STAKE MOUNTED-LED	EACH	30	
AR125416	MITL-BASE MOUNTED-LED	EACH	10	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EACH	3	
AR125443	TAXI GUIDANCE SIGN, 3 CHARACTER	EACH	4	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EACH	1	
AR125446	TAXI GUIDANCE SIGN, 6 CHARACTER	EACH	4	
AR125565	SPLICE CAN	EACH	6	
AR125961	RELOCATE STAKE MOUNTED LIGHT	EACH	1	
AR125964	RELOCATE TAXI GUIDANCE SIGN	EACH	1	
AR150510	ENGINEER'S FIELD OFFICE	L SUM	1	
AR150520	MOBILIZATION	L SUM	1	
AR150530	TRAFFIC MAINTENANCE	L SUM	1	
AR150540	HAUL ROUTE	L SUM	1	
AR152410	UNCLASSIFIED EXCAVATION	CU YD	23,299	
AR155712	LIME-MODIFIED SUBGRADE-12"	SQ YD	24,625	
AR156511	DITCH CHECK	EACH	46	
AR156516	AGGREGATE DITCH CHECK	EACH	2	
AR156520	INLET PROTECTION	EACH	11	
AR156530	TEMPORARY SEEDING	ACRE	20.30	
AR156543	RIPRAP-GRADATION NO. 3	SQ YD	80	
AR209608	CRUSHED AGG. BASE COURSE - 8"	SQ YD	24,625	
AR401614	BIT. SURF. CSE.-METHOD II, SUPERPAVE	TON	2,601	
AR401630	BITUMINOUS SURFACE TEST SECTION	EACH	1	
AR401650	BITUMINOUS PAVEMENT MILLING	SQ YD	405	
AR401900	REMOVE BITUMINOUS PAVEMENT	SQ YD	7,140	
AR403614	BIT. BASE CSE.-METHOD II, SUPERPAVE	TON	3,832	
AR602510	BITUMINOUS PRIME COAT	GALLON	3,665	
AR603510	BITUMINOUS TACK COAT	GALLON	1,745	
AR620520	PAVEMENT MARKING-WATERBORNE	SQ FT	9,456	
AR620525	PAVEMENT MARKING-BLACK BORDER	SQ FT	8,060	
AR620900	PAVEMENT MARKING REMOVAL	SQ FT	1,650	
AR701512	12" RCP, CLASS IV	FOOT	12	
AR701518	18" RCP, CLASS IV	FOOT	472	
AR701524	24" RCP, CLASS IV	FOOT	203	
AR701900	REMOVE PIPE	FOOT	1,045	
AR705526	6" PERFORATED UNDERDRAIN W/SOCK	FOOT	11,084	
AR705620	UNDERDRAIN END SECTION	EACH	3	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	8	
AR705640	UNDERDRAIN CLEANOUT	EACH	26	
AR751412	INLET-TYPE B	EACH	3	
AR751900	REMOVE INLET	EACH	6	
AR752230	METAL END SECTION 30"	EACH	1	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	2	
AR752418	PRECAST REINFORCED CONC. FES 18"	EACH	2	
AR752424	PRECAST REINFORCED CONC. FES 24"	EACH	2	
AR752430	PRECAST REINFORCED CONC. FES 30"	EACH	1	
AR800476	REMOVE AIRFIELD LIGHTING	L SUM	1	
AR800564	CABLE AND CCR TESTING AND CALIBRATION	L SUM	1	
AR901510	SEEDING	ACRE	20.3	
AR908514	LIGHT-DUTY HYDRAULIC MULCH	ACRE	20.3	

1

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE 1

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AS108158	1/C #8 5 KV UG CABLE IN UD	FOOT	13,606	
AS108756	1/C #6 GROUND	FOOT	13,606	
AS110012	2" DIRECTIONAL BORE	FOOT	325	
AS125411	MITL-STAKE MOUNTED-LED	EACH	57	
AS125416	MITL-BASE MOUNTED-LED	EACH	18	
AS125565	SPLICE CAN	EACH	6	

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE 2

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AT109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1	

FOR BID

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10748 North 1650th St.
Palestine, Illinois 62451

JEFFREY M. OLSON
062-065527
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

DATE SIGNED: 11/17/2023 LICENSE EXPIRES: 11/30/2025

CONSTRUCT FULL PARALLEL TAXIWAY TO RUNWAY 9/27

IDA No: RSV-4820

Contract No. RB0

NO.	DATE	DESCRIPTION
1	1/10/2024	ADDENDUM A (MJD, MJD, KNL)
		DES, DWN, REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0002D
CAD FILE: G-002-FLP.DWG
DESIGN BY: HLE 9/29/2023
DRAWN BY: HLE 9/29/2023
REVIEWED BY: JRH 11/17/2023

SHEET TITLE

SUMMARY OF QUANTITIES AND INDEX OF SHEETS

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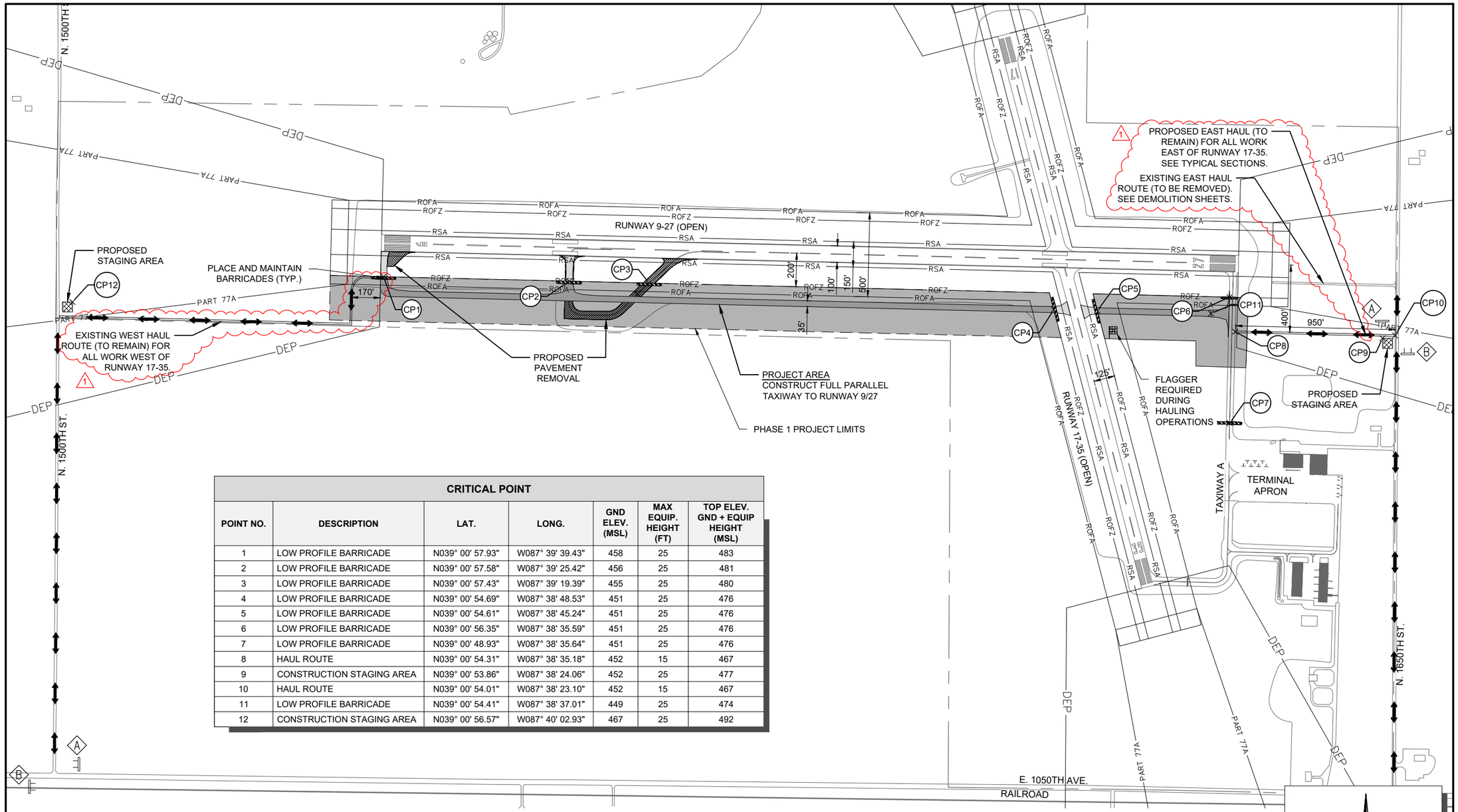

CRITICAL POINT						
POINT NO.	DESCRIPTION	LAT.	LONG.	GND ELEV. (MSL)	MAX EQUIP. HEIGHT (FT)	TOP ELEV. GND + EQUIP HEIGHT (MSL)
1	LOW PROFILE BARRICADE	N039° 00' 57.93"	W087° 39' 39.43"	458	25	483
2	LOW PROFILE BARRICADE	N039° 00' 57.58"	W087° 39' 25.42"	456	25	481
3	LOW PROFILE BARRICADE	N039° 00' 57.43"	W087° 39' 19.39"	455	25	480
4	LOW PROFILE BARRICADE	N039° 00' 54.69"	W087° 38' 48.53"	451	25	476
5	LOW PROFILE BARRICADE	N039° 00' 54.61"	W087° 38' 45.24"	451	25	476
6	LOW PROFILE BARRICADE	N039° 00' 56.35"	W087° 38' 35.59"	451	25	476
7	LOW PROFILE BARRICADE	N039° 00' 48.93"	W087° 38' 35.64"	451	25	476
8	HAUL ROUTE	N039° 00' 54.31"	W087° 38' 35.18"	452	15	467
9	CONSTRUCTION STAGING AREA	N039° 00' 53.86"	W087° 38' 24.06"	452	25	477
10	HAUL ROUTE	N039° 00' 54.01"	W087° 38' 23.10"	452	15	467
11	LOW PROFILE BARRICADE	N039° 00' 54.41"	W087° 38' 37.01"	449	25	474
12	CONSTRUCTION STAGING AREA	N039° 00' 56.57"	W087° 40' 02.93"	467	25	492

PHASE 1 NOTES

WORK TO BE COMPLETED:

INITIAL WORK OUTSIDE OF RUNWAY 9-27 OBSTACLE FREE ZONE (ROFZ - MORE THAN 200' AWAY FROM RUNWAY CENTERLINE) AND RUNWAY 17-35 OBSTACLE FREE ZONE (ROFZ - MORE THAN 125' AWAY FROM RUNWAY CENTERLINE), INCLUDING:
HAUL ROUTES/STAGING AREAS CONSTRUCTION; PAVEMENT REMOVAL AND MILLING OF THE EXISTING TAXIWAY D (TEACUP) TURNAROUND; UNCLASSIFIED EXCAVATION AND GRADING; LIME STABILIZATION OF THE SUBGRADE; UNDERDRAIN INSTALLATION; DRAINAGE PIPE AND STRUCTURES; AGGREGATE BASE COURSE; ASPHALT PAVING; SEEDING AND MULCHING; PAVEMENT MARKING.

AIRFIELD CLOSURES AND CHANGES:

1. RUNWAY 9/27 AND RUNWAY 17/35 WILL REMAIN OPEN. THE RUNWAY 27 APPROACH WILL BE REDUCED TO "VISUAL ONLY" PER NOTAM.
2. TAXIWAY D (TEACUP TURNAROUND) AND TAXIWAY A WILL BE CLOSED.
3. RUNWAY 17/35 WILL BE CLOSED PER PHASE 2 ONCE GRADING, DRAINAGE, UNDERDRAINS, AND LIME STABILIZATION WORK HAS BEEN COMPLETED.

EXISTING	PROPOSED	LEGEND
RSA		RUNWAY SAFETY AREA (RSA)
ROFZ		RUNWAY OBSTACLE FREE ZONE (OFZ)
		PHASE WORK AREA
		PROPOSED PAVEMENT
		PAVEMENT REMOVAL
		STAGING AREA (AR150520)
		TEMPORARY RUNWAY CLOSURE CROSS
		LOW PROFILE BARRICADE
		TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540)

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

FOR BID

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JEFFREY M. OLSON
062-065527
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

DATE SIGNED: 11/17/2023 LICENSE EXPIRES: 11/30/2025

CONSTRUCT FULL PARALLEL TAXIWAY TO RUNWAY 9/27

IDA No: RSV-4820

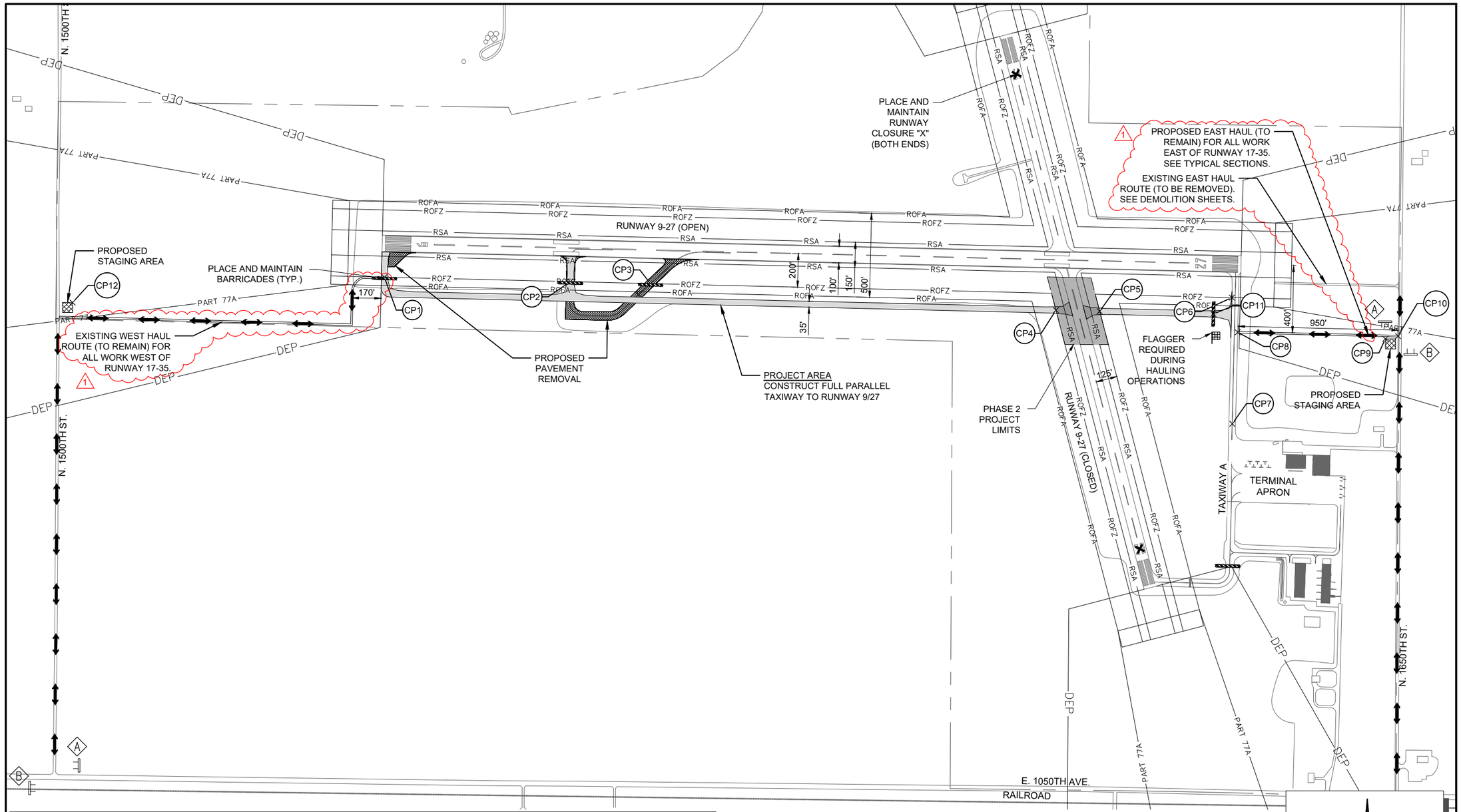
Contract No. RB0

NO.	DATE	DESCRIPTION	DES	DWN	REV
1	1/10/2024	ADDENDUM A	JMO	HLE	JMO

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0002D
CAD FILE: C-102-CSPP.DWG
DESIGN BY: HLE 9/29/2023
DRAWN BY: HLE 9/29/2023
REVIEWED BY: JRH 11/17/2023

SHEET TITLE

CONSTRUCTION PHASING PLAN - PHASE 1



PHASE 2 NOTES

WORK TO BE COMPLETED:

WORK WITHIN THE RUNWAY 17-35 OBSTACLE FREE ZONE (ROFZ - WITHIN 125' AWAY FROM RUNWAY CENTERLINE), AND ALL OTHER REMAINING WORK ITEMS, INCLUDING:
UNCLASSIFIED EXCAVATION AND GRADING; LIME STABILIZATION OF THE SUBGRADE; UNDERDRAIN INSTALLATION; DRAINAGE PIPE AND STRUCTURES; AGGREGATE BASE COURSE; ASPHALT PAVING; SEEDING AND MULCHING; PAVEMENT MARKING.

AIRFIELD CLOSURES AND CHANGES:

1. RUNWAY 9/27 WILL REMAIN OPEN AND RUNWAY 17/35 WILL BE CLOSED.
2. TAXIWAY D (TEACUP TURNAROUND) AND PROPOSED TAXIWAY B WILL BE CLOSED.
3. RUNWAY 17/35 WILL BE OPENED AND RUNWAY 9/27 WILL BE CLOSED UPON COMPLETION OF ALL WORK FOR PHASE 2.

EXISTING	PROPOSED	LEGEND
RSA		RUNWAY SAFETY AREA (RSA)
ROFZ		RUNWAY OBSTACLE FREE ZONE (OFZ)
		PHASE WORK AREA
		PROPOSED PAVEMENT
		PAVEMENT REMOVAL
		STAGING AREA (AR150520)
		TEMPORARY RUNWAY CLOSURE CROSS
		LOW PROFILE BARRICADE
		TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540)

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0' 150' 300' 600'

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

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		JMO	HLE	JMO
		DES	DWN	REV

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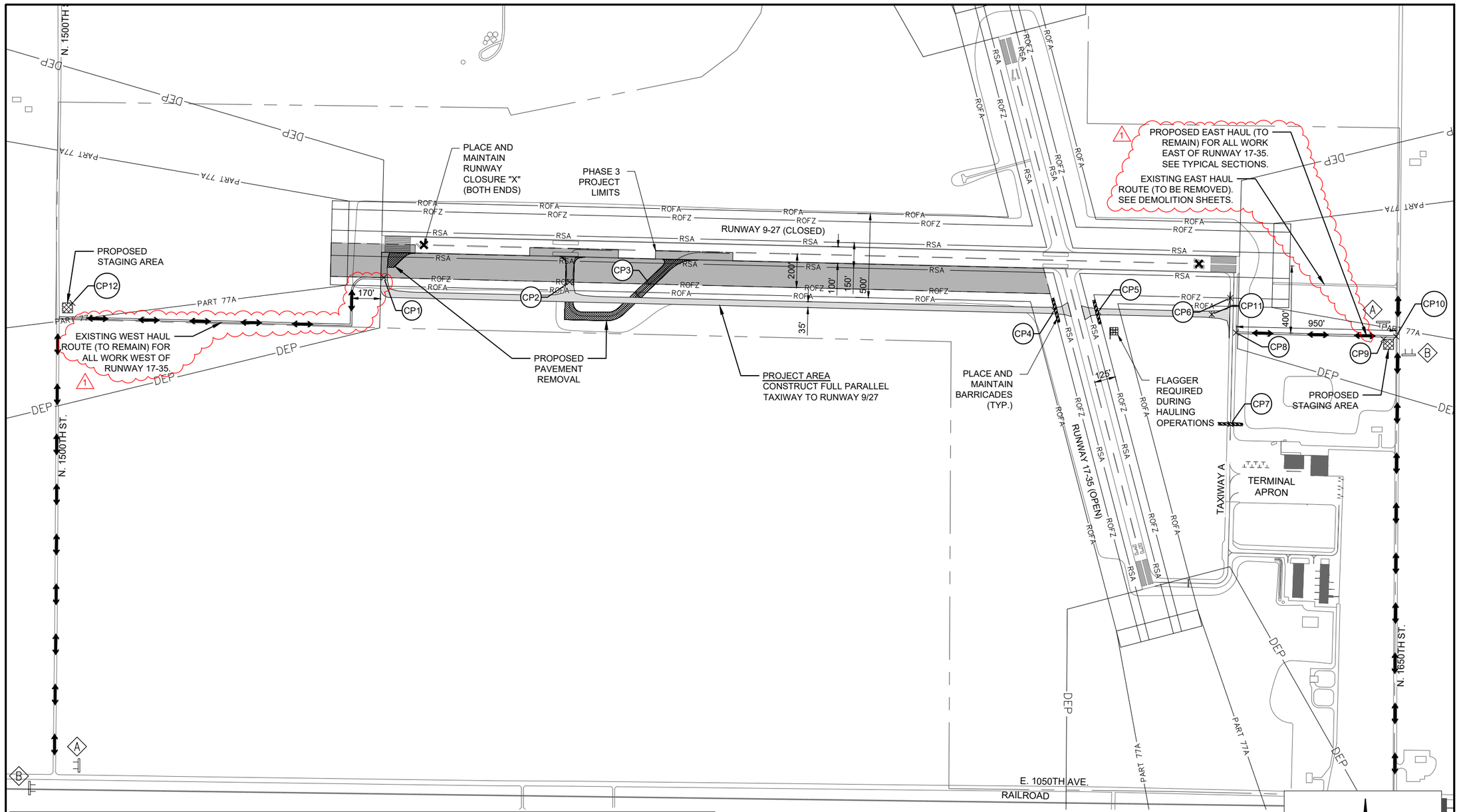
DESIGN BY: HLE 9/29/2023
DRAWN BY: HLE 9/29/2023
REVIEWED BY: JRH 11/17/2023

SHEET TITLE

CONSTRUCTION PHASING PLAN - PHASE 2



PHASE 3 NOTES

WORK TO BE COMPLETED:

WORK WITHIN THE RUNWAY 9-27 OBSTACLE FREE ZONE (ROFZ - WITHIN 200' OF THE RWY CENTERLINE) AND ALL OTHER REMAINING WORK ITEMS, INCLUDING: PAVEMENT REMOVAL AND MILLING OF THE EXISTING TAXIWAY D (TEACUP) TURNAROUND; UNCLASSIFIED EXCAVATION AND GRADING; LIME STABILIZATION OF THE SUBGRADE; UNDERDRAIN INSTALLATION; DRAINAGE PIPE AND STRUCTURES; AGGREGATE BASE COURSE; ASPHALT PAVING; SEEDING AND MULCHING; PAVEMENT MARKING; REMOVAL AND RESTORATION OF HAUL ROUTE AND STAGING AREA.

AIRFIELD CLOSURES AND CHANGES:

1. RUNWAY 17/35 WILL REMAIN OPEN AND RUNWAY 9/27 WILL BE CLOSED.
2. TAXIWAY D (TEACUP TURNAROUND) AND PROPOSED TAXIWAY B WILL BE CLOSED.
3. RUNWAY 9/27 AND RUNWAY 17/35 WILL BE OPENED UPON COMPLETION OF ALL WORK FOR PHASE 3.

EXISTING	PROPOSED	LEGEND
RSA		RUNWAY SAFETY AREA (RSA)
ROFZ		RUNWAY OBSTACLE FREE ZONE (OFZ)
		PHASE WORK AREA
		PROPOSED PAVEMENT
		PAVEMENT REMOVAL
		STAGING AREA (AR150520)
		TEMPORARY RUNWAY CLOSURE CROSS
		LOW PROFILE BARRICADE
		TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540)

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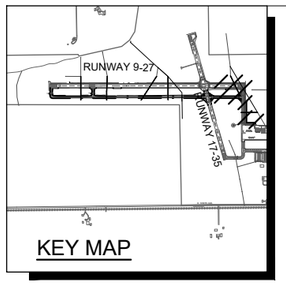
		JMO	HLE	JMO
		DES	DWN	REV

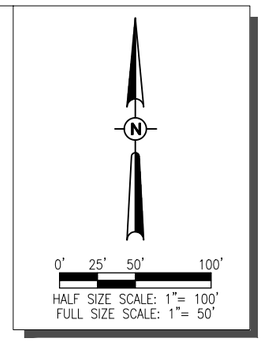
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0002D
CAD FILE: C-102-CSPP.DWG
DESIGN BY: HLE 9/29/2023
DRAWN BY: HLE 9/29/2023
REVIEWED BY: JRH 11/17/2023

SHEET TITLE

CONSTRUCTION PHASING PLAN - PHASE 3



KEY MAP



NOTES:

1. SEE PREVIOUS SHEET FOR LEGEND.
2. SEE "AIRFIELD LIGHTING NOTES" SHEET.

MATCHLINE OF THIS SHEET

EXISTING HOMERUN CKT FOR TAXIWAY A; 1/C #8 AWG FAA L-824 5000V TYPE C UG CABLE IN UNIT DUCT

EXISTING FUEL PAD

EXISTING CULVERT

EXISTING HIGH VOLTAGE HANDHOLE

EXISTING AIRPORT ELECTRICAL VAULT

EXISTING 200 AMP 120/240 VAC 1PH, 3W PLUS GND FEEDER IN CONDUIT

EXISTING AIRPORT ROTATING BEACON

EXISTING SERVICE METER AND BREAKER WITH SUPPORT STRUCTURE.

EXISTING UTILITY PAD MOUNT XFMR

EXISTING ELECTRIC UTILITY PRIMARY

NON-DIRECTIONAL BEACON (NDB)

PROPOSED 12-IN RCP

MATCHLINE - STA. 146+00 TAXIWAY B

TYPICAL SPACING BETWEEN EXISTING RUNWAY 17-35 AND TAXIWAY A 181.3'

10'

PROPOSED BASE BID RETROREFLECTIVE MARKER, ADD. ALT. L-861T(L) STAKE MOUNTED TAXIWAY EDGE LIGHT (TYP.)

EXISTING RUNWAY END 27 PLASI AND FOUNDATION TO BE REMOVED BY OTHERS.

EXISTING HOMERUN FOR RWY 17-35 LIGHTING; 2-1/C #8 AWG, FAA L-824, 5000V TYPE C UG CABLE IN UD

EXISTING RUNWAY 27 PLASI 120 VAC FEEDER CIRCUIT TO BE REMOVED BY OTHERS.

PROPOSED BASE BID RETROREFLECTIVE MARKER, ADD. ALT. L-861T(L) BASE MOUNTED TAXIWAY EDGE LIGHT (TYP.)

PROPOSED TAXIWAY B LIGHTING CIRCUIT; 1/C #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE IN UNIT DUCT (AS108158). FURNISH AND INSTALL 1/C #6 GROUND IN SAME TRENCH ABOVE TWY LIGHTING CABLE OR IN AN ADJACENT TRENCH. BOND 1/C #6 GROUND TO EACH GROUND ROD AT THE RESPECTIVE AIRFIELD LIGHT FIXTURE AND TAXI GUIDANCE SIGNS (AS108756) (TYP.) LOCATE APPROXIMATELY 12 FEET FROM PAVEMENT EDGE. BURY 18" MINIMUM BELOW GRADE.

1 PROPOSED ELECTRICAL HANDHOLE ADJUSTMENT. EXISTING ELEVATION APPROX. 450.60 PROPOSED ELEVATION 450.94 INCLUDES NEW FRAME. SEE SPECIAL PROVISIONS.

PROPOSED 3-WAY 2" CONCRETE ENCASED DUCT, 90 L.F. TERMINATE IN HANDHOLES. ROUTE TAXIWAY B HOMERUN CKT THROUGH ONE DUCT AND ROUTE TAXIWAY A CKT WITH GROUND THROUGH SECOND DUCT. LEAVE THIRD DUCT TO SPARE.

PROPOSED HIGH VOLTAGE ELECTRICAL HANDHOLE (TYP. EACH SIDE)

PROPOSED TAXIWAY GUIDANCE SIGN. CONNECT TO TAXIWAY B LIGHTING CIRCUIT. (TYP.)

PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN (TYP.)

PROPOSED TAXIWAY A LIGHTING CIRCUIT; 1/C #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE IN UNIT DUCT (AR108158). FURNISH AND INSTALL 1/C #6 GROUND IN SAME TRENCH ABOVE TWY LIGHTING CABLE OR IN AN ADJACENT TRENCH. BOND 1/C #6 GROUND TO EACH GROUND ROD AT THE RESPECTIVE AIRFIELD LIGHT FIXTURE AND TAXI GUIDANCE SIGNS (AR108756) (TYP.) LOCATE APPROXIMATELY 12 FEET FROM PAVEMENT EDGE. BURY 18" MINIMUM BELOW GRADE.

PROPOSED TAXIWAY B LIGHTING CIRCUIT; 1/C #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE IN UNIT DUCT (AR108158). FURNISH AND INSTALL 1/C #6 GROUND IN SAME TRENCH ABOVE TWY LIGHTING CABLE OR IN AN ADJACENT TRENCH. BOND 1/C #6 GROUND TO EACH GROUND ROD AT THE RESPECTIVE AIRFIELD LIGHT FIXTURE AND TAXI GUIDANCE SIGNS. (AR108756) (TYP.) LOCATE APPROXIMATELY 12 FEET FROM PAVEMENT EDGE. BURY 18" MINIMUM BELOW GRADE.

PROPOSED BASE BID RETROREFLECTIVE MARKER, ADD. ALT. L-861T(L) STAKE MOUNTED TAXIWAY EDGE LIGHT (TYP.)

PROPOSED TAXIWAY GUIDANCE SIGN. CONNECT TO TAXIWAY B LIGHTING CIRCUIT. (TYP.)

TXY A CKT

PROPOSED 12-IN CONCRETE FES

TXY B HOMERUN

EXISTING BASE MOUNTED RUNWAY LIGHT (TYP.)

EXISTING RUNWAY 17 REIL 240 VAC FEEDER CIRCUIT; 3-1/C #4 XLP-USE 600V CONDUCTORS IN UD.

EXISTING RUNWAY 9 PLASI 120 VAC FEEDER CIRCUIT; 2-1/C #4 XLP-USE CONDUCTORS IN UNIT DUCT TO BE REMOVED BY OTHERS.

EXISTING RUNWAY 9 REIL 240 VAC FEEDER CIRCUIT; 3-1/C #4 XLP-USE CONDUCTORS IN UD

EXISTING RWY 9-27 SERIES CIRCUIT LIGHTING CABLES; 1/C #8 AWG, FAA L-824, 5000V. TYPE C U.G. CABLE IN UD W/ 1/C #6 GROUND. RUNWAY LIGHTING CABLE LOCATED APPROX. 12 FT FROM PAVEMENT (TYP.)

EXISTING STAKE MOUNTED RUNWAY LIGHT (TYP.)

PROPOSED RECTANGULAR JUNCTION STRUCTURE NF

PROPOSED 12-IN RCP

RELOCATE EXISTING TAXI HOLD POSITION SIGN R1-TGS1. CONNECT TO RWY 9-27 LTG CKT.

PROPOSED RUNWAY EXIT/TAXIWAY ENTRANCE DIRECTION SIGN TO BE CONNECTED TO RWY 9-27 LTG CKT.

EXISTING ABANDONED STORM PIPE. UNKNOWN SIZE, MATERIAL, AND DEPTH.

EXISTING TAXIWAY A LIGHTING SERIES CIRCUIT CABLE.

EXISTING WIND CONE 120 VAC FEEDER CIRCUIT.

EXISTING TAXIWAY A SERIES CIRCUIT LIGHTING CABLES; 1/C #8 AWG, FAA L-842, 5000V. TYPE C U.G. CABLE IN UD W/ 1/C #6 GROUND.

EXISTING RUNWAY 17 REIL 240 VAC FEEDER CIRCUIT; 3-1/C #4 XLP-USE 600V CONDUCTORS IN UD.

EXISTING RUNWAY 9 PLASI 120 VAC FEEDER CIRCUIT TO BE REMOVED BY OTHERS.

40.8' 40.8' 40.8' 40.8'

EXISTING HOMERUN CKT FOR RWY 9-27 LIGHTING; 2-1/C #8 AWG FAA L-824, 5000V TYPE C UG CABLE IN UNIT DUCT.

EXISTING RUNWAY END 9 REIL 240 VAC FEEDER CIRCUIT; 3-1/C #4 XLP-USE 600V CONDUCTORS IN UD.

EXISTING HOMERUN CKT FOR RWY 17-35 LIGHTING; 2-1/C #8 AWG FAA L-824, 5000V TYPE C UG CABLE IN UNIT DUCT, LOCATED 40 FT FROM PAVEMENT EDGE.

PROPOSED 2" DIRECTIONAL BORE DUCT 125 L.F. (AS110012). ROUTE TAXIWAY B LIGHTING CIRCUIT HOMERUN CONDUCTORS THROUGH DUCT BETWEEN SPLICE CANS.

EXISTING RUNWAY END 27 REIL 240 VAC FEEDER CIRCUIT; 3-1/C #4 XLP-USE 600V U.G. CABLE IN UD.

INTERCEPT EXISTING RWY 9-27 HOMERUN CONDUCTORS IN EXISTING HANDHOLE AND SPLICE TO REROUTED HOMERUN CONDUCTORS

PROPOSED 2-2" DIRECTIONAL BORE DUCT 60 L.F. EACH (120 L.F. TOTAL) (AR110012). ROUTE TAXIWAY A LIGHTING CIRCUIT WITH GROUND CONDUCTORS THROUGH ONE DUCT. ROUTE RWY 9-27 LTG HOMERUN CKT THROUGH SECOND DUCT.

EXISTING RUNWAY 27 PLASI 120 VAC FEEDER CIRCUIT TO BE REMOVED BY OTHERS.

EXISTING RUNWAY 27 REIL

EXISTING RUNWAY 9-27 LIGHTING SERIES CIRCUIT CABLE.

EXISTING HOMERUN FOR RWY 17-35 IS 36 FT FROM TAXIWAY A.

RUNWAY 27 END

EXISTING RUNWAY 27 REIL

RAMP

PROPOSED TAXIWAY B LIGHTING CIRCUIT HOMERUN CONDUCTORS; 2-1/C #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE IN UNIT DUCT. (AS108158) SINGLE DUCT WITH 2 CONDUCTORS IS ALSO ACCEPTABLE BUT SHALL BE PAID FOR AS SEPARATE RUNS UNDER AS108158.

MATCHLINE OF THIS SHEET

FOR BID

JAN 10, 2024 3:37 PM ENGEL01909
I:\22\JOBS\22A0002D\CAD\AIRPORT\SHEET\E-142-ELE.DWG

HANSON Engineering | Planning | Allied Services

Offices Nationwide
www.hanson-inc.com

Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

Illinois Licensed
Professional Service Corporation
#184-001084

Crawford County Airport

10748 North 1650th St.
Palestine, Illinois 62451

COVERING ELECTRICAL DESIGN

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

DATE SIGNED: 11/17/2023
LICENSE EXPIRES: 11/30/2025

CONSTRUCT FULL PARALLEL TAXIWAY TO RUNWAY 9/27

IDA No: RSV-4820

Contract No. RB0

NO.	DATE	DESCRIPTION		
1	1/10/2024	ADDENDUM A		
		MJD	MJD	KNL

DES DWN REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0002D
CAD FILE: E-142-ELE.DWG
DESIGN BY: HLE 09/29/2023
DRAWN BY: HLE 09/29/2023
REVIEWED BY: KNL 11/15/2023

SHEET TITLE

PROPOSED ELECTRICAL PLAN - STA. 146+00 TO 156+00

INDEX

APPENDIX A – Cable and Constant Current Regulator Testing Forms
APPENDIX B – Soil Boring Logs
APPENDIX B – Existing Handhole Detail (For Pay Item AR110946)

Refer to IDOT Division of Aeronautics Policy Memorandums (as applicable):

87-2, “Density Acceptance of Bituminous Pavements”
87-4, “Determination of Bulk Specific Gravity (d) of Compacted Bituminous Mixes”
96-1, “Item 610, Structural Portland Cement Concrete: Job Mix Formula Approval & Production Testing.
96-3, “Requirements for Quality Assurance on Projects with Bituminous Concrete Paving”
2003-1, “Requirements for Laboratory, Testing, Quality Control, and Paving of Superpave HMA Concrete Mixtures for Airports”
“HMA Comparison Samples” memorandum, dated 12/7/2020.

APPENDIX A

RSV-Crawford County Airport
Palestine, Illinois

Illinois Project No. RSV-4820
Hanson Project No. 22A002D

Construct Full Parallel Taxiway to Runway 9/27

Cable and Constant Current Regulator
Testing Forms

Engineering Firm	Hanson Professional Services Inc.
Airport Name	RSV-Crawford County Airport
Project	Construct Full Parallel Taxiway to Runway 9/27
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TESTING FORMS

Prior to beginning airfield lighting removals, modifications, replacements, and/or cable installation all existing series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the vault. All existing series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current regulator shall be tested with results recorded. Note: output voltage measurements are not required for constant current regulators that are not equipped with output voltage meters. Provide a True RMS Ammeter for current measurements.

Insulation resistance testing equipment for use with 5,000 Volt series circuit cables shall use an insulation resistance tester capable of testing the cables at 5,000 Volts. Older series circuit cables and/or cables in poor condition may require the test voltage to be performed at a voltage lower than 5,000 Volts (Example 1,000 Volts, 500 Volts, or less than 500 Volts). The respective test voltage shall be recorded for each cable insulation resistance test result.

Insulation resistance testing equipment for use with 600 Volt rated cables shall use a 500 Volt insulation resistance tester. The respective test voltage shall be recorded for each cable insulation resistance test result.

It is recommended to use the same insulation resistance test equipment throughout the project to ensure reliable comparative readings at the beginning of the project and at the completion of the project.

Disconnect the airfield lighting series circuit cables from the constant current regulator when performing cable insulation resistance tests (Megger Tests). Test the cables that go to the airfield for the respective airfield lighting series circuit. Connect the cable insulation resistance tester to one of the airfield lighting series circuit cables and to a good ground in the airport electrical vault such as the airport vault ground bus. Conduct the cable insulation resistance test on each respective cable for not less than 90 seconds. Record the test results at the end of the time duration for the test.

FAA Advisory Circular 150/5340-26C Maintenance of Airport Visual Aid Facilities provides guidance on Insulation Resistance Tests. Also refer to the user manual for the respective cable insulation resistance tester. Reasonably new series circuit cables and transformers with good connections should read 500 Mega-Ohms to 1,000 Mega-Ohms or higher. The readings should decrease with age. The resistance value declines over the service life of the circuit; a 10-20 percent decline per year may be considered normal. A yearly decline of 50 percent (4 percent monthly) or greater indicates the existence of a problem, such as a high resistance ground, serious deterioration of the circuit insulation, lightning damage, bad connections, bad splices, cable insulation

damage, or other failure. FAA Advisory Circular 150/5340-26C notes “Generally speaking, any circuit that measures less than 1 megohm is certainly destined for rapid failure.” Airfield lighting series circuits with cable insulation readings of less than 1 megohm are not uncommon for older circuits that are 20 years or more of age.

Based on information in FAA AC No. 150/5340-26C Maintenance of Airport Visual Aid Facilities, the cable insulation resistance value inevitably declines of 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.

All existing series circuit cable loops shall also have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. The resistance of the series circuit loop with connections using #8 AWG copper conductor should be approximately 0.8 to 1 Ohm per thousand feet of cable length. The resistance of the series circuit loop with connections using #6 AWG copper conductor should be approximately 0.5 to 0.7 Ohm per thousand feet of cable length. The number of series circuit transformers and connections will affect the overall resistance of the series circuit loop and therefore the measurements might be slightly higher than the calculated resistance for the respective length of cable.

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TESTING FORMS

__Record the date for the respective tests.

__ Record the manufacture and model number of the insulation resistance tester used for the Megger tests. Note: it is recommended to use the same insulation resistance tester again after airfield lighting modifications, additions, and/or upgrades have been completed.

__ Record the manufacture and model number of the Ohmmeter used to measure resistance of each series circuit cable loop. Note: it is recommended to use the same Ohmmeter again after airfield lighting modifications, additions, and/or upgrades have been completed.

__ Record the manufacture and model number of the Ammeter used to measure current readings.

__Record personnel conducting tests.

__Record personnel observing tests.

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TESTING FORMS

__ For each respective series circuit conduct cable insulation resistance test (Megger test) at the vault and record test results. Time duration of test should not be less than 90 seconds.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 9-27 series circuit cable			
Runway 17-35 series circuit cable			
Taxiway A series circuit cable			

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TESTING FORMS

__ Each respective lighting series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	**Series Circuit Loop Resistance in Ohms**
Runway 9-27 series circuit cable	
Runway 17-35 series circuit cable	
Taxiway A series circuit cable	

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TESTING FORMS

___ Conduct cable insulation resistance test (Megger test) and record for each 120 VAC or 240 VAC feeder circuit cable for Navaids at the vault. Time duration of test should not be less than 90 seconds.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 9 PAPI Phase A conductor			
Runway 9 PAPI Phase B conductor			
Runway 27 PAPI Phase A conductor			
Runway 27 PAPI Phase B conductor			
Runway 9 REILS Phase A conductor			
Runway 9 REILS Phase B conductor			
Runway 27 REILS Phase A conductor			
Runway 27 REILS Phase B conductor			
Runway 17 REILS Phase A conductor			
Runway 17 REILS Phase B conductor			

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TESTING FORMS

Tests for constant current regulators shall include the following.

1. 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.

2. Prior to conducting tests confirm each constant current regulator has a good and secure frame ground connection to the vault grounding electrode system. The constant current regulator frame ground shall be a minimum #6 AWG copper conductor and UL listed grounding connectors with secure and tight connections. Correct where missing. This is required for the safety of personnel.

3. The respective personnel performing tests shall be familiar with the respective test equipment and the use and operation of the test equipment. The Contractor is responsible to employ the services of personnel qualified 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. Test each brightness step and measure and record the input current on Phase A and Phase B for the 240 VAC branch circuit to each CCR. Note: Provide a True RMS Ammeter for current measurements.

5. Test each brightness step and record the CCR output current to the series circuit lighting. Each CCR should be equipped with an output current meter. In the event the output current meter is not working properly or is out of calibration use a True RMS Ammeter for output current measurements and measure the current in the output series circuit conductor.

6. Test each brightness step and record the CCR output voltage for the series circuit lighting. Each CCR should be equipped with an output voltage meter. Where the CCR does not include an output voltage meter, the output voltage measurements are not required. Do not use a 0 to 600 Volt voltmeter to measure voltage across the CCR output terminals due to safety concerns and high voltages at the CCR output.

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TESTING FORMS

Prior to beginning airfield lighting modifications and/or cable installation each constant current regulator shall be tested with results recorded. **Note: Output voltage measurements are not required for constant current regulators that are not equipped with output voltage meters.**

__ Test Runway 9-27 CCR by Manual Control and record input current, output amperage and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Runway 9-27 CCR by L-854 Radio Control **(Photocell Bypass On)** and record input current, output amperage, and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

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TESTING FORMS

__ Test Runway 9-27 CCR by Photocell and record input current, output amperage, and output voltage at respective preset step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		

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TESTING FORMS

Prior to beginning airfield lighting modifications and/or cable installation each constant current regulator shall be tested with results recorded.

__ Test Taxiway CCR by Manual Control and record input current and output amperage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Taxiway CCR by L-854 Radio Control **(Photocell Bypass On or Radio On)** and record input current, output amperage, and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Prior to beginning airfield lighting modifications and/or cable installation each constant current regulator shall be tested with results recorded.

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TESTING FORMS

__ Test Runway 17-35 CCR by Manual Control and record input current and output amperage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Runway 17-35 CCR by L-854 Radio Control **(Photocell Bypass On or Radio On)** and record input current, output amperage, and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

After airfield lighting modifications, additions, and/or upgrades have been completed, series circuit cables shall be Megger tested with an insulation resistance tester and recorded at the vault. All series circuit cable loops shall have the resistance measured with an Ohmmeter and recorded for each circuit at the vault. Each constant current

regulator shall be tested with results recorded. Note: Output voltage measurements are not required for constant current regulators that are not equipped with output voltage meters. Note: Provide a True RMS Ammeter for current measurements.

__Record the date for the respective tests.

__ Record the manufacture and model number of the insulation resistance tester used for the Megger tests.

__ Record the manufacture and model number of the Ohmmeter used to measure resistance of each series circuit cable loop.

__ Record the manufacture and model number of the Ammeter used to measure current readings.

__Record personnel conducting tests.

__Record personnel observing tests.

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TESTING FORMS

__ After airfield lighting modifications, additions, and/or upgrades have been completed, conduct cable insulation resistance test (Megger test) for each respective series circuit at the vault and record test results. Time duration of test should not be less than 90 seconds.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 9-27 series circuit cable			
Runway 17-35 series circuit cable			
Taxiway A series circuit cable			
Taxiway B series circuit cable			

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TESTING FORMS

__ After airfield lighting modifications, additions, and/or upgrades have been completed, each respective lighting series circuit cable loop shall have the resistance tested and recorded at the vault. Use an Ohmmeter and measure the resistance of the series circuit loop at the Vault.

Cable Under Test	**Series Circuit Loop Resistance in Ohms**
Runway 9-27 series circuit cable	
Runway 17-35 series circuit cable	
Taxiway A series circuit cable	
Taxiway B series circuit cable	

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TESTING FORMS

___ After airfield lighting modifications, additions, and/or upgrades have been completed, conduct cable insulation resistance test (Megger test) and record for each 120 VAC or 240 VAC feeder circuit cable for Navaids at the vault. Time duration of test should not be less than 90 seconds.

Cable Under Test	Cable Insulation Resistance	Test Voltage	Time Duration
Runway 9 PAPI Phase A conductor			
Runway 9 PAPI Phase B conductor			
Runway 27 PAPI Phase A conductor			
Runway 27 PAPI Phase B conductor			
Runway 9 REILS Phase A conductor			
Runway 9 REILS Phase B conductor			
Runway 27 REILS Phase A conductor			
Runway 27 REILS Phase B conductor			
Runway 17 REILS Phase A conductor			
Runway 17 REILS Phase B conductor			

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TESTING FORMS

Tests for constant current regulators shall include the following.

1. 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.

2. Prior to conducting tests confirm each constant current regulator has a good and secure frame ground connection to the vault grounding electrode system. The constant current regulator frame ground shall be a minimum #6 AWG copper conductor and UL listed grounding connectors with secure and tight connections. Correct where missing. This is required for safety of personnel.

3. The respective personnel performing tests shall be familiar with the respective test equipment and the use and operation of the test equipment. The Contractor is responsible to employ the services of personnel qualified 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. Test each brightness step and measure and record the input current on Phase A and Phase B for the 240 VAC branch circuit to each CCR. Note: Provide a True RMS Ammeter for current measurements.

5. Test each brightness step and record the CCR output current to the series circuit lighting circuit. Each CCR should be equipped with an output current meter. In the event the output current meter is not working properly or is out of calibration use a True RMS Ammeter for output current measurements and measure the current in the output series circuit conductor.

6. Test each brightness step and record the CCR output voltage for the series circuit lighting circuit. Each CCR should be equipped with an output voltage meter. Where the CCR does not include an output voltage meter, the output voltage measurements are not required. Do not use a 0 to 600 Volt voltmeter to measure voltage across the CCR output terminals due to safety concerns and high voltages at the CCR output.

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TESTING FORMS

After airfield lighting modifications, additions, and/or upgrades have been completed, each constant current regulator shall be tested with results recorded. **Note: Output voltage measurements are not required for constant current regulators that are not equipped with output voltage meters.**

__ Test Runway 9-27 CCR by Manual Control and record input current, output amperage and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Runway 9-27 CCR by L-854 Radio Control **(Photocell Bypass On)** and record input current, output amperage, and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

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Airport Name	RSV-Crawford County Airport
Project	Construct Full Parallel Taxiway to Runway 9/27
IDA Project	RSV-4820
SBG Project	
Hanson Project	22A0002D
Date	

TESTING FORMS

__ Test Runway 9-27 CCR by Photocell and record input current, output amperage, and output voltage at respective preset step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		

Engineering Firm	Hanson Professional Services Inc.
Airport Name	RSV-Crawford County Airport
Project	Construct Full Parallel Taxiway to Runway 9/27
IDA Project	RSV-4820
SBG Project	
Hanson Project	22A0002D
Date	

TESTING FORMS

After airfield lighting modifications, additions, and/or upgrades have been completed, each constant current regulator shall be tested with results recorded.

__ Test Taxiway CCR by Manual Control and record input current and output amperage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Taxiway CCR by L-854 Radio Control **(Photocell Bypass On or Radio On)** and record input current, output amperage, and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

Engineering Firm	Hanson Professional Services Inc.
Airport Name	RSV-Crawford County Airport
Project	Construct Full Parallel Taxiway to Runway 9/27
IDA Project	RSV-4820
SBG Project	
Hanson Project	22A0002D
Date	

TESTING FORMS

After airfield lighting modifications, additions, and/or upgrades have been completed, each constant current regulator shall be tested with results recorded.

__ Test Runway 17-35 CCR by Manual Control and record input current and output amperage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

__ Test Runway 17-35 CCR by L-854 Radio Control **(Photocell Bypass On or Radio On)** and record input current, output amperage, and output voltage at each step.

STEP	INPUT CURRENT	OUTPUT CURRENT	OUTPUT VOLTS
B10	Phase A:		
	Phase B:		
B30	Phase A:		
	Phase B:		
B100	Phase A:		
	Phase B:		

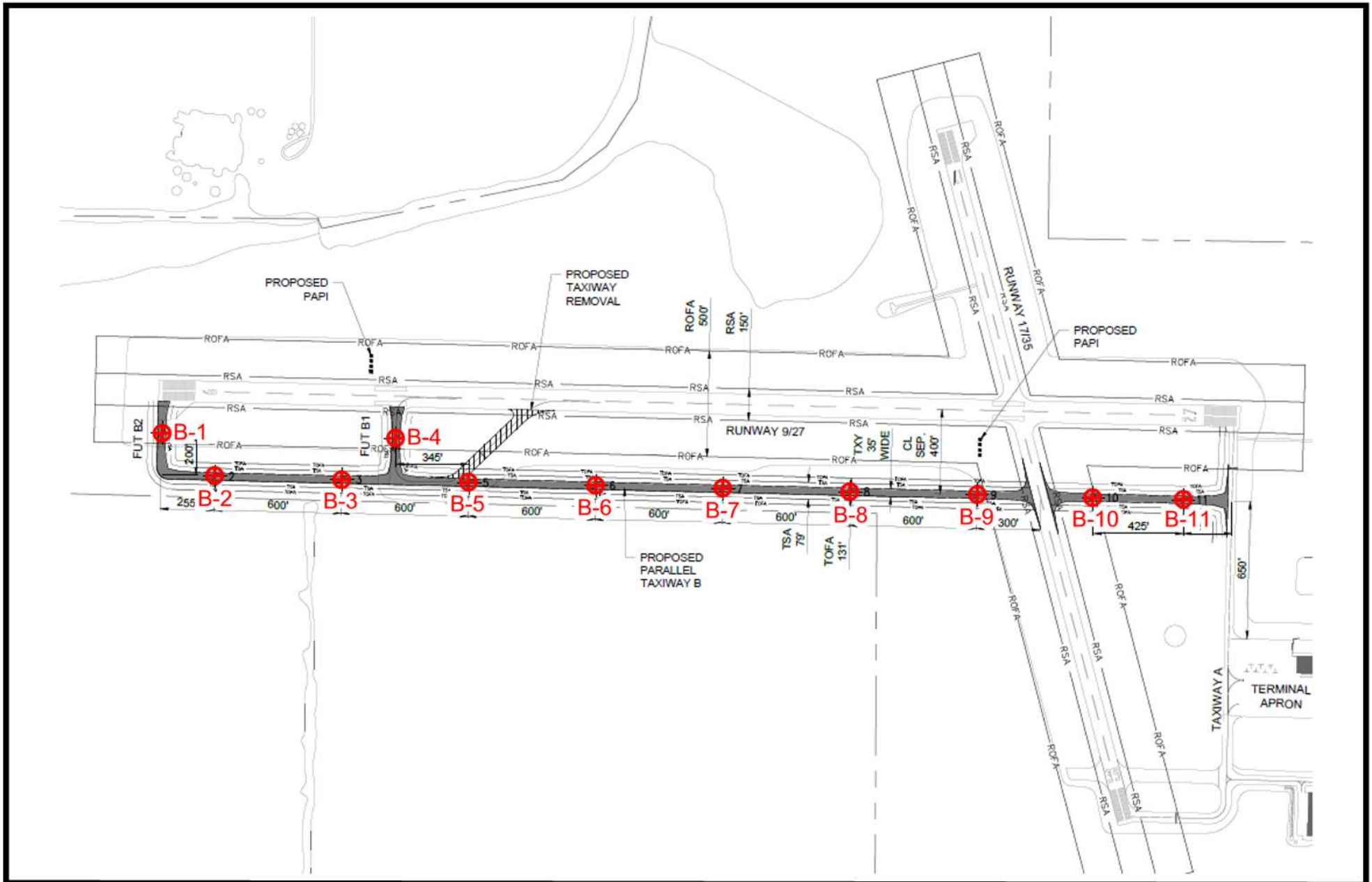
APPENDIX B

RSV-Crawford County Airport
Palestine, Illinois

Illinois Project No. RSV-4820
Hanson Project No. 22A002D

Construct Full Parallel Taxiway to Runway 9/27

SOIL BORING LOGS



Midwest Engineering and Testing, Inc.

geotechnical*environmental*materials engineers

Figure 2
Boring Location Diagram
Proposed Parallel Taxiway to Runway 9-27
Crawford County Airport
Palestine, Illinois

SCALE:	None
PROJECT NO.:	C33079
DATE:	July 19, 2023
DRAWN BY:	EB

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-1
Project No. : C33079
Date of Boring: June 22, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Brown and gray clayey SILT (CL-ML) Fill	1	1-AU	12	4.5+	-	12	-	Dry during and upon completion of drilling
	2							
Brown and gray silty CLAY (CL) with sand - Fill	3	2-SS	12	4.5+	-	17	-	
	4							
	5							
Brown and gray silty CLAY (CL) with sand	6	3-SS	7	1.8	1.4	20	97	
	7							
	8	4-SS	6	0.3	-	19	-	
Brown clayey SAND (SC)	9							
	10							
	11	5-SS	9	-	-	21	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-2
Project No. : C33079
Date of Boring: June 22, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Brown and gray clayey SILT (CL-ML) Fill	1	1-AU	13	4.5+	-	10	-	Dry during and upon completion of drilling
	2							
Brown and gray silty CLAY (CL) with sand - Fill	3	2-SS	11	4.5+	-	16	-	
	4							
	5							
Brown and gray sandy CLAY (CL)	6	3-SS	6	2.3	1.9	19	103	
	7							
	8	4-SS	7	-	-	21	-	
Brown clayey SAND (SC)	9							
	10							
	11	5-SS	8	-	-	21	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-3
Project No. : C33079
Date of Boring: June 22, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Brown and gray clayey SILT (CL-ML) Fill	1	1-AU	13	4.5+	-	8	-	Dry during and upon completion of drilling
	2							
Brown and gray silty CLAY (CL) with sand - Fill	3	2-SS	14	4.5+	-	13	-	
	4							
Brown and gray silty CLAY (CL) with sand	5	3-SS	8	1.5	1.4	18	106	
	6							
	7							
Brown clayey SAND (SC)	8	4-SS	7	-	-	19	-	
	9							
	10							
	11	5-SS	8	-	-	17	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-4
Project No. : C33079
Date of Boring: June 22, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
5" Asphalt over 8" Sand and Gravel	1	1-AU	-	3.0	-	14	-	
Dark gray clayey SILT (CL-ML)	2							Dry during and upon completion of drilling
	3	2-SS	9	2.3	2.1	24	94	
Brown and gray silty CLAY (CL) with sand	4							
	5							
	6	3-SS	11	2.3	2.0	21	99	
	7							
	8	4-SS	11	1.0	1.0	15	110	
Brown clayey SAND (SC)	9							
	10							
	11	5-SS	12	-	-	19	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-5
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Brown and gray clayey SILT (CL-ML) Fill	1	1-AU	11	4.5+	-	6	-	Dry during and upon completion of drilling
	2							
Brown and gray silty CLAY (CL) with sand - Fill	3	2-SS	10	4.0	-	16	-	
	4							
Brown and gray silty CLAY (CL) with sand	5	3-SS	8	4.5+	-	14	-	
	6							
	7							
Brown clayey SAND (SC)	8	4-SS	9	-	-	17	-	
	9							
	10							
	11	5-SS	4	-	-	24	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-6
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Dark gray clayey SILT (CL-ML) Fill	1	1-AU	11	4.5+	-	13	-	Dry during and upon completion of drilling
	2							
Brown and gray silty CLAY (CL) with sand - Fill	3	2-SS	10	4.5+	-	24	-	
	4							
	5							
Brown and gray silty CLAY (CL) with sand	6	3-SS	10	3.5	3.6	23	98	
	7							
Brown clayey SAND (SC)	8	4-SS	8	-	-	25	-	
	9							
	10							
	11	5-SS	4	-	-	18	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-7
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Brown and gray clayey SILT (CL-ML) Fill	1	1-AU	23	4.5+	-	7	-	Dry during and upon completion of drilling
	2							
Brown and gray sandy CLAY (CL) Fill	3	2-SS	9	4.5+	-	11	-	
	4							
	5							
Brown clayey SAND (SC)	6	3-SS	7	-	-	15	-	
	7							
	8	4-SS	7	-	-	18	-	
	9							
	10							
Brown medium to coarse SAND (SP)	11	5-SS	4	-	-	22	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-8
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Brown and gray clayey SILT (CL-ML) Fill	1	1-AU	9	4.5+	-	6	-	Dry during and upon completion of drilling
	2							
Brown and gray sandy CLAY (CL) Fill	3	2-SS	14	4.5	4.8	9	114	
	4							
Brown and gray clayey SAND (SC)	5	3-SS	8	0.5	-	15	-	
	6							
	7							
Brown fine clayey SAND (SC)	8	4-SS	7	-	-	5	-	
	9							
	10							
	11	5-SS	9	-	-	10	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-9
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Dark brown clayey SILT (CL-ML) Fill	1	1-AU	13	4.5+	-	9	-	Dry during and upon completion of drilling
	2							
Brown clayey SAND (SC)	3	2-SS	9	-	-	7	-	
	4							
Brown fine to medium SAND (SP)	5	3-SS	11	-	-	5	-	
	6							
	7	4-SS	4	-	-	7	-	
	8							
	9	5-SS	8	-	-	4	-	
	10							
	11							
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-10
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
	1	1-AU	19	4.5+	-	7	-	Dry during and upon completion of drilling
	2							
Dark brown clayey SAND (SC) Fill	3	2-SS	14	-	-	8	-	
	4							
	5							
	6	3-SS	11	-	-	5	-	
Brown clayey SAND (SC)	7							
	8	4-SS	4	0.3	-	25	-	
	9							
	10							
Brown fine to medium SAND (SP)	11	5-SS	5	-	-	17	-	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

SOIL BORING LOG

MET Midwest Engineering and Testing, Inc.

Project Name: Proposed Parallel Taxiway to Runway 9-27
Location: Crawford County Airport
10748 North 1650th Street
Palestine, Illinois

Boring: B-11
Project No. : C33079
Date of Boring: June 21, 2023
Field Representative: Zach Wilcoxen

VISUAL SOIL CLASSIFICATION	Feet	Sample No.	N	Q_p (tsf)	Q_u (tsf)	MC (%)	Dd (pcf)	Remarks
6" Topsoil								
Dark brown clayey SILT (CL-ML)	1	1-AU	13	4.5+	-	7	-	Dry during and upon completion of drilling
	2							
Brown fine to medium SAND (SP) with gravel	3	2-SS	10	-	-	4	-	
	4							
Brown clayey SAND (SC)	5							
	6	3-SS	8	-	-	15	-	
	7							
	8	4-SS	3	-	-	24	-	
	9							
Brown sandy CLAY (CL)	10							
	11	5-SS	4	0.3	0.3	22	97	
END OF BORING @ 11.5 FEET	12							
	13							

Lines of Demarcation represent an approximate boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

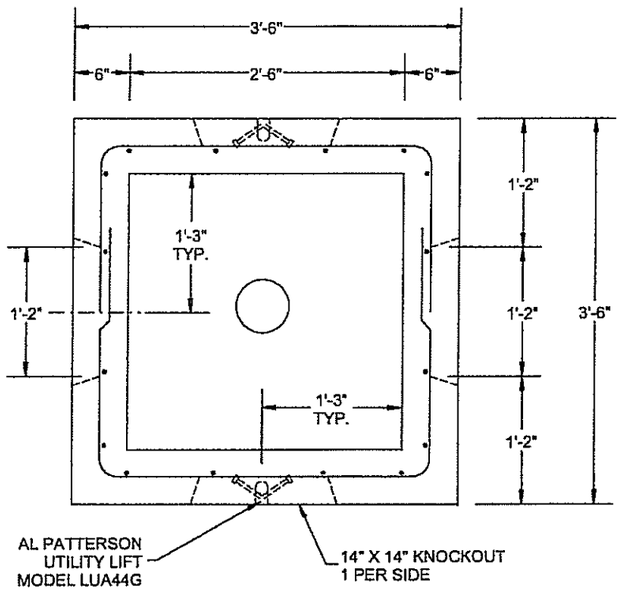
APPENDIX C

RSV-Crawford County Airport
Palestine, Illinois

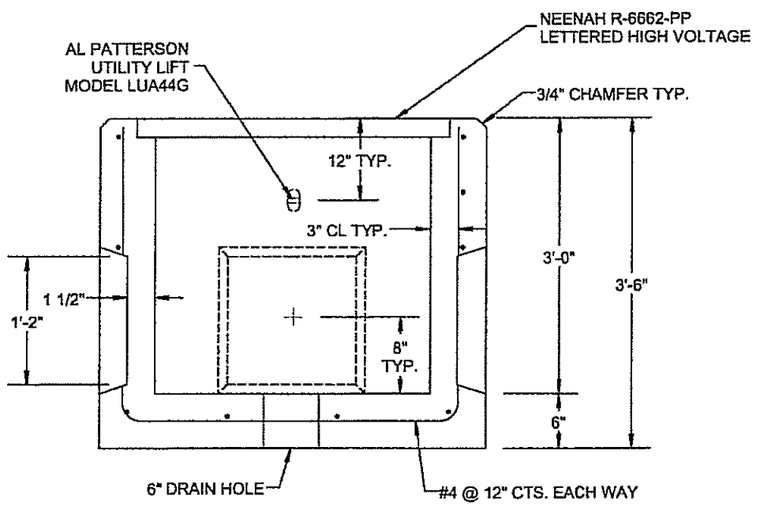
Illinois Project No. RSV-4820
Hanson Project No. 22A002D

Construct Full Parallel Taxiway to Runway 9/27

EXISTING HANDHOLE DETAIL
(FOR PAY ITEM AR110946)



PLAN



CROSS SECTION

GENERAL NOTES

MINIMUM CONCRETE STRENGTH SHALL BE 4,500 P.S.I. AFTER 28 DAYS

REINFORCEMENT SHALL BE ASTM A706 GRADE 60.

ALL MATERIALS SHALL BE DOMESTIC.

QUANTITY: 5

AR110610

PROJECT: CRAWFORD COUNTY AIRPORT
CONTRACT: RB020
ILLINOIS PROJECT: RSV-4334
SBG PROJECT: 3-17-SBGP-XX
COUNTY: CRAWFORD

REVISIONS

PRECAST ELECTRICAL HANDHOLE

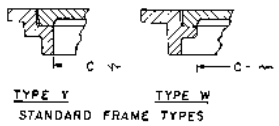
JH MOORE, INC
15515 E 875TH ROAD
EFFINGHAM, IL 62401
PHONE: 217-536-5152
FAX: 217-536-5155

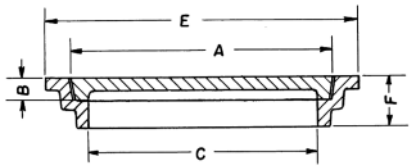
McCANN CONCRETE PRODUCTS, INC.
Precasting To Meet Your Needs
8709 STATE ROUTE 159
DORSEY, IL 62021
PHONE: 618-377-3888
FAX: 618-377-7746

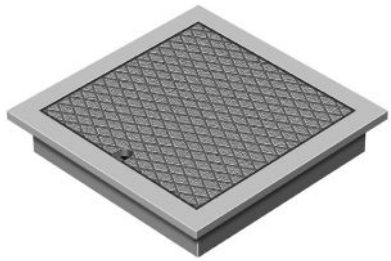
DESIGNED BY	JOB NO.
DRAWN BY R.W.G.	SHEET 1 OF 1
CHECKED BY	1-1
DATE 10/09/14	

R-6662 to R-6663 Series
Manhole Frame, Lid

Heavy Duty







Illustrating R-6662-CP

Illustrating R-6663-JS

Frames and lids in this series can be furnished standard without hinges or with Type T hinges as indicated below. Also, castings can be furnished with Type R butt hinges in stainless steel (When butt hinges are required, specify the non-hinged unit with the hinge of your choice). If fastening device is necessary, see page 16 for various types available on all units of this series.

These castings are also available using a gasketed and bolted lid. See **R-6665-2-3 Series**. For similar castings with grates, see **R-6672-3 Series**.

For complete information on our Spring Assist hatch products, please refer to the R-3498 Series.

Hold-open safety bars are furnished standard on most T-hinged units.

The specific location and number of hinges, handles and pickholes on these units may vary depending on the size and shape of the lids and may not be exactly as illustrated. If the location and number of hinges, handles or pickholes is critical on your particular project, please specify requirements.

Catalog No. Not Hinged	Catalog No. T-Hinged	Catalog No. Spring Assist	Dimensions in inches A	B	C	E	F	No. of Lids	Frame Type
	Square								
R-6662-AP	-		12 1/4 x 12 1/4	1	11 1/2 x 11 1/2	15 x 15	6	1	Y
R-6662-BP **	R-6662-BH		13 3/4 x 13 3/4	1 1/2	12 x 12	18 x 18	4	1	W
R-6662-CP **	R-6662-CH		18 x 18	1 1/2	16 x 16	22 x 22	4	1	W
R-6662-EP **	R-6662-EH		20 x 20	1 1/2	18 x 18	24 x 24	4	1	W
R-6662-GP **	R-6662-GH		21 1/2 x 21 1/2	1 1/2	20 x 20	26 x 26	4	1	W
R-6662-HP **	R-6662-HH		23 1/2 x 23 1/2	1 1/2	22 x 22	28 x 28	4	1	W
R-6662-JP	-		25 1/4 x 25 1/4	1 3/4	23 x 23	31 1/2 x 31 1/2	4	1	Y
R-6662-KP **	R-6662-KH	R-6662-KS ***	25 3/4 x 25 3/4	1 1/2	24 x 24	30 x 30	4	1	W
R-6662-LP	-		27 x 27	2	25 x 25	33 1/2 x 33 1/2	4	1	Y
R-6662-MP **	R-6662-MH		27 1/2 x 27 1/2	1 1/2	26 x 26	32 x 32	4	1	W
R-6662-NP **	R-6662-NH		29 1/2 x 29 1/2	1 1/2	28 x 28	34 x 34	4	1	W
R-6662-PP	R-6662-PH	R-6662-PS ***	31 1/2 x 31 1/2	1 1/2	30 x 30	36 x 36	4	1	W
R-6662-RP	R-6662-RH	R-6662-RS x ***	37 x 37	1 1/2	36 x 36	42 x 42	4	2	W
R-6662-TP +	R-6662-TH	R-6662-TS	50 x 50	1 1/2	48 x 48	56 x 56	4	2	Y
	Rectangular								
R-6663-AP **	R-6663-AH		14 x 20	1 1/2	12 x 18	18 x 24	4	1	W
R-6663-BP **	R-6663-BH		13 1/2 x 25 1/2	1 1/2	12 x 24	18 x 30	4	1	W
R-6663-CP	R-6663-CH		19 1/2 x 25 1/2	1 1/2	18 x 24	24 x 30	4	1	W
R-6663-DP **	R-6663-DH		19 1/2 x 31 1/2	1 1/2	18 x 30	24 x 36	4	1	W
R-6663-E1P	R-6663-E1H		20 x 44	1 1/2	18 x 42	24 x 48	4	1	Y
R-6663-EP **	R-6663-EH		19 3/4 x 37 3/4	1 1/2	18 x 36	24 x 42	4	1	W
R-6663-FP	-		22 x 32	1 1/4	20 x 30	26 x 36	4	1	Y
R-6663-HP	R-6663-HH		26 x 32	1 1/2	24 x 30	30 x 36	4	1	Y
R-6663-JP	R-6663-JH ++	R-6663-JS	25 1/2 x 37 1/2	1 1/2	24 x 36	30 x 42	4	1	W
R-6663-KP **	R-6663-KH		25 3/4 x 49 3/4	1 1/2	24 x 48	30 x 54	4	2	W
R-6663-MP **	R-6663-MH		31 3/4 x 37 3/4	1 1/2	30 x 36	36 x 42	4	2	W
R-6663-NP **	R-6663-NH		31 1/2 x 49 1/2	1 1/2	30 x 48	36 x 54	4	2	W
R-6663-O1P *	R-6663-O1H *		38 x 50	1 1/2	36 x 48	44 1/2 x 56 1/2	4	2	Y
R-6663-OP	R-6663-OH		35 3/4 x 59 7/8	1 3/8	34 x 58	40 x 64	6	2	Y
R-6663-PP	R-6663-PH		44 x 62	1 3/8	42 x 60	50 1/2 x 68 1/2	4	2	W
-	-	R-6663-RS ***	76 9/16 x 38 3/8	1 1/2	74 3/16 x 36	80 3/16 x 42	4	2	W

* Frame in sections bolted at corners.
** Furnished with pickhole instead of G-handle.
*** Also available as grated cover order as R-6662-KGS, R-6662-PGS, R-6662-RGS or R-6663-RGS.

\+ Available with centered 24" diameter removable center access lid.
++ Available with two-piece lid.
x 1-piece lid