

CONSTRUCTION PLANS FOR OLNEY-NOBLE AIRPORT OLNEY, RICHLAND COUNTY, ILLINOIS 1,856' PARTIAL PARALLEL TAXIWAY TO RUNWAY 11-29

SCOPE OF WORK

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A 1,856' X 35' PARTIAL PARALLEL TAXIWAY TO RUNWAY 11-29. PROJECT SHALL INCLUDE UNCLASSIFIED EXCAVATION, DRAINAGE INSTALLATION, LIME MODIFIED SUBGRADE, AGGREGATE BASE COURSE, BITUMINOUS BASE AND SURFACE COURSE MATERIALS, INSTALLATION OF A MITL SYSTEM, PAVEMENT MARKING, SEEDING AND MULCHING.

ADDITIVE ALTERNATE NO. 1

UPGRADE MEDIUM INTENSITY TAXIWAY LIGHTS TO TYPE L-861T(L) WITH LED (LIGHT EMITTING DIODE) ILLUMINATION.

ADDITIVE ALTERNATE NO. 2

UPGRADE TAXI GUIDANCE SIGNS TO TYPE L-858L(L) WITH LED (LIGHT EMITTING DIODE) ILLUMINATION.

ADDITIVE ALTERNATE NO. 3

PROVIDE WEED CONTROL RINGS FOR AIRFIELD LIGHT FIXTURES.

COVERING
ELECTRICAL
DESIGN

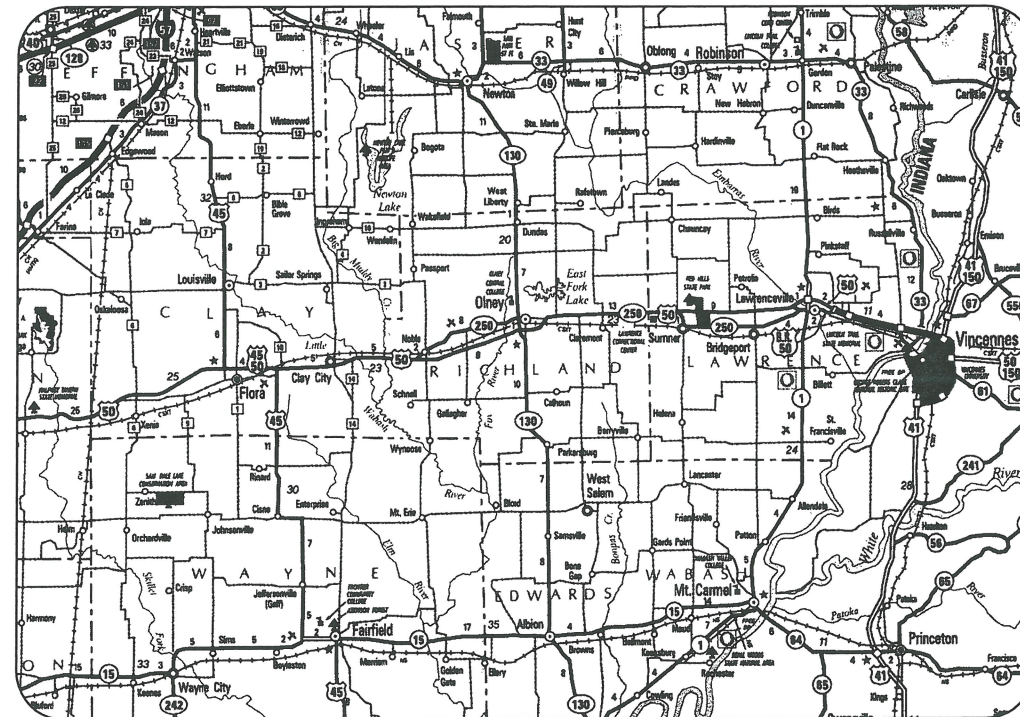
REVISED MARCH 21, 2012

ILL. PROJ.: OLY-4131
A.I.P. PROJ.: 3-17-0076-B11

LATITUDE: 38° 44' 00"
LONGITUDE: 88° 10' 33"
ELEVATION: 481.0' M.S.L.
DATE: FEB. 17, 2012



LOCATION OF COUNTY



LOCATION



Hanson Professional Services Inc.
ELECTRICAL ENGINEER

Submitted by: *Kevin N. Lightfoot* ENG'R
Date Submitted: MARCH 21, 2012
Lic. Exp. Date: NOVEMBER 30, 2013



Hanson Professional Services Inc.

Submitted by: *Charles A. Hagloch* ENG'R
Date Submitted: MARCH 21, 2012
Lic. Exp. Date: NOVEMBER 30, 2013

OLNEY-NOBLE AIRPORT AUTHORITY

Approved: *Sam Brown* MANAGER
Date: 3-20-2012
Approved: _____ SECRETARY
Date: _____

DATE	03/21/12	UPDATE PER	FAA PGL 12-2 & EB67D
REVISION			
OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS			
Hanson Proj. No.	11A0081D	File Name	G-001-CVR.dwg
Scale	NOT TO SCALE	Date	02/17/12
LAYOUT	CAH	07/29/11	
DRAWN	JEO	07/29/11	
REVIEWED	CAH	02/15/12	
1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29			
COVER SHEET			
1			
1 of 52 sheets			

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SUMMARY OF QUANTITIES – BASE BID

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR108158	1/C #8 5KV UG CABLE IN UD	L.F.	7,055	
AR109200	INSTALL ELECTRICAL EQUIPEMENT	L.S.	1	
AR110014	4" DIRECTIONAL BORE	L.F.	275	
AR110502	2-WAY CONCRETE ENCASED DUCT	L.F.	110	
AR110550	SPLIT DUCT	L.F.	130	
AR125410	MITL-STAKE MOUNTED	EACH	46	
AR125415	MITL-BASE MOUNTED	EACH	7	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EACH	1	
AR125447	TAXI GUIDANCE SIGN, 7 CHARACTER	EACH	1	
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	7	
AR125961	RELOCATE STAKE MOUNTED LIGHT	EACH	2	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR150520	MOBILIZATION	L.S.	1	
AR150540	HAUL ROUTE	L.S.	1	
AR152410	UNCLASSIFIED EXCAVATION	C.Y.	7,243	
AR155540	BY-PRODUCT LIME	TON	293	
AR155716	LIME-MODIFIED SUBGRADE-- 16"	S.Y.	7,933	
AR156510	SILT FENCE	L.F.	2,006	
AR156511	DITCH CHECK	EACH	8	
AR156520	INLET PROTECTION	EACH	2	
AR156521	HEADWALL PROTECTION	EACH	3	
AR156530	TEMPORARY SEEDING	ACRE	9.00	
AR156531	EROSION CONTROL BLANKET	S.Y.	1,799	
AR156544	RIPRAP-GRADATION NO.4	S.Y.	137	
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	2,749	
AR401613	BIT. SURF. CSE-METHOD I, SUPERPAVE	TON	914	
AR403613	BIT. BASE CSE.-METHOD I, SUPERPAVE	TON	931	
AR602510	BITUMINOUS PRIME COAT	GAL	2,777	
AR603510	BITUMINOUS TACK COAT	GAL	1,166	
AR620520	PAVEMENT MARKING-WATERBORNE	S.F.	3,766	
AR620525	PAVEMENT MARKING-BLACK BORDER	S.F.	414	
AR701512	12" RCP, CLASS IV	L.F.	256	
AR701515	15" RCP, CLASS IV	L.F.	88	
AR701536	36" RCP, CLASS IV	L.F.	113	
AR705410	POROUS BACKFILL	C.Y.	116	
AR705524	4" PERFORATED UNDERDRAIN W/SOCK	L.F.	3,421	
AR751410	INLET	EACH	1	
AR751801	INSPECTION HOLE (TYPE A)	EACH	5	
AR751811	INSPECTION HOLE (TYPE B)	EACH	2	
AR751900	REMOVE INLET	EACH	1	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	6	
AR752415	PRECAST REINFORCED CONC. FES 15"	EACH	2	
AR800429	FIELD TILE TRACING	EACH	6	
AR800463	FIELD TILE REPAIR	EACH	6	
AR901510	SEEDING	ACRE	9.00	
AR908510	MULCHING	ACRE	8.7	

SUMMARY OF QUANTITIES – ADDITIVE ALTERNATE NO. 1

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AS800592	MITL LED UPGRADE	EACH	53	

SUMMARY OF QUANTITIES – ADDITIVE ALTERNATE NO. 2

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AT800593	5 CHARACTER SIGN LED UPGRADE	EACH	1	
AT800594	7 CHARACTER SIGN LED UPGRADE	EACH	1	

SUMMARY OF QUANTITIES – ADDITIVE ALTERNATE NO. 3

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AU800580	WEED CONTROL RING	EACH	53	

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX TO SHEETS
3	PROPOSED SAFETY PLAN
4	PROPOSED STORMWATER POLLUTION PREVENTION PLAN
5	PROPOSED STORMWATER POLLUTION PREVENTION DETAILS
6	PROPOSED CONSTRUCTION PLAN STA. 115+21.60 TO STA. 127+00
7	PROPOSED CONSTRUCTION PLAN STA. 127+00 TO STA. 130+64.28
8	PROPOSED TYPICAL SECTION AND NOTES
9	PROPOSED TAXIWAY B PLAN AND PROFILE STA. 113+00 TO STA. 125+00
10	PROPOSED TAXIWAY B PLAN AND PROFILE STA. 125+00 TO 130+32.6
11	PROPOSED TAXIWAY B2 PLAN AND PROFILE STA. 0+00 TO STA. 6+50
12	PROPOSED DRAINAGE PLAN STA. 115+21.60 TO STA. 127+00
13	PROPOSED DRAINAGE PLAN STA. 127+00 TO STA. 130+64.28
14	PROPOSED STAKING PLAN STA. 115+21.60 TO STA. 127+00
15	PROPOSED STAKING PLAN STA. 127+00 TO STA. 130+64.28
16	PROPOSED MARKING PLAN STA. 115+21.60 TO STA. 127+00
17	PROPOSED MARKING PLAN STA. 127+00 TO STA. 130+64.28
18	EXISTING ELECTRICAL PLAN STA. 127+00 TO STA. 130+64.28
19	PROPOSED ELECTRICAL PLAN STA. 115+21.60 TO STA. 127+00
20	PROPOSED ELECTRICAL PLAN STA. 127+00 TO STA. 130+64.28
21	PROPOSED ELECTRICAL PLAN FOR TERMINAL AREA
22	AIRFIELD LIGHTING NOTES
23	ELECTRICAL DETAILS SHEET 1
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30	HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS
31	GROUNDING DETAILS
32	GROUNDING NOTES
33	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 115+00 TO STA. 115+50
34	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 116+00 TO STA. 116+50
35	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 117+00 TO STA. 117+50
36	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 118+00 TO STA. 118+50
37	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 119+00 TO STA. 119+50
38	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 120+00 TO STA. 120+50
39	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 121+00 TO STA. 121+50
40	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 122+00 TO STA. 122+50
41	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 123+00 TO STA. 123+50
42	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 124+00 TO STA. 124+50
43	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 125+00 TO STA. 125+50
44	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 126+00 TO STA. 126+50
45	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 127+00 TO STA. 127+50
46	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 128+00 TO STA. 128+50
47	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 129+00 TO STA. 129+50
48	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 129+53 TO STA. 130+00
49	PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 130+33
50	PROPOSED CROSS-SECTIONS FOR TAXIWAY B1 STA. 0+38 TO STA. 1+50
51	PROPOSED CROSS-SECTIONS FOR TAXIWAY B1 STA. 2+00 TO STA. 3+50
52	PROPOSED CROSS-SECTIONS FOR TAXIWAY B1 STA. 3+83

REVISION	DATE	DESCRIPTION
1	03/12/12	UPDATE PER FAX PGL 12-2 & EB67D
2	03/19/12	ADDITIVE ALTERNATE #2
3	03/20/12	ADDITIVE ALTERNATE #3

OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

Hanson Proj. No. 11A0081D	Scale 02/17/12	DATE	02/15/12
Filename G-002-FIP.dwg	NOT TO SCALE	DATE	02/15/12
LAYOUT	CAH	07/29/11	
DRAWN	JEO	07/29/11	
REVIEWED	CAH	02/15/12	

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Offices Nationwide

1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

SUMMARY OF QUANTITIES AND INDEX TO SHEETS

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IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

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 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.

HAUL ROUTE AND VEHICLE PARKING

THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND PARKING AREA AS SHOWN ON THIS SHEET. THE PROPOSED PARKING AREA WILL BE 200' X 200'. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND PARKING AREA THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE OF THESE AREAS WILL BE REPAIRED BY THE CONTRACTOR AND AT THE CONTRACTOR'S OWN EXPENSE. AT THE CONCLUSION OF THE PROJECT THE CONTRACTOR WILL GRADE, FERTILIZE, SEED AND MULCH THE HAUL ROUTE AND PARKING AREA AS NEEDED TO RESTORE IT TO ITS ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND PARKING AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

CONTRACTOR RESPONSIBILITIES

THE CONTRACTOR'S EQUIPMENT PARKING AND STORAGE AREA WILL BE AS SHOWN ON THIS SHEET. THE CONTRACTOR'S EMPLOYEES WILL PARK THEIR VEHICLES IN THIS AREA. ONLY CONTRACTOR VEHICLES WILL BE ALLOWED OUTSIDE THIS AREA.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREA AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

THE CONTRACTOR SHALL KEEP ONE RUNWAY OPEN AT ALL TIMES AND MAINTAIN CONTINUOUS TAXIWAY ACCESS TO ALL HANGARS AND ADMINISTRATIVE AREAS.

ALL WORK PERFORMED SHALL BE DONE IN A ORDERLY AND EFFECTIVE MANNER TO MINIMIZE RUNWAY CLOSURE.

NO TRENCHES OR HOLES WILL REMAIN OPEN OVERNIGHT.

NO RUNWAY SHALL BE CLOSED OVERNIGHT UNLESS AUTHORIZED BY THE RESIDENT ENGINEER.

BARRICADES AND TRAFFIC CONES

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS DIRECTED BY THE AIRPORT MANAGER. THE BARRICADES WILL BE EQUIPPED WITH RED FLASHING OR RED STEADY-BURN LIGHTS AND 20" SQUARE ORANGE FLAGS. THE BARRICADES, THEIR MAINTENANCE, PLACEMENT AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
- PROPOSED BENCHMARK
- PROPOSED BARRICADES WHEN RUNWAY 11-29 IS CLOSED
- PROPOSED BARRICADES WHEN RUNWAY 3-21 IS CLOSED

SCOPE OF WORK

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A 1,856' X 35' PARTIAL PARALLEL TAXIWAY TO RUNWAY 11-29. PROJECT SHALL INCLUDE UNCLASSIFIED EXCAVATION, DRAINAGE INSTALLATION, LIME MODIFIED SUBGRADE, AGGREGATE BASE COURSE, BITUMINOUS BASE AND SURFACE COURSE MATERIALS, INSTALLATION OF A MITL SYSTEM, PAVEMENT MARKING, SEEDING AND MULCHING.

ADDITIVE ALTERNATE NO. 1

UPGRADE MEDIUM INTENSITY TAXIWAY LIGHTS TO TYPE L-861T(L) WITH LED (LIGHT EMITTING DIODE) ILLUMINATION.

ADDITIVE ALTERNATE NO. 2

UPGRADE TAXI GUIDANCE SIGNS TO TYPE L-858L(L) WITH LED (LIGHT EMITTING DIODE) ILLUMINATION.

ADDITIVE ALTERNATE NO. 3

PROVIDE WEED CONTROL RINGS FOR AIRFIELD LIGHT FIXTURES.

CRITICAL POINT DATA

CRITICAL POINT #1 LATITUDE: 38° 43' 16.05" LONGITUDE: 88° 10' 29.44" ELEVATION: 470.11 M.S.L.	CRITICAL POINT #3 LATITUDE: 38° 43' 22.62" LONGITUDE: 88° 10' 49.00" ELEVATION: 475.40 M.S.L.
CRITICAL POINT #2 LATITUDE: 38° 43' 23.37" LONGITUDE: 88° 10' 45.96" ELEVATION: 476.11 M.S.L.	CRITICAL POINT #4 LATITUDE: 38° 43' 26.17" LONGITUDE: 88° 11' 03.72" ELEVATION: 478.70 M.S.L.

BENCHMARK DATA

NO.	DESCRIPTION	ELEV.
CP #2	NGS MONUMENT "OLNEYPORT" STAINLESS STEEL ROD IN SLEEVE	469.12
CB-13	CHISELED "C" NW CORNER OF CONCRETE PAD FOR FUEL TANKS ON APRON	467.44
CB #2	WEST BOLT ON BEACON BASE	467.79

AIRPORT SECURITY NOTE

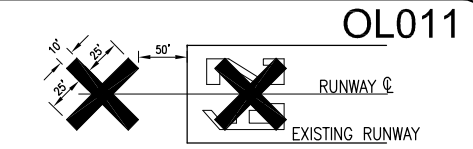
AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL CLOSE AND LOCK THE EXISTING GATE IN THE HAUL ROUTE AT THE END OF EACH WORKING DAY.

HEIGHT OF CONSTRUCTION EQUIPMENT

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT WILL BE 25 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A DUMP TRUCK.

NOTE

ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13 "AIRPORT DESIGN".



YELLOW IN COLOR
DETAIL OF CROSS FOR CLOSED RUNWAY
"NOT TO SCALE"

NOTE:

COST OF CONSTRUCTING, PLACING, MAINTAINING AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE AIRPORT MANAGER. THE CROSSES WILL BE PLACED OVER THE NUMERALS AND SECURED IN A MANNER APPROVED BY THE MANAGER. THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

J.U.L.I.E. INFORMATION

COUNTY _____ RICHLAND
CITY _____ OLNEY
TOWNSHIP _____ NOBLE
SECTION NO. _____ 2
ADDRESS _____ OLNEY-NOBLE AIRPORT
P.O. BOX 717
OLNEY, ILLINOIS 62450

PROPOSED SAFETY PLAN

GENERAL - THE OLNEY-NOBLE AIRPORT IS COMPRISED OF TWO RUNWAYS. THE PROPOSED CONSTRUCTION WILL NECESSITATE CLOSING BOTH RUNWAYS. ANY TIME THE CONTRACTOR IS WORKING WITHIN 75' OF THE RUNWAY CENTERLINE THE RUNWAY WILL BE CLOSED. THE RUNWAY WILL BE CLOSED ONLY DURING THE CONSTRUCTION DAY UNLESS AUTHORIZED BY THE RESIDENT ENGINEER. AT THE END OF EACH CONSTRUCTION DAY THE CONTRACTOR WILL SMOOTH GRADE ALL AREAS WITHIN THE SAFETY AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER AND RE-OPEN THE RUNWAY. ALL WORK INCLUDED IN OPENING AND CLOSING THE RUNWAY WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

IDENTIFICATION - WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRPORT THEY SHALL BE PROPERLY MARKED WITH THREE (3) FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR WILL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.

RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (123.00 MHz.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE OLNEY-NOBLE AIRPORT AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

150-ENGINEER'S FIELD OFFICE NOTES

THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE FURNISHED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH ITEM AR150510 "ENGINEER'S FIELD OFFICE" AS STATED ON PAGE 49 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS NOV. 2, 2009.

THE LOCATION OF THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.

THE ENGINEERING FIRM WILL MAKE PAYMENT FOR ALL LONG DISTANCE TELEPHONE CALLS IN EXCESS OF ONE HUNDRED DOLLARS (\$100.00) PER MONTH.

THE CONTRACTOR WILL FURNISH A WIRELESS PHONE TO THE RESIDENT ENGINEER FOR HIS EXCLUSIVE USE FOR THE DURATION OF THIS PROJECT. THE RESIDENT ENGINEER WILL USE THIS PHONE FOR PROJECT BUSINESS ONLY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CHARGES ASSOCIATED WITH THIS CELL PHONE.

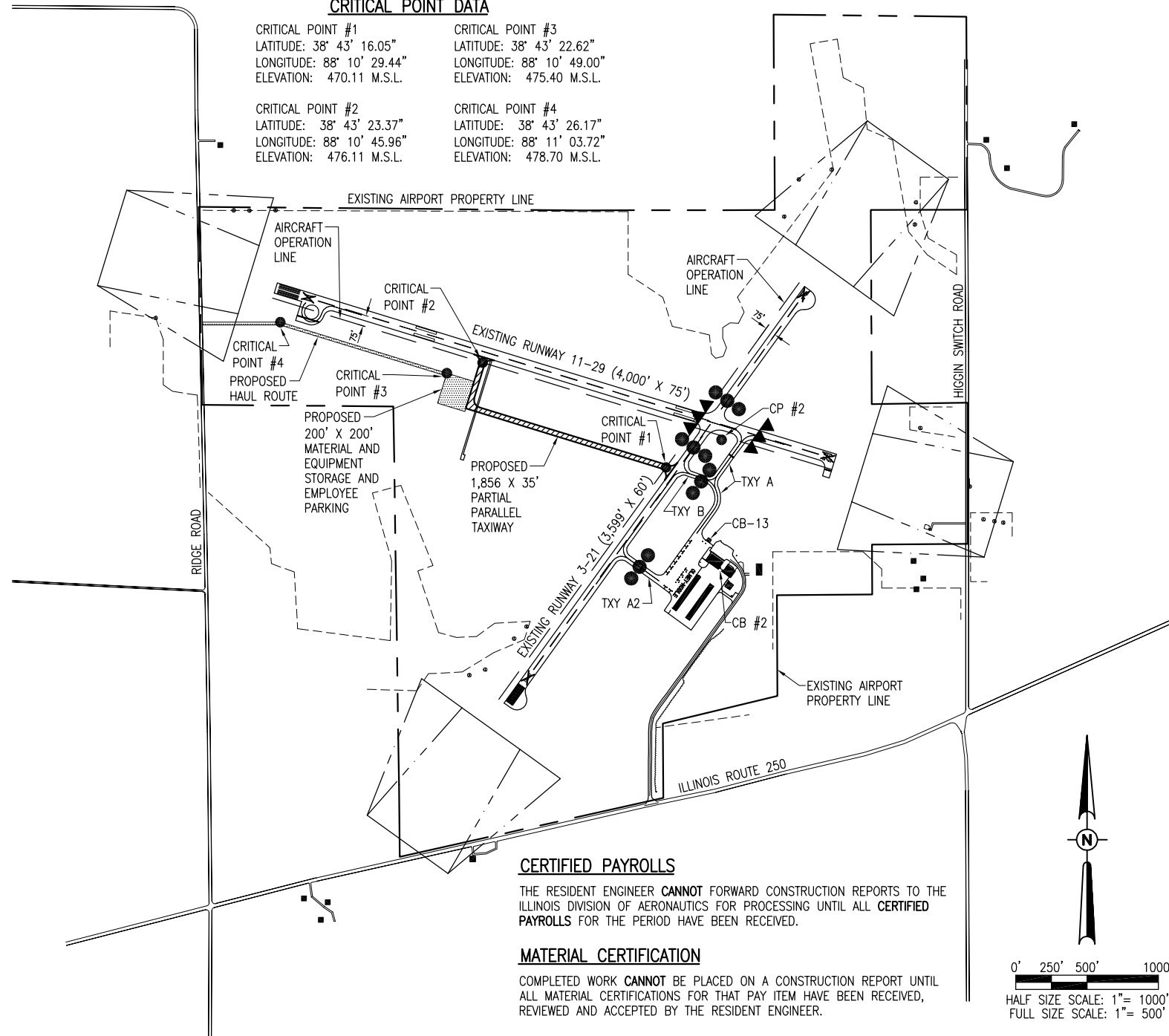
THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE PAID FOR UNDER ITEMS: AR150510 ENGINEER'S FIELD OFFICE ____ 1 L.S.

EROSION CONTROL

THIS PROJECT WILL DISTURB MORE THAN 1 ACRE OF LAND, THEREFORE A N.P.D.E.S. PERMIT WILL BE REQUIRED.

AIRCRAFT OPERATION LINE

THE CONTRACTOR WILL LOCATE THIS LINE AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN A RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THE LATHE LINE FOR RUNWAYS.

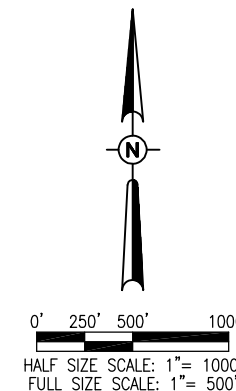


CERTIFIED PAYROLLS

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

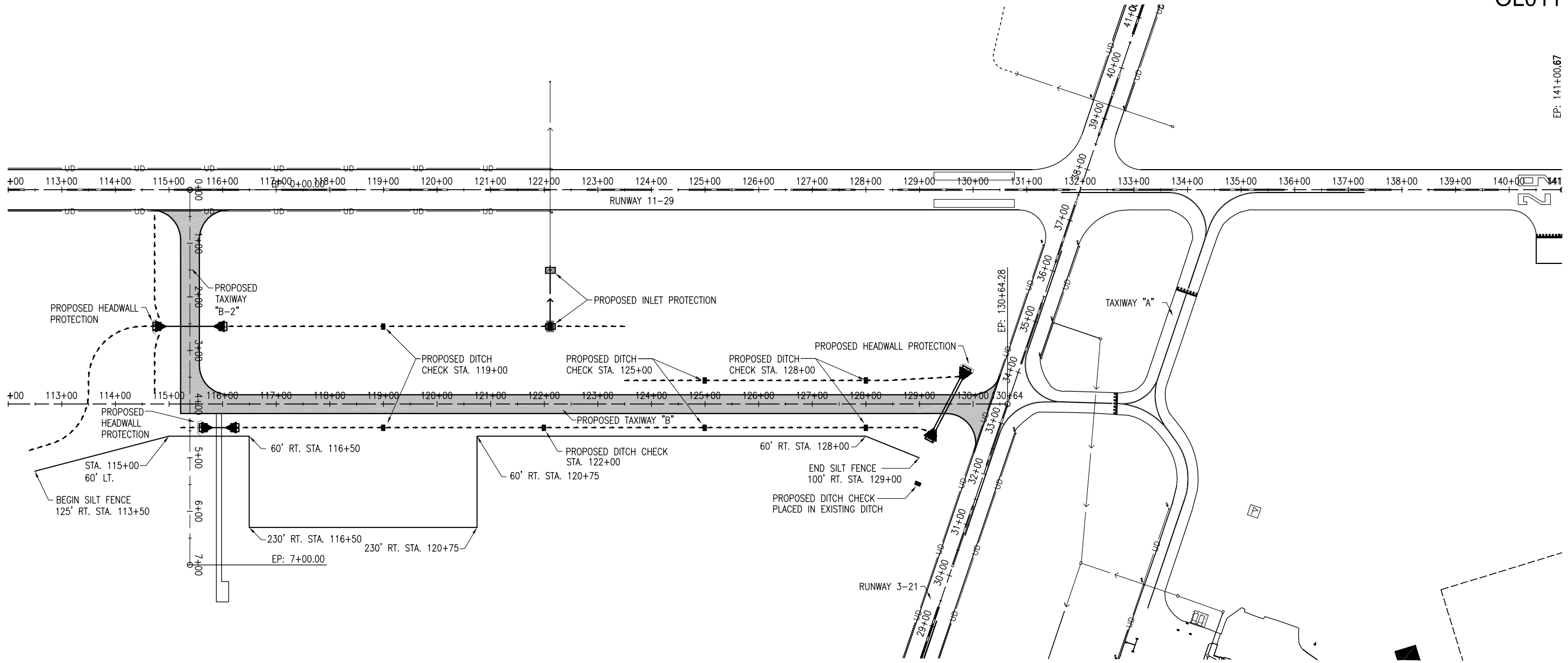
MATERIAL CERTIFICATION

COMPLETED WORK CANNOT BE PLACED ON A CONSTRUCTION REPORT UNTIL ALL MATERIAL CERTIFICATIONS FOR THAT PAY ITEM HAVE BEEN RECEIVED, REVIEWED AND ACCEPTED BY THE RESIDENT ENGINEER.



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REVISION					
DATE					
OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS					
A.I.P. PROJ.: 3-17-0076-B11					
IL PROJ.: 01Y-4131					
Hanson Proj. No. 11A0081D Filename: G-003-SFY.dwg Scale: 1" = 500' Date: 02/17/12	LAYOUT	CAH	07/29/11	DRAWN	BAK
	REVIEWED	CAH	02/15/12	DRAWN	BAK
 © Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide					
1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29			PROPOSED SAFETY PLAN		
3					
3 of 52 sheets					



EROSION CONTROL NOTES

ALL PROPOSED EROSION CONTROL MEASURES SHALL BE COMPLETED AS DETAILED ON THIS EROSION CONTROL PLAN AND IN ACCORDANCE WITH THE SPECIFICATIONS.

EROSION CONTROL MEASURES ARE GOVERNED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S STANDARDS AND SPECIFICATIONS FOR SOIL EROSIONS AND SPECIFICATION FOR SOIL EROSIONS AND SEDIMENT CONTROL.

FILTER FENCE FOR STRUCTURE PROTECTION AS SHOWN ON THIS SHEET.

THE EXISTING INLET WILL HAVE INLET PROTECTION PLACED AROUND IT UNTIL IT IS REMOVED. THE PROPOSED INLET WILL BE PROTECTED AFTER IT IS PLACED.

INSPECTION OF THE INLET PROTECTION SHALL BE FREQUENT AND REPAIR/REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

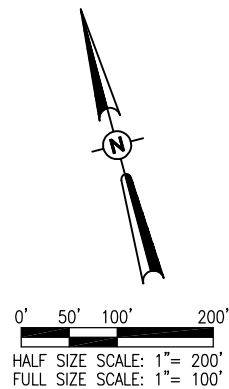
EROSION CONTROL FENCE SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM WATER DRAINAGE.

COST OF REMOVAL AND REPLACEMENT SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM AR156510 SILT FENCE.

THE PROPOSED HEADWALL PROTECTION WILL BE PLACED AT THE LOCATION ON THIS SHEET IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET 5.

HEADWALL PROTECTION IS TO INCLUDE ALL INCIDENTALS NECESSARY TO CONSTRUCT THESE ITEMS AND WILL BE PAID FOR UNDER ITEM: AR156521 HEADWALL PROTECTION.

- LEGEND**
- EXISTING IMPROVEMENTS
 - PROPOSED IMPROVEMENTS
 - PROPOSED HEADWALL
 - PROPOSED INLET
 - PROPOSED SILT FENCE
 - PROPOSED DITCH CHECK
 - PROPOSED HEADWALL PROTECTION
 - PROPOSED INLET PROTECTION
 - PROPOSED DRAINAGE DITCH



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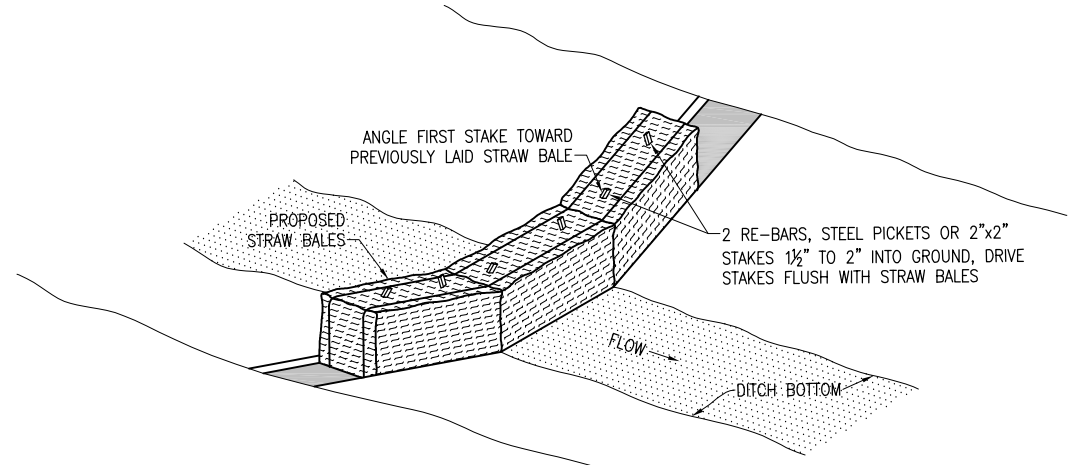
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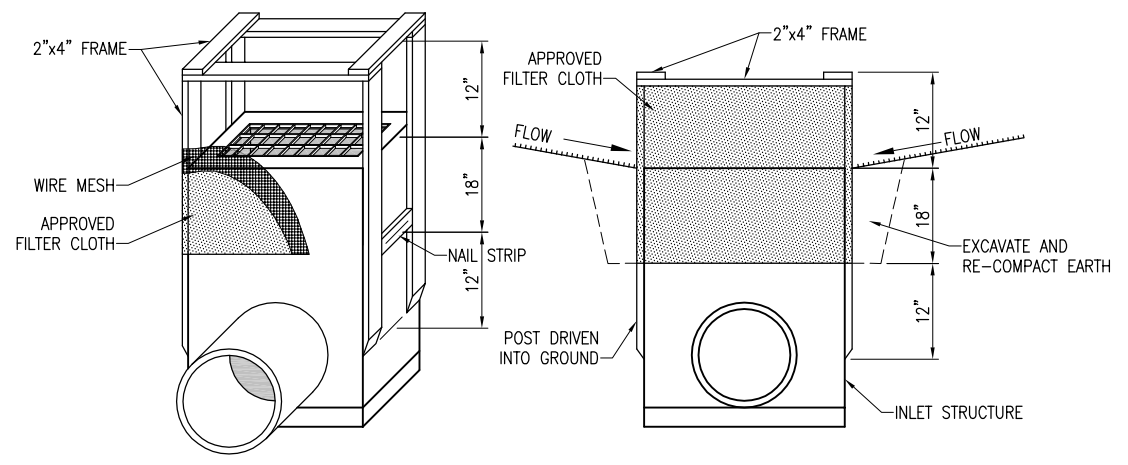
**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**PROPOSED STORMWATER
POLLUTION PREVENTION PLAN**

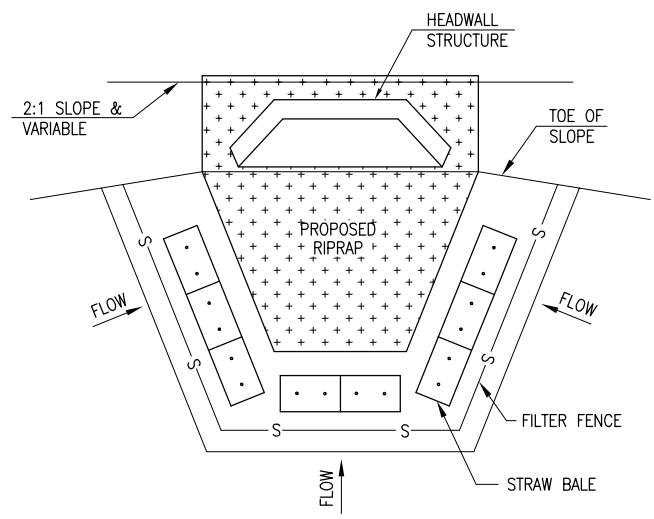
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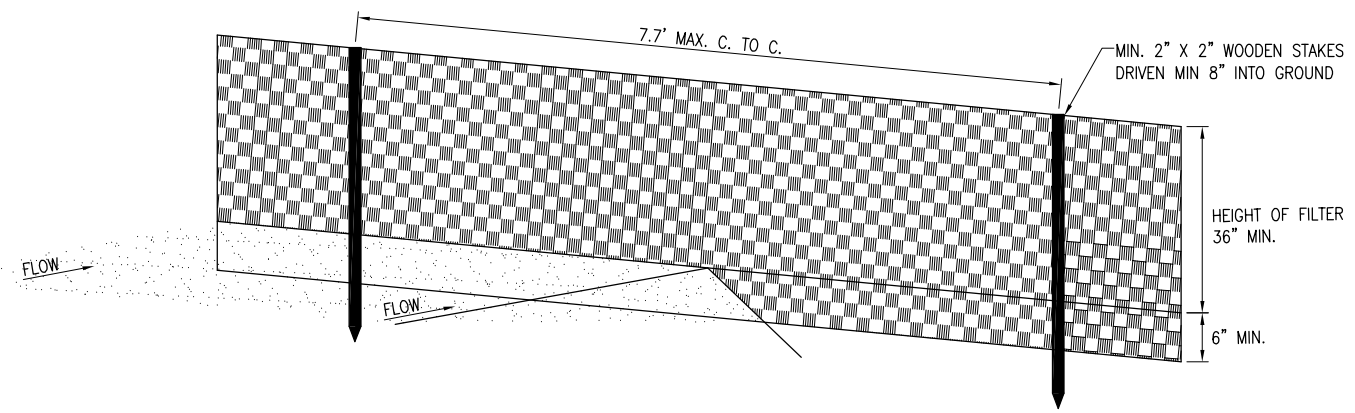
DITCH CHECK DETAIL
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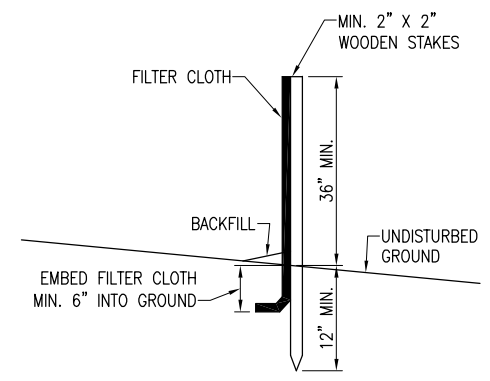
INLET PROTECTION DETAIL
"NOT TO SCALE"



HEADWALL STRUCTURE PROTECTION
"NOT TO SCALE"



PERSPECTIVE VIEW



SECTION

FILTER FENCE DETAIL
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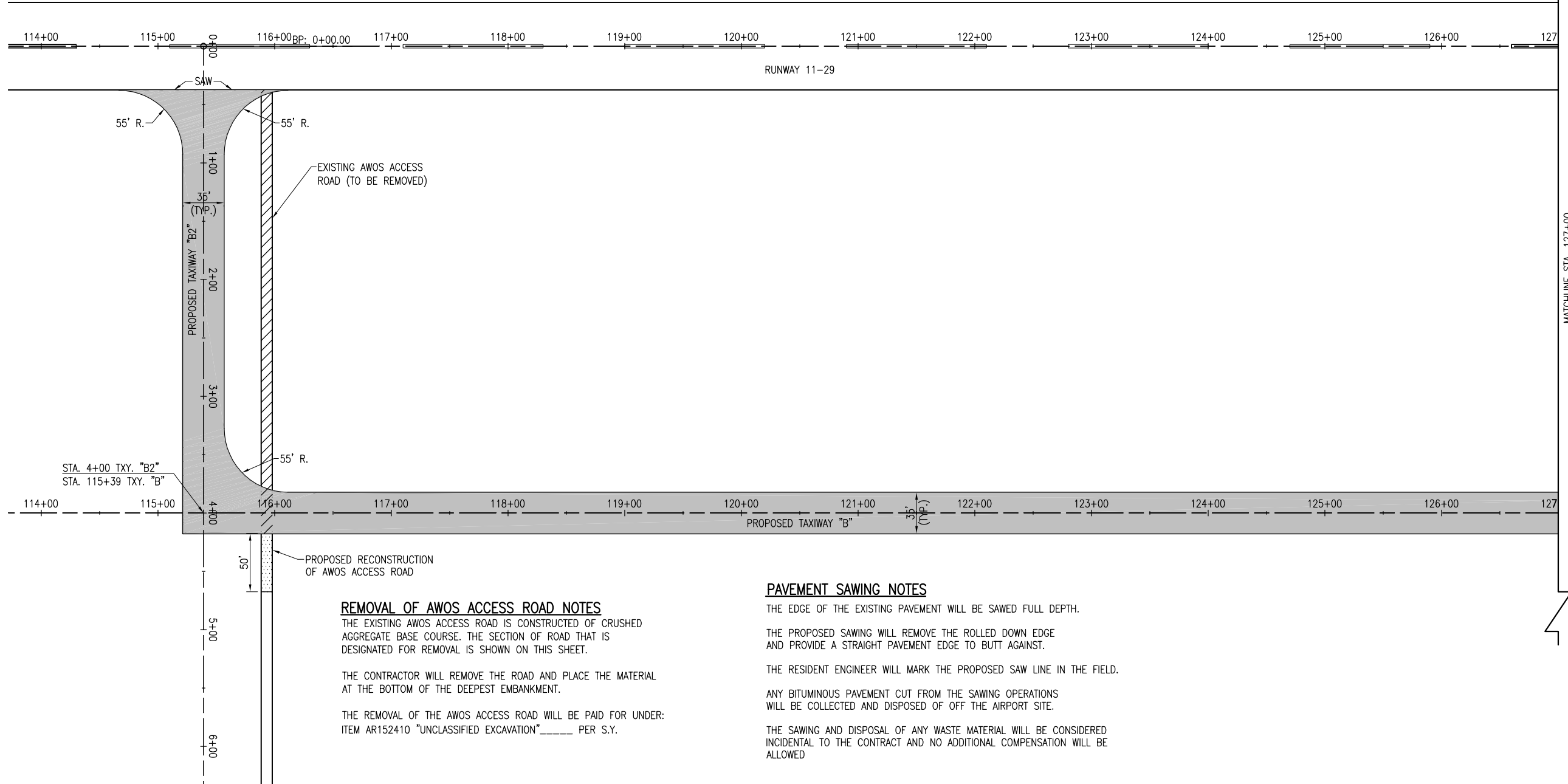
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**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**PROPOSED STORMWATER
POLLUTION PREVENTION DETAILS**

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MATCHLINE STA. 127+00

REMOVAL OF AWOS ACCESS ROAD NOTES

THE EXISTING AWOS ACCESS ROAD IS CONSTRUCTED OF CRUSHED AGGREGATE BASE COURSE. THE SECTION OF ROAD THAT IS DESIGNATED FOR REMOVAL IS SHOWN ON THIS SHEET.

THE CONTRACTOR WILL REMOVE THE ROAD AND PLACE THE MATERIAL AT THE BOTTOM OF THE DEEPEST EMBANKMENT.

THE REMOVAL OF THE AWOS ACCESS ROAD WILL BE PAID FOR UNDER: ITEM AR152410 "UNCLASSIFIED EXCAVATION" _____ PER S.Y.

RECONSTRUCTION OF AWOS ACCESS ROAD NOTES

A SECTION OF THE AWOS ACCESS ROAD WILL HAVE TO BE RECONSTRUCTED AFTER THE 12" RC PIPE HAS BEEN INSTALLED AND THE GRADING HAS BEEN COMPLETED. THE SECTION OF THE ROAD TO BE RECONSTRUCTED IS SHOWN ON THIS SHEET.

AS PART OF THE UNCLASSIFIED EXCAVATION THE CONTRACTOR WILL REMOVE THE EXISTING AGGREGATE BASE COURSE WITHIN THE AREA TO BE RECONSTRUCTED AND STOCK PILE THIS MATERIAL NEAR BY.

ONCE THE 12" REINFORCED CONCRETE PIPE HAS BEEN INSTALLED WITH IT'S END SECTIONS, AND THE GRADING WITHIN THIS AREA IS COMPLETED; THE CONTRACTOR WILL RECONSTRUCT THE ACCESS ROAD BY RE-BUILDING THE SUBGRADE OF THE ROAD AND PLACING THE STOCK PILED AGGREGATE BASE COURSE MATERIAL BACK. THE AGGREGATE BASE COURSE MATERIAL WILL BE GRADED SMOOTH AND COMPACTED TO THE SATISFACTION OF THE RESIDENT ENGINEER.

THE REMOVAL, STICK PILING, REPLACEMENT, GRADING AND COMPACTING OF THE AGGREGATE BASE COURSE MATERIAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE UNCLASSIFIED EXCAVATION AND 12" RCP, CLASS IV ITEMS OF WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

PAVEMENT SAWING NOTES

THE EDGE OF THE EXISTING PAVEMENT WILL BE SAWED FULL DEPTH.

THE PROPOSED SAWING WILL REMOVE THE ROLLED DOWN EDGE AND PROVIDE A STRAIGHT PAVEMENT EDGE TO BUTT AGAINST.

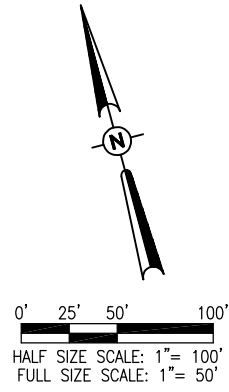
THE RESIDENT ENGINEER WILL MARK THE PROPOSED SAW LINE IN THE FIELD.

ANY BITUMINOUS PAVEMENT CUT FROM THE SAWING OPERATIONS WILL BE COLLECTED AND DISPOSED OF OFF THE AIRPORT SITE.

THE SAWING AND DISPOSAL OF ANY WASTE MATERIAL WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED

LEGEND

	EXISTING IMPROVEMENTS
	PROPOSED IMPROVEMENTS



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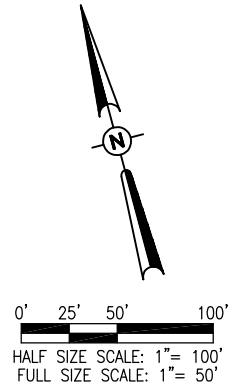
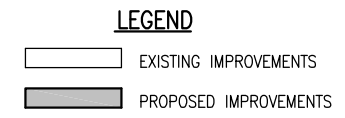
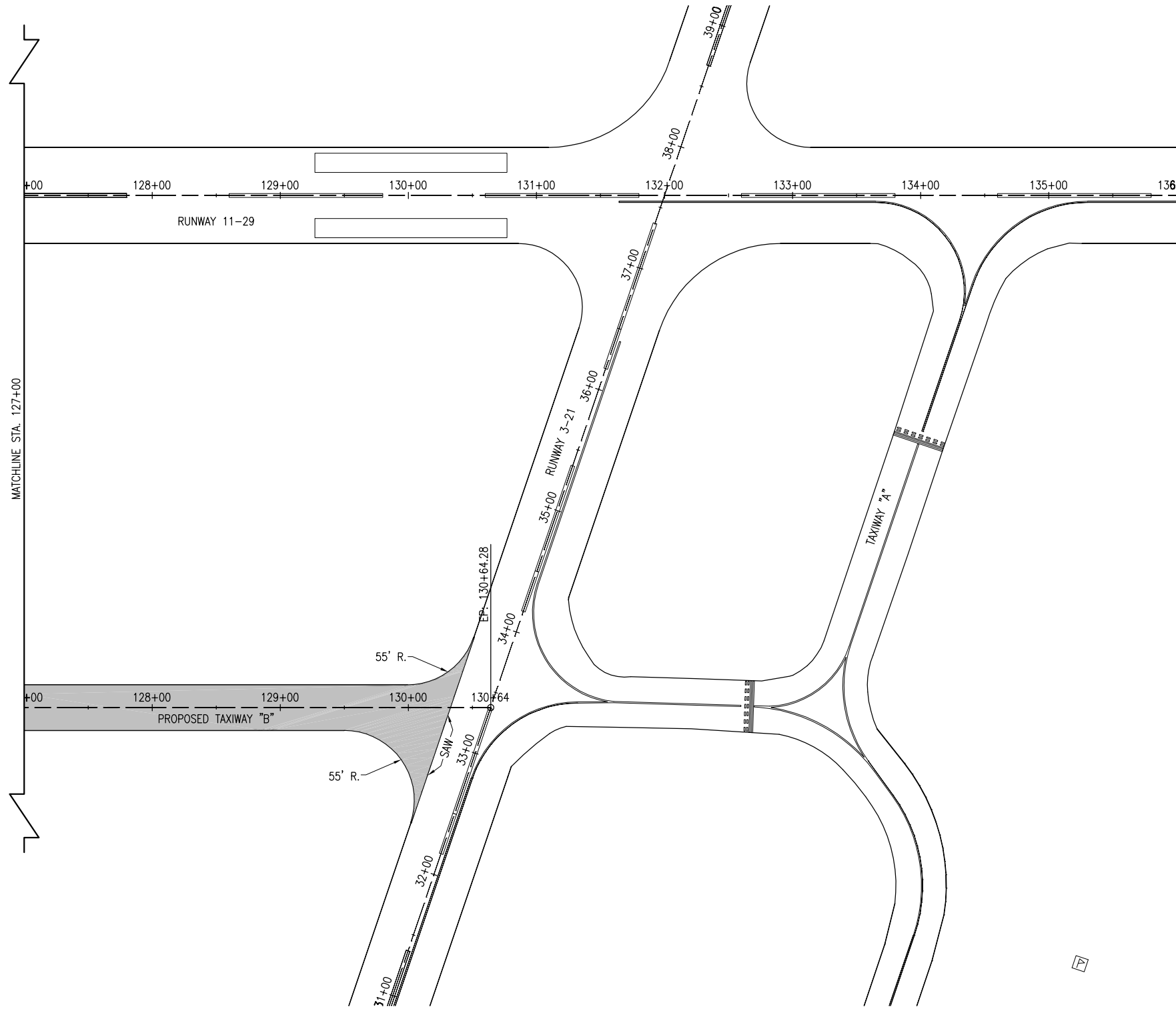
1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED CONSTRUCTION PLAN
 STA. 115+21.60 TO STA. 127+00

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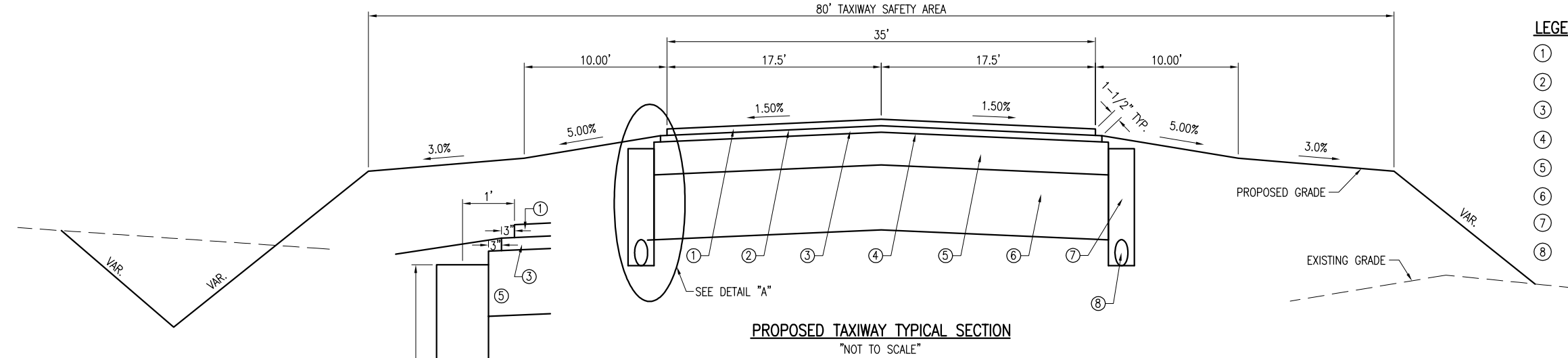
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**1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29**

**PROPOSED CONSTRUCTION PLAN
 STA. 127+00 TO STA. 130+64.28**

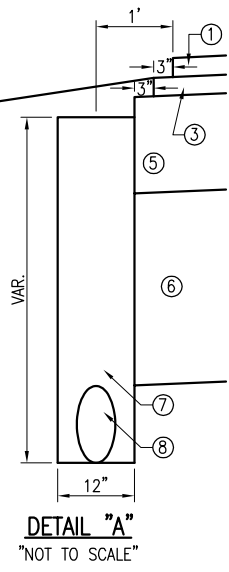


LEGEND FOR TYPICAL SECTION

- ① PROPOSED 2" (401) BITUMINOUS SURFACE COURSE
- ② PROPOSED BITUMINOUS TACK COAT (0.15 GAL./S.Y.)
- ③ PROPOSED 2" (403) BITUMINOUS BASE COURSE
- ④ PROPOSED BITUMINOUS PRIME COAT (0.50 GAL./S.Y.)
- ⑤ PROPOSED 8" (209) CRUSHED AGGREGATE BASE COURSE
- ⑥ PROPOSED 16" (155) LIME MODIFIED SUBGRADE
- ⑦ PROPOSED POROUS BACKFILL
- ⑧ PROPOSED 4" PERFORATED UNDERDRAIN W/SOCK

155-SOIL PROCESSING NOTES:

THERE IS NOT ENOUGH CLEARANCE TO PROCESS THE LIME 16" OVER THE EXISTING AND PROPOSED DRAINAGE PIPES. THEREFORE, THE CONTRACTOR WILL IDENTIFY AND MARK THE EXISTING AND PROPOSED PIPES AND WILL NOT PROCESS THE SOIL IN THESE AREAS. IF ANY PIPES ARE DAMAGED BY THE PROPOSED SOIL PROCESSING, THE CONTRACTOR WILL BE REQUIRED TO REPAIR THE PIPES AT HIS OWN COST.



603-BITUMINOUS TACK COAT NOTES:

THE BITUMINOUS TACK COAT (603) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR603 "BITUMINOUS TACK COAT" AS STATED ON PAGE 254 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THE PROPOSED BITUMINOUS TACK COAT SHALL BE PLACED ON THE PROPOSED BITUMINOUS PAVEMENT PRIOR TO THE PLACEMENT OF THE NEXT LIFT OF PROPOSED BITUMINOUS SURFACE COURSE. THE PROPOSED BITUMINOUS PAVEMENT SHALL HAVE A TACK COAT OF BITUMINOUS MATERIAL APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS.

THE PROPOSED BITUMINOUS TACK COAT WILL BE PAID FOR UNDER ITEM: AR603510 BITUMINOUS TACK COAT _____ PER GAL.

AR403-BITUMINOUS BASE COURSE-METHOD 1, SUPERPAVE NOTES

THE BITUMINOUS BASE COURSE (403) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR403613 "BITUMINOUS BASE COURSE-METHOD 1, SUPERPAVE" AS STATED ON PAGE 188 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING 1 LIFT OF BITUMINOUS BASE COURSE 2 INCH DEPTH ON THE PROPOSED CRUSHED AGGREGATE BASE COURSE.

THE PROPOSED BITUMINOUS BASE COURSE WILL BE DESIGNED TO A SUPERPAVE DESIGN OF LESS THAN 60,000 POUNDS FOR RUNWAY/TAXIWAY PAVEMENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY CONTROL IN THE PRODUCTION AND CONSTRUCTION OF THE BITUMINOUS BASE COURSE METHOD 1, SUPERPAVE.

403-4.9 ADD THE FOLLOWING TO THIS SECTION:

WHEN HAND SPREADING IS PERMITTED, THE MIXTURE WILL BE DISTRIBUTED AND SPREAD USING HAND TOOLS. WHEN THE WORK IS COMPLETED, THE LAYER WILL HAVE THE REQUIRED THICKNESS AND CONFORM TO THE GRADE AND SURFACE CONTOUR SHOWN ON THE PLANS.

403-4.11 ADD THE FOLLOWING TO THIS PARAGRAPH:

ALL PAVEMENT EDGES (LONGITUDINAL, RADIUS, AND PAVEMENT ENDS) MUST BE LEFT IN PROPER ALIGNMENT AS SHOWN ON THE PLANS. THIS MAY BE ACCOMPLISHED BY THE TRIMMING METHOD OUTLINED ABOVE OR AT THE CONTRACTOR'S OPTION BY SAWING AFTER THE PAVING HAS BEEN COMPLETED. NO ADDITIONAL COMPENSATION WILL BE MADE IF THE SAWING METHOD IS USED.

403-6.1 ADD THE FOLLOWING TO THIS SECTION
AR403613 BIT. BASE CSE.-METHOD 1, SUPERPAVE____PER TON

AR209-CRUSHED AGGREGATE BASE COURSE NOTES

THE CRUSHED AGGREGATE BASE COURSE (209) SHALL BE PLACED IN ACCORDANCE WITH ITEM 209 "CRUSHED AGGREGATE BASE COURSE" AS STATED ON PAGE 93 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THE CRUSHED AGGREGATE BASE COURSE MATERIAL (CA-6) WILL BE USED TO CONSTRUCT A BASE COURSE FOR THE PROPOSED BITUMINOUS BASE COURSE (201). THE CRUSHED AGGREGATE BASE COURSE MATERIAL WILL BE 8" IN DEPTH AND COMPACTED TO NOT LESS THAN 95 PERCENT DENSITY.

THE PROPOSED AGGREGATE FOR THE BASE COURSE MATERIAL SHALL MEET THE REQUIREMENTS OF GRADATION "B" IN TABLE 1 OF THE SUPPLEMENTAL SPECIFICATIONS.

209-3.2 EQUIPMENT. ADD THE FOLLOWING PARAGRAPHS TO THIS SECTION:

"PROVISIONS SHALL BE MADE BY THE CONTRACTOR FOR FURNISHING WATER AT THE PLANT AND AT THE SITE OF THE WORK BY EQUIPMENT OF AMPLE CAPACITY AND OF SUCH DESIGN AS TO ASSURE UNIFORM MIXING AND APPLICATION."

THE CONTRACTOR WILL PROVIDE THE RESIDENT ENGINEER A PROCTOR CURVE SHOWING OPTIMUM DENSITY AND MOISTURE FOR THE SUPPLIED BASE COURSE MATERIAL.

THE COMPACTION CONTROL TEST TO BE USED SHALL BE FAA COMPACTION CONTROL TEST T-611 FOR AIRCRAFT WEIGHING LESS THAN 60,000 LBS.

209-4.1. DELETE THE FIFTH SENTENCE AND REPLACE IT WITH THE FOLLOWING:

"IF AT THE TIME THE AGGREGATES ARE WEIGHED THEY CONTAIN MORE THAN SIX (6) PERCENT OF ABSORBED AND FREE MOISTURE BY WEIGHT, A DEDUCTION FOR THE MOISTURE IN EXCESS OF THIS AMOUNT SHALL BE MADE IN DETERMINING THE PAY QUANTITY."

209-5.1 ADD THE FOLLOWING TO THIS SECTION
AR209510 CRUSHED AGGREGATE BASE COURSE____PER TON

602-BITUMINOUS PRIME COAT NOTES:

THE BITUMINOUS PRIME COAT (602) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR602 "BITUMINOUS PRIME COAT" AS STATED ON PAGE 251 OF THE STANDARD SPECIFICATION FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THE PROPOSED BITUMINOUS PRIME COAT SHALL BE PLACED ON THE PROPOSED AGGREGATE BASE COURSE PRIOR TO THE PLACEMENT OF THE FIRST LIFT OF PROPOSED BITUMINOUS BASE COURSE. THE PROPOSED AGGREGATE BASE COURSE SHALL HAVE A PRIME COAT OF BITUMINOUS MATERIAL APPLIED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS.

THE PROPOSED BITUMINOUS PRIME COAT WILL BE PAID FOR UNDER ITEM: AR602510 BITUMINOUS PRIME COAT _____ PER GAL.

AR401611 BITUMINOUS SURFACE COURSE-METHOD 1, SUPERPAVE

THE BITUMINOUS SURFACE COURSE (401) SHALL BE PLACED IN ACCORDANCE WITH ITEM AR401003 "BITUMINOUS SURFACE COURSE-METHOD 1, SUPERPAVE" AS STATED ON PAGE 129 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING 1 LIFT OF BITUMINOUS SURFACE COURSE-METHOD 1, SUPERPAVE 2 INCH DEPTH ON THE BITUMINOUS BASE COURSE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY CONTROL IN THE PRODUCTION AND CONSTRUCTION OF THE BITUMINOUS SURFACE COURSE METHOD 1, SUPERPAVE.

PRIOR TO STARTING THE BITUMINOUS SURFACE COURSE-METHOD 1, SUPERPAVE OPERATION, THE CONTRACTOR SHALL SUBMIT TO THE RESIDENT ENGINEER A DETAILED OUTLINE SHOWING AREAS AND ORDER OF PAVING WIDTHS OF PAVING LANES, AND REQUIRED OFFSETS FOR ELECTRONIC GRADE.

THE PROPOSED BITUMINOUS SURFACE COURSE METHOD 1, SUPERPAVE WILL BE DESIGNED TO A SUPERPAVE DESIGN OF LESS THAN 60,000 POUNDS.

401-4.9 ADD THE FOLLOWING TO THIS SECTION:

WHEN HAND SPREADING IS PERMITTED, THE MIXTURE WILL BE DISTRIBUTED AND SPREAD USING HAND TOOLS. WHEN THE WORK IS COMPLETED, THE LAYER WILL HAVE THE REQUIRED THICKNESS AND CONFORM TO THE GRADE AND SURFACE CONTOUR SHOWN ON THE PLANS.

401-4.12 ADD THE FOLLOWING TO THIS PARAGRAPH:

ALL PAVEMENT EDGES (LONGITUDINAL, RADIUS, AND PAVEMENT ENDS) MUST BE LEFT IN PROPER ALIGNMENT AS SHOWN ON THE PLANS. THIS MAY BE ACCOMPLISHED BY THE TRIMMING METHOD OUTLINED ABOVE OR AT THE CONTRACTOR'S OPTION BY SAWING AFTER THE PAVING HAS BEEN COMPLETED. NO ADDITIONAL COMPENSATION WILL BE MADE IF THE SAWING METHOD IS USED.

401-6.1 ADD THE FOLLOWING TO THIS SECTION
AR401613 BIT. SURF. CSE.-METHOD 1, SUPERPAVE____PER TON

155-LIME-MODIFIED SUBGRADE NOTES:

THE PROPOSED LIME-MODIFIED SUBGRADE SHALL BE COMPLETED IN ACCORDANCE WITH ITEM 155 "LIME TREATED SUBGRADE" AS STATED ON PAGE 69 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING A 16" DEEP COURSE OF A MIXTURE OF SOIL, LIME AND WATER IN ACCORDANCE WITH THE RATES AND METHODS DESIGNED IN THE SPECIFICATIONS (EITHER THE WET OR DRY METHODS IS ACCEPTABLE).

THE SUBGRADE WILL BE CUT PRIOR TO LIME-MODIFICATION.

ANY SWELL WILL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF ON THE AIRPORT SITE AS DIRECTED BY THE RESIDENT ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR REMOVAL OF SWELL.

THE LIME-MODIFIED SUBGRADE SHALL BE CUT TO FINISHED ELEVATION UPON COMPLETION (0.05+) IN ACCORDANCE TO SECTION 152-2.11 OF THE SPECIFICATIONS. THE LIME-MODIFIED SUBGRADE WILL BE WET CURED FOR 2 DAYS.

THE CONTRACTOR WILL LIME-MODIFY THE SUBGRADE FROM THE CENTERLINE TO 1' OUTSIDE OF THE PROPOSED PAVEMENT SURFACE ON BOTH SIDES.

THE LIME-MODIFIED SUBGRADE WILL BE COMPACTED IN ACCORDANCE WITH PROCEDURES FOR AIRCRAFT WEIGHING LESS THAN 60,000 POUNDS.

THE ENTIRE THICKNESS OF THE TREATED SUBGRADE SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT OF THE STANDARD DRY DENSITY.

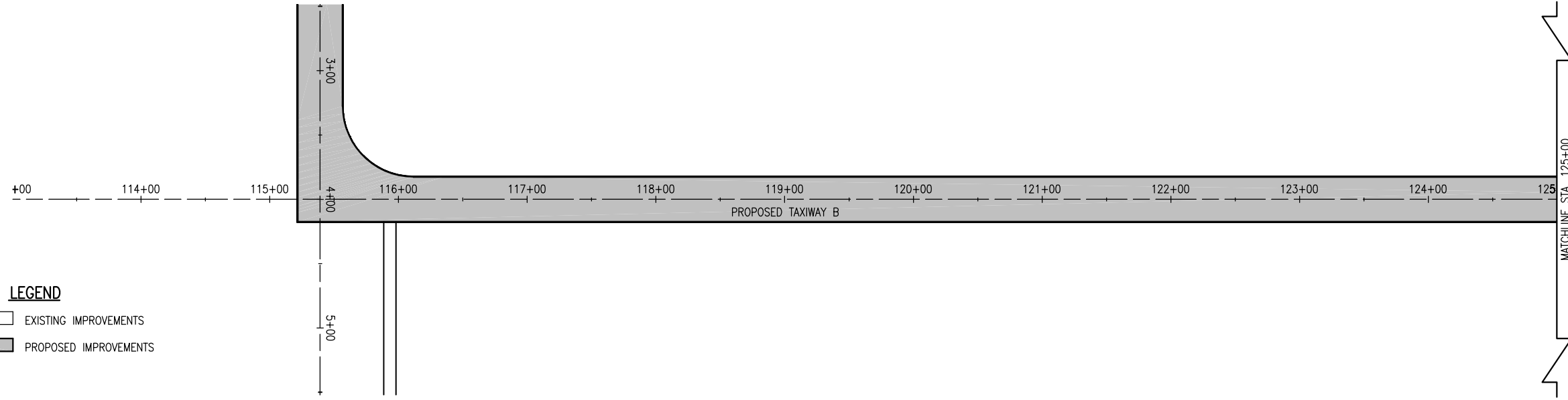
THE LIME, BY-PRODUCT LIME (CODE L), WAS CALCULATED AT 6% OF THE DRY SOIL WEIGHT AT MAXIMUM DENSITY. THE ACTUAL AMOUNT WILL BE DETERMINED PRIOR TO THE START OF CONSTRUCTION, BUT SHALL NOT EXCEED 6% BY WEIGHT. THE COST OF LIME WILL BE PAID FOR UNDER ITEM AR155540.

THE SOIL TEST INDICATES AN AVERAGE SOIL WEIGHT OF 103 POUNDS PER CUBIC FOOT. THEREFORE, THE MAXIMUM TONNAGE OF LIME WILL BE 293 TONS.

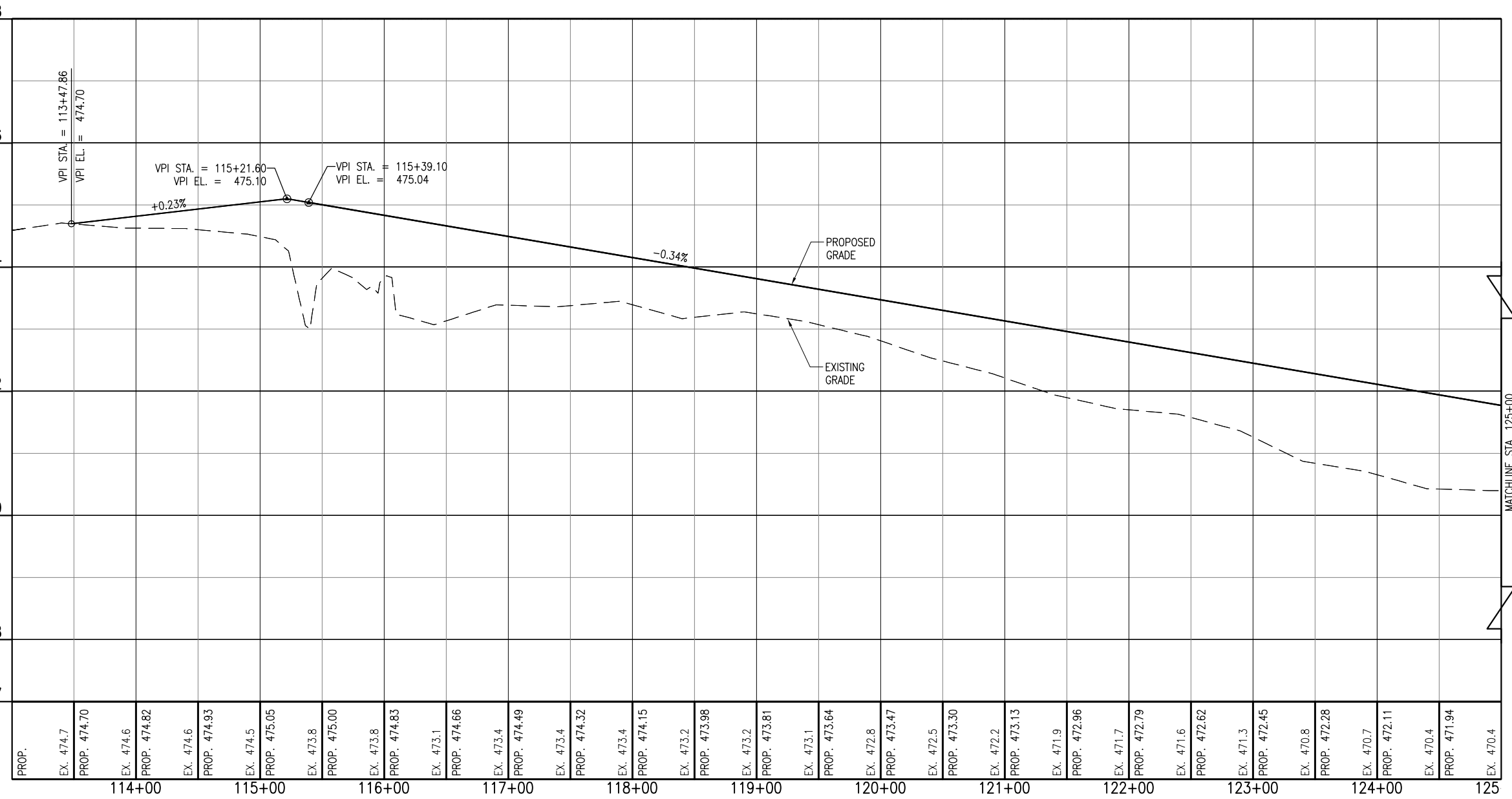
THE PROPOSED LIME-MODIFIED SUBGRADE WILL BE PAID FOR UNDER ITEMS:
AR155616 SOIL PROCESSING-16" _____ PER S.Y.
AR155540 BY-PRODUCT LIME _____ PER TONS

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29			PROPOSED TYPICAL SECTION AND NOTES		
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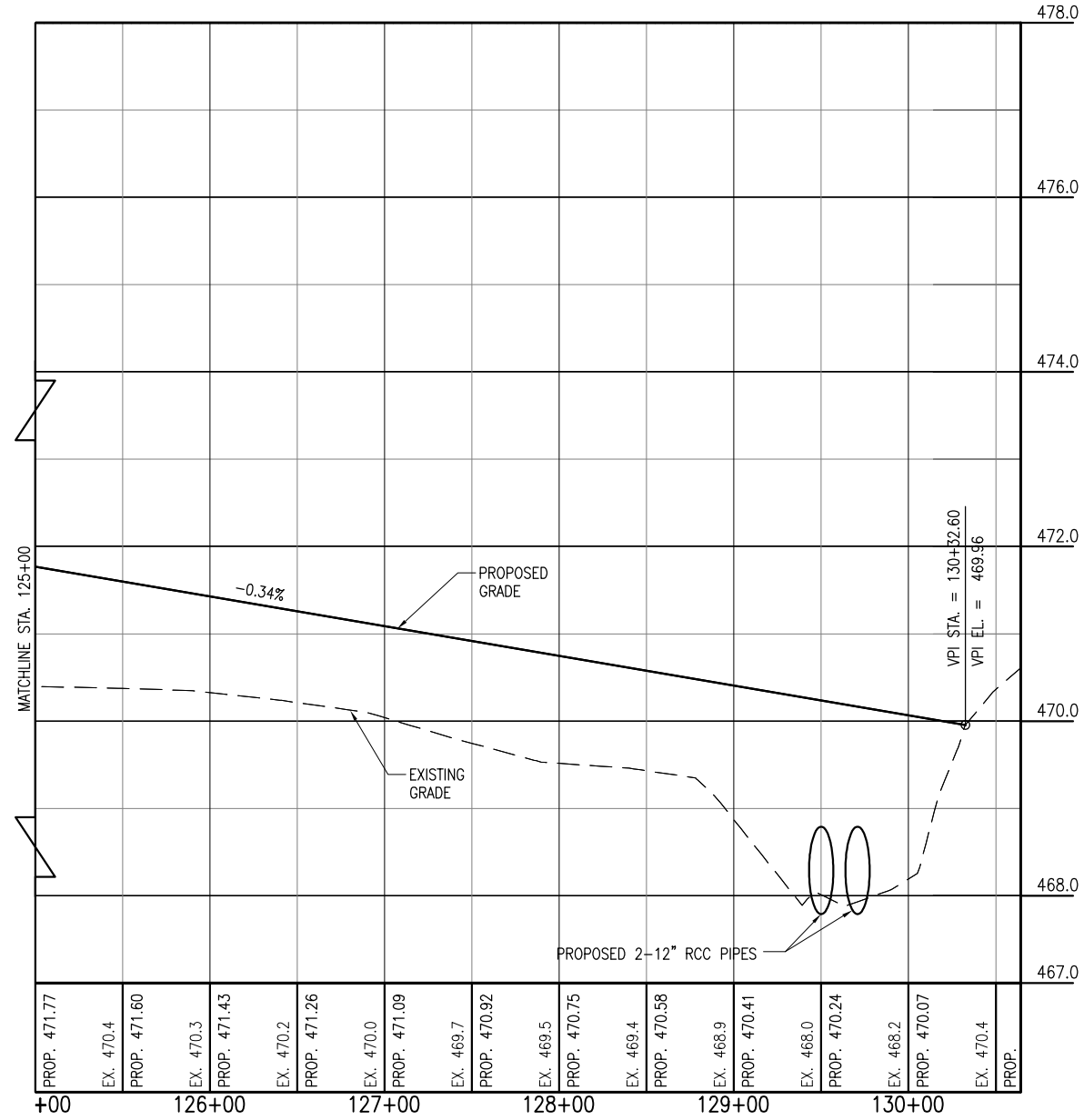
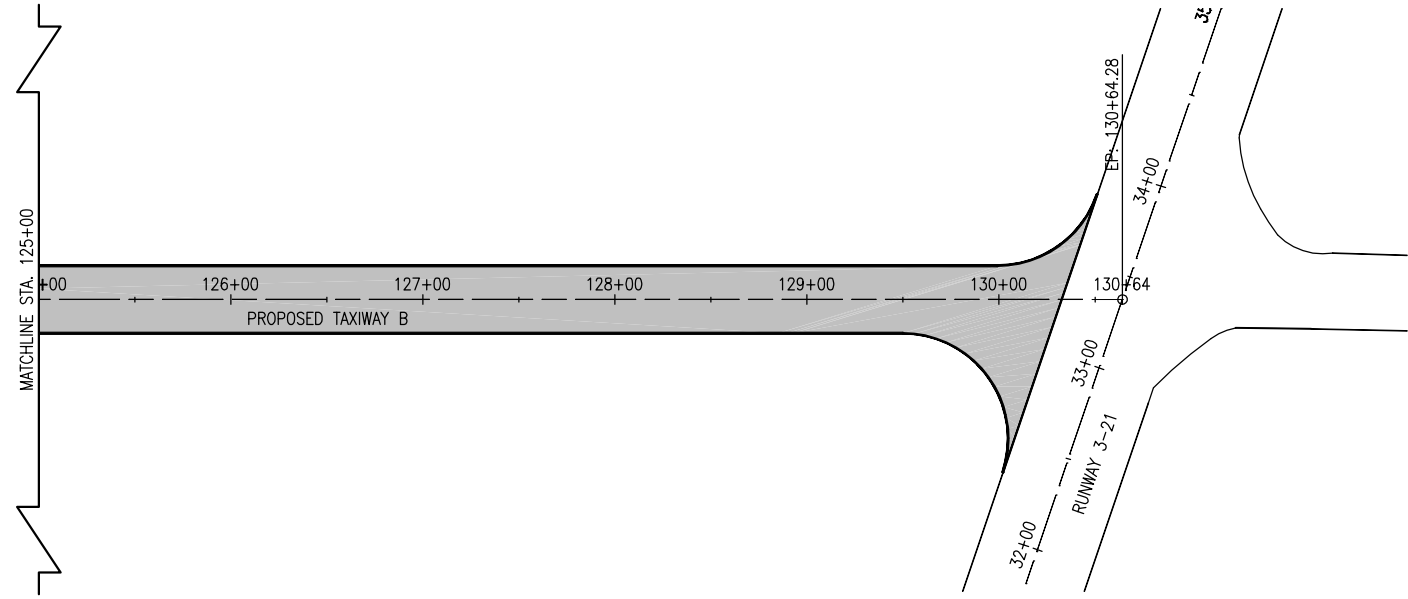
LEGEND

EXISTING IMPROVEMENTS

PROPOSED IMPROVEMENTS

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<p>1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29</p>		<p>OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS</p>					
<p>PROPOSED TAXIWAY B PLAN AND PROFILE STA. 113+00 TO STA. 125+00</p>		<p>IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11</p>					
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 [White Box] EXISTING IMPROVEMENTS
 [Grey Box] PROPOSED IMPROVEMENTS



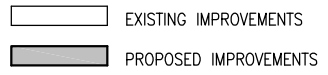
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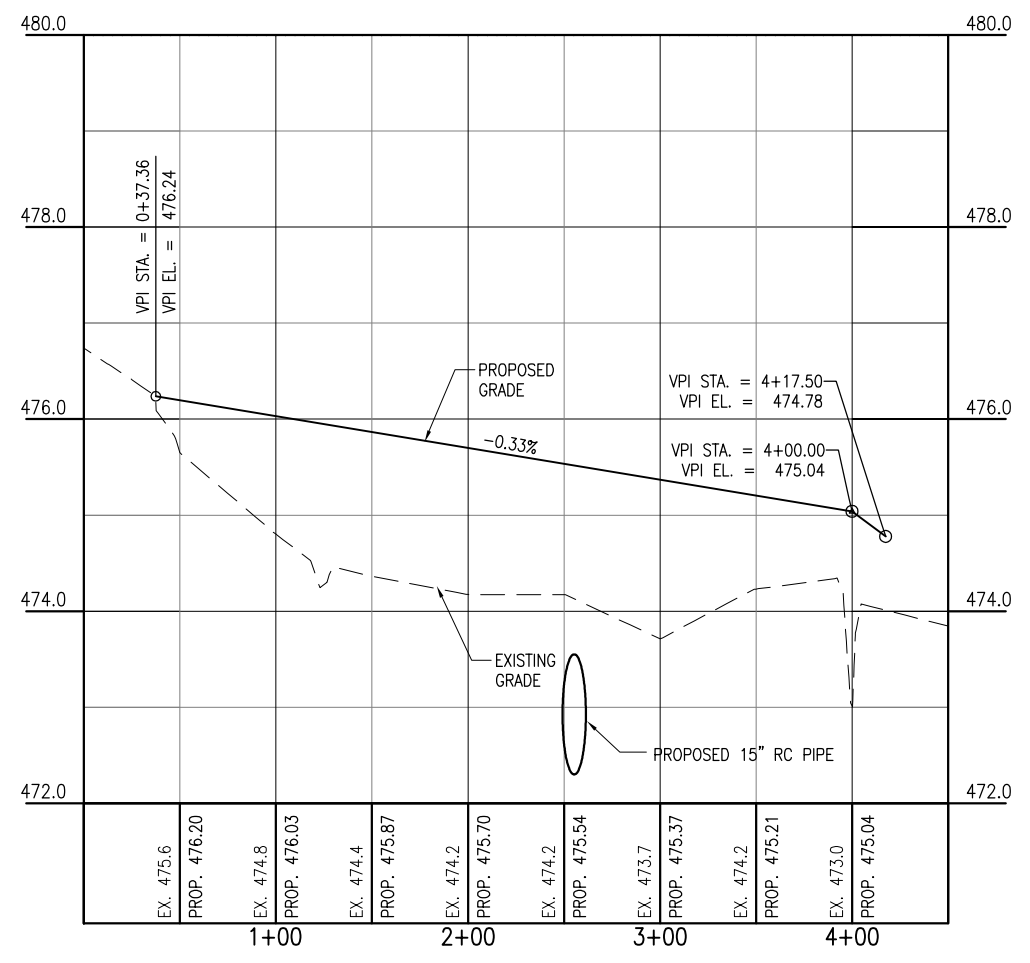
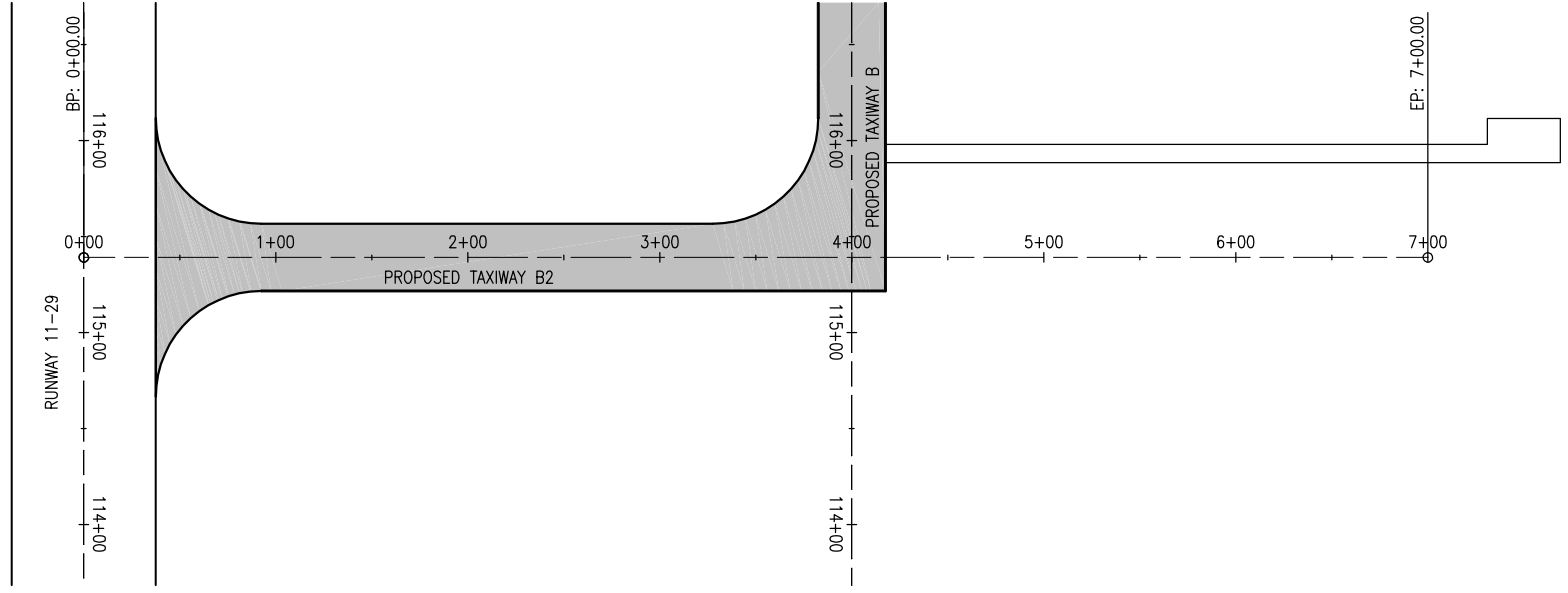
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REVIEWED	CAH	02/15/12	

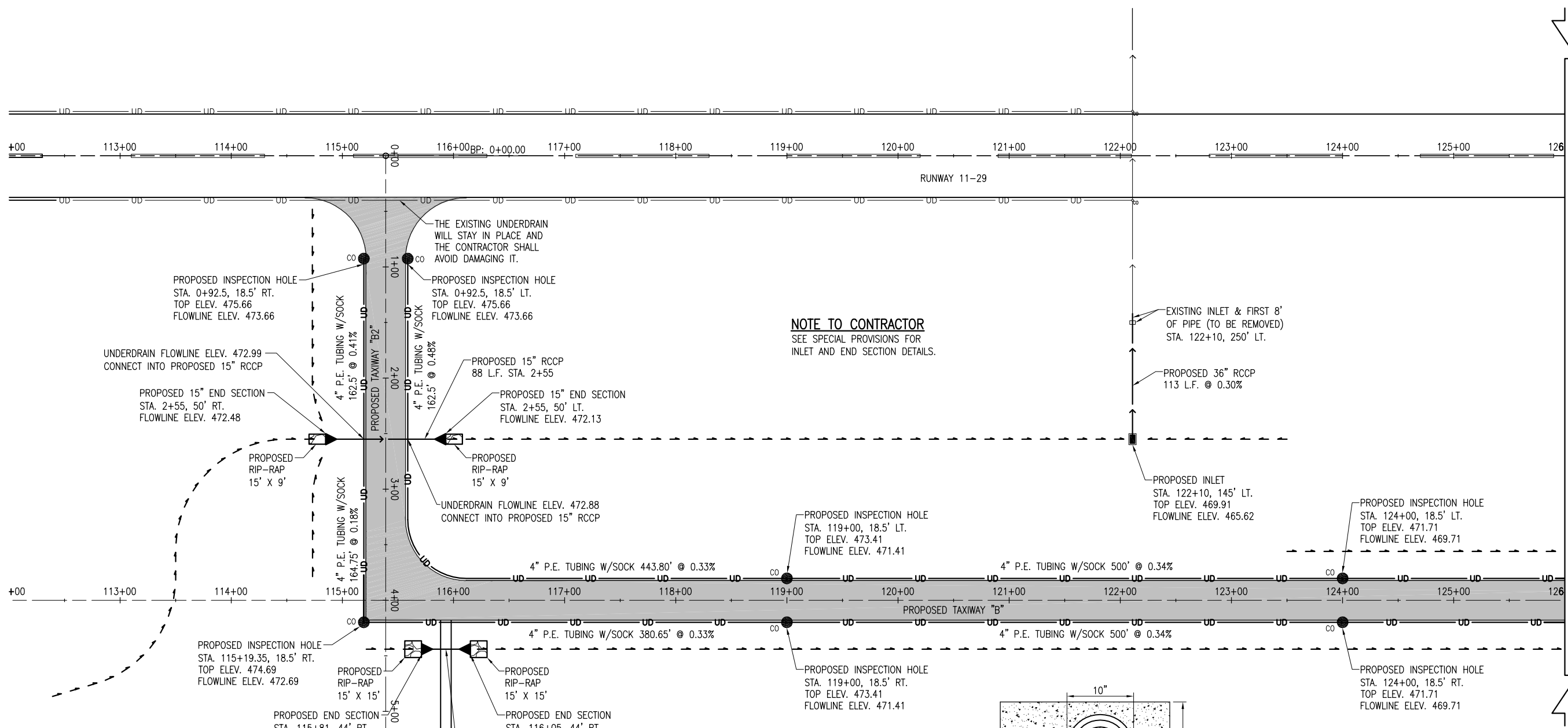
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**1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29**
 PROPOSED TAXIWAY B PLAN
 AND PROFILE STA. 125+00
 TO 130+32.6

LEGEND




OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS	
IL. PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11	REVISION DATE
Hanson Proj. No. 11A0081D Filename: C-702-PNP.DWG Scale: AS SHOWN Date: 02/17/12	
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LAYOUT BAK 01/23/12 DRAWN BAK 01/23/12 REVIEWED CAH 02/15/12	
1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29 PROPOSED TAXIWAY B2 PLAN AND PROFILE STA. 0+00 TO STA. 6+50	
11 11 of 52 sheets	



NOTE TO CONTRACTOR
SEE SPECIAL PROVISIONS FOR INLET AND END SECTION DETAILS.

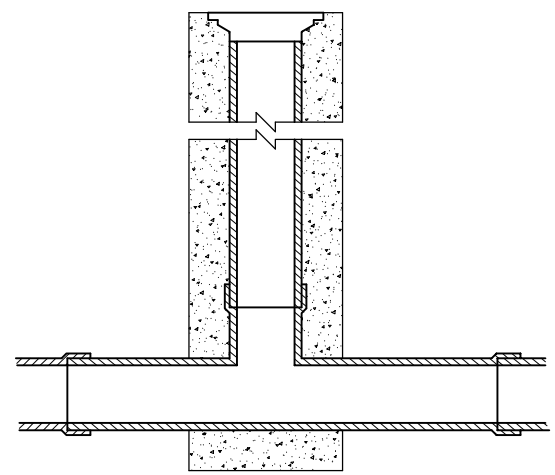
156544-RIPRAP NOTES:

THE PROPOSED RIPRAP SHALL BE PLACED IN ACCORDANCE WITH ITEM AR156540 "RIPRAP" AS STATED ON PAGE 80 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THE PROPOSED RIPRAP WILL BE GRADATION NO. 4 AND PLACED TO THE DIMENSIONS AS SHOWN ON THIS SHEET AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

A FILTER FABRIC WILL BE REQUIRED UNDER THE STONE RIPRAP. THE FILTER FABRIC MATERIAL WILL BE IN ACCORDANCE WITH THE REQUIREMENTS AS STATED ON PAGE 183 FOR A GRADATION 4 RIPRAP STONE. THE FILTER FABRIC WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE RIPRAP AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE PROPOSED RIPRAP WILL BE PAID FOR UNDER ITEM: AR156544 RIPRAP-GRADATION NO. 4 PER S.Y.



INSPECTION HOLE-TYPE A

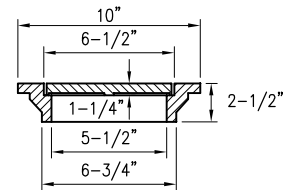
INSPECTION HOLE NOTES

DIAMETER OF PIPE AS SPECIFIED.

TOP OF INSPECTION HOLES SHALL BE 2" ABOVE FINISH GROUND LINE AT LOCATION SHOWN ON PLANS.

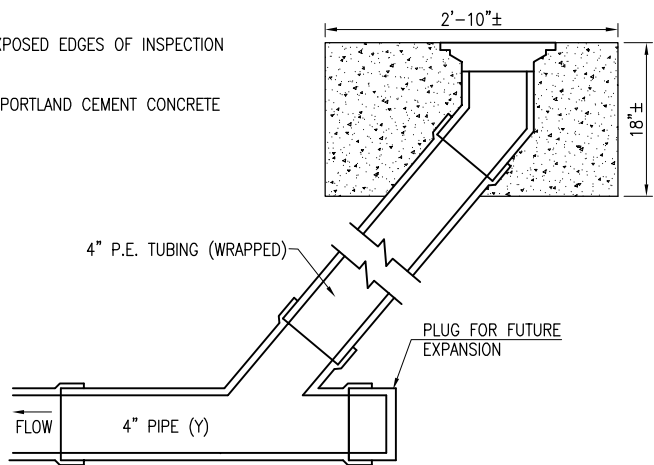
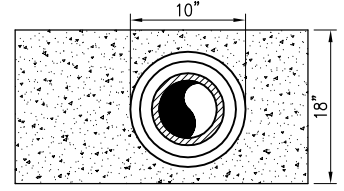
1/2" CHAMFER TO BE USED ON ALL EXPOSED EDGES OF INSPECTION HOLES.

THE CONCRETE SHALL BE STRUCTURAL PORTLAND CEMENT CONCRETE (NON- REINFORCED)



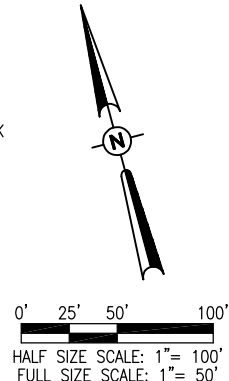
CAST IRON FRAME AND COVER

NEENAH R-6013, DEETER 1810, EAST JORDAN 2790-6 OR APPROVED EQUAL



CLEANOUT HOLE-TYPE B

- LEGEND**
- EXISTING IMPROVEMENTS
 - PROPOSED IMPROVEMENTS
 - EXISTING DRAINAGE PIPE
 - EXISTING UNDERDRAIN
 - PROPOSED 4" P.E. TUBING W/SOCK
 - PROPOSED DRAINAGE PIPE
 - PROPOSED DRAINAGE DITCH
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING INLET
 - PROPOSED END SECTION
 - PROPOSED INLET



REVISION	DATE

OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED DRAINAGE PLAN
STA. 115+21.60 TO STA. 127+00

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705-UNDERDRAIN NOTES:

THE PROPOSED UNDERDRAIN PIPE WILL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 705 "PIPE UNDERDRAINS FOR AIRPORTS" AS STATED ON PAGE 310 OF THE ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING 4" P.E. TUBING (WRAPPED) AND UNDERDRAIN INSPECTION HOLES AT THE LOCATIONS AND TO THE GRADES SHOWN ON THE CONSTRUCTION PLANS.

705-3.3 LAYING AND INSTALLING PIPE. REVISE THIS SECTION AS FOLLOWS:

"PIPE DRAINS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER. THE PIPE SHALL BE BEDDED IN THE UNDERLYING MATERIAL TO A DEPTH NOT LESS THAN 10 PERCENT OF THE EXTERNAL DIAMETER OF THE PIPE, AND WHERE TRENCHING IS REQUIRED, THE TRENCH SHALL HAVE A WIDTH OF NOT LESS 8 IN. THE BOTTOM OF THE TRENCH SHALL BE COMPACTED IN A MANNER MEETING THE APPROVAL OF THE ENGINEER.

JOINTS AND FITTINGS MAY BE ASSEMBLED WITHOUT GASKETS OR SOLVENT CEMENT IF THE JOINT IS SAND TIGHT AND THE SPIGOT ENTERS THE SOCKET NOT LESS THAN 1/3 OF THE SOCKET DEPTH FOR SOLVENT CEMENT JOINTS AND FULL-DEPTH FOR ELASTOMERIC GASKET JOINTS.

NO PIPE SHALL BE PLACED IN THE TRENCH UNTIL IT AND THE PREPARED FOUNDATION HAVE BEEN APPROVED BY THE RESIDENT ENGINEER. THE PIPE SHALL BE LAID SO THAT THE FLOWLINE WILL BE AT THE GRADE SHOWN ON THE PLANS OR ESTABLISHED BY THE RESIDENT ENGINEER. THE PERMISSIBLE MINIMUM COVER OVER A PIPE SHALL BE 12 IN.

LAYING OF PIPES SHALL COMMENCE AT THE OUTLET END AND PROCEED TOWARD THE INLET END WITH THE PIPES TRUE TO LINE AND GRADE.

THE ENDS OF THE PIPE SHALL BE CAREFULLY CLEANED BEFORE THEY ARE PLACED, AND SHALL BE PLACED TO AVOID UNNECESSARY HANDLING ON THE FOUNDATION. AS EACH LENGTH OF PIPE IS LAID, THE ENDS OF THE PIPE SHALL BE PROTECTED TO PREVENT THE ENTRANCE OF ANY MATERIAL.

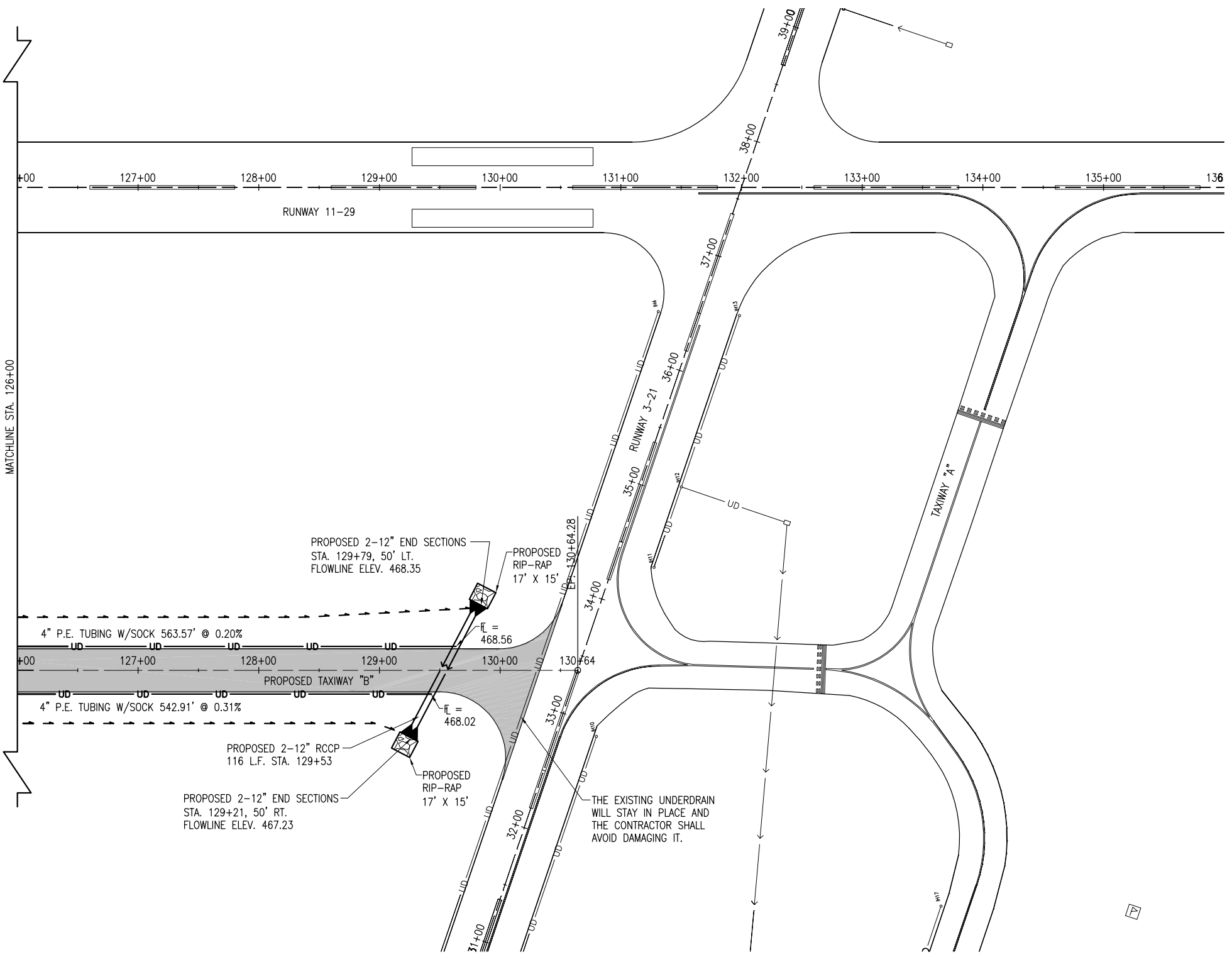
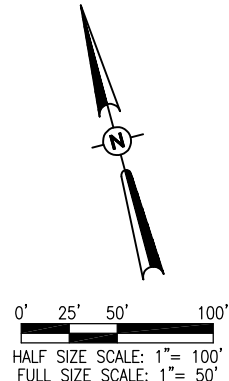
LONGITUDINAL LAPS SHALL BE PLACED AT THE SIDES AND SEPARATE SECTIONS OF PIPE SHALL BE JOINED WITH TIGHTLY-DRAWN, APPROVED CONNECTING BANDS.

705-3.6 BACKFILLING; ADD THE FOLLOWING TO THIS SECTION:

"THE EDGE DRAIN TRENCH WILL BE BACKFILLED WITH CONSOLIDATED POROUS BACKFILL NO. 1 IN ACCORDANCE WITH THE DETAIL ON THE CONSTRUCTION PLANS. THE POROUS BACKFILL WILL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATION SET FORTH FOR GRANULAR MATERIAL BACKFILL."

THE PROPOSED UNDERDRAIN PIPE WILL BE PAID FOR UNDER ITEMS:
 AR705410 POROUS BACKFILL _____ PER C.Y.
 AR705524 4" PERFORATED UNDERDRAIN W/SOCK _____ PER L.F.
 AR751801 INSPECTION HOLE (TYPE A) _____ PER EACH
 AR751811 INSPECTION HOLE (TYPE B) _____ PER EACH

- LEGEND**
- EXISTING IMPROVEMENTS
 - PROPOSED IMPROVEMENTS
 - EXISTING DRAINAGE PIPE
 - EXISTING UNDERDRAIN
 - PROPOSED 4" P.E. TUBING W/SOCK
 - PROPOSED DRAINAGE PIPE
 - PROPOSED DRAINAGE DITCH
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING INLET
 - PROPOSED HEADWALL
 - PROPOSED END SECTION



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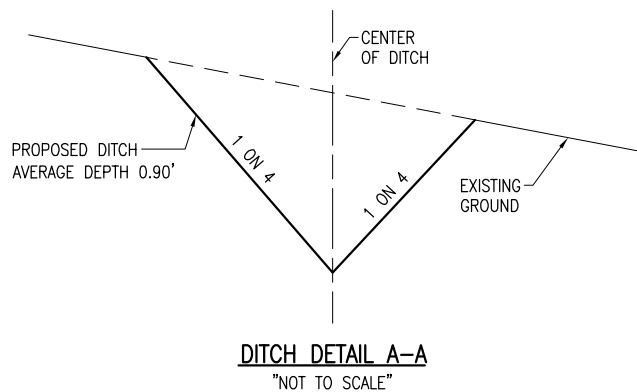
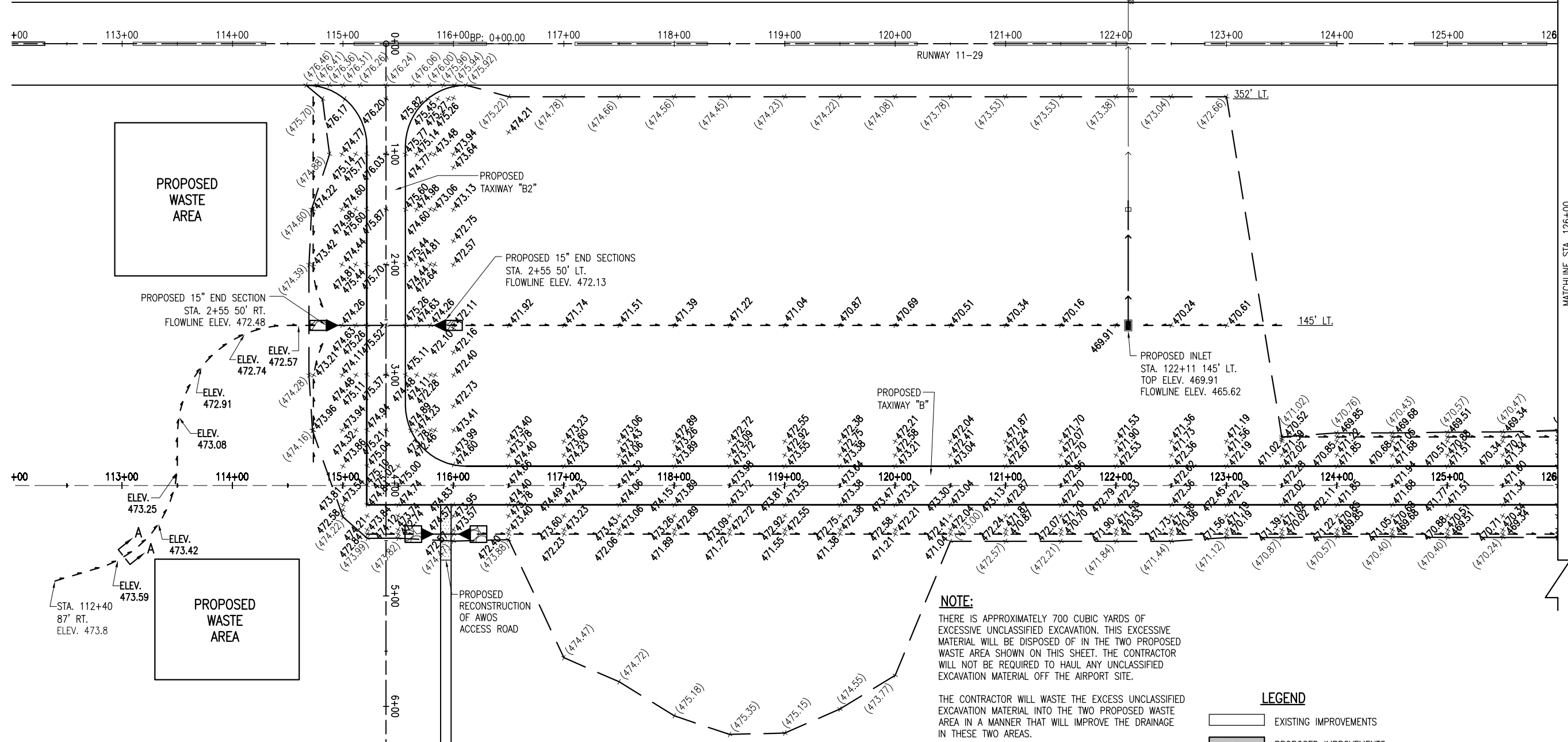
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**1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29**

PROPOSED DRAINAGE PLAN
 STA. 127+00 TO STA. 130+64.28

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NOTE:

THERE IS APPROXIMATELY 700 CUBIC YARDS OF EXCESSIVE UNCLASSIFIED EXCAVATION. THIS EXCESSIVE MATERIAL WILL BE DISPOSED OF IN THE TWO PROPOSED WASTE AREA SHOWN ON THIS SHEET. THE CONTRACTOR WILL NOT BE REQUIRED TO HAUL ANY UNCLASSIFIED EXCAVATION MATERIAL OFF THE AIRPORT SITE.

THE CONTRACTOR WILL WASTE THE EXCESS UNCLASSIFIED EXCAVATION MATERIAL INTO THE TWO PROPOSED WASTE AREA IN A MANNER THAT WILL IMPROVE THE DRAINAGE IN THESE TWO AREAS.

THE UNCLASSIFIED EXCAVATION MATERIAL WILL REQUIRE ONLY LIGHT ROLLING TO THE SATISFACTION OF THE RESIDENT ENGINEER.

ONCE THE MATERIAL HAS BEEN PLACED AND COMPACTED THE CONTRACTOR WILL GRADE THE AREA TO DRAIN.

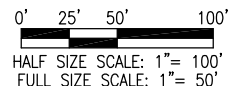
IF THE PROPOSED WASTE AREA IS LOCATED WITHIN AN EXISTING GRASS AREA, THEN IT WILL BE SEEDED AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908.

IF THE PROPOSED WASTE AREA IS LOCATED WITHIN AN EXISTING FARMING AREA, THEN THE AREA WILL NOT BE SEEDED AND MULCHED.

THE PROPOSED DRAINAGE DITCH LOCATED 87' RT., STATION 112+40 TO 50' LT., STATION 114+70 WILL BE SEEDED AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908. THE PROPOSED SEEDED AND MULCHING WILL EXTEND TO TWO FEET BEYOND THE TOP OF DITCH.

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING DRAINAGE PIPE
- PROPOSED DRAINAGE PIPE
- PROPOSED DRAINAGE DITCH
- EXISTING INLET
- PROPOSED HEADWALL
- PROPOSED END SECTION
- PROPOSED INLET
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADING AND SEEDING LIMITS



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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED STAKING PLAN
STA. 115+21.60 TO STA. 127+00

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901 SEEDING NOTES

THE PROPOSED SEEDING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ITEM 901 "SEEDING" AS STATED ON PAGE 324 OF THE STANDARD SPECIFICATIONS FOR, CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

ALL DISTURBED AREAS LOCATED WITHIN THE PROPOSED GRADING AND SEEDING LIMITS WILL BE SEEDDED IN ACCORDANCE WITH THE ABOVE NOTED SPECIFICATION. ALL AREAS OUTSIDE THE DESIGNATED GRADING AND SEEDING LIMITS WILL ALSO BE SEEDDED BUT AT THE CONTRACTOR'S OWN EXPENSE.

ALL MATERIALS AND/OR DEBRIS RESULTING FROM THE SEEDING OPERATIONS WILL BE REMOVED FROM THE PAVEMENTS AND MISCELLANEOUS STRUCTURES PRIOR TO OPENING THE RUNWAY.

901-3.4 MAINTENANCE OF SEEDDED AREAS. DELETE THE SECOND PARAGRAPH OF THIS SECTION AND ADD THE FOLLOWING:

"THE CONTRACTOR WILL BE REQUIRED TO ESTABLISH A GOOD STAND OF GRASS OF UNIFORM COLOR AND DENSITY TO THE SATISFACTION OF THE RESIDENT ENGINEER. IF AT THE TIME WHEN THE CONTRACT HAS BEEN OTHERWISE COMPLETED, IT IS NOT POSSIBLE TO MAKE AN ADEQUATE DETERMINATION OF COLOR, DENSITY, AND UNIFORMITY OF SUCH STAND OF GRASS, THE ITEM OF WORK WILL BE REVIEWED AT A LATER DATE DETERMINED BY THE ILLINOIS DIVISION OF AERONAUTICS."

DATE SEEDING COMPLETED _____

THE PROPOSED SEEDING WILL BE PAID FOR UNDER ITEMS:
AR901510 SEEDING _____ PER ACRES

908 MULCHING NOTES

THE PROPOSED MULCHING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ITEM 908 "MULCHING" AS STATED ON PAGE 334 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOVEMBER 2, 2009.

THIS ITEM SHALL CONSIST OF THE FURNISHING, TRANSPORTING, AND PLACING MULCH OVER THE SEEDDED AREA. DISTURBED AREAS OUTSIDE THE GRADING LIMITS SHALL ALSO BE MULCHED AND PARTICIPATION WILL BE THE SAME AS FOR SEEDDED AREAS.

908-2.1 MULCH MATERIAL: THE CONTRACTOR MAY EITHER FURNISH STRAW OR HYDROMULCH AS THE TYPE OF MULCH MATERIAL TO BE USED ON THIS PROJECT.

908-3.1 MULCHING: THE HYDRAULIC MULCH SHALL BE APPLIED AS A SLURRY OF 2,500 POUNDS OF MULCH AND NOT LESS THAN 2,500 GALLONS OF WATER PER ACRE.

908-3.4 STRUCTURE CLEANING: AFTER THE PROPOSED MULCH HAS BEEN APPLIED, THE CONTRACTOR WILL CLEAN THE MULCH OFF ALL STRUCTURES (DRAINAGE, ELECTRICAL, LIGHTS, ETC.).

DATE MULCHING COMPLETED _____

THE PROPOSED MULCHING WILL BE PAID FOR UNDER ITEMS:
AR908510 MULCHING _____ PER ACRES

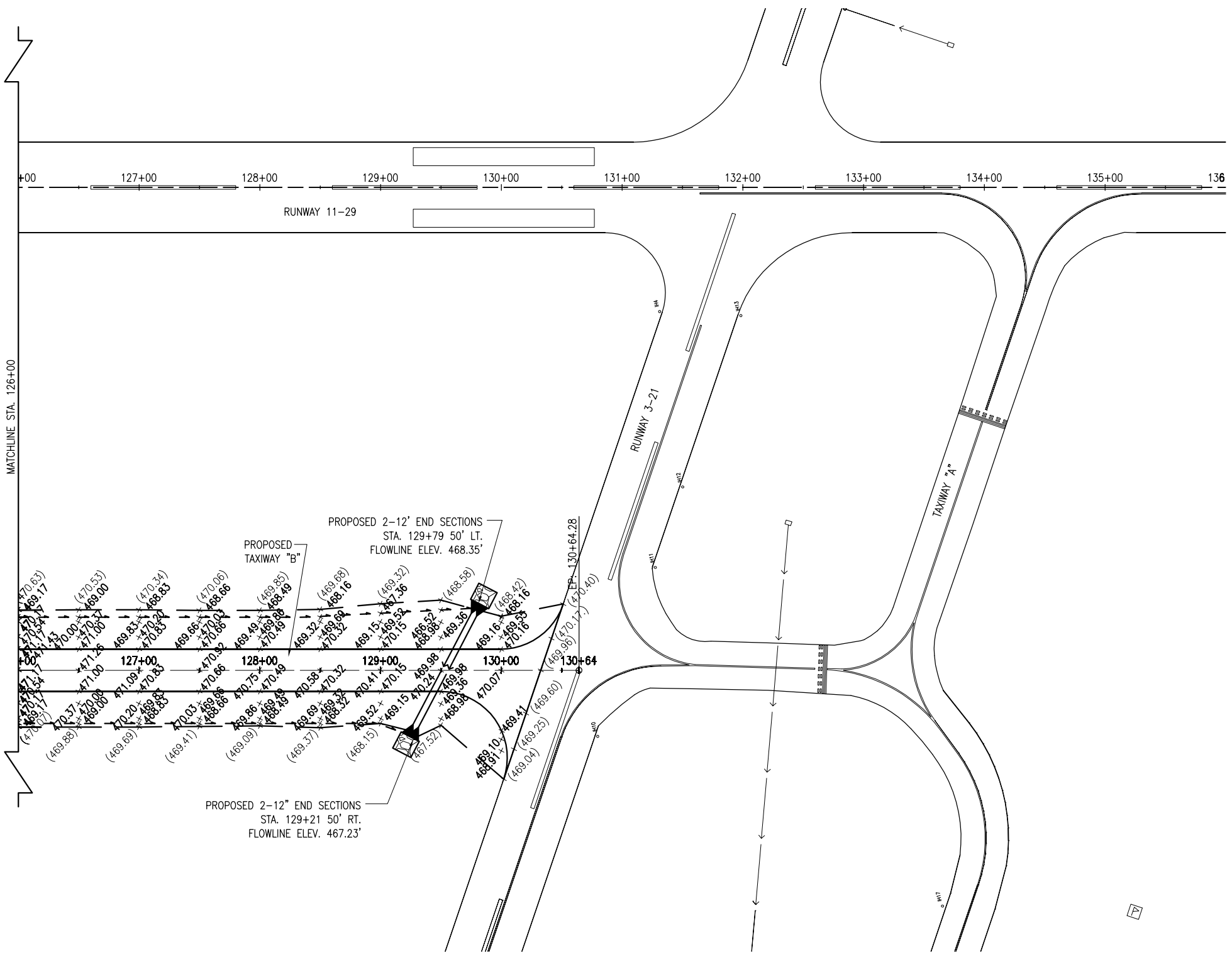
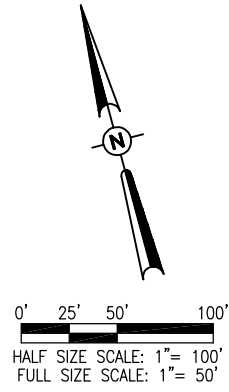
EROSION CONTROL BLANKET NOTES

AN EROSION CONTROL MATERIAL FOUR FEET IN WIDTH WILL BE INSTALLED ALONG THE TAXIWAY SHOULDERS ADJACENT TO THE EDGE OF THE PAVEMENT IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

THIS ITEM OF WORK SHALL BE PAID FOR UNDER ITEM
AR156531 "EROSION CONTROL BLANKET" _____ PER S.Y.

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING DRAINAGE PIPE
- PROPOSED DRAINAGE PIPE
- PROPOSED DRAINAGE DITCH
- EXISTING INLET
- PROPOSED HEADWALL
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADING AND SEEDING LIMITS



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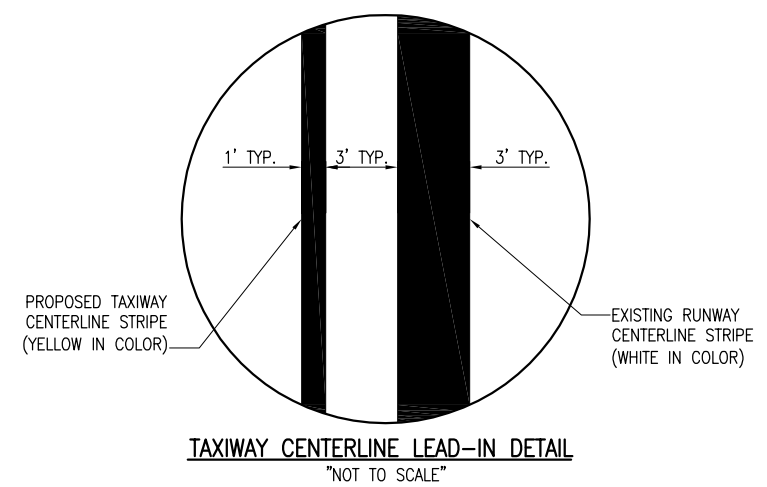
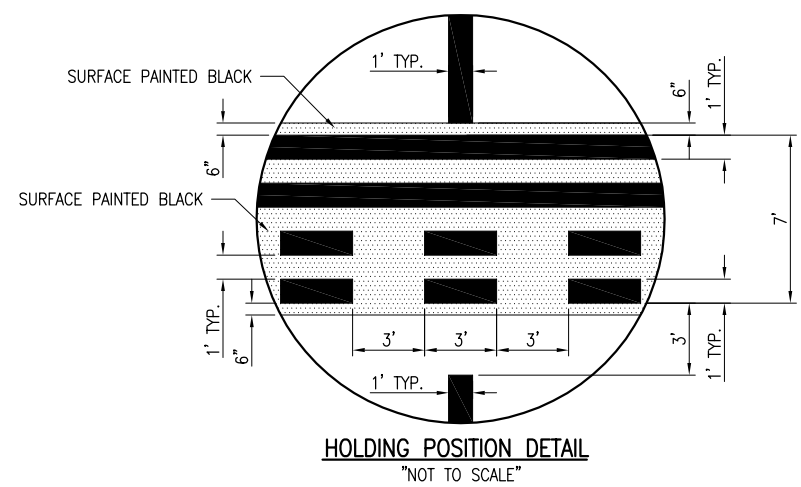
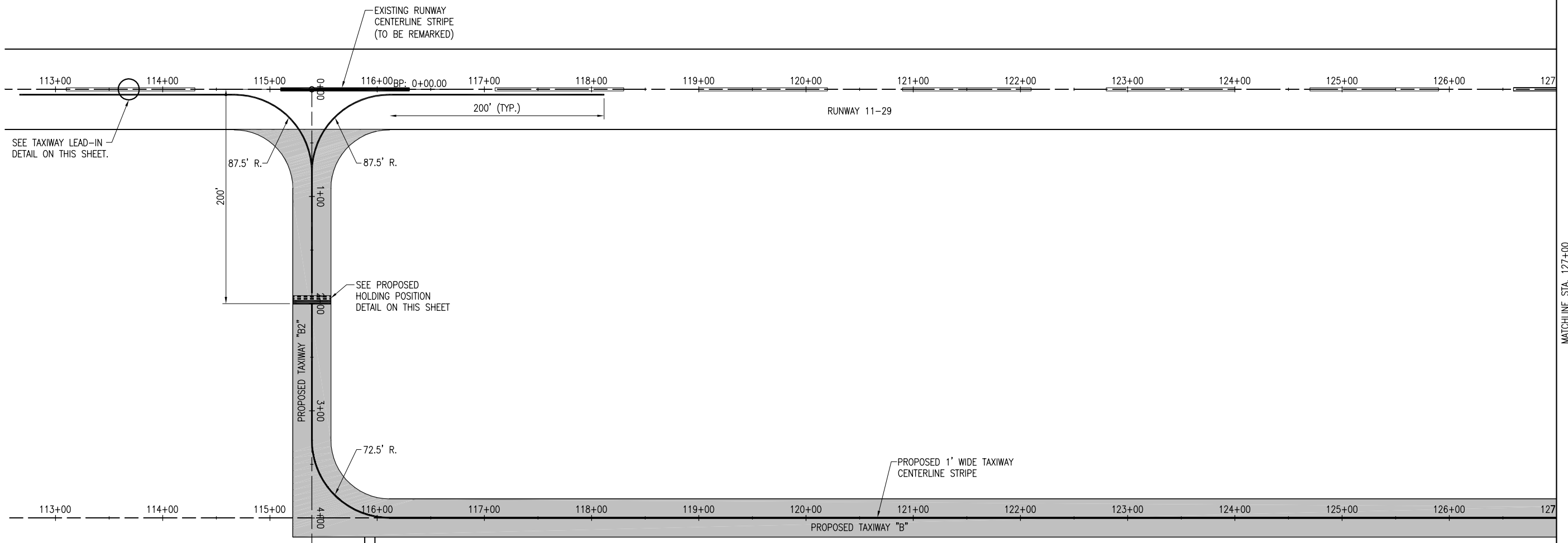
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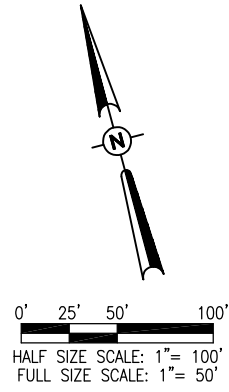
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TAXIWAY TO RWY. 11-29**

PROPOSED STAKING PLAN
STA. 127+00 TO STA. 130+64.28

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- LEGEND**
- EXISTING IMPROVEMENTS
 - PROPOSED IMPROVEMENTS
 - EXISTING MARKING
 - PROPOSED MARKING



REVISION	DATE

MATCHLINE STA. 127+00

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PROPOSED MARKING PLAN
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620-PAVEMENT MARKING-WATERBORNE NOTES

THE PAVEMENT MARKING-WATERBORNE (620) SHALL BE PLACED IN ACCORDANCE WITH ITEM 620 "PAVEMENT MARKING" AS STATED ON PAGE 277 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS, ADOPTED NOV. 2, 2009.

THIS ITEM SHALL CONSIST OF TAXIWAY CENTERLINE, AND TIEDOWN MARKING IN ACCORDANCE WITH THESE SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. ALL MARKING WILL BE YELLOW IN COLOR WITH A 6-IN BLACK BORDER. THE PROPOSED PAVEMENT MARKING WILL BE APPLIED IN TWO APPLICATIONS.

ANY MATERIAL DELIVERED THAT FAILS TO MEET THE SPECIFICATIONS SHALL BE DISPOSED OF BY THE VENDOR AND IMMEDIATELY REPLACED WITH ACCEPTABLE MATERIAL ENTIRELY AT THE VENDOR'S EXPENSE, INCLUDING HANDLING AND TRANSPORTATION CHARGES.

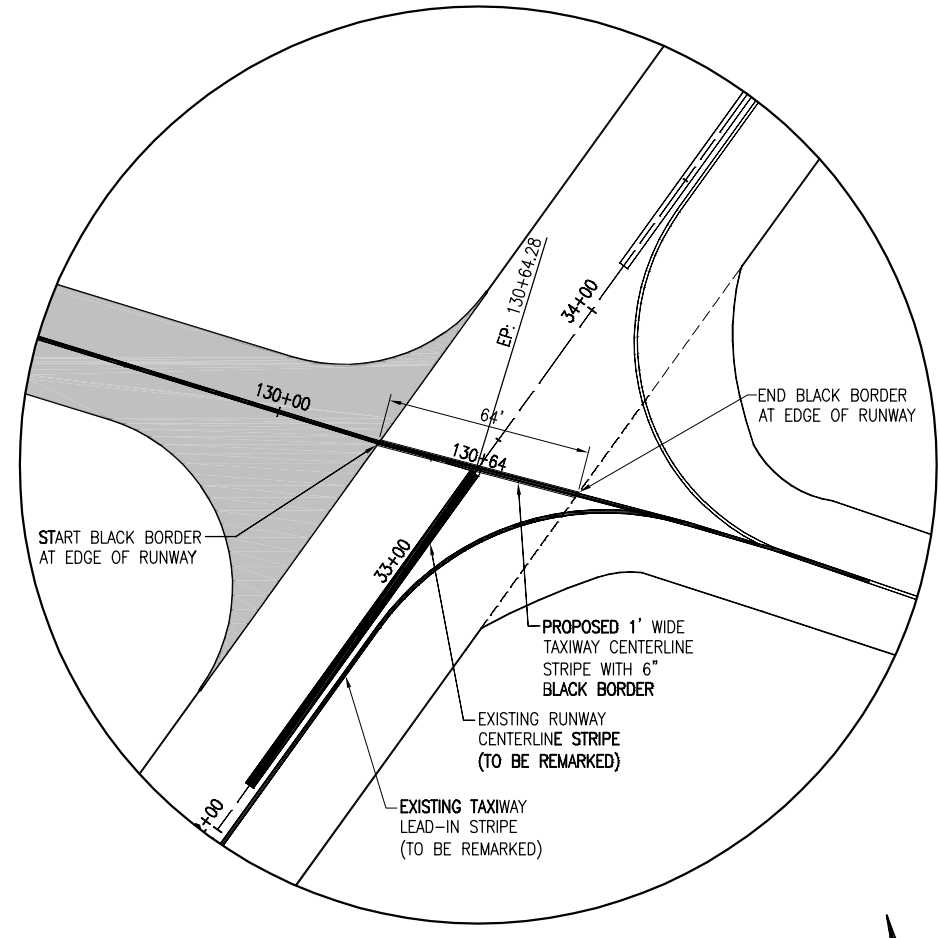
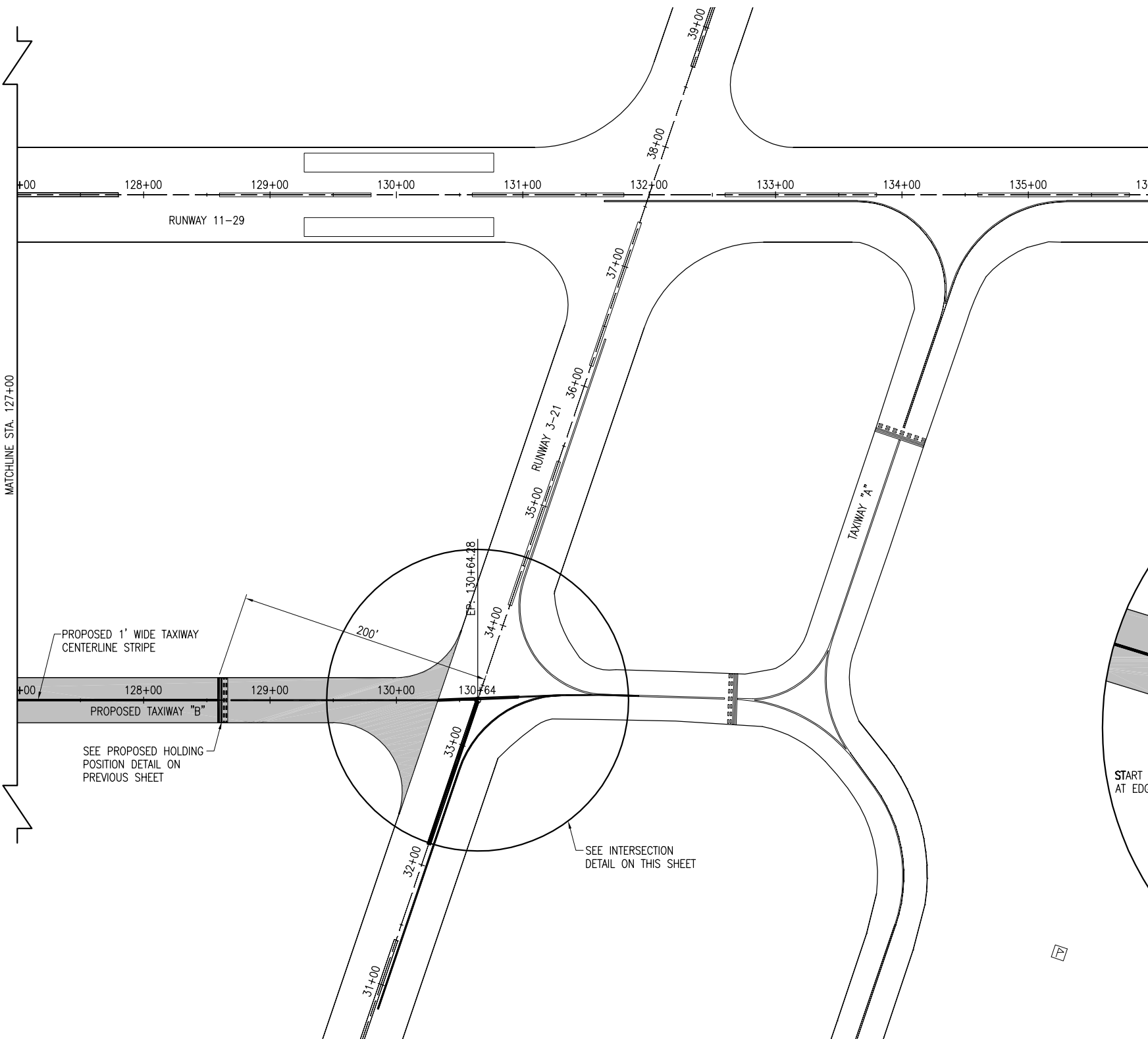
ALL CURING COMPOUND WILL BE CLEANED FROM CONCRETE PAVEMENT PRIOR TO APPLYING PAINT. NO EXCEPTIONS.

ALL PROPOSED MARKING WILL BE COMPLETED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION PLANS.

GLASS BEADS SHALL BE REQUIRED ONLY ON THE SECOND APPLICATION OF YELLOW MARKING.

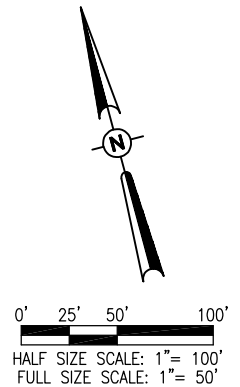
CUT-OFF SHEETS WILL BE REQUIRED TO INSURE STRAIGHT EDGES.

THE PROPOSED MARKING WILL BE PAID FOR UNDER ITEM:
 AR620520 PAVEMENT MARKING-WATERBORNE ___ PER S.F.
 AR620525 PAVEMENT MARKING-BLACK BORDER ___ PER S.F.



INTERSECTION DETAIL
NOT TO SCALE

- LEGEND**
- EXISTING IMPROVEMENTS
 - PROPOSED IMPROVEMENTS
 - EXISTING MARKING
 - PROPOSED MARKING



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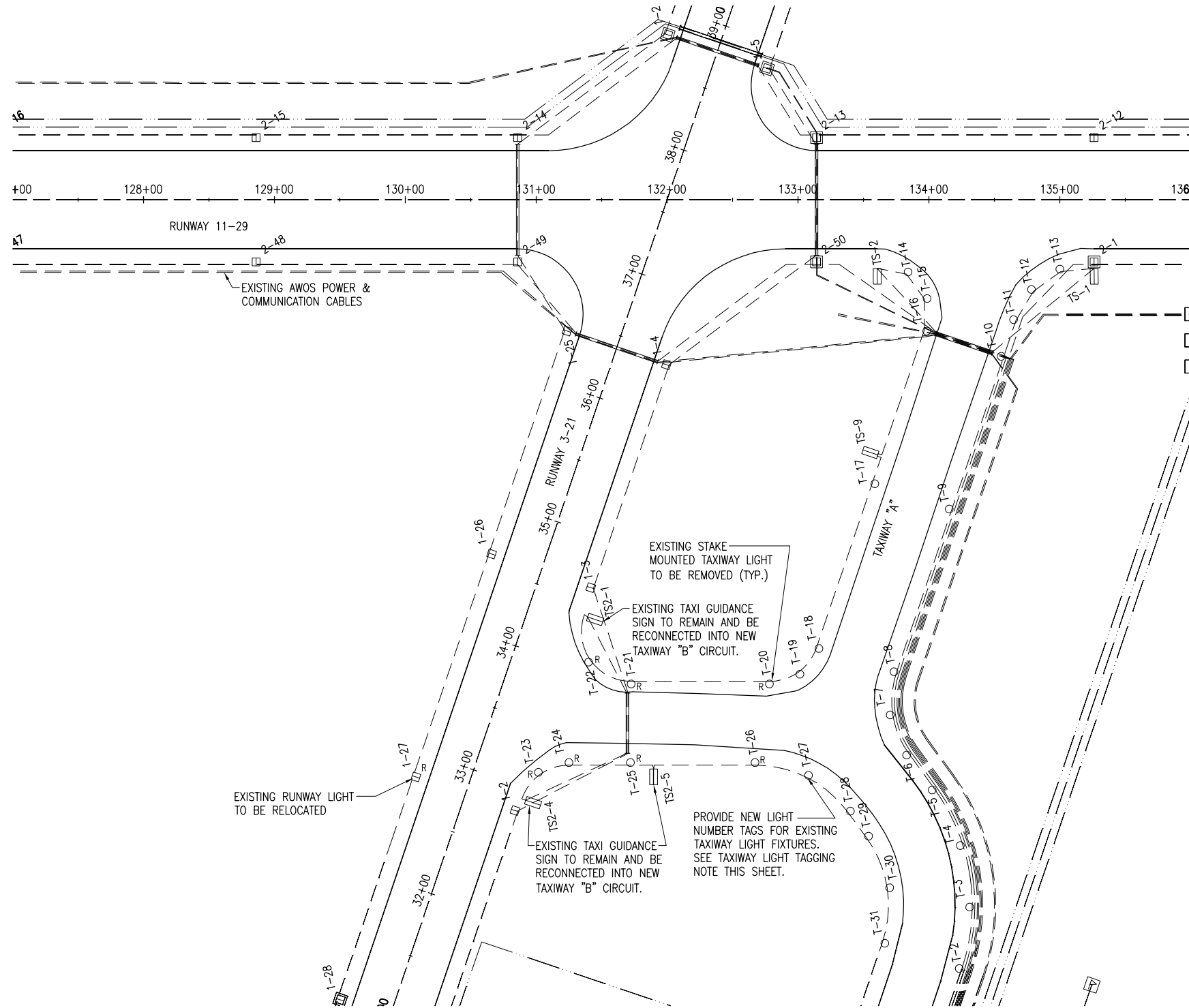
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PROPOSED MARKING PLAN
STA. 127+00 TO STA. 130+64.28



LEGEND

	EXISTING IMPROVEMENTS
	EXISTING ELECTRICAL CABLES
	EXISTING ELECTRICAL DUCT
	EXISTING STAKE MOUNTED TAXIWAY LIGHT
	EXISTING STAKE MOUNTED TAXIWAY LIGHT (TO BE REMOVED)
	EXISTING BASE MOUNTED TAXIWAY LIGHT
	EXISTING STAKE MOUNTED RUNWAY LIGHT
	EXISTING STAKE MOUNTED RUNWAY LIGHT (TO BE RELOCATED)
	EXISTING BASE MOUNTED RUNWAY LIGHT
	EXISTING TAXI GUIDANCE SIGN

TAXIWAY LIGHT TAGGING NOTE
 THE EXISTING TAXIWAY LIGHTS T-27 THROUGH T-49 SHALL BE RETAGGED TO READ T-20 THROUGH T-56.

PROVIDE NEW LIGHT NUMBER TAGS FOR EXISTING TAXIWAY LIGHT FIXTURES. SEE TAXIWAY LIGHT TAGGING NOTE THIS SHEET.

EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED (TYP.)

EXISTING TAXI GUIDANCE SIGN TO REMAIN AND BE RECONNECTED INTO NEW TAXIWAY "B" CIRCUIT.

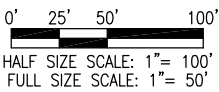
EXISTING RUNWAY LIGHT TO BE RELOCATED

LIGHT REMOVAL/RELOCATION NOTES

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- 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 OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAIDS, OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- EXISTING AIRFIELD LIGHTS THAT ARE DESIGNATED FOR RELOCATION SHALL BE DISCONNECTED AND CAREFULLY REMOVED BY THE CONTRACTOR AS NOT TO DAMAGE THE LIGHT. THE LIGHT ASSEMBLY AND ISOLATION TRANSFORMERS SHALL BE RELOCATED AND INSTALLED IN THE LOCATIONS SHOWN.
- THE CONTRACTOR IS ENCOURAGED TO INSPECT EACH EXISTING LIGHT PRIOR TO RELOCATION AND IDENTIFY TO THE RESIDENT ENGINEER ANY DAMAGED OR INOPERATING PARTS. ONCE THE EXISTING LIGHT IS REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR ALL FIXTURES DAMAGED DURING THE RELOCATION. ALL LIGHTS WILL BE REINSTALLED IN PROPER WORKING ORDER, OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- EXISTING AIRFIELD LIGHTS, AND THEIR ISOLATING TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT MANAGER.
- THE EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF THE PROPOSED LIGHT OR CABLE, PAVEMENT OR OTHER WORK, THEN IT SHALL BE DISCONNECTED, REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES
- THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT REMOVAL, WITH EARTH FROM WITHIN THE CONSTRUCTION LIMITS. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
- RUNWAY LIGHTING CIRCUITS SHALL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY FOR AN OPEN RUNWAY. THE CONTRACTOR SHALL PROVIDE TEMPORARY CABLE & CONNECTIONS WHERE NECESSARY TO MAINTAIN A RUNWAY OR TAXIWAY LIGHTING SYSTEM. TEMPORARY CABLE SHALL BE 1/C #8 FAA L-824 5KV UG CABLE IN DUCT OR UNIT DUCT.
- ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, - OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 218, PARAGRAPH c.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

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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.



OL011

REVISION	DATE	UPDATE PER	DATE
	03/17/12		

**OLNEY-NOBLE AIRPORT
 OLNEY, ILLINOIS**

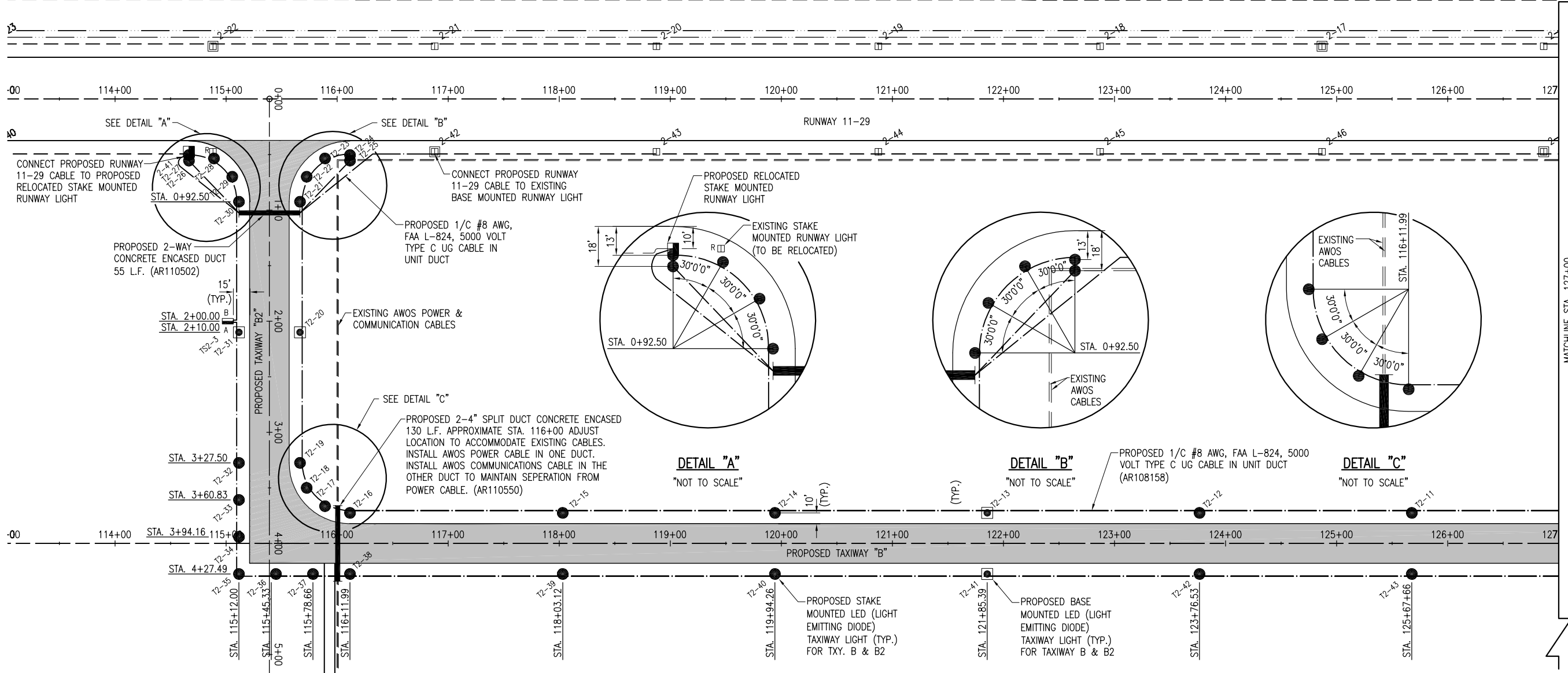
IL PROJ.: OLY-4131 A.I.P. PROJ.: 3-17-0076-B11

Hanson Proj. No. 11A0081D_0800	Filename C-142-ELE.dwg	Scale 1" = 50'	Date 02/17/12
LAYOUT	KNL	01/30/12	
DRAWN	BAK	02/03/12	
REVIEWED	CAH	02/15/12	

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

EXISTING ELECTRICAL PLAN
 STA. 127+00 TO STA. 130+64.28

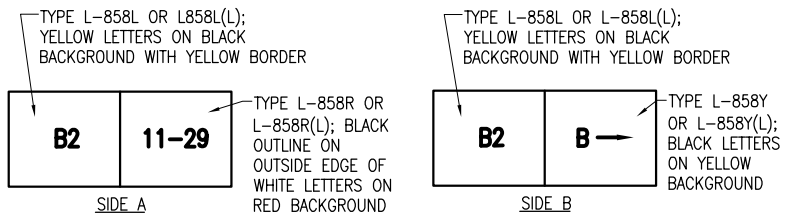


TEMPORARY LIGHTING NOTE:

THE CONTRACTOR WILL FURNISH A TEMPORARY JUMPER CABLE BETWEEN RUNWAY LIGHTS 2-41 AND 2-42 IN ORDER TO MAINTAIN RUNWAY 11-29 LIGHTING CIRCUIT.

THE JUMPER WILL REMAIN IN PLACE UNTIL RUNWAY LIGHT 2-41 HAS BEEN RELOCATED AND THE PROPOSED CABLE INSTALLED.

THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE JUMPER CABLE WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



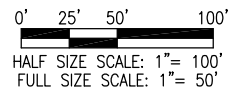
TAXI GUIDANCE SIGN TS2-3 DETAIL
"NOT TO SCALE"

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

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING ELECTRICAL CABLES
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT (TO BE RELOCATED)
- EXISTING BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED RELOCATED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN



DATE	REVISION
03/21/12	UPDATE PER FAA PGL 12-2 & EB67D

OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

Hanson Proj. No. 11A0081D_0800	FILENAME C-141-ELE.dwg	Scale 1" = 50'	Date 02/17/12
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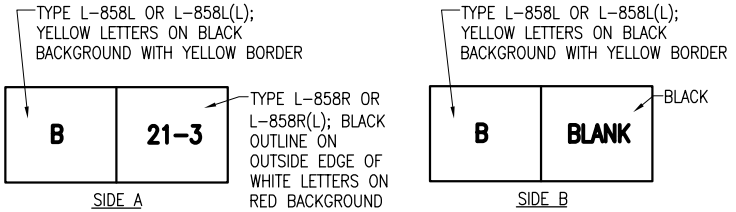
1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED ELECTRICAL PLAN
STA. 115+21.60 TO STA. 127+00

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TAXI GUIDANCE SIGN TS2-2 DETAIL
"NOT TO SCALE"

TEMPORARY LIGHTING NOTE:

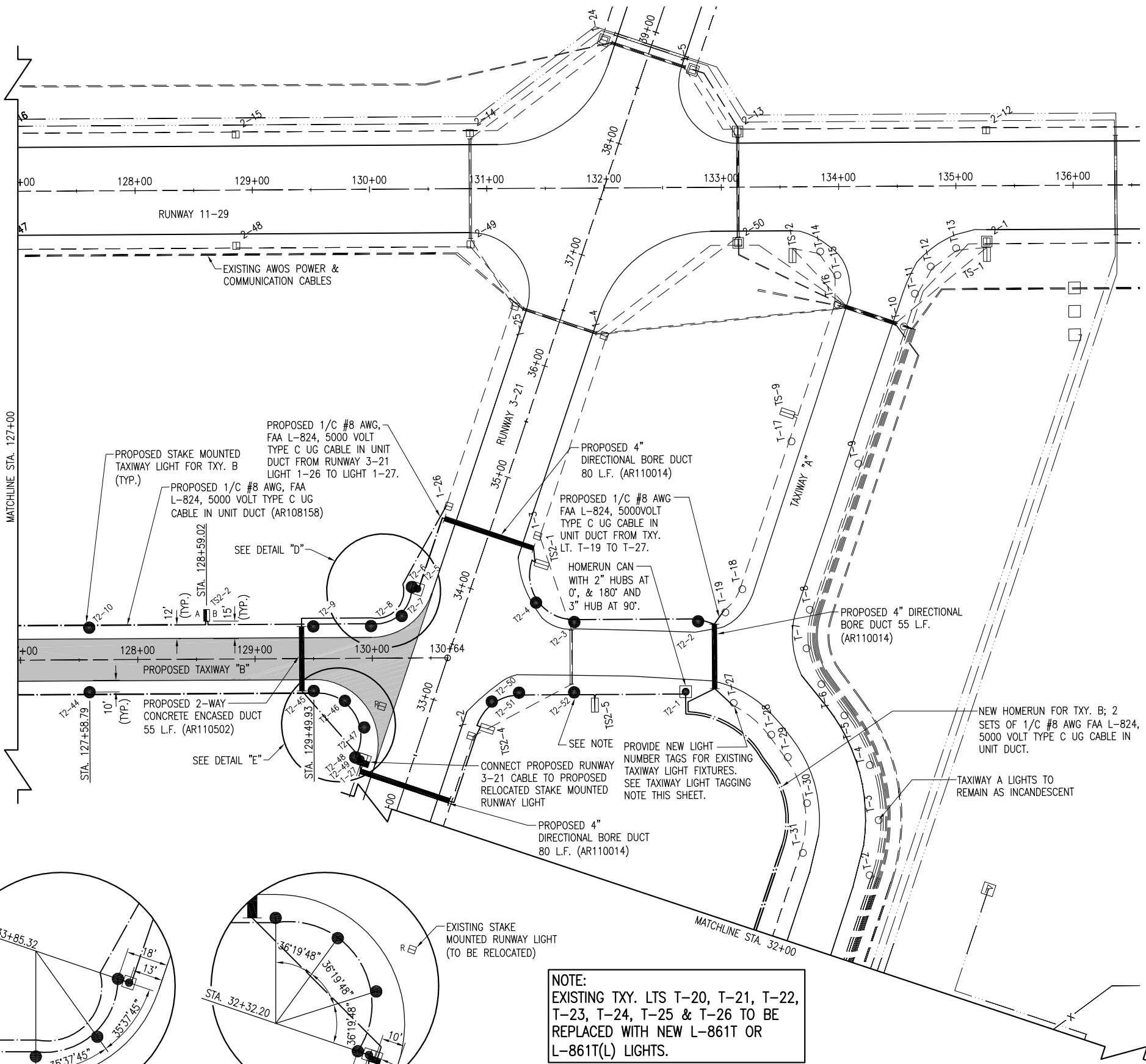
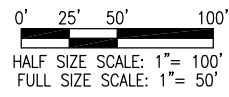
THE CONTRACTOR WILL FURNISH A TEMPORARY JUMPER CABLE (IN DUCT OR UNIT DUCT WHERE EXPOSED ABOVE GRADE) BETWEEN RUNWAY LIGHTS 1-26 AND 1-27 IN ORDER TO MAINTAIN RUNWAY 3-21 LIGHTING CIRCUIT.

THE JUMPER WILL REMAIN IN PLACE UNTIL RUNWAY LIGHT 1-27 HAS BEEN RELOCATED AND THE PROPOSED CABLE INSTALLED.

THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE JUMPER CABLE WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

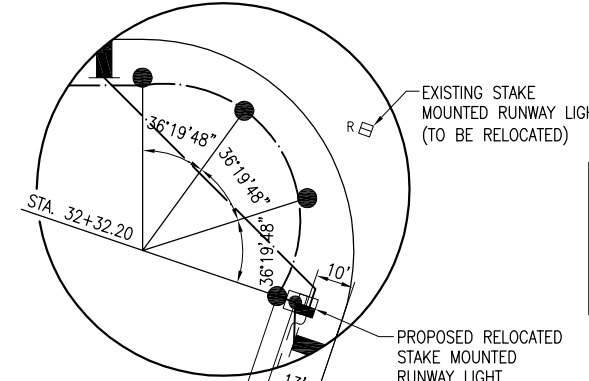
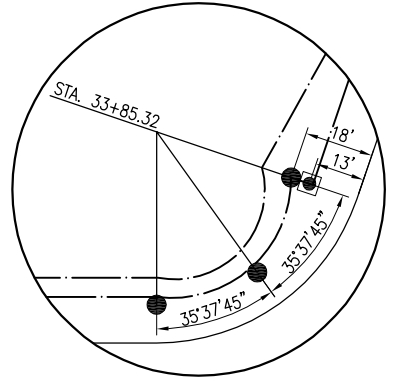
LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING ELECTRICAL CABLES
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
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- PROPOSED RELOCATED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN



NOTE:
EXISTING TXY. LTS T-20, T-21, T-22, T-23, T-24, T-25 & T-26 TO BE REPLACED WITH NEW L-861T OR L-861T(L) LIGHTS.

TAXIWAY LIGHT TAGGING NOTE
THE EXISTING TAXIWAY LIGHTS T-27 THROUGH T-49 SHALL BE RETAGGED TO READ T-20 THROUGH T-56.



REVISION	DATE	UPDATE PER
12-2 &	03/21/12	EB67D

OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

AL.P. PROJ.: 3-17-0076-B11

IL PROJ.: 01Y-4131

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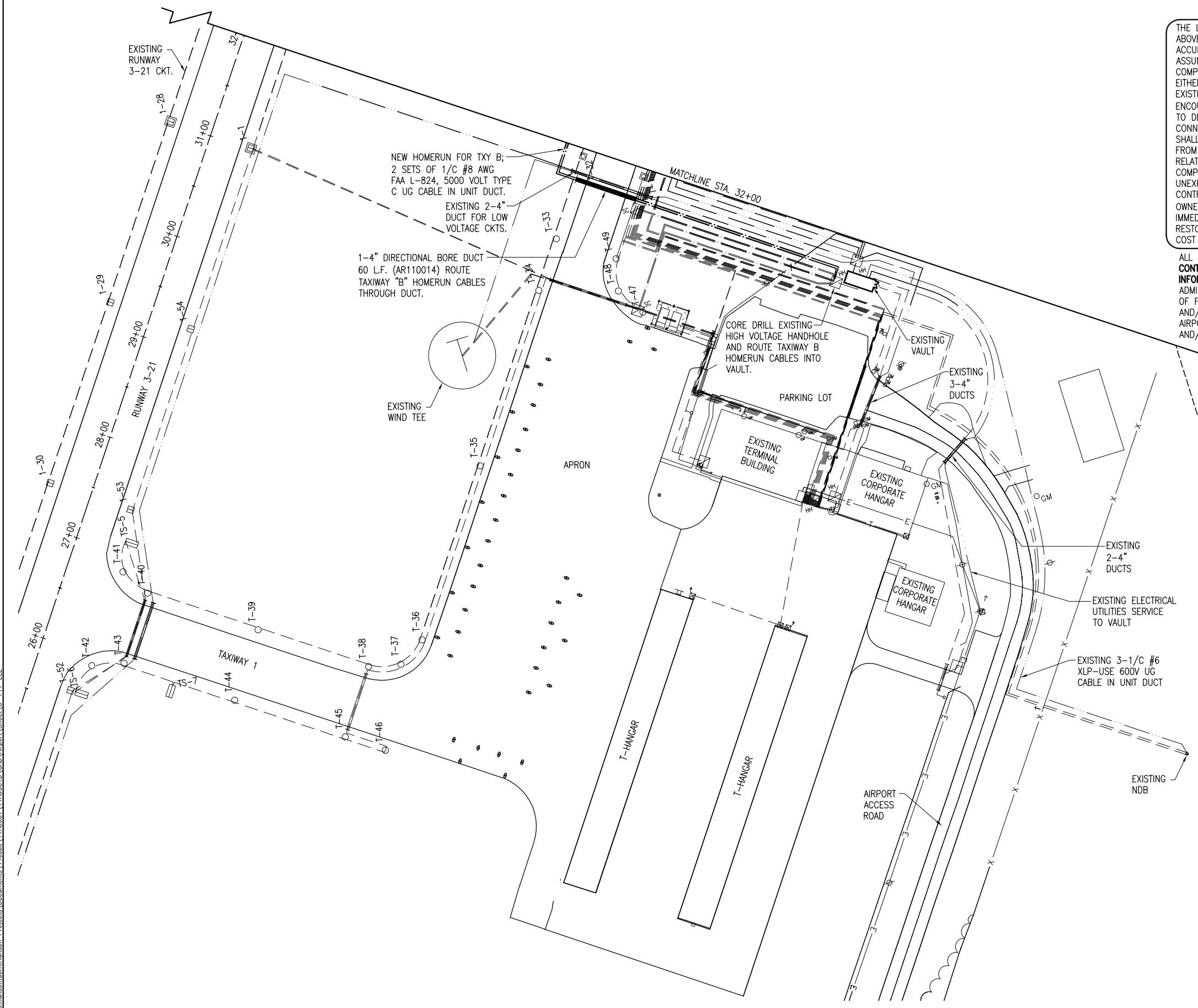
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED ELECTRICAL PLAN
STA. 127+00 TO STA. 130+64.28

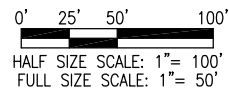
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LEGEND

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- EXISTING ELECTRICAL CABLES
- EXISTING 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING 3-1/C #6 XLP-USE 600V UG CABLE IN UNIT DUCT
- EXISTING 4-1/C #6 XLP-USE 600V UG CABLE IN UNIT DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING SPLICE CAN



REVISION	DATE

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

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**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**PROPOSED ELECTRICAL PLAN
FOR TERMINAL AREA**

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AIRFIELD LIGHTING NOTES

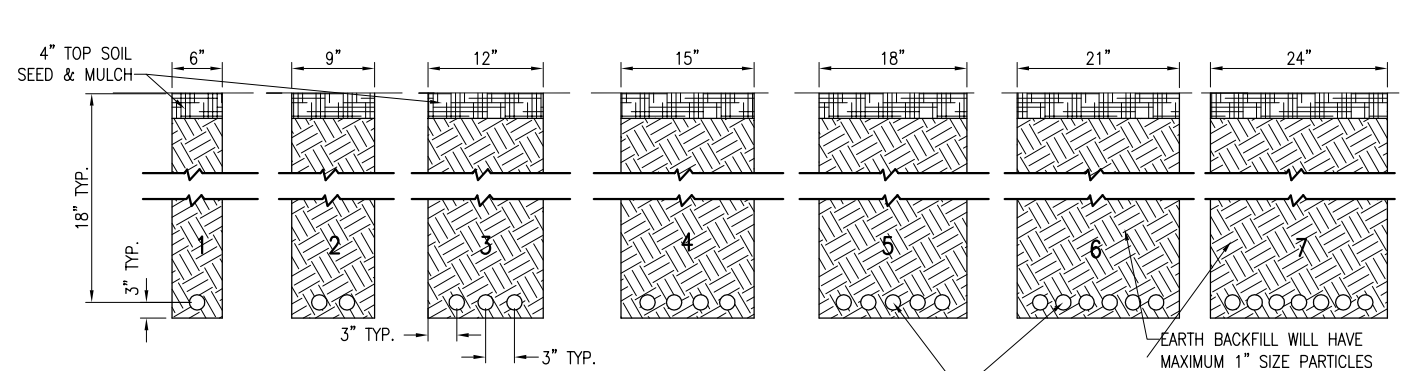
1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
3. PROPOSED TAXIWAY LIGHTS AND RELOCATED RUNWAY LIGHTS SHALL BE PLACED 10' (FT.) FROM THE PAVEMENT EDGE UNLESS SHOWN OTHERWISE ON THESE CONSTRUCTION DRAWINGS. PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE, UNLESS SHOWN OTHERWISE.
4. PROPOSED TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, SPLICE CANS, HANDHOLES, MANHOLES, ELECTRICAL DUCTS, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
5. PROPOSED CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
6. THE PROPOSED RUNWAY AND TAXIWAY LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT.
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. ALL PROPOSED TAXIWAY LIGHTS WILL BE FITTED WITH 360° BLUE LENSES.
9. ALL TAXIWAY LIGHTS (PROPOSED AND EXISTING) SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS. TAGS WILL BE CONSIDERED INCIDENTAL TO THE LIGHTING INSTALLATION.
10. SEE "TAXI GUIDANCE SIGN SCHEDULE" AND/OR DETAILS FOR INFO ON SIGN LEGENDS.
11. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PART 218, PARAGRAPH c. 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.
12. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
13. EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE.
14. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, AND/OR REMOVALS 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. THIS WORK WILL BE CONSIDERED AS AN INCIDENTAL ITEM AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
15. EXISTING RUNWAY AND/OR TAXIWAY LIGHTS THAT ARE DESIGNATED FOR RELOCATION SHALL BE DISCONNECTED AND CAREFULLY REMOVED BY THE CONTRACTOR AS NOT TO DAMAGE THE LIGHT. THE LIGHT ASSEMBLY AND ISOLATION TRANSFORMERS SHALL BE RELOCATED AND INSTALLED IN THE LOCATIONS SHOWN.
16. THE CONTRACTOR IS ENCOURAGED TO INSPECT EACH EXISTING LIGHT PRIOR TO RELOCATION AND IDENTIFY TO THE RESIDENT ENGINEER ANY DAMAGED OR INOPERATING PARTS. ONCE THE EXISTING LIGHT IS REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR ALL FIXTURES DAMAGED DURING THE RELOCATION. ALL LIGHTS WILL BE REINSTALLED IN PROPER WORKING ORDER, OR REPLACED AT THE CONTRACTOR'S EXPENSE.
17. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

TAXI GUIDANCE SIGN NOTES

1. THE PROPOSED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y OR L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R OR L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L OR 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.
2. ALL PROPOSED TAXI GUIDANCE SIGNS WILL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE.
3. THE PROPOSED TAXI GUIDANCE SIGNS WILL BE PAID FOR UNDER THE FOLLOWING ITEMS
 AR125445 TAXI GUIDANCE SIGN, 5 CHARACTER_____ 1 EACH
 AR125447 TAXI GUIDANCE SIGN, 7 CHARACTER_____ 1 EACH

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<p>1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29</p>	<p>AIRFIELD LIGHTING NOTES</p>	<p>22</p> <p>22 of 52 sheets</p>	<p>HANSON © Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2903 www.hanson-inc.com Offices Nationwide</p>									
<p>Hanson Proj. No. 11A0081D_0800 Filename C-141-ELE.dwg Scale NOT TO SCALE Date 02/17/12</p>			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>LAYOUT</td> <td>CAH</td> <td>01/30/12</td> </tr> <tr> <td>DRAWN</td> <td>BAK</td> <td>02/07/12</td> </tr> <tr> <td>REVIEWED</td> <td>CAH</td> <td>02/15/12</td> </tr> </table>	LAYOUT	CAH	01/30/12	DRAWN	BAK	02/07/12	REVIEWED	CAH	02/15/12
LAYOUT	CAH	01/30/12										
DRAWN	BAK	02/07/12										
REVIEWED	CAH	02/15/12										
<p>OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS</p>			<p>IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11</p>									
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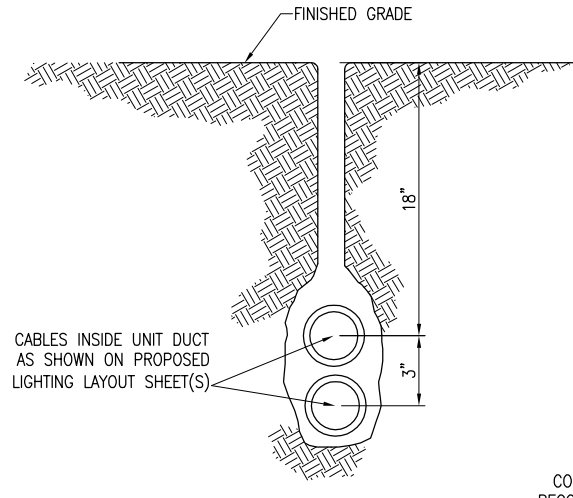


NOTES:
 DETAIL NUMBERS INDICATE NO. OF CABLES.

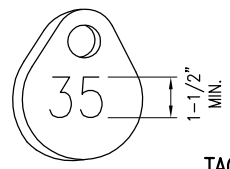
TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.

DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.

ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

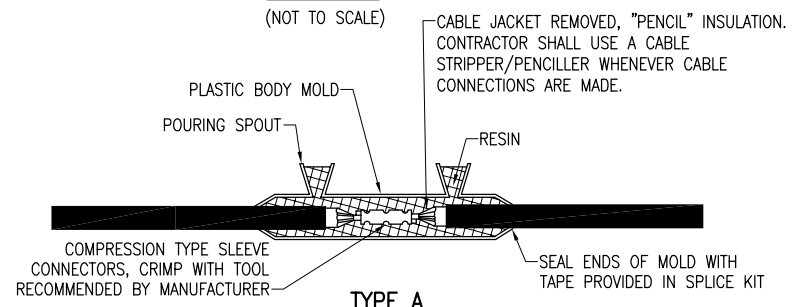


PLOWED CABLE
(NOT TO SCALE)



TAG DETAIL
(NOT TO SCALE)

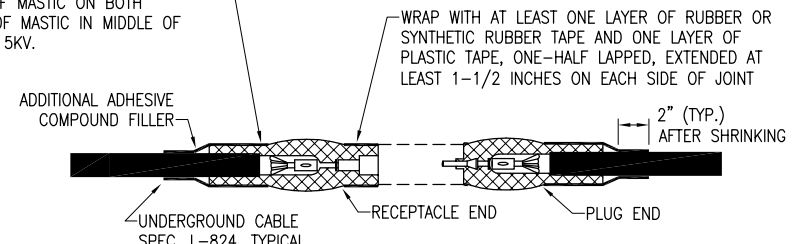
NOTE:
 AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.



TYPE A

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

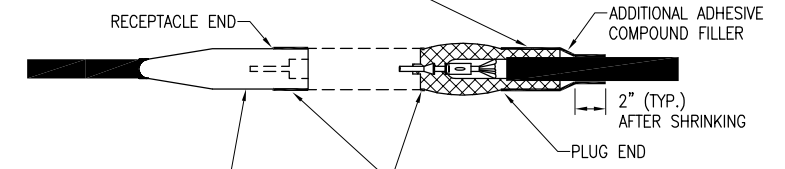
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES



TYPE B

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

HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE. HEAT SHRINKABLE TUBING SHALL EXTEND FROM THE CABLE TO AT LEAST AN INCH PAST THE COMPLETED CONNECTION.



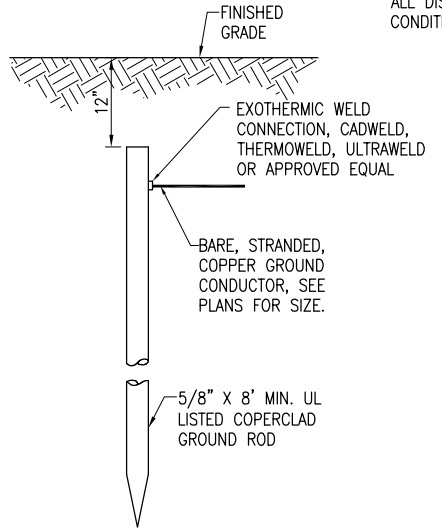
TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS

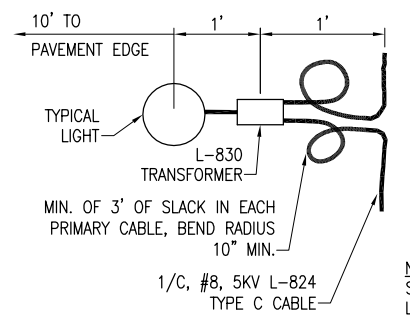
NOTES:
 SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.

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

CABLE SPLICES
(NOT TO SCALE)



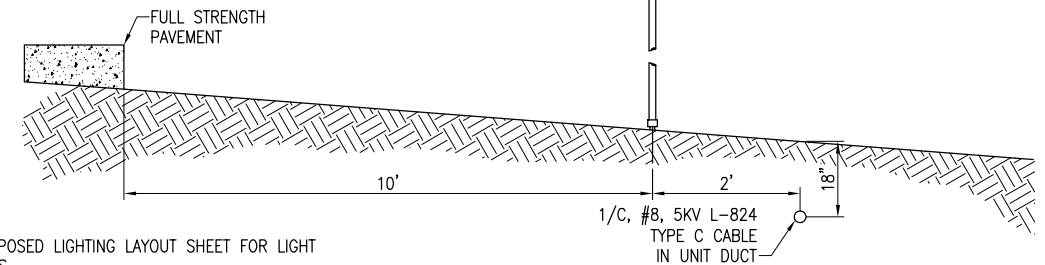
CABLE TRENCHES
(NOT TO SCALE)



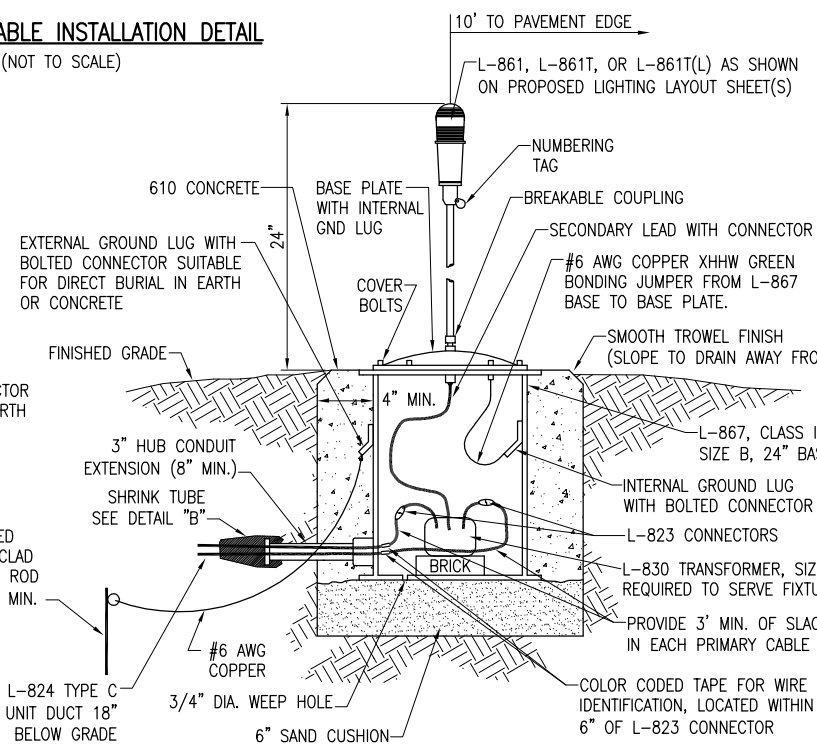
LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)

PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.

NOTES:
 SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.



PROFILE VIEW



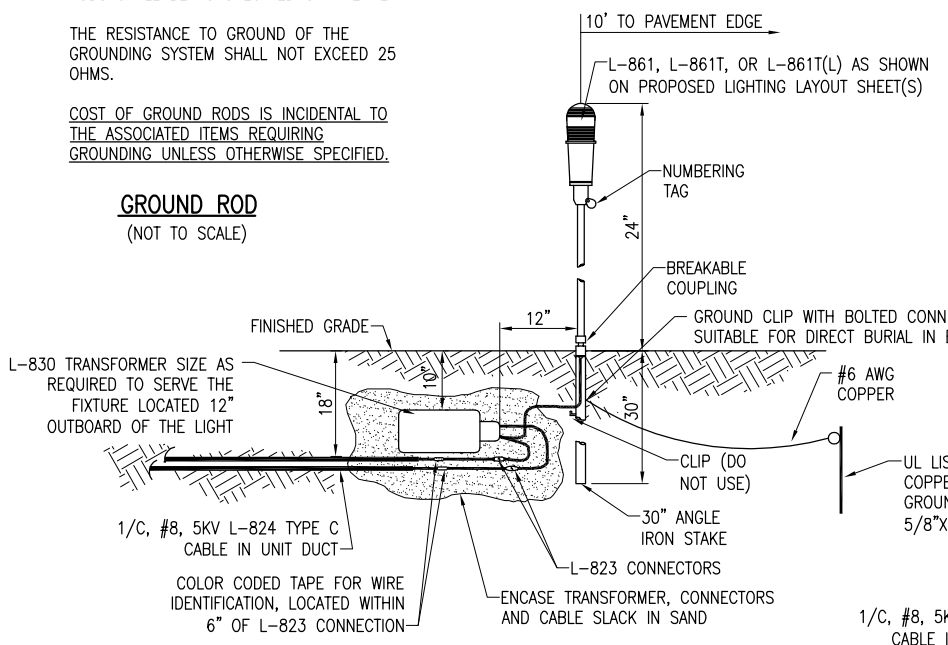
MEDIUM/HIGH INTENSITY LIGHT - BASE MOUNTED
(NOT TO SCALE)

NOTES:
 TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.

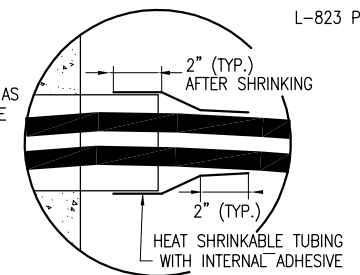
THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.

COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.

GROUND ROD
(NOT TO SCALE)



MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)



DETAIL "B"
(NOT TO SCALE)

REVISION	DATE	UPDATE PER	FAA PGL 12-2 & EB67D

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IL PROJ.: 01Y-4131
 A.I.P. PROJ.: 3-17-0076-B11

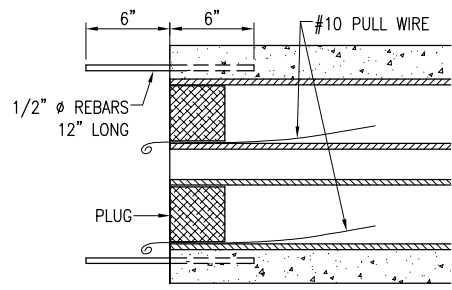
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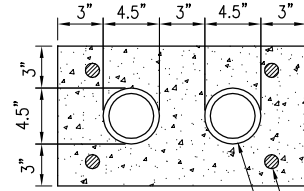
1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

ELECTRICAL DETAILS
 SHEET 1

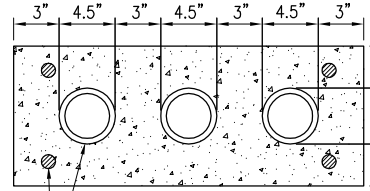
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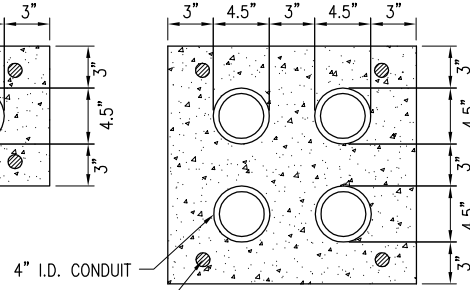
TYPICAL SECTION
(NOT TO SCALE)



2-DUCT BANK
(NOT TO SCALE)



3-DUCT BANK
(NOT TO SCALE)



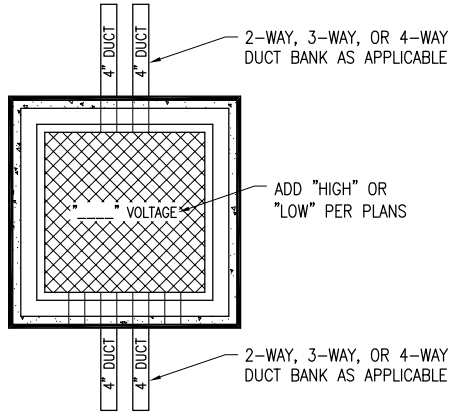
4-DUCT BANK
(NOT TO SCALE)

DUCT BANK NOTES:

- DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
- REBAR IS REQUIRED TO ACCOMMODATE FUTURE DUCT EXTENSIONS & INTERFACE AT DUCT BANK TERMINATIONS. CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLES REQUIRE REBAR AT TERMINATIONS.
- CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 PVC CONFORMING TO ITEM 110.
- MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE.
- HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- DUCT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT PAY ITEM.

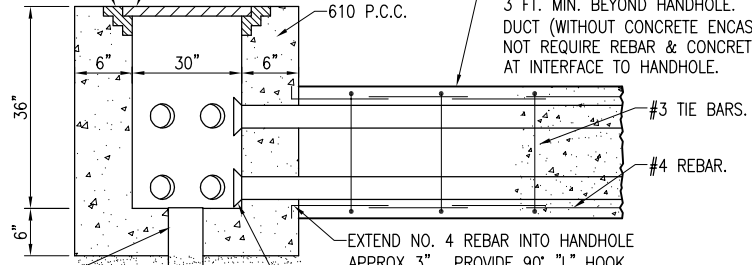
CABLE & DUCT MARKER NOTES:

- 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 FORMED AS DESCRIBED IN NOTE 4.
- CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
- CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 3/8" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.



HEAVY DUTY FRAME & LID SUITABLE FOR H-20 LOADING, NEENAH CAT. NO. R-6662-PP OR APPROVED EQUAL

SMOOTH TROWEL FINISH (SLOPE TO DRAIN)



DUCT BANK SHALL TRANSITION TO (OR BE) REINFORCED CONCRETE ENCASED DUCT WHERE ENTERING A HANDHOLE. PROVIDE REINFORCEMENT 3 FT. MIN. BEYOND HANDHOLE. DIRECT BURY DUCT (WITHOUT CONCRETE ENCASEMENT) DOES NOT REQUIRE REBAR & CONCRETE ENCASEMENT AT INTERFACE TO HANDHOLE.

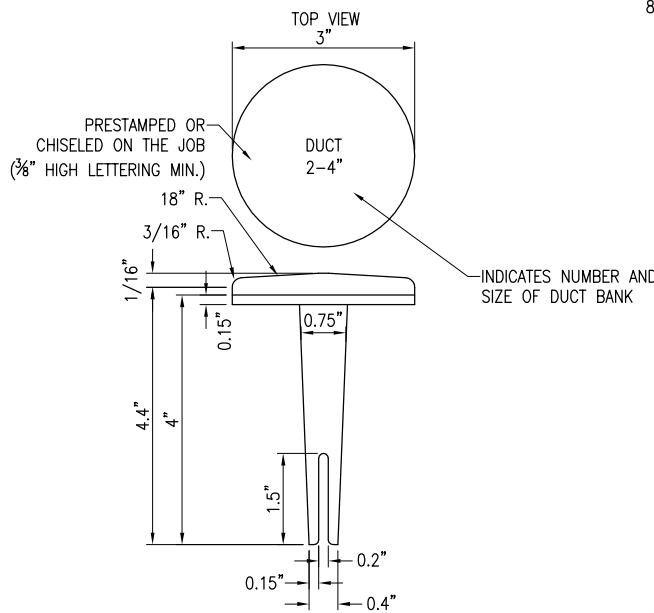
EXTEND NO. 4 REBAR INTO HANDHOLE APPROX 3". PROVIDE 90° "L" HOOK ON REBAR TERMINATION IN HANDHOLE. (TYP.) OR EXTEND REBAR EPOXY ANCHORED INTO HANDHOLE WITH 4" EMBEDMENT.

PROVIDE CONDUIT BUSHING OR BELL AT TERMINATION IN HANDHOLE (TYP.)

NOTES:

- LIDS FOR LOW VOLTAGE HANDHOLES SHALL BE LABELED "LOW VOLTAGE". LIDS FOR HIGH VOLTAGE HANDHOLES SHALL BE LABELED "HIGH VOLTAGE". COORDINATE LETTERING WITH MFR.
- HANDHOLES MAY BE CAST IN PLACE OR PRECAST CONCRETE. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS. FIBERGLASS HANDHOLES ARE NOT ACCEPTABLE.
- 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.
- ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

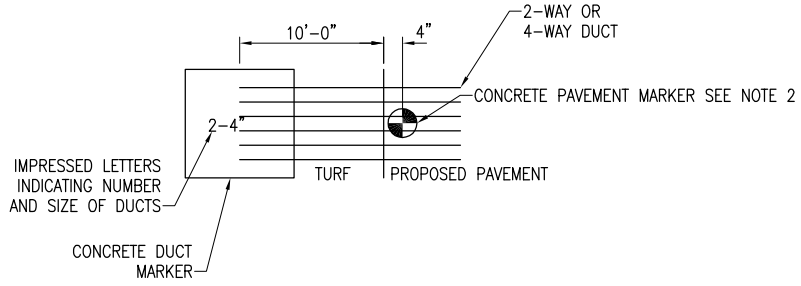
ELECTRICAL HANDHOLE
(NOT TO SCALE)



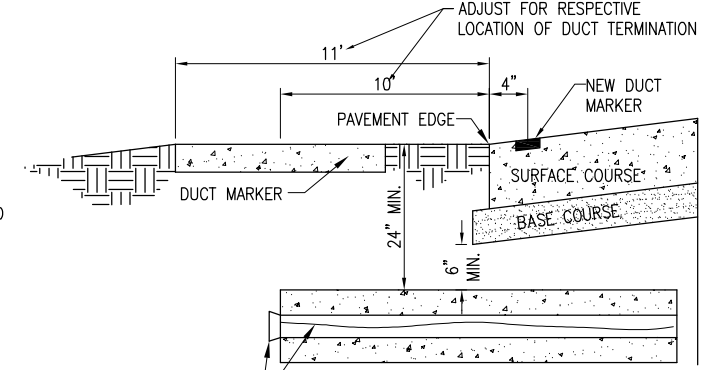
BITUMINOUS PAVEMENT DUCT MARKERS
(NOT TO SCALE)

NOTES:

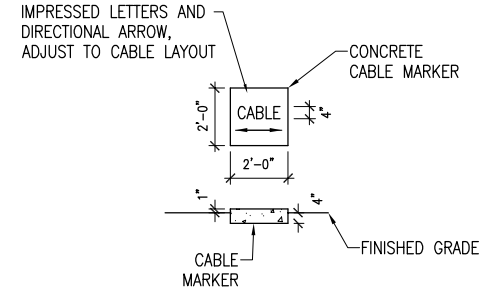
- TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.
- BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO. INC., 210 KASKASKIA DRIVE, RED BUD, IL. 62278, PHONE (618) 282-4114.



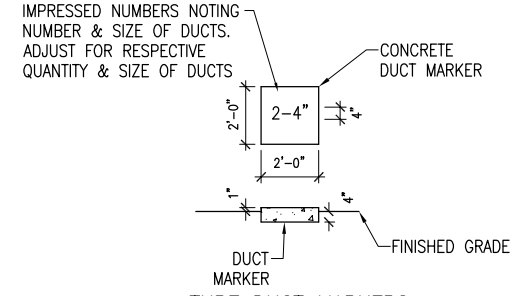
DUCT MARKER DETAIL
(NOT TO SCALE)



UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)



TURF CABLE MARKERS
(NOT TO SCALE)



TURF DUCT MARKERS
(NOT TO SCALE)

REVISION	DATE	ADDED DUCT MARKER NOTE
03/12/12		

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OLNEY, ILLINOIS

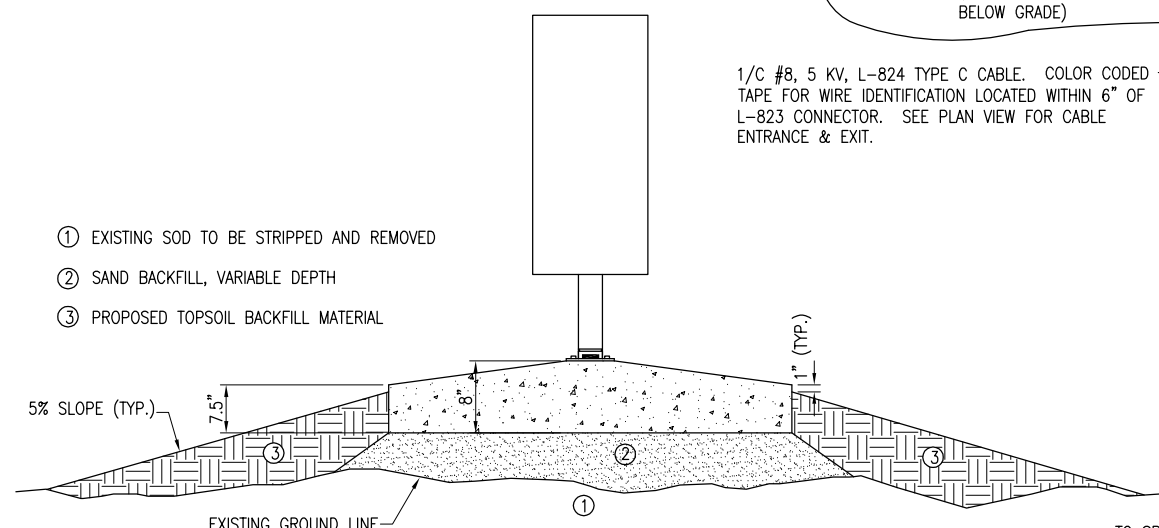
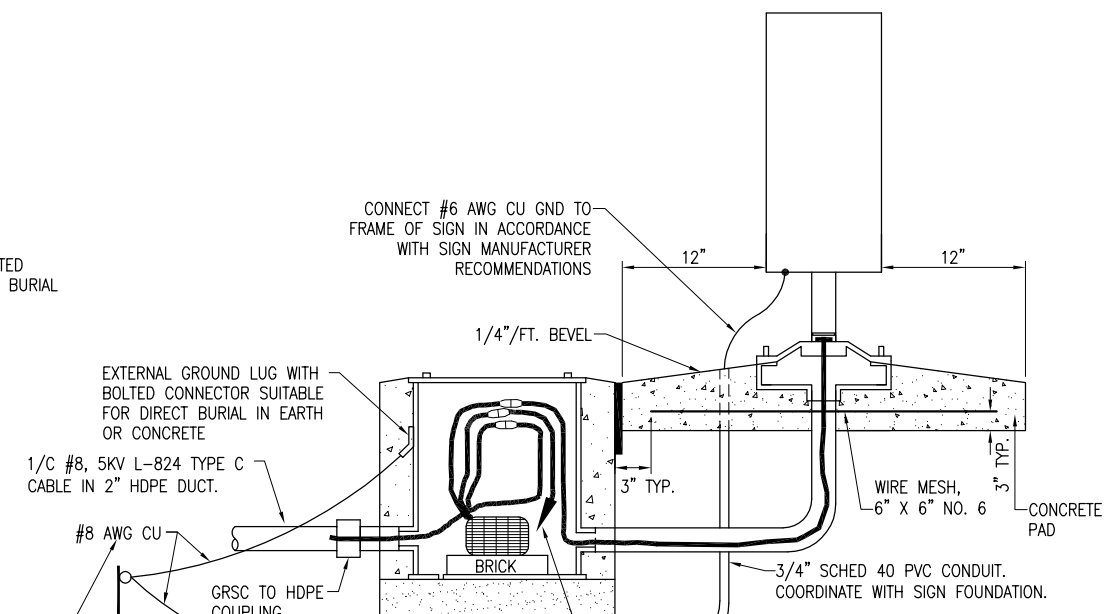
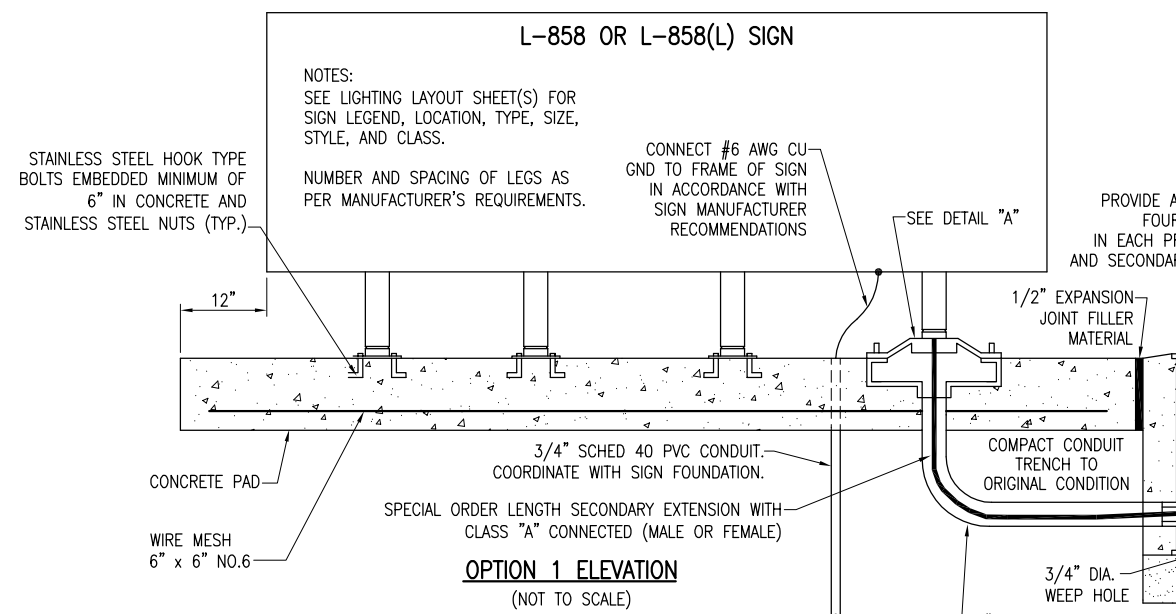
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ELECTRICAL DETAILS
SHEET 2

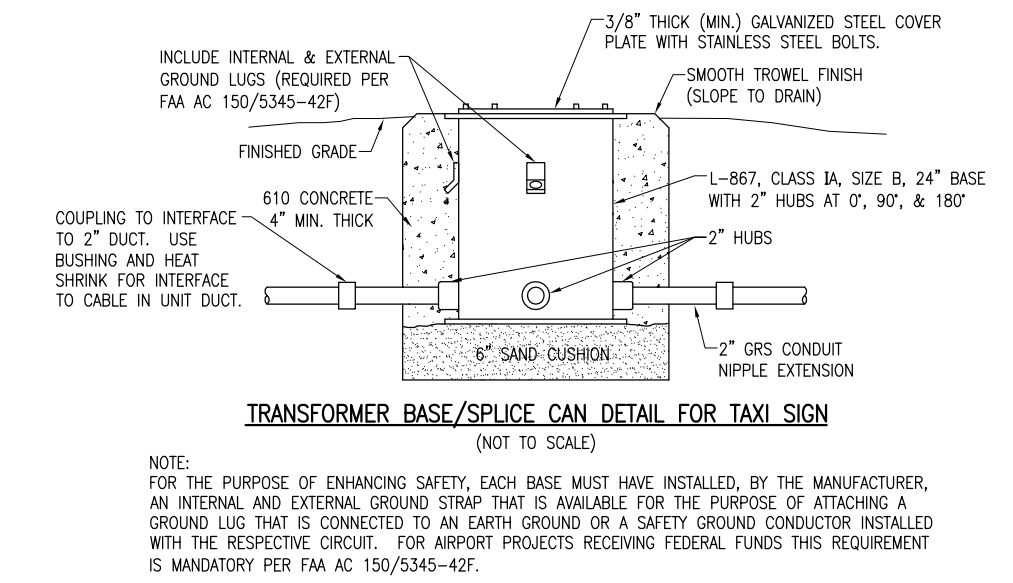
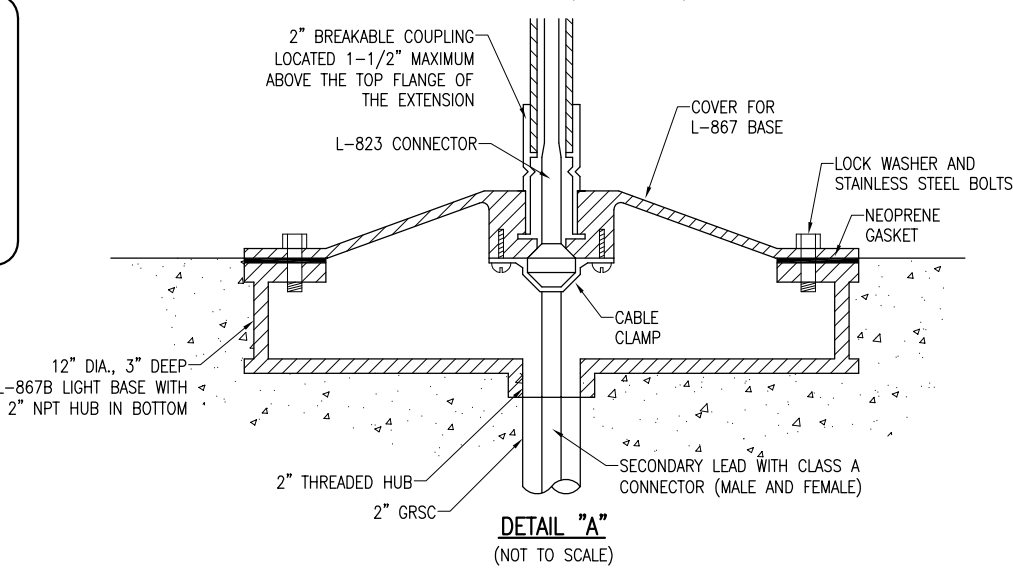
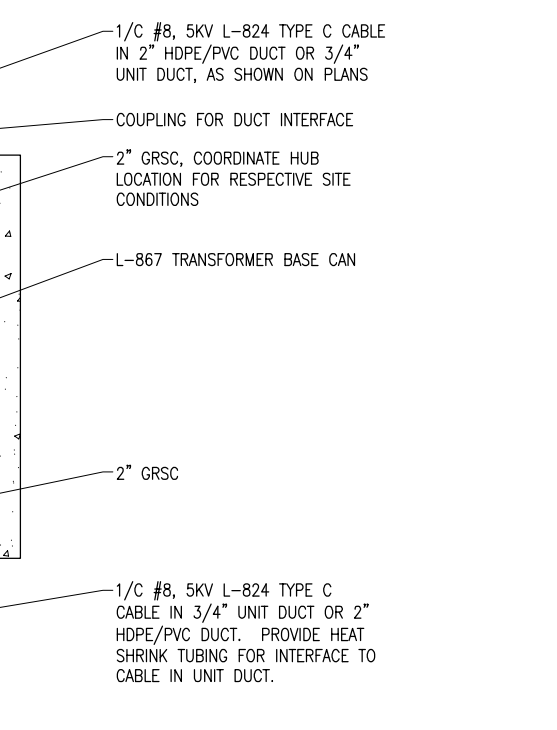
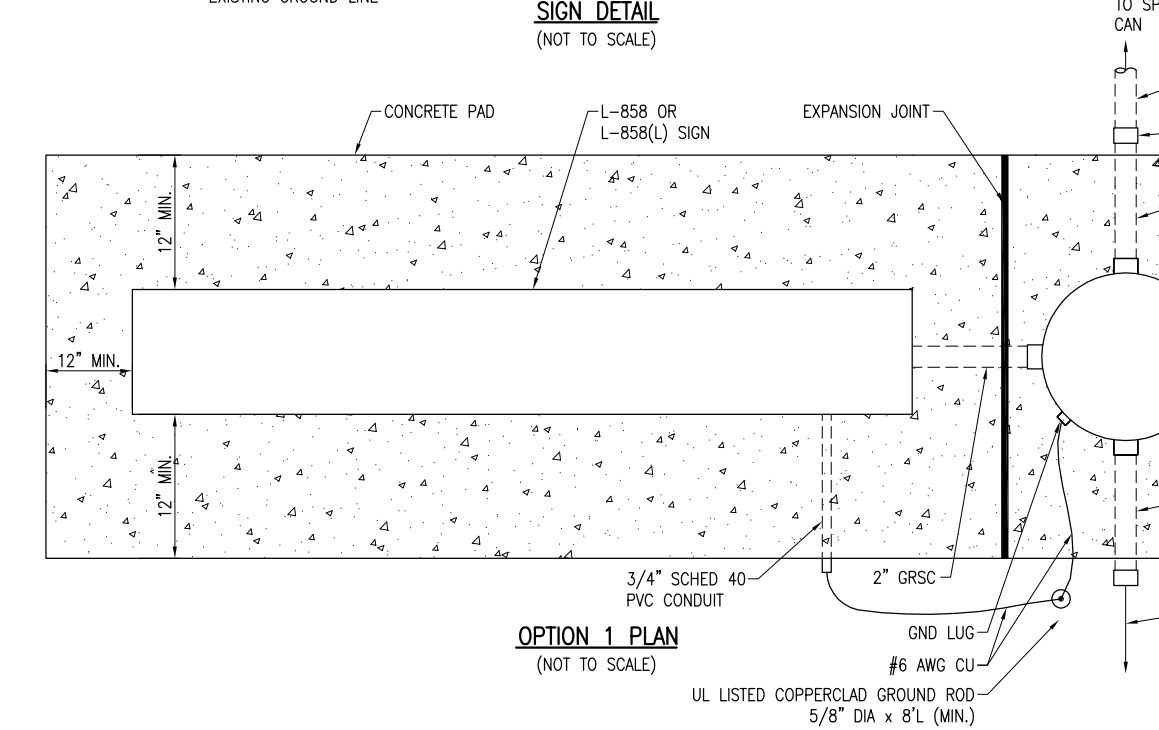
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PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN, TAXI SIGN FRAME, OR MOUNTING STAKE AND A 3/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. ALSO BOND THE SIGN FRAME TO THE GROUND ROD WITH A #6 AWG BARE COPPER CONDUCTOR.

GENERAL NOTES

1. SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
2. SEE ELECTRICAL NOTES SHEETS.



NOTE: 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 150/5345-42F.

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REVISION	DATE	UPDATE PER
1	03/12/12	FAA PGL 12-2 & EB67D

**OLNEY-NOBLE AIRPORT
 OLNEY, ILLINOIS**

IL PROJ.: 01Y-4131
 A.I.P. PROJ.: 3-17-0076-B11

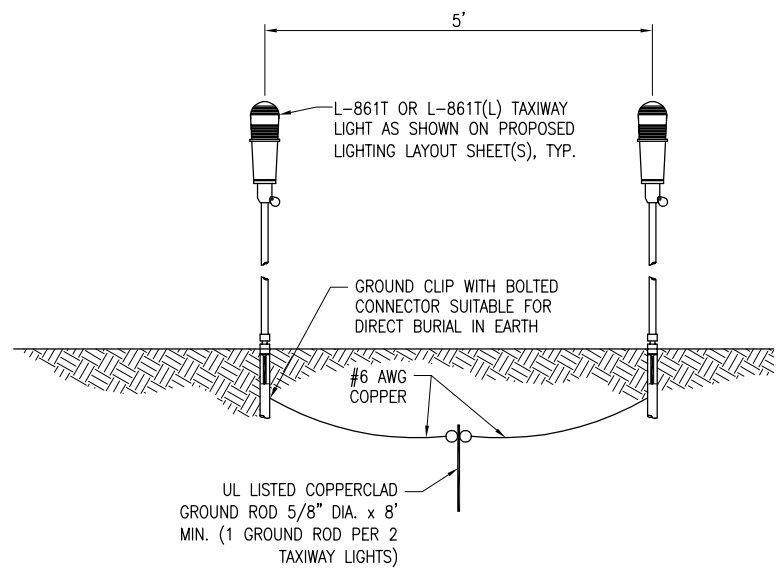
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LAYOUT	KNL	01/30/12
DRAWN	BAK	02/08/12
REVIEWED	CAH	02/15/12

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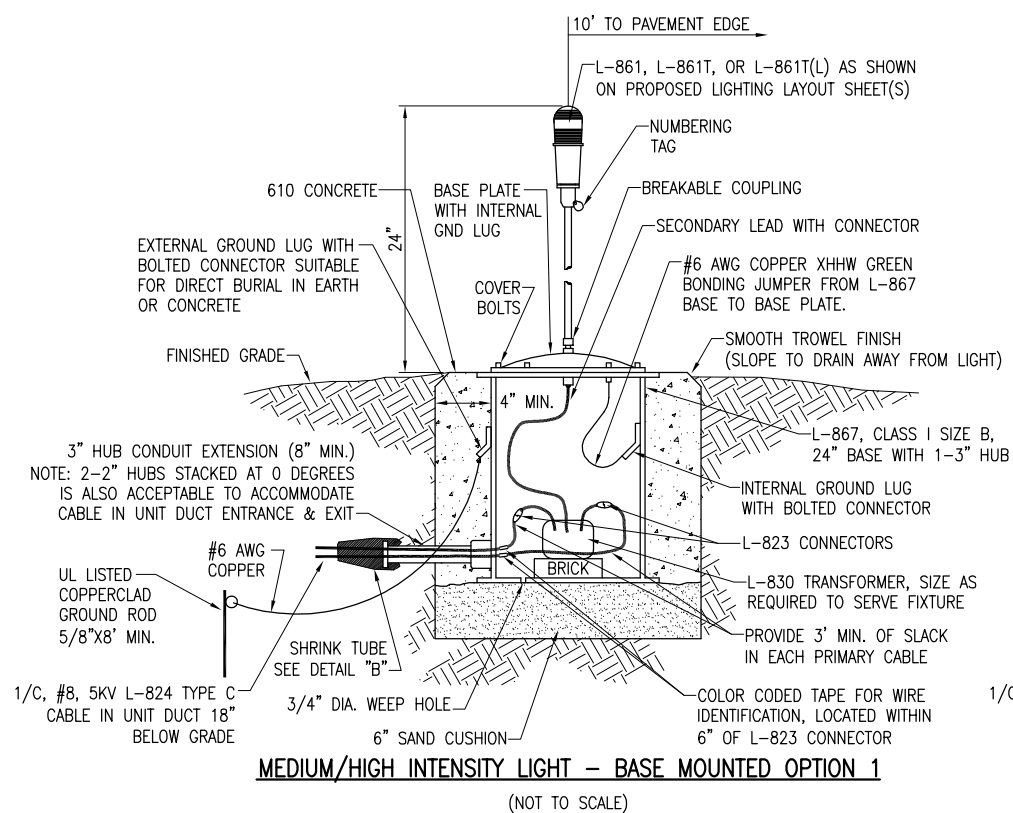
**1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29**

ELECTRICAL DETAILS
 SHEET 3

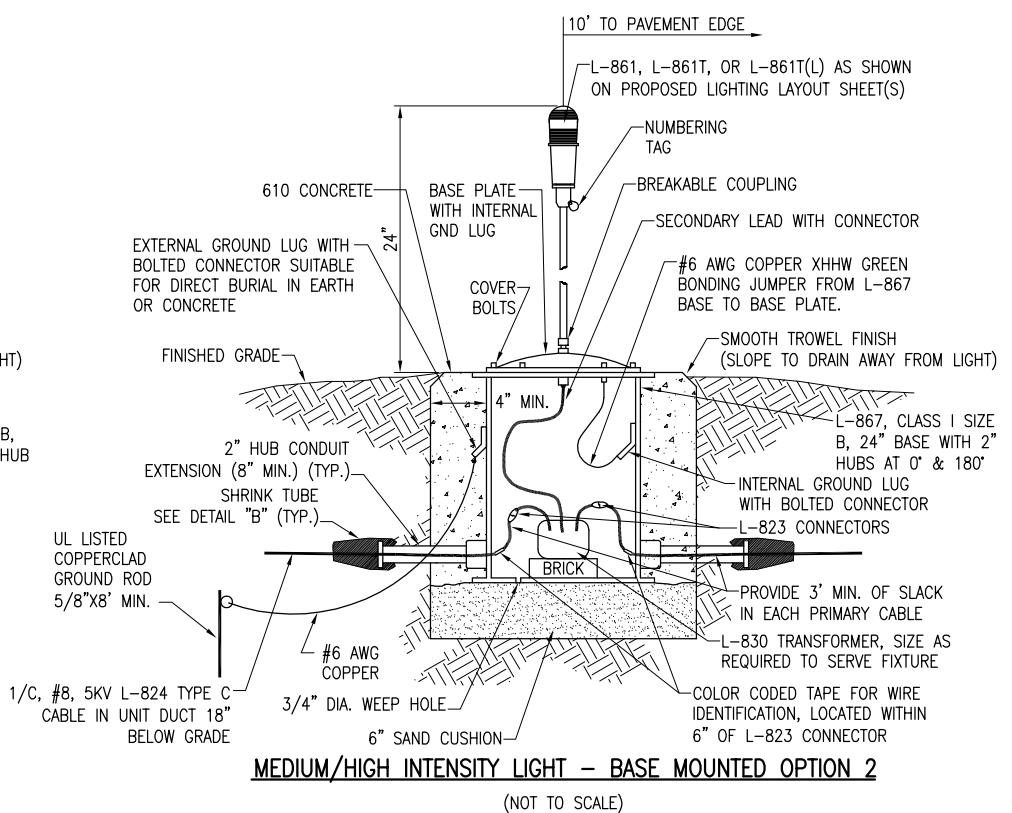
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 25 of 52 sheets



GROUNDING DETAIL FOR ADJACENT TAXIWAY LIGHTS
(NOT TO SCALE)



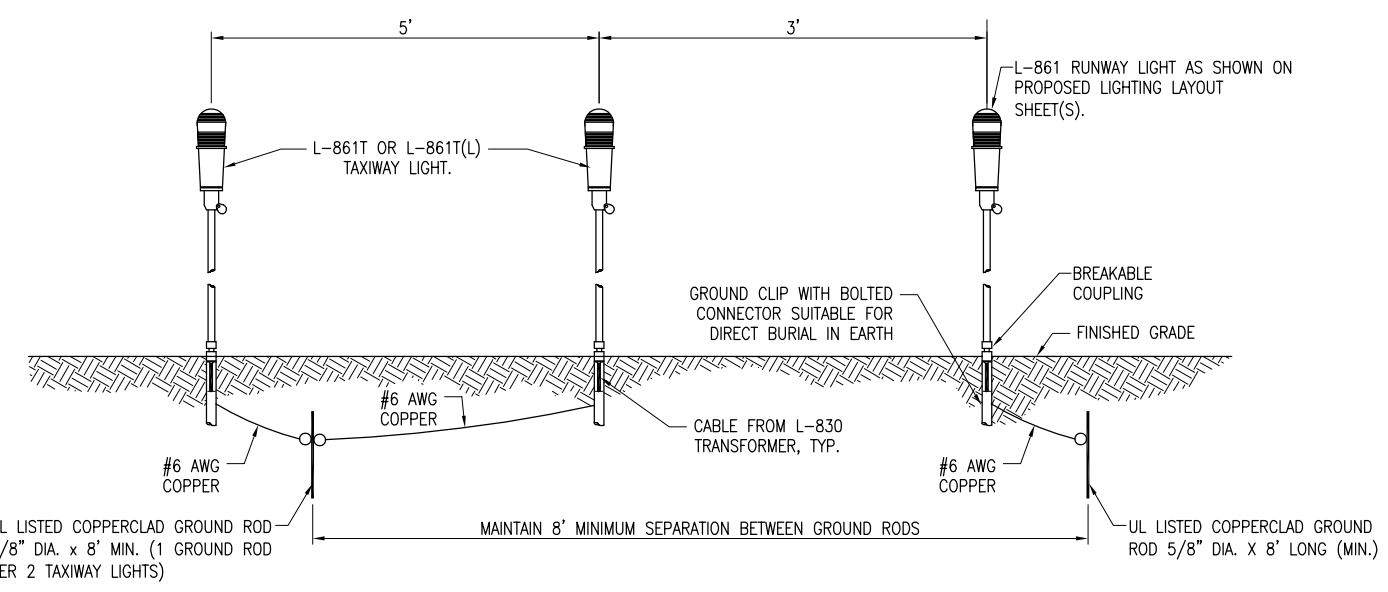
MEDIUM/HIGH INTENSITY LIGHT - BASE MOUNTED OPTION 1
(NOT TO SCALE)



MEDIUM/HIGH INTENSITY LIGHT - BASE MOUNTED OPTION 2
(NOT TO SCALE)

NOTES

- GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. 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 5/8-INCH DIAMETER BY 8-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 GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), 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
- FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW OR USE INSULATION. THE GROUND WIRE 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.
- FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM PROVIDE ONE 5/8-INCH DIAMETER BY 8-FOOT LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS.
- STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100% DOMESTIC STEEL.



GROUNDING DETAIL FOR ADJACENT RUNWAY AND TAXIWAY LIGHTS
(NOT TO SCALE)

REVISION	DATE	UPDATE PER
12-2 & EB67D	03/12/12	FAA

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

AL.P. PROJ.: 3-17-0076-B11
IL. PROJ.: OLY-4131

Hanson Proj. No. 11A0081D	FILENAME E-504.dwg	SCALE NOT TO SCALE	DATE 02/17/12
LAYOUT	KNL	01/30/12	
DRAWN	BAK	02/08/12	
REVIEWED	CAH	02/15/12	

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

ELECTRICAL DETAILS SHEET 4

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GENERAL 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, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
3. 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).
4. 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.
5. 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.
6. 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.
7. 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.
8. ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER 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 REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
9. 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. A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
B. THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
C. INSTALLATION INSTRUCTION.
D. START-UP INSTRUCTIONS.
E. PREVENTATIVE MAINTENANCE REQUIREMENTS.
F. CHART FOR TROUBLE-SHOOTING.
G. 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.
H. 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.
I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

- 1. 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.
2. 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, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC 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).
3. 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.
4. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
5. LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
6. NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
7. THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
B. 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.
8. 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.
9. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
10. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
11. CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
12. DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
13. 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.
14. SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL 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 RECOMMENDATIONS.

- 15. CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
16. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT U.L. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
17. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
18. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
19. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
21. WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
22. UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
A. 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.
B. THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
C. ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
D. 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.
E. ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
F. EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
G. A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
H. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
J. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
24. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOFF, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

REVISION table with columns for REVISION, DATE, and description. Includes project title 'OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS', drawing title '1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29', sheet title 'ELECTRICAL NOTES SHEET 1', and page number '27 of 52 sheets'. Also includes Hanson Professional Services Inc. logo and contact information.

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AIRFIELD LIGHTING NOTES

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

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

GROUNDING NOTES FOR AIRFIELD LIGHTING

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. 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 5/8-INCH DIAMETER BY 8-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 GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW OR USE INSULATION. THE GROUND WIRE 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.
3. 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 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
4. PER FAA 150/5340-30F THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.


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REVISION	DATE

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

A.I.P. PROJ.: 3-17-0076-B11
I.L. PROJ.: 01Y-4131

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Offices Nationwide

**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

ELECTRICAL NOTES
SHEET 2

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
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCUAR 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:

- CONTRACTOR SHALL EXAMINE THE SITE AND VAULT TO DETERMINE EXISTING SITE CONDITIONS.
- 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, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

120/240 VAC, 1 PHASE, 3 WIRE	
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

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OLNEY-NOBLE AIRPORT OLNEY, ILLINOIS	
A.I.P. PROJ.: 3-17-0076-B11 I.L. PROJ.: 01Y-4131	
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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29 ELECTRICAL LEGEND, ABBREVIATIONS & NOTES	
29 29 of 52 sheets	

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
TAXIWAY CCR	TAXIWAYS A & B
CUTOUT FOR TAXIWAYS	TAXIWAYS A & B
TAXIWAY CUTOUT ENCLOSURE	CAUTION OPERATE CUTOUT WITH CCR SHUT OFF
TAXIWAY CUTOUTS INPUT SIDE CONNECTIONS (PROVIDE 2 LEGEND PLATES)	INPUT
TAXIWAY A CUTOUT OUTPUT SIDE CONNECTION	TYX A OUTPUT
TAXIWAY B CUTOUT OUTPUT SIDE CONNECTION	TYX B OUTPUT

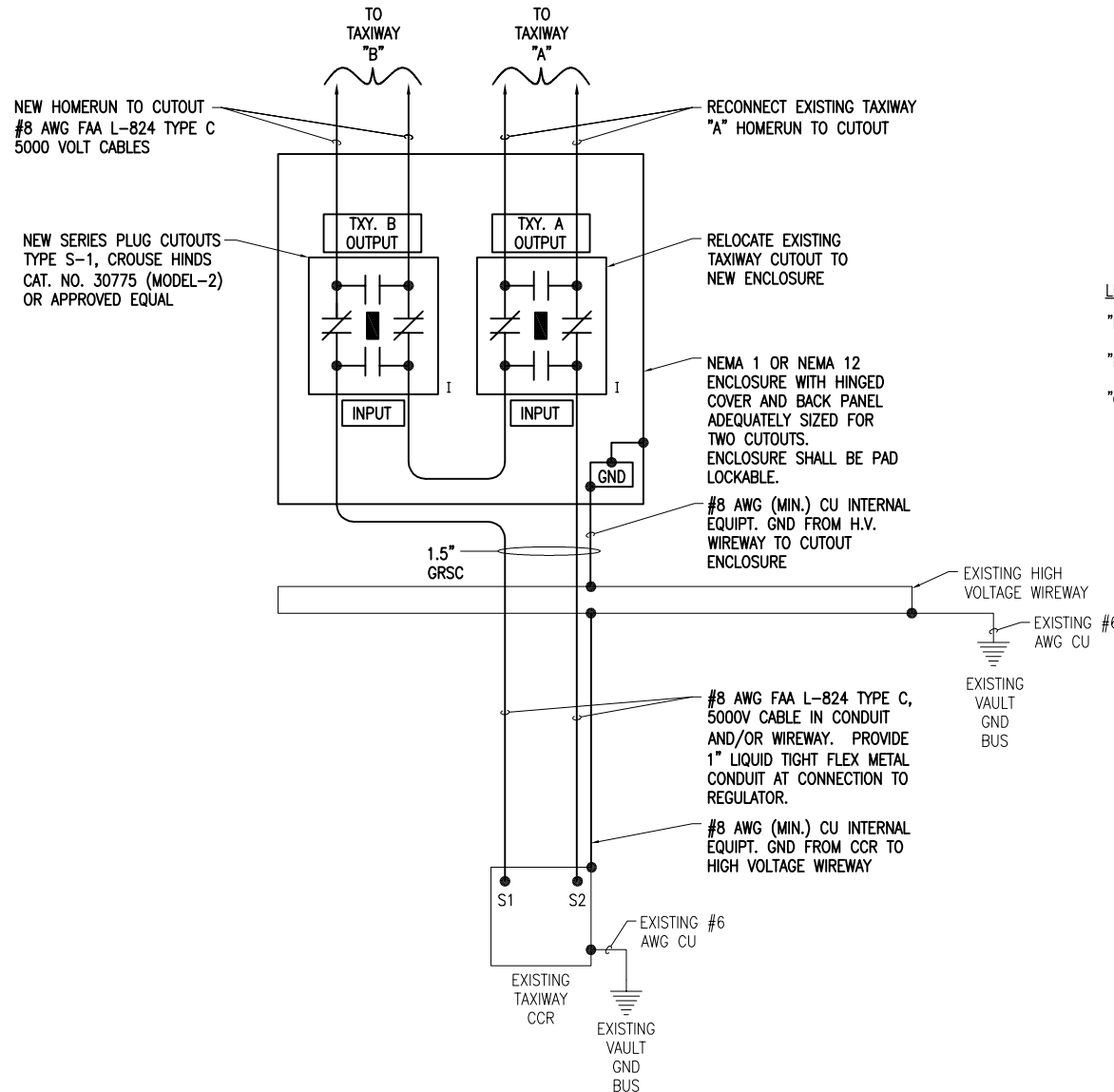


"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR CUTOUT ENCLOSURE, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES".

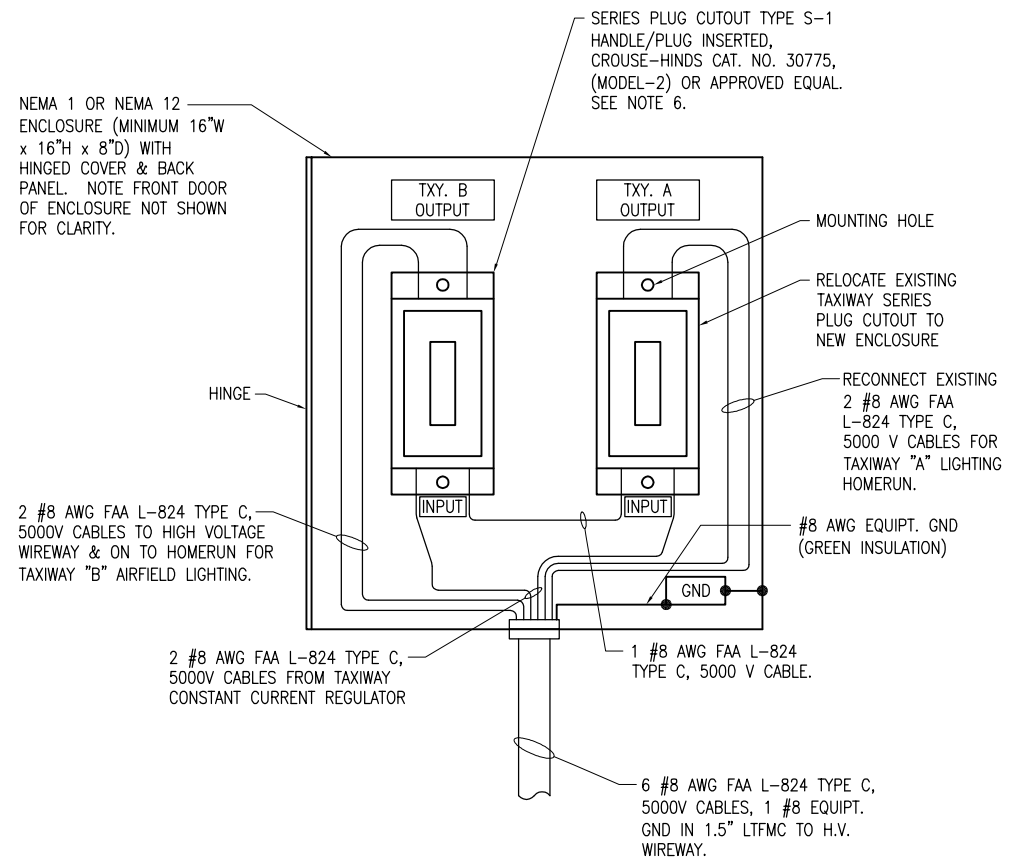
NOTES

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATE FOR TAXIWAY CONSTANT CURRENT REGULATOR LABELED "TAXIWAY A & B"
2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE RUNWAY OR TAXIWAY CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE CUTOUTS TO IDENTIFY THE RESPECTIVE INPUT CONNECTIONS AND THE RESPECTIVE CIRCUIT LOAD/OUTPUT CONNECTIONS.
4. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
5. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
6. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND SHALL COMPLY WITH FAA AC 150/5340-4C. 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 TERMINAL WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
7. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
8. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH CUTOUT TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., BOX 1174, MILFORD, PA 18337, PHONE: 1-877-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.



LEGEND

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



SERIES PLUG CUTOUT MOUNTING DETAIL

FOR TAXIWAYS A & B CIRCUITS

NOT TO SCALE

REVISION	DATE

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

IL PROJ.: OLY-4131 A.I.P. PROJ.: 3-17-0076-B11

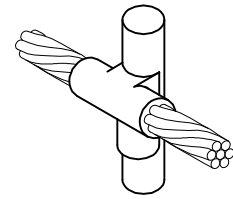
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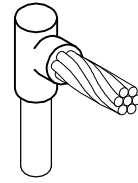
**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**HIGH VOLTAGE WIRING
SCHEMATIC FOR TAXIWAYS**

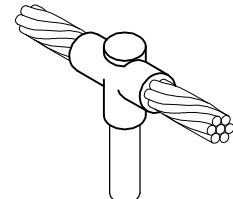
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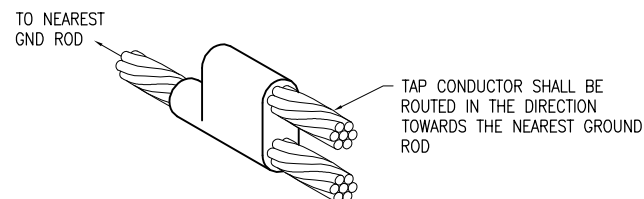
CABLE TO GROUND ROD



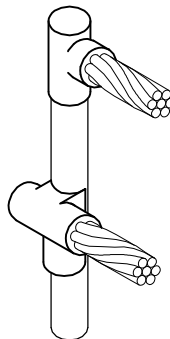
CABLE TO GROUND ROD



CABLE TO GROUND ROD



CABLE TO CABLE HORIZONTAL PARALLEL TAP

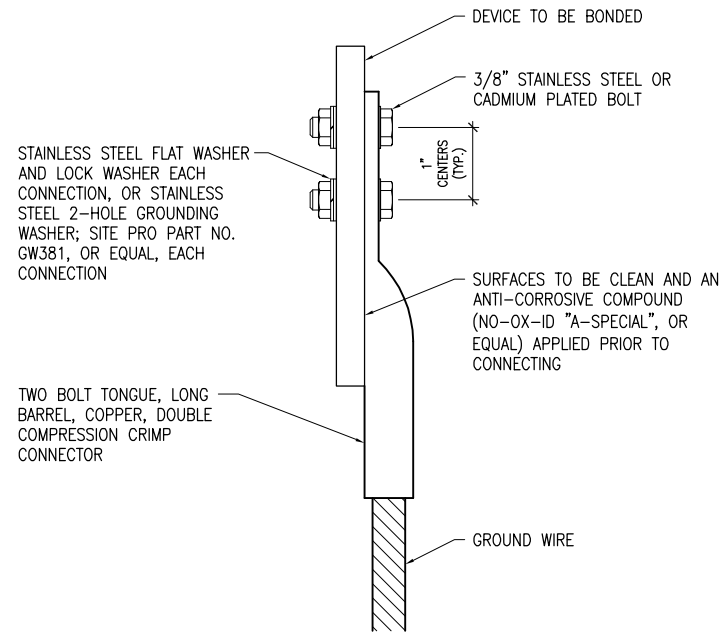


CABLES TO GROUND ROD

DETAIL NOTES

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELDED AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA, OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIrcLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIrcLING THE CONDUIT.

EXOTHERMIC WELD DETAILS

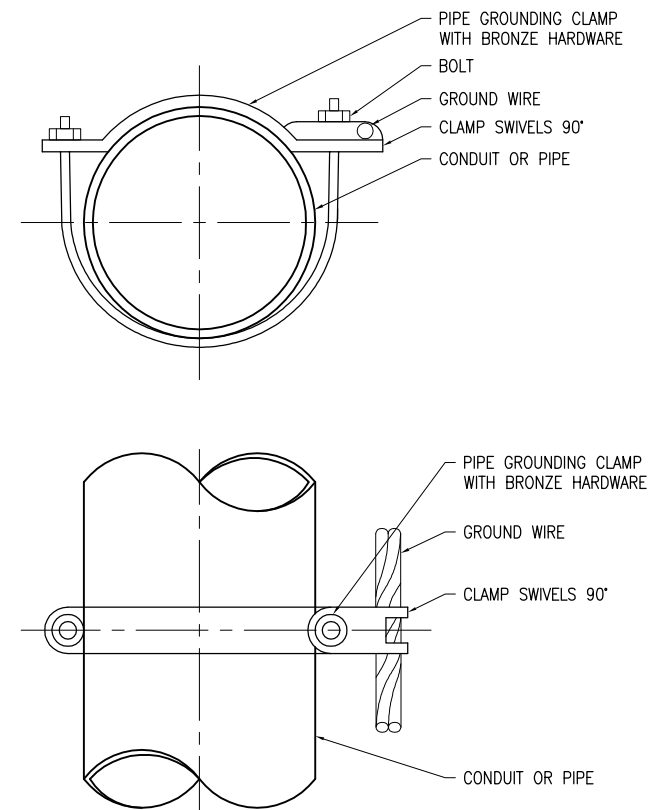


2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	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 EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL



PIPE GROUNDING CLAMP TABLE	
BURNDY CAT. NO.	PIPE SIZE
GAR3902-BU	1/2" - 1"
GAR3903-BU	1 1/4" - 2"
GAR3904-BU	2 1/2" - 3 1/2"
GAR3905-BU	4" - 5"
GAR3906-BU	6"

NOTES

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL


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Filename: E-505.dwg		A.I.P. PROJ.: 3-17-0076-B11	
Scale: AS SHOWN			
Date: 02/17/12			
LAYOUT	KNL	02/09/12	
DRAWN	BAK	02/10/12	
REVIEWED	CAH	02/15/12	
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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29		GROUNDING DETAILS	
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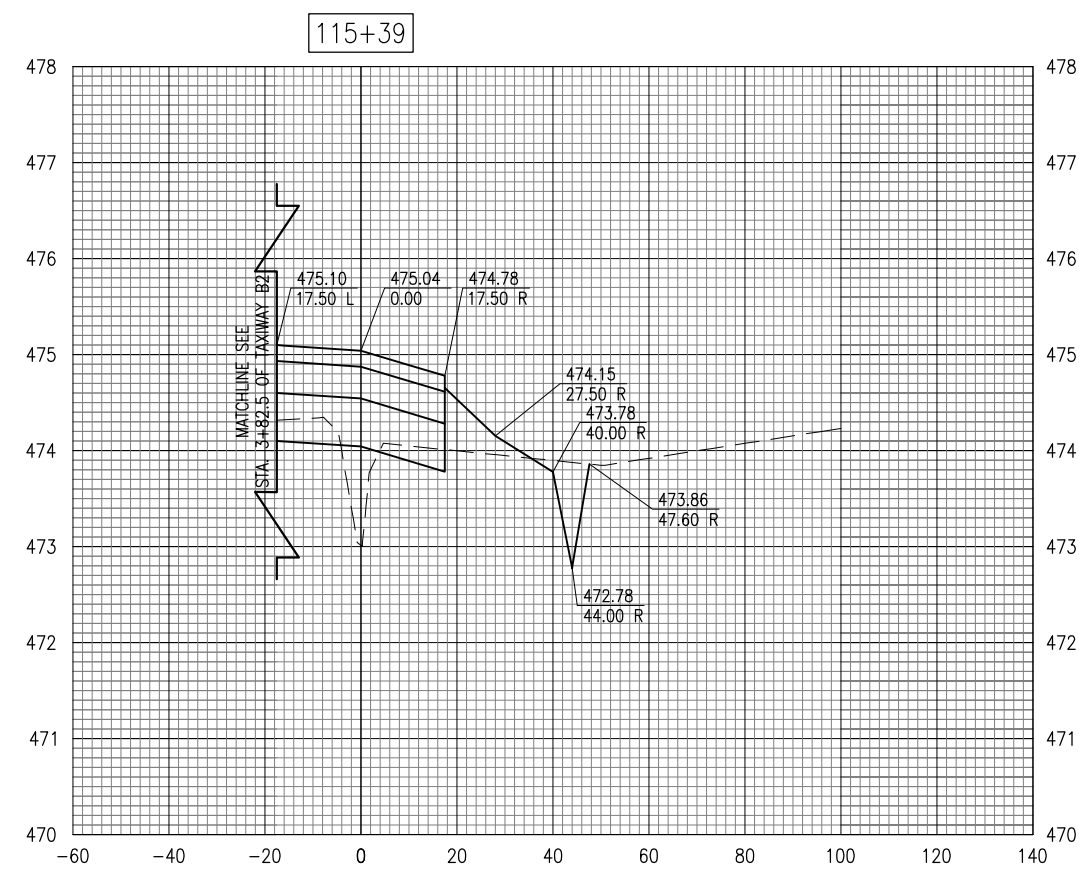
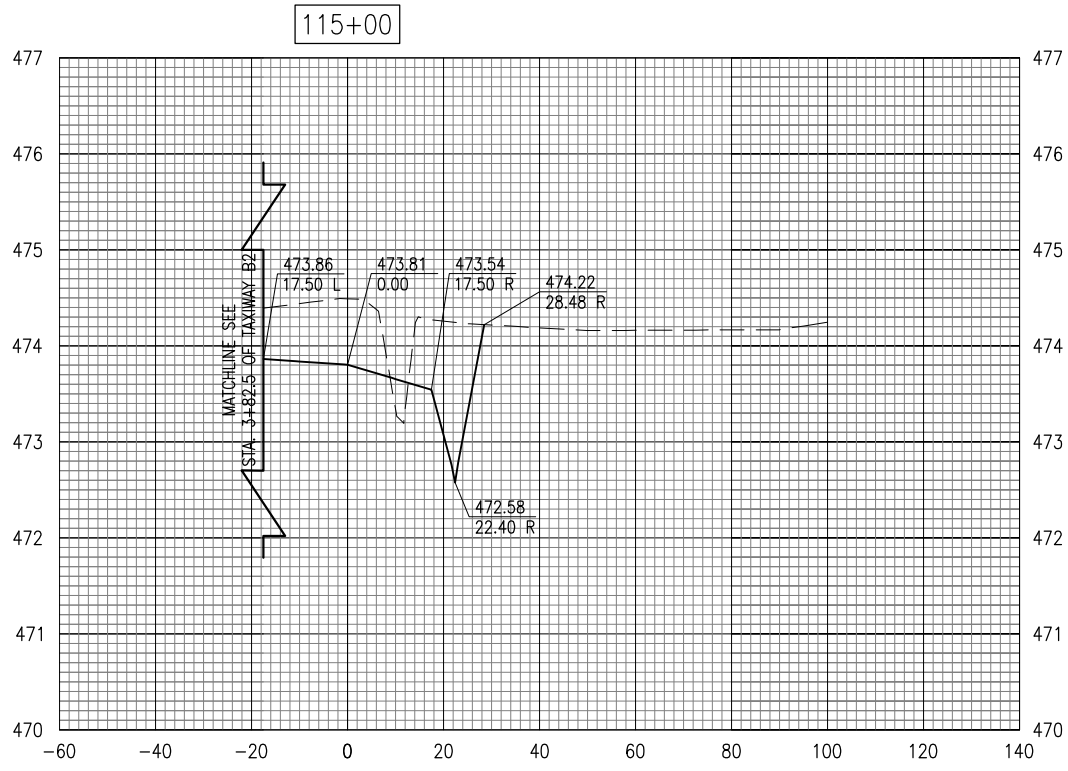
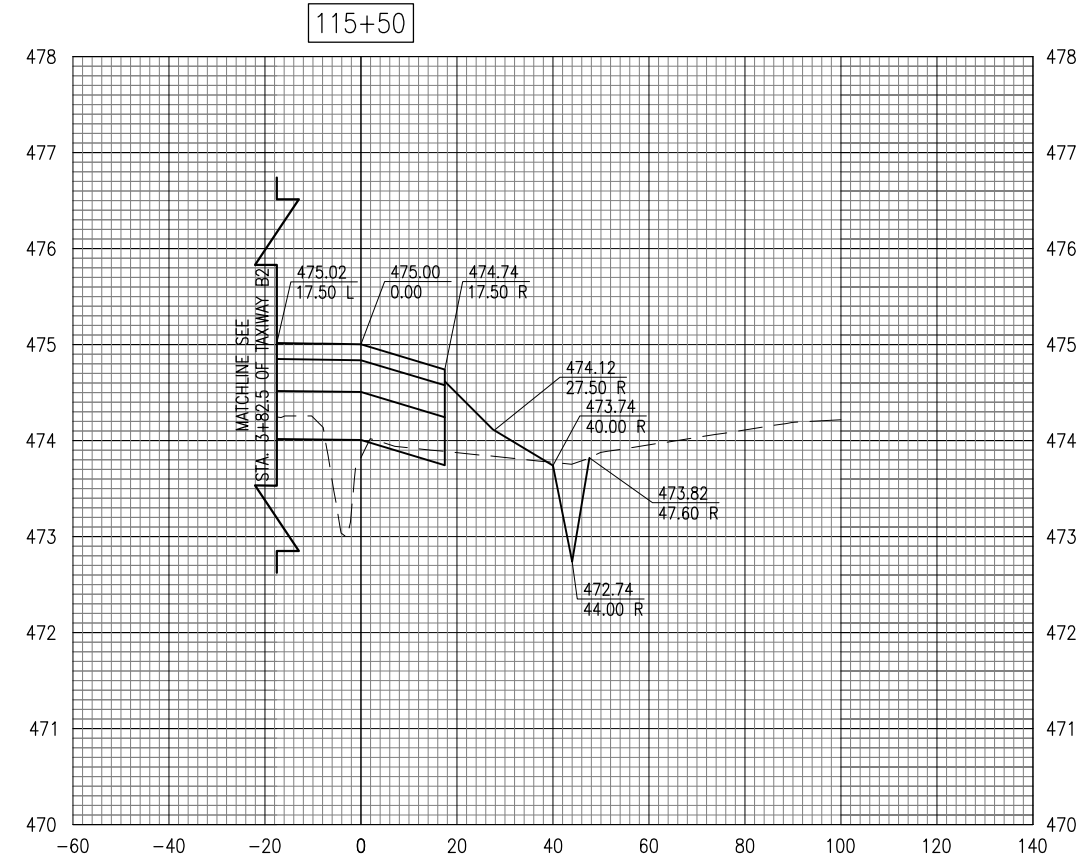
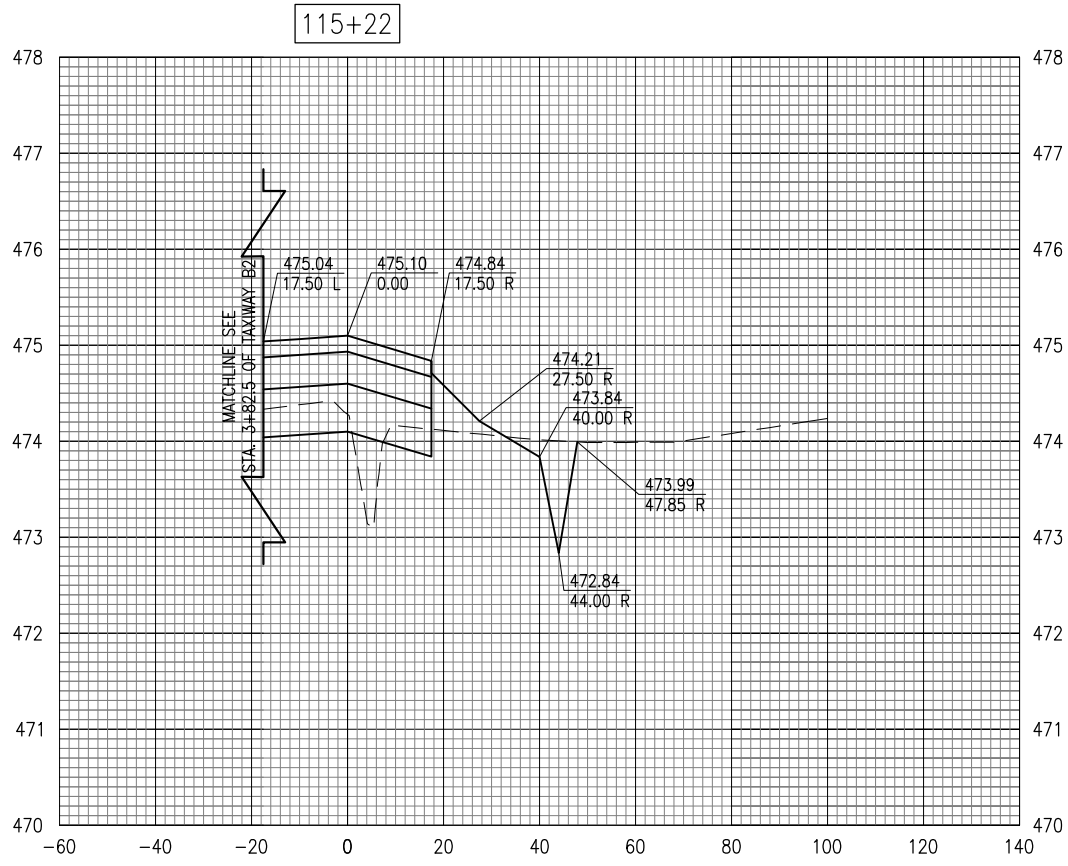
GROUNDING NOTES

1. 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 AS DETAILED HEREIN. 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:
2. FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 5/8-IN. DIAMETER BY 8-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437), 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.
3. 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 10 OHMS, CONTACT THE ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND FIELD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER, UPON REQUEST, FOR REVIEW AND RECORD PURPOSES.
4. ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
5. 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 EQUAL.
6. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
7. 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
8. ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
9. ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
10. 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.
11. 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 2011 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.
12. 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 2011 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 2011 NEC 250-102.
13. 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.
14. 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.
15. 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.
16. ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR EQUAL.
17. BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
18. BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
19. INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, 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.
20. IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2011 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
21. WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29			GROUNDING NOTES		
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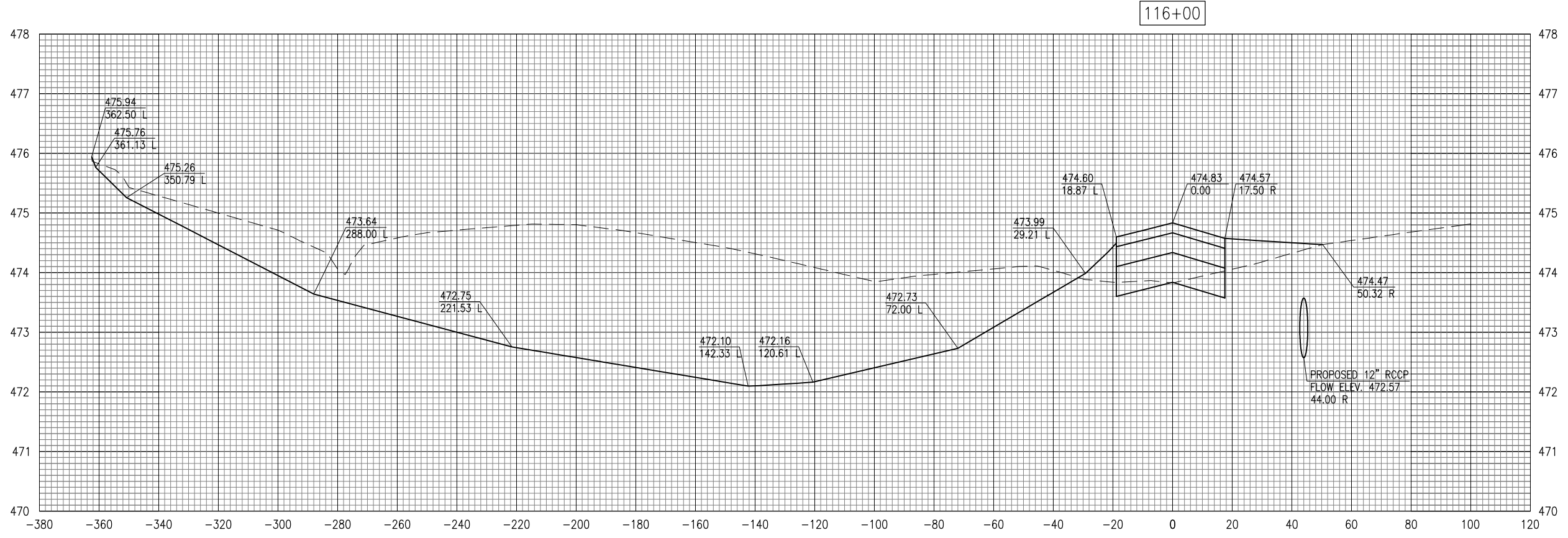
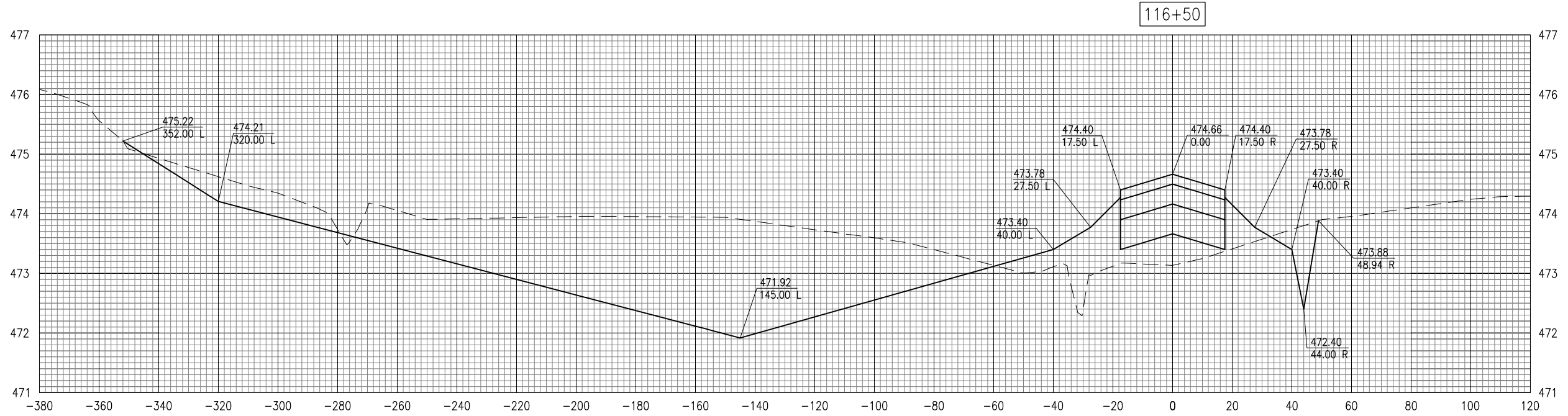
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1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
 FOR TAXIWAY B STA. 115+00
 TO STA. 115+50



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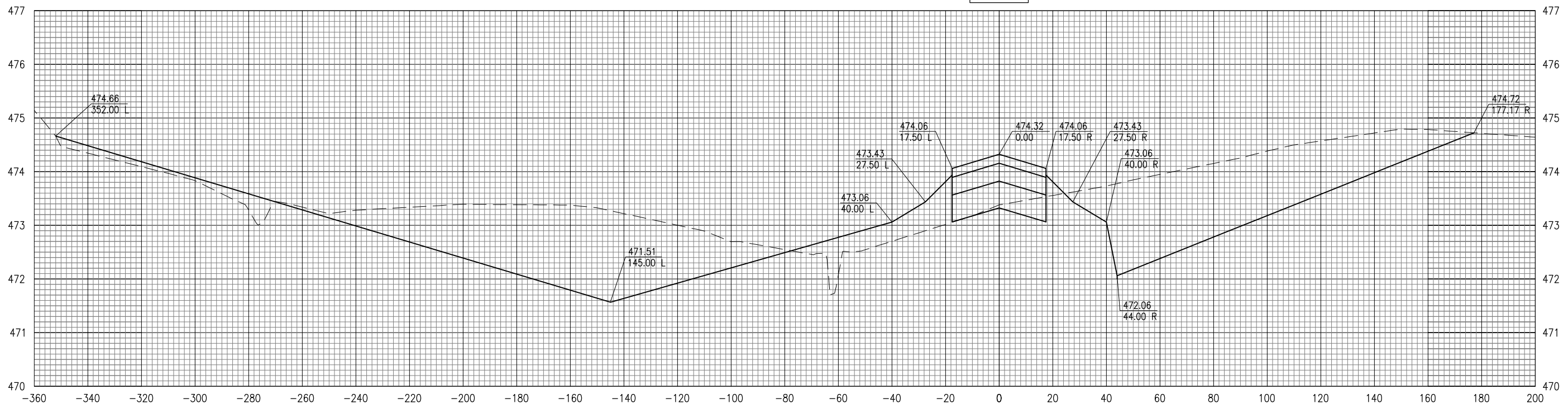
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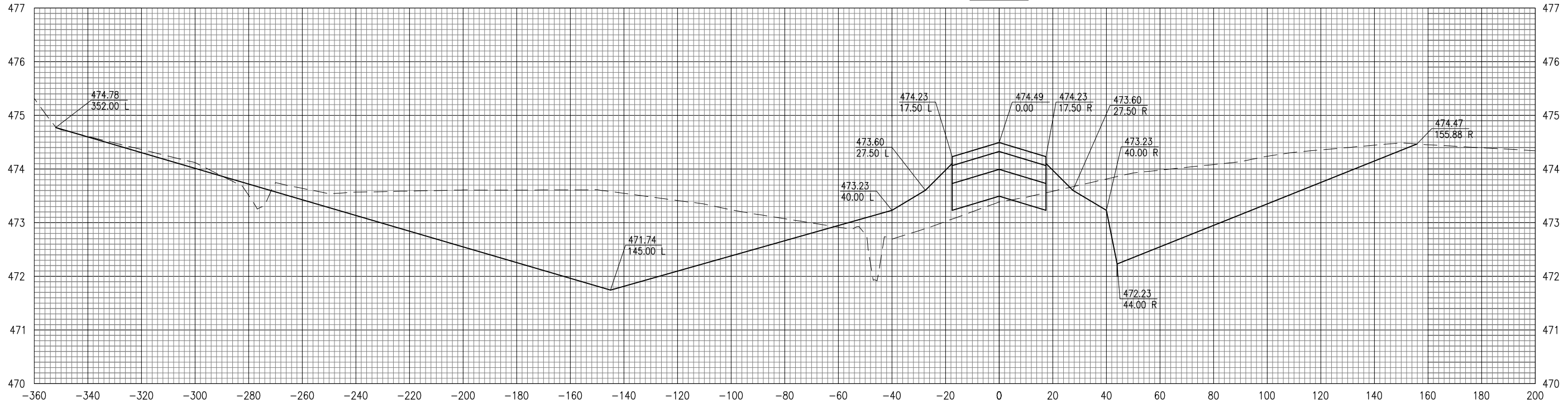
1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 116+00
TO STA. 116+50

117+50



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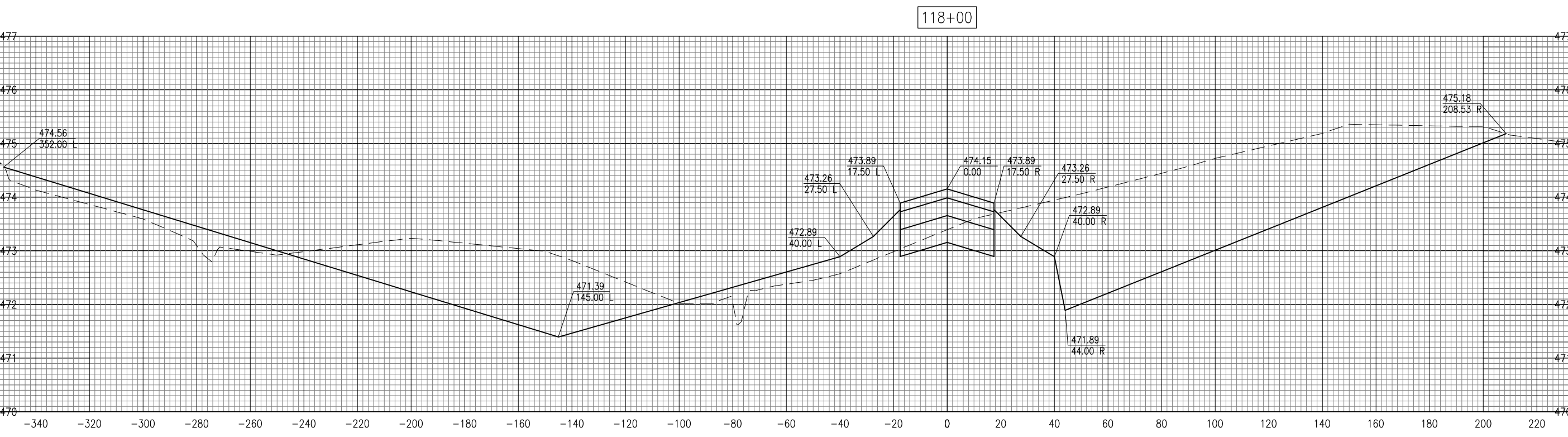
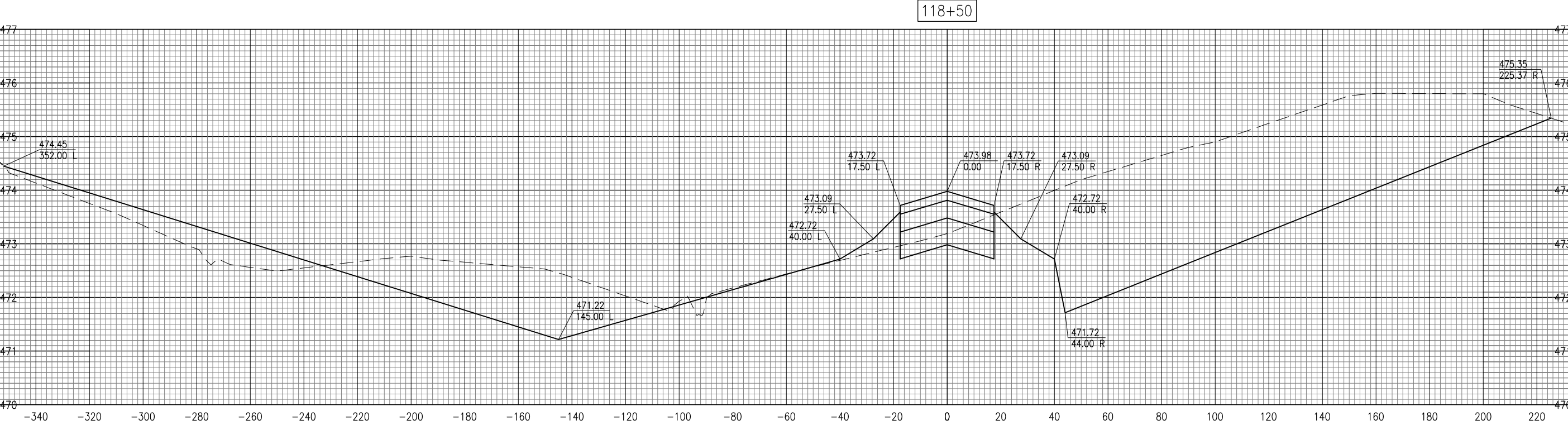
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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 117+00 TO STA. 117+50

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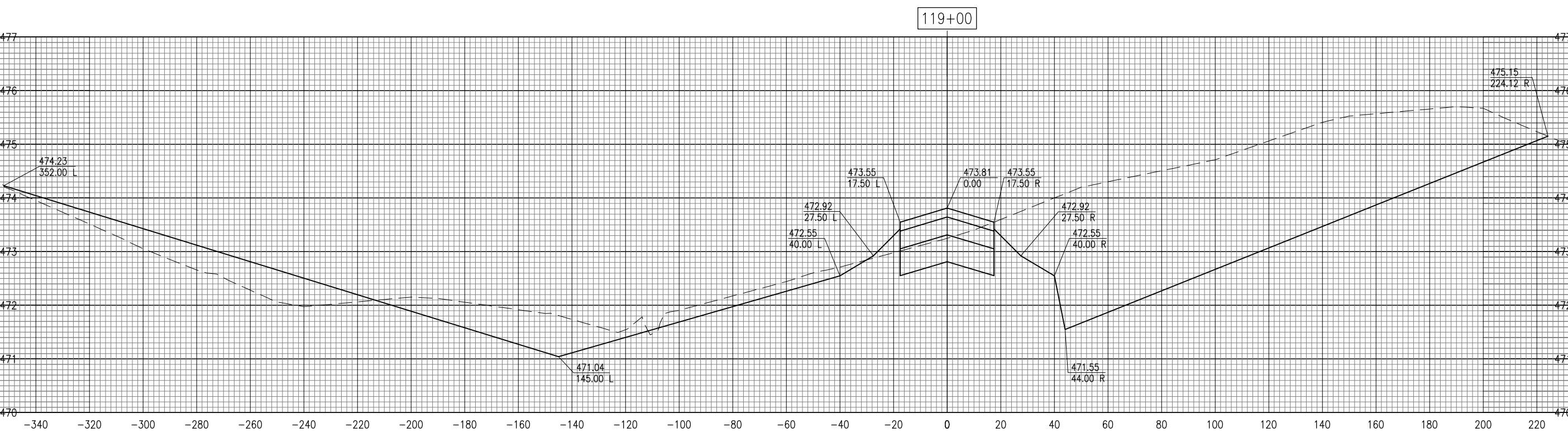
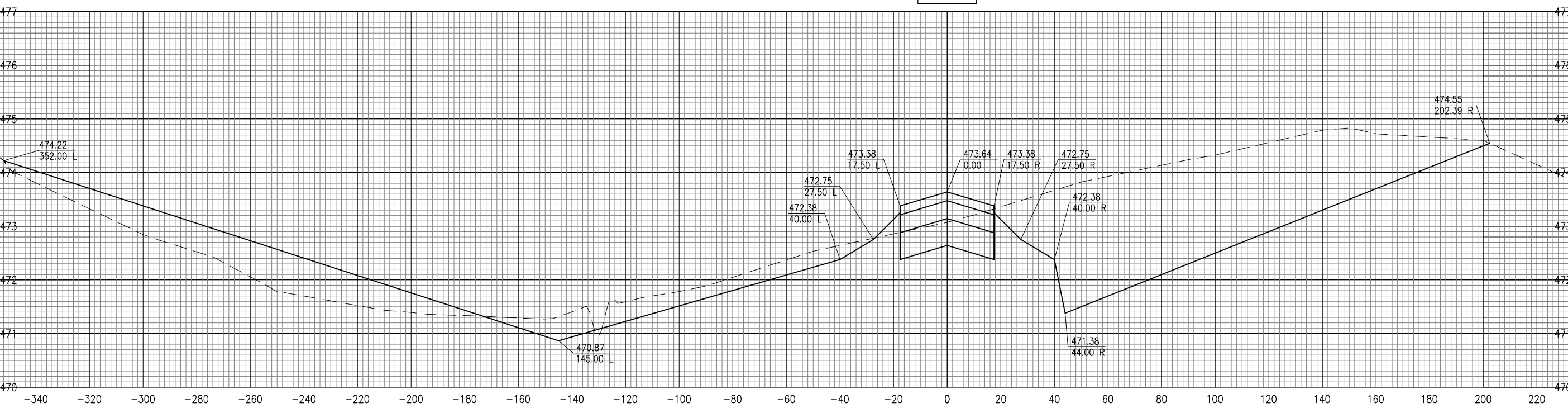
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 118+00
TO STA. 118+50

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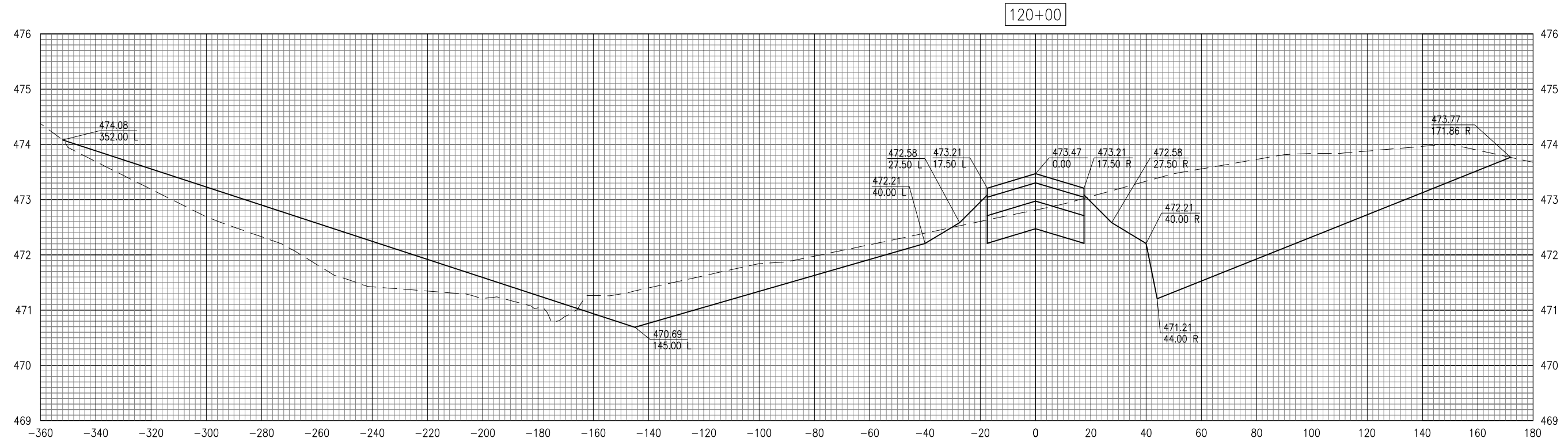
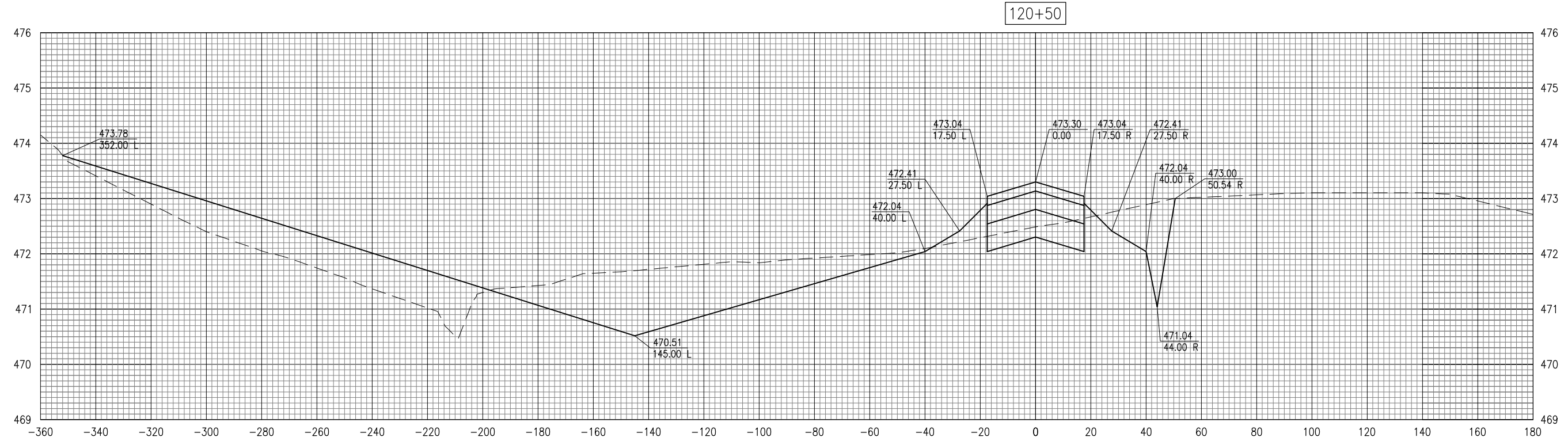
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**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

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TO STA. 119+50**

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OLNEY, ILLINOIS**

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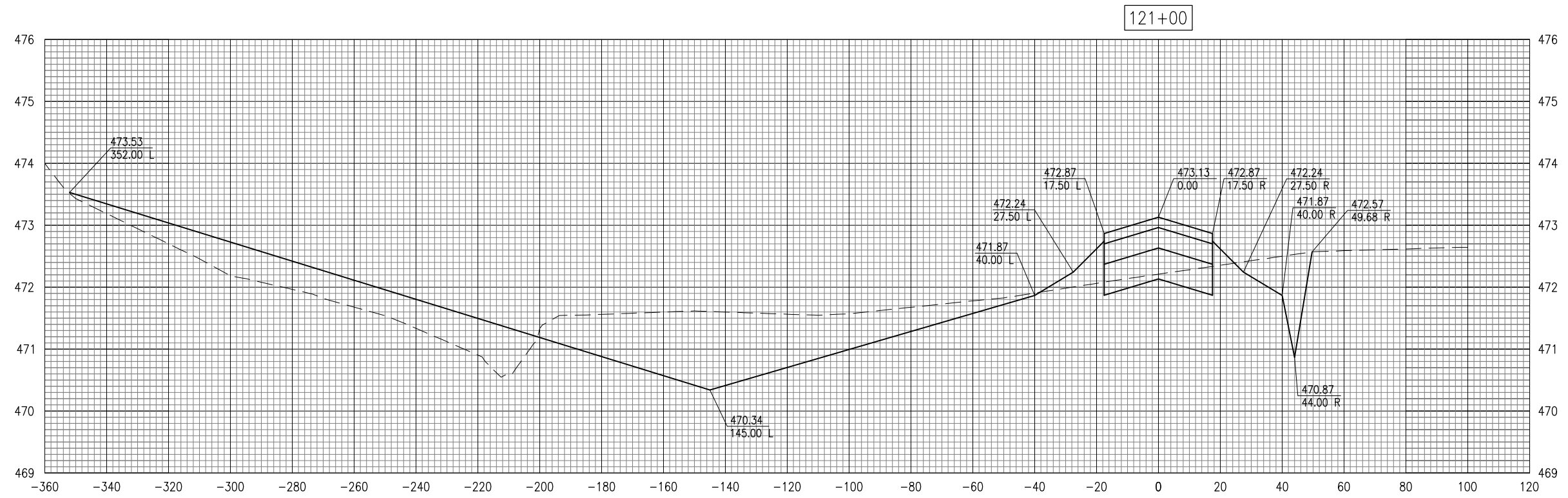
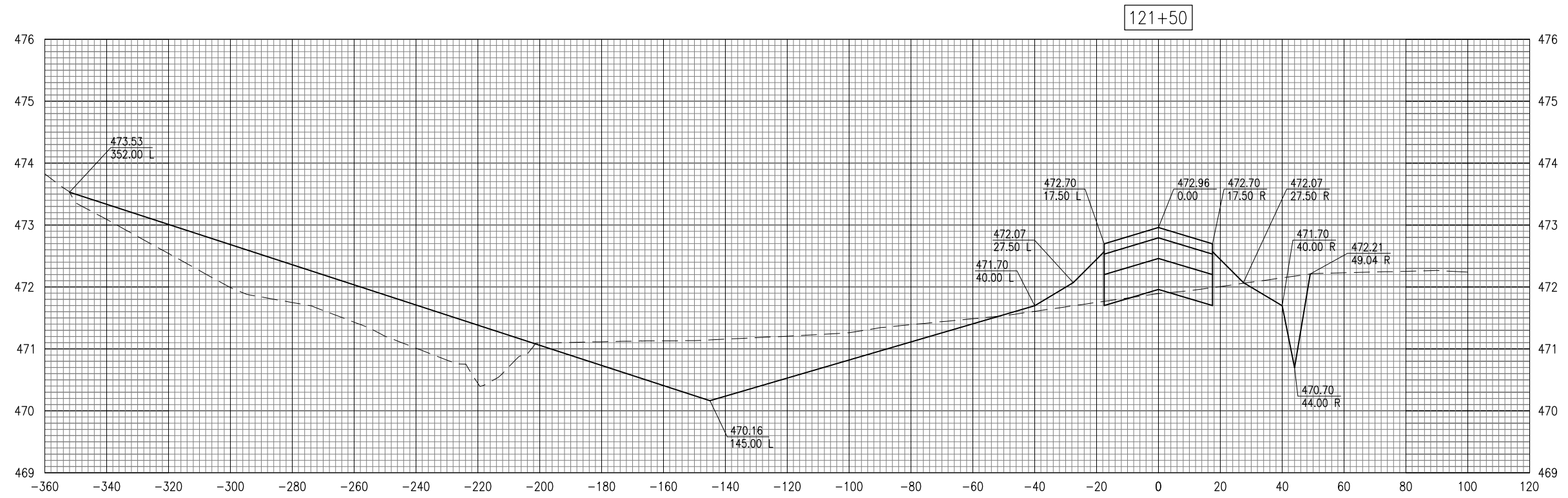
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**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 120+00
TO STA. 120+50**

38
38 of 52 sheets



REVISION	DATE

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

IL. PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

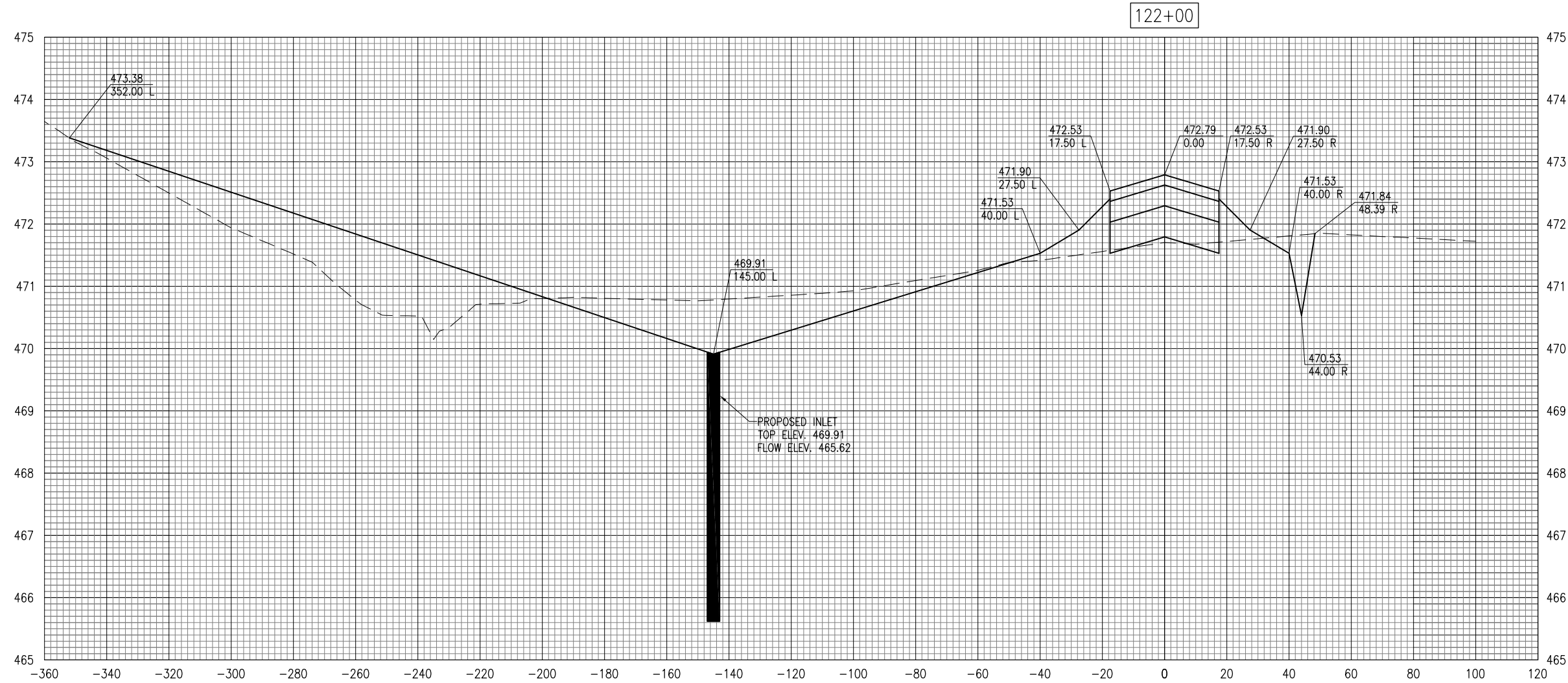
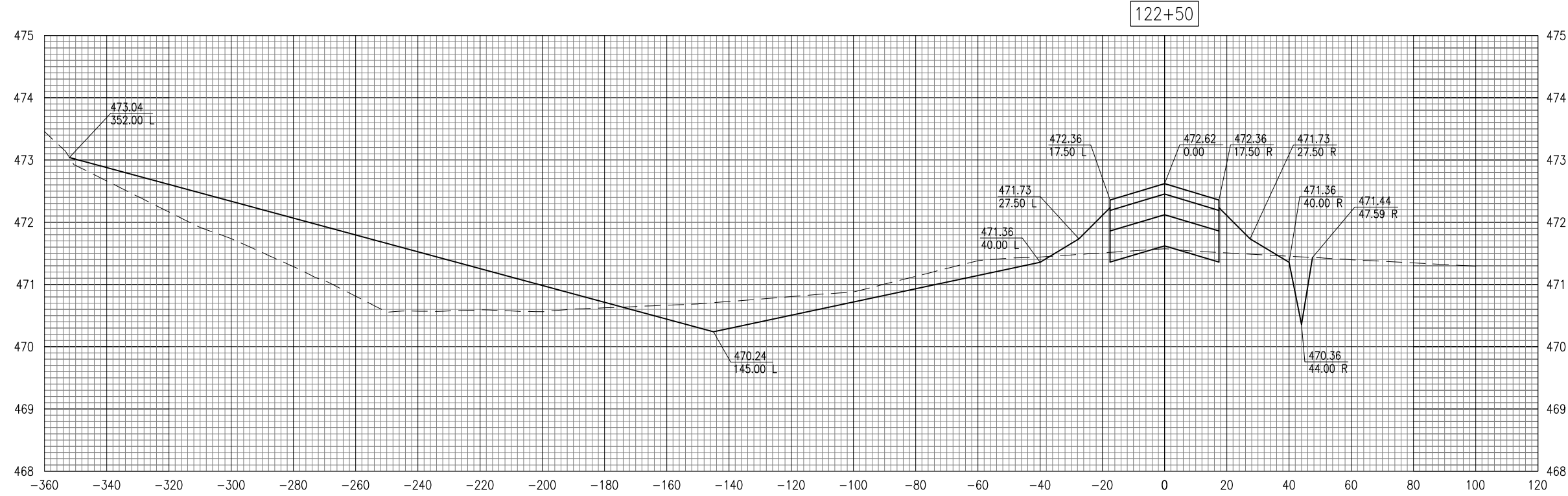
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**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 121+00
TO STA. 121+50**

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PROPOSED INLET
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FLOW ELEV. 465.62

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DATE	

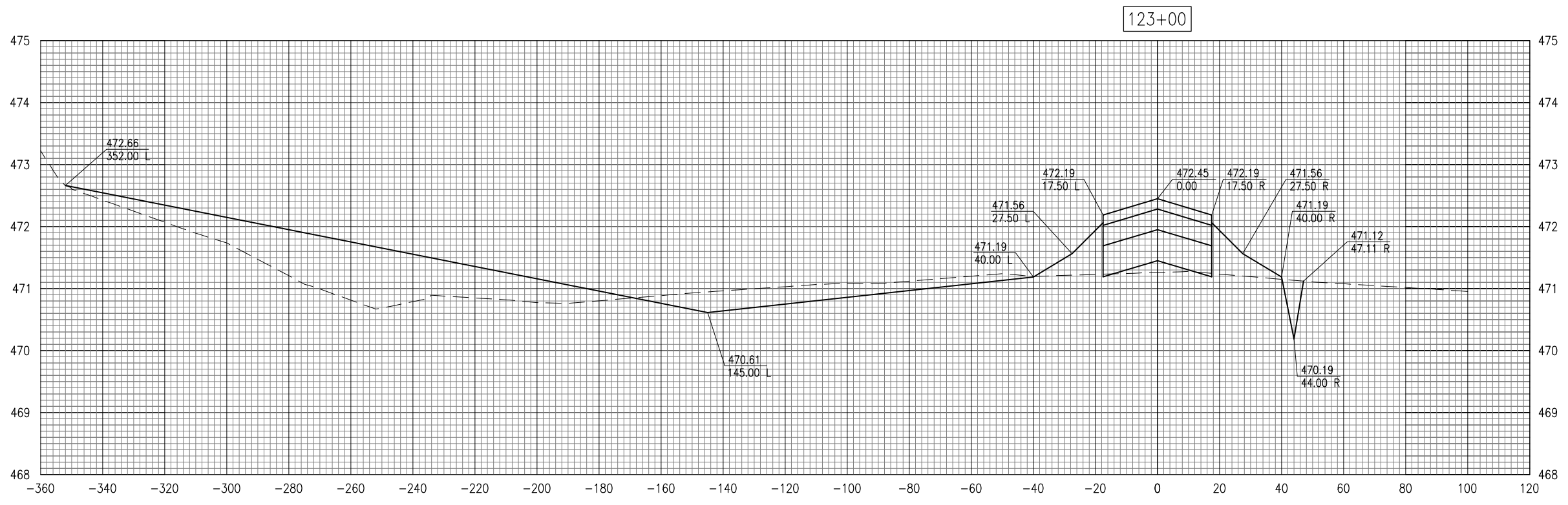
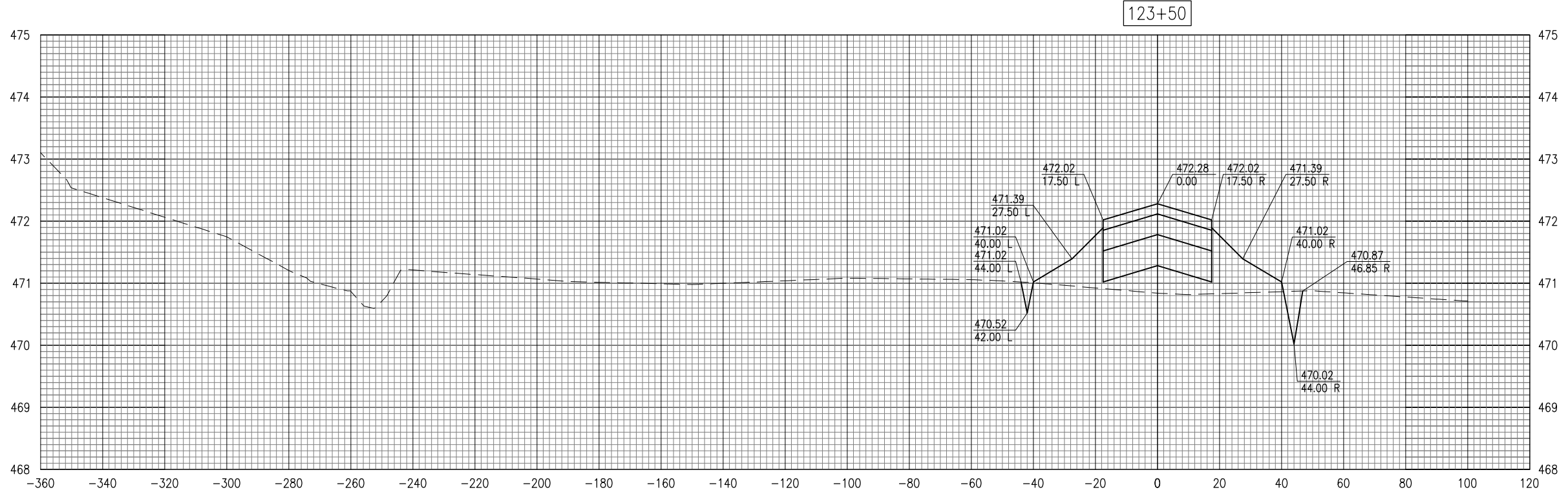
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Filename C-302-XS-B.DWG
Scale H. 1" = 20' V. 1" = 1'
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LAYOUT BAK 01/25/12
DRAWN BAK 01/25/12
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29
PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 122+00
TO STA. 122+50



DATE	REVISION

OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

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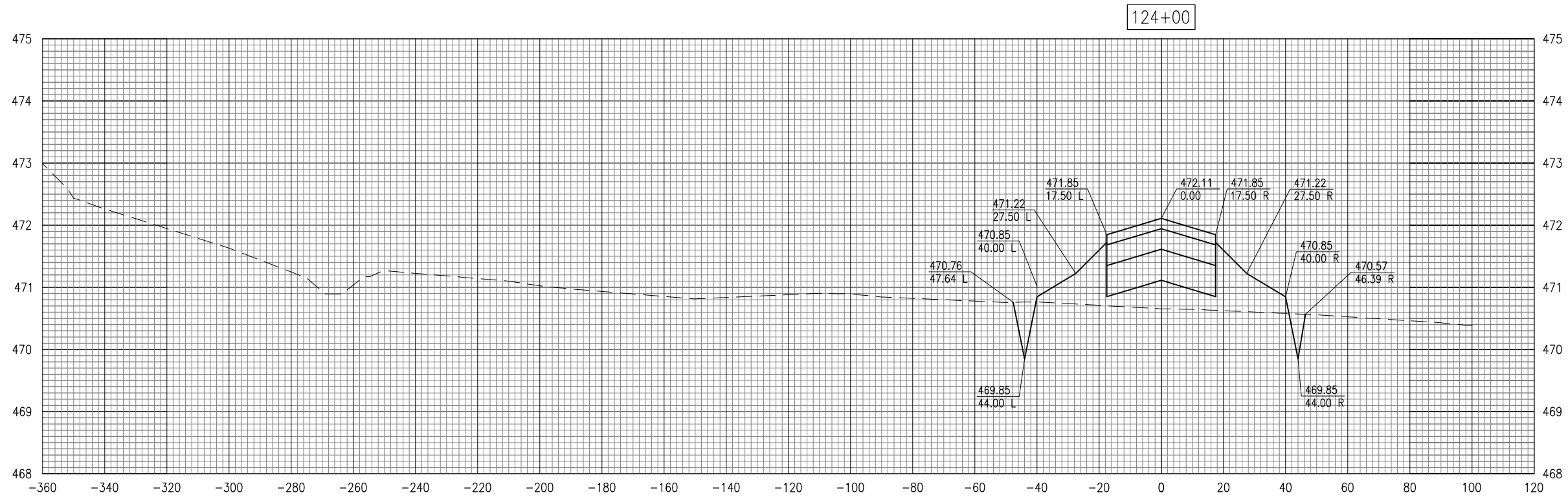
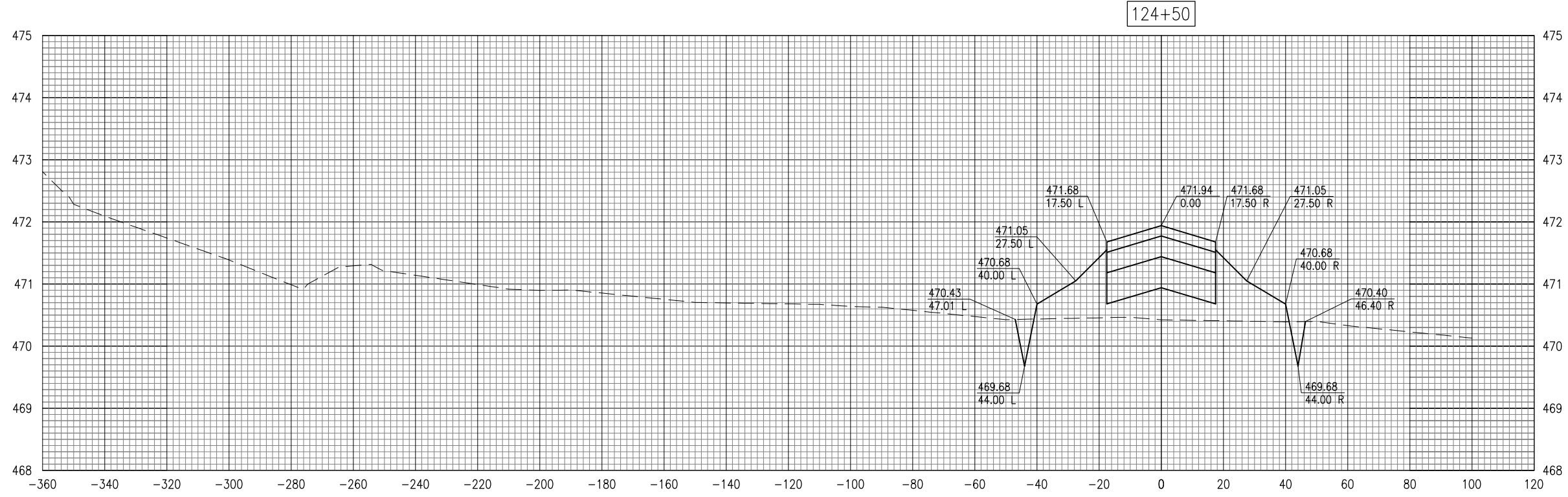
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1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
 FOR TAXIWAY B STA. 123+00
 TO STA. 123+50

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DATE	REVISION

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

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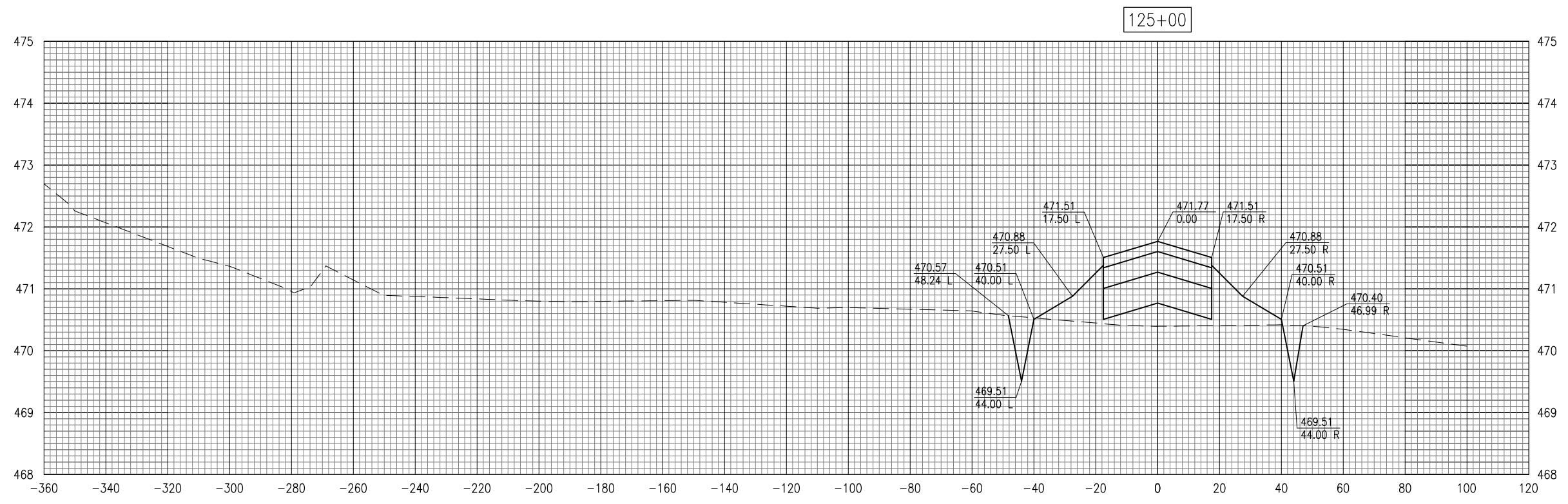
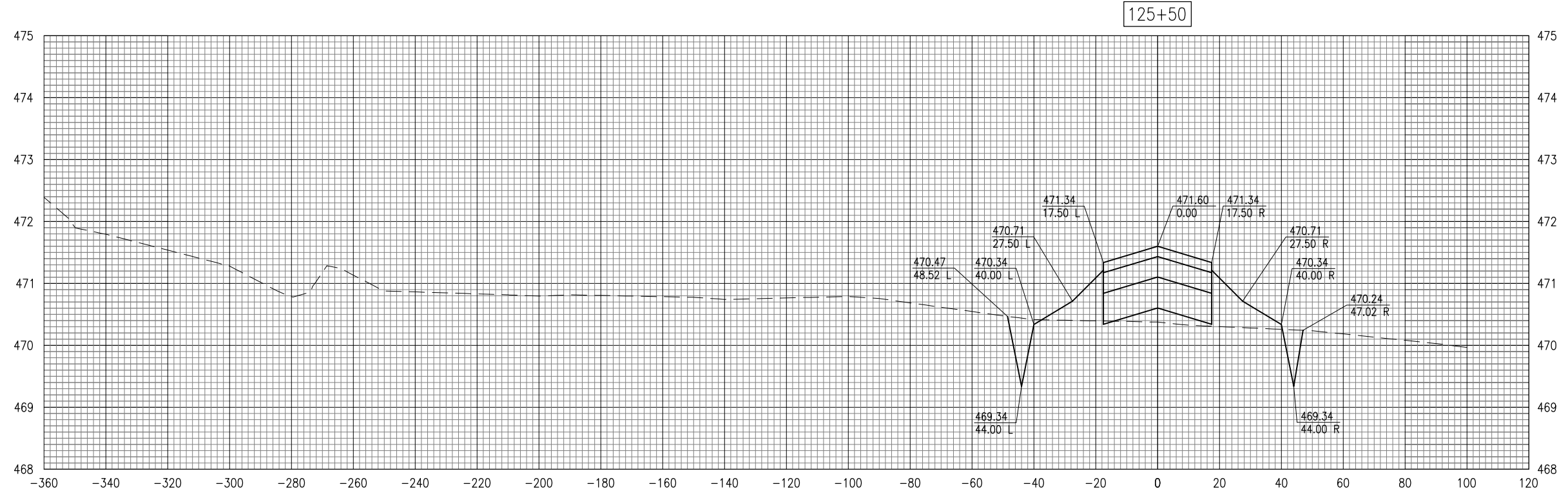
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 124+00
TO STA. 124+50

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OLNEY, ILLINOIS**

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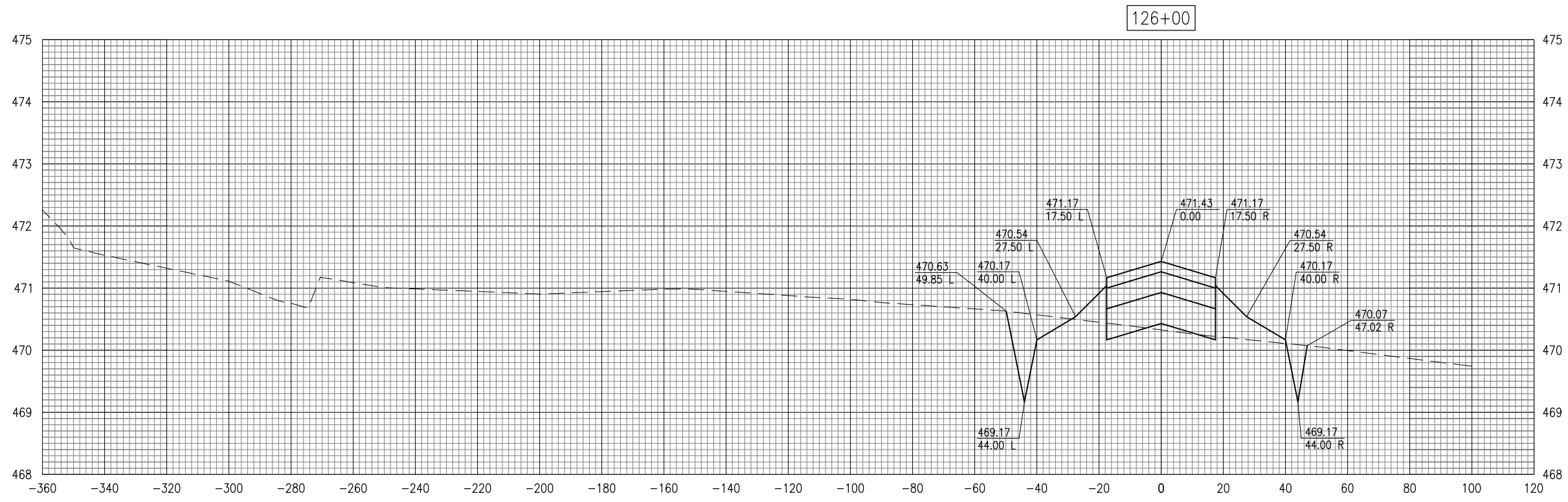
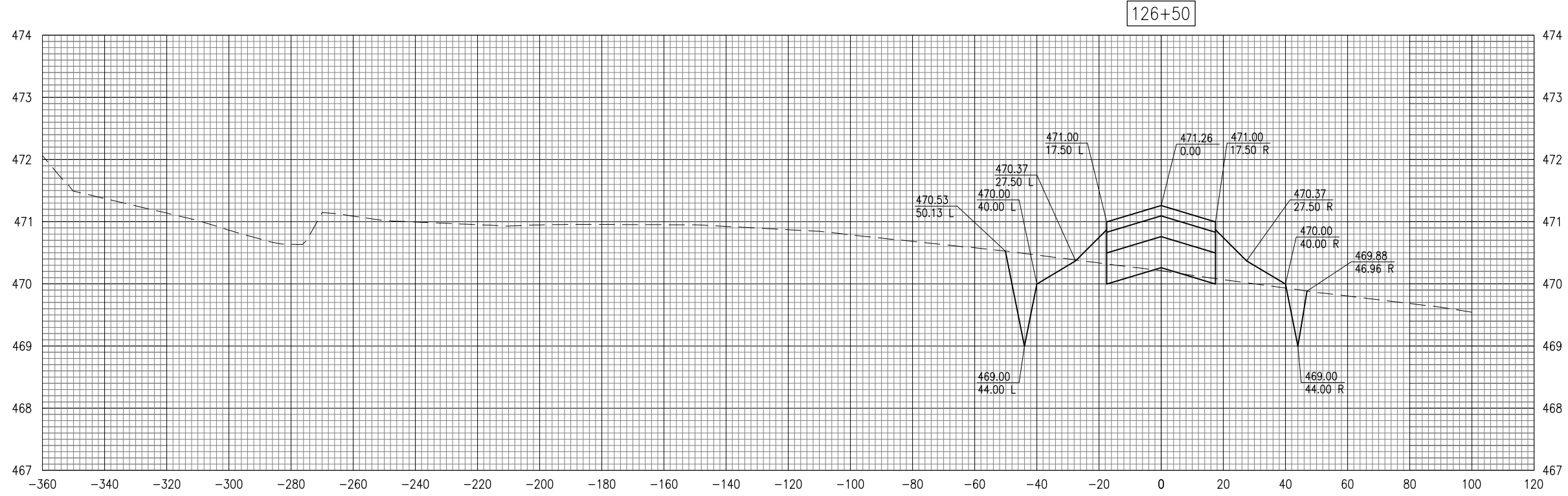
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**1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29**

**PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 125+00
TO STA. 125+50**

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**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

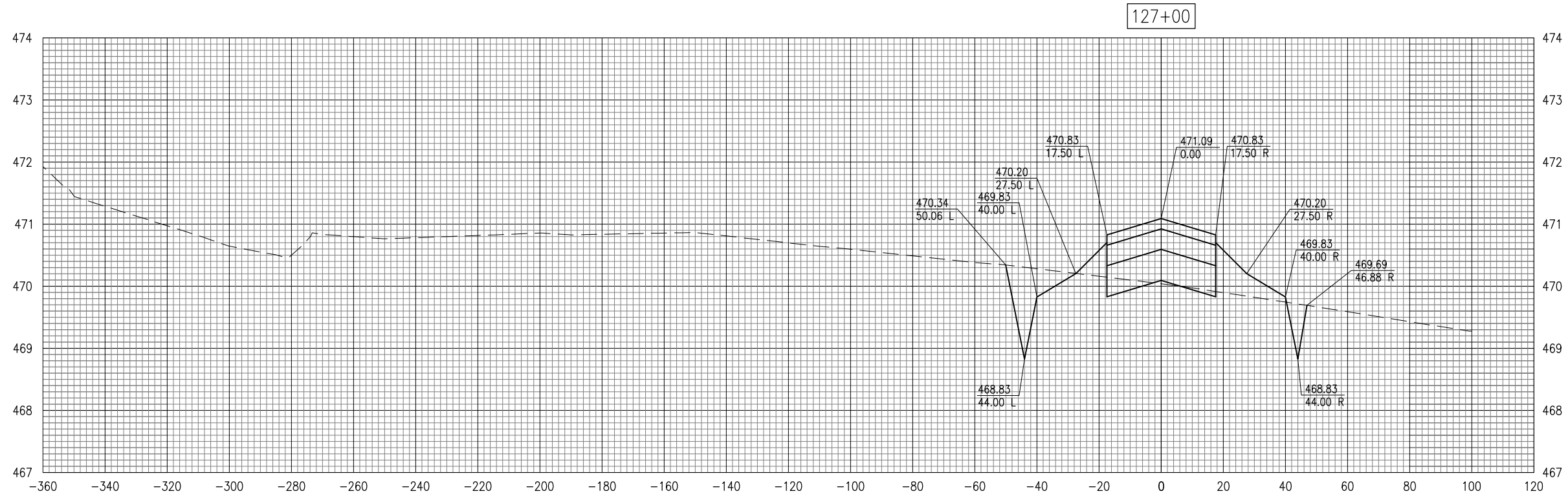
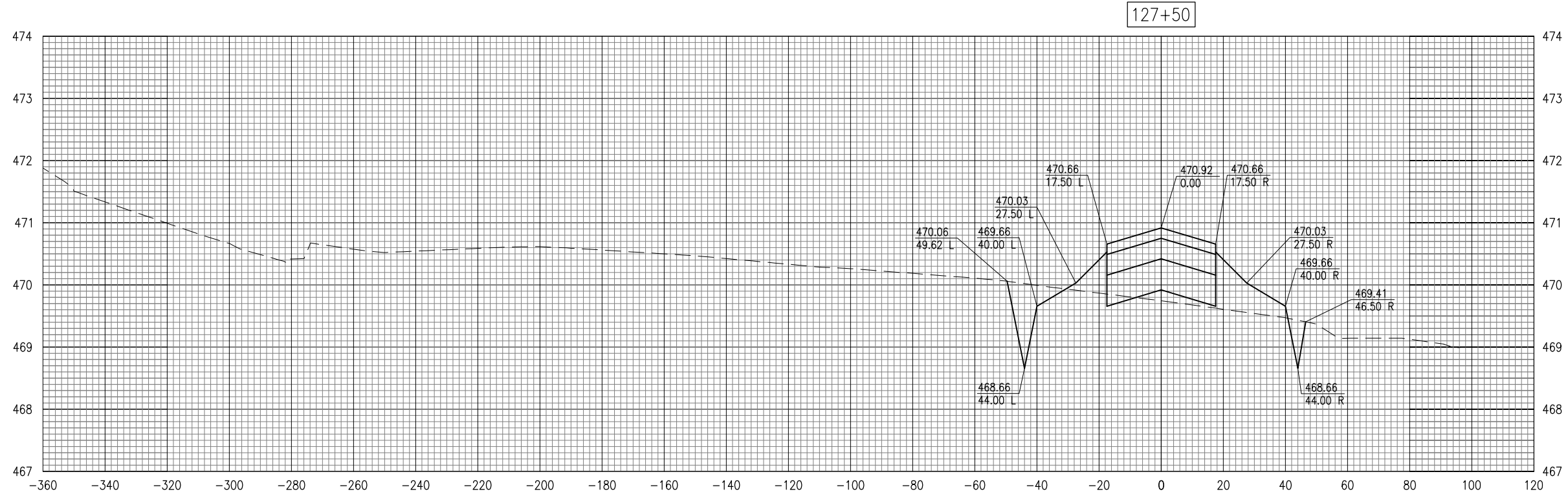
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 126+00
TO STA. 126+50



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DATE

OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

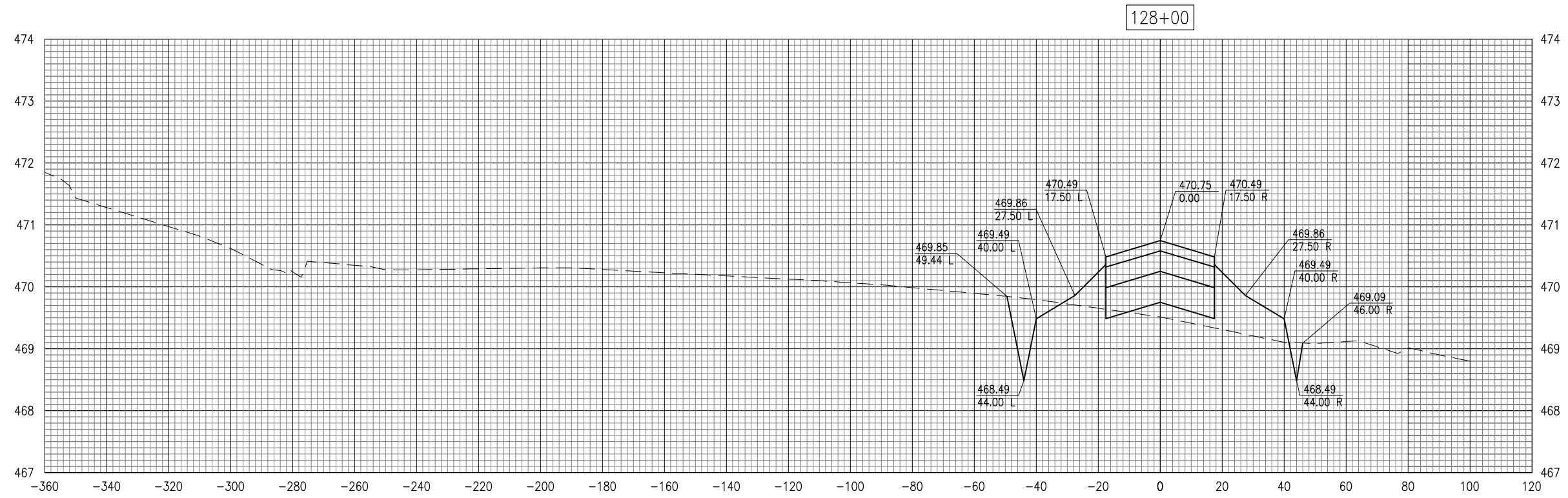
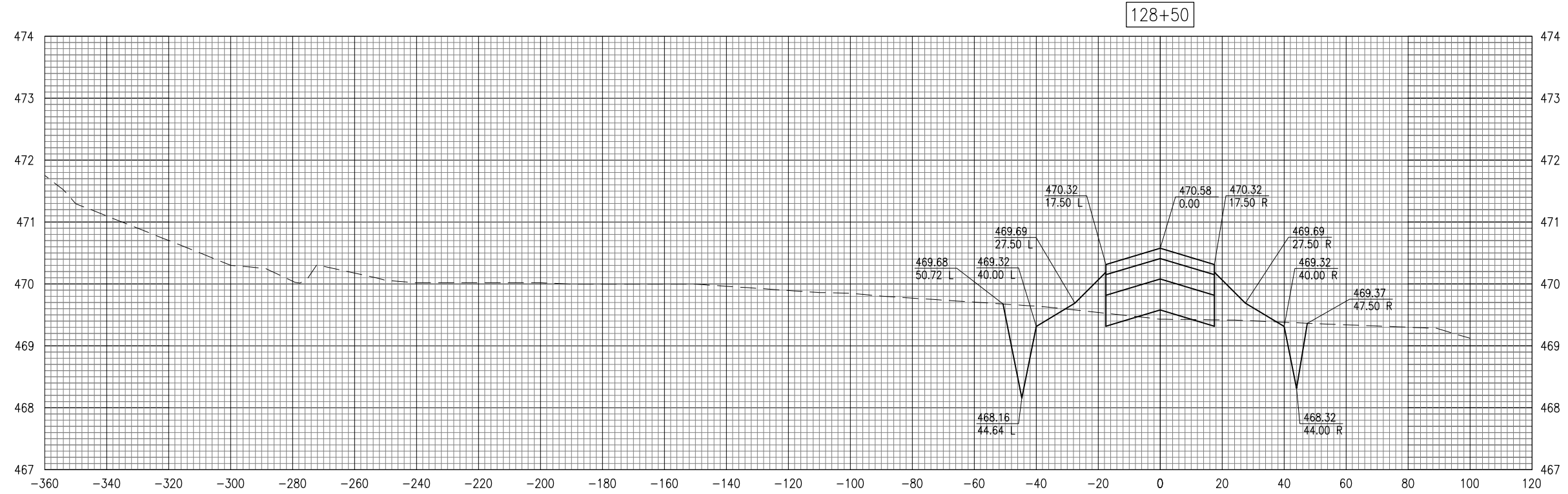
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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 127+00 TO STA. 127+50



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**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

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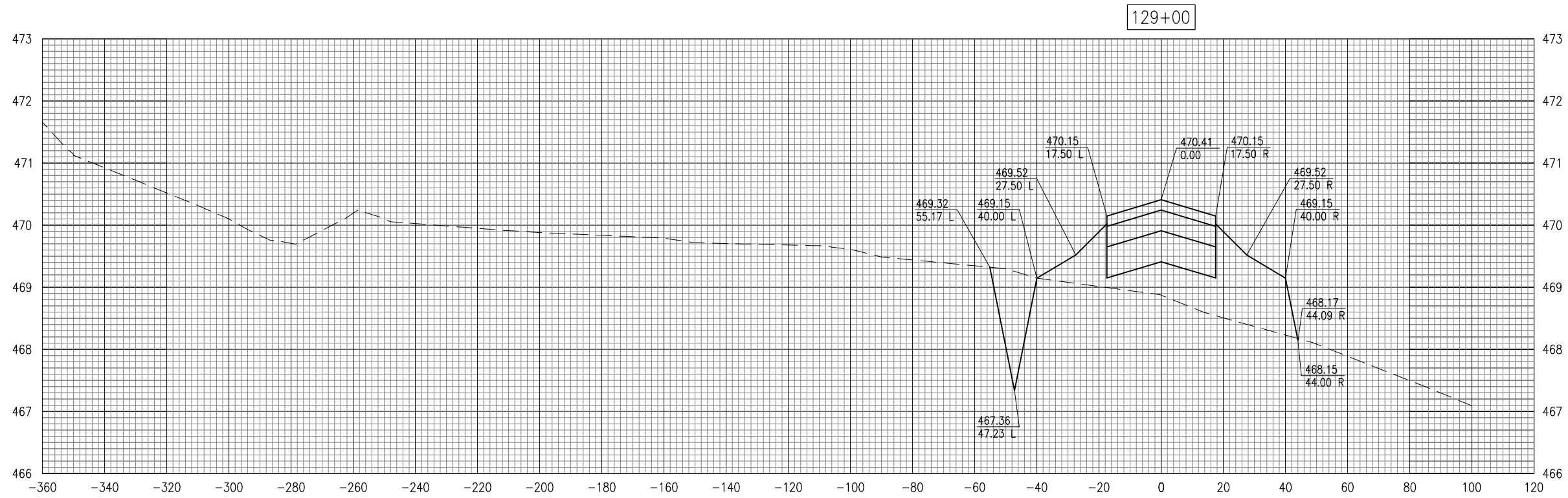
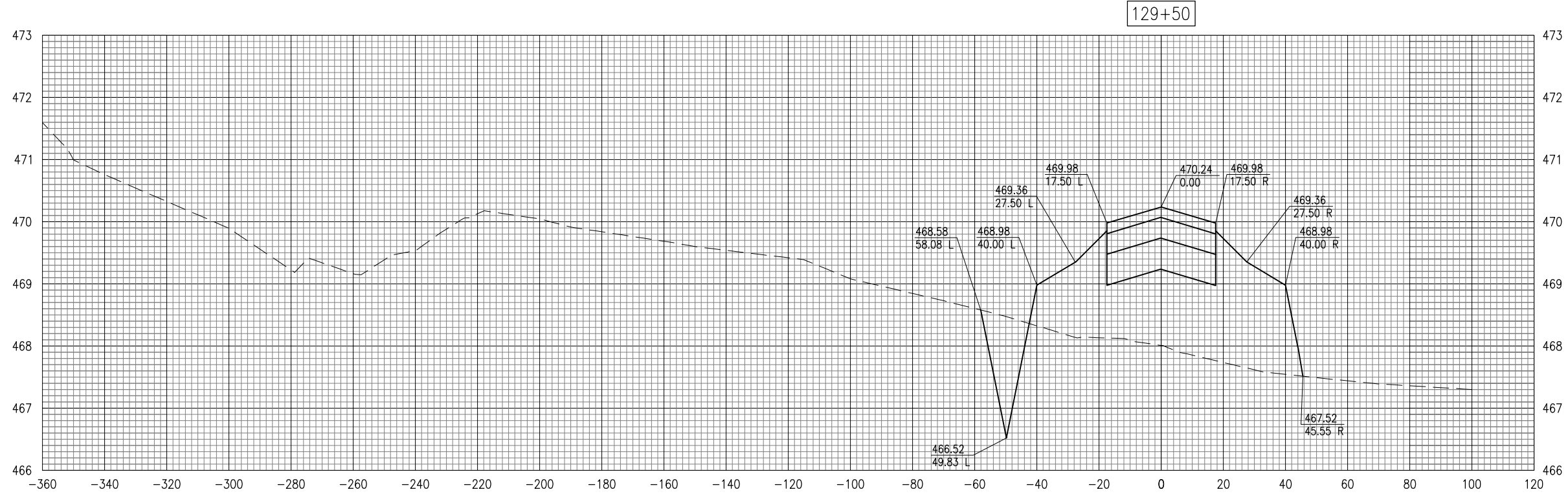
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LAYOUT	REVIEWED	CAH
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 128+00
TO STA. 128+50

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**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

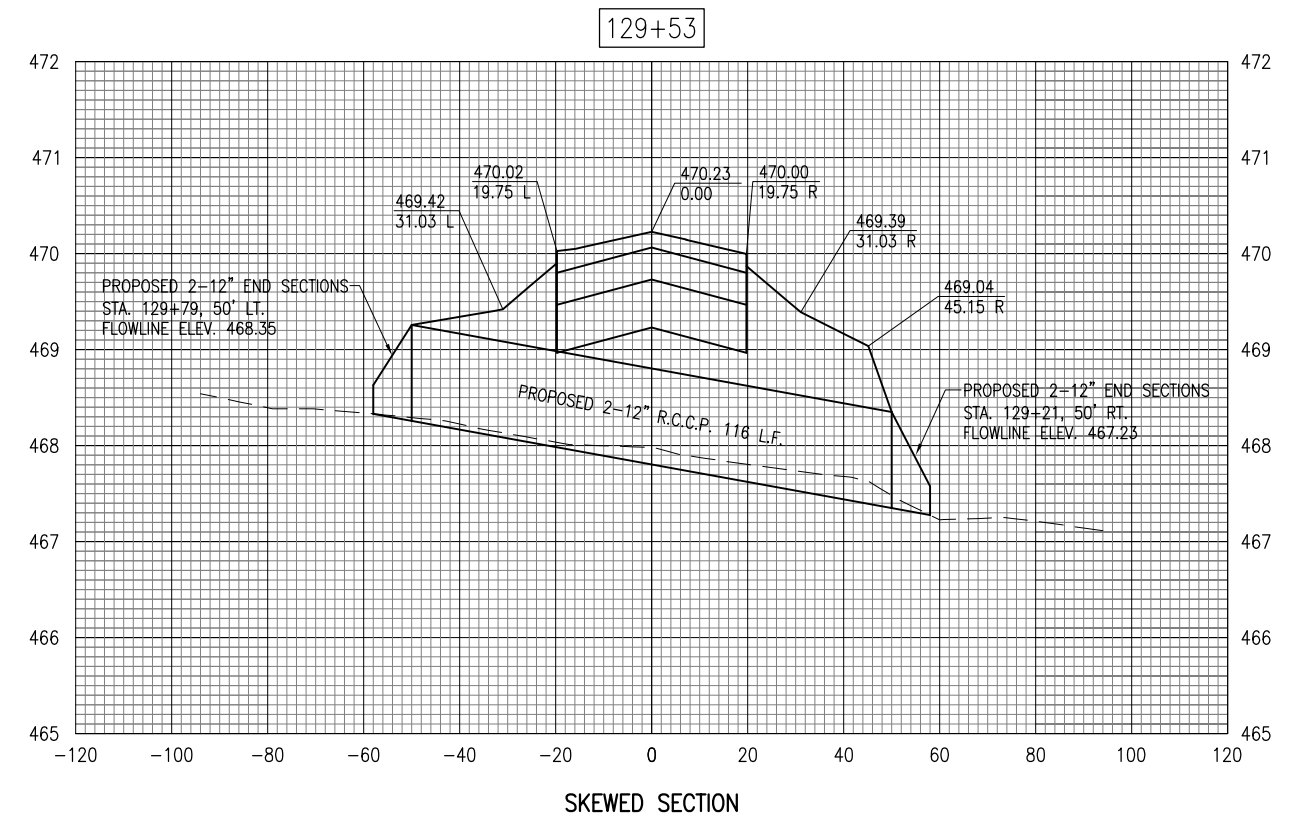
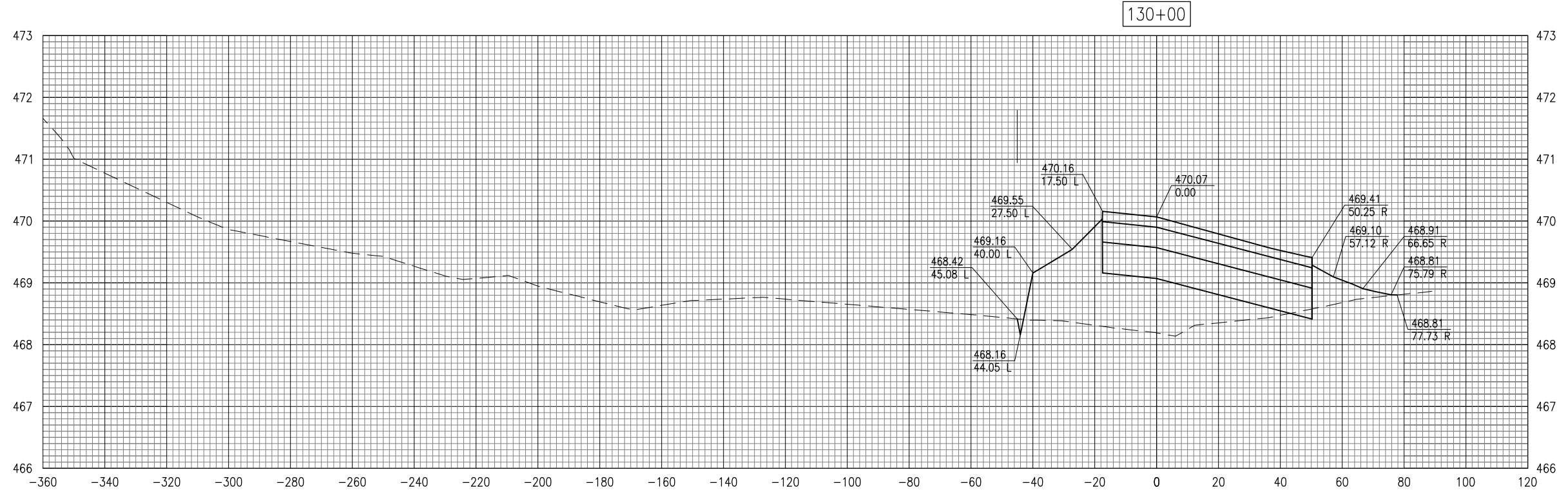
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1,856' PARTIAL PARALLEL
TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 129+00
TO STA. 129+50



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REVISION	DATE

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

Hanson Proj. No. 11A0081D Filename C-304-XS-B.DWG Scale H. 1" = 20' V. 1" = 1' Date 02/17/12	LAYOUT DRAWN BAK REVIEWED CAH	01/25/12 01/25/12 02/15/12
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TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
FOR TAXIWAY B STA. 129+53
TO STA. 130+00

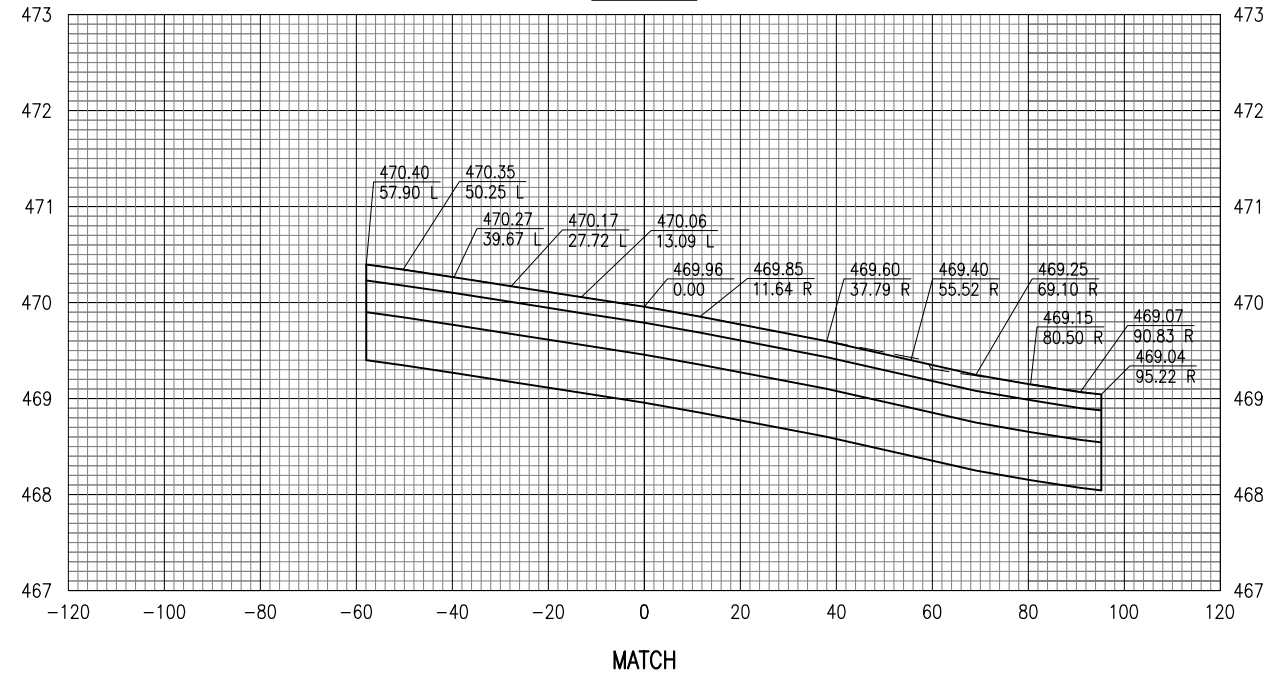
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115+00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115+21.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115+39.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115+50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
116+00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
116+50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117+00.00	304.42	66.48	281.87	61.56	281.87	61.56	220.31
117+50.00	308.55	68.81	567.57	125.27	849.44	186.83	662.61
118+00.00	370.51	70.13	628.77	128.65	1478.21	315.48	1162.72
118+50.00	424.02	63.35	735.68	123.60	2213.89	439.08	1774.81
119+00.00	397.61	63.07	760.78	117.06	2974.67	556.14	2418.53
119+50.00	295.72	98.16	641.98	149.29	3616.65	705.43	2911.21
120+00.00	240.73	109.42	496.71	192.21	4113.36	897.64	3215.72
120+50.00	115.38	108.00	329.73	201.31	4443.09	1098.95	3344.14
121+00.00	117.45	98.59	215.58	191.28	4658.67	1290.24	3368.44
121+50.00	81.60	129.33	184.31	211.03	4842.98	1501.27	3341.71
122+00.00	0.00	0.00	75.56	119.75	4918.54	1621.01	3297.53
122+50.00	36.83	148.49	34.10	137.49	4952.64	1758.51	3194.14
123+00.00	28.11	139.51	60.13	266.67	5012.78	2025.17	2987.60
123+50.00	0.00	0.00	26.03	129.17	5038.81	2154.35	2884.46

TOTAL VOLUME							
STATION	CUT AREA (SF)	FILL AREA (SF)	CUT VOL (CY)	FILL VOL (CY)	CUM CUT VOL (CY)	CUM FILL VOL (CY)	NET VOL (CY)
124+00.00	5.27	71.45	4.88	66.16	5043.68	2220.50	2823.18
124+50.00	0.00	0.00	4.88	66.16	5048.56	2286.66	2761.90
125+00.00	7.35	62.96	6.81	58.30	5055.37	2344.96	2710.41
125+50.00	8.00	55.87	14.21	110.03	5069.58	2454.99	2614.59
126+00.00	13.24	45.90	19.66	94.23	5089.24	2549.22	2540.02
126+50.00	14.52	43.28	25.71	82.57	5114.95	2631.79	2483.15
127+00.00	14.10	43.59	26.50	80.44	5141.45	2712.23	2429.22
127+50.00	11.03	51.76	23.27	88.29	5164.72	2800.52	2364.20
128+00.00	0.00	0.00	10.21	47.92	5174.93	2848.44	2326.49
128+50.00	14.51	45.53	13.43	42.16	5188.37	2890.60	2297.76
129+00.00	14.62	88.91	26.97	124.48	5215.33	3015.08	2200.25
129+50.00	15.22	144.65	27.62	216.26	5242.96	3231.34	2011.62
129+53.24	0.00	0.00	0.91	8.69	5243.87	3240.03	2003.84
130+00.00	0.00	0.00	0.00	0.00	5243.87	3240.03	2003.84
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130+33



DATE	REVISION

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

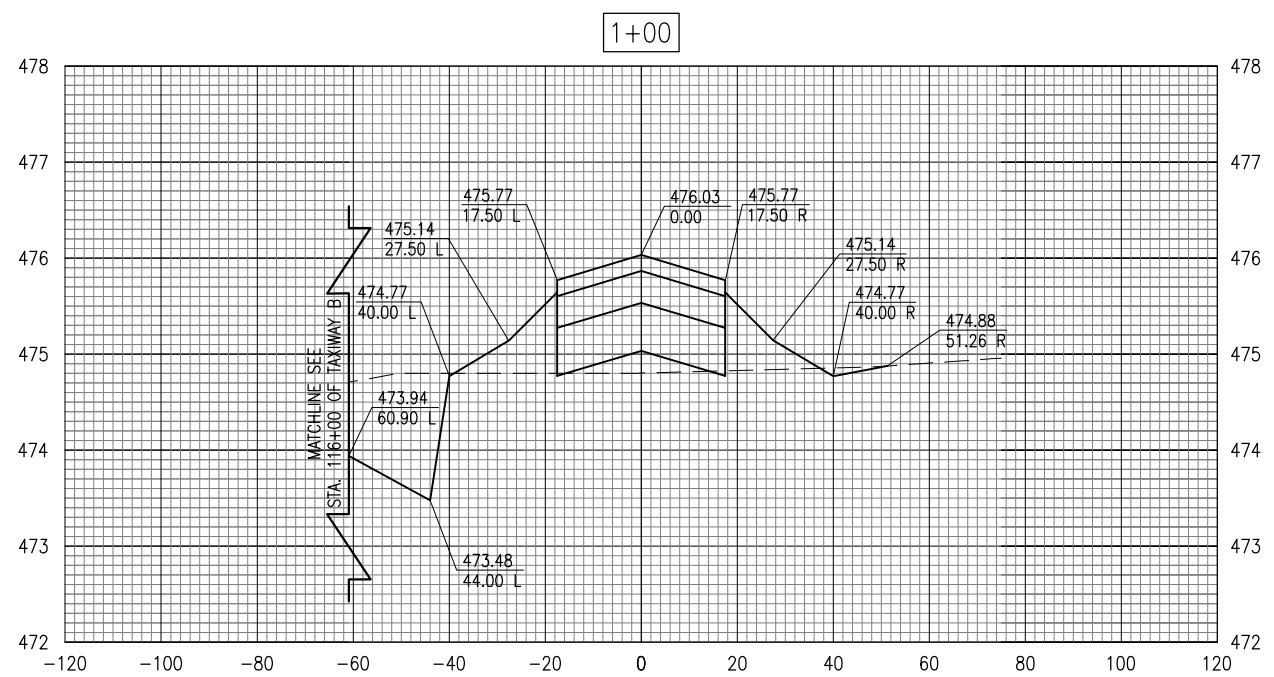
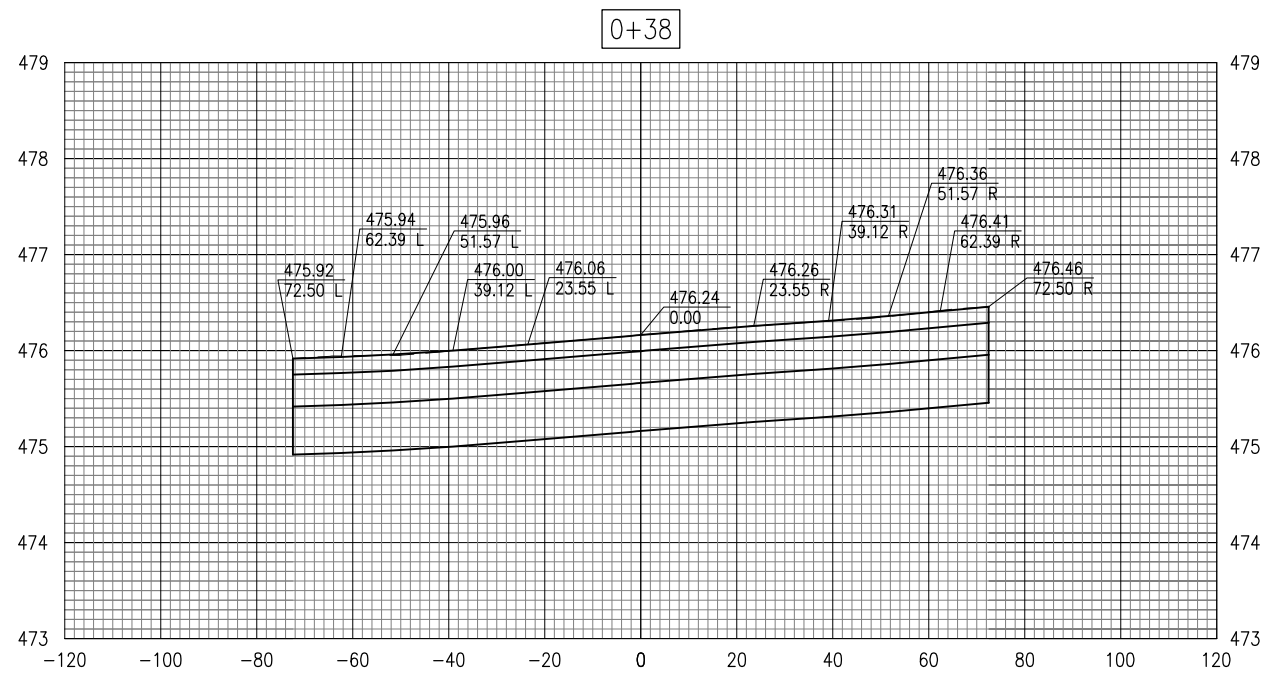
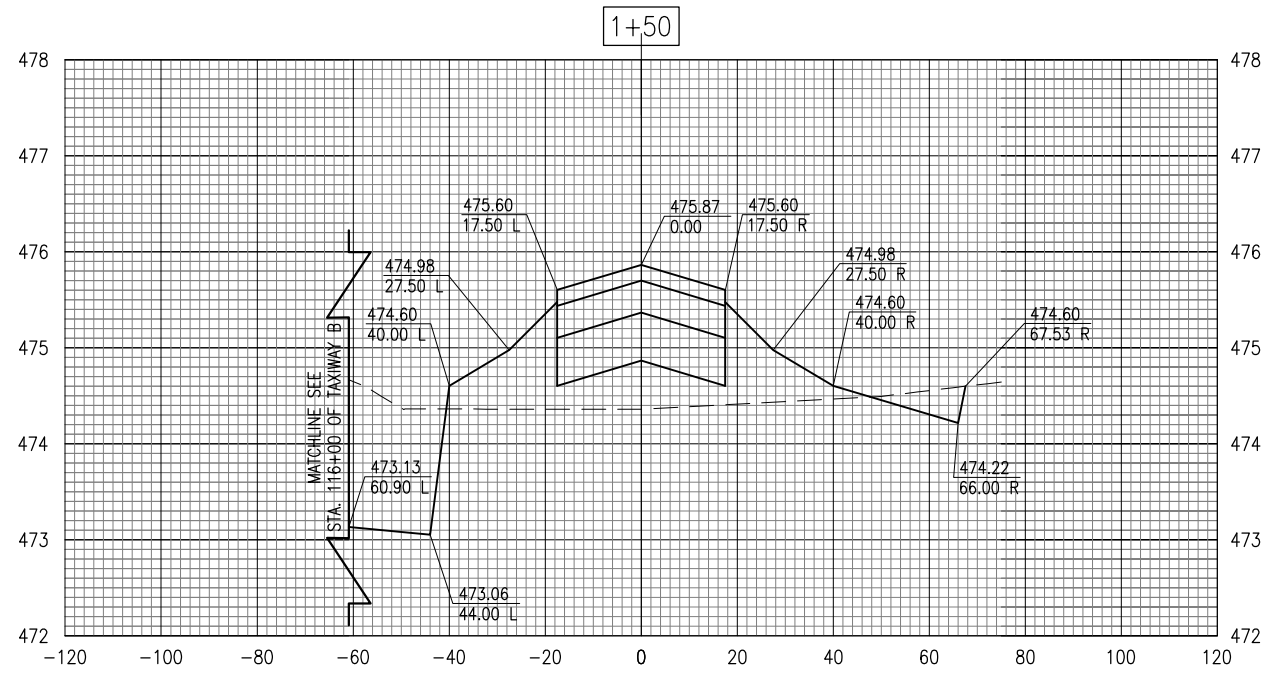
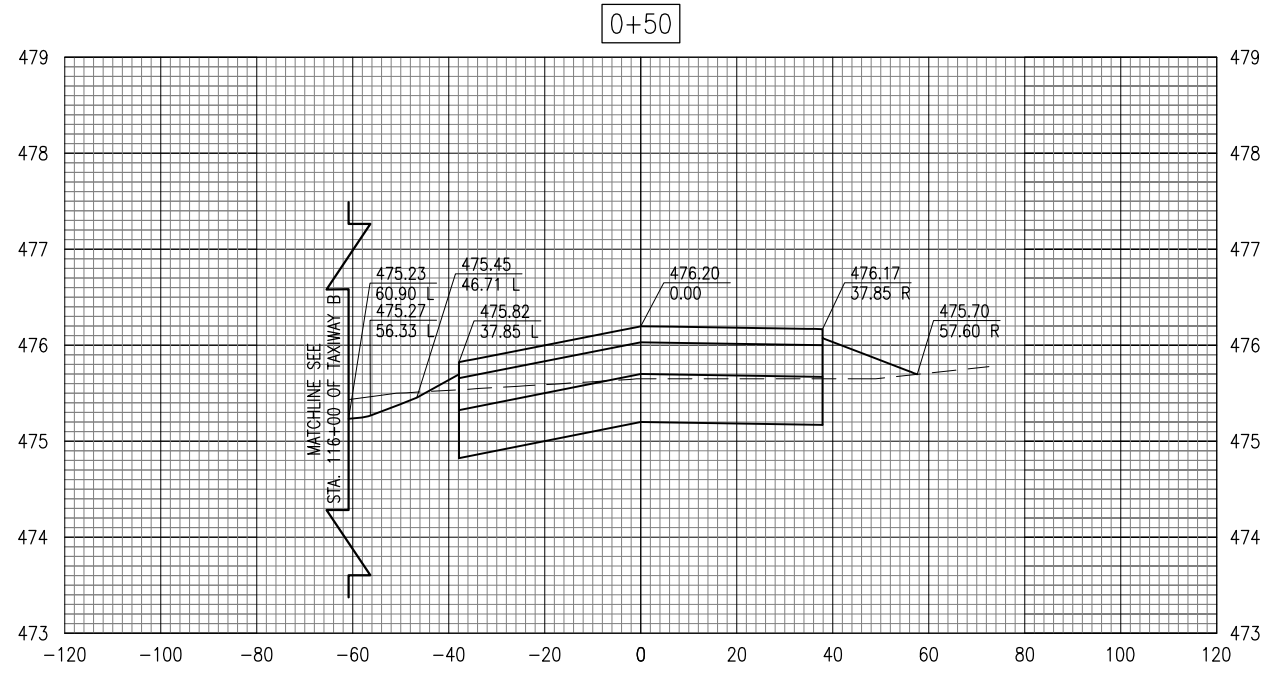
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	REVIEWED	CAH	02/15/12

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29
PROPOSED CROSS-SECTIONS FOR TAXIWAY B STA. 130+33

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OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS

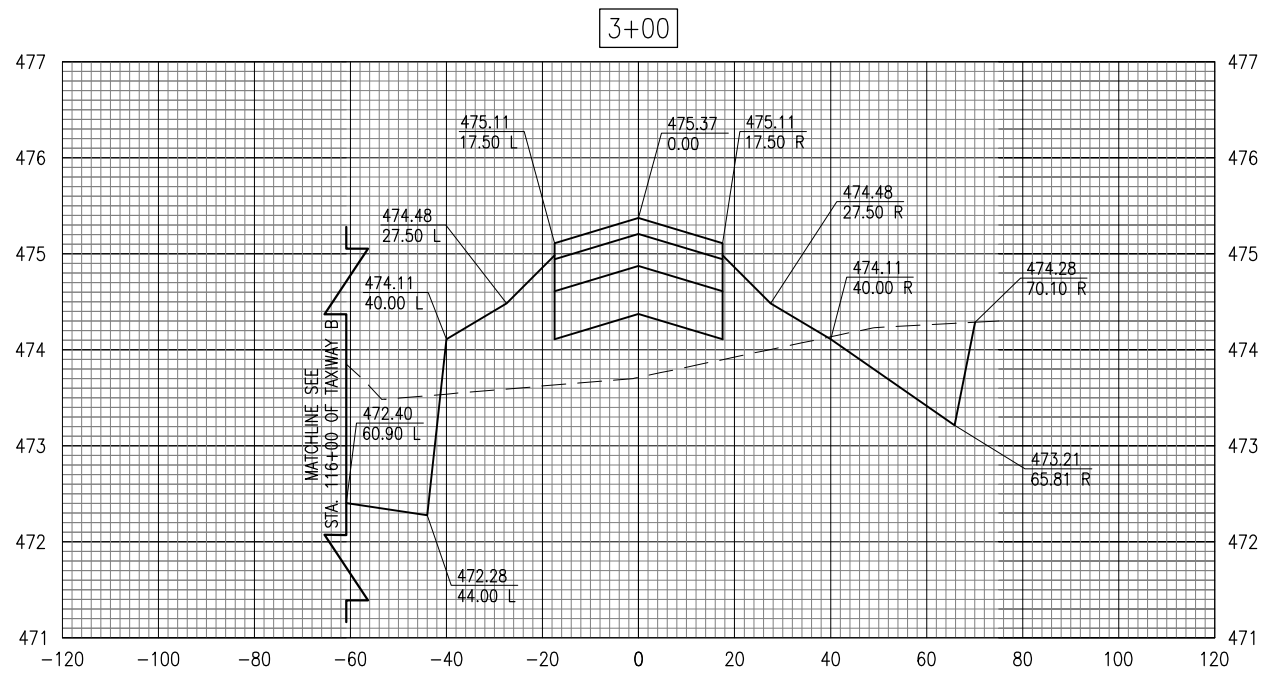
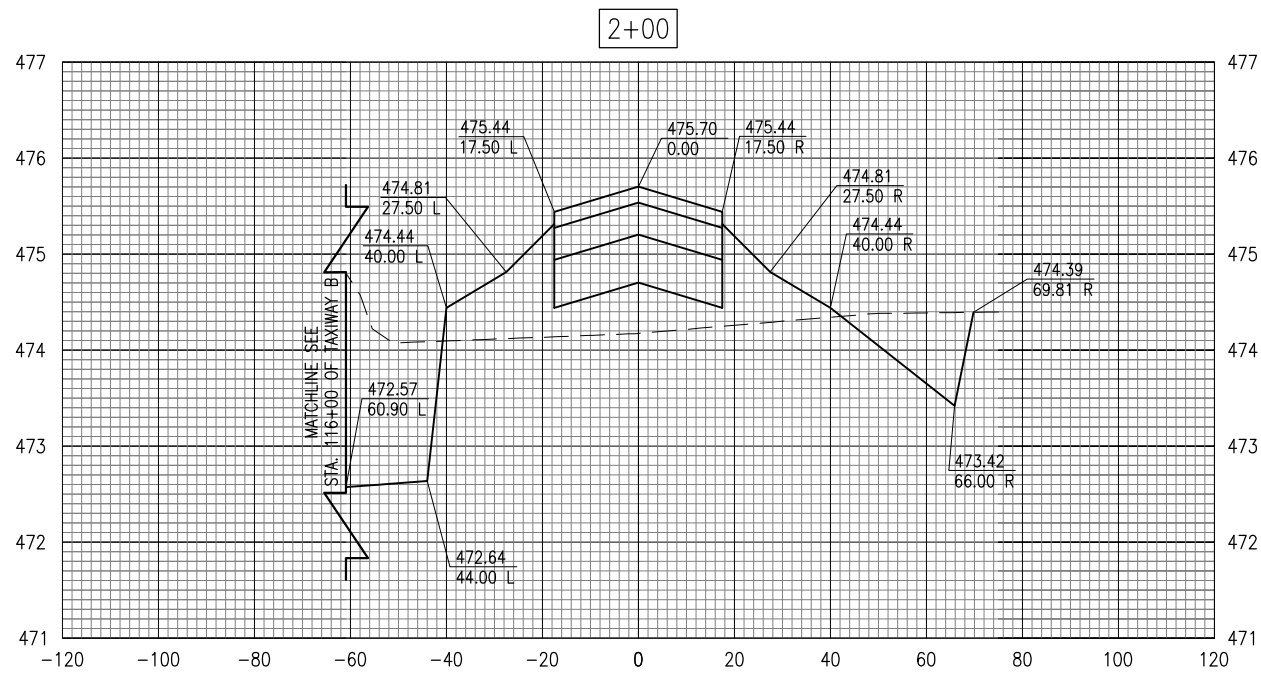
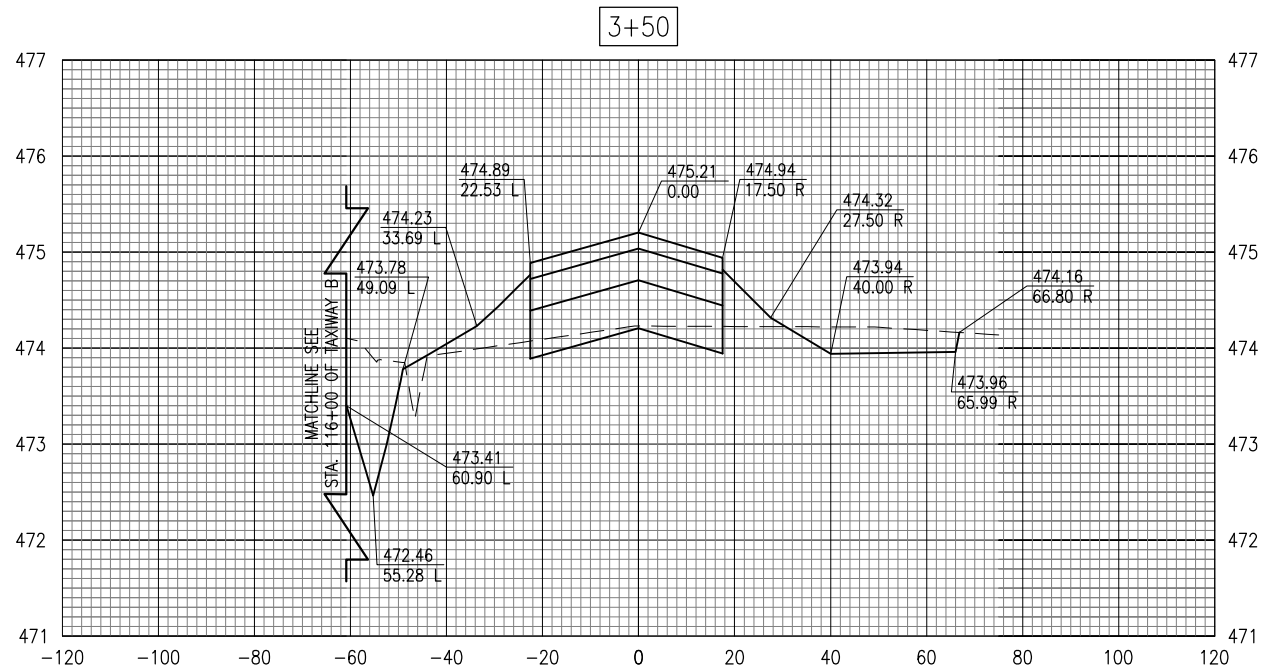
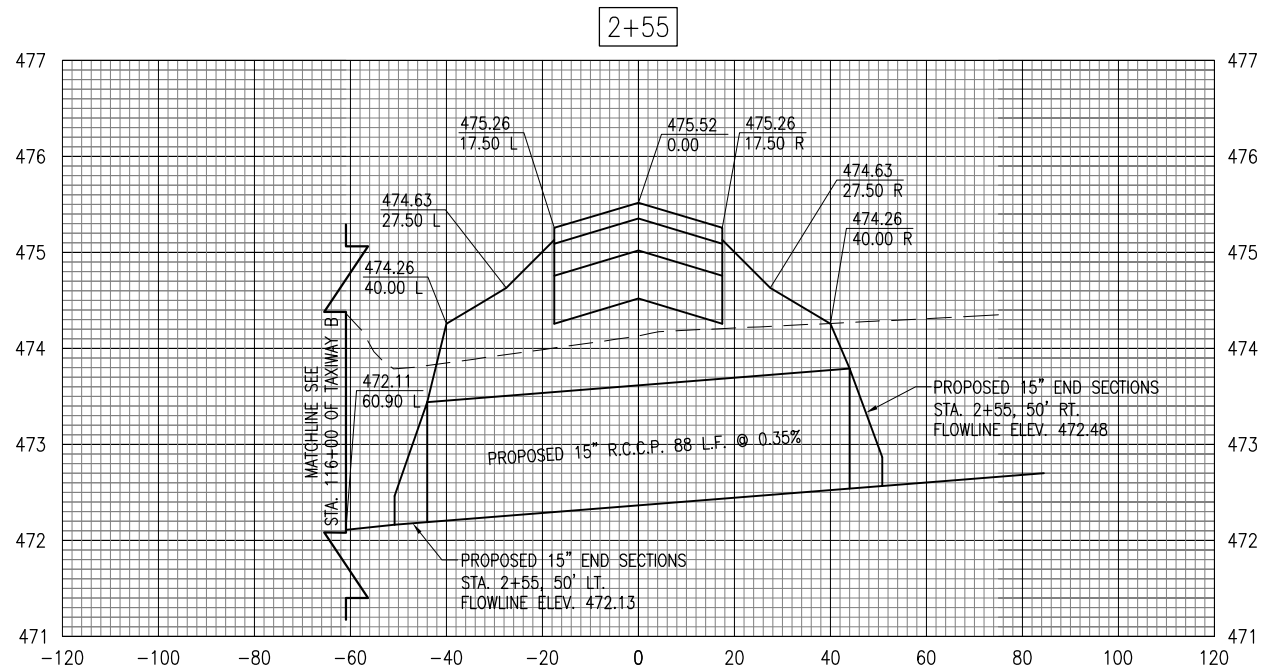
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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29
PROPOSED CROSS-SECTIONS FOR TAXIWAY B1 STA. 0+38 TO STA. 1+50

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REVISION	DATE

**OLNEY-NOBLE AIRPORT
OLNEY, ILLINOIS**

IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

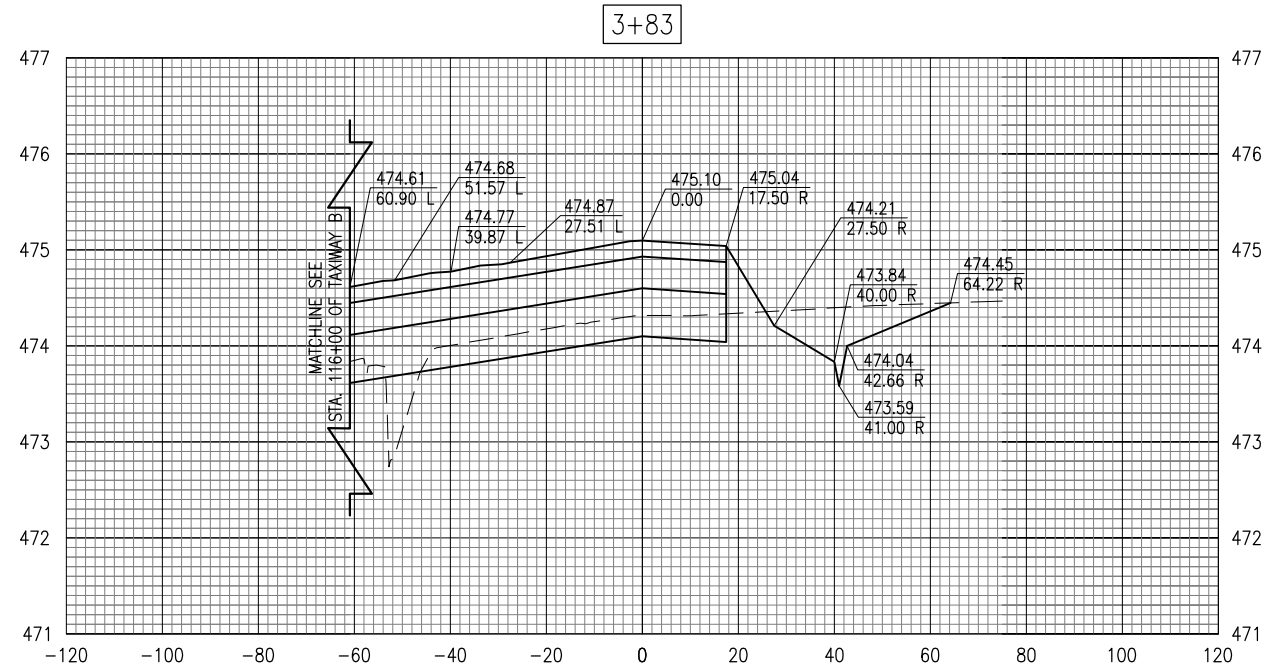
Hanson Proj. No. 11A0081D	FILENAME C-305-XS-B1.DWG
Scale H. 1" = 20' V. 1" = 1'	Date 02/17/12
LAYOUT BAK	01/25/12
DRAWN BAK	01/25/12
REVIEWED CAH	02/15/12

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1,856' PARTIAL PARALLEL TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS FOR TAXIWAY B1 STA. 2+00 TO STA. 3+50

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TOTAL VOLUME							
STATION	CUT AREA (SF)	FILL AREA (SF)	CUT VOL (CY)	FILL VOL (CY)	CUM CUT VOL (CY)	CUM FILL VOL (CY)	NET VOL (CY)
0+37.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0+50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1+00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1+50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2+00.00	43.78	76.46	40.54	70.80	40.54	70.80	-30.26
2+55.00	0.00	0.00	44.59	77.88	85.13	148.68	-63.55
3+00.00	39.55	84.03	32.96	70.03	118.10	218.71	-100.61
3+50.00	0.00	0.00	36.62	77.81	154.72	296.52	-141.80
3+82.50	0.00	0.00	0.00	0.00	154.72	296.52	-141.80

DATE	REVISION

**OLNEY-NOBLE AIRPORT
 OLNEY, ILLINOIS**

IL PROJ.: 01Y-4131 A.I.P. PROJ.: 3-17-0076-B11

Hanson Proj. No. 11A0081D Filename C-305-XS-B1.DWG Scale H. 1" = 20' V. 1" = 1' Date 02/17/12	LAYOUT DRAWN BAK REVIEWED CAH	01/25/12 01/25/12 02/15/12
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1,856' PARTIAL PARALLEL
 TAXIWAY TO RWY. 11-29

PROPOSED CROSS-SECTIONS
 FOR TAXIWAY B1 STA. 3+83