

CONSTRUCTION PLANS - FOR BID

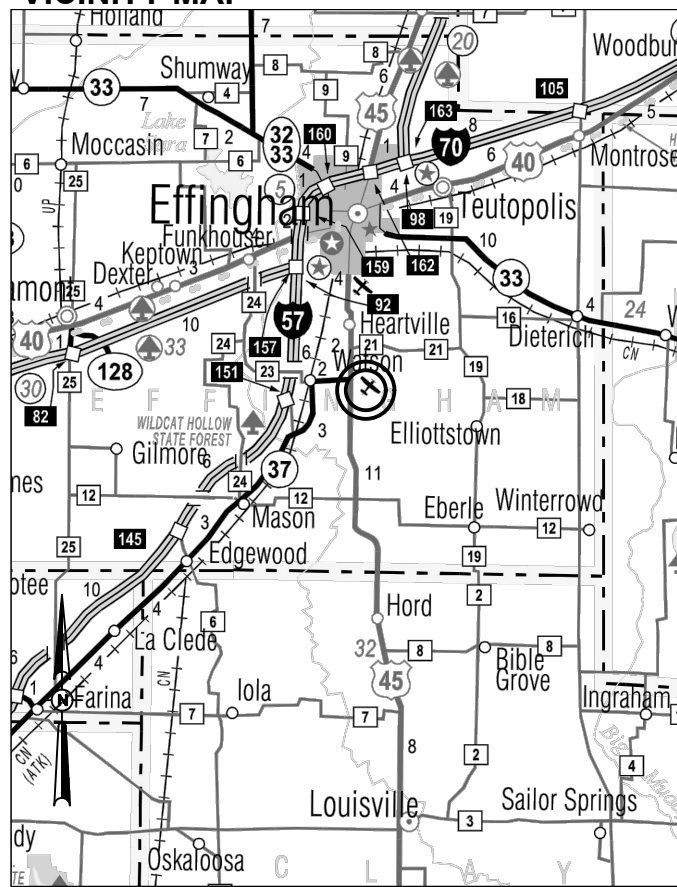
EXTEND RUNWAY 11-29 AND EXTEND TAXIWAY A TO RUNWAY 29

EFFINGHAM COUNTY AIRPORT COMMISSION
EFFINGHAM COUNTY MEMORIAL AIRPORT (1H2)
EFFINGHAM, EFFINGHAM COUNTY, ILLINOIS

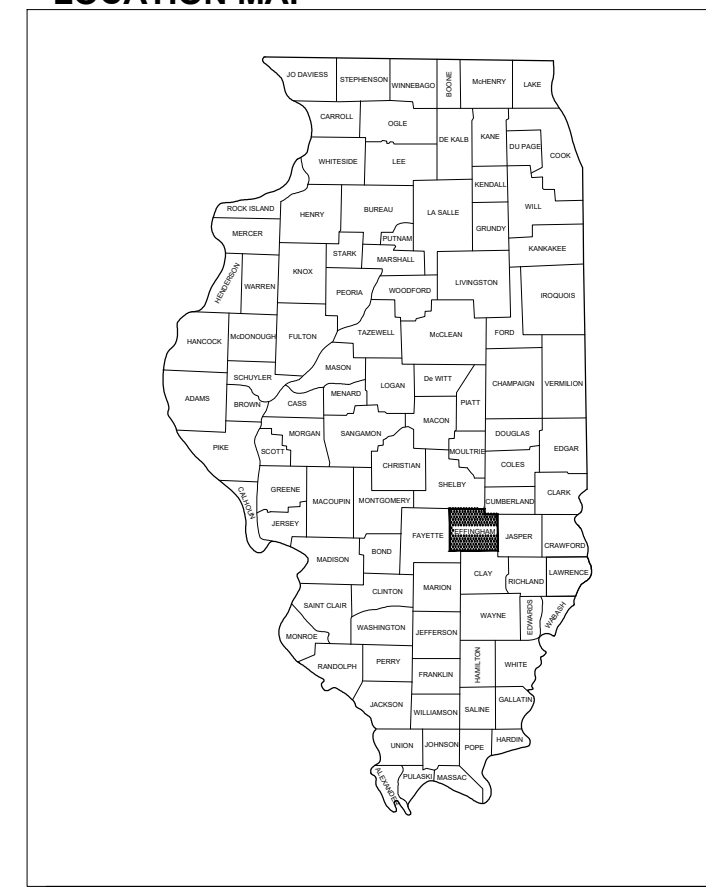
ILLINOIS PROJECT NO. 1H2-4982
A.I.P. PROJECT NO. N/A

NOVEMBER 17, 2023

VICINITY MAP



LOCATION MAP



NOTICE TO CONTRACTORS AND BIDDERS

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

COVERING ELECTRICAL DESIGN

HANSON
HANSON PROFESSIONAL SERVICES INC.
1525 South Sixth Street
Springfield, Illinois 62703-2886
Telephone: 217.788.2450
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Kevin N. Lightfoot
Kevin Lightfoot, P.E. Lic. Exp. 11/30/2025
Electrical Engineer



COVERING CIVIL DESIGN

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Michael J. Dudas
Michael Dudas, P.E. Lic. Exp. 11/30/2025
Civil Engineer



EFFINGHAM COUNTY AIRPORT COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois

Greg Koester
Greg Koester
Airport Superintendent

11/17/2023
Date

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No.	Issue/Description	Sheets Changed	Date	By



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: G-002-SQQ.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: HLE 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

SUMMARY OF
QUANTITIES

FOR BID

SUMMARY OF QUANTITIES - BASE BID

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AR107508	L-806 WC 8" INTERNALLY LIT	EACH	1	
AR108108	1/C #8 5 KV UG CABLE	FOOT	4,600	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L SUM	1	
AR110202	2 PVC DUCT, DIRECT BURY	FOOT	4,000	
AR125510	MIRL, BASE MOUNTED	EACH	10	
AR125545	MI THRESHOLD LIGHT BASE MTD	EACH	8	
AR125565	SPLICE CAN	EACH	4	
AR125931	REPLACE LIGHT LENSE	EACH	10	
AR125967	RELOCATE REILS	PAIR	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	82,192	
AR152540	SOIL STABILIZATION FABRIC	SQ YD	10,430	
AR155530	HYDRATED LIME	TON	260.0	
AR155712	LIME-MODIFIED SUBGRADE-12"	SQ YD	10,430	
AR156510	SILT FENCE	FOOT	3,725	
AR156511	DITCH CHECK	EACH	58	
AR156533	TEMPORARY SEED AND MULCH	ACRE	52.5	
AR161900	REMOVE CLASS C FENCE	FOOT	1,240	
AR209606	CRUSHED AGG. BASE COURSE-6"	SQ YD	10,660	
AR501510	10" PCC PAVEMENT	SQ YD	10,205	
AR501530	PCC TEST BATCH	EACH	1	
AR501900	REMOVE PCC PAVEMENT	SQ YD	1,010	
AR620520	PAVEMENT MARKING-WATERBORNE	SQ FT	21,410	
AR620525	PAVEMENT MARKING-BLACK BORDER	SQ FT	4,955	
AR620900	PAVEMENT MARKING REMOVAL	SQ FT	30,360	
AR620912	TEMPORARY MARK & LIGHT	L SUM	1	
AR701512	12" RCP, CLASS IV	FOOT	432	
AR701536	36" RCP, CLASS IV	FOOT	184	
AR705524	4" PERFORATED UNDERDRAIN W/SOCK	FOOT	1,930	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	3	
AR705640	UNDERDRAIN CLEANOUT	EACH	2	
AR705900	REMOVE UNDERDRAIN	FOOT	160	
AR705903	REMOVE UNDERDRAIN INSP. HOLE	EACH	1	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	6	
AR752436	PRECAST REINFORCED CONC. FES 36"	EACH	2	
AR800476	REMOVE AIRFIELD LIGHTING	L SUM	1	
AR800564	CABLE & CCR TESTING & CALIBRATION	L SUM	1	
AR901510	SEEDING	ACRE	52.5	
AR908510	MULCHING	ACRE	52.5	

SUMMARY OF QUANTITIES - ADD. ALT. 1 (TAXIWAY A EXTENSION)

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AS108108	1/C #8 5 KV UG CABLE	FOOT	550	
AS108158	1/C #8 5 KV UG CABLE IN UD	FOOT	4,750	
AS109311	7.5 KW REGULATOR, STYLE 1	EACH	1	
AS110202	2" PVC DUCT, DIRECT BURY	FOOT	500	
AS110503	3-WAY CONCRETE ENCASED DUCT	FOOT	60	
AS115610	ELECTRICAL HANDHOLE	EACH	2	
AS125411	MITL-STAKE MOUNTED-LED	EACH	23	
AS125416	MITL-BASE MOUNTED-LED	EACH	14	
AS125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EACH	1	
AS125470	MODIFY EXISTING SIGN PANEL	EACH	1	
AS125921	REPLACE STAKE MOUNTED LIGHT	EACH	36	
AS125922	REPLACE BASE MOUNTED LIGHT	EACH	8	
AS152410	UNCLASSIFIED EXCAVATION	CU YD	50	
AS152540	SOIL STABILIZATION FABRIC	SQ YD	9,605	
AS154604	GRANULAR DRAINAGE SUBBASE-4"	SQ YD	10,100	
AS155530	HYDRATED LIME	TON	240.0	
AS155712	LIME MODIFIED SUBGRADE-12"	SQ YD	9,605	
AS209606	CRUSHED AGG. BASE COURSE-6"	SQ YD	9,360	
AS401613	BIT. SURF. CSE. -METHOD I, SUPERPAVE	TON	1,050.0	
AS401900	REMOVE BITUMINOUS PAVEMENT	SQ YD	105	
AS403613	BIT. BASE COURSE-METHOD I SUPERPAVE	TON	2,160.0	
AS602510	BITUMINOUS PRIME COAT	GALLON	3,280	
AS603510	BITUMINOUS TACK COAT	GALLON	1,410	
AS620520	PAVEMENT MARKING-WATERBORNE	SQ FT	2,366	
AS620525	PAVEMENT MARKING-BLACK BORDER	SQ FT	2,438	
AS705524	4" PERFORATED UNDERDRAIN W/SOCK	FOOT	4,450	
AS705630	UNDERDRAIN INSPECTION HOLE	EACH	8	
AS705640	UNDERDRAIN CLEANOUT	EACH	4	
AS705900	REMOVE UNDERDRAIN	FOOT	160	
AS705903	REMOVE UNDERDRAIN INSP. HOLE	EACH	1	

SUMMARY OF QUANTITIES - ADD. ALT. 2 (PCC PANEL REPAIR)

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AT152410	UNCLASSIFIED EXCAVATION	CU YD	1,310	
AT152540	SOIL STABILIZATION FABRIC	SQ YD	2,905	
AT155530	HYDRATED LIME	TON	80.0	
AT155712	LIME MODIFIED SUBGRADE-12"	SQ YD	2,905	
AT209606	CRUSHED AGG. BASE COURSE-6"	SQ YD	2,950	
AT501510	10" PCC PAVEMENT	SQ YD	2,860	
AT501900	REMOVE PCC PAVEMENT	SQ YD	2,860	

SUMMARY OF QUANTITIES - ADD. ALT. 3 (4-BOX PAPI)

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AU108088	1/C #8 XLP-USE	FOOT	15,950	
AU110012	2" DIRECTIONAL BORE	FOOT	350	
AU110202	2" PVC DUCT, DIRECT BURY	FOOT	4,950	
AU125565	SPLICE CAN	EACH	17	
AU125615	PAPI (L-880 SYSTEM)	EACH	1	

GENERAL NOTES

1. THE PROJECT PAY ITEMS ARE INTENDED TO BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PLANS. ALL INCIDENTAL WORK REQUIRED TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE RESIDENT ENGINEER IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, AND TRANSPORTATION NECESSARY TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.
2. THE RULES, REGULATIONS, AND SPECIFICATIONS ENUMERATED HEREIN SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS. THEY SHALL NOT PROHIBIT THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIAL THAN ARE SPECIFIED HEREIN, IF APPROVED BY THE ENGINEER.
3. ACCESS TO THE SITE SHALL BE RESTRICTED EXCLUSIVELY TO THE DESIGNATED CONSTRUCTION ENTRANCE, STAGING AREA, AND HAUL ROUTE. NO EQUIPMENT OR PERSONNEL SHALL BE PERMITTED OUTSIDE THE GENERAL PROJECT AREA.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AND KEEP CLEAN OF DEBRIS ALL EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES SHALL BE IMMEDIATELY REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
5. CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
6. THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR HAULING ON PUBLIC ROADS, AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES TO ANY PAVEMENTS (PUBLIC OR PRIVATE) CAUSED BY HIS/HER CONSTRUCTION EQUIPMENT OR PERSONNEL.
8. THE CONTRACTOR SHALL PROVIDE ONE SET OF PRELIMINARY REDLINED RECORD DRAWINGS TO THE RESIDENT ENGINEER AT THE COMPLETION OF THE PROJECT FOR INCORPORATION INTO THE OFFICIAL RECORD DRAWINGS HE WILL PREPARE.
9. APPROXIMATE LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN THROUGHOUT THESE PLANS. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND PROTECT THESE UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER AUTHORITIES FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
10. THE CONTRACTOR SHALL PROVIDE ALL LAYOUT NEEDS, BOTH VERTICALLY AND HORIZONTALLY.
11. ALL REQUESTS FOR INFORMATION SHALL BE PROVIDED IN WRITING AND ALL DIRECTIVES SHALL BE RECEIVED IN WRITING.
12. CHANGES TO THE PROJECT SHALL NOT BE INCORPORATED INTO THE PROJECT UNTIL EXPRESSLY APPROVED BY THE ENGINEER.
13. NPDES PERMIT - THIS PROJECT WILL DISTURB MORE THAN 1 ACRE, THEREFORE A NPDES PERMIT IS REQUIRED.
14. MATERIAL CERTIFICATIONS - MATERIALS CANNOT BE INSTALLED UNTIL ALL THE MATERIAL CERTIFICATIONS FOR THAT ITEM HAVE BEEN RECEIVED, REVIEWED AND ACCEPTED BY THE RESIDENT ENGINEER. MATERIALS INSTALLED WITHOUT APPROVAL ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
15. CERTIFIED PAYROLLS - PAY APPLICATIONS CANNOT BE PROCESSED FOR PAYMENT UNTIL ALL CERTIFIED PAYROLLS FOR THAT PERIOD HAVE BEEN RECEIVED.

UTILITY NOTE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

J.U.L.I.E. INFORMATION

COUNTY _____ EFFINGHAM
 CITY _____ EFFINGHAM
 TOWNSHIP _____ 7N
 SECTION _____ 9 & 10
 RANGE _____ 6E
 ADDRESS _____ EFFINGHAM COUNTY MEMORIAL AIRPORT
 14449 E. 1100TH AVE.
 EFFINGHAM, ILLINOIS 62401



Offices Nationwide
 www.hanson-inc.com

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

Illinois Licensed
 Professional Service Corporation
 #184-001084

EFFINGHAM COUNTY AIRPORT
 COMMISSION
 Effingham County Memorial Airport
 14449 East 1100th Ave.
 Effingham, Illinois 62401

COVERING CIVIL DESIGN



Michael J. Dudas

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

EXTEND RUNWAY
 11-29 AND TAXIWAY A

IDA NO. 1H2-4982
 CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
 PROJECT NO: 22A0004D
 CAD FILE: G-002-S00.DWG
 DESIGN BY: MJD 10/16/2023
 DRAWN BY: HLE 10/16/2023
 REVIEWED BY: MJD 11/17/2023

SHEET TITLE

GENERAL NOTES

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FOR BID



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

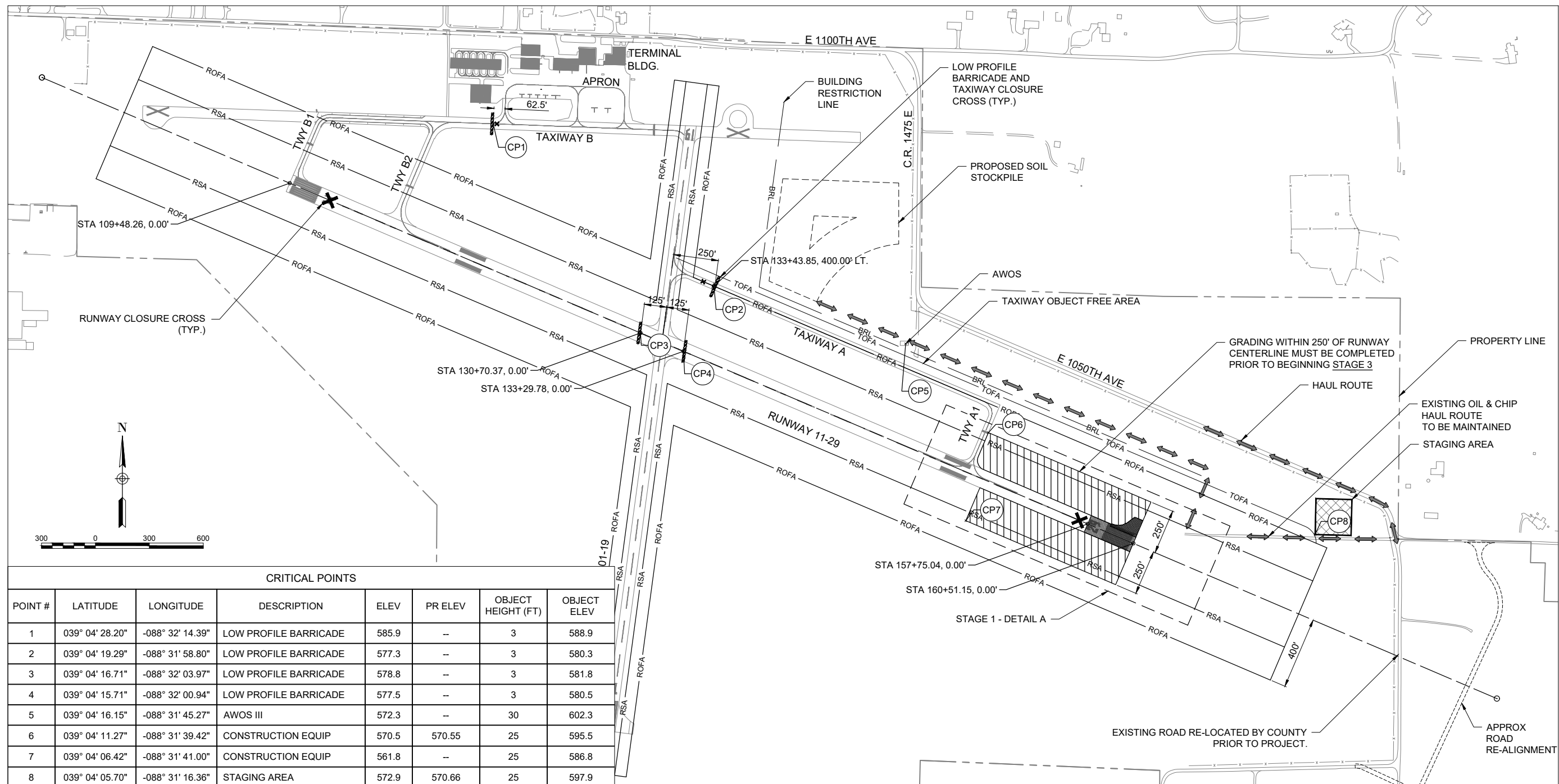
IDA NO. 1H2-4982
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NO.	DATE	DESCRIPTION		
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-101-SFY.DWG
DESIGN BY: MJD 10/5/2023
DRAWN BY: MJD 10/5/2023
REVIEWED BY: MJD 11/17/2023

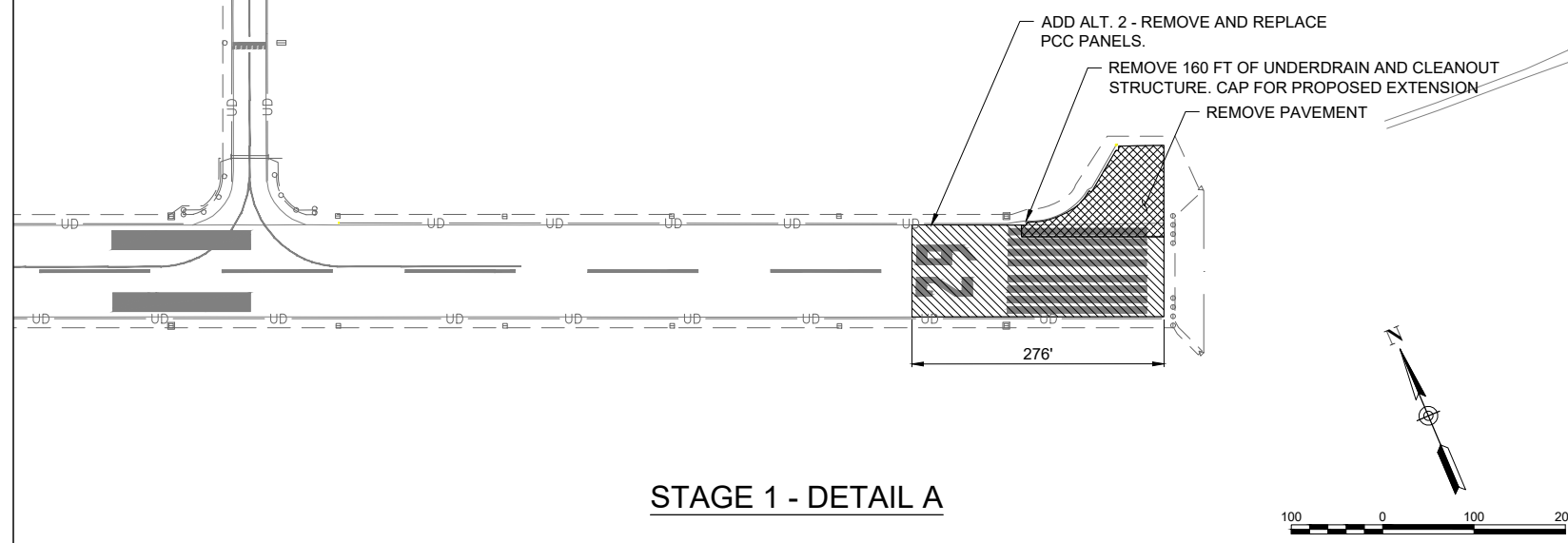
SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 1



CRITICAL POINTS

POINT #	LATITUDE	LONGITUDE	DESCRIPTION	ELEV	PR ELEV	OBJECT HEIGHT (FT)	OBJECT ELEV
1	039° 04' 28.20"	-088° 32' 14.39"	LOW PROFILE BARRICADE	585.9	--	3	588.9
2	039° 04' 19.29"	-088° 31' 58.80"	LOW PROFILE BARRICADE	577.3	--	3	580.3
3	039° 04' 16.71"	-088° 32' 03.97"	LOW PROFILE BARRICADE	578.8	--	3	581.8
4	039° 04' 15.71"	-088° 32' 00.94"	LOW PROFILE BARRICADE	577.5	--	3	580.5
5	039° 04' 16.15"	-088° 31' 45.27"	AWOS III	572.3	--	30	602.3
6	039° 04' 11.27"	-088° 31' 39.42"	CONSTRUCTION EQUIP	570.5	570.55	25	595.5
7	039° 04' 06.42"	-088° 31' 41.00"	CONSTRUCTION EQUIP	561.8	--	25	586.8
8	039° 04' 05.70"	-088° 31' 16.36"	STAGING AREA	572.9	570.66	25	597.9



- STAGE 1 SCOPE OF WORK**
1. REMOVE TURNAROUND PAVEMENT ON THE END OF RWY 29.
 2. REMOVE EXISTING UNDERDRAIN AND COMPLETE GRADING AROUND EXISTING RUNWAY 29 END.
 3. SEED, MULCH, AND EROSION CONTROL.
- ADD. ALT. 2**
1. 276 FEET OF PANEL REPLACEMENT.
- CLOSURES**
2. RUNWAY 11-29 WILL BE CLOSED.
 3. TAXIWAY B (PARTIAL), B1, AND B2.
 4. TAXIWAY A AND A1.

DEC 04, 2023 9:37 AM ENG01009 1:22:05\22A0004D\CAD\AIRPORT\SHEETC-101-SFY.DWG

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

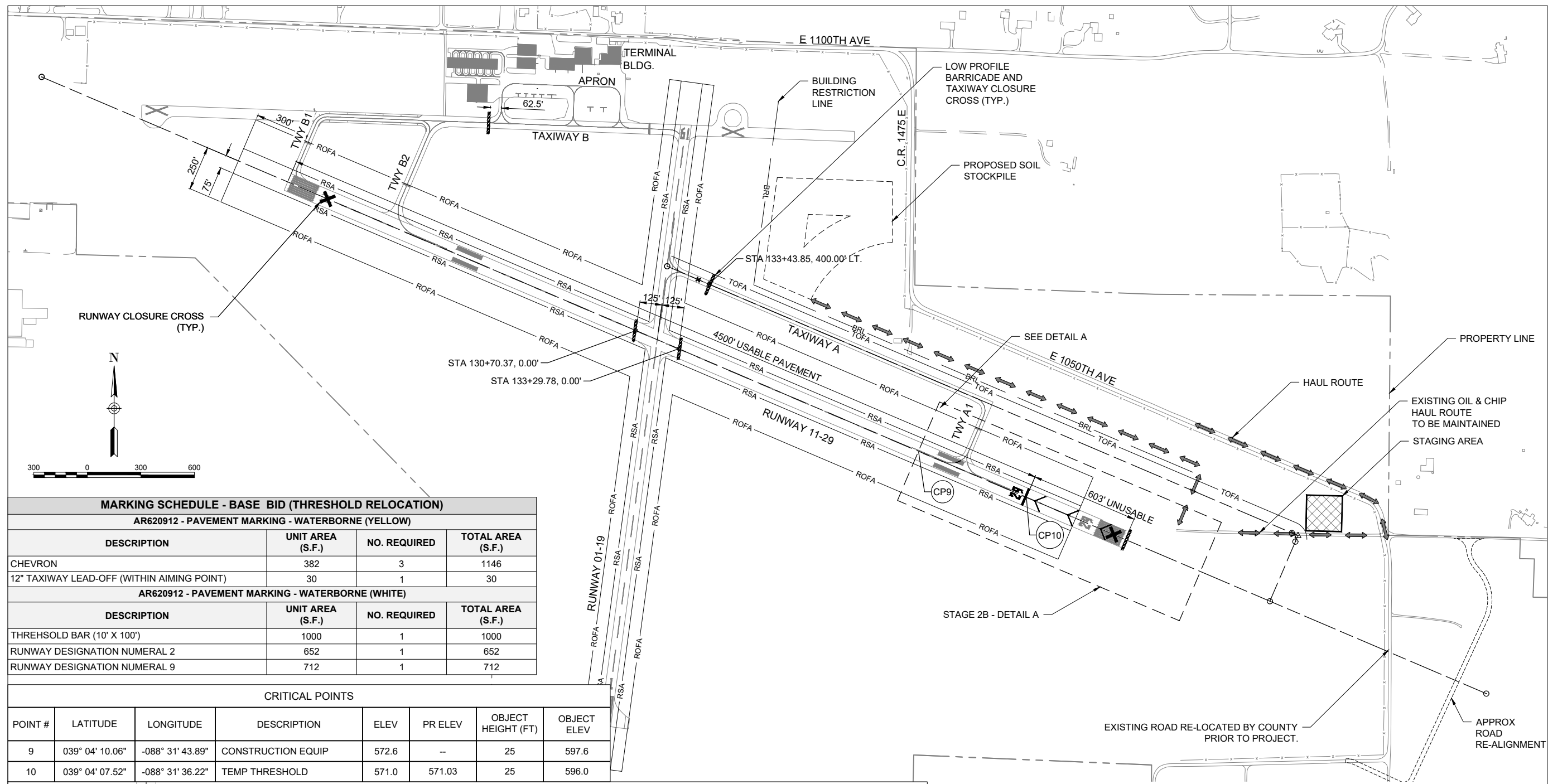
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DESIGN BY: MJD 10/5/2023
DRAWN BY: MJD 10/5/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 2A



MARKING SCHEDULE - BASE BID (THRESHOLD RELOCATION)

AR620912 - PAVEMENT MARKING - WATERBORNE (YELLOW)

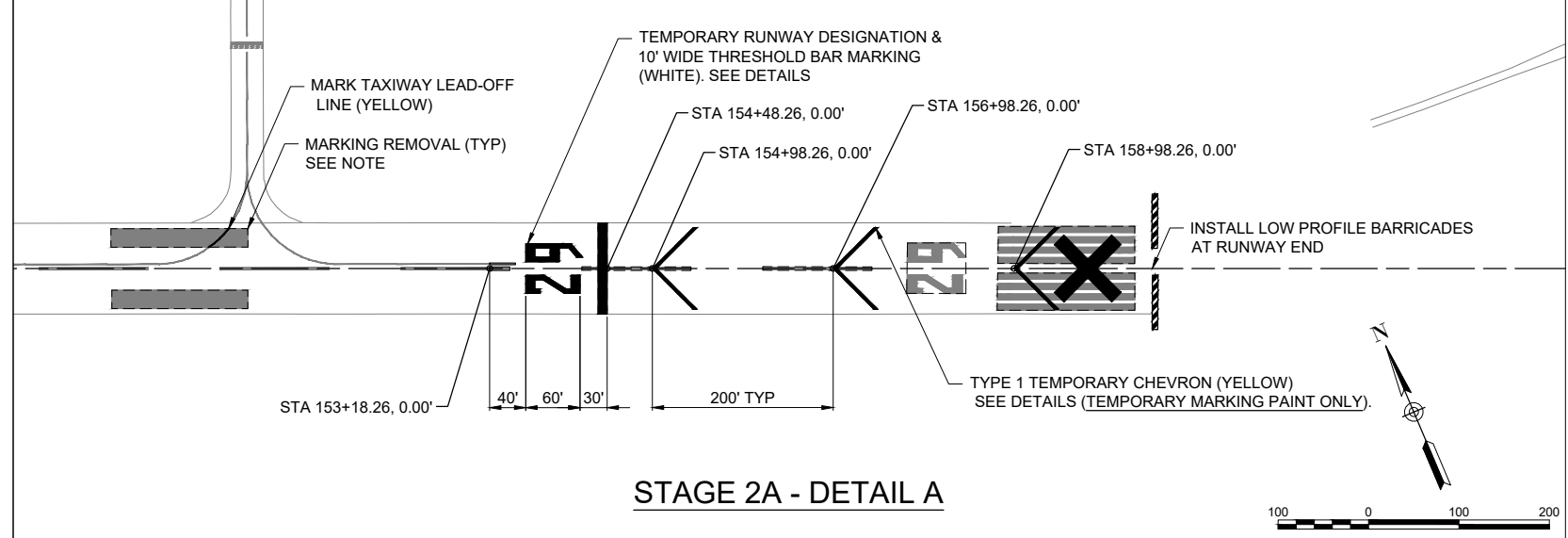
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
CHEVRON	382	3	1146
12" TAXIWAY LEAD-OFF (WITHIN AIMING POINT)	30	1	30

AR620912 - PAVEMENT MARKING - WATERBORNE (WHITE)

DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
THRESHOLD BAR (10' X 100')	1000	1	1000
RUNWAY DESIGNATION NUMERAL 2	652	1	652
RUNWAY DESIGNATION NUMERAL 9	712	1	712

CRITICAL POINTS

POINT #	LATITUDE	LONGITUDE	DESCRIPTION	ELEV	PR ELEV	OBJECT HEIGHT (FT)	OBJECT ELEV
9	039° 04' 10.06"	-088° 31' 43.89"	CONSTRUCTION EQUIP	572.6	--	25	597.6
10	039° 04' 07.52"	-088° 31' 36.22"	TEMP THRESHOLD	571.0	571.03	25	596.0



STAGE 2A SCOPE OF WORK

1. STAGE 2A AND 2B MAY BE COMPLETED SIMULTANEOUSLY OR IN EITHER ORDER.
2. REDUCE RUNWAY 11-29 CLASSIFICATION TO B-II FOR DURATION OF THE PROJECT (COMPLETED BY AIRPORT).
3. REMOVE MARKINGS AND PLACE TEMPORARY MARKINGS FOR TEMPORARY THRESHOLD, AS SHOWN.
4. STAGE 3 GRADING MAY BEGIN.

CLOSURES

1. RUNWAY 11-29 WILL BE CLOSED.
2. TAXIWAY B (PARTIAL), B1, AND B2. TAXIWAY A AND A1.

NOTES

1. THE PHYSICAL REMOVAL OF MARKINGS FOR THRESHOLD BARS AND NUMERALS MUST INCLUDE A PRE-DETERMINED LARGER SIZE AND SHAPE OF A REMOVAL AREA THAT ENCOMPASSES THE OLD MARKING(S) AND BY GROUPING ADJACENT MARKINGS TOGETHER INTO A LARGER RECTANGULAR REMOVAL AREA.
2. TEMPORARY PAVEMENT MARKING AND REMOVAL WILL BE COMPLETED UNDER AR620912. NO INDIVIDUAL MEASUREMENTS WILL BE MADE FOR PAYMENT. ALL EFFORT ASSOCIATED WITH MOVING THE THRESHOLD WILL BE PAID FOR AS LUMP SUM.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

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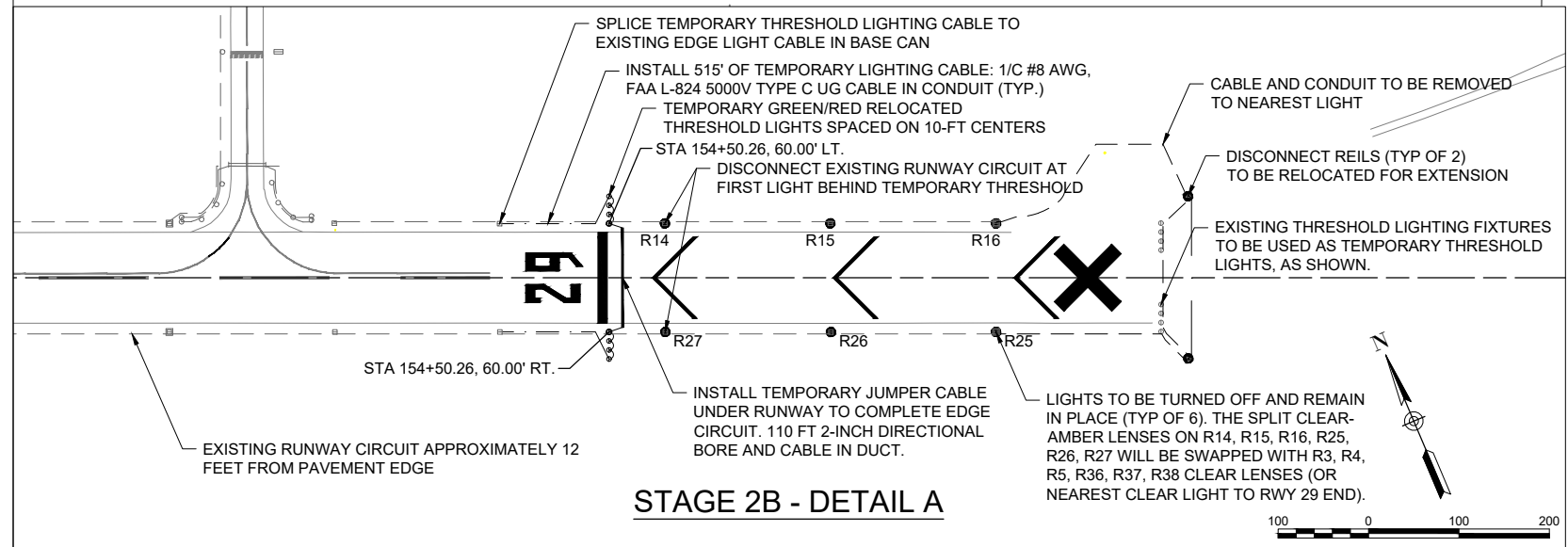
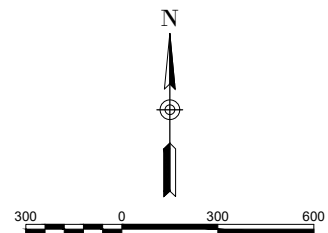
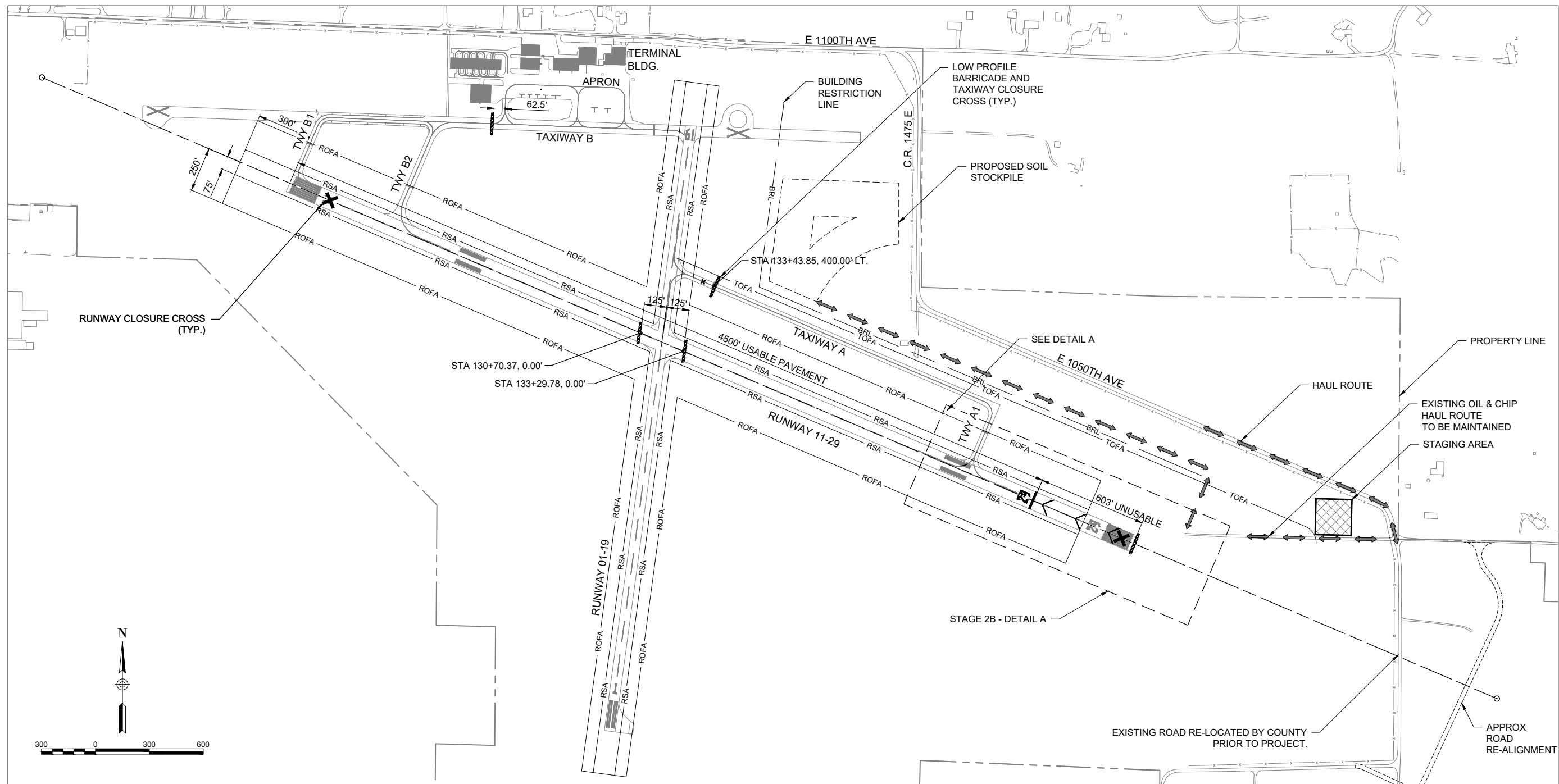
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		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DRAWN BY: MJD 09/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 2B

FOR BID



STAGE 2B SCOPE OF WORK

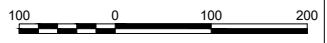
1. STAGE 2A AND 2B MAY BE COMPLETED SIMULTANEOUSLY OR IN EITHER ORDER.
2. STAGE 3 GRADING MAY BEGIN.
3. MOVE THRESHOLD LIGHTING.

CLOSURES

1. RUNWAY 11-29 WILL BE CLOSED.
2. TAXIWAY B (PARTIAL), B1, AND B2. TAXIWAY A AND A1.

NOTES

1. TEMPORARY LIGHTING WILL BE COMPLETED UNDER AR620912. NO INDIVIDUAL MEASUREMENTS WILL BE MADE FOR PAYMENT. ALL EFFORT ASSOCIATED WITH MOVING THE THRESHOLD WILL BE PAID FOR AS LUMP SUM.
2. CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT TEMPORARY THRESHOLD INSTALLATION WILL HAVE FUNCTIONAL TRANSFORMERS AND STAKES FOR SAFE INSTALLATION.
3. **CONTRACTOR SHALL SHUTOFF AIRFIELD LIGHTING CIRCUITS PRIOR TO WORK, AND SHALL PRACTICE LOCKOUT/TAGOUT PROCEDURES FOR SAFETY OF PERSONNEL.**



DEC 04, 2023 9:38 AM ENGELO1009 1:22:05S22A0004D\CAD\AIRPORT\SHEETC-101-SFY.DWG



Michael J. Dudas

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EXTEND RUNWAY 11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

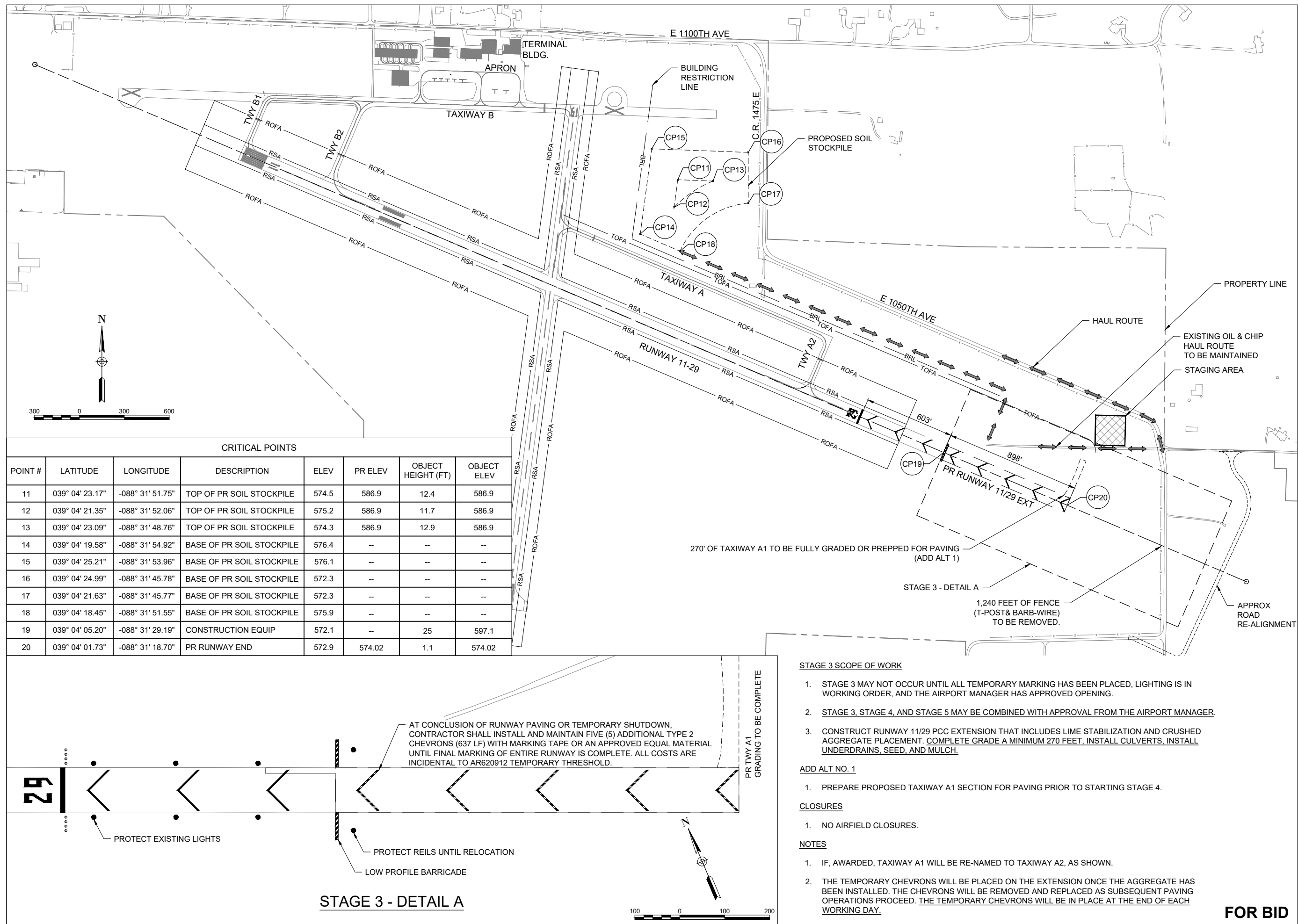
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-101-SFY.DWG
DESIGN BY: MJD 08/23/2023
DRAWN BY: MJD 09/27/2023
REVIEWED BY: MJD 11/17/2023

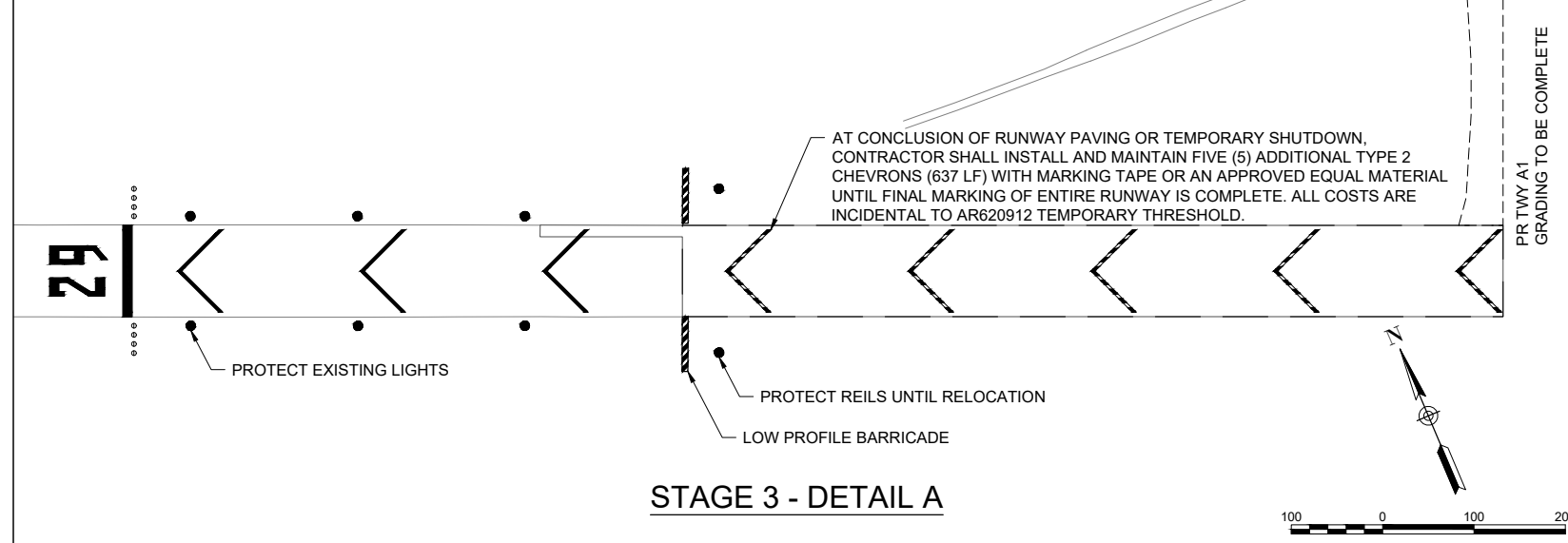
SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 3

FOR BID



CRITICAL POINTS							
POINT #	LATITUDE	LONGITUDE	DESCRIPTION	ELEV	PR ELEV	OBJECT HEIGHT (FT)	OBJECT ELEV
11	039° 04' 23.17"	-088° 31' 51.75"	TOP OF PR SOIL STOCKPILE	574.5	586.9	12.4	586.9
12	039° 04' 21.35"	-088° 31' 52.06"	TOP OF PR SOIL STOCKPILE	575.2	586.9	11.7	586.9
13	039° 04' 23.09"	-088° 31' 48.76"	TOP OF PR SOIL STOCKPILE	574.3	586.9	12.9	586.9
14	039° 04' 19.58"	-088° 31' 54.92"	BASE OF PR SOIL STOCKPILE	576.4	--	--	--
15	039° 04' 25.21"	-088° 31' 53.96"	BASE OF PR SOIL STOCKPILE	576.1	--	--	--
16	039° 04' 24.99"	-088° 31' 45.78"	BASE OF PR SOIL STOCKPILE	572.3	--	--	--
17	039° 04' 21.63"	-088° 31' 45.77"	BASE OF PR SOIL STOCKPILE	572.3	--	--	--
18	039° 04' 18.45"	-088° 31' 51.55"	BASE OF PR SOIL STOCKPILE	575.9	--	--	--
19	039° 04' 05.20"	-088° 31' 29.19"	CONSTRUCTION EQUIP	572.1	--	25	597.1
20	039° 04' 01.73"	-088° 31' 18.70"	PR RUNWAY END	572.9	574.02	1.1	574.02



- STAGE 3 SCOPE OF WORK**
- STAGE 3 MAY NOT OCCUR UNTIL ALL TEMPORARY MARKING HAS BEEN PLACED, LIGHTING IS IN WORKING ORDER, AND THE AIRPORT MANAGER HAS APPROVED OPENING.
 - STAGE 3, STAGE 4, AND STAGE 5 MAY BE COMBINED WITH APPROVAL FROM THE AIRPORT MANAGER.
 - CONSTRUCT RUNWAY 11/29 PCC EXTENSION THAT INCLUDES LIME STABILIZATION AND CRUSHED AGGREGATE PLACEMENT. COMPLETE GRADE A MINIMUM 270 FEET, INSTALL CULVERTS, INSTALL UNDERDRAINS, SEED, AND MULCH.
- ADD ALT NO. 1**
- PREPARE PROPOSED TAXIWAY A1 SECTION FOR PAVING PRIOR TO STARTING STAGE 4.
- CLOSURES**
- NO AIRFIELD CLOSURES.
- NOTES**
- IF, AWARDED, TAXIWAY A1 WILL BE RE-NAMED TO TAXIWAY A2, AS SHOWN.
 - THE TEMPORARY CHEVRONS WILL BE PLACED ON THE EXTENSION ONCE THE AGGREGATE HAS BEEN INSTALLED. THE CHEVRONS WILL BE REMOVED AND REPLACED AS SUBSEQUENT PAVING OPERATIONS PROCEED. THE TEMPORARY CHEVRONS WILL BE IN PLACE AT THE END OF EACH WORKING DAY.



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

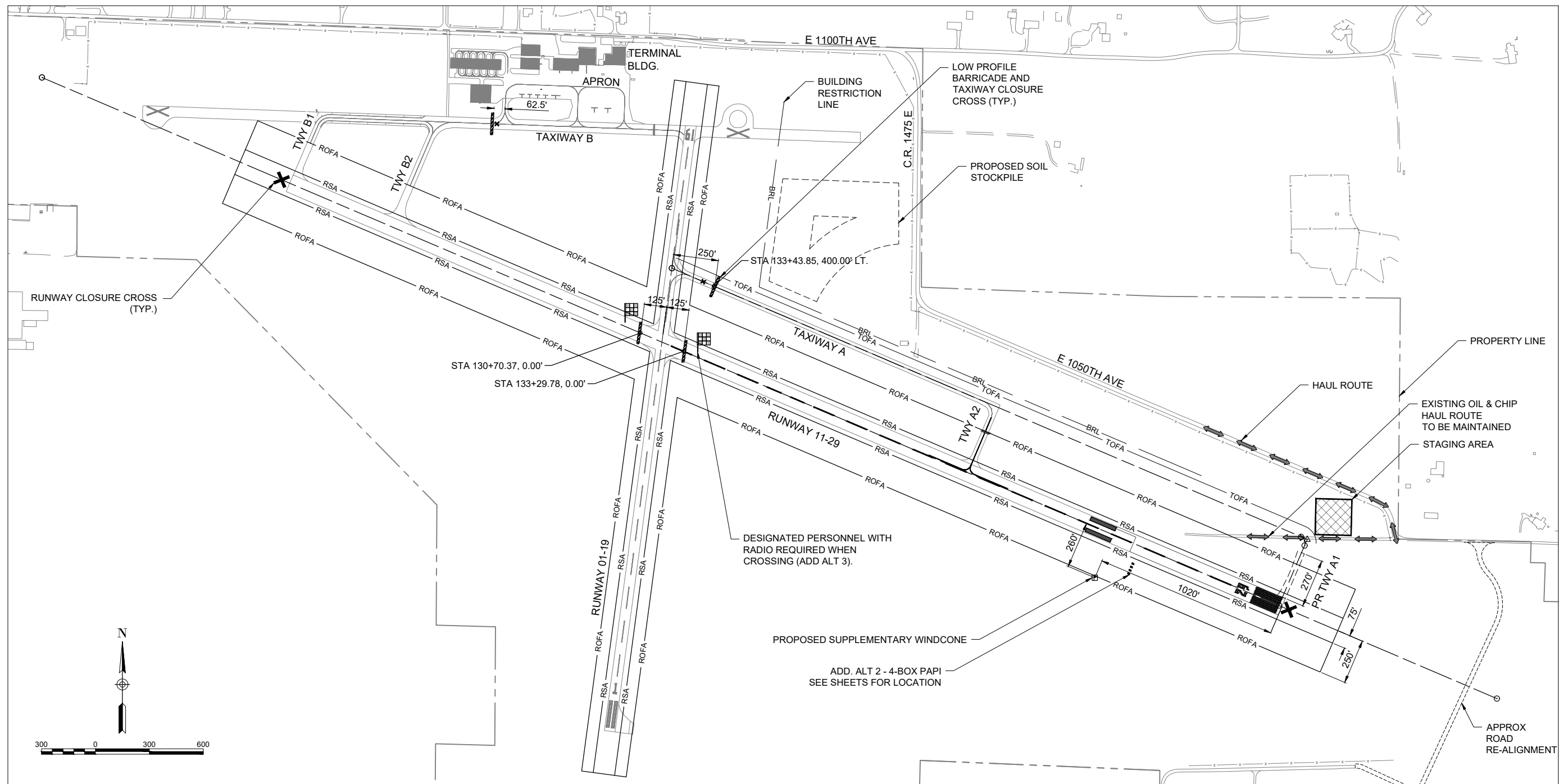
IDA NO. 1H2-4982
CONTRACT NO. EF010

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SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 4A



STAGE 4A SCOPE OF WORK

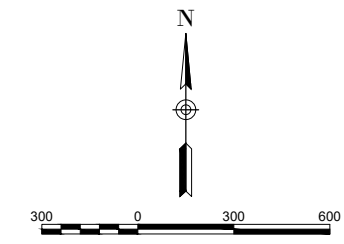
1. THE AIRPORT MAY GRANT PERMISSION TO COMBINE STAGE 3 AND 4.
2. COMPLETE RUNWAY MARKING AND ASSOCIATED MARKING REMOVAL.
3. REIL RE-LOCATION.
4. RUNWAY LIGHTING INSTALLATION.
5. WINDCONE INSTALLATION.

ADD. ALT 3

1. INSTALL 4-BOX PAPI.

CLOSURES

1. RUNWAY 11-29 WILL BE CLOSED.
2. TAXIWAY B (PARTIAL), B1, AND B2.
3. TAXIWAY A AND A1.



FOR BID



Michael J. Dudas

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EXTEND RUNWAY 11-29 AND TAXIWAY A

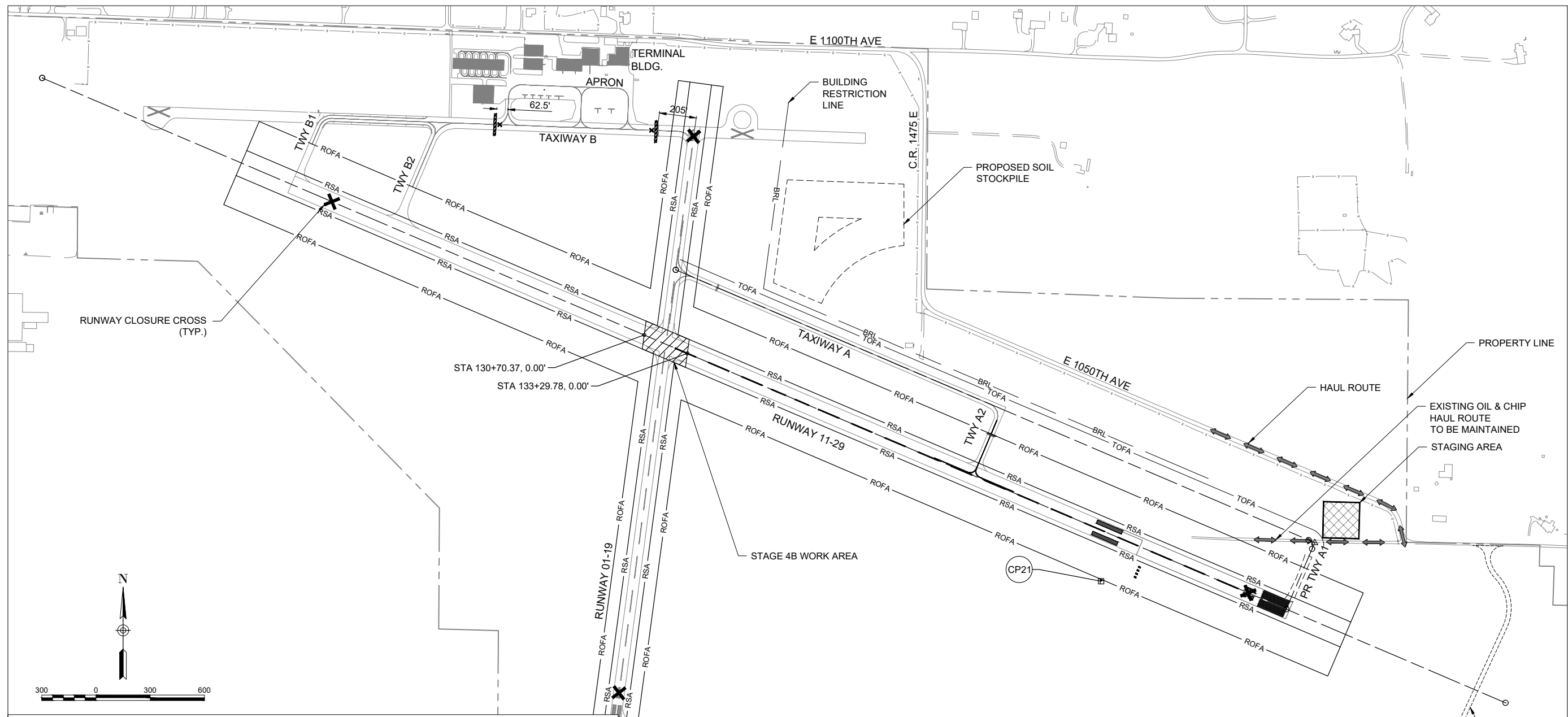
IDA NO. 1H2-4982
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SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 4B



CRITICAL POINTS							
POINT #	LATITUDE	LONGITUDE	DESCRIPTION	ELEV	PR ELEV	OBJECT HEIGHT (FT)	OBJECT ELEV
21	039° 04' 03.30"	-088° 31' 31.89"	PR WINDCONE	570.9	--	10	580.9

STAGE 4B SCOPE OF WORK

1. THE AIRPORT MAY GRANT PERMISSION TO COMBINE STAGE 4A & 4B. STAGE 4B IS ONLY NECESSARY IF REQUIRED TO CROSS PAVEMENT DURING MARKING, PAPI, AND/OR WINDCONE INSTALLATION.
2. PLANS DO NOT REQUIRE FULL CLOSURE OF THE AIRPORT. STAGE IS ONLY SHOWN FOR REFERENCE.

CLOSURES

1. ENTIRE AIRFIELD WILL BE CLOSED.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

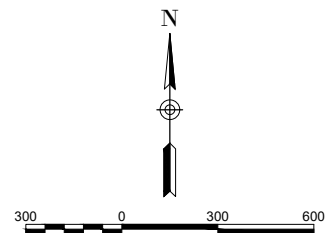
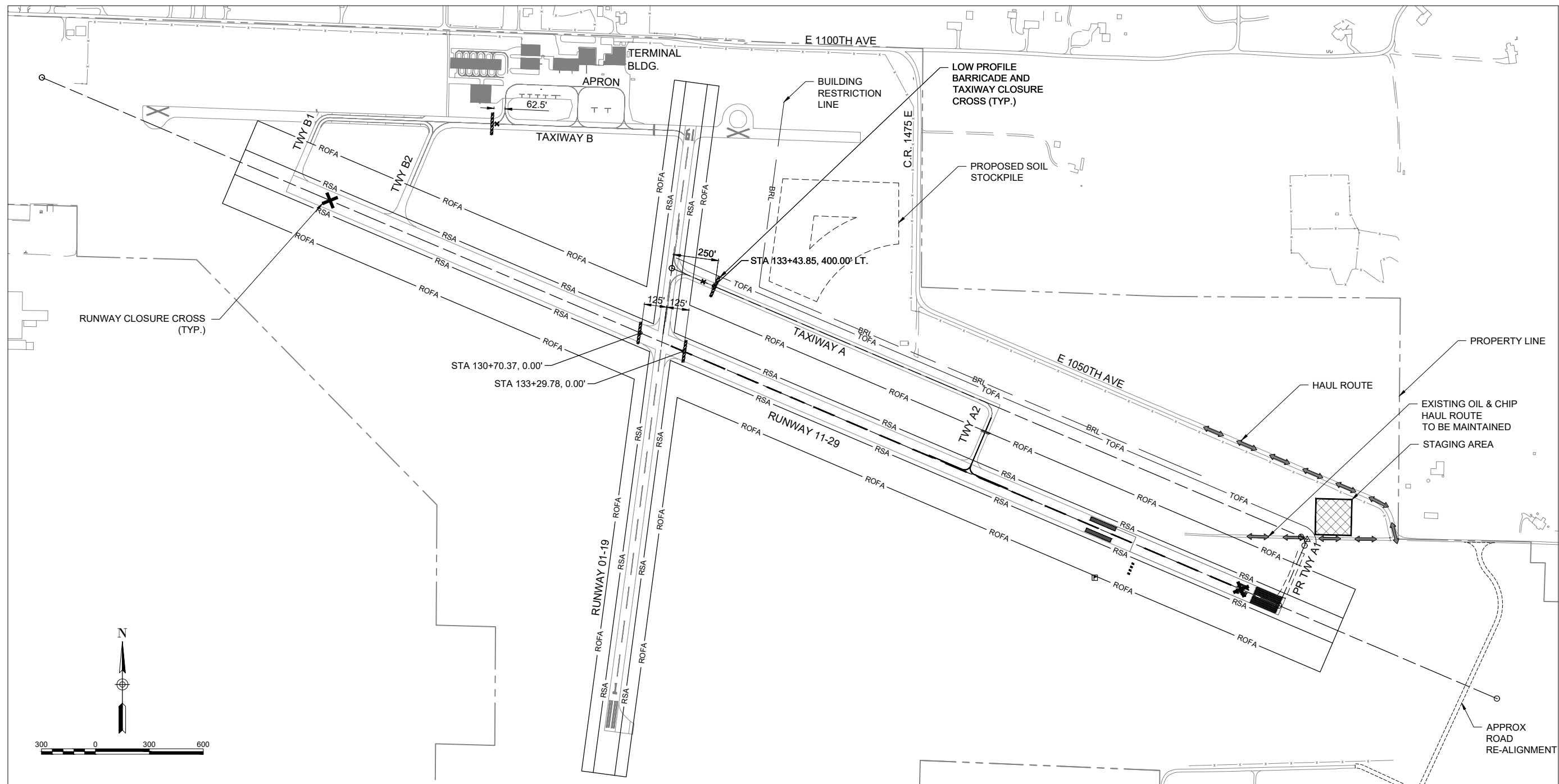
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SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 5A



STAGE 5A NOTES (ADD ALT 1)

- 1. PAVE TAXIWAY A1.

CLOSURES

- 1. RUNWAY 11-29 WILL BE CLOSED.
- 2. TAXIWAY B (PARTIAL), B1, AND B2.
- 3. TAXIWAY A AND A1.

NOTES

- 1. CLOSURES DEPICTED SHALL BE DONE FOR FINAL MARKING, SEEDING, AND MULCHING FOR PROPOSED TAXIWAY A EXTENSION, PROPOSED TAXIWAY A1, AND EXISTING TAXIWAY A2.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

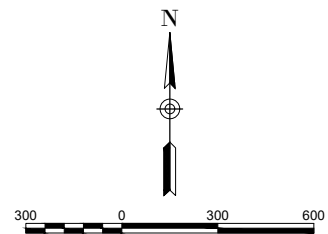
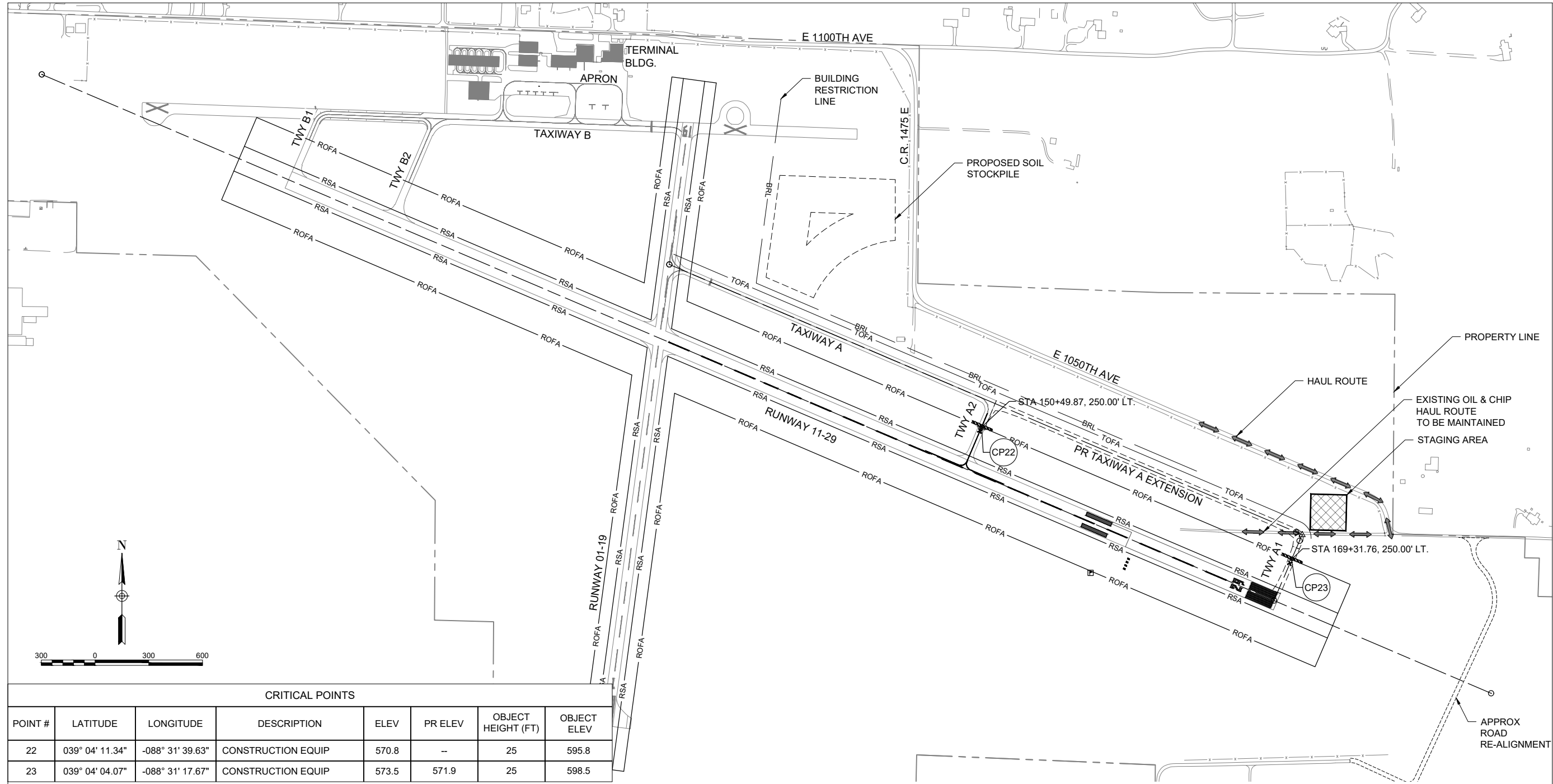
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

TRAFFIC CONTROL AND CONSTRUCTION PHASING - STAGE 5B



CRITICAL POINTS

POINT #	LATITUDE	LONGITUDE	DESCRIPTION	ELEV	PR ELEV	OBJECT HEIGHT (FT)	OBJECT ELEV
22	039° 04' 11.34"	-088° 31' 39.63"	CONSTRUCTION EQUIP	570.8	--	25	595.8
23	039° 04' 04.07"	-088° 31' 17.67"	CONSTRUCTION EQUIP	573.5	571.9	25	598.5

STAGE 5A SCOPE OF WORK (ADD ALT 1)

1. PREPARE LIME MODIFIED SUBGRADE, AGGREGATE DRAINAGE LAYER, AND CRUSHED AGGREGATE BASE COURSE.
2. PAVE TAXIWAY A EXTENSION.
3. REMOVE STAGING AREA.
4. FINAL SEEDING AND MULCHING.

CLOSURES

1. TAXIWAY A AND TAXIWAY A1.

FOR BID

SAFETY NOTES

- 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.
- 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.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE SPECIFIED OR 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.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' OF ANY ACTIVE RUNWAY, WITHIN 62.5' 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.
- 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.
- 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.
- NO CONSTRUCTION EQUIPMENT GREATER THAN THE HEIGHTS SHOWN IN THE CRITICAL POINTS TABLE WILL BE PERMITTED ON THE AIRPORT AT THE RESPECTIVE LOCATIONS WITHOUT THE APPROVAL OF THE AIRPORT MANAGER AND AIRSPACE APPROVAL BY THE FAA.
- 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.
- 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 SWEEPED, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- 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.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- 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.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- 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.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
- 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.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
- UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.
- THE CONTRACTOR SHALL HAVE THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), AS DETAILED IN THE SPECIAL PROVISIONS, SUBMITTED AND APPROVED PRIOR TO BEING ISSUED "NOTICE TO PROCEED".
- ALL RUNWAY/TAXIWAY CLOSURES SHALL BE COORDINATED WITH THE AIRPORT MANAGER A MINIMUM OF 72 HOURS BEFORE THE DESIRED CLOSING TIME. THE AIRPORT MANAGER HAS COMPLETE AUTHORITY IN DETERMINING WHEN THE RUNWAY/TAXIWAY MAY BE CLOSED.

RUNWAY/TAXIWAY CLOSURE PROCEDURES:

- CONTACT THE AIRPORT MANAGEMENT OR ASSIGNED REPRESENTATIVE A MINIMUM OF 72 HOURS BEFORE THE DESIRED CLOSING TIME.
- ISSUANCE OF NOTAM AND DEACTIVATION OF THE APPLICABLE AIRFIELD LIGHTING AND NAVAIDS BY THE AIRPORT MANAGEMENT AND/OR FAA.
- PLACEMENT OF CROSSES AND BARRICADES.
- ONLY AT THE TIME THAT ALL OF THE ABOVE ARE COMPLETED MAY ANY CONSTRUCTION OPERATIONS BEGIN WITHIN THE RUNWAY/TAXIWAY AIR OPERATIONS AREA.

RUNWAY/TAXIWAY RE-OPENING PROCEDURES:

- ENSURE ALL PERSONNEL, EQUIPMENT AND MATERIALS ARE CLEAR OF THE AIR OPERATIONS AREA.
- INSPECT THE AREA FOR LOOSE OR TRACKED DEBRIS, PAVEMENT DROP-OFFS, AND OPEN TRENCHES.
- CONTACT AIRPORT MANAGEMENT OR REPRESENTATIVE FOR FINAL INSPECTION OF THE AREA.
- REMOVE BARRICADES AND CROSSES.
- ACTIVATION OF THE AIRFIELD LIGHTING AND NAVAIDS AND CANCELLATION OF THE NOTAM BY THE AIRPORT MANAGEMENT AND/OR FAA.

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EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING CIVIL DESIGN



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

**IDA NO. 1H2-4982
CONTRACT NO. EF010**

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DESIGN BY: MJD 08/23/2023
DRAWN BY: MJD 09/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

**TRAFFIC CONTROL
AND CONSTRUCTION
PHASING NOTES**

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

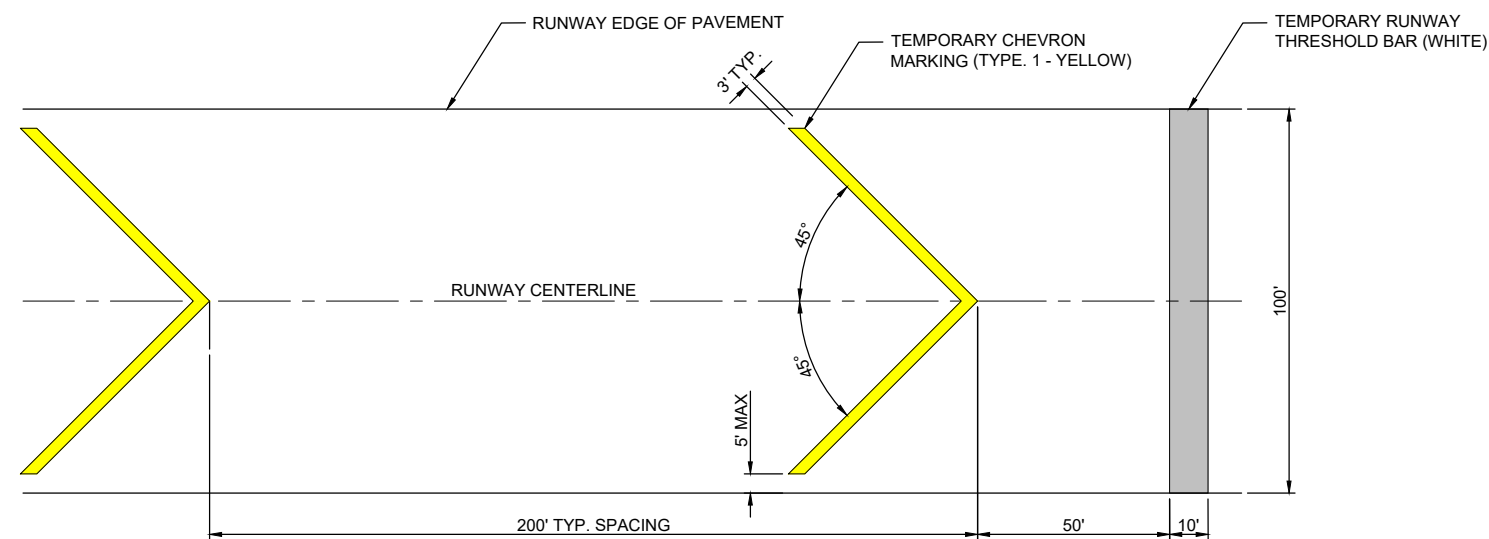
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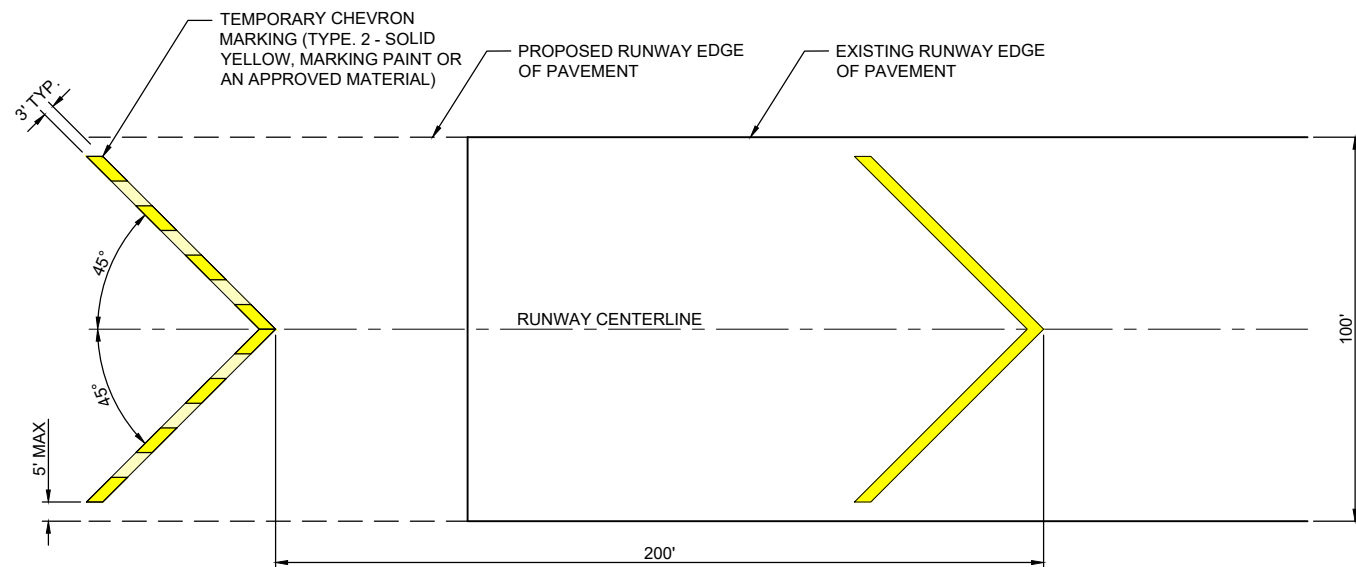
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-101-SFY.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: HLE 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

TRAFFIC CONTROL
AND CONSTRUCTION
PHASING DETAILS

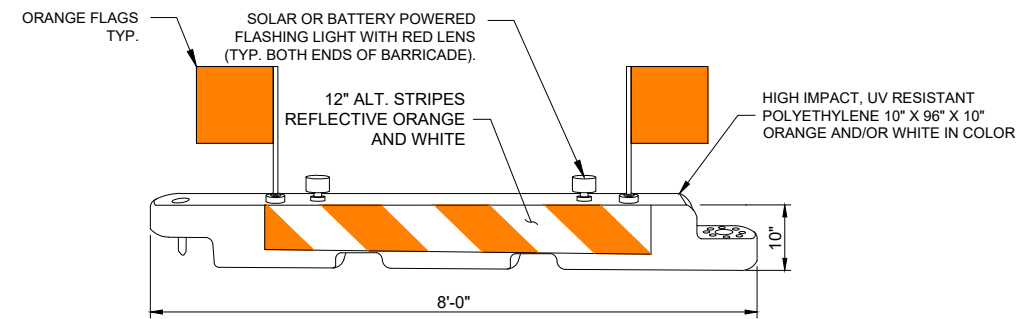


TEMPORARY CHEVRON PAINTMARKINGS (TYPE 1)
NOT TO SCALE



TEMPORARY CHEVRON REFLECTIVE TAPE MARKINGS (TYPE 2)
NOT TO SCALE

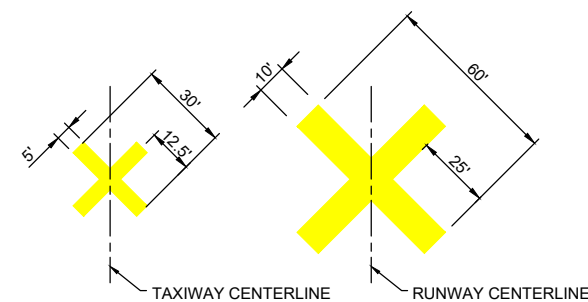
1. THE PROPOSED TEMPORARY CHEVRON MARKING (TYPE 2) WILL BE SOLID AND YELLOW IN COLOR AND CONSTRUCTED OF A SUITABLE MATERIAL APPROVED BY THE AIRPORT MANAGER.
2. THE TEMPORARY CHEVRONS WILL BE PLACED ON THE EXTENSION ONCE THE AGGREGATE HAS BEEN INSTALLED. THE CHEVRONS WILL BE REMOVED AND REPLACED AS SUBSEQUENT PAVING OPERATIONS PROCEED. THE TEMPORARY CHEVRONS WILL BE IN PLACE AT THE END OF EACH WORKING DAY.



LOW PROFILE AIRCRAFT BARRICADE DETAIL

BARRICADE NOTES

1. 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 SPACED END TO END THE WIDTH OF THE PAVEMENT WITH A MAXIMUM SPACING OF 4' BETWEEN ENDS. BARRICADES ARE TO BE SET BACK FROM THE ACTIVE RUNWAY OR TAXIWAY CENTERLINE THE DISTANCE AS SHOWN ON THE PLANS.
3. CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
4. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
5. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
6. THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
7. COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING BARRICADES SHALL BE INCLUDED AS AN INCIDENTAL COST TO THE CONTRACT.



1. TEMPORARY CLOSURE CROSS MARKINGS SHALL BE "AVIATION YELLOW."
2. TEMPORARY CLOSURE CROSS MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
3. COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING CLOSURE CROSSES SHALL BE INCLUDED AS AN INCIDENTAL COST TO THE CONTRACT.

CLOSURE CROSS MARKER DETAIL

NOT TO SCALE

FOR BID



Michael J. Dudas

DATE: 11/17/2023 LICENSE: 11/30/2025
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EXTEND RUNWAY
11-29 AND TAXIWAY A

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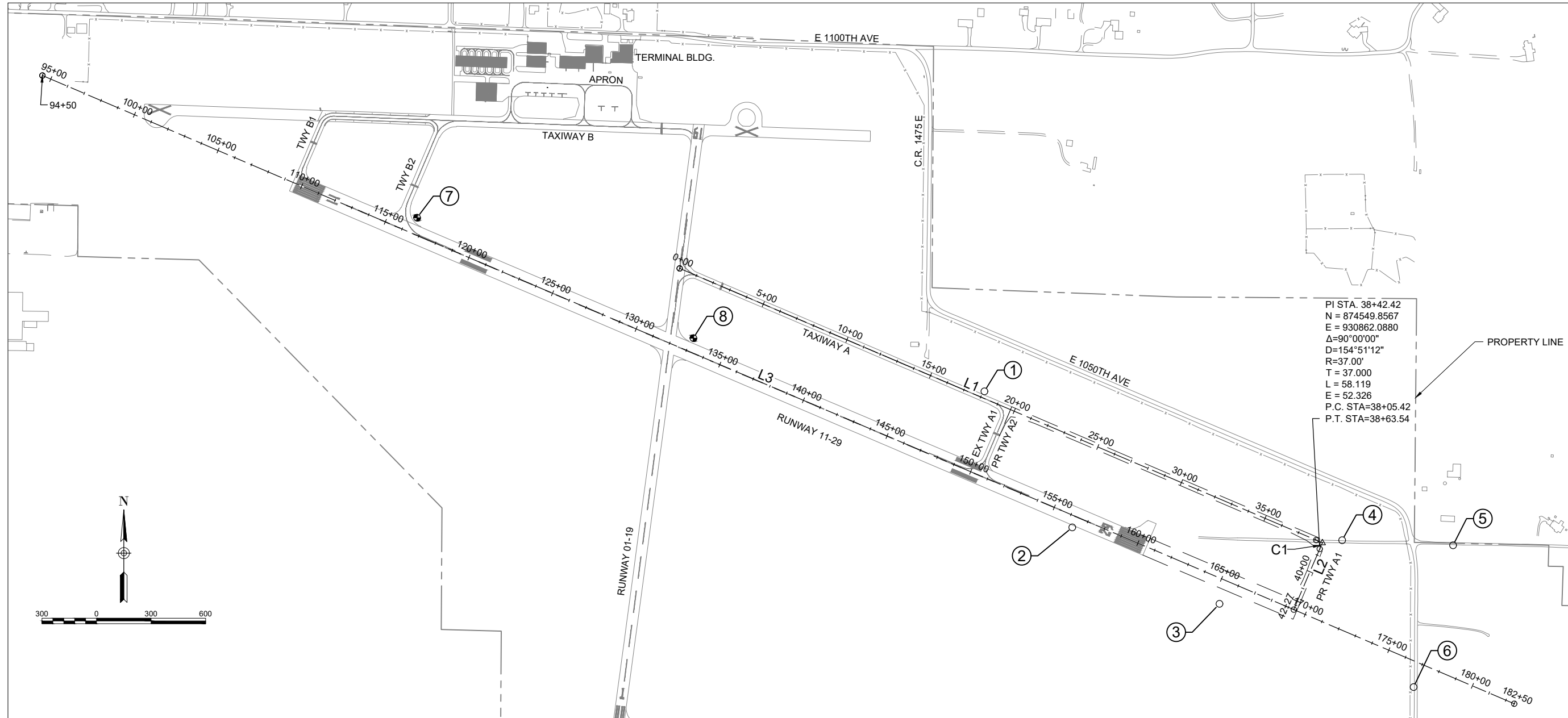
DESIGN BY: MJD 10/11/2023

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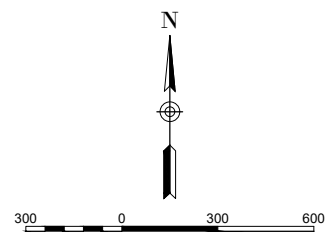
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

ALIGNMENT DATA
SHEET



PI STA. 38+42.42
N = 874549.8567
E = 930862.0880
Δ=90°00'00"
D=154°51'12"
R=37.00'
T = 37.000
L = 58.119
E = 52.326
P.C. STA=38+05.42
P.T. STA=38+63.54



SURVEY CONTROL POINTS				
POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
1	IRON PIN	570.905	875382.578	929003.871
2	IRON PIN	570.262	874634.314	929486.875
3	IRON PIN	571.308	874213.417	930296.181
4	IRON PIN	573.685	874563.579	930970.648
5	IRON PIN	573.051	874535.750	931580.705
6	IRON PIN	571.677	873755.822	931363.577
7	EFFPORT NGS MONUMENT EFFPORT AZ MK NGS MONUMENT	582.600	876337.883	925884.248
8	EFFPORT NGS MONUMENT EFFPORT AZ MK NGS MONUMENT	576.113	875675.221	927403.752

- HORIZONTAL AND VERTICAL CONTROL DATA**
- COORDINATES AS SHOWN HEREON ARE BASED ON STATE PLAN COORDINATES, REFERENCE THE NORTH AMERICAN DATUM OF 1983/2011 ADJUSTED, ILLINOIS EAST ZONE;
 - ELEVATIONS AS SHOWN HEREON REFERENCE NAVD 88 BASED ON A CLOSED LEVEL LOOP FROM NATIONAL GEODETIC SURVEY (NGS) BENCHMARK "EFFPORT AZ MK", ELEVATION=582.6
 - REFERENCE NGS DATA SHEET FOR "EFFPORT AZ MK."
 - SURVEY COMPLETED MAY 16, 2023. CONTRACTOR REQUIRED TO LOCATE AND REFERENCE CENTERLINE AND ESTABLISH BENCHMARKS, AS NECESSARY, TO COMPLETE THE WORK.
 - CONTRACTOR WILL BE REQUIRED TO PROVIDE FINAL AS-BUILT BY A REGISTERED SURVEYOR.

ALIGNMENT DATA TWY-A						
LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	0+00.00	38+05.42	3805.42	113° 07' 28"	876058.892, 927328.388	874564.388, 930828.061
C1	38+05.42	38+63.54	58.12	IN=S66° 52' 32"E OUT=S23° 07' 28"W DEL=90°00'00"	874564.39, 930828.061	874515.829, 930847.557
L2	38+63.54	42+26.54	363.00	203° 07' 28"	874515.829, 930847.557	874181.995, 930704.996

ALIGNMENT DATA RWY-11-29						
LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L3	94+50.00	182+50.00	8800.00	113° 07' 28"	877120.306, 923824.371	873664.281, 931917.324

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

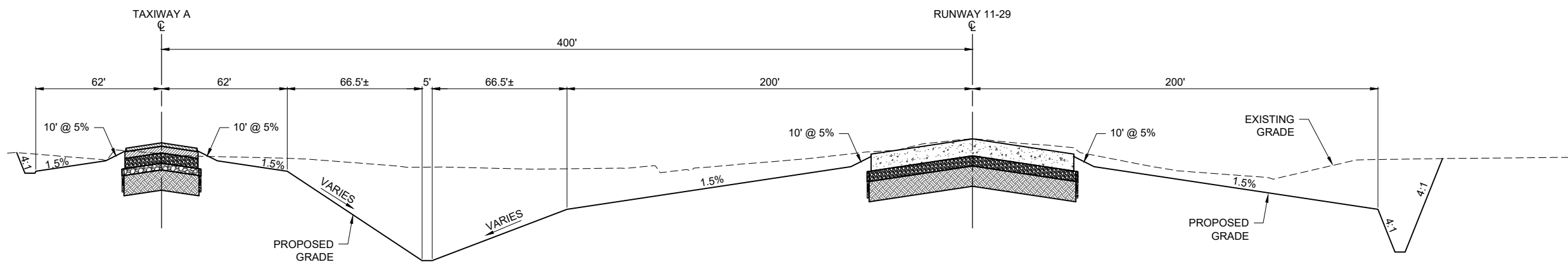
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-301-TYP.DWG
DESIGN BY: MJD 10/20/2023
DRAWN BY: CWS 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

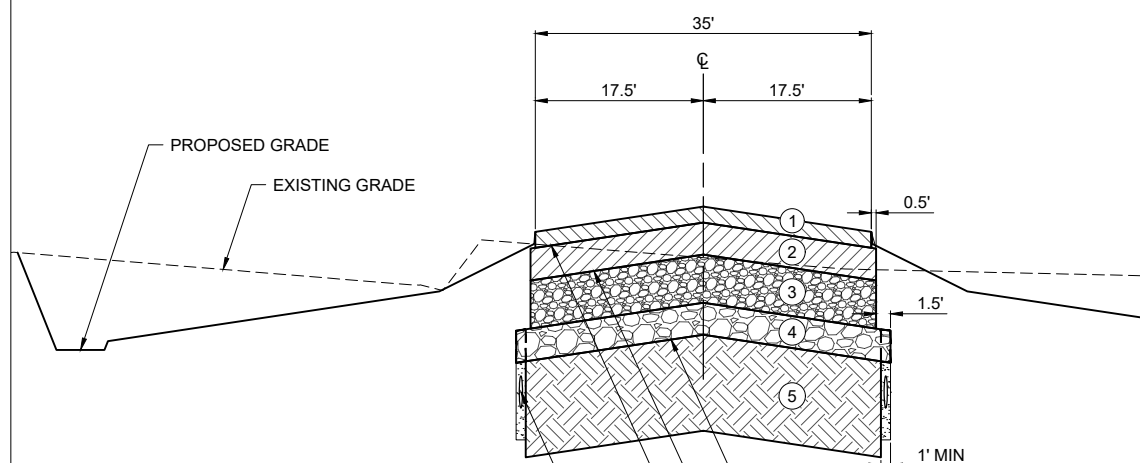
TYPICAL SECTIONS

FOR BID



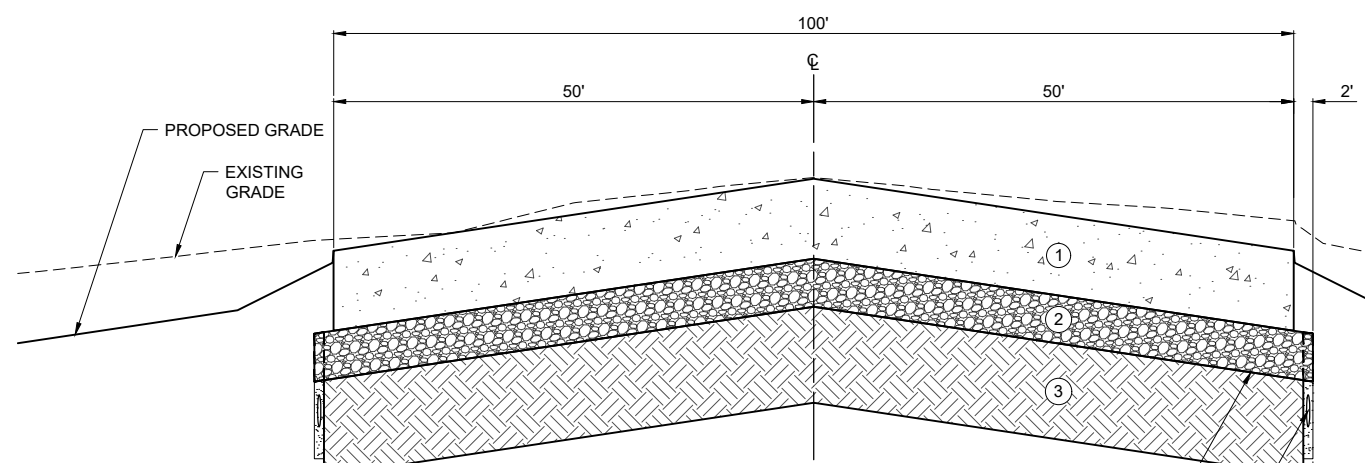
TYPICAL SECTION - PROPOSED RUNWAY / TAXIWAY EXTENSION

NOT TO SCALE



TYPICAL SECTION - PROPOSED TAXIWAY A EXTENSION

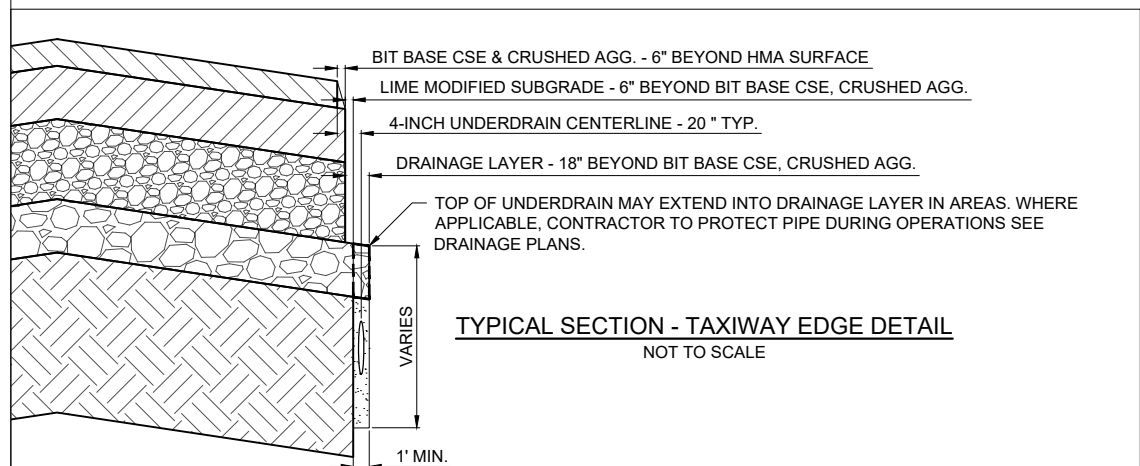
NOT TO SCALE



TYPICAL SECTION - PROPOSED RUNWAY 11-29 EXTENSION

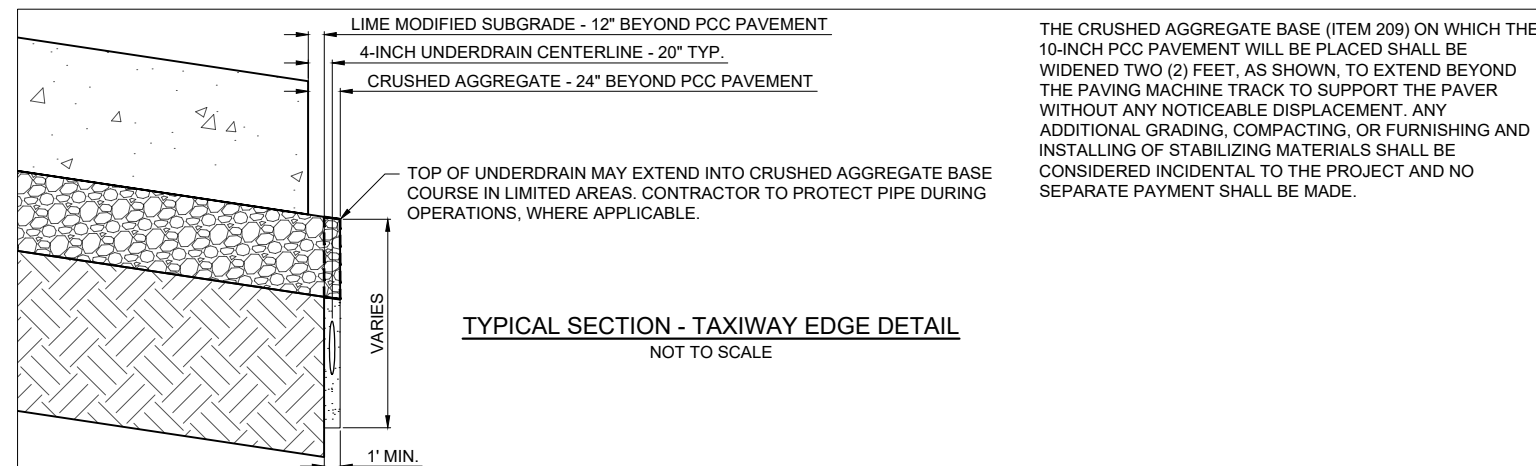
NOT TO SCALE

- ① PR 2-INCH BITUMINOUS SURFACE COURSE (AS401)
 - ② PR 4-INCH BITUMINOUS BASE COURSE (AS403)
 - ③ PR 6-INCH CRUSHED AGGREGATE BASE COURSE (AS209)
 - ④ PR 4-INCH GRANULAR DRAINAGE SUBBASE (AS154604)
 - ⑤ PR 12-INCH LIME MODIFIED SUBGRADE (AS155)
- PR SOIL STABILIZATION FABRIC (AS152540)
 - PR PRIME COAT - 0.35 GAL/SY (AS602)
 - PR TACK COAT - 0.1 GAL/SY (AS603)
 - PR 4-INCH UNDERDRAIN (AS705). SEE DETAILS.



TYPICAL SECTION - TAXIWAY EDGE DETAIL

NOT TO SCALE



TYPICAL SECTION - TAXIWAY EDGE DETAIL

NOT TO SCALE

THE CRUSHED AGGREGATE BASE (ITEM 209) ON WHICH THE 10-INCH PCC PAVEMENT WILL BE PLACED SHALL BE WIDENED TWO (2) FEET, AS SHOWN, TO EXTEND BEYOND THE PAVING MACHINE TRACK TO SUPPORT THE PAVER WITHOUT ANY NOTICEABLE DISPLACEMENT. ANY ADDITIONAL GRADING, COMPACTING, OR FURNISHING AND INSTALLING OF STABILIZING MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.

DEC 04, 2023 9:40 AM ENGELO1809
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Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: C-111-REM.DWG

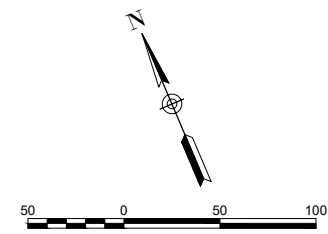
DESIGN BY: MJD 10/11/2023

DRAWN BY: HLE 10/11/2023

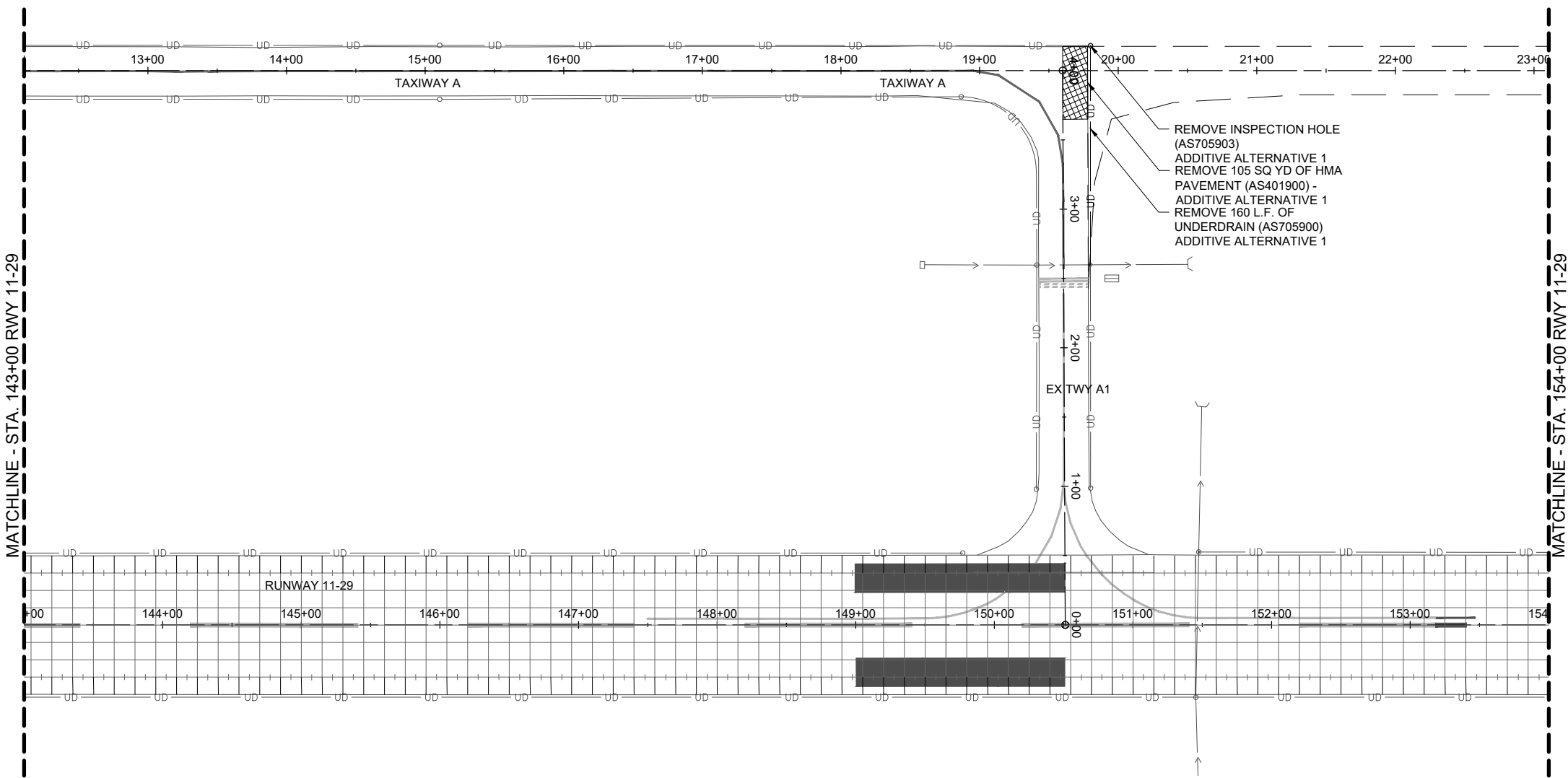
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

EXISTING SITE
DEMOLITION PLAN
-STA. 143+00 TO STA.
154+00



- LEGEND:**
- OHE— EXISTING OVERHEAD ELECTRIC
 - E— EXISTING ELECTRIC
 - G— EXISTING GAS
 - FO— EXISTING FIBER OPTIC
 - W— EXISTING WATER
 - >— EXISTING STORM SEWER
 - X— EXISTING FENCE
 - [Solid Box] EXISTING PAVEMENT
 - [Dashed Box] PROPOSED PAVEMENT
 - [Dotted Box] MARKING REMOVAL
 - [Dashed Line] APPROX. ROAD RELOCATION
 - [Cross-hatch Box] FULL-DEPTH PAVEMENT REMOVAL
 - [Diagonal-hatch Box] PANEL REPLACEMENT (ADD. ALT. 2)
 - UD— UNDERDRAIN REMOVAL
 - x— FENCE REMOVAL



MATCHLINE - STA. 143+00 RWY 11-29

MATCHLINE - STA. 154+00 RWY 11-29

DEC 04, 2023 9:41 AM ENGELO1809
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FOR BID



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

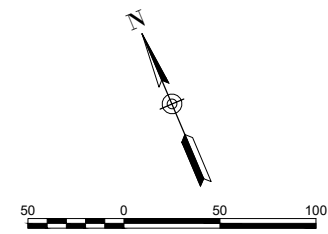
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

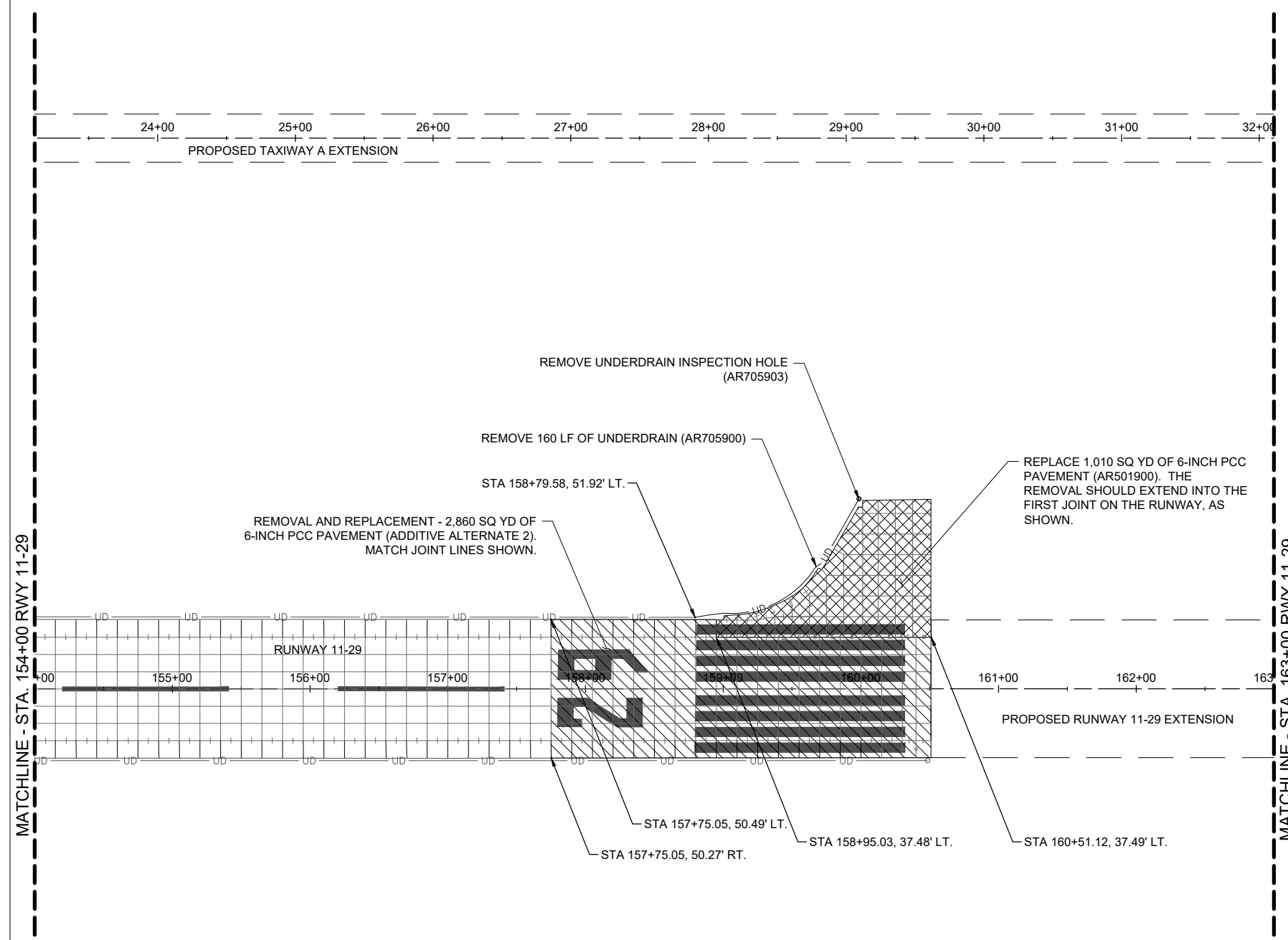
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-111-REM.DWG
DESIGN BY: MJD 10/11/2023
DRAWN BY: HLE 10/11/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

EXISTING SITE
DEMOLITION PLAN -
STA. 154+00 TO STA.
163+00



- LEGEND:**
- OHE— EXISTING OVERHEAD ELECTRIC
 - E— EXISTING ELECTRIC
 - G— EXISTING GAS
 - FO— EXISTING FIBER OPTIC
 - W— EXISTING WATER
 - >— EXISTING STORM SEWER
 - X— EXISTING FENCE
 - [Solid Box] EXISTING PAVEMENT
 - [Dashed Box] PROPOSED PAVEMENT
 - [Dotted Box] MARKING REMOVAL
 - [Dashed Line] APPROX. ROAD RELOCATION
 - [Cross-hatch Box] FULL-DEPTH PAVEMENT REMOVAL
 - [Diagonal-hatch Box] PANEL REPLACEMENT (ADD. ALT. 2)
 - UD— UNDERDRAIN REMOVAL
 - X— FENCE REMOVAL



DEC 04, 2023 9:41 AM ENG01009
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FOR BID



Michael J. Dudas

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: C-111-REM.DWG

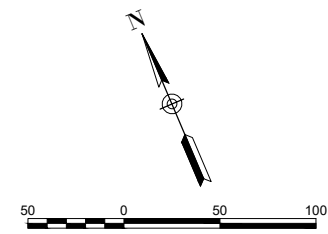
DESIGN BY: MJD 10/11/2023

DRAWN BY: HLE 10/11/2023

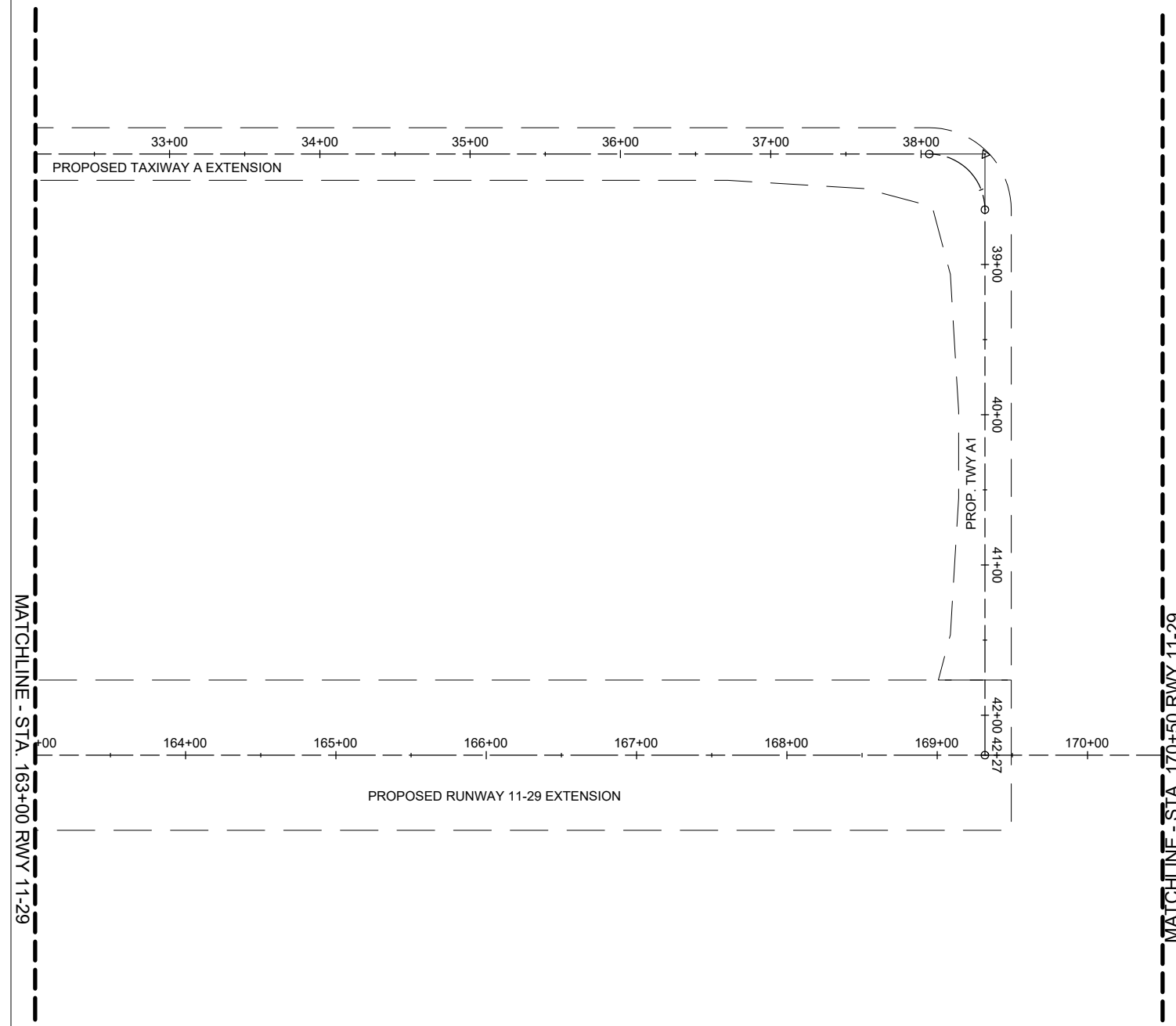
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

EXISTING SITE
DEMOLITION PLAN -
STA. 163+00 TO STA.
170+50



- LEGEND:**
- OHE— EXISTING OVERHEAD ELECTRIC
 - E— EXISTING ELECTRIC
 - G— EXISTING GAS
 - FO— EXISTING FIBER OPTIC
 - W— EXISTING WATER
 - >— EXISTING STORM SEWER
 - X— EXISTING FENCE
 - [Solid Box] EXISTING PAVEMENT
 - [Dashed Box] PROPOSED PAVEMENT
 - [Dotted Box] MARKING REMOVAL
 - [Dashed Line] APPROX. ROAD RELOCATION
 - [Cross-hatch Box] FULL-DEPTH PAVEMENT REMOVAL
 - [Diagonal-hatch Box] PANEL REPLACEMENT (ADD. ALT. 2)
 - ud— UNDERDRAIN REMOVAL
 - x— FENCE REMOVAL



DEC 04, 2023 9:41 AM ENGELO1809
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FOR BID



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

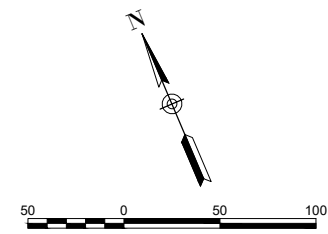
IDA NO. 1H2-4982
CONTRACT NO. EF010

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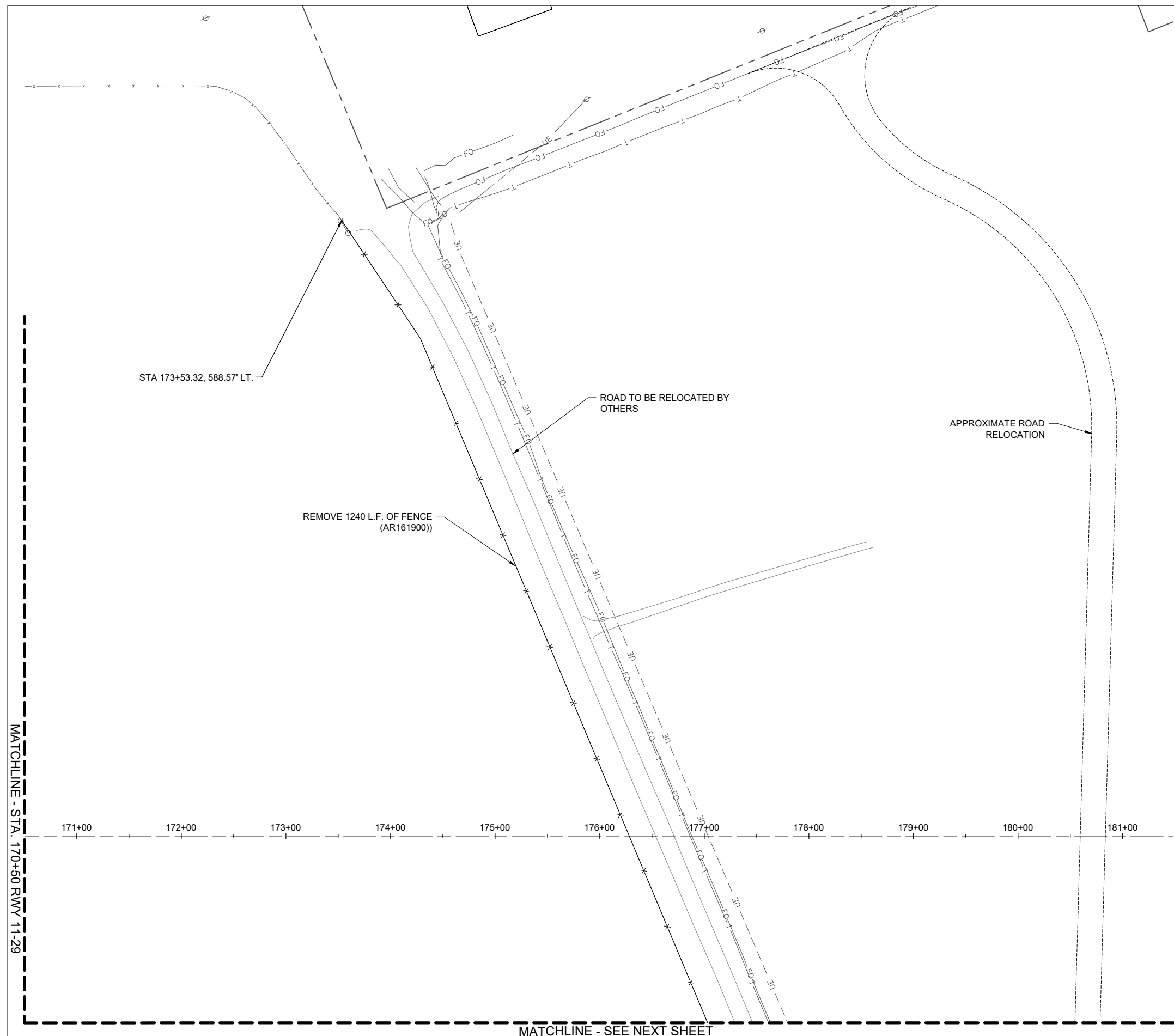
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-111-REM.DWG
DESIGN BY: MJD 10/11/2023
DRAWN BY: HLE 10/11/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

EXISTING SITE
DEMOLITION PLAN -
STA. 170+50 TO STA.
181+50 NORTH



- LEGEND:**
- OHE— EXISTING OVERHEAD ELECTRIC
 - E— EXISTING ELECTRIC
 - G— EXISTING GAS
 - FO— EXISTING FIBER OPTIC
 - W— EXISTING WATER
 - >— EXISTING STORM SEWER
 - X— EXISTING FENCE
 - [Solid Line] EXISTING PAVEMENT
 - [Dashed Line] PROPOSED PAVEMENT
 - [Dotted Line] MARKING REMOVAL
 - [Dashed Line] APPROX. ROAD RELOCATION
 - [Cross-hatch] FULL-DEPTH PAVEMENT REMOVAL
 - [Diagonal Hatch] PANEL REPLACEMENT (ADD. ALT. 2)
 - ud— UNDERDRAIN REMOVAL
 - x— FENCE REMOVAL



MATCHLINE - STA. 170+50 R/WY 11-29

MATCHLINE - SEE NEXT SHEET

FOR BID



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: C-111-REM.DWG

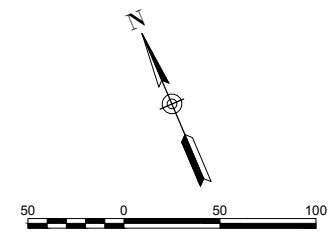
DESIGN BY: MJD 10/11/2023

DRAWN BY: HLE 10/11/2023

REVIEWED BY: MJD 11/17/2023

SHEET TITLE

EXISTING SITE
DEMOLITION PLAN -
STA. 170+50 TO STA.
181+50 SOUTH



MATCHLINE - SEE PREVIOUS SHEET

REMOVE 1240 L.F. OF FENCE
(AR161900))

ROAD TO BE RELOCATED BY
OTHERS

APPROXIMATE ROAD
RELOCATION

STA 178+55.61, 541.76' RT.

LEGEND:

- OHE— EXISTING OVERHEAD ELECTRIC
- E— EXISTING ELECTRIC
- G— EXISTING GAS
- FO— EXISTING FIBER OPTIC
- W— EXISTING WATER
- >— EXISTING STORM SEWER
- X— EXISTING FENCE
- ▭ EXISTING PAVEMENT
- ▭ PROPOSED PAVEMENT
- - - MARKING REMOVAL
- - - APPROX. ROAD RELOCATION
- ▨ FULL-DEPTH PAVEMENT REMOVAL
- ▨ PANEL REPLACEMENT (ADD. ALT. 2)
- UD— UNDERDRAIN REMOVAL
- X— FENCE REMOVAL

1025th AVE.

COUNTY RD. 1500 E



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: C-121-CON.DWG

DESIGN BY: MJD 10/11/2023

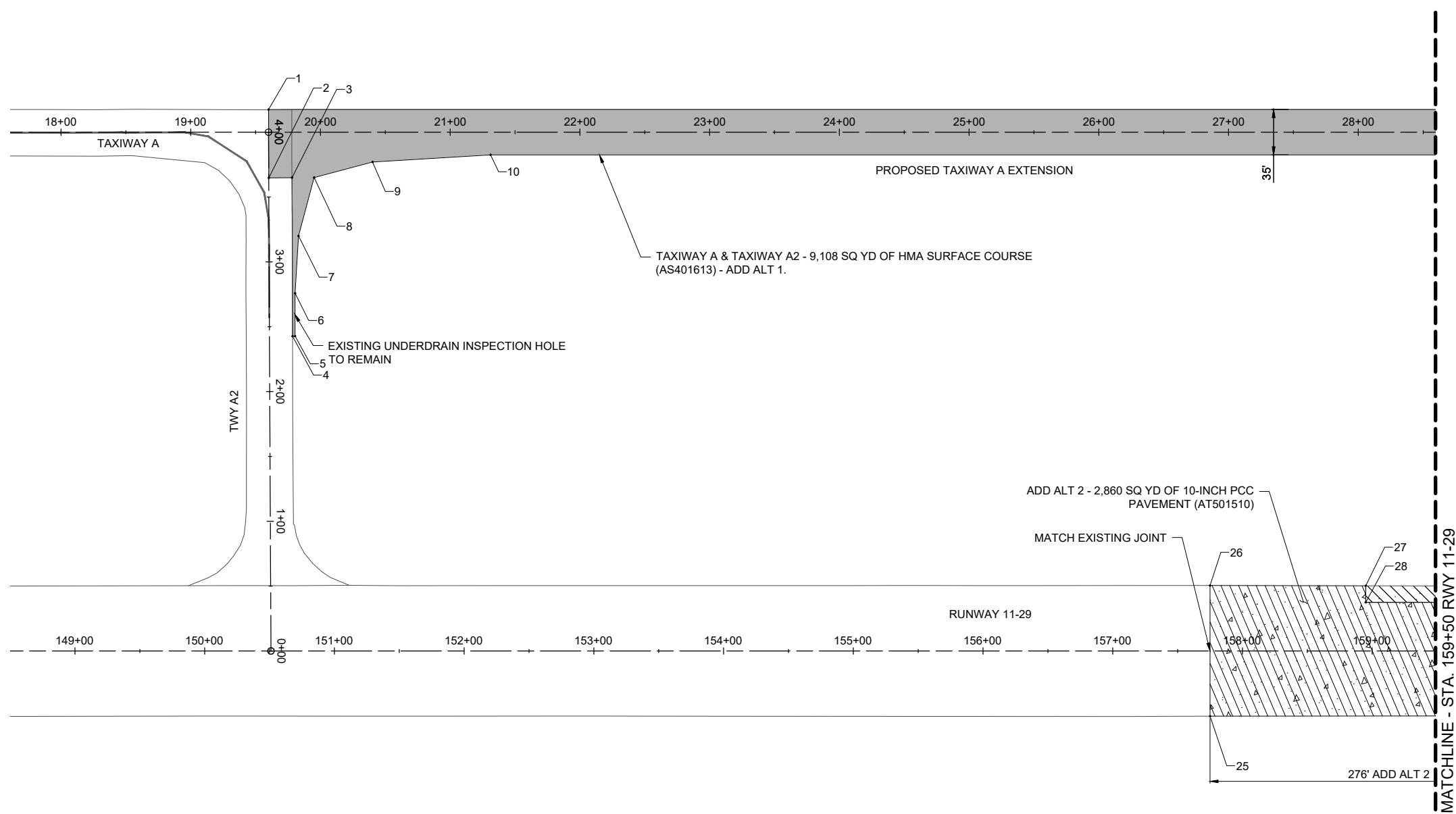
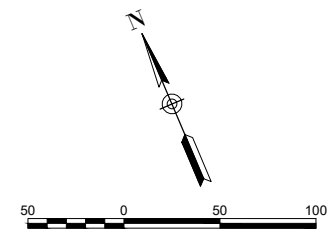
DRAWN BY: HLE 10/11/2023

REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED
CONSTRUCTION
PLAN - STA. 148+50
TO STA. 159+50

FOR BID



- LEGEND:**
- EXISTING PAVEMENT
 - PROPOSED HMA PAVEMENT (ADD ALT 1)
 - PROPOSED 10-INCH PCC PAVEMENT
 - PROPOSED PCC PAVEMENT REPAIR (ADD ALT 2)
 - PROPOSED PCC PAVEMENT TO MATCH EXISTING (10-INCH IF ADD ALT 2 IS AWARDED)

RUNWAY PAVEMENT LAYOUT (BASE BID)			
POINT #	DESCRIPTION	NORTHING	EASTING
19	EDGE OF PAVEMENT	874221.1051	930740.7264
23	EDGE OF PAVEMENT	874129.1397	930701.4534
24	EDGE OF PAVEMENT	874481.9630	929875.2490
27	EDGE OF PAVEMENT	874635.3716	929771.3391
28	EDGE OF PANEL REMOVAL	874623.6188	929766.2921
29	EDGE OF PANEL REMOVAL	874562.4177	929909.6064

TAXIWAY PAVEMENT LAYOUT (ADD ALT 1)			
POINT #	DESCRIPTION	NORTHING	EASTING
24	EDGE OF PAVEMENT	874481.9630	929875.2490
25	EDGE OF PAVEMENT	874590.0416	929621.4863
26	EDGE OF PAVEMENT	874682.6993	929661.0500
27	EDGE OF PAVEMENT	874635.3716	929771.3391
28	EDGE OF PANEL REMOVAL	874623.6188	929766.2921
29	EDGE OF PANEL REMOVAL	874562.4177	929909.6064

TAXIWAY PAVEMENT LAYOUT (ADD ALT 1)			
POINT #	DESCRIPTION	NORTHING	EASTING
1	EDGE OF PAVEMENT	875305.1916	929137.6770
2	EDGE OF PAVEMENT	875256.6819	929117.2210
3	EDGE OF PAVEMENT	875249.8212	929133.7342
4	EDGE OF PAVEMENT	875137.2410	929086.0597
5	EDGE OF PAVEMENT	875136.4556	929087.8990
6	EDGE OF PAVEMENT	875166.8877	929100.8948
7	EDGE OF PAVEMENT	875206.5040	929120.7186
8	EDGE OF PAVEMENT	875243.1756	929149.4273
9	EDGE OF PAVEMENT	875236.5386	929195.5245
10	EDGE OF PAVEMENT	875205.8583	929281.3730
11	EDGE OF PAVEMENT	874600.9196	930697.9544
12	EDGE OF PAVEMENT	874560.1230	930779.4829

TAXIWAY PAVEMENT LAYOUT (ADD ALT 1)			
POINT #	DESCRIPTION	NORTHING	EASTING
13	EDGE OF PAVEMENT	874531.4143	930816.1545
14	EDGE OF PAVEMENT	874485.3172	930809.5175
15	EDGE OF PAVEMENT	874399.4687	930778.8372
16	EDGE OF PAVEMENT	874346.1287	930756.0588
17	EDGE OF PAVEMENT	874264.6003	930715.2623
18	EDGE OF PAVEMENT	874240.1525	930696.1232
19	EDGE OF PAVEMENT	874221.1051	930740.7264
20	EDGE OF PAVEMENT	874508.9567	930863.6509
21	EDGE OF PAVEMENT	874580.4816	930834.9336
22	RADIUS CENTER POINT	874530.3605	930813.5298



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

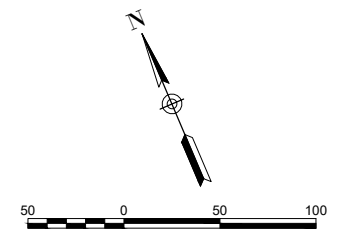
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

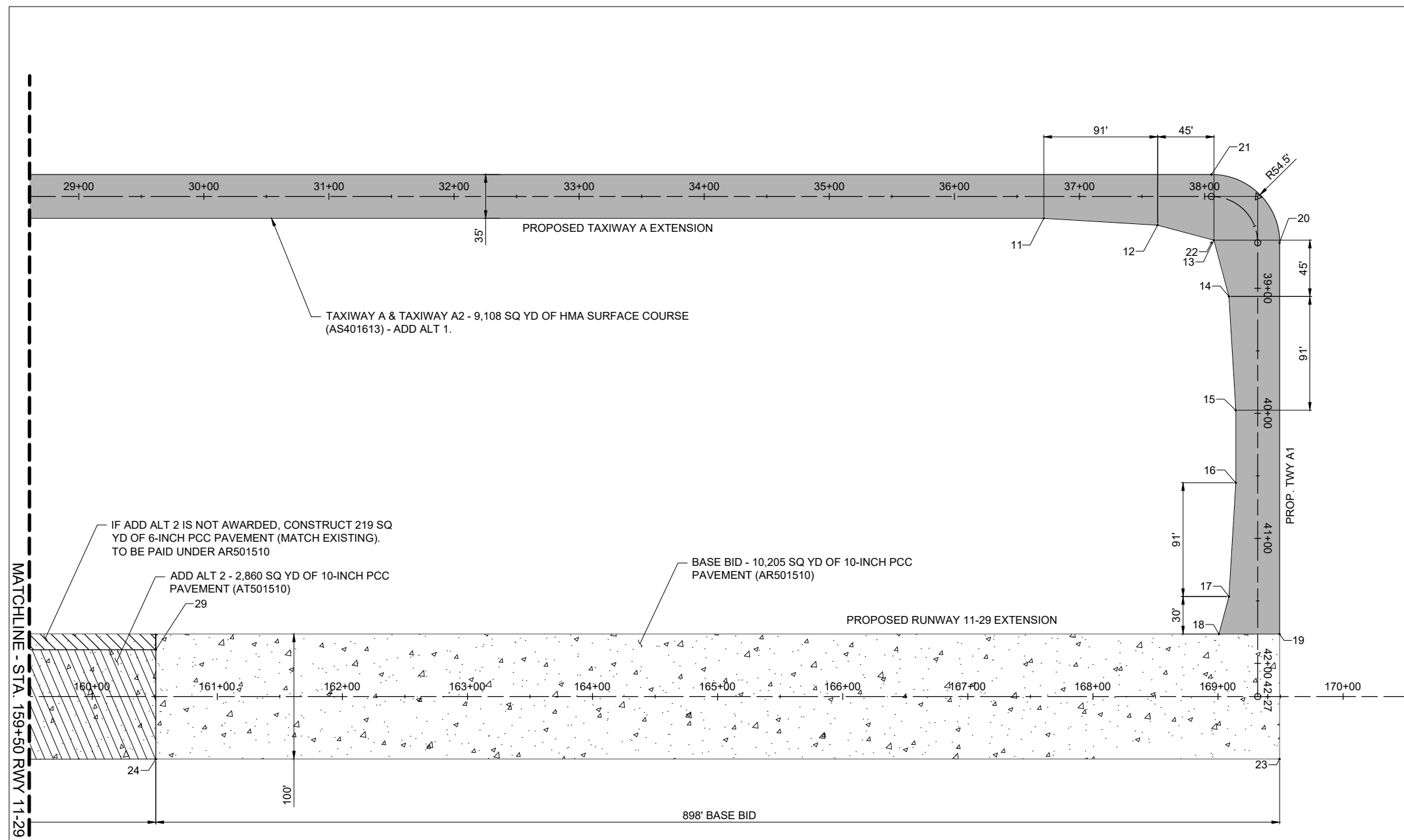
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-121-CON.DWG
DESIGN BY: MJD 10/11/2023
DRAWN BY: HLE 10/11/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED
CONSTRUCTION
PLAN - STA. 159+50
TO STA. 170+50



- LEGEND:**
- EXISTING PAVEMENT
 - PROPOSED HMA PAVEMENT (ADD ALT 1)
 - PROPOSED 10-INCH PCC PAVEMENT
 - PROPOSED PCC PAVEMENT REPAIR (ADD ALT 2)
 - PROPOSED PCC PAVEMENT TO MATCH EXISTING (10-INCH IF ADD ALT 2 IS AWARDED)



FOR BID



Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A

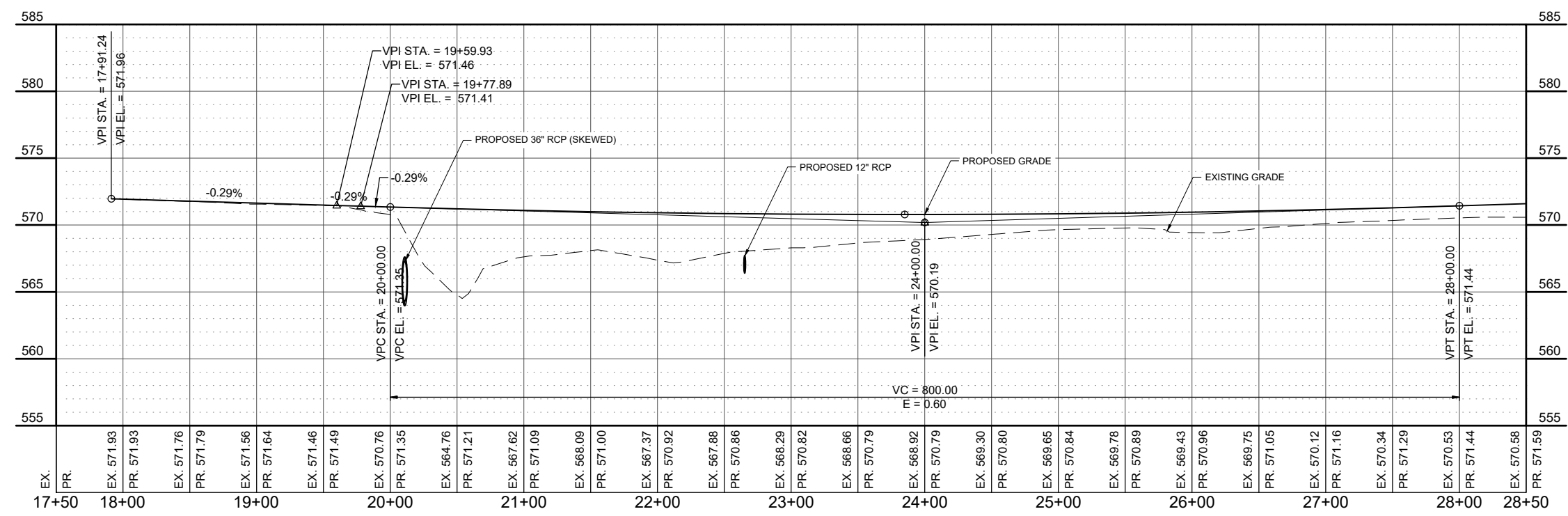
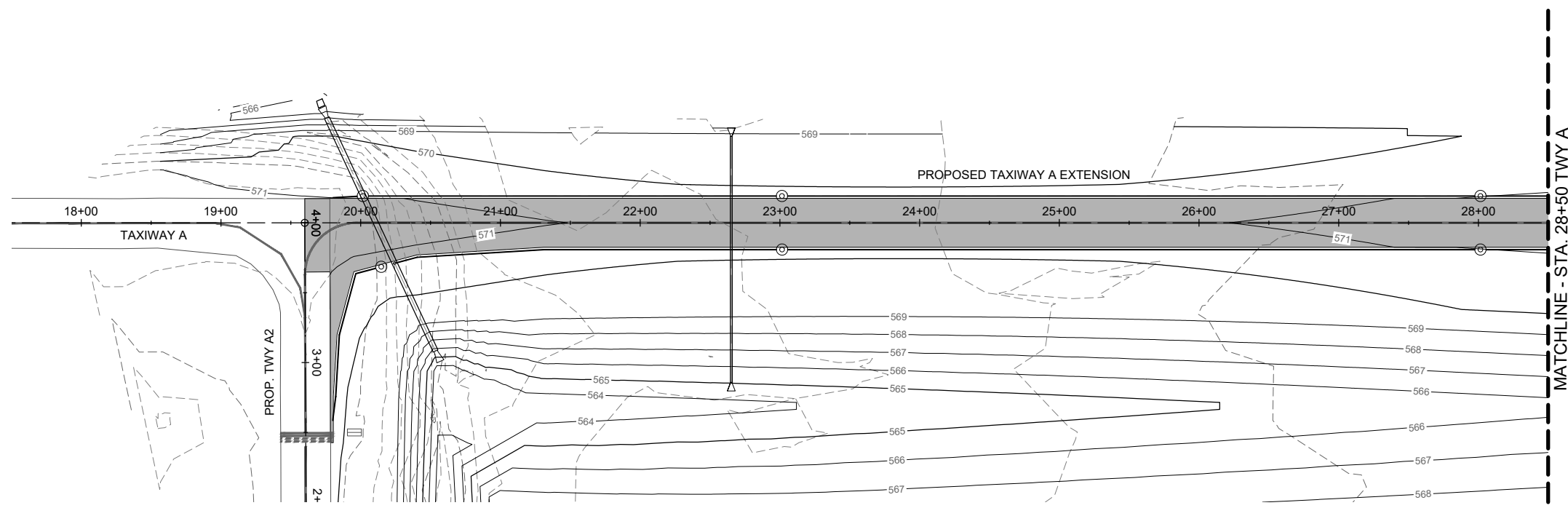
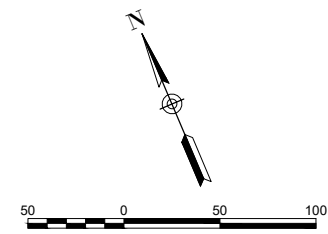
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CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-701-PNP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: HLE 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED PLAN
AND PROFILE TWY A
- STA. 17+50 TO STA.
28+50



DEC 04, 2023 9:44 AM ENG01009
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FOR BID



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

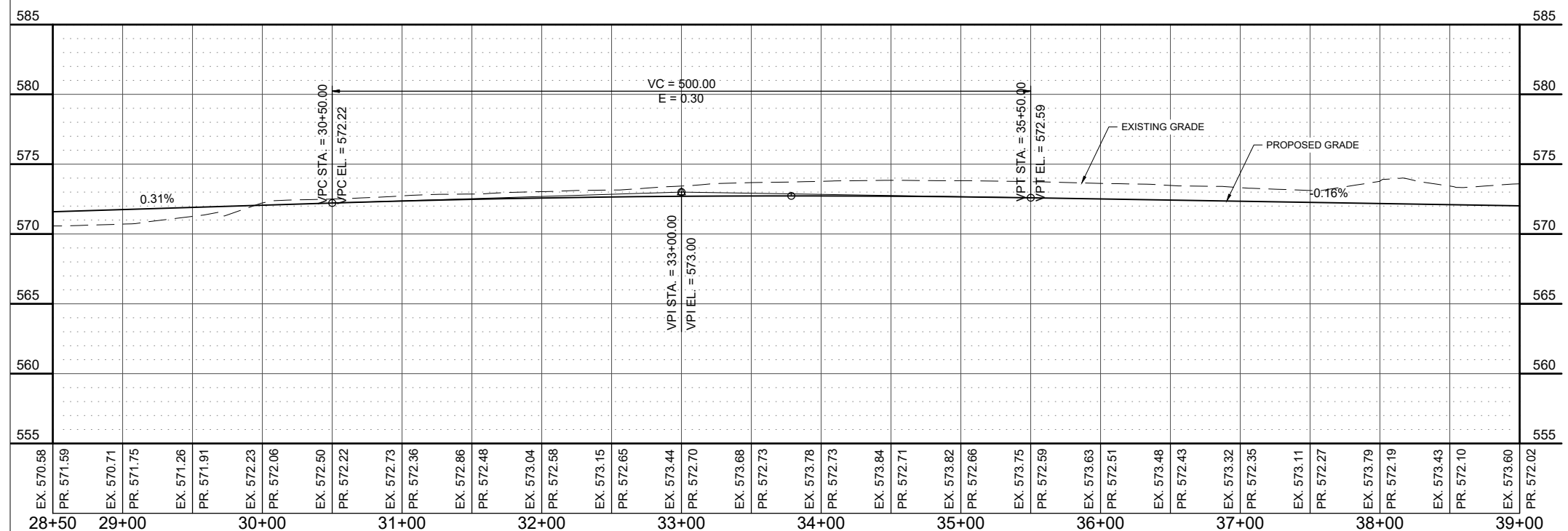
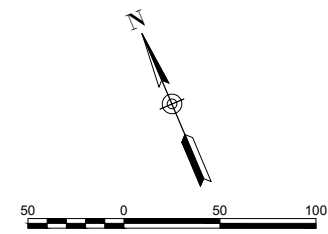
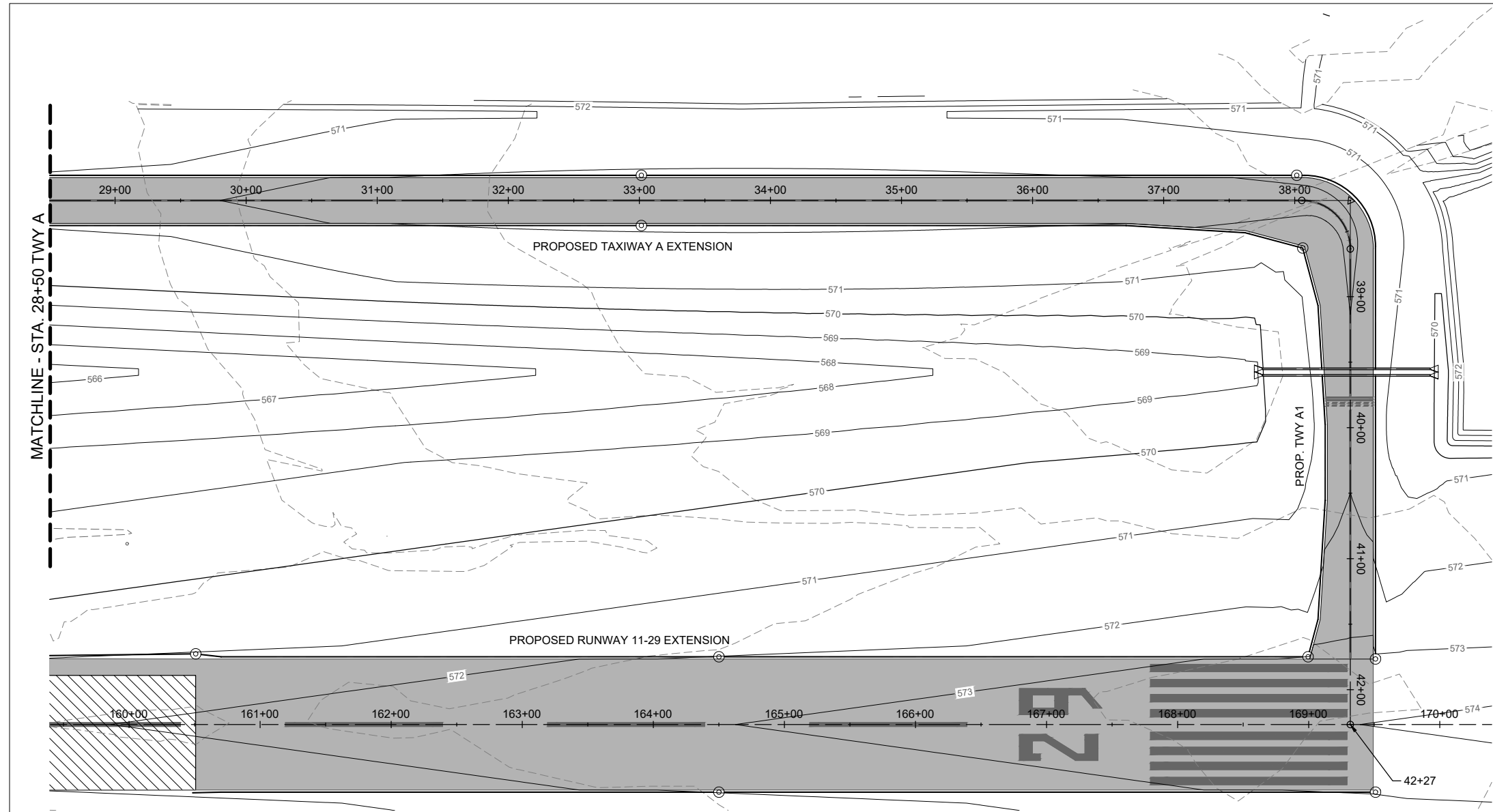
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CONTRACT NO. EF010

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SHEET TITLE

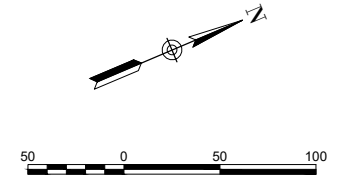
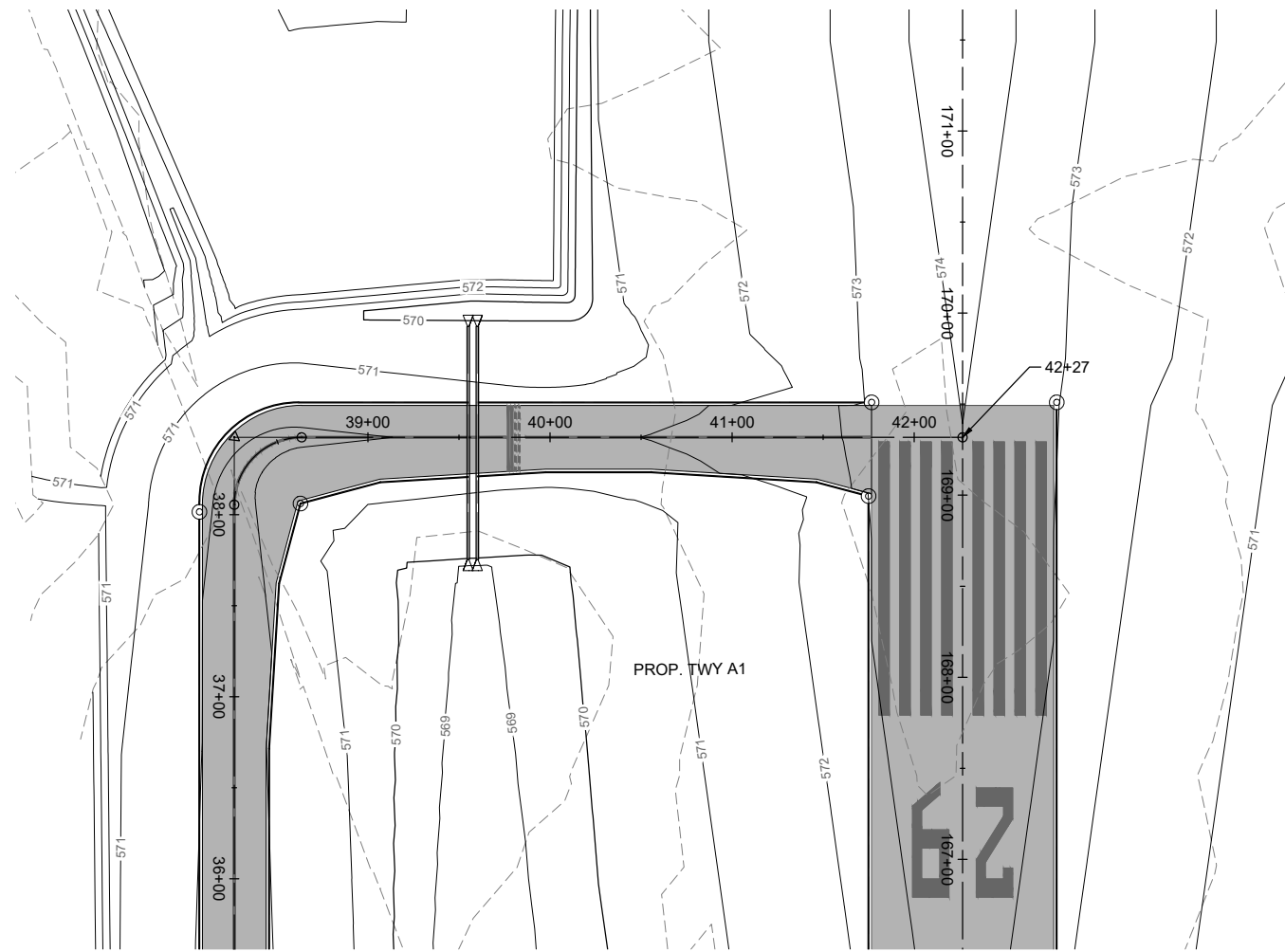
**PROPOSED PLAN
AND PROFILE TWY A
- STA. 28+50 TO STA.
39+00**



Station	Existing Elevation	Proposed Elevation
28+50	EX. 570.58	PR. 571.59
29+00	EX. 570.71	PR. 571.75
30+00	EX. 571.26	PR. 571.91
30+50	EX. 572.50	PR. 572.22
31+00	EX. 572.73	PR. 572.36
32+00	EX. 572.86	PR. 572.48
33+00	EX. 573.04	PR. 572.58
34+00	EX. 573.15	PR. 572.65
35+00	EX. 573.44	PR. 572.70
36+00	EX. 573.68	PR. 572.73
37+00	EX. 573.78	PR. 572.73
38+00	EX. 573.84	PR. 572.71
39+00	EX. 573.82	PR. 572.66
39+00	EX. 573.75	PR. 572.59
39+00	EX. 573.63	PR. 572.51
39+00	EX. 573.48	PR. 572.43
39+00	EX. 573.32	PR. 572.35
39+00	EX. 573.11	PR. 572.27
39+00	EX. 573.79	PR. 572.19
39+00	EX. 573.43	PR. 572.10
39+00	EX. 573.60	PR. 572.02

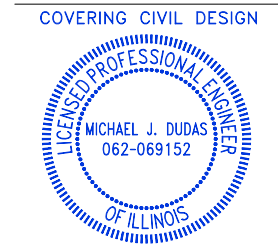
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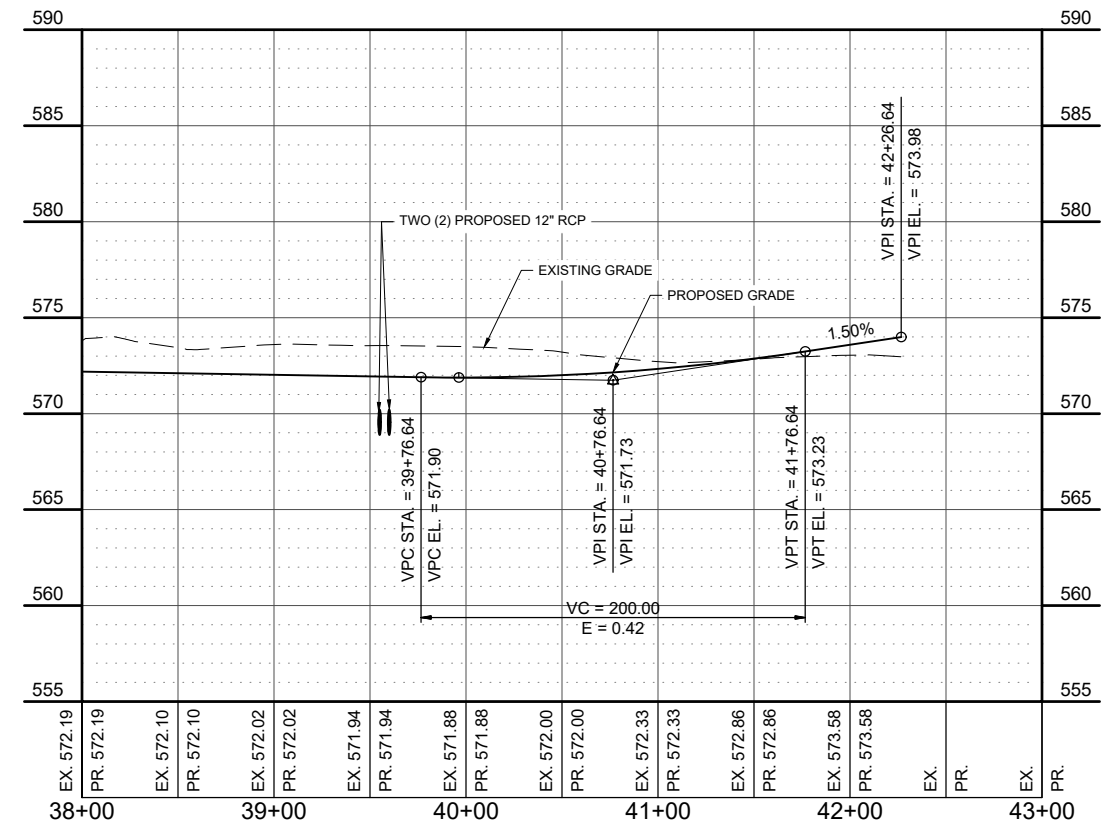
EFFINGHAM COUNTY AIRPORT
 COMMISSION
 Effingham County Memorial Airport
 14449 East 1100th Ave.
 Effingham, Illinois 62401



Michael J. Dudas

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

EXTEND RUNWAY
 11-29 AND TAXIWAY A
 IDA NO. 1H2-4982
 CONTRACT NO. EF010



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
 PROJECT NO: 22A0004D
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 DESIGN BY: MJD 10/16/2023
 DRAWN BY: HLE 10/16/2023
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SHEET TITLE

PROPOSED PLAN
 AND PROFILE TWY A
 - STA. 38+00 TO STA.
 42+27

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**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

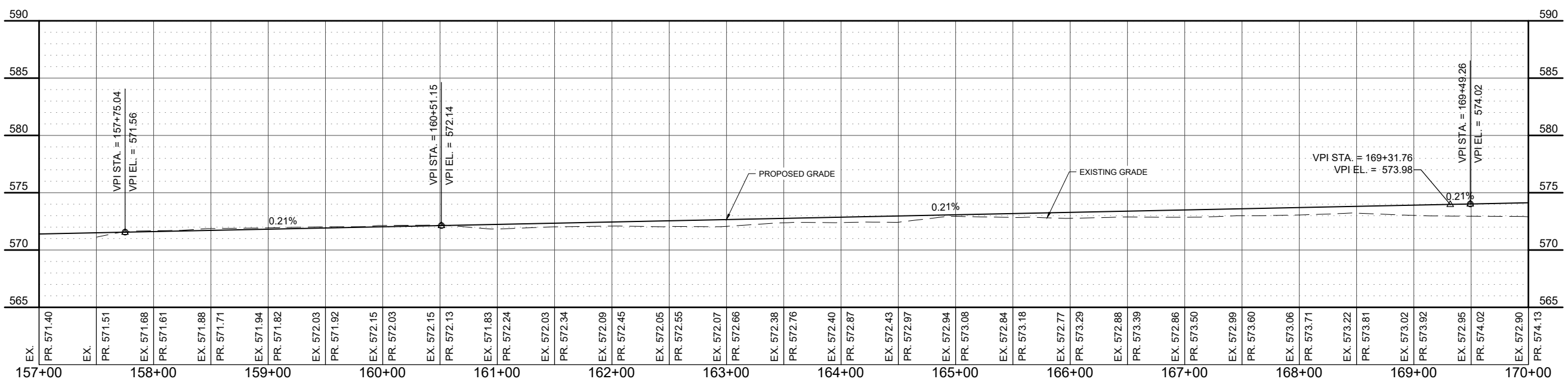
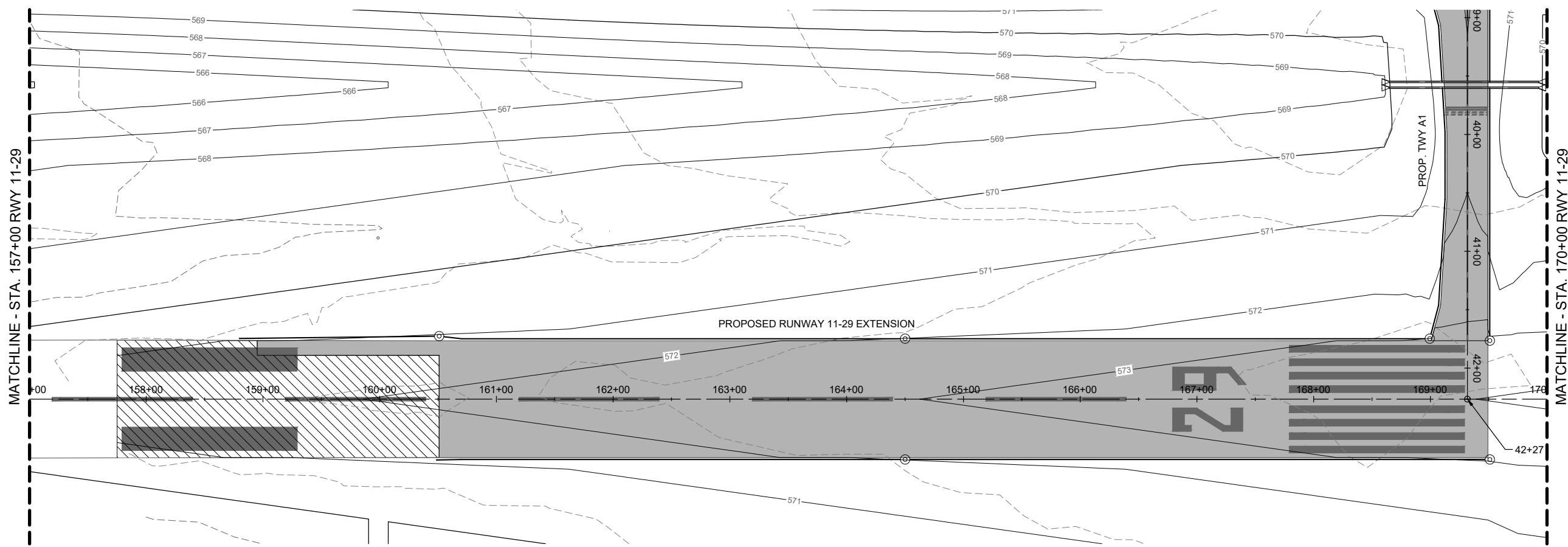
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-701-PNP.DWG
DESIGN BY: MJD 10/16/2023
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SHEET TITLE

**PROPOSED PLAN
AND PROFILE RWY
11-29 - STA. 157+00
TO STA. 170+00**

FOR BID



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Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

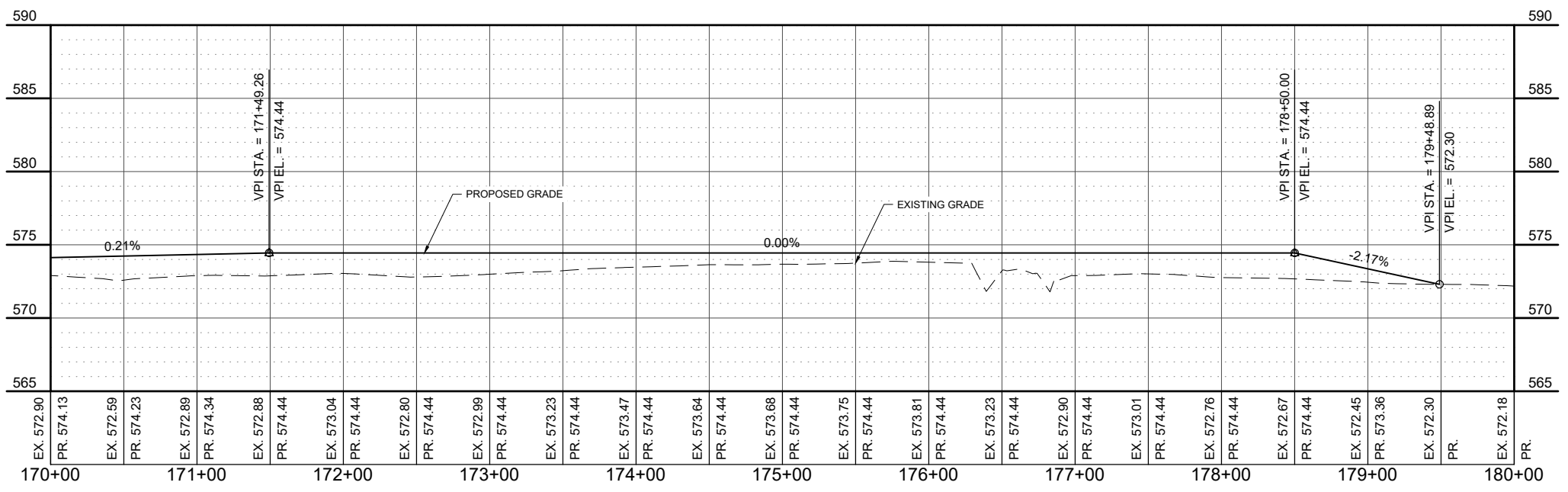
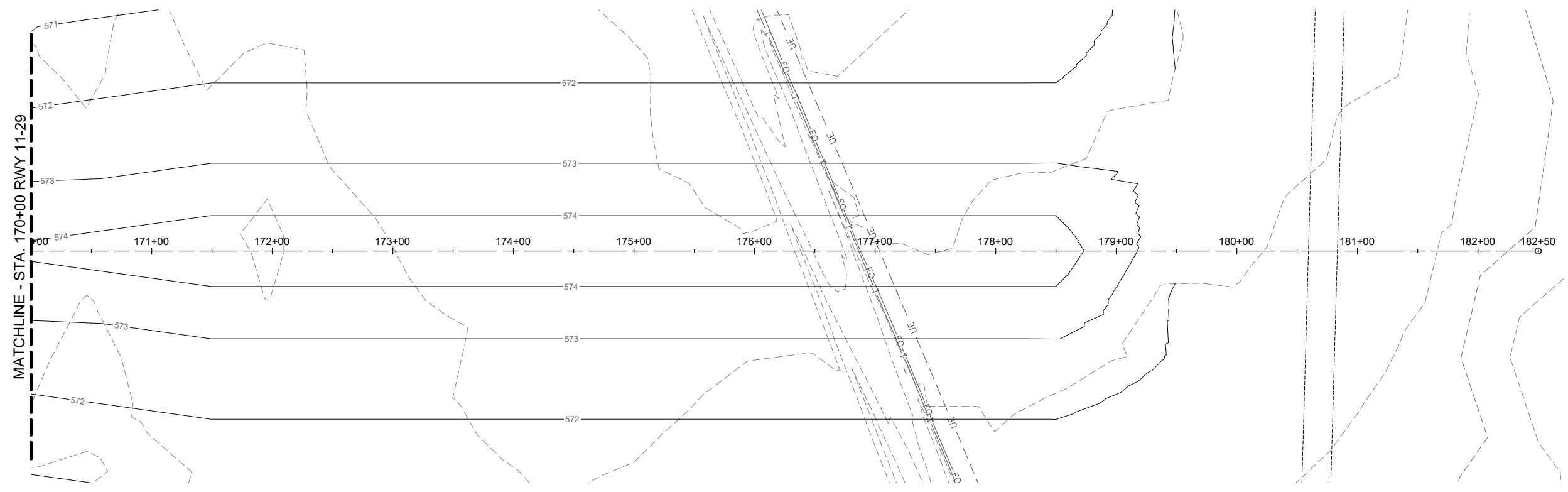
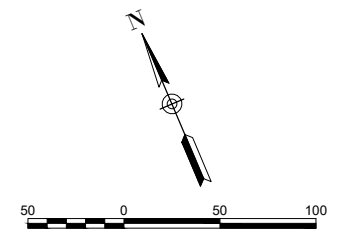
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-701-PNP.DWG
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SHEET TITLE

PROPOSED PLAN
AND PROFILE RWY
11-29 - STA. 170+00
TO STA. 180+00

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EXTEND RUNWAY
11-29 AND TAXIWAY A

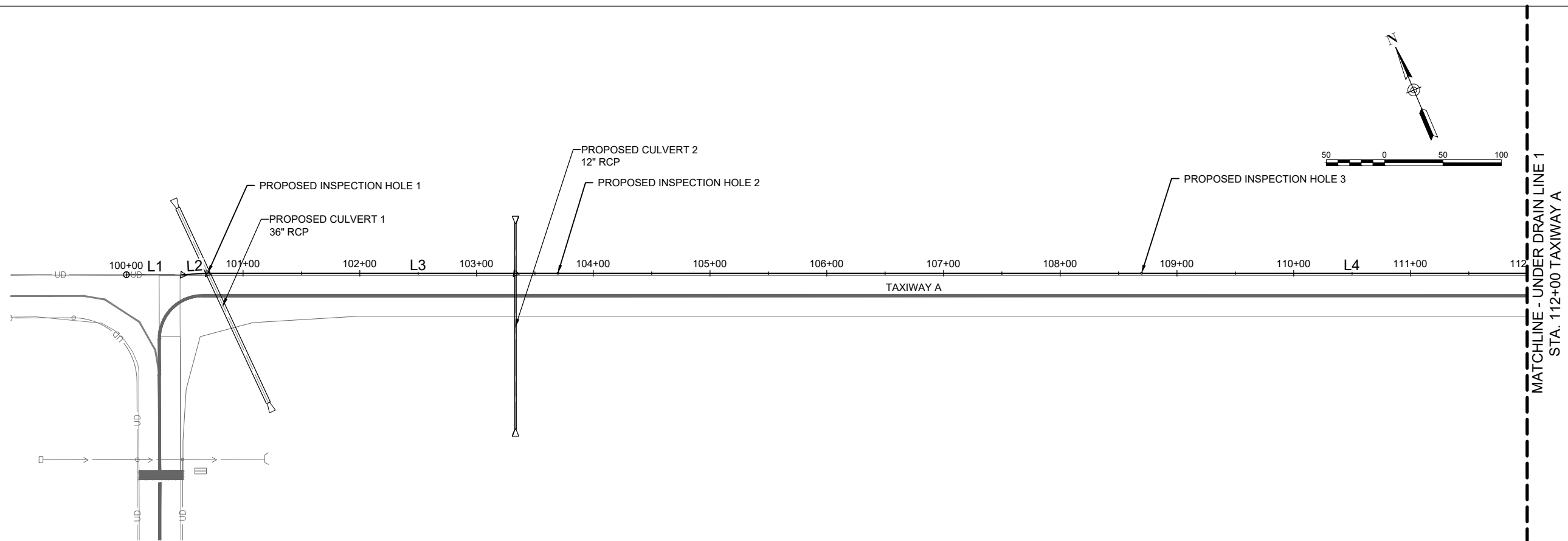
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CONTRACT NO. EF010

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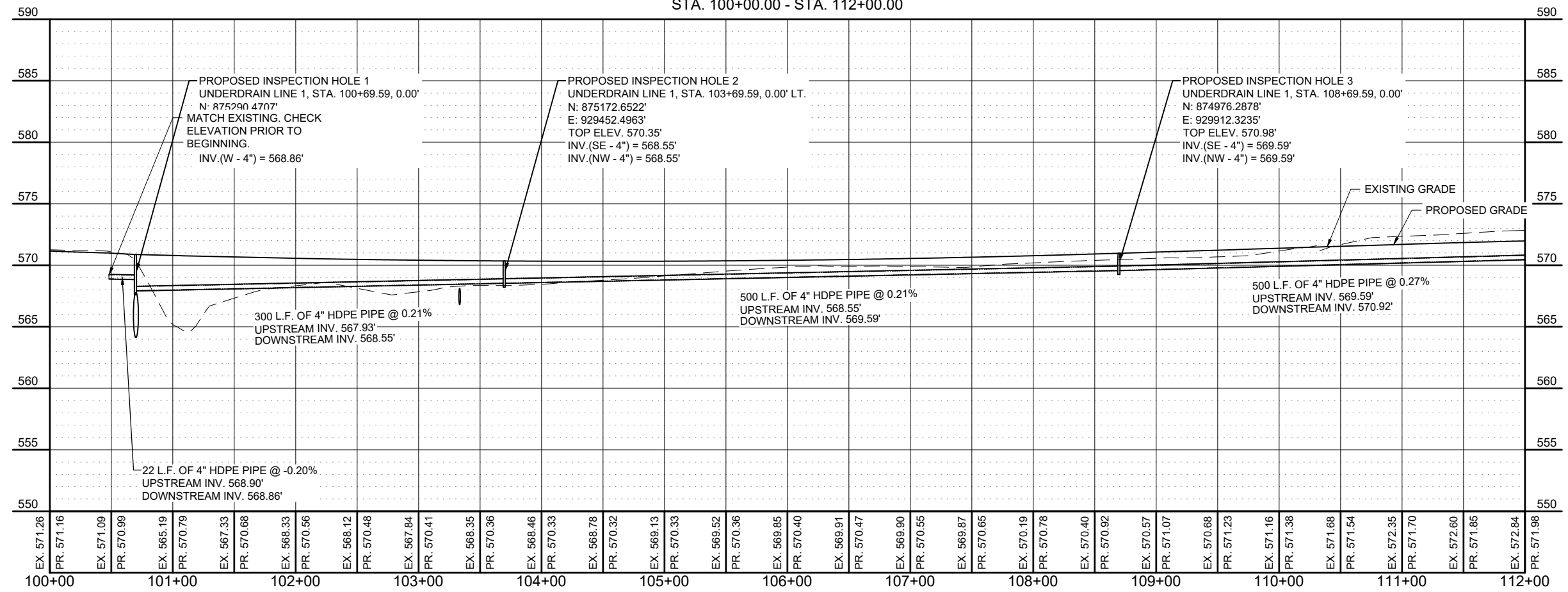
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PROJECT NO: 22A0004D
CAD FILE: C-702-PNP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED PLAN
AND PROFILE
UNDERDRAIN STA.
100+00 TO STA.
112+00



UNDERDRAIN LINE 1 PROFILE
STA. 100+00.00 - STA. 112+00.00



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EXTEND RUNWAY
11-29 AND TAXIWAY A

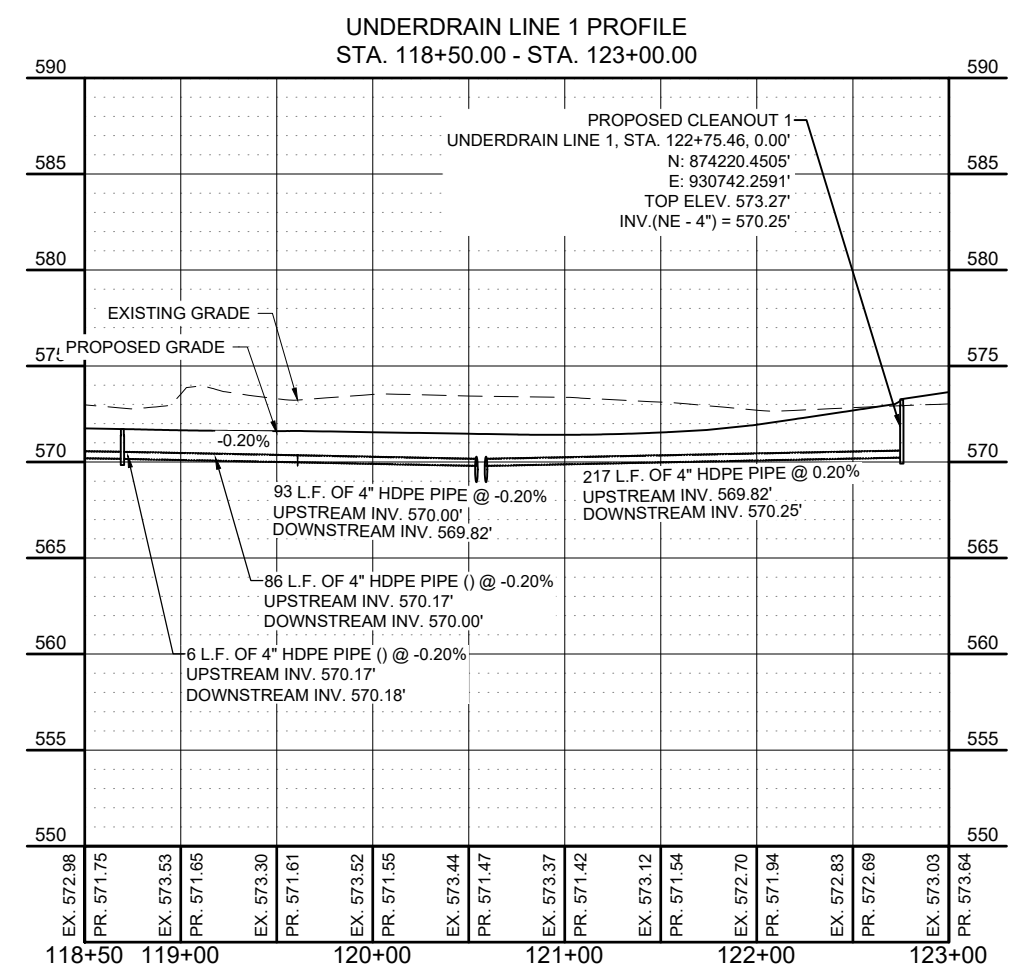
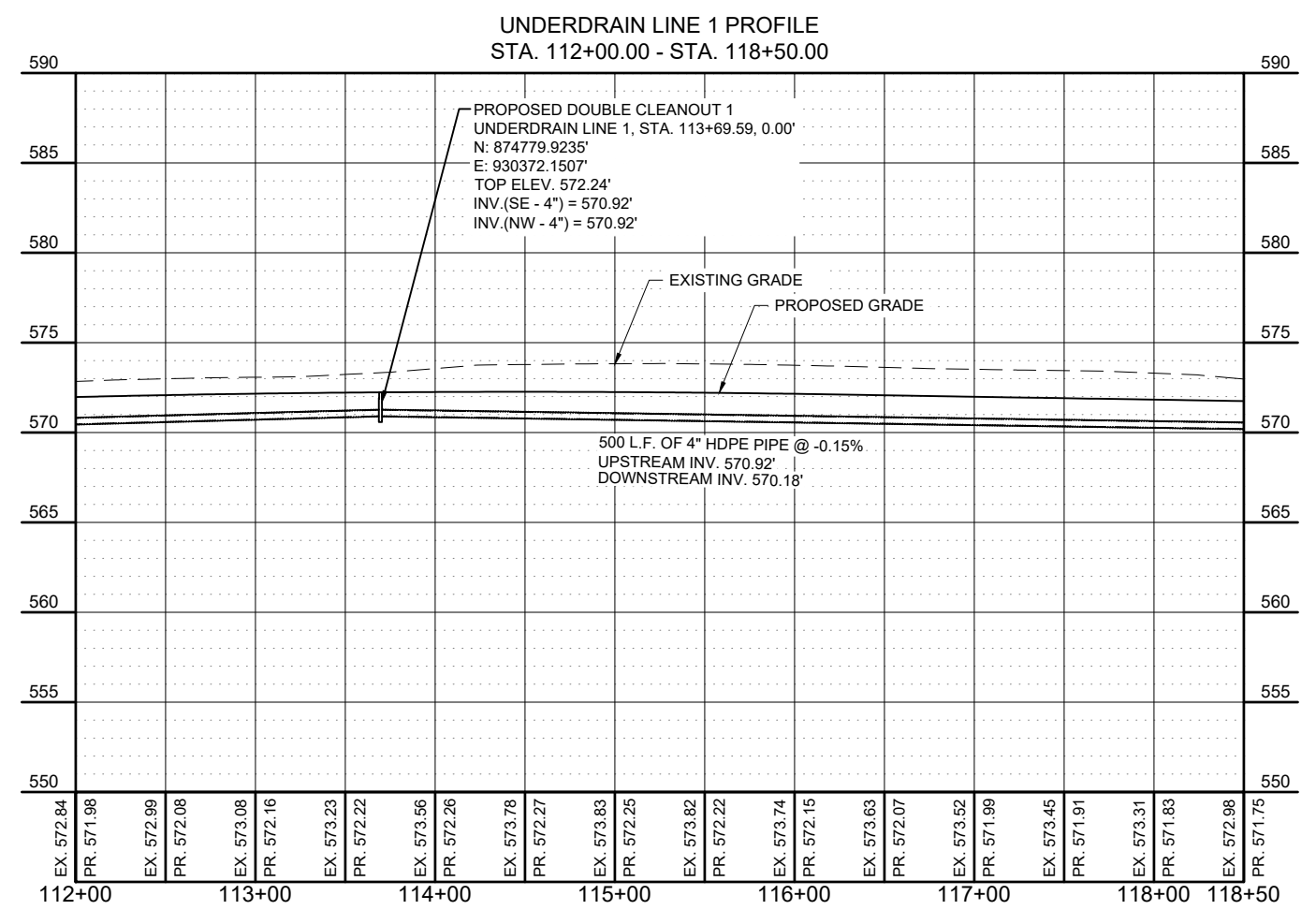
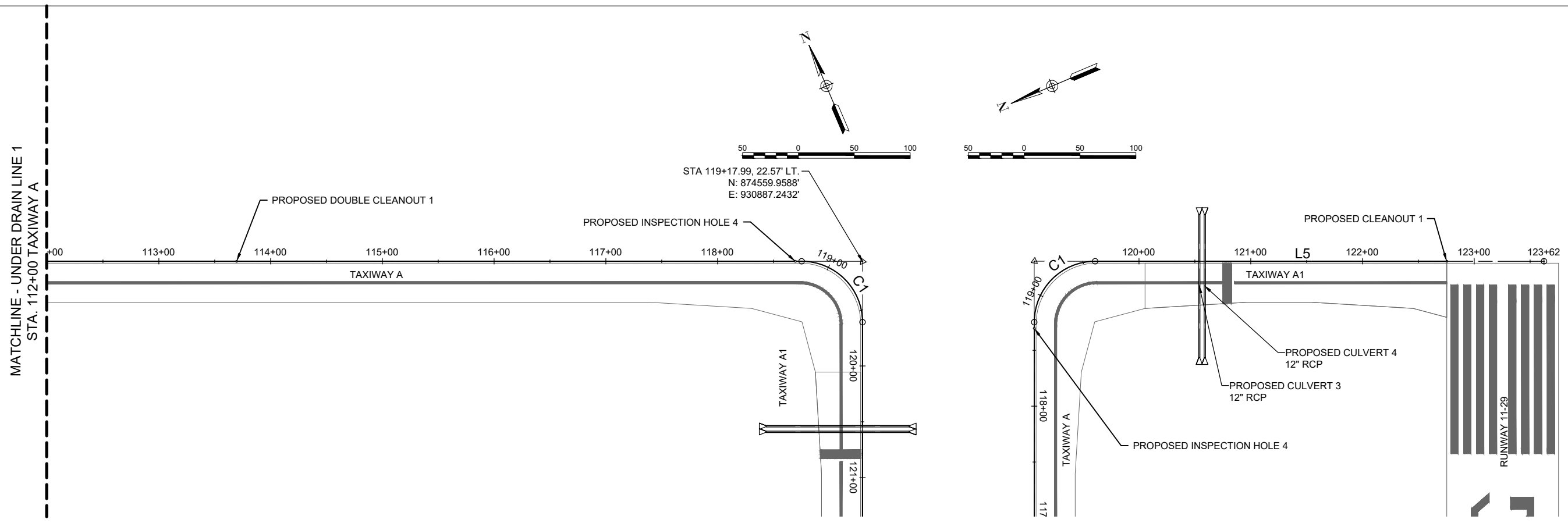
IDA NO. 1H2-4982
CONTRACT NO. EF010

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SHEET TITLE

PROPOSED PLAN
AND PROFILE
UNDERDRAIN STA.
112+00 TO STA.
123+00



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EXTEND RUNWAY
11-29 AND TAXIWAY A

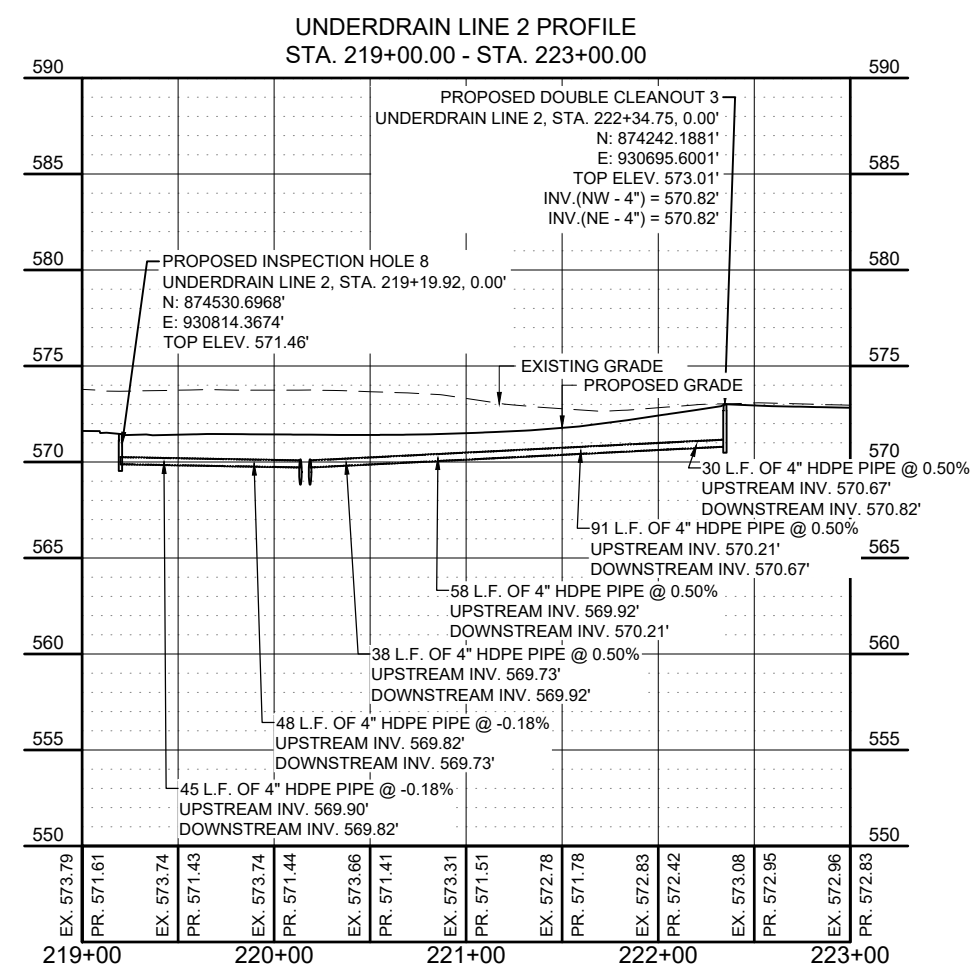
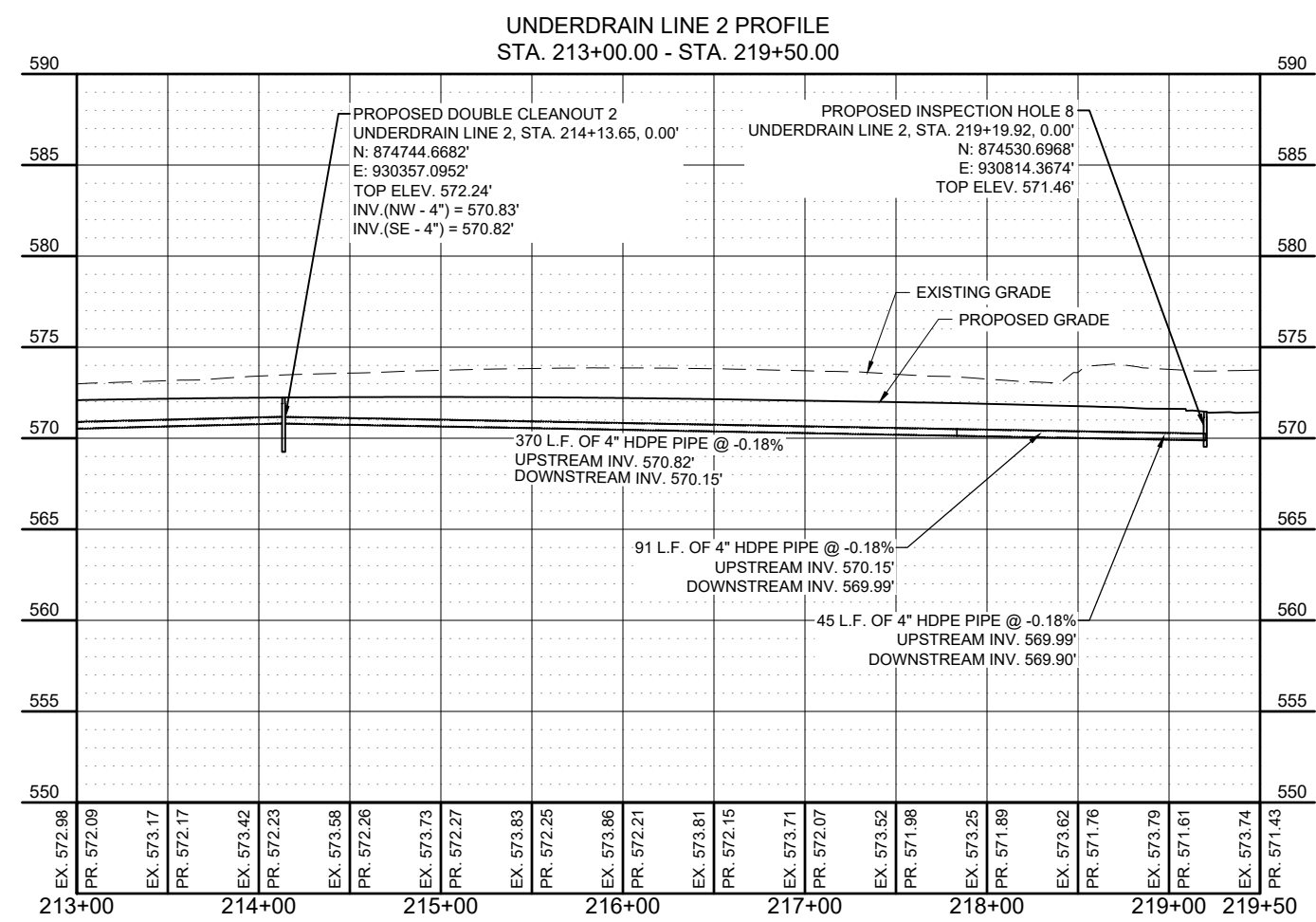
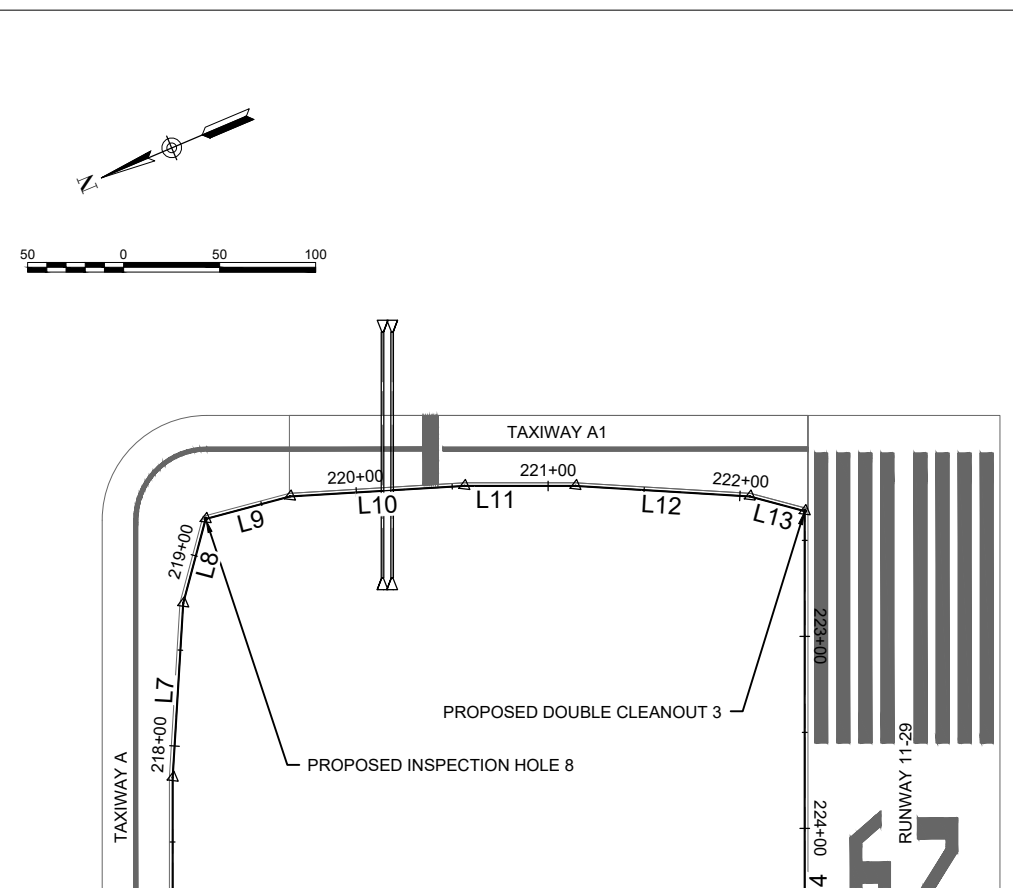
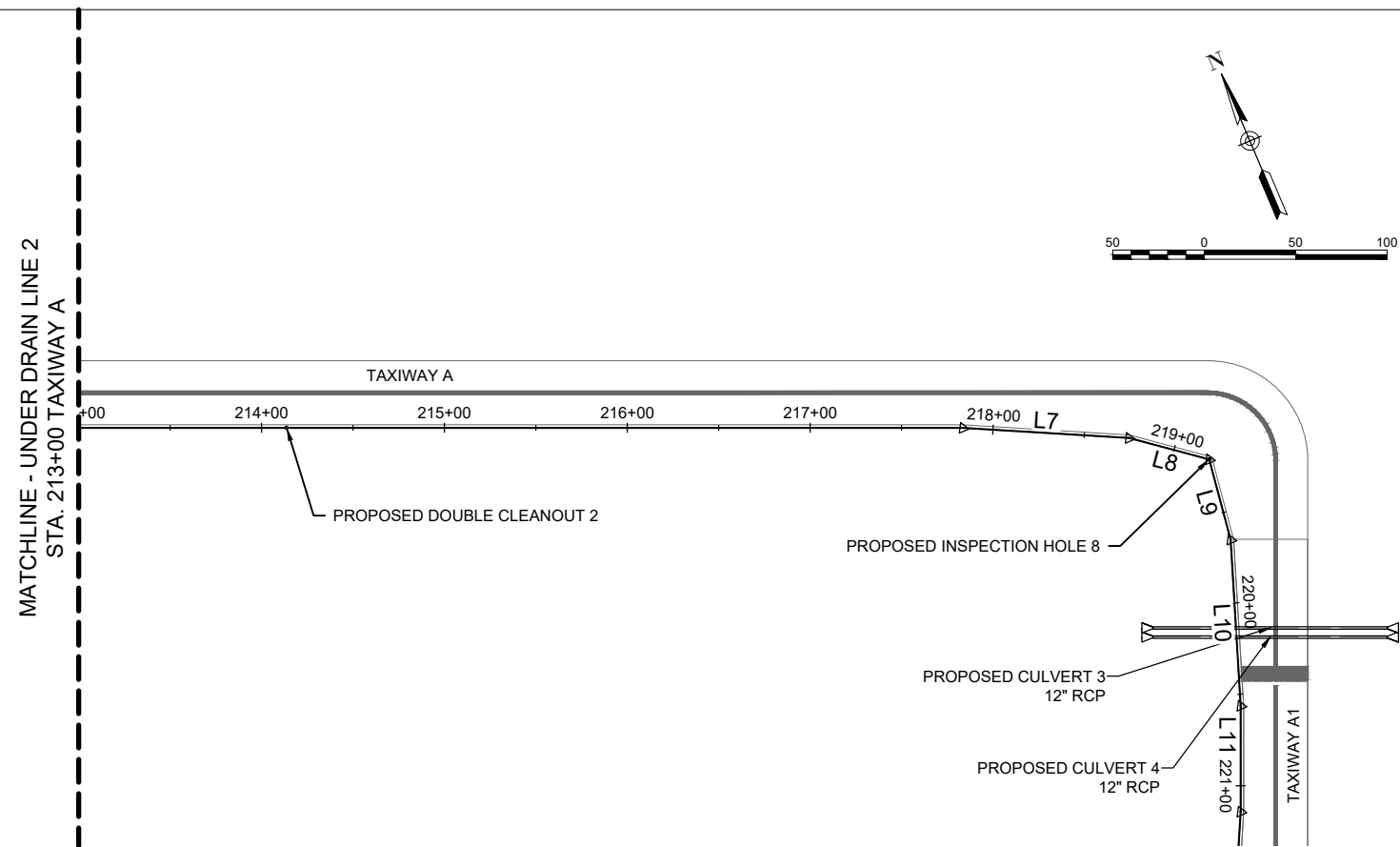
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SHEET TITLE

PROPOSED PLAN
AND PROFILE
UNDERDRAIN STA.
213+00 TO STA.
222+35



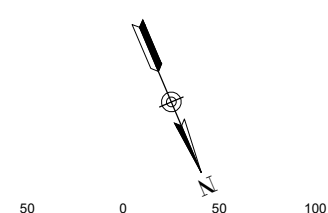
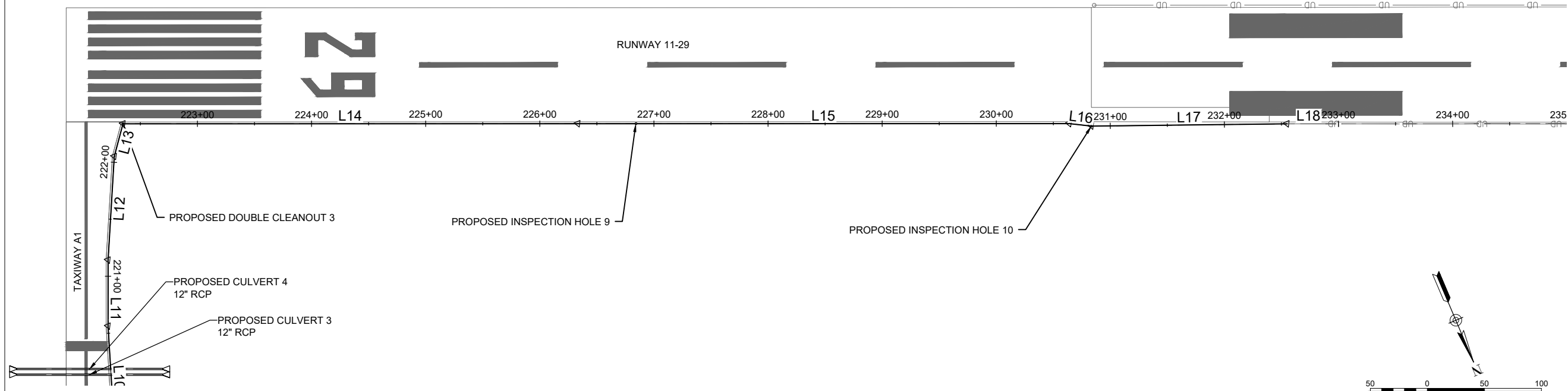
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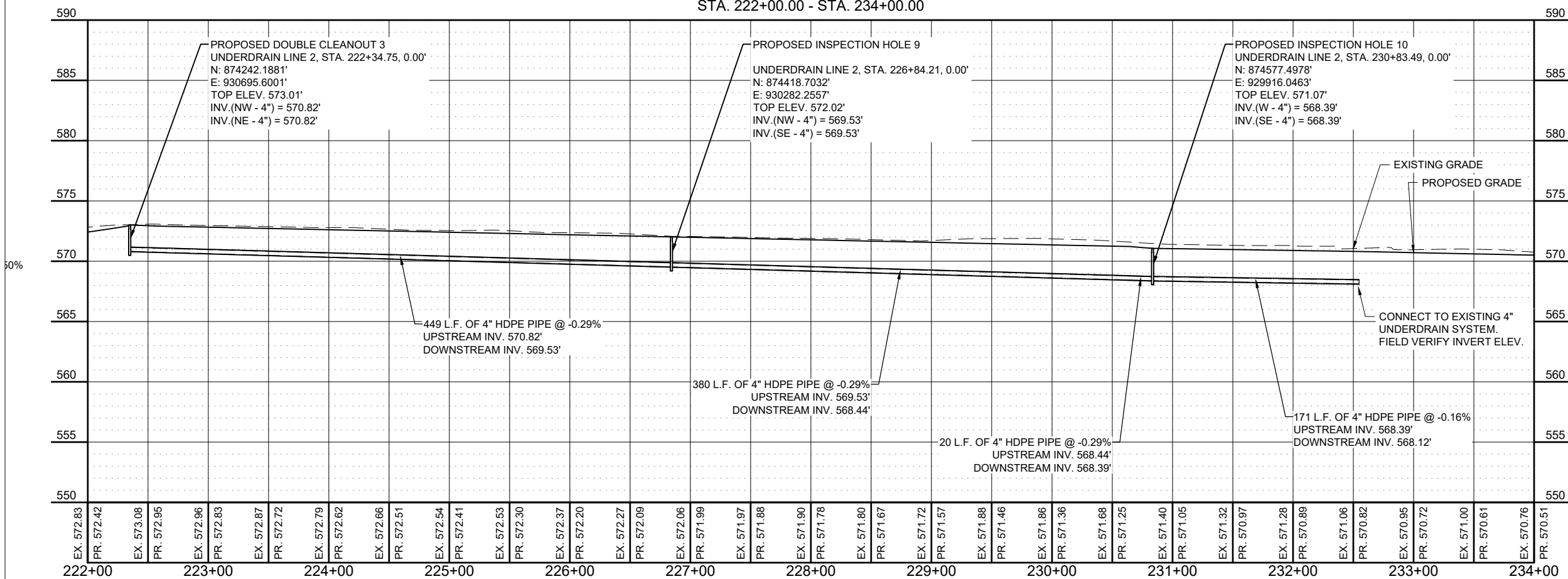


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UNDERDRAIN LINE 2 PROFILE
STA. 222+00.00 - STA. 234+00.00



EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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SHEET TITLE

PROPOSED PLAN
AND PROFILE
UNDERDRAIN STA.
222+35 TO STA.
233+00

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EXTEND RUNWAY
11-29 AND TAXIWAY A

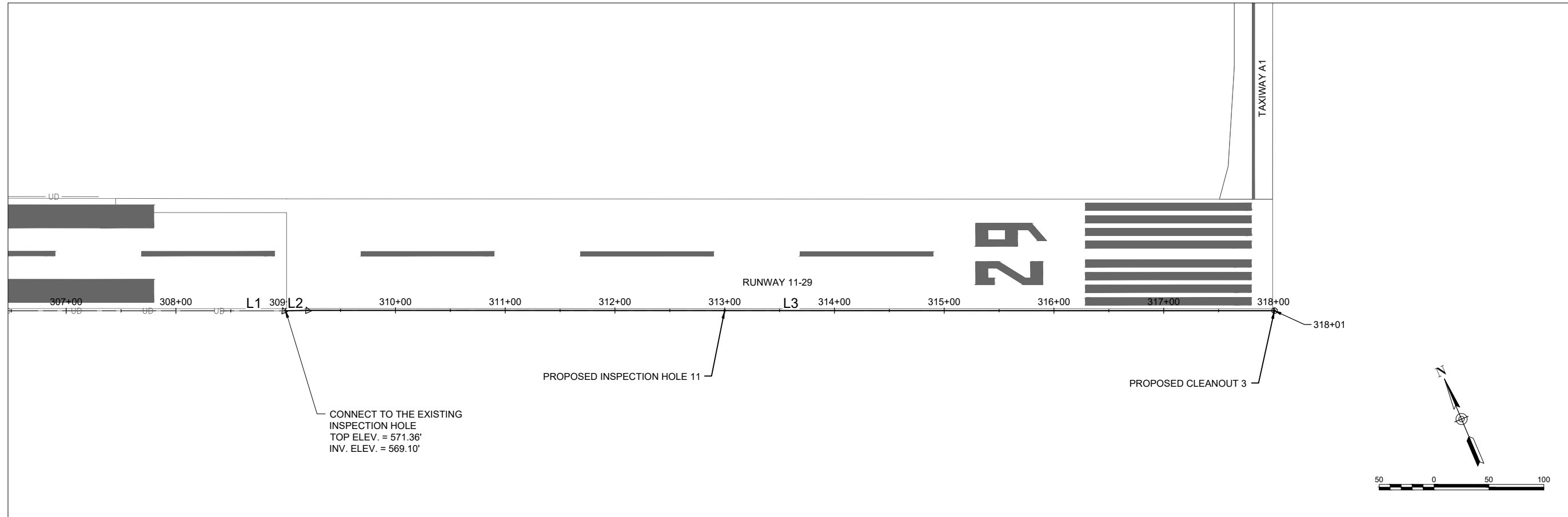
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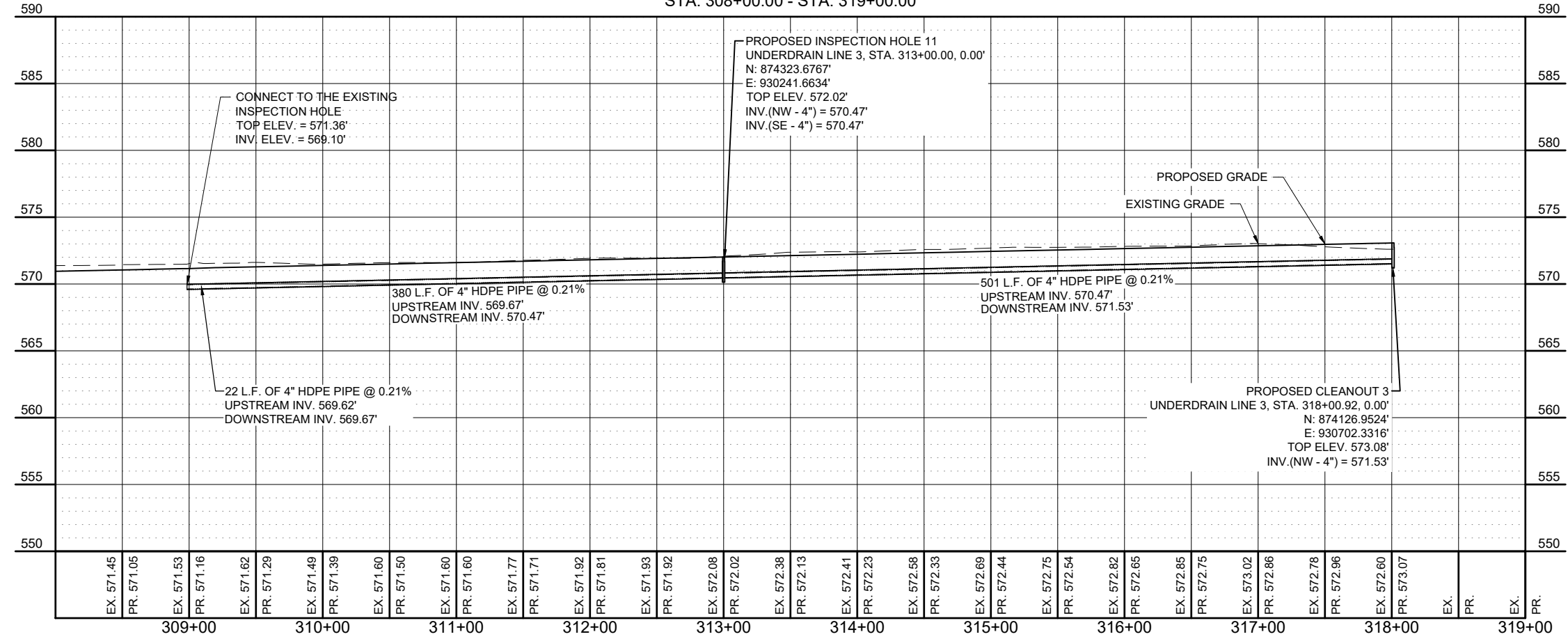
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SHEET TITLE

PROPOSED PLAN
AND PROFILE
UNDERDRAIN STA.
308+00 TO STA.
319+00



UNDERDRAIN LINE 3 PROFILE
STA. 308+00.00 - STA. 319+00.00



EX. 571.45	PR. 571.05	EX. 571.53	PR. 571.16	EX. 571.62	PR. 571.29	EX. 571.49	PR. 571.39	EX. 571.60	PR. 571.50	EX. 571.60	PR. 571.60	EX. 571.77	PR. 571.71	EX. 571.92	PR. 571.81	EX. 571.93	PR. 571.92	EX. 572.08	PR. 572.02	EX. 572.38	PR. 572.13	EX. 572.41	PR. 572.23	EX. 572.58	PR. 572.33	EX. 572.69	PR. 572.44	EX. 572.75	PR. 572.54	EX. 572.82	PR. 572.65	EX. 572.85	PR. 572.75	EX. 573.02	PR. 572.86	EX. 572.78	PR. 572.96	EX. 572.60	PR. 573.07	EX.	PR.	EX.	PR.		
309+00		310+00		311+00		312+00		313+00		314+00		315+00		316+00		317+00		318+00		319+00																									

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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

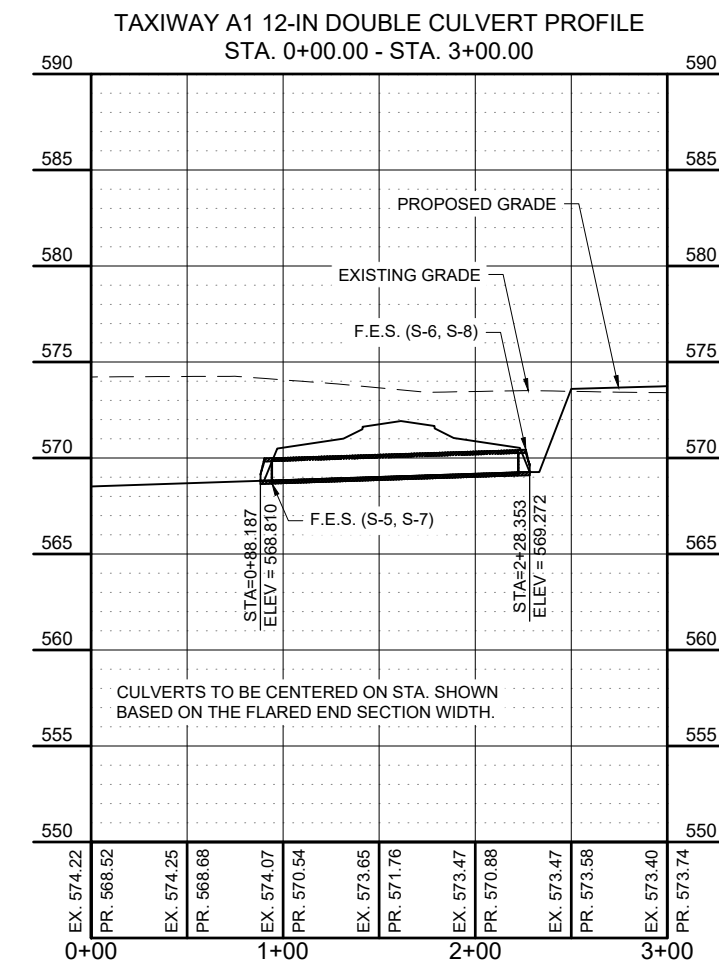
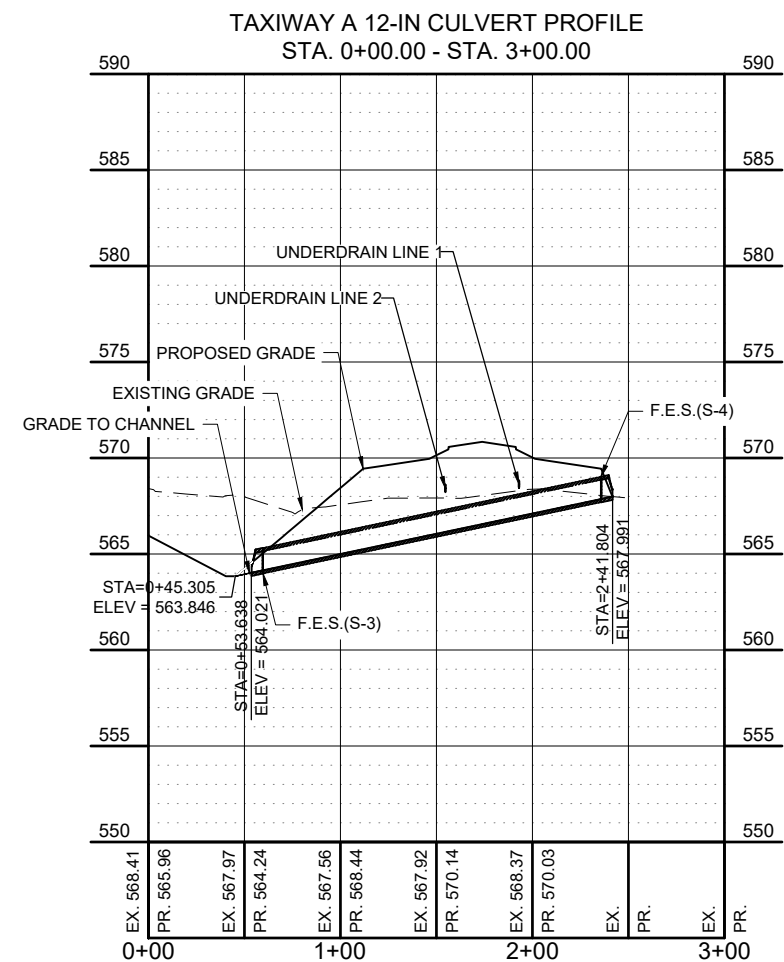
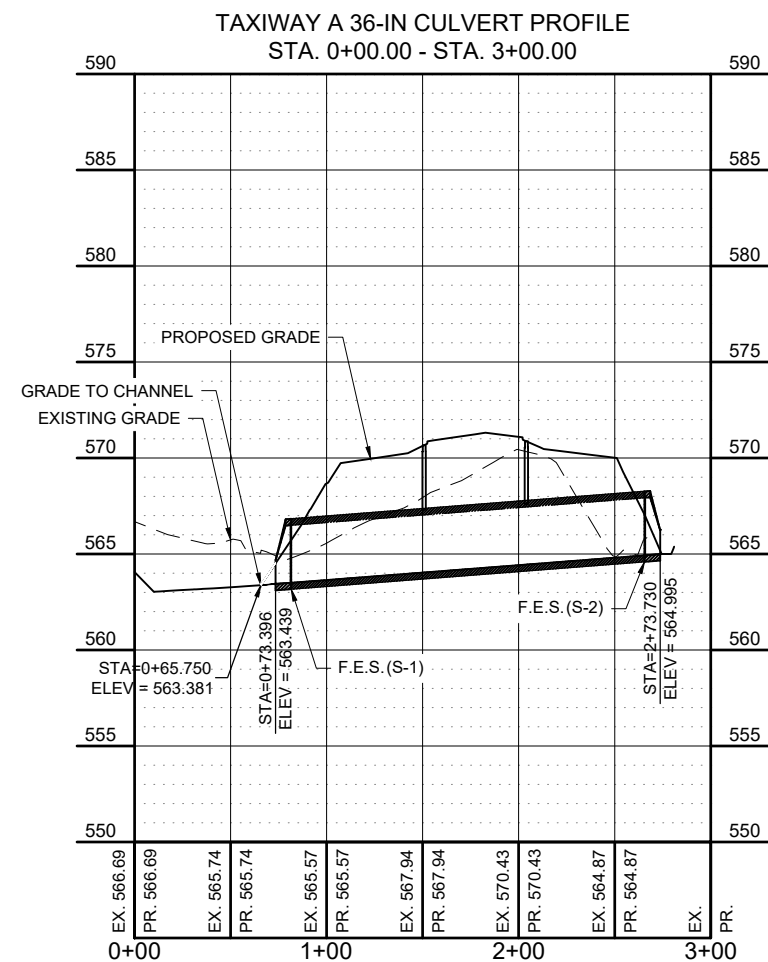
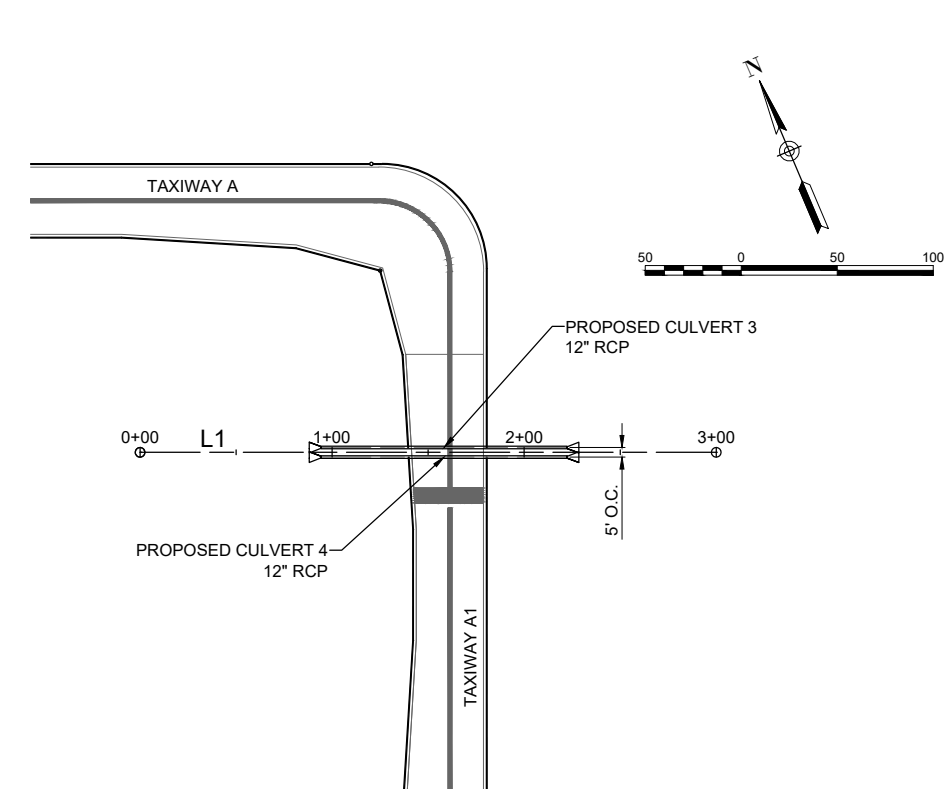
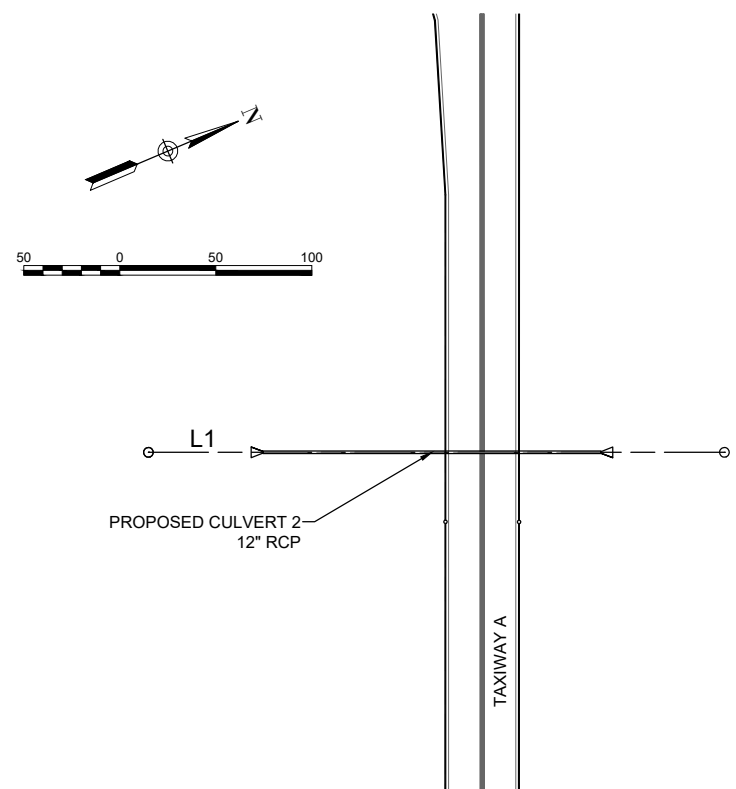
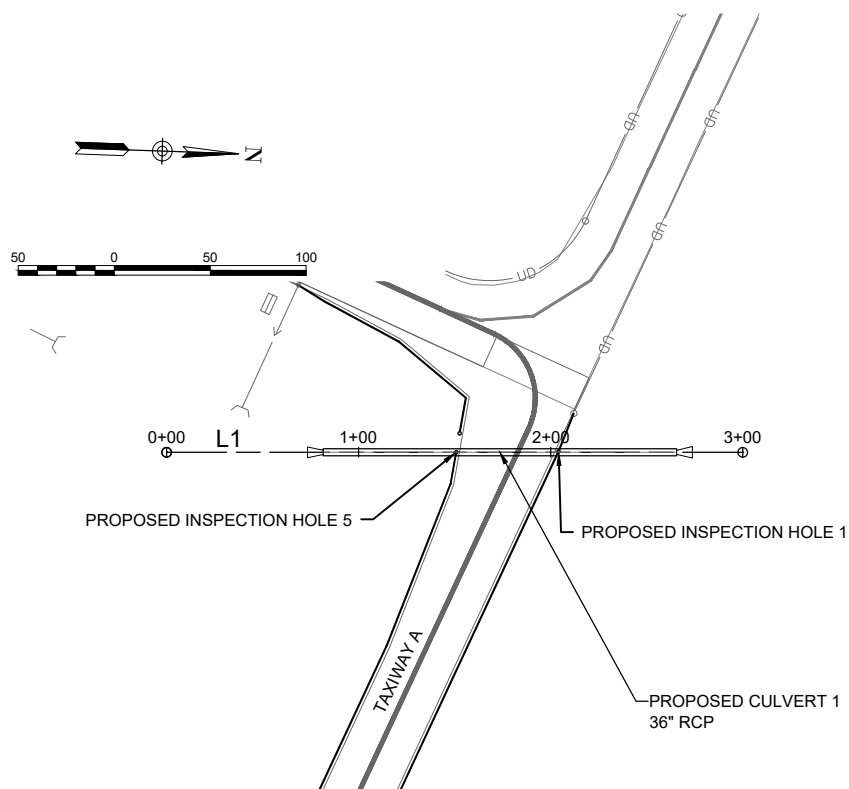
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED PLAN
AND PROFILE
TAXIWAY A
CULVERTS

FOR BID



SLOPES MAY BE FLATTENED TO ACCOMMODATE A MINIMUM 6 INCHES OF TOPSOIL OVER ANY EXPOSED DRAINAGE PIPES / FLARED END SECTIONS. ADDITIONAL SOIL / GRADING WILL BE INCIDENTAL TO THE RESPECTIVE PAY ITEM FOR RCP CULVERTS (AR701) AND FLARED END SECTIONS (AR752)

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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

		DESCRIPTION		
NO.	DATE	DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
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CAD FILE: C-702-PNP.DWG
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

UNDERDRAIN DATA
TABLES

RUNWAY UNDER DRAIN - PIPE DATA TABLE

ALIGNMENT	START STATION	END STATION	SIZE	LENGTH	START INVERT	END INVERT	SLOPE	PIPE COVER (MIN.)	PIPE COVER (MAX.)
UNDERDRAIN LINE 2	STA. 222+34.75	STA. 226+84.21	4-IN	449'	570.82'	569.53'	-0.29%	1.80'	2.12'
UNDERDRAIN LINE 2	STA. 226+84.21	STA. 230+63.95	4-IN	380'	569.53'	568.44'	-0.29%	2.12'	2.41'
UNDERDRAIN LINE 2	STA. 230+63.95	STA. 230+83.49	4-IN	20'	568.44'	568.39'	-0.29%	2.32'	2.41'
UNDERDRAIN LINE 2	STA. 230+83.49	STA. 232+54.78	4-IN	171'	568.39'	568.12'	-0.16%	2.32'	2.32'

RUNWAY UNDER DRAIN SYSTEM - STRUCTURE DATA TABLE

STATION	STATION	RIM ELEV.
LINE 2, DOUBLE CLEANOUT 3	222+34.75	RIM = 573.01'
LINE 2, INSPECTION HOLE 9	226+84.21	RIM = 572.02'
LINE 2, INSPECTION HOLE 10	230+83.49	RIM = 571.07'

RUNWAY UNDER DRAIN - PIPE DATA TABLE

ALIGNMENT	START STATION	END STATION	SIZE	LENGTH	START INVERT	END INVERT	SLOPE	PIPE COVER (MIN.)	PIPE COVER (MAX.)
UNDERDRAIN LINE 3	STA. 308+98.43	STA. 309+19.99	4-IN	22'	569.62'	569.67'	0.21%	1.17'	1.19'
UNDERDRAIN LINE 3	STA. 309+19.99	STA. 313+00.00	4-IN	380'	569.67'	570.47'	0.21%	1.18'	1.19'
UNDERDRAIN LINE 3	STA. 313+00.00	STA. 318+00.92	4-IN	501'	570.47'	571.53'	0.21%	1.17'	1.18'

RUNWAY UNDER DRAIN SYSTEM - STRUCTURE DATA TABLE

STATION	STATION	RIM ELEV.
LINE 3, INSPECTION HOLE 11	313+00.00	RIM = 572.02'
LINE 3, CLEANOUT 3	318+00.92	RIM = 573.08'

TAXIWAY UNDER DRAIN - PIPE DATA TABLE

ALIGNMENT	START STATION	END STATION	SIZE	LENGTH	START INVERT	END INVERT	SLOPE	PIPE COVER (MIN.)	PIPE COVER (MAX.)
UNDERDRAIN LINE 1	STA. 100+48.09	STA. 100+69.59	4-IN	22'	568.90'	568.86'	-0.20%	1.65'	1.73'
UNDERDRAIN LINE 1	STA. 100+69.59	STA. 103+69.59	4-IN	300'	567.93'	568.55'	0.21%	1.43'	2.58'
UNDERDRAIN LINE 1	STA. 103+69.59	STA. 108+69.59	4-IN	500'	568.55'	569.59'	0.21%	0.95'	1.43'
UNDERDRAIN LINE 1	STA. 108+69.59	STA. 113+69.59	4-IN	500'	569.59'	570.92'	0.27%	0.95'	1.15'
UNDERDRAIN LINE 1	STA. 113+69.59	STA. 118+69.59	4-IN	500'	570.92'	570.18'	-0.15%	0.95'	1.21'
UNDERDRAIN LINE 1	STA. 118+75.18	STA. 118+69.59	4-IN	6'	570.17'	570.18'	-0.20%	1.17'	1.17'
UNDERDRAIN LINE 1	STA. 118+75.18	STA. 119+60.79	4-IN	86'	570.17'	570.00'	-0.20%	1.17'	1.25'
UNDERDRAIN LINE 1	STA. 119+60.79	STA. 120+53.96	4-IN	93'	570.00'	569.82'	-0.20%	1.25'	1.28'
UNDERDRAIN LINE 1	STA. 120+58.96	STA. 122+75.46	4-IN	217'	569.82'	570.25'	0.20%	1.14'	2.66'

TAXIWAY UNDER DRAIN SYSTEM - STRUCTURE DATA TABLE

STATION	STATION	RIM ELEV.
LINE 1, INSPECTION HOLE 1	100+69.59	RIM = 570.88'
LINE 1, INSPECTION HOLE 2	103+69.59	RIM = 570.35'
LINE 1, INSPECTION HOLE 3	108+69.59	RIM = 570.98'
LINE 1, DOUBLE CLEANOUT 1	113+69.59	RIM = 572.24'
LINE 1, INSPECTION HOLE 4	118+69.59	RIM = 571.72'
LINE 1, CLEANOUT 1	122+75.46	RIM = 573.27'

TAXIWAY UNDER DRAIN - PIPE DATA TABLE

ALIGNMENT	START STATION	END STATION	SIZE	LENGTH	START INVERT	END INVERT	SLOPE	PIPE COVER (MIN.)	PIPE COVER (MAX.)
UNDERDRAIN LINE 2	STA. 200+00.01	STA. 200+17.37	4-IN	17'	567.31'	567.48'	1.00%	2.55'	2.87'
UNDERDRAIN LINE 2	STA. 200+17.37	STA. 200+61.46	4-IN	44'	567.48'	567.92'	1.00%	2.22'	2.55'
UNDERDRAIN LINE 2	STA. 200+61.46	STA. 201+06.90	4-IN	45'	567.92'	568.38'	1.00%	1.89'	2.22'
UNDERDRAIN LINE 2	STA. 201+06.91	STA. 201+25.74	4-IN	19'	568.38'	568.57'	1.00%	1.72'	1.89'
UNDERDRAIN LINE 2	STA. 201+35.74	STA. 201+52.34	4-IN	17'	567.65'	567.69'	0.25%	2.63'	2.65'
UNDERDRAIN LINE 2	STA. 201+52.34	STA. 202+43.29	4-IN	91'	567.69'	567.92'	0.25%	2.28'	2.63'
UNDERDRAIN LINE 2	STA. 202+43.29	STA. 204+13.66	4-IN	170'	567.92'	568.34'	0.25%	1.64'	2.28'
UNDERDRAIN LINE 2	STA. 204+13.66	STA. 209+13.65	4-IN	500'	568.34'	569.58'	0.25%	1.00'	1.64'
UNDERDRAIN LINE 2	STA. 209+13.65	STA. 214+13.65	4-IN	500'	569.58'	570.83'	0.25%	1.03'	1.21'
UNDERDRAIN LINE 2	STA. 214+13.65	STA. 217+83.53	4-IN	370'	570.82'	570.15'	-0.18%	1.05'	1.41'
UNDERDRAIN LINE 2	STA. 217+83.53	STA. 218+74.48	4-IN	91'	570.15'	569.99'	-0.18%	1.35'	1.41'
UNDERDRAIN LINE 2	STA. 218+74.48	STA. 219+19.92	4-IN	45'	569.99'	569.90'	-0.18%	1.19'	1.35'
UNDERDRAIN LINE 2	STA. 219+19.92	STA. 219+65.36	4-IN	45'	569.90'	569.82'	-0.18%	1.14'	1.28'
UNDERDRAIN LINE 2	STA. 219+65.36	STA. 220+13.68	4-IN	48'	569.82'	569.73'	-0.18%	1.28'	1.33'
UNDERDRAIN LINE 2	STA. 220+18.69	STA. 220+56.31	4-IN	38'	569.73'	569.92'	0.50%	1.13'	1.32'
UNDERDRAIN LINE 2	STA. 220+56.31	STA. 221+14.21	4-IN	58'	569.92'	570.21'	0.50%	0.98'	1.13'
UNDERDRAIN LINE 2	STA. 221+14.21	STA. 222+05.15	4-IN	91'	570.21'	570.67'	0.50%	0.97'	1.46'
UNDERDRAIN LINE 2	STA. 222+05.15	STA. 222+34.75	4-IN	30'	570.67'	570.82'	0.50%	1.46'	1.82'

TAXIWAY UNDER DRAIN SYSTEM - STRUCTURE DATA TABLE

STATION	STATION	RIM ELEV.
LINE 2, CLEANOUT 2	201+25.74	RIM = 570.66'
LINE 2, INSPECTION HOLE 5	201+35.74	RIM = 570.67'
LINE 2, INSPECTION HOLE 6	204+13.66	RIM = 570.35'
LINE 2, INSPECTION HOLE 7	209+13.65	RIM = 570.98'
LINE 2, DOUBLE CLEANOUT 2	214+13.65	RIM = 572.24'
LINE 2, INSPECTION HOLE 8	219+19.92	RIM = 571.46'

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Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62703
phone: 217-788-2450
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EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING CIVIL DESIGN



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-702-PNP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

UNDERDRAIN
ALIGNMENT DATA
TABLES

ALIGNMENT DATA UNDERDRAIN LINE 1

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	100+00.00	100+48.09	48.09	113° 08' 54"	875316.736, 929112.180	875297.831, 929156.397
L2	100+48.09	100+69.59	21.50	110° 01' 04"	875297.831, 929156.397	875290.471, 929176.600
L3	100+69.59	103+33.33	263.74	113° 07' 28"	875290.471, 929176.600	875186.891, 929419.153
L4	103+33.33	118+75.18	1541.85	113° 07' 28"	875186.891, 929419.153	874581.363, 930837.122
C1	118+75.18	119+60.79	85.61	IN=S66° 52' 32"E OUT=S23° 07' 28"W DEL=90°00'00"	874581.36, 930837.122	874509.838, 930865.839
L5	119+60.79	123+62.46	401.67	203° 07' 28"	874509.838, 930865.839	874140.441, 930708.092

ALIGNMENT DATA UNDERDRAIN LINE 2

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	200+00.00	200+17.37	17.37	30° 07' 35"	875151.162, 929093.689	875166.187, 929102.408
L2	200+17.37	200+61.46	44.08	26° 31' 16"	875166.187, 929102.408	875205.632, 929122.093
L3	200+61.46	201+06.91	45.45	38° 07' 19"	875205.632, 929122.093	875241.388, 929150.151
L4	201+06.91	201+52.34	45.43	98° 11' 35"	875241.388, 929150.151	875234.913, 929195.121
L5	201+52.34	202+43.29	90.95	109° 39' 57"	875234.913, 929195.121	875204.306, 929280.765
L6	202+43.29	217+83.53	1540.24	113° 07' 28"	875204.306, 929280.765	874599.407, 930697.254
L7	217+83.53	218+74.48	90.95	116° 35' 00"	874599.407, 930697.254	874558.707, 930778.587
L8	218+74.48	219+19.92	45.44	128° 03' 21"	874558.707, 930778.587	874530.697, 930814.367
L9	219+19.92	219+65.36	45.44	188° 11' 35"	874530.697, 930814.367	874485.720, 930807.892
L10	219+65.36	220+56.31	90.95	199° 39' 57"	874485.720, 930807.892	874400.077, 930777.285
L11	220+56.31	221+14.21	57.90	203° 07' 28"	874400.077, 930777.285	874346.830, 930754.546
L12	221+14.21	222+05.15	90.95	206° 35' 00"	874346.830, 930754.546	874265.496, 930713.847
L13	222+05.15	222+34.75	29.60	218° 03' 21"	874265.496, 930713.847	874242.188, 930695.600
L14	222+34.75	226+33.34	398.58	293° 07' 28"	874242.188, 930695.600	874398.724, 930329.042
L15	226+33.34	230+63.96	430.62	293° 07' 28"	874398.724, 930329.042	874567.841, 929933.020
L16	230+63.96	230+83.49	19.53	299° 38' 11"	874567.841, 929933.020	874577.498, 929916.046
L17	230+83.49	232+54.78	171.30	292° 28' 12"	874577.498, 929916.046	874642.967, 929757.755
L18	232+54.78	239+84.31	729.53	293° 07' 37"	874642.967, 929757.755	874929.503, 929086.853

ALIGNMENT DATA UNDERDRAIN LINE 3

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	300+00.00	308+98.43	898.43	113° 07' 30"	874833.828, 929045.948	874480.980, 929872.185
L2	308+98.43	309+19.99	21.57	111° 57' 13"	874480.980, 929872.185	874472.918, 929892.186
L3	309+19.99	318+00.92	880.92	113° 07' 28"	874472.918, 929892.186	874126.952, 930702.332

DEC 04, 2023 9:49 AM ENG01009
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FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-702-PNP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

CULVERT DATA
SHEET

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	0+00.00	3+00.00	300.00	358° 07' 27"	875086.572, 929183.628	875386.411, 929173.808

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	0+00.00	3+00.00	300.00	23° 07' 10"	875009.379, 929343.366	875285.286, 929461.161

LABEL	START STATION	END STATION	LENGTH	AZIMUTH	START (N,E)	END (N,E)
L1	0+00.00	3+00.00	300.00	113° 07' 28"	874492.737, 930662.283	874374.918, 930938.180

ALIGNMENT	STRUCTURE	UPSTREAM STA.	DOWNSTREAM STA.	SIZE	LENGTH	START INVERT	END INVERT	SLOPE
TAXIWAY A 36-IN CULVERT	CULVERT 1 - F.E.S. (S-2)	STA. 2+73.730	STA. 2+65.563	36-IN	8.167'	564.995'	564.931'	-0.78%
	CULVERT 1	STA. 2+65.563	STA. 0+81.563		184'	564.931'	563.503'	
	CULVERT 1 - F.E.S. (S-1)	STA. 0+81.563	STA. 0+73.396		8.167'	563.503'	563.439'	
TAXIWAY A 12-IN CULVERT	CULVERT 2 - F.E.S. (S-4)	STA. 2+41.804	STA. 2+35.721	12-IN	6.083'	567.991'	567.863'	-2.11%
	CULVERT 2	STA. 2+35.721	STA. 0+59.721		176'	567.863'	564.150'	
	CULVERT 2 - F.E.S. (S-3)	STA. 0+59.721	STA. 0+53.638		6.083'	564.150'	564.021'	
TAXIWAY A1 12-IN DOUBLE CULVERT	CULVERT 3 - F.E.S. (S-6)	STA. 2+28.353, 2.50 LT	STA. 2+22.270, 2.50' LT	12-IN	6.083'	569.272'	569.252'	-0.33%
	CULVERT 3	STA. 2+22.270, 2.50' LT	STA. 0+94.270, 2.50' LT		128'	569.252'	568.830'	
	CULVERT 3 - F.E.S. (S-5)	STA. 0+94.270, 2.50' LT	STA. 0+88.187, 2.50' LT		6.083'	568.830'	568.810'	
	CULVERT 4 - F.E.S. (S-8)	STA. 2+28.353, 2.50 RT	STA. 2+22.270, 2.50' RT	12-IN	6.083'	569.272'	569.252'	-0.33%
	CULVERT 4	STA. 2+22.270, 2.50' RT	STA. 0+94.270, 2.50' RT		128'	569.252'	568.830'	
	CULVERT 4 - F.E.S. (S-7)	STA. 0+94.270, 2.50' RT	STA. 0+88.187, 2.50' RT		6.083'	568.830'	568.810'	



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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
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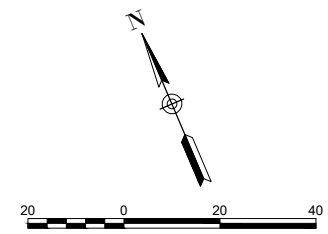
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-161-JNT.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: CWS 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED JOINTING
PLAN RWY 11-29 -
STA. 157+50 TO STA.
162+00

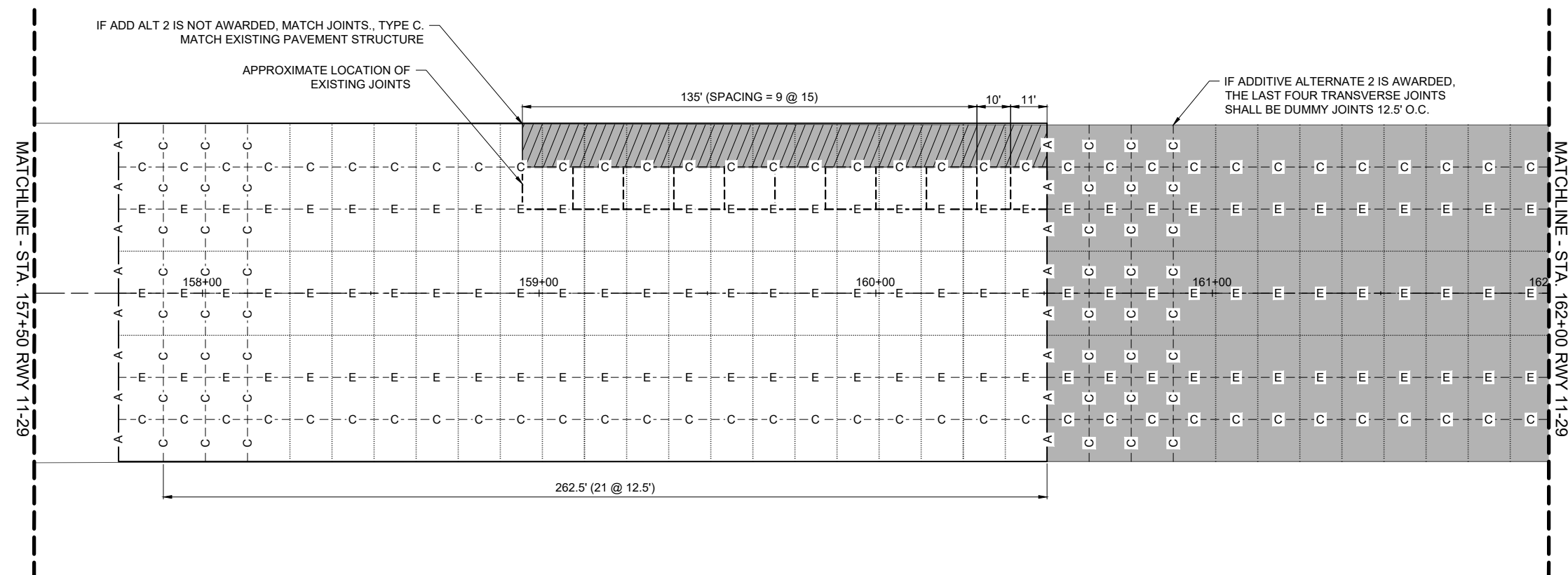
JOINTING NOTES

- ALL JOINT EDGES SHALL BE SAWCUT TO PRODUCE THE 1/4" CHAMFER.
- ALL LONGITUDINAL AND TRANSVERSE CONTRACTION JOINTS SHALL BE SAWED.
- 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.
- DOWEL BARS FOR 10 IN. THICK PAVEMENT SHALL BE 1 IN. DIAMETER, 18 IN. LONG AT 12 IN. SPACING.
- 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 SUBGRADE.
- ALL TIE BARS SHALL BE PLACED AT A POINT NOT LESS THAN 6" OR MORE THAN 15" FROM A TRANSVERSE OR EXPANSION JOINT.
- DOWELS IN TRANSVERSE CONTRACTION AND LONGITUDINAL CONSTRUCTION JOINTS SHALL BE COATED WITH A RUSTPROOFING COMPOUND AND HALF THE LENGTH GREASED WITH A HEAVY GREASE.
- ALLOWABLE TOLERANCES FOR GROOVE DEPTH WILL BE ±1/8" FOR CONSTRUCTION JOINTS AND ±1/4" FOR CONTRACTION JOINTS.
- 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 USE.
- THE COST OF ALL DOWEL BARS, TIE-BARS, SAWING AND SEALING SHALL BE INCLUDED IN THE COST OF THE PCC PAVEMENT.
- 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.
- JOINT SEALANT SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS, ITEM 605.
- CURING COMPOUND SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS, ITEM 501, SECTION 501-2.9, AND SHALL BE APPROVED PRIOR TO THE PAVING OPERATION BY THE RESIDENT ENGINEER/TECHNICIAN.
- ALL NON-ALIGNED EDGES WILL BE SAWED FULL DEPTH.



LEGEND

- PROPOSED IMPROVEMENTS (BASE BID)
- PROPOSED IMPROVEMENTS (ADD ALT 2)
- TYPE A, THICKENED EDGE ISOLATION JOINT
- TYPE C, DOWELED CONTRACTION JOINT
- TYPE D, DUMMY CONTRACTION JOINT
- TYPE E, DOWELED CONSTRUCTION JOINT





Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

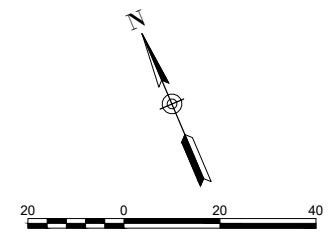
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

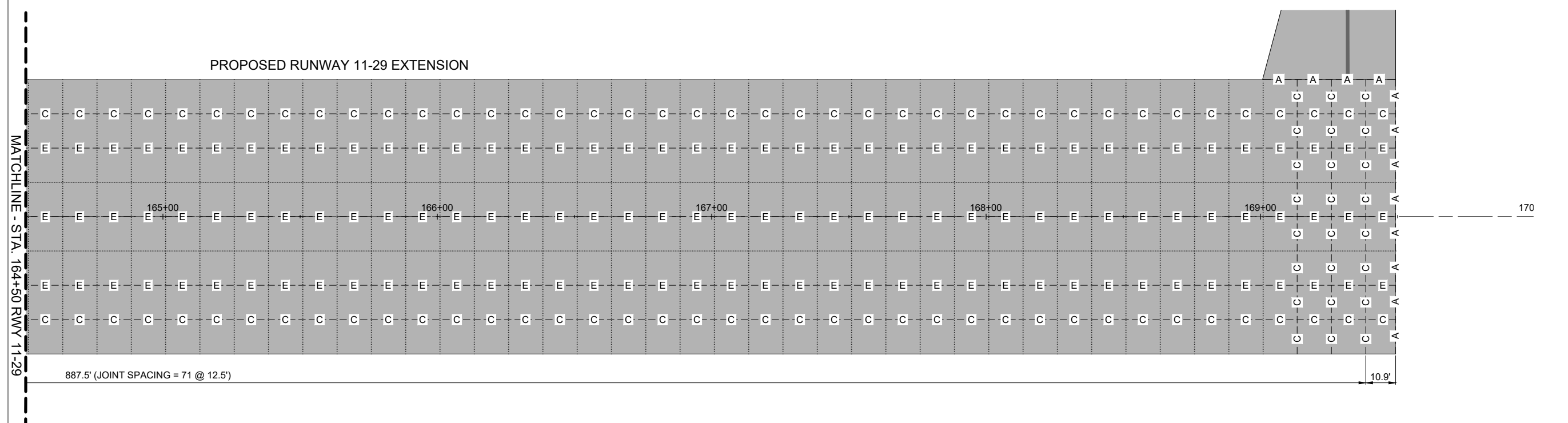
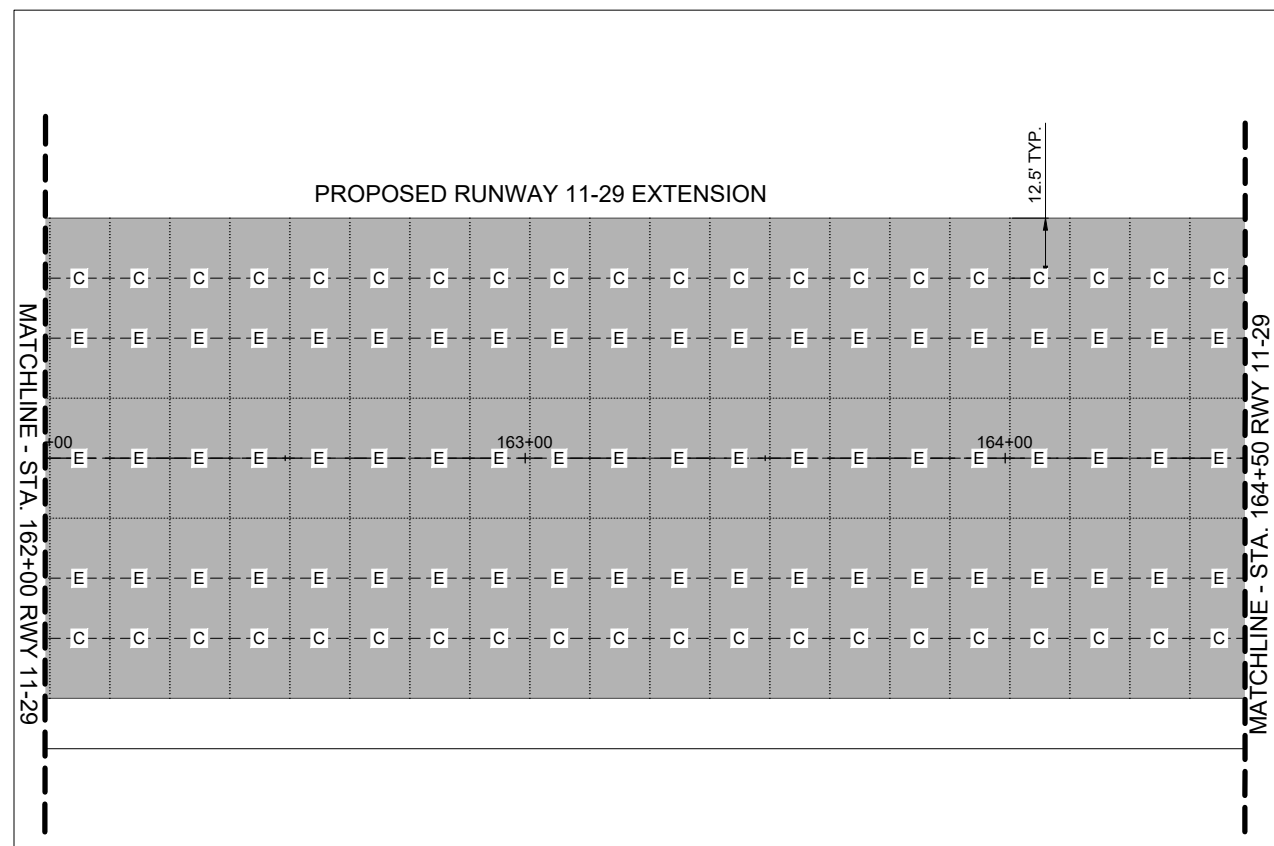
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-161-JNT.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: CWS 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED JOINTING
PLAN RWY 11-29 -
STA. 162+00 TO STA.
170+00



- LEGEND**
- PROPOSED IMPROVEMENTS (BASE BID)
 - TYPE A, THICKENED EDGE ISOLATION JOINT
 - TYPE C, DOWELED CONTRACTION JOINT
 - TYPE D, DUMMY CONTRACTION JOINT
 - TYPE E, DOWELED CONSTRUCTION JOINT



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FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

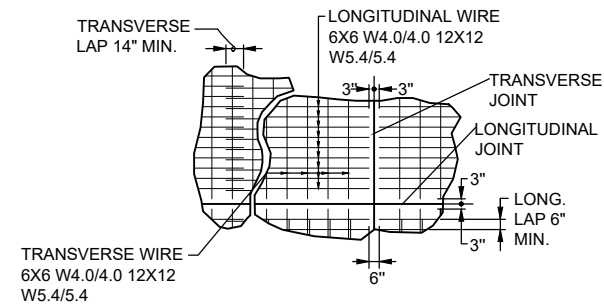
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-561-JNT.DWG
DESIGN BY: MJD 10/16/2023
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

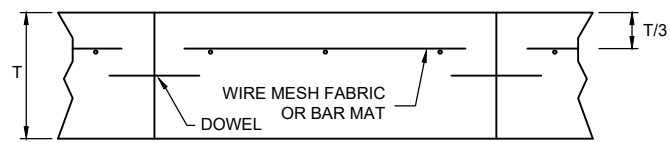
JOINTING DETAILS

DIMENSIONS AND SPACING OF STEEL DOWELS			
THICKNESS OF PANEL	DIAMETER	LENGTH	SPACING
5-7 IN	3/4 IN	18 IN	12 IN
7.5-12 IN	1 IN	18 IN	12 IN
12.5-16 IN	1 1/4 IN	20 IN	15 IN
16.5-20 IN	1 1/2 IN	20 IN	18 IN
20.5-24 IN	2 IN	24 IN	18 IN



REINFORCEMENT SHEET WIRE FABRIC DETAIL
NOT TO SCALE

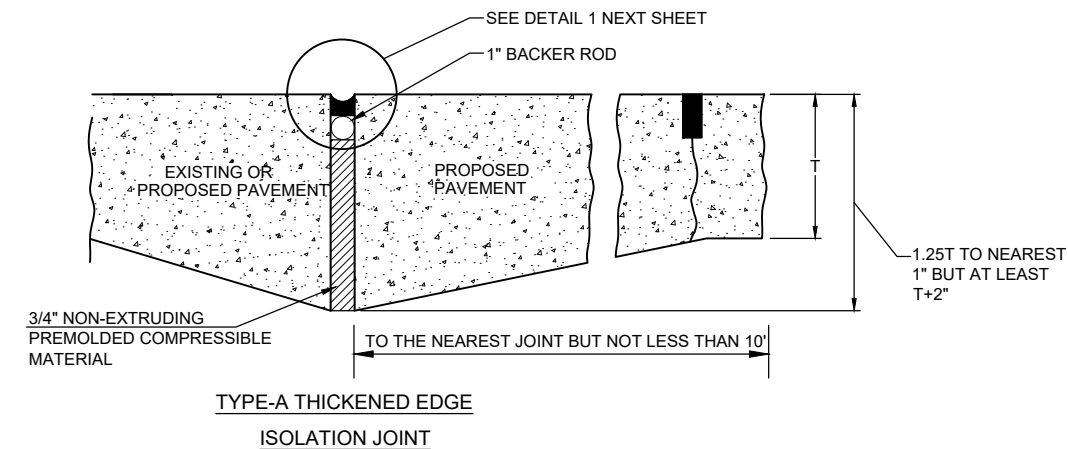
NOTE:
DIFFERENT WIRE MESH SIZES/CONFIGURATIONS OR SIZES ARE PERMITTED
IF THE MINIMUM CROSS SECTIONAL AREA EQUALS 0.5 OR GREATER.



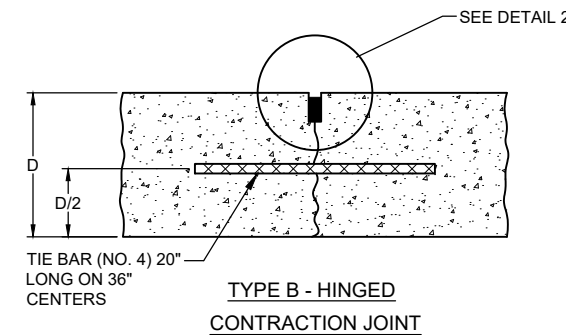
PAVEMENT REINFORCING DETAIL
NOT TO SCALE

REINFORCING NOTES:

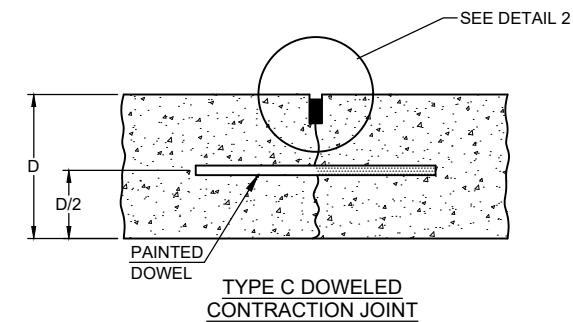
1. END LAPS SHALL BE A MINIMUM OF 12", BUT NOT LESS THAN 30 TIMES THE DIAMETER OF THE LONGITUDINAL WIRE OR BAR.
2. SIDE LAPS SHALL BE A MINIMUM OF 6", BUT NOT LESS THAN 20 TIMES THE DIAMETER OF TRANSVERSE WIRE OR BAR.
3. END AND SIDE CLEARANCES SHALL BE A MAXIMUM OF 6" AND A MINIMUM OF 2".
4. LONGITUDINAL MEMBERS SHALL BE SPACED NOT LESS THAN 4" NOR MORE THAN 12" APART.
5. TRANSVERSE MEMBERS SHALL BE SPACED NOT LESS THAN 4" NOR MORE THAN 24" APART.
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 PAVEMENT.



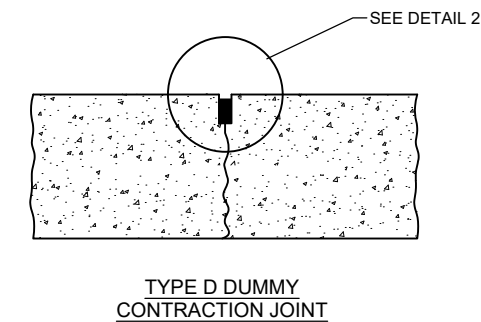
TYPE-A THICKENED EDGE ISOLATION JOINT



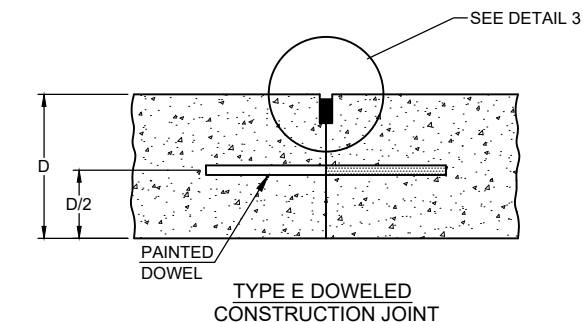
TYPE B - HINGED CONTRACTION JOINT



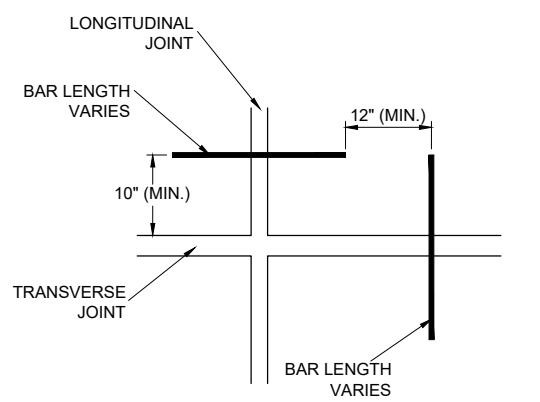
TYPE C DOWELED CONTRACTION JOINT



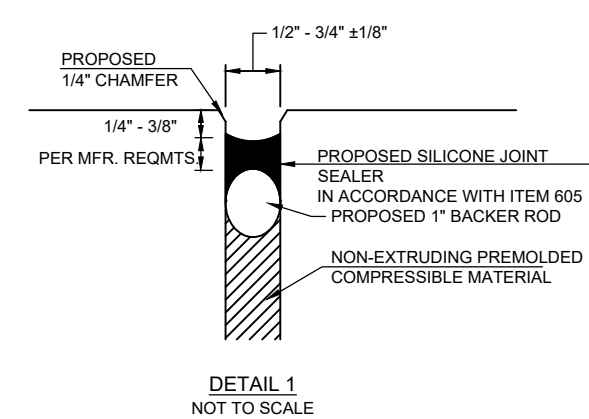
TYPE D DUMMY CONTRACTION JOINT



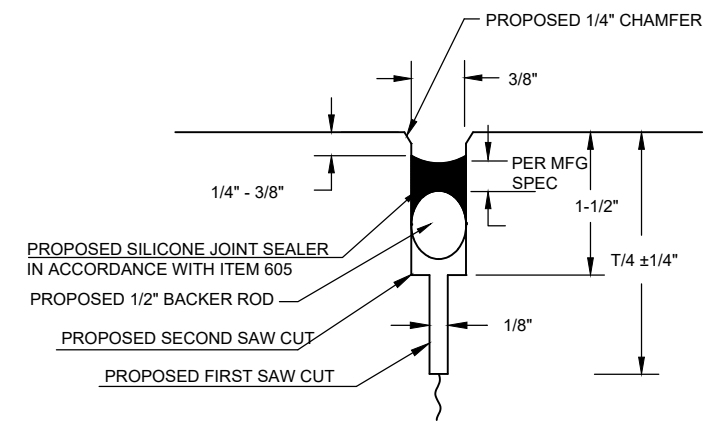
TYPE E DOWELED CONSTRUCTION JOINT



DOWEL PLAN VIEW

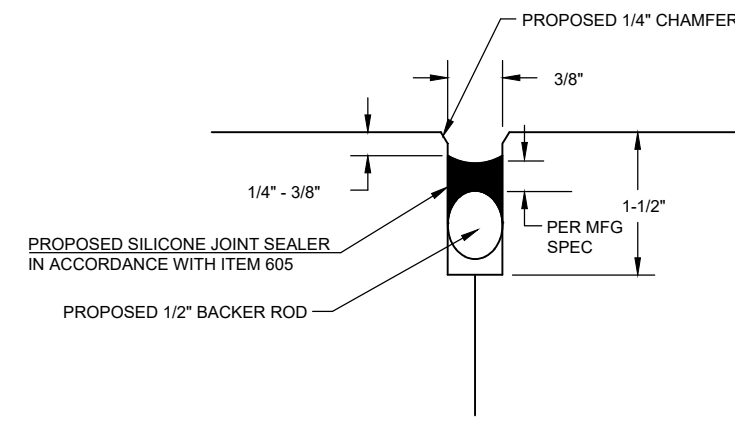


DETAIL 1 NOT TO SCALE



DETAIL 2 NOT TO SCALE

JOINT SEALING DETAILS
NOT TO SCALE



DETAIL 3 NOT TO SCALE

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DEC 04, 2023 9:51 AM ENG01009
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Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
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NO.	DATE	DESCRIPTION		
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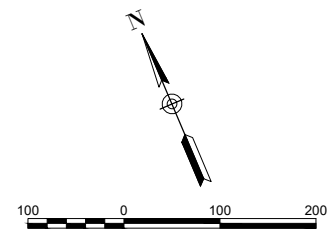
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PROJECT NO: 22A0004D
CAD FILE: C-201-SWPP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: CWS 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED EROSION
AND SEDIMENT
CONTROL PLAN
SHEET 1

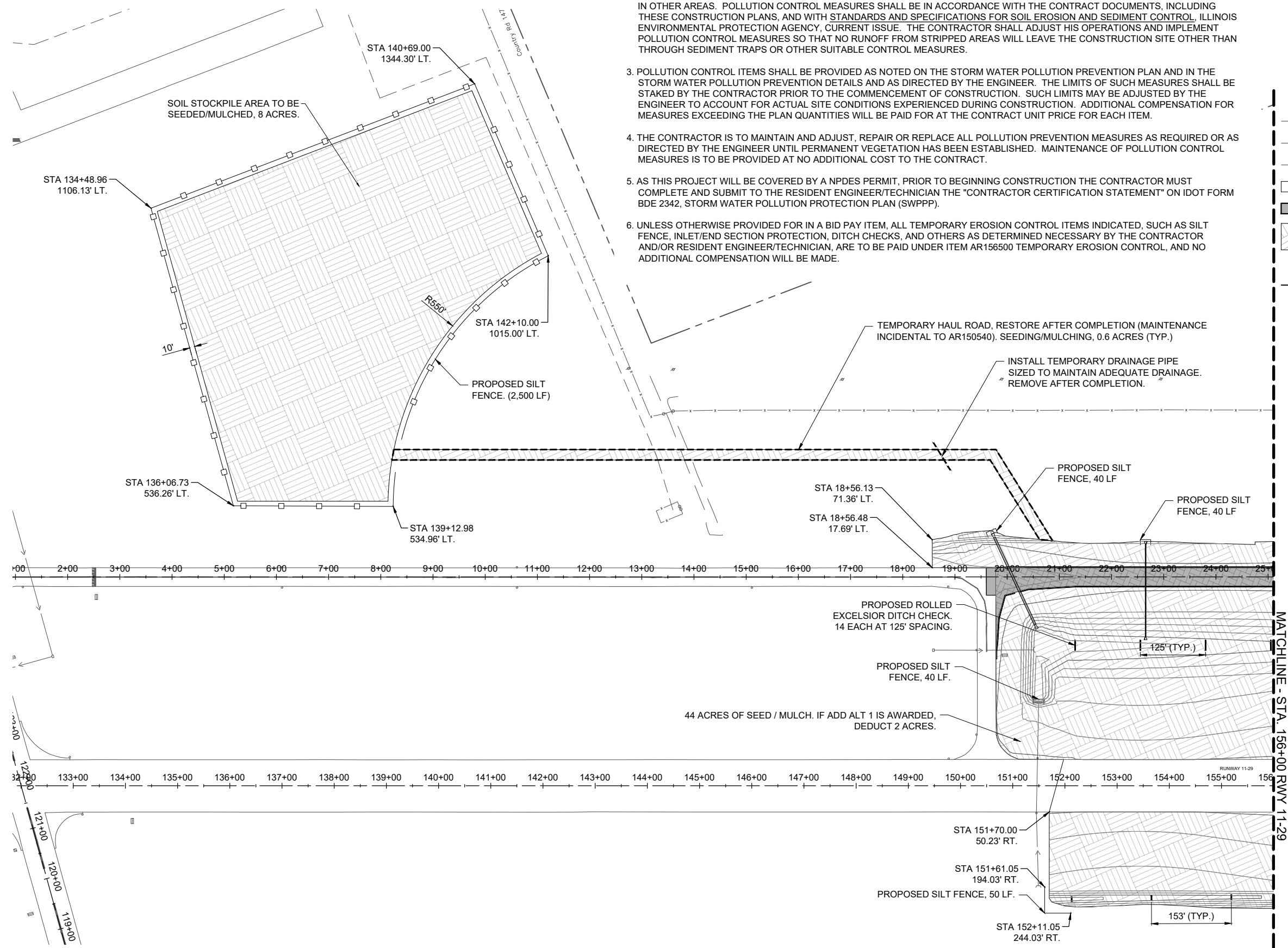
STORM WATER POLLUTION PREVENTION NOTES

1. THE CONTRACTOR SHALL IMPLEMENT ALL PROVISIONS OF THE CONTRACT DOCUMENTS TO ASSURE THAT STORM WATER POLLUTION PREVENTION ITEMS ARE CONSTRUCTED AND MAINTAINED IN A TIMELY MANNER. SEDIMENTATION MUST NOT BE TRANSPORTED OFF THE CONSTRUCTION SITE. PERMANENT DRAINAGE FEATURES AND VEGETATIVE MEASURES SHALL BE PROVIDED AS SOON AS POSSIBLE.
2. THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT AND MAINTAIN STORM WATER POLLUTION PREVENTION PRACTICES AND MEASURES PRIOR TO THE STRIPPING OF EXISTING VEGETATION WHERE EVER POSSIBLE AND AS SOON AS CONSTRUCTION PERMITS IN OTHER AREAS. POLLUTION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THESE CONSTRUCTION PLANS, AND WITH STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, CURRENT ISSUE. THE CONTRACTOR SHALL ADJUST HIS OPERATIONS AND IMPLEMENT POLLUTION CONTROL MEASURES SO THAT NO RUNOFF FROM STRIPPED AREAS WILL LEAVE THE CONSTRUCTION SITE OTHER THAN THROUGH SEDIMENT TRAPS OR OTHER SUITABLE CONTROL MEASURES.
3. POLLUTION CONTROL ITEMS SHALL BE PROVIDED AS NOTED ON THE STORM WATER POLLUTION PREVENTION PLAN AND IN THE STORM WATER POLLUTION PREVENTION DETAILS AND AS DIRECTED BY THE ENGINEER. THE LIMITS OF SUCH MEASURES SHALL BE STAKED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SUCH LIMITS MAY BE ADJUSTED BY THE ENGINEER TO ACCOUNT FOR ACTUAL SITE CONDITIONS EXPERIENCED DURING CONSTRUCTION. ADDITIONAL COMPENSATION FOR MEASURES EXCEEDING THE PLAN QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH ITEM.
4. THE CONTRACTOR IS TO MAINTAIN AND ADJUST, REPAIR OR REPLACE ALL POLLUTION PREVENTION MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. MAINTENANCE OF POLLUTION CONTROL MEASURES IS TO BE PROVIDED AT NO ADDITIONAL COST TO THE CONTRACT.
5. AS THIS PROJECT WILL BE COVERED BY A NPDES PERMIT, PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR MUST COMPLETE AND SUBMIT TO THE RESIDENT ENGINEER/TECHNICIAN THE "CONTRACTOR CERTIFICATION STATEMENT" ON IDOT FORM BDE 2342, STORM WATER POLLUTION PROTECTION PLAN (SWPPP).
6. UNLESS OTHERWISE PROVIDED FOR IN A BID PAY ITEM, ALL TEMPORARY EROSION CONTROL ITEMS INDICATED, SUCH AS SILT FENCE, INLET/END SECTION PROTECTION, DITCH CHECKS, AND OTHERS AS DETERMINED NECESSARY BY THE CONTRACTOR AND/OR RESIDENT ENGINEER/TECHNICIAN, ARE TO BE PAID UNDER ITEM AR156500 TEMPORARY EROSION CONTROL, AND NO ADDITIONAL COMPENSATION WILL BE MADE.



LEGEND

- EXISTING WATER
- EXISTING STORM SEWER
- EXISTING FENCE
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED SEEDING/MULCHING
- PROPOSED DITCH CHECK
- PROPOSED SILT FENCE



44 ACRES OF SEED / MULCH. IF ADD ALT 1 IS AWARDED, DEDUCT 2 ACRES.

FOR BID

DEC 04, 2023 9:52 AM ENG01009 1:22:05\22A0004D\CAD\AIRPORT\SHEETC-201-SWPP.DWG



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

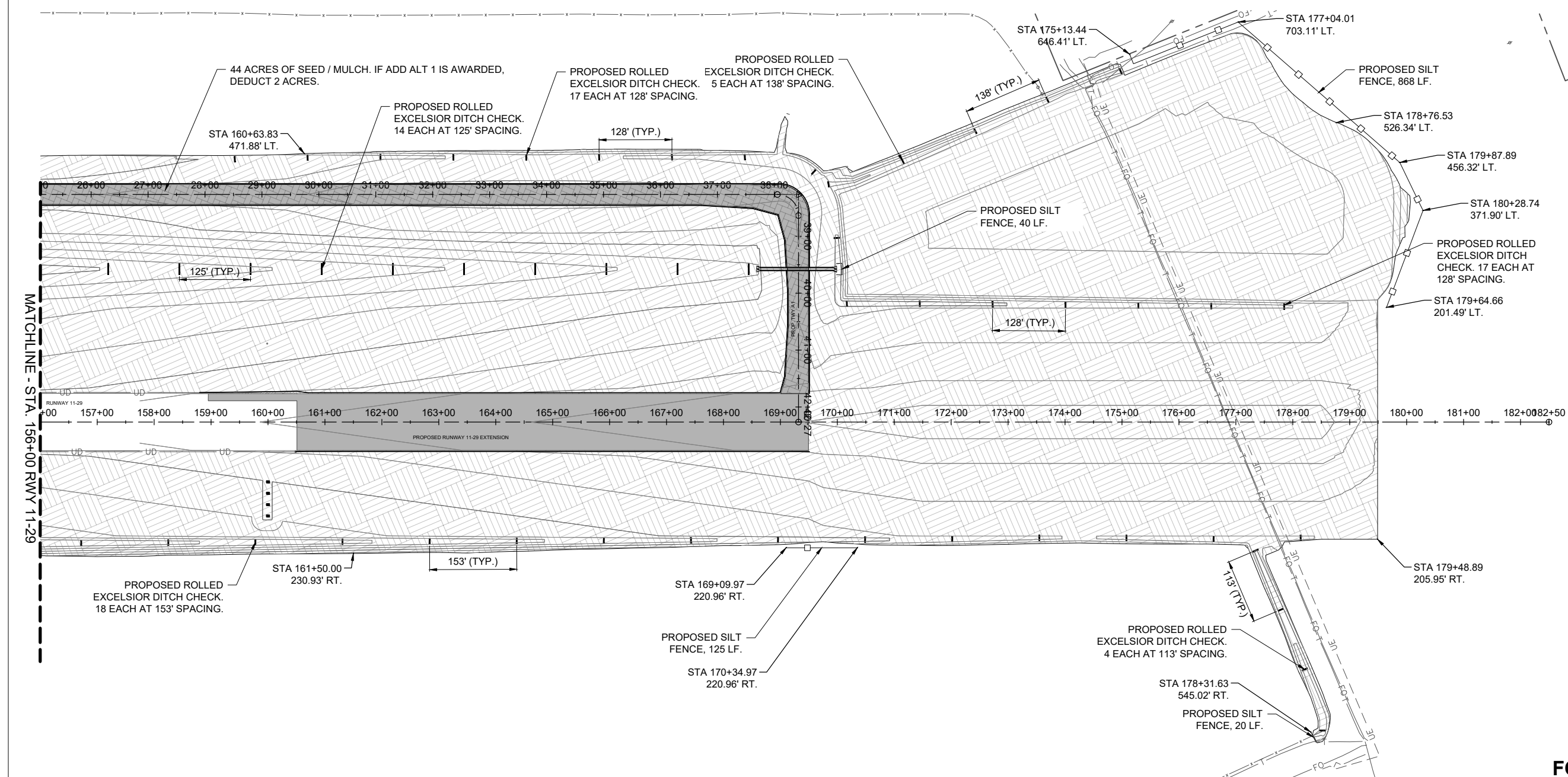
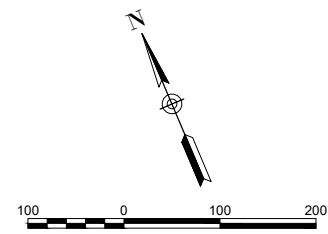
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-201-SWPP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: CWS 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

**PROPOSED EROSION
AND SEDIMENT
CONTROL PLAN
SHEET 2**

LEGEND

- T— EXISTING TELEPHONE
- FO— EXISTING FIBER OPTIC
- UE— EXISTING ELECTRICAL
- >— EXISTING STORM SEWER
- X— EXISTING FENCE
- ▭ EXISTING PAVEMENT
- ▨ PROPOSED PAVEMENT
- ▩ PROPOSED SEEDING/MULCHING
- PROPOSED DITCH CHECK
- PROPOSED SILT FENCE



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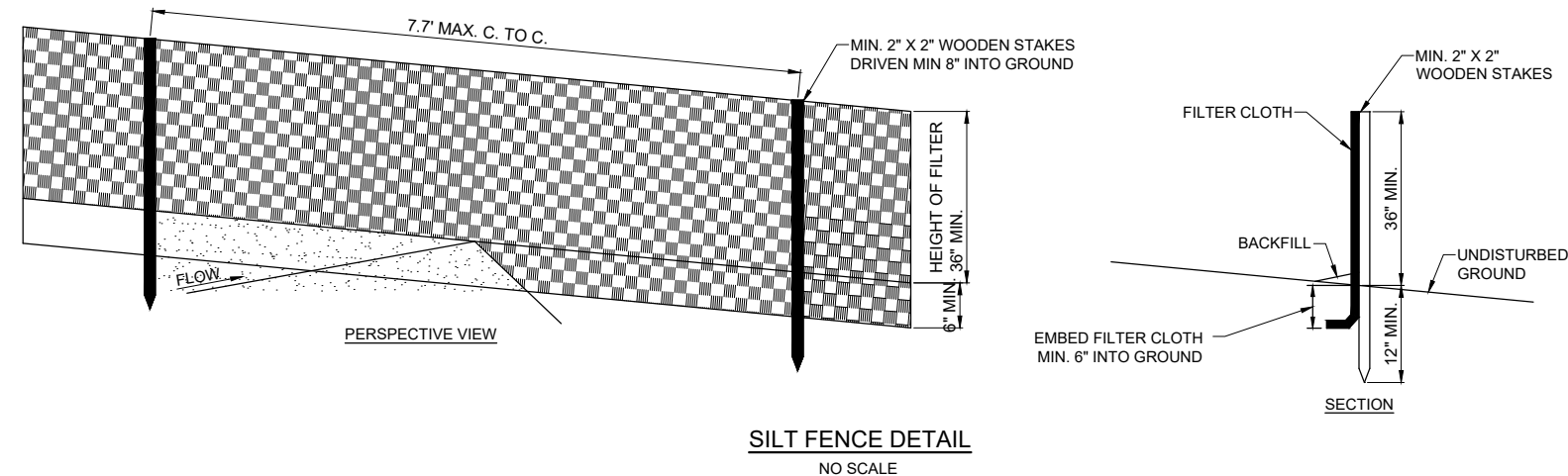


Michael J. Dudas

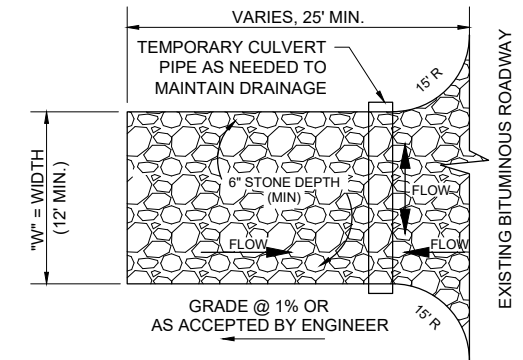
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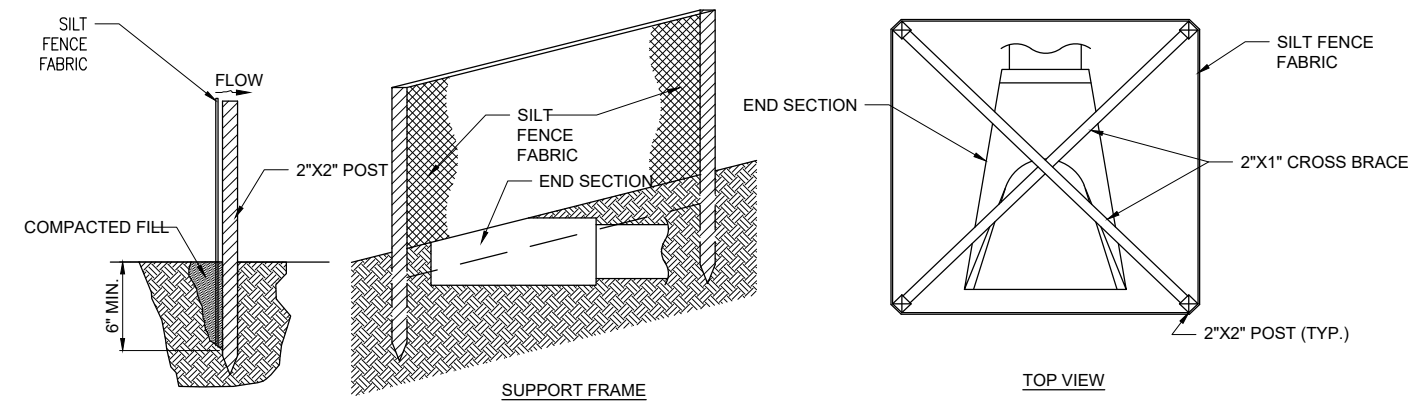


SILT FENCE DETAIL
NO SCALE

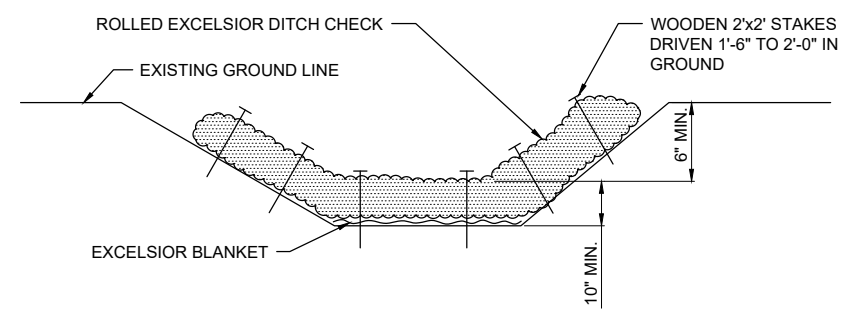


CONSTRUCTION ENTRANCE DRIVE/STAGING AREA DETAIL
NOT TO SCALE

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



FABRIC INLET/END SECTION PROTECTION
NOT TO SCALE



ROLLED EXCELSIOR DITCH CHECK
NOT TO SCALE

- DITCH CHECKS (ROLLED EXCELSIOR) SHALL BE PLACED IN THE DITCH CHANNEL OR AS DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN, AND SHALL EXTEND UP THE SIDES OF THE DITCH BANKS SO THAT THE BOTTOM OF THE ENDS ARE 6" ABOVE THE TOP OF THE DITCH CHECK IN THE MIDDLE OF THE DITCH.
- DITCH CHECKS SHALL BE SECURELY ANCHORED IN PLACE BY WOODEN STAKES DRIVEN ON THE DOWNSTREAM SIDE THE ROLL. THE STAKES SHALL BE DRIVEN AT A 30 DEGREE ANGLE TOWARD THE UPSTREAM SIDE OF THE ROLL TO SECURE THE DITCH CHECKS. THE STAKES SHALL BE A MAXIMUM SPACING OF 2 FEET.
- A LAYER OF EXCELSIOR BLANKET 5 FEET IN WIDTH SHALL BE PLACED UNDER THE ROLLED EXCELSIOR IN THE BED OF THE DITCH: 1 FOOT UPSTREAM OF THE DITCH CHECK, 1 FOOT UNDER DITCH CHECK, AND EXTEND 3 FEET DOWNSTREAM OF THE DITCH CHECK.
- INSPECTIONS SHALL BE FREQUENT AND REPAIR/REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED, AT NO ADDITIONAL COST TO CONTRACT.
- DITCH CHECKS SHALL BE REMOVED ONCE SEEDING HAS BEEN ESTABLISHED.

CONTRACTOR'S CERTIFICATION STATEMENT

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

PROJECT INFORMATION:
 AIRPORT: _____ PROJECT: _____
 PROJECT NO: _____ COUNTY: _____
 CONTRACT NUMBER: _____

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

SIGNATURE: _____ DATE: _____
 PRINTED NAME: _____ TITLE: _____
 NAME OF FIRM: _____
 STREET ADDRESS: _____
 CITY, STATE, ZIP: _____
 PHONE NUMBER: _____

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

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
 PROJECT NO: 22A0004D
 CAD FILE: C-581-SWP.DWG
 DESIGN BY: MJD 10/16/2023
 DRAWN BY: CWS 10/16/2023
 REVIEWED BY: MJD 11/17/2023
 SHEET TITLE

STORMWATER
POLLUTION
PREVENTION
DETAILS



Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A

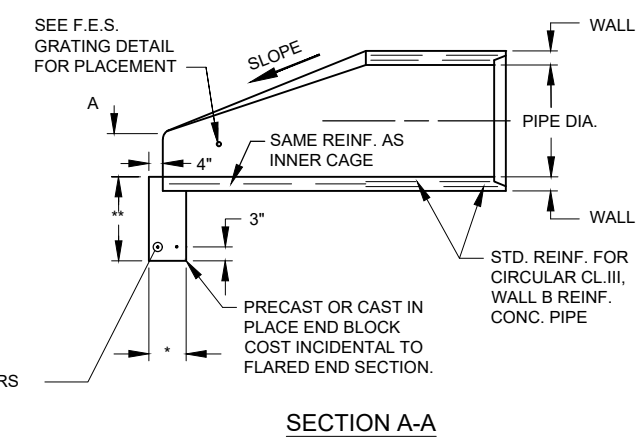
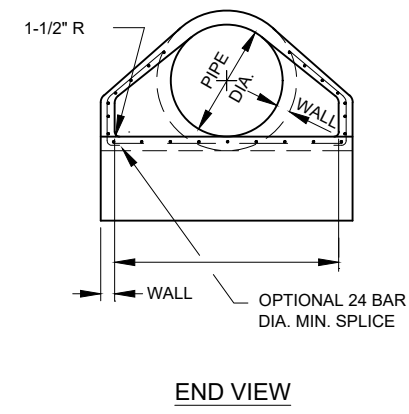
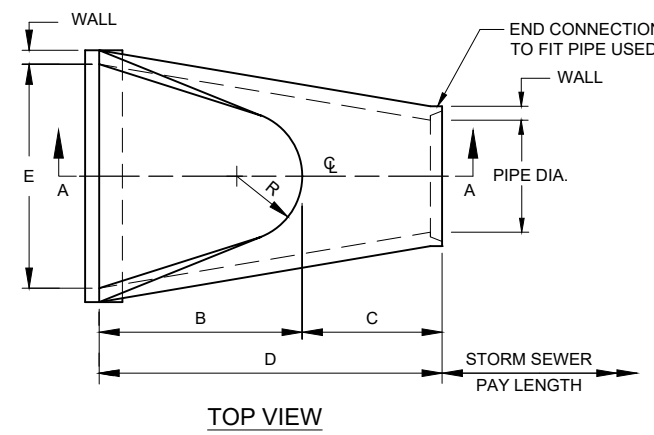
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-301-TYP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: CWS 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

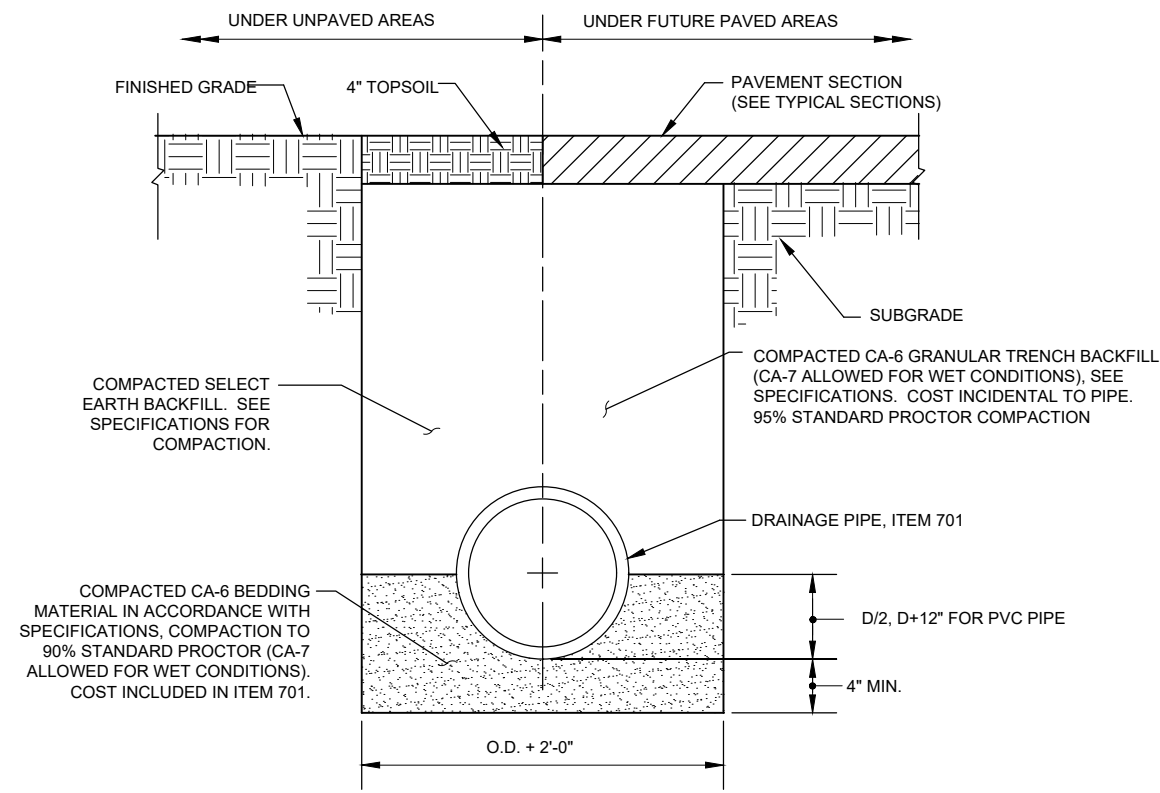
DRAINAGE DETAILS



- * 8" - 36" DIA. PIPE OR LESS
10" - GREATER THAN 36" DIA. PIPE
- ** 18" - 36" DIA. PIPE OR LESS
24" - GREATER THAN 36" DIA. PIPE

PIPE DIA.	WALL	A	B	C	D	E	R	SLOPE
12"	2"	4"	24"	4'-0 7/8"	6'-0 7/8"	24"	9"	1:2.4
36"	4"	15"	5'-3"	34 3/4"	8'-1 3/4"	6'-0"	20"	1:2.5

PRECAST CONCRETE FLARED END SECTION
(IDOT STANDARD 542301-MODIFIED)
NOT TO SCALE



- NOTES:**
- UNSATURABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
 - WITHIN 3 FEET OF PAVED AREA, GRANULAR BACKFILL IS TO BE USED INSTEAD OF EARTH BACKFILL.
 - 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

FOR BID



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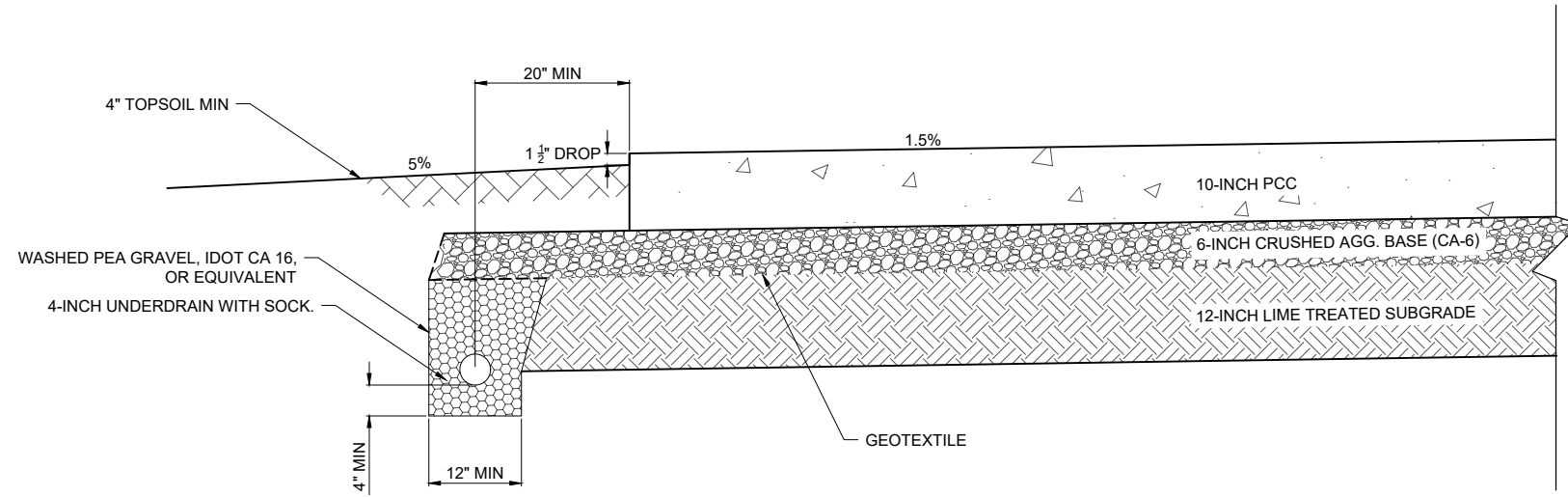
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-301-TYP.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: HLE 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

UNDERDRAIN
DETAILS SHEET 1

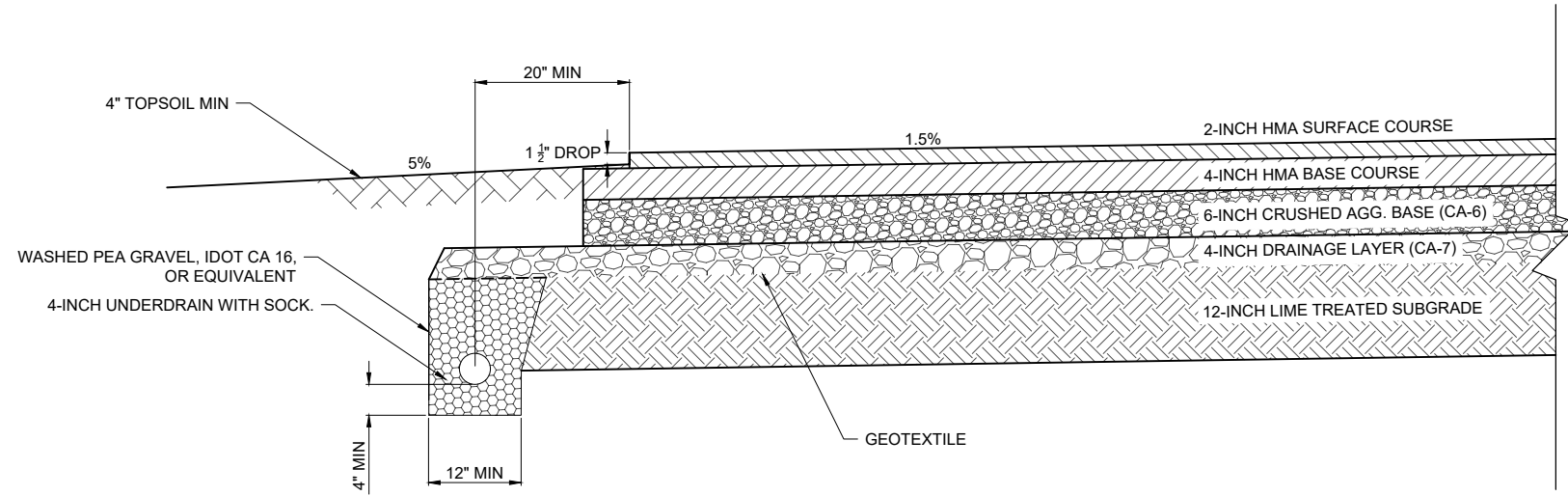
NOTES

- CONTRACTOR SHALL TAKE PROPER MEASURES TO PREVENT BLENDING SOIL OR OTHER DEBRIS INTO CRUSHED AGGREGATE BASE AND/OR THE POROUS GRANULAR MATERIAL THAT WOULD IMPEDE DRAINAGE.



TYPICAL SECTION - UNDERDRAIN (RUNWAY)

NOT TO SCALE



TYPICAL SECTION - UNDERDRAIN (TAXIWAY)

NOT TO SCALE



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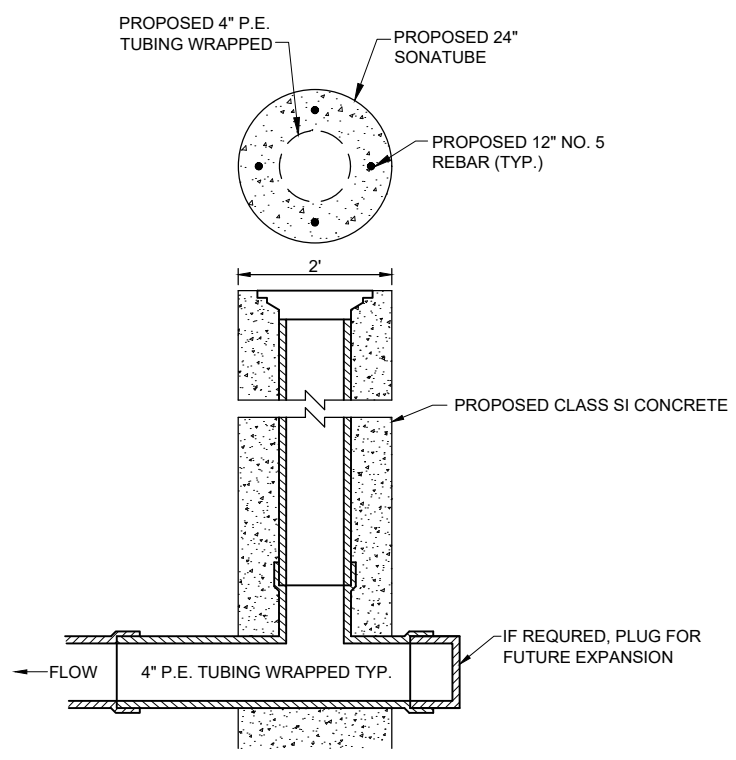
ISSUE: NOVEMBER 17, 2023
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SHEET TITLE

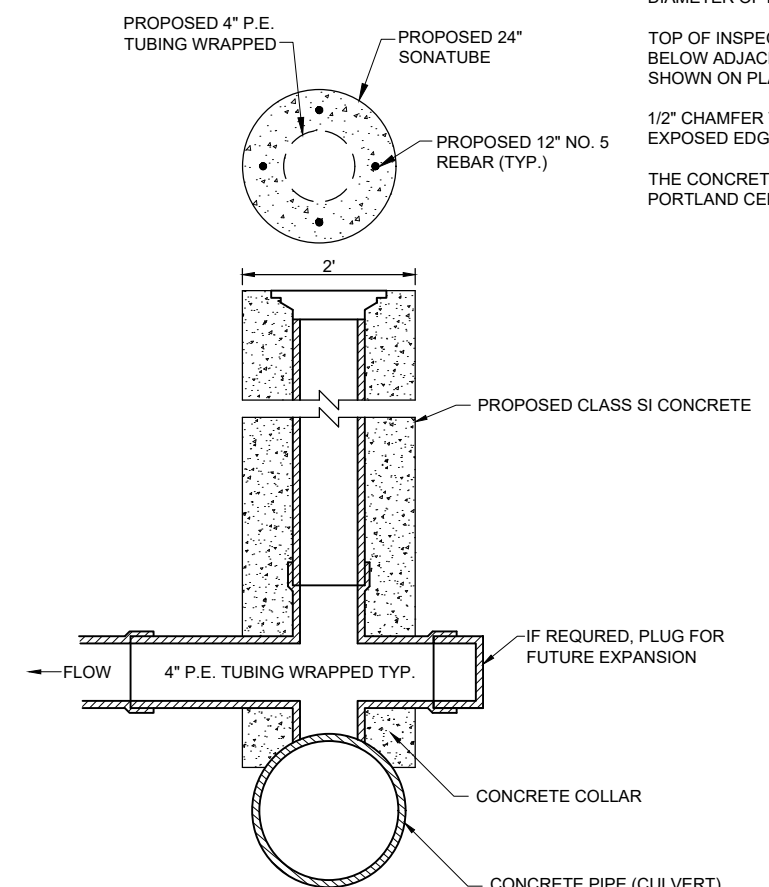
UNDERDRAIN
DETAILS SHEET 2

INSPECTION HOLE NOTES

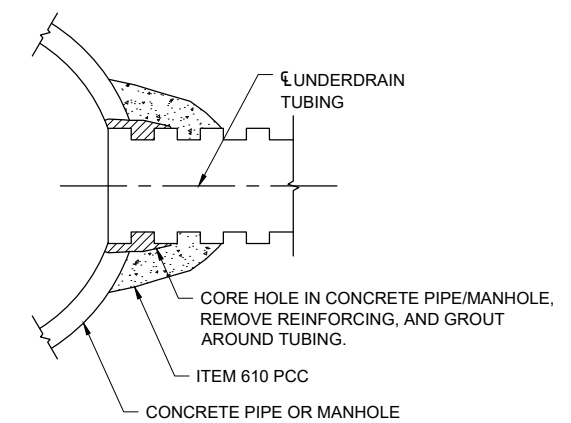
DIAMETER OF PIPE AS SPECIFIED.
TOP OF INSPECTION HOLES SHALL BE 0.10' BELOW ADJACENT PAVEMENT AT LOCATION SHOWN ON PLANS.
1/2" CHAMFER TO BE USED ON ALL EXPOSED EDGES OF INSPECTION HOLES.
THE CONCRETE SHALL BE STRUCTURAL PORTLAND CEMENT CONCRETE.



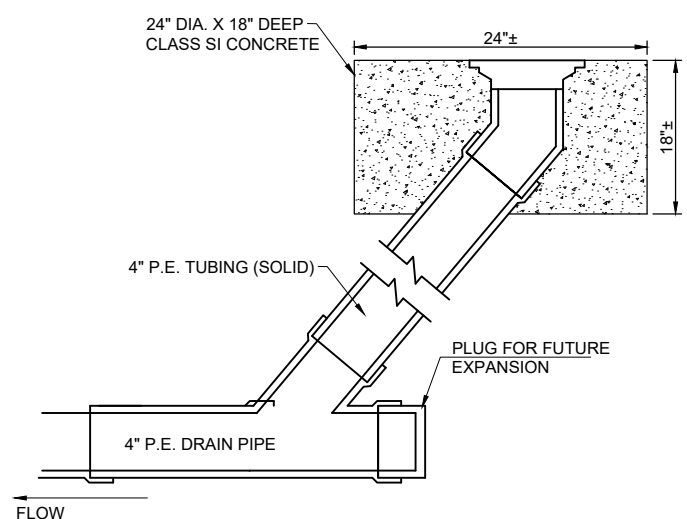
INSPECTION HOLE-TYPE A
"NOT TO SCALE"



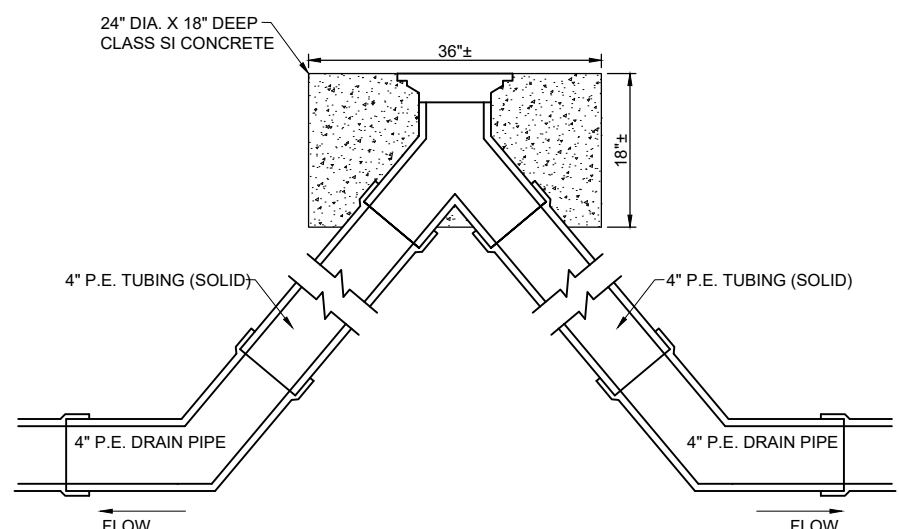
INSPECTION HOLE-TYPE B
"NOT TO SCALE"



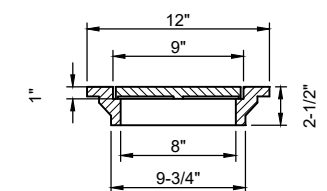
STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION
NOT TO SCALE



CLEANOUT TYPE B
NOT TO SCALE



DUAL UNDERDRAIN CLEANOUT
NOT TO SCALE



CAST IRON FRAME AND GRATE

NEENAH R-6450-AG,
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.
- 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 610.

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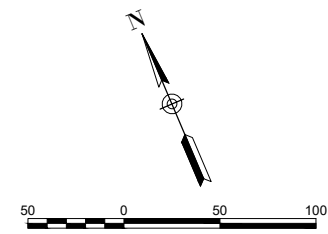
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CAD FILE: C-112-REM.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: HLE 10/16/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

MARKING REMOVAL
PLAN - STA. 132+00
TO STA. 154+00

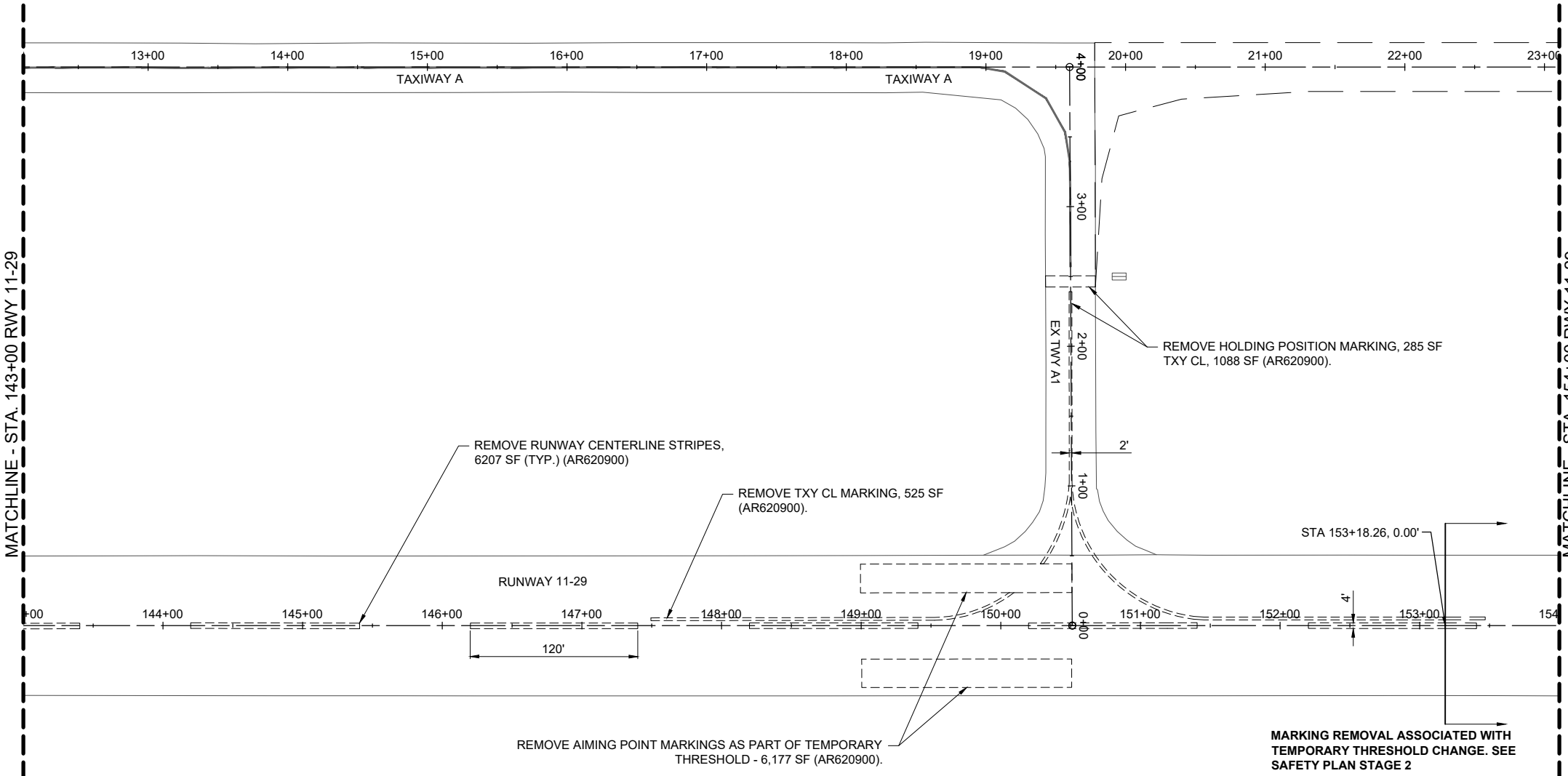
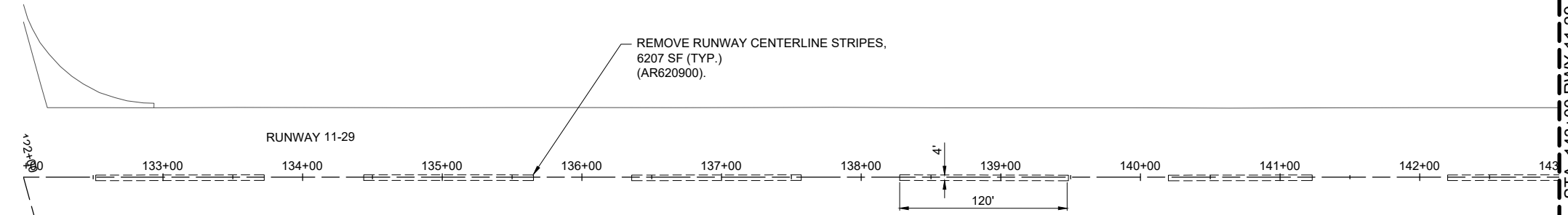
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LEGEND:

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- MARKING REMOVAL

AR620900 PAVEMENT MARKING REMOVAL	
DESCRIPTION	TOTAL AREA (S.F.)
THRESHOLD STRIPES	12444
RUNWAY DESIGNATION NUMERAL 29	3632
AIMING POINTS	6177
12" TAXIWAY CENTERLINES	1613
RUNWAY CENTERLINE STRIPES (13 TOTAL)	6207
HOLDING POSITION - EXISTING TWY A1 / PROPOSED TWY A2	285



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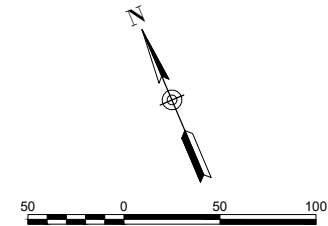
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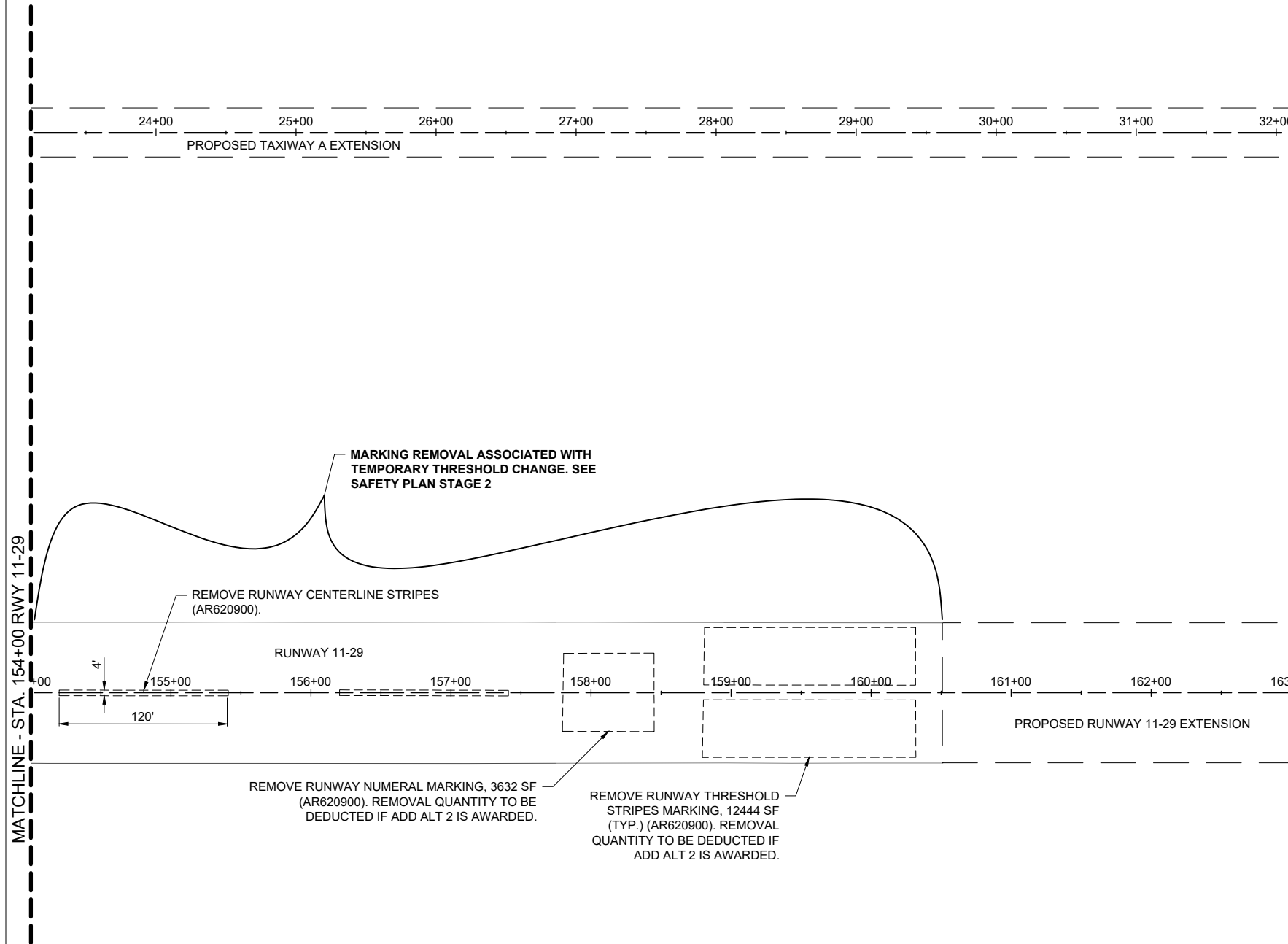
SHEET TITLE

**MARKING REMOVAL
PLAN - STA. 154+00
TO STA. 163+00**



LEGEND:

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- MARKING REMOVAL





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PROJECT NO: 22A0004D
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DESIGN BY: MJD 10/9/2023
DRAWN BY: CWS 10/9/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED MARKING PLAN - STA. 132+00 TO STA. 154+00



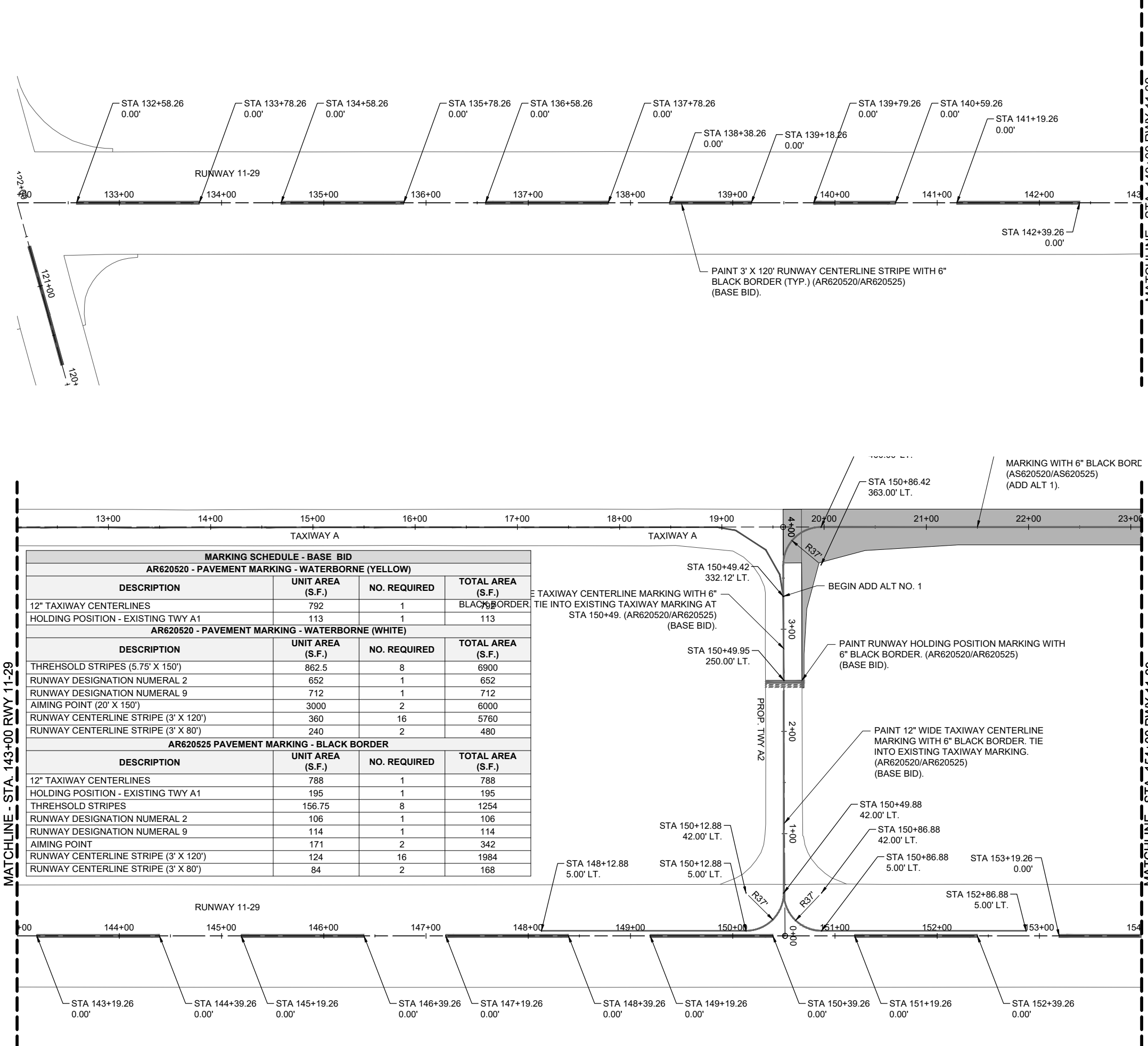
LEGEND:

EXISTING PAVEMENT

PROPOSED PAVEMENT

PAVEMENT MARKING NOTES

- GLASS BEADS SHALL BE REQUIRED FOR ALL WHITE AND YELLOW PERMANENT PAINT MARKINGS. GLASS BEADS ARE NOT REQUIRED FOR TEMPORARY MARKINGS OR BLACK PAINT. REFER TO SPECIFICATION ITEM P-620 FOR ADDITIONAL INFORMATION.
- IMMEDIATELY PRIOR TO THE APPLICATION OF PAINT, ALL SURFACES SHALL BE DRY AND FREE FROM DIRT, GREASE, OIL, LAITANCE, OR OTHER FOREIGN MATERIAL WHICH WOULD REDUCE THE BOND BETWEEN THE PAINT AND THE PAVEMENT. THIS SHALL INCLUDE PAINTED AREAS ON THE EXISTING PAVEMENTS. REFER TO SPECIFICATION P-620-3.3 FOR ADDITIONAL INFORMATION.
- EXISTING PAVEMENT MARKINGS OUTSIDE THE LIMITS OF THE MARKINGS SHOWN ON THE MARKING PLAN WHICH ARE REMOVED OR WORN DUE TO CONSTRUCTION ACTIVITY SHALL BE REPAINTED. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR THIS WORK.
- NUMERAL MARKING TEMPLATES FOR SURFACE PAINTED HOLD POSITION SIGN MARKINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR USE ON THE PROJECT. TEMPLATES SHALL BE MAINTAINED IN GOOD CONDITION AND TURNED OVER TO THE OWNER AT PROJECT COMPLETION.
- IF THE CONTRACTOR ELECTS TO "BLOCK PAINT" THE BLACK PAINT AND THEN PAINT EITHER YELLOW OR WHITE PAINT OVER THE BLACK PAINT; ONLY THE VISIBLE 6" BLACK OUTLINE WILL BE ELIGIBLE FOR PAYMENT.



MARKING SCHEDULE - BASE BID			
AR620520 - PAVEMENT MARKING - WATERBORNE (YELLOW)			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
12" TAXIWAY CENTERLINES	792	1	792
HOLDING POSITION - EXISTING TWY A1	113	1	113
AR620520 - PAVEMENT MARKING - WATERBORNE (WHITE)			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
THRESHOLD STRIPES (5.75' X 150')	862.5	8	6900
RUNWAY DESIGNATION NUMERAL 2	652	1	652
RUNWAY DESIGNATION NUMERAL 9	712	1	712
AIMING POINT (20' X 150')	3000	2	6000
RUNWAY CENTERLINE STRIPE (3' X 120')	360	16	5760
RUNWAY CENTERLINE STRIPE (3' X 80')	240	2	480
AR620525 PAVEMENT MARKING - BLACK BORDER			
DESCRIPTION	UNIT AREA (S.F.)	NO. REQUIRED	TOTAL AREA (S.F.)
12" TAXIWAY CENTERLINES	788	1	788
HOLDING POSITION - EXISTING TWY A1	195	1	195
THRESHOLD STRIPES	156.75	8	1254
RUNWAY DESIGNATION NUMERAL 2	106	1	106
RUNWAY DESIGNATION NUMERAL 9	114	1	114
AIMING POINT	171	2	342
RUNWAY CENTERLINE STRIPE (3' X 120')	124	16	1984
RUNWAY CENTERLINE STRIPE (3' X 80')	84	2	168

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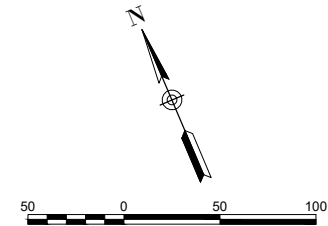
DESIGN BY: MJD 10/9/2023

DRAWN BY: CWS 10/9/2023

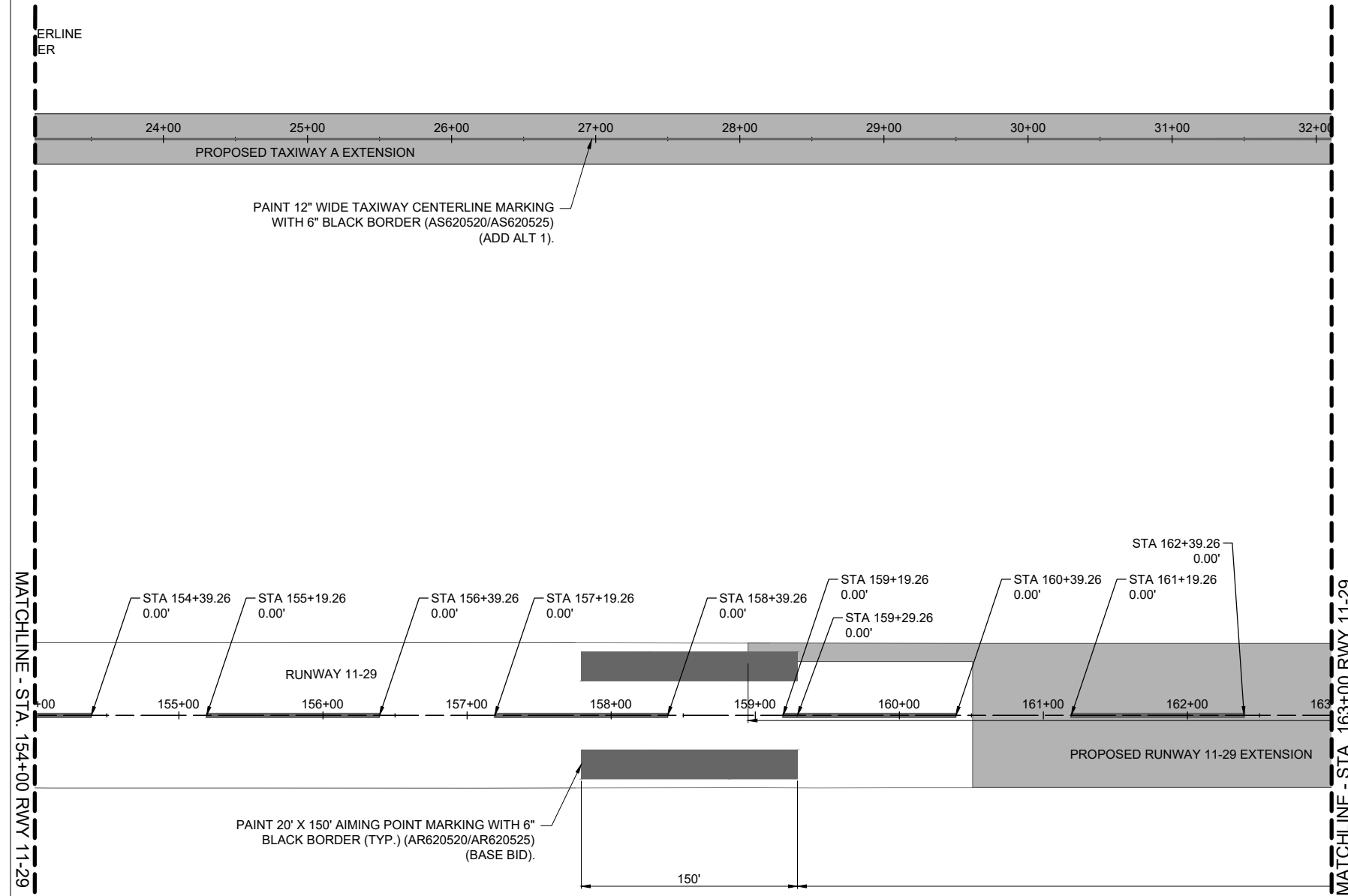
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

PROPOSED MARKING
PLAN - STA. 154+00
TO STA. 163+00



LEGEND:
 EXISTING PAVEMENT
 PROPOSED PAVEMENT



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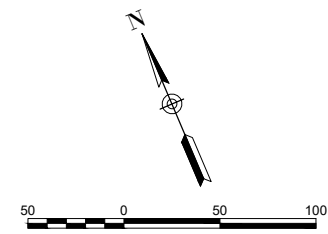
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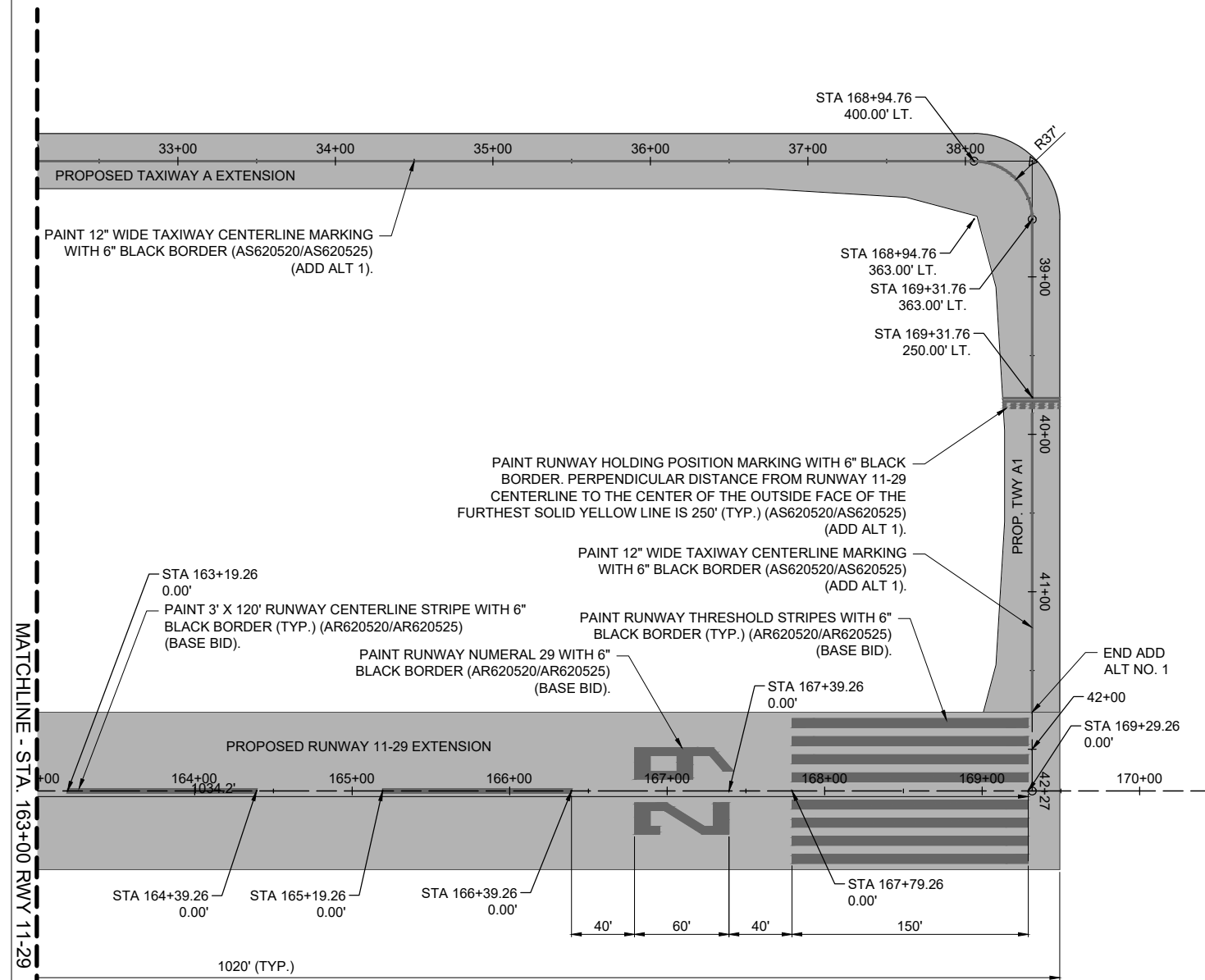
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SHEET TITLE

**PROPOSED MARKING
PLAN - STA. 163+00
TO STA. 170+50**



LEGEND:
 EXISTING PAVEMENT
 PROPOSED PAVEMENT



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CAD FILE: C-502-MRK.DWG

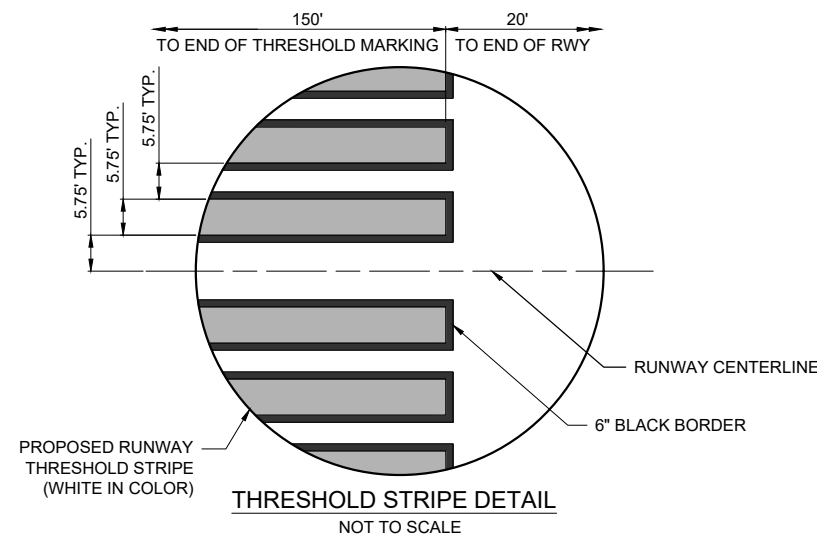
DESIGN BY: MJD 10/9/2023

DRAWN BY: CWS 10/9/2023

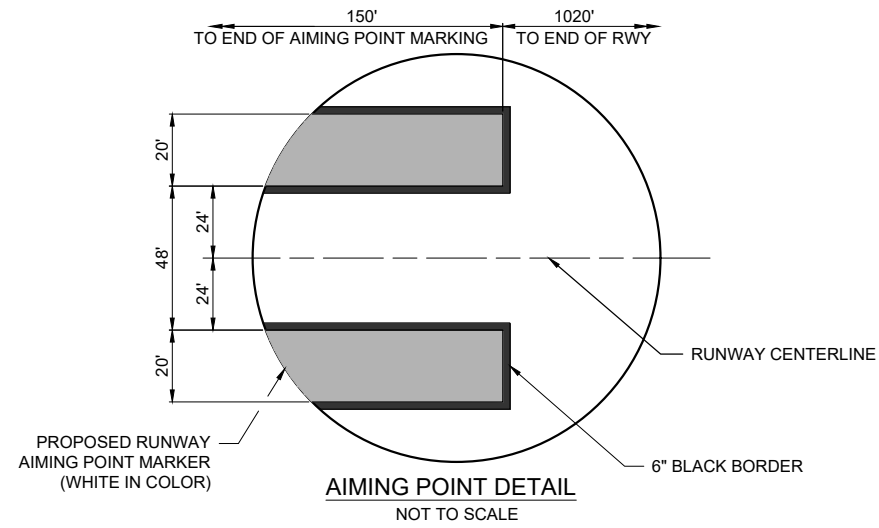
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

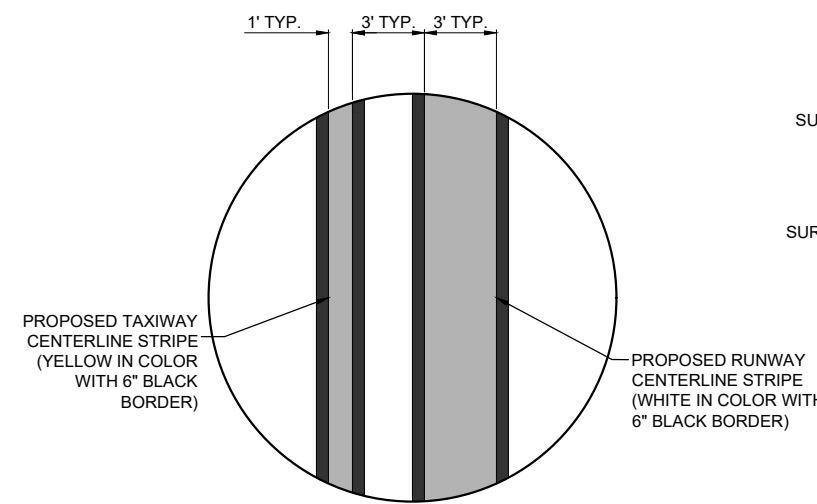
MARKING DETAILS



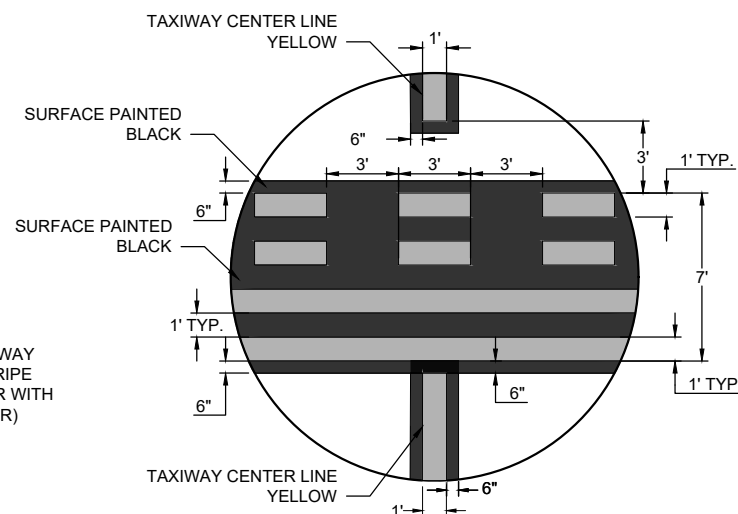
THRESHOLD STRIPE DETAIL
NOT TO SCALE



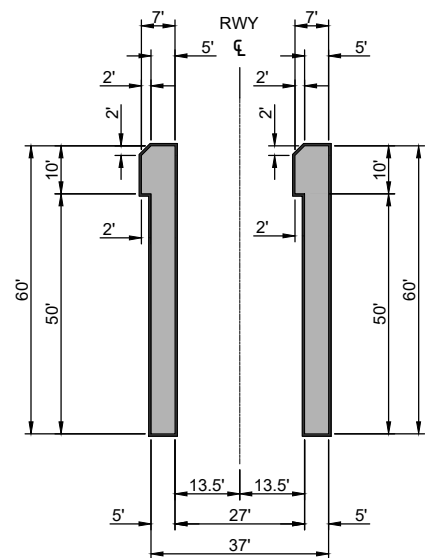
AIMING POINT DETAIL
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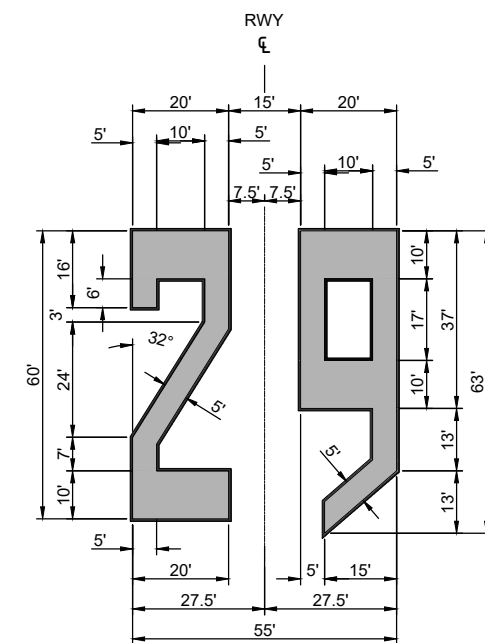
TAXIWAY CENTERLINE LEAD-IN DETAIL
NOT TO SCALE



RUNWAY HOLDING POSITION DETAIL
NOT TO SCALE



WHITE: 118.5 SF
BLACK: 68 SF
RUNWAY 11 DESIGNATION MARKING
NOT TO SCALE

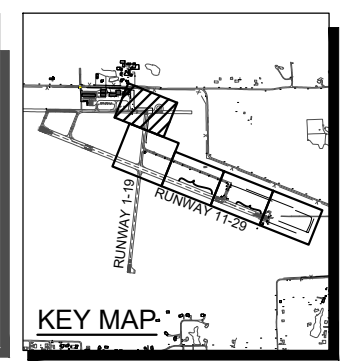
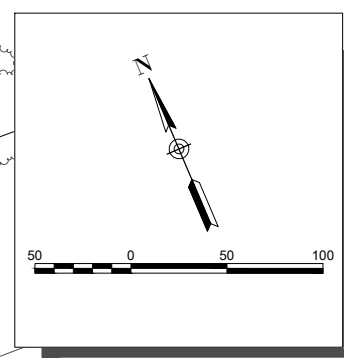
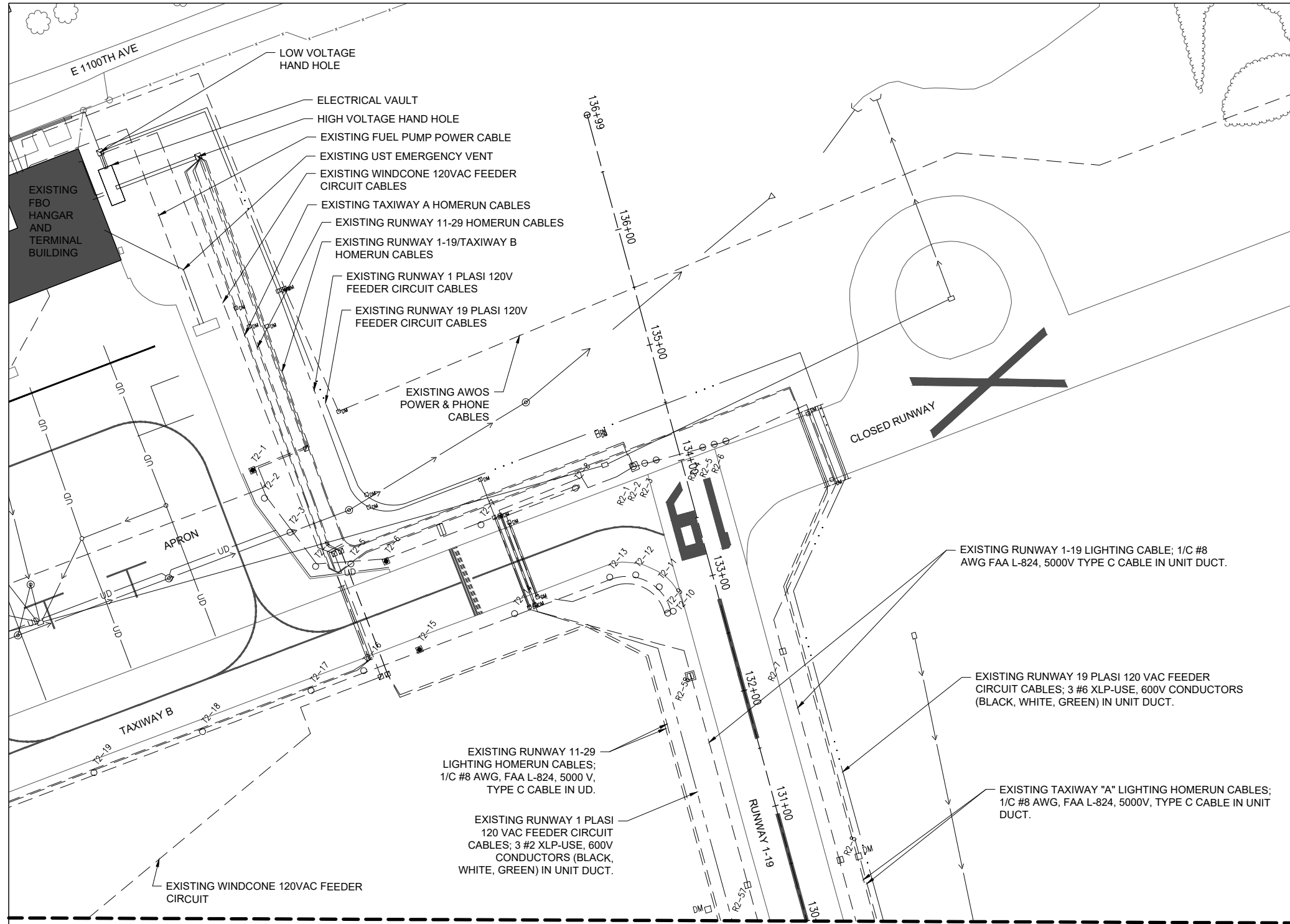


WHITE: 652 SF
BLACK: 106 SF
WHITE: 712 SF
BLACK: 114 SF
RUNWAY 29 DESIGNATION MARKING
NOT TO SCALE

RUNWAY DESIGNATION MARKING NOTES

- ALL NUMERAL MARKING WILL BE WHITE IN COLOR WITH A 6" BLACK OUTLINE.
- NUMERALS ARE HORIZONTALLY SPACED 15 FEET APART.
- DOUBLE DIGIT NUMERAL DESIGNATIONS ARE CENTERED ON THE RUNWAY PAVEMENT CENTERLINE BASED ON THE CENTER OF THE OUTER EDGES OF THE TWO NUMERALS.

FOR BID



LEGEND

- [Symbol] EXISTING PAVEMENT
- [Symbol] EXISTING BUILDING
- [Symbol] EXISTING ELECTRICAL DUCT
- [Symbol] EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- [Symbol] EXISTING RUNWAY 1 PLASI FEEDER CIRCUIT
- [Symbol] EXISTING RUNWAY 19 PLASI FEEDER CIRCUIT
- [Symbol] EXISTING FENCE
- [Symbol] EXISTING UNDERDRAIN
- [Symbol] EXISTING STORM SEWER
- [Symbol] EXISTING REIL
- [Symbol] EXISTING TAXI GUIDANCE SIGN
- [Symbol] EXISTING SPLICE CAN
- [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT
- [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT
- [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- [Symbol] EXISTING STAKE MOUNTED RUNWAY LIGHT
- [Symbol] EXISTING BASE MOUNTED RUNWAY LIGHT
- [Symbol] EXISTING STAKE MOUNTED THRESHOLD LIGHT
- [Symbol] EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- [Symbol] EXISTING BASE MOUNTED THRESHOLD LIGHT
- [Symbol] EXISTING ELECTRICAL HANDHOLE
- [Symbol] EXISTING DUCT MARKER
- [Symbol] EXISTING CLEAN-OUT
- [Symbol] EXISTING INLET
- [Symbol] EXISTING QUARTZ/INCANDESCENT STAKE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH NEW L-861T(L) LED FIXTURE AND TRANSFORMER. EXISTING MOUNTING STAKE TO REMAIN AND BE REUSED.
- [Symbol] EXISTING QUARTZ/INCANDESCENT BASE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH NEW L-861T(L) LED FIXTURE AND TRANSFORMER. EXISTING BASE TO REMAIN AND BE REUSED.

MATCHLINE - STA. 130+00 RWY 1-19

GENERAL NOTES:

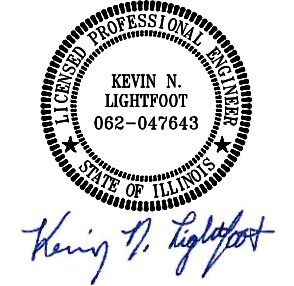
- SEE "AIRFIELD LIGHTING NOTES" SHEET.
- PRIOR TO BEGINNING EXCAVATIONS, AIRFIELD LIGHTING MODIFICATIONS, CABLE INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS. ALL EXISTING SERIES CIRCUIT CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE RESPECTIVE 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 AND RESULTS RECORDED. CONTRACTOR SHALL PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. COPIES OF TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER AND THE RESPECTIVE PROJECT ENGINEER WITHIN FIVE BUSINESS DAYS OF CONDUCTING THE RESPECTIVE TESTS. SEE THE TESTING FORMS INCLUDED IN THE APPENDIX. THESE TESTS ARE REQUIRED TO PROTECT THE OWNER AND THE CONTRACTOR AND TO IDENTIFY EXISTING CONDITIONS AND ANY DEFECTIVE CABLES, CIRCUITS, AND/OR CONSTANT CURRENT REGULATORS. FAILURE TO COMPLY WITH THIS REQUIREMENT MIGHT RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR DEFECTIVE CABLES AND CIRCUIT CONDITIONS (WHERE PREVIOUSLY NOT IDENTIFIED) AND THE ASSOCIATED CORRECTIVE WORK AT NO ADDITIONAL COST TO THE CONTRACT.

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

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

EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING ELECTRICAL DESIGN



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

EXTEND RUNWAY 11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

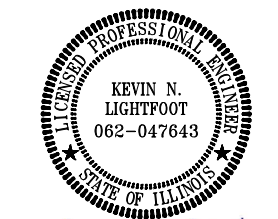
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: E-141-ELE.DWG
DESIGN BY: KNL 10/3/2023
DRAWN BY: HLE 10/3/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

EXISTING
ELECTRICAL PLAN -
STA. 130+00 RUNWAY
1-19

FOR BID



Kevin N. Lightfoot

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

EXTEND RUNWAY 11-29 AND TAXIWAY A

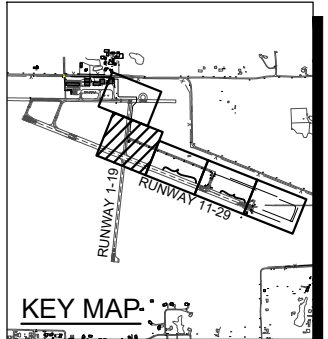
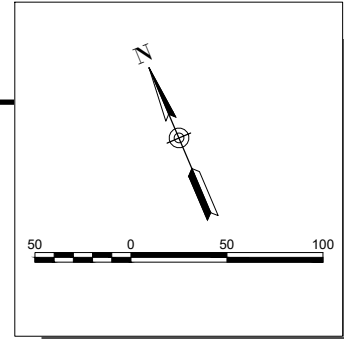
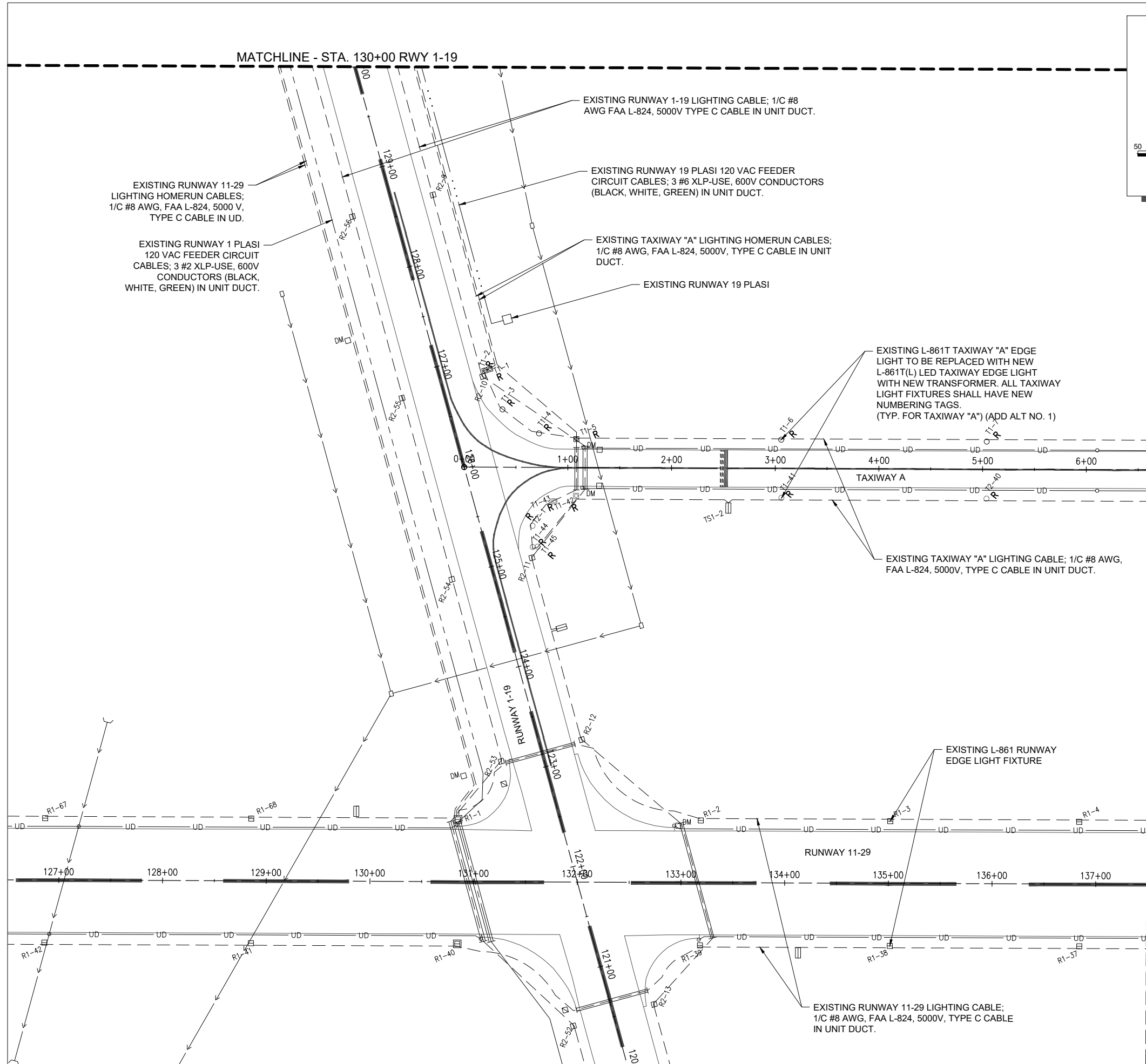
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DESIGN BY: KNL 10/3/2023
DRAWN BY: HLE 10/3/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

EXISTING
ELECTRICAL PLAN -
STA. 126+50 TO STA.
137+50



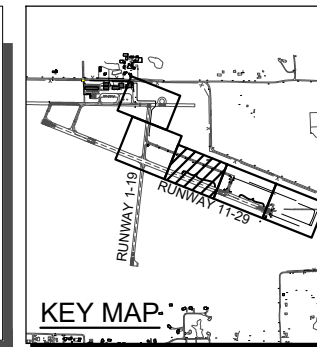
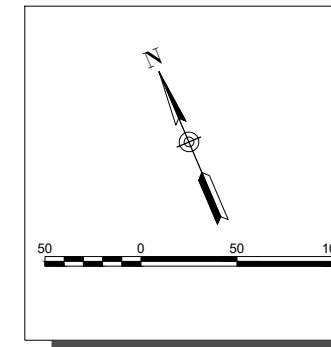
- LEGEND**
- [Solid Line] EXISTING PAVEMENT
 - [Thick Solid Line] EXISTING BUILDING
 - [Dashed Line] EXISTING ELECTRICAL DUCT
 - [Dotted Line] EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
 - [Dash-dot Line] EXISTING RUNWAY 1 PLASI FEEDER CIRCUIT
 - [Dash-dot-dot Line] EXISTING RUNWAY 19 PLASI FEEDER CIRCUIT
 - [X-X] EXISTING FENCE
 - [UD] EXISTING UNDERDRAIN
 - [S-S] EXISTING STORM SEWER
 - [V] EXISTING REIL
 - [Square with X] EXISTING TAXI GUIDANCE SIGN
 - [Square with Z] EXISTING SPLICE CAN
 - [Circle with X] EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - [Circle with X and slash] EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - [Square with Z and slash] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Square with Z and slash and X] EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - [Square with Z] EXISTING STAKE MOUNTED RUNWAY LIGHT
 - [Square with Z and slash] EXISTING BASE MOUNTED RUNWAY LIGHT
 - [Circle with Z] EXISTING STAKE MOUNTED THRESHOLD LIGHT
 - [Circle with Z and slash] EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
 - [Square with Z and slash] EXISTING BASE MOUNTED THRESHOLD LIGHT
 - [Square with Z and slash and H] EXISTING ELECTRICAL HANDHOLE
 - [Square with DM] EXISTING DUCT MARKER
 - [Circle with CO] EXISTING CLEAN-OUT
 - [Square with I] EXISTING INLET
 - [Circle with R and O] EXISTING QUARTZ/INCANDESCENT STAKE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH NEW L-861T(L) LED FIXTURE AND TRANSFORMER. EXISTING MOUNTING STAKE TO REMAIN AND BE REUSED.
 - [Circle with R and Z] EXISTING QUARTZ/INCANDESCENT BASE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH NEW L-861T(L) LED FIXTURE AND TRANSFORMER. EXISTING BASE TO REMAIN AND BE REUSED.

DEC 04, 2023 9:56 AM ENGELO1009
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FOR BID

NOTE:

EXISTING RUNWAY 11-29 LIGHT LENS COLORS WILL NEED TO BE CHANGED FROM YELLOW/WHITE TO WHITE FOR FIXTURES R1-6 TO R1-10 AND R1-31 TO R1-35 (10 TOTAL) TO ACCOMMODATE RUNWAY EXTENSION.



Offices Nationwide
www.hanson-inc.com

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

Illinois Licensed
Professional Service Corporation
#184-001084

EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING ELECTRICAL DESIGN



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

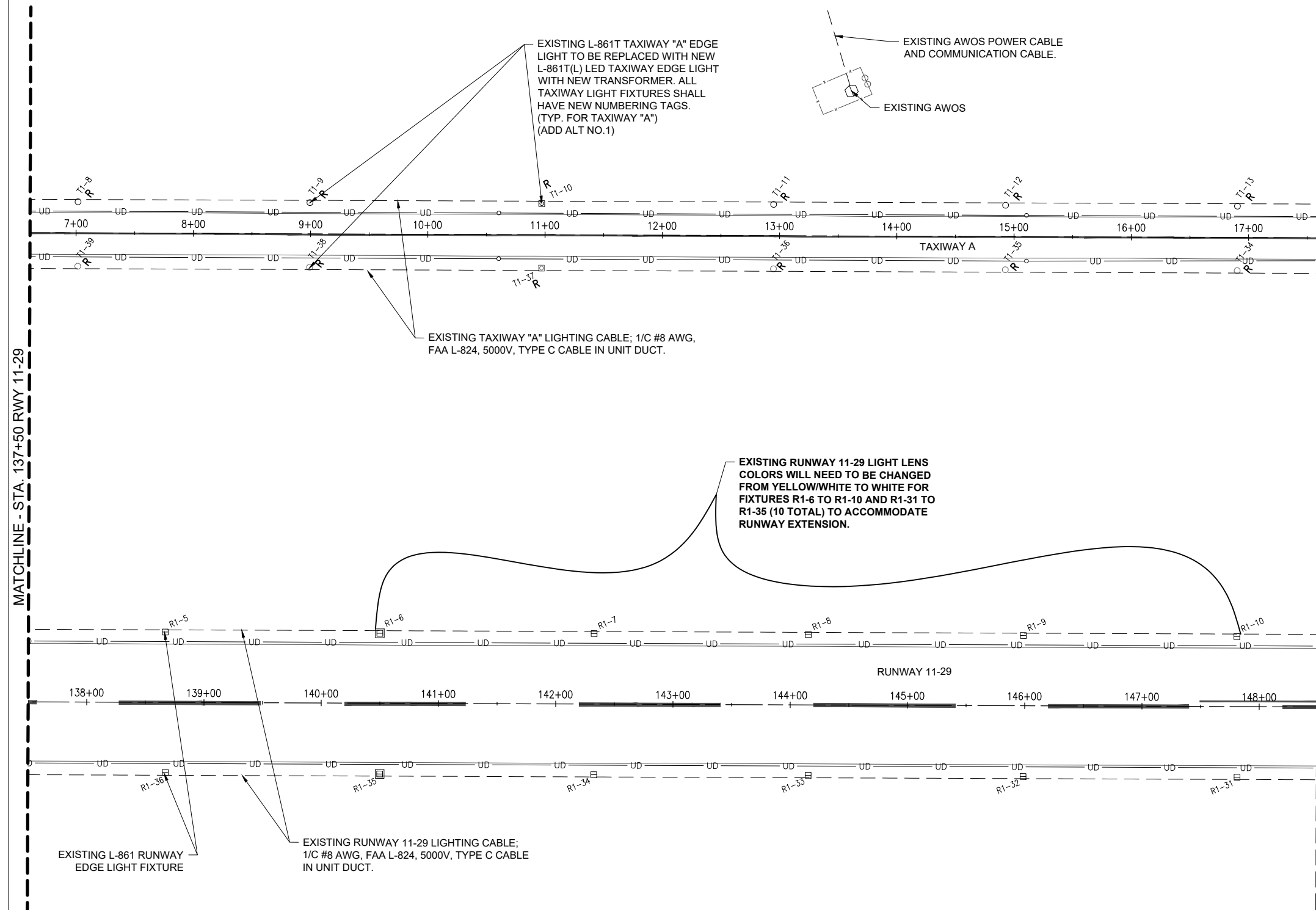
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: E-141-ELE.DWG
DESIGN BY: KNL 10/3/2023
DRAWN BY: HLE 10/3/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

EXISTING
ELECTRICAL PLAN -
STA. 137+50 TO STA.
148+50

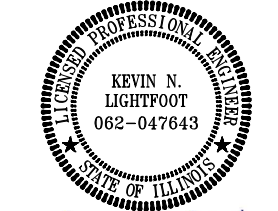
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING RUNWAY 1 PLASI FEEDER CIRCUIT
- EXISTING RUNWAY 19 PLASI FEEDER CIRCUIT
- EXISTING FENCE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING ELECTRICAL HANDHOLE
- EXISTING DUCT MARKER
- EXISTING CLEAN-OUT
- EXISTING INLET
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DEC 04, 2023 9:56 AM ENGELO1009
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FOR BID



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: E-141-ELE.DWG

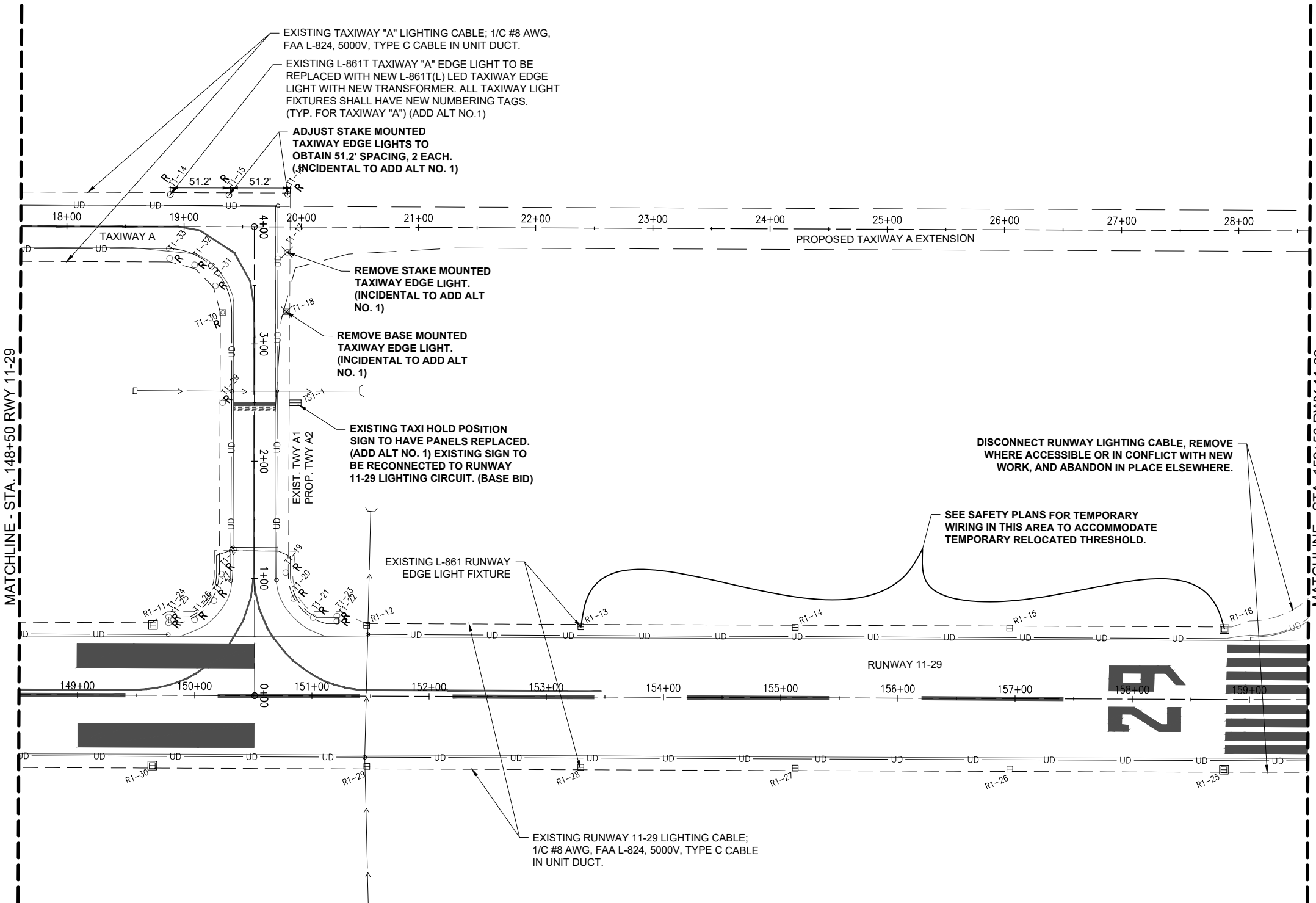
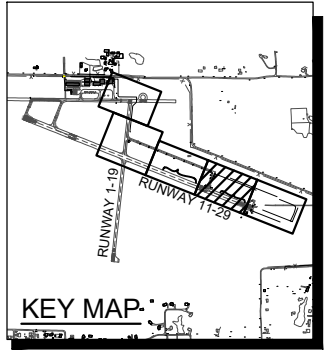
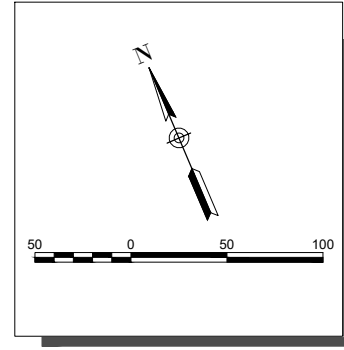
DESIGN BY: KNL 10/3/2023

DRAWN BY: HLE 10/3/2023

REVIEWED BY: KNL 11/9/2023

SHEET TITLE

EXISTING
ELECTRICAL PLAN -
STA. 148+50 TO STA.
159+50



- LEGEND**
- [Symbol] EXISTING PAVEMENT
 - [Symbol] EXISTING BUILDING
 - [Symbol] EXISTING ELECTRICAL DUCT
 - [Symbol] EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
 - [Symbol] EXISTING RUNWAY 1 PLASI FEEDER CIRCUIT
 - [Symbol] EXISTING RUNWAY 19 PLASI FEEDER CIRCUIT
 - [Symbol] EXISTING FENCE
 - [Symbol] EXISTING UNDERDRAIN
 - [Symbol] EXISTING STORM SEWER
 - [Symbol] EXISTING REIL
 - [Symbol] EXISTING TAXI GUIDANCE SIGN
 - [Symbol] EXISTING SPLICE CAN
 - [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - [Symbol] EXISTING STAKE MOUNTED RUNWAY LIGHT
 - [Symbol] EXISTING BASE MOUNTED RUNWAY LIGHT
 - [Symbol] EXISTING STAKE MOUNTED THRESHOLD LIGHT
 - [Symbol] EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
 - [Symbol] EXISTING BASE MOUNTED THRESHOLD LIGHT
 - [Symbol] EXISTING ELECTRICAL HANDHOLE
 - [Symbol] EXISTING DUCT MARKER
 - [Symbol] EXISTING CLEAN-OUT
 - [Symbol] EXISTING INLET
 - [Symbol] EXISTING QUARTZ/INCANDESCENT STAKE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH NEW L-861T(L) LED FIXTURE AND TRANSFORMER. EXISTING MOUNTING STAKE TO REMAIN AND BE REUSED.
 - [Symbol] EXISTING QUARTZ/INCANDESCENT BASE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH NEW L-861T(L) LED FIXTURE AND TRANSFORMER. EXISTING BASE TO REMAIN AND BE REUSED.

FOR BID



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

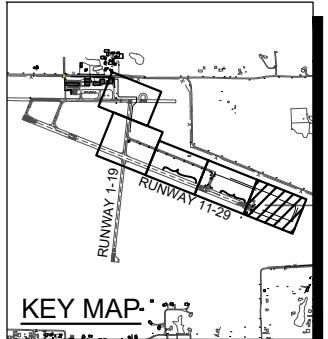
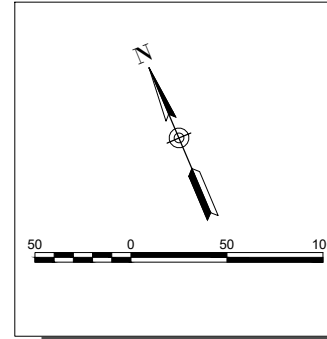
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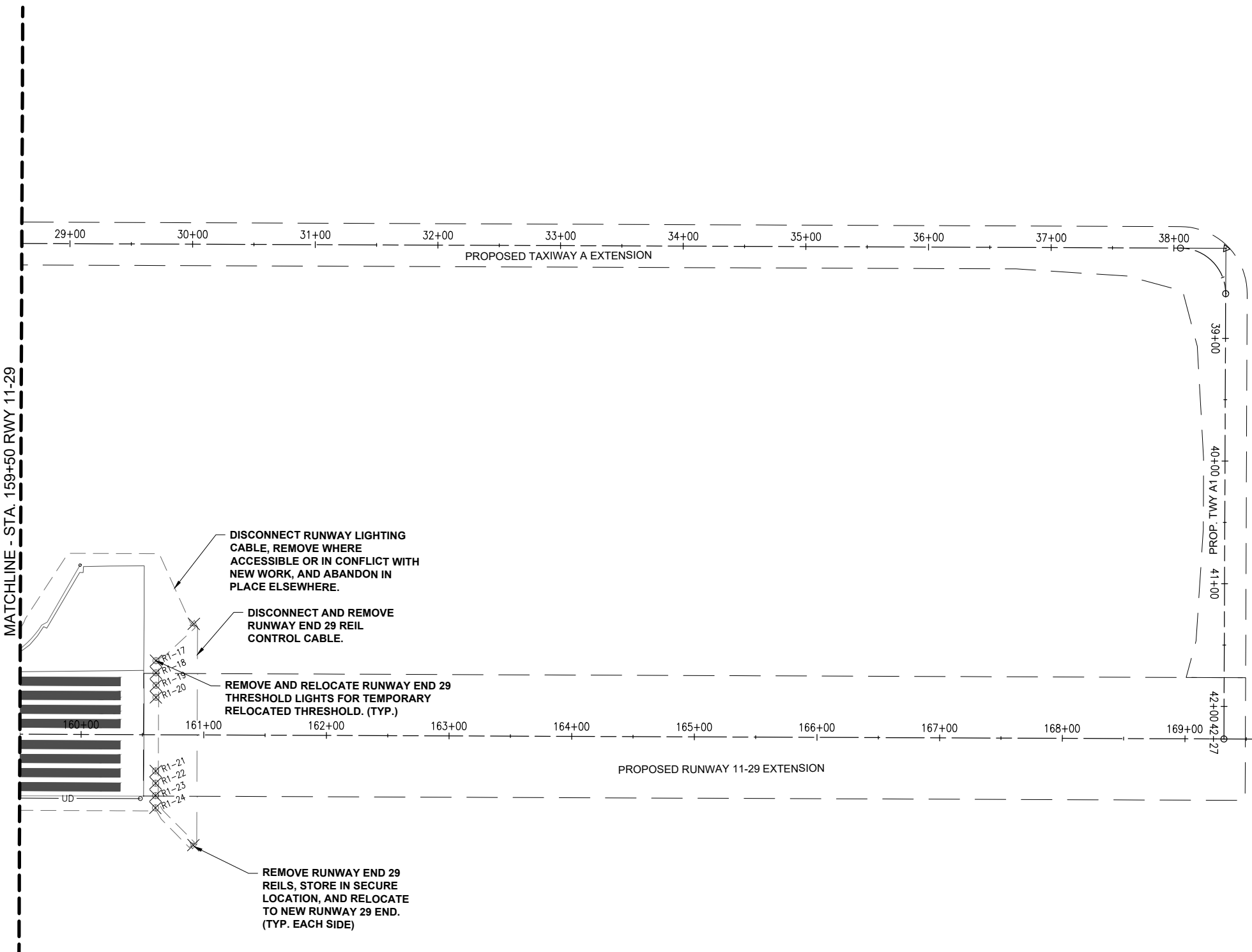
SHEET TITLE

EXISTING
ELECTRICAL PLAN -
STA. 159+50 TO STA.
170+50



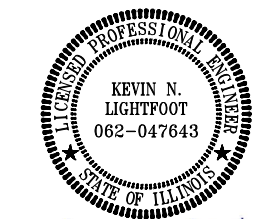
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING RUNWAY 1 PLASI FEEDER CIRCUIT
- EXISTING RUNWAY 19 PLASI FEEDER CIRCUIT
- EXISTING FENCE
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DEC 04, 2023 9:56 AM ENG01009
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FOR BID



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

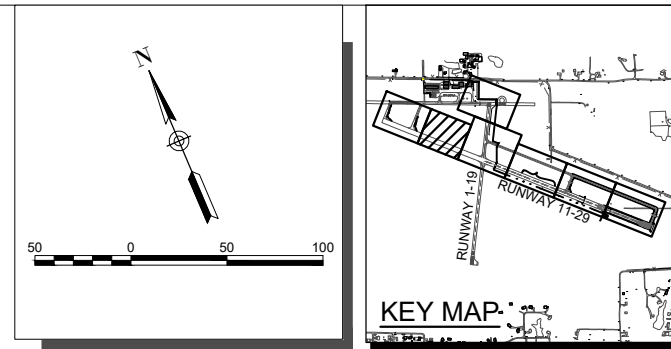
IDA NO. 1H2-4982
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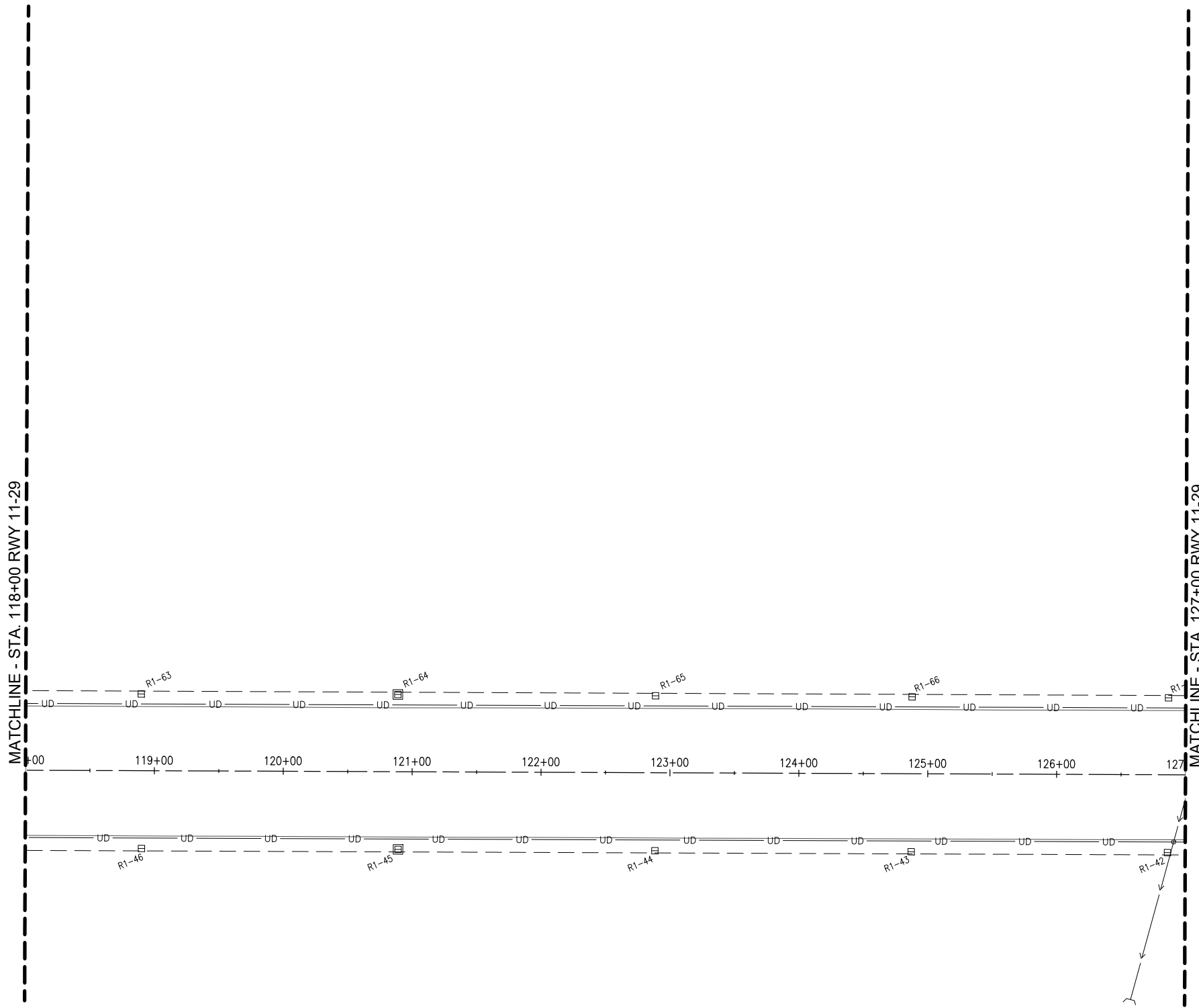
SHEET TITLE

**PROPOSED
ELECTRICAL PLAN -
STA. 118+00 TO STA.
127+00**



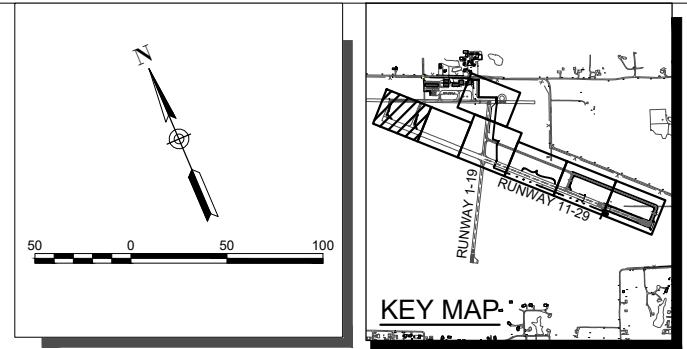
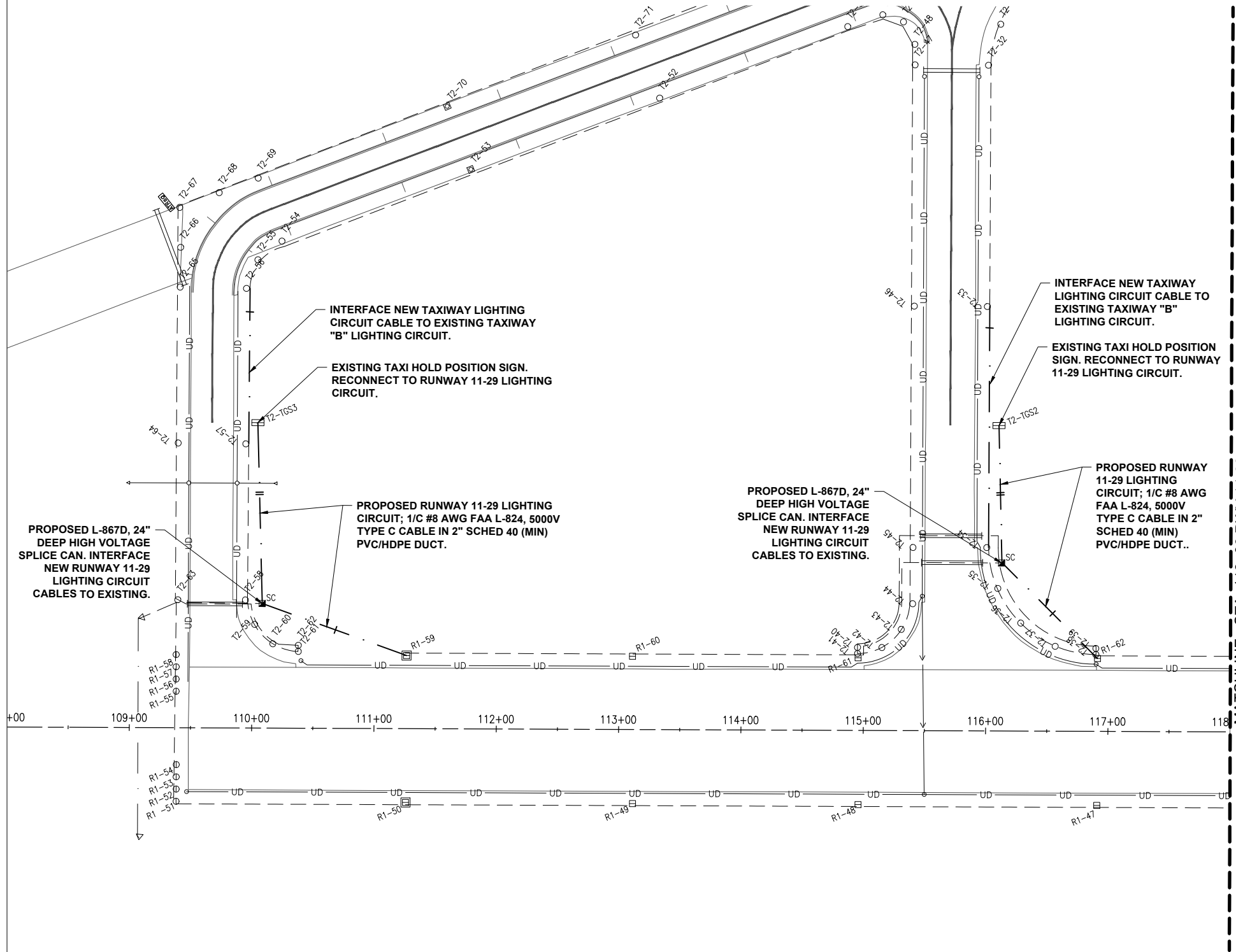
LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING RUNWAY 1 PLASI FEEDER CIRCUIT
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- PROPOSED 3-1/C #8 XLP-USE, 600V UG CABLE IN 2" SCHED. 40 (MIN.) PVC/HDPE DUCT.
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- EXISTING REIL
- RELOCATED REIL
- EXISTING TAXI GUIDANCE SIGN
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED L-861T(L) LED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
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- PROPOSED BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
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- EXISTING ELECTRICAL HANDHOLE
- EXISTING DUCT MARKER
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- EXISTING INLET
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED L-861T(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) STAKE WITH NEW TRANSFORMER.
- PROPOSED L-861T(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) BASE WITH NEW TRANSFORMER.



FOR BID

DEC 04, 2023 9:58 AM ENGELO1009
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LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING ELECTRICAL DUCT
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MATCHLINE - STA. 118+00 RWY 11-29

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 Engineering | Planning | Allied Services
 Offices Nationwide
 www.hanson-inc.com
 Hanson Professional Services Inc.
 1525 S. 6th Street
 Springfield, IL 62703
 phone: 217-788-2450
 fax: 217-788-2503
 Illinois Licensed
 Professional Service Corporation
 #184-001084

EFFINGHAM COUNTY AIRPORT
 COMMISSION
 Effingham County Memorial Airport
 14449 East 1100th Ave.
 Effingham, Illinois 62401

COVERING ELECTRICAL DESIGN



Kevin N. Lightfoot

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

EXTEND RUNWAY
 11-29 AND TAXIWAY A

IDA NO. 1H2-4982
 CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
 PROJECT NO: 22A0004D
 CAD FILE: E-142-ELE.DWG
 DESIGN BY: MJD 10/16/2023
 DRAWN BY: HLE 10/16/2023
 REVIEWED BY: KNL 11/9/2023

SHEET TITLE

PROPOSED
 ELECTRICAL PLAN -
 STA. 108+00 TO STA.
 118+00

FOR BID



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D
CAD FILE: E-142-ELE.DWG

DESIGN BY: KNL 10/3/2023

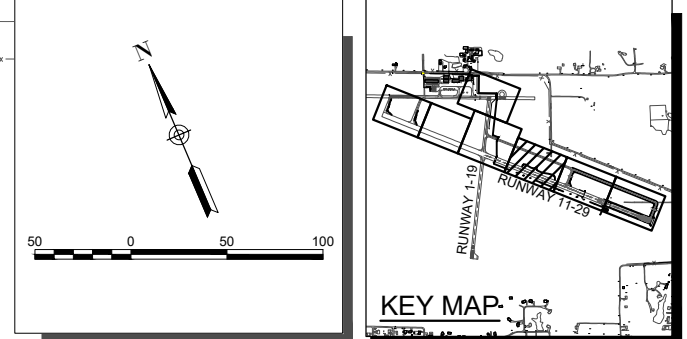
DRAWN BY: HLE 10/3/2023

REVIEWED BY: KNL 11/9/2023

SHEET TITLE

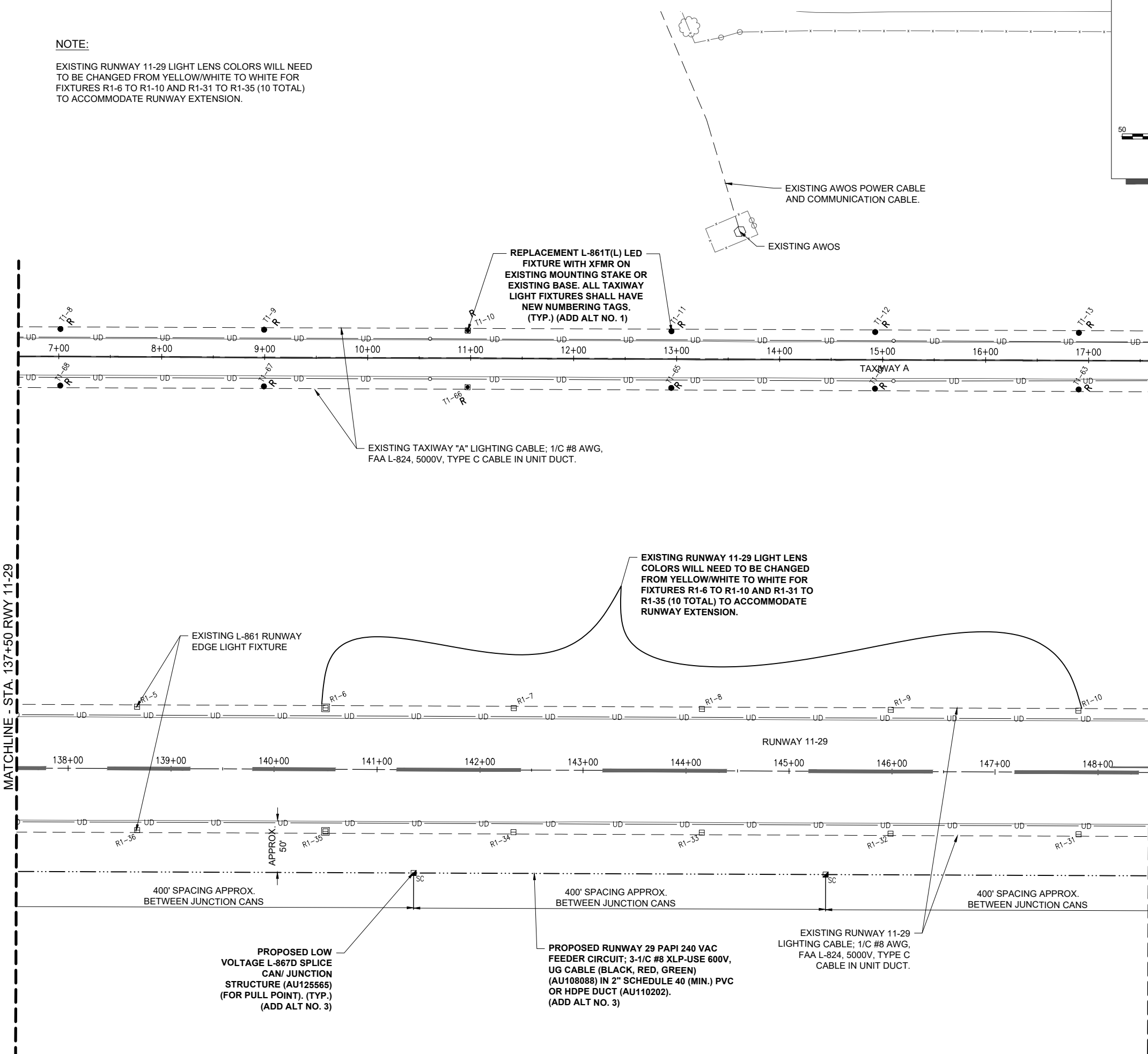
**PROPOSED
ELECTRICAL PLAN
-STA. 137+50 TO STA.
148+50**

NOTE:
EXISTING RUNWAY 11-29 LIGHT LENS COLORS WILL NEED TO BE CHANGED FROM YELLOW/WHITE TO WHITE FOR FIXTURES R1-6 TO R1-10 AND R1-31 TO R1-35 (10 TOTAL) TO ACCOMMODATE RUNWAY EXTENSION.



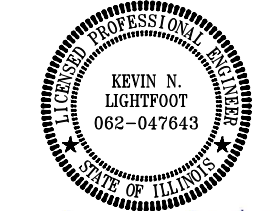
LEGEND

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- [Symbol] PROPOSED PAVEMENT
- [Symbol] EXISTING ELECTRICAL DUCT
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FOR BID



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

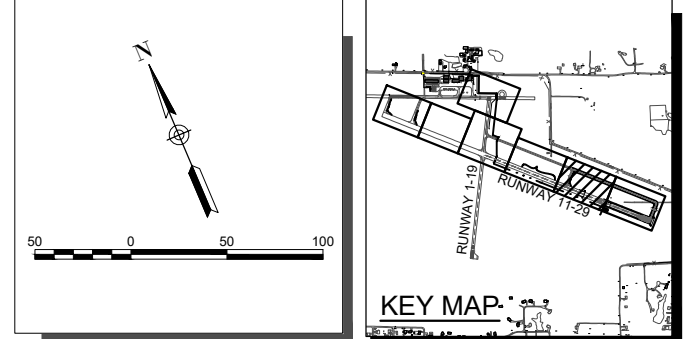
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: E-142-ELE.DWG
DESIGN BY: KNL 10/3/2023
DRAWN BY: HLE 10/3/2023
REVIEWED BY: KNL 11/9/2023

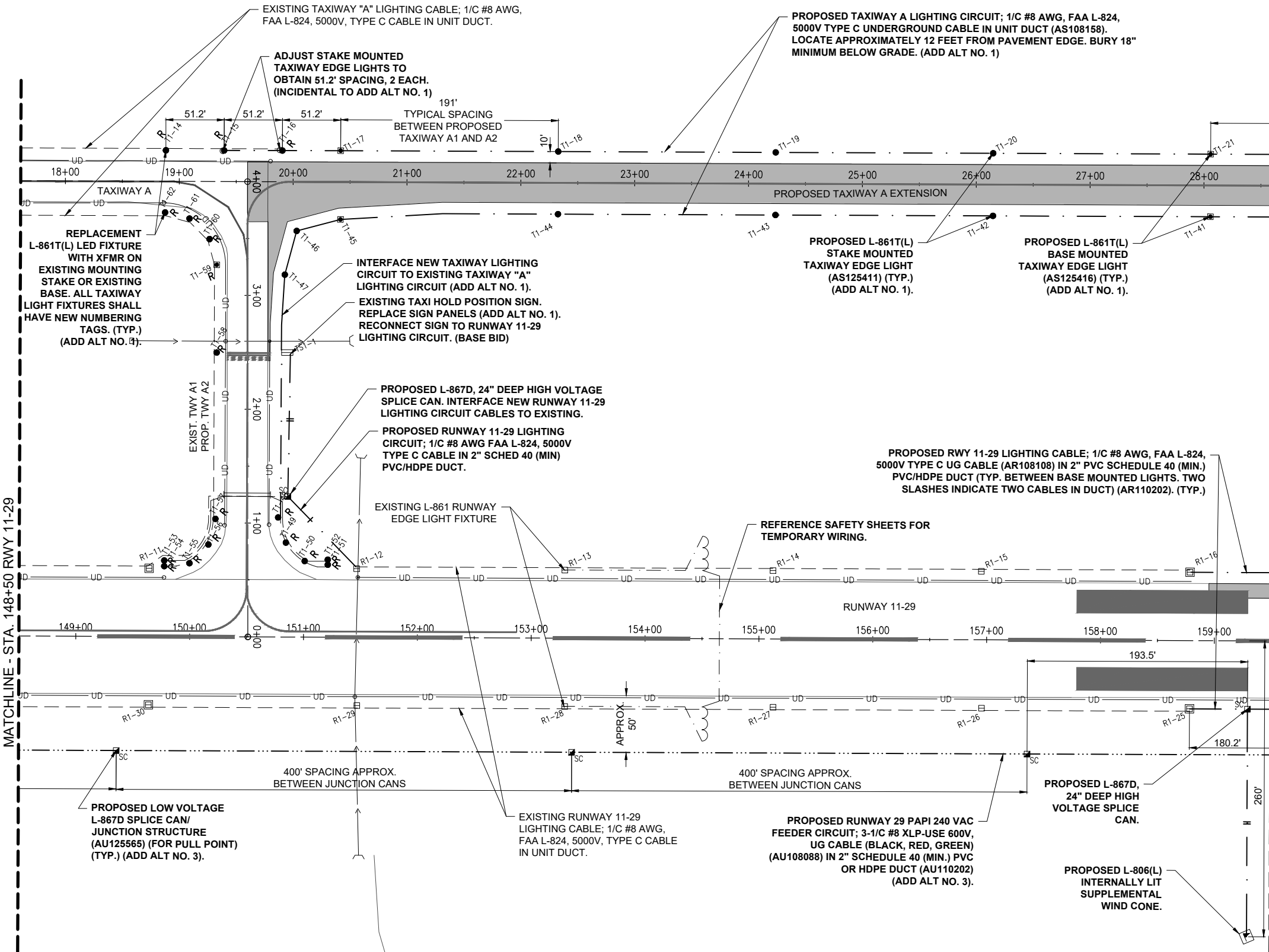
SHEET TITLE

PROPOSED
ELECTRICAL PLAN -
STA. 148+50 TO STA.
159+50



LEGEND

- EXISTING PAVEMENT
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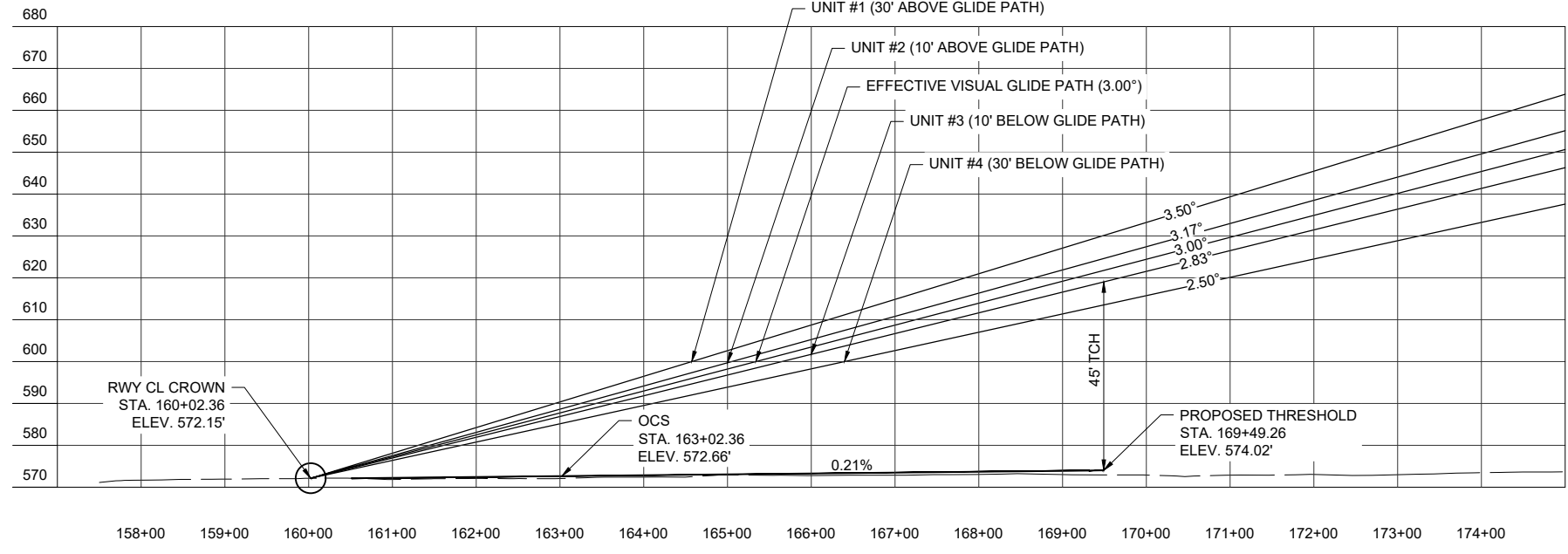
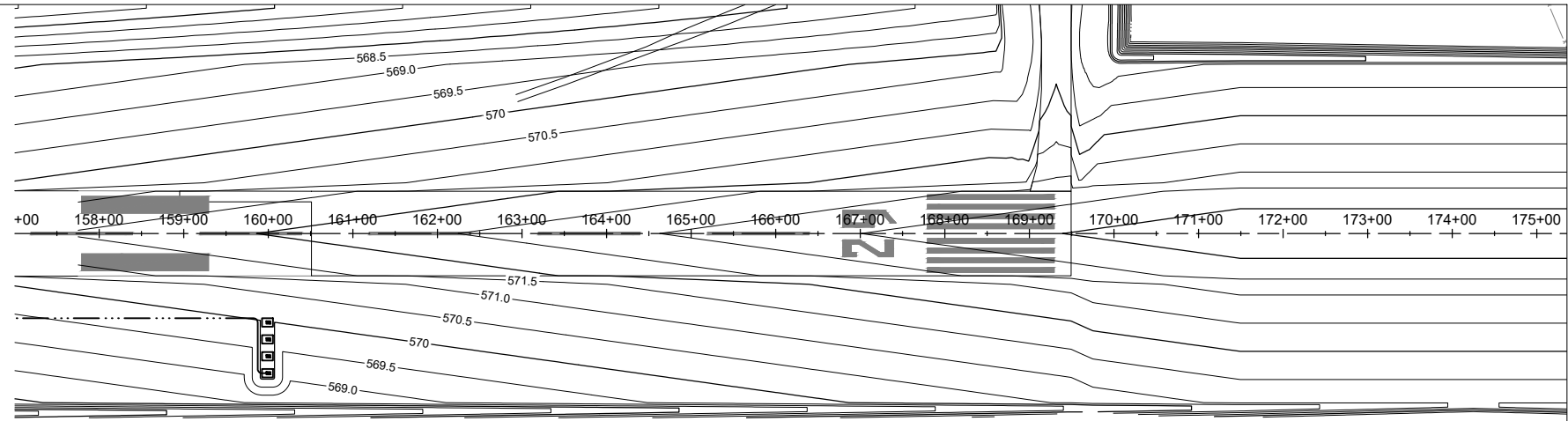


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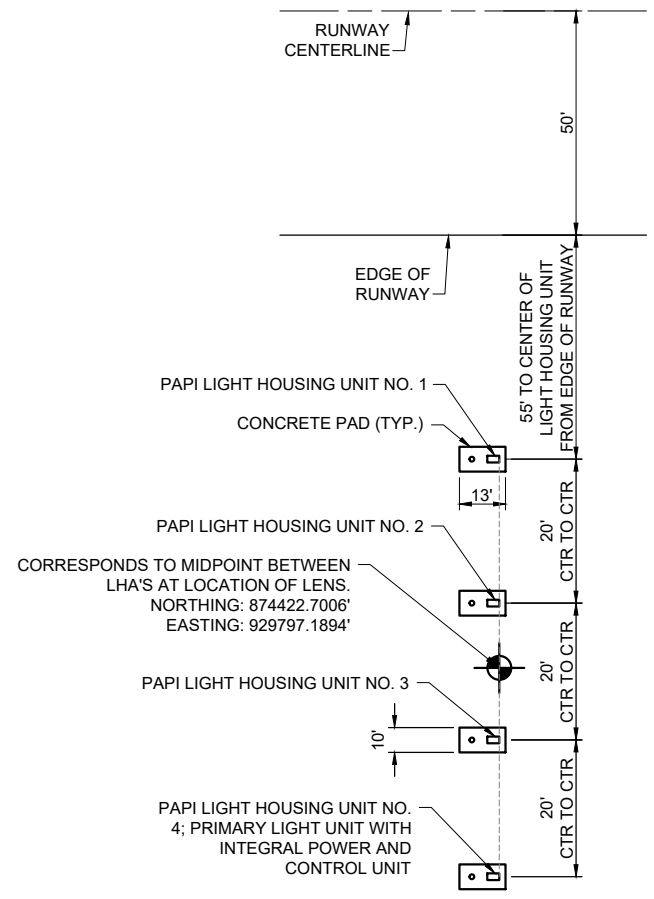
P.A.P.I. NOTES

- EACH PROPOSED PRECISION APPROACH PATH INDICATOR (PAPI) SYSTEM WILL BE PLACED AT THE LOCATION SHOWN ON RESPECTIVE PROPOSED ELECTRICAL SITE PLAN SHEETS AND/OR AS DETAILED HEREIN ON THIS SHEET. LOCATE THE PAPI WITH THE POWER AND CONTROL UNIT FURTHEST FROM THE RUNWAY PAVEMENT EDGE TO COMPLY WITH FAA REQUIREMENTS.
- ANY REQUIRED ELECTRICAL EQUIPMENT BESIDES THE FOUR PAPI LIGHT UNITS THAT IS NOT CONSIDERED BY THE FAA TO BE FIXED-BY-FUNCTION SHALL BE INSTALLED OUTSIDE OF THE RUNWAY OBJECT FREE AREA, WHICH IS 400' FROM THE RUNWAY CENTERLINE.
- THE PROPOSED CONCRETE FOUNDATION PIERS SHALL BE AS DETAILED ON THE "PAPI FOUNDATION DETAILS" SHEET.
- EACH PAPI UNIT SHALL BE CONSTRUCTED SUCH THAT THE BEAM CENTERS WILL BE WITHIN ±1" OF THE RESPECTIVE SPECIFIED ELEVATION.
- THE INBOARD LIGHT UNIT MUST NOT BE LESS THAN 50 FT. FROM THE RUNWAY EDGE (MEASURED TO THE EDGE OF THE LIGHT UNIT) OR TO OTHER RUNWAYS OR TAXIWAYS, AND THE PAPI LIGHT UNITS SHALL HAVE A LATERAL SEPARATION OF 20 FT (MEASURED CENTER TO CENTER), IN ACCORDANCE WITH AC 150/5340-30J PART 7.5.4 PAPI, 7.5.4.7.2 SEPARATION BETWEEN LIGHT UNITS, AND FIGURE A-81. FOR THE L-880 AND L-881, THE DISTANCE BETWEEN LIGHT UNITS MAY NOT VARY BY MORE THAN PLUS OR MINUS 1 FOOT. SEE "RWY 29 PAPI LAYOUT DETAIL" FOR DIMENSIONS BETWEEN UNITS.
- THE PROPOSED PAPI SIGNAL SHALL BE VISIBLE FOR A 10 DEGREE ZONE ON EITHER SIDE OF THE RUNWAY CENTERLINE IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5340-30J, FIGURE A-81 PAPI OBSTACLE CLEARANCE SURFACE, AND FAA ORDER JO 6850.2C FIGURE 5-4 PAPI OBSTACLE CLEARANCE SURFACE. PER FAA AC 150/5345-28H, 3.2.4 LIGHT UNIT ADJUSTMENTS, PART 3.2.4.1.3 HORIZONTAL LIGHT BEAM COVERAGE, THE PAPI SHALL BE DESIGNED TO BE CAPABLE OF MODIFYING THE HORIZONTAL LIGHT BEAM COVERAGE OF THE PAPI FOR OBSTACLE AVOIDANCE IN THE APPROACH AREA AND LIGHT SIGNAL CLEARANCE SURFACE. THIS MAY BE ACCOMPLISHED USING BAFFLES (ALSO REFERRED TO AS BLANKING DEVICES).
- PER FAA 150/5340-30J, 7.5.4 PAPI, 7.5.4.11.2 LOCATION OF THE PCU, IT NOTES TO LOCATE THE PCU AS FAR FROM THE RUNWAY AS POSSIBLE FOR A MINIMUM OBSTRUCTION TO AIRCRAFT. IF THE PCU IS ESSENTIAL (INTERNAL) WITH A LIGHT UNIT, PLACE IT FARTHEST FROM THE RUNWAY. PER FAA ORDER 6850.2C, 507 PAPI ASSEMBLIES, 507.A POWER AND CONTROL ASSEMBLY, AN EXTERNAL PCA/PCU SERVING A LED PAPI MUST BE LOCATED OUTSIDE OF THE RUNWAY OBJECT FREE AREA (ROFA).



RUNWAY CENTERLINE PROFILE

PAPI DATA-RUNWAY END 29				
	P.A.P.I. UNIT #1	P.A.P.I. UNIT #2	P.A.P.I. UNIT #3	P.A.P.I. UNIT #4
AIMING ANGLE	3° 30' (3.50°)	3° 10' (3.17°)	2° 50' (2.83°)	2° 30' (2.50°)
APPROXIMATE PROPOSED GROUND ELEVATION	570.10'	570.10'	570.10'	570.10'
LIGHT BEAM CENTERLINE ELEVATION	572.85'	572.85'	572.85'	572.85'

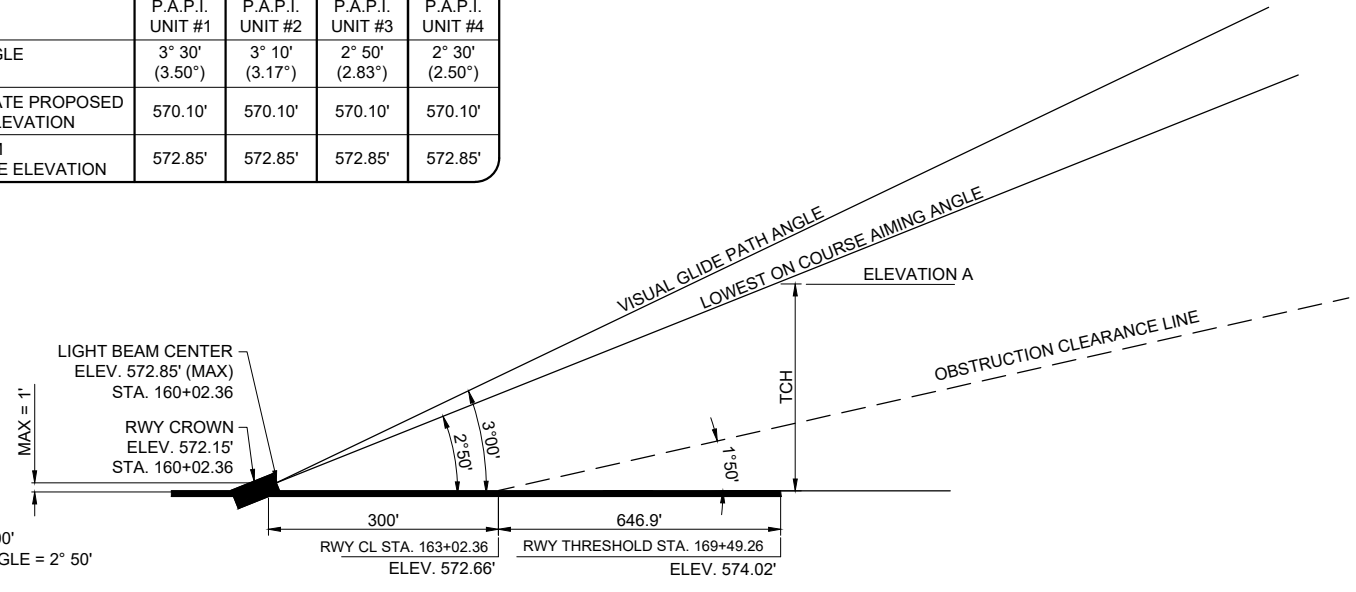


RWY 29 P.A.P.I. LAYOUT DETAIL

"NOT TO SCALE"

NOTES:

- TCH = 45'
- GLIDE PATH ANGLE = 3° 00'
- LOWEST ON-COURSE ANGLE = 2° 50'
- OCS SLOPE = 1° 50'
- ELEVATION A = 619.02'
- ADJUSTED DISTANCE FROM THRESHOLD (d) = 946.9'



P.A.P.I. AIMING DIAGRAM 29 END

"NOT TO SCALE"



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

Illinois Licensed
Professional Service Corporation
#184-001084

EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING CIVIL DESIGN



Michael J. Dudas

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-501-DETL.DWG
DESIGN BY: MJD 10/05/2023
DRAWN BY: HLE 10/05/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

**PAPI SITING DETAILS
AND NOTES RUNWAY
END 29**

FOR BID

DEC 04, 2023 10:00 AM ENGEL01509 1:22:05\22A0004D\CAD\AIRPORT\SHEETC-501-DETL.DWG

AIRFIELD LIGHTING REMOVAL, RELOCATION, AND INSTALLATION NOTES

1. KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
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, VAULT 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 RECOMMENDATIONS.
5. 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 FAA APPROVED.
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.
8. 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/TECHNICIAN.
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 THE WORK.
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 SHUT OFF.
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 REQUIREMENTS.
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 LUMP SUM.
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 PERMITTED.
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 CABLE 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.
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 ALLOWED.
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 WITH 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 UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER/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.

EXISTING CABLE NOTES

BASED ON FIELD OBSERVATIONS AND RECORDS THE EXISTING AIRFIELD LIGHTING AND NAVAID CIRCUIT CONDUCTORS APPEAR TO BE AS FOLLOWS:

- RUNWAY 1-19 LIGHTING HOMERUN CABLES ARE 2 SETS OF 1 #8 AWG FAA L-824, 5000 VOLT CONDUCTORS IN 3/4" BLACK UNIT DUCT.
- TAXIWAY "B" LIGHTING HOMERUN CABLES ARE 2 SETS OF 1 #8 AWG FAA L-824, 5000 VOLT CONDUCTORS IN 3/4" BLACK UNIT DUCT.
- RUNWAY 11-29 LIGHTING HOMERUN CABLES ARE 2 SETS OF 1 #8 AWG FAA L-824, 5000 VOLT CONDUCTORS IN 3/4" BLACK UNIT DUCT.
- TAXIWAY "A" LIGHTING HOMERUN CABLES ARE 2 SETS OF 1 #8 AWG FAA L-824, 5000 VOLT CONDUCTORS IN 3/4" BLACK UNIT DUCT.
- WIND CONE 120 VAC FEEDER CABLE IS 2 #8 AWG, FAA L-824, 5000 VOLT CONDUCTORS.
- RUNWAY 1 PLASI 120 VAC FEEDER CABLE IS 3 #2 AWG ADVANCED DIGITAL CABLE XLP-USE-2, 600 VOLT CONDUCTORS COLOR CODED BLACK, WHITE, GREEN, IN 1.25" SCHEDULE 40 BLACK UNIT DUCT.
- RUNWAY 19 PLASI 120 VAC FEEDER CABLE IS 3 #6 AWG ADVANCED DIGITAL CABLE XLP-USE-2, 600 VOLT CONDUCTORS COLOR CODED BLACK, WHITE, GREEN, IN 1.25" SCHEDULE 40 BLACK UNIT DUCT.
- BEACON 120/240 VAC FEEDER CABLE IS 4 #6 AWG ADVANCED DIGITAL CABLE XLP-USE-2, 600 VOLT CONDUCTORS COLOR CODED BLACK, RED, WHITE, GREEN, IN 1.25" SCHEDULE 40 BLACK UNIT DUCT.
- AWOS POWER FEEDER CABLE TYPE IS UNKNOWN.
- AWOS COMMUNICATION CABLE TYPE IS UNKNOWN.
- CABLES TYPES AND SIZES TO THE FUEL FACILITY ARE UNKNOWN.
- ABANDONED CABLES THAT WERE PREVIOUSLY USED AS THE HOMERUN FOR RUNWAY 1-19 LIGHTING ARE 2 #8 AWG, FAA L-824, 5000 VOLT CONDUCTORS.
- ABANDONED CABLES THAT WERE PREVIOUSLY USED AS THE HOMERUN FOR TAXIWAY "B" (EAST-WEST TAXIWAY) LIGHTING ARE 2 #8 AWG, FAA L-824, 5000 VOLT CONDUCTORS.
- ABANDONED CABLES THAT WERE PREVIOUSLY USED AS THE HOMERUN FOR RUNWAY 11-29 LIGHTING ARE 2 SETS OF 1 #8 AWG FAA L-824, 5000 VOLT CONDUCTORS IN UNIT DUCT.
- ABANDONED CABLES THAT WERE PREVIOUSLY USED AS 120 VAC FEEDER FOR RUNWAY 1 PLASI ARE 2 #4 AWG TYPE USE CONDUCTORS.
- ABANDONED CABLES THAT WERE PREVIOUSLY USED AS 120 VAC FEEDER FOR RUNWAY 19 PLASI ARE 2 #4 AWG TYPE USE CONDUCTORS.



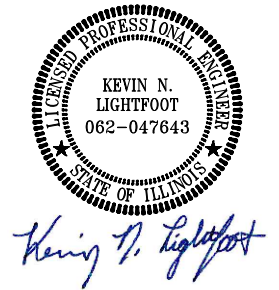
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EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING ELECTRICAL DESIGN



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

EXTEND RUNWAY
11-29 AND TAXIWAY A

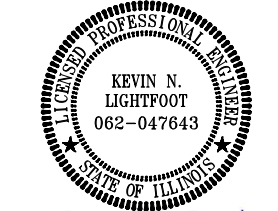
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: E-001-NOTES.DWG
DESIGN BY: KNL 08/23/2023
DRAWN BY: CWS 09/27/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

AIRFIELD LIGHTING
NOTES



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

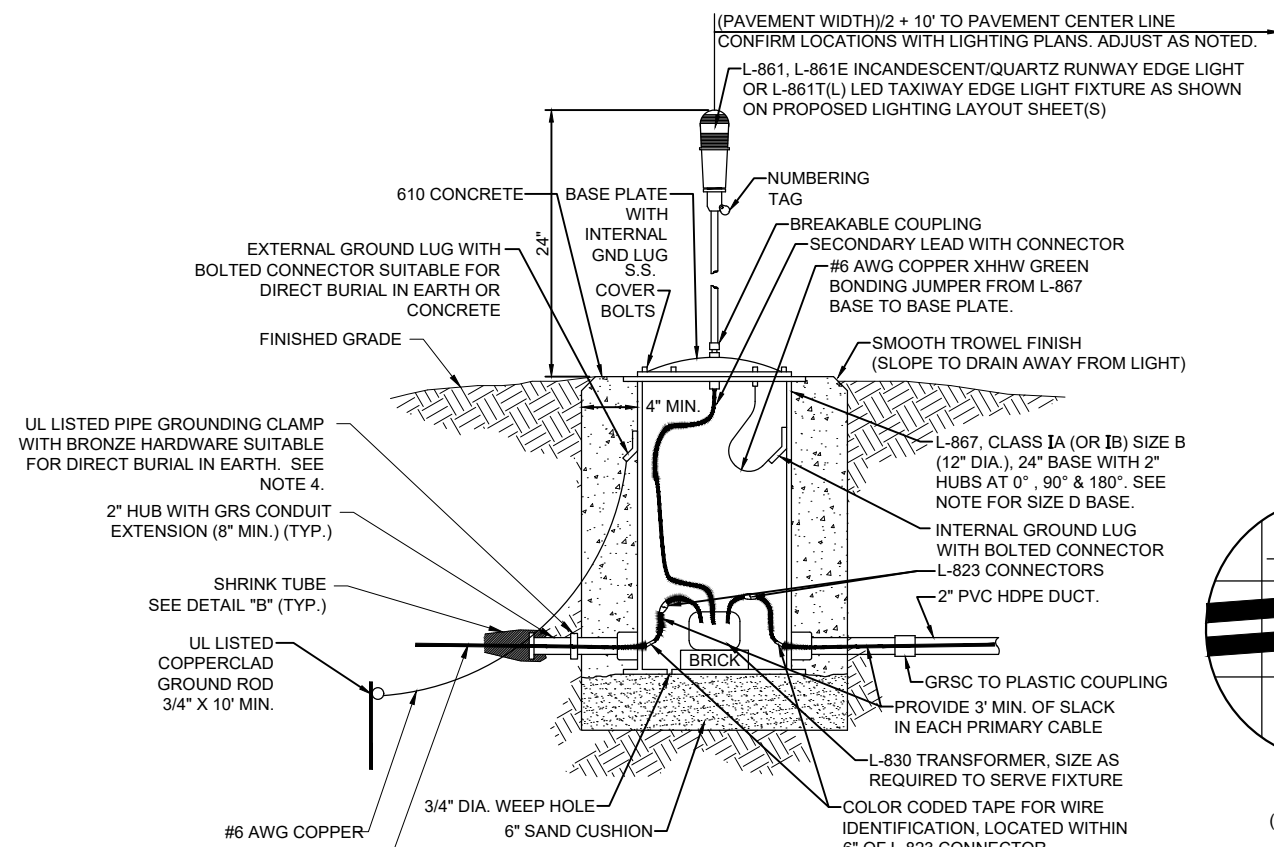
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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REVIEWED BY: KNL 11/9/2023

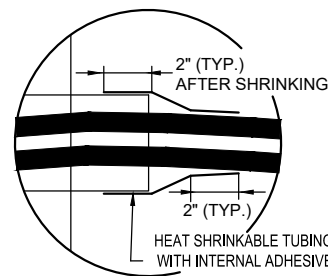
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AIRFIELD LIGHT
DETAILS

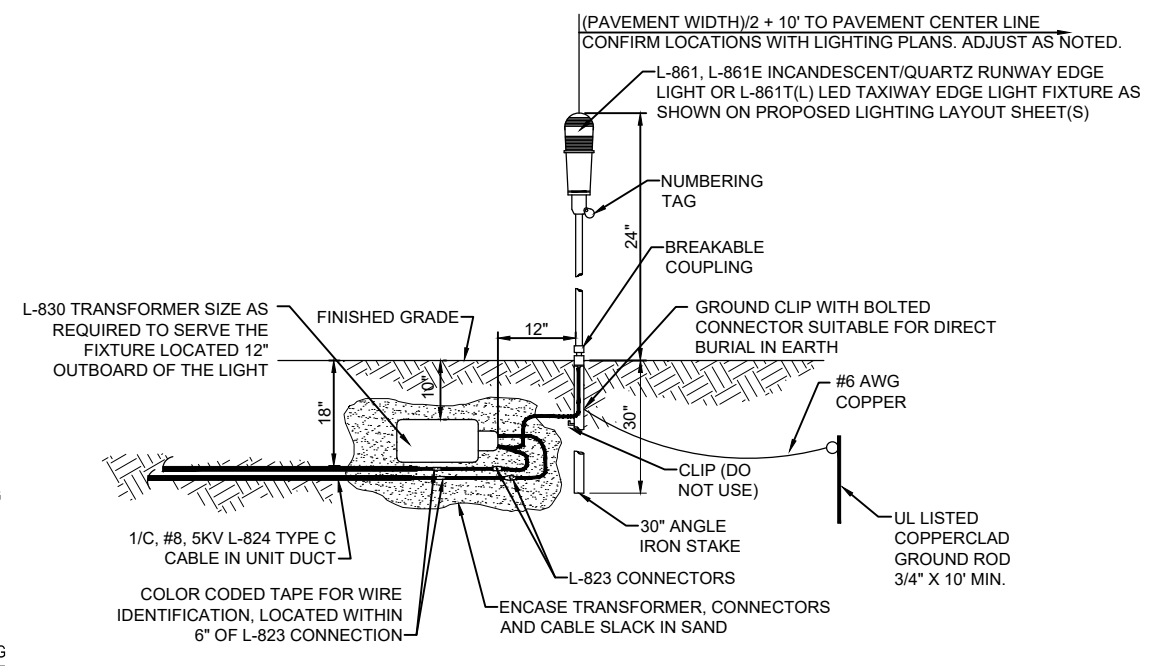


MEDIUM INTENSITY AIRFIELD EDGE LIGHT - BASE MOUNTED
(NOT TO SCALE)

WHERE NOTED ON THE PLANS PROVIDE SIZE D (16 IN. NOMINAL DIAMETER) LIGHT BASE WITH 2\"/>



DETAIL "B"
(NOT TO SCALE)

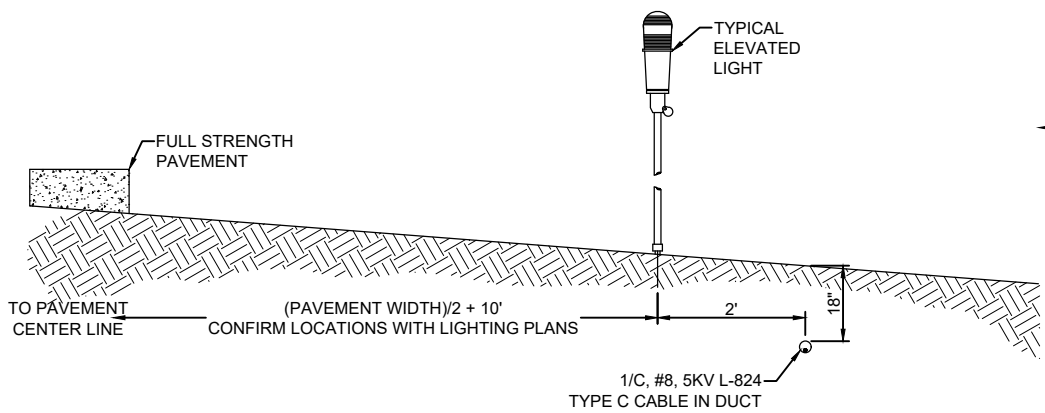


MEDIUM INTENSITY AIRFIELD EDGE LIGHT - STAKE MOUNTED
(NOT TO SCALE)

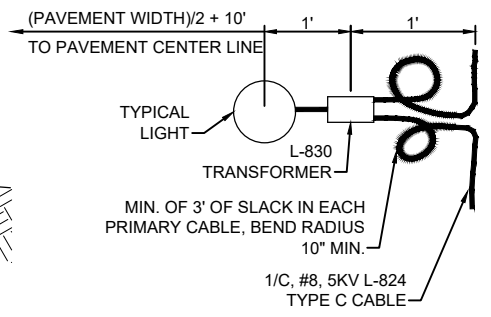
NOTES:

- SEE ELECTRICAL NOTES SHEETS.
- SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
- SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
- WHERE GROUND LUGS ARE NOT ACCESSIBLE ON BASE CANS, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.
- THE PROPOSED AIRFIELD LIGHT FIXTURES SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-46 (CURRENT ISSUE(S) IN EFFECT) AND BE FAA APPROVED FOR TYPE L-861 RUNWAY EDGE LIGHTS, L-861E THRESHOLD LIGHTS AND 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.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING AND SPLICE CANS SHALL BE IN ACCORDANCE WITH ITEM 610 CONCRETE FOR MISCELLANEOUS STRUCTURES.
- IDENTIFICATION TAGS SHALL BE ATTACHED TO EACH AIRFIELD LIGHT FIXTURE.
- PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108 AND L-125, RUBBER AND PLASTIC ELECTRICAL TAPES SHALL BE SCOTCH ELECTRICAL TAPE NUMBERS 130C LINERLESS RUBBER SPLICING TAPE (2\"/>

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

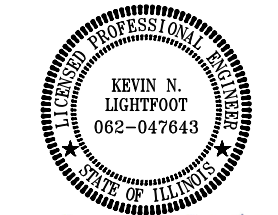


PROFILE VIEW



PLAN VIEW

LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DESIGN BY: KNL 08/23/2023
DRAWN BY: CWS 09/27/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

TAXI GUIDANCE SIGN
SCHEDULE

FOR BID

TAXI GUIDANCE SIGN SCHEDULE

SIGN NUMBER	LOCATION	EXISTING		PROPOSED		NORTHING	EASTING	GROUND RESISTANCE	REMARKS
		SIDE A	SIDE B	SIDE A	SIDE B				
R1-TGS3	NEW TAXIWAY A1 INTERSECTION WITH RUNWAY 29 AT HOLD LINE								NEW SIGN TYPE: L-858L/R(L), SIZE 1, STYLE 2, CLASS 2 LOCATION/MANDATORY HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION. CONNECT TO THE RUNWAY 11-29 SERIES LIGHTING CIRCUIT.
TS1-1	EXISTING TAXIWAY A1/NEW TAXIWAY A2 INTERSECTION WITH RUNWAY 29-11 AT HOLD LINE								EXISTING SIGN; AIRFIELD GUIDANCE SIGN MANUFACTURERS, INC. CAT. NUMBER 122.5DF, SIZE 1, STYLE 2, CLASS 2 SERIAL NUMBER 00409030. LOCATION: TAXIWAY "A2" INTERSECTION TO RUNWAY 29-11. PRESENTLY THIS CONNECTOR TAXIWAY IS DESIGNATED AS "A1". THIS CONNECTOR TAXIWAY WILL BE RENAMED "A2" IN ACCORDANCE WITH THE AIRPORT LAYOUT PLAN. PROVIDE REPLACEMENT PANELS FOR EXISTING SIGN. SIGN TYPE: L-858L/R LOCATION/MANDATORY INSTRUCTION SIGN; IDENTIFYING THE RESPECTIVE TAXIWAY (LOCATION) AND IDENTIFYING HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION, (MANDATORY). THIS SIGN TO BE REWIRED TO THE RUNWAY 11-29 SERIES LIGHTING CIRCUIT TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".
T2-TGS2	TAXIWAY B2 INTERSECTION TO RUNWAY 29-11								EXISTING SIGN; AIRFIELD GUIDANCE SIGN MANUFACTURERS, INC. CAT. NUMBER 122.5DF, SIZE 1, STYLE 2, CLASS 2 SERIAL NUMBER 01210025. LOCATION: TAXIWAY "B2" INTERSECTION TO RUNWAY 29-11. EXISTING SIGN IS TYPE: L-858L/R LOCATION/MANDATORY INSTRUCTION SIGN; IDENTIFYING THE RESPECTIVE TAXIWAY (LOCATION) AND IDENTIFYING HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION, (MANDATORY). THIS SIGN TO BE REWIRED TO THE RUNWAY 11-29 SERIES LIGHTING CIRCUIT TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".
T2-TGS3	TAXIWAY B1 INTERSECTION TO RUNWAY 11 END								EXISTING SIGN; AIRFIELD GUIDANCE SIGN MANUFACTURERS, INC. CAT. NUMBER 122.5DF, SIZE 1, STYLE 2, CLASS 2 SERIAL NUMBER 01210026. LOCATION: TAXIWAY "B1" INTERSECTION TO RUNWAY 11 END. EXISTING SIGN IS TYPE: L-858L/R LOCATION/MANDATORY INSTRUCTION SIGN; IDENTIFYING THE RESPECTIVE TAXIWAY (LOCATION) AND IDENTIFYING HOLDING POSITION SIGN FOR TAXIWAY/RUNWAY INTERSECTION, (MANDATORY). THIS SIGN TO BE REWIRED TO THE RUNWAY 11-29 SERIES LIGHTING CIRCUIT TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".

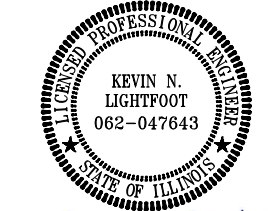
TAXI GUIDANCE SIGN LEGEND

- TYPE L-858L(L) LOCATION SIGN - YELLOW LEGEND AND BORDER ON A BLACK BACKGROUND
- TYPE L-858R(L) MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
- TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGN - BLACK LEGEND ON A YELLOW BACKGROUND
- BLANK - BLACK BACKGROUND

* 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.

NOTES:

1. THE PROPOSED LIGHTED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND). THE SIGNS SHALL BE 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; CLASS 2, FOR OPERATION FROM -40 DEGREES F TO 131 DEGREES F; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED, DOUBLE-SIDED, AS SPECIFIED ON THE PLANS. THE PROPOSED TAXI GUIDANCE SIGNS SHALL USE LED (LIGHT EMITTING DIODE) TYPE ILLUMINATION. ALSO SEE FAA ENGINEERING BRIEF 67 (MOST CURRENT ISSUE) "LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES".
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.
3. 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.
4. RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIING ROUTE) OR RUNWAY EXIT/TAXIWAY ENTRANCE LIGHTS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY CIRCUIT TO BE ILLUMINATED WHEN THE RUNWAY EDGE LIGHTS ARE ON TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION", AND/OR FAA AC 150/5340-30J PART 2.5.3.4.
5. HOLDING POSITION SIGNS FOR RUNWAYS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE ASSOCIATED RUNWAY LIGHTS ARE ILLUMINATED TO COMPLY WITH FAA AC 150/5340-18G, CHAPTER 1, PART 1.15 "SIGN OPERATION".
6. 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 EQUIPMENT OR SYSTEMS CAN RENDER THE EQUIPMENT 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."



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

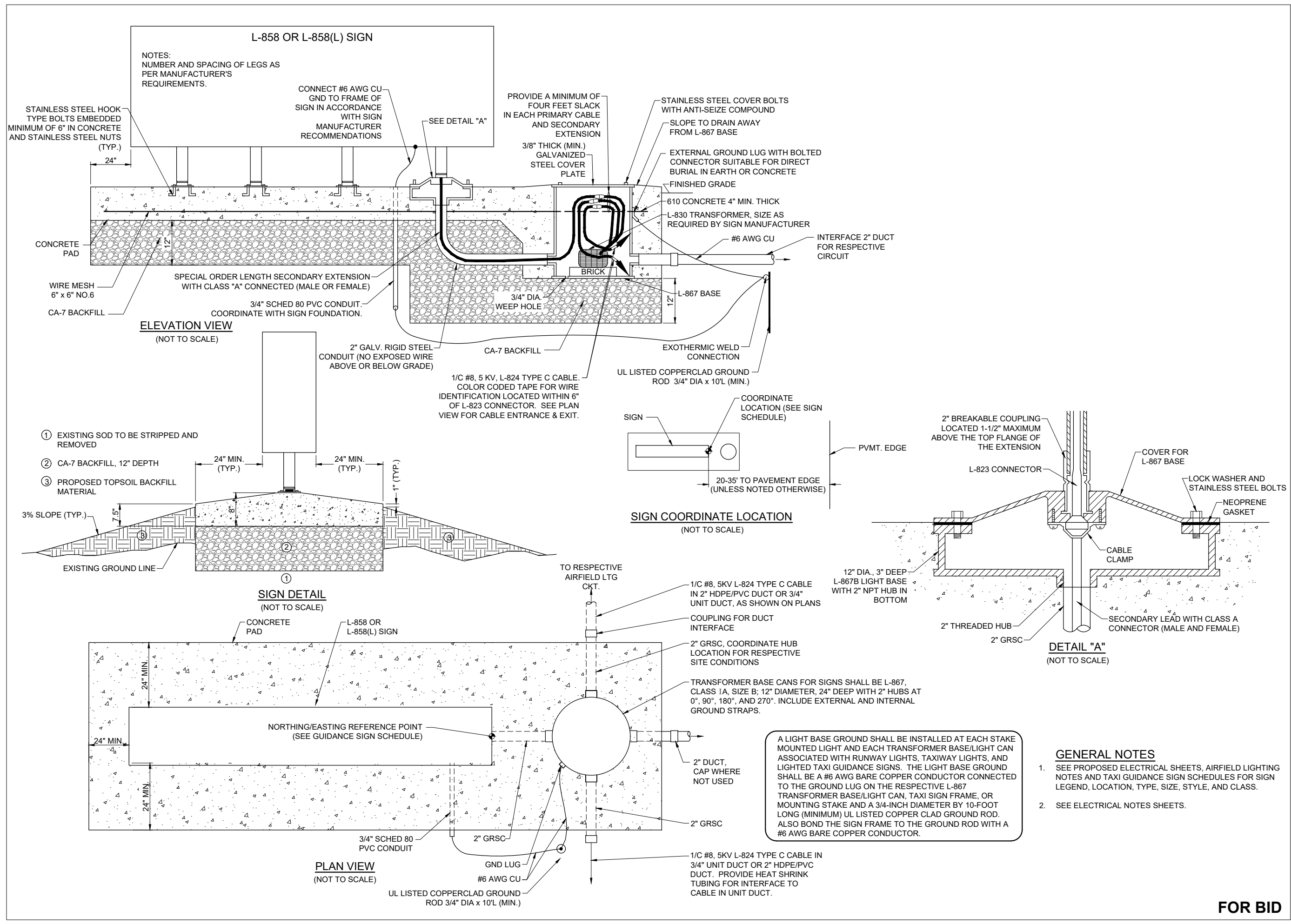
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DESIGN BY: KNL 08/23/2023
DRAWN BY: CWS 09/27/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

TAXI GUIDANCE SIGN
DETAILS



DEC 04, 2023 10:00 AM ENGEL01509 1:22JOBS\22A0004D\CAD\AIRPORT\SHEETE-502-DETL.DWG



Kevin N. Lightfoot

DATE: 11/17/2023 LICENSE: 11/30/2025
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EXTEND RUNWAY
11-29 AND TAXIWAY A

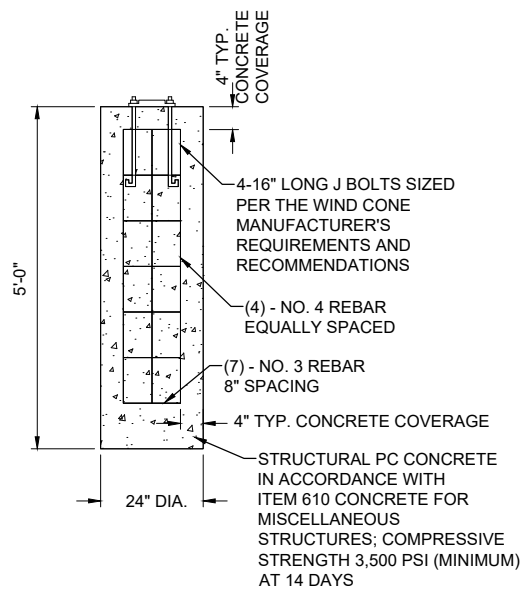
IDA NO. 1H2-4982
CONTRACT NO. EF010

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		DES	DWN	REV

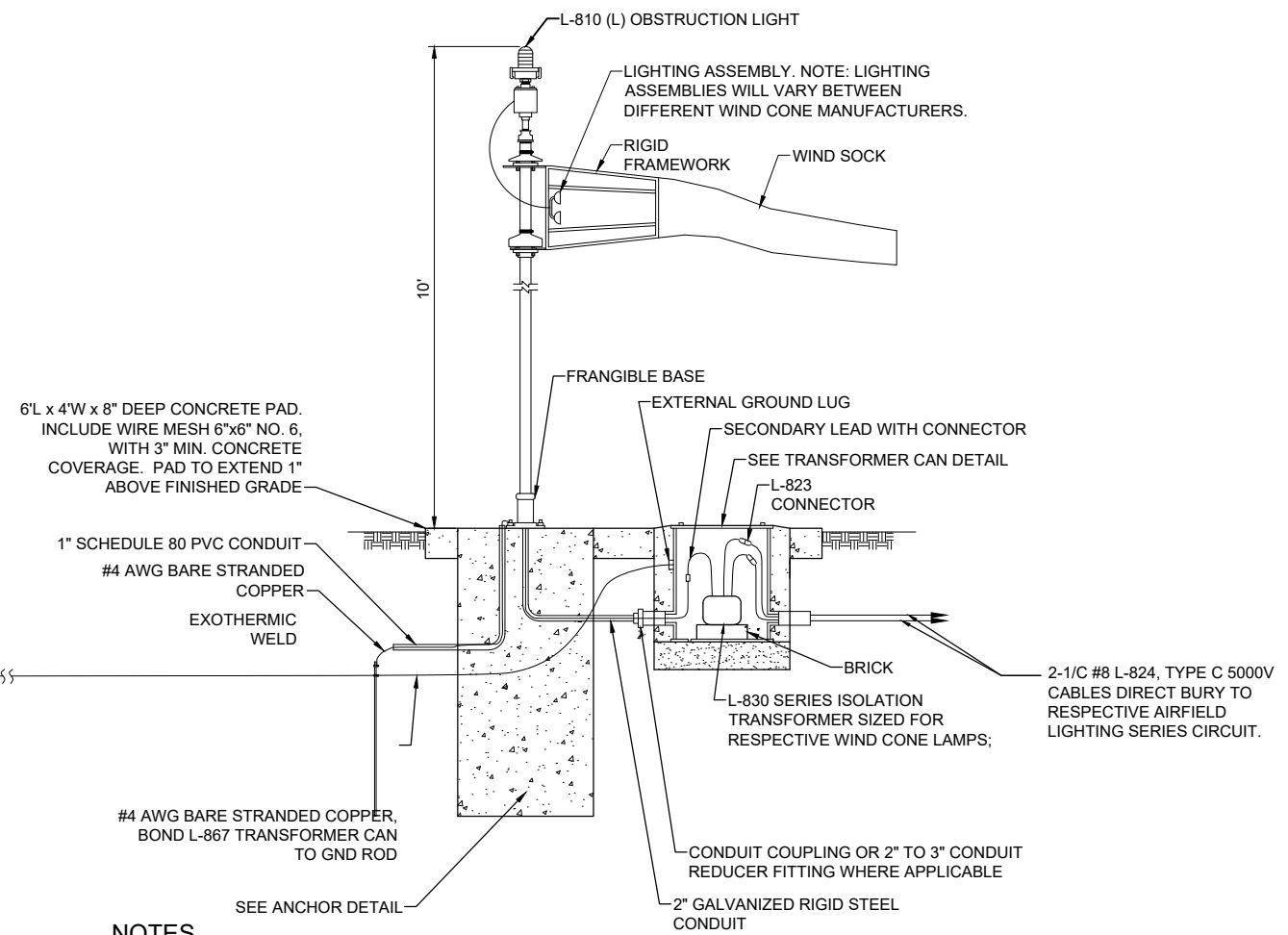
ISSUE: NOVEMBER 17, 2023
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REVIEWED BY: KNL 11/9/2023

SHEET TITLE

L-806 WIND CONE
DETAILS



3/4" X 10' LONG UL LISTED COPPERCLAD GROUND ROD (TYP. FOR 2). GROUND RODS SHALL BE SPACED NOT LESS THAN ONE ROD LENGTH APART

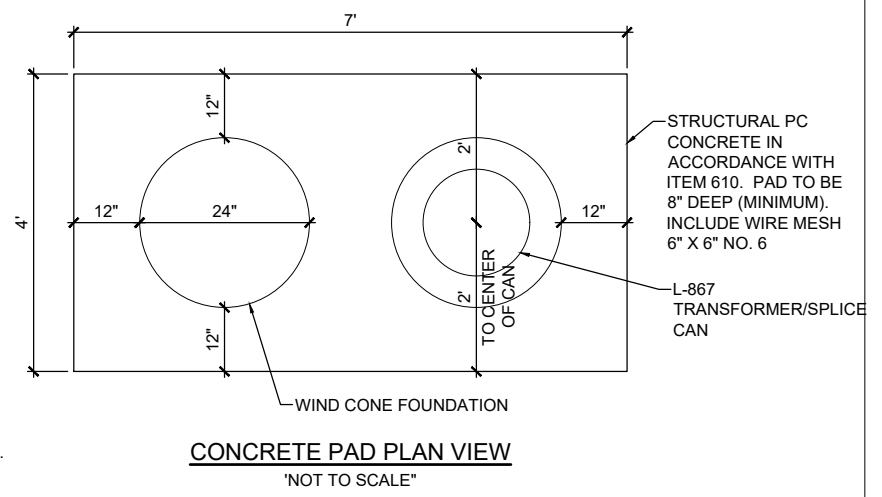
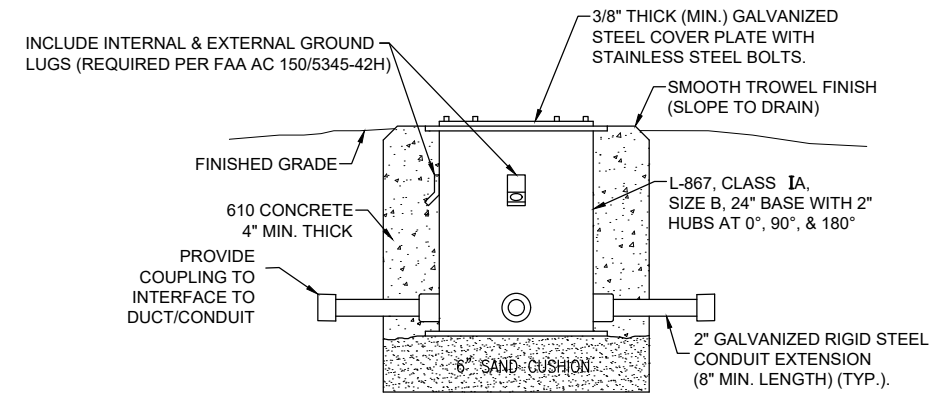


NOTES

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, INSTALLING, OR RECONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
- SUPPLEMENTAL WIND CONES SHALL BE FAA APPROVED TYPE L-806(L) WITH LIGHT EMITTING DIODE ILLUMINATION, STYLE I-B (INTERNALLY LIGHTED), SIZE 1 (18-INCH DIAMETER BY 8 FEET LONG), AND SUITABLE FOR 6.6 AMP SERIES CIRCUIT POWER. WIND CONES SHALL INCLUDE CONSTANT-BRIGHTNESS SERIES CIRCUIT POWER ADAPTER. SEE SPECIAL PROVISION SPECS. WIND CONES ARE HALI-BRITE PRODUCT NUMBER L806-S1-IN-66A-0N-5 WITH REPLACEMENT LAMP ASSEMBLY 9200-0039.
- THE RESPECTIVE RUNWAY LIGHTING CIRCUIT IS POWERED BY AN L-828, CLASS 1 - 6.6 AMP OUTPUT CURRENT, STYLE 1; 3 BRIGHTNESS STEPS CONSTANT CURRENT REGULATOR. COORDINATE WITH THE RESPECTIVE WIND CONE MANUFACTURER TO PROVIDE A COMPATIBLE AND PROPERLY SIZED SERIES ISOLATION TRANSFORMER FOR EACH WIND CONE.
- SUPPLEMENTAL L-806 WIND CONES WILL BE PAID FOR UNDER ITEM AR107508 L-806 WC 8' INTERNALLY LIT PER EACH. SPLICE/TRANSFORMER CANS FOR WIND CONE SERIES CIRCUIT TRANSFORMERS WILL BE INCIDENTAL TO THE RESPECTIVE WIND CONE PAY ITEM.
- REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GRADE 60 OR ASTM A615 GRADE 6 AND SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL. WELDED WIRE FABRIC SHALL CONFORM TO AASHTO M55, ASTM A82, OR ASTM A185 AND SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL.
- FOR EACH GROUNDING ELECTRODE SYSTEM (GROUND ROD) THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUNDING SYSTEM WITH A INSTRUMENT THAT IS SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH GROUNDING ELECTRODE SYSTEM. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER OF RECORD.
- RESTORE TURF AREAS AFFECTED BY WIND CONE INSTALLATION.

INTERNALLY LIGHTED L806 WIND CONE (SERIES CIRCUIT TYPE)

"NOT TO SCALE"



FOR BID



Kevin N. Lightfoot

DATE: 11/17/2023 LICENSE: 11/30/2025
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EXTEND RUNWAY
11-29 AND TAXIWAY A

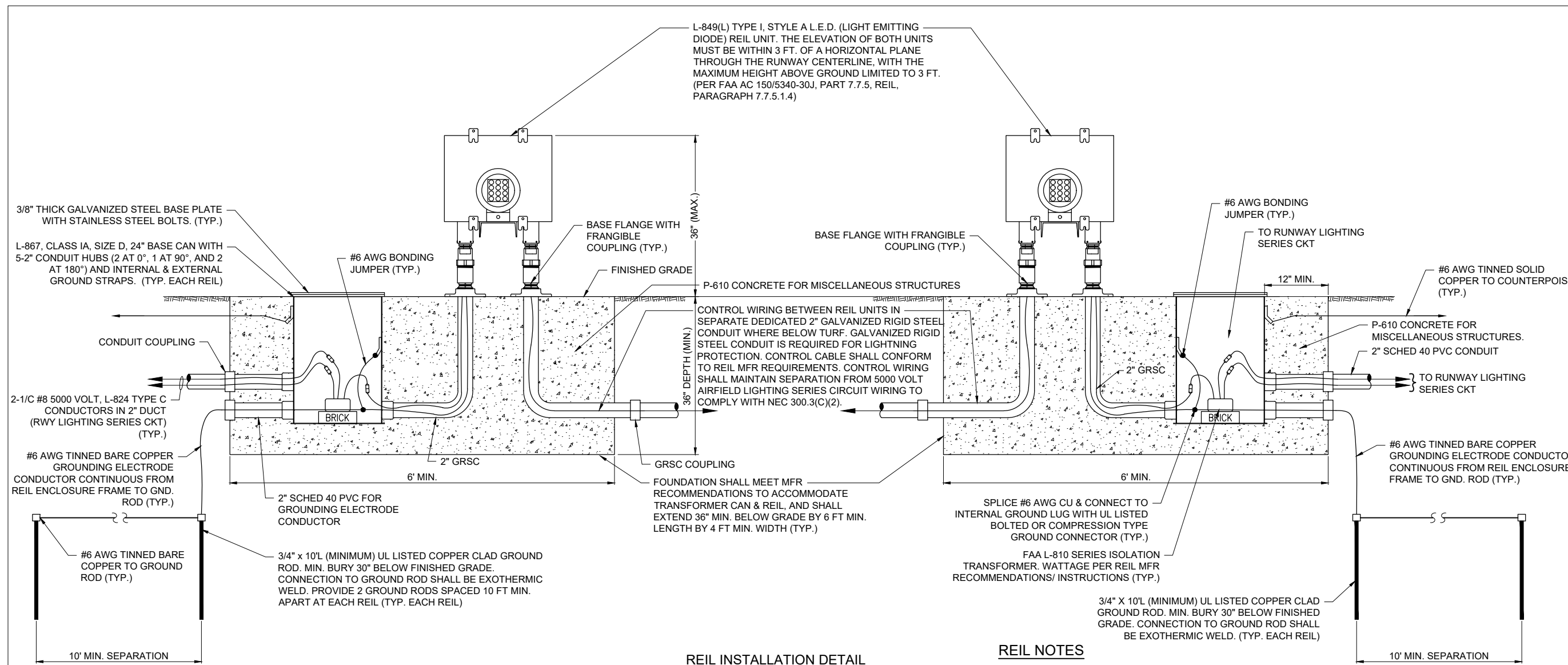
IDA NO. 1H2-4982
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NO.	DATE	DESCRIPTION		
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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SHEET TITLE

REIL RELOCATION
DETAILS AND NOTES



REIL INSTALLATION DETAIL
NOT TO SCALE

REIL NOTES

- REILS ARE EXISTING UNITS AND SHALL BE RELOCATED.
- REILS SHALL BE AIMED AT ANGLE 10 DEGREES VERTICALLY AND TOED OUT 15 DEGREES FROM THE LINE PARALLEL TO THE RUNWAY CENTERLINE. CONTRACTOR SHALL STENCIL HORIZONTAL AND VERTICAL AIMING ANGLES ON EACH REIL UNIT, BLACK LETTERING 1" HIGH OR SIZED TO FIT ON REIL HOUSING BACK SIDE.
- REILS FOR RUNWAY 29 END SHALL BE LOCATED LATERALLY 40 FEET FROM THE RUNWAY PAVEMENT EDGE AND LONGITUDINALLY 40 FEET DOWNWIND OF THE THRESHOLD. SPACE THE REIL LIGHT UNITS EQUALLY FROM THE RUNWAY CENTERLINE.
- ANY AND ALL TRENCHES AND DISTURBED AREAS WILL BE BACKFILLED AND RESTORED TO A SMOOTH GRADE AND SEEDED TO THE SATISFACTION OF THE ENGINEER. ALL TRENCH SETTLEMENT SHALL BE CORRECTED FOR A PERIOD OF ONE YEAR. RESTORATION, GRADING, SEEDING, AND MULCHING OF AREAS DISTURBED DURING THE REIL INSTALLATION AND ASSOCIATED CABLE WILL BE INCIDENTAL TO THE INSTALLATION OF THE REILS.
- GROUNDING FOR REILS.** GROUNDING FOR REILS SHALL CONFORM TO THE RESPECTIVE REIL MANUFACTURER'S INSTALLATION INSTRUCTIONS, AS DETAILED ON THE PLANS, AND AS SPECIFIED HEREIN. FURNISH AND INSTALL TWO 3/4-INCH DIAMETER BY 10-FOOT LONG COPPER CLAD GROUND RODS AT EACH REIL UNIT. GROUND RODS SHALL BE BURIED 30" MINIMUM BELOW GRADE. BOND EACH REIL UNIT HOUSING AND THE REIL BASE CAN TO THE RESPECTIVE GROUND ROD IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITH A #6 AWG BARE SOLID OR STRANDED (PER REIL MANUFACTURER REQUIREMENTS) COPPER GROUNDING ELECTRODE CONDUCTOR. ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD AS MANUFACTURED BY CADWELD, THERMOWELD, ULTRAWELD, OR APPROVED EQUAL. CONNECTIONS TO REIL UNIT FRAMES SHALL BE AS RECOMMENDED BY THE MANUFACTURER OR WITH UL LISTED GROUNDING CONNECTORS. CONNECTIONS TO THE BASE / TRANSFORMER CAN SHALL BE WITH UL LISTED BOLTED CONNECTOR OR ONE-HOLE COMPRESSION LUG & 3/8" STAINLESS STEEL BOLTS, NUTS, & WASHERS.
- PRIOR TO FINAL ACCEPTANCE AND ACTIVATION, THE COMPLETED REIL INSTALLATION WILL REQUIRE A FLIGHT CHECK TO BE SCHEDULED AND CONDUCTED BY THE FAA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE A REPRESENTATIVE PRESENT TO MAKE ANY NECESSARY ADJUSTMENTS IN THE INSTALLATION AND/OR AIMING OF THE REIL UNITS FOR THE FLIGHT SYSTEM CHECKS.

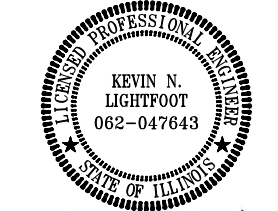
NAMEPLATE DATA FOR EXISTING REILS
ON RUNWAY 29 END IS AS FOLLOWS;

ADB SAFEGATE APPROACH,
FAA L-849(L) STYLE A REIL-L
RUNWAY END IDENTIFICATION LIGHT,
PART NUMBER REIL/A1101011
SINGLE STEP HIGH INTENSITY,
INPUT: 2.8 -6.6 AMPS, 50/60HZ,
CONTROL: 2.8-6.6 AMPS,
OPTIONS: CURRENT SENSING
LIGHT ENGINE: LED: 44A7302/0
ID NO. 2017082400408
PRIMARY: X

ADB SAFEGATE APPROACH,
FAA L-849(L) STYLE A REIL-L
RUNWAY END IDENTIFICATION LIGHT,
PART NUMBER REIL/A1101011
SINGLE STEP HIGH INTENSITY,
INPUT: 2.8 -6.6 AMPS, 50/60HZ,
CONTROL: 2.8-6.6 AMPS,
OPTIONS: CURRENT SENSING
LIGHT ENGINE: LED: 44A7302/0
ID NO. 2017082400408
SECONDARY: X

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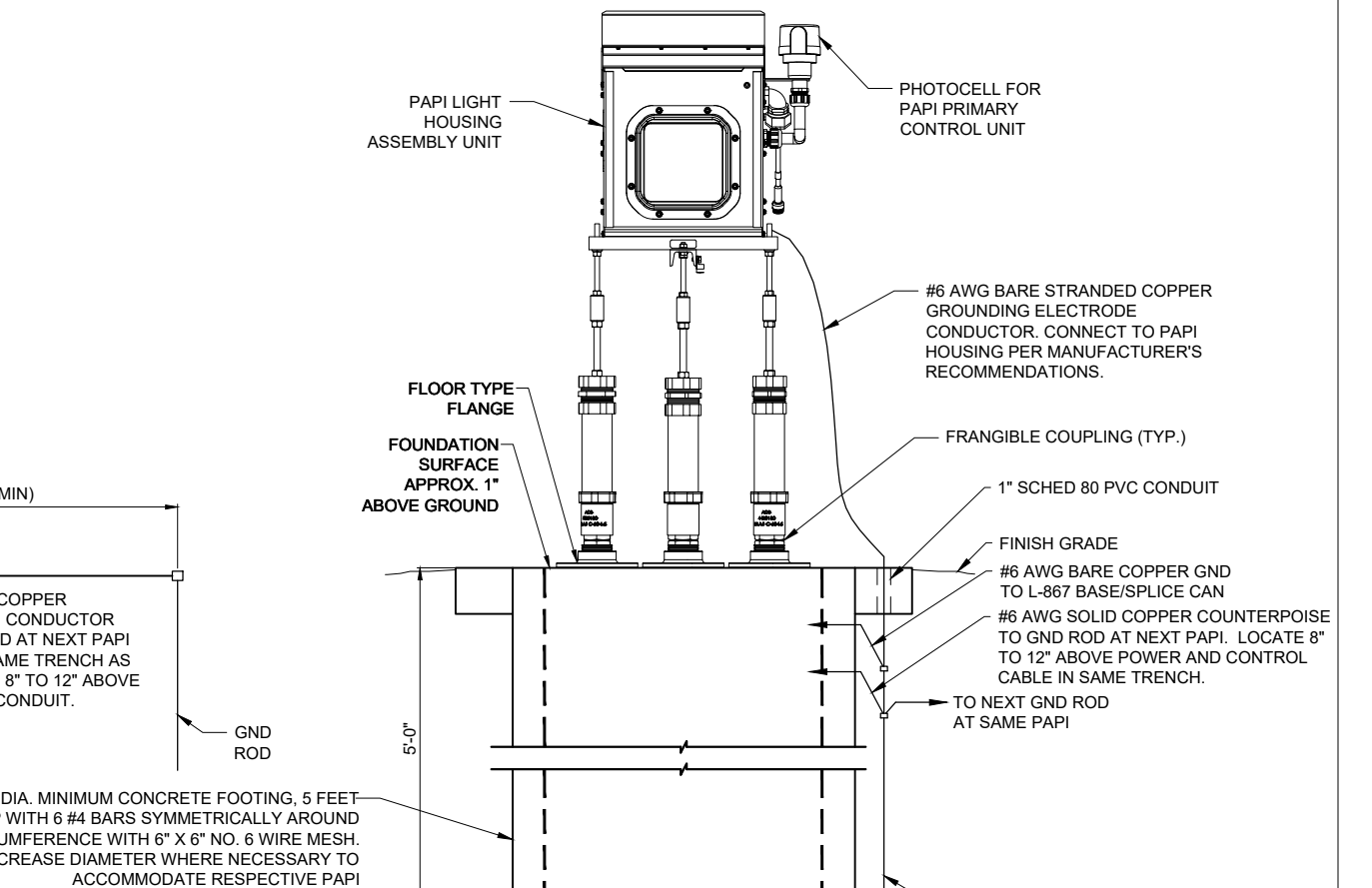
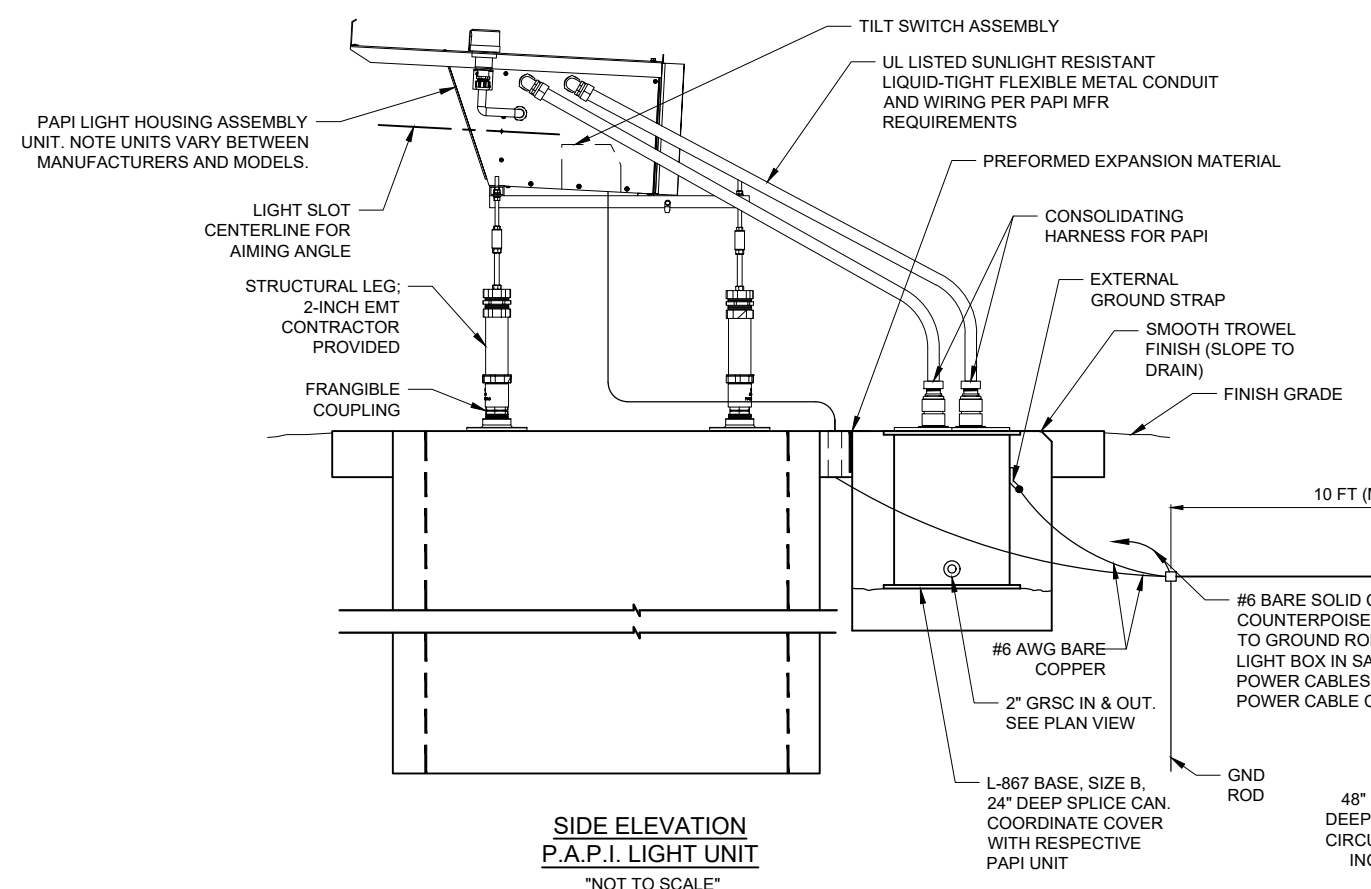
Kevin N. Lightfoot

NO.	DATE	DESCRIPTION		
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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REVIEWED BY: KNL 11/9/2023

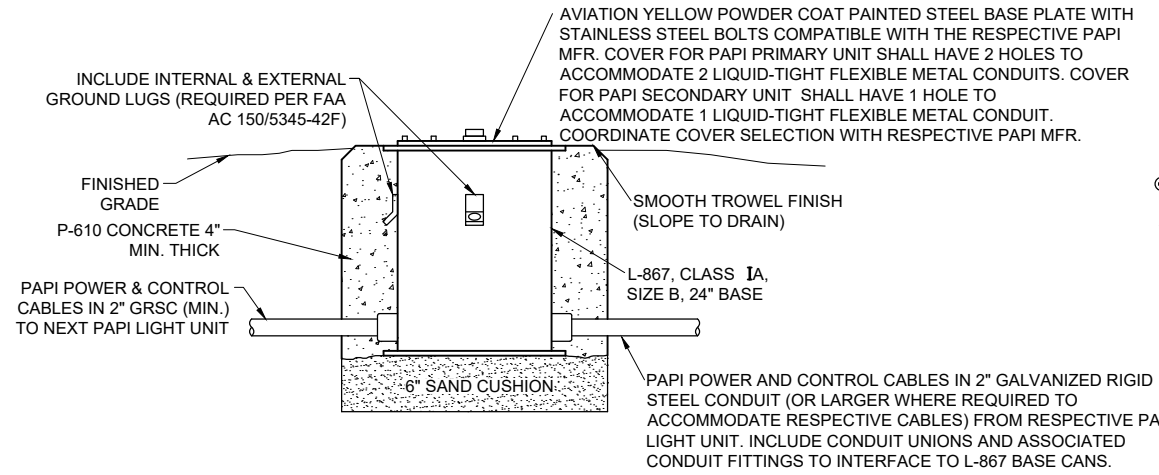
SHEET TITLE

**PAPI FOUNDATION
DETAILS**



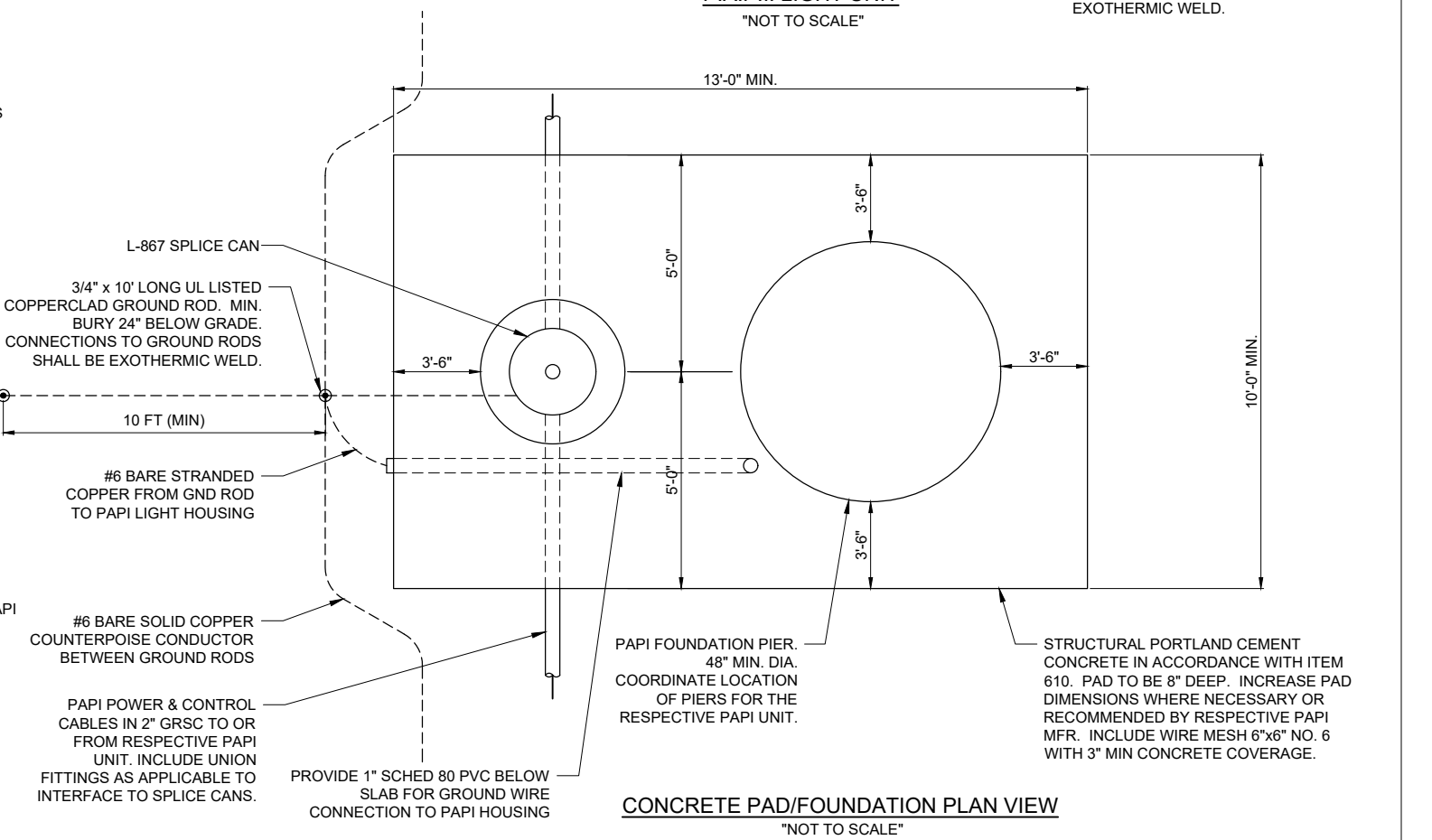
GROUNDING FOR PAPI'S

- GROUNDING FOR PAPI'S SHALL CONFORM TO THE RESPECTIVE PAPI MANUFACTURER'S INSTALLATION INSTRUCTIONS. AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. THE POWER CIRCUIT TO EACH PAPI UNIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE OF THE SAME SIZE AND TYPE AS THE PHASE CONDUCTORS. FURNISH AND INSTALL TWO 3/4-INCH DIAMETER BY 10-FOOT LONG COPPER CLAD GROUND RODS AT EACH PAPI LIGHTING UNIT SPACED NOT LESS THAN ONE GND ROD LENGTH APART. BOND EACH PAPI UNIT AND THE RESPECTIVE L-867 SPLICE CAN TO THE RESPECTIVE GROUND ROD WITH A #6 AWG STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR. TOP OF GROUND RODS SHALL BE BURIED APPROXIMATELY 24 INCHES BELOW GRADE. ALL CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS; CADWELD BY ERICO PRODUCTS, THERMOWELD BY CONTINENTAL INDUSTRIES, INC., OR ULTRAWELD BY HARGER LIGHTNING PROTECTION GROUNDING EQUIPMENT, OR APPROVED EQUAL. CONNECTIONS TO L-867 SPLICE CANS SHALL BE WITH UL LISTED GROUNDING CONNECTORS SUITABLE FOR USE IN DIRECT BURIAL OR CONCRETE ENCASUREMENT APPLICATIONS. CONNECTIONS TO PAPI UNIT FRAME SHALL BE AS RECOMMENDED BY THE MANUFACTURER OR WITH A UL LISTED GROUNDING CONNECTOR. ALL GROUND RODS ASSOCIATED WITH THE COMPLETE PAPI INSTALLATION SHALL BE BONDED TOGETHER WITH A #6 AWG SOLID COPPER COUNTERPOISE CONDUCTOR. THIS COUNTERPOISE CONDUCTOR SHALL BE INSTALLED IN THE SAME TRENCH LOCATED 10 INCHES ABOVE THE POWER AND CONTROL CONDUCTORS, BETWEEN EACH RESPECTIVE PAPI UNIT.



NOTE:
FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AND 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 150/5345-42H (AND/OR OTHER CURRENT ISSUES IN EFFECT).

PAPI L-867 SPLICE CAN DETAIL
(NOT TO SCALE)



CONCRETE PAD/FOUNDATION PLAN VIEW
(NOT TO SCALE)

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FOR BID



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

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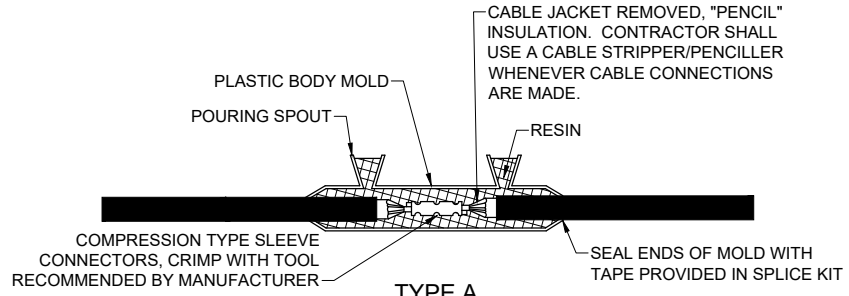
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DESIGN BY: KNL 08/23/2023
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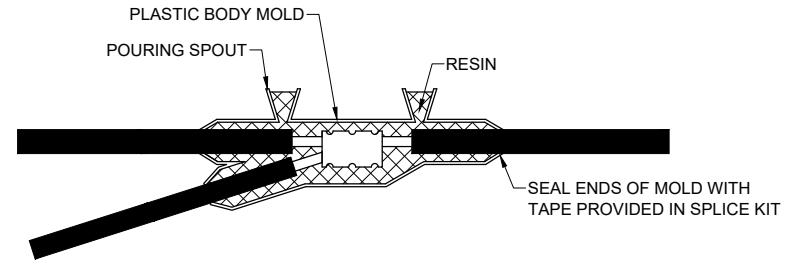
**AIRFIELD LIGHTING
CABLE SPLICE
DETAILS**

NOTES:

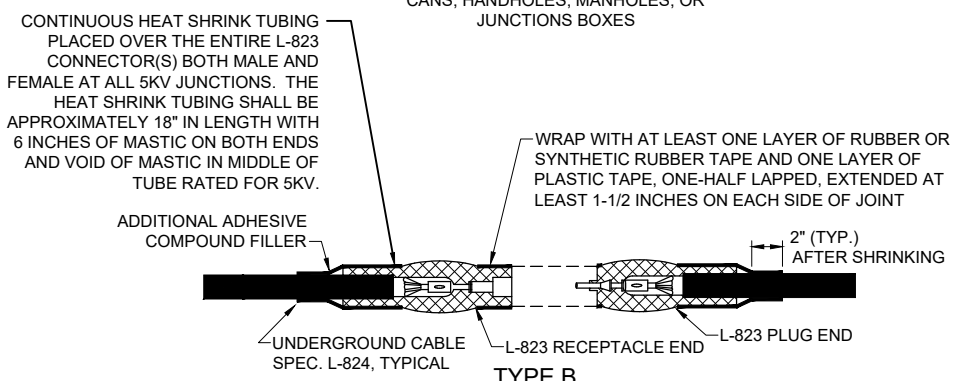
- SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
- KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
- EVERY AIRFIELD LIGHTING CABLE SPICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5,000 VOLTS AC TO COMPLY WITH THE REQUIREMENTS OF FAA AC 150/5370-10G ITEM L-108.
- 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 THE APPLICATION.
- PROVIDE CABLE TAGS TO IDENTIFY THE RESPECTIVE CIRCUITS ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
- CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. FOR THE L-823 CONNECTORS, THE CRIMPING TOOL USED MUST BE LISTED BY THE L-823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.



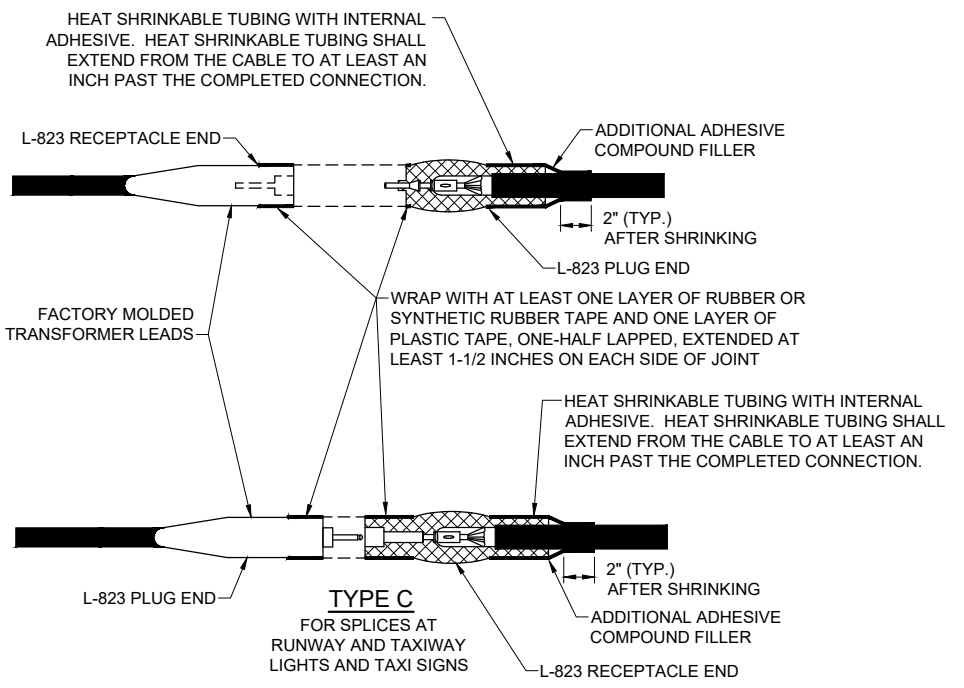
TYPE A
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES



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

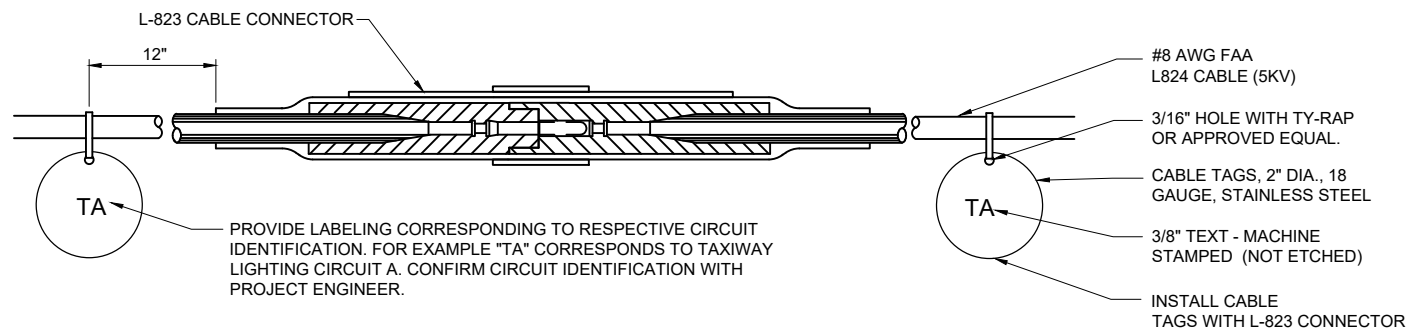


TYPE B
FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES



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

CABLE SPLICES
"NOT TO SCALE"

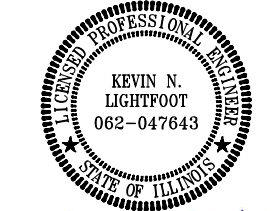


- CONTRACTOR SHALL PROVIDE CABLE CIRCUIT IDENTIFICATION MARKERS ATTACHED TO BOTH SIDES OF EACH CABLE CONNECTION.
- CABLE IDENTIFICATION TAGS SHALL BE STAINLESS STEEL OR BRASS.
- THE CABLE SHALL THOROUGHLY BE CLEANED PRIOR TO THE INSTALLATION OF THE L-823 CONNECTOR KIT.
- ATTACH EACH CABLE TIE ENOUGH TO HOLD IN PLACE WITHOUT COMPRESSING EDGE OF CABLE TAG INTO CONDUCTOR. TRIM OFF EXCESS CABLE TIE.
- CABLE TAGS SHALL BE PROVIDED AT ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
- CABLE TAGS SHALL BE LABELED AS FOLLOWS FOR RESPECTIVE AIRFIELD LIGHTING CIRCUITS,
RUNWAY 11-29 LIGHTING: R1
RUNWAY 1-19 LIGHTING: R2
TAXIWAY A LIGHTING: TA
TAXIWAY B LIGHTING: TB

CABLE TAG DETAIL
"NOT TO SCALE"

DEC 04, 2023 10:01 AM ENGEL015009
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Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

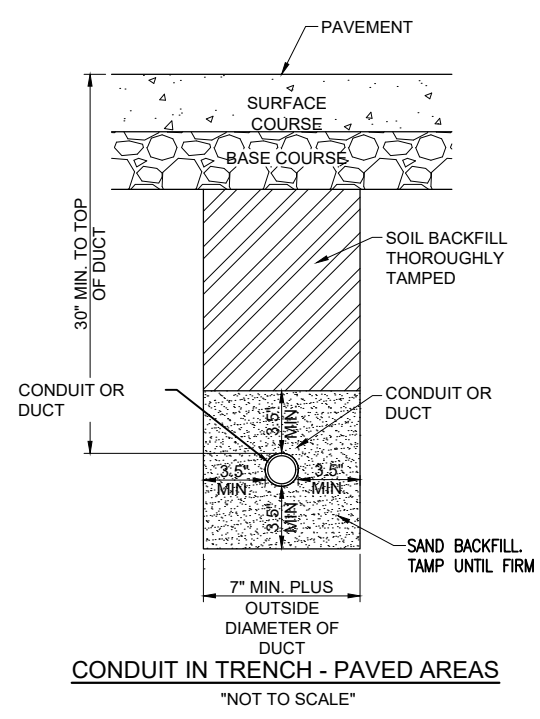
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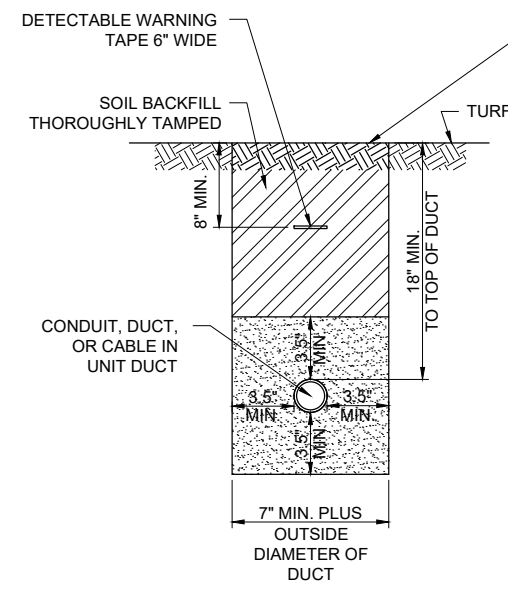
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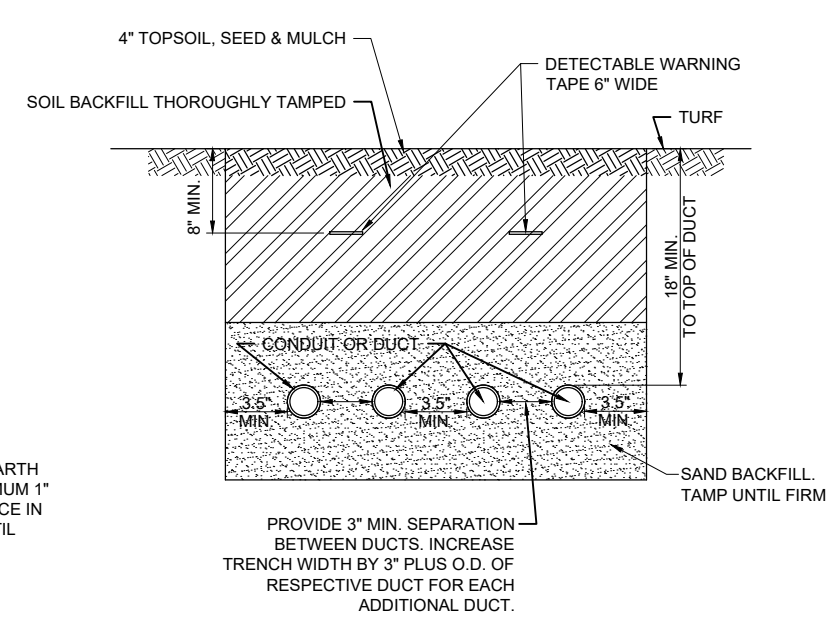
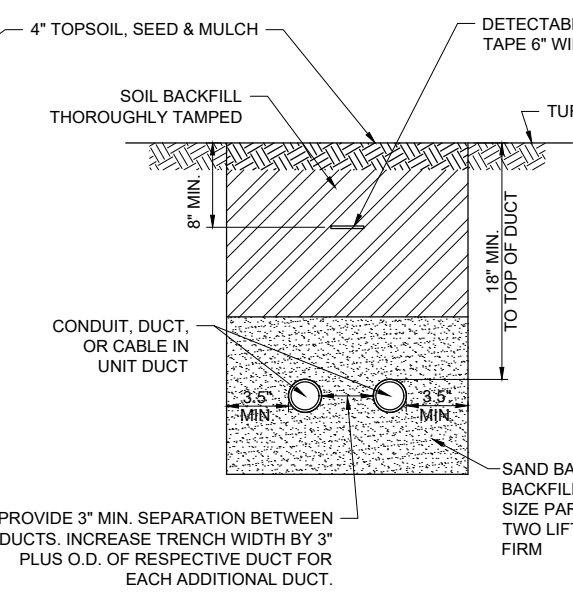
**CONDUIT TRENCH
DETAIL**



CONDUIT IN TRENCH - PAVED AREAS
"NOT TO SCALE"



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



NOTES:

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

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

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

FOR BID



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: E-513-DETL.DWG

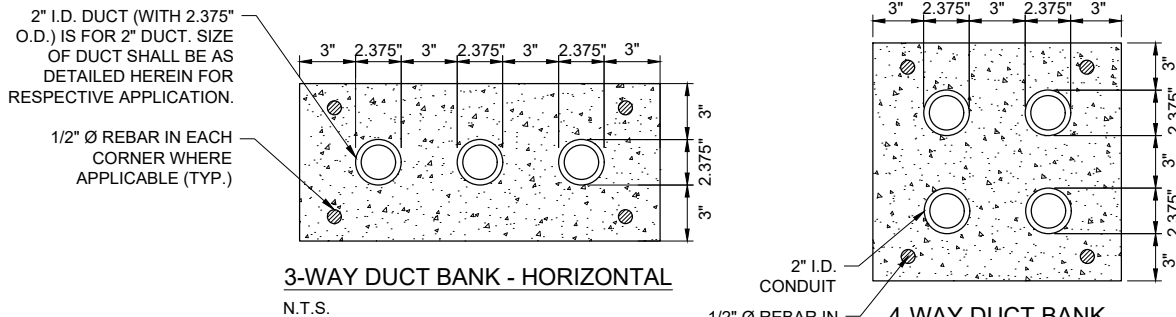
DESIGN BY: KNL 10/7/2023

DRAWN BY: HLE 10/9/2023

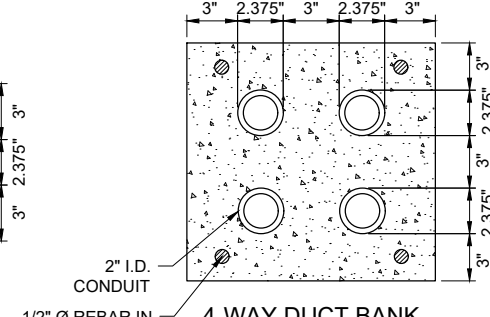
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

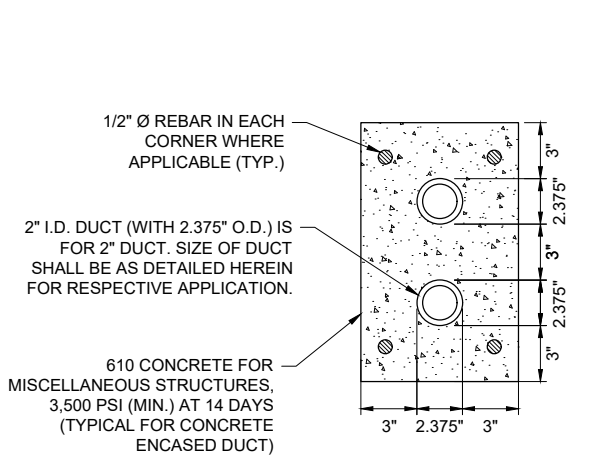
DUCT BANK DETAILS
AND NOTES



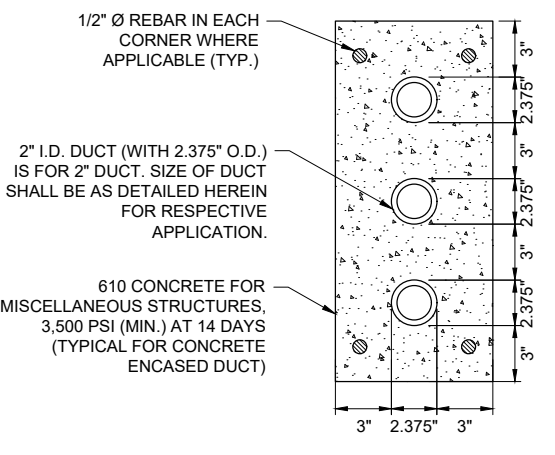
3-WAY DUCT BANK - HORIZONTAL
N.T.S.



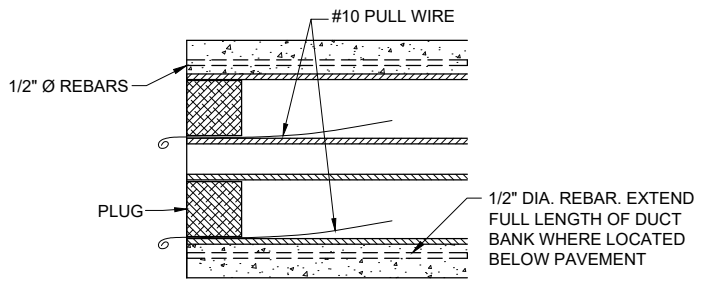
4-WAY DUCT BANK
N.T.S.



2-WAY DUCT BANK - VERTICAL
N.T.S.



3-WAY DUCT BANK - VERTICAL
N.T.S.



TYPICAL SECTION
N.T.S.

DUCT INSTALLATION NOTES

- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE. THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL 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 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 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.
- ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
- CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESIDENT PROJECT REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT PROJECT REPRESENTATIVE AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.
- PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
- THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. HE WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED UNDERGROUND IMPROVEMENTS
- CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 (MINIMUM) PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE.
- 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.
- INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
- 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.
- 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.
- UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- 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.
- HOMERUN 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.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

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.
- 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.

FOR BID



Kevin N. Lightfoot

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

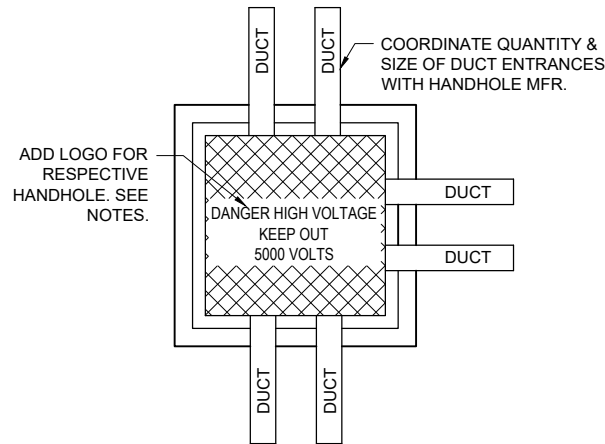
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DESIGN BY: KNL 08/23/2023

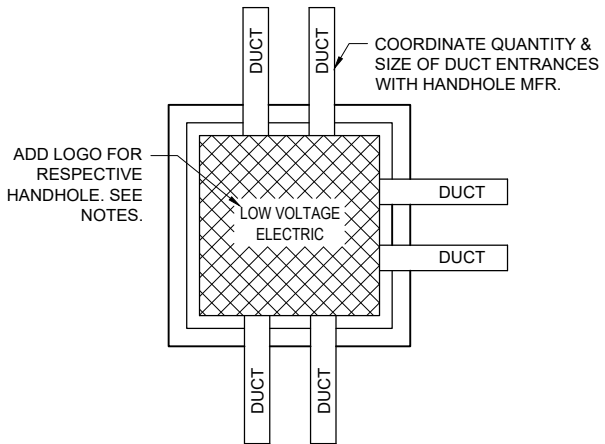
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REVIEWED BY: KNL 11/9/2023

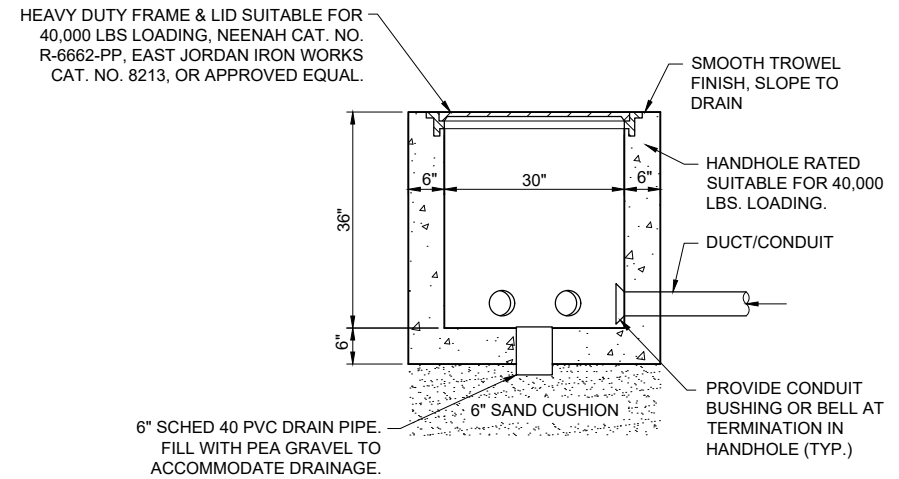
SHEET TITLE



HIGH VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"

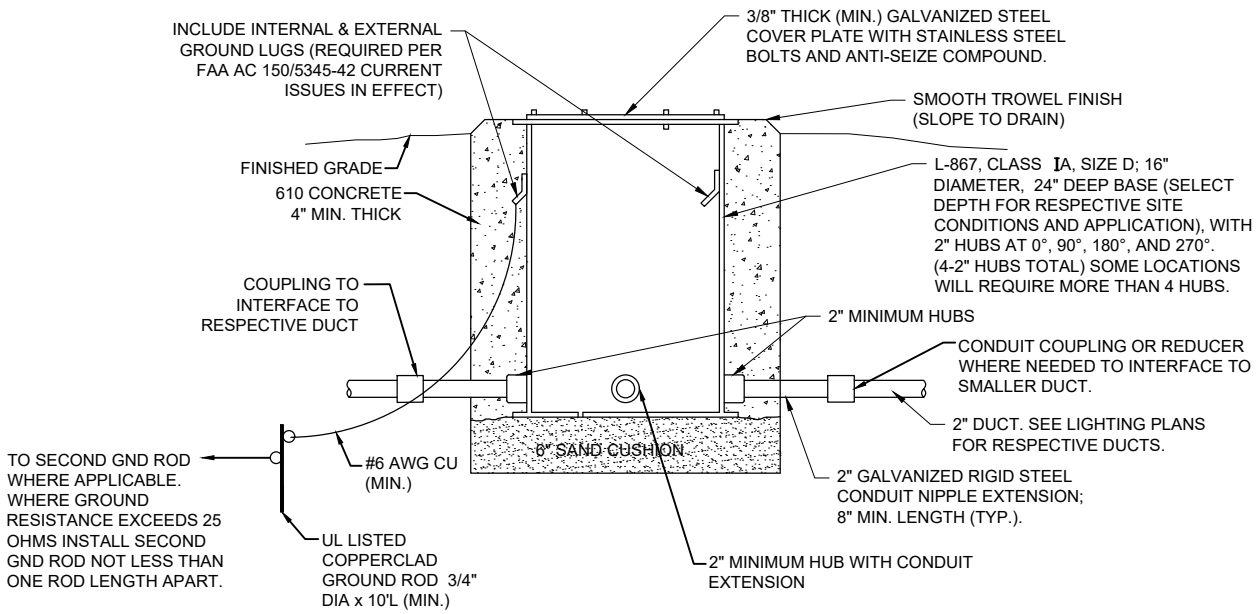


ELEVATION
"NOT TO SCALE"

HANDHOLE NOTES:

- LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 40,000 POUND LOADS.
- REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
- CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURER MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
- COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
- ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HANDHOLES WITH SIMILAR DIMENSIONS MEETING STRENGTH AND LOADING REQUIREMENTS WILL BE CONSIDERED.

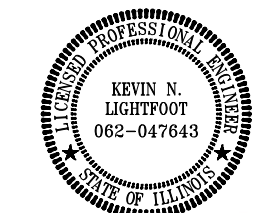
ELECTRICAL HANDHOLE
"NOT TO SCALE"



SPLICE CAN/JUNCTION CAN DETAIL
"NOT TO SCALE"

NOTES FOR SPLICE CAN/JUNCTION CAN DETAIL:

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



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

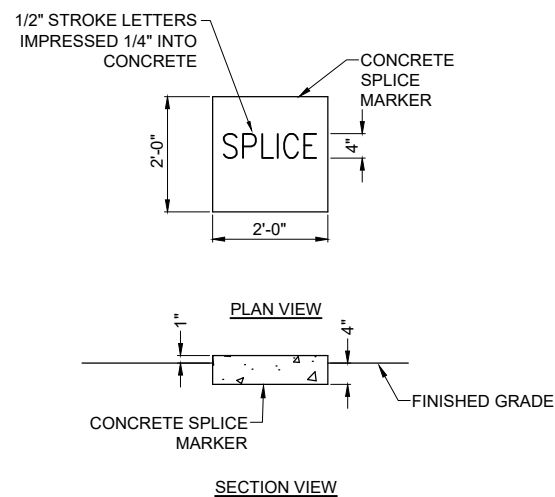
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
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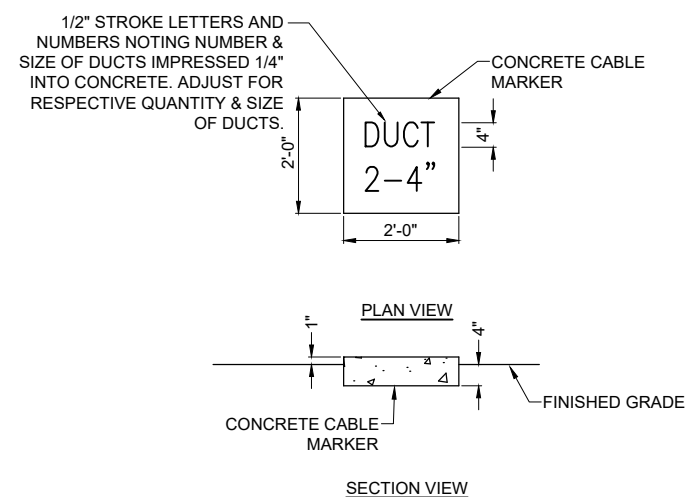
ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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SHEET TITLE

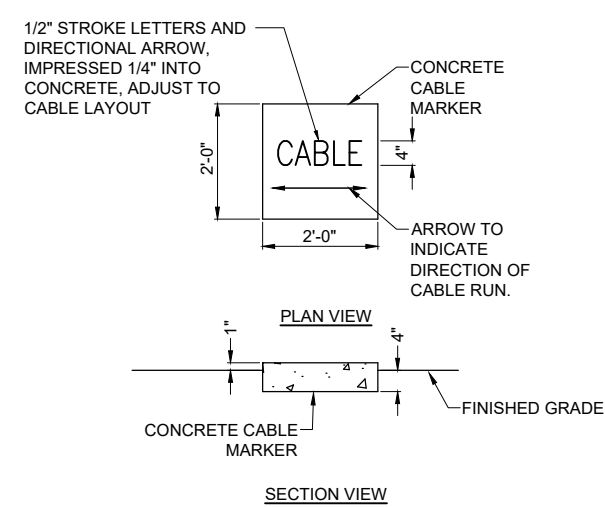
CABLE AND DUCT
MARKER DETAILS



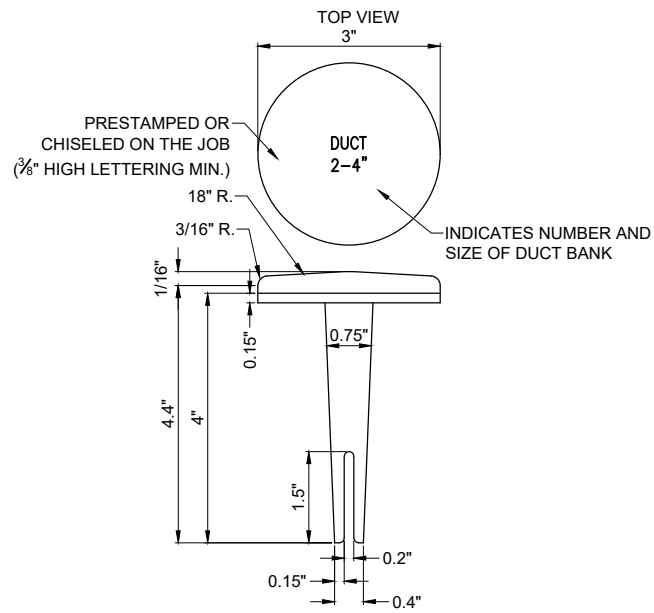
TURF CABLE MARKERS
"NOT TO SCALE"



TURF CABLE MARKERS
"NOT TO SCALE"



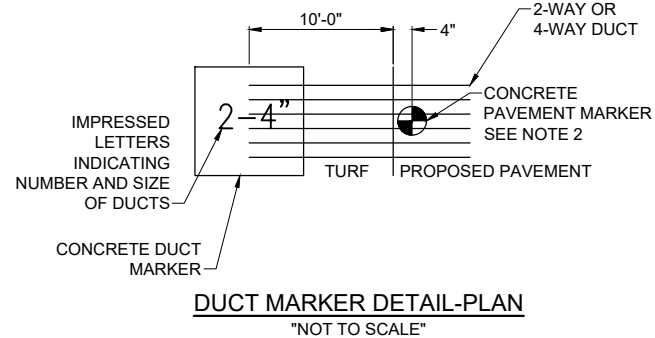
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"NOT TO SCALE"



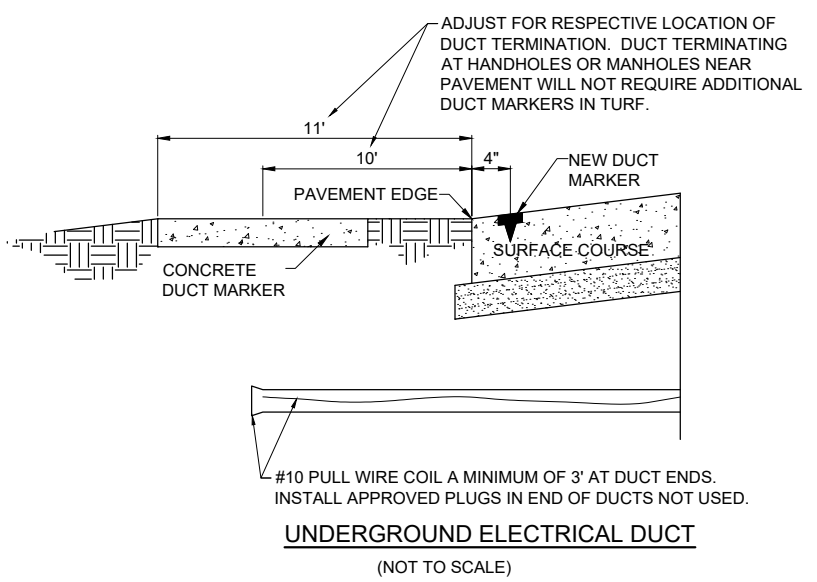
BITUMINOUS PAVEMENT DUCT MARKERS
"NOT TO SCALE"

NOTE:

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



DUCT MARKER DETAIL-PLAN
"NOT TO SCALE"



UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)

CABLE & DUCT MARKER NOTES:

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

FOR BID

GENERAL 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.
- 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 COMPONENTS.
 - 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 CONTROL, ETC.
- 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 JUNCTION/PULL BOXES.
- THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
 - 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 ENCLOSURES.
- SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
- CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
- 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.
- 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.
- 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.
- 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.
- 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 WARNING".

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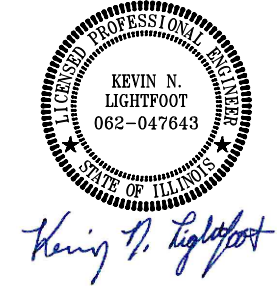
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EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING ELECTRICAL DESIGN



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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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SHEET TITLE

**ELECTRICAL NOTES
SHEET 1**



DATE 11/17/2023 LICENSE 11/30/2025
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**EXTEND RUNWAY
11-29 AND TAXIWAY A**

**IDA NO. 1H2-4982
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SHEET TITLE

**ELECTRICAL NOTES
SHEET 2**

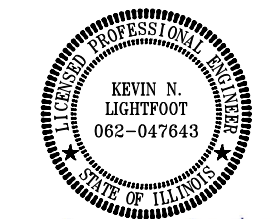
AIRFIELD LIGHTING NOTES

- UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
- NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
- PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
- 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.
- 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.
- GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
- EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
- 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.
- 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.
- 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.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
- 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.
- 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 FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.
- 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 ARTICLE 250-12.
- THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
- 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.



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: E-511-DETL.DWG

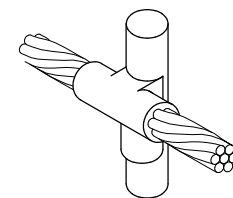
DESIGN BY: KNL 08/23/2023

DRAWN BY: CWS 09/27/2023

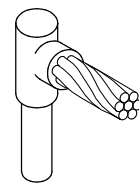
REVIEWED BY: KNL 11/9/2023

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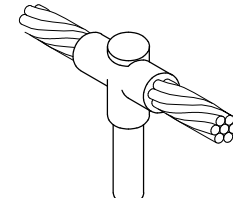
GROUNDING DETAILS



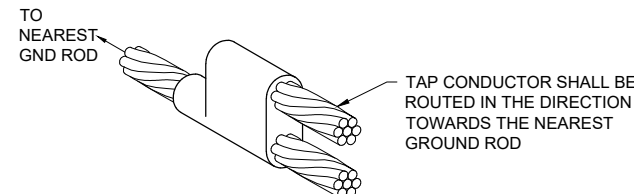
CABLE TO GROUND ROD



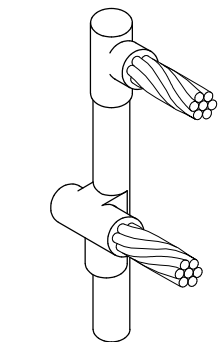
CABLE TO GROUND ROD



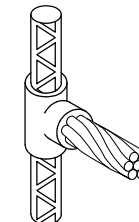
CABLE TO GROUND ROD



CABLE TO CABLE
HORIZONTAL PARALLEL TAP



CABLES TO GROUND ROD

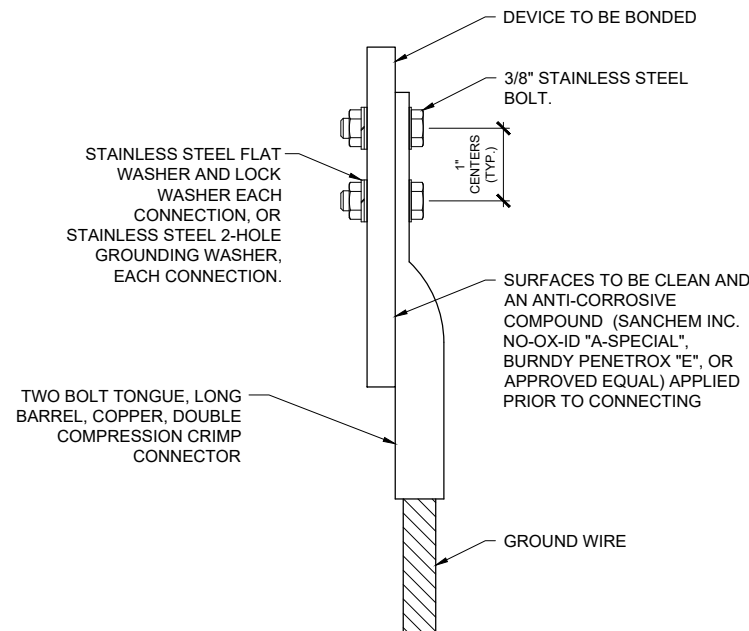


CABLE TO REBAR

DETAIL NOTES

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

EXOTHERMIC WELD DETAILS

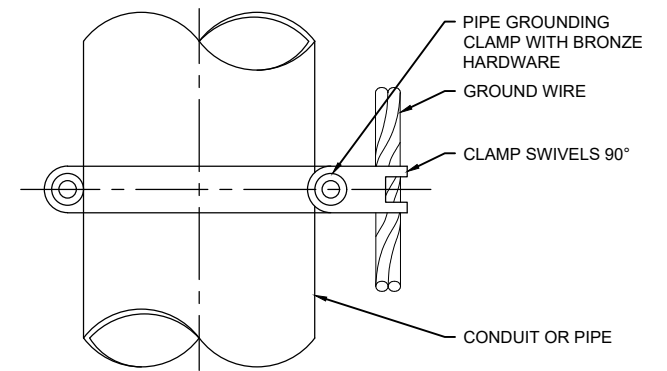
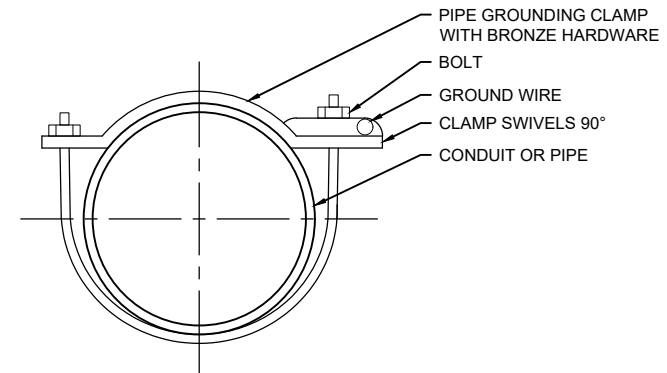


WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38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

NOTES

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

GROUNDING LUG CONNECTION DETAIL



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

NOTES

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

PIPE/CONDUIT GROUNDING CLAMP DETAIL



Kevin N. Lightfoot

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

EXTEND RUNWAY
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ISSUE: NOVEMBER 17, 2023

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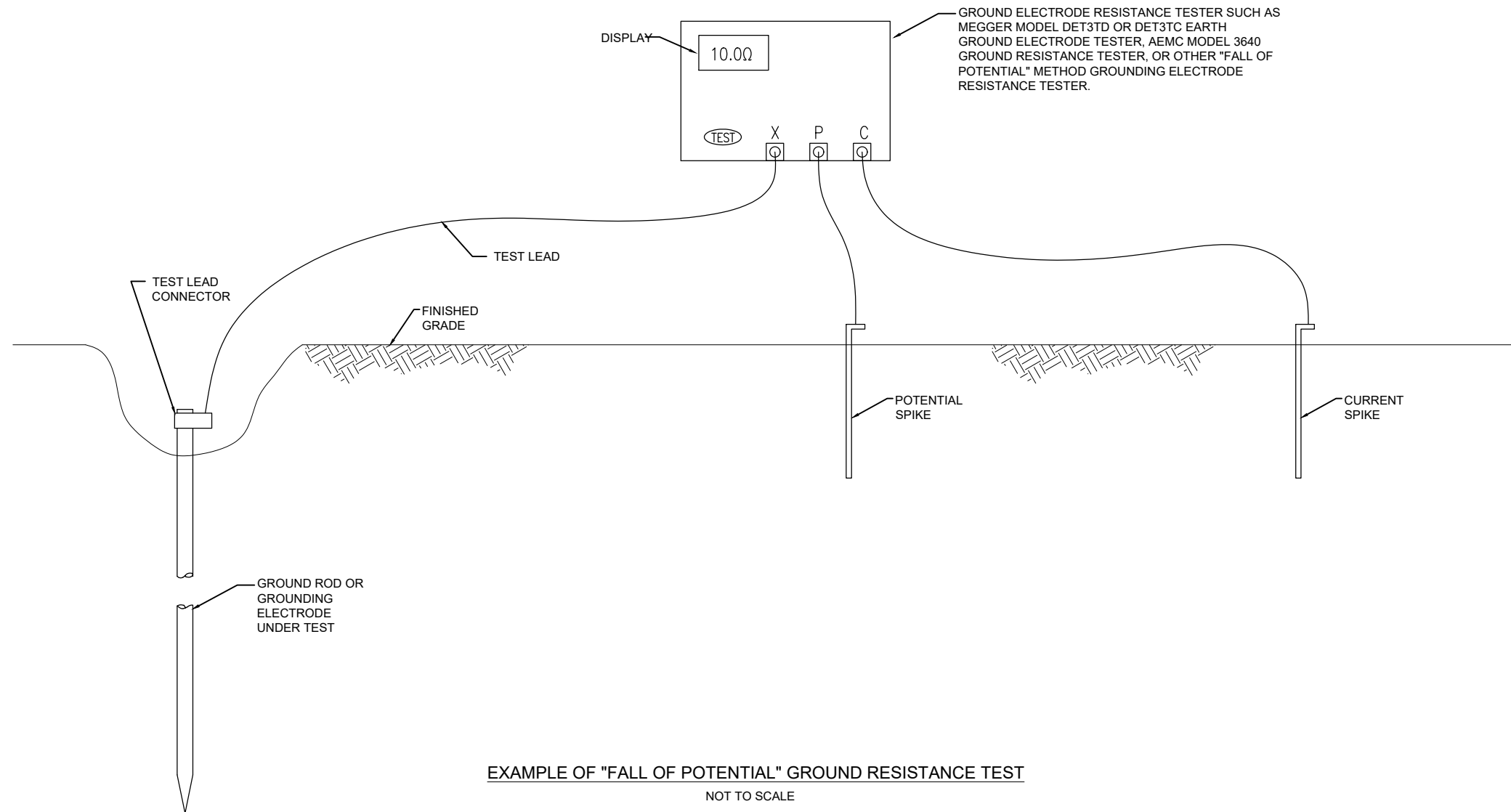
DESIGN BY: KNL 08/23/2023

DRAWN BY: CWS 09/27/2023

REVIEWED BY: KNL 11/9/2023

SHEET TITLE

GROUND
RESISTANCE
TESTING DETAILS



EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST

NOT TO SCALE

NOTES

- CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
- FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, SPLICE CAN AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. 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.

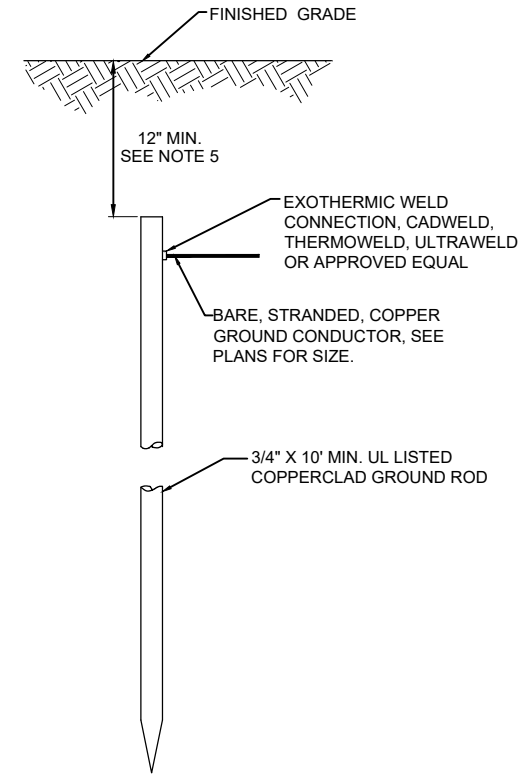
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GROUNDING NOTES

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019f (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:

- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING (UNLESS DETAILED OTHERWISE HEREIN). 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, 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 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 FOR FURTHER DIRECTION. 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 ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER OF RECORD.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE 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, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, OR APPROVED 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.
- 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, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN 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, DO NOT COMPLETELY ENIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. 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. 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.
- IF LOCAL CODES DICTATE THAT GROUNDING ELECTRODE CONDUCTORS OR 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 GROUNDING ELECTRODE CONDUCTOR OR INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2020 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM EQUIPMENT. 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
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT.



10 FT. GROUND ROD

NOTES

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- 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 FOR AIRFIELD LIGHT FIXTURES AND TAXI GUIDANCE SIGNS, SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR INDIVIDUAL SPLICE CANS SHALL BE 3/4-IN DIAMETER BY 10 FOOT LONG. WHERE GROUND RESISTANCE EXCEEDS 25 OHMS FURNISH AND INSTALL A SECOND GROUND ROD SPACED MINIMUM OF 10 FEET APART (ONE ROD LENGTH APART), AND CONNECT TO FIRST GND ROD.

GROUND RODS

NOT TO SCALE

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EFFINGHAM COUNTY AIRPORT
COMMISSION
Effingham County Memorial Airport
14449 East 1100th Ave.
Effingham, Illinois 62401

COVERING ELECTRICAL DESIGN



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

**IDA NO. 1H2-4982
CONTRACT NO. EF010**

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DESIGN BY: KNL 08/23/2023
DRAWN BY: CWS 09/27/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

GROUNDING NOTES

FOR BID

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

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

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

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

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
LIR	LOW IMPACT-RESISTANT
LOC	LOCALIZER FACILITY
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATING LIGHTS
MIRL	MEDIUM INTENSITY RUNWAY LIGHT
MITL	MEDIUM INTENSITY TAXIWAY LIGHT
NDB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
RAIL	RUNWAY ALIGNMENT INDICATING LIGHTS
REIL	RUNWAY END IDENTIFIER LIGHT
RVR	RUNWAY VISUAL RANGE
VADI	VISUAL APPROACH DESCENT INDICATOR
VASI	VISUAL APPROACH SLOPE INDICATOR
VOR	VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE FACILITY
WC	WIND CONE

NOTES:

1. 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 LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC 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 KCML TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

120/240 VAC, 1 PHASE, 3 WIRE		
PHASE A	BLACK	
PHASE B	RED	
NEUTRAL	WHITE	
GROUND	GREEN	
6. 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.
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.



Kevin N. Lightfoot

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

**EXTEND RUNWAY
11-29 AND TAXIWAY A**

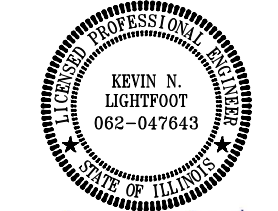
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SHEET TITLE

**ELECTRICAL LEGEND
AND ABBREVIATIONS**



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

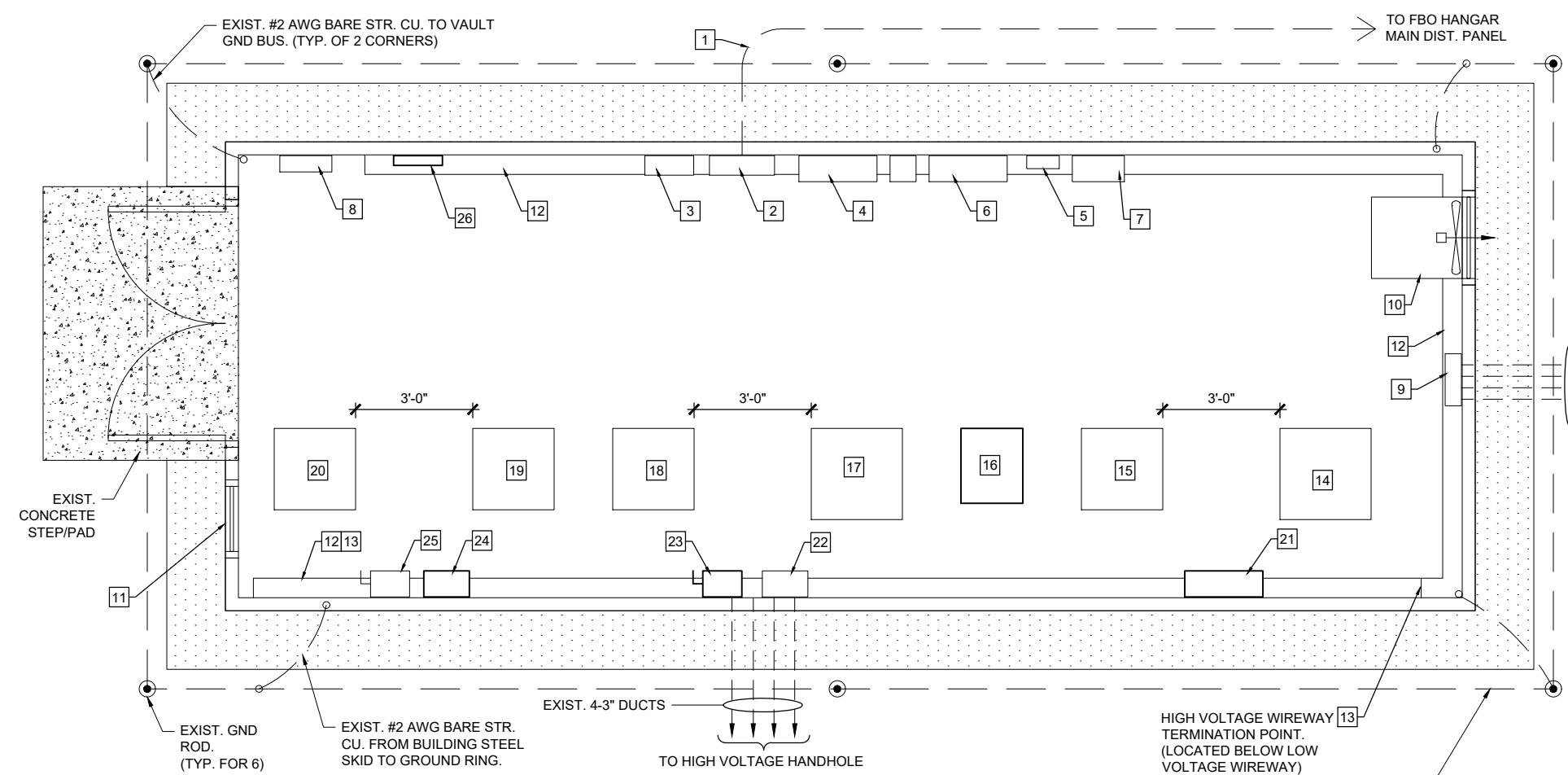
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SHEET TITLE

AIRPORT VAULT
EQUIPMENT PLAN



VAULT ELECTRICAL EQUIPMENT PLAN

SCALE 1/2"=1'-0"
1 0 2 4 FEET

HIGH VOLTAGE WIREWAY [13]
TERMINATION POINT.
(LOCATED BELOW LOW
VOLTAGE WIREWAY)

EXIST. #2 AWG BARE STR. CU.
GROUND RING BURIED 30" (MIN.)
BELOW GRADE (TYP. FOR GROUND
RING). LOCATE 2'-0" (MIN.) BEYOND
PERIMETER OF BUILDING.

GENERAL NOTES

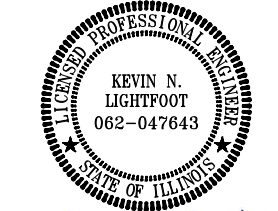
- SEE "PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CCR'S (CONSTANT CURRENT REGULATORS). SEE "HIGH VOLTAGE WIRING SCHEMATICS" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "AIRFIELD LIGHTING WIRING SCHEMATIC" FOR CCR CONTROL WIRING REQUIREMENTS.
- CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, AND INPUT AND OUTPUT CONNECTIONS ON EACH CUTOUT.
- CONTRACTOR SHALL COORDINATE WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS WITH THE AIRPORT DIRECTOR/MANAGER AND THE RESIDENT PROJECT REPRESENTATIVE. AND SHUTDOWN OF EXISTING SYSTEMS SHALL BE SCHEDULED WITH AND APPROVED BY THE AIRPORT MANAGER PRIOR TO SHUTDOWN. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONATIONS.
- THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH AND QUALIFIED TO WORK ON 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- EACH ACTIVE CCR SERVING THE RESPECTIVE WORK AREAS OF THE PROJECT, SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD LIGHTING REPLACEMENTS AND VAULT 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. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE PROJECT ENGINEER.

KEYED NOTES

- 1 EXIST. 120/240 VAC, SINGLE PHASE FEEDER CONDUCTORS IN GRSC FROM FBO HANGAR MAIN DISTRIBUTION PANEL TO VAULT DISTRIBUTION PANEL.
- 2 EXIST. VAULT MAIN DISTRIBUTION PANEL A.
- 3 EXIST. AC SURGE PROTECTOR/TVSS
- 4 EXIST. LIGHTING CONTACTOR PANEL.
- 5 EXIST. L-854 RADIO CONTROL UNIT.
- 6 EXIST. RADIO RELAY INTERFACE PANEL WITH PHOTOCELL BYPASS SWITCH FOR AIRFIELD LIGHTING SYSTEM.
- 7 EXIST. RADIO RELAY INTERFACE PANEL FOR TAXIWAY LIGHTING SYSTEM.
- 8 EXIST. ELECTRIC WALL HEATER EH-1.
- 9 EXIST. ELECTRIC WALL HEATER EH-2.
- 10 EXIST. EXHAUST FAN EF-1.
- 11 EXIST. INTAKE LOUVER L-1.
- 12 EXIST. 6" BY 6" LOW VOLTAGE WIREWAY.
- 13 EXIST. 6" BY 6" HIGH VOLTAGE WIREWAY.
- 14 EXIST. EAST-WEST TAXIWAY REGULATOR (CCR #1).
- 15 EXIST. MANAIRCO MR07L8283B-01, 7.5 KW REGULATOR FOR BACKUP/SPARE FOR TAXIWAY CIRCUITS (CCR #2).

- 16 EXIST. REGULATOR FOR TAXIWAY "A" (CCR #3). TO BE REMOVED, TURNED OVER TO THE AIRPORT, AND REPLACED WITH A NEW CCR. (ADD ALT NO. 1)
- 17 EXIST. MANAIRCO MSR07L8283B-0102, 7.5 KW REGULATOR FOR RUNWAY 11-29 (CCR #4).
- 18 EXIST. MANAIRCO MR07L8283B-01, 7.5 KW REGULATOR FOR BACKUP/SPARE FOR RUNWAY 11-29 (CCR #5).
- 19 EXIST. MANAIRCO 4 KW REGULATOR FOR RUNWAY 1-19 (CCR #6).
- 20 EXIST. MANAIRCO 4 KW REGULATOR FOR BACKUP/SPARE FOR RUNWAY 1-19 (CCR #7).
- 21 EXIST. TAXIWAY CIRCUITS SERIES PLUG CUTOUTS (TYPE S-1) WITH ENCLOSURE. PROVIDE FIRE STOP MATERIAL AT EACH CONDUIT ENTRY & EXIT.
- 22 EXIST. TRANSFER PAIR SERIES PLUG CUTOUTS (TYPE S-1) WITH ENCLOSURE, FOR RUNWAY 11-29 TO BE REMOVED AND REPLACED WITH NEW TYPE S-1 CUTOUTS. PROVIDE FIRE STOP MATERIAL AT EACH CONDUIT ENTRY & EXIT.
- 23 EXIST. 60 AMP, 240 VAC, 2P DOUBLE THROW FUSIBLE SAFETY SWITCH FOR RUNWAY 11-29 CCR'S
- 24 EXIST. TRANSFER PAIR SERIES PLUG CUTOUTS (TYPE S-1) WITH ENCLOSURE, FOR RUNWAY 1-19 TO BE REMOVED AND REPLACED WITH NEW TYPE S-1 CUTOUTS. PROVIDE FIRE STOP MATERIAL AT EACH CONDUIT ENTRY & EXIT.
- 25 EXIST. 60 AMP, 240 VAC, 2P DOUBLE THROW NOT FUSIBLE SAFETY SWITCH FOR RUNWAY 1-19 CCR'S
- 26 PROVIDE LOCKOUT STATION WITH 10 LOCKOUT PADLOCKS, EACH WITH A DIFFERENT KEY, 5 LOCKOUT HASPS TO ACCOMMODATE MULTIPLE PADLOCKS AND 50 LOCKOUT TAGS, IN ACCORDANCE WITH OSHA STANDARD 1910.147.

FOR BID



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: E-601.DWG

DESIGN BY: KNL 08/23/2023

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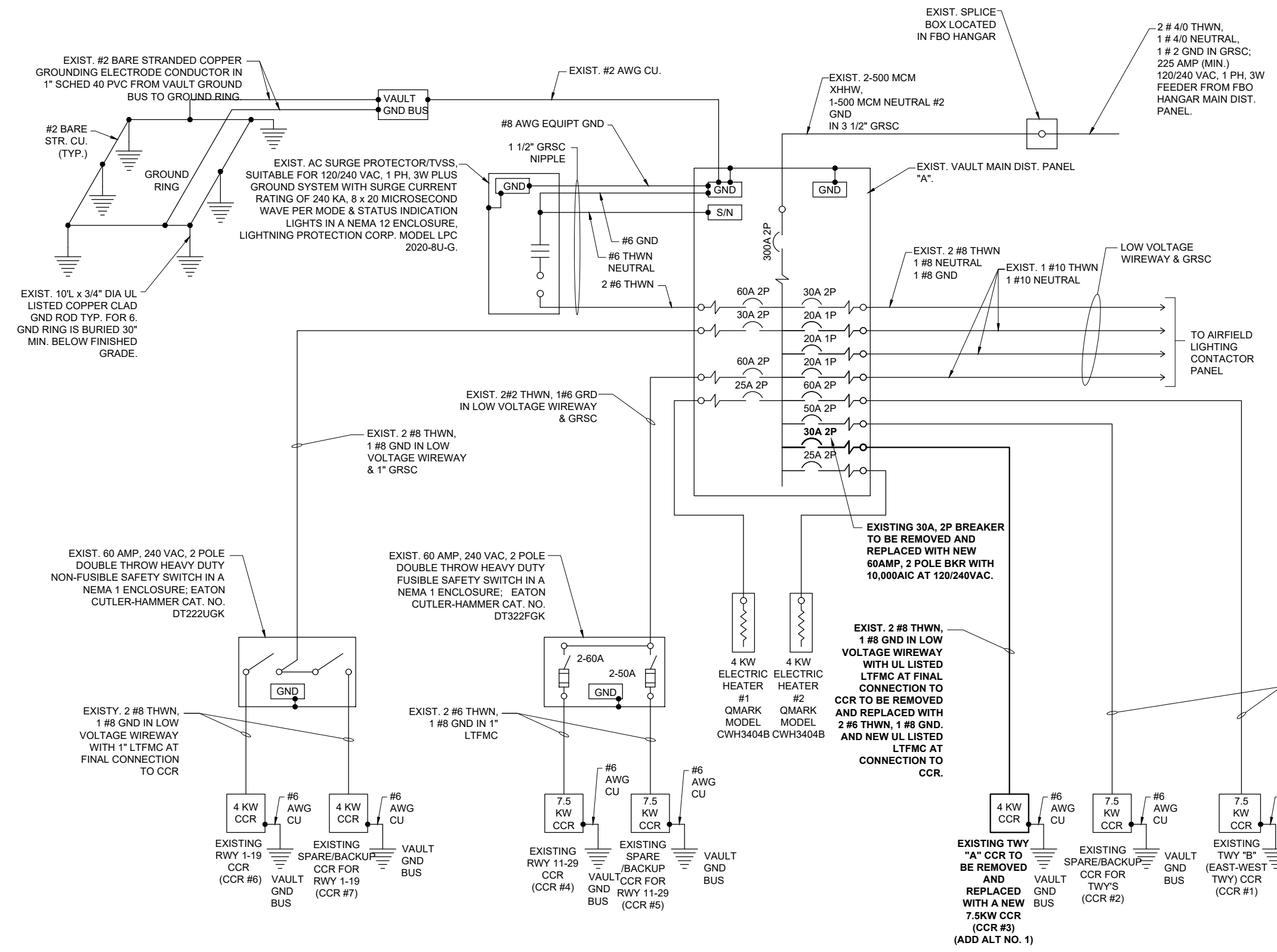
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

EXISTING
ELECTRICAL
ONE-LINE FOR VAULT
SHEET 1

NOTES:

- EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/TECHNICIAN.
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND THE AIRPORT MAINTENANCE STAFF. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
- WHEN A TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING SHALL BE SHUT OFF.



EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD

FOR BID

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Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
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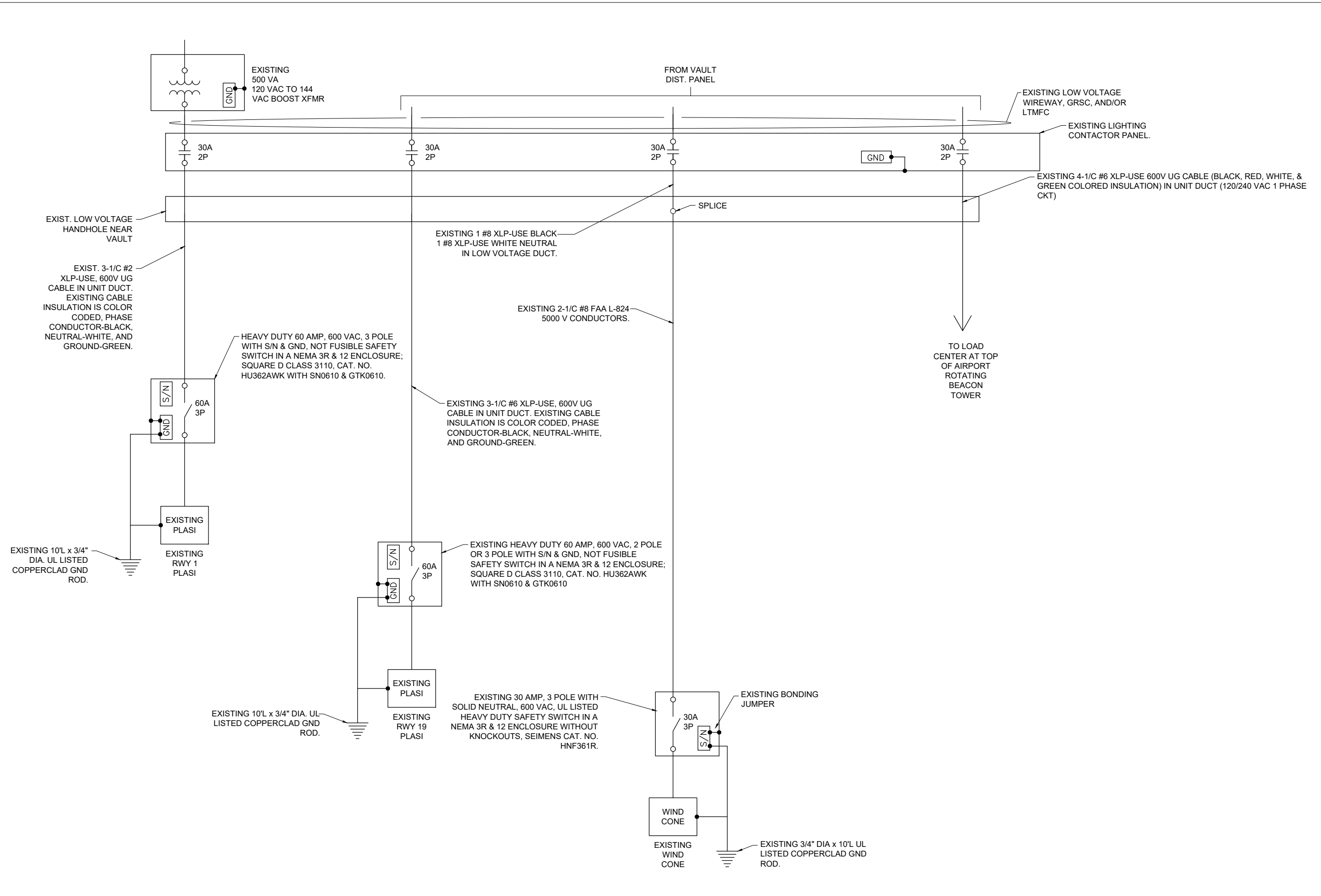
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DRAWN BY: CWS 09/27/2023

REVIEWED BY: KNL 11/9/2023

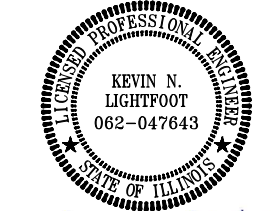
SHEET TITLE

EXISTING
ELECTRICAL
ONE-LINE FOR VAULT
SHEET 2



EXISTING ELECTRICAL ONE-LINE FOR VAULT & AIRFIELD (CONTINUED)

FOR BID



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

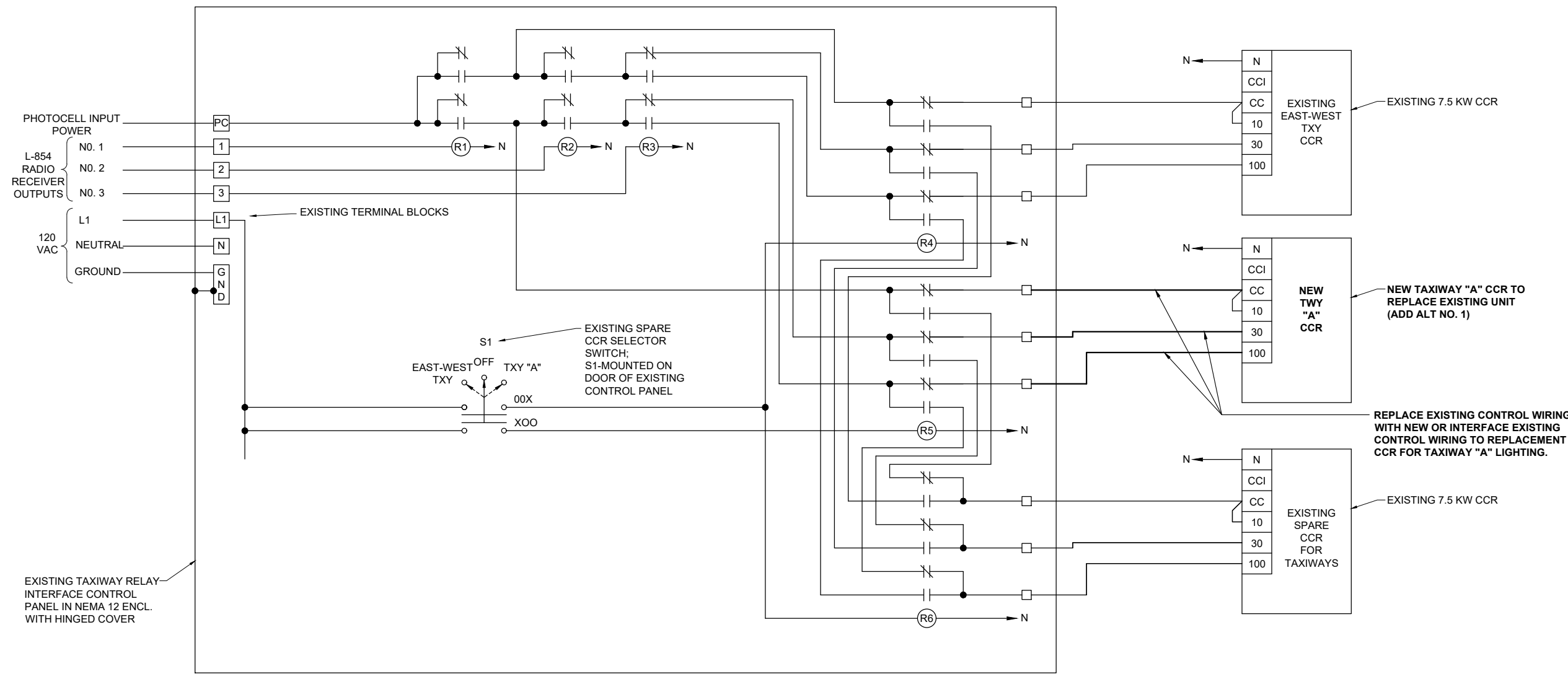
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DRAWN BY: AJL 10/02/2023
REVIEWED BY: KNL 11/9/2023

SHEET TITLE

TAXIWAY LIGHTING
CONTROL WIRING
SCHEMATIC



TAXIWAY LIGHTING CONTROL WIRING SCHEMATIC

EXISTING

- RELAY INTERFACE CONTROL PANEL WAS MANUFACTURED BY AN FAA APPROVED L-821 PANEL BUILDER; ADB AIRFIELD SOLUTIONS, 977 GAHANNA PARKWAY, COLUMBUS, OHIO 43230. CONFIRM EXISTING CONTROL WIRING IN THE FIELD.
- EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE.
- IN THE AUTOMATIC MODE OF OPERATION THE TAXIWAY CIRCUITS ARE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:

PHOTOCELL	- ACTIVATE RADIO CONTROL
3 CLICKS	- 10% BRIGHTNESS
5 CLICKS	- 30% BRIGHTNESS
7 CLICKS	- 100% BRIGHTNESS
- EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT
- COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE CONSISTENT FOR ALL REGULATORS. COLOR CODING SHALL BE AS FOLLOWS:

CC	- RED
10%	- ORANGE (WHERE APPLICABLE)
30%	- YELLOW
100%	- BLUE
NEUTRAL	- WHITE
EQUIPT. GND.	- GREEN
- ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CC, 10%, 30%, 100%)
- "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR
- TAXIWAY CONTROL SYSTEM IS DESIGNED TO ACCOMMODATE L-828 CONSTANT CURRENT REGULATORS. CONFIRM REPLACEMENT CCR FOR TWY "A" LIGHTING IS COMPATIBLE WITH EXISTING CONTROL SYSTEM.

FOR BID



Kevin N. Lightfoot

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SIGNED: EXPIRES:

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
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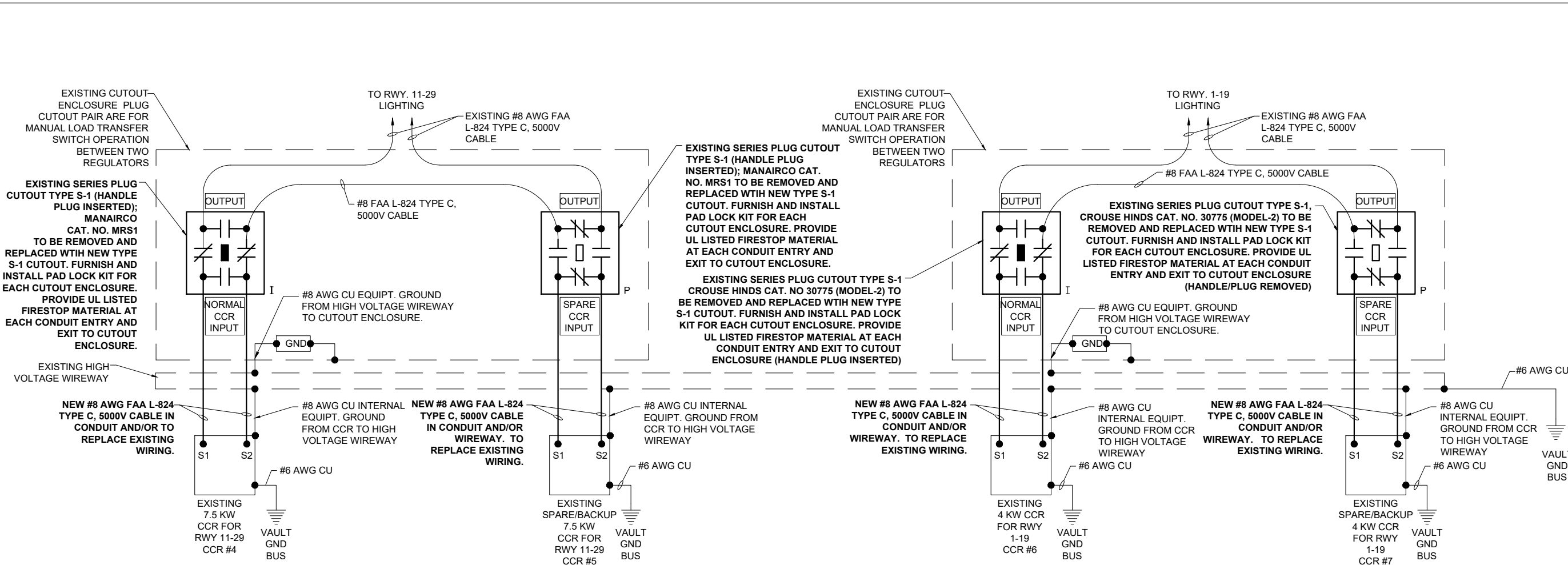
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SHEET TITLE

EXISTING HIGH
VOLTAGE WIRING
SCHEMATIC FOR
RUNWAYS

FOR BID



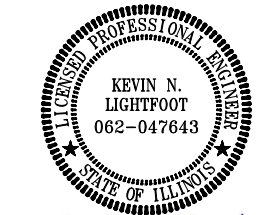
EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS

NOTES:

- KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT PROJECT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER AND THE RESIDENT ENGINEER. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY OF PERSONNEL. CONTRACTOR SHALL FURNISH AND INSTALL LOCKOUT/TAGOUT KITS PER SPECIFICATIONS.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT OR DISCONNECT AN L-823 CABLE CONNECTION WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT OR DISCONNECTING A CABLE.
- THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
- EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- OVERSEE AND CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO CABLE WORK OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES AND/OR OTHER WORK HAS BEEN COMPLETED. PROVIDE 5KV INSULATION TESTER FOR 5,000 VOLT SERIES CIRCUIT CABLES. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER. PROVIDE COPY OF TEST RESULTS TO THE PROJECT ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER AND THE PROJECT ENGINEER OF RECORD (EOR).
- EXISTING S-1 CUTOUTS FOR RUNWAY LIGHTING CIRCUITS SHALL BE REMOVED AND REPLACED WITH NEW S-1 CUTOUT. REPLACEMENT SERIES PLUG CUTOUTS SHALL BE TYPE: S-1, RATED 5000 VOLTS, 20-AMP. 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. EACH PAIR OF CUTOUTS SHALL BE WIRED AS A TRANSFER PAIR WHERE EITHER OF TWO CCR'S CAN PROVIDE POWER TO THE RESPECTIVE AIRFIELD LIGHTING SERIES CIRCUIT. PROVIDE ONLY ONE S-1 PLUG FOR EACH PAIR OF CUTOUT RECEPTACLES. 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.

LEGEND

- "I" DENOTES S-1 PLUG CUTOUT WITH PLUG INSERTED
- "P" DENOTES S-1 PLUG CUTOUT WITH PLUG PULLED
- "CCR" DENOTES CONSTANT CURRENT REGULATOR



Kevin N. Lightfoot

DATE: 11/17/2023 LICENSE: 11/30/2025
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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
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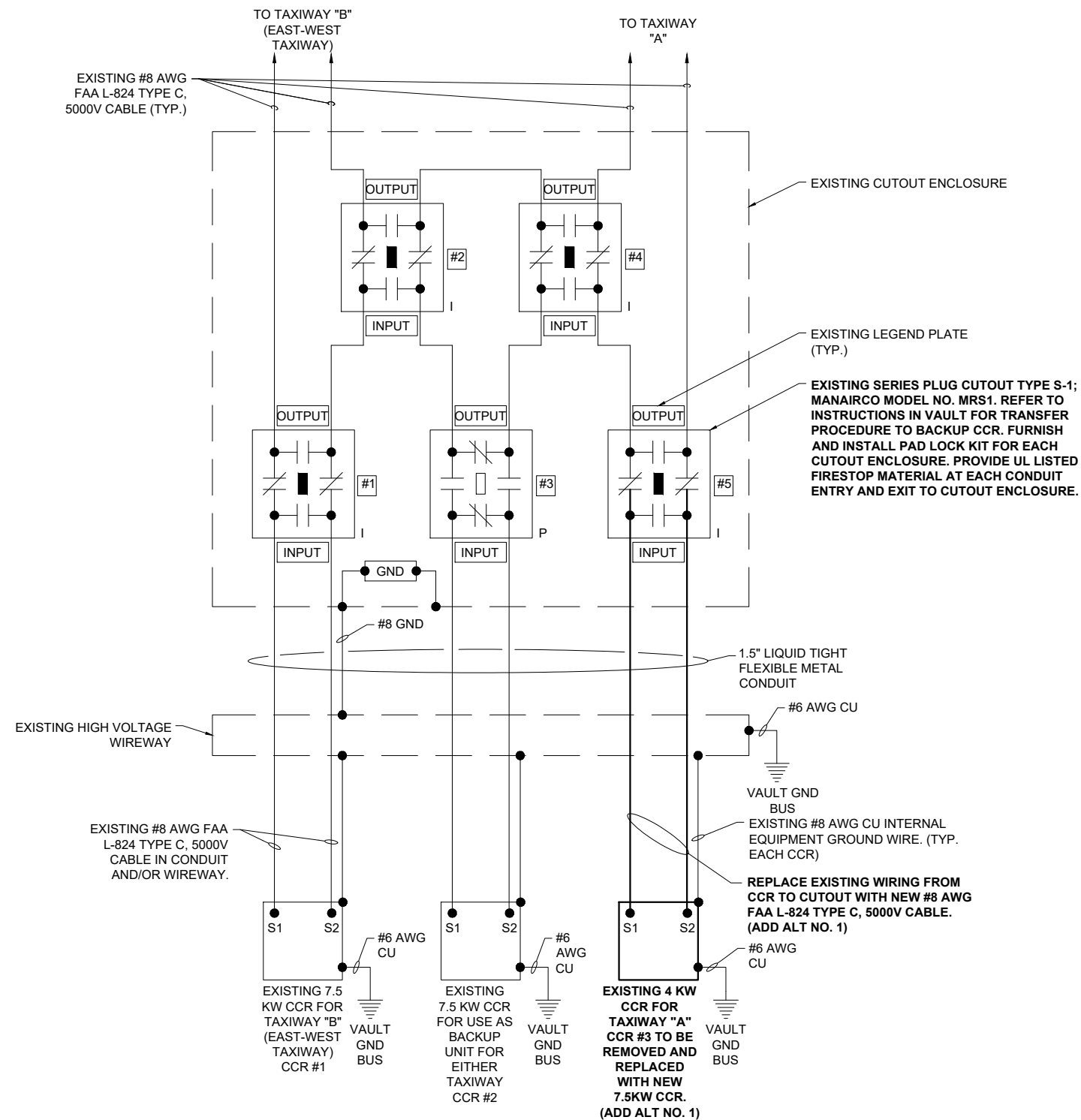
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SHEET TITLE

EXISTING HIGH
VOLTAGE WIRING
SCHEMATIC FOR
TAXIWAYS

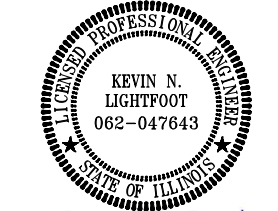
NOTES:

- 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).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER AND THE RESIDENT ENGINEER. CONTRACTOR SHALL FOLLOW LOCKOUT/TAGOUT PROCEDURES FOR SAFETY OF PERSONNEL. CONTRACTOR SHALL FURNISH AND INSTALL LOCKOUT/TAGOUT KITS PER SPECIFICATIONS.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT OR DISCONNECT AN L-823 CABLE CONNECTION WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT OR DISCONNECTING A CABLE.
- THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
- EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- OVERSEE AND CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO CABLE WORK OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES AND/OR OTHER WORK HAS BEEN COMPLETED. PROVIDE 5KV INSULATION TESTER FOR 5,000 VOLT SERIES CIRCUIT CABLES. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER. PROVIDE COPY OF TEST RESULTS TO THE PROJECT ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
- RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER AND THE PROJECT ENGINEER OF RECORD (EOR).



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS

FOR BID



Kevin N. Lightfoot

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
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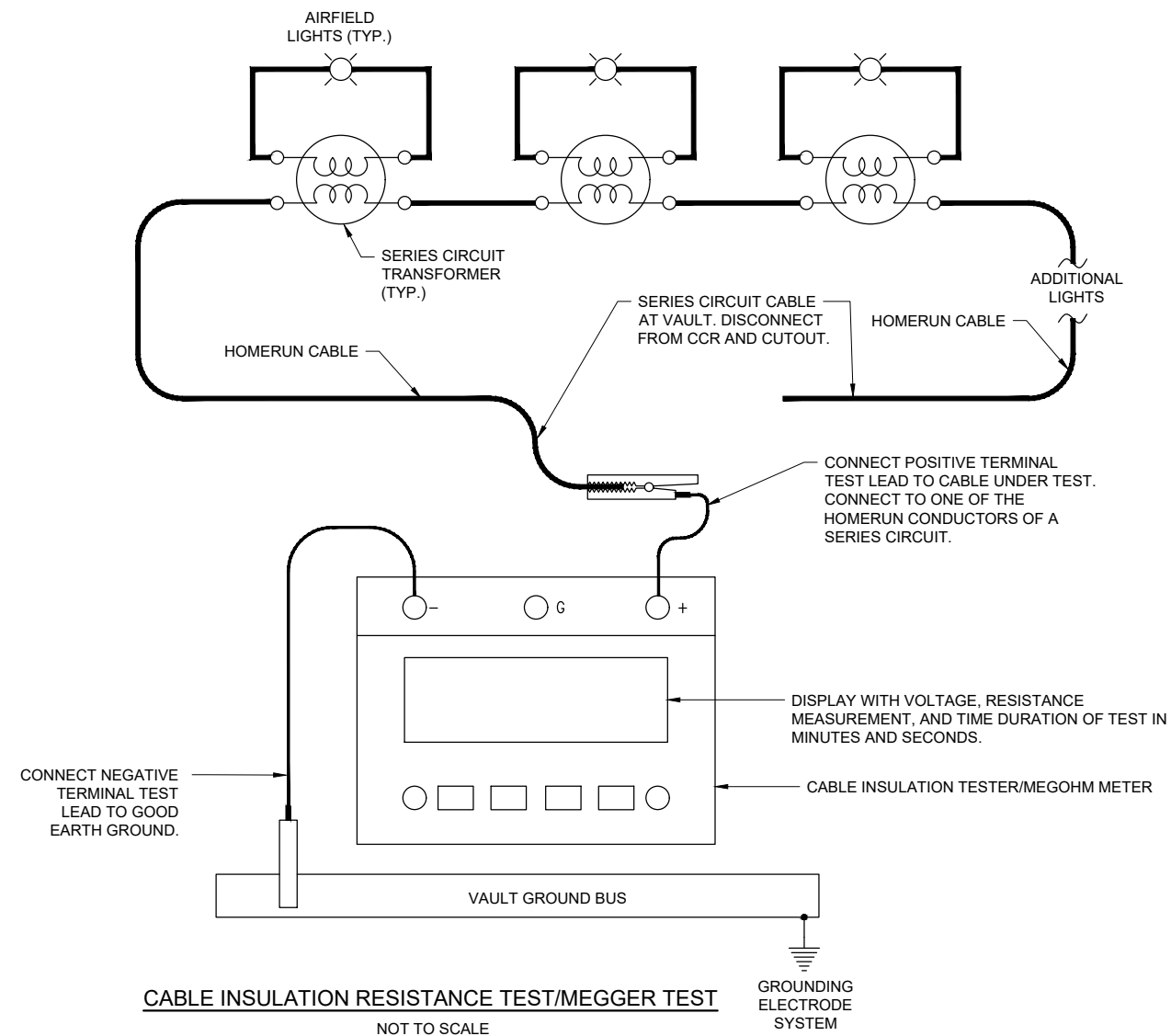
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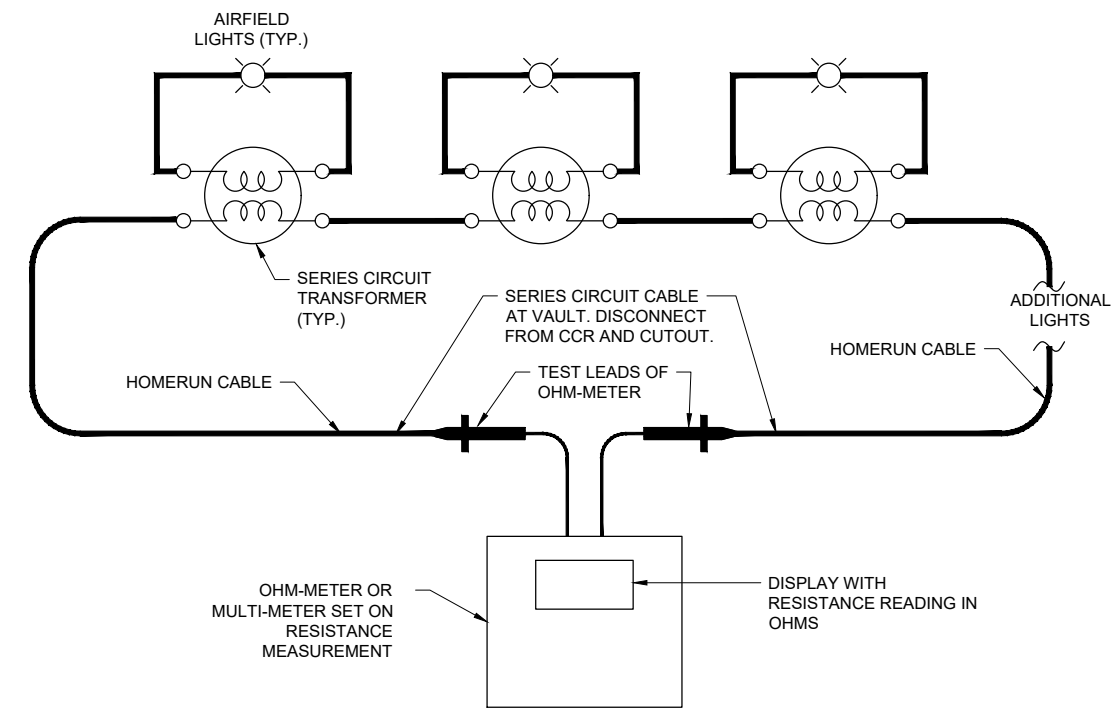
SHEET TITLE

SERIES CIRCUIT
CABLE TESTING
DETAILS



CABLE INSULATION RESISTANCE TEST (MEGGER TEST) NOTES

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



MEASURE RESISTANCE OF SERIES CIRCUIT LOOP.

NOT TO SCALE

SERIES CIRCUIT LOOP RESISTANCE MEASUREMENT NOTES

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

FOR BID



Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

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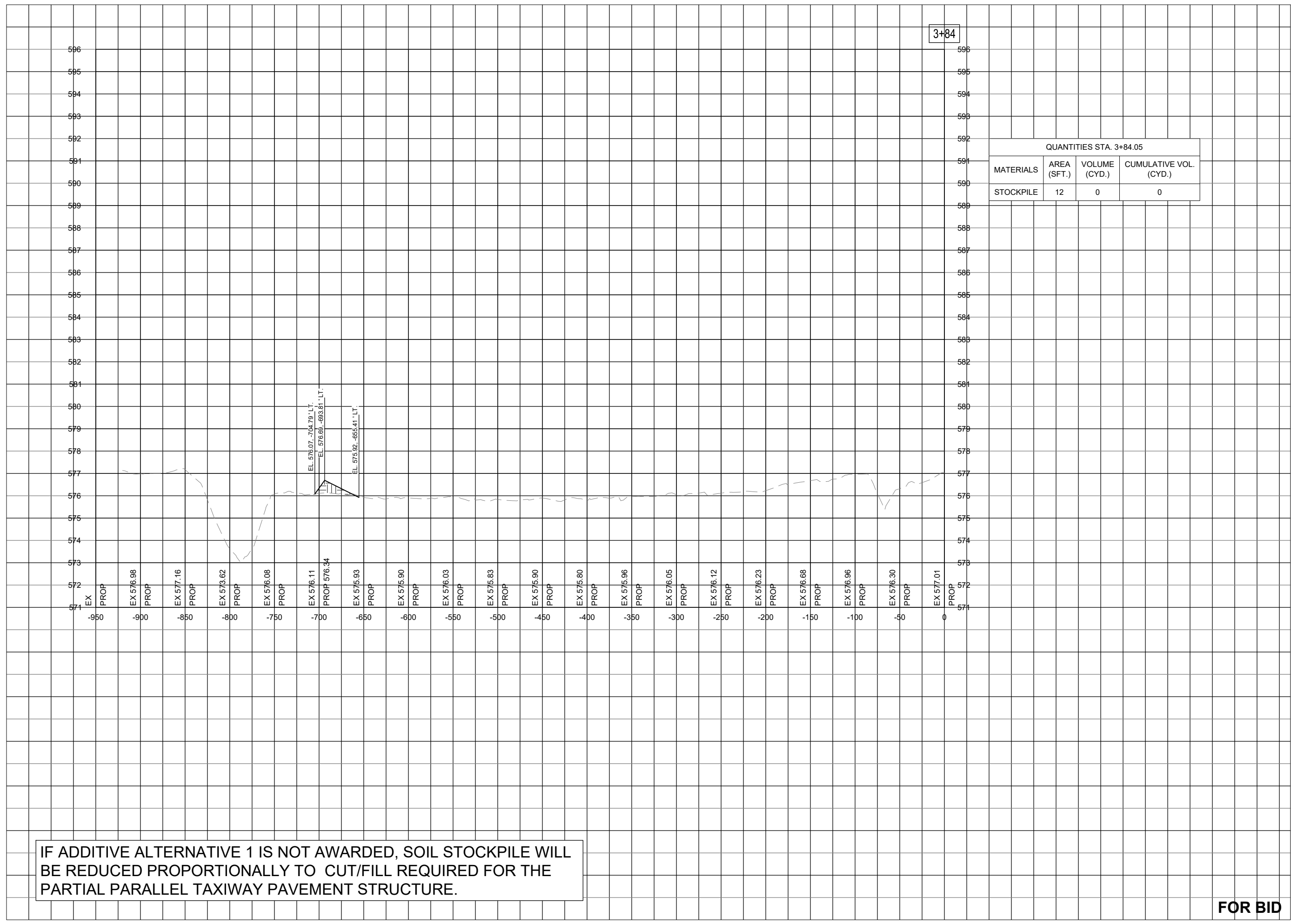
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 3+84

3+84

QUANTITIES STA. 3+84.05			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	12	0	0



IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

FOR BID



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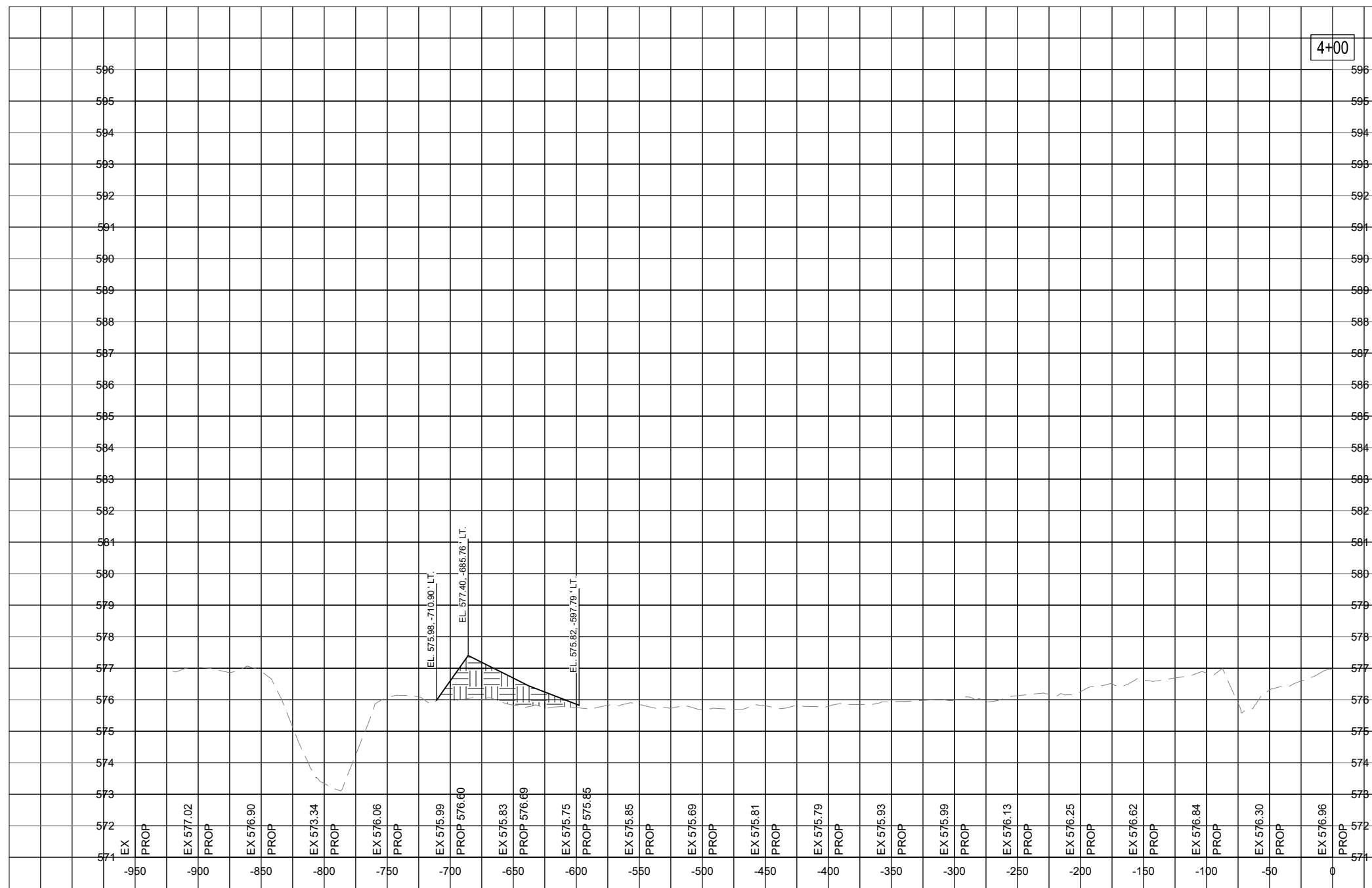
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 4+00

4+00

QUANTITIES STA. 4+00.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	79	27	27



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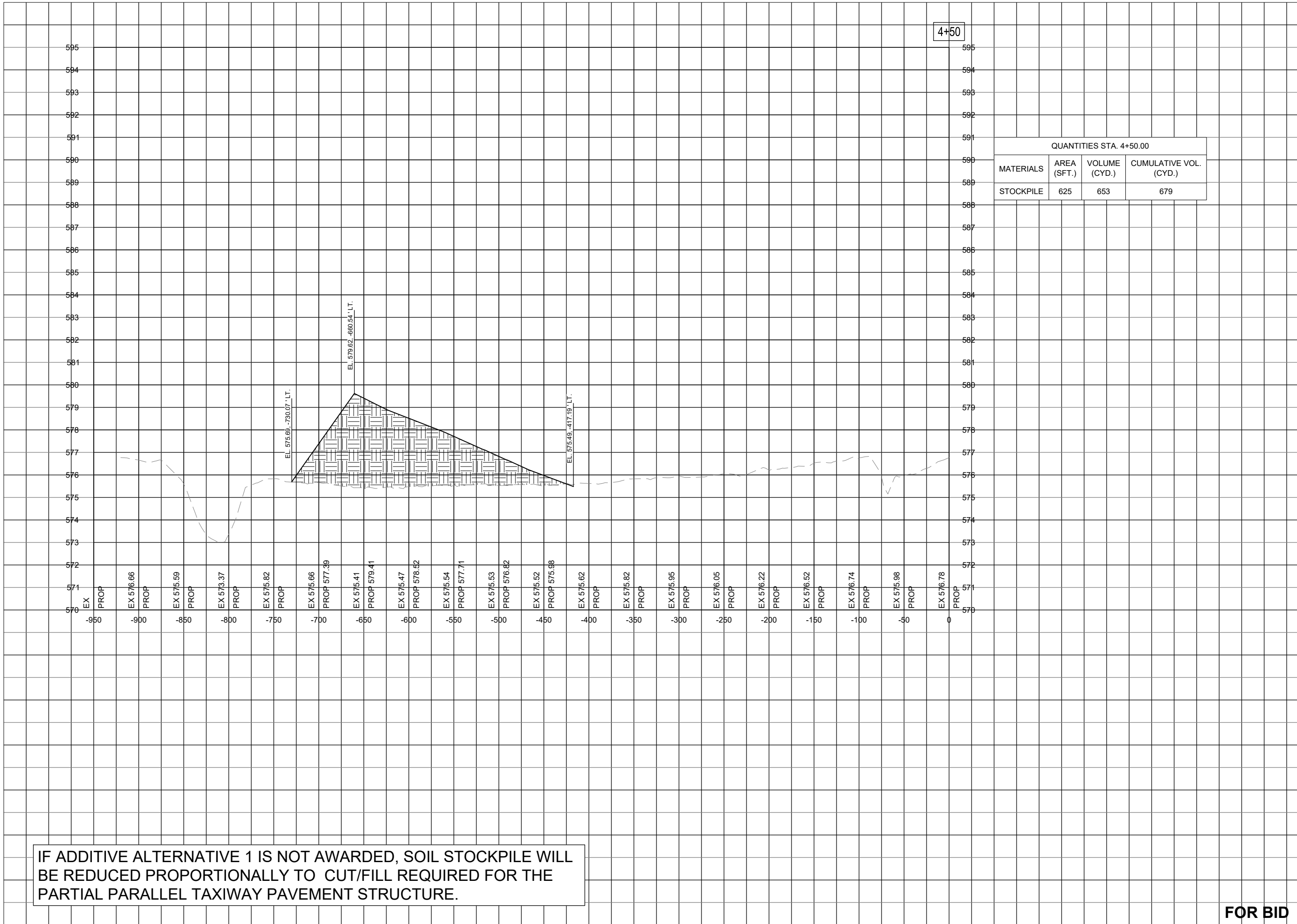
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 4+50

4+50



QUANTITIES STA. 4+50.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	625	653	679

IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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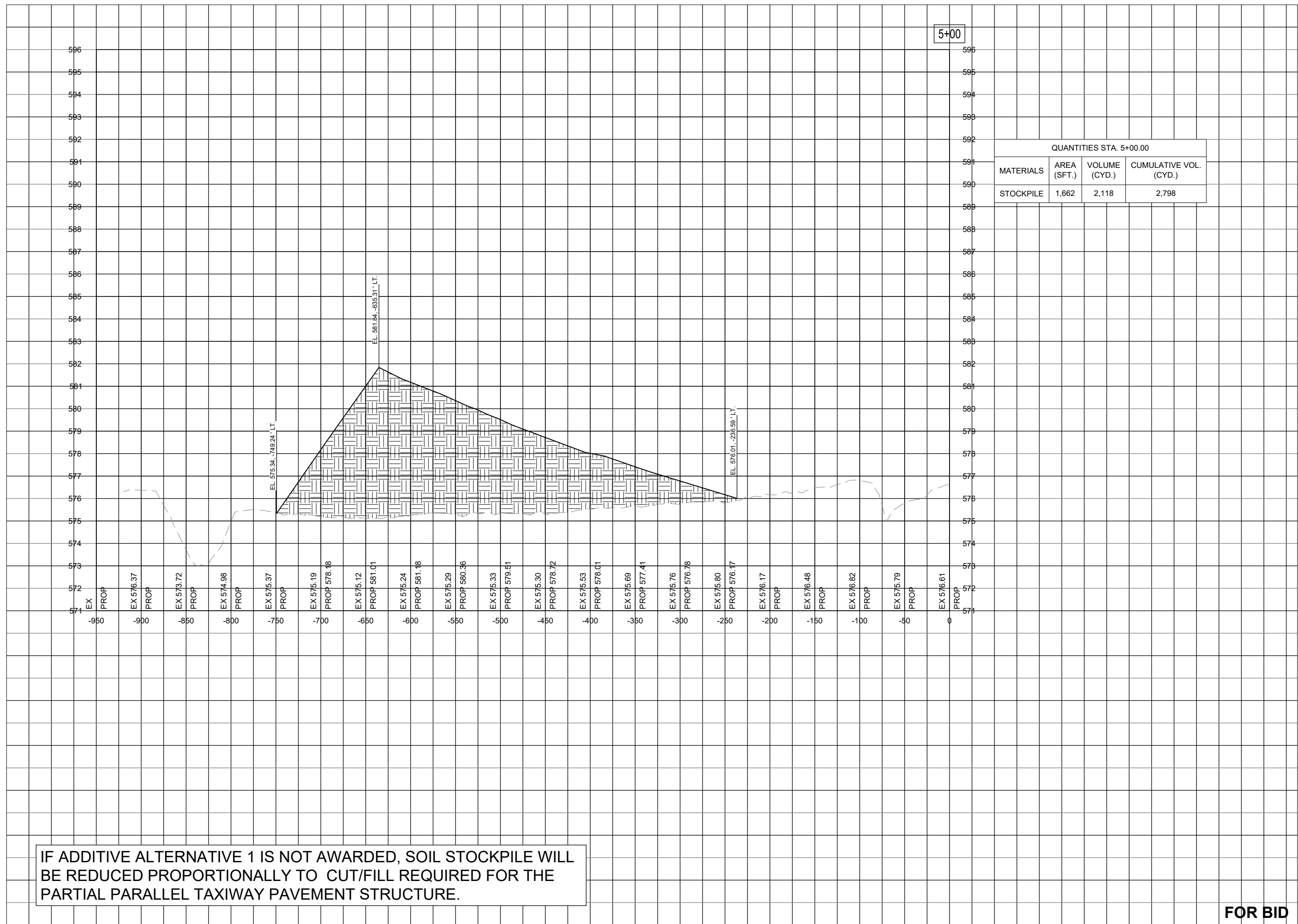
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 5+00

5+00



QUANTITIES STA. 5+00.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	1,662	2,118	2,798

IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

FOR BID



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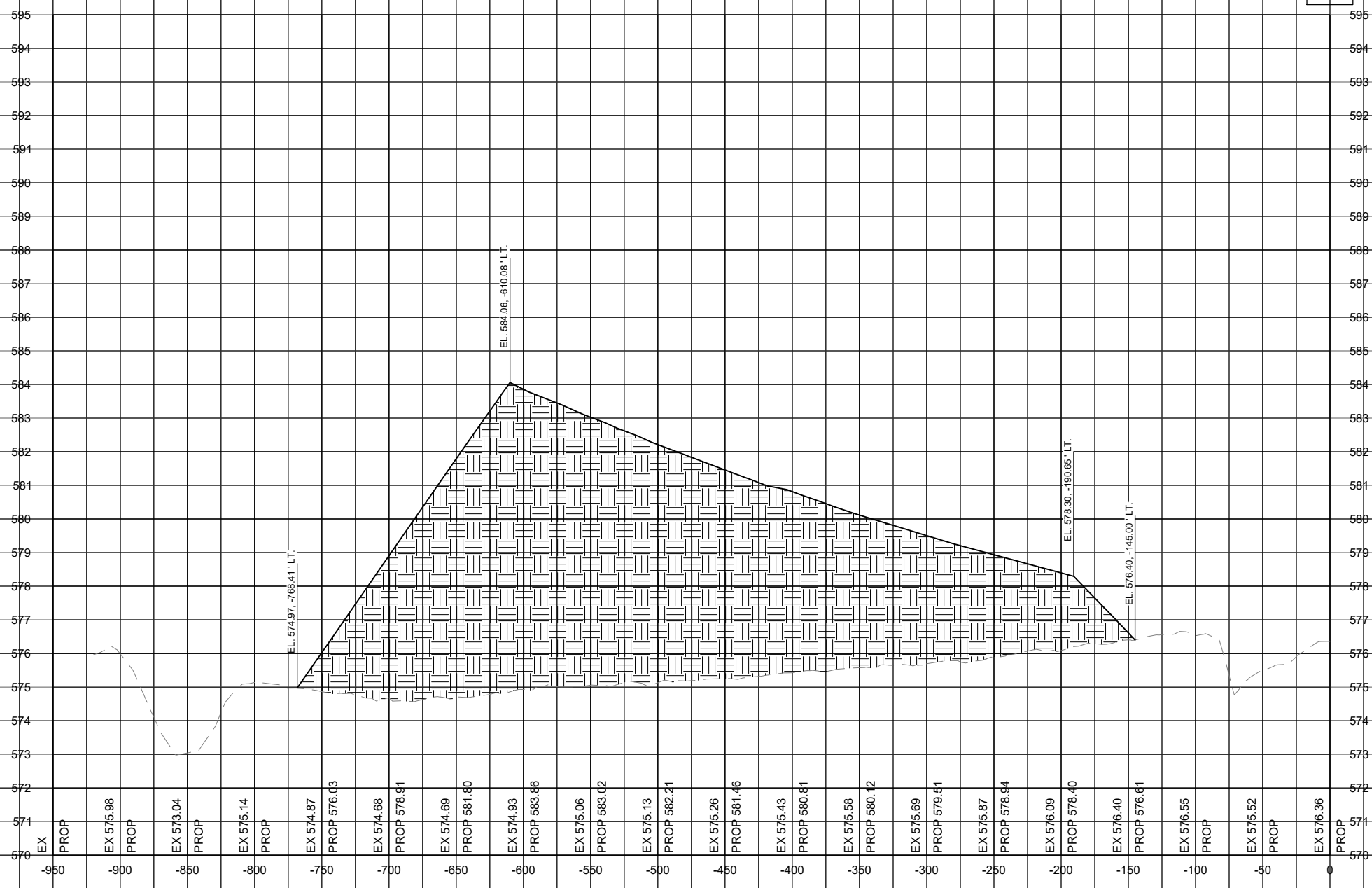
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 5+50

5+50



MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	3,099	4,408	7,206

IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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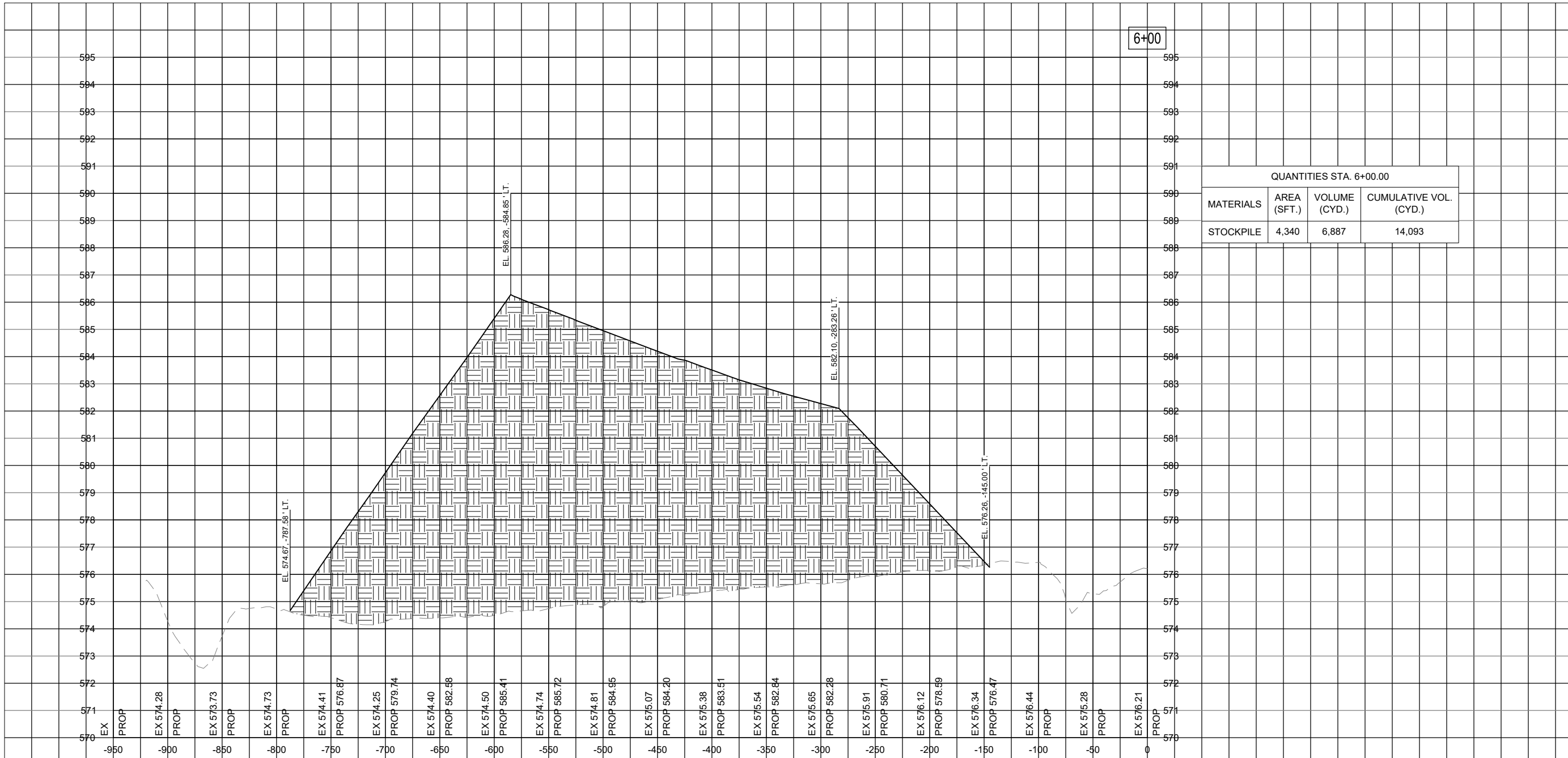
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 6+00

6+00



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FOR BID



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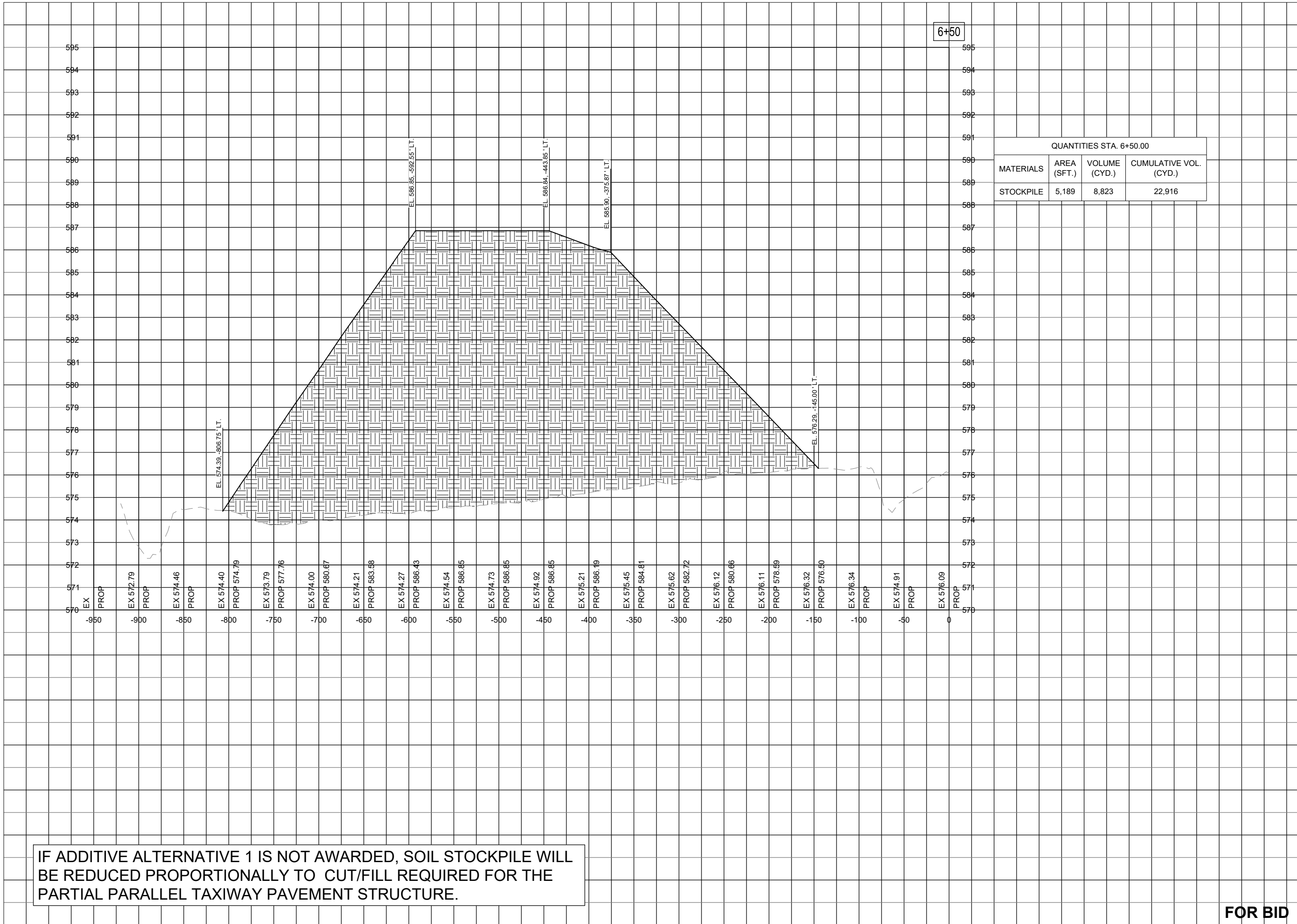
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 6+50

6+50



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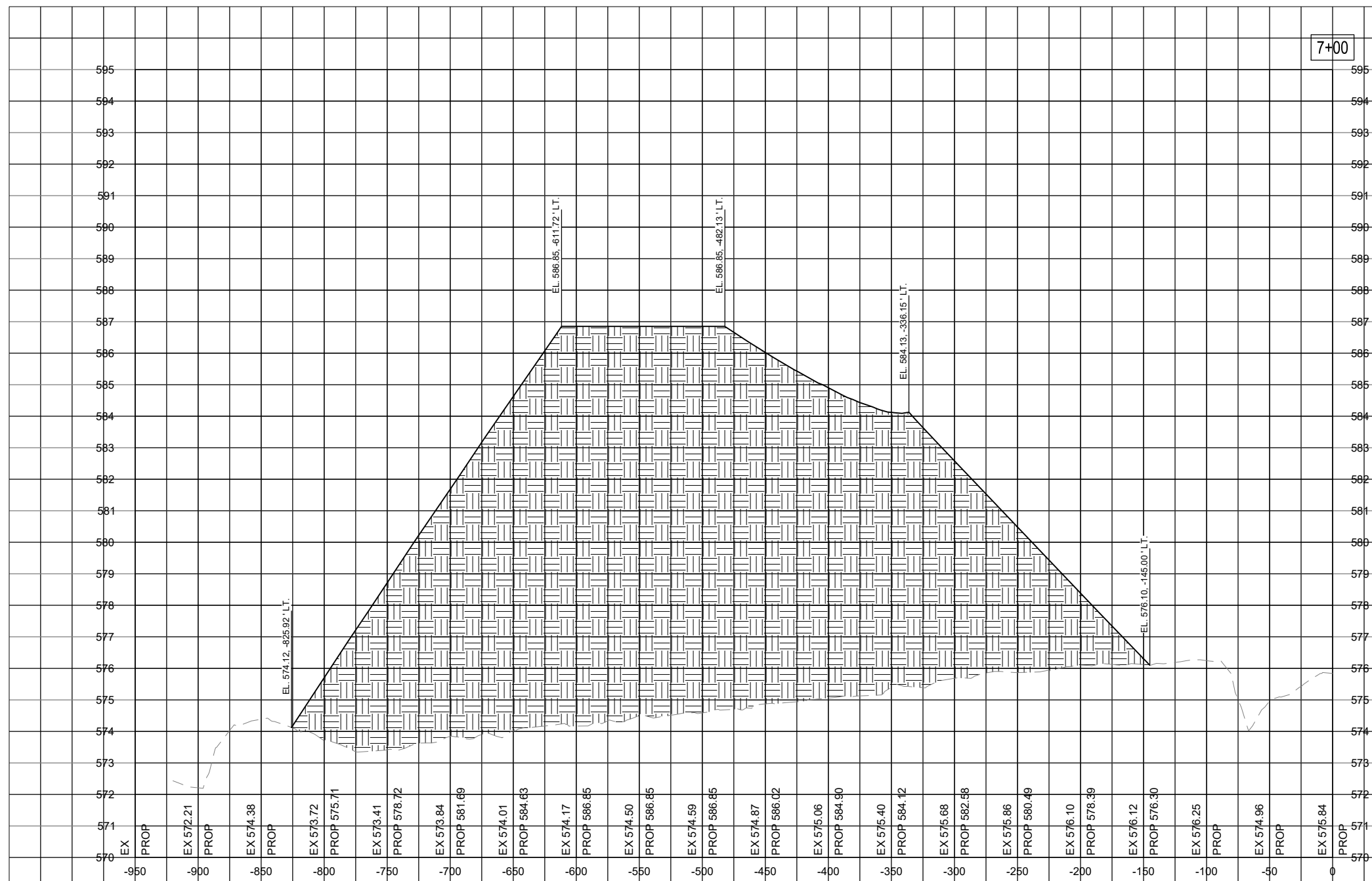
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 7+00

7+00



QUANTITIES STA. 7+00.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	5,355	9,763	32,678

IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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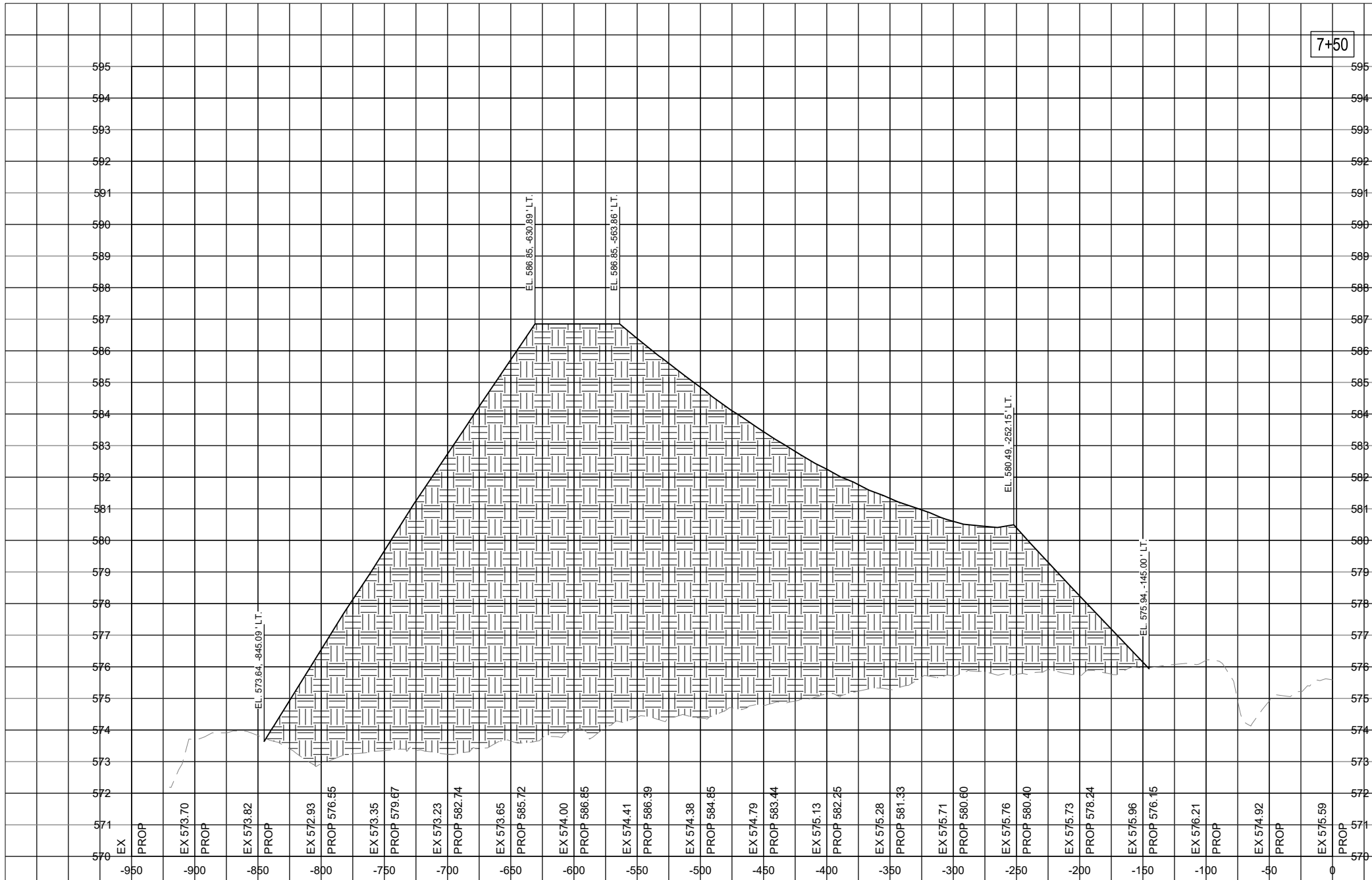
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 7+50

7+50



QUANTITIES STA. 7+50.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	5,044	9,628	42,306

IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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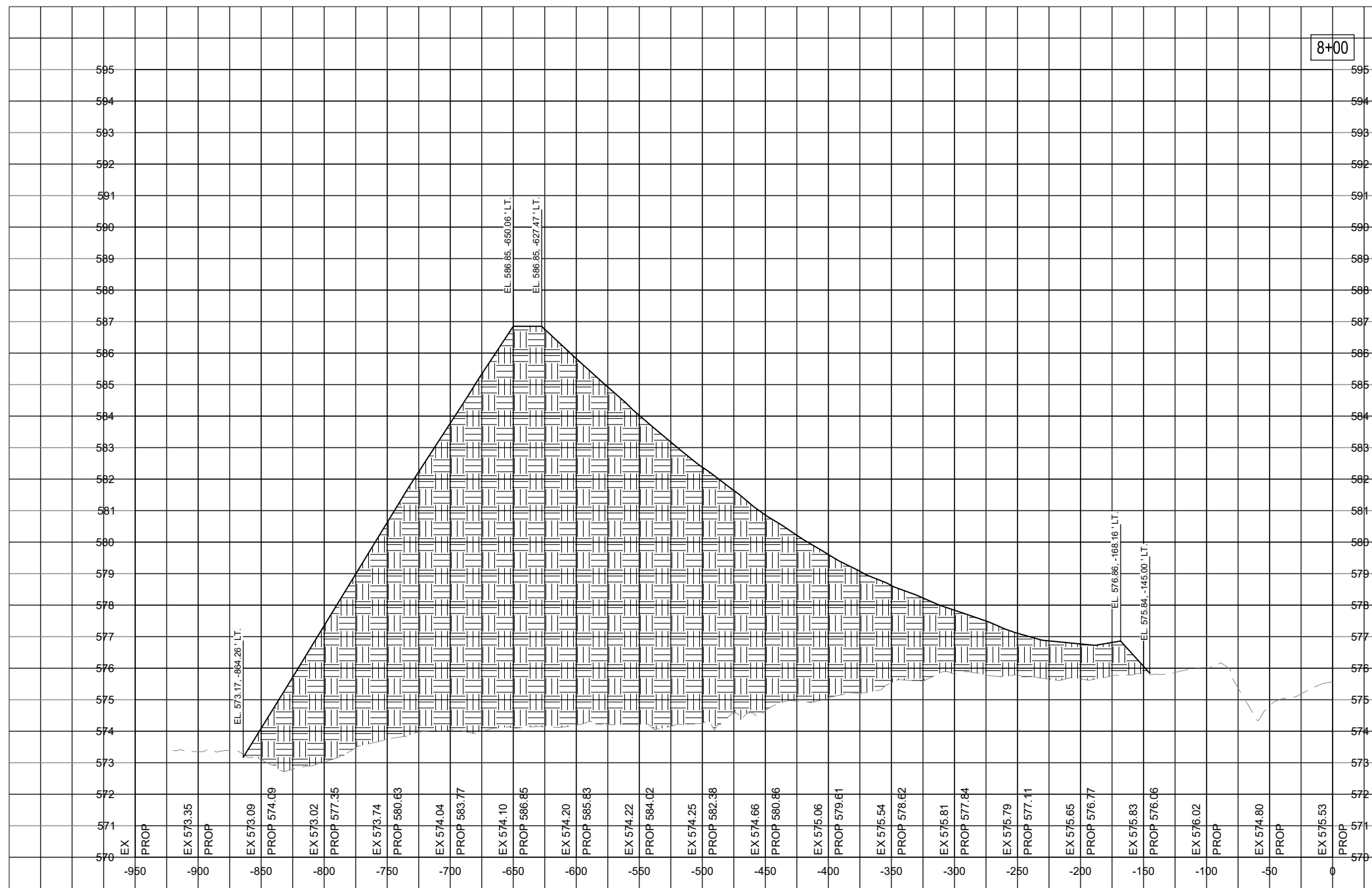
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 8+00

8+00



QUANTITIES STA. 8+00.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	4,149	8,512	50,819

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

FOR BID



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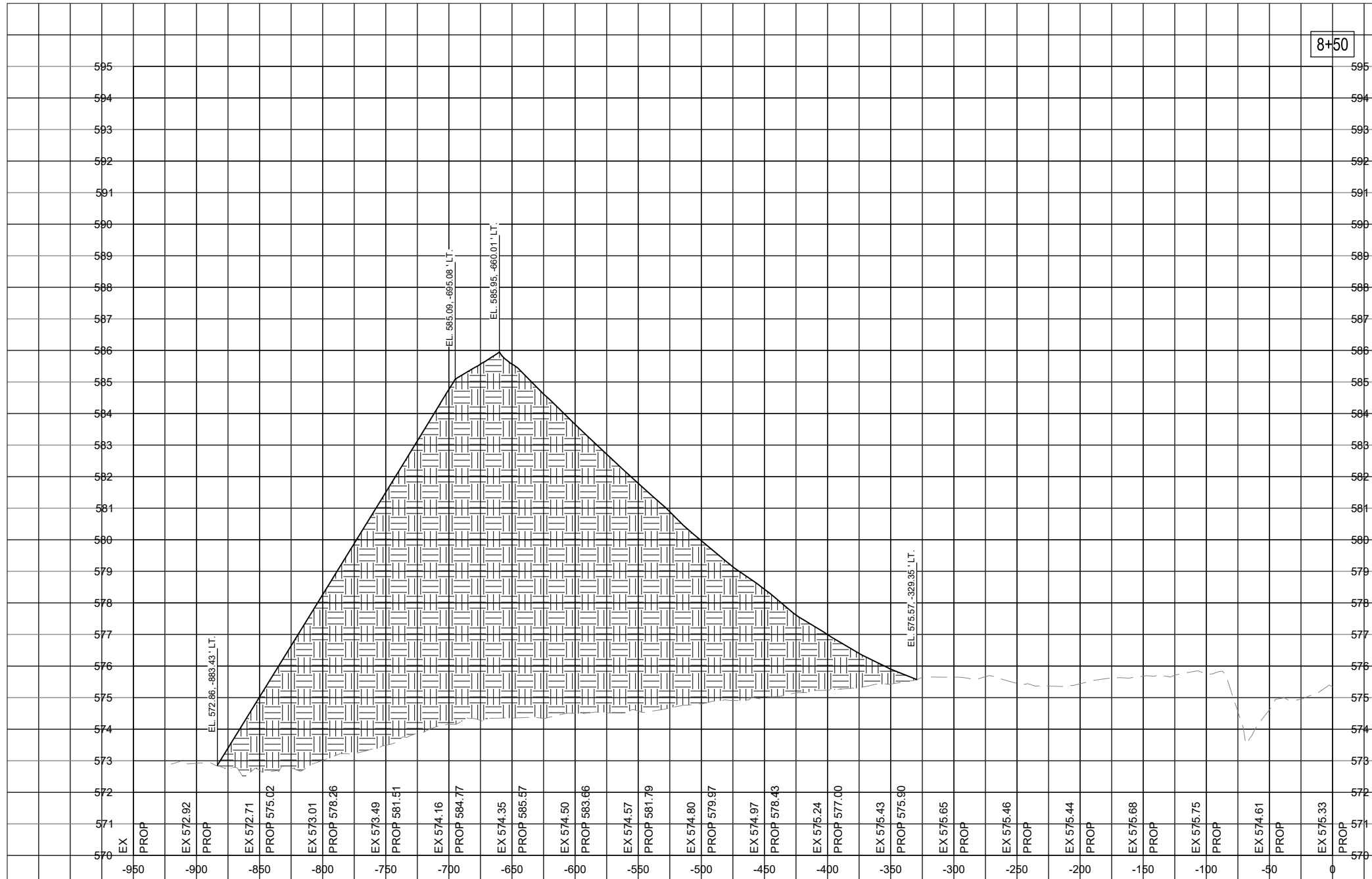
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 8+50

8+50



QUANTITIES STA. 8+50.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	3,221	6,824	57,643

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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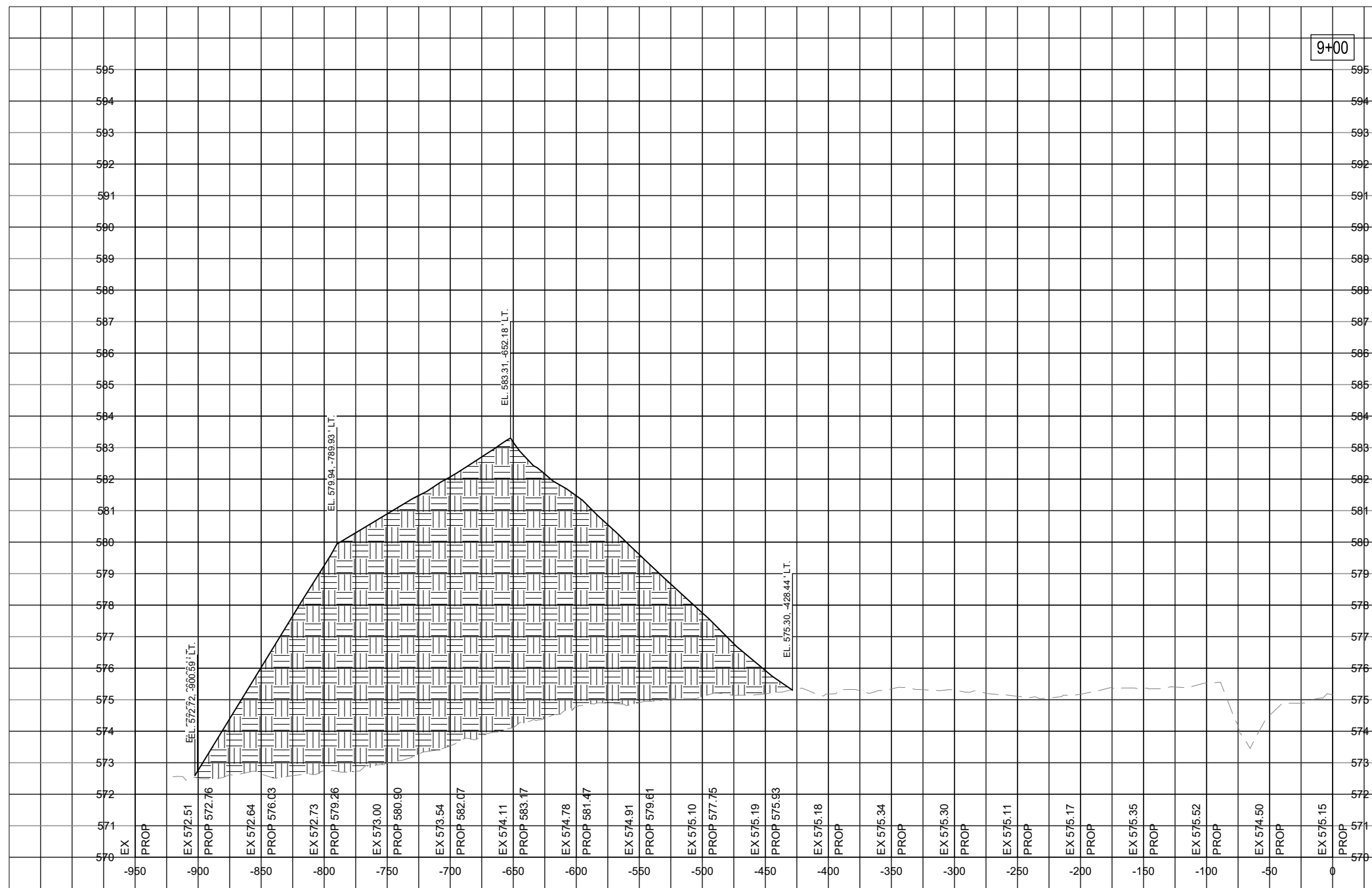
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 9+00

9+00



QUANTITIES STA. 9+00.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	2,517	5,313	62,956

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

FOR BID



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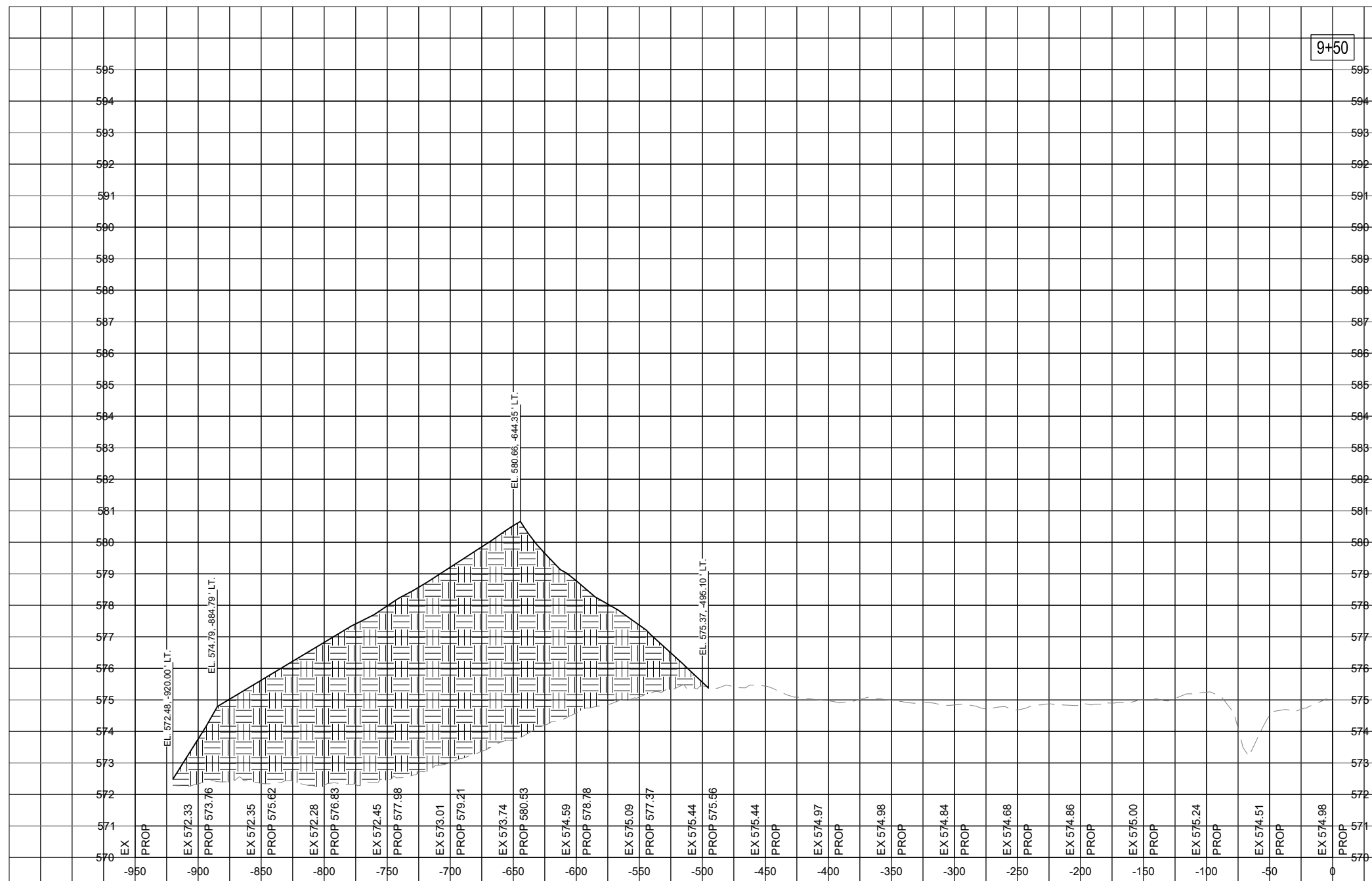
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 9+50

9+50



QUANTITIES STA. 9+50.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	1,701	3,906	66,861

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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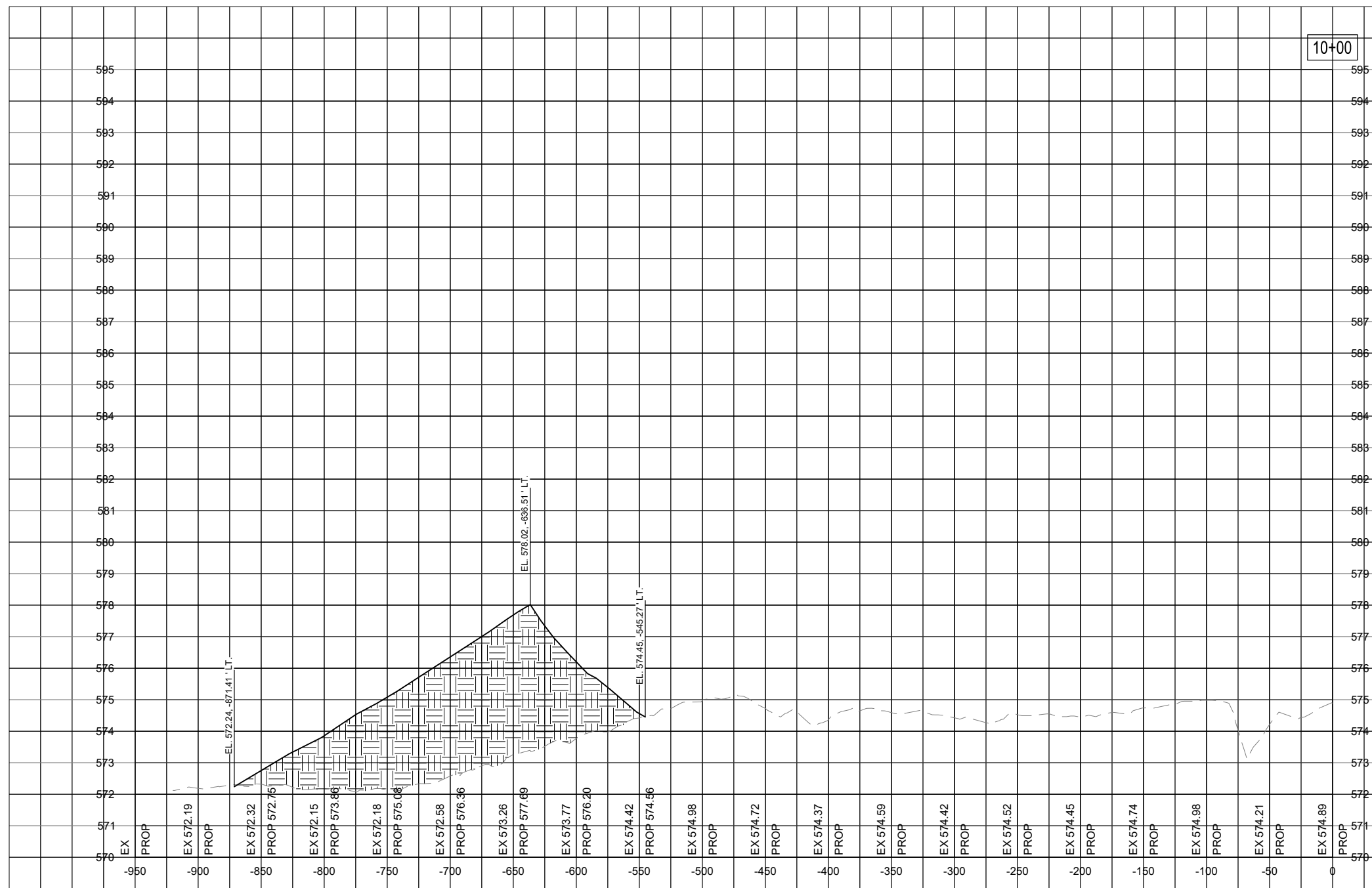
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 10+00

10+00



QUANTITIES STA. 10+00.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	807	2,322	69,183

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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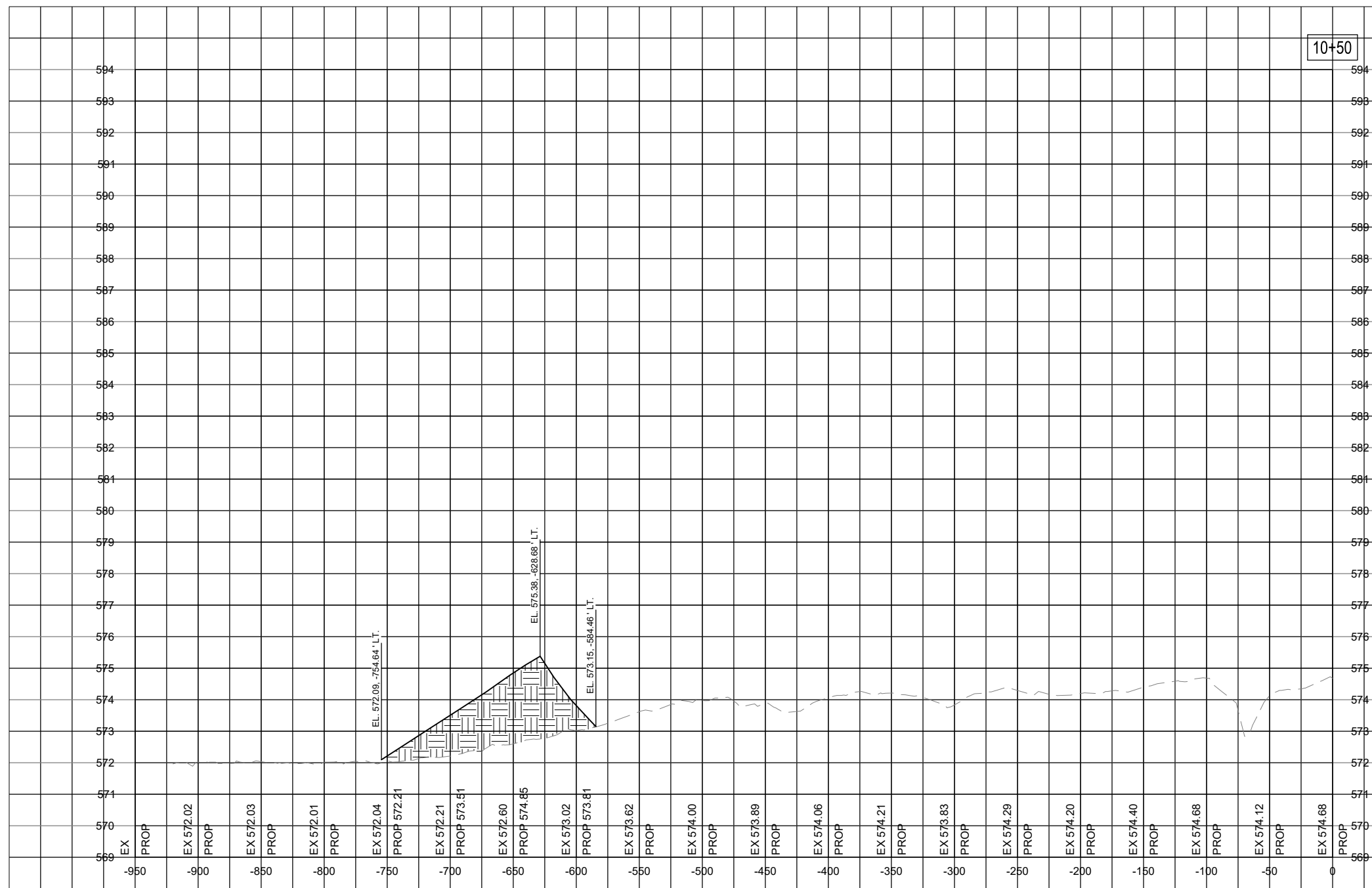
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 10+50

10+50

QUANTITIES STA. 10+50.00			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	230	960	70,143



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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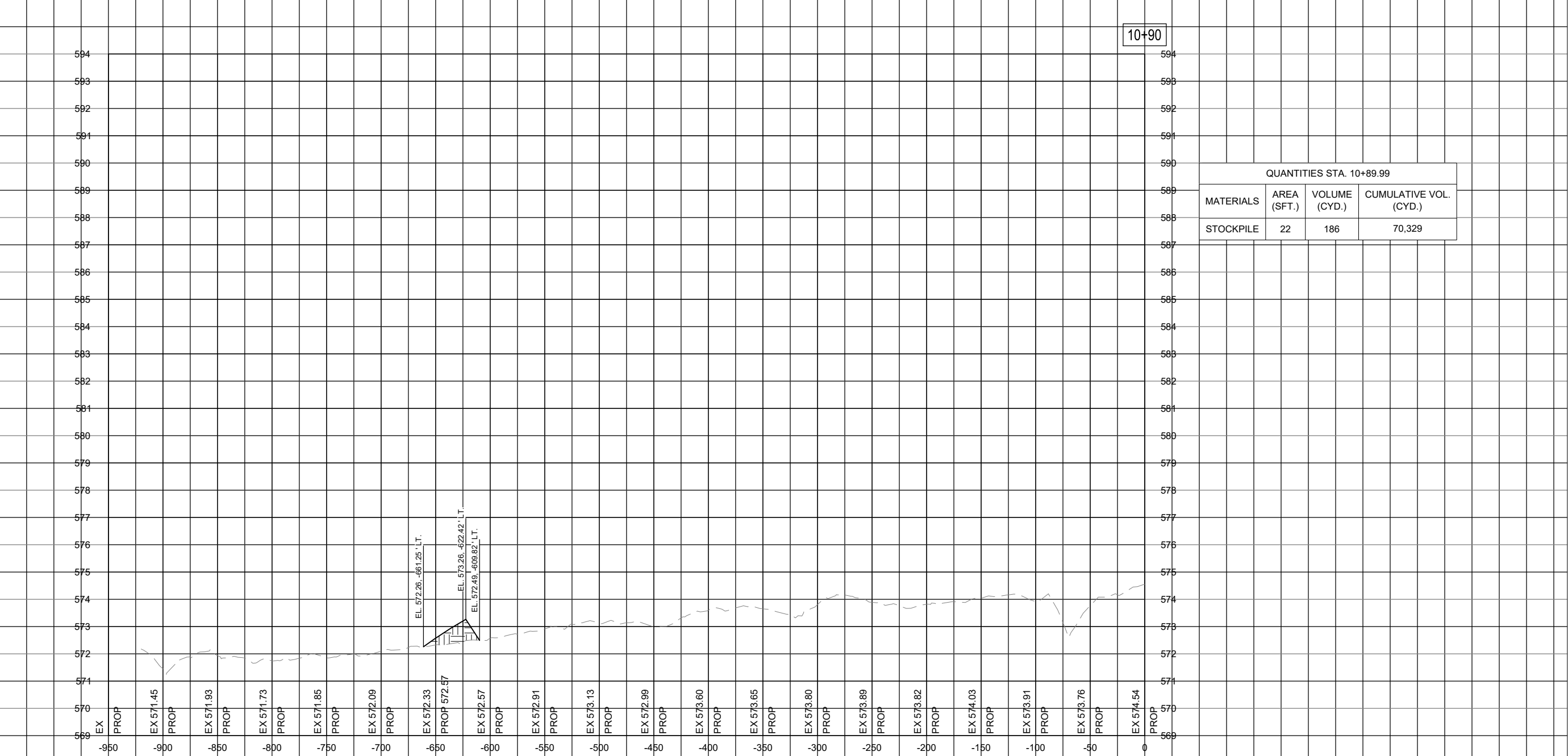
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SHEET TITLE

STOCKPILE CROSS
SECTION - STA. 10+90

10+90



QUANTITIES STA. 10+89.99			
MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
STOCKPILE	22	186	70,329

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE SOIL STOCKPILE WILL BE REDUCED PROPORTIONALLY TO CUT/FILL REQUIRED FOR THE PARTIAL PARALLEL TAXIWAY PAVEMENT STRUCTURE.

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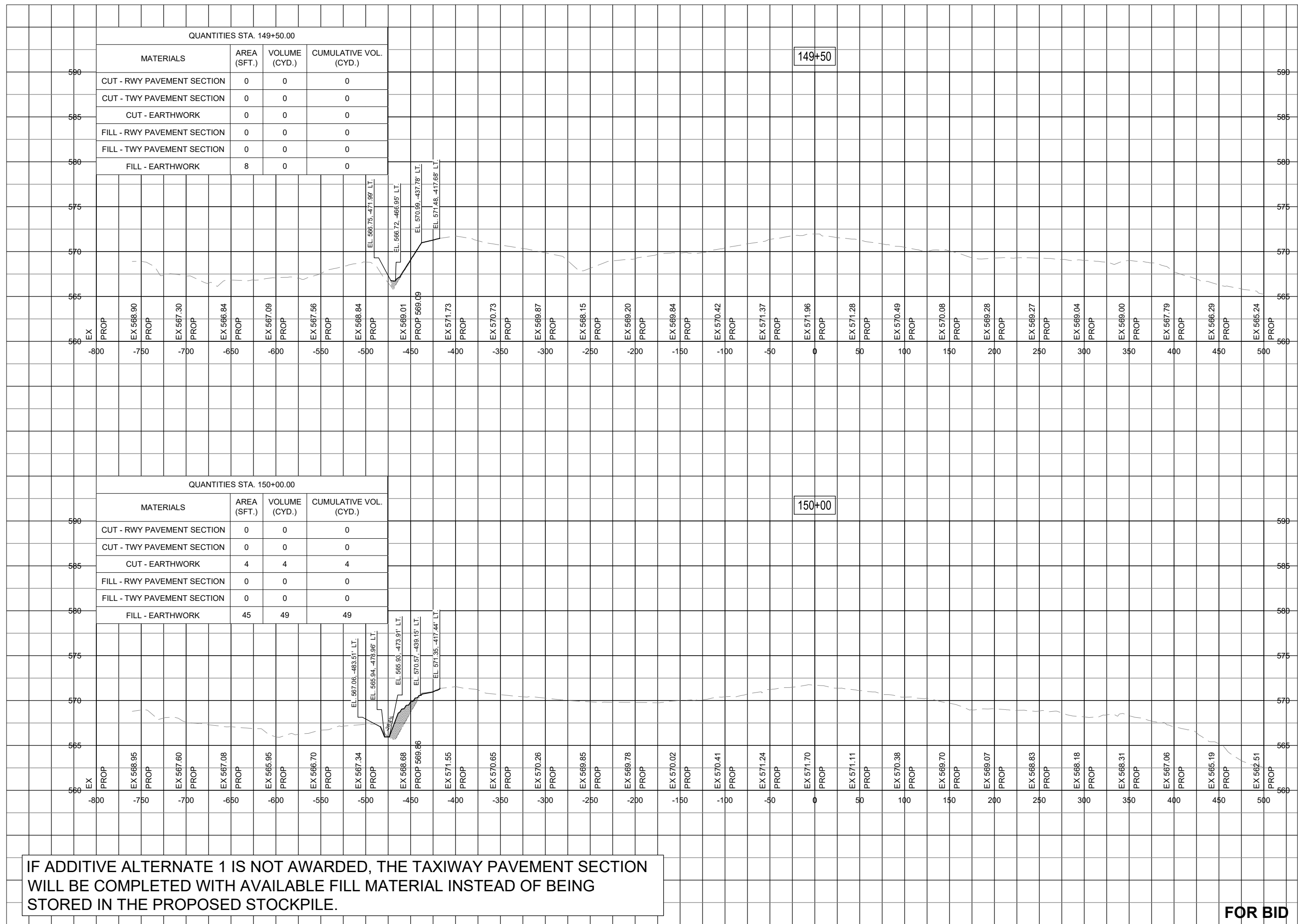
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
149+50 TO STA.
150+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



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EXTEND RUNWAY
11-29 AND TAXIWAY A

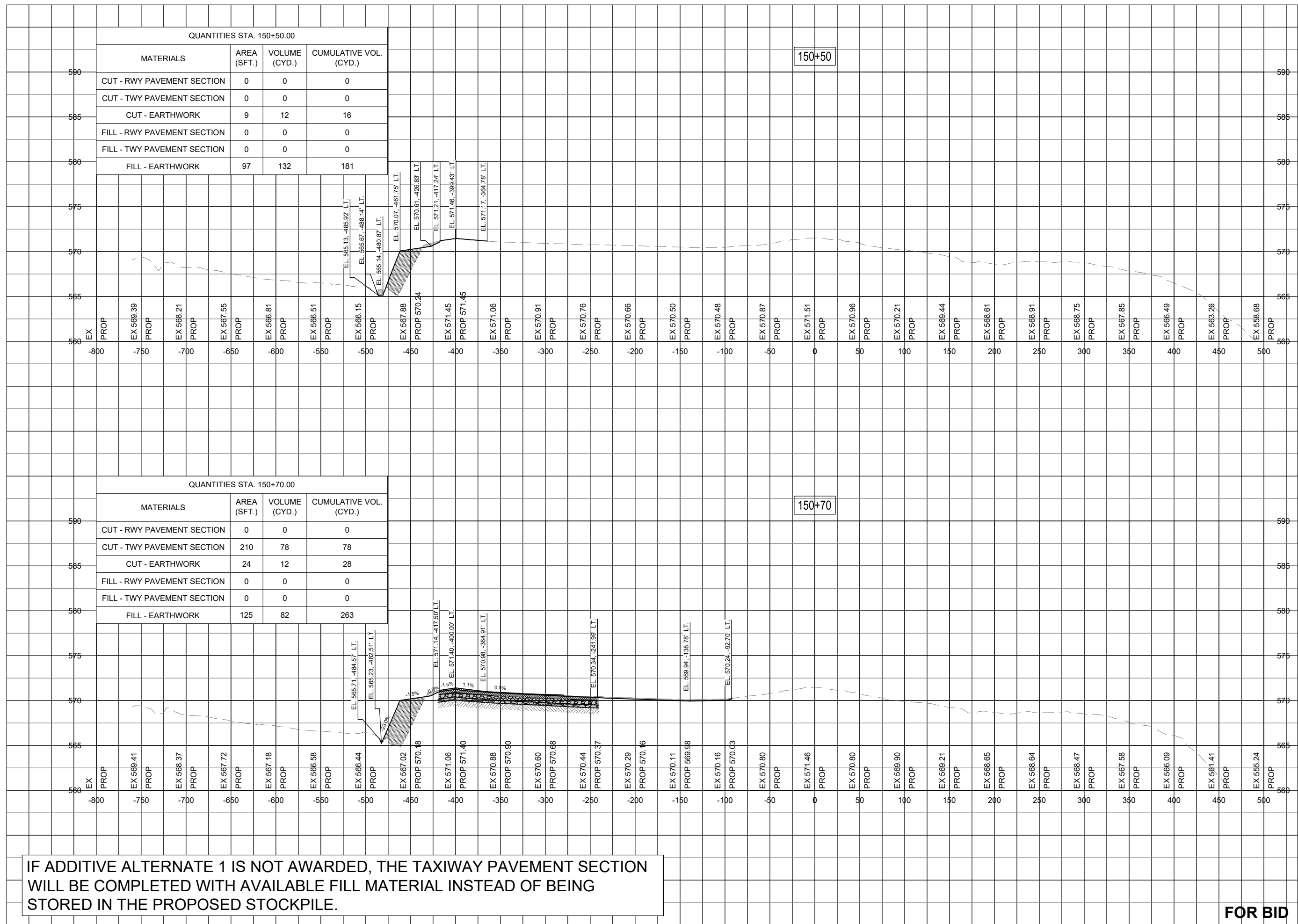
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-303-XS.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

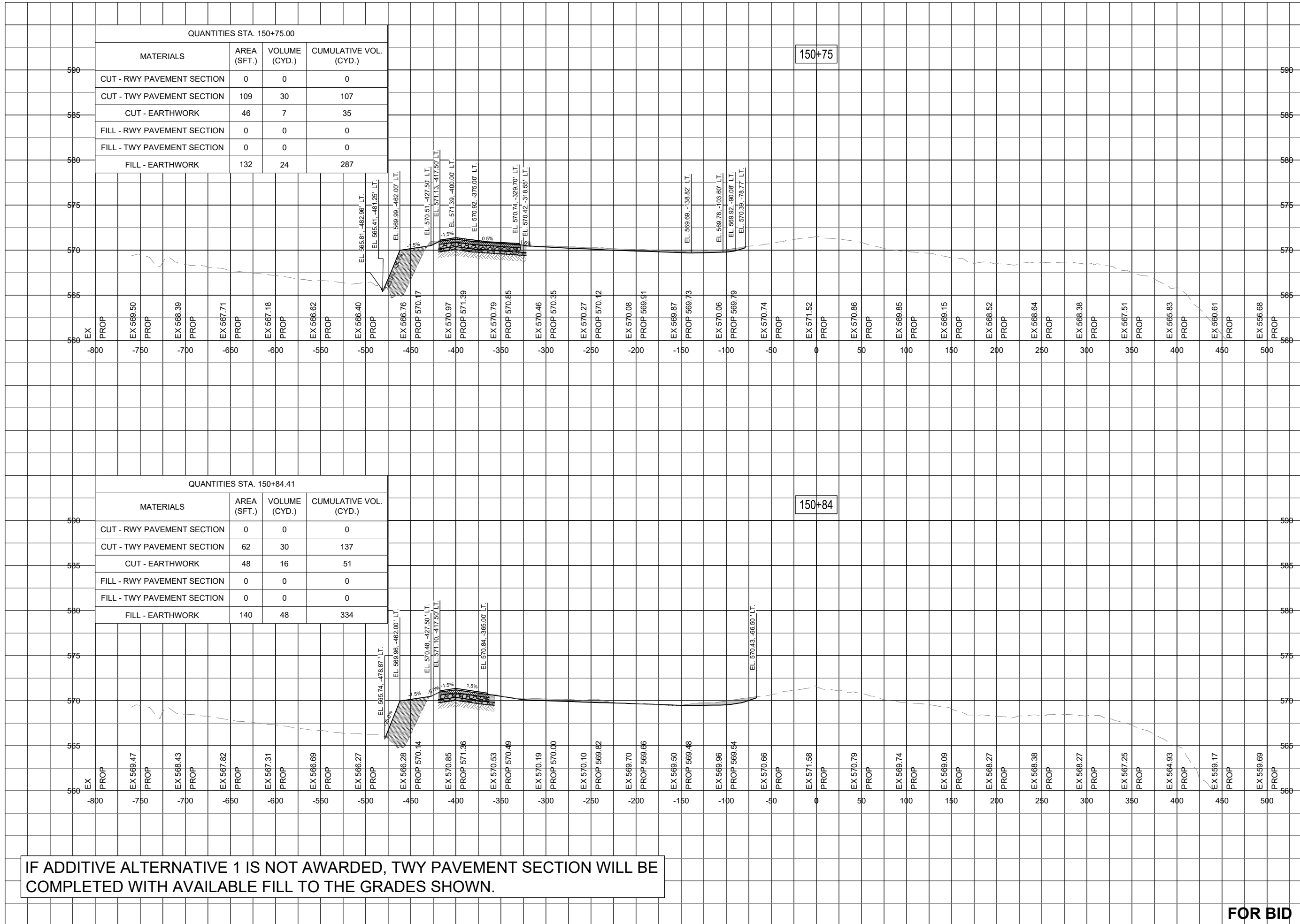
RUNWAY TAXIWAY
EXTENSION - STA.
150+50 TO STA.
150+70



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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IF ADDITIVE ALTERNATIVE 1 IS NOT AWARDED, TWY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL TO THE GRADES SHOWN.

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EXTEND RUNWAY
 11-29 AND TAXIWAY A

IDA NO. 1H2-4982
 CONTRACT NO. EF010

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 DRAWN BY: NLD 10/27/2023
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SHEET TITLE

RUNWAY TAXIWAY
 EXTENSION - STA.
 150+75 TO STA.
 150+84



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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

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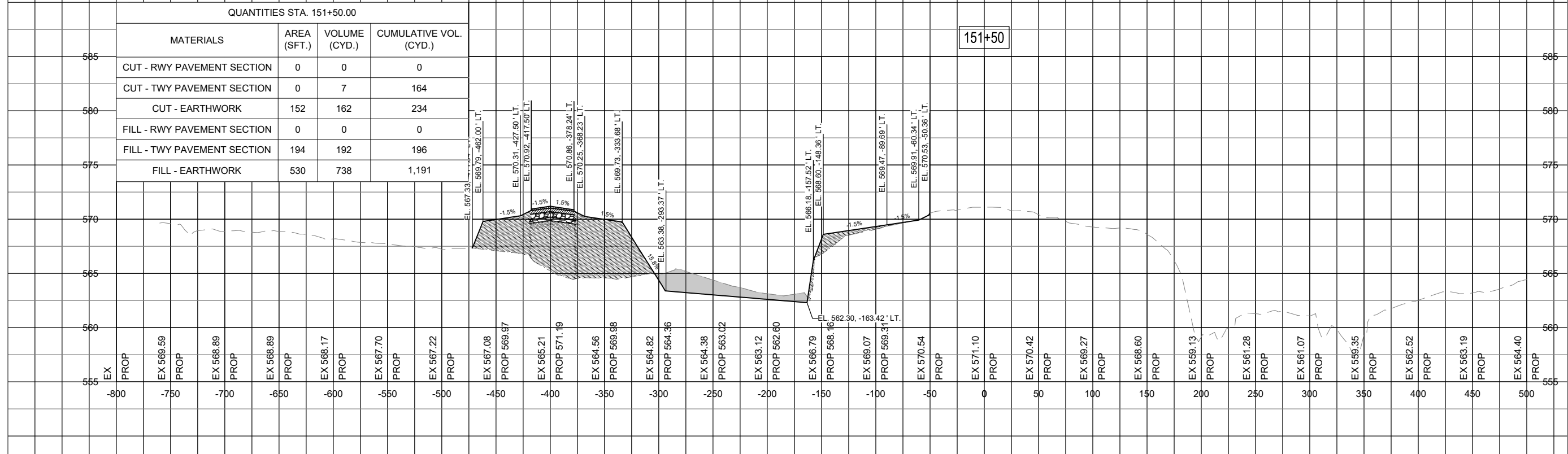
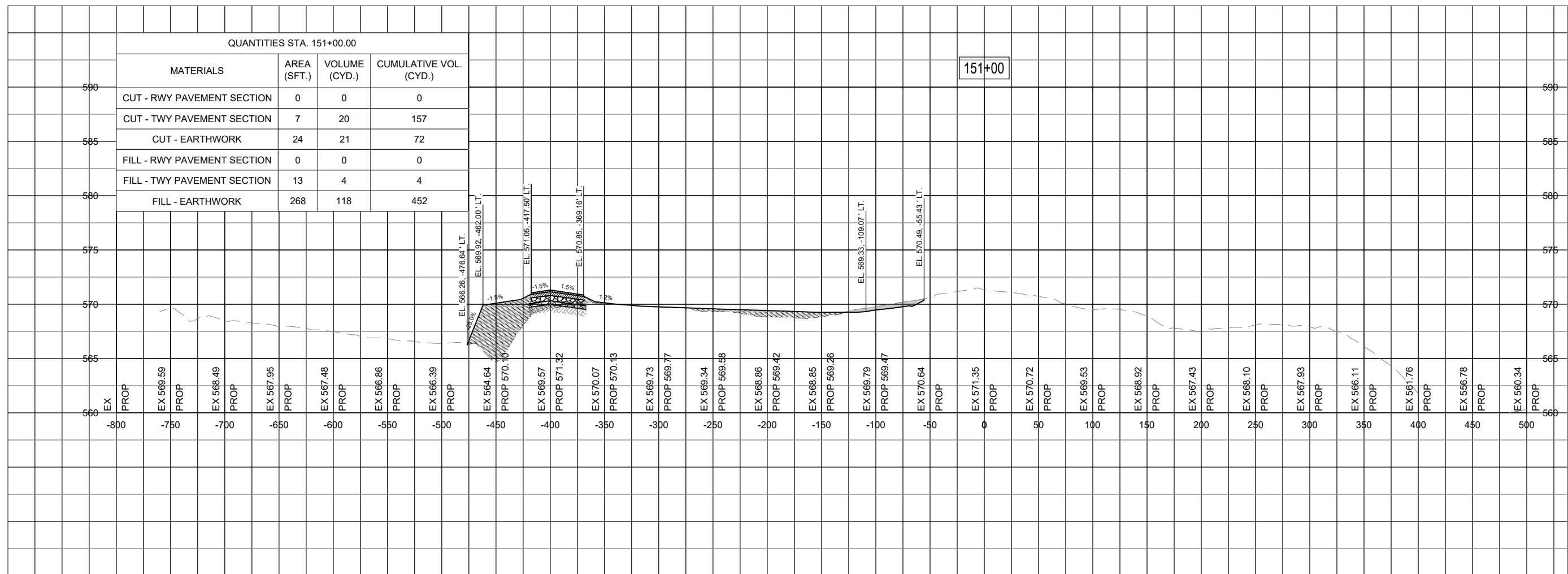
DESIGN BY: MJD 10/16/2023

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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
151+00 TO STA.
151+50



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

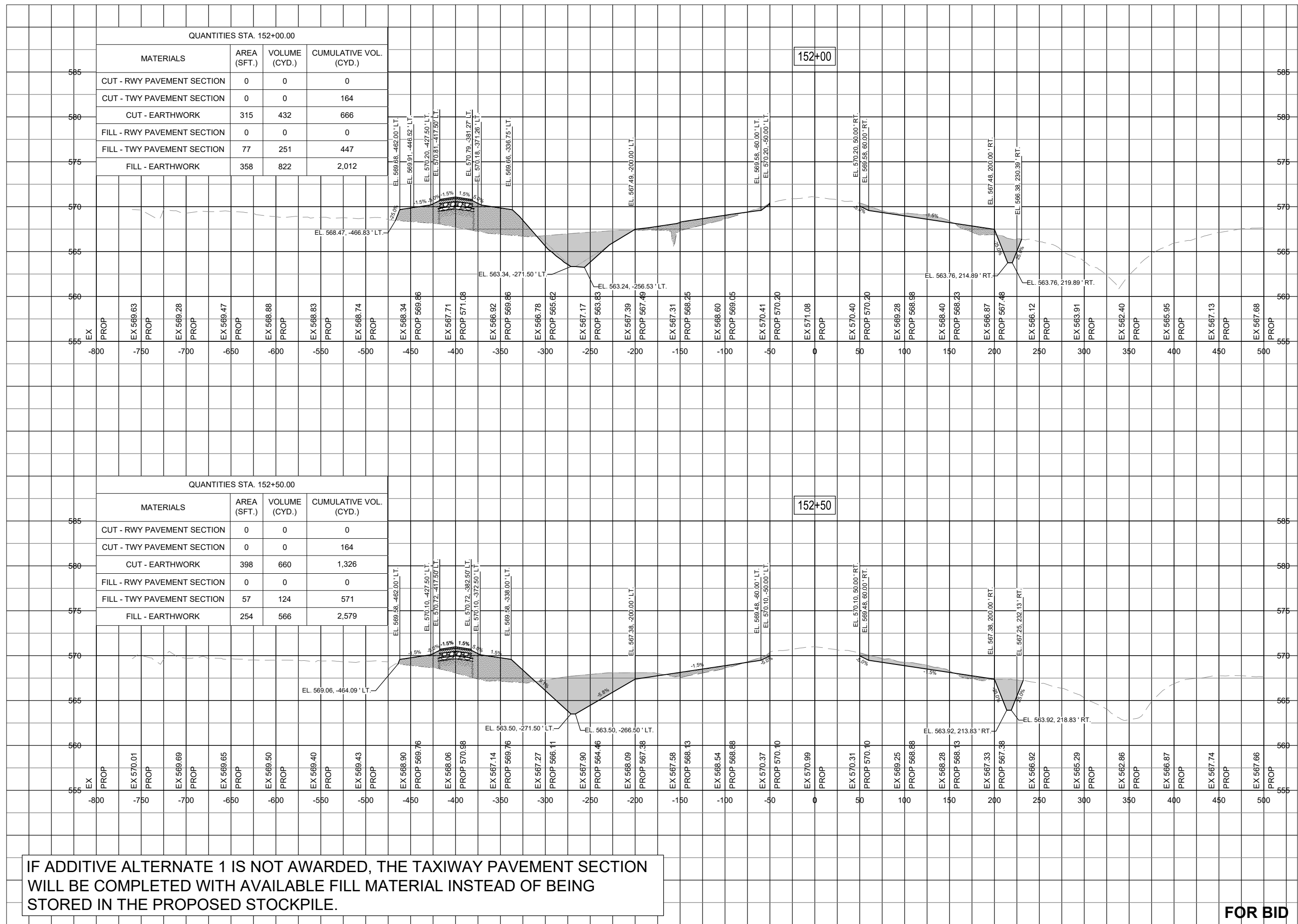
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
152+00 TO STA.
152+50

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IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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 11-29 AND TAXIWAY A

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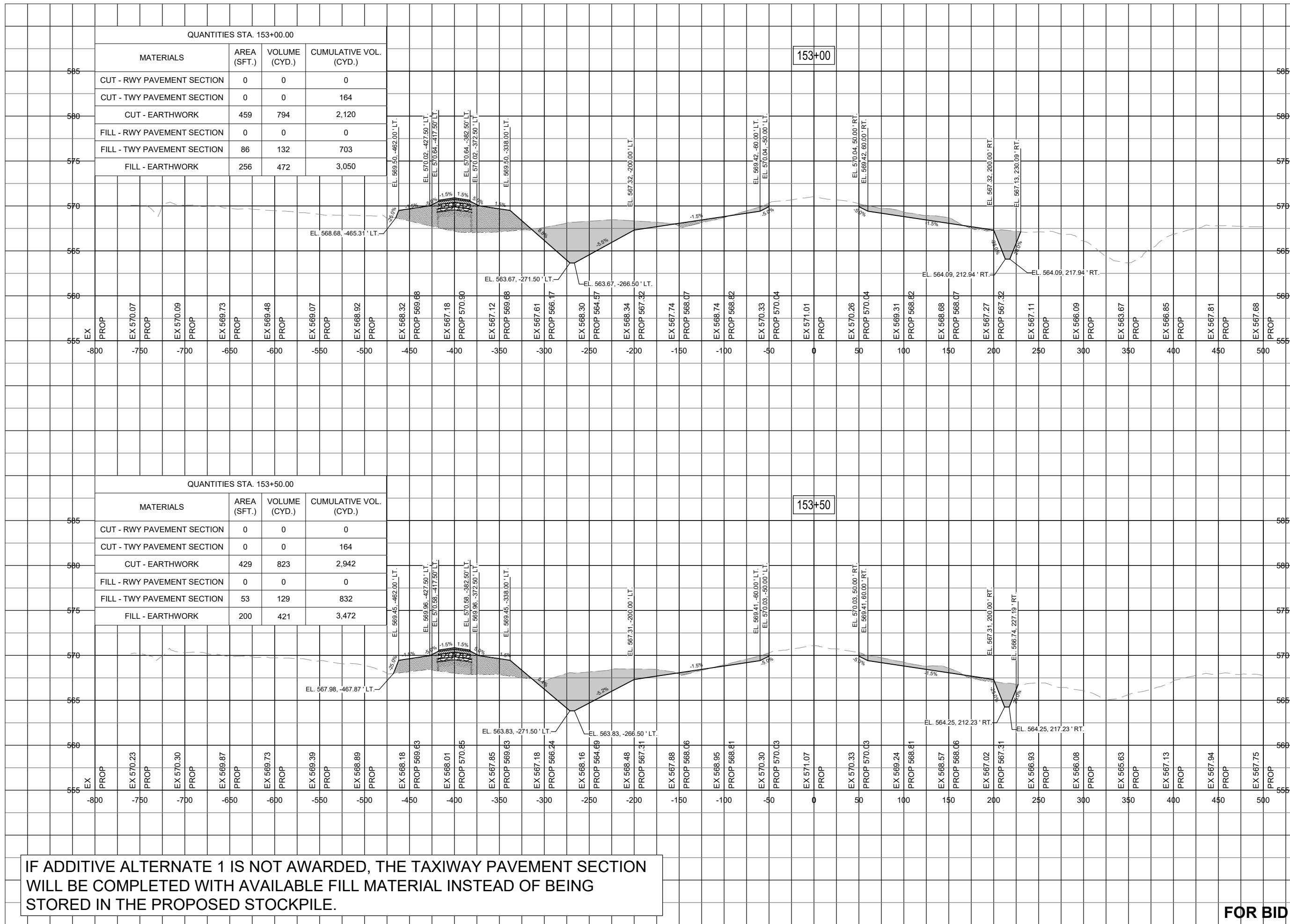
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SHEET TITLE

RUNWAY TAXIWAY
 EXTENSION - STA.
 153+00 TO STA.
 153+50

FOR BID

116



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



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EXTEND RUNWAY
11-29 AND TAXIWAY A

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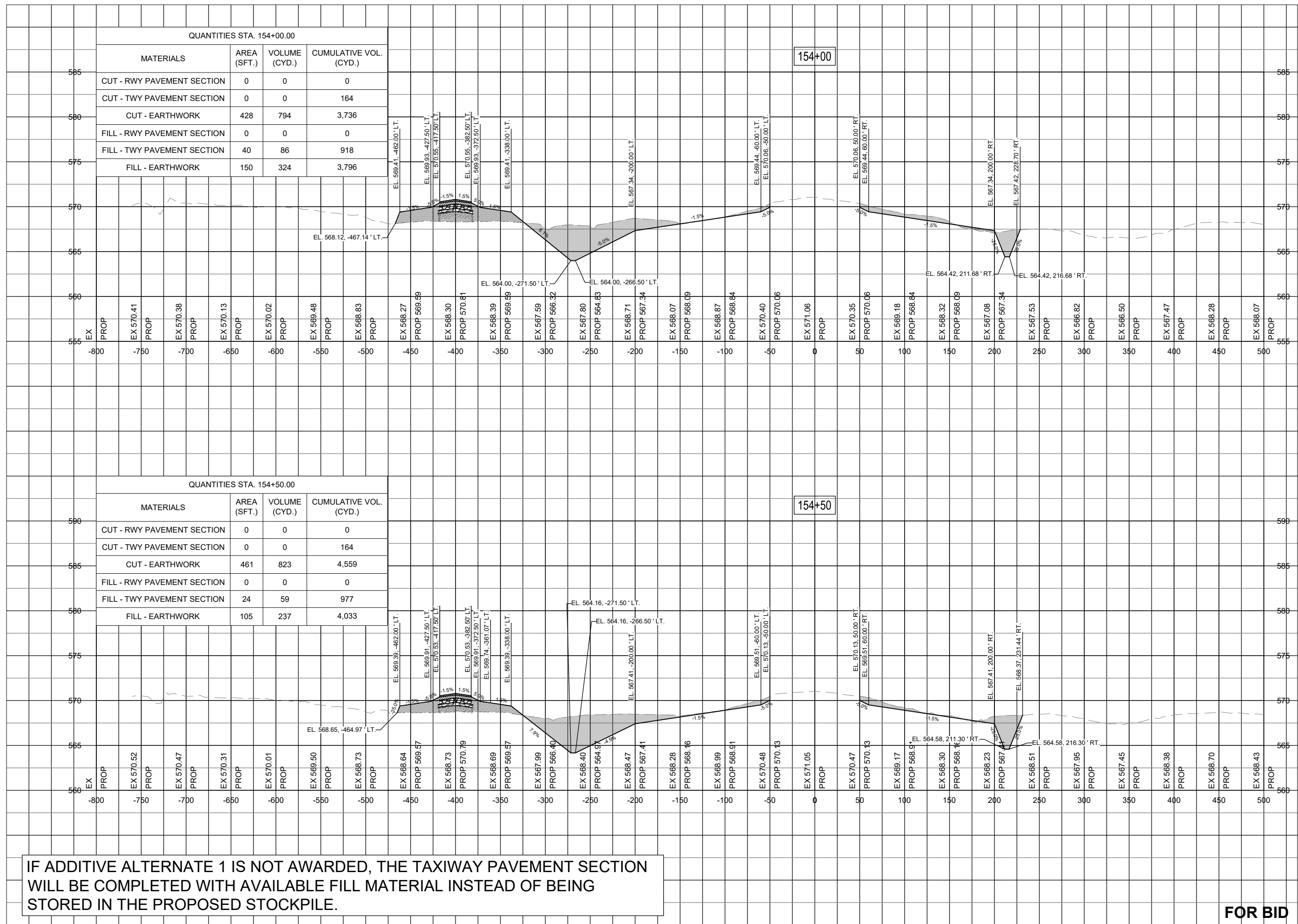
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
154+00 TO STA.
154+50

FOR BID



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



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EXTEND RUNWAY
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CONTRACT NO. EF010

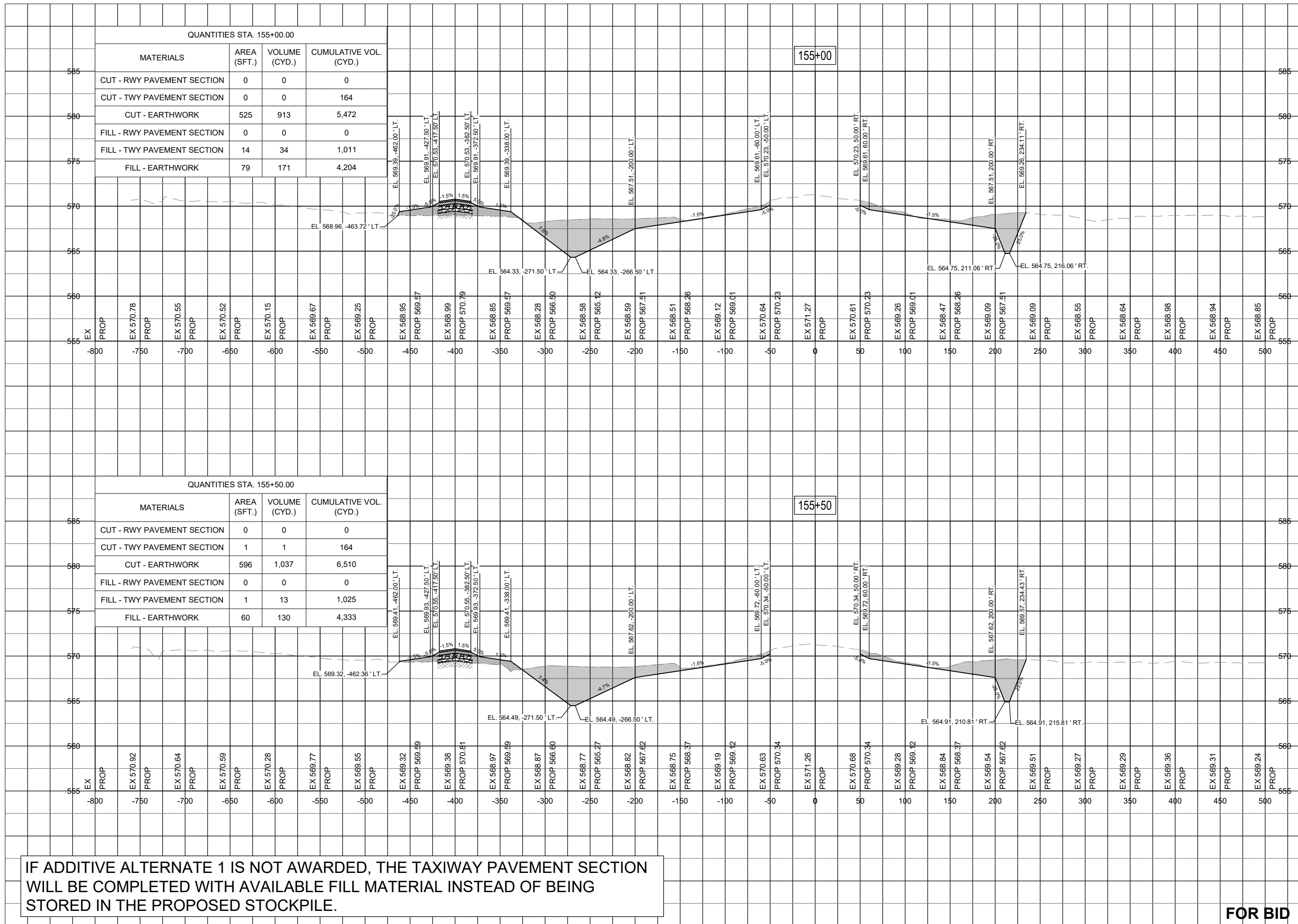
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
155+00 TO STA.
155+50

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**EXTEND RUNWAY
11-29 AND TAXIWAY A**

IDA NO. 1H2-4982
CONTRACT NO. EF010

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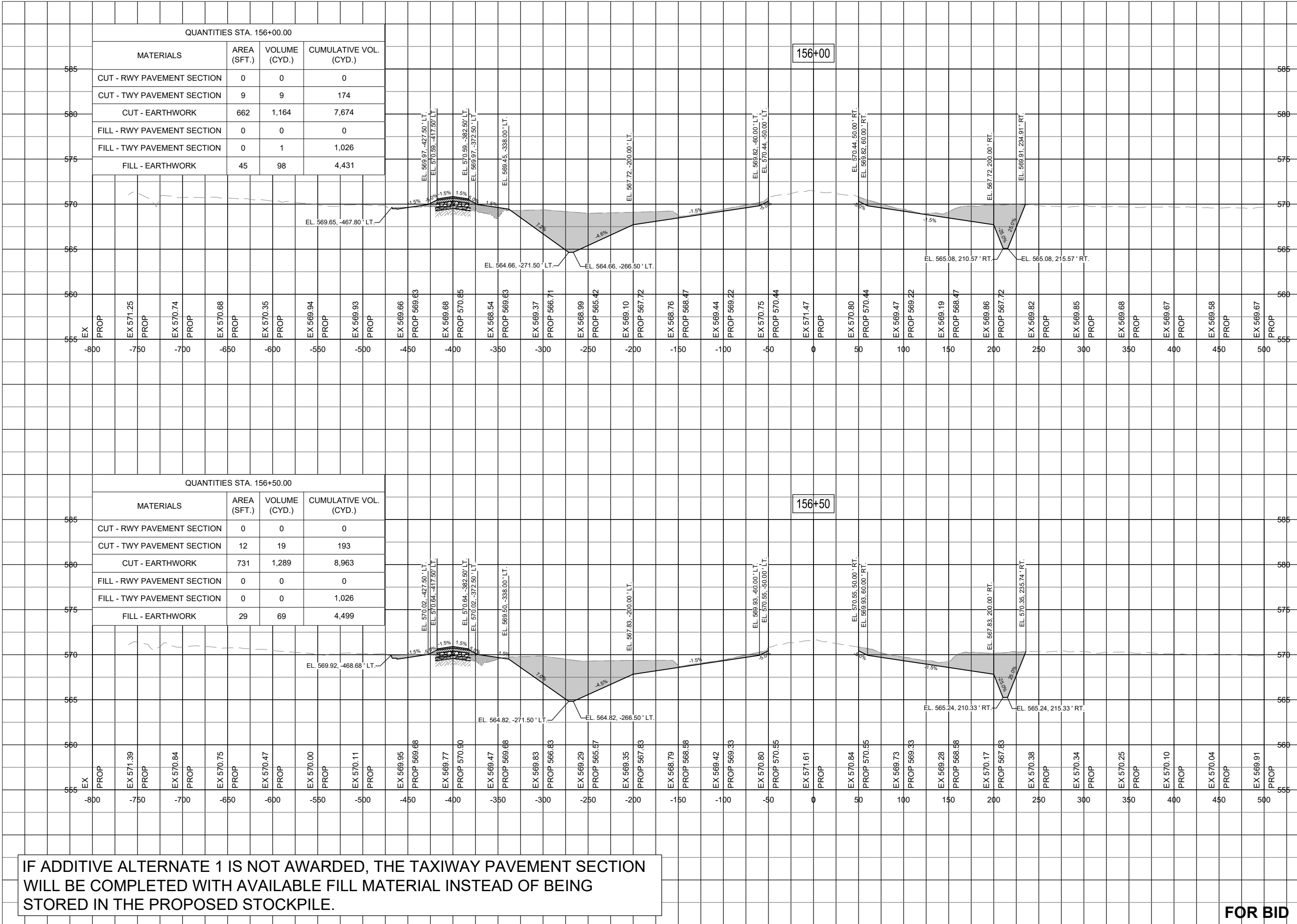
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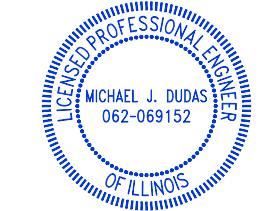
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SHEET TITLE

**RUNWAY TAXIWAY
EXTENSION - STA.
156+00 TO STA.
156+50**



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EXTEND RUNWAY
11-29 AND TAXIWAY A

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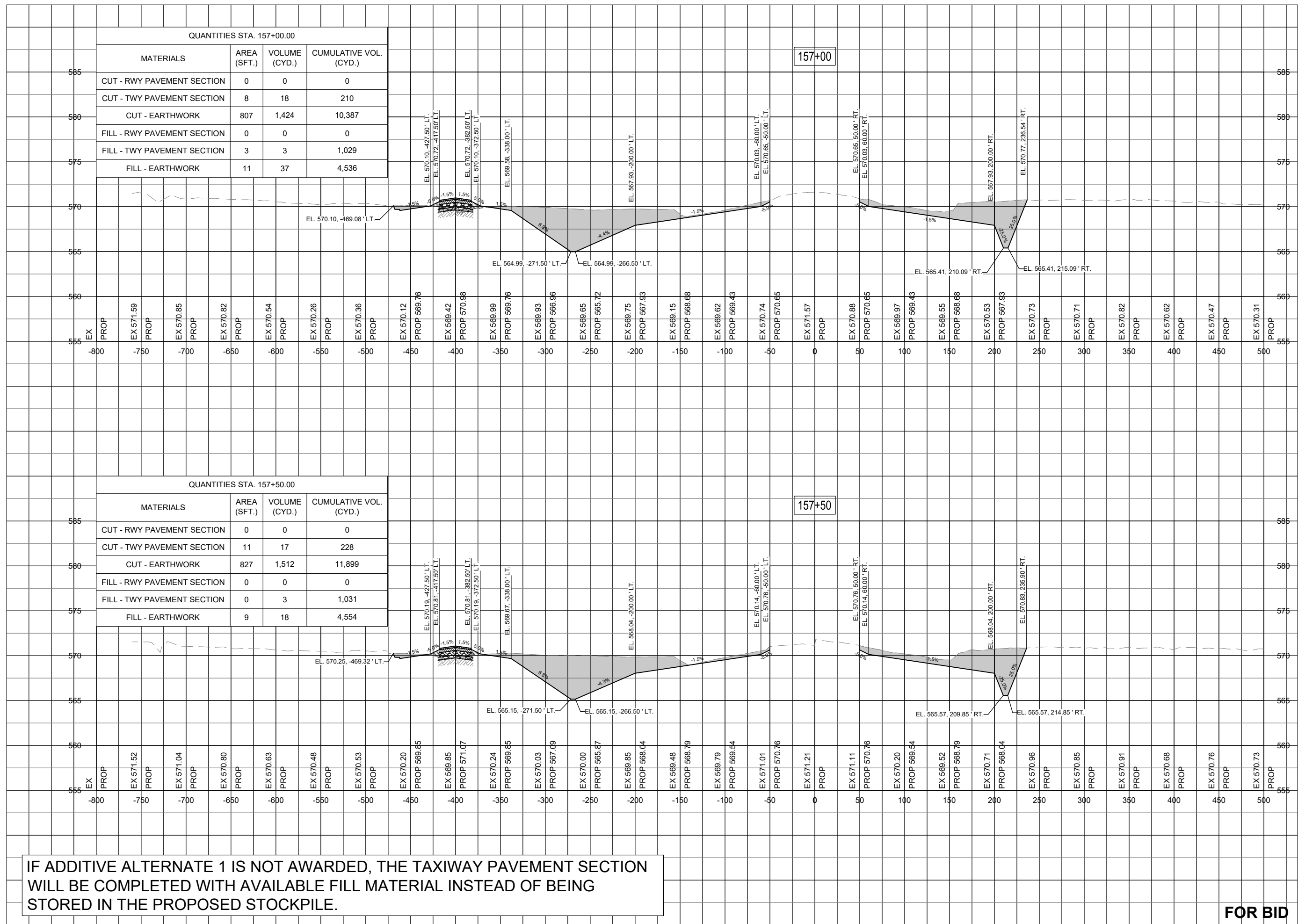
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
157+00 TO STA.
157+50

FOR BID



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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EXTEND RUNWAY
11-29 AND TAXIWAY A

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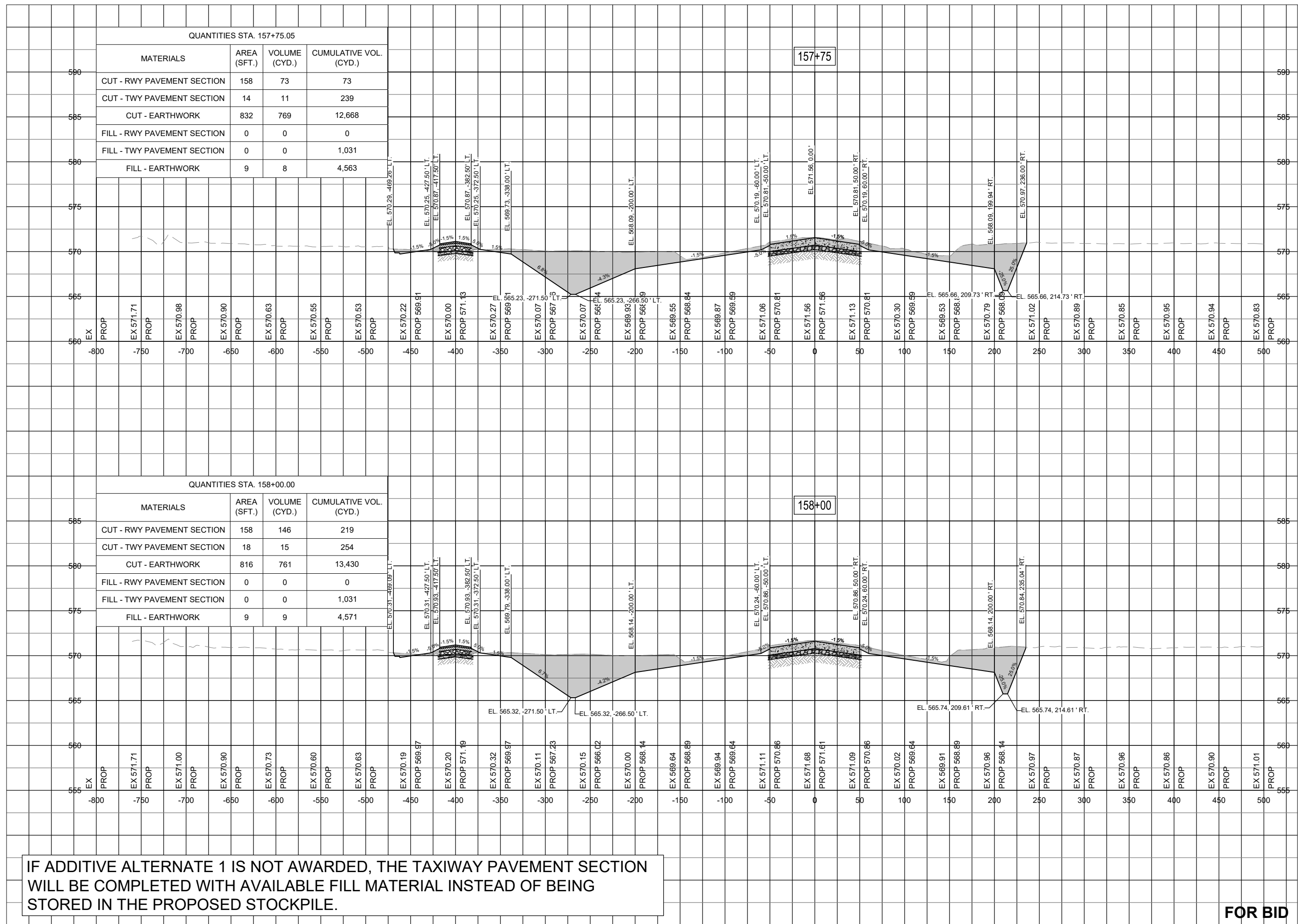
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
157+75 TO STA.
158+00

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QUANTITIES STA. 157+75.05

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	158	73	73
CUT - TWY PAVEMENT SECTION	14	11	239
CUT - EARTHWORK	832	769	12,668
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	9	8	4,563

QUANTITIES STA. 158+00.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	158	146	219
CUT - TWY PAVEMENT SECTION	18	15	254
CUT - EARTHWORK	816	761	13,430
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	9	9	4,571

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

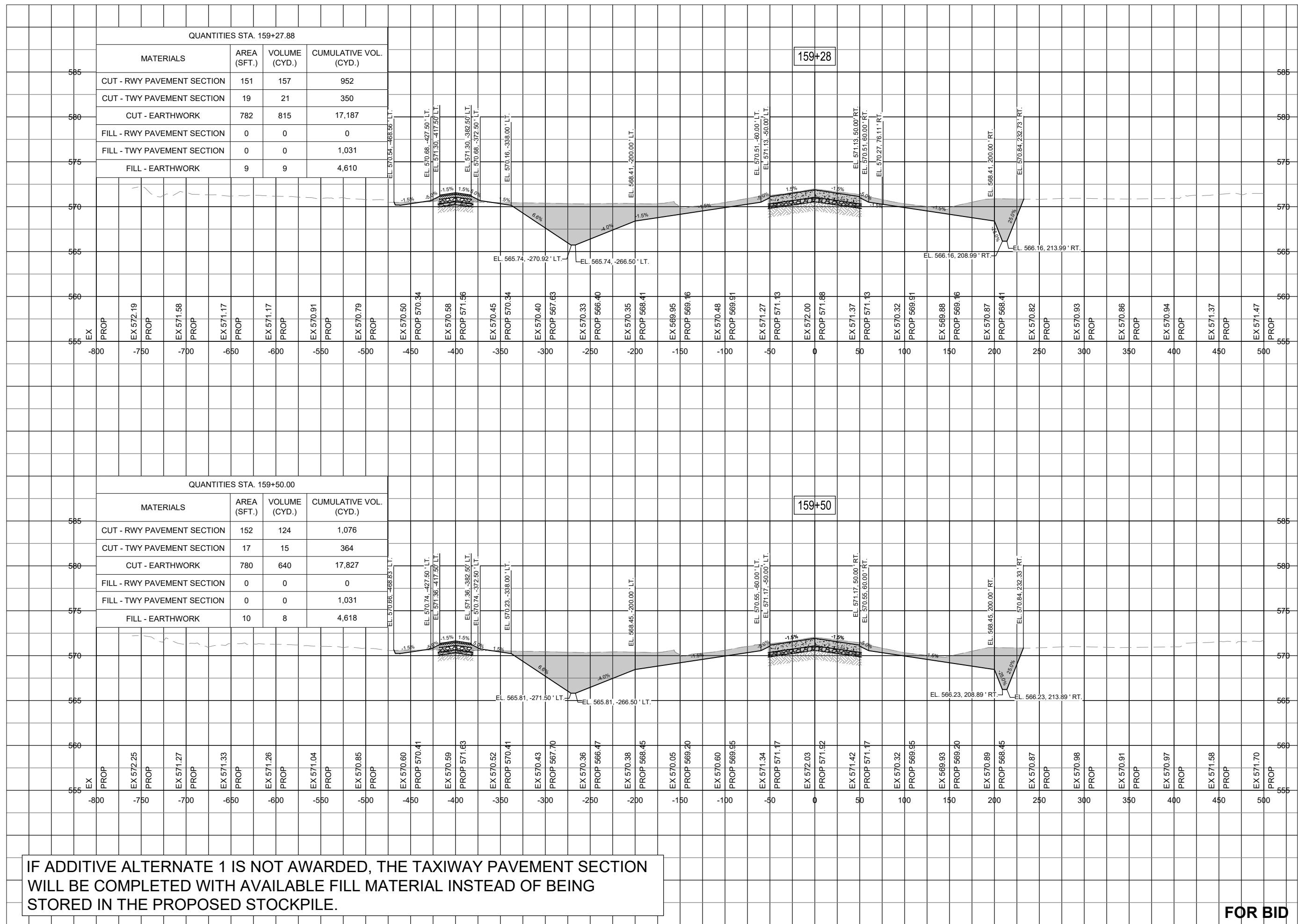
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
159+28 TO STA.
159+50



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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11-29 AND TAXIWAY A

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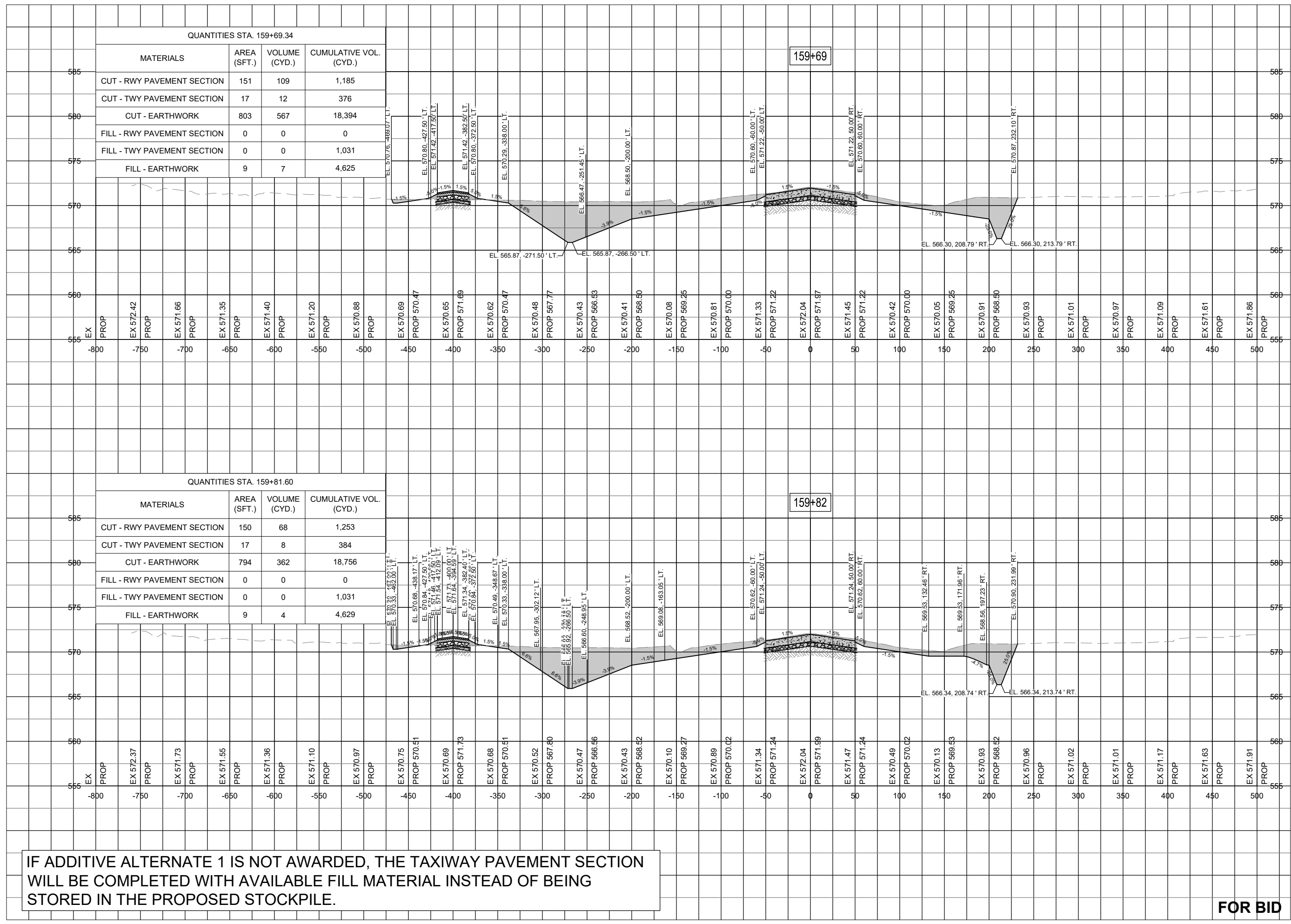
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
159+69 TO STA.
159+82

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QUANTITIES STA. 159+69.34

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	151	109	1,185
CUT - TWY PAVEMENT SECTION	17	12	376
CUT - EARTHWORK	803	567	18,394
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	9	7	4,625

QUANTITIES STA. 159+81.60

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	150	68	1,253
CUT - TWY PAVEMENT SECTION	17	8	384
CUT - EARTHWORK	794	362	18,756
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	9	4	4,629

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

DATE: 11/17/2023 LICENSE: 11/30/2025
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EXTEND RUNWAY
11-29 AND TAXIWAY A

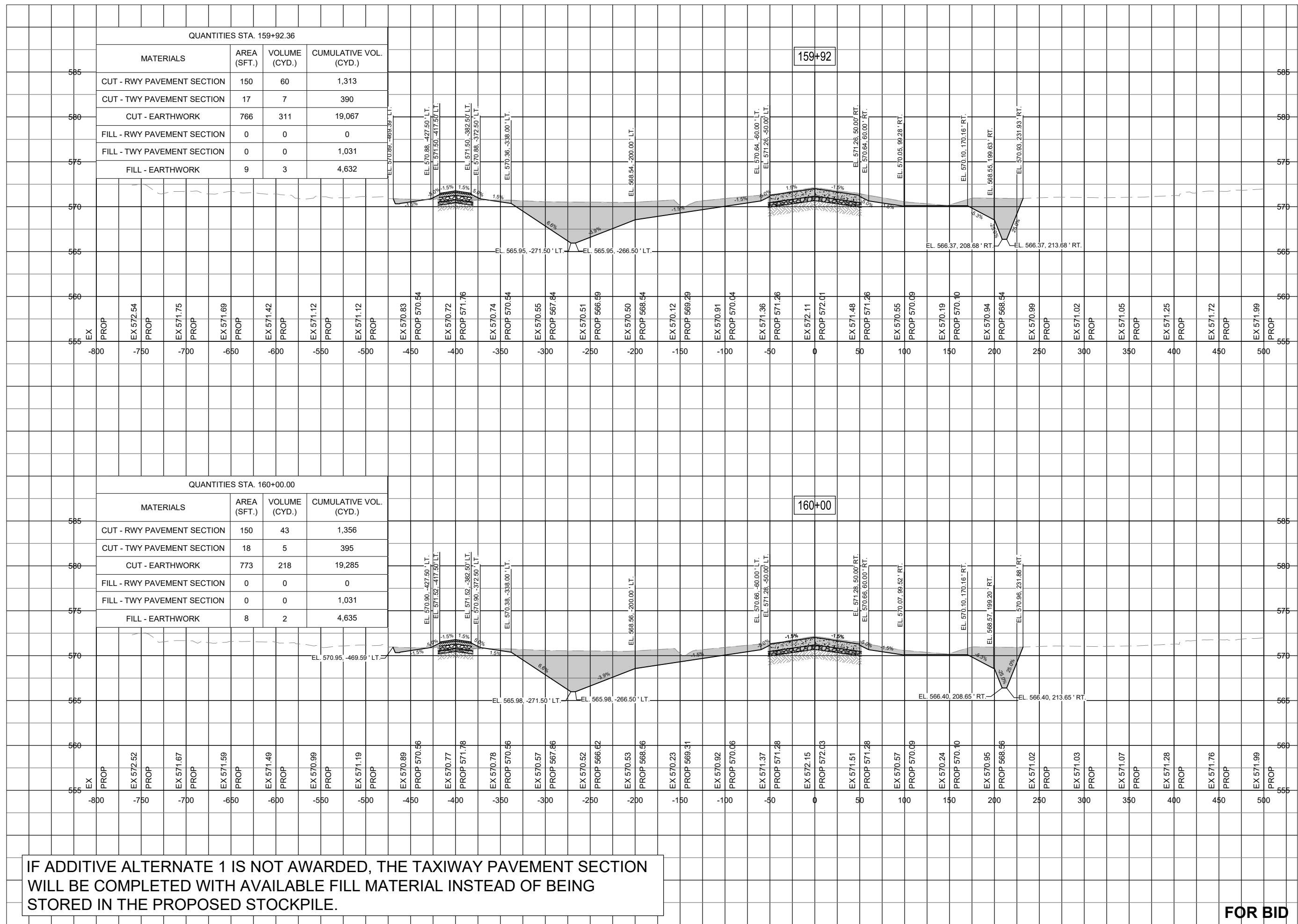
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
159+92 TO STA.
160+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
160+05 TO STA.
160+13

QUANTITIES STA. 160+05.36

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	150	30	1,385
CUT - TWY PAVEMENT SECTION	20	4	399
CUT - EARTHWORK	780	154	19,439
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	6	1	4,636

QUANTITIES STA. 160+13.14

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	150	43	1,429
CUT - TWY PAVEMENT SECTION	23	6	405
CUT - EARTHWORK	817	230	19,669
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	5	2	4,637

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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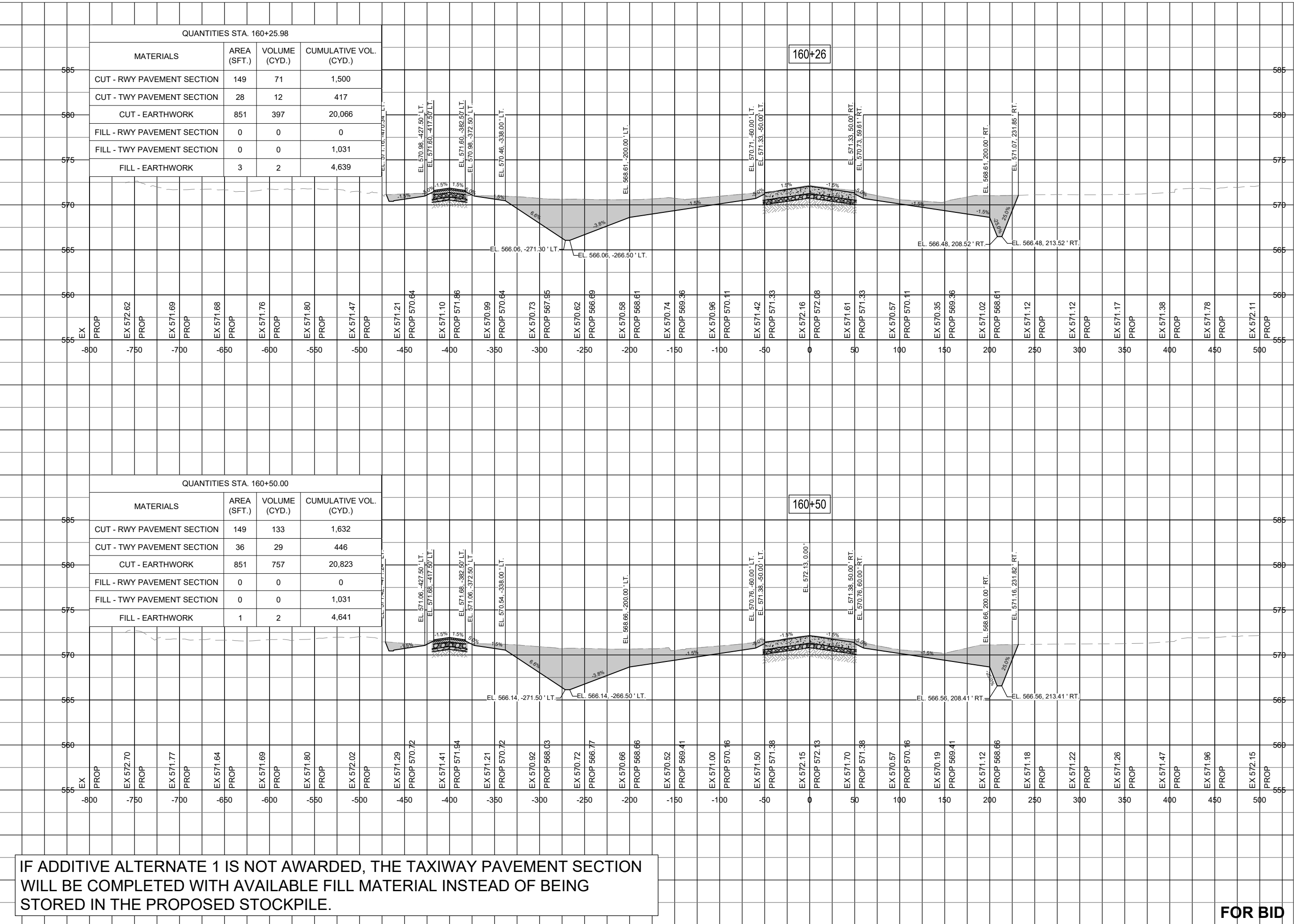
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
160+26 TO STA.
160+50

FOR BID



QUANTITIES STA. 160+25.98

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	149	71	1,500
CUT - TWY PAVEMENT SECTION	28	12	417
CUT - EARTHWORK	851	397	20,066
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	3	2	4,639

QUANTITIES STA. 160+50.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	149	133	1,632
CUT - TWY PAVEMENT SECTION	36	29	446
CUT - EARTHWORK	851	757	20,823
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	1	2	4,641

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



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11-29 AND TAXIWAY A

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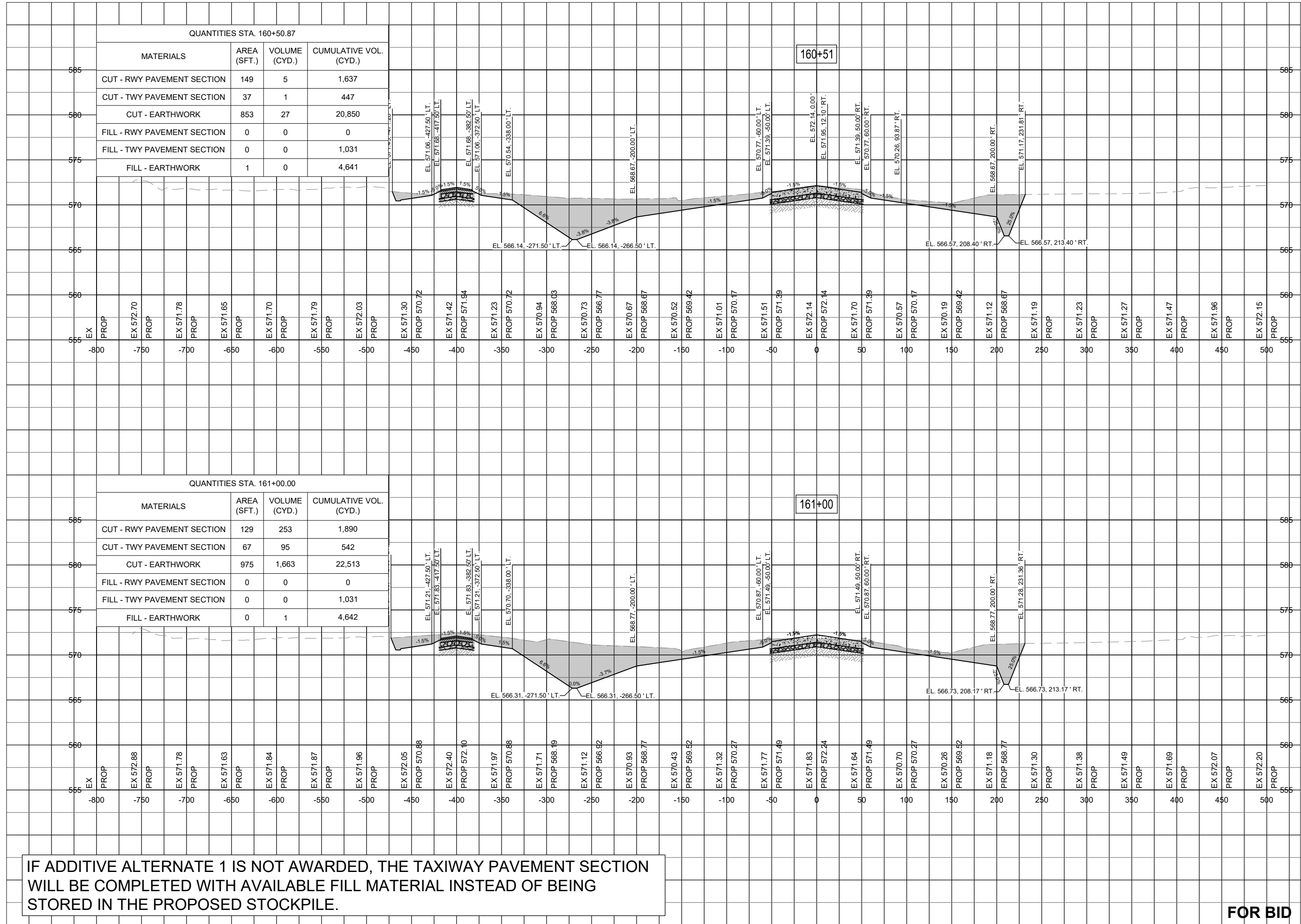
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
160+51 TO STA.
161+00

FOR BID



QUANTITIES STA. 160+50.87

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	149	5	1,637
CUT - TWY PAVEMENT SECTION	37	1	447
CUT - EARTHWORK	853	27	20,850
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	1	0	4,641

QUANTITIES STA. 161+00.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	129	253	1,890
CUT - TWY PAVEMENT SECTION	67	95	542
CUT - EARTHWORK	975	1,663	22,513
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	0	1	4,642

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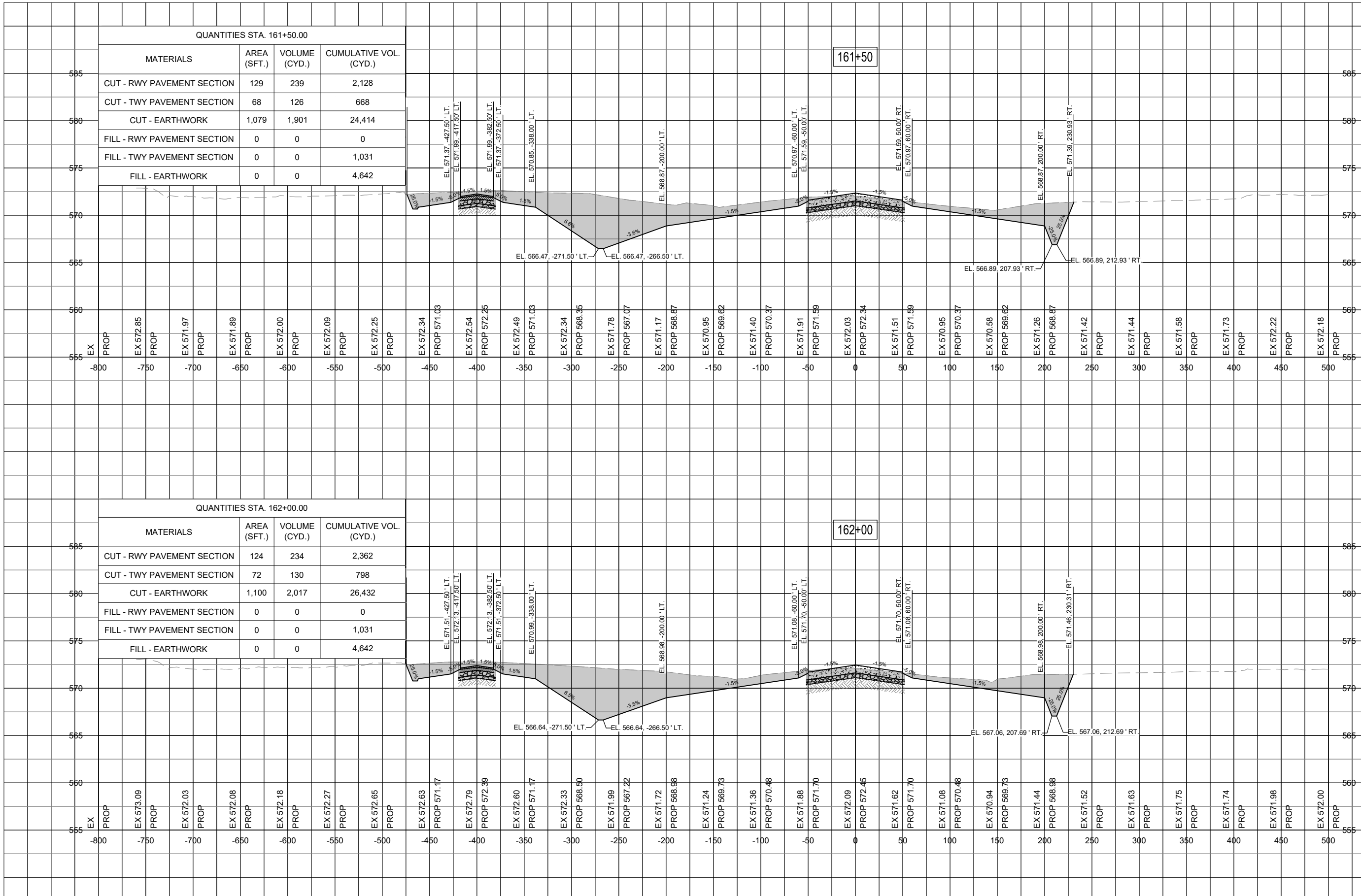
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DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
161+50 TO STA.
162+00

FOR BID



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: C-303-XS.DWG

DESIGN BY: MJD 10/16/2023

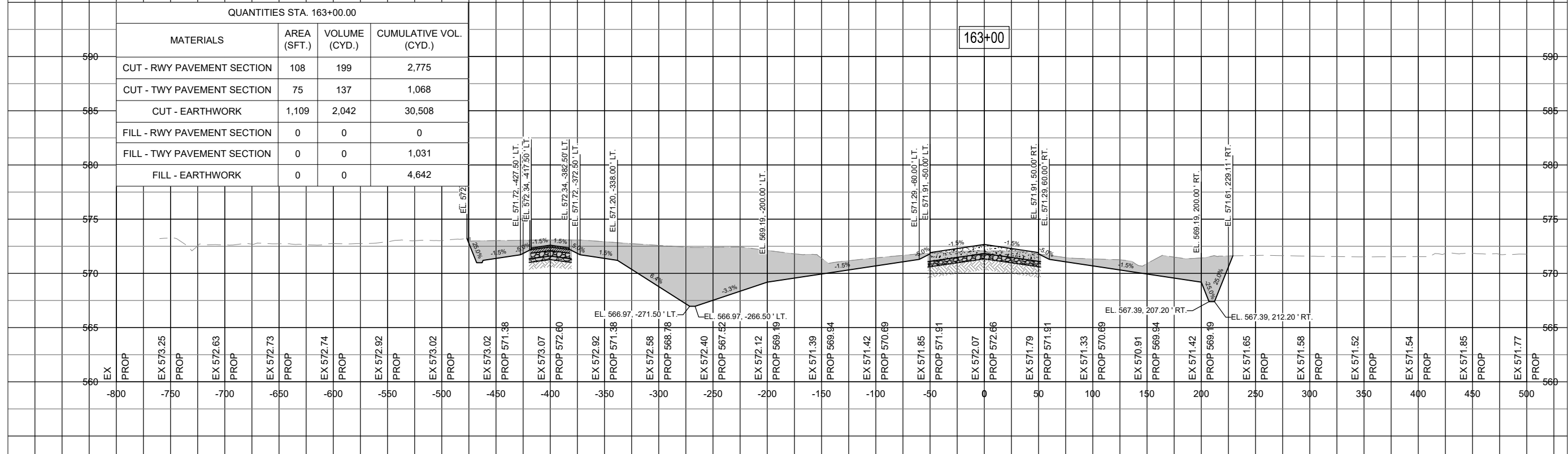
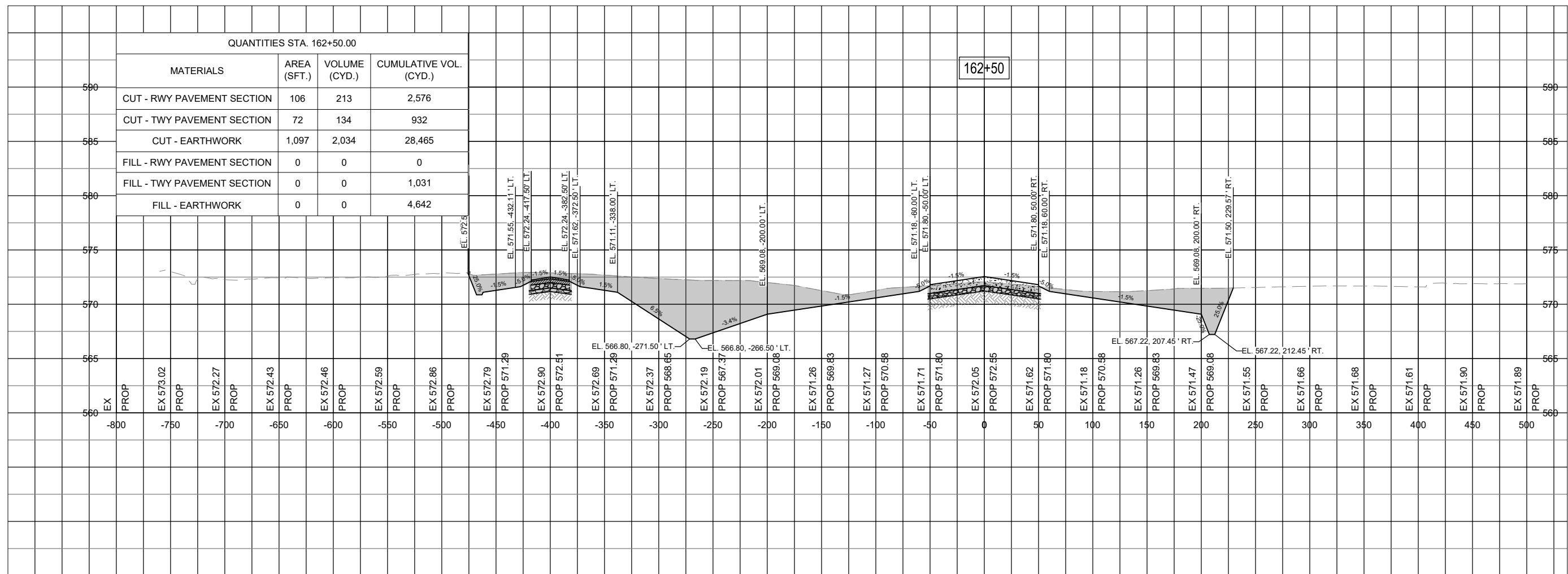
DRAWN BY: NLD 10/27/2023

REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
162+50 TO STA.
163+00

FOR BID 130



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

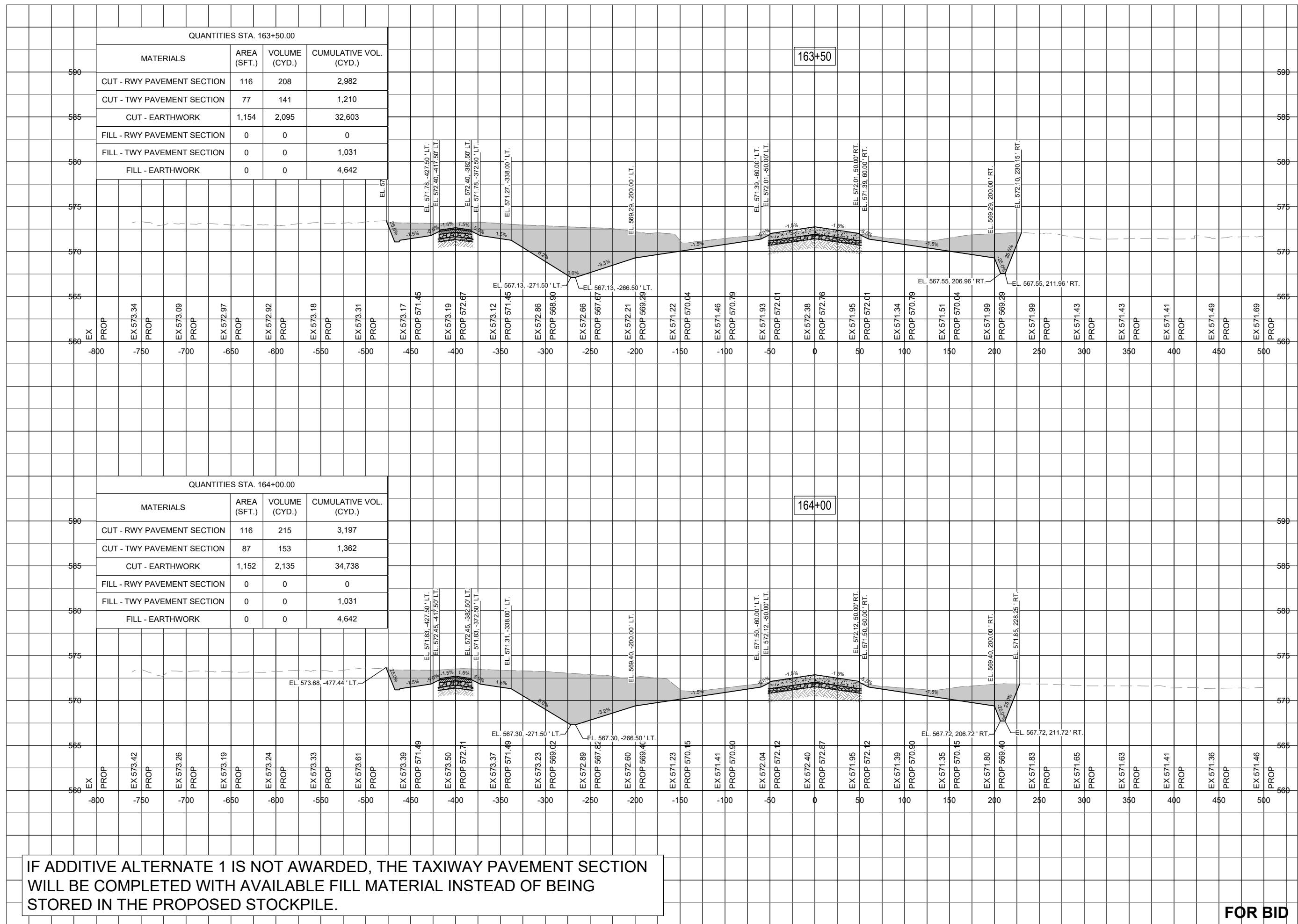
IDA NO. 1H2-4982
CONTRACT NO. EF010

NO.	DATE	DESCRIPTION		
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-303-XS.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
163+50 TO STA.
164+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
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ISSUE: NOVEMBER 17, 2023
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CAD FILE: C-303-XS.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

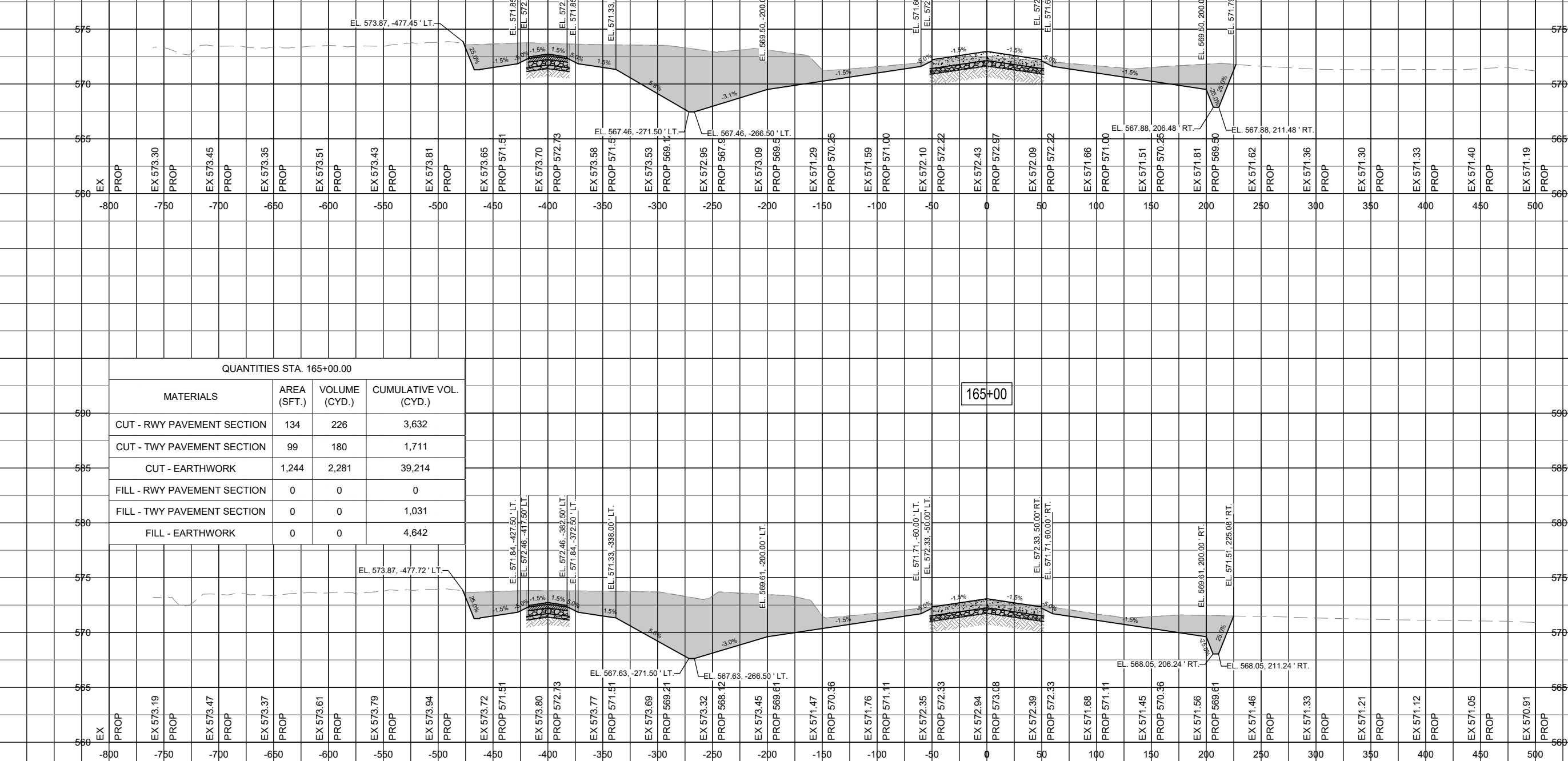
RUNWAY TAXIWAY
EXTENSION - STA.
164+50 TO STA.
165+00

QUANTITIES STA. 164+50.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	110	209	3,406
CUT - TWY PAVEMENT SECTION	95	169	1,531
CUT - EARTHWORK	1,219	2,196	36,934
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	0	0	4,642

QUANTITIES STA. 165+00.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	134	226	3,632
CUT - TWY PAVEMENT SECTION	99	180	1,711
CUT - EARTHWORK	1,244	2,281	39,214
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	0	0	4,642



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

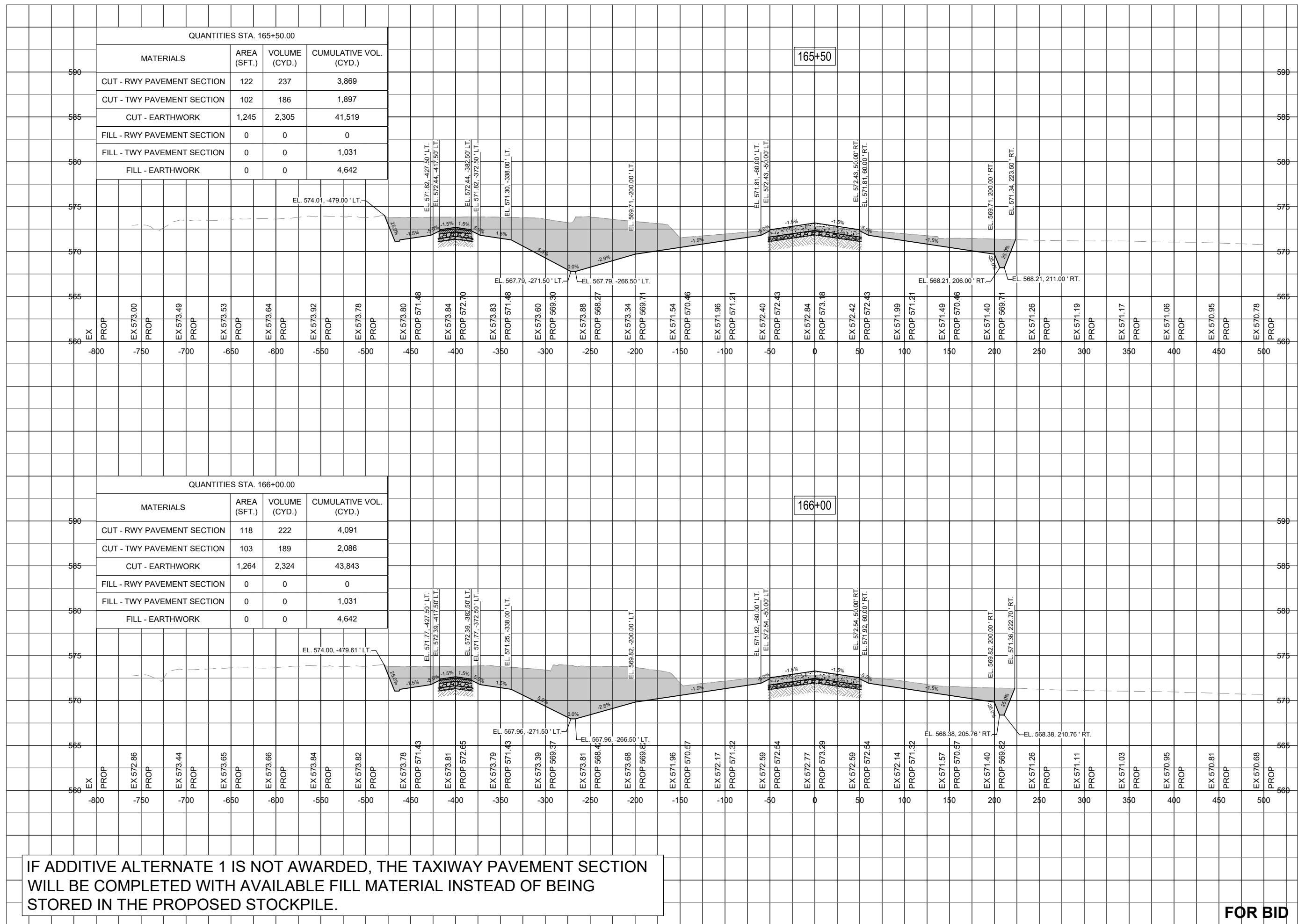
IDA NO. 1H2-4982
CONTRACT NO. EF010

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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
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DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
165+50 TO STA.
166+00



DEC 04, 2023 10:16 AM ENGEL01509
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FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

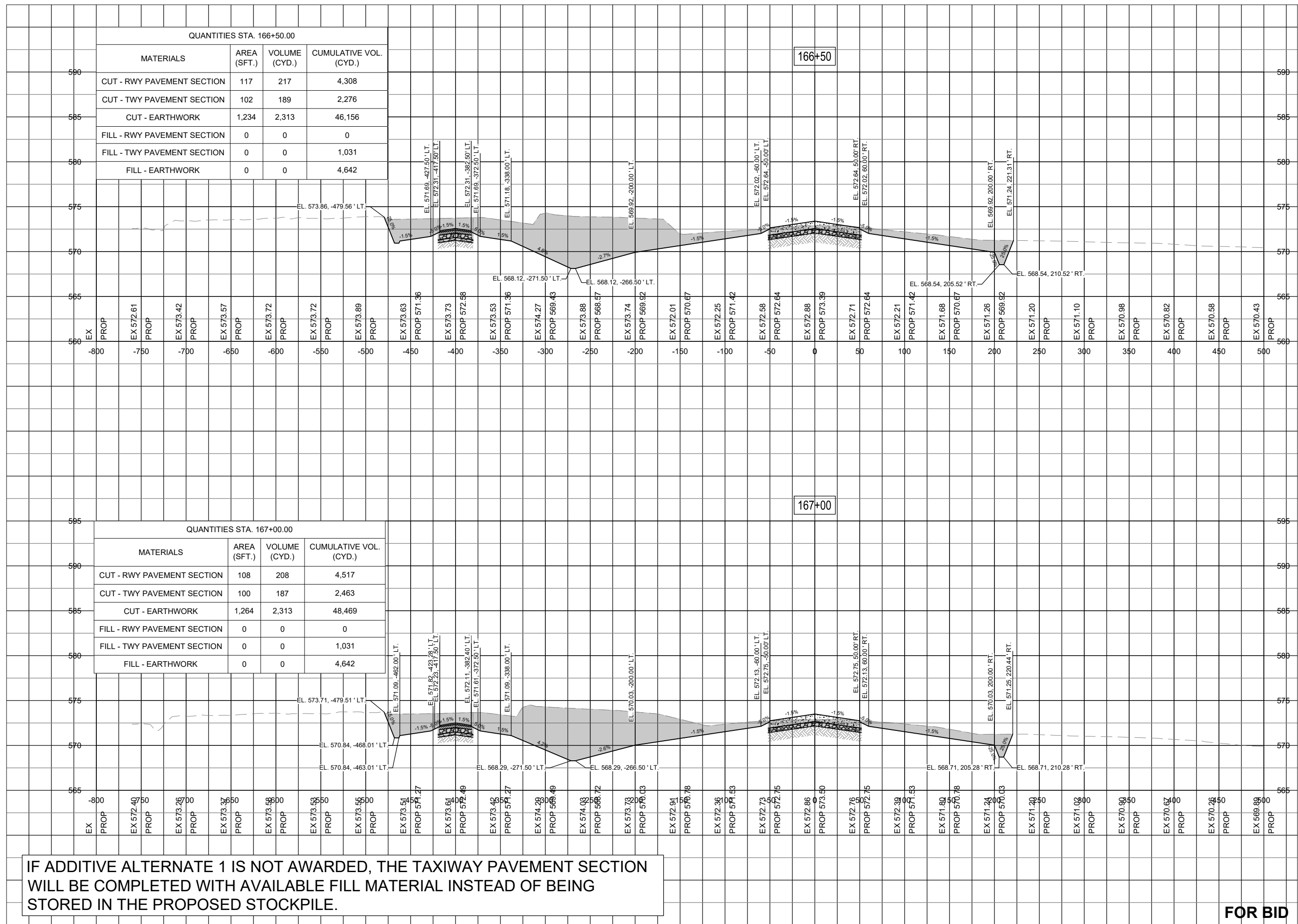
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
166+50 TO STA.
167+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



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SIGNED: EXPIRES:

EXTEND RUNWAY
11-29 AND TAXIWAY A

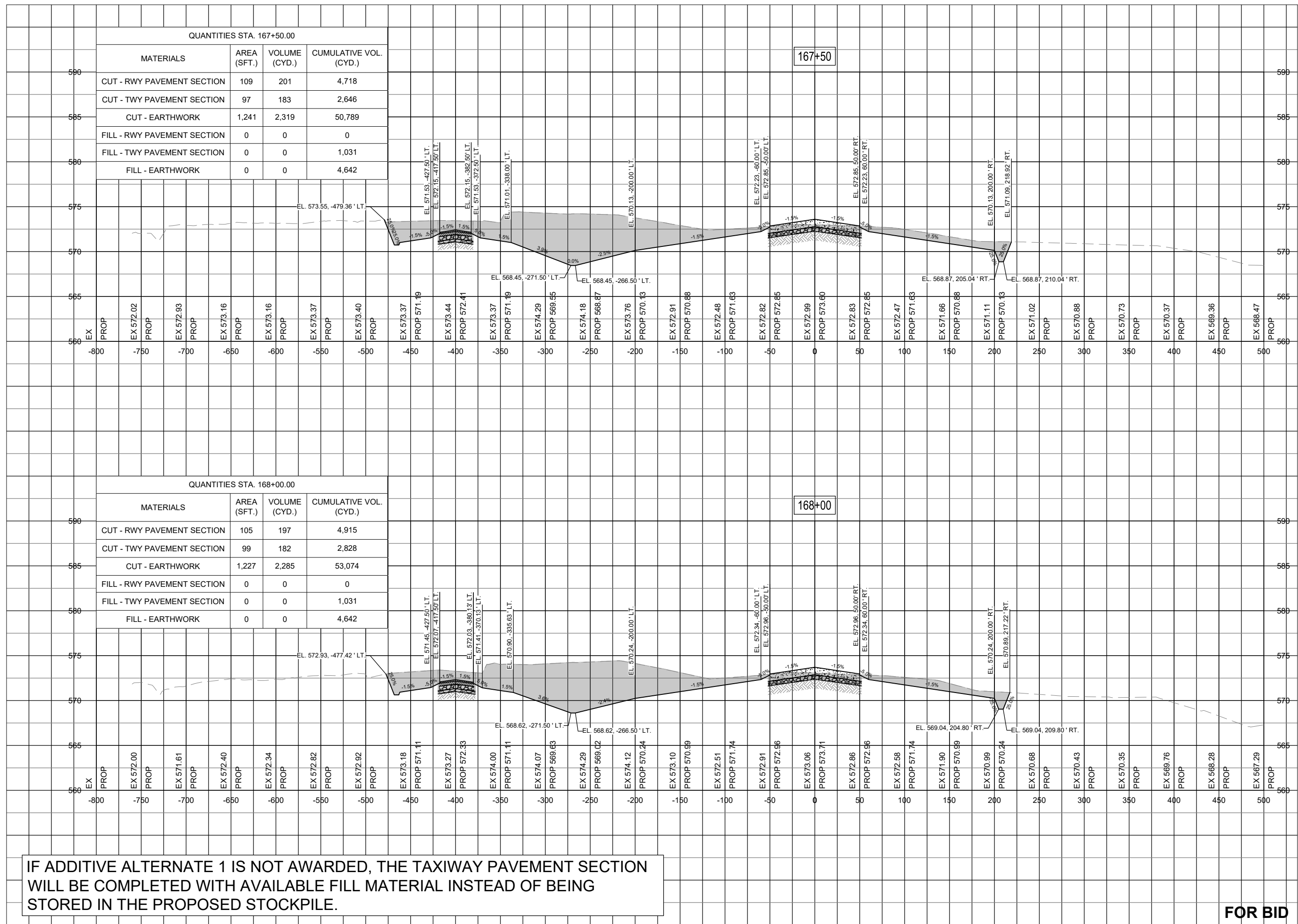
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
167+50 TO STA.
168+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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SIGNED: EXPIRES:

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

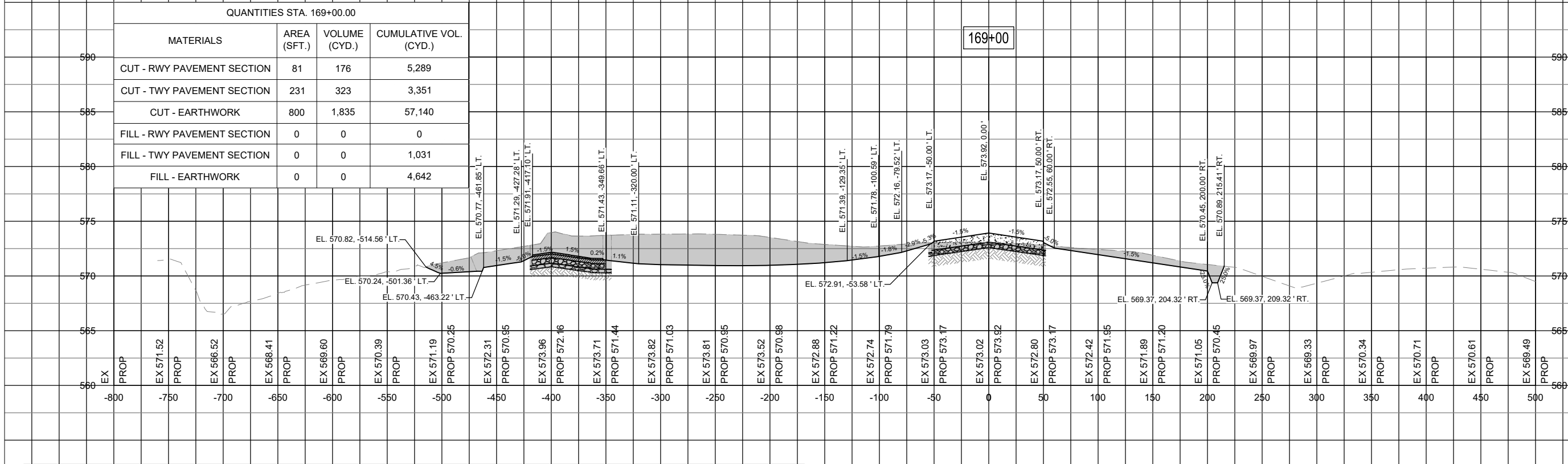
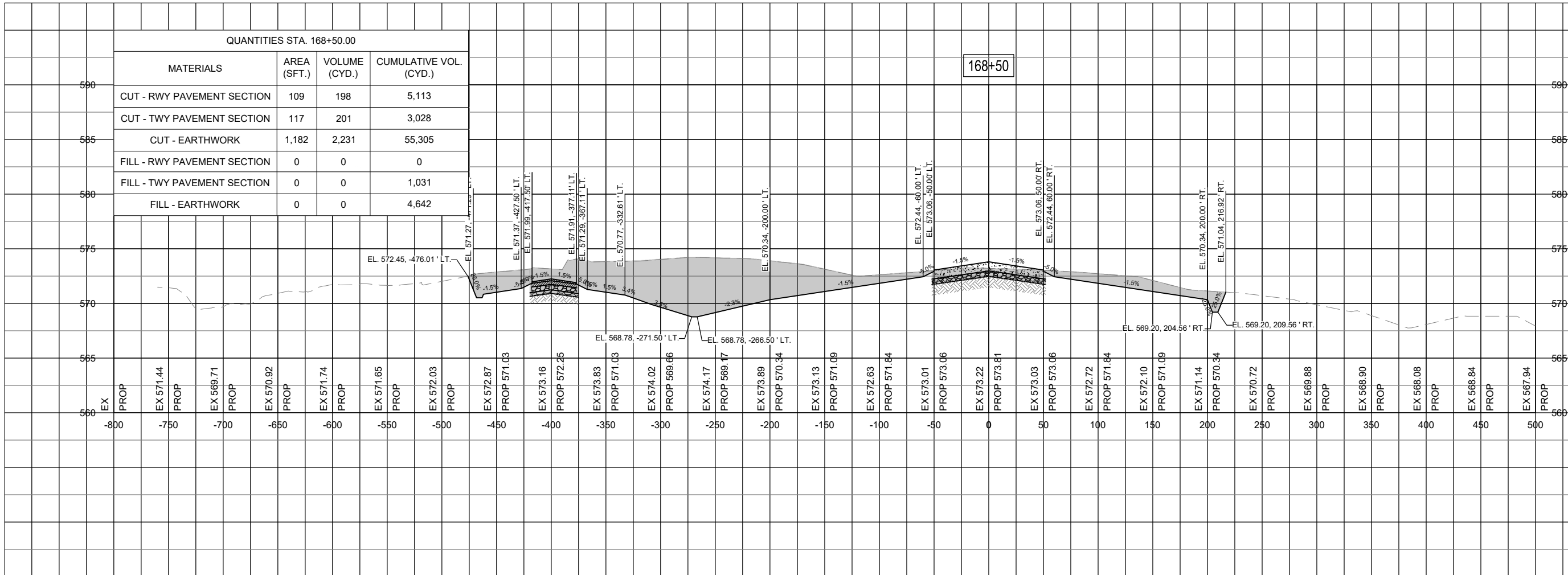
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CAD FILE: C-303-XS.DWG
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DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
168+50 TO STA.
169+00

FOR BID



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

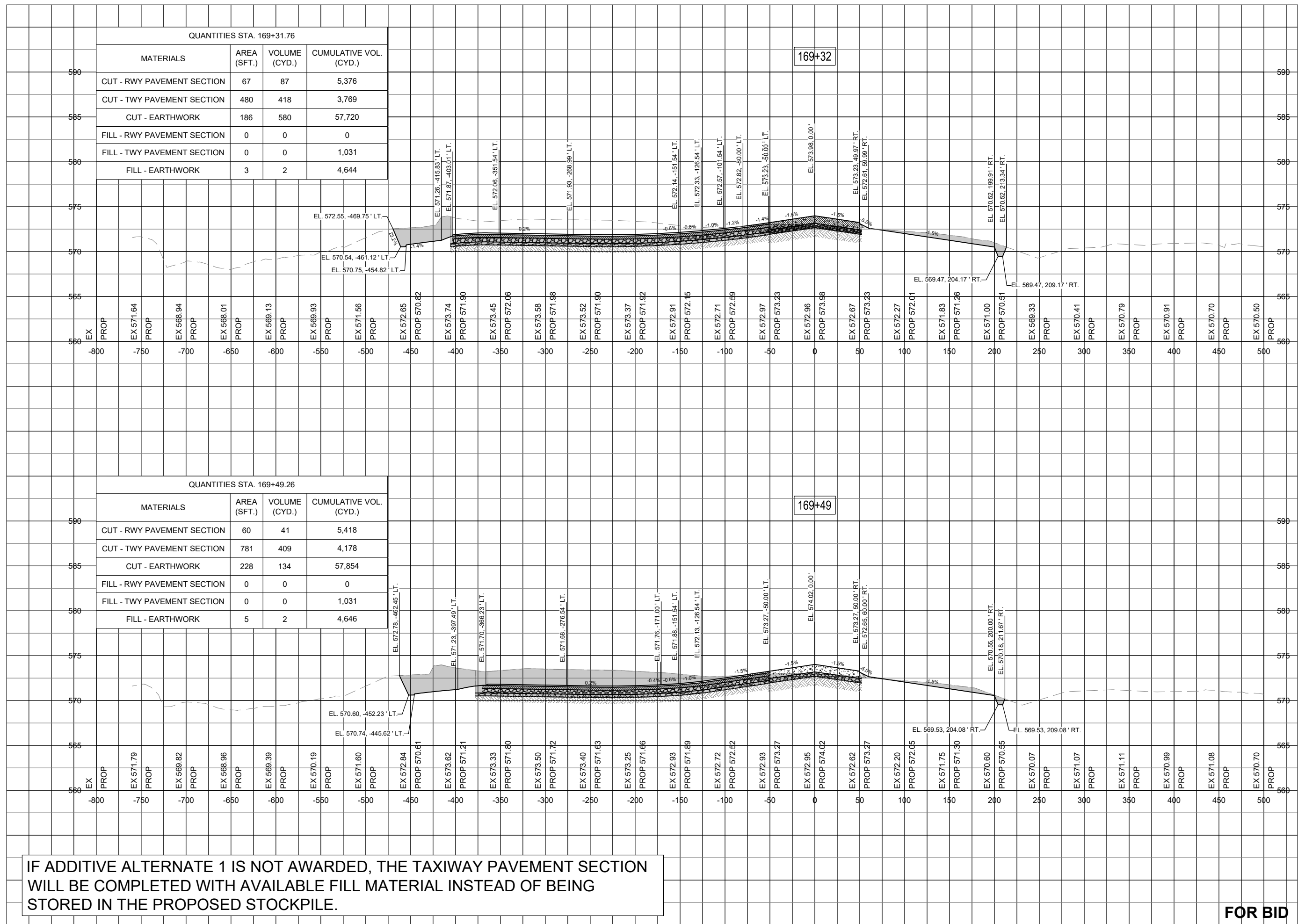
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DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
169+32 TO STA.
169+49



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

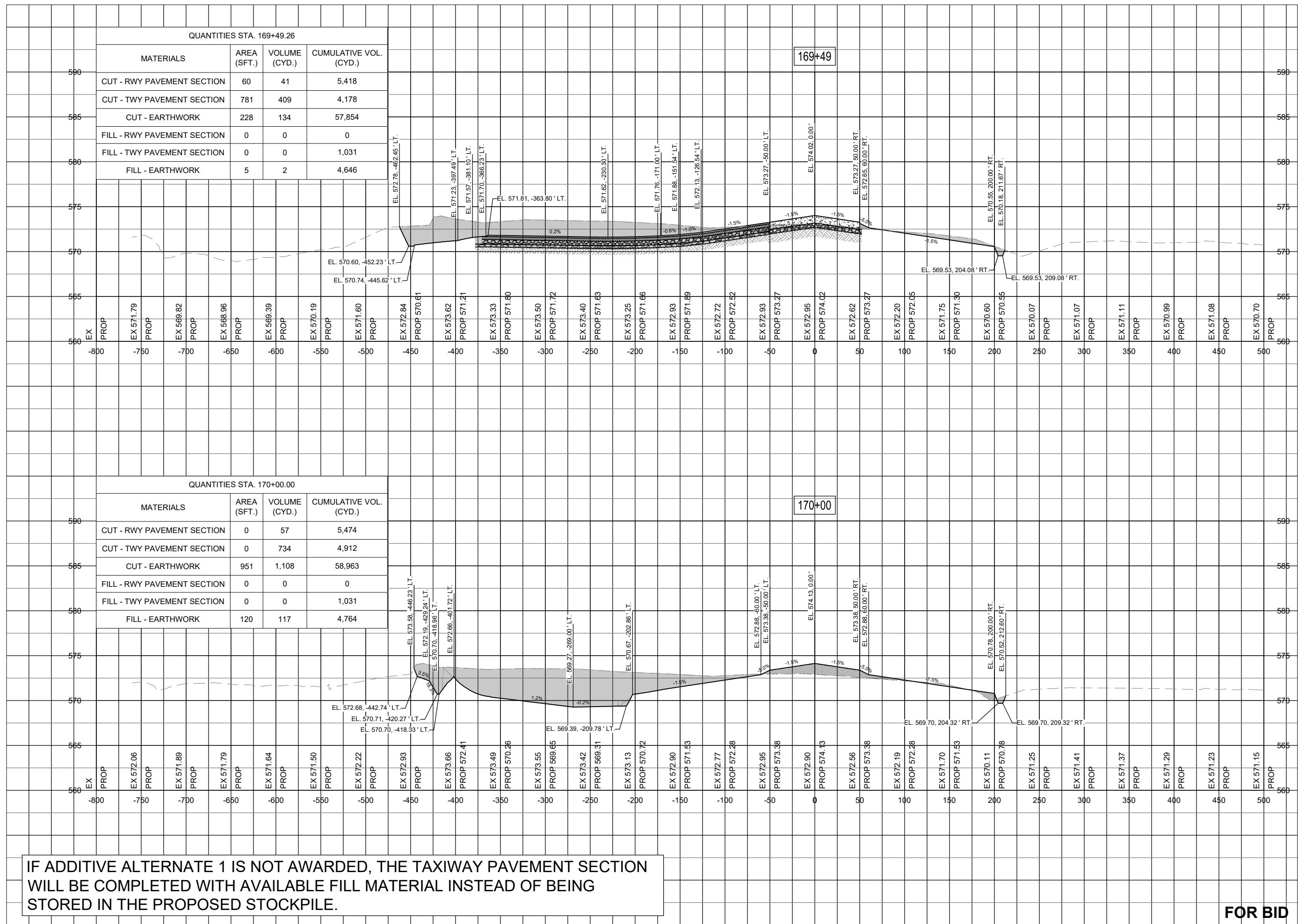
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DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
169+49 TO STA.
170+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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SIGNED: EXPIRES:

EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
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NO.	DATE	DESCRIPTION		
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ISSUE: NOVEMBER 17, 2023

PROJECT NO: 22A0004D

CAD FILE: C-303-XS.DWG

DESIGN BY: MJD 10/16/2023

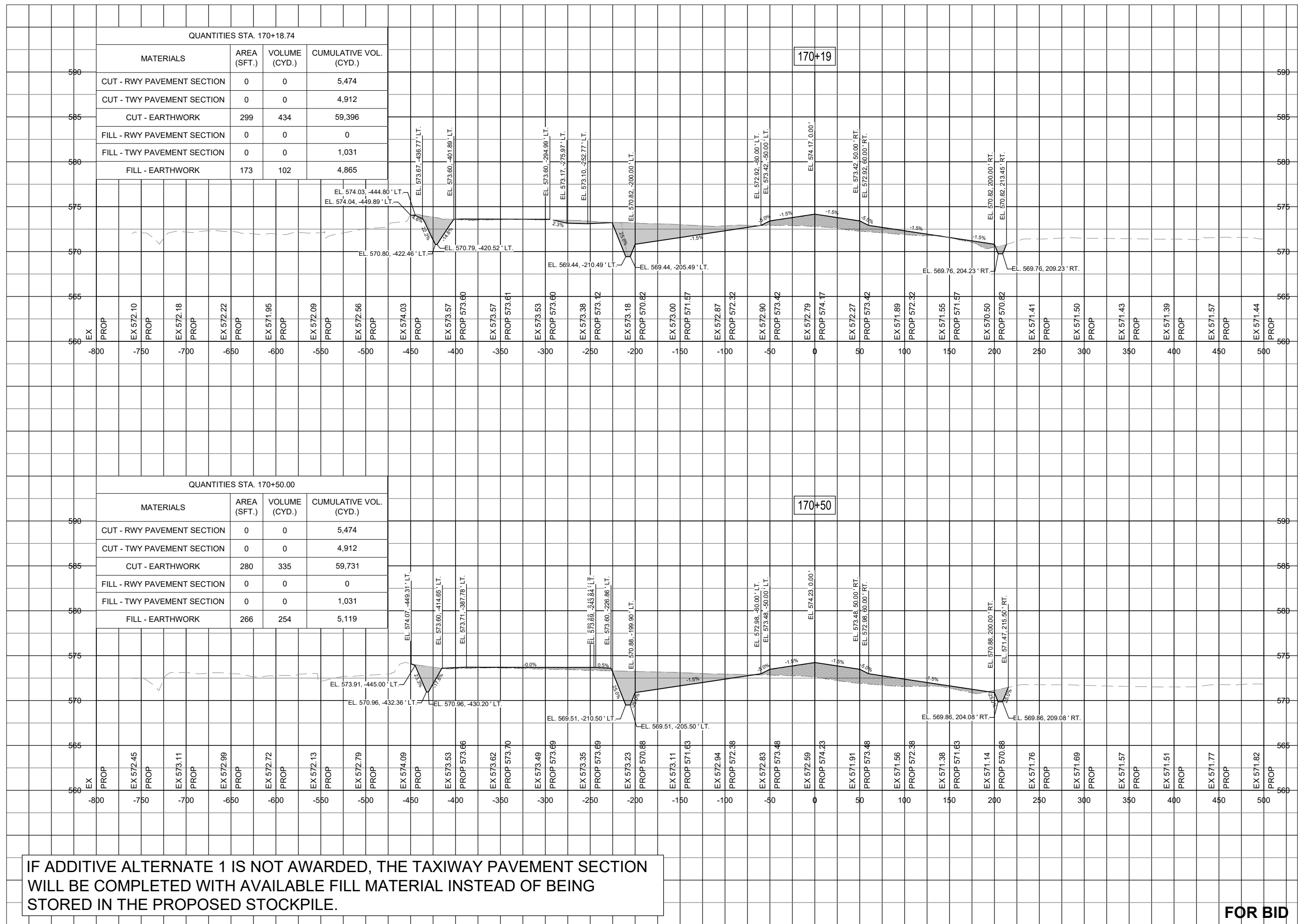
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REVIEWED BY: MJD 11/17/2023

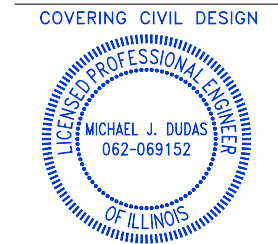
SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
170+19 TO STA.
170+50

FOR BID



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Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A
IDA NO. 1H2-4982
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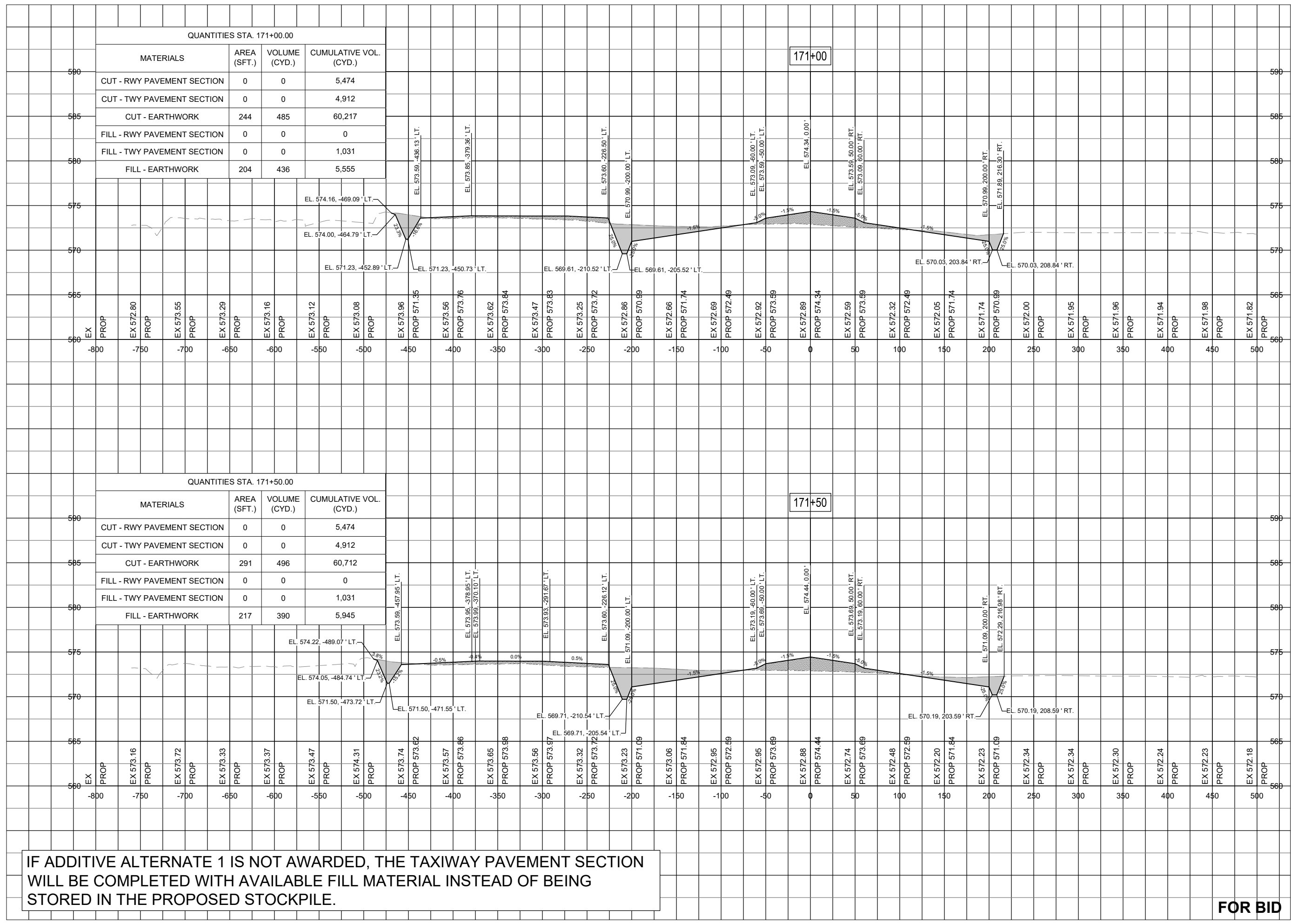
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ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-303-XS.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
171+00 TO STA.
171+50

FOR BID



DEC 04, 2023 10:19 AM ENGEL01509
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IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

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ISSUE: NOVEMBER 17, 2023

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CAD FILE: C-303-XS.DWG

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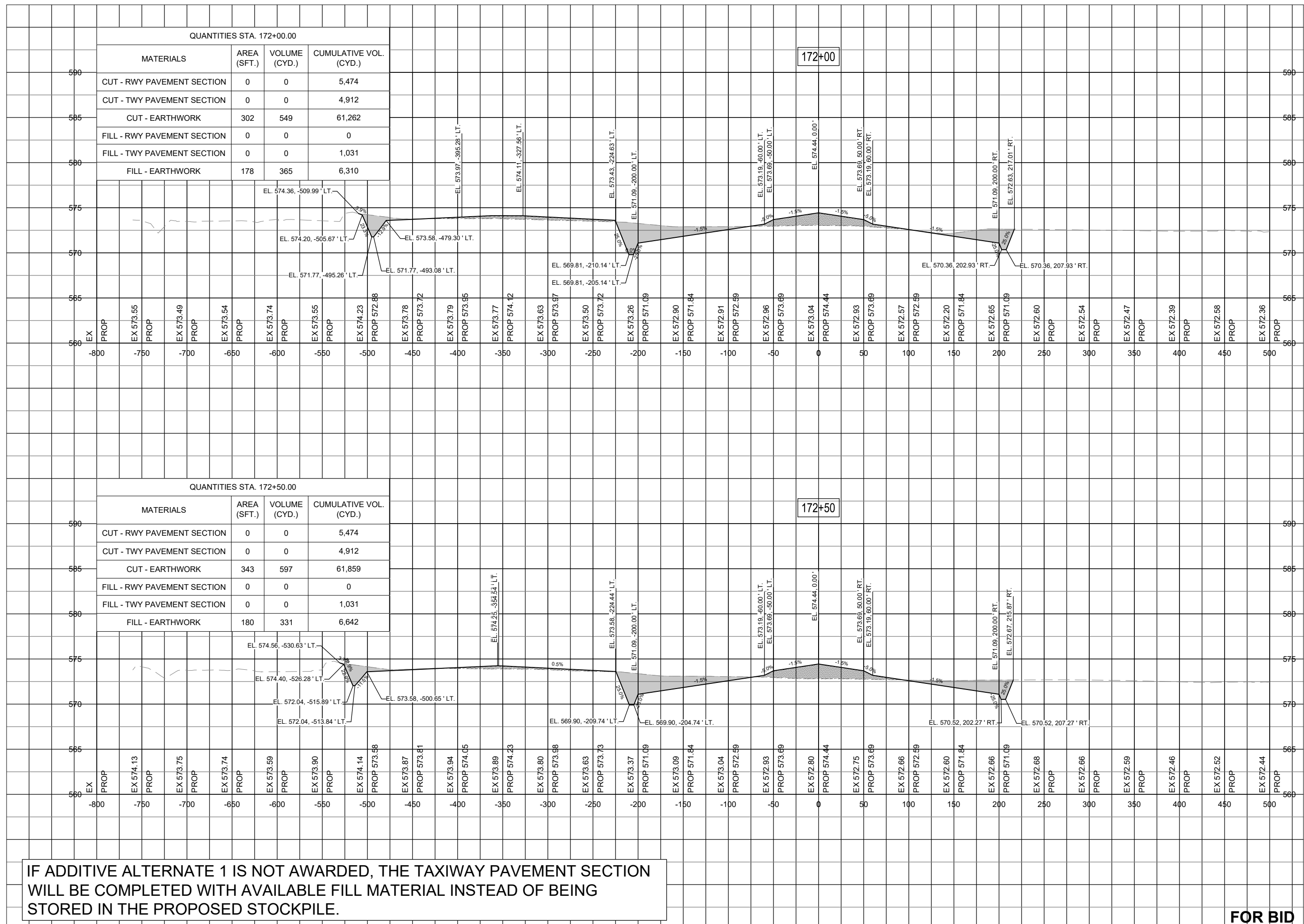
DRAWN BY: NLD 10/27/2023

REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
172+00 TO STA.
172+50

FOR BID



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



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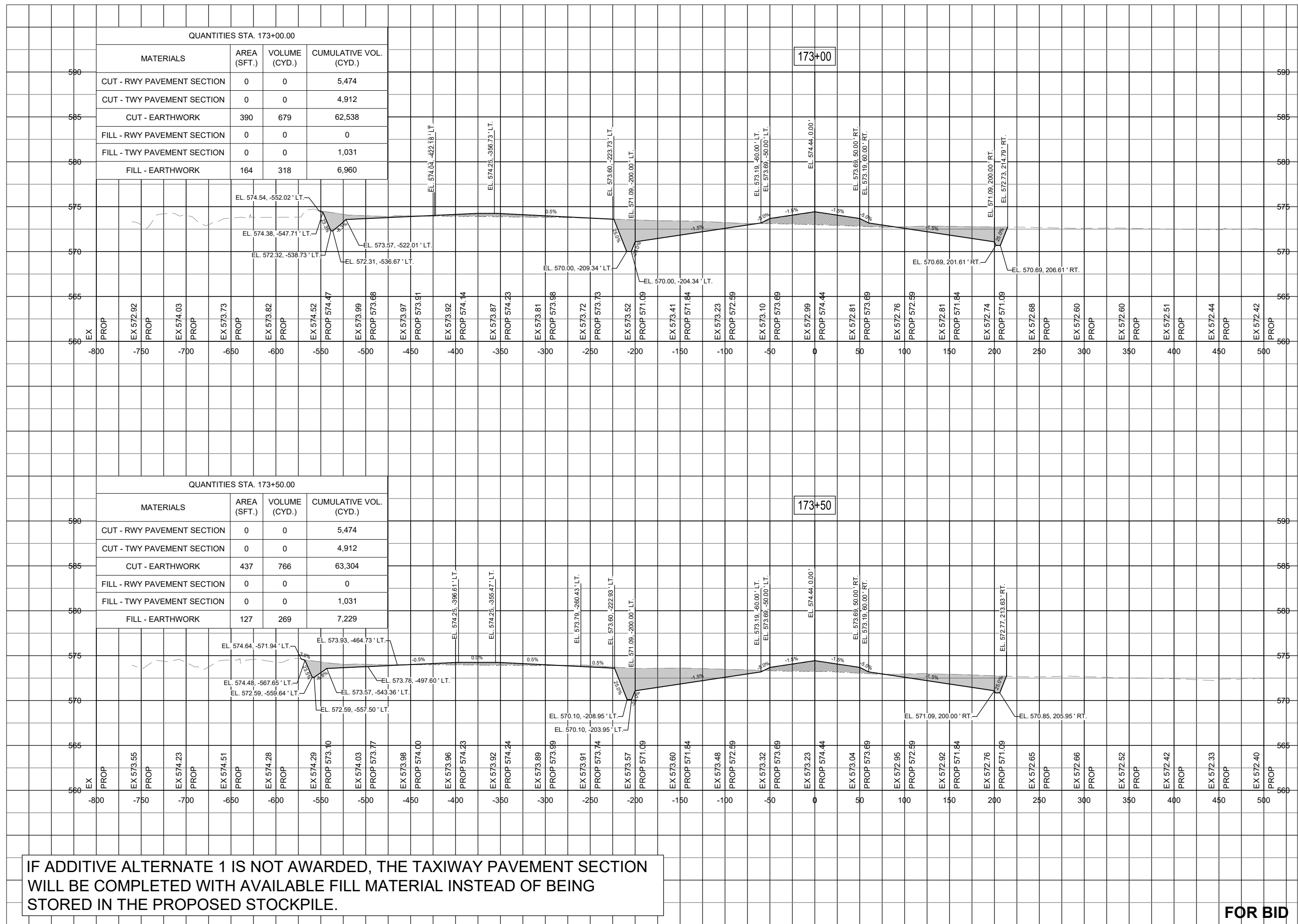
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
173+00 TO STA.
173+50



QUANTITIES STA. 173+00.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	0	0	5,474
CUT - TWY PAVEMENT SECTION	0	0	4,912
CUT - EARTHWORK	390	679	62,538
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	164	318	6,960

QUANTITIES STA. 173+50.00

MATERIALS	AREA (SFT.)	VOLUME (CYD.)	CUMULATIVE VOL. (CYD.)
CUT - RWY PAVEMENT SECTION	0	0	5,474
CUT - TWY PAVEMENT SECTION	0	0	4,912
CUT - EARTHWORK	437	766	63,304
FILL - RWY PAVEMENT SECTION	0	0	0
FILL - TWY PAVEMENT SECTION	0	0	1,031
FILL - EARTHWORK	127	269	7,229

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

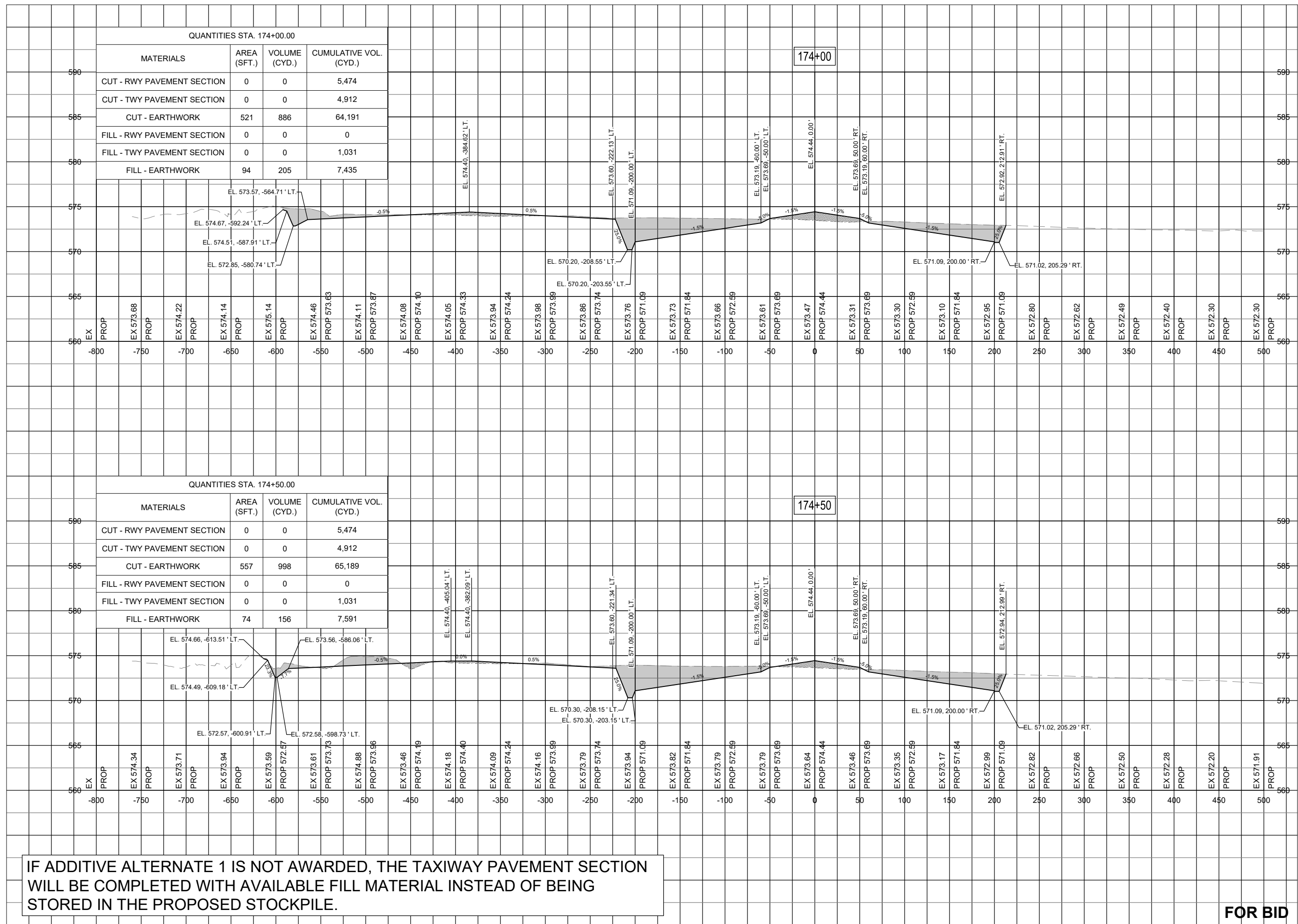
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
174+00 TO STA.
174+50



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

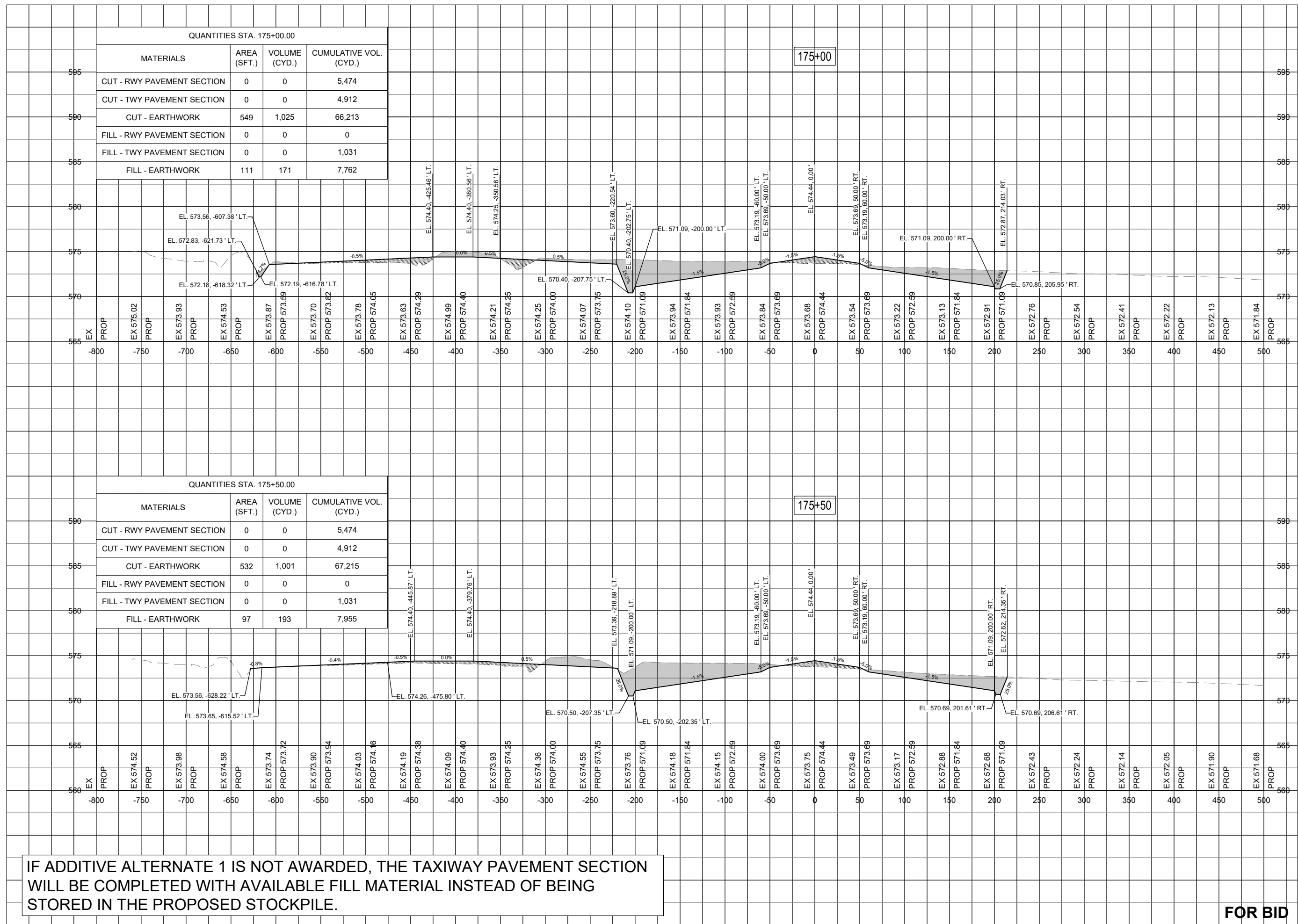
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
175+00 TO STA.
175+50



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



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EXTEND RUNWAY
11-29 AND TAXIWAY A

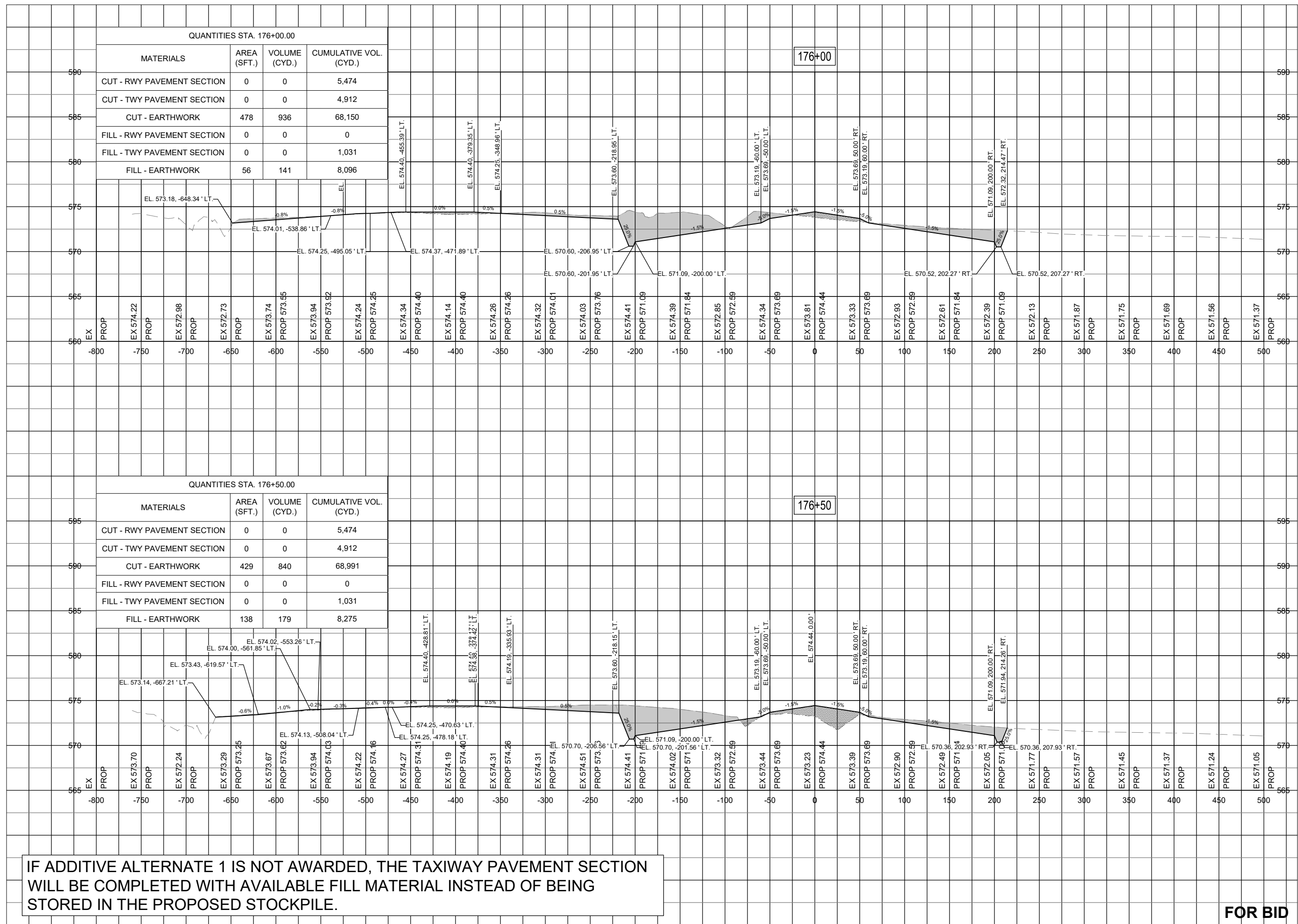
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
176+00 TO STA.
176+50



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

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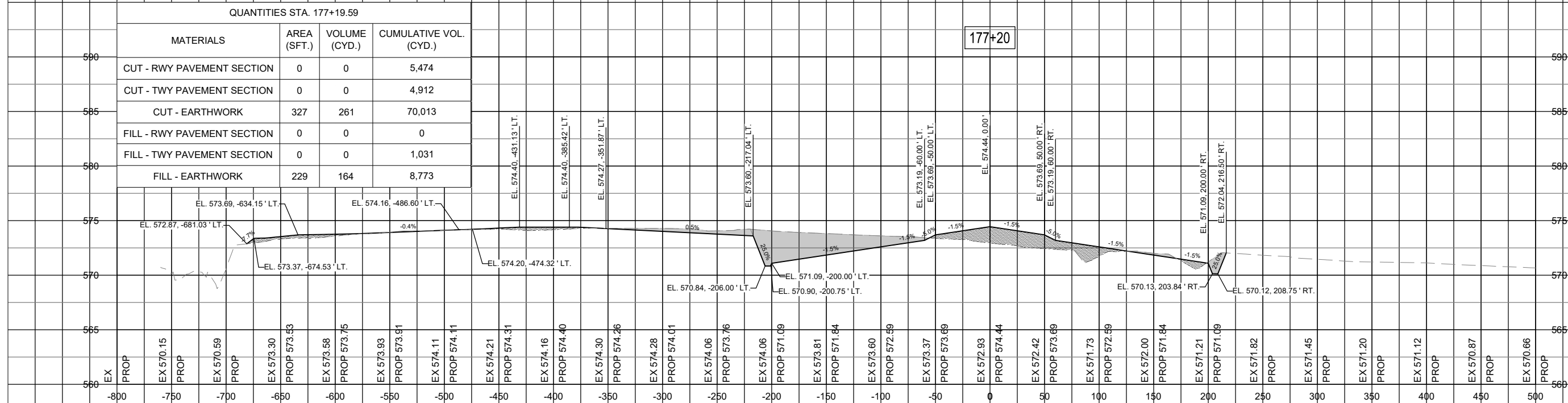
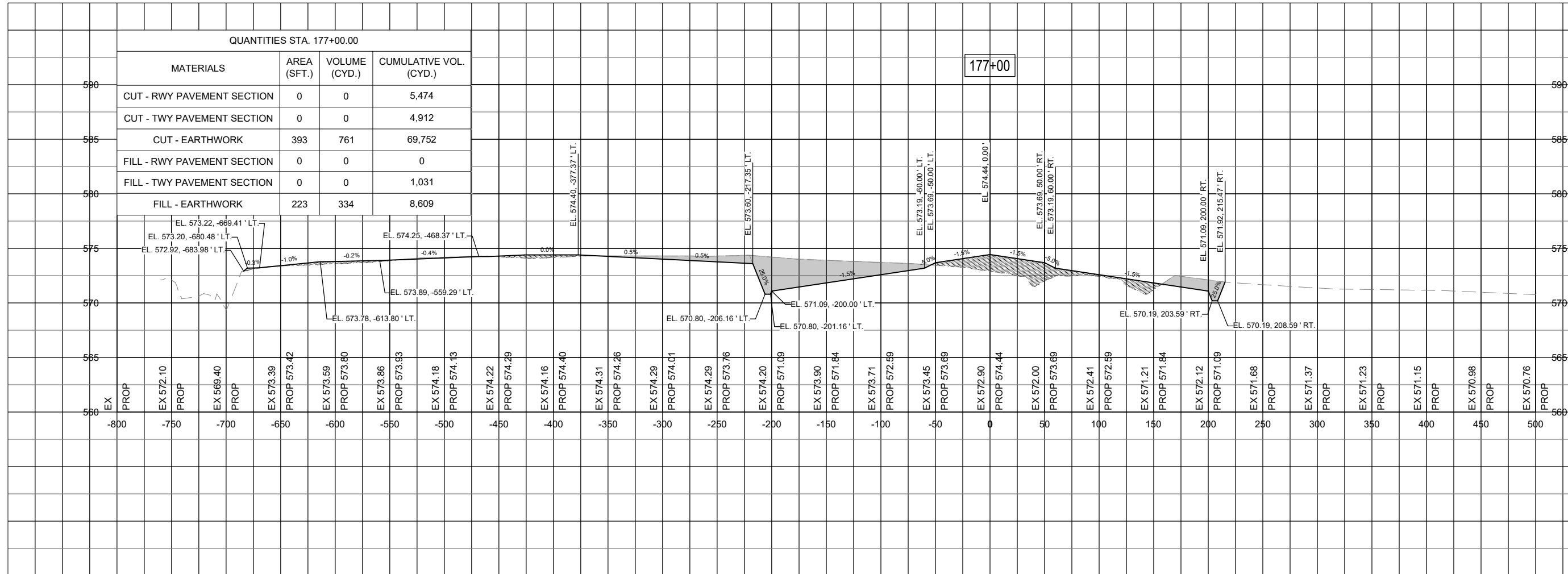
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
177+00 TO STA.
177+20



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

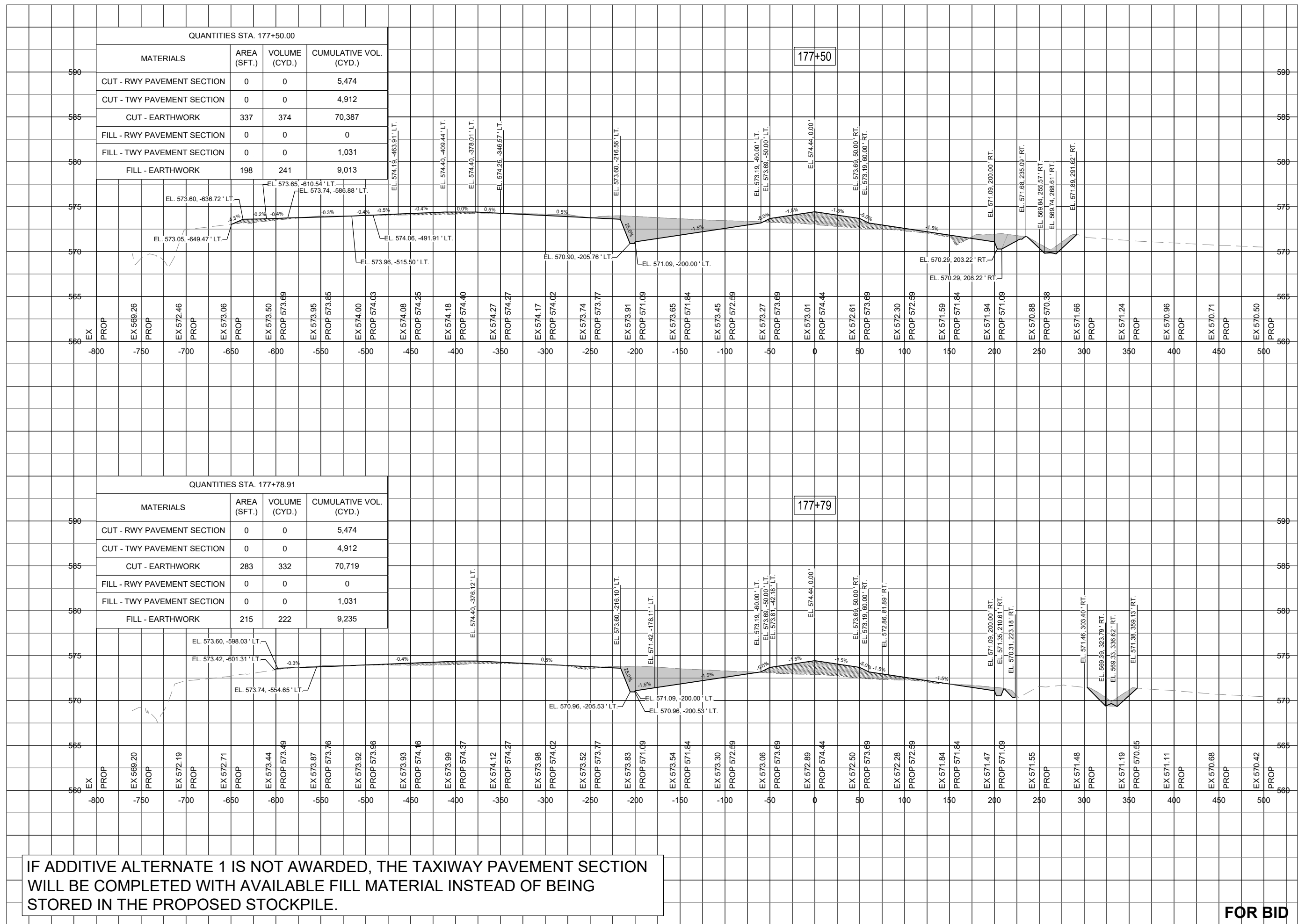
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SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
177+50 TO STA.
177+79



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A

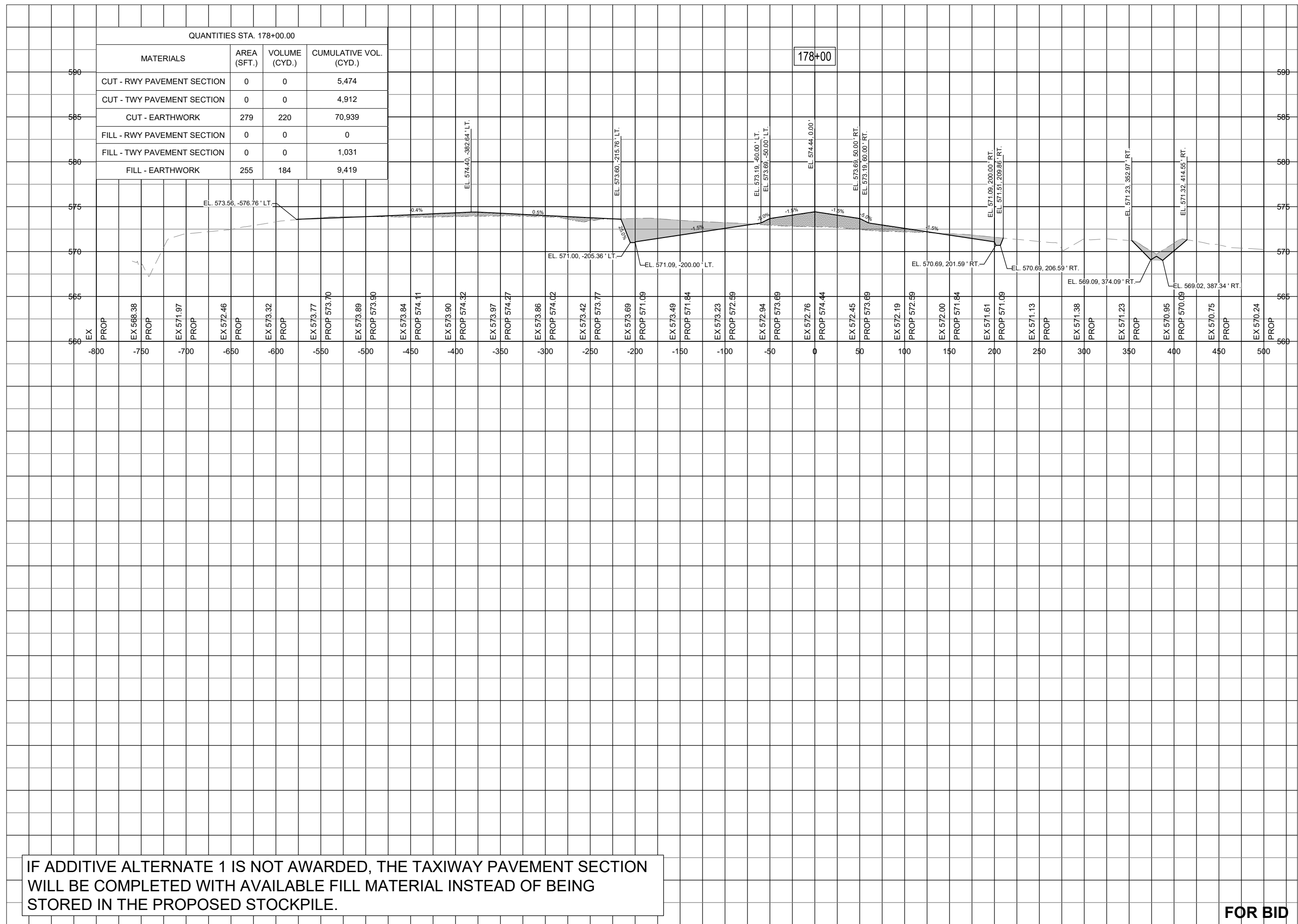
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
178+00



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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EXTEND RUNWAY
11-29 AND TAXIWAY A

IDA NO. 1H2-4982
CONTRACT NO. EF010

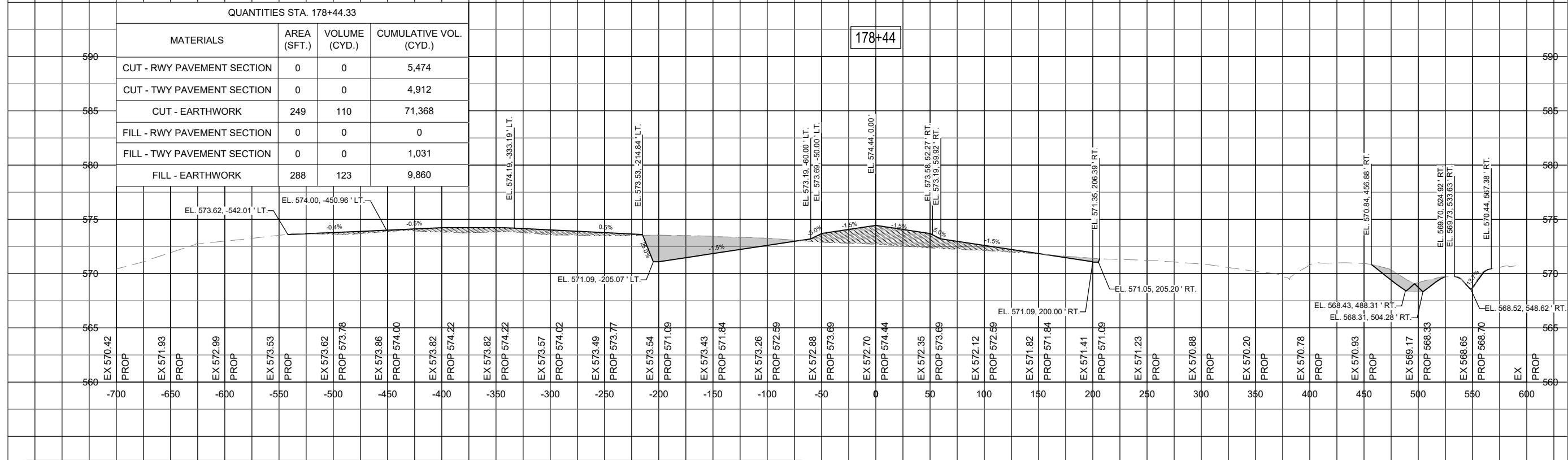
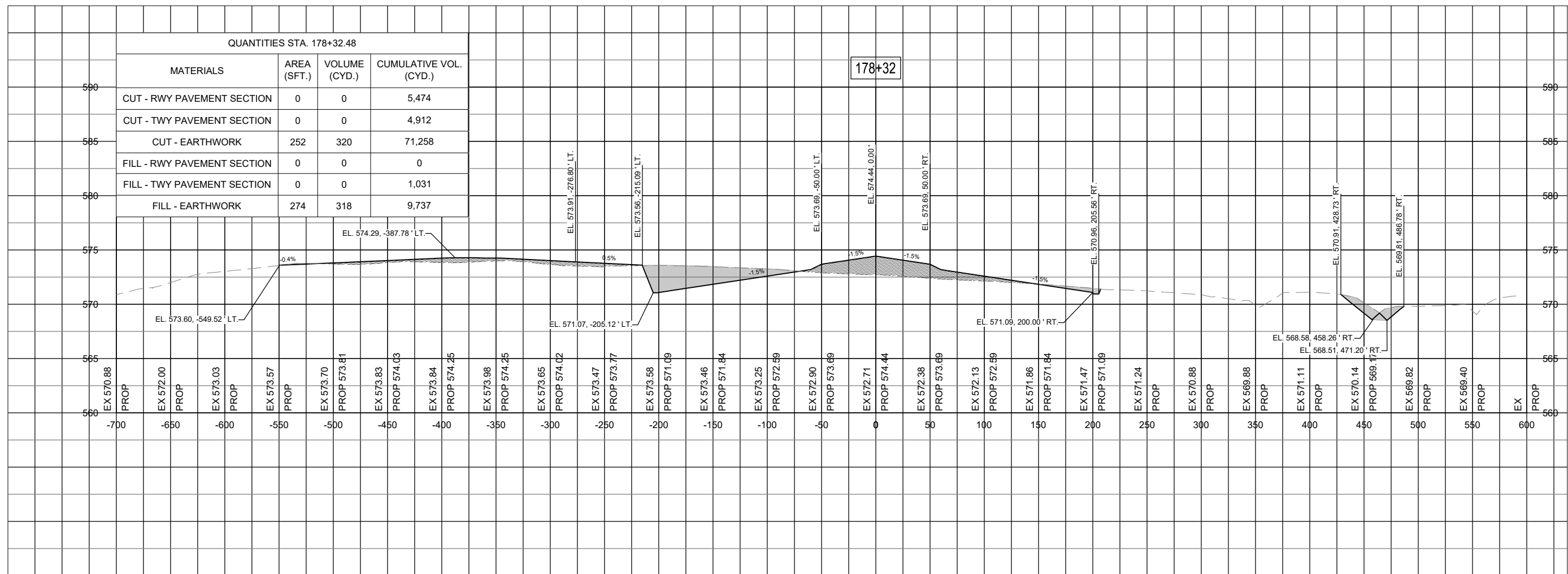
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
PROJECT NO: 22A0004D
CAD FILE: C-303-XS.DWG
DESIGN BY: MJD 10/16/2023
DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
178+32 TO STA.
178+44

FOR BID



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

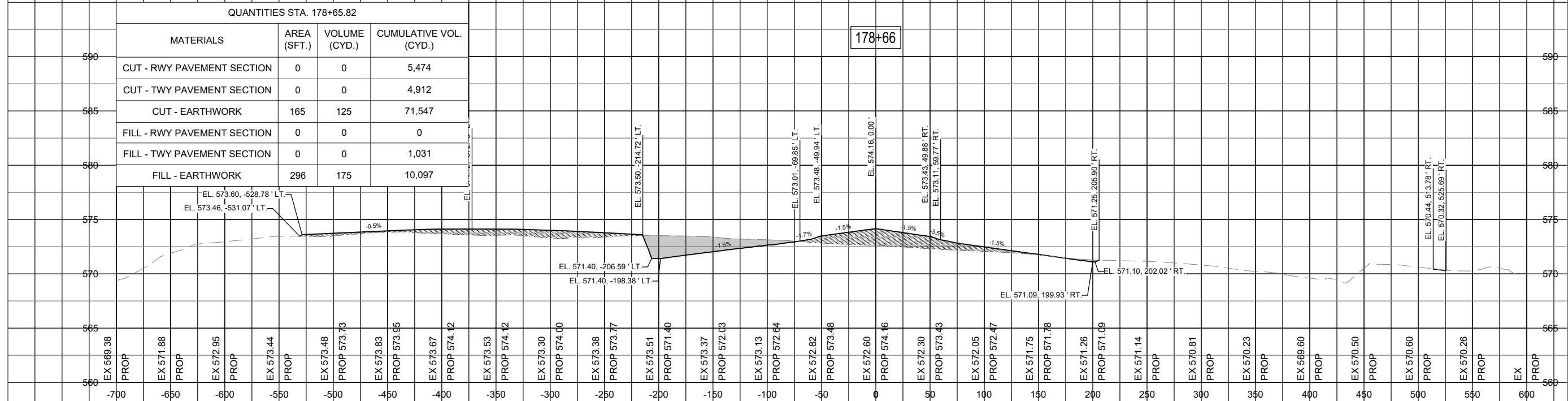
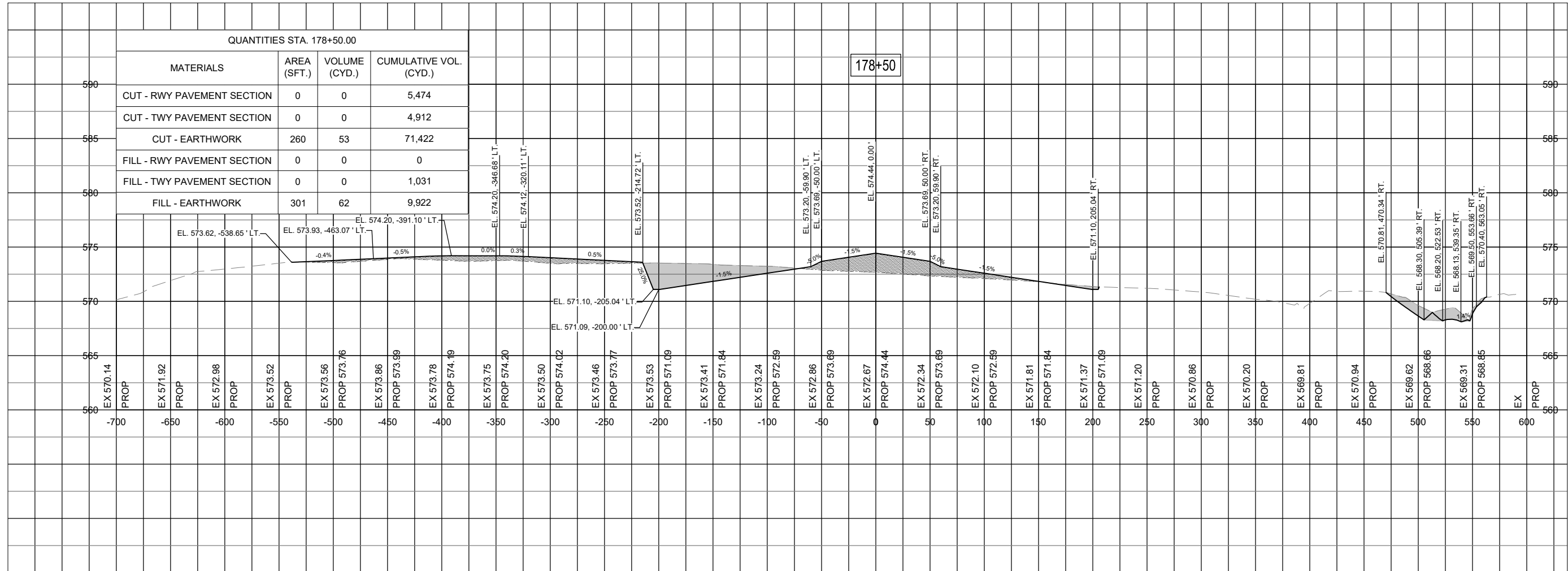
IDA NO. 1H2-4982
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: NOVEMBER 17, 2023
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DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
178+50 TO STA.
178+66



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

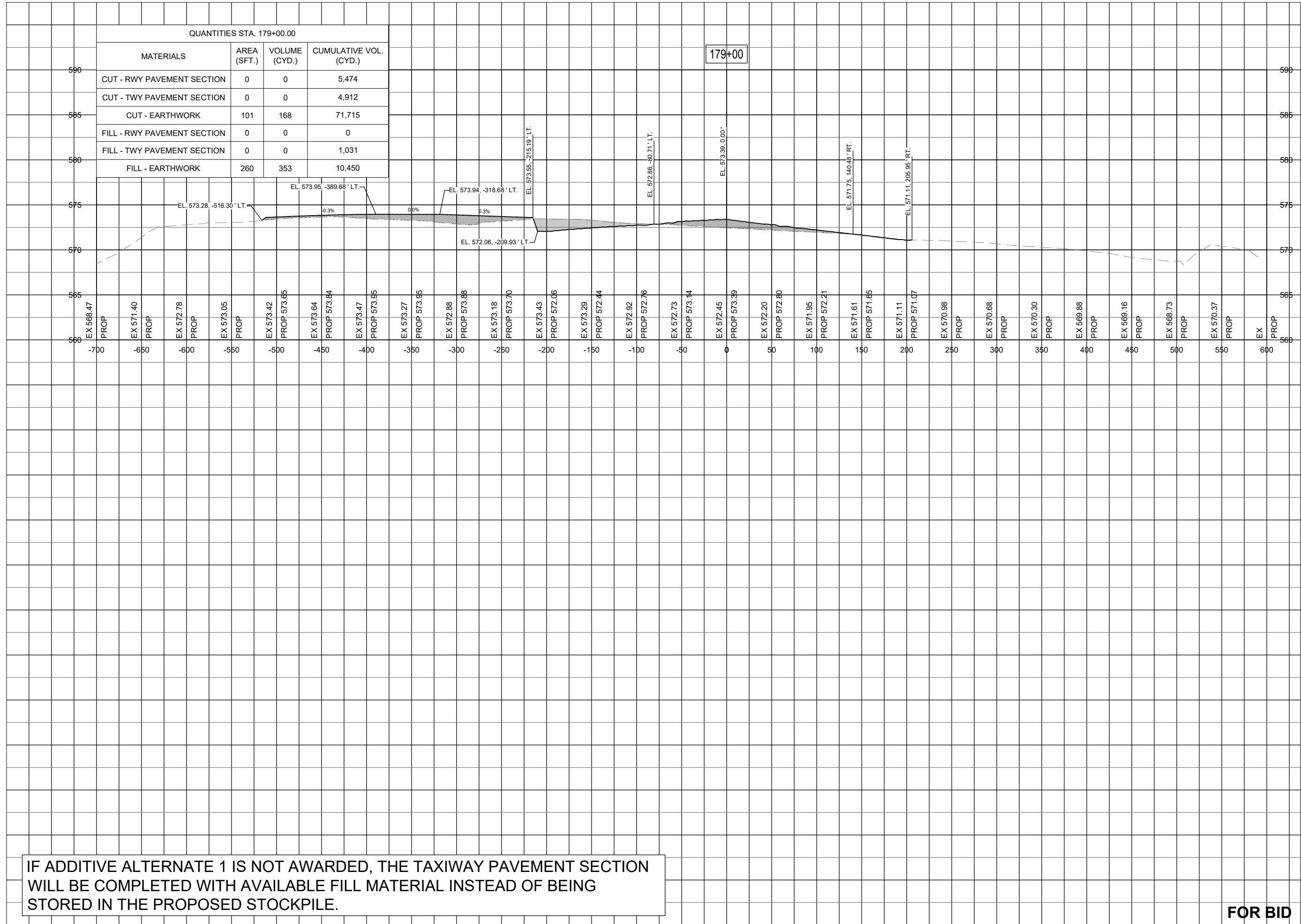
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
179+00



179+00

IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

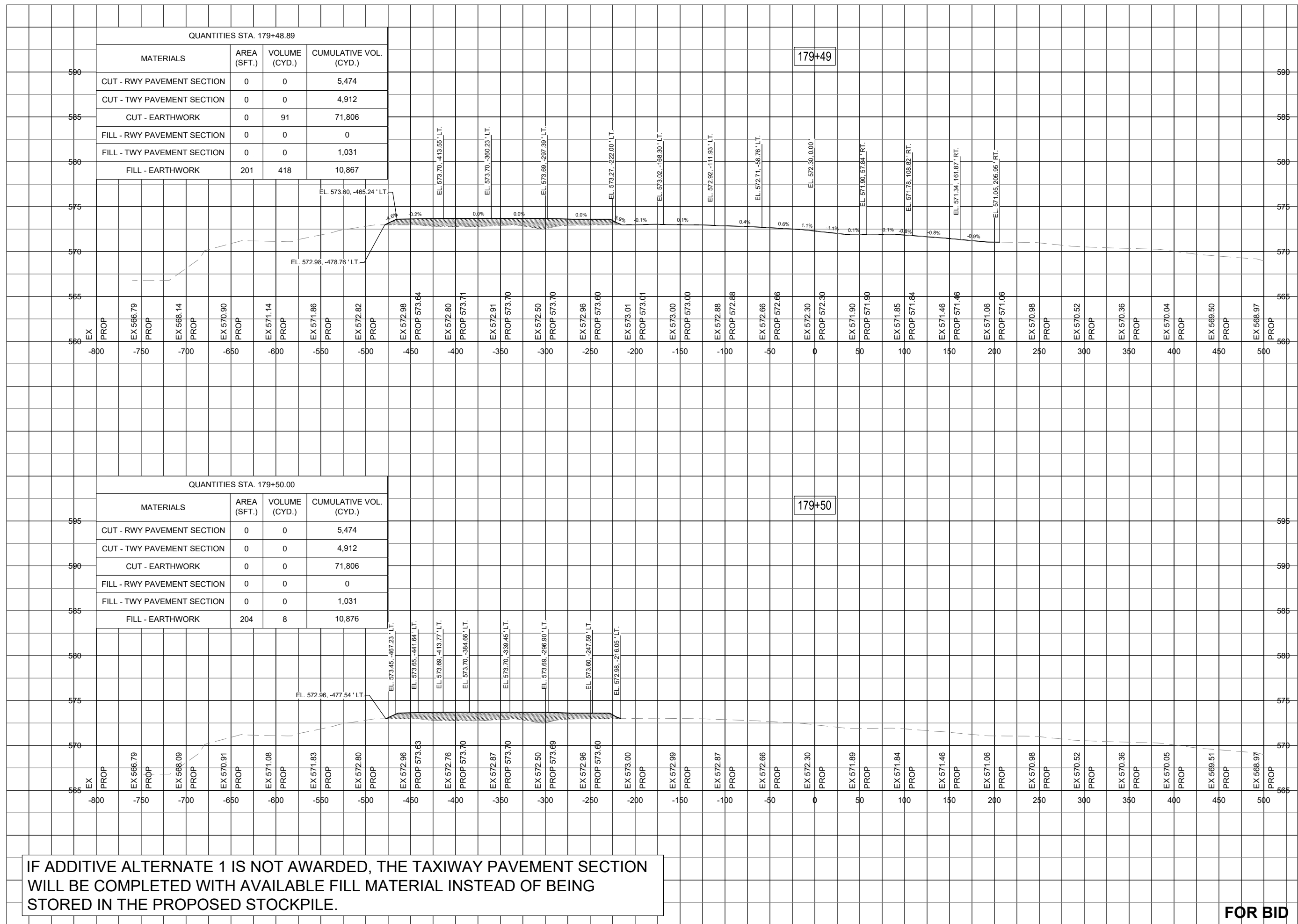
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CONTRACT NO. EF010

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		DES	DWN	REV

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DRAWN BY: NLD 10/27/2023
REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
179+49 TO STA.
179+50



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID

DEC 04, 2023 10:22 AM ENGEL01509 1:\22\JOBS\22A004D\CAD\AIRPORT\SHEETC-303-XS.DWG



Michael J. Dudas

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

EXTEND RUNWAY
11-29 AND TAXIWAY A

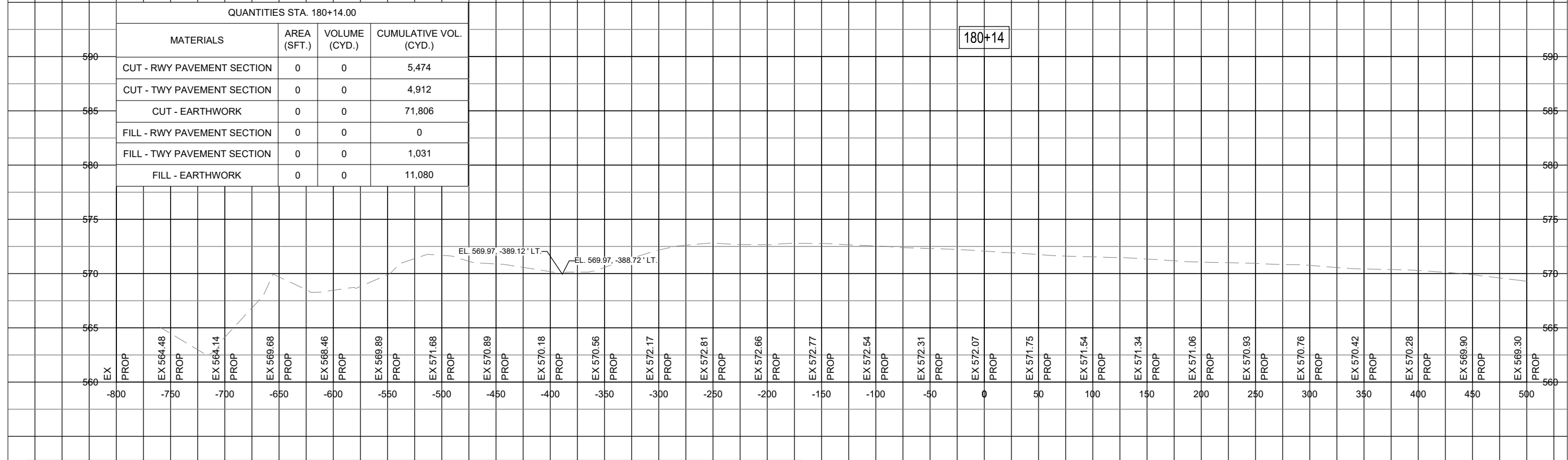
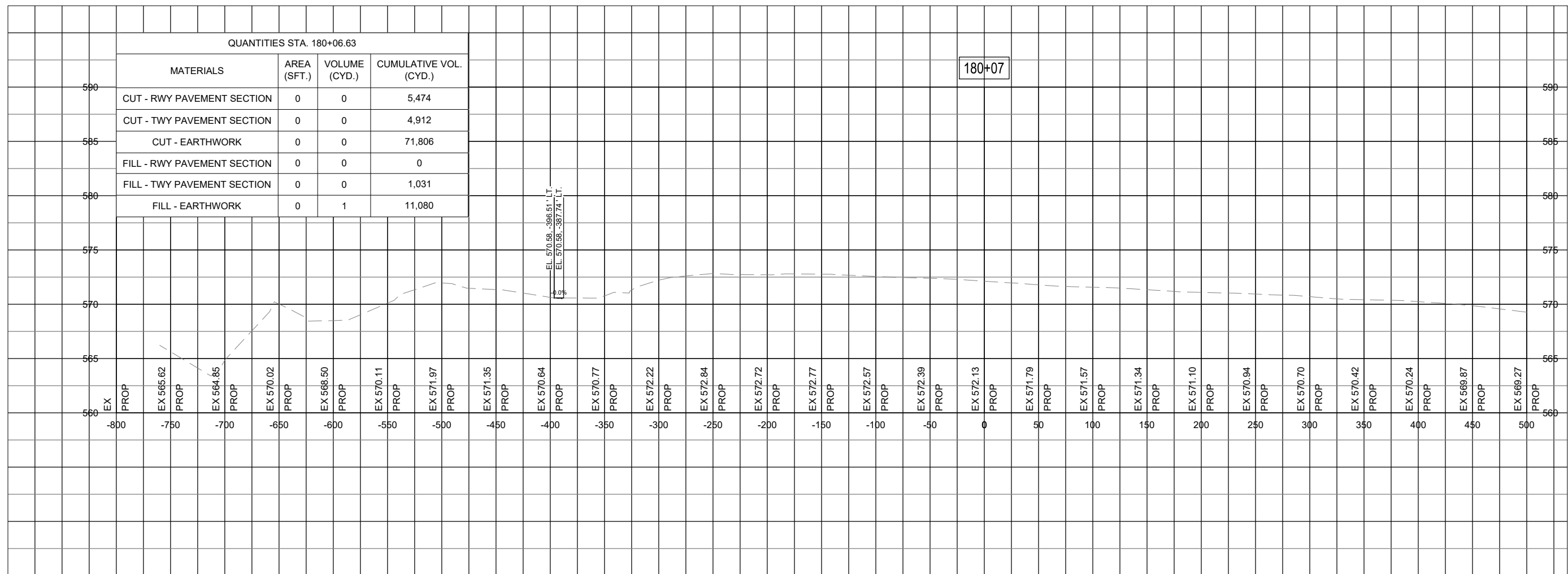
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REVIEWED BY: MJD 11/17/2023

SHEET TITLE

RUNWAY TAXIWAY
EXTENSION - STA.
180+07 TO STA.
180+14



IF ADDITIVE ALTERNATE 1 IS NOT AWARDED, THE TAXIWAY PAVEMENT SECTION WILL BE COMPLETED WITH AVAILABLE FILL MATERIAL INSTEAD OF BEING STORED IN THE PROPOSED STOCKPILE.

FOR BID