

CONSTRUCTION PLANS FOR ST. LOUIS DOWNTOWN AIRPORT CAHOKIA, ST. CLAIR COUNTY, ILLINOIS GRADE DITCH PARALLEL TO MAIN RUNWAY

SCOPE OF WORK

BASE BID

THE PROJECT CONSISTS OF RELOCATION OF AN EXISTING DITCH TO A LOCATION OUTSIDE THE RUNWAY SAFETY AREA, INCLUDING GRADING, CONSTRUCTION OF CONCRETE PAVED DITCH, RELOCATION OF UTILITIES, EROSION CONTROL AND ASSOCIATED WORK.

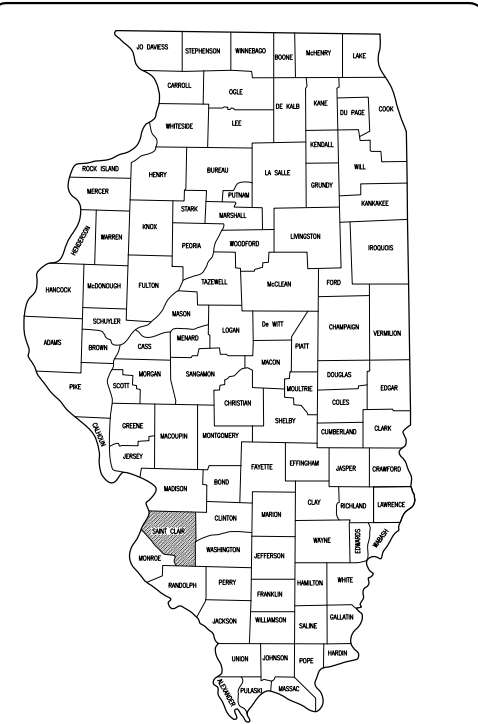
ADDITIVE ALTERNATE NO. 1

ADDITIVE ALTERNATE NO. 1 WILL CONSIST OF PARTIAL DEPTH PAVEMENT REPAIRS ON TAXIWAY B1 AND TAXIWAY B7, INCLUDING PAVEMENT REMOVAL, CONCRETE PAVING AND ASSOCIATED WORK.

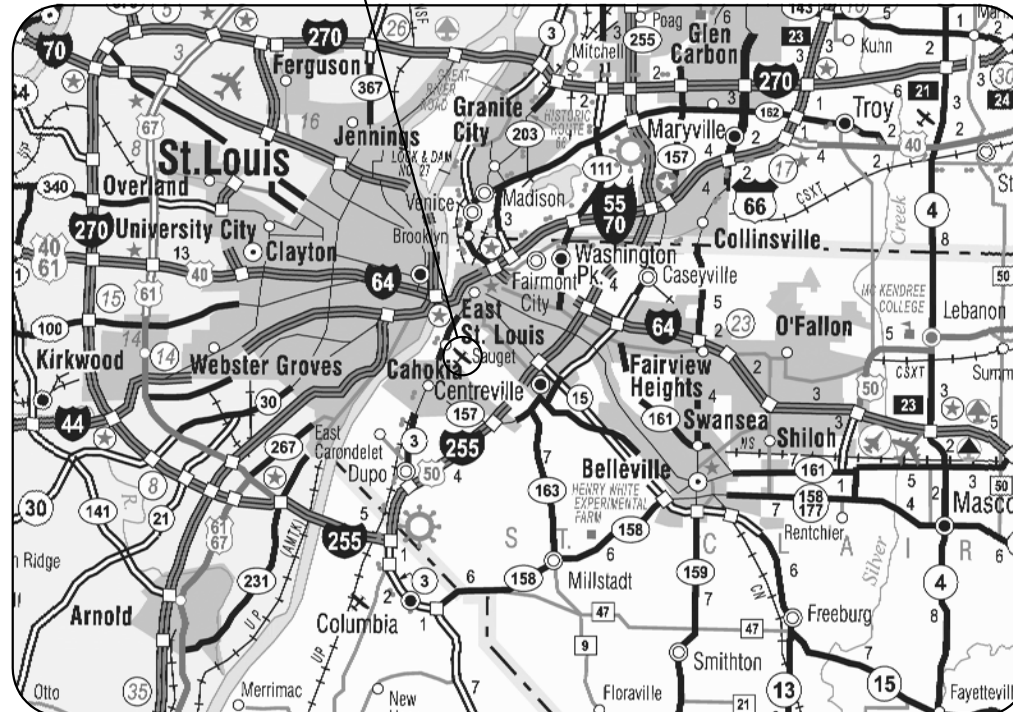
ILL. PROJ.: CPS-4210
S.B.G. PROJ.: 3-17-0039-B29

LATITUDE: 38° 34' 14"
LONGITUDE: 90° 09' 22"
ELEVATION: 413' M.S.L.
DATE: MAR 8, 2013

ST. LOUIS DOWNTOWN AIRPORT
CAHOKIA, ILLINOIS



LOCATION OF COUNTY



LOCATION



COVERING
ELECTRICAL
DESIGN



Hanson Professional Services Inc.
ELECTRICAL ENGINEER

Submitted by: *Kevin N. Lightfoot* ENGINEER

Date Submitted: 3/4/2013

Lics. Exp. Date: 11/30/2013



Hanson Professional Services Inc.
CIVIL ENGINEER

Submitted by: *Barry S. Stolz* ENGINEER

Date Submitted: 3/8/2013

Lics. Exp. Date: 11/30/2013

BI-STATE DEVELOPMENT AGENCY

Approved: *Robert M. Daniel* DIRECTOR OF THE AIRPORT

Date: March 7, 2013

REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
ILL PROJ.: CPS-4210

Hanson Project No.	11A0190
Filename	G-001-CVR.dwg
Scale	NONE
Date	03/08/13
LAYOUT	MLH 01/16/13
DRAWN	MLH 01/16/13
REVIEWED	BSS 03/08/13

HANSON
Hanson Professional Services Inc.
1525 South Main Street
Springfield, Illinois 62703-2886

GRADE DITCH PARALLEL TO MAIN RUNWAY

COVER SHEET

1

1 of 86 sheets

SUMMARY OF QUANTITIES - BASE BID				
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR108082	1/C #2 XLP-USE	LF	1,298	
AR108108	1/C #8 5 KV UG CABLE	LF	1,813	
AR108158	1/C #8 5 KV UG CABLE IN UD	LF	237	
AR108258	2/C #8 5 KV UG CABLE IN UD	LF	766	
AR108706	1/C #6 COUNTERPOISE	LF	250	
AR108806	6 PAIR CONTROL CABLE	LF	433	
AR110012	2" DIRECTIONAL BORE	LF	260	
AR110014	4" DIRECTIONAL BORE	LF	305	
AR110502	2-WAY CONCRETE ENCASED DUCT	LF	230	
AR110504	4-WAY CONCRETE ENCASED DUCT	LF	220	
AR110714	ELECTRICAL MANHOLE - 4'	EA	2	
AR110715	ELECTRICAL MANHOLE - SPECIAL	EA	2	
AR150510	ENGINEER'S FIELD OFFICE	LS	1	
AR150520	MOBILIZATION	LS	1	
AR150540	HAUL ROUTE	LS	1	
AR152410	UNCLASSIFIED EXCAVATION	CY	18,266	
AR156511	DITCH CHECK	EA	15	
AR156520	INLET PROTECTION	EA	12	
AR156531	EROSION CONTROL BLANKET	SY	4,562	
AR701900	REMOVE PIPE	LF	56	
AR705506	6" PERFORATED UNDERDRAIN	LF	80	
AR705620	UNDERDRAIN END SECTION	EA	4	
AR705962	RELOCATE UNDERDRAIN END SECTION	EA	2	
AR752900	REMOVE END SECTION	EA	2	
AR754610	PAVED DITCH	LF	2,505	
AR901510	SEEDING	ACRE	15.3	
AR908510	MULCHING	ACRE	15.3	

EARTHWORK QUANTITY SUMMARY				
WORK AREA	CUT (CY)	FILL (CY)	FILL + 20% (CY)	WORK AREA
WORK AREA 1	8,559**	2,873	3,448	5,111 CY EXPORT
WORK AREA 2	4,134**	1,559	1,871	2,263 CY EXPORT
WORK AREA 3	696	2,720	3,264**	2,568 CY IMPORT
WORK AREA 4	1,876	1,924	2,309**	433 CY IMPORT
PROJECT TOTAL	15,265	9,076	10,892	4,373 CY EXPORT

** USED TO CALCULATE AR152410 PAY ITEM QUANTITY

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE 1				
ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AS150530	TRAFFIC MAINTENANCE	LS	1	
AS610510	STRUCTURAL PC CONCRETE	CY	8.5	
AS620520	PAVEMENT MARKING-WATERBORNE	SF	30	
AS620525	PAVEMENT MARKING-BLACK BORDER	SF	30	
AS800372	BITUMINOUS & PCC PAVEMENT REMOVAL	SY	41	

GENERAL NOTES:

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

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

MATERIAL CERTIFICATIONS
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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5	PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 2
6	PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 3
7	PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 4
8	CONSTRUCTION SAFETY AND PHASING DETAILS AND NOTES
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21	ELECTRICAL LEGEND AND ABBREVIATIONS
22	HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS
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24	GROUNDING DETAILS
25	GROUNDING NOTES
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27	PLAN AND PROFILE STA. 109+50.00 TO STA. 120+25.00
28	PLAN AND PROFILE STA. 120+25.00 TO STA. 131+00.00
29	PLAN AND PROFILE STA. 131+00.00 TO STA. 141+75.00
30	PLAN AND PROFILE STA. 141+75.00 TO STA. 152+50.00
31	PLAN AND PROFILE STA. 152+50.00 TO STA. 163+25.00
32	PLAN AND PROFILE STA. 163+25.00 TO STA. 172+97.00
33	SWPPP STA. 100+00 TO STA. 123+00
34	SWPPP STA. 123+00 TO STA. 146+00
35	SWPPP STA. 146+00 TO STA. 170+50
36	SWPPP DETAILS
37	CROSS SECTIONS STA. 101+31 TO STA. 102+00
38	CROSS SECTIONS STA. 102+50 TO STA. 104+00
39	CROSS SECTIONS STA. 104+50 TO STA. 105+50
40	CROSS SECTIONS STA. 106+500 TO STA. 107+00
41	CROSS SECTIONS STA. 107+50 TO STA. 108+50
42	CROSS SECTIONS STA. 109+00 TO STA. 110+00
43	CROSS SECTIONS STA. 110+50 TO STA. 111+50

INDEX TO SHEETS	
SHEET NO.	DESCRIPTION
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45	CROSS SECTIONS STA. 113+50 TO STA. 114+50
46	CROSS SECTIONS STA. 115+00 TO STA. 116+00
47	CROSS SECTIONS STA. 116+50 TO STA. 117+50
48	CROSS SECTIONS STA. 118+00 TO STA. 118+50
49	CROSS SECTIONS STA. 119+00 TO STA. 119+37
50	CROSS SECTIONS STA. 119+50 TO STA. 120+50
51	CROSS SECTIONS STA. 121+00 TO STA. 122+00
52	CROSS SECTIONS STA. 122+23 TO STA. 123+82
53	CROSS SECTIONS STA. 124+00 TO STA. 124+50
54	CROSS SECTIONS STA. 125+00 TO STA. 126+00
55	CROSS SECTIONS STA. 126+50 TO STA. 127+50
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57	CROSS SECTIONS STA. 128+98 TO STA. 129+50
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59	CROSS SECTIONS STA. 131+00 TO STA. 132+00
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61	CROSS SECTIONS STA. 134+00 TO STA. 135+14
62	CROSS SECTIONS STA. 135+60 TO STA. 137+21
63	CROSS SECTIONS STA. 137+50 TO STA. 138+50
64	CROSS SECTIONS STA. 139+00 TO STA. 140+00
65	CROSS SECTIONS STA. 140+50 TO STA. 141+50
66	CROSS SECTIONS STA. 142+00 TO STA. 143+00
67	CROSS SECTIONS STA. 143+50 TO STA. 144+50
68	CROSS SECTIONS STA. 145+00 TO STA. 146+50
69	CROSS SECTIONS STA. 147+00 TO STA. 148+50
70	CROSS SECTIONS STA. 149+00 TO STA. 150+00
71	CROSS SECTIONS STA. 150+50 TO STA. 151+50
72	CROSS SECTIONS STA. 152+00 TO STA. 152+90
73	CROSS SECTIONS STA. 153+00 TO STA. 154+13
74	CROSS SECTIONS STA. 155+31 TO STA. 156+50
75	CROSS SECTIONS STA. 157+00 TO STA. 158+50
76	CROSS SECTIONS STA. 159+00 TO STA. 160+00
77	CROSS SECTIONS STA. 160+50 TO STA. 161+50
78	CROSS SECTIONS STA. 162+00 TO STA. 162+50
79	CROSS SECTIONS STA. 163+00 TO STA. 163+50
80	CROSS SECTIONS STA. 164+00 TO STA. 164+50
81	CROSS SECTIONS STA. 165+00 TO STA. 165+50
82	CROSS SECTIONS STA. 165+97 TO STA. 166+50
83	CROSS SECTIONS STA. 167+00 TO STA. 167+50
84	CROSS SECTIONS STA. 168+00 TO STA. 168+50
85	CROSS SECTIONS STA. 168+72 TO STA. 169+13
86	CONSTRUCTION PLAN - ADDITIVE ALTERNATE

REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CFS-4210

Hanson Project No.	11A0190
Filename	G-002-FLP.cwg
Scale	NONE
Date	03/08/13
LAYOUT	MLH 01/15/13
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REVIEWED	BSS 03/08/13

HANSON
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Hanson Professional Services Inc.
1525 South Main Street
Springfield, Illinois 62703-2886

GRADE DITCH PARALLEL TO MAIN RUNWAY

SUMMARY OF QUANTITIES AND INDEX TO SHEETS

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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.

J.U.L.I.E. INFORMATION

COUNTY _____ ST. CLAIR
 CITY _____ CAHOKIA
 TOWNSHIP _____ CENTERVILLE
 SECTION NO. _____ T.1N. - R.10W.
 ADDRESS _____ ST. LOUIS DOWNTOWN AIRPORT
 6100 ARCHVIEW DRIVE
 CAHOKIA, IL 62206-1445

CONTROL POINT DATA

NO.	DESCRIPTION	NORTHING	EASTING	ELEV.
1	ALUM CAP IN CONC.	694,968.570	2,298,934.540	405.14
2	CPS A, NGS MONUMENT	691,967.750	2,302,244.770	402.76
3	CPS C, NGS MONUMENT	695,797.730	2,297,963.240	407.48
4	ALUM CAP	694,019.540	2,296,063.780	407.51

SURVEY NOTES

- ALL COORDINATE VALUES SHOWN IN TABLE ARE BASED ON ILLINOIS STATE PLANE - WEST ZONE NAD-83 (2007).
- REFER TO IDOT STANDARD SPECIFICATIONS 50-06, CONSTRUCTION LAYOUT STAKES, FOR ADDITIONAL INFORMATION.

LEGEND

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED IMPROVEMENTS
- PROPOSED CONTRACTOR STAGING AREA
- PROPOSED STOCKPILE
- PROPOSED HAUL ROUTE
- EXISTING FENCE
- AIRPORT PROPERTY LINE
- SURVEY CONTROL POINT
- CRITICAL POINT

CRITICAL POINTS

POINT #	LATITUDE	LONGITUDE	GROUND ELEVATION	PROPOSED EQUIPMENT HEIGHT	PROPOSED EQUIPMENT ELEVATION	REMARKS
1	N 38° 34' 24.94"	W 90° 09' 47.15"	408.1	25'	433.1	---
2	N 38° 34' 15.19"	W 90° 09' 26.83"	407.9	25'	432.9	---
3	N 38° 34' 09.87"	W 90° 09' 16.08"	408.6	25'	433.6	---
4	N 38° 34' 05.39"	W 90° 09' 08.52"	406.9	25'	431.9	---
5	N 38° 34' 04.41"	W 90° 09' 06.70"	406.3	25'	431.3	---
6	N 38° 33' 58.68"	W 90° 08' 53.47"	404.3	25'	429.3	---
7	N 38° 33' 52.35"	W 90° 08' 40.66"	402.7	25'	427.7	---
8	N 38° 34' 28.77"	W 90° 09' 50.78"	411.5	25'	436.5	ADDITIVE ALTERNATE 1
9	N 38° 33' 57.10"	W 90° 08' 34.05"	405.0	25'	430.0	ADDITIVE ALTERNATE 1
10	N 38° 33' 38.30"	W 90° 08' 33.17"	404.0	25'	429.0	STOCKPILE HT. 6' ABOVE GROUND
11	N 38° 33' 41.34"	W 90° 08' 34.53"	404.0	25'	429.0	---
12	N 38° 33' 46.40"	W 90° 08' 33.07"	407.0	25'	432.0	---
13	N 38° 33' 47.89"	W 90° 08' 32.85"	406.7	25'	431.7	HAUL ROAD AT 300' MODIFIED RSA
14	N 38° 33' 48.42"	W 90° 08' 32.74"	406.8	25'	431.8	HAUL ROAD AT 400' MODIFIED RSA
15	N 38° 33' 48.94"	W 90° 08' 32.62"	406.7	25'	431.7	HAUL ROAD AT 500' STANDARD RSA

GENERAL NOTES

SD057

- THE SCOPE OF WORK SHEET IS INTENDED ONLY AS A GENERAL DESCRIPTION OF WORK ITEMS AND THEIR APPROXIMATE LOCATIONS AND LIMITS, FOR THE PURPOSE OF UNDERSTANDING THE SCOPE OF THE PROJECT. THIS SHEET SHALL NOT BE USED AS A CONSTRUCTION PLAN. REFER TO THE FOLLOWING PLAN SHEETS FOR DETAILED CONSTRUCTION REQUIREMENTS, LOCATIONS, AND ITEMS OF WORK.
- WORK FOR THIS PROJECT (BASE BID) SHALL CONSIST OF, BUT IS NOT LIMITED TO, RELOCATION OF THE EXISTING DITCH PARALLEL TO RUNWAY 12R-30L OUTSIDE OF THE RUNWAY SAFETY AREA, INCLUDING GRADING, CONSTRUCTION OF A PAVED DITCH, RELOCATION OF UTILITIES, EROSION CONTROL, AND OTHER ASSOCIATED ITEMS. AN ADDITIVE ALTERNATE BID CONSISTS OF TAXIWAY PAVEMENT REPAIRS, INCLUDING PAVEMENT REMOVAL AND CONCRETE PAVING.
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, AND TRANSPORTATION NECESSARY TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.
- THE RULES, REGULATIONS, AND SPECIFICATIONS ENUMERATED HEREIN SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS. THEY SHALL NOT PROHIBIT THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIAL THAN ARE SPECIFIED HEREIN.
- THE CONTRACTOR IS NOT PERMITTED TO USE THE AIRPORT ENTRANCE DRIVE AND AUTO PARKING LOT FOR MATERIAL AND EQUIPMENT HAULING OR STORAGE. THE CONSTRUCTION ENTRANCE AS SHOWN ON THE SCOPE OF WORK AND/OR SAFETY PHASING PLAN ARE ONLY TO BE USED FOR THE PROJECT. ACCESS TO THE PROJECT FOR ALL HAULING OF MATERIALS AND EQUIPMENT SHALL BE RESTRICTED TO THE DESIGNATED CONSTRUCTION ENTRANCE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT, PRESERVE AND REPAIR THE EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES AT NO ADDITIONAL COST TO THE CONTRACT.
- NO EQUIPMENT SHALL BE PERMITTED TO CROSS OR USE ANY EXISTING PAVEMENT OUTSIDE THE CONSTRUCTION LIMITS, GENERAL PROJECT AREA OR HAUL ROUTE.
- CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
- UNLESS OTHERWISE NOTED, ALL DISTURBED AREAS OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS SHALL BE GRADED, SEEDED AND/OR HYDROMULCH SEEDED AT NO ADDITIONAL COST TO THE CONTRACT.
- ALL WASTE MATERIAL SHALL BE HAULED FROM THE AIRPORT AND PROPERLY DISPOSED OF UNLESS OTHERWISE SPECIFIED HEREIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR HAULING ON PUBLIC ROADS, AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES TO ANY PAVEMENTS (PUBLIC OR PRIVATE) CAUSED BY HIS/HER CONSTRUCTION EQUIPMENT OR PERSONNEL.
- THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE ONE SET OF REDLINED AS-BUILT DRAWINGS TO THE RESIDENT ENGINEER AT THE COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL NOTE THAT ALL AREAS WITHIN THE AIRPORT PROPERTY LINE AND OUTSIDE THE CONSTRUCTION LIMITS MAY BE USED FOR AGRICULTURAL PURPOSES. THE CONSTRUCTION LIMITS SHALL BE RESTRICTED TO AREAS THAT ARE ABSOLUTELY NECESSARY TO DISTURB TO COMPLETE THE REQUIRED WORK ITEMS. LIMITS SHALL BE COORDINATED WITH THE RESIDENT ENGINEER PRIOR TO BEGINNING ANY WORK. ALL AREAS WHICH HAVE BEEN FARMED AND OR DESIGNATED TO BE FARMED AFTER THE PROJECT COMPLETION, AND HAVE BEEN DISTURBED BY CONSTRUCTION ACTIVITY, SHALL BE CHISEL PLOWED (36" MAX.) OR OTHERWISE SCARIFIED TO RETURN THE AREA TO A REASONABLE TILLABLE CONDITION (IF SO PERMITTED BY THE AIRPORT MANAGER.)
- CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ALL GRASS, STONE, OR PAVEMENT DISTURBED BY CONTRACTOR'S CONSTRUCTION OPERATIONS, STAGING, AND CONSTRUCTION ACCESS ROUTES. DISTURBED AREAS TO BE REPAIRED, GRADED, AND MULCHED SEEDED UNLESS OTHERWISE NOTED. STAGING AREA AND SITE ACCESS RESTORATION SHALL BE INCLUDED IN THE COST OF THE HAUL ROUTE.
- THE PROJECT PAY ITEMS ARE INTENDED TO BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PLANS. ALL INCIDENTAL WORK REQUIRED TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE RESIDENT ENGINEER IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS.
- APPROXIMATE LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN THROUGHOUT THESE PLANS. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND PROTECT THESE UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER PERSONS FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR MUST AT ALL TIMES MAINTAIN PROPER DRAINAGE FOR ALL AREAS AFFECTED BY HIS WORK.

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29

IL PROJ.: CFS-4210

Hanson Project No.	11A0190	LAYOUT	M/JH	11/17/11
Filename	G-003-SOW.dwg	DRAWN	M/JH	11/17/11
Scale	AS SHOWN	REVIEWED	BSS	03/08/13
Date	03/08/13			

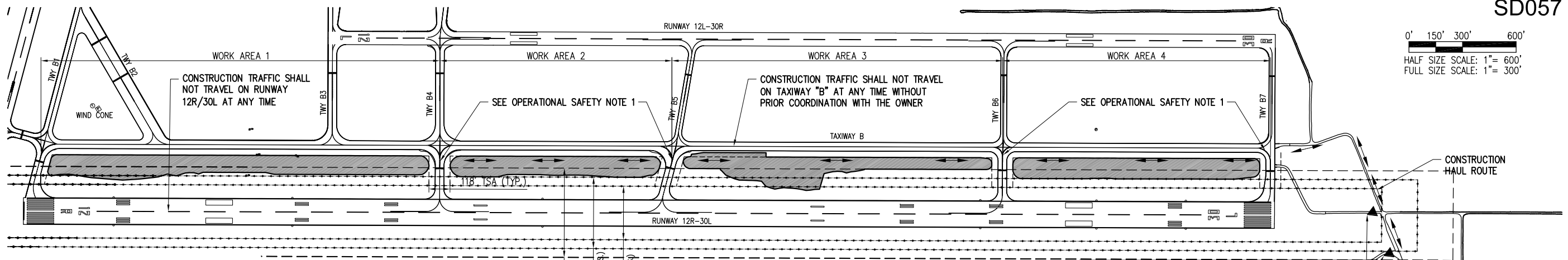
HANSON
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 Hanson Professional Services Inc.
 1525 So. Main Street
 Springfield, Illinois 62703-2886

GRADE DITCH PARALLEL TO MAIN RUNWAY
 PROPOSED SCOPE OF WORK PLAN

3
 3 of 86 sheets

MAR 11, 2013 12:38 PM HARR01115
 pw: \\sp1-svr306.hanson.com\hanson\Projects\Documents\11A0190\11A01900\CAD\Airport\Sheet\G-003-SOW

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



OPERATIONAL SAFETY NOTES

1. FLAGPERSONS AND/OR ESCORTS WITH RADIOS SHALL BE REQUIRED TO CONTROL VEHICLE TRAFFIC ACROSS ACTIVE AIRFIELD PAVEMENTS. NO CONSTRUCTION PERSONNEL/EQUIPMENT ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR TAXIWAY SAFETY AREA (TSA) WHEN PAVEMENTS ARE OPEN TO AIRCRAFT TRAFFIC. PAVEMENTS ARE TO BE KEPT FREE OF DEBRIS AT ALL TIMES. ANY DAMAGE TO PAVEMENTS BY THE CONTRACTOR'S FORCES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
2. CONSTRUCTION PERSONNEL WILL BE REQUIRED TO ATTEND AIRFIELD DRIVER SAFETY TRAINING (APPROXIMATELY 1 HOUR) AT THE AIRPORT PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
3. DURING WORK IN THIS PHASE, THE OWNER WILL ISSUE A NOTAM TO TEMPORARILY REDUCE THE WIDTH OF THE RUNWAY 12R/30L SAFETY AREA (RSA) FROM 500' WIDE TO 300' WIDE (B-III AIRCRAFT, ≥3/4 MI. VIS.) ANY WORK REQUIRED WITHIN 150' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.
4. THE CONTRACTOR SHALL LOCATE THE REDUCED RSA LIMITS FOR THIS WORK AREA AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT WITHIN THE WORK AREA LIMITS. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN THE RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THESE LATHE LINES DURING CONSTRUCTION.
5. THE OWNER RESERVES THE RIGHT TO ALLOW SPECIFIC CRITICAL AIRCRAFT (C-II) OPERATIONS DURING CONSTRUCTION THAT WILL REQUIRE THE STANDARD RSA WIDTH OF 500' TO BE TEMPORARILY REINSTATED. IN THESE INSTANCES, THE CONTRACTOR WILL BE REQUIRED TO TEMPORARILY MOVE THEIR PERSONNEL AND EQUIPMENT OUTSIDE OF THE STANDARD RSA LIMITS UNTIL THE AIRCRAFT OPERATION IS COMPLETED (ESTIMATED MAXIMUM 30 MINUTES). THE CONTRACTOR WILL BE GIVEN AS MUCH ADVANCE NOTICE AS POSSIBLE FOR EACH OCCURRENCE. ANTICIPATED FREQUENCY OF THIS OCCURRENCE IS 5 PER WEEK, ON AVERAGE, HOWEVER THE OWNER WILL ATTEMPT TO SCHEDULE CRITICAL AIRCRAFT OPERATIONS OUTSIDE OF THE NORMAL DAILY CONSTRUCTION SCHEDULE AS BEST AS POSSIBLE TO AVOID INTERRUPTIONS TO CONSTRUCTION PROGRESS.
6. IF WEATHER AND ATMOSPHERIC CONDITIONS RESULT IN A LESS THAN 3/4-MILE VISIBILITY, THE OWNER RESERVES THE RIGHT TO MODIFY THE TEMPORARY RUNWAY SAFETY AREA TO A 400' WIDTH IN ORDER TO ALLOW CONTINUED AIRCRAFT OPERATIONS ON THE RUNWAY (B-III AIRCRAFT, <3/4 MI. VIS.) IF THIS SCENARIO OCCURS, ANY WORK REQUIRED WITHIN 200' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.

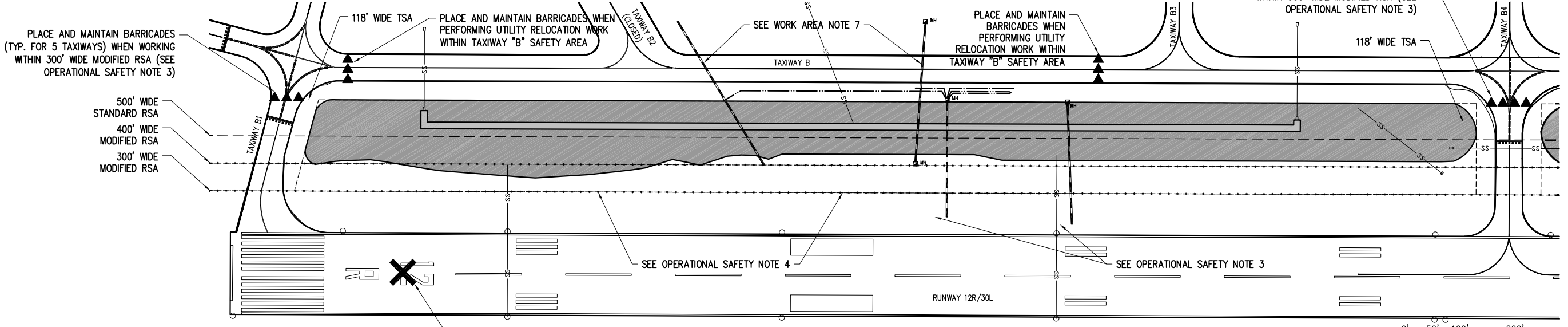
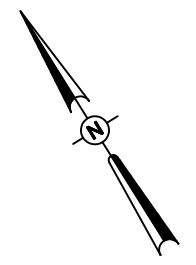
OVERALL PROJECT VIEW

WORK AREA 1 NOTES

1. THE WORK ITEMS TO BE COMPLETED IN THIS AREA INCLUDE UNCLASSIFIED EXCAVATION, CONSTRUCTION OF A CONCRETE PAVED DITCH, MISCELLANEOUS DRAINAGE ITEMS, REROUTING OF UTILITY LINES, SEEDING/MULCHING AND EROSION CONTROL.
2. THE CONTRACTOR SHALL HAVE A MAXIMUM OF 30 CONSECUTIVE CALENDAR DAYS TO COMPLETE THE WORK IN THIS AREA.
3. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
4. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
5. AT THE COMPLETION OF ALL WORK AREA CONSTRUCTION, THE HAUL ROAD, EQUIPMENT PARKING AREA, AND GATE ARE TO BE LEFT IN PLACE IN THEIR PRE-CONSTRUCTION CONDITION.
6. ANY UTILITIES NOTED TO BE REROUTED AS PART OF THIS WORK AREA SHALL BE COMPLETED WITHIN NORMAL CONSTRUCTION HOURS SUCH THAT NO SINGLE UTILITY LINE IS OUT OF SERVICE OVERNIGHT, UNLESS APPROVAL IS OBTAINED FROM THE OWNER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND RESIDENT ENGINEER IN ADVANCE IN ORDER TO PROPERLY SHUTDOWN THE UTILITIES FOR REROUTING.
7. THE PROPOSED WORK ASSOCIATED WITH RELOCATION OF ANY PHONE COMPANY LINES SHALL BE CLOSELY COORDINATED AT THE BEGINNING OF THE PROJECT IN ORDER TO SCHEDULE THE APPROPRIATE CONSTRUCTION ITEMS TO RUN CONSECUTIVELY BETWEEN THE CONTRACTOR AND PHONE COMPANY.
8. THE CONTRACTOR SHALL MAINTAIN NATURAL WATER FLOW THROUGHOUT CONSTRUCTION TO ALLOW FOR COMPLETE REALIGNMENT OF THE DITCH. CONTRACTOR SHALL SUBMIT A WATER/SITE MAINTENANCE PLAN TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
9. THE COSTS FOR ALL ITEMS ASSOCIATED WITH THIS SAFETY PLAN ARE TO BE INCLUDED IN THE COST OF OTHER WORK ITEMS, UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.

LEGEND

- EXISTING IMPROVEMENTS
- WORK AREA LIMITS
- PROPOSED EQUIPMENT PARKING AREA
- PROPOSED EARTHWORK STOCKPILE AREA
- EXISTING FENCE
- PROPOSED BARRICADES
- PROPOSED HAUL ROUTE
- CONSTRUCTION SIGN:
 - "CONSTRUCTION TRAFFIC →"
 - "← CONSTRUCTION TRAFFIC"



WORK AREA 1 VIEW

0' 50' 100' 200'
HALF SIZE SCALE: 1" = 200'
FULL SIZE SCALE: 1" = 100'

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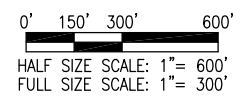
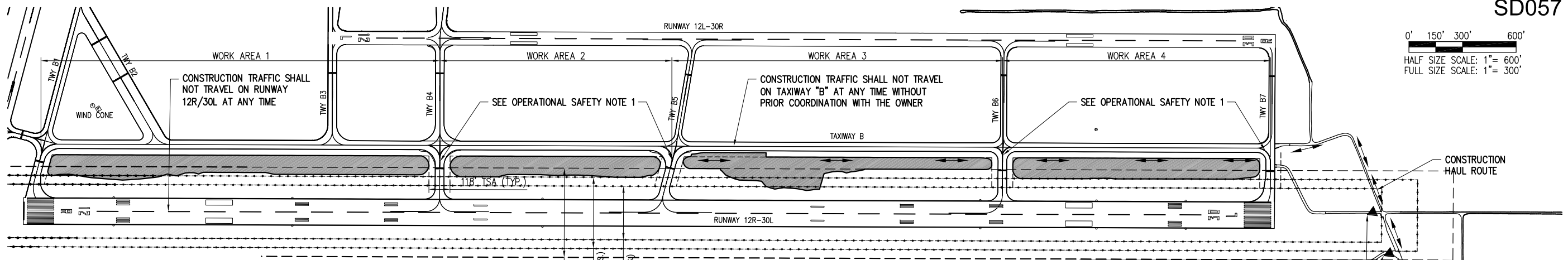
SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CPS-4210

Hanson Project No.	11A0190
Filename	C-005-SFY.dwg
Scale	AS SHOWN
Date	03/08/13
LAYOUT	BSS 01/31/13
DRAWN	MLH 02/01/13
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY

PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 1



OPERATIONAL SAFETY NOTES

1. FLAGPERSONS AND/OR ESCORTS WITH RADIOS SHALL BE REQUIRED TO CONTROL VEHICLE TRAFFIC ACROSS ACTIVE AIRFIELD PAVEMENTS. NO CONSTRUCTION PERSONNEL/EQUIPMENT ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR TAXIWAY SAFETY AREA (TSA) WHEN PAVEMENTS ARE OPEN TO AIRCRAFT TRAFFIC. PAVEMENTS ARE TO BE KEPT FREE OF DEBRIS AT ALL TIMES. ANY DAMAGE TO PAVEMENTS BY THE CONTRACTOR'S FORCES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
2. CONSTRUCTION PERSONNEL WILL BE REQUIRED TO ATTEND AIRFIELD DRIVER SAFETY TRAINING (APPROXIMATELY 1 HOUR) AT THE AIRPORT PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
3. DURING WORK IN THIS PHASE, THE OWNER WILL ISSUE A NOTAM TO TEMPORARILY REDUCE THE WIDTH OF THE RUNWAY 12R/30L SAFETY AREA (RSA) FROM 500' WIDE TO 300' WIDE (B-III AIRCRAFT, ≥3/4 MI. VIS.) ANY WORK REQUIRED WITHIN 150' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.
4. THE CONTRACTOR SHALL LOCATE THE REDUCED RSA LIMITS FOR THIS WORK AREA AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT WITHIN THE WORK AREA LIMITS. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN THE RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THESE LATHE LINES DURING CONSTRUCTION.
5. THE OWNER RESERVES THE RIGHT TO ALLOW SPECIFIC CRITICAL AIRCRAFT (C-III) OPERATIONS DURING CONSTRUCTION THAT WILL REQUIRE THE STANDARD RSA WIDTH OF 500' TO BE TEMPORARILY REINSTATED. IN THESE INSTANCES, THE CONTRACTOR WILL BE REQUIRED TO TEMPORARILY MOVE THEIR PERSONNEL AND EQUIPMENT OUTSIDE OF THE STANDARD RSA LIMITS UNTIL THE AIRCRAFT OPERATION IS COMPLETED (ESTIMATED MAXIMUM 30 MINUTES). THE CONTRACTOR WILL BE GIVEN AS MUCH ADVANCE NOTICE AS POSSIBLE FOR EACH OCCURRENCE. ANTICIPATED FREQUENCY OF THIS OCCURRENCE IS 5 PER WEEK, ON AVERAGE, HOWEVER THE OWNER WILL ATTEMPT TO SCHEDULE CRITICAL AIRCRAFT OPERATIONS OUTSIDE OF THE NORMAL DAILY CONSTRUCTION SCHEDULE AS BEST AS POSSIBLE TO AVOID INTERRUPTIONS TO CONSTRUCTION PROGRESS.
6. IF WEATHER AND ATMOSPHERIC CONDITIONS RESULT IN A LESS THAN 3/4-MILE VISIBILITY, THE OWNER RESERVES THE RIGHT TO MODIFY THE TEMPORARY RUNWAY SAFETY AREA TO A 400' WIDTH IN ORDER TO ALLOW CONTINUED AIRCRAFT OPERATIONS ON THE RUNWAY (B-III AIRCRAFT, <3/4 MI. VIS.) IF THIS SCENARIO OCCURS, ANY WORK REQUIRED WITHIN 200' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.

500' STANDARD RSA
(C-III AIRCRAFT)
400' MODIFIED RSA
(B-III AIRCRAFT, < 3/4 MI. VIS.)
300' MODIFIED RSA
(B-III AIRCRAFT, ≥3/4 MI. VIS.)

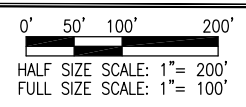
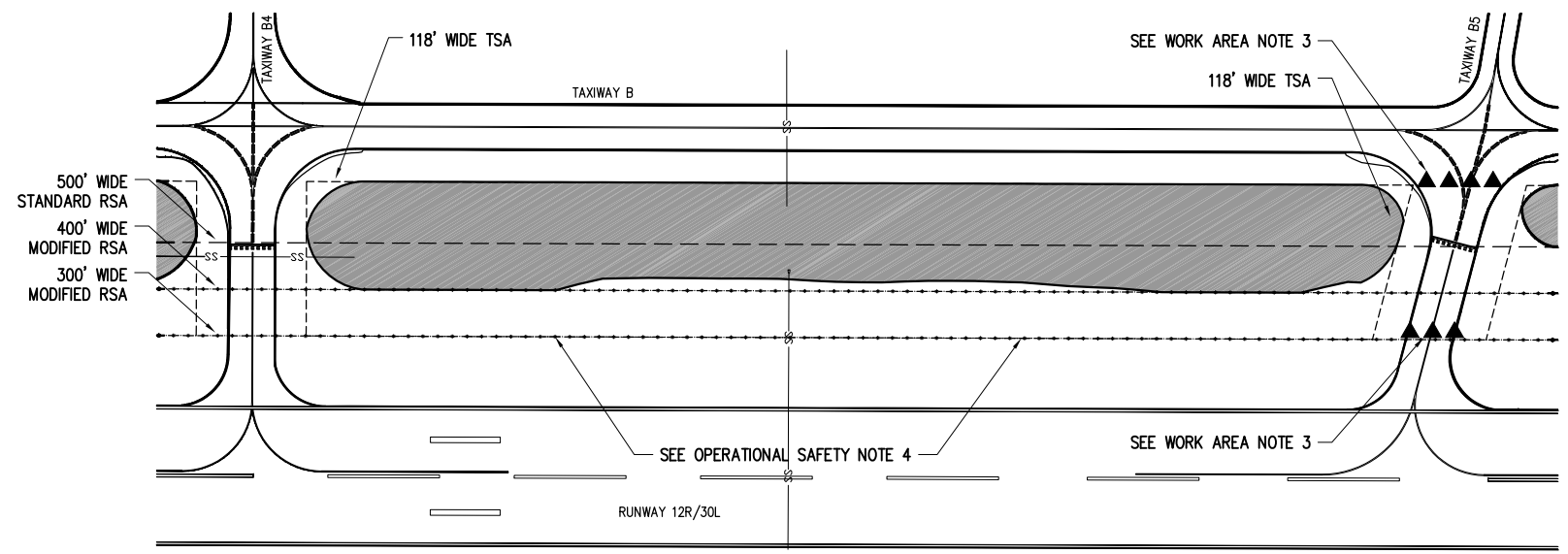
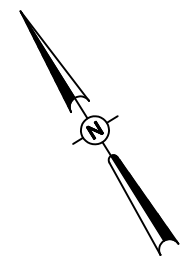
OVERALL PROJECT VIEW

WORK AREA 2 NOTES

1. THE WORK ITEMS TO BE COMPLETED IN THIS AREA INCLUDE UNCLASSIFIED EXCAVATION, MISCELLANEOUS DRAINAGE ITEMS, REROUTING OF UTILITY LINES, SEEDING/MULCHING AND EROSION CONTROL.
2. THE CONTRACTOR SHALL HAVE A MAXIMUM OF 14 CONSECUTIVE CALENDAR DAYS TO COMPLETE THE WORK IN THIS AREA.
3. WORK AREAS 2, 3 AND 4 MAY BE PERFORMED SIMULTANEOUSLY, HOWEVER CONTRACT TIME PROVISIONS SHALL STILL BE ENFORCED FOR EACH WORK AREA. TAXIWAYS "B5" AND "B6" MUST BE PROPERLY BARRICADED AND MAINTAINED DURING WORK HOURS, AND ALL PAVEMENTS MUST BE CLEANED AND BARRICADES REMOVED BEFORE LEAVING THE SITE EACH DAY.
4. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
5. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
6. AT THE COMPLETION OF ALL WORK AREA CONSTRUCTION, THE HAUL ROAD, EQUIPMENT PARKING AREA, AND GATE ARE TO BE LEFT IN PLACE IN THEIR PRE-CONSTRUCTION CONDITION.
7. THE CONTRACTOR SHALL MAINTAIN NATURAL WATER FLOW THROUGHOUT CONSTRUCTION TO ALLOW FOR COMPLETE REALIGNMENT OF THE DITCH. CONTRACTOR SHALL SUBMIT A WATER/SITE MAINTENANCE PLAN TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
8. THE COSTS FOR ALL ITEMS ASSOCIATED WITH THIS SAFETY PLAN ARE TO BE INCLUDED IN THE COST OF OTHER WORK ITEMS, UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.

LEGEND

- [White Box] EXISTING IMPROVEMENTS
- [Black Box] WORK AREA LIMITS
- [Cross-hatched Box] PROPOSED EQUIPMENT PARKING AREA
- [Diagonal-hatched Box] PROPOSED EARTHWORK STOCKPILE AREA
- [Line with 'x'] EXISTING FENCE
- [Triangle] PROPOSED BARRICADES
- [Double Arrow] PROPOSED HAUL ROUTE
- [T Symbol] CONSTRUCTION SIGN:
 - [Diamond with 'A'] "CONSTRUCTION TRAFFIC →"
 - [Diamond with 'B'] "← CONSTRUCTION TRAFFIC"



WORK AREA 2 VIEW

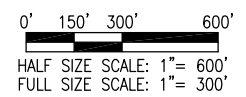
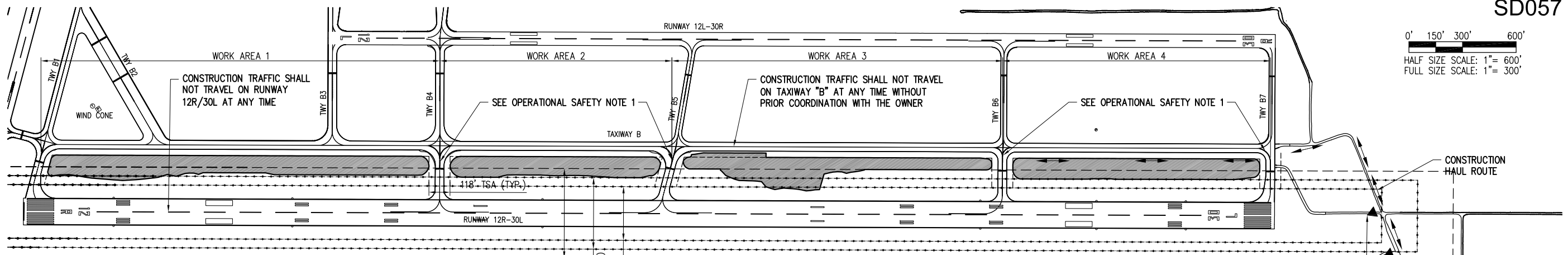
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
ILL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	BSS	01/31/13
Filename	C-006-SFY.dwg	DRAWN	MLH	02/01/13
Scale	AS SHOWN	REVIEWED	BSS	03/08/13
Date	03/08/13			

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GRADE DITCH PARALLEL TO MAIN RUNWAY
PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 2



OPERATIONAL SAFETY NOTES

1. FLAGPERSONS AND/OR ESCORTS WITH RADIOS SHALL BE REQUIRED TO CONTROL VEHICLE TRAFFIC ACROSS ACTIVE AIRFIELD PAVEMENTS. NO CONSTRUCTION PERSONNEL/EQUIPMENT ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR TAXIWAY SAFETY AREA (TSA) WHEN PAVEMENTS ARE OPEN TO AIRCRAFT TRAFFIC. PAVEMENTS ARE TO BE KEPT FREE OF DEBRIS AT ALL TIMES. ANY DAMAGE TO PAVEMENTS BY THE CONTRACTOR'S FORCES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
2. CONSTRUCTION PERSONNEL WILL BE REQUIRED TO ATTEND AIRFIELD DRIVER SAFETY TRAINING (APPROXIMATELY 1 HOUR) AT THE AIRPORT PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
3. DURING WORK IN THIS PHASE, THE OWNER WILL ISSUE A NOTAM TO TEMPORARILY REDUCE THE WIDTH OF THE RUNWAY 12R/30L SAFETY AREA (RSA) FROM 500' WIDE TO 300' WIDE (B-III AIRCRAFT, $\geq 3/4$ MI. VIS.) ANY WORK REQUIRED WITHIN 150' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.
4. THE CONTRACTOR SHALL LOCATE THE REDUCED RSA LIMITS FOR THIS WORK AREA AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT WITHIN THE WORK AREA LIMITS. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN THE RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THESE LATHE LINES DURING CONSTRUCTION.
5. THE OWNER RESERVES THE RIGHT TO ALLOW SPECIFIC CRITICAL AIRCRAFT (C-II) OPERATIONS DURING CONSTRUCTION THAT WILL REQUIRE THE STANDARD RSA WIDTH OF 500' TO BE TEMPORARILY REINSTATED. IN THESE INSTANCES, THE CONTRACTOR WILL BE REQUIRED TO TEMPORARILY MOVE THEIR PERSONNEL AND EQUIPMENT OUTSIDE OF THE STANDARD RSA LIMITS UNTIL THE AIRCRAFT OPERATION IS COMPLETED (ESTIMATED MAXIMUM 30 MINUTES). THE CONTRACTOR WILL BE GIVEN AS MUCH ADVANCE NOTICE AS POSSIBLE FOR EACH OCCURRENCE. ANTICIPATED FREQUENCY OF THIS OCCURRENCE IS 5 PER WEEK, ON AVERAGE, HOWEVER THE OWNER WILL ATTEMPT TO SCHEDULE CRITICAL AIRCRAFT OPERATIONS OUTSIDE OF THE NORMAL DAILY CONSTRUCTION SCHEDULE AS BEST AS POSSIBLE TO AVOID INTERRUPTIONS TO CONSTRUCTION PROGRESS.
6. IF WEATHER AND ATMOSPHERIC CONDITIONS RESULT IN A LESS THAN $3/4$ -MILE VISIBILITY, THE OWNER RESERVES THE RIGHT TO MODIFY THE TEMPORARY RUNWAY SAFETY AREA TO A 400' WIDTH IN ORDER TO ALLOW CONTINUED AIRCRAFT OPERATIONS ON THE RUNWAY (B-III AIRCRAFT, $< 3/4$ MI. VIS.) IF THIS SCENARIO OCCURS, ANY WORK REQUIRED WITHIN 200' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.

- 500' STANDARD RSA (C-II AIRCRAFT)
- 400' MODIFIED RSA (B-III AIRCRAFT, $< 3/4$ MI. VIS.)
- 300' MODIFIED RSA (B-III AIRCRAFT, $\geq 3/4$ MI. VIS.)

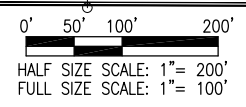
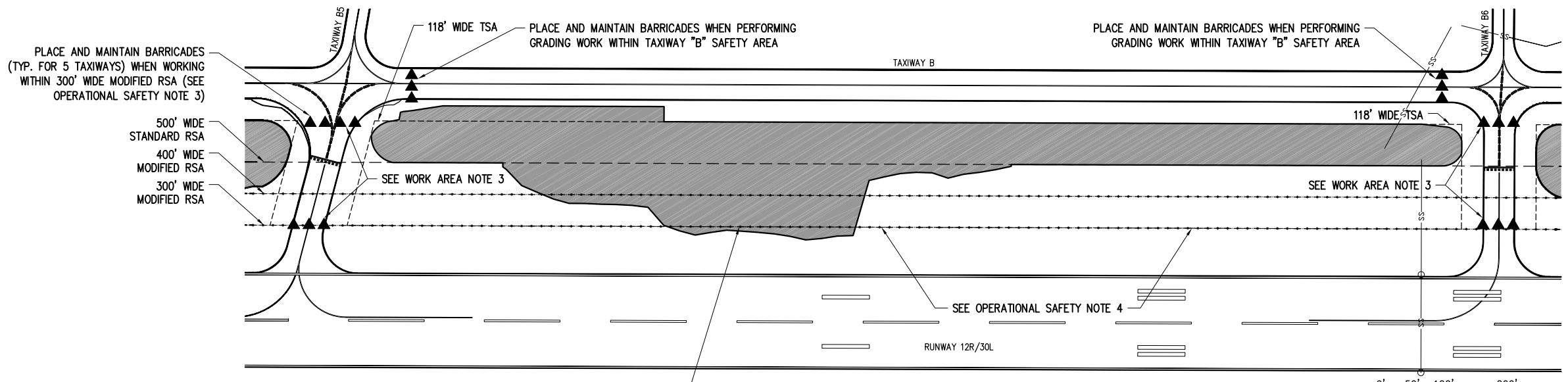
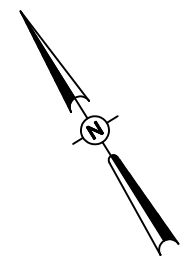
OVERALL PROJECT VIEW

WORK AREA 3 NOTES

1. THE WORK ITEMS TO BE COMPLETED IN THIS AREA INCLUDE UNCLASSIFIED EXCAVATION, MISCELLANEOUS DRAINAGE ITEMS, REROUTING OF UTILITY LINES, SEEDING/MULCHING AND EROSION CONTROL.
2. THE CONTRACTOR SHALL HAVE A MAXIMUM OF 21 CONSECUTIVE CALENDAR DAYS TO COMPLETE THE WORK IN THIS AREA.
3. WORK AREAS 2, 3 AND 4 MAY BE PERFORMED SIMULTANEOUSLY, HOWEVER CONTRACT TIME PROVISIONS SHALL STILL BE ENFORCED FOR EACH WORK AREA. TAXIWAYS "B5" AND "B6" MUST BE PROPERLY BARRICADED AND MAINTAINED DURING WORK HOURS, AND ALL PAVEMENTS MUST BE CLEANED AND BARRICADES REMOVED BEFORE LEAVING THE SITE EACH DAY.
4. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
5. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
6. AT THE COMPLETION OF ALL WORK AREA CONSTRUCTION, THE HAUL ROAD, EQUIPMENT PARKING AREA, AND GATE ARE TO BE LEFT IN PLACE IN THEIR PRE-CONSTRUCTION CONDITION.
7. THE CONTRACTOR SHALL MAINTAIN NATURAL WATER FLOW THROUGHOUT CONSTRUCTION TO ALLOW FOR COMPLETE REALIGNMENT OF THE DITCH. CONTRACTOR SHALL SUBMIT A WATER/SITE MAINTENANCE PLAN TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
8. THE COSTS FOR ALL ITEMS ASSOCIATED WITH THIS SAFETY PLAN ARE TO BE INCLUDED IN THE COST OF OTHER WORK ITEMS, UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.

LEGEND

- EXISTING IMPROVEMENTS
- WORK AREA LIMITS
- PROPOSED EQUIPMENT PARKING AREA
- PROPOSED EARTHWORK STOCKPILE AREA
- EXISTING FENCE
- PROPOSED BARRICADES
- PROPOSED HAUL ROUTE
- CONSTRUCTION SIGN:
 - "CONSTRUCTION TRAFFIC →"
 - "← CONSTRUCTION TRAFFIC"



WORK AREA 3 VIEW

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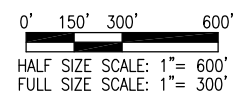
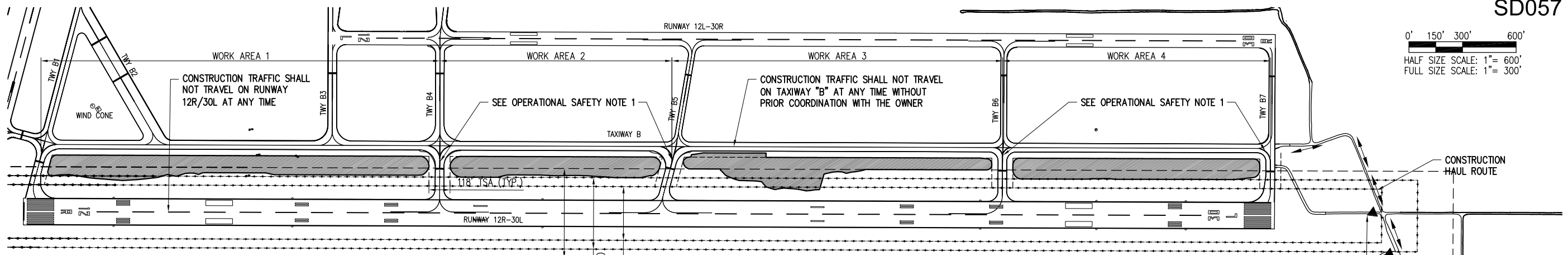
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190
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LAYOUT	BSS 01/31/13
DRAWN	MLH 02/01/13
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 3



OPERATIONAL SAFETY NOTES

1. FLAGPERSONS AND/OR ESCORTS WITH RADIOS SHALL BE REQUIRED TO CONTROL VEHICLE TRAFFIC ACROSS ACTIVE AIRFIELD PAVEMENTS. NO CONSTRUCTION PERSONNEL/EQUIPMENT ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR TAXIWAY SAFETY AREA (TSA) WHEN PAVEMENTS ARE OPEN TO AIRCRAFT TRAFFIC. PAVEMENTS ARE TO BE KEPT FREE OF DEBRIS AT ALL TIMES. ANY DAMAGE TO PAVEMENTS BY THE CONTRACTOR'S FORCES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
2. CONSTRUCTION PERSONNEL WILL BE REQUIRED TO ATTEND AIRFIELD DRIVER SAFETY TRAINING (APPROXIMATELY 1 HOUR) AT THE AIRPORT PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
3. DURING WORK IN THIS PHASE, THE OWNER WILL ISSUE A NOTAM TO TEMPORARILY REDUCE THE WIDTH OF THE RUNWAY 12R/30L SAFETY AREA (RSA) FROM 500' WIDE TO 300' WIDE (B-III AIRCRAFT, ≥3/4 MI. VIS.) ANY WORK REQUIRED WITHIN 150' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.
4. THE CONTRACTOR SHALL LOCATE THE REDUCED RSA LIMITS FOR THIS WORK AREA AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT WITHIN THE WORK AREA LIMITS. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN THE RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THESE LATHE LINES DURING CONSTRUCTION.
5. THE OWNER RESERVES THE RIGHT TO ALLOW SPECIFIC CRITICAL AIRCRAFT (C-II) OPERATIONS DURING CONSTRUCTION THAT WILL REQUIRE THE STANDARD RSA WIDTH OF 500' TO BE TEMPORARILY REINSTATED. IN THESE INSTANCES, THE CONTRACTOR WILL BE REQUIRED TO TEMPORARILY MOVE THEIR PERSONNEL AND EQUIPMENT OUTSIDE OF THE STANDARD RSA LIMITS UNTIL THE AIRCRAFT OPERATION IS COMPLETED (ESTIMATED MAXIMUM 30 MINUTES). THE CONTRACTOR WILL BE GIVEN AS MUCH ADVANCE NOTICE AS POSSIBLE FOR EACH OCCURRENCE. ANTICIPATED FREQUENCY OF THIS OCCURRENCE IS 5 PER WEEK, ON AVERAGE, HOWEVER THE OWNER WILL ATTEMPT TO SCHEDULE CRITICAL AIRCRAFT OPERATIONS OUTSIDE OF THE NORMAL DAILY CONSTRUCTION SCHEDULE AS BEST AS POSSIBLE TO AVOID INTERRUPTIONS TO CONSTRUCTION PROGRESS.
6. IF WEATHER AND ATMOSPHERIC CONDITIONS RESULT IN A LESS THAN 3/4-MILE VISIBILITY, THE OWNER RESERVES THE RIGHT TO MODIFY THE TEMPORARY RUNWAY SAFETY AREA TO A 400' WIDTH IN ORDER TO ALLOW CONTINUED AIRCRAFT OPERATIONS ON THE RUNWAY (B-III AIRCRAFT, <3/4 MI. VIS.) IF THIS SCENARIO OCCURS, ANY WORK REQUIRED WITHIN 200' OF THE RUNWAY 12R/30L CENTERLINE WILL REQUIRE THE RUNWAY TO BE SHUTDOWN TO AIRCRAFT TRAFFIC. WORK REQUIRED WITHIN THE REDUCED RUNWAY SAFETY AREA MAY BE REQUIRED TO BE SCHEDULED AROUND CERTAIN PEAK TRAFFIC TIMES, AND MUST BE COORDINATED WITH THE OWNER IN ADVANCE.

500' STANDARD RSA
(C-II AIRCRAFT)

400' MODIFIED RSA
(B-III AIRCRAFT, < 3/4 MI. VIS.)

300' MODIFIED RSA
(B-III AIRCRAFT, ≥3/4 MI. VIS.)

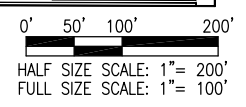
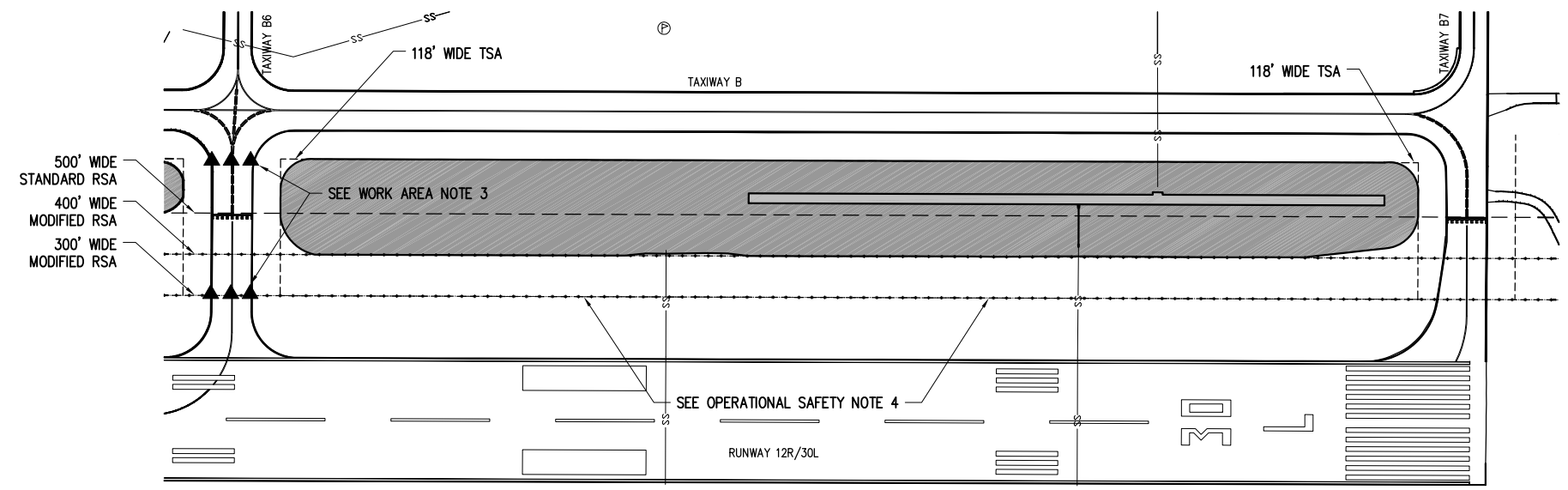
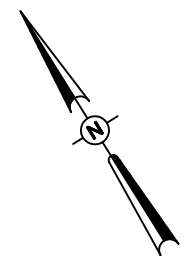
OVERALL PROJECT VIEW

WORK AREA 4 NOTES

1. THE WORK ITEMS TO BE COMPLETED IN THIS AREA INCLUDE UNCLASSIFIED EXCAVATION, CONSTRUCTION OF A CONCRETE PAVED DITCH, MISCELLANEOUS DRAINAGE ITEMS, REROUTING OF UTILITY LINES, SEEDING/MULCHING AND EROSION CONTROL.
2. THE CONTRACTOR SHALL HAVE A MAXIMUM OF 21 CONSECUTIVE CALENDAR DAYS TO COMPLETE THE WORK IN THIS AREA.
3. WORK AREAS 2, 3 AND 4 MAY BE PERFORMED SIMULTANEOUSLY, HOWEVER CONTRACT TIME PROVISIONS SHALL STILL BE ENFORCED FOR EACH WORK AREA. TAXIWAYS "B5" AND "B6" MUST BE PROPERLY BARRICADED AND MAINTAINED DURING WORK HOURS, AND ALL PAVEMENTS MUST BE CLEANED AND BARRICADES REMOVED BEFORE LEAVING THE SITE EACH DAY.
4. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.
5. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
6. AT THE COMPLETION OF ALL WORK AREA CONSTRUCTION, THE HAUL ROAD, EQUIPMENT PARKING AREA, AND GATE ARE TO BE LEFT IN PLACE IN THEIR PRE-CONSTRUCTION CONDITION.
7. THE CONTRACTOR SHALL MAINTAIN NATURAL WATER FLOW THROUGHOUT CONSTRUCTION TO ALLOW FOR COMPLETE REALIGNMENT OF THE DITCH. CONTRACTOR SHALL SUBMIT A WATER/SITE MAINTENANCE PLAN TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
8. THE COSTS FOR ALL ITEMS ASSOCIATED WITH THIS SAFETY PLAN ARE TO BE INCLUDED IN THE COST OF OTHER WORK ITEMS, UNLESS OTHERWISE NOTED WITHIN THE PLAN SET.

LEGEND

- [White Box] EXISTING IMPROVEMENTS
- [Black Box] WORK AREA LIMITS
- [Cross-hatched Box] PROPOSED EQUIPMENT PARKING AREA
- [Diagonal-hatched Box] PROPOSED EARTHWORK STOCKPILE AREA
- [Line with 'x'] EXISTING FENCE
- [Triangle] PROPOSED BARRICADES
- [Double Arrow] PROPOSED HAUL ROUTE
- [T Sign] CONSTRUCTION SIGN:
 - [Diamond with 'A'] "CONSTRUCTION TRAFFIC →"
 - [Diamond with 'B'] "← CONSTRUCTION TRAFFIC"



WORK AREA 4 VIEW

REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	BSS	01/31/13
Filename	C-008-SFY.dwg	DRAWN	MLH	02/01/13
Scale	AS SHOWN	REVIEWED	BSS	03/08/13
Date	03/08/13			

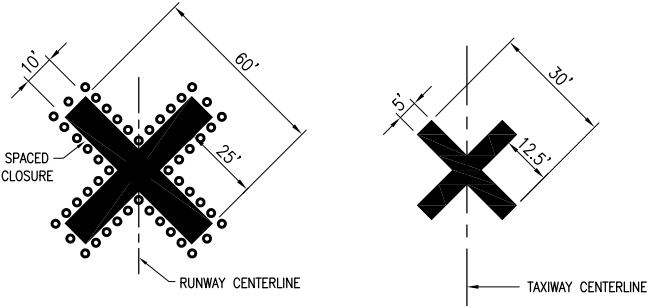
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GRADE DITCH PARALLEL TO MAIN RUNWAY

PROPOSED CONSTRUCTION SAFETY PLAN - WORK AREA 4

SAFETY NOTES

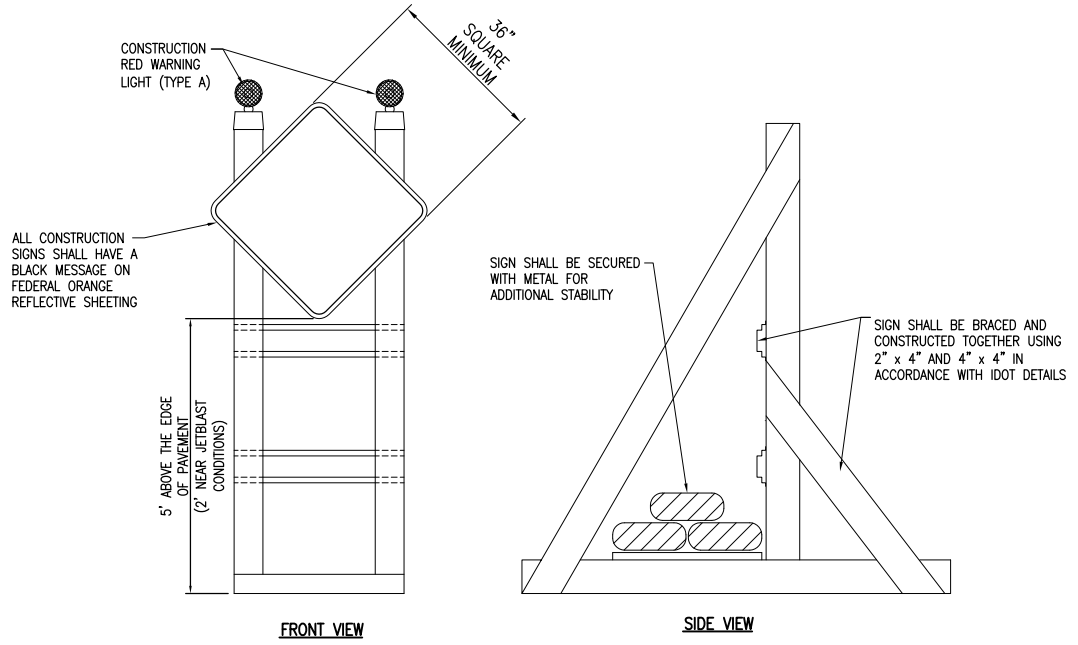
- FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE SAFETY AND PHASING NOTES AND DETAILS SHEET.
- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE PROJECT SAFETY AND PHASING PLANS.
- NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE RESIDENT ENGINEER AND/OR AIRPORT MANAGER RESERVE THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 200' OF ANY ACTIVE RUNWAY, WITHIN 50' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE ENGINEER) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- NO OPEN TRENCHES WITHIN 200' OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 50' OF ANY AIRPORT OPERATIONS AREA WILL BE PERMITTED UNLESS PROPERLY MARKED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
- OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING YELLOW LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL WILL BE PERMITTED ON THE AIRPORT. HOWEVER OTHER EQUIPMENT TALLER THAN 25' MAY BE PERMITTED WITH THE APPROVAL OF THE AIRPORT MANAGER AND AIRSPACE APPROVAL BY THE FAA.
- NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER. NO FLARE POTS ARE ALLOWED ON THE PROJECT.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED AND YELLOW LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER.
- CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER AS NECESSARY TO CONTROL DUST.
- NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE RUNWAY, INCLUDING TURF RUNWAYS. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN 200' OF ANY ACTIVE RUNWAY CENTERLINE OR WITHIN 50' OF ANY OTHER ACTIVE AIRPORT TAXIWAY OR APRON. HOWEVER, CONSTRUCTION MAY BE PERMITTED IN THESE AREAS IF THE CONTRACTOR HAS GAINED APPROVAL FROM THE AIRPORT MANAGER AT LEAST 72 HOURS IN ADVANCE OF THE SCHEDULED CONSTRUCTION PERIOD AND THE OPERATIONAL AREA IS CLOSED TO TRAFFIC AND PROPER NOTAMS ARE ISSUED BY THE AIRPORT MANAGER TO THE APPROPRIATE FLIGHT SERVICE STATION.
- CONTRACTOR MAY WORK WITHIN OFZ WITHOUT PLACING RUNWAY CLOSED MARKERS IF HE CAN DEMONSTRATE THAT THE OFZ CAN BE CLEARED OF ALL MEN, EQUIPMENT AND OBSTRUCTIONS WITHIN A 15 MINUTE TIME PERIOD BY MONITORING UNICOM FREQUENCY 122.95 AND CLEARING OFZ AT THE REQUEST OF PILOTS. RADIO(S) TO BE PROVIDED BY CONTRACTOR TO ALL CREWS NOT WITHIN MONITORING RANGE OF THE RADIO. (OWNER TO RESTRICT TOUCH AND GO'S DURING CONSTRUCTION WORK HOURS)
- UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.



AMBER STEADY BURNING LIGHTS SPACED 5' APART REQUIRED FOR NIGHT CLOSURE (WHERE SPECIFIED)

- TEMPORARY CLOSURE CROSS MARKINGS SHALL BE "AVIATION YELLOW."
- TEMPORARY CLOSURE CROSS MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
- RUNWAY CLOSURE CROSS MARKINGS SHALL BE LIGHTED DURING DARKNESS AND PERIODS OF REDUCED VISIBILITY.
- COST FOR PLACING, MAINTAINING, AND REMOVING CLOSURE CROSSES SHALL BE INCLUDED IN OTHER CONTRACT ITEMS.

CLOSURE CROSS MARKER DETAIL
(LIGHTED/UNLIGHTED)
NOT TO SCALE



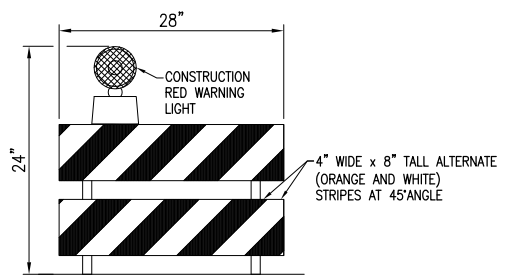
ALL CONSTRUCTION SIGNS SHALL HAVE A BLACK MESSAGE ON FEDERAL ORANGE REFLECTIVE SHEETING

SIGN SHALL BE SECURED WITH METAL FOR ADDITIONAL STABILITY

SIGN SHALL BE BRACED AND CONSTRUCTED TOGETHER USING 2" x 4" AND 4" x 4" IN ACCORDANCE WITH IDOT DETAILS

SIGNAGE NOTES

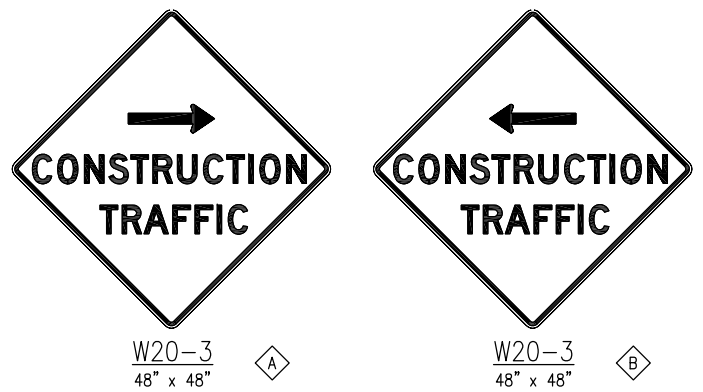
- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- UNLESS OTHERWISE SPECIFIED, CONSTRUCTION SIGNS SHALL BE MOUNTED ON PORTABLE OR NON-PORTABLE SUPPORTS. A PORTABLE SUPPORT IS DEFINED AS A TYPICAL SIGN STANDARD AS SHOWN ON THIS SHEET, OR A SMALL LIGHT WEIGHT TRAILER. A NON-PORTABLE SUPPORT IS DEFINED AS DRIVEN METAL OR WOOD POST. ALL SIGNS, REGARDLESS OF THE TYPE OF SUPPORTS USED, SHALL BE MOUNTED SUCH THAT THE MESSAGE ON THE SIGN IS LEVEL IN THE HORIZONTAL PLANE AFTER PLACEMENT. THE COST OF CONSTRUCTION WARNING LIGHTS SHALL BE INCLUDED IN THE COST OF THE CONSTRUCTION SIGNS.
- CONSTRUCTION RED WARNING LIGHTS- THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY ARE TO BE USED IN A LOW INTENSITY FLASHING MODE (TYPE A).
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- COST FOR PLACING, MAINTAINING, AND REMOVING SIGNS SHALL BE INCLUDED IN OTHER CONTRACT ITEMS.



MODIFIED TYPE II BARRICADE
NOT TO SCALE

BARRICADE NOTES

- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- MODIFIED TYPE II BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS AS DIRECTED BY THE ENGINEER. BARRICADES ARE TO BE SET BACK 66' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHTS- THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE ONLY COLOR COMBINATION ON TYPE II BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE INCLUDED IN OTHER CONTRACT ITEMS.



CONSTRUCTION SIGNS
NOT TO SCALE

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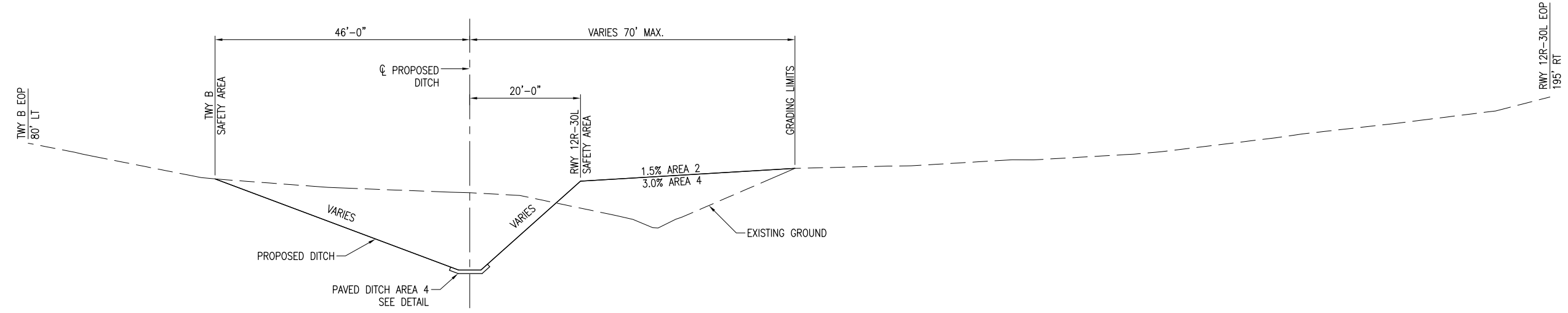
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REVIEWED	BSS
	03/08/13

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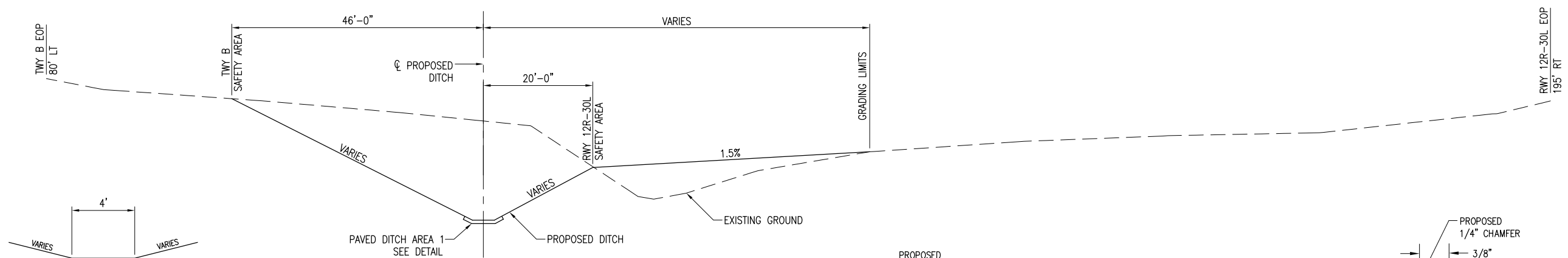
GRADE DITCH PARALLEL TO MAIN RUNWAY

CONSTRUCTION SAFETY AND PHASING DETAILS AND NOTES

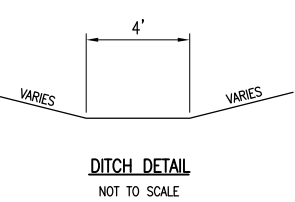
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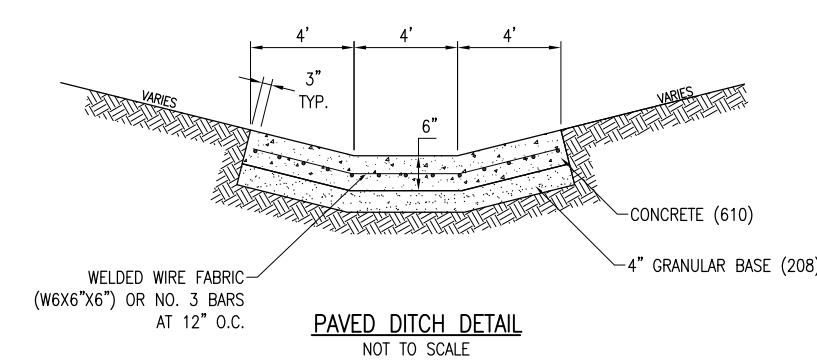
TYPICAL SECTION
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 STA. 124+23.00 TO STA. 135+14.00 AREA 2
 STA. 161+50.00 TO STA. 168+72.00 AREA 4
 TRANSITION RT DITCH FORESLOPE STA. 161+50 TO STA. 162+00



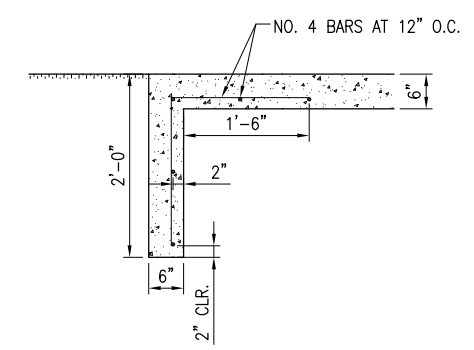
TYPICAL SECTION
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 STA. 106+50.00 TO STA. 122+23.00 AREA 1



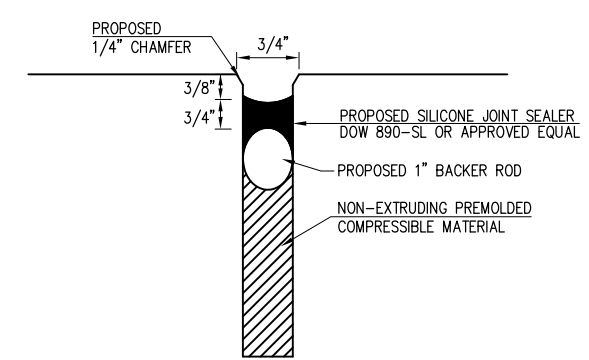
DITCH DETAIL
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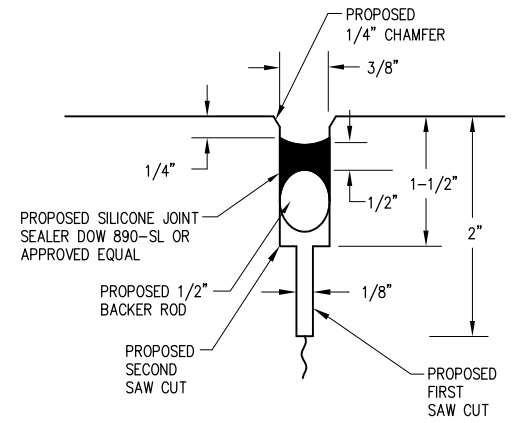
PAVED DITCH DETAIL
 NOT TO SCALE



TOE WALL DETAIL FOR PAVED DITCH
 NOT TO SCALE



EXPANSION JOINT DETAIL
 NOT TO SCALE



CONTRACTION JOINT DETAIL
 NOT TO SCALE

PAVED DITCH NOTES

1. PAVED DITCH SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH ITEM 754 OF THE STANDARD SPECIFICATIONS.
2. EXPANSION JOINTS SHALL BE FORMED OR CUT EVERY 75'. CONTRACTION JOINTS SHALL BE CUT OR TOOLED AT SPACING NOT TO EXCEED 15'. JOINTS SHALL BE INCIDENTAL TO THE PAVED DITCH ITEM.
3. THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.
4. TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF PAVED DITCH, AND POURED MONOLITHICALLY. THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE INCLUDED IN THE BID PRICE FOR "PAVED DITCH".

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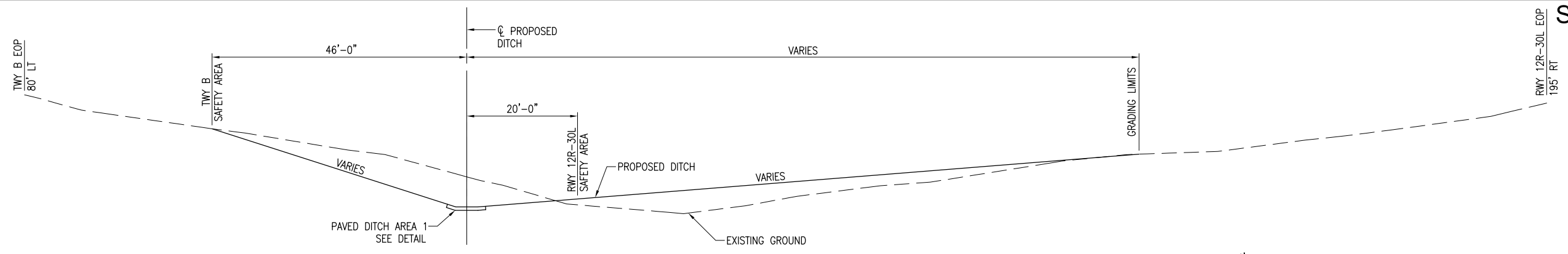
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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

Hanson Project No.	11A0190
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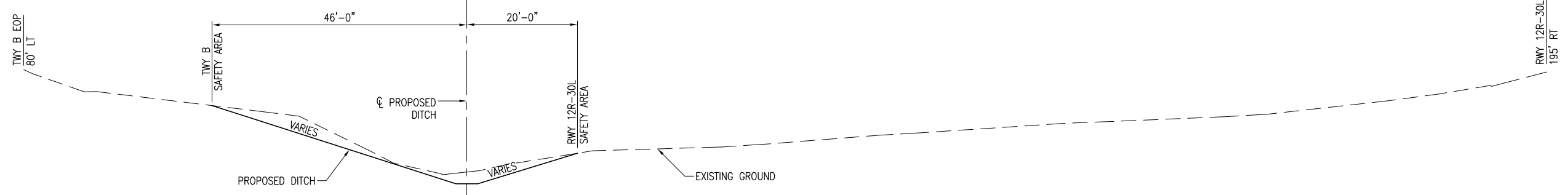
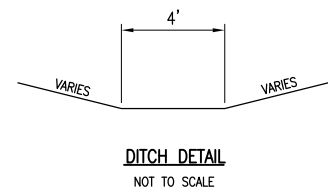
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PROPOSED TYPICAL SECTIONS

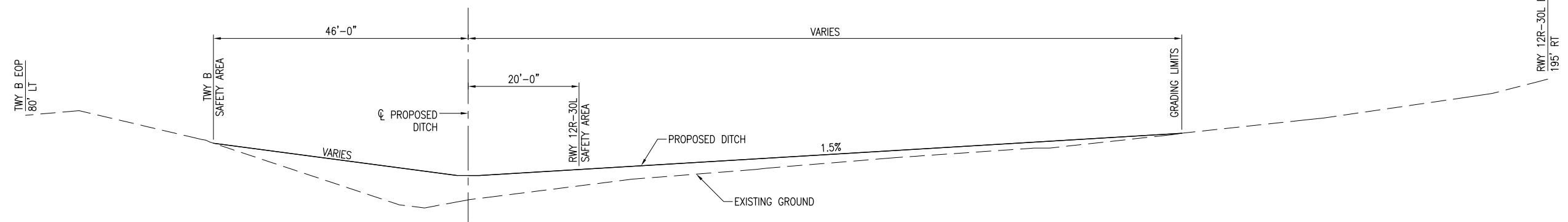
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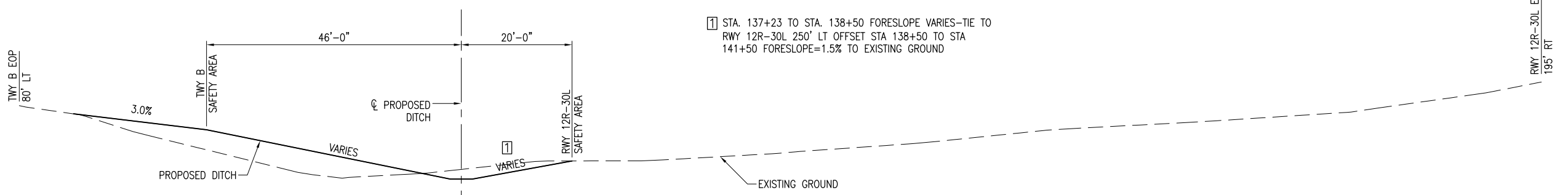
TYPICAL SECTION
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 STA. 101+86.00 TO STA. 106+50.00 AREA 1
 TRANSITION RIGHT DITCH FORESLOPE STATION 106+00 TO 106+50
 STA. 155+73.00 TO STA. 161+50.00 AREA 4



TYPICAL SECTION
 NOT TO SCALE
 STA. 147+00.00 TO STA. 153+50.00 AREA 3



TYPICAL SECTION
 NOT TO SCALE
 STA. 141+50.00 TO STA. 147+00.00 AREA 3



TYPICAL SECTION
 NOT TO SCALE
 STA. 137+23.00 TO STA. 141+50.00 AREA 3

1 STA. 137+23 TO STA. 138+50 FORESLOPE VARIES-TIE TO
 RWY 12R-30L 250' LT OFFSET STA 138+50 TO STA
 141+50 FORESLOPE=1.5% TO EXISTING GROUND

SD057

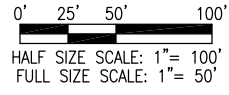
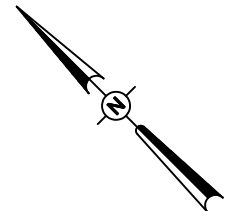
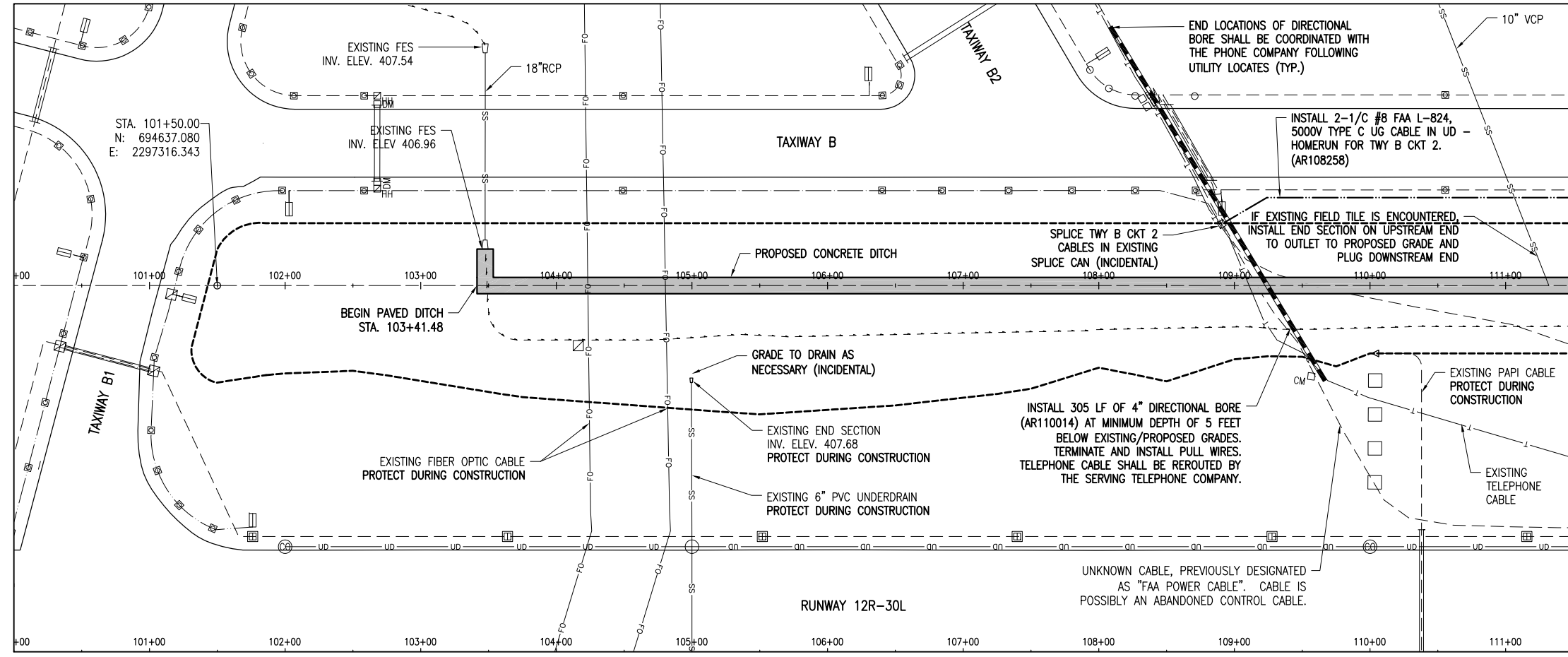
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PROPOSED TYPICAL SECTIONS 2



MATCHLINE STA. 111+50

LEGEND

- EXISTING PAVEMENT
- EXISTING DRAINAGE DITCH
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING COMMUNICATION CABLE
- EXISTING STORM SEWER
- EXISTING ELECTRIC
- EXISTING ELECTRICAL DUCT
- PROPOSED DUCT
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE UNIT DUCT
- PROPOSED 2-1/C #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED CONCRETE PAVED DITCH
- PROPOSED GRADING LIMITS
- EXISTING TAXI GUIDANCE SIGN
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING HANDHOLE
- EXISTING MANHOLE
- PROPOSED HANDHOLE
- PROPOSED MANHOLE

AIRFIELD CABLE AND UTILITY LINE RELOCATION NOTES

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR AND THE RESPECTIVE FAA ATCT PERSONNEL. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & 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 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.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. WORK TO THE RUNWAY 12L REIL SYSTEM SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR AND THE RESPECTIVE FAA MAINTENANCE PERSONNEL. CONTACT MARK THIEN, FAA MAINTENANCE, AIR TRAFFIC CONTROL TOWER, ST. LOUIS DOWNTOWN AIRPORT, PHONE: 618-337-6727 REGARDING WORK TO THE FAA REILS.
6. WORK AFFECTING THE TELEPHONE LINES SHALL BE COORDINATED WITH THE RESPECTIVE TELEPHONE UTILITY COMPANY.
7. THE EXISTING DUCTS AND CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS, RELOCATIONS, AND/OR CABLE OR DUCT REPLACEMENTS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF THE AIRFIELD LIGHT, SIGN, DUCT, CABLE, HANDHOLE, MANHOLE, SITE WORK, 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
8. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE DUCT REMOVAL, CABLE REMOVAL, OR OTHER 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.
9. WHEN A RUNWAY IS CLOSED, THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
10. 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.
11. 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.
12. PROPOSED/REPLACEMENT CABLE FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C CABLE INSTALLED IN DUCT OR UNIT DUCT. CABLES IN UNIT DUCT SHALL BE INSTALLED A MINIMUM OF 18" BELOW FINISHED GRADE.
13. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE/DUCT CROSSES AN EXISTING CABLE, THE PROPOSED DUCT/CABLE SHALL BE TRENCHED INTO PLACE. IN ALL OTHER LOCATIONS, THE PROPOSED CABLE/DUCT MAY BE EITHER TRENCHED OR PLOWED INTO PLACE. TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND/OR DUCT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
14. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN RACEWAY, CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY, CONDUIT, OR DUCT.
15. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION BOX, HANDHOLE, OR MANHOLE.
16. IN THE EVENT THAT OTHER CONSTRUCTION PROJECTS ARE IN PROGRESS AT THE AIRPORT AT THE SAME TIME AS THIS PROJECT, THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH ALL OTHER CONTRACTORS AND THE AIRPORT DIRECTOR IN COORDINATION OF THE WORK.
17. FURNISH AND INSTALL A #6 AWG (MIN.) BARE SOLID COPPER COUNTERPOISE CONDUCTOR APPROXIMATELY 10" ABOVE THE DUCT BANK FOR THE FAA REILS CIRCUIT. COUNTERPOISE SHALL BE BONDED TO GROUND RODS AT APPROXIMATELY 90-FOOT INTERVALS AND AT THE DUCT BANK TERMINATIONS JUST OUTSIDE OF THE MANHOLES. GROUND RODS SHALL BE 3/4" DIA. X 10' LONG UL LISTED COPPERCLAD. THE SPACING OF GROUND RODS SHALL VARY BY 10% TO 20% TO PREVENT RESONANCE. INSTALL GROUND RODS 6 FEET ON EITHER SIDE OF THE TRENCH. ALL BELOW GRADE CONNECTIONS TO GROUND RODS AND COUNTERPOISE SHALL BE EXOTHERMIC WELD.
18. THE EXISTING RUNWAY 12L REILS ARE OWNED AND MAINTAINED BY THE FAA. THE EXISTING RWY 12L REIL POWER AND CONTROL ASSEMBLY CABINET IS UNDERSTOOD TO BE LOCATED BETWEEN THE OLD ATCT AND THE VAULT. CONTRACTOR SHALL CONFIRM POWER SOURCE PRIOR TO WORKING ON THE REIL CABLES.
19. 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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SAINT LOUIS DOWNTOWN AIRPORT

A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29

IL PROJ.: CPS-4210

Hanson Project No.	11A0190	DATE	03/08/13
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Date	03/08/13	LAYOUT	DW

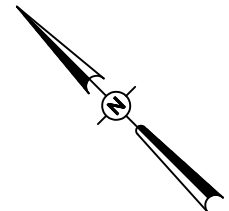
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GRADE DITCH PARALLEL TO MAIN RUNWAY

CONSTRUCTION PLAN - STA. 100+00 TO STA. 111+50

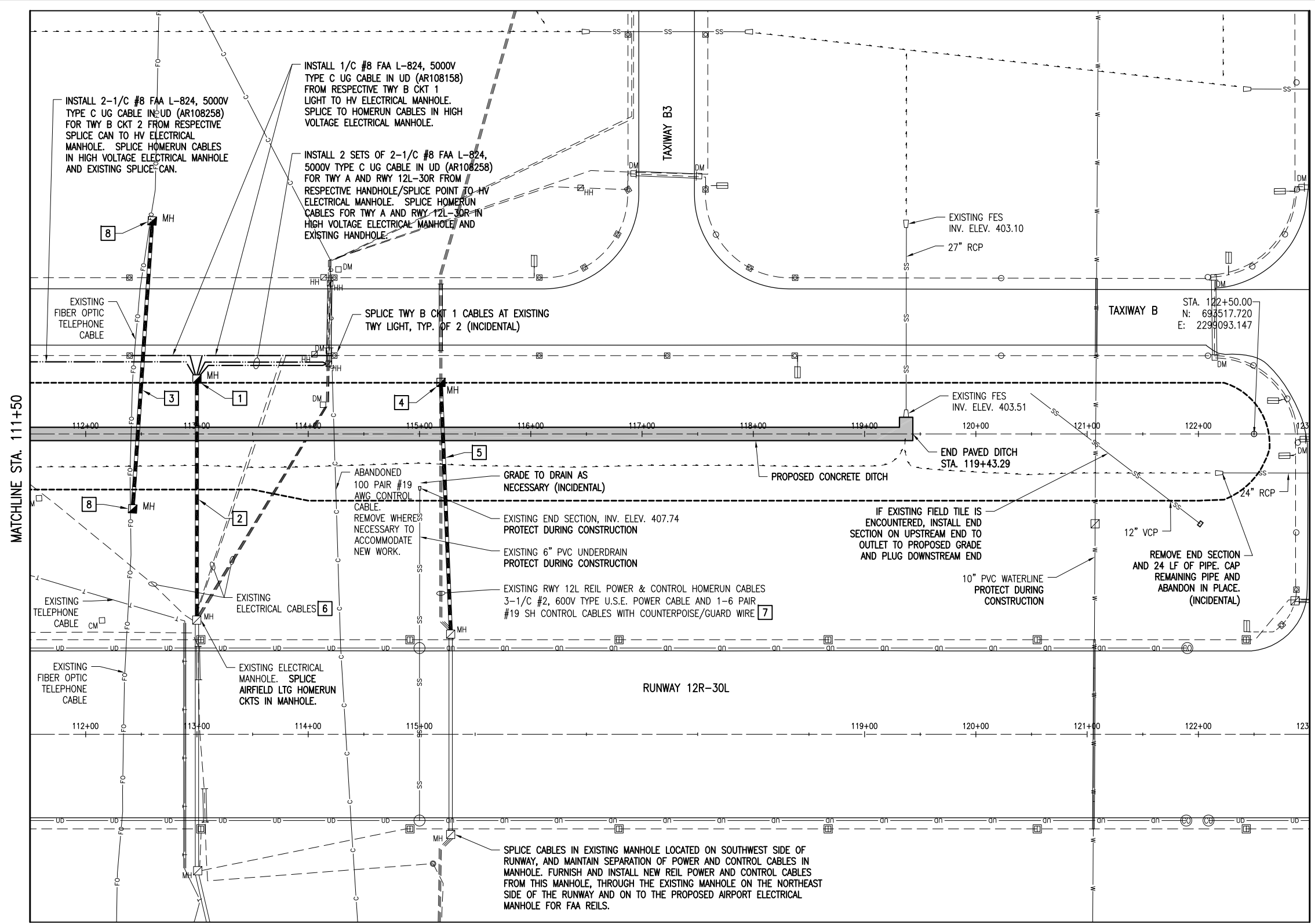
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0' 25' 50' 100'
HALF SIZE SCALE: 1" = 100'
FULL SIZE SCALE: 1" = 50'

LEGEND

- EXISTING PAVEMENT
- EXISTING DRAINAGE DITCH
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING FIBER OPTIC
- EXISTING COMMUNICATION CABLE
- EXISTING STORM SEWER
- EXISTING ELECTRIC
- EXISTING ELECTRICAL DUCT
- PROPOSED DUCT
- PROPOSED 1/2" #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE UNIT DUCT
- PROPOSED 2-1/2" #8 AWG, FAA L-824, 5000V TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED CONCRETE PAVED DITCH
- PROPOSED GRADING LIMITS
- EXISTING TAXI GUIDANCE SIGN
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING HANDHOLE
- EXISTING MANHOLE
- PROPOSED HANDHOLE
- PROPOSED MANHOLE



KEYED NOTES

- 1 INSTALL AIRPORT ELECTRICAL MANHOLE (AR110715) FOR AIRFIELD LIGHTING SERIES CKTS (HIGH VOLTAGE). SPLICE AIRFIELD LTG HOMERUN CKTS IN MANHOLE.
- 2 CONSTRUCT 220 LF OF 4"-4 WAY CONCRETE ENCASED DUCT (AR110504). TERMINATE DUCTS IN MANHOLES.
 DUCT 1: INSTALL TWY B CKT 1 AND TWY B CKT 2 HOMERUN CABLES; 4-1/2" #8 AWG FAA L-824, 5000V TYPE C CABLES (AR108108)
 DUCT 2: INSTALL TWY A HOMERUN CABLES; 2-1/2" #8 AWG FAA L-824, 5000V TYPE C CABLES (AR108108)
 DUCT 3: INSTALL RWY 12L-30R HOMERUN CABLES; 2-1/2" #8 AWG FAA L-824, 5000V TYPE C CABLES (AR108108)
 DUCT 4: LEAVE FOR SPARE
- 3 INSTALL 260 LF OF 2" DIRECTIONAL BORE (AR110012) AT MINIMUM DEPTH OF 5 FEET BELOW EXISTING/PROPOSED GRADES. TERMINATE IN MANHOLES AND INSTALL PULL WIRES. FIBER OPTIC TELEPHONE CABLE SHALL BE REROUTED BY THE SERVING TELEPHONE COMPANY.
- 4 INSTALL AIRPORT ELECTRICAL MANHOLE (AR110715) FOR FAA REILS. ADJUST LOCATION TO COORDINATE WITH LOCATION OF FAA REIL CABLES. SPLICE CABLES IN PROPOSED MANHOLE AND MAINTAIN SEPARATION OF POWER AND CONTROL CABLES IN MANHOLE. TERMINATE COUNTERPOISE AT 3/4" X 10'L GROUND ROD AT EXTERIOR OF MANHOLES (INCIDENTAL TO AR108706)
- 5 CONSTRUCT 230 LF OF 4"-2 WAY CONCRETE ENCASED DUCT (AR110502). TERMINATE DUCTS IN MANHOLES.
 DUCT 1: INSTALL REIL POWER CABLES: 3-1/2" #2, 600V TYPE XLP-USE POWER CABLE (AR108082)
 DUCT 2: INSTALL 1-6 PAIR #19 SH CONTROL CABLES (AR108806)
 INSTALL A #6 BARE SOLID COPPER COUNTERPOISE APPRX 10" ABOVE DUCT BANK (AR108706)
- 6 EXISTING AIRFIELD LIGHTING HOMERUN CABLES FOR TWY B CKT 1, TWY B CKT 2, TWY A, AND RWY 12L-30R SHALL BE REMOVED TO ACCOMMODATE NEW WORK AND REPLACED AS DETAILED HEREIN.
- 7 EXISTING FAA RWY 12L REIL POWER AND CONTROL HOMERUN CABLES SHALL BE REMOVED TO ACCOMMODATE NEW WORK AND REPLACED AS DETAILED HEREIN.
- 8 INSTALL ELECTRICAL MANHOLE-4' (AR110714). END LOCATIONS OF DIRECTIONAL BORE AND LOCATIONS OF PROPOSED MANHOLES SHALL BE COORDINATED WITH THE PHONE COMPANY FOLLOWING UTILITY LOCATES (TYP.)

REVISION	DATE

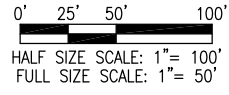
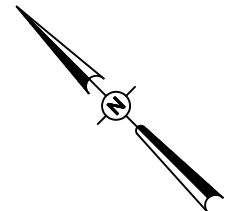
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

Hanson Project No. 11A0190	DATE	03/08/13
Filename C-121-CON.dwg	LAYOUT	01/28/13
Scale 1"=50'H, 1"=5'V	DRAWN	01/29/13
Date 03/08/13	REVIEWED	03/08/13

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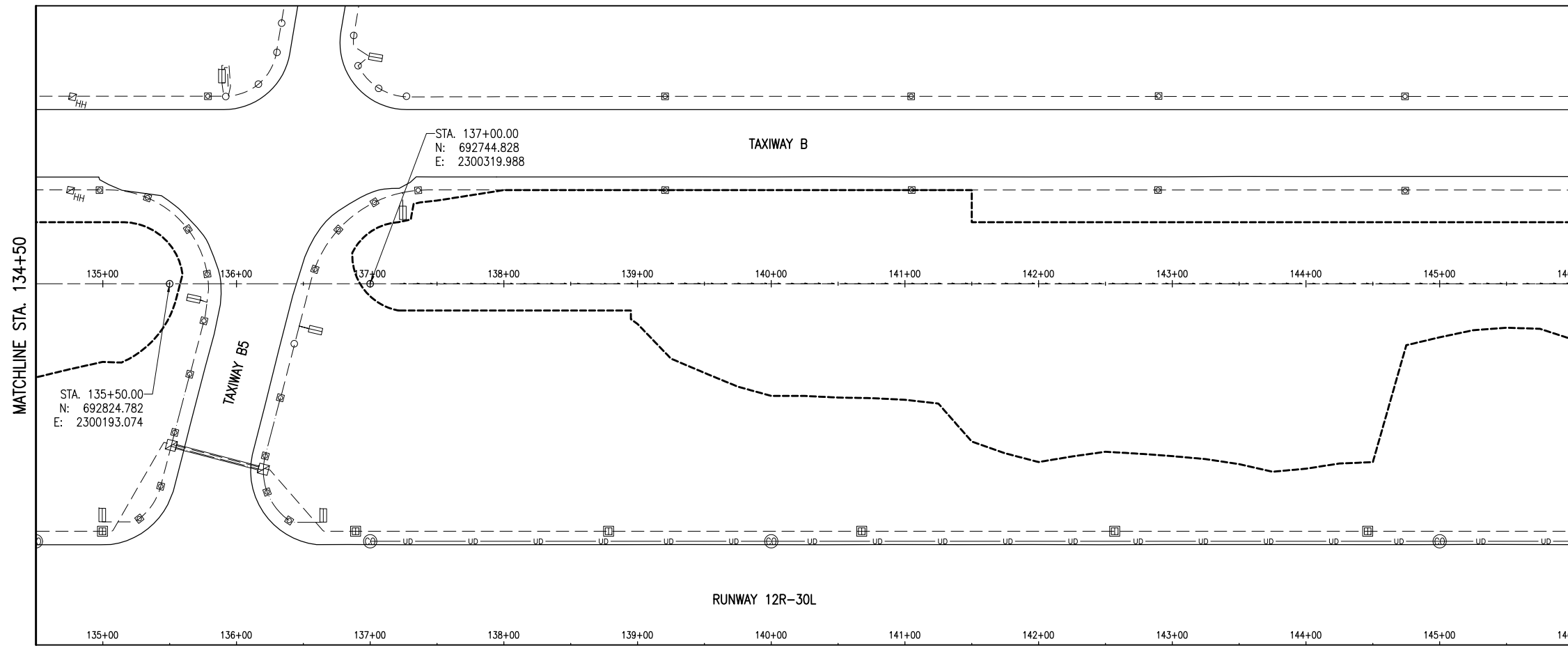
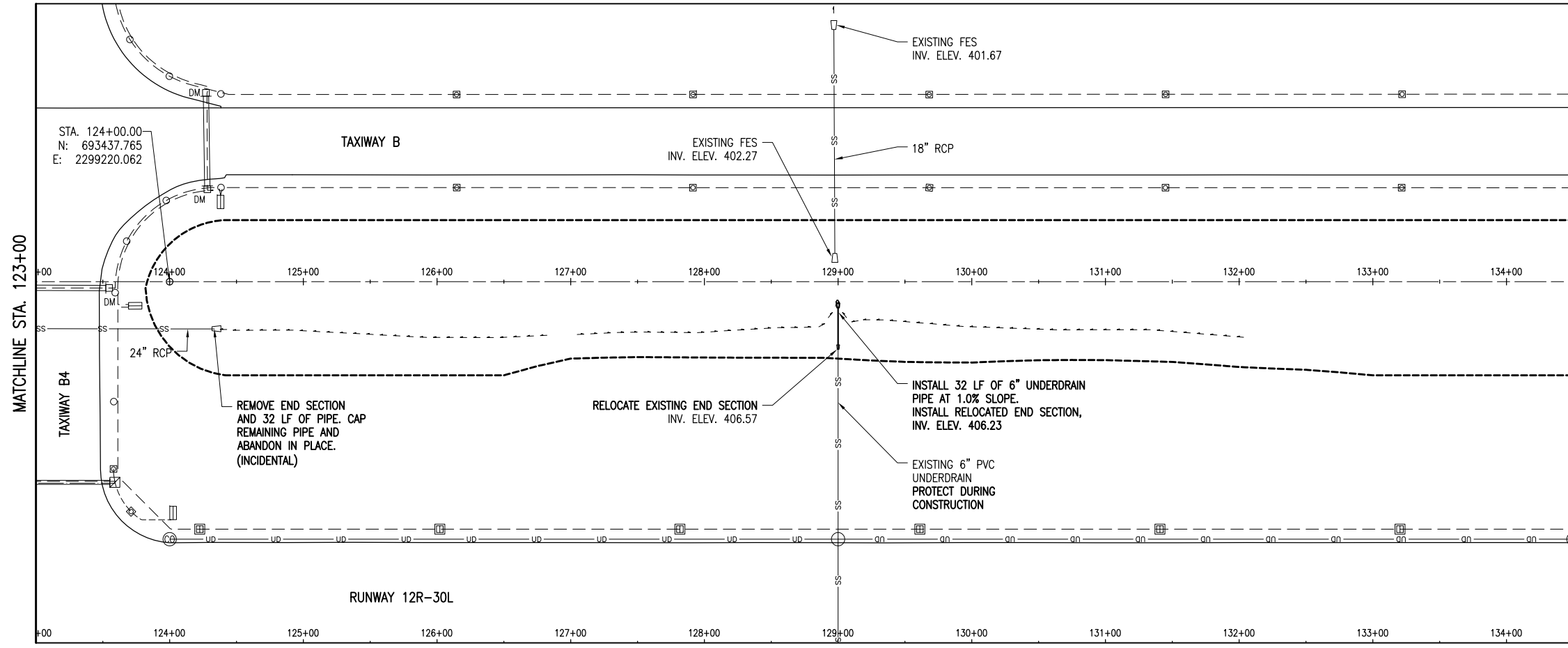
GRADE DITCH PARALLEL TO MAIN RUNWAY
 CONSTRUCTION PLAN - STA. 111+50 TO STA. 123+00

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LEGEND

- EXISTING PAVEMENT
- EXISTING DRAINAGE DITCH
- EXISTING STORM SEWER
- EXISTING ELECTRIC
- EXISTING ELECTRICAL DUCT
- PROPOSED CONCRETE PAVED DITCH
- PROPOSED GRADING LIMITS
- EXISTING TAXI GUIDANCE SIGN
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING HANDHOLE
- EXISTING MANHOLE



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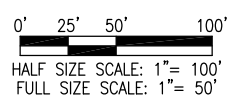
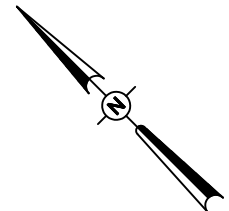
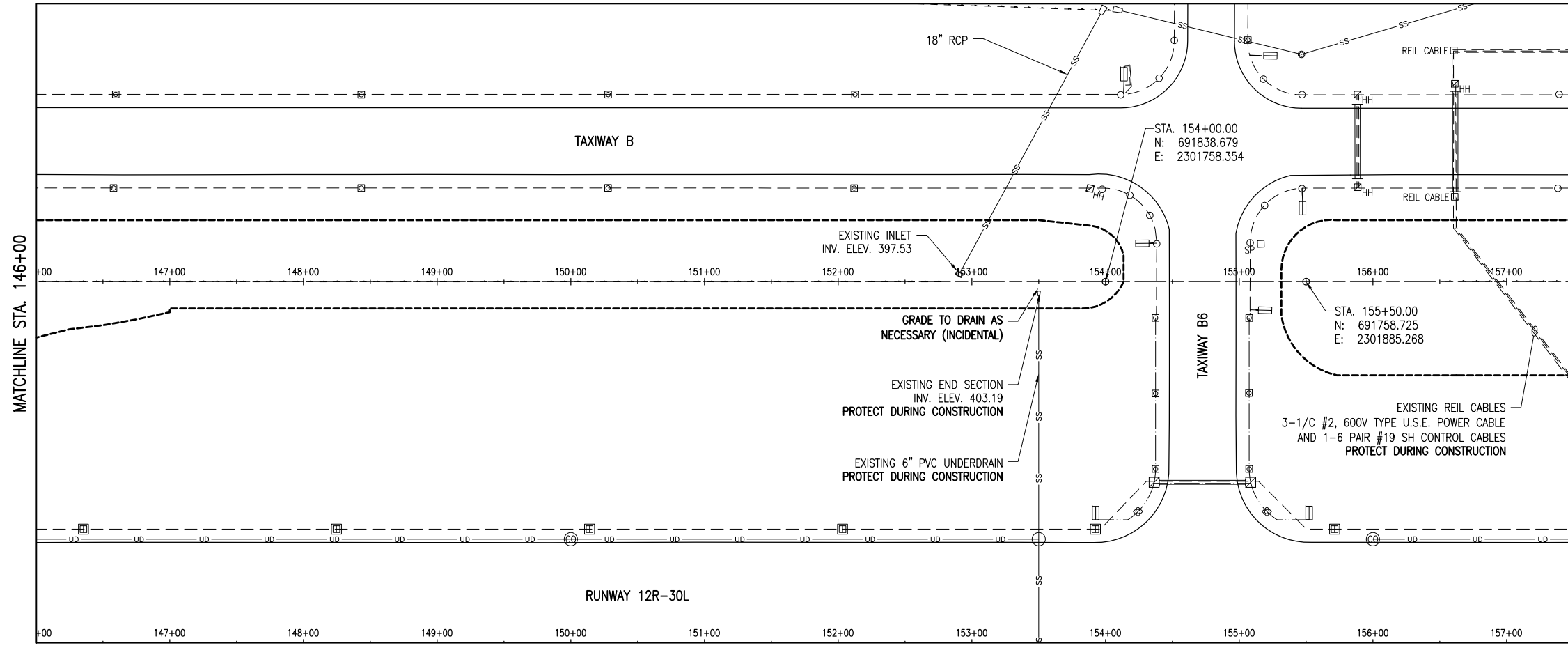
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DRAWN	MLH 01/29/13
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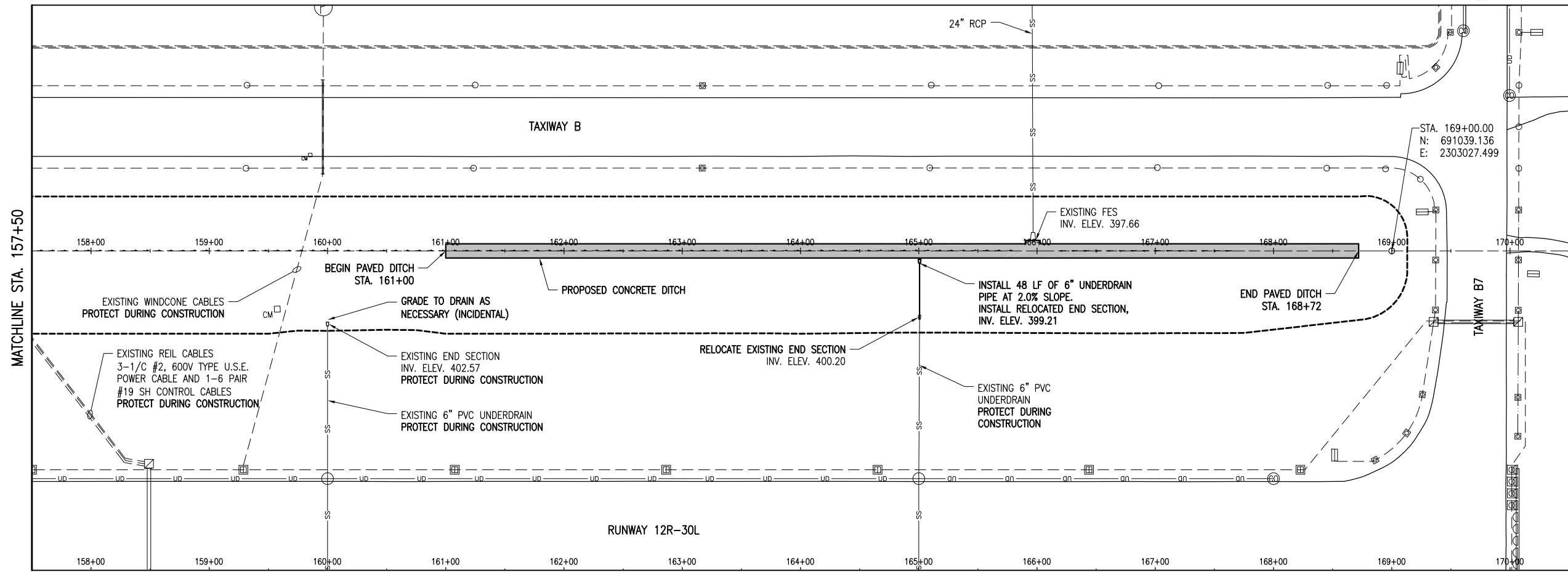
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CONSTRUCTION PLAN - STA. 123+00 TO STA. 146+00

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LEGEND

- EXISTING PAVEMENT
- EXISTING DRAINAGE DITCH
- EXISTING STORM SEWER
- EXISTING ELECTRIC
- EXISTING ELECTRICAL DUCT
- PROPOSED CONCRETE PAVED DITCH
- PROPOSED GRADING LIMITS
- EXISTING TAXI GUIDANCE SIGN
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING HANDHOLE
- EXISTING MANHOLE



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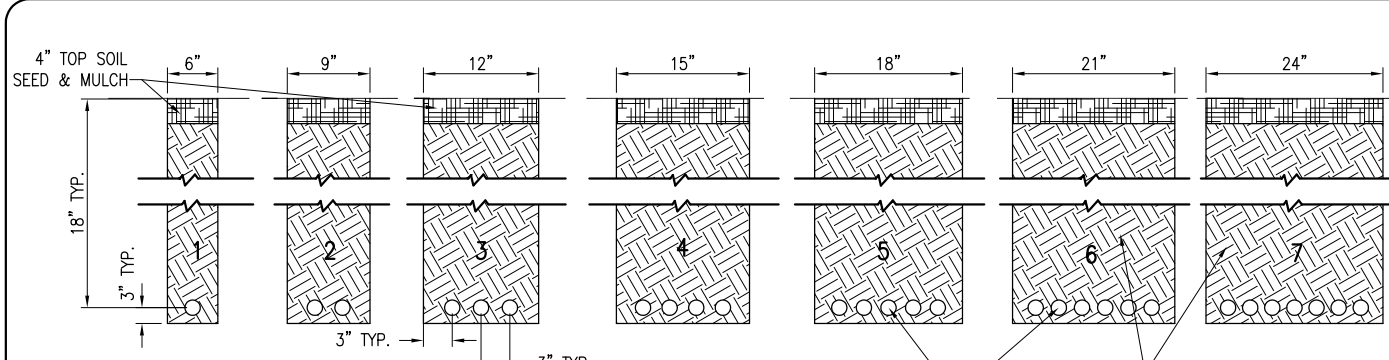
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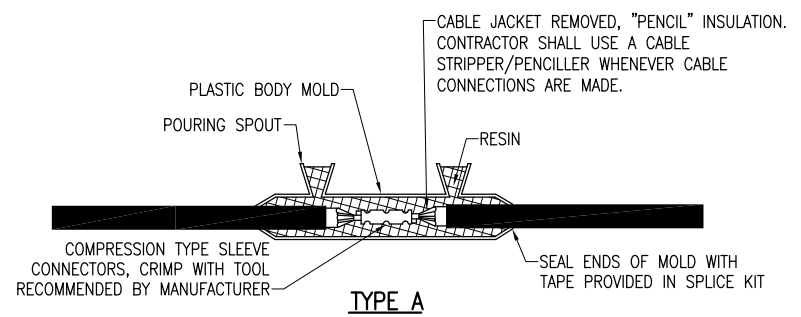
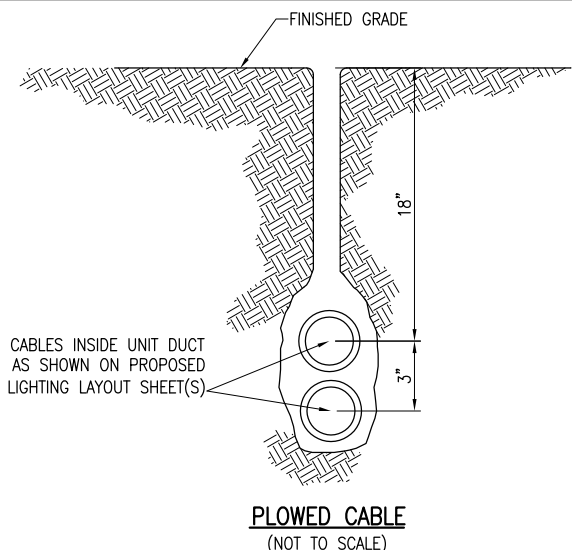
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GRADE DITCH PARALLEL TO MAIN RUNWAY

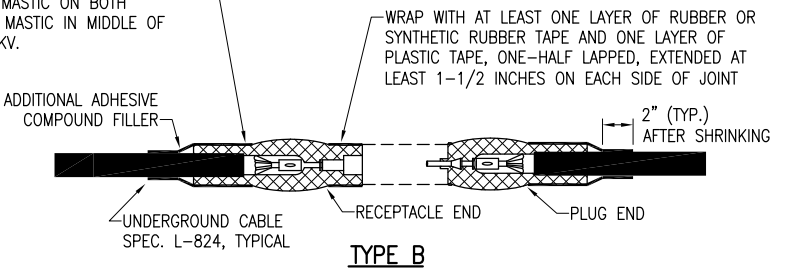
CONSTRUCTION PLAN - STA. 146+00 TO STA. 170+50



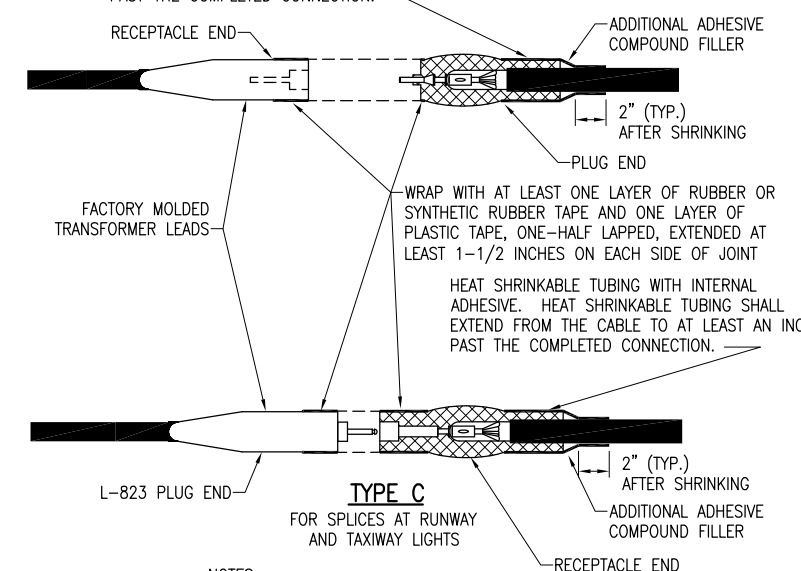
NOTES:
 DETAIL NUMBERS INDICATE NO. OF CABLES.
 TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
 DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.
 EARTH BACKFILL WILL HAVE MAXIMUM 1" SIZE PARTICLES AND WILL BE PLACED IN TWO LIFTS AS APPROXIMATELY SHOWN (TYPICAL FOR ALL TRENCHES)



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



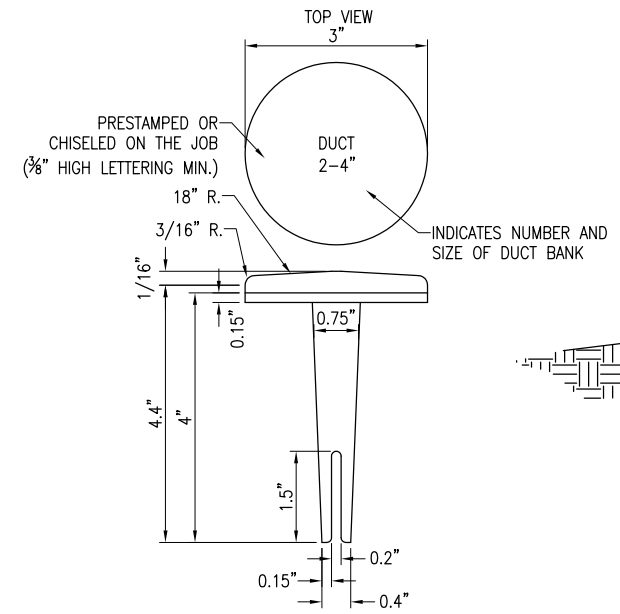
TYPE B
 FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES.
 HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE. HEAT SHRINKABLE TUBING SHALL EXTEND FROM THE CABLE TO AT LEAST AN INCH PAST THE COMPLETED CONNECTION.



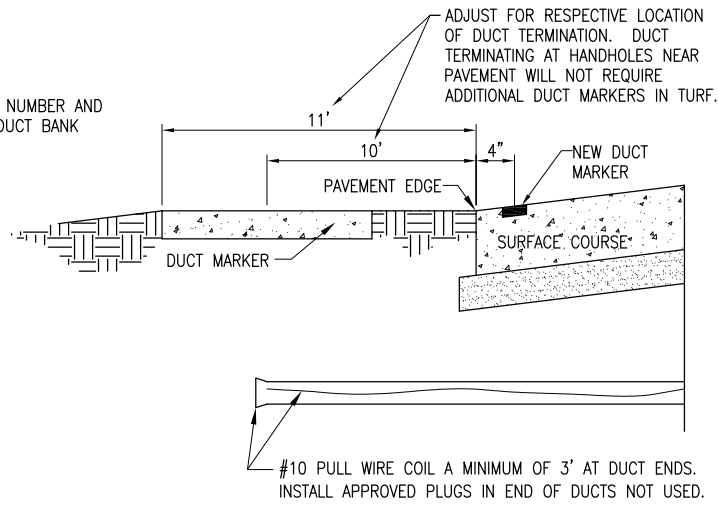
TYPE C
 FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS
NOTES:
 SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.
 INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

CABLE SPLICES
 (NOT TO SCALE)

CABLE TRENCHES
 (NOT TO SCALE)



BITUMINOUS PAVEMENT DUCT MARKERS
 "NOT TO SCALE"

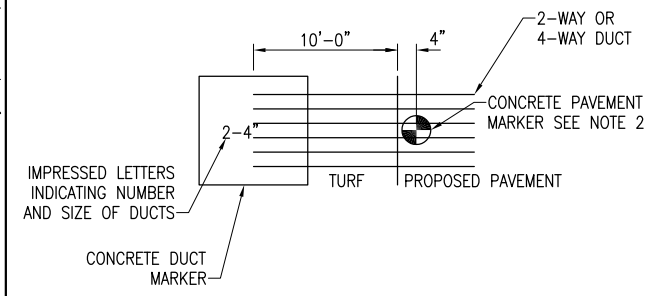


UNDERGROUND ELECTRICAL DUCT
 (NOT TO SCALE)

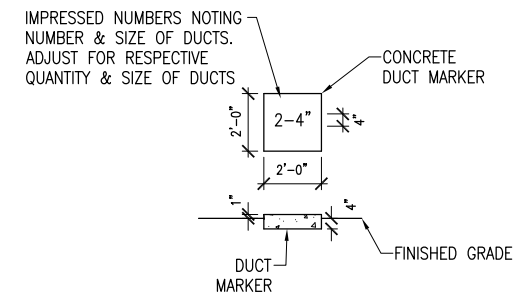
CABLE & DUCT MARKER NOTES:

1. 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.
2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.
3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.

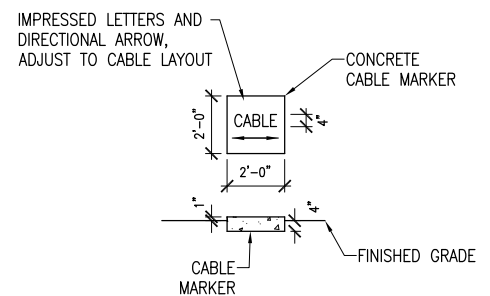
- NOTE:**
1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE
 2. BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO. INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278.



DUCT MARKER DETAIL
 "NOT TO SCALE"



TURF DUCT MARKERS
 "NOT TO SCALE"



TURF CABLE MARKERS
 "NOT TO SCALE"

REVISION	DATE

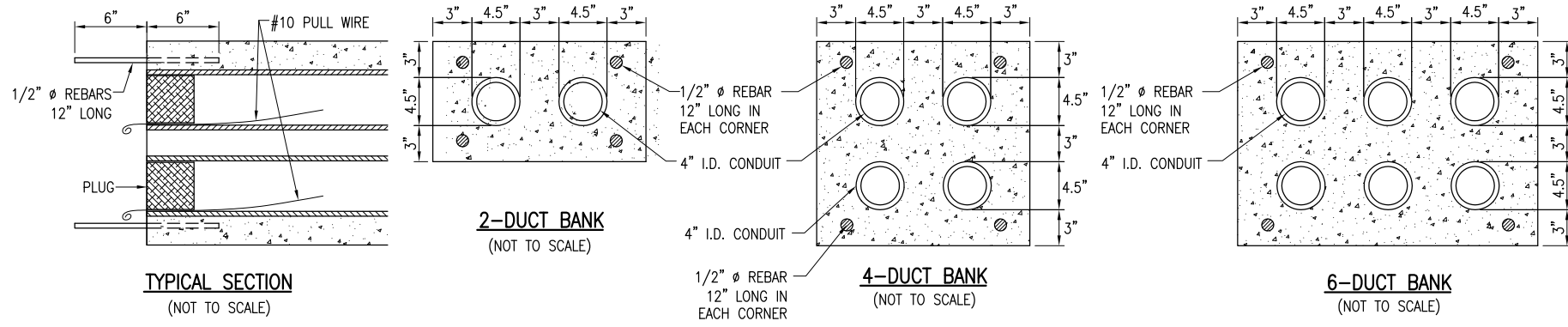
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	KNL	02/15/13
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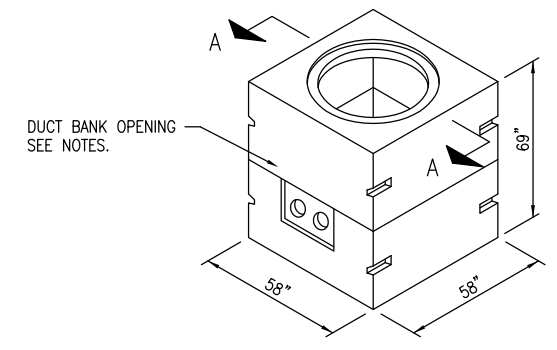
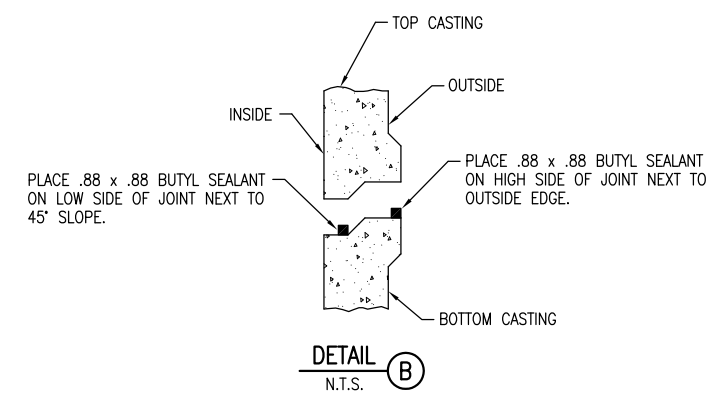
GRADE DITCH PARALLEL TO MAIN RUNWAY
 ELECTRICAL DETAILS SHEET 1

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DUCT BANK NOTES:

1. ALL DIMENSION ARE MINIMUM.
2. INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., TO MAINTAIN PROPER SEPARATION OF CONDUITS.
3. REBAR IS REQUIRED TO ACCOMMODATE FUTURE DUCT EXTENSIONS & INTERFACE AT DUCT BANK TERMINATIONS. DUCT BANKS TERMINATING IN MANHOLES DO NOT REQUIRE REBAR AT TERMINATIONS.
4. CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 PVC CONFORMING TO ITEM 110.
5. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE. DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 42" MINIMUM TO FINISHED GRADE IN CULTIVATED/FARMED AREAS.
6. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
7. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
8. INSTALL DUCT BANKS WITH SLOPE TO DRAIN WHERE TERMINATING IN MANHOLES OR HANDHOLES.



PRECAST 4'x4'x4' AIRPORT MANHOLE NOTES

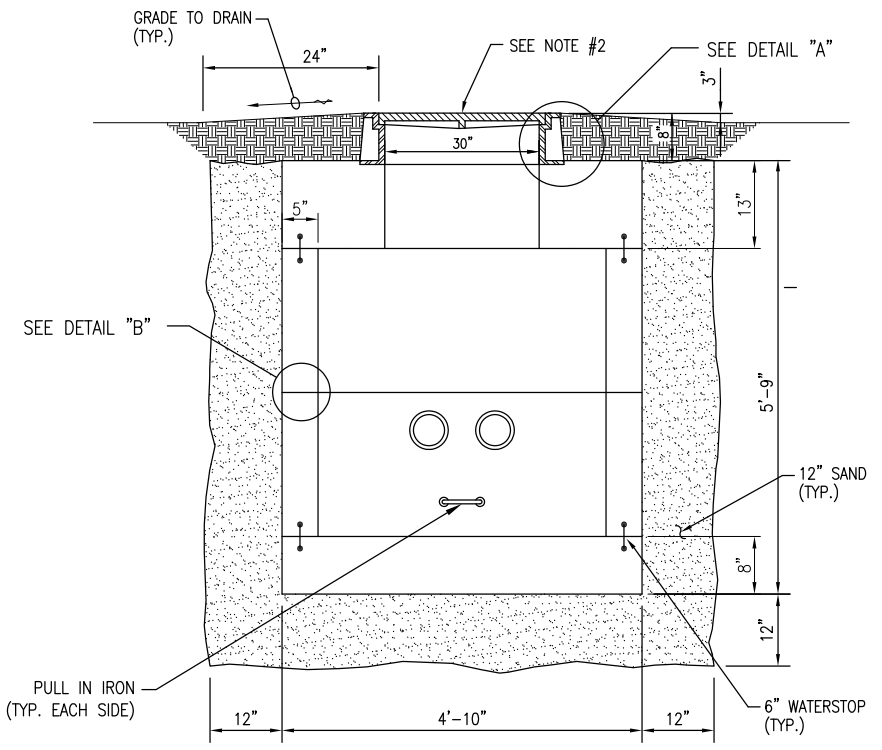
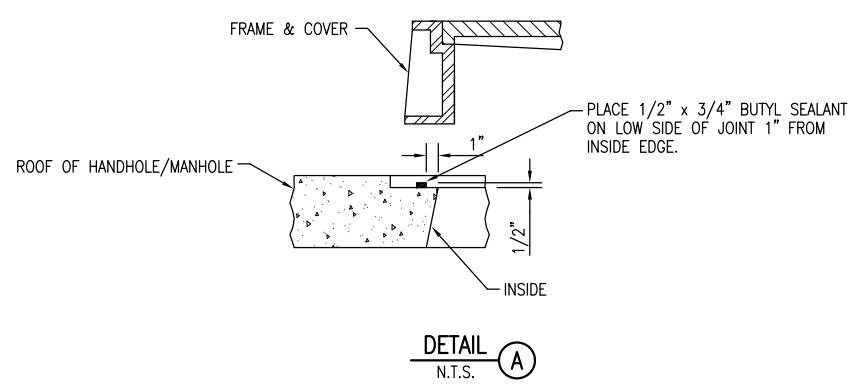
1. 4'x4'x4' AIRPORT MANHOLE SHALL BE CONSTRUCTED TO MEET THE FOLLOWING:

DESIGN CRITERIA:

 - 1) DESIGN SPECIFICATIONS: ACI 318, ASTM C858, FAA AC 150/5320-6D
 - 2) DESIGN LOADING:
 - B727-200 (210,000 LB. TAXI WEIGHT, 97,600 LB. MAX. GEAR)
 - B777-200/300 (752,000 LB. TAXI WEIGHT, 352,000 LB. MAX. GEAR)
 - 3) LIVE LOAD SURCHARGE: 24.5% OF THE WHEEL LOAD SOIL PRESSURE
 - 4) CONCRETE COMPRESSIVE STRENGTH: $F'_c = 5,000$ PSI
 - 5) REINFORCING STEEL: ASTM A706, $F_y = 60,000$ PSI

DESIGN ASSUMPTIONS:

 - 1) GROUND WATER LEVEL: 3'-6" BELOW GRADE
 - 2) EARTH COVER: 0'-8" - 2'-0"
 - 3) LIVE LOAD IMPACT: $I = 20\%$
 - 4) COEFFICIENT OF ACTIVE EARTH PRESSURE: $K_a = 0.3$
 - 5) SPECIFIC WEIGHT OF STD. AGGREGATE CONCRETE: 150 PCF
 - 6) SPECIFIC WEIGHT OF DRY EARTH: 100 PCF
 - 7) SPECIFIC WEIGHT OF SATURATED EARTH: 120 PCF
 - 8) EQUIVALENT FLUID PRESSURE OF DRY EARTH: 30 PSF
 - 9) EQUIVALENT FLUID PRESSURE OF SATURATED EARTH: 80 PSF
2. AIRPORT MANHOLE FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR AC 150/5320-6D APPENDIX 3 ITEM 2.d. (1). AIRPORT MANHOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3492-A OR APPROVED EQUAL. 4'x4'x4' AIRPORT MANHOLE SHALL BE PROVIDED FOR USE WITH TELEPHONE UTILITY LINES AND CABLES. LID FOR TELEPHONE MANHOLE SHALL BE LABELED "TELEPHONE" OR IN ACCORDANCE WITH THE SERVING TELEPHONE COMPANY REQUIREMENTS. COORDINATE LETTERING WITH MFR.
3. COORDINATE DUCT BANK INTERFACE & OPENINGS WITH THE MANHOLE MFR. CONTRACTOR SHALL SLOPE DUCT BANK TO PRECAST MANHOLE OPENINGS. ALL OPENINGS SHALL BE SEALED WATERTIGHT AFTER DUCT BANK INSTALLATION.
4. 4'x4'x4' AIRPORT MANHOLE SHALL BE MANUFACTURED BY A CONCRETE ELECTRICAL MANHOLE PRODUCER ON THE ILLINOIS DEPARTMENT OF TRANSPORTATION APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
5. 4'x4'x4' AIRPORT MANHOLE SHALL BE PAID FOR UNDER ITEM AR110714 ELECTRICAL MANHOLE 4' PER EACH.
6. COORDINATE INSTALLATION OF MANHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.
7. INCLUDE FLOOR SUMP OR DRAINAGE PIPE.
8. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE MANHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



4'x4'x4' AIRPORT MANHOLE DETAILS
N.T.S. (NOT TO SCALE)

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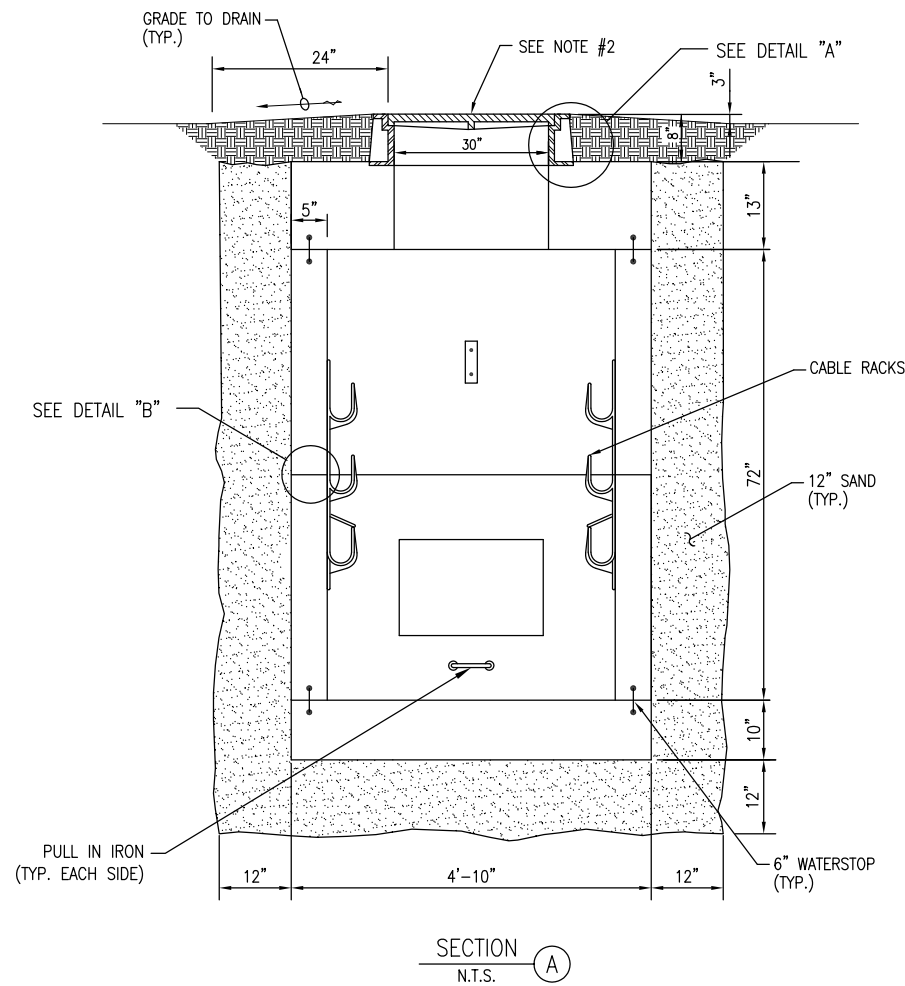
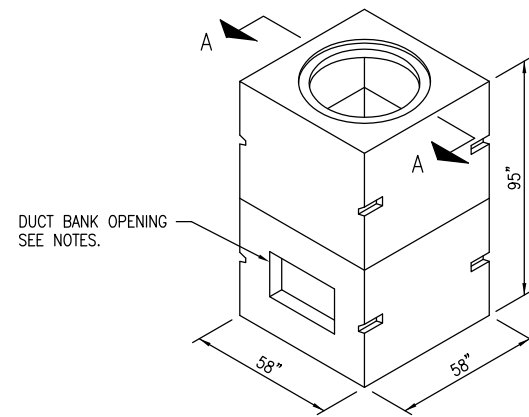
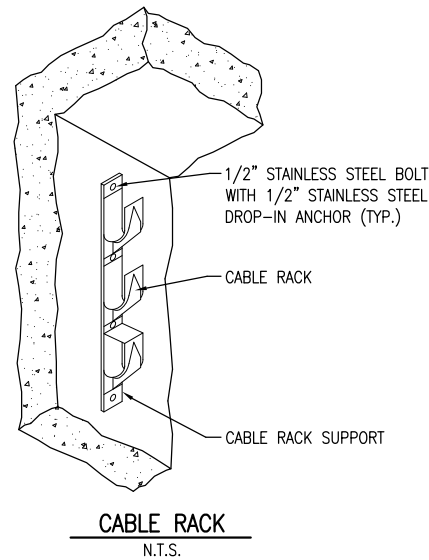
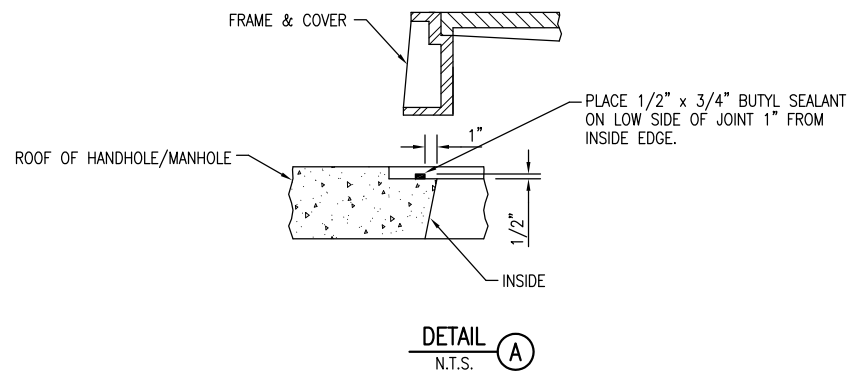
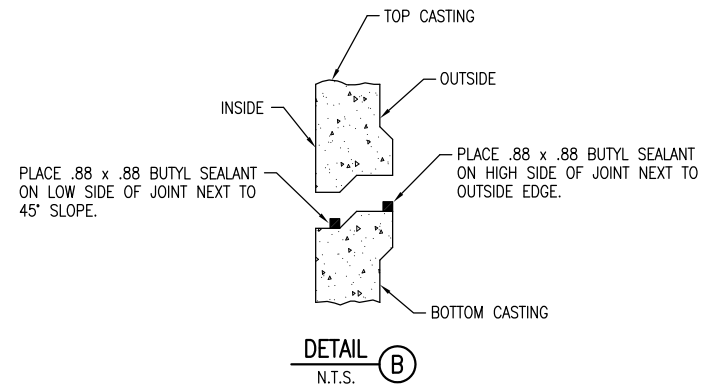
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SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
ILL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	KNL	02/15/13
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GRADE DITCH PARALLEL TO MAIN RUNWAY
ELECTRICAL DETAILS SHEET 2



4'x4'x6' AIRPORT MANHOLE DETAILS
N.T.S. (NOT TO SCALE)

PRECAST 4'x4'x6' AIRPORT MANHOLE NOTES

1. 4'x4'x6' AIRPORT MANHOLE SHALL BE CONSTRUCTED TO MEET THE FOLLOWING:

DESIGN CRITERIA:

- DESIGN SPECIFICATIONS: ACI 318, ASTM C857 AND C858, FAA AC 150/5320-6D APPENDIX 3
- DESIGN LOADING:
B727-200, 97,600 LBS. MAIN GEAR
B747-400ER, 213,600 LBS. MAIN GEAR
- LIVE LOAD SURCHARGE: 24.5% OF THE WHEEL LOAD SOIL PRESSURE
- CONCRETE COMPRESSIVE STRENGTH: $f'_c = 5,000$ PSI AT 28 DAYS
- REINFORCING STEEL: ASTM A706, 60,000 PSI

DESIGN ASSUMPTIONS:

- GROUND WATER LEVEL: 3'-6" BELOW GRADE
- EARTH COVER: 0'-8" - 2'-0"
- LIVE LOAD IMPACT: $I = 20\%$
- COEFFICIENT OF ACTIVE EARTH PRESSURE: $K_a = 0.3$
- SPECIFIC WEIGHT OF STD. AGGREGATE CONCRETE: 150 PCF
- SPECIFIC WEIGHT OF DRY EARTH: 100 PCF
- SPECIFIC WEIGHT OF SATURATED EARTH: 120 PCF
- EQUIVALENT FLUID PRESSURE OF DRY EARTH: 30 PSF
- EQUIVALENT FLUID PRESSURE OF SATURATED EARTH: 80 PSF

2. AIRPORT MANHOLE FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR AC 150/5320-6D APPENDIX 3 ITEM 2.d. (1). AIRPORT MANHOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3492-A OR APPROVED EQUAL. LID FOR HIGH VOLTAGE MANHOLE SHALL BE LABELED "HIGH VOLTAGE". LID FOR LOW VOLTAGE MANHOLE SHALL BE LABELED "LOW VOLTAGE" OR "0V-600V ELECTRIC". LID FOR FAA REILS SHALL BE LABELED "FAA REILS".

3. COORDINATE DUCT BANK INTERFACE & OPENINGS WITH THE MANHOLE MFR. CONTRACTOR SHALL SLOPE DUCT BANK TO PRECAST MANHOLE OPENINGS. ALL OPENINGS SHALL BE SEALED WATERTIGHT AFTER DUCT BANK INSTALLATION.

4. 4'x4'x6' AIRPORT MANHOLE SHALL BE MANUFACTURED BY A CONCRETE ELECTRICAL MANHOLE PRODUCER ON THE ILLINOIS DEPARTMENT OF TRANSPORTATION APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.

5. 4'x4'x6' AIRPORT MANHOLE SHALL BE PAID FOR UNDER ITEM AR110715 ELECTRICAL MANHOLE SPECIAL PER EACH.

6. CABLE RACKS SHALL BE HEAVY DUTY CORROSION RESISTANT NYLON MATERIAL WITH CORROSION RESISTANT STAINLESS STEEL MOUNTING HARDWARE; UNDERGROUND DEVICES, INC. CAT. NO. 3SR1N, 3SR2N OR 3SR3N OR EQUAL. PROVIDE AT LEAST TWO TRIPLE HOOK CABLE RACKS ON EACH MANHOLE WALL, SPACED TO SUPPORT RESPECTIVE CABLES.

7. COORDINATE INSTALLATION OF MANHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.

8. INCLUDE FLOOR SUMP OR DRAINAGE PIPE.

9. 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 MANHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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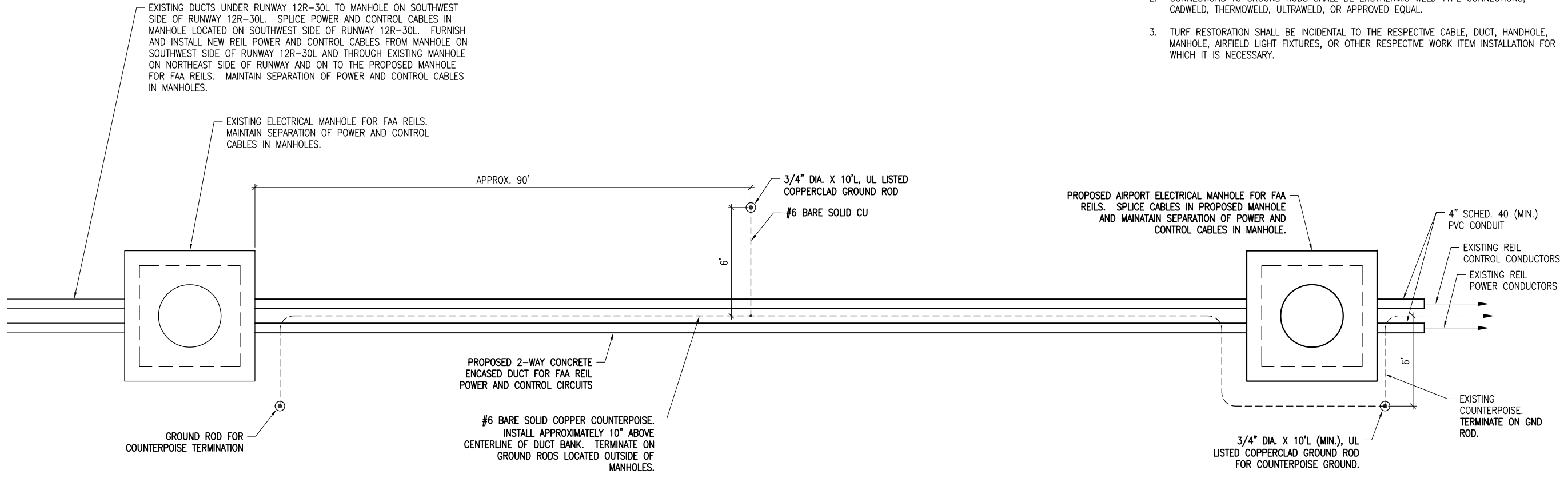
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GRADE DITCH PARALLEL TO MAIN RUNWAY
4'x4'x6' AIRPORT MANHOLE DETAIL

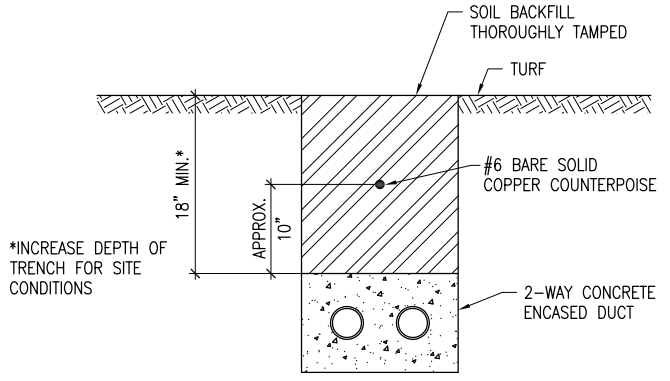
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NOTES

- FURNISH AND INSTALL A #6 AWG (MIN.) BARE SOLID COPPER COUNTERPOISE CONDUCTOR APPROXIMATELY 10" ABOVE THE DUCT BANK FOR THE FAA REILS CIRCUIT. COUNTERPOISE SHALL BE BONDED TO GROUND RODS AT APPROXIMATELY 90' INTERVALS AND AT THE DUCT BANK TERMINATIONS JUST OUTSIDE OF THE MANHOLES. GROUND RODS SHALL BE 3/4" DIA. X 10' LONG UL LISTED COPPERCLAD. THE SPACING OF GROUND RODS SHALL VARY BY 10% TO 20% TO PREVENT RESONANCE. INSTALL GROUND RODS 6 FEET ON EITHER SIDE OF THE TRENCH. ALL BELOW GRADE CONNECTIONS TO GROUND RODS AND COUNTERPOISE SHALL BE EXOTHERMIC WELD.
- CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS; CADWELD, THERMOWELD, ULTRAWELD, OR APPROVED EQUAL.
- TURF RESTORATION SHALL BE INCIDENTAL TO THE RESPECTIVE CABLE, DUCT, HANDHOLE, MANHOLE, AIRFIELD LIGHT FIXTURES, OR OTHER RESPECTIVE WORK ITEM INSTALLATION FOR WHICH IT IS NECESSARY.



COUNTERPOISE PLAN FOR FAA REIL CIRCUITS
"NOT TO SCALE"



COUNTERPOISE ELEVATION
NOT TO SCALE

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GRADE DITCH PARALLEL TO MAIN RUNWAY
COUNTERPOISE DETAILS FOR FAA REIL CIRCUITS

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 SUPPORTS 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 UL 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, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

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GRADE DITCH PARALLEL TO MAIN RUNWAY
ELECTRICAL NOTES SHEET 1

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A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29



IL PROJ.: CFS-4210

Hanson Project No.	11A0190	
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Date	03/08/13	
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1425 South Main Street
Springfield, Illinois 62703-2886

GRADE DITCH PARALLEL TO MAIN RUNWAY

ELECTRICAL NOTES SHEET 2

AIRFIELD LIGHTING NOTES

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

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

GROUNDING NOTES FOR AIRFIELD LIGHTING

- GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30G 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 INSULATION OR A BRAIDED GROUNDING STRAP OF EQUIVALENT CURRENT RATING. 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.
- 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.
- PER FAA 150/5340-30G THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
- FOR EACH GROUNDING ELECTRODE SYSTEM THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH GROUNDING ELECTRODE SYSTEM. IF GROUND RESISTANCE EXCEEDS 25 OHMS. CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT PROJECT REPRESENTATIVE/RESIDENT ENGINEER.

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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:

- 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 DIRECTOR AND THE RESPECTIVE FAA ATCT PERSONNEL. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & 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 UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

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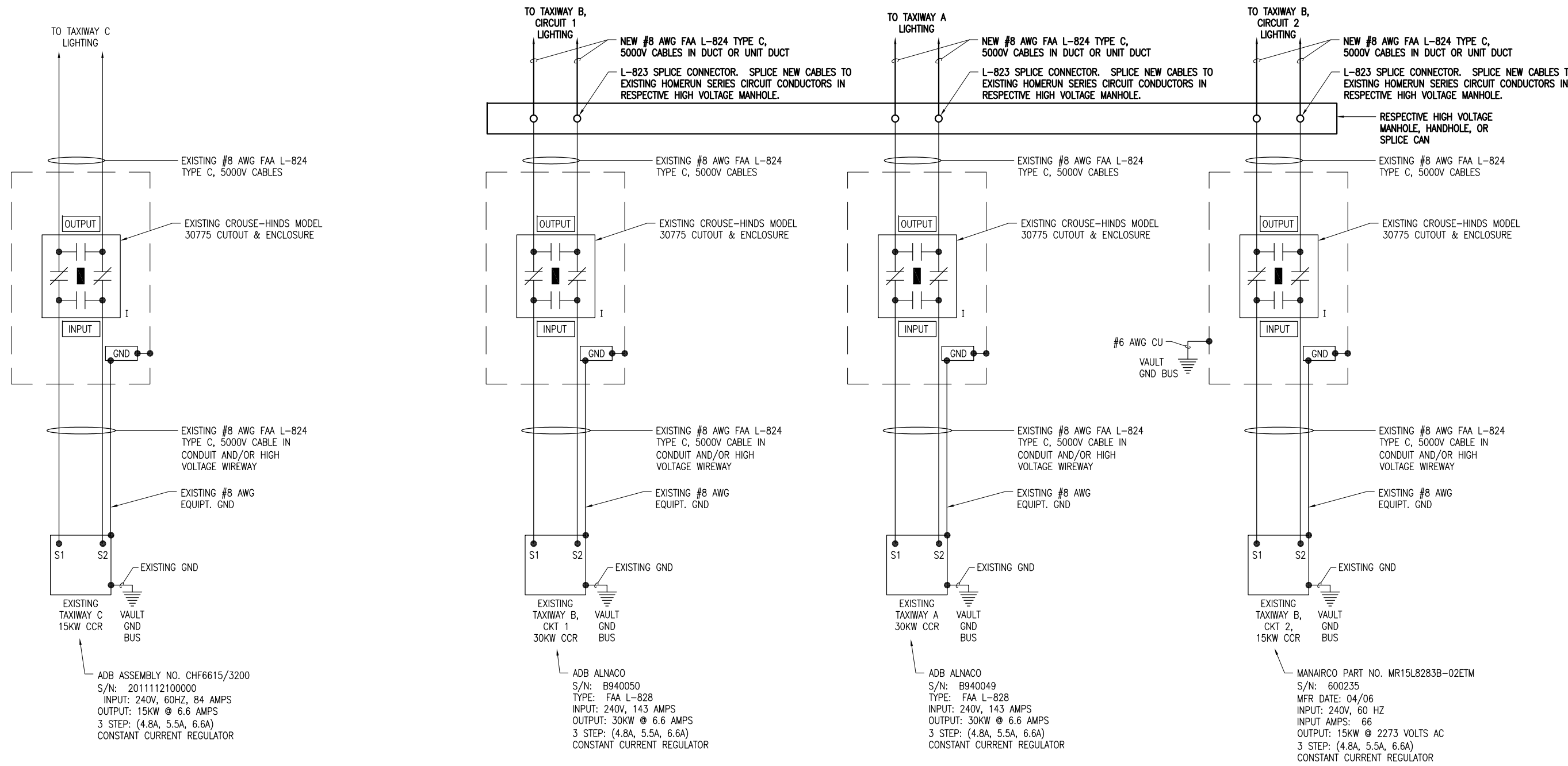
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 1525 South Main Street
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GRADE DITCH PARALLEL TO MAIN RUNWAY

ELECTRICAL LEGEND AND ABBREVIATIONS



HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS

LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

- NOTES:**
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR AND THE RESPECTIVE FAA ATCT PERSONNEL. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
 - CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
 - MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS PRIOR TO CABLE WORK. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE.
 - TAXIWAY "A" CCR, TAXIWAY "B" CIRCUIT 1 CCR, TAXIWAY "B" CIRCUIT 2 CCR, AND TAXIWAY "C" CCR AND THE ASSOCIATED CUTOUTS ARE EXISTING.
 - ALL CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK AND AFTER THE NEW CABLES AND LIGHTING SYSTEM MODIFICATIONS HAVE BEEN COMPLETED.
 - HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION BOX, HANDHOLE, OR MANHOLE.
 - SPLICES FOR RUNWAY AND TAXIWAY SERIES CIRCUITS SHALL BE FAA APPROVED TYPE L-823 CONNECTORS AND SHALL BE INSTALLED IN HIGH VOLTAGE HANDHOLES, HIGH VOLTAGE MANHOLES, SPLICE CANS OR HIGH VOLTAGE ENCLOSURES.

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SAINT LOUIS DOWNTOWN AIRPORT

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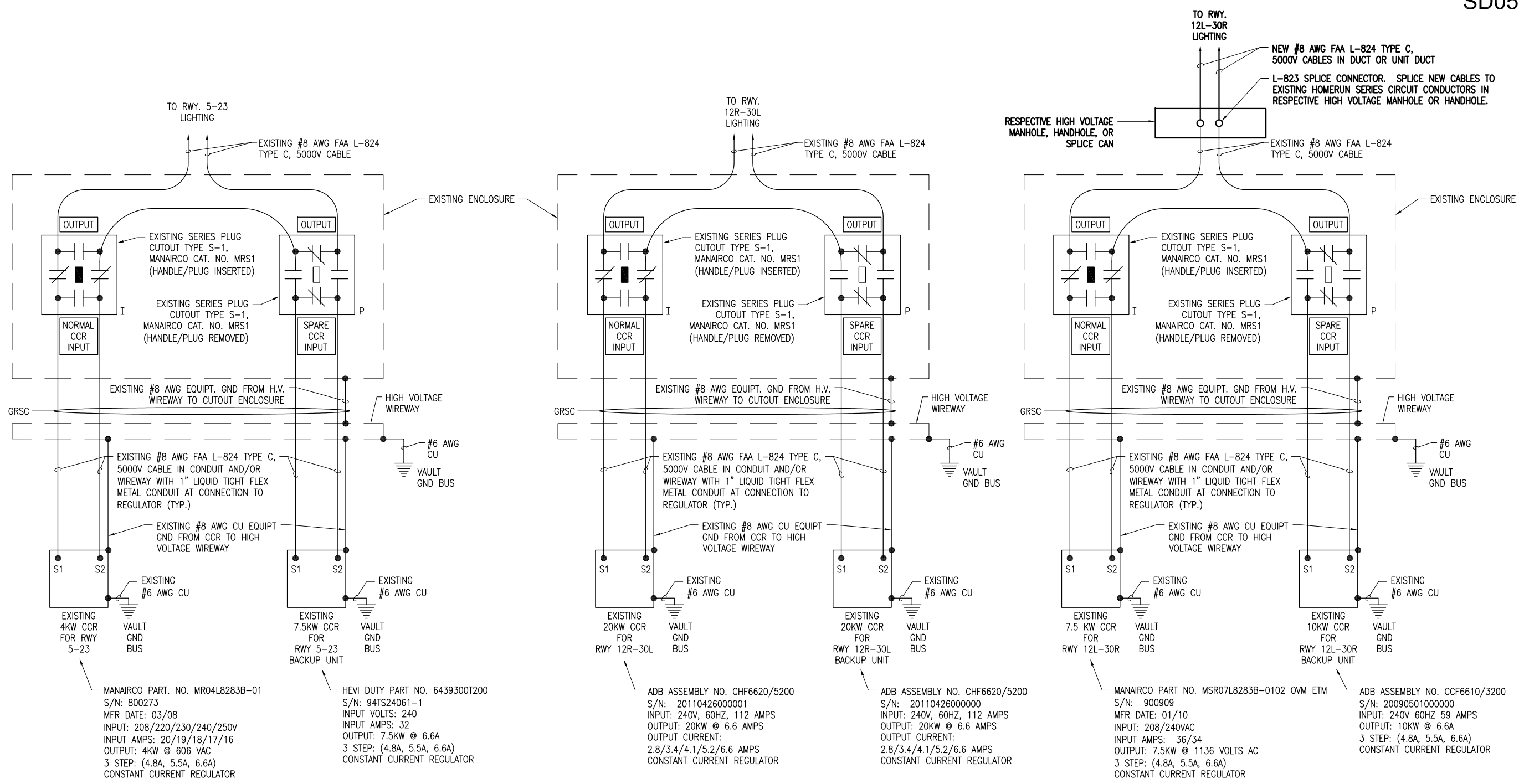
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1525 South Main Street
Springfield, Illinois 62703-2886

GRADE DITCH PARALLEL TO MAIN RUNWAY

HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAYS



HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS

LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

- NOTES:**
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR AND THE RESPECTIVE FAA ATCT PERSONNEL. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
 - CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
 - MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS PRIOR TO CABLE WORK. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE.
 - RUNWAY 5-23 CCR, BACKUP CCR FOR RUNWAY 5-23, RUNWAY 12R-30L CCR, BACKUP CCR FOR RUNWAY 12R-30L, RUNWAY 12L-30R CCR, AND BACKUP CCR FOR RUNWAY 12L-30R AND THE ASSOCIATED CUTOUTS ARE EXISTING.
 - ALL CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK AND AFTER THE NEW CABLES AND LIGHTING SYSTEM MODIFICATIONS HAVE BEEN COMPLETED.
 - HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION BOX, HANDHOLE, OR MANHOLE.
 - SPLICES FOR RUNWAY AND TAXIWAY SERIES CIRCUITS SHALL BE FAA APPROVED TYPE L-823 CONNECTORS AND SHALL BE INSTALLED IN HIGH VOLTAGE HANDHOLES, HIGH VOLTAGE MANHOLES, SPLICE CANS OR HIGH VOLTAGE ENCLOSURES.

REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CPS-4210

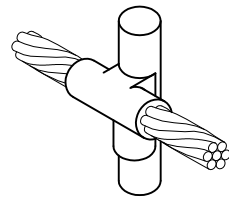
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LAYOUT	KNL	02/15/13	
DRAWN	MLH	02/17/13	
REVIEWED	BSS	03/08/13	

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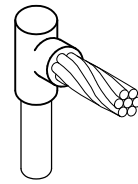
GRADE DITCH PARALLEL TO MAIN RUNWAY

HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS

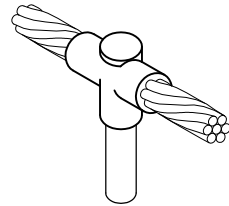
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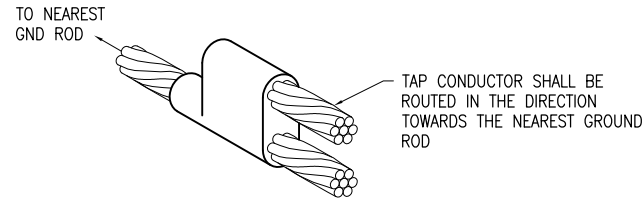
CABLE TO GROUND ROD



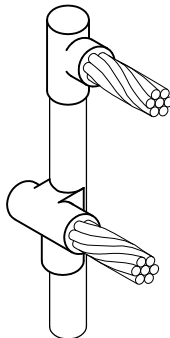
CABLE TO GROUND ROD



CABLE TO GROUND ROD



CABLE TO CABLE
HORIZONTAL PARALLEL TAP

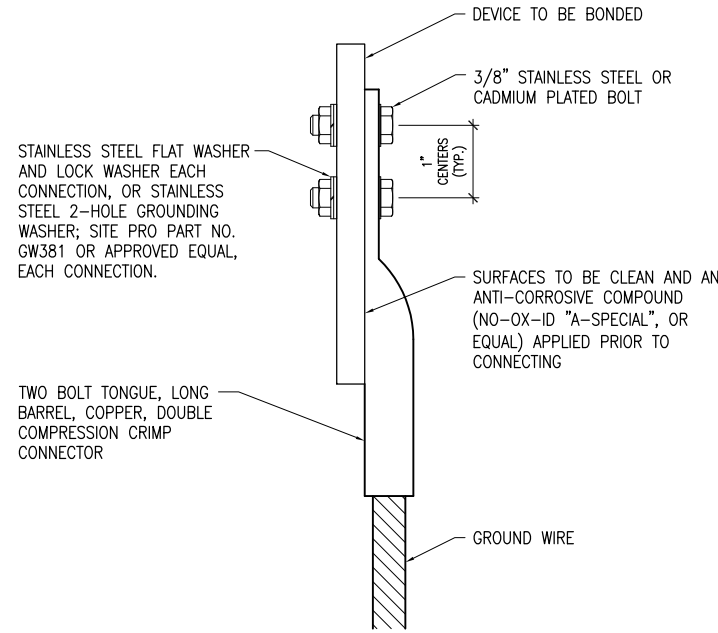


CABLES TO GROUND ROD

DETAIL NOTES

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA. 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

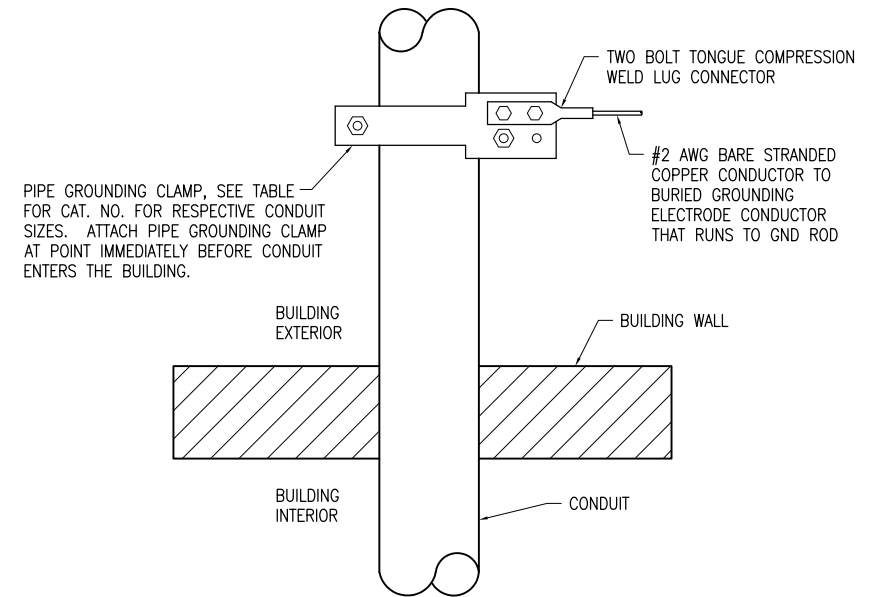


2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	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 EQUIP 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.	CONDUIT SIZE
GAR3902TC	1/2" - 1"
GAR3903TC	1 1/4" - 2"
GAR3904TC	2 1/2" - 3 1/2"
GAR3905TC	4" - 5"
GAR3906TC	6"
GAR3907TC	8"

NOTES

- EXTERIOR CONDUIT GROUNDING IS REQUIRED FOR THE PHOTOCCELL CONDUIT, RADIO ANTENNA CONDUIT, & OTHER CONDUITS EXTENDING TO THE ROOF LEVEL.
- CONNECTIONS TO BURIED GROUNDING ELECTRODE CONDUCTOR SHALL BE EXOTHERMIC WELD.

EXTERIOR CONDUIT GROUNDING DETAIL

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REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	KNL	02/15/13
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Date	03/08/13			

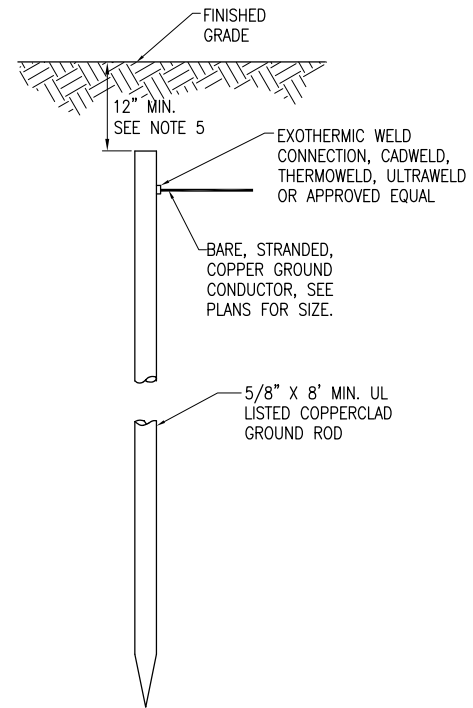
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GRADE DITCH PARALLEL TO MAIN RUNWAY	GROUNDING DETAILS
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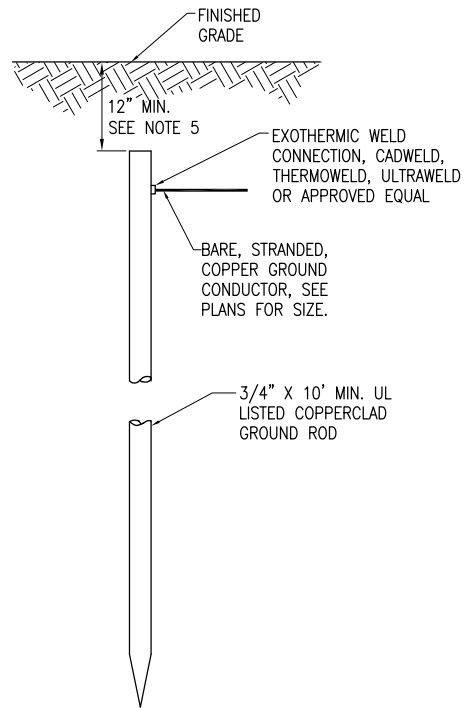
GROUNDING NOTES

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019e (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS 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) OR 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.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR EQUAL.
- 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.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 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.

- 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.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 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 ENCLICLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT 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.
- 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.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. STEEL USED TO MANUFACTURER GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



8 FT. GROUND ROD



10 FT. GROUND ROD

NOTES

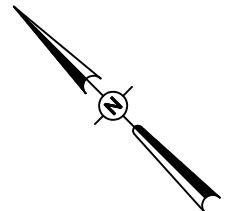
- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, AND SPLICE CANS SHALL BE A MINIMUM 5/8-INCH DIAMETER BY 8-FT LONG UL LISTED COPPER CLAD.
- GROUND RODS FOR FAA REIL CIRCUIT COUNTERPOISE SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.

GROUND RODS

(NOT TO SCALE)

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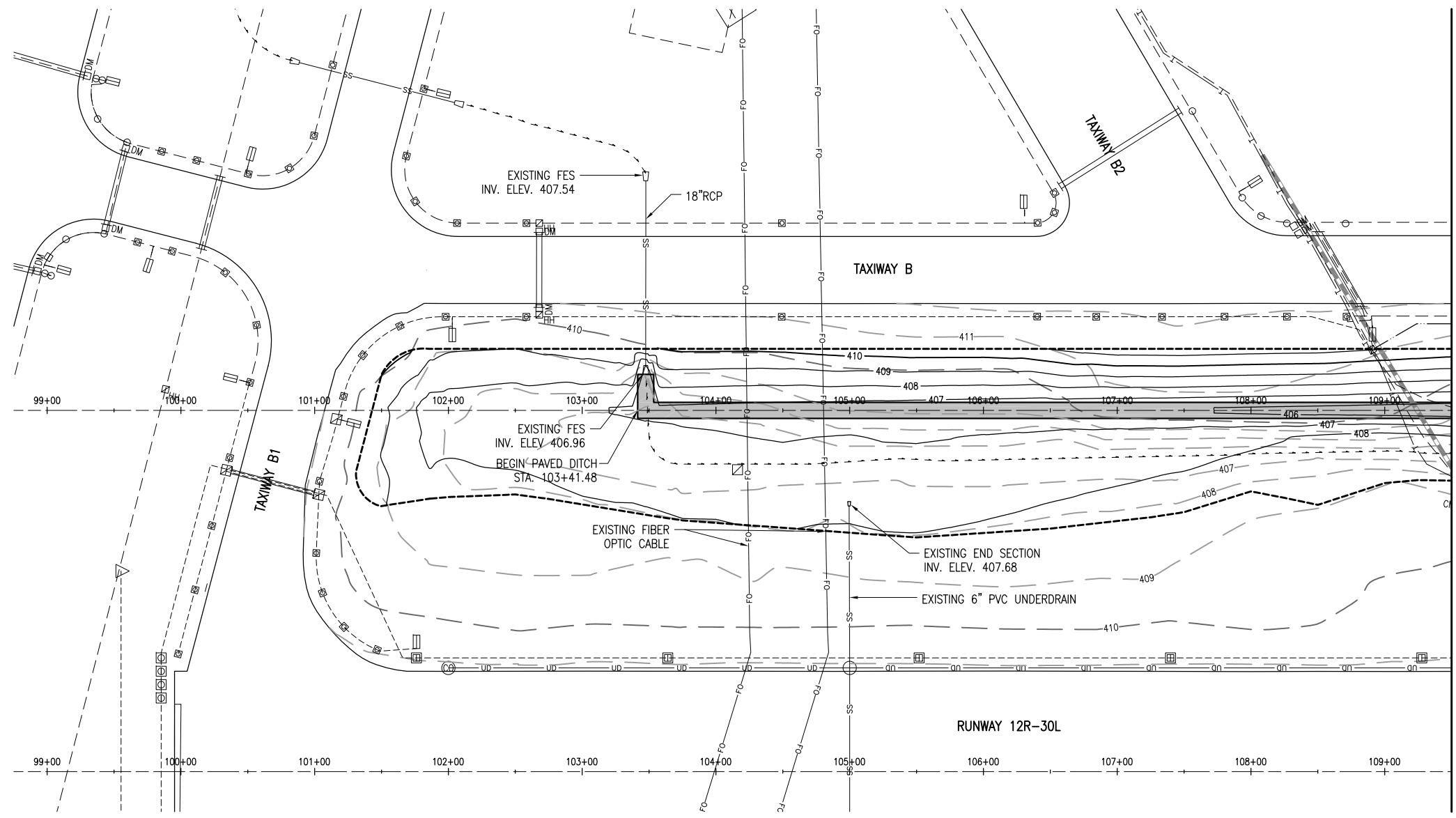
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DATE			IL PROJ.: CFS-4210		
Hanson Project No. 11A0190 File Name E-004-NOTE.dwg Scale NONE Date 03/08/13		LAYOUT KNL 02/15/13 DRAWN MLH 2/17/13 REVIEWED BSS 03/08/13	 © Copyright Hanson Professional Services Inc. 2013 Hanson Professional Services Inc. 1525 South Main Street Springfield, Illinois 62703-2886		
GRADE DITCH PARALLEL TO MAIN RUNWAY		GROUNDING NOTES			
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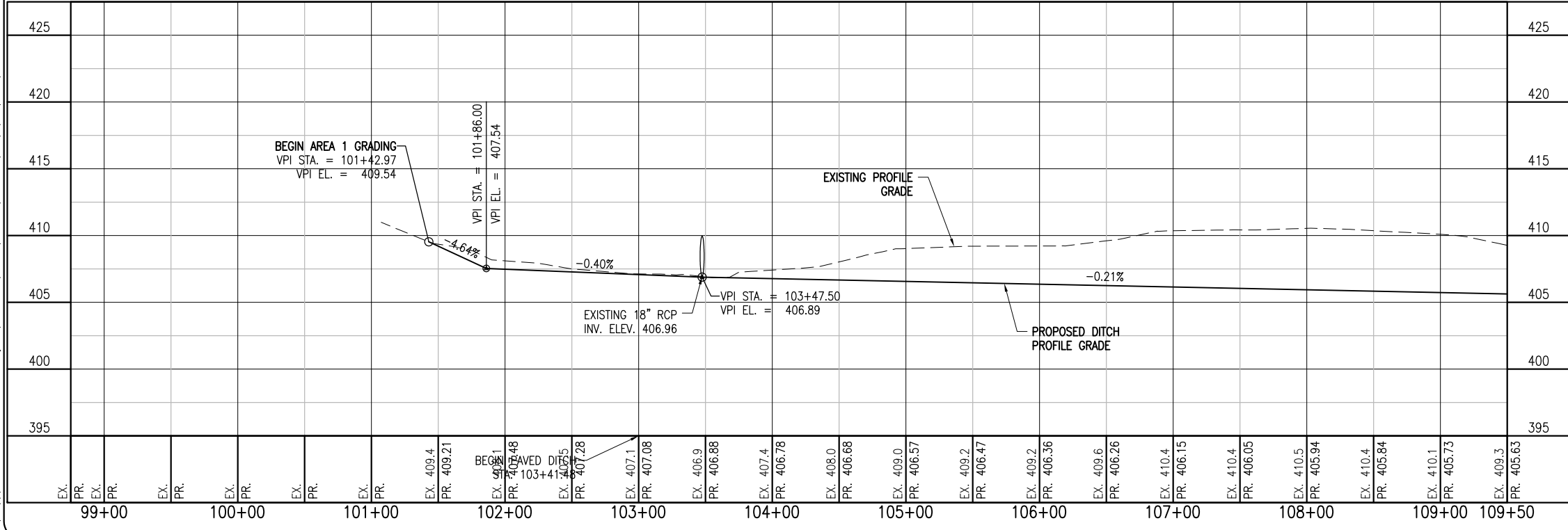
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 FULL SIZE SCALE: 1" = 50'

LEGEND

- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE
- PROPOSED CONCRETE DITCH



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REVISION	DATE

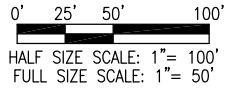
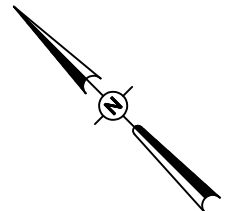
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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

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Scale	1"=50'H, 1"=5'V
Date	03/08/13

LAYOUT	DAW	01/28/13
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REVIEWED	BSS	03/08/13

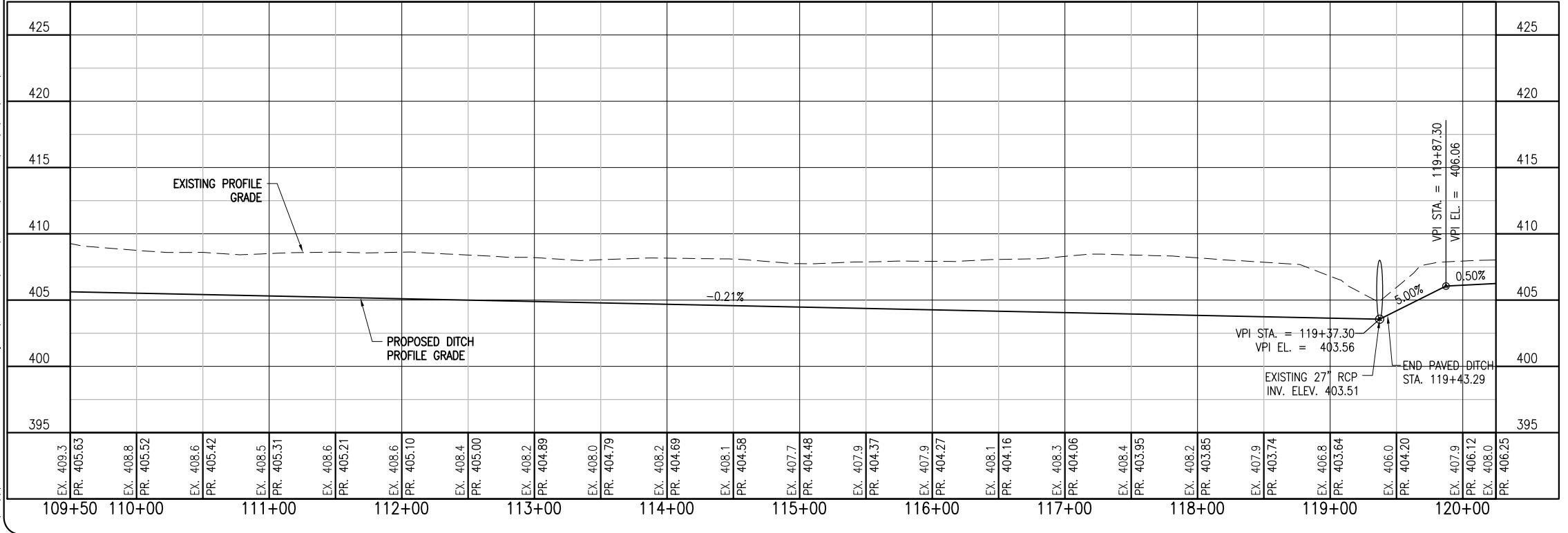
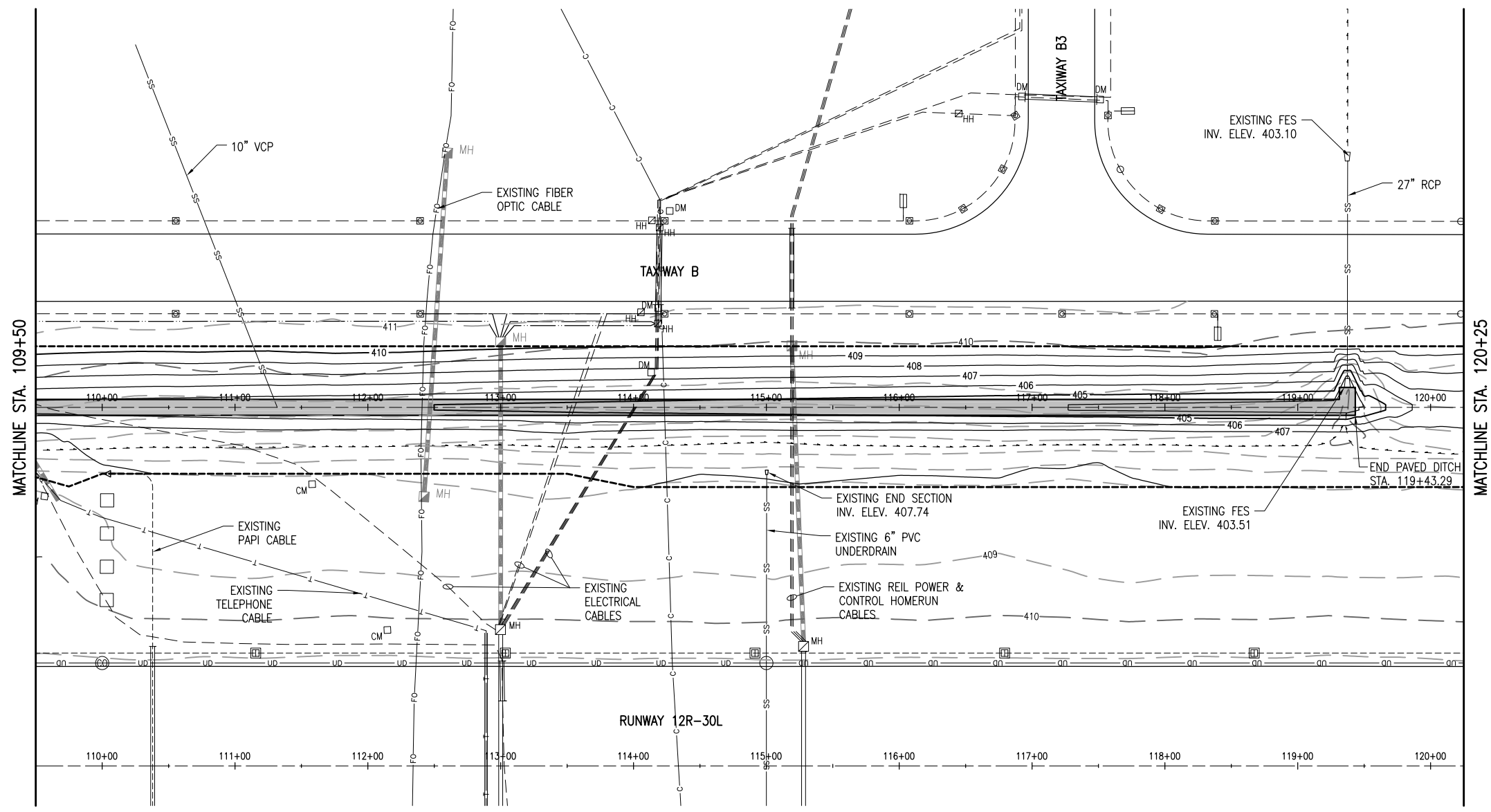
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 98+75.00 TO STA. 109+50.00



LEGEND

- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE
- PROPOSED CONCRETE DITCH



REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

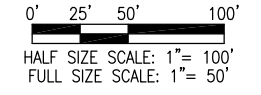
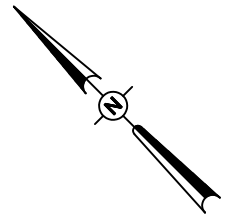
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Date	03/08/13

LAYOUT	DATE
DRAWN	01/28/13
REVIEWED	01/29/13
BSS	03/08/13

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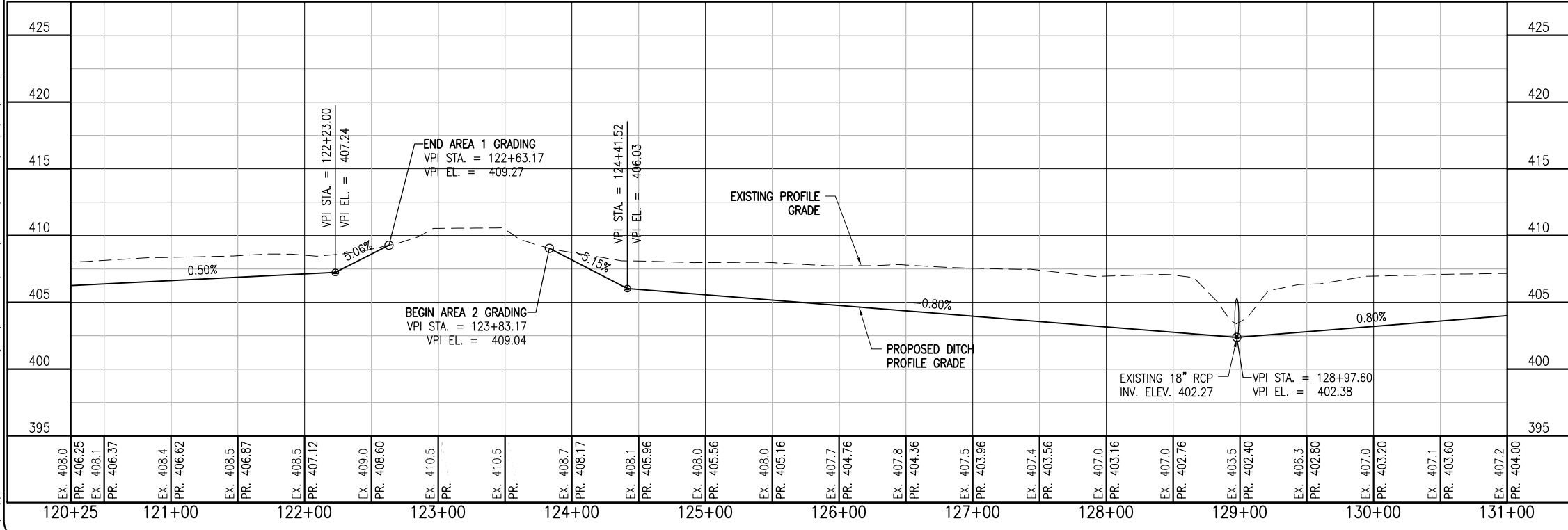
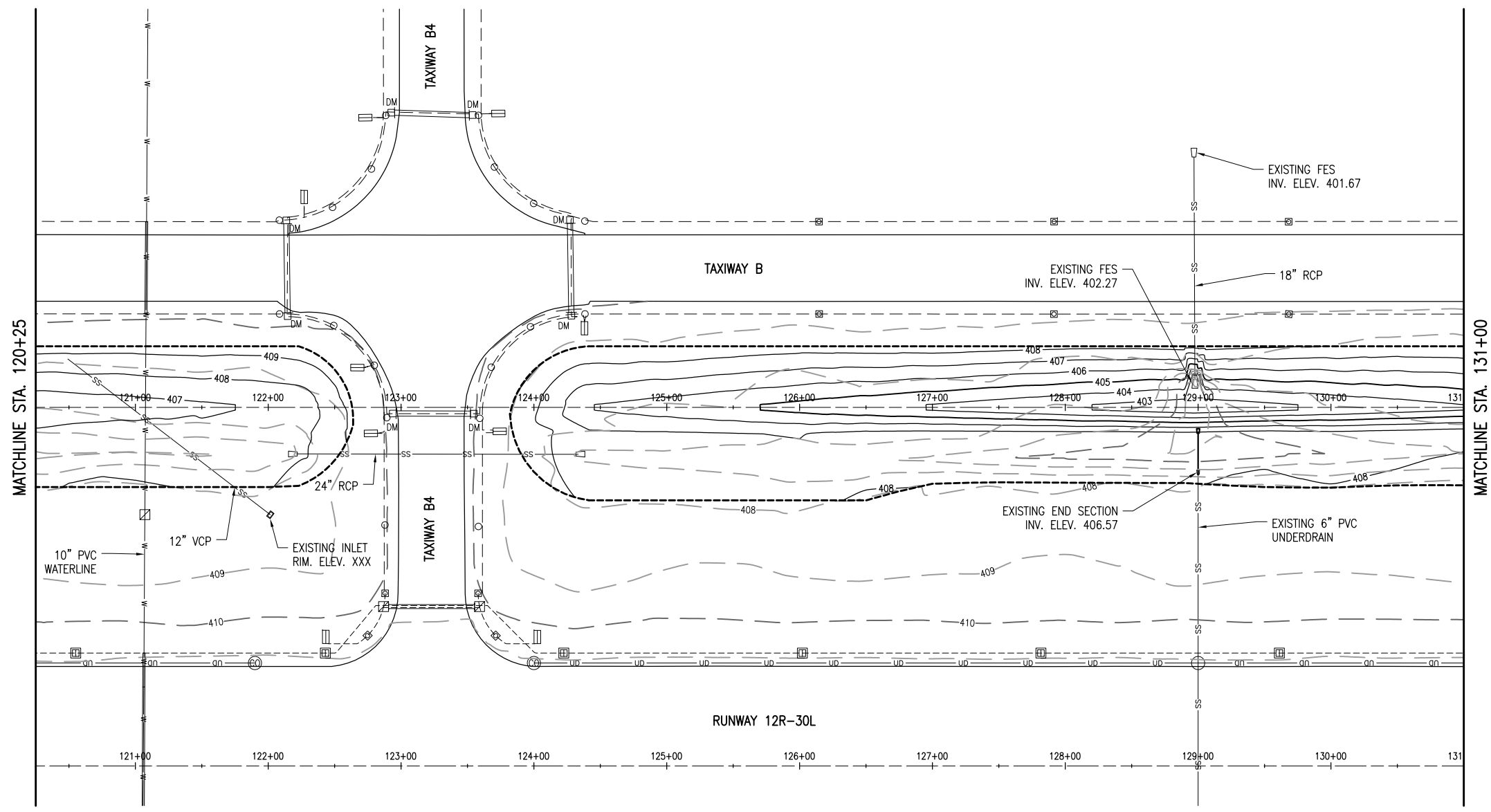
GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 109+50.00 TO STA. 120+25.00

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LEGEND

- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE



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REVISION	DATE

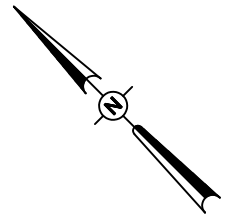
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Date	03/08/13

LAYOUT	DATE
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REVIEWED	03/08/13

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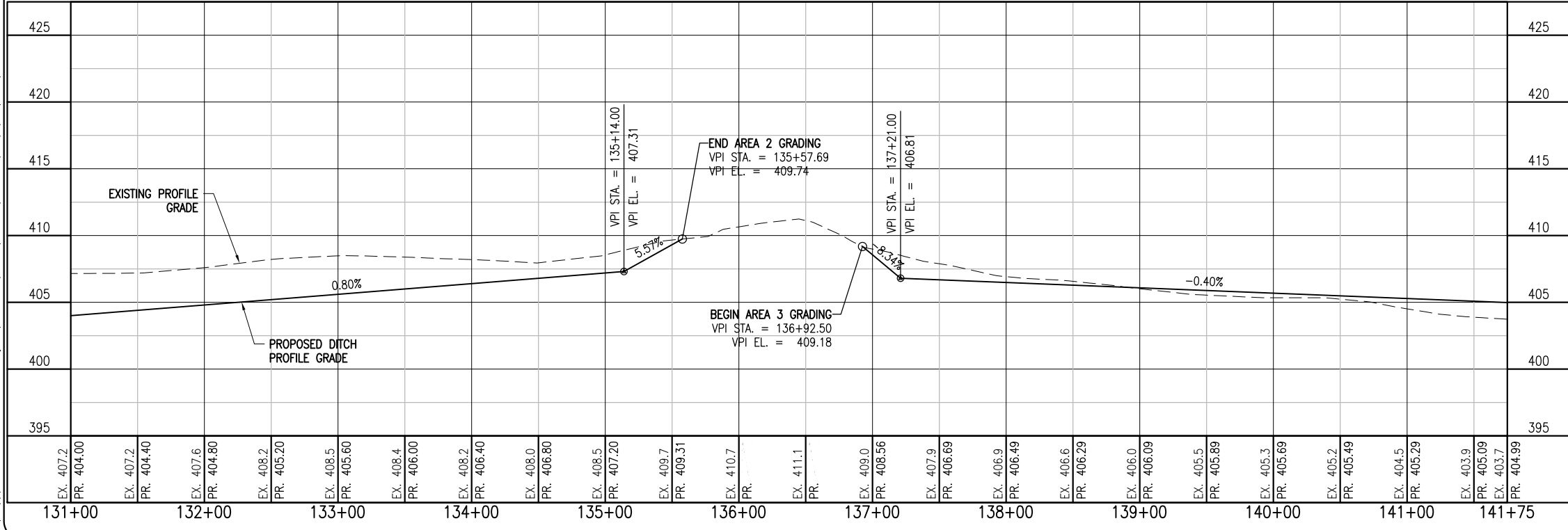
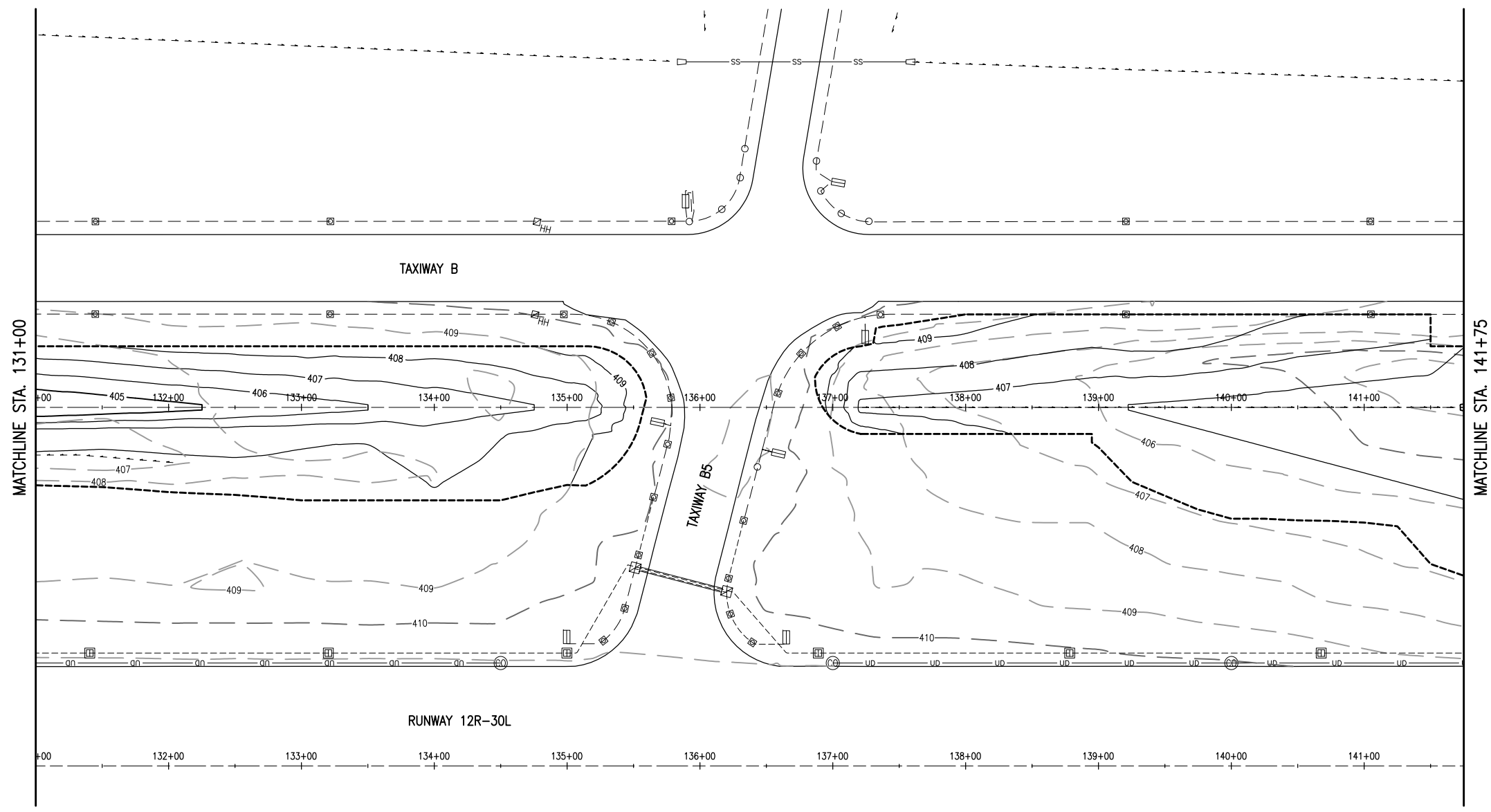
GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 120+25.00 TO STA. 131+00.00



0' 25' 50' 100'
 HALF SIZE SCALE: 1" = 100'
 FULL SIZE SCALE: 1" = 50'

LEGEND

- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE



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REVISION	DATE

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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

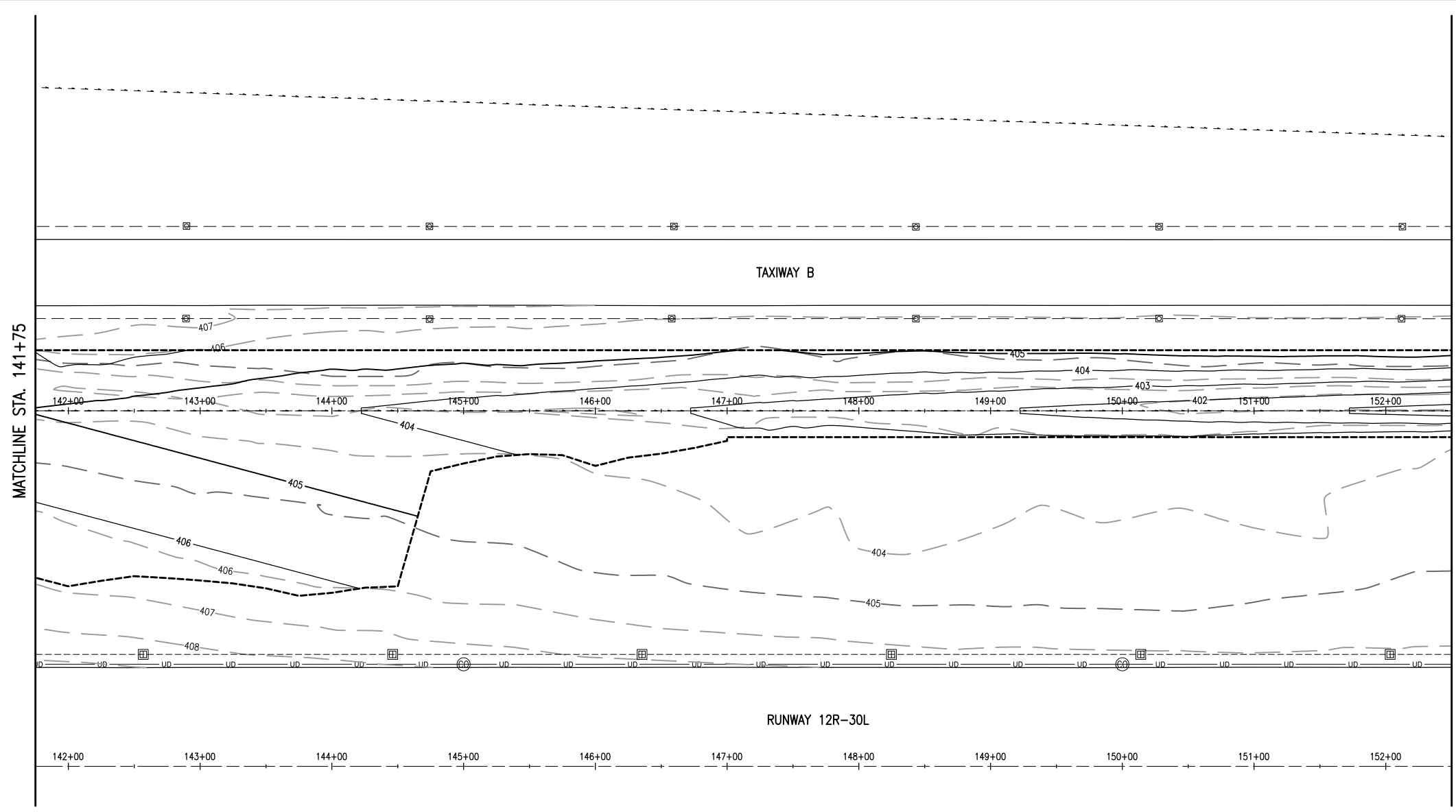
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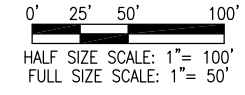
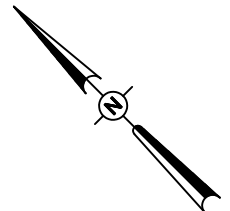
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 131+00.00 TO STA. 141+75.00

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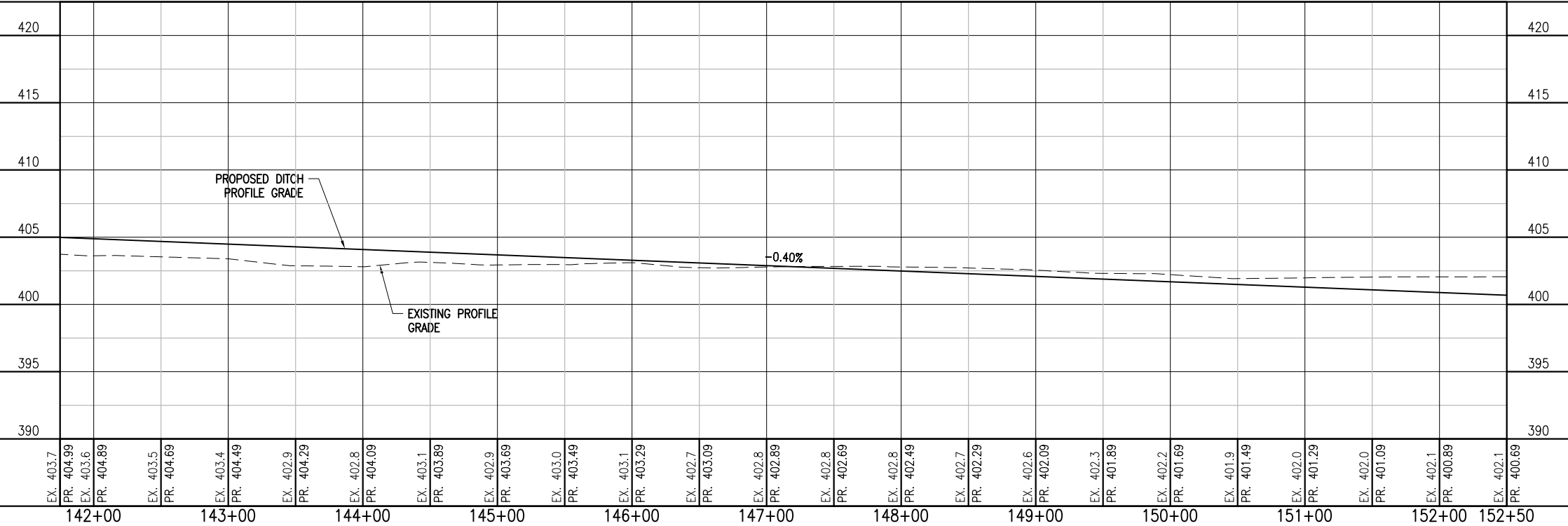


SD057



LEGEND

- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE



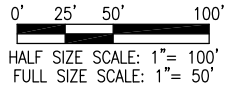
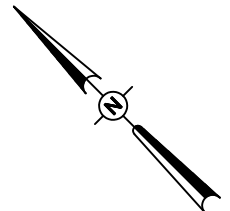
REVISION
DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	DATE	01/28/13
Filename	C-701-PNP.dwg	DRAWN	DATE	01/29/13
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Date	03/08/13			

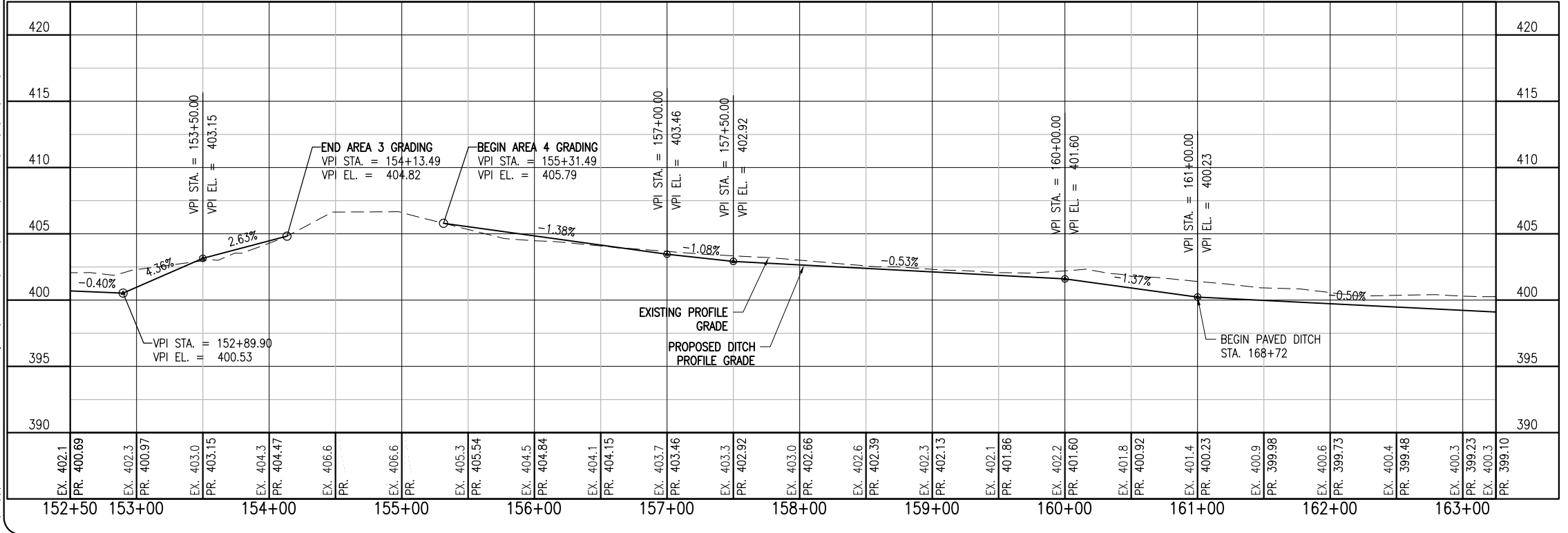
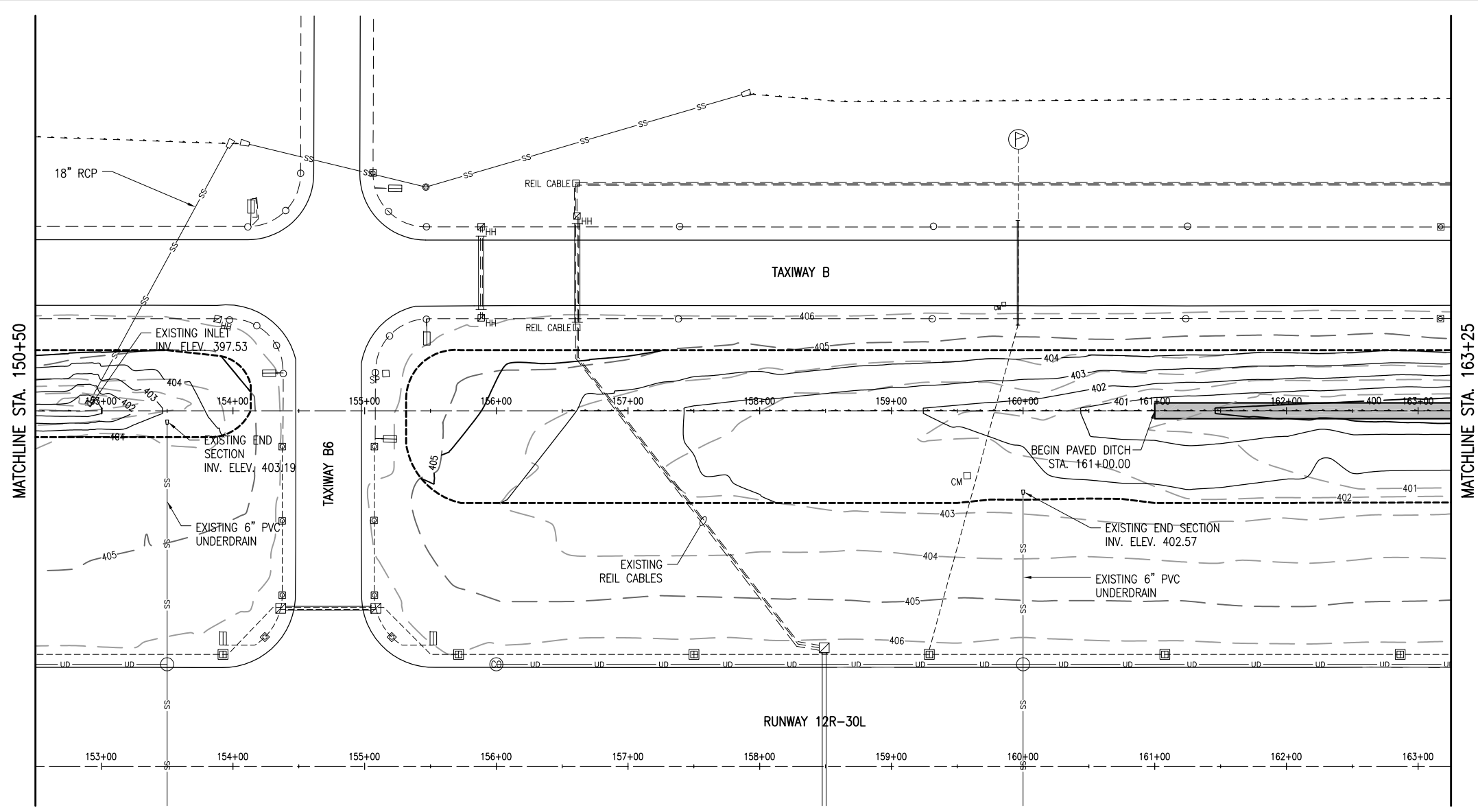
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 141+75.00 TO STA. 152+50.00



LEGEND

- EXISTING BUILDING
- EXISTING PAVEMENT
- EXISTING FENCE
- EXISTING STORM SEWER
- EXISTING SANITARY
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE
- PROPOSED CONCRETE DITCH



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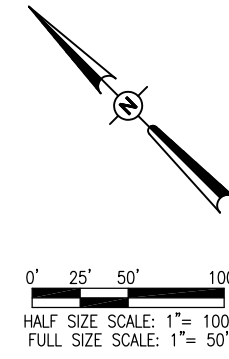
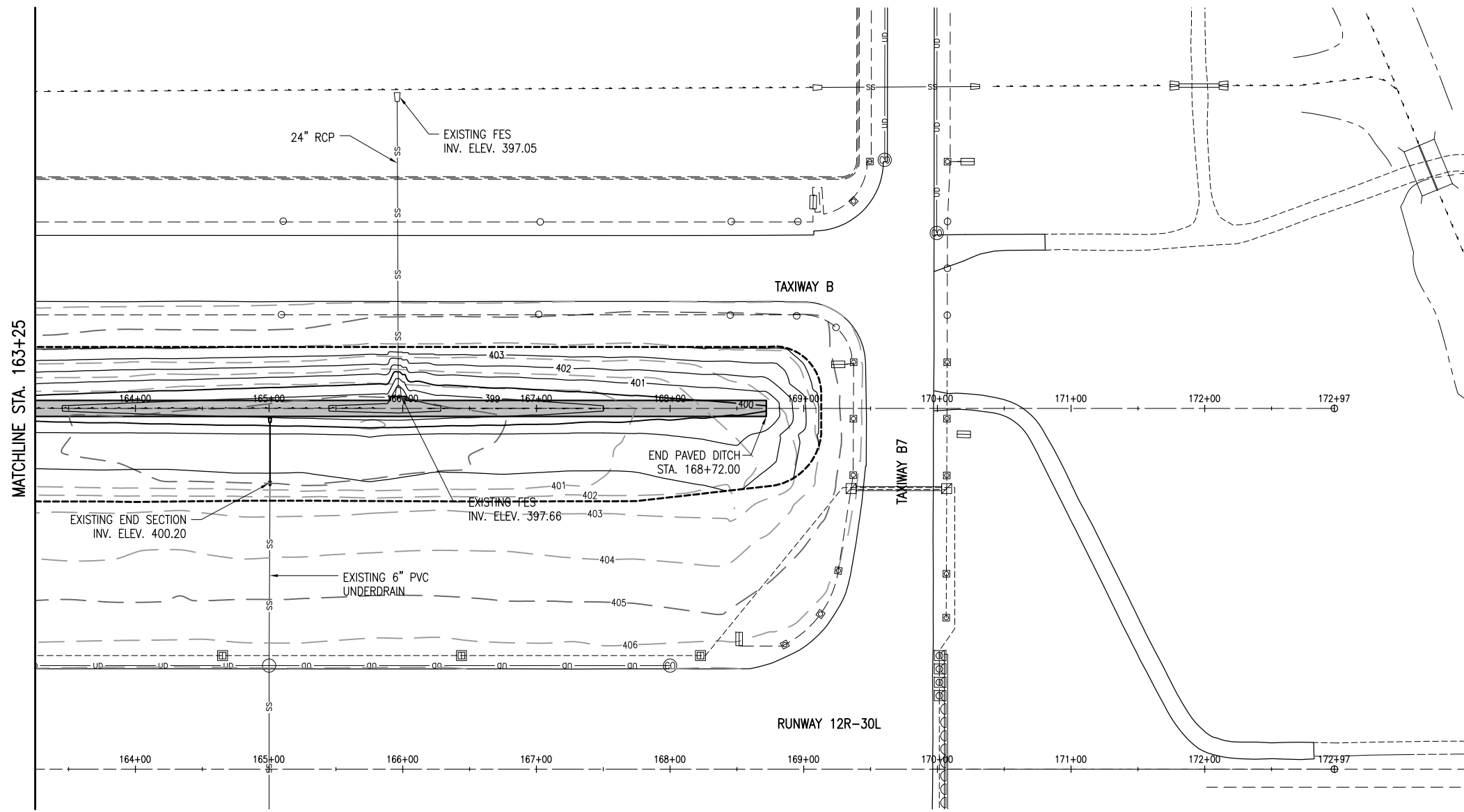
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SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

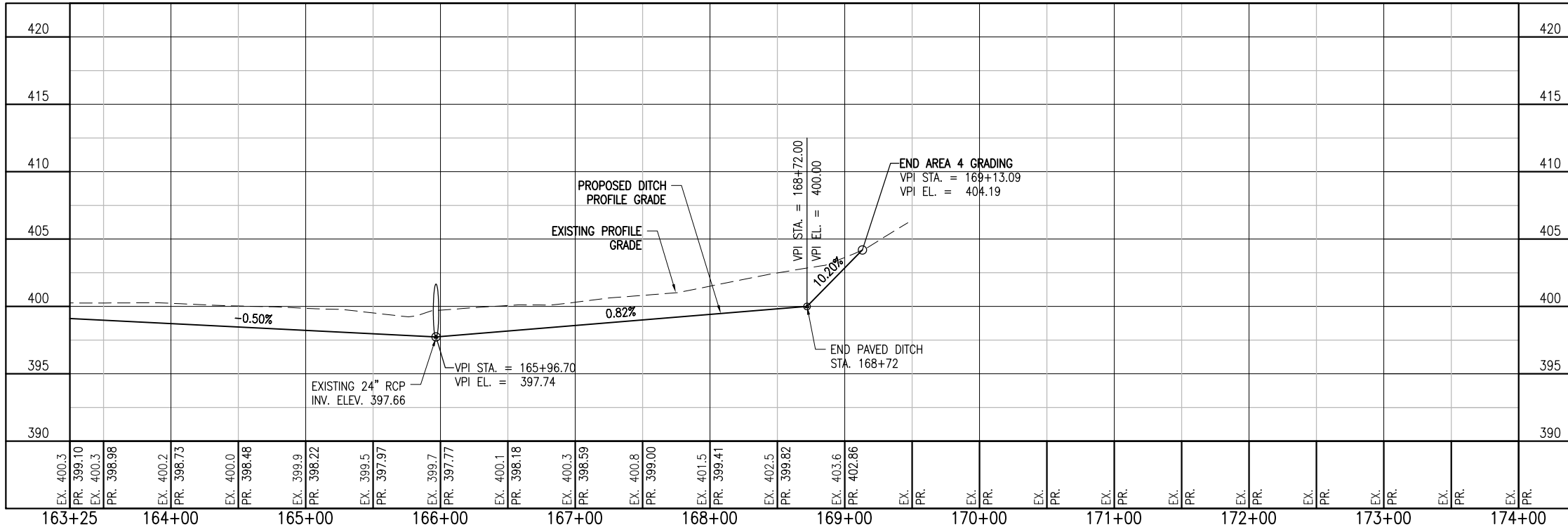
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LAYOUT	DAW 01/28/13
DRAWN	MLH 01/29/13
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 152+50.00 TO STA. 163+25.00



- LEGEND**
- EXISTING BUILDING
 - EXISTING PAVEMENT
 - EXISTING FENCE
 - EXISTING STORM SEWER
 - EXISTING SANITARY
 - EXISTING DITCH
 - EXISTING STORM INLET/MAHOLES
 - PROPOSED CONCRETE DITCH



REVISION	DATE

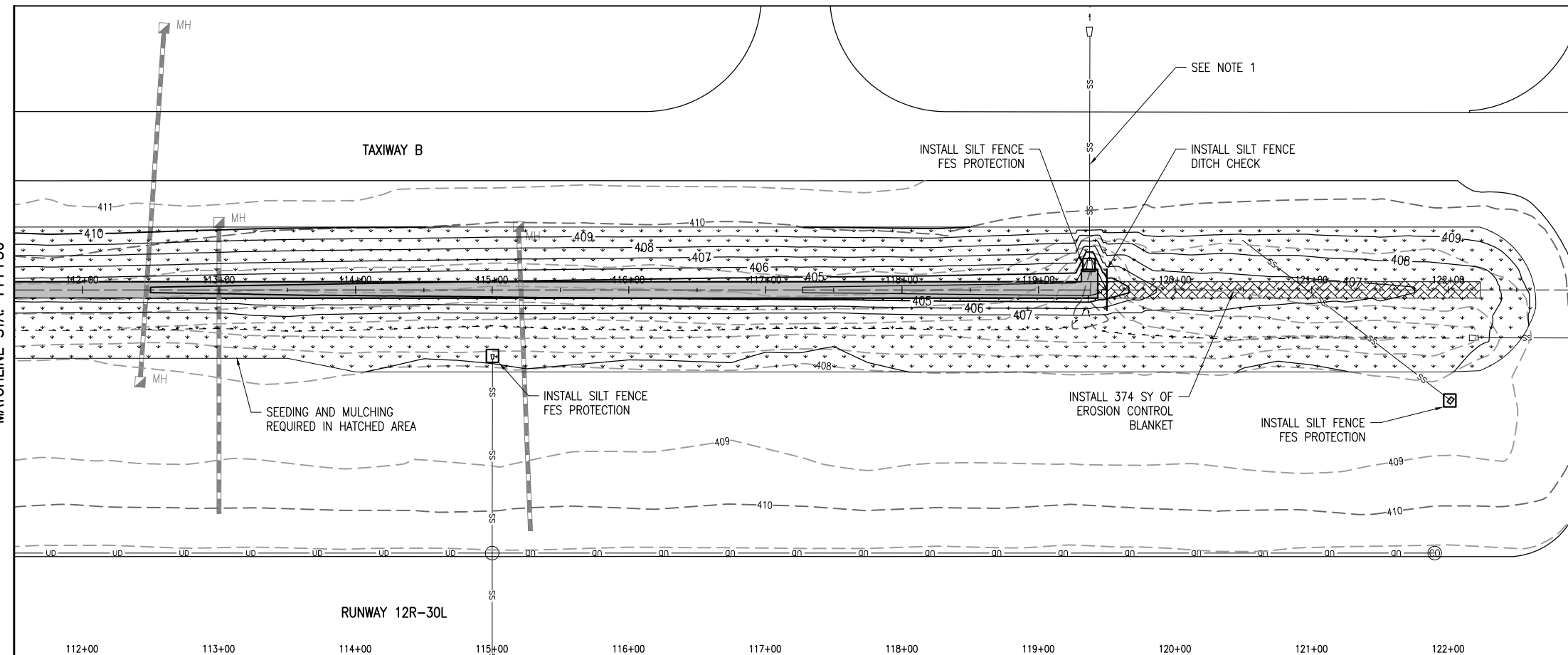
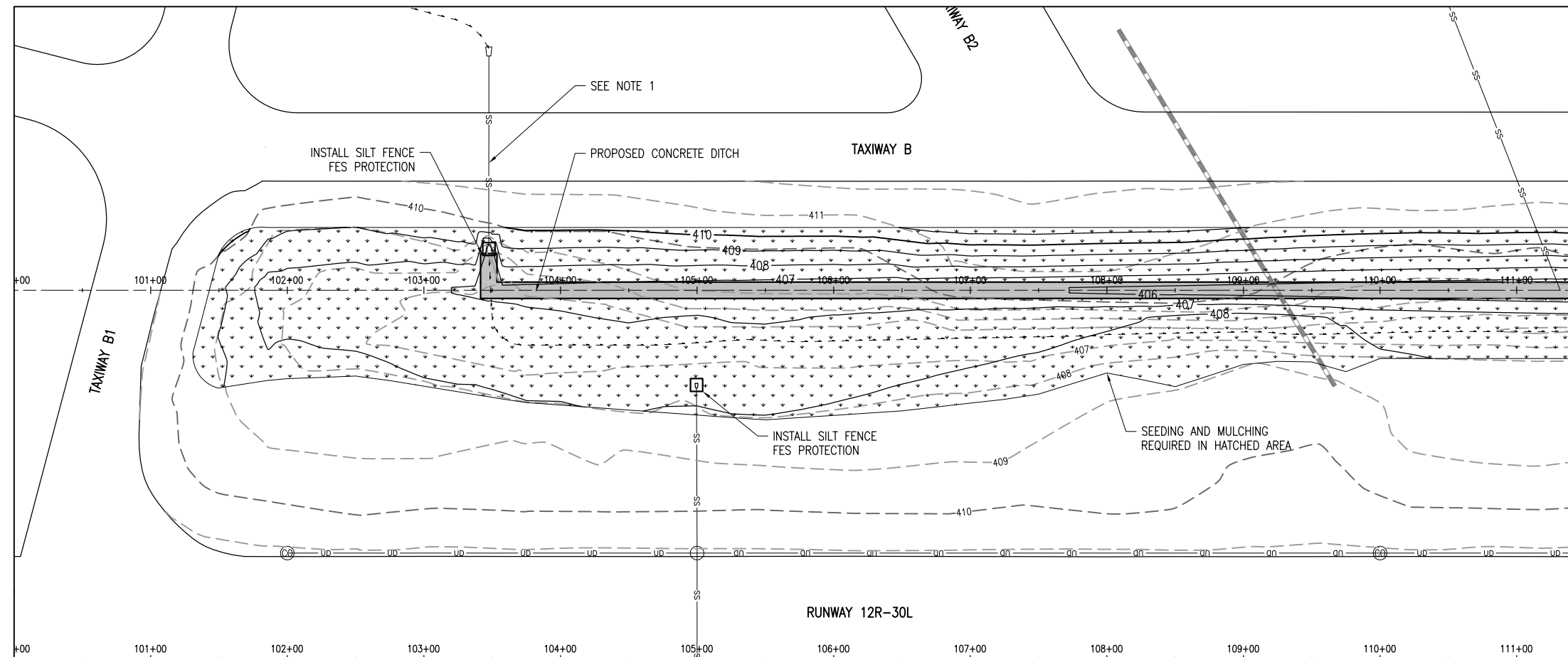
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 A Division of Bi-State Development Agency
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REVIEWED	BSS 03/08/13

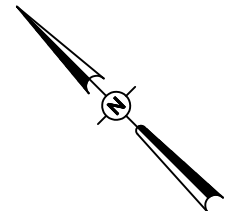
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 PLAN AND PROFILE
 STA. 163+25.00 TO STA. 172+97.00

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SD057



0' 25' 50' 100'
 HALF SIZE SCALE: 1" = 100'
 FULL SIZE SCALE: 1" = 50'

- LEGEND**
- EXISTING PAVEMENT
 - ss — EXISTING STORM SEWER
 - - - EXISTING DITCH
 - /○ EXISTING STORM INLET/MAHOLE
 - ▬ PROPOSED PAVED DITCH
 - ▨ PROPOSED SEEDING/MULCHING
 - ▩ PROPOSED EROSION CONTROL BLANKET
 - SF — PROPOSED SILT FENCE

- NOTES**
- CONTRACTOR SHALL CLEAN OUT EXISTING PIPE UNDER TAXIWAY AT COMPLETION OF DITCH CONSTRUCTION PRIOR TO ESTABLISHING NATURAL WATER FLOW THROUGH NEW DITCH (INCIDENTAL).

REVISION	DATE

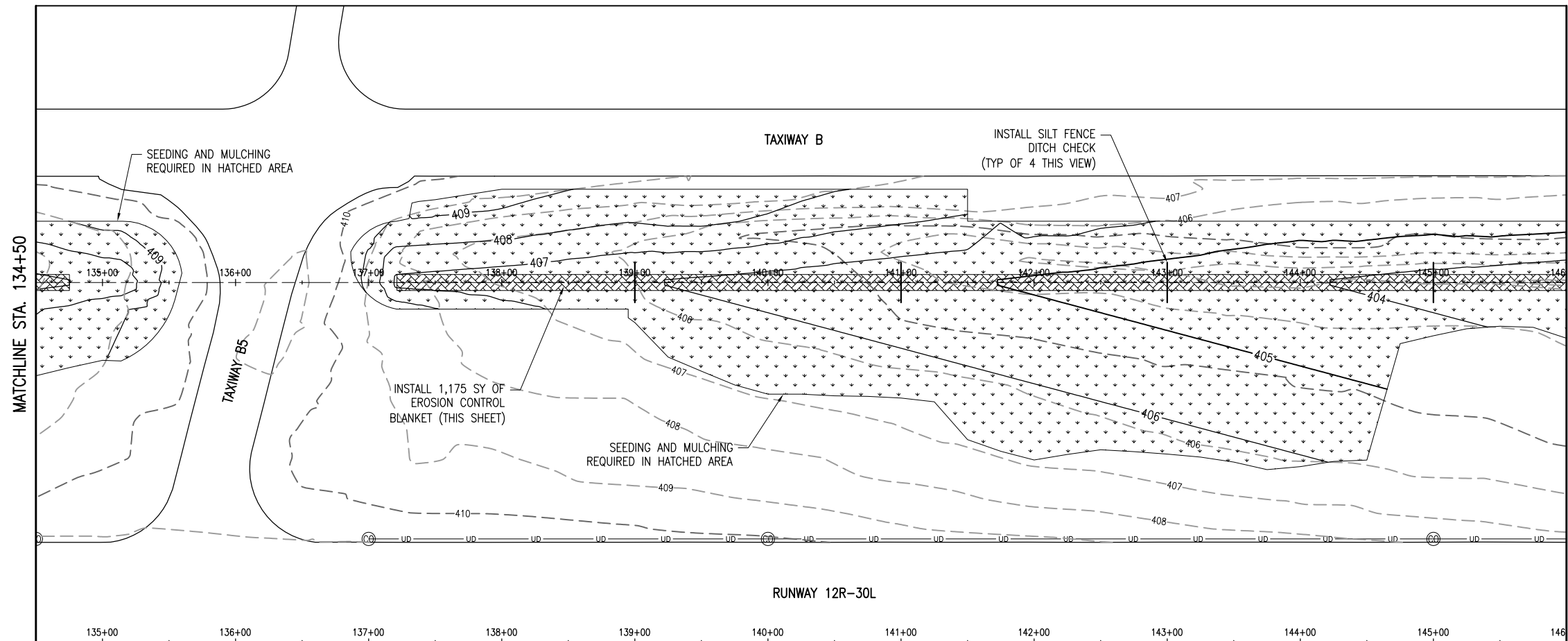
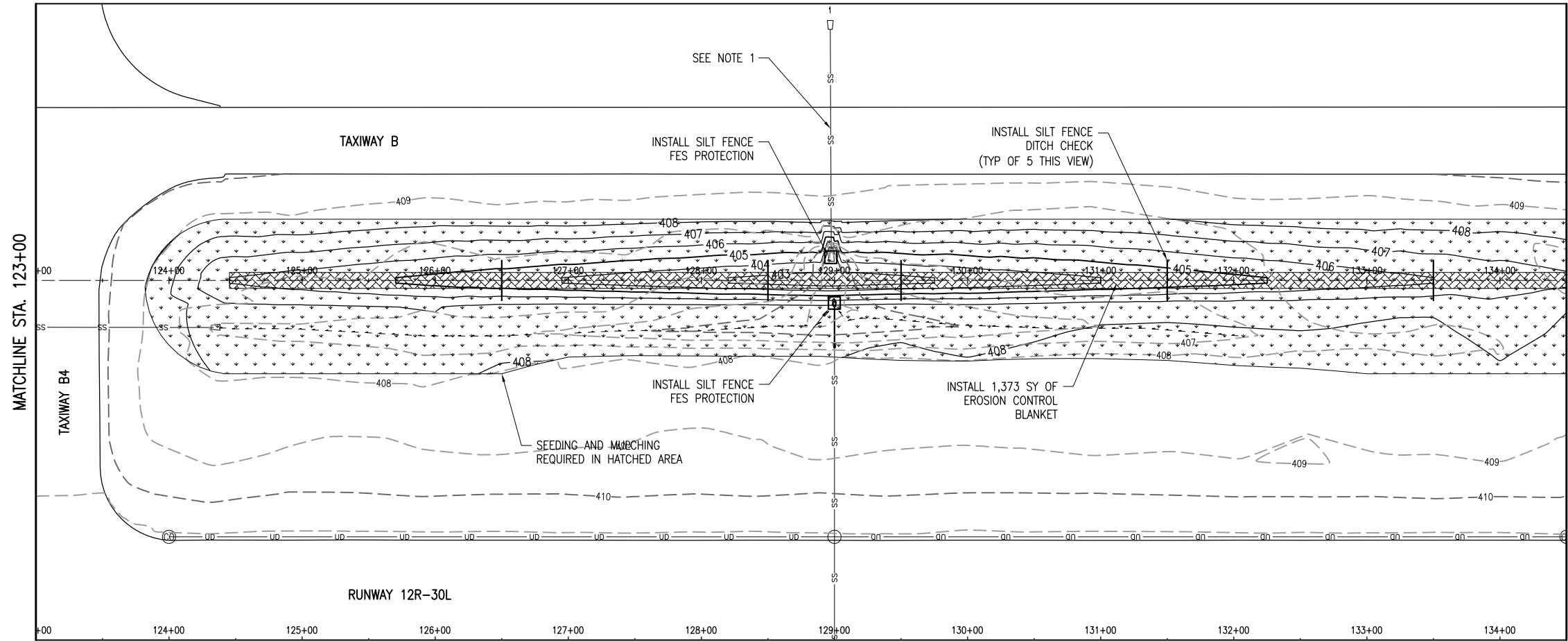
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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 ILL PROJ.: CPS-4210

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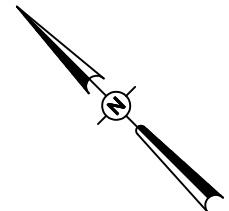
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 SWPPP STA. 100+00 TO STA. 123+00

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SD057



0' 25' 50' 100'
 HALF SIZE SCALE: 1" = 100'
 FULL SIZE SCALE: 1" = 50'

LEGEND

- EXISTING PAVEMENT
- EXISTING STORM SEWER
- EXISTING DITCH
- EXISTING STORM INLET/MAHOLE
- PROPOSED PAVED DITCH
- PROPOSED SEEDING/MULCHING
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED SILT FENCE

NOTES

1. CONTRACTOR SHALL CLEAN OUT EXISTING PIPE UNDER TAXIWAY AT COMPLETION OF DITCH CONSTRUCTION PRIOR TO ESTABLISHING NATURAL WATER FLOW THROUGH NEW DITCH (INCIDENTAL).

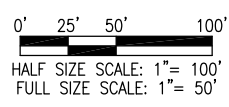
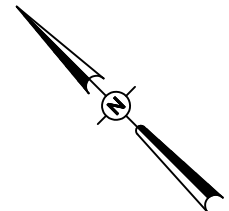
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

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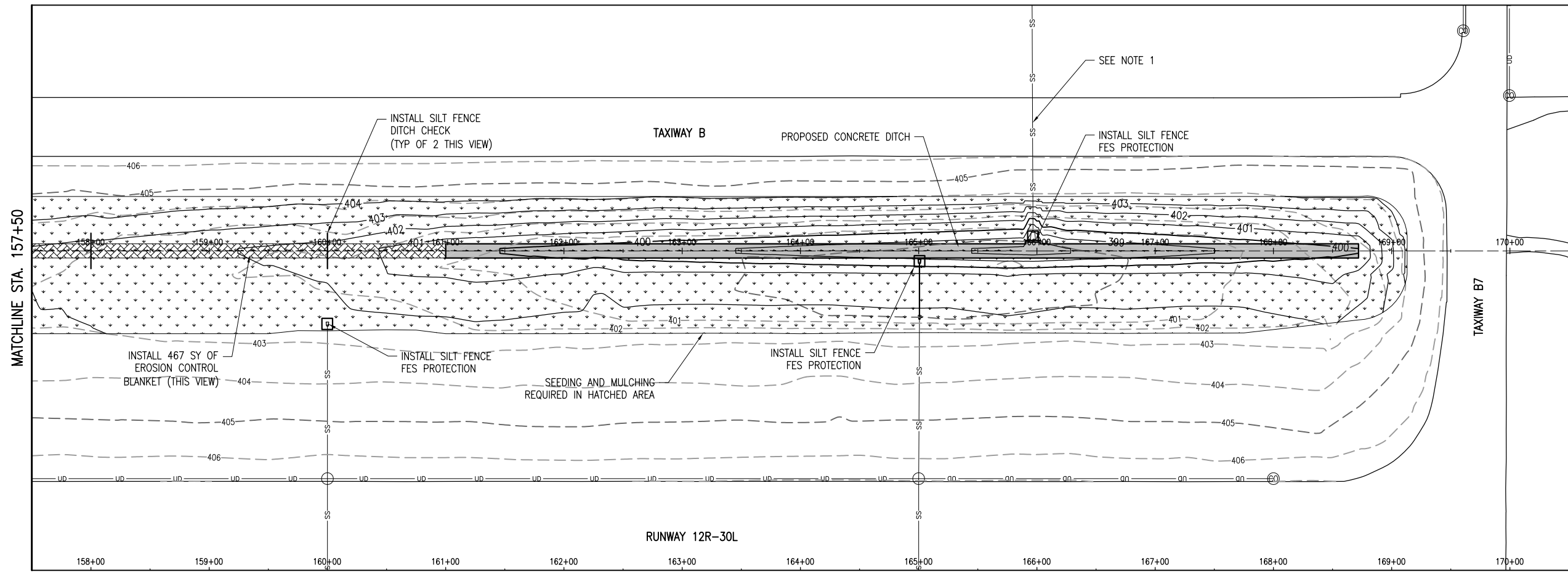
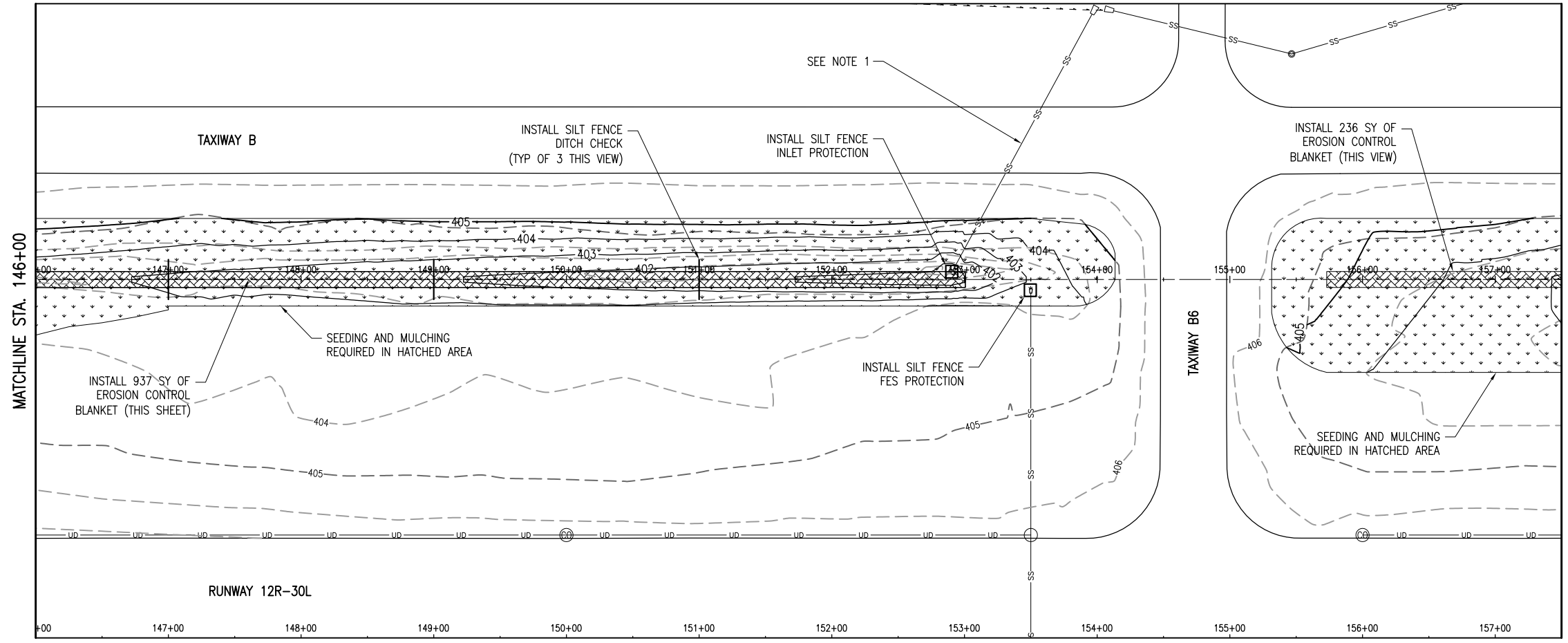
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 SWPPP STA. 123+00 TO STA. 146+00



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING STORM SEWER
 - EXISTING DITCH
 - EXISTING STORM INLET/MAHOLE
 - PROPOSED PAVED DITCH
 - PROPOSED SEEDING/MULCHING
 - PROPOSED EROSION CONTROL BLANKET
 - PROPOSED SILT FENCE

- NOTES**
- CONTRACTOR SHALL CLEAN OUT EXISTING PIPE UNDER TAXIWAY AT COMPLETION OF DITCH CONSTRUCTION PRIOR TO ESTABLISHING NATURAL WATER FLOW THROUGH NEW DITCH (INCIDENTAL).



REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190
Filename	C-181-SWP.dwg
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REVIEWED	BSS 03/08/13

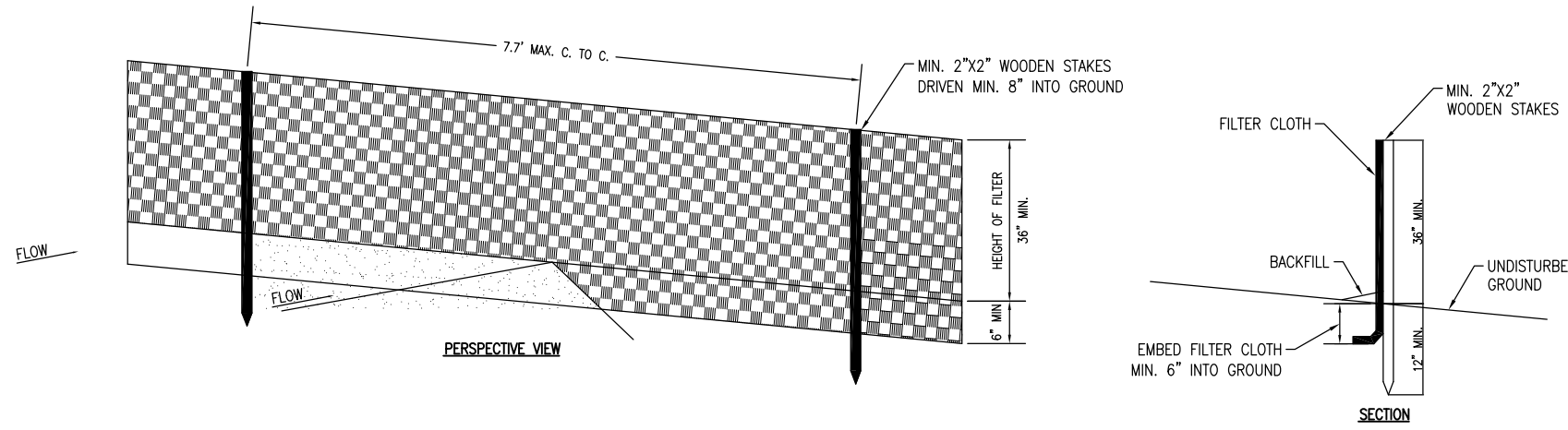
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 SWPPP STA. 146+00 TO STA. 170+50

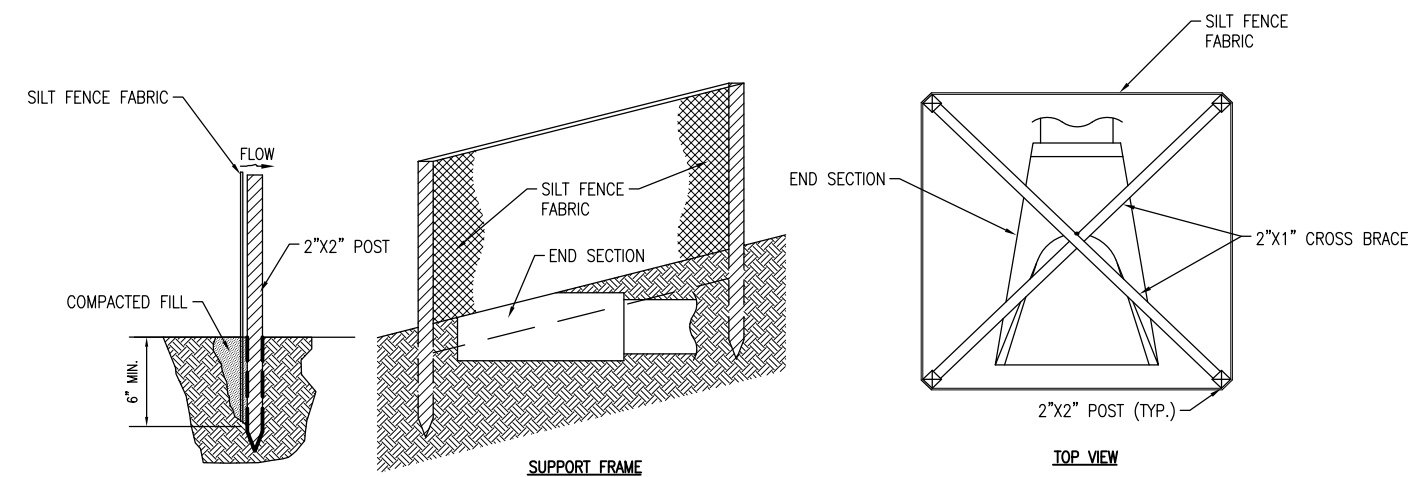
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STORM WATER POLLUTION PREVENTION NOTES

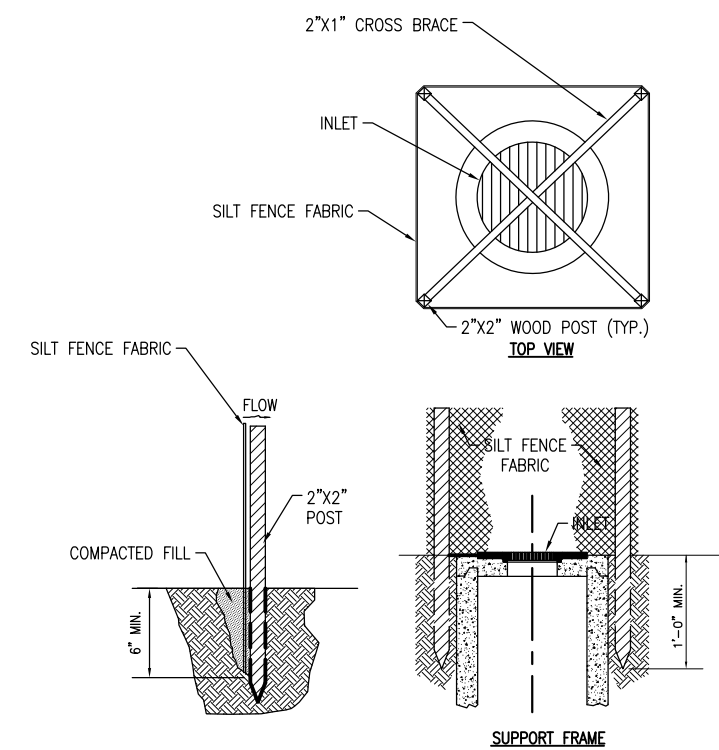
1. THE CONTRACTOR SHALL IMPLEMENT ALL PROVISIONS OF THE CONTRACT DOCUMENTS TO ASSURE THAT STORM WATER POLLUTION PREVENTION ITEMS ARE CONSTRUCTED AND MAINTAINED IN A TIMELY MANNER. SEDIMENTATION MUST NOT BE TRANSPORTED OFF THE CONSTRUCTION SITE. PERMANENT DRAINAGE FEATURES AND VEGETATIVE MEASURES SHALL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



SILT FENCE DETAIL
NO SCALE



FABRIC END SECTION PROTECTION
NOT TO SCALE



FABRIC DROP INLET PROTECTION
NOT TO SCALE

REVISION	DATE

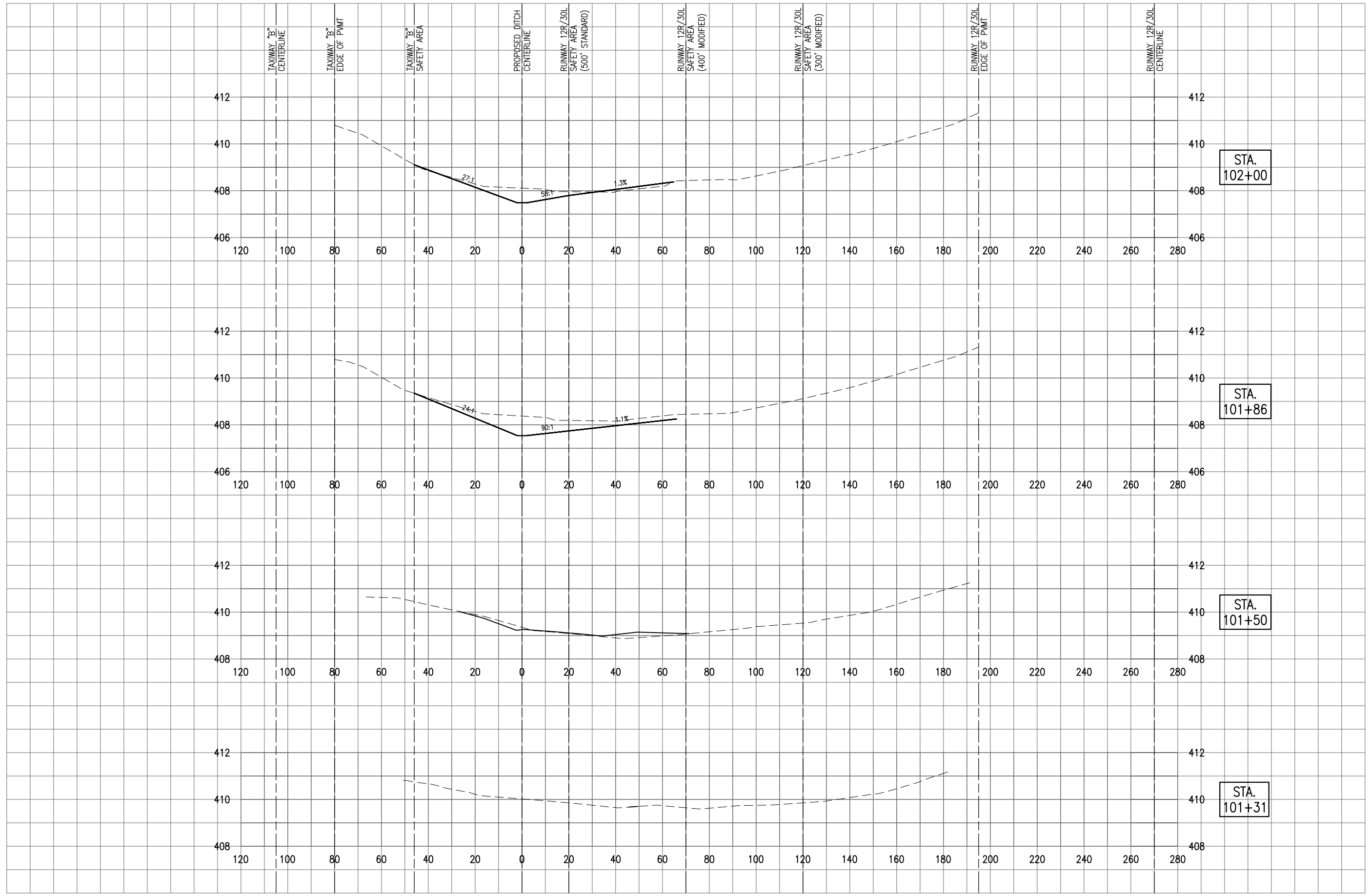
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A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CPS-4210

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Date	03/08/13			

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GRADE DITCH PARALLEL TO MAIN RUNWAY
SWPPP DETAILS

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MAR 11, 2013 1:04 PM HARR01115
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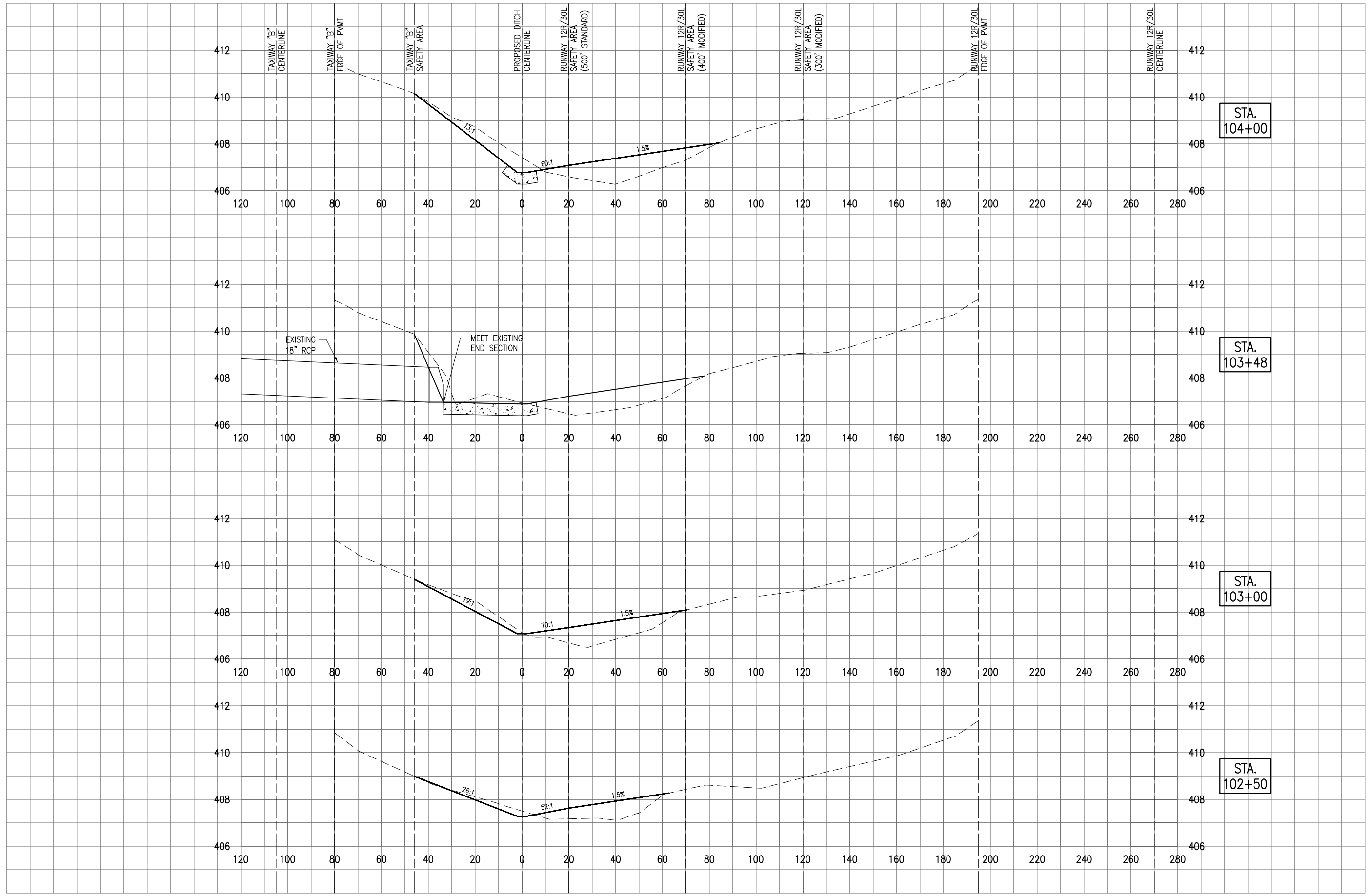
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

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Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 101+31 TO STA. 102+00



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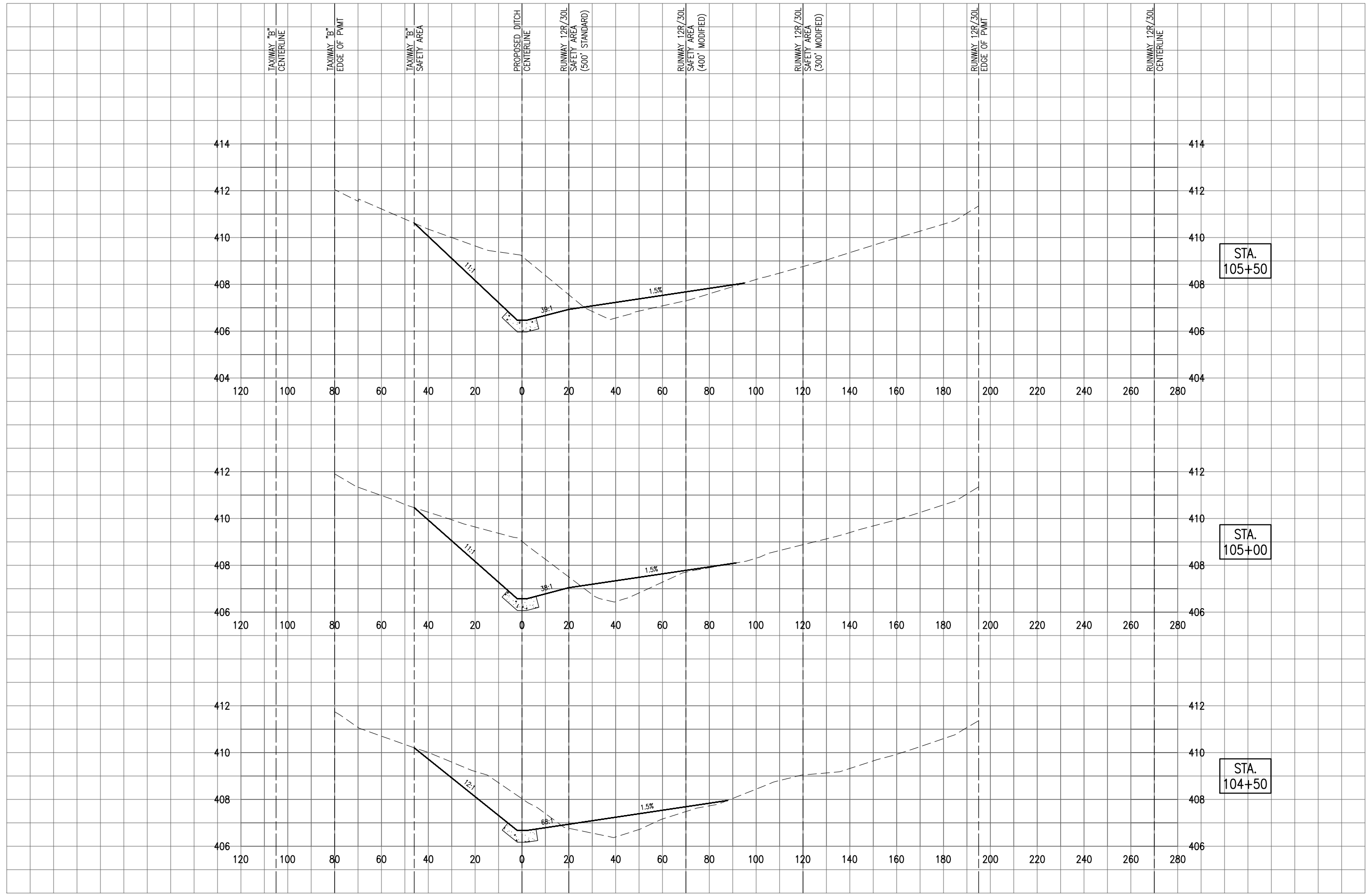
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190
Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
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REVISION	DATE

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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

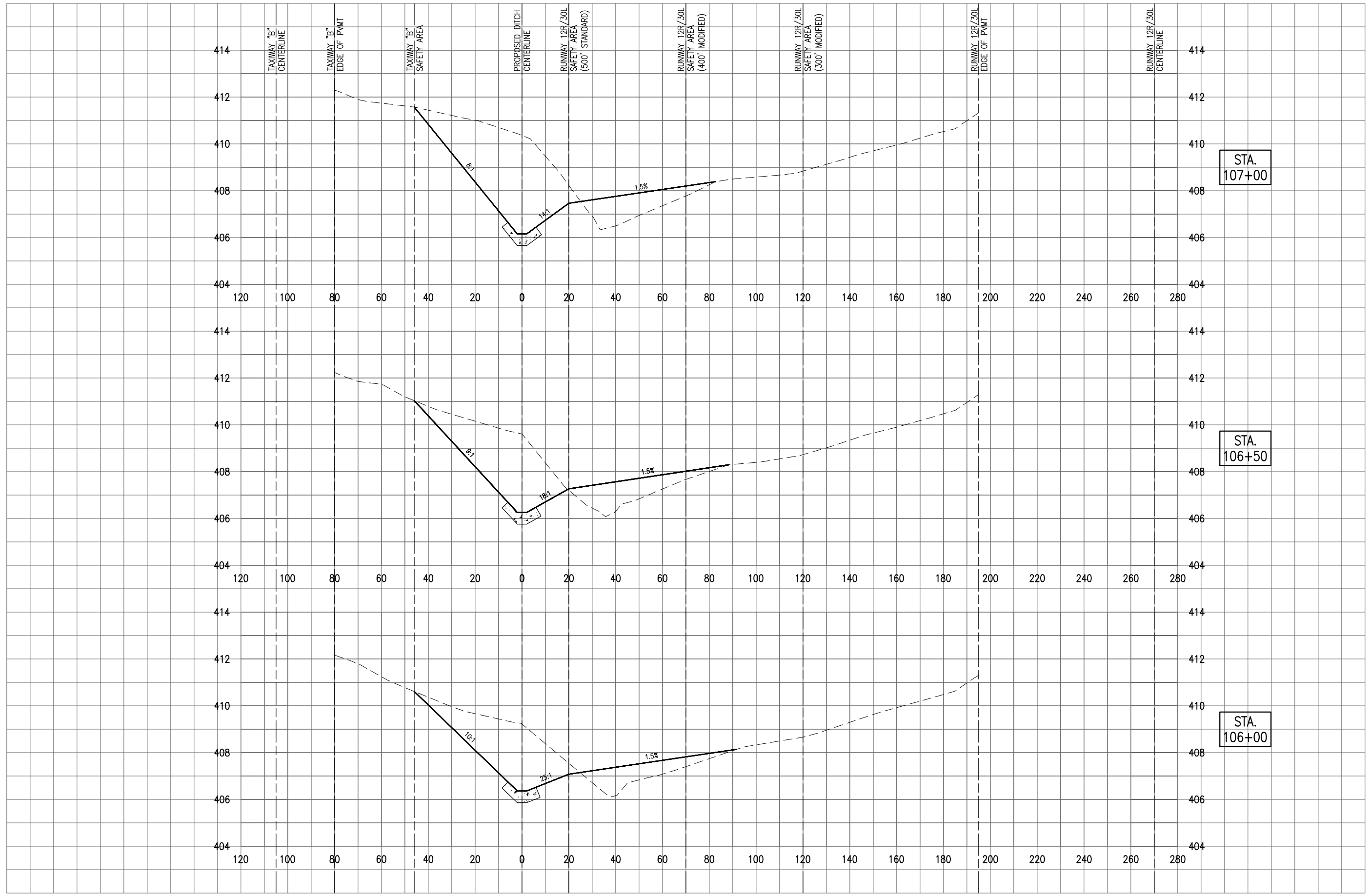
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LAYOUT	DAW	01/23/13
DRAWN	MLH	01/23/12
REVIEWED	BSS	03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
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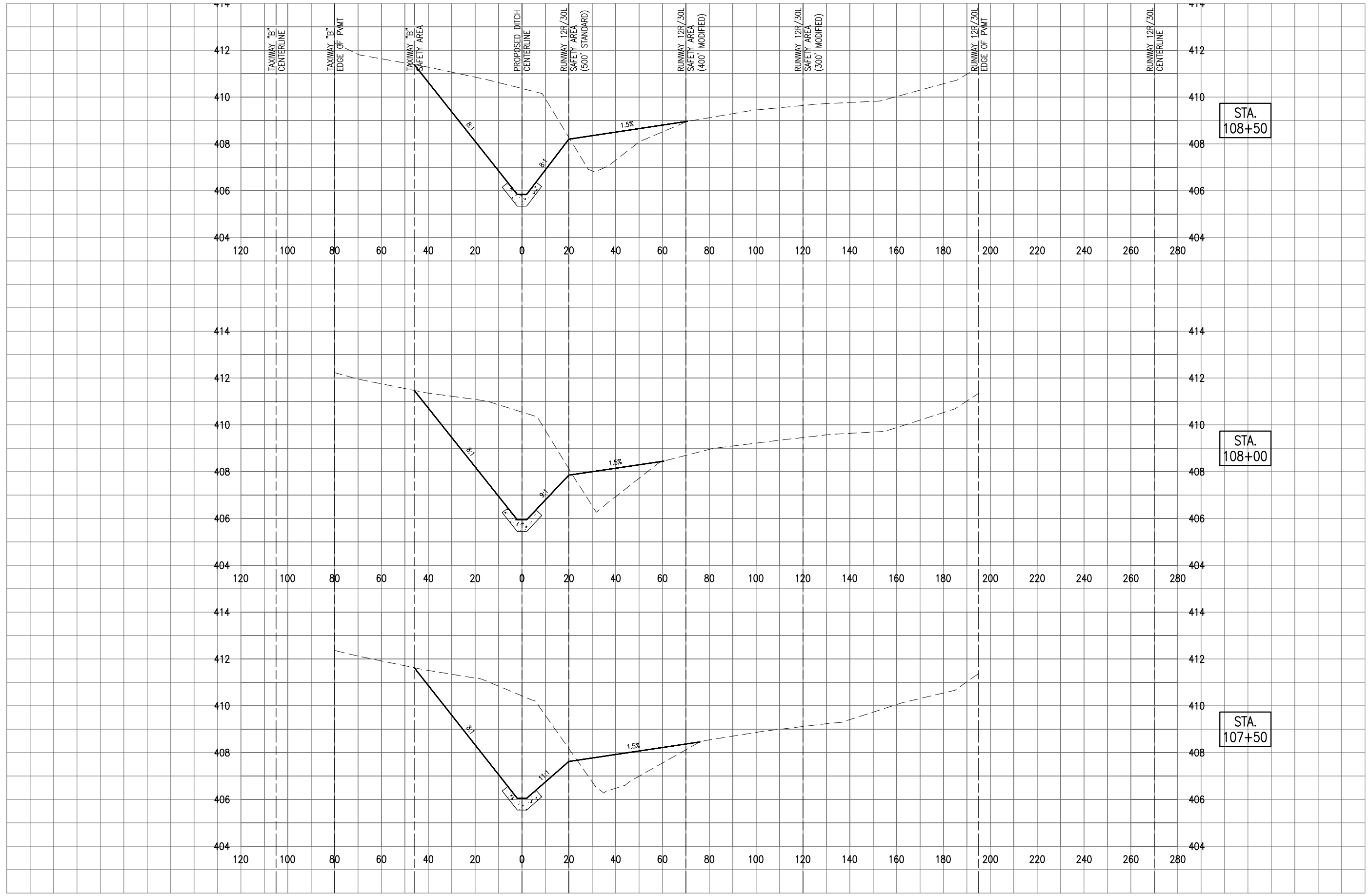
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SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

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Filename	C-302-XS.dwg
Scale	1" = 20'H 1" = 2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
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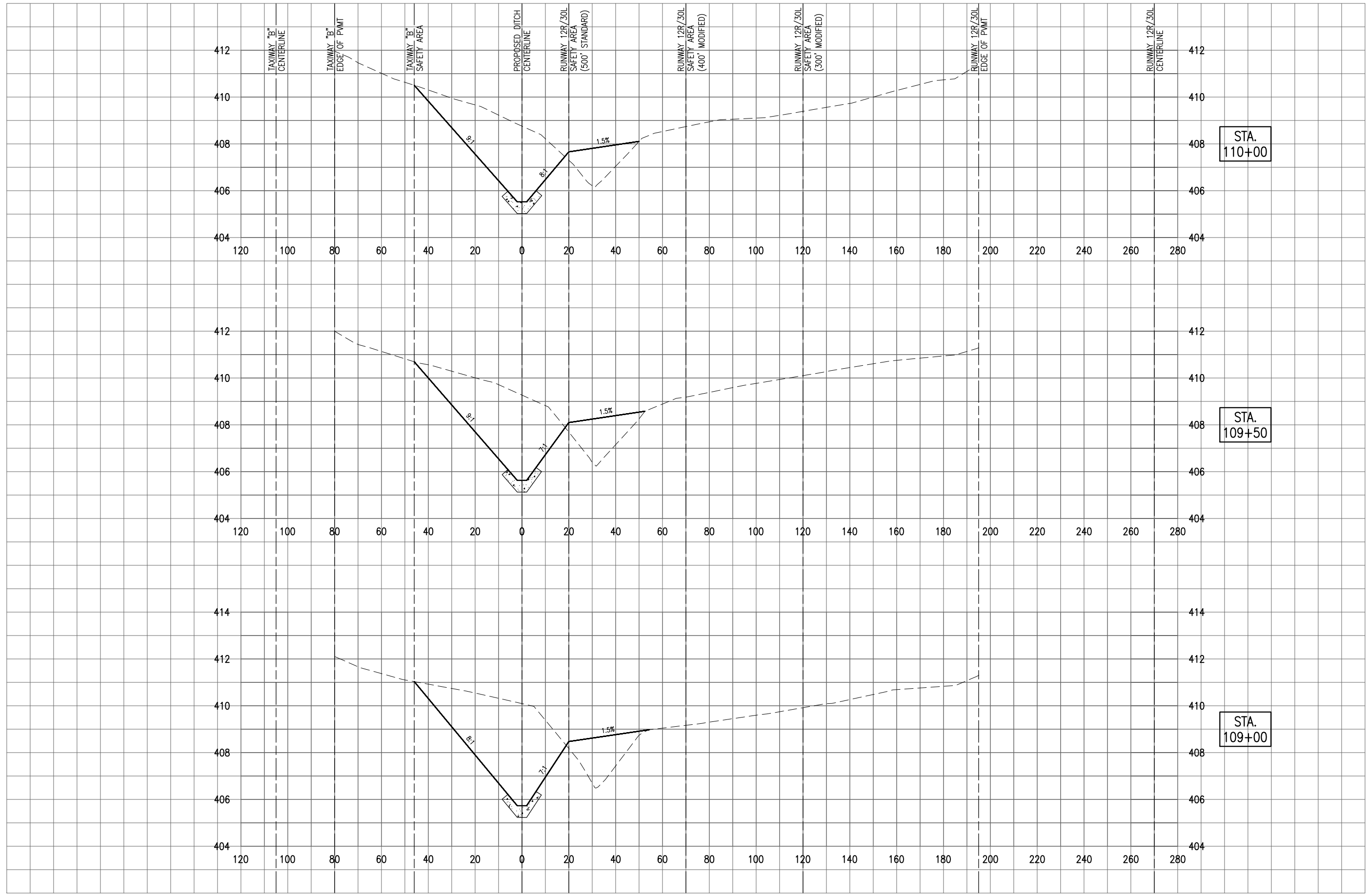
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SAINT LOUIS DOWNTOWN AIRPORT
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 IL PROJ.: CFS-4210

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Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 107+50 TO STA. 108+50



REVISION	DATE

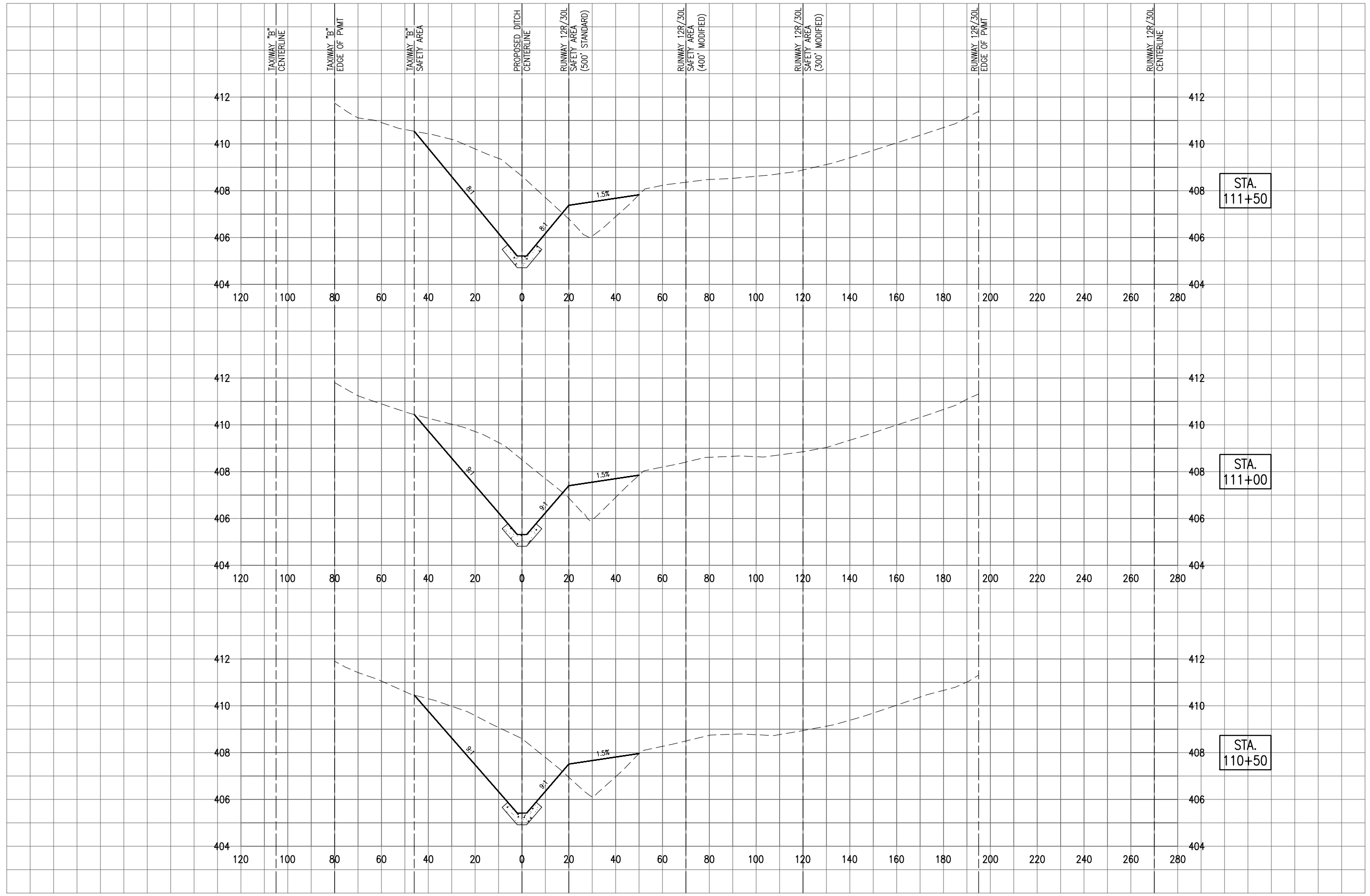
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Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
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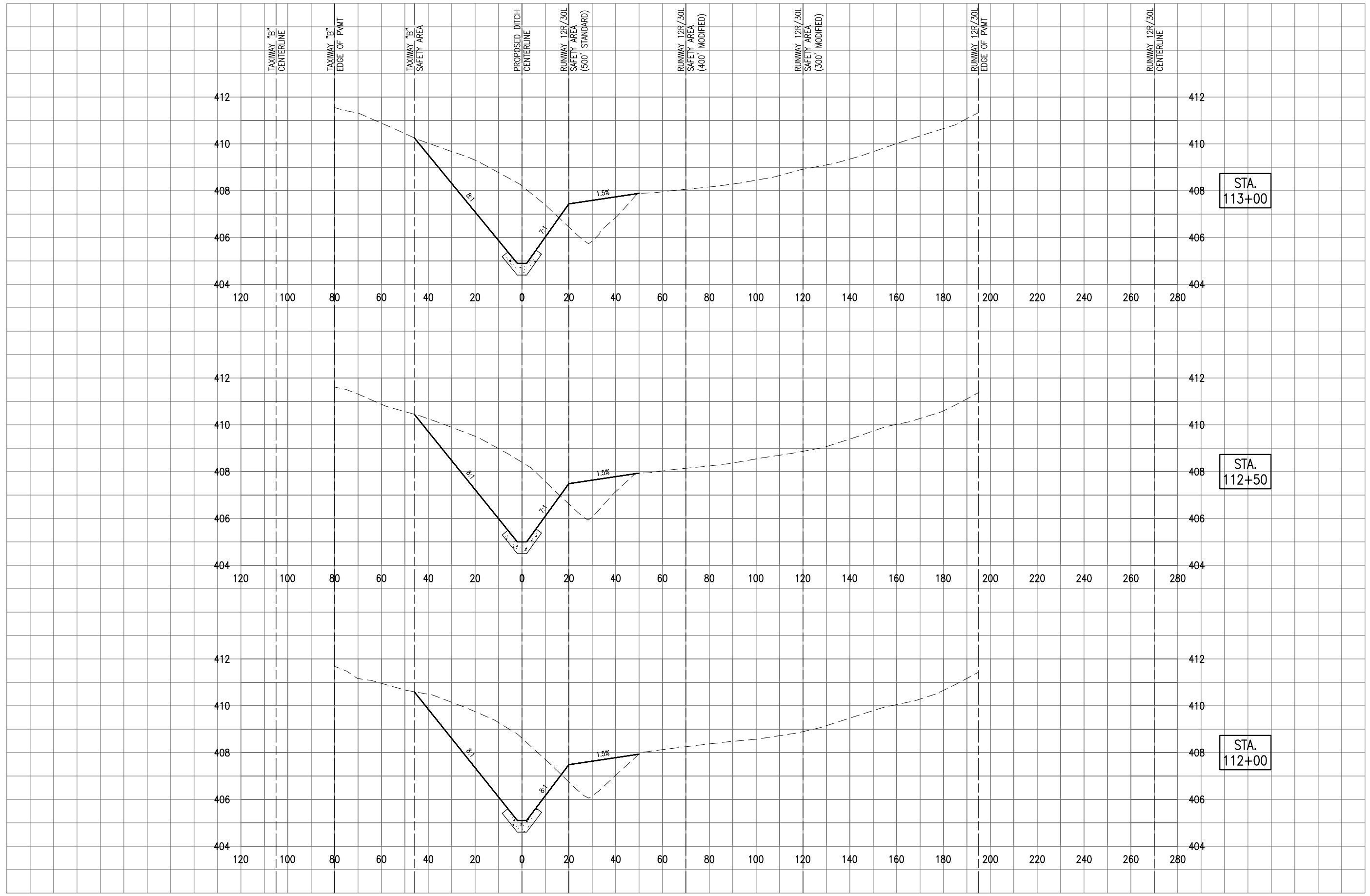
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Filename	C-302-XS.dwg
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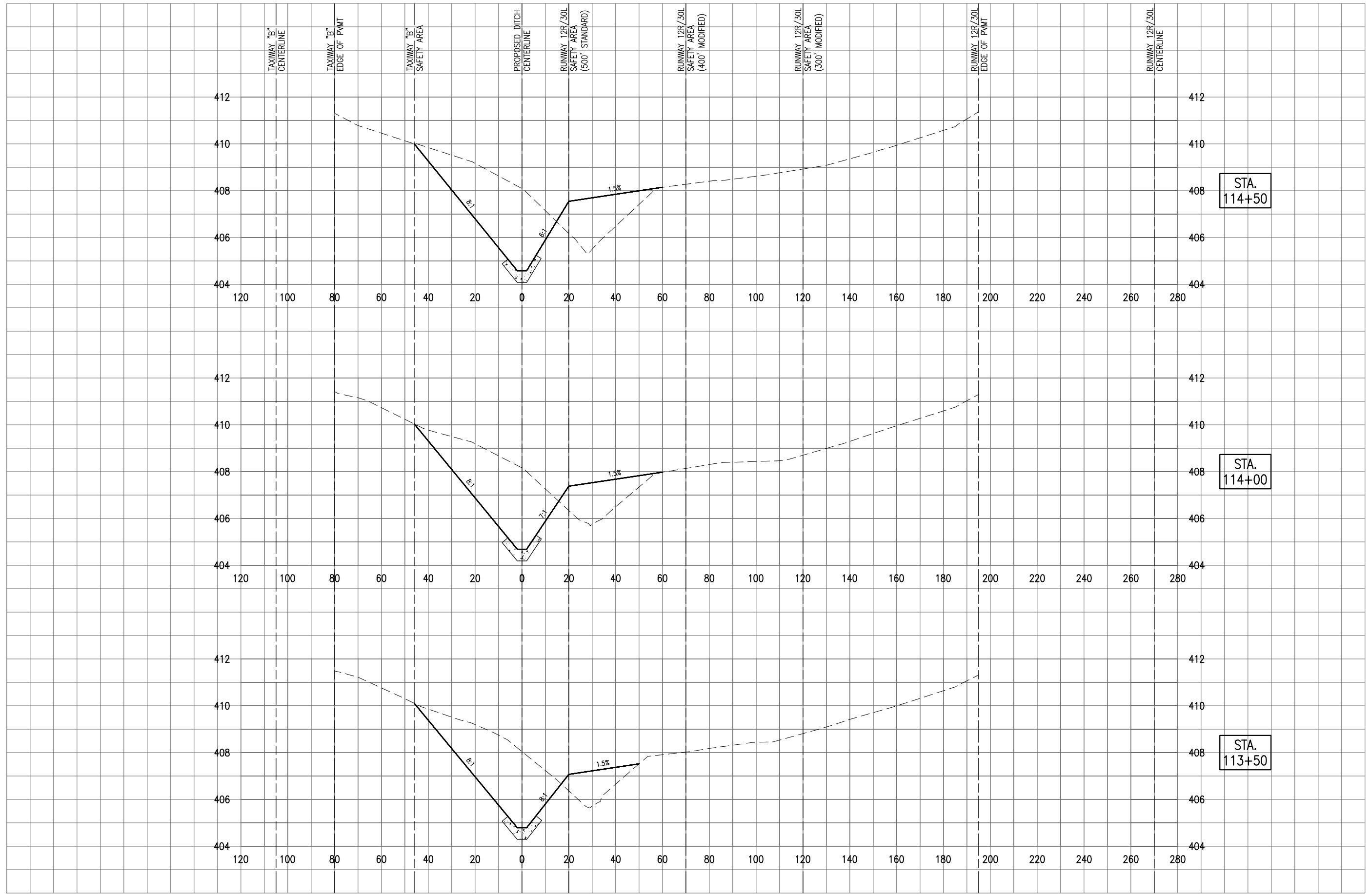
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Date	03/08/13
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GRADE DITCH PARALLEL TO MAIN RUNWAY
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REVISION	DATE

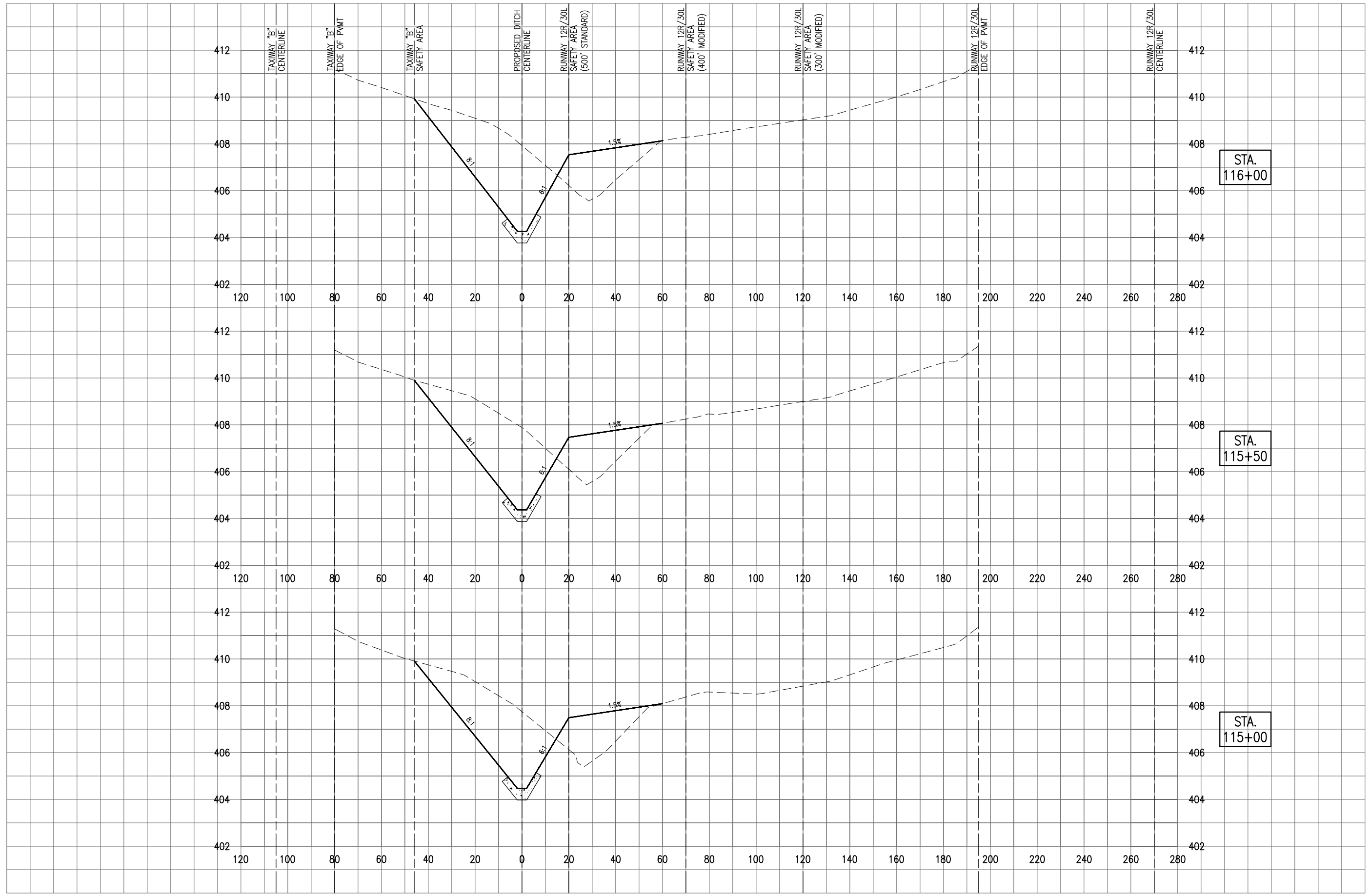
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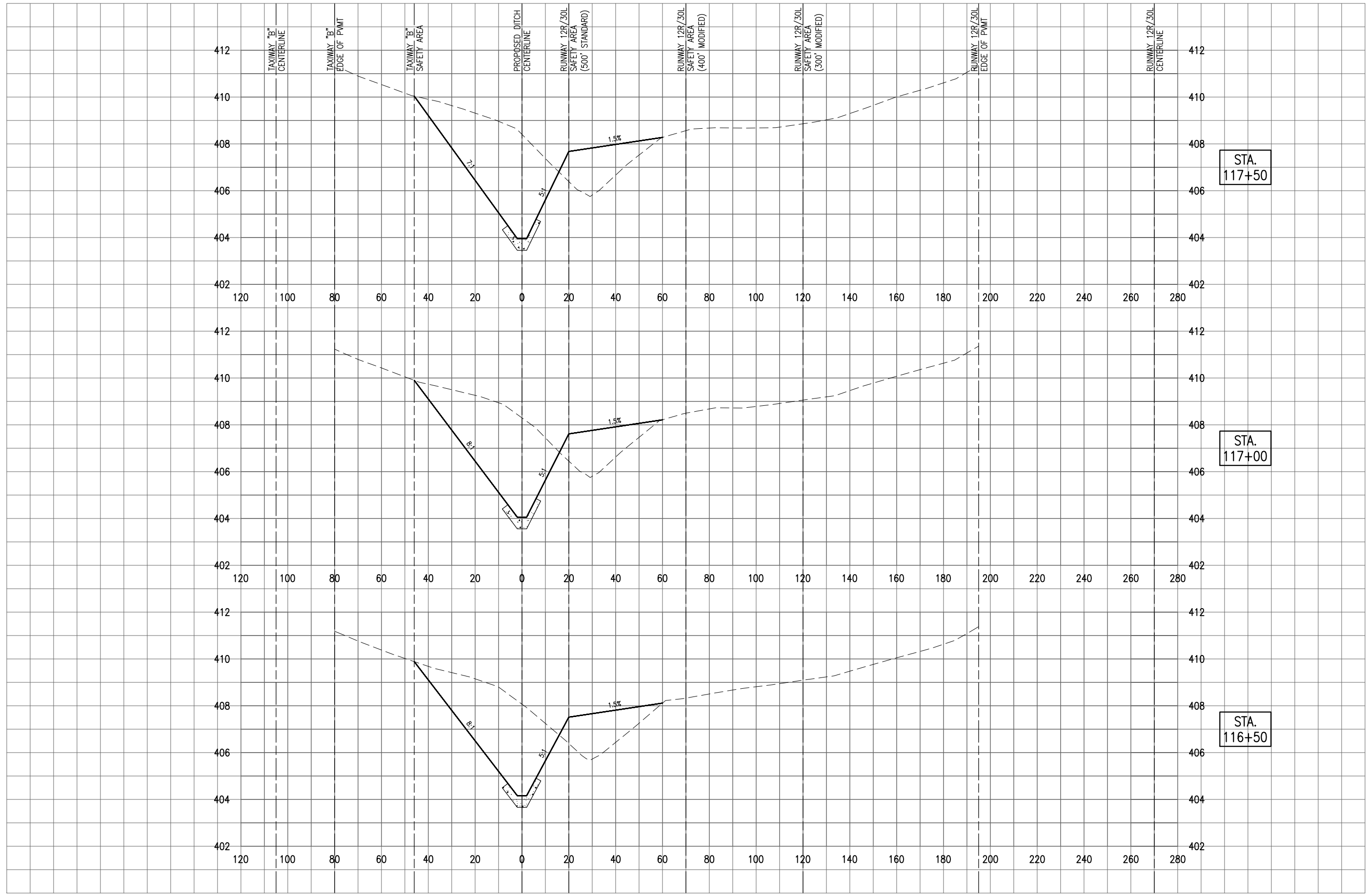
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 115+00 TO STA. 116+00



STA.
117+50

STA.
117+00

STA.
116+50

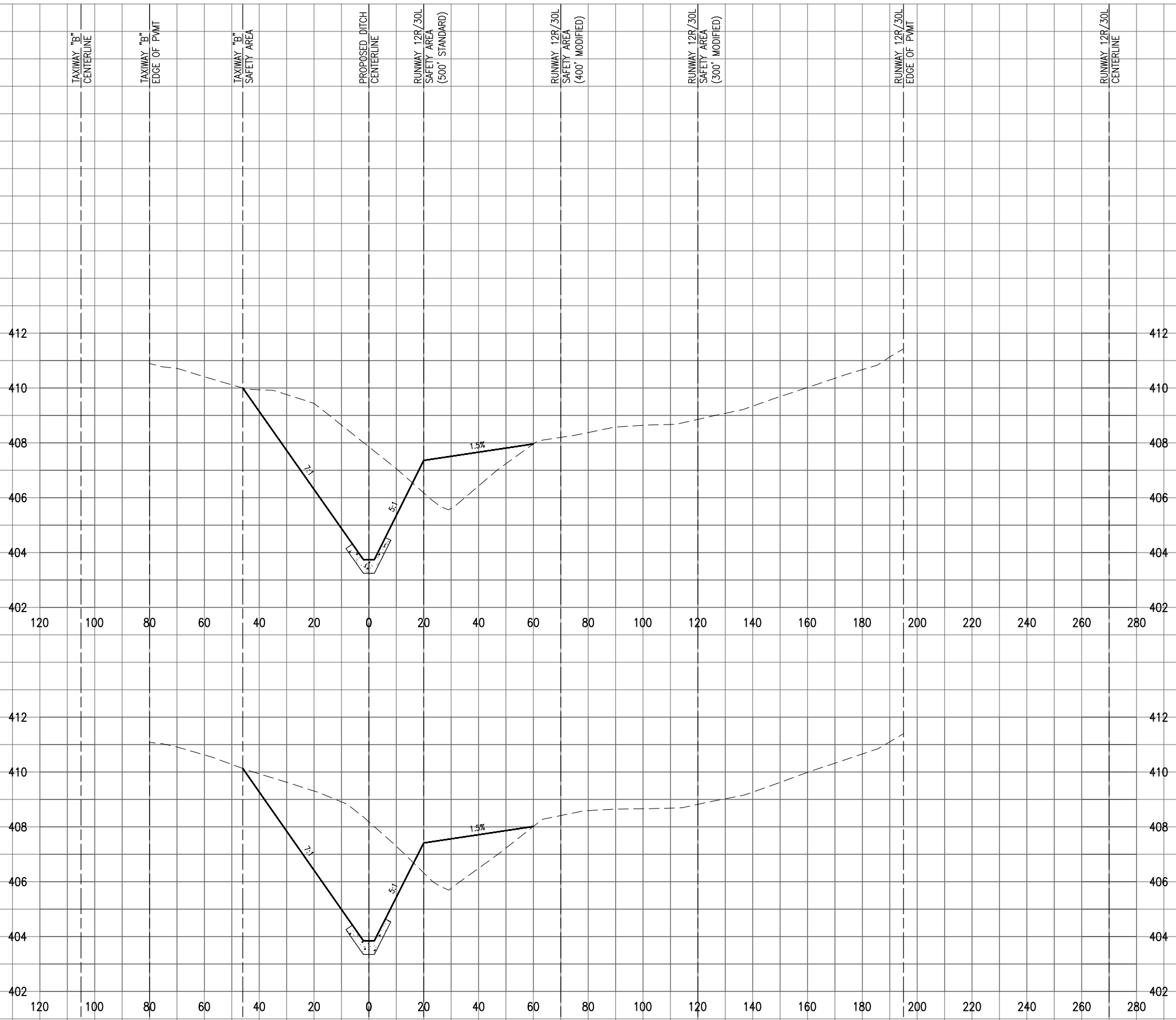
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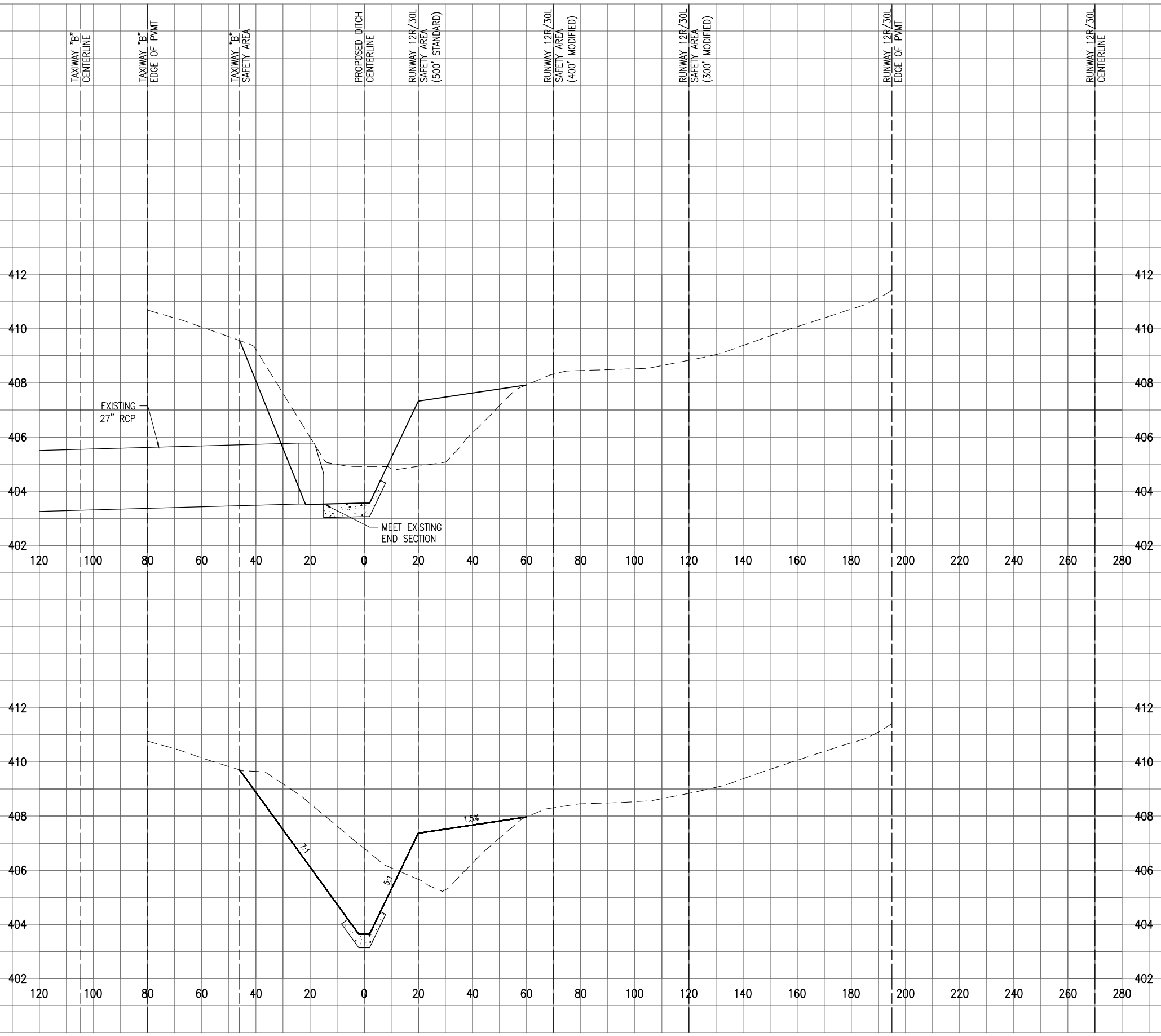
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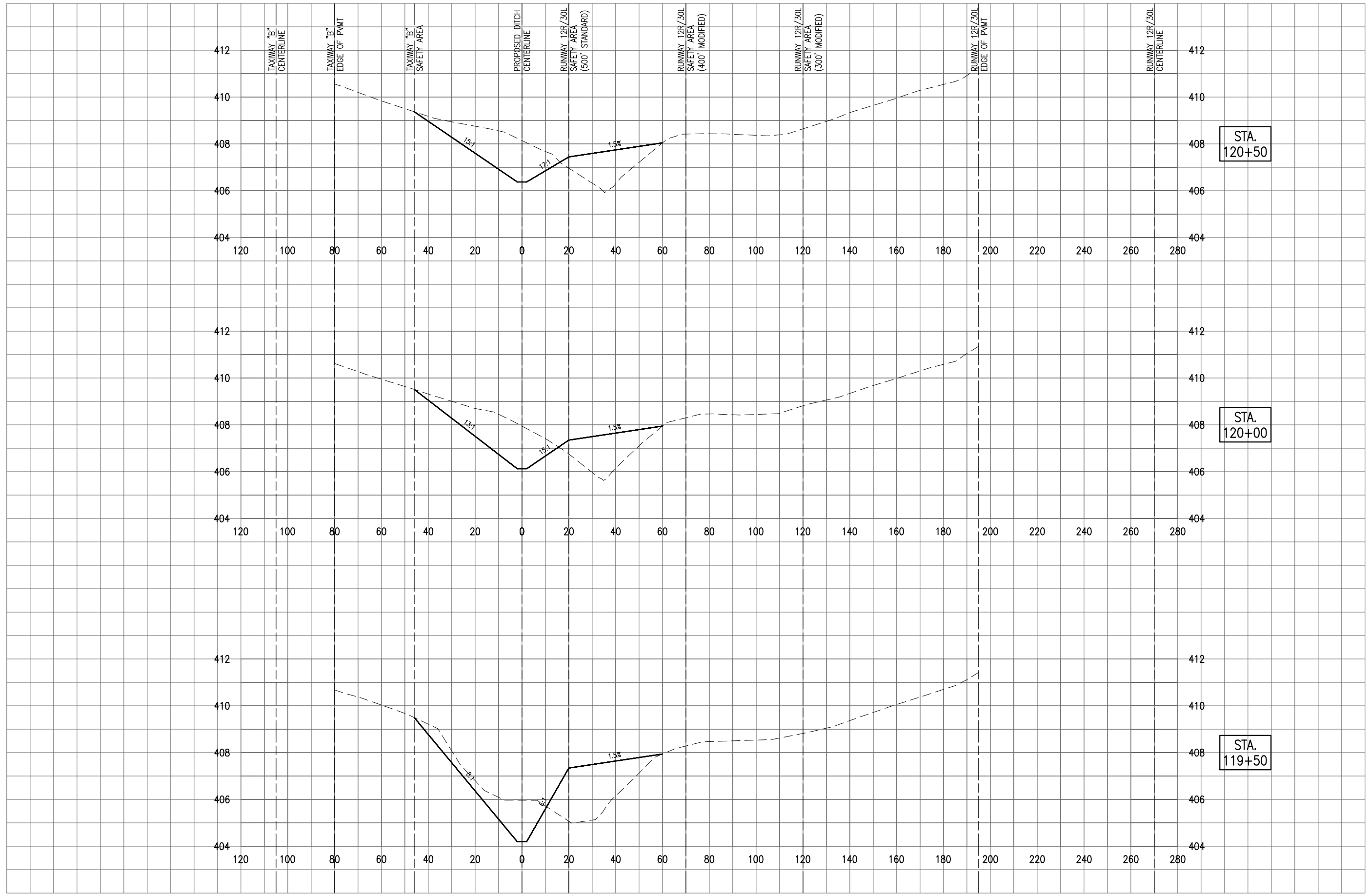
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 119+00 TO STA. 119+37



STA.
120+50

STA.
120+00

STA.
119+50

REVISION	DATE

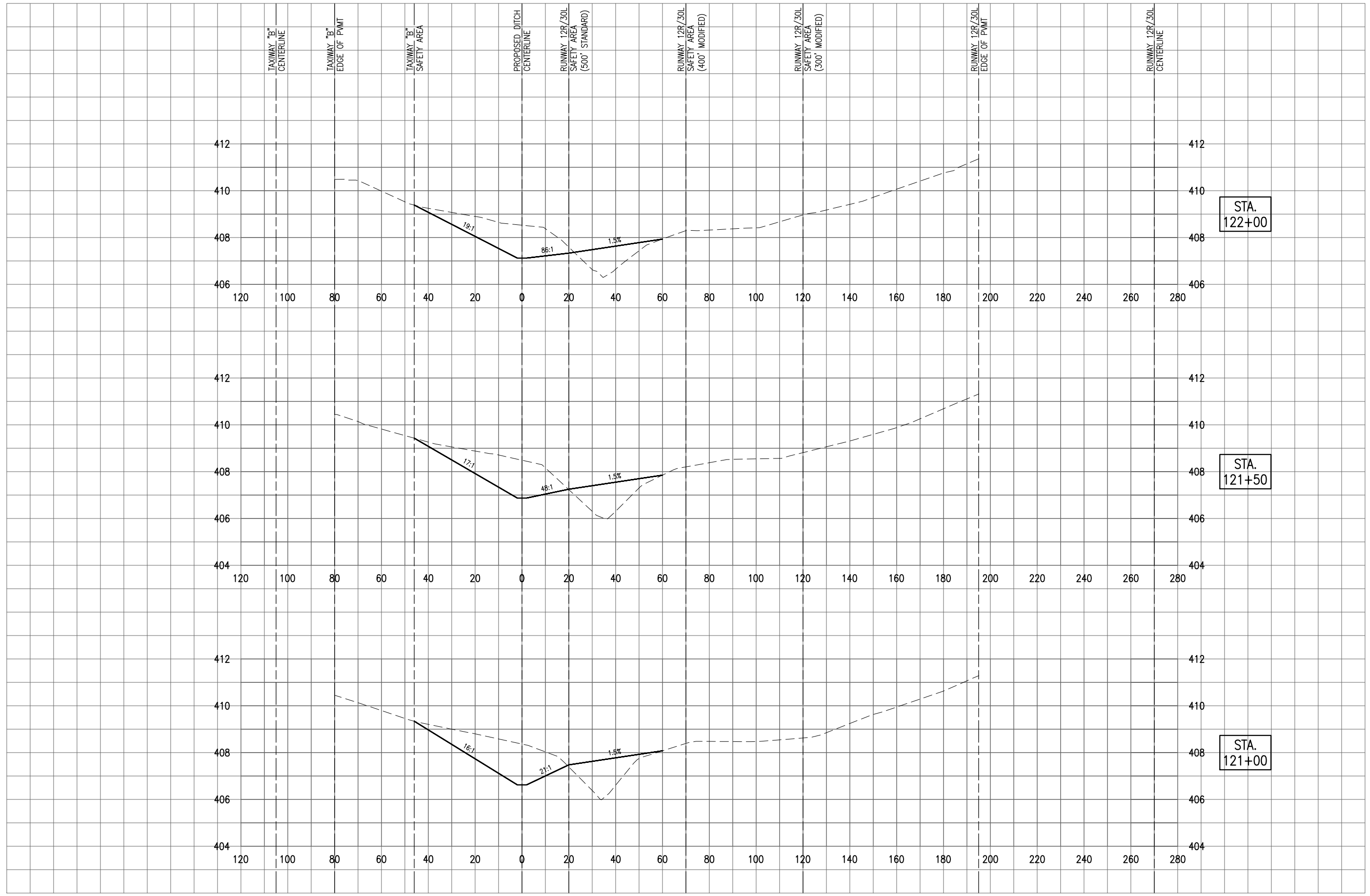
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CROSS SECTIONS STA. 119+50 TO STA. 120+50

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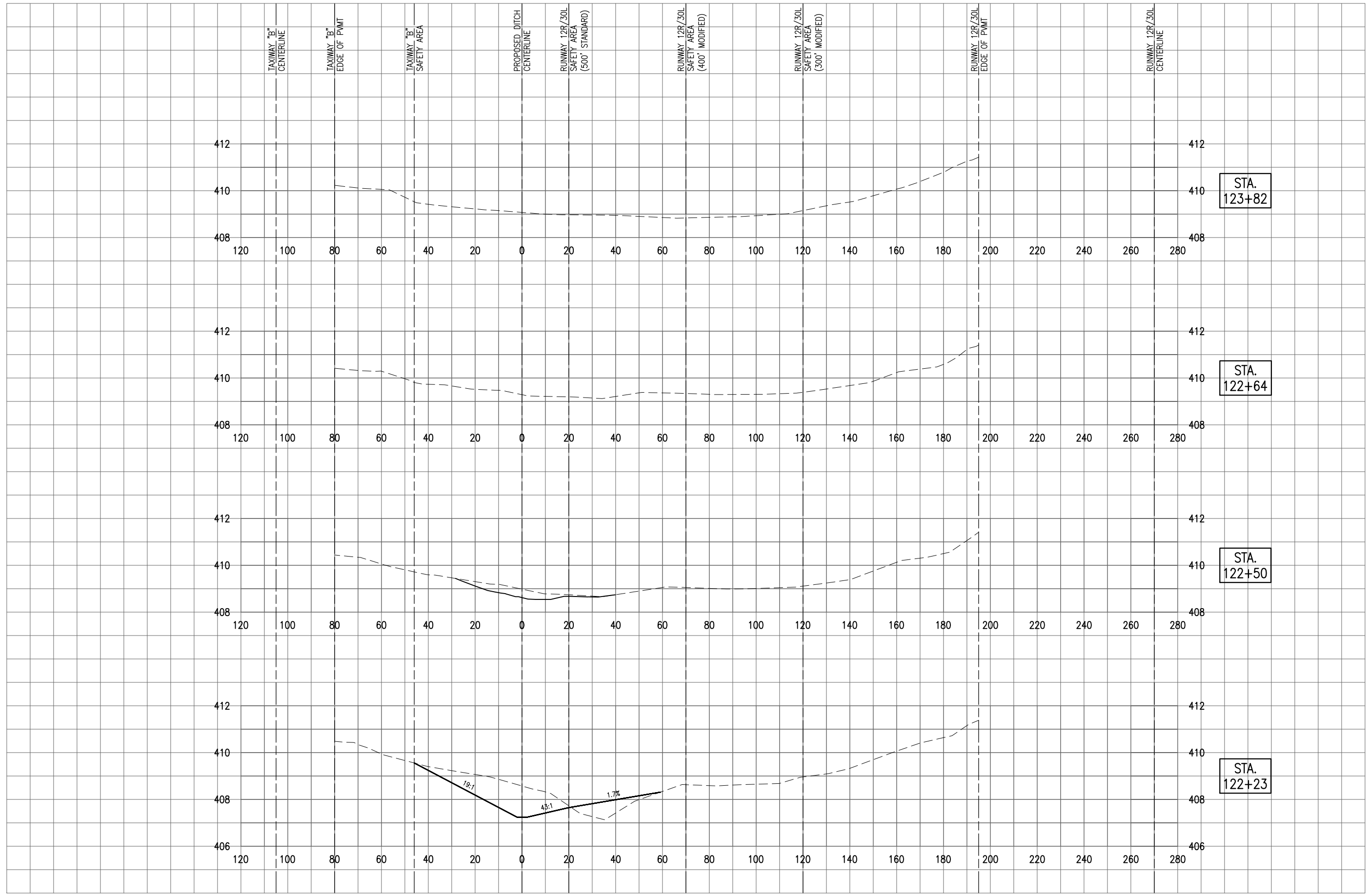
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GRADE DITCH PARALLEL TO MAIN RUNWAY
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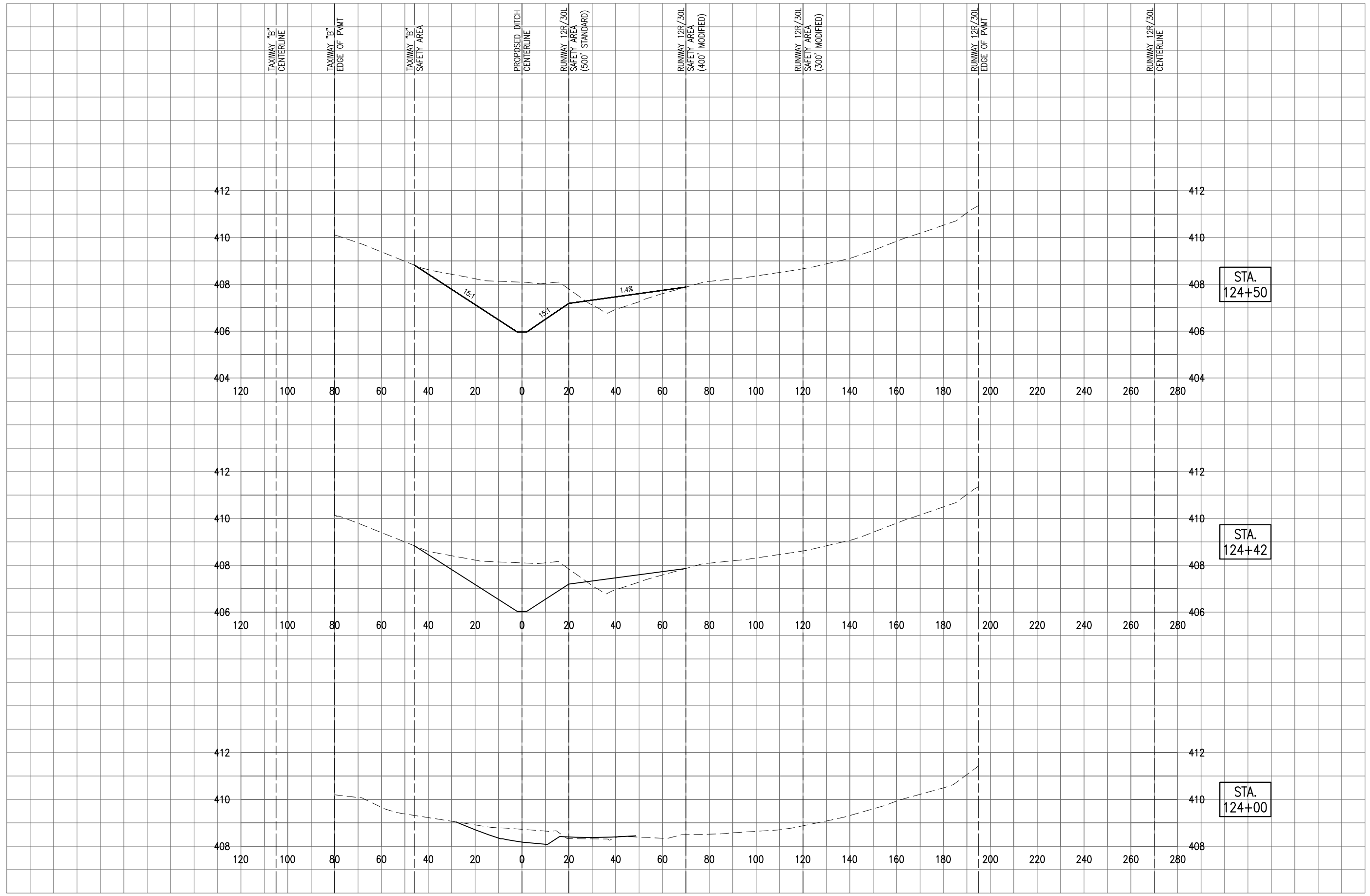
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CROSS SECTIONS STA. 122+23 TO STA. 123+82



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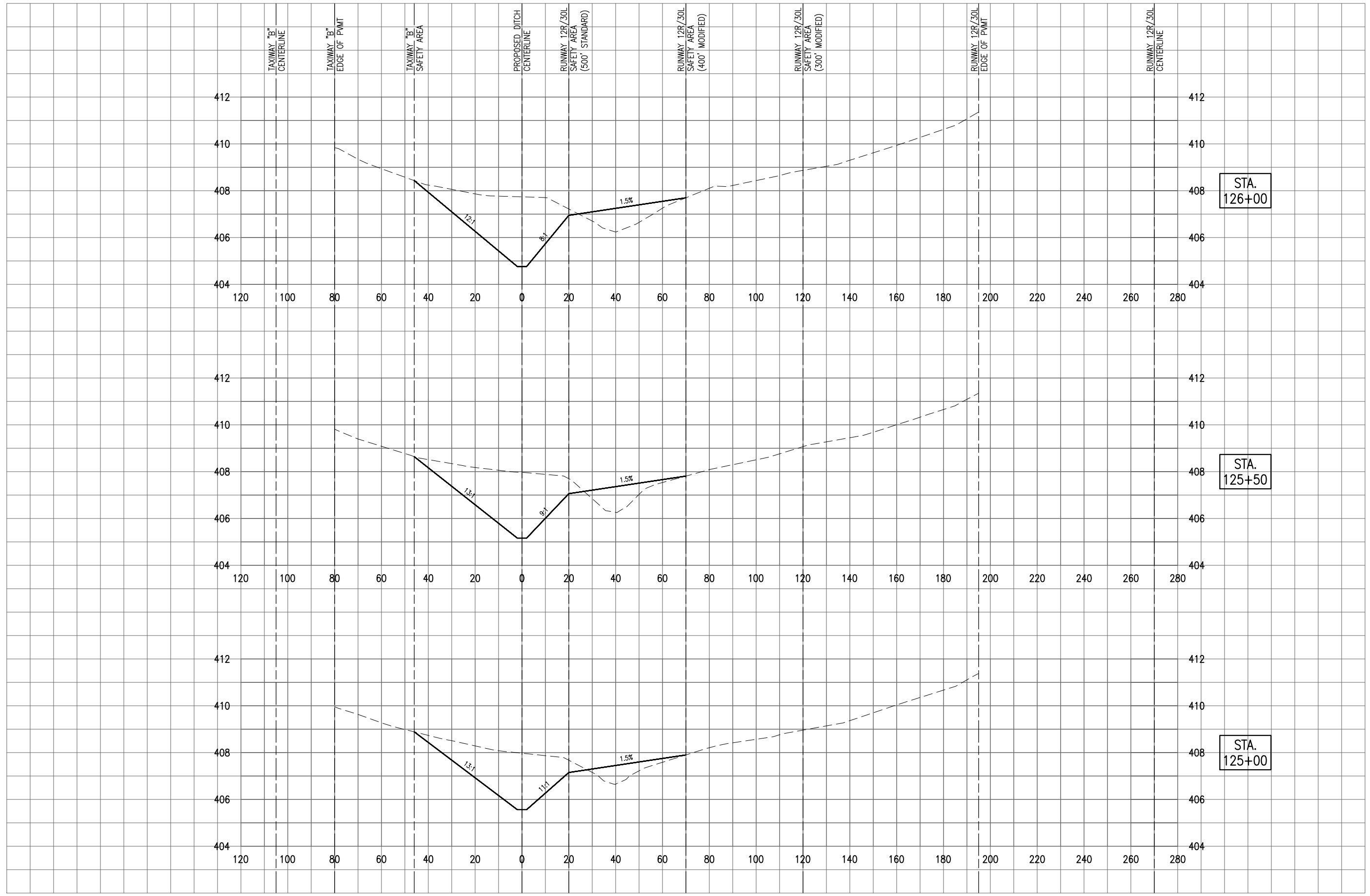
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Date	03/08/13
LAYOUT	DAW 01/23/13
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GRADE DITCH PARALLEL TO MAIN RUNWAY
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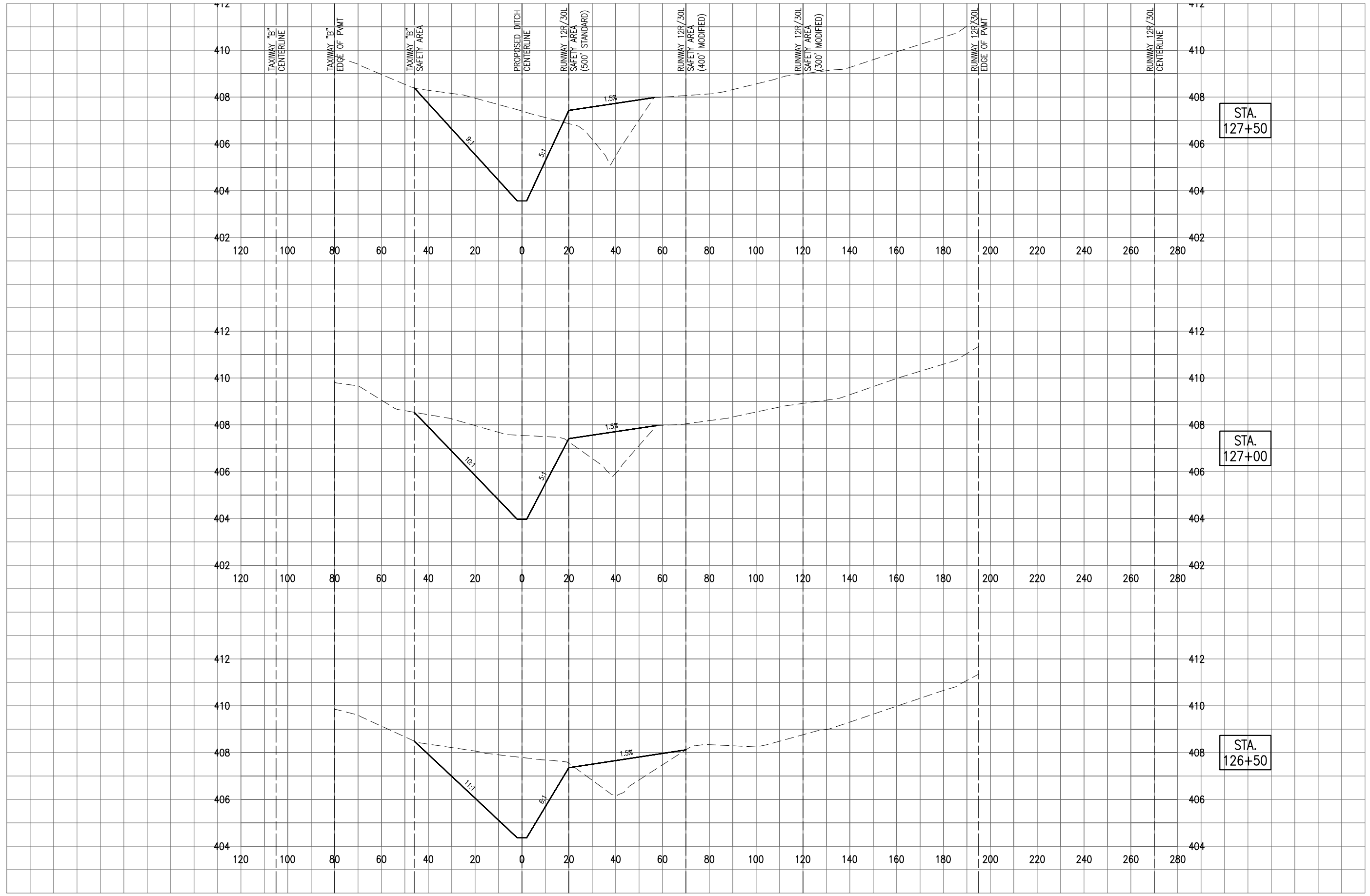
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Date	03/08/13
LAYOUT	DAW 01/23/13
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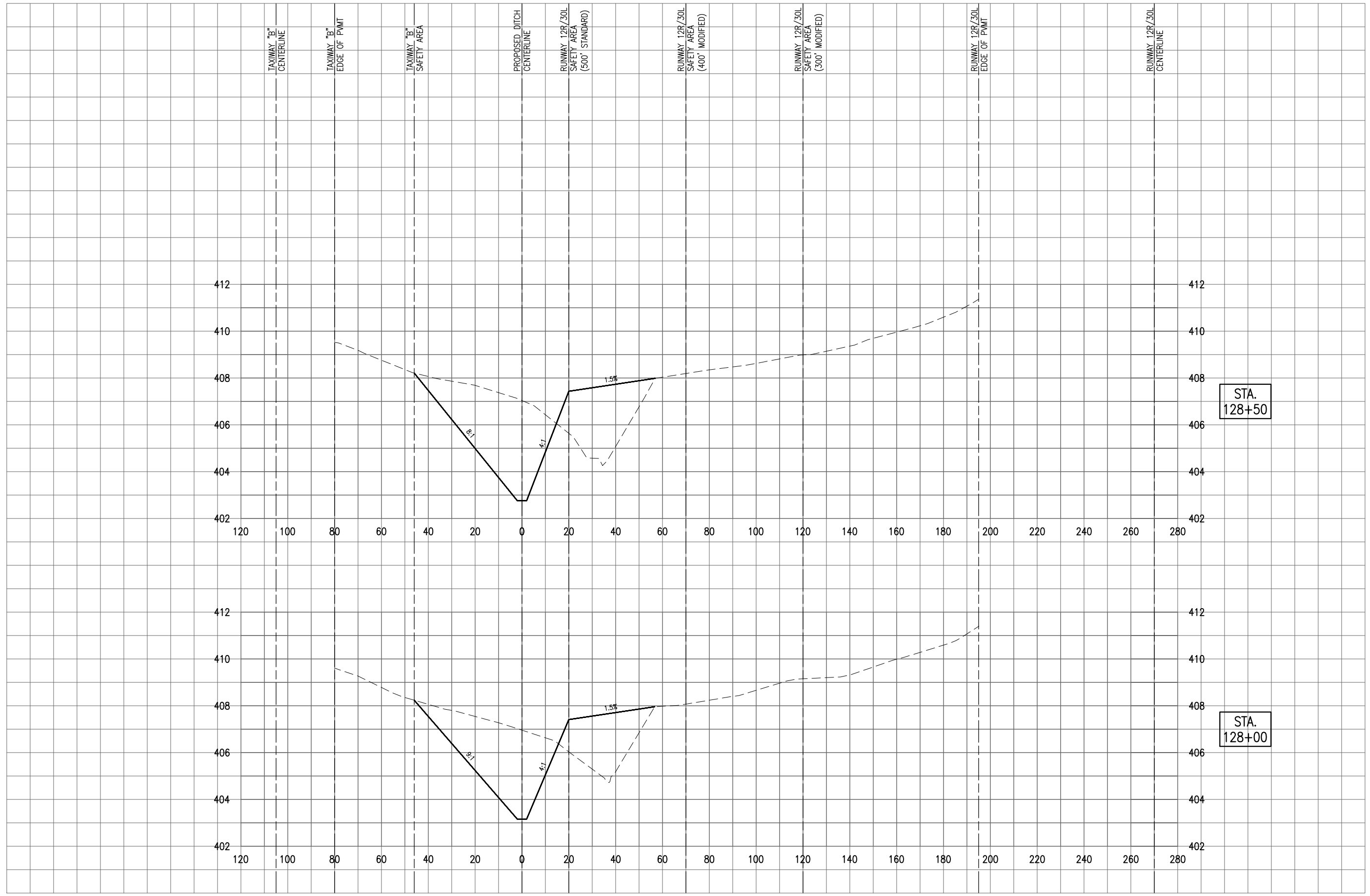
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GRADE DITCH PARALLEL TO MAIN RUNWAY

CROSS SECTIONS STA. 126+50 TO STA. 127+50



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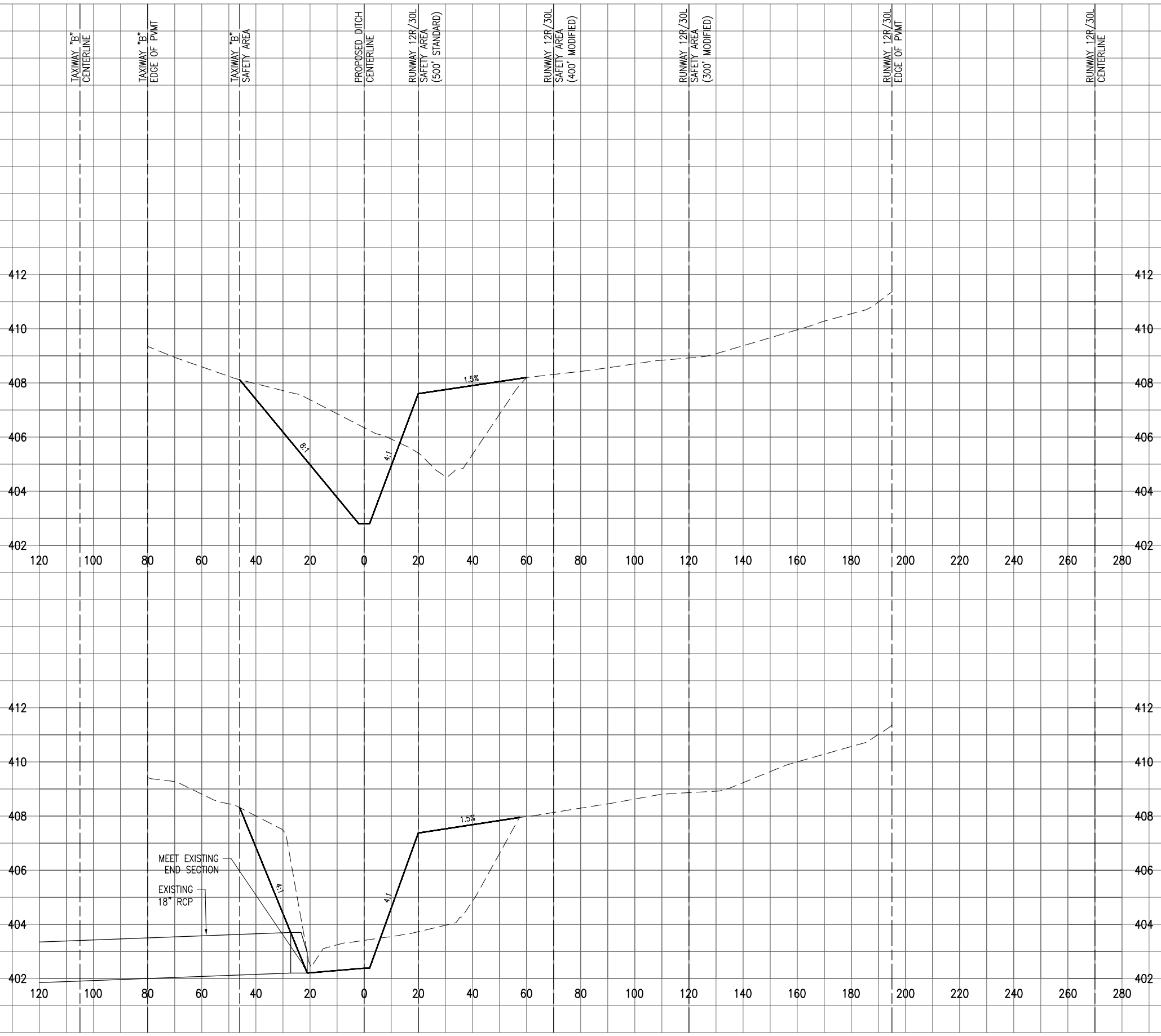
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Filename C-302-XS.dwg	DRAWN	MLH	01/23/12
Scale 1"=20'H 1"=2'V	REVIEWED	BSS	03/08/13
Date 03/08/13			

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 128+00 TO STA. 128+50



STA.
129+50

STA.
128+98

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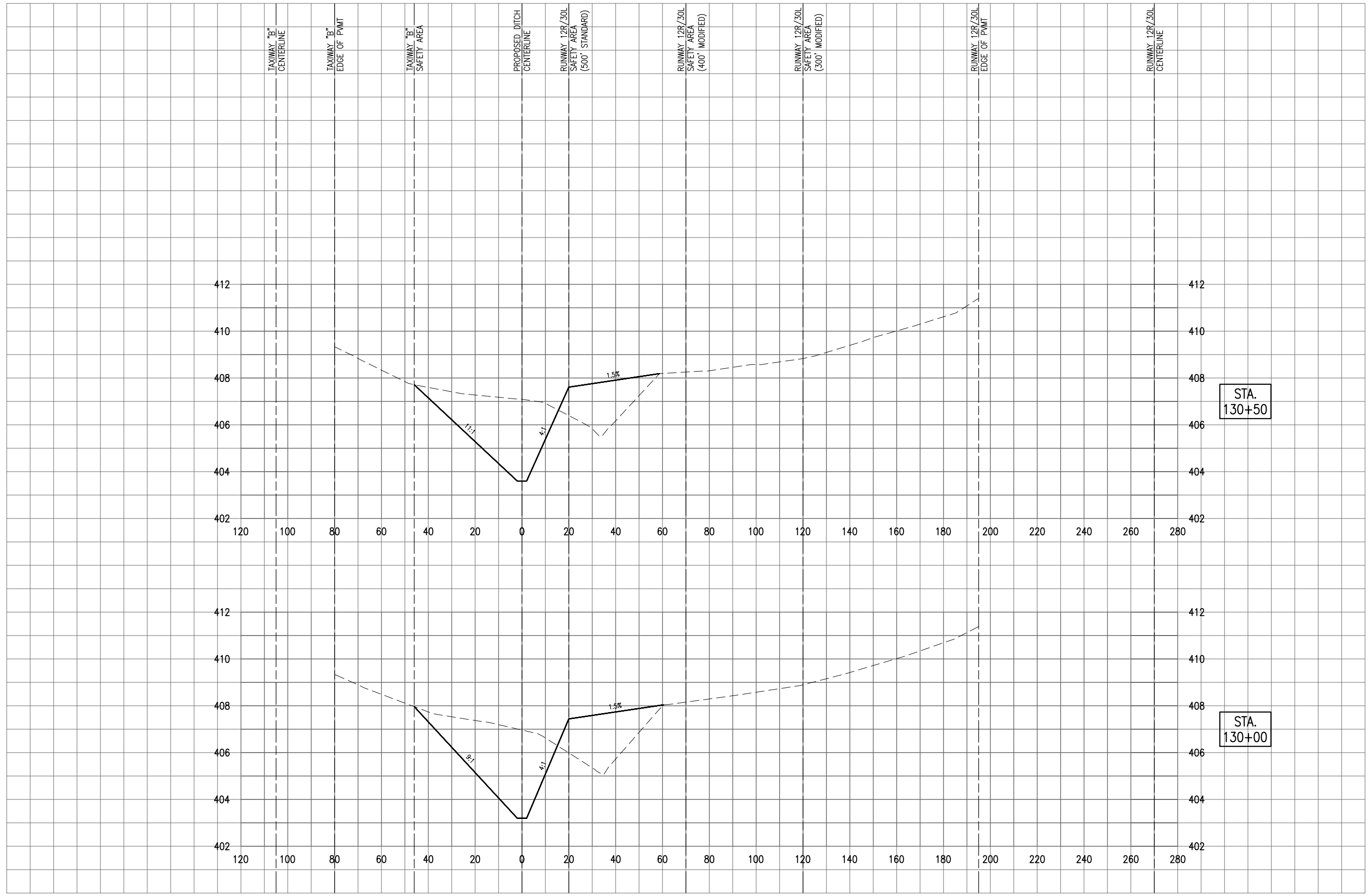


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GRADE DITCH PARALLEL TO MAIN RUNWAY
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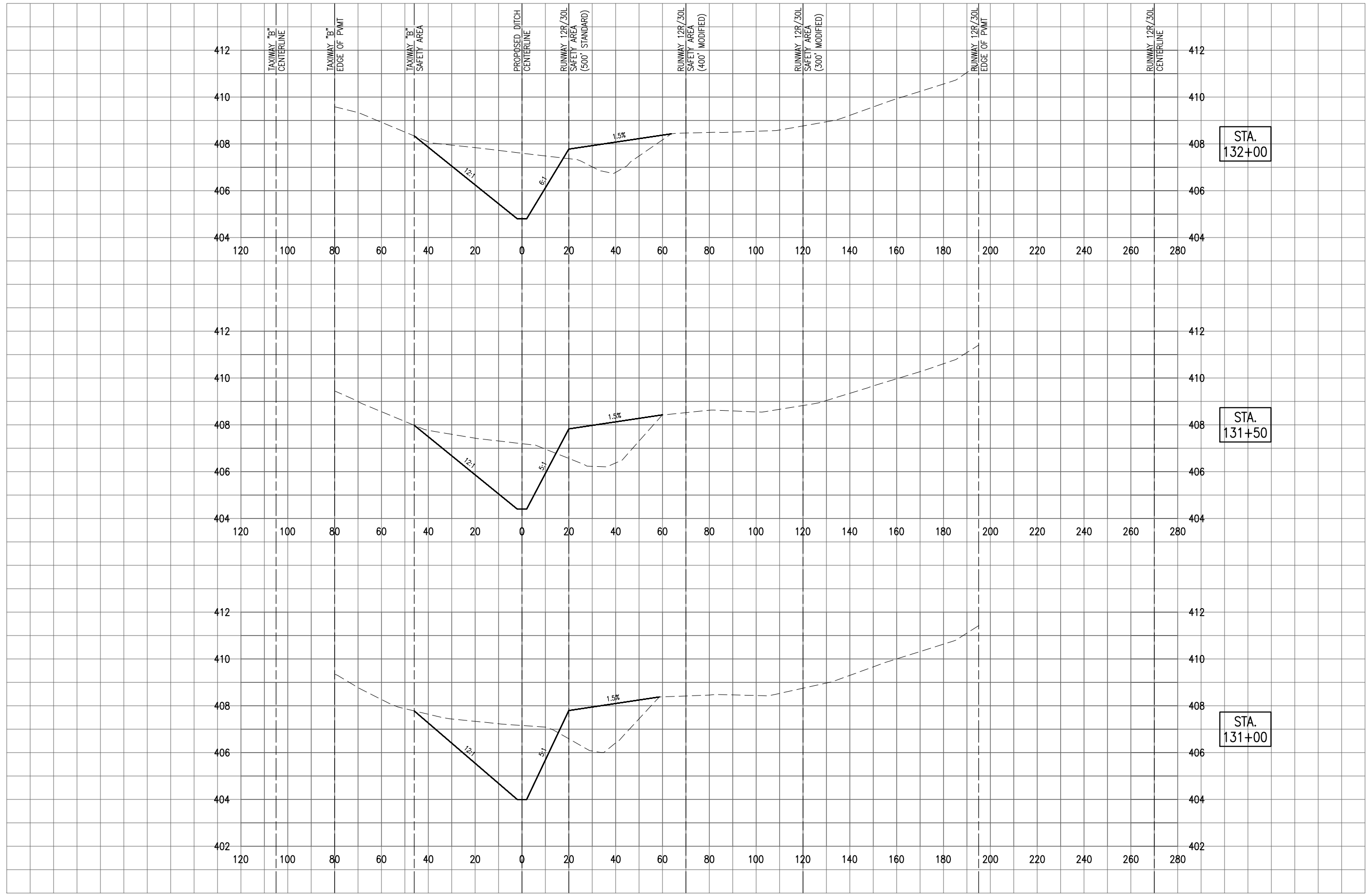
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 130+00 TO STA. 130+50



STA.
132+00

STA.
131+50

STA.
131+00

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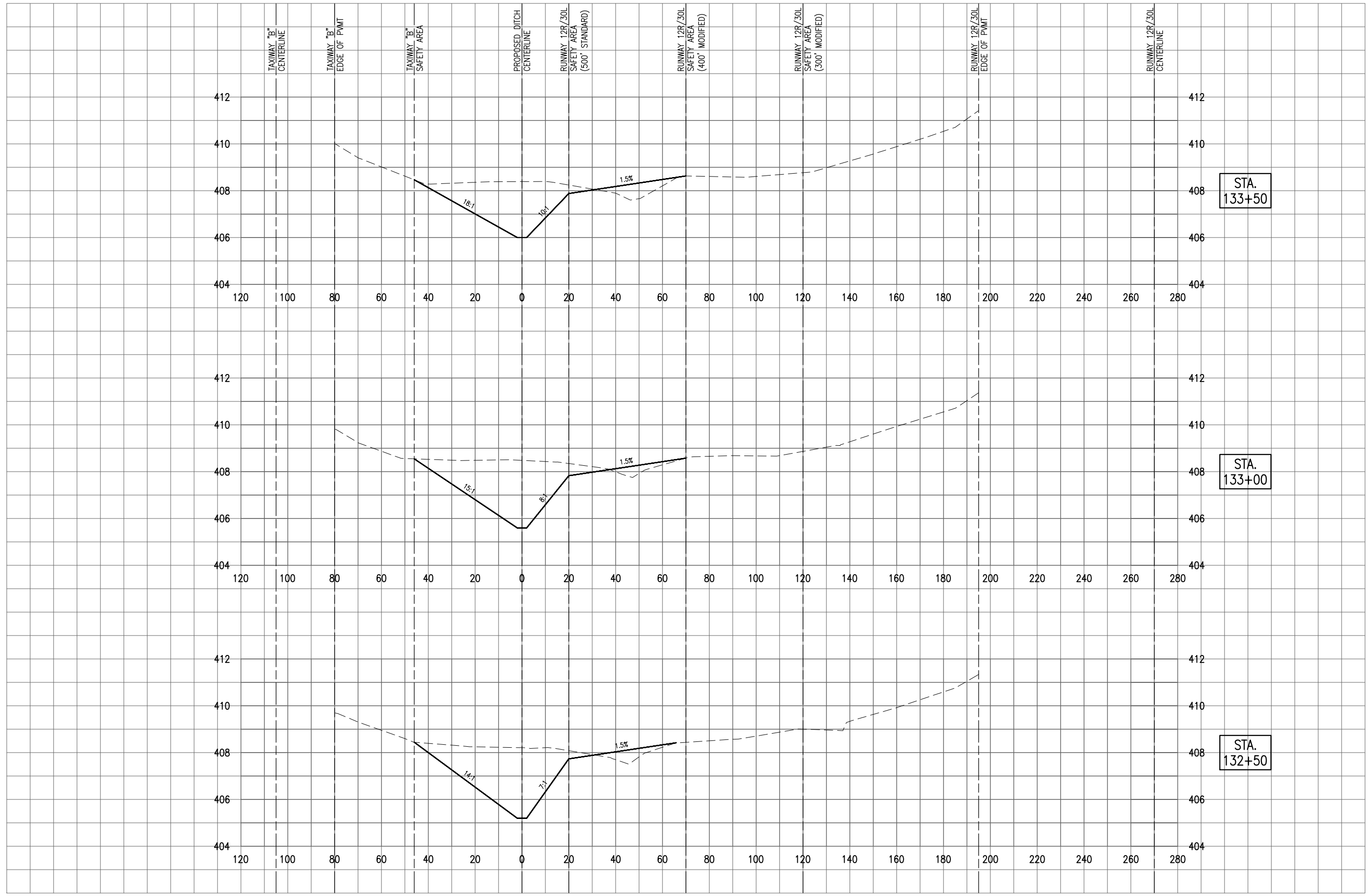
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 131+00 TO STA. 132+00



REVISION	DATE

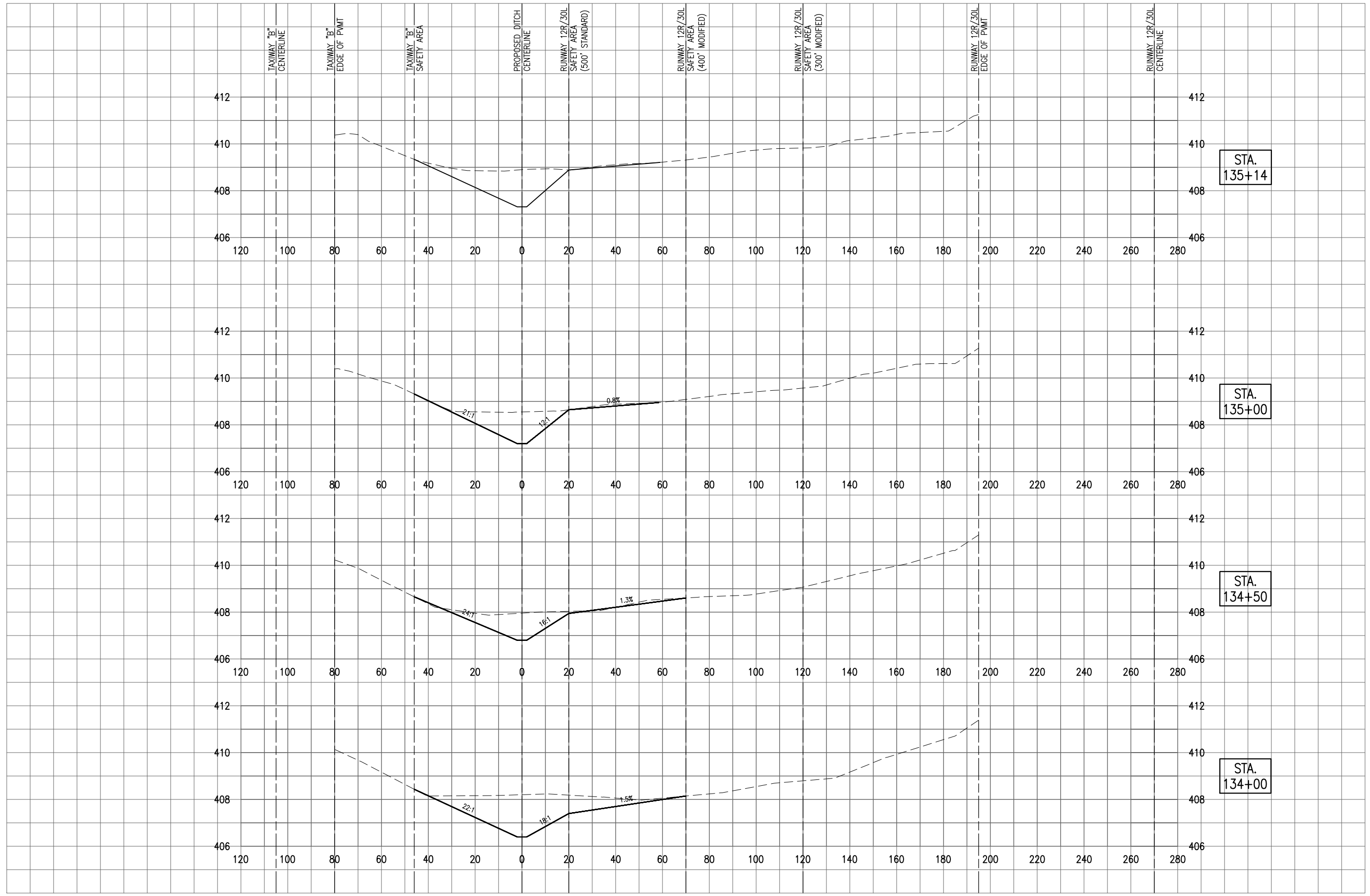
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

Hanson Project No.	11A0190
Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 132+50 TO STA. 133+50

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STA.
135+14

STA.
135+00

STA.
134+50

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134+00

REVISION	DATE

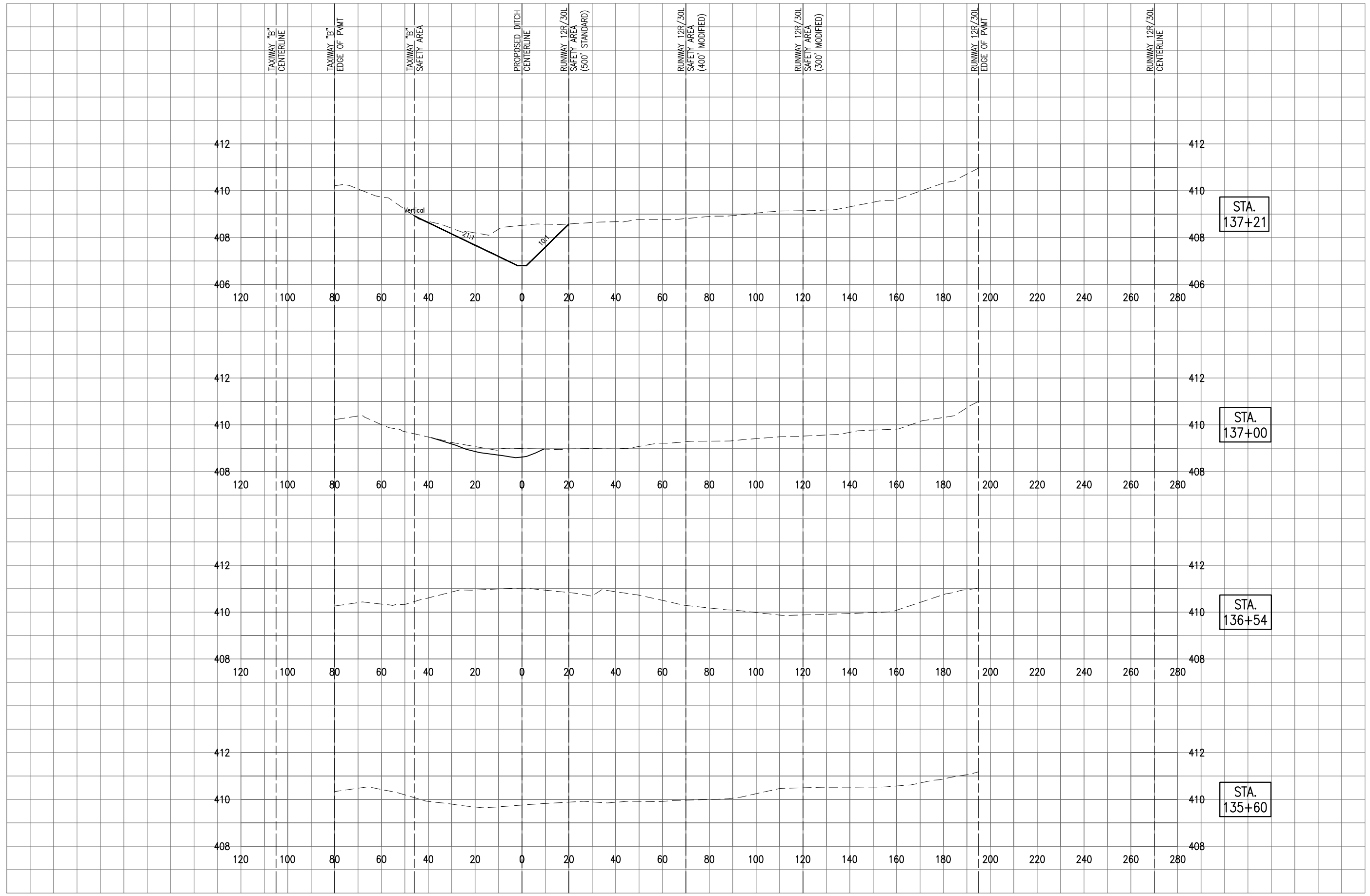
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A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CPS-4210

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Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
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CROSS SECTIONS STA. 134+00 TO STA. 135+14

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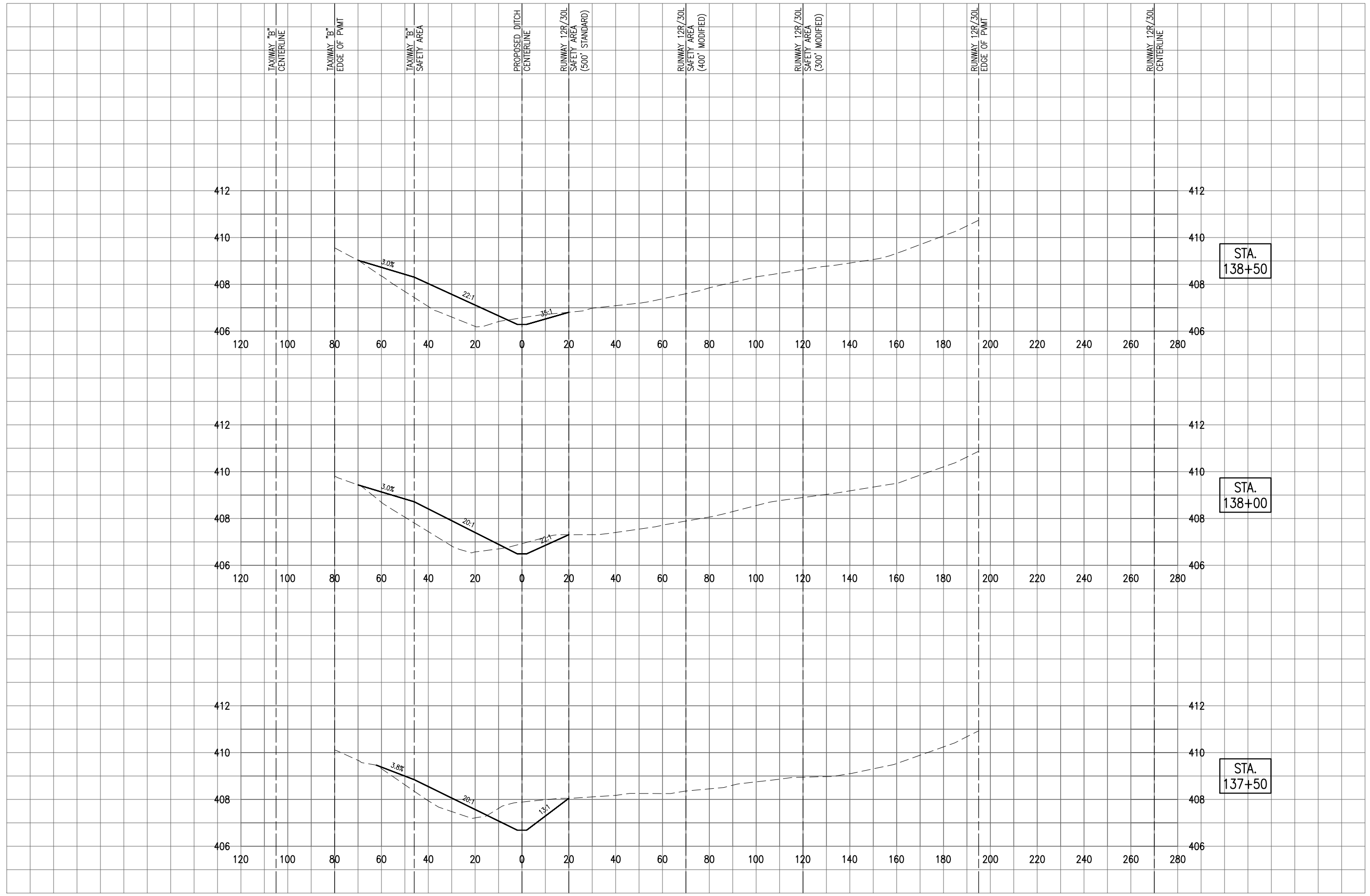
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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

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Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29

IL PROJ.: CFS-4210

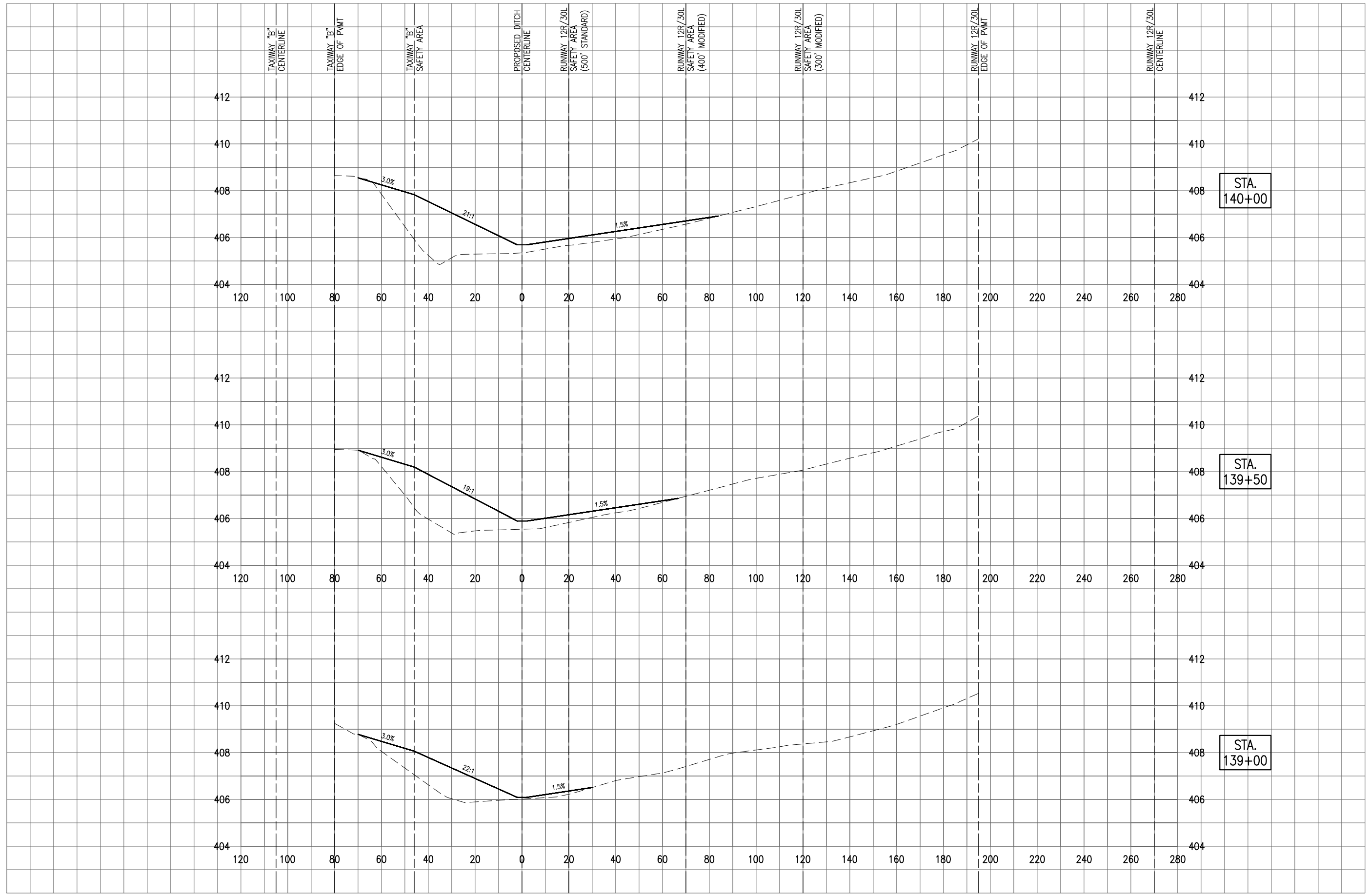
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REVIEWED	BSS
DATE	01/23/13
DATE	01/23/12
DATE	03/08/13

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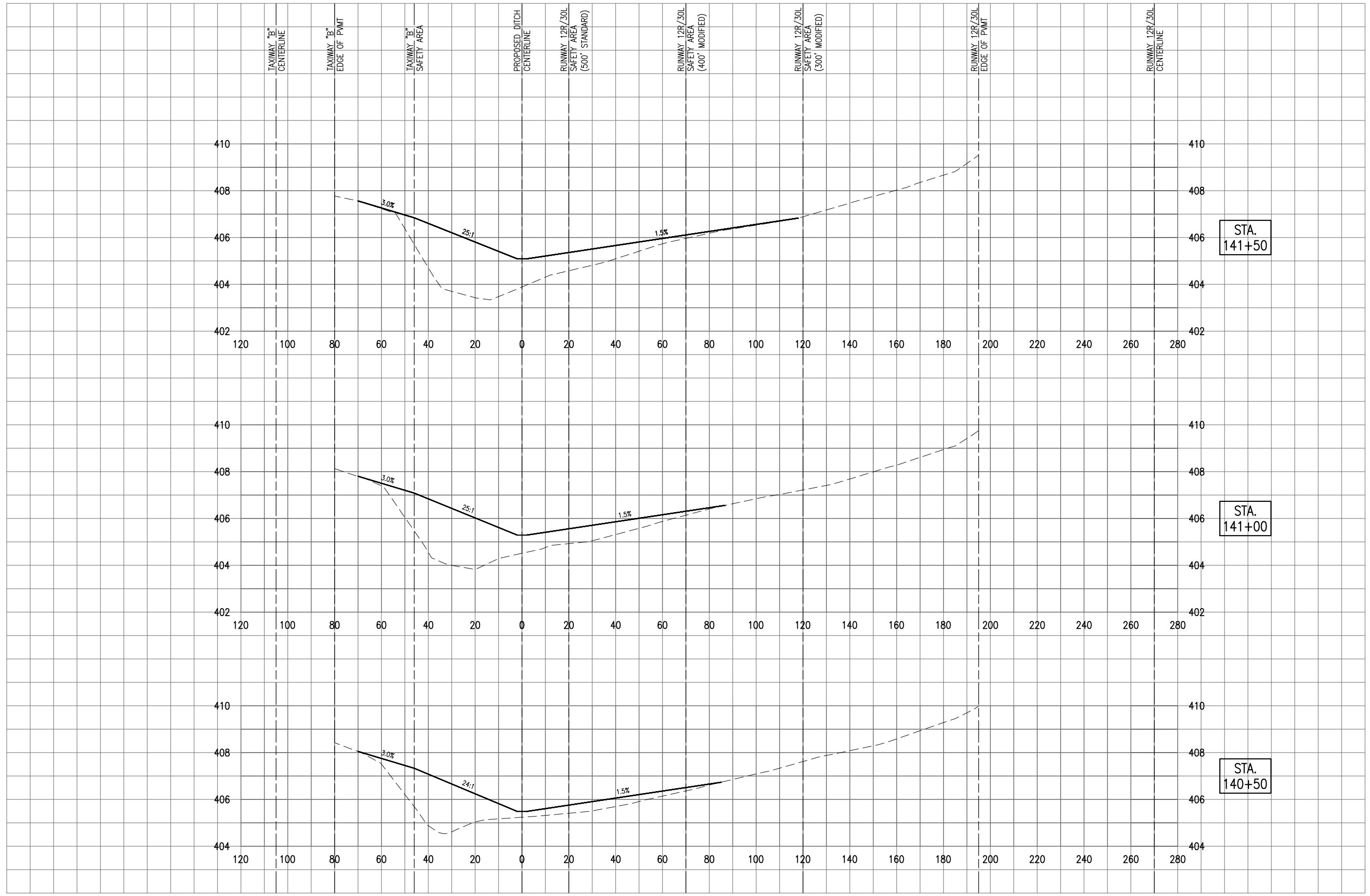
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 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

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Filename	C-302-XS.dwg
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DRAWN	MLH
REVIEWED	BSS
	01/23/13
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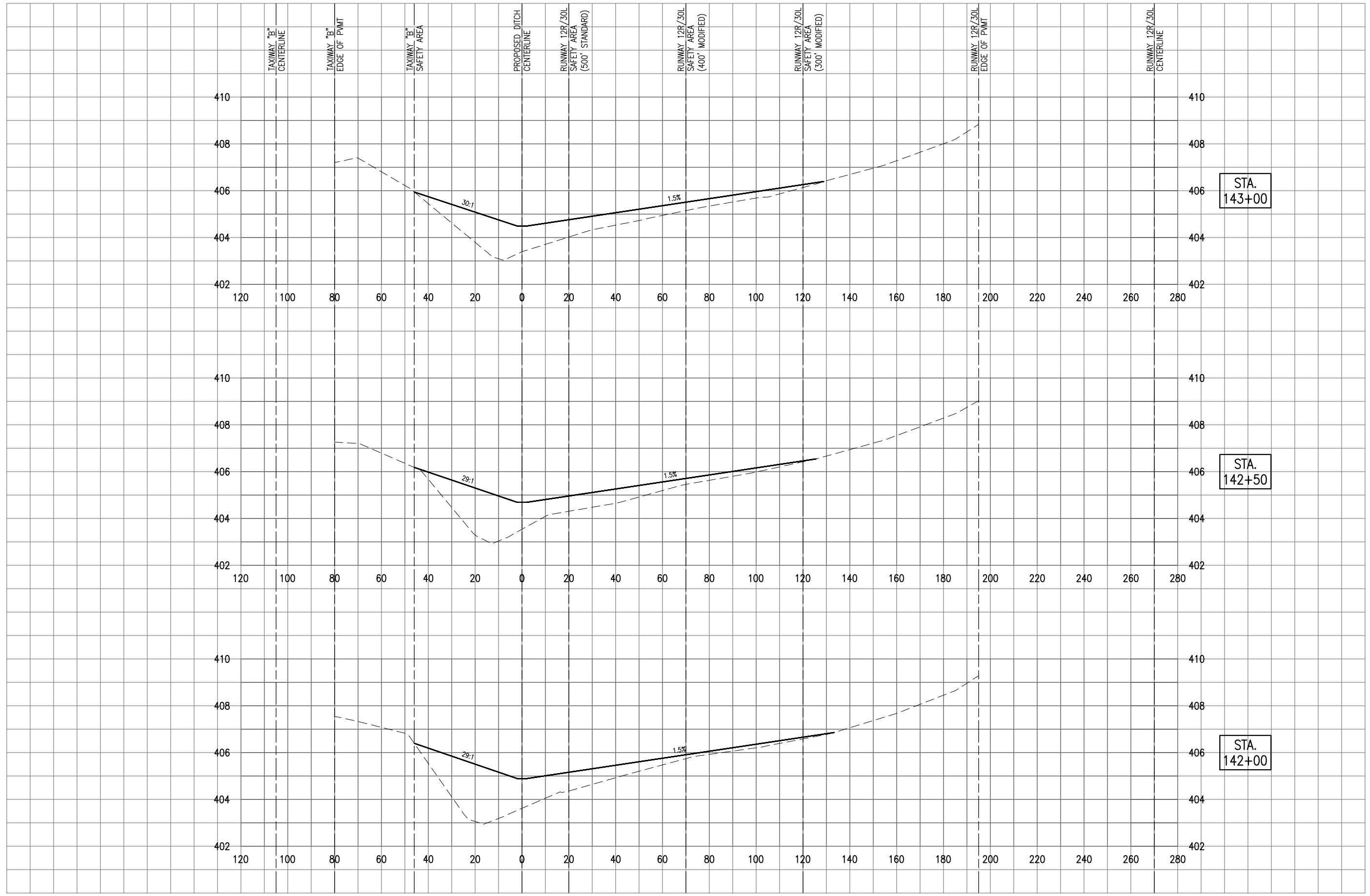
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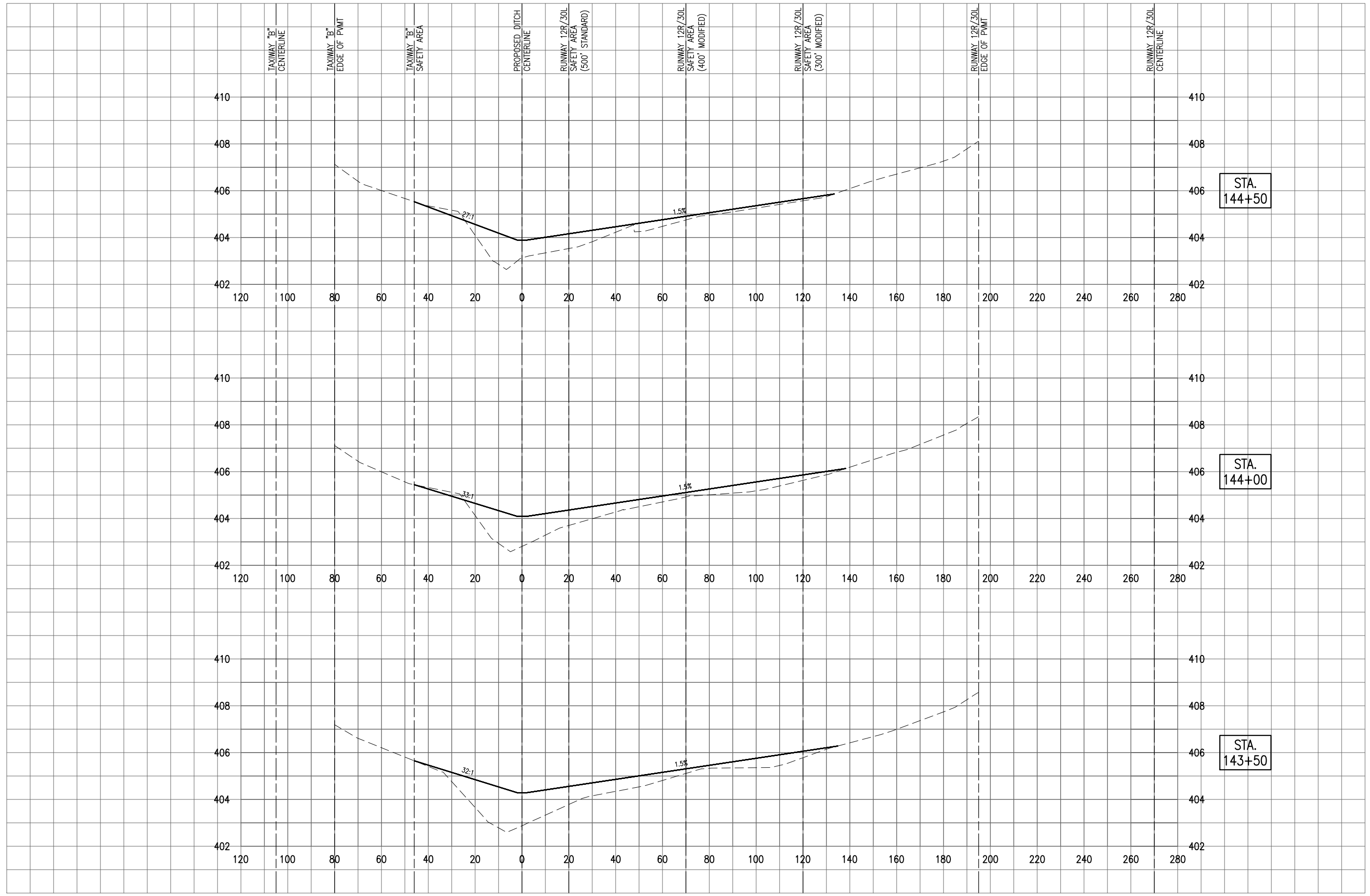
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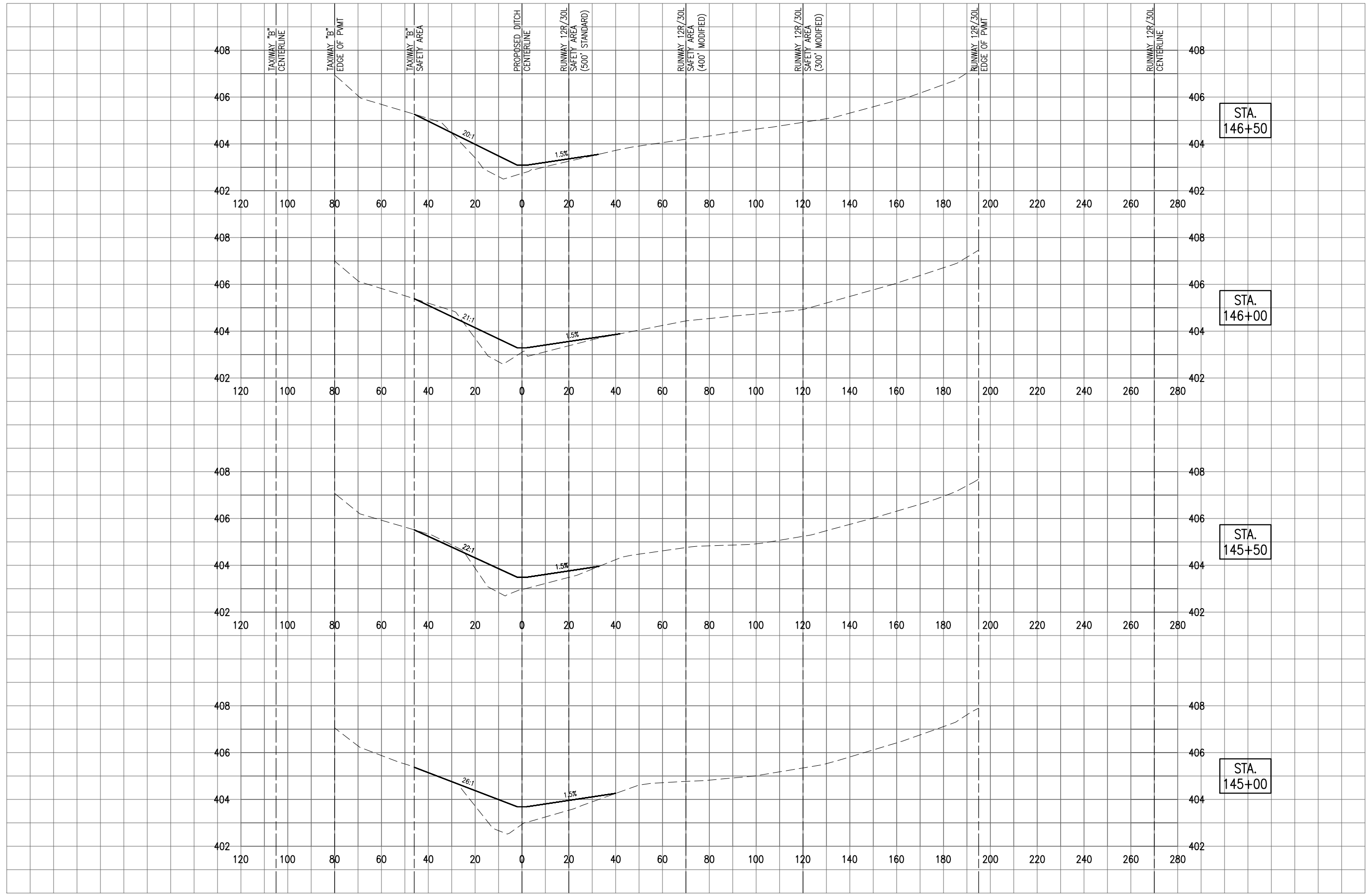
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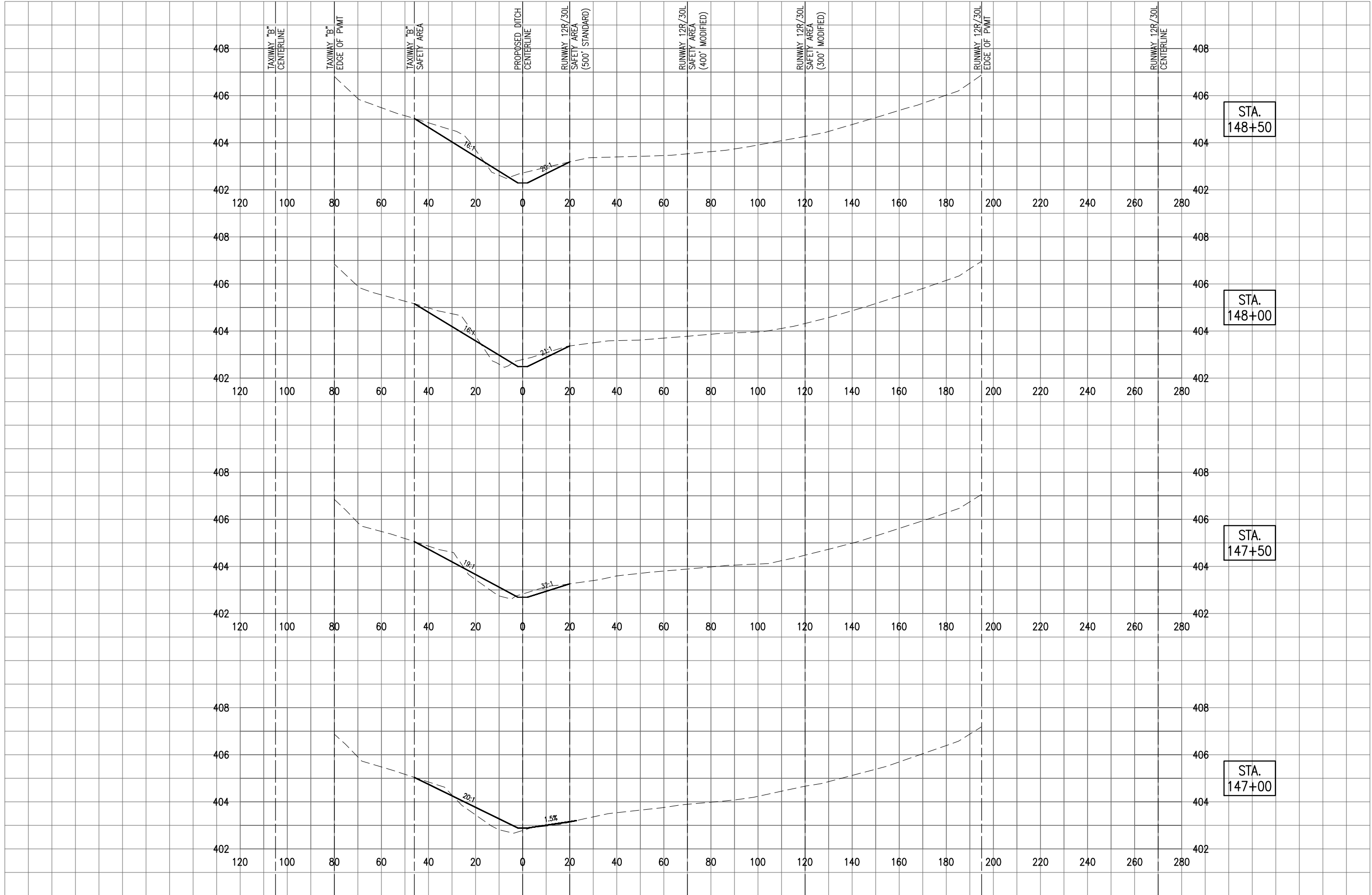
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DATE	03/08/13

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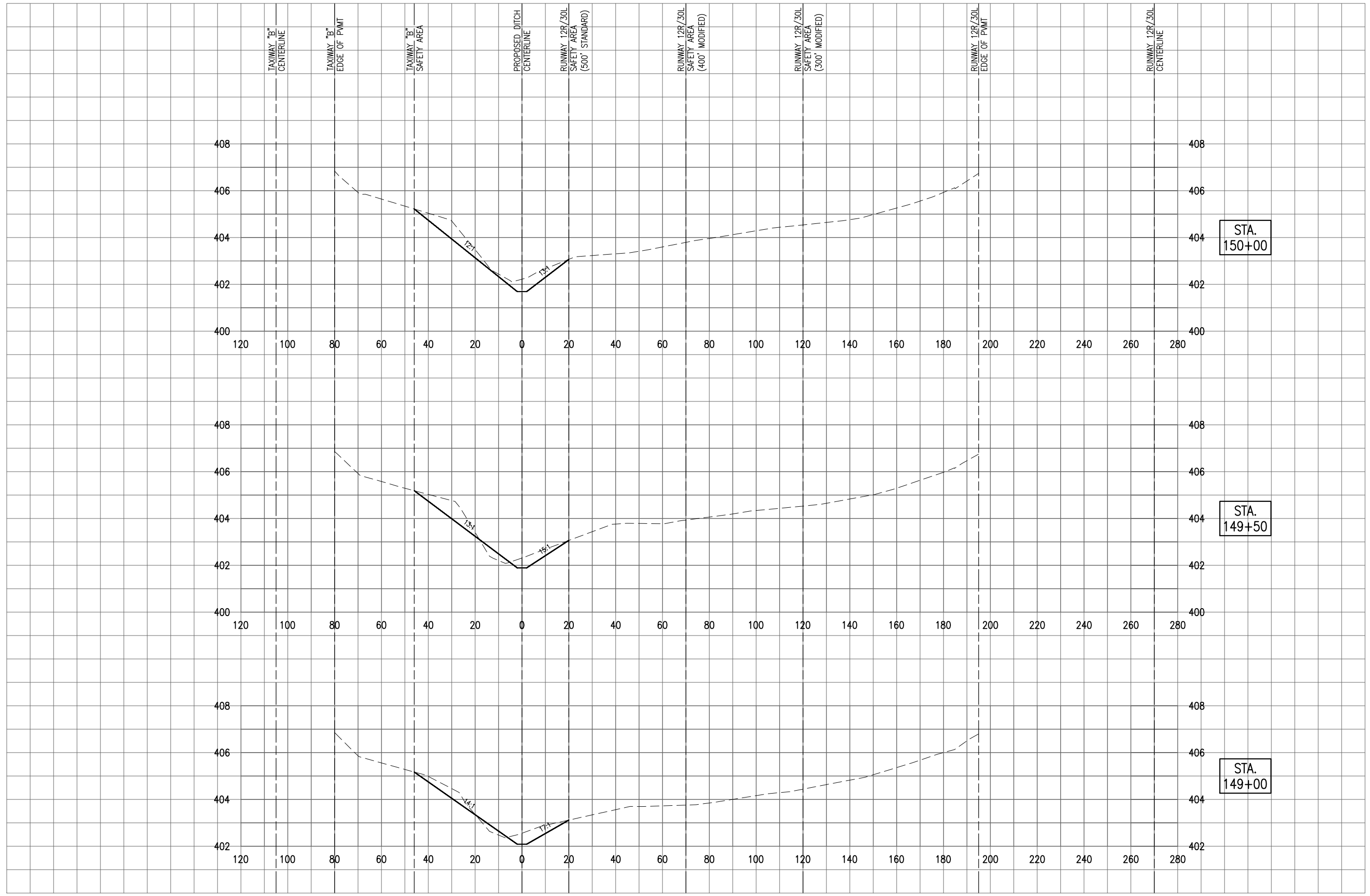
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A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
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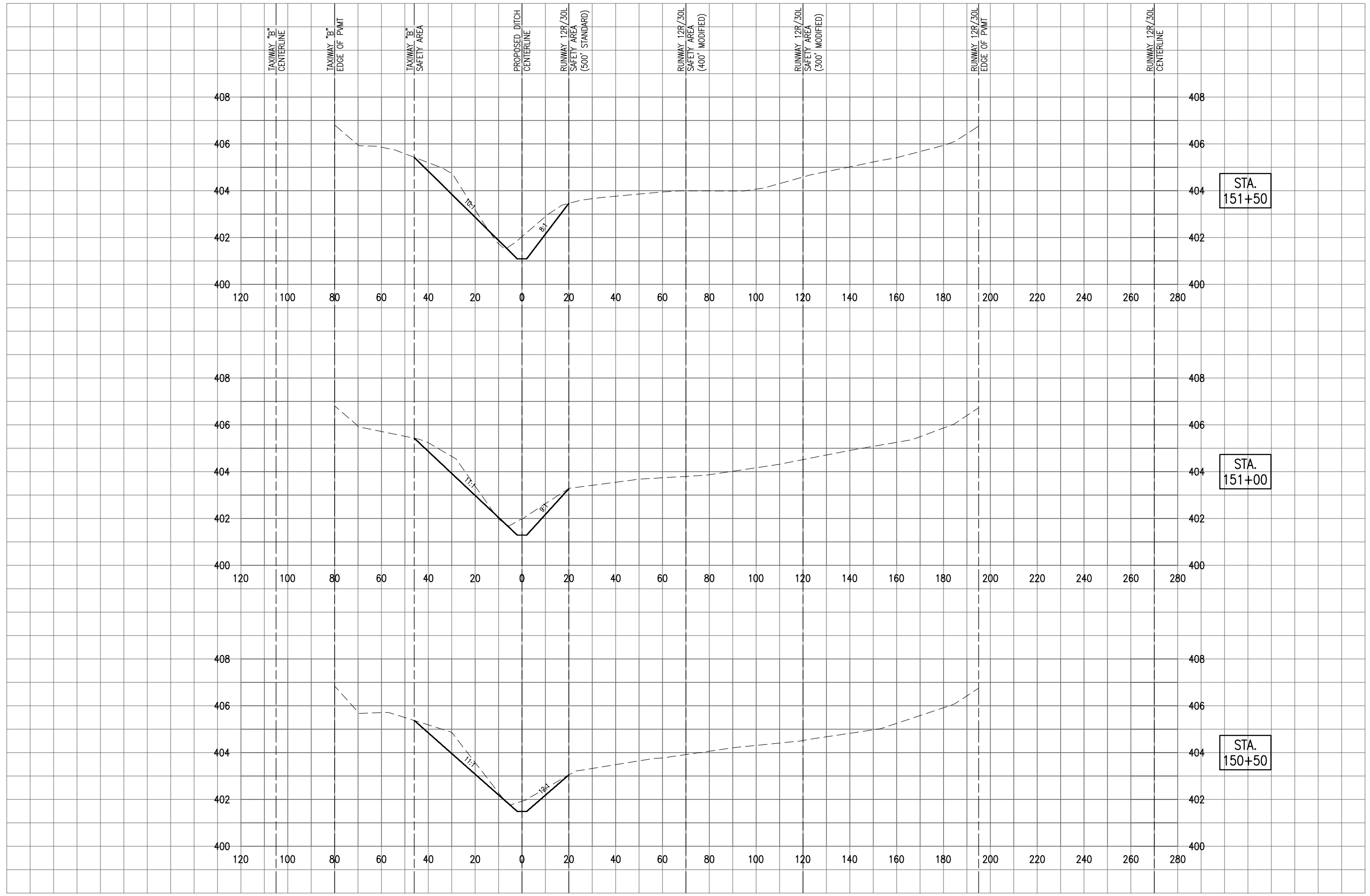
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REVISION	DATE

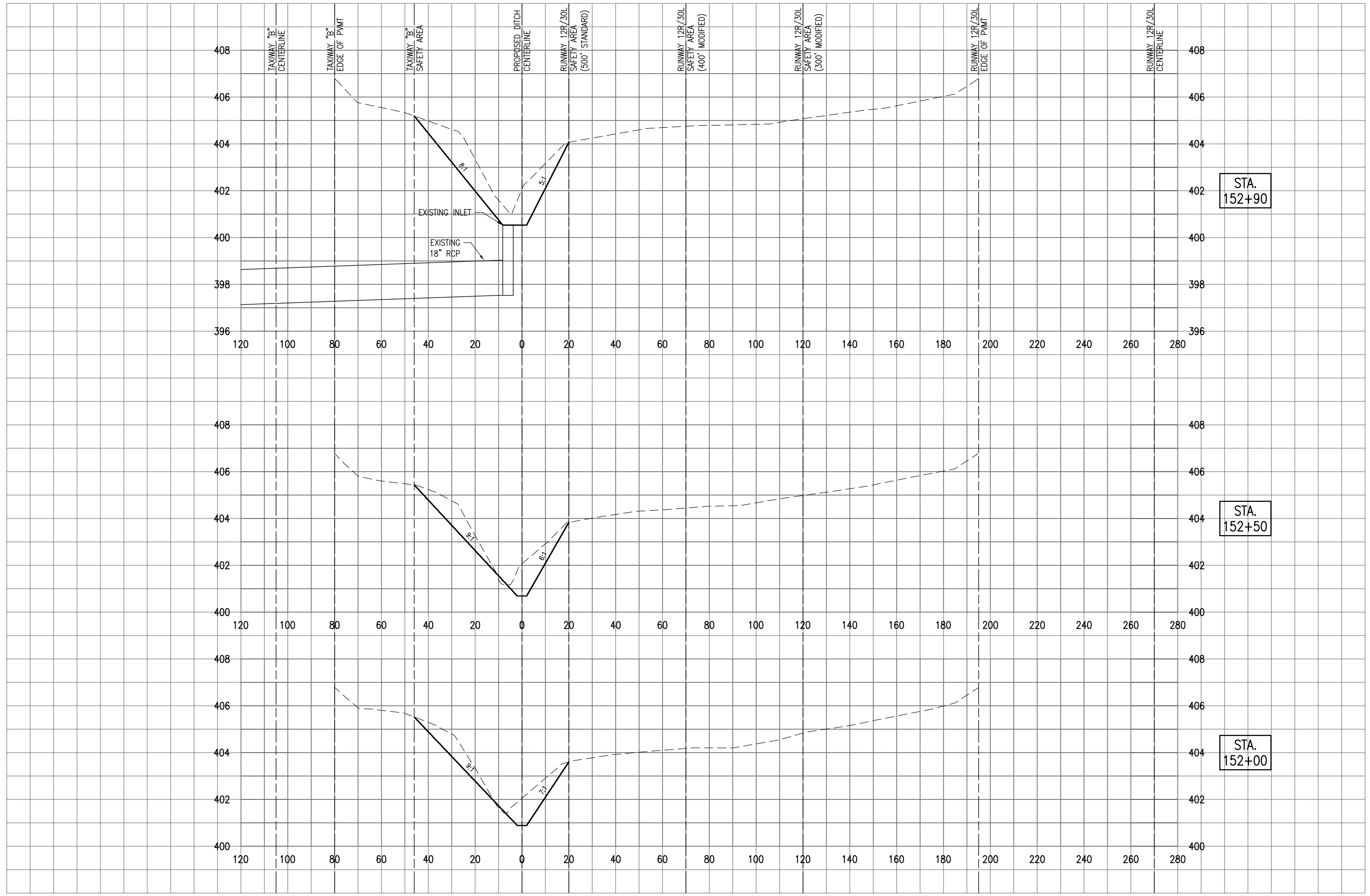
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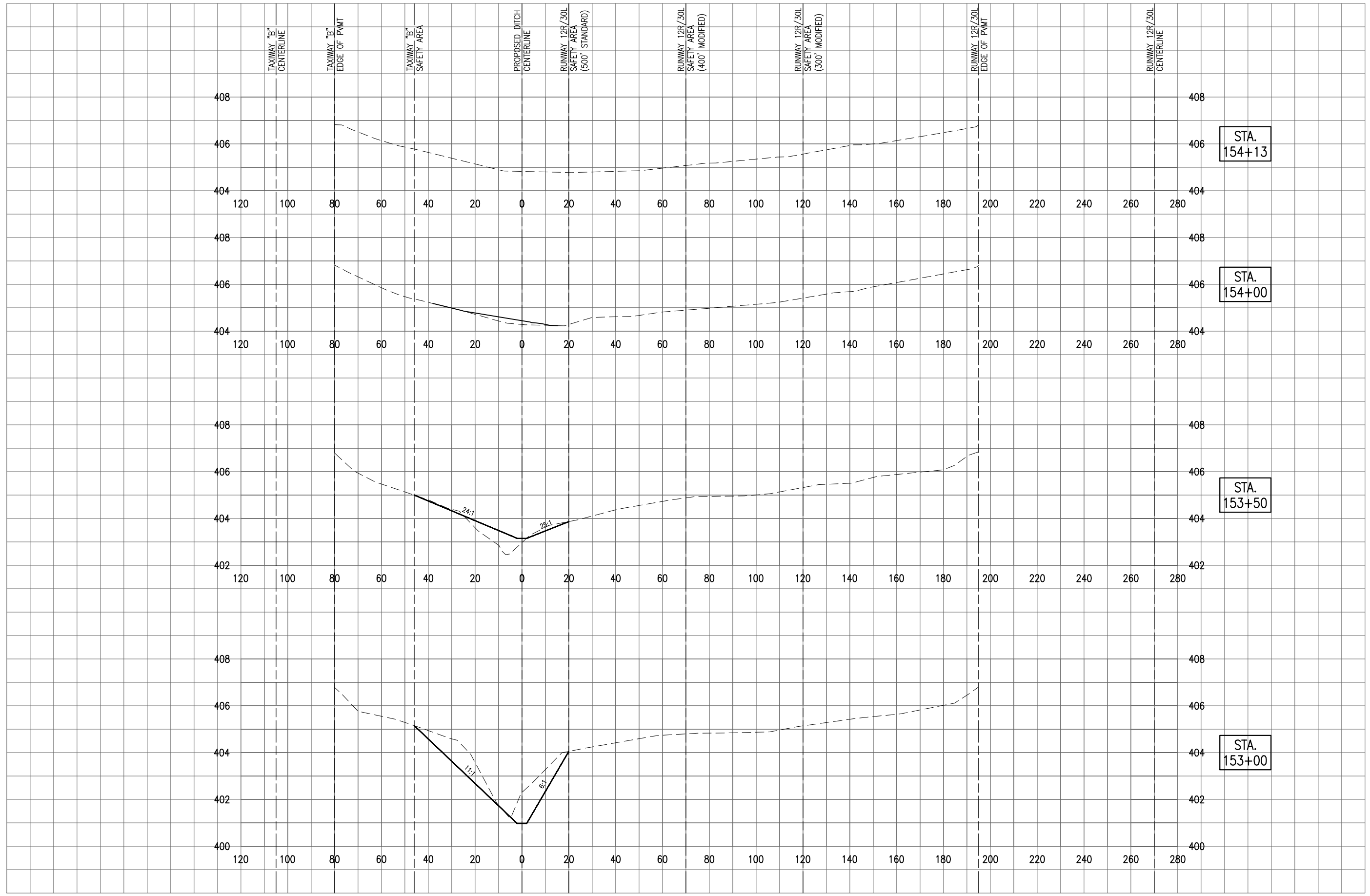
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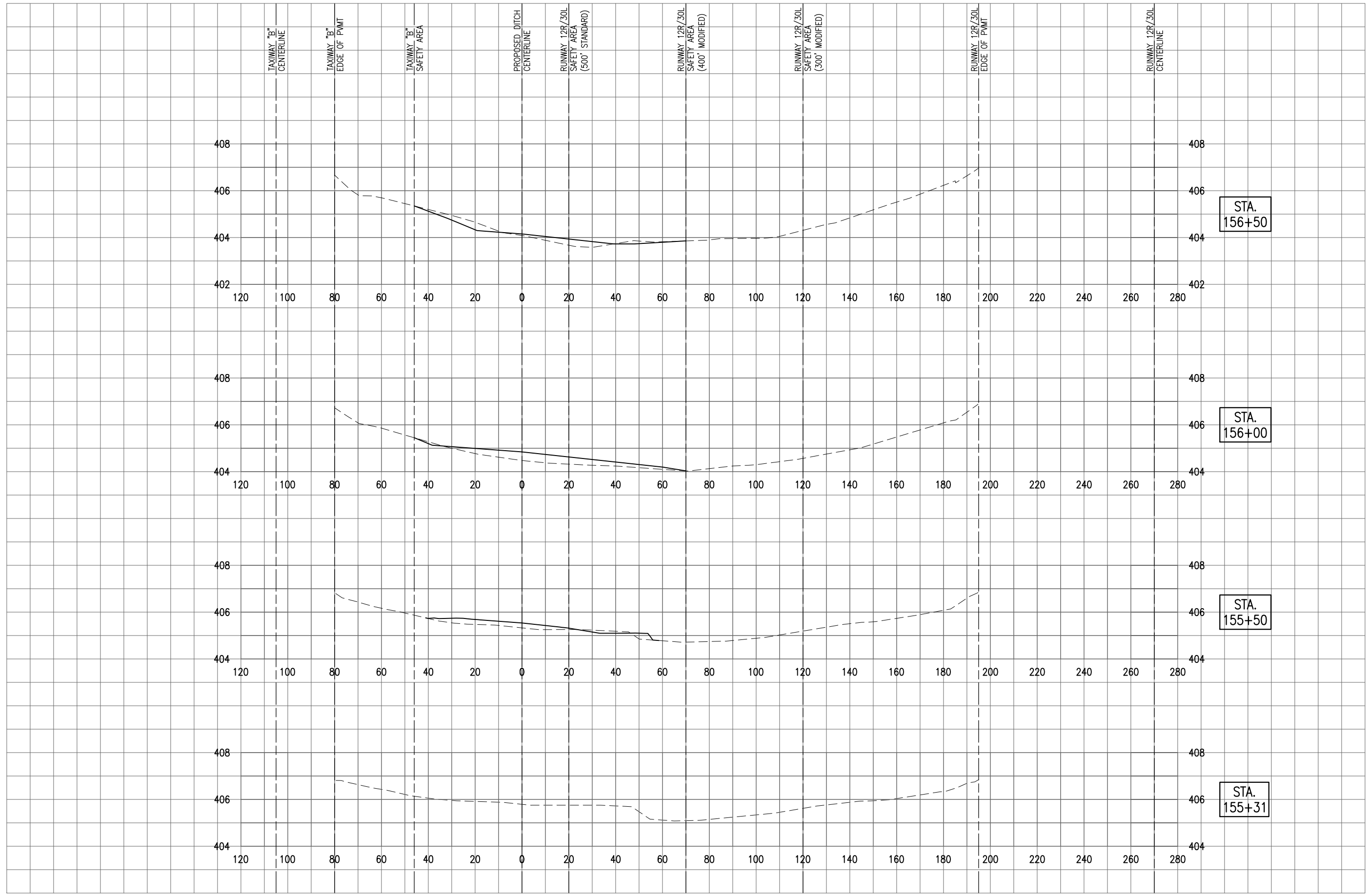
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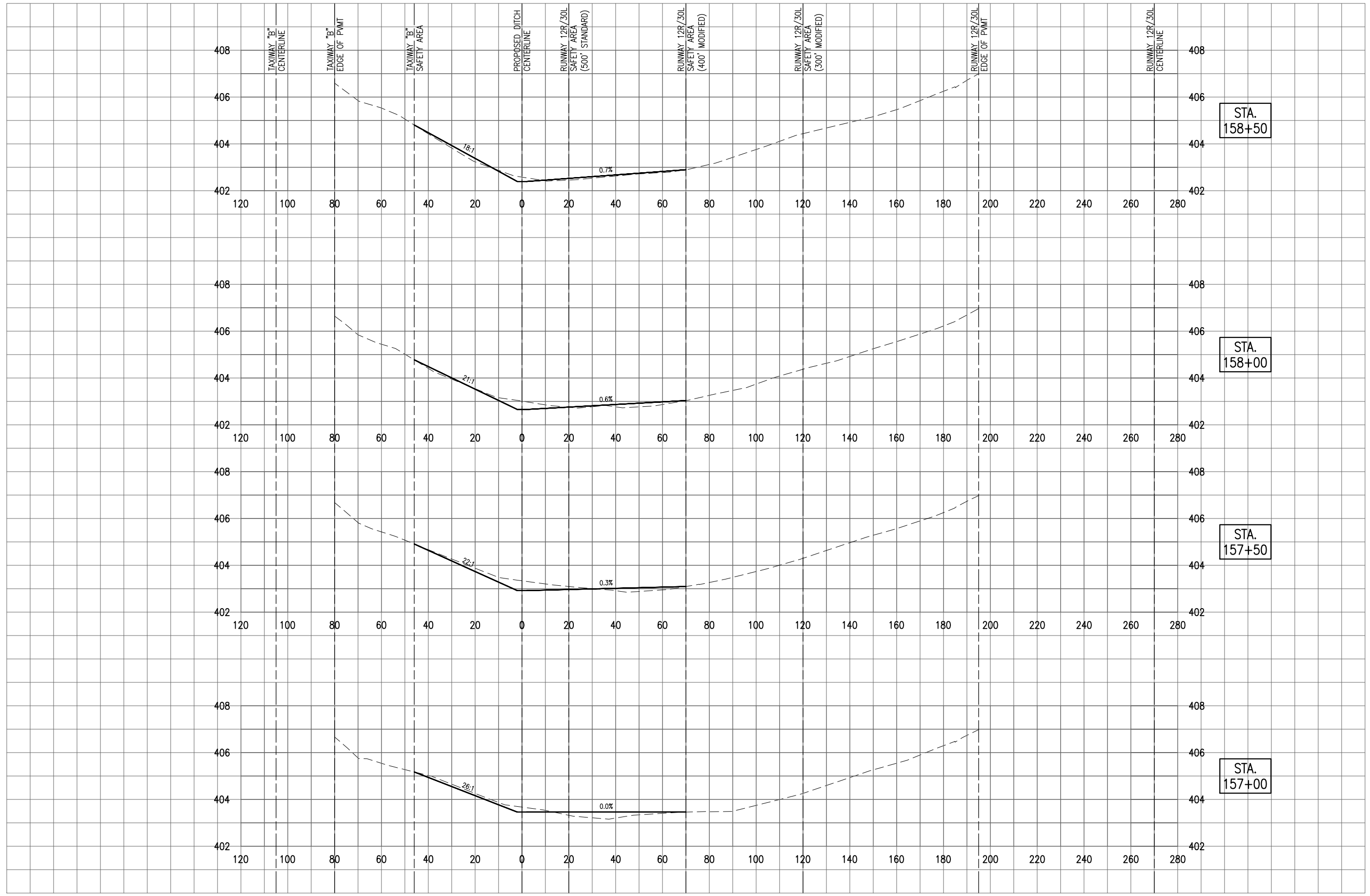
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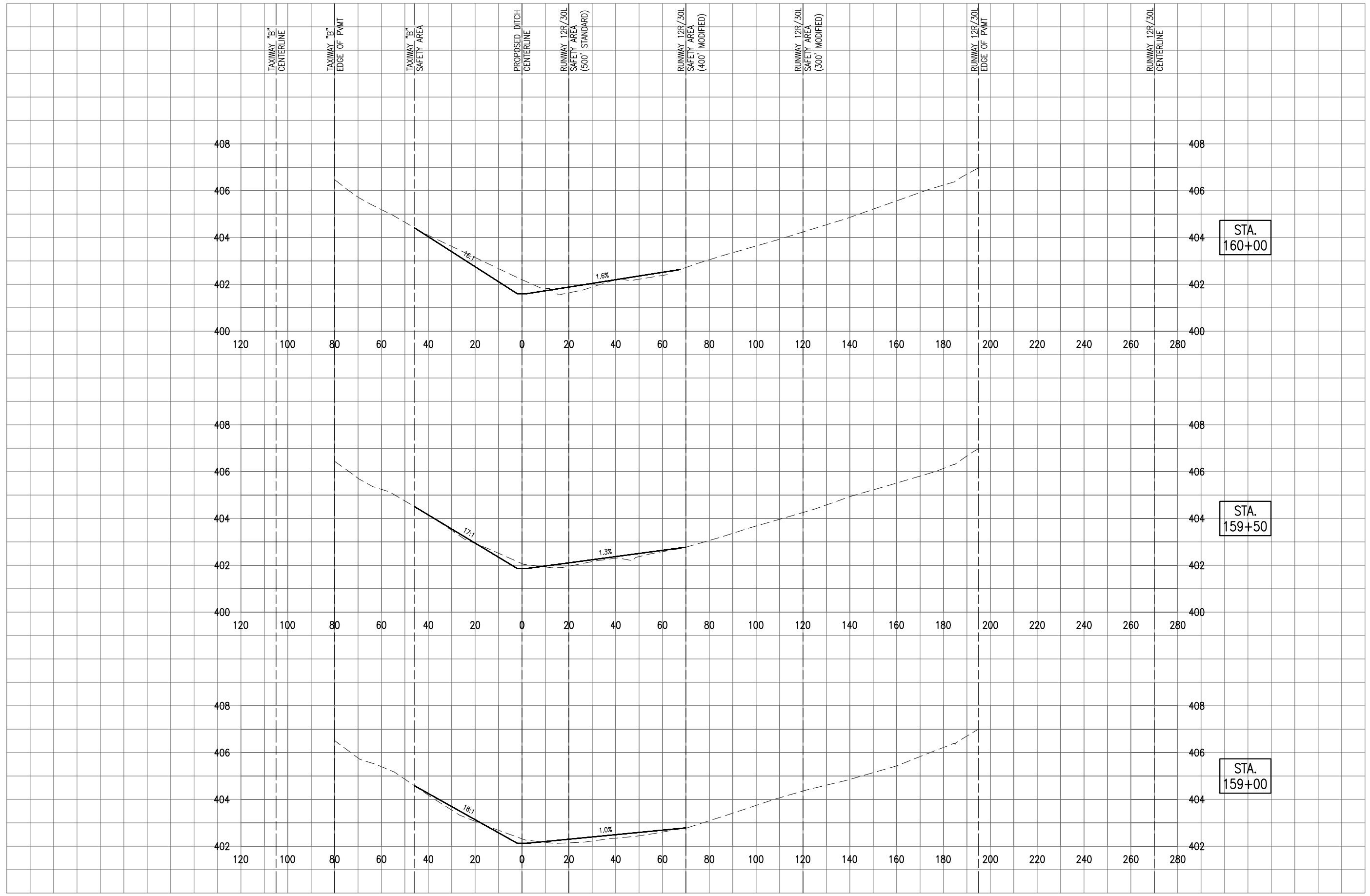
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 A Division of Bi-State Development Agency
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STA.
160+00

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159+50

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159+00

REVISION	DATE

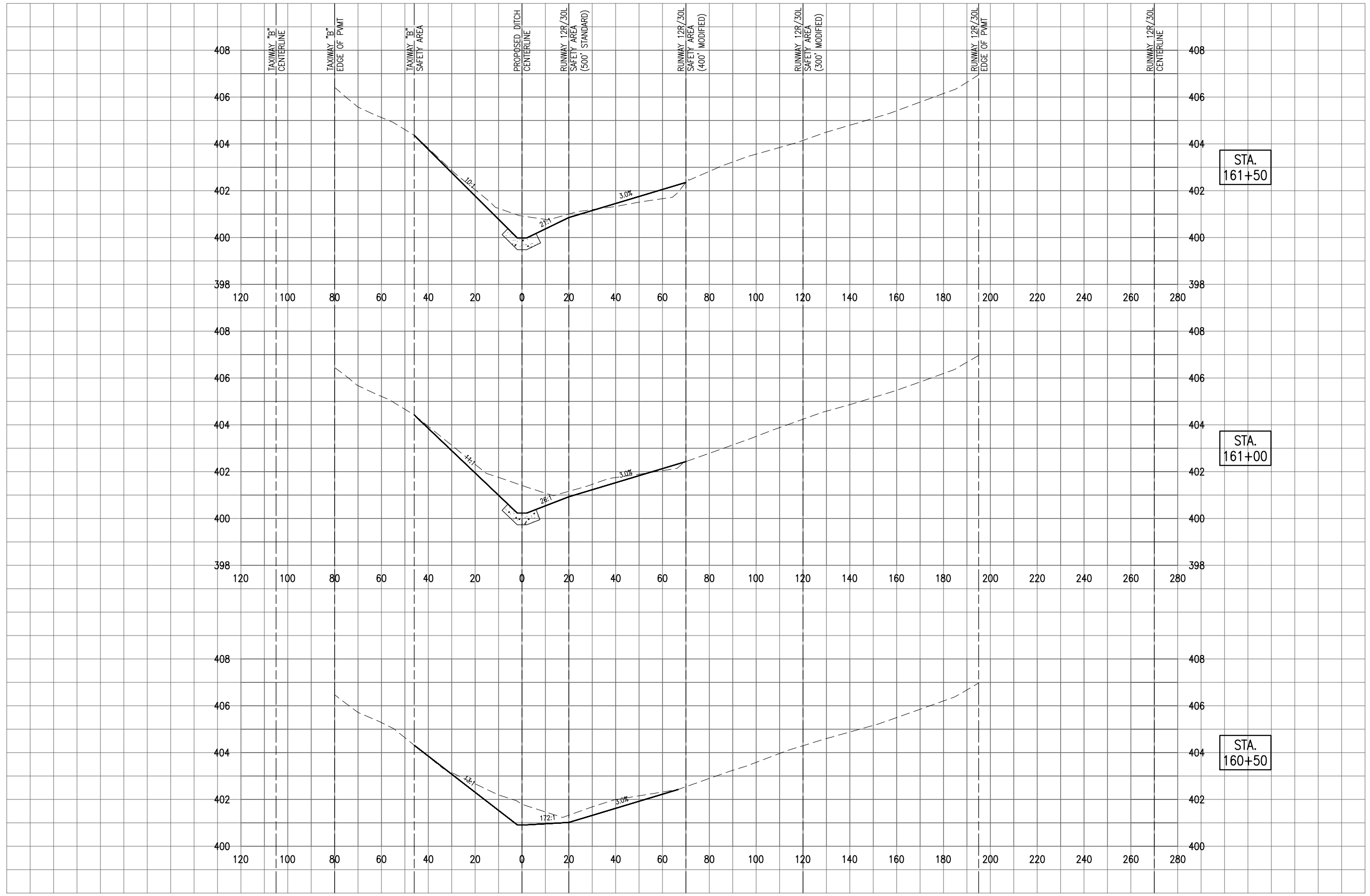
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A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
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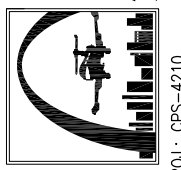
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SAINT LOUIS DOWNTOWN AIRPORT



A Division of Bi-State Development Agency
BLOCK GRANT PROJ.: 3-17-0039-B29
IL PROJ.: CPS-4210

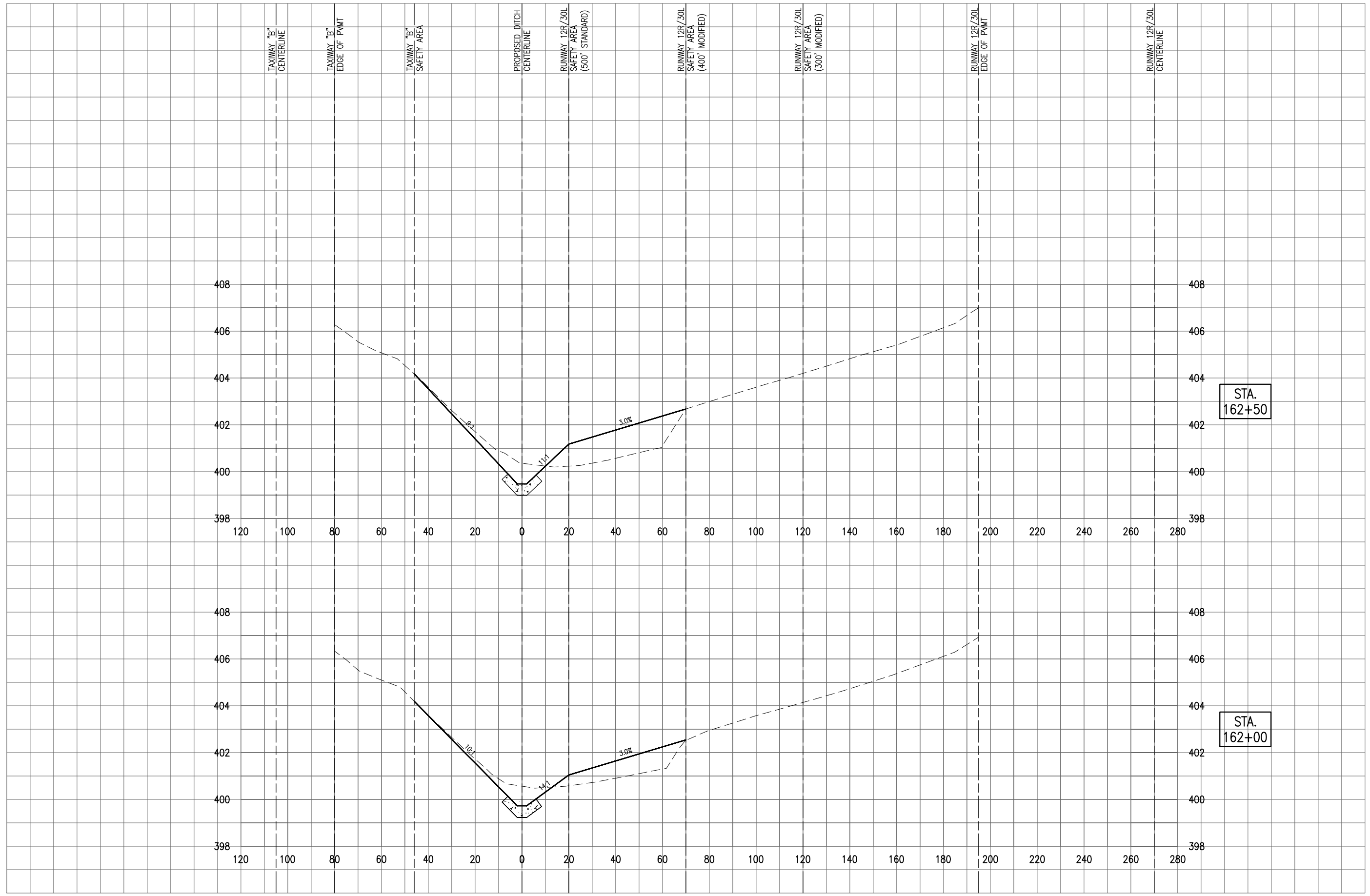
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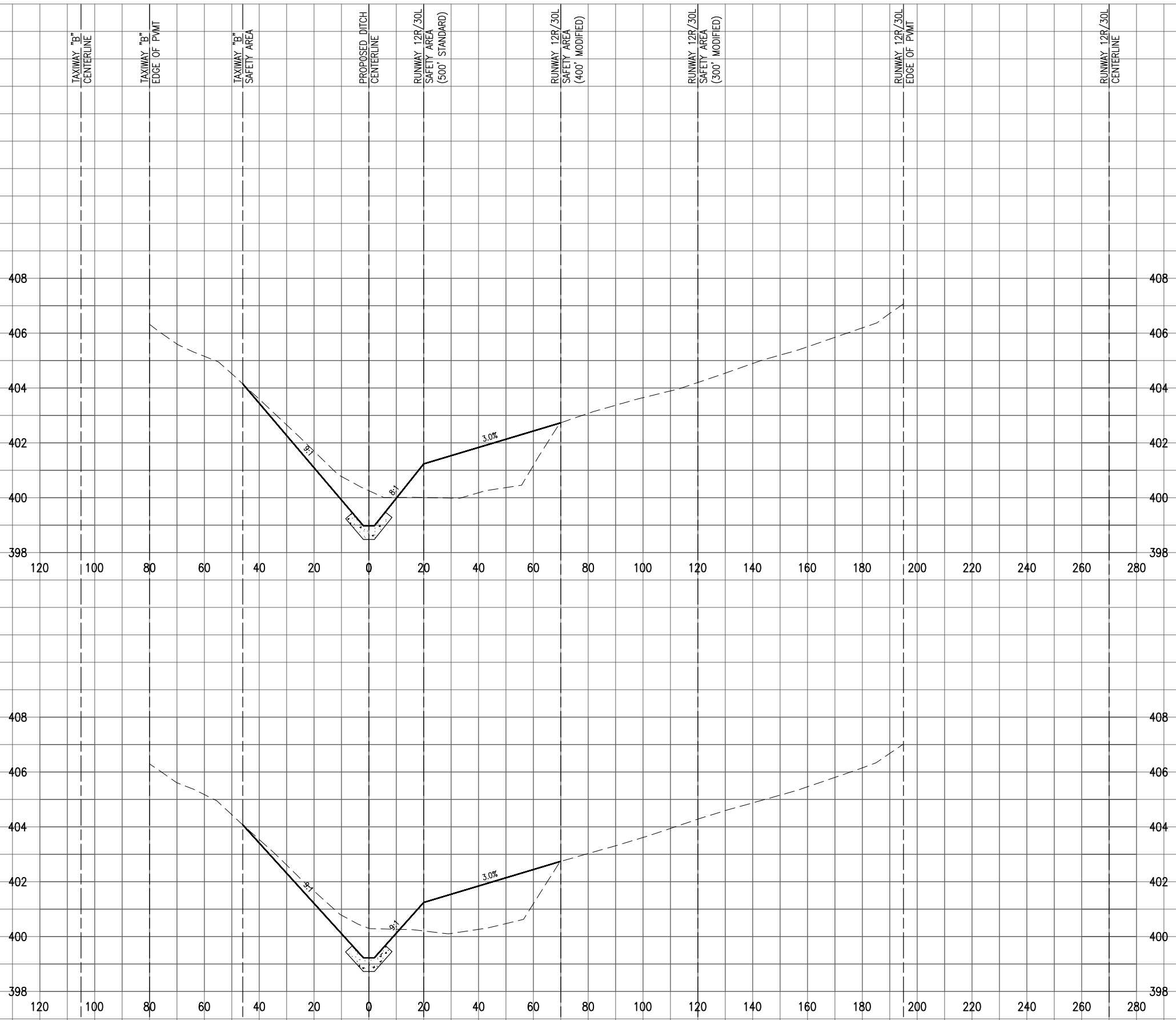
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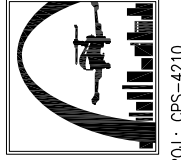
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163+50

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 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29



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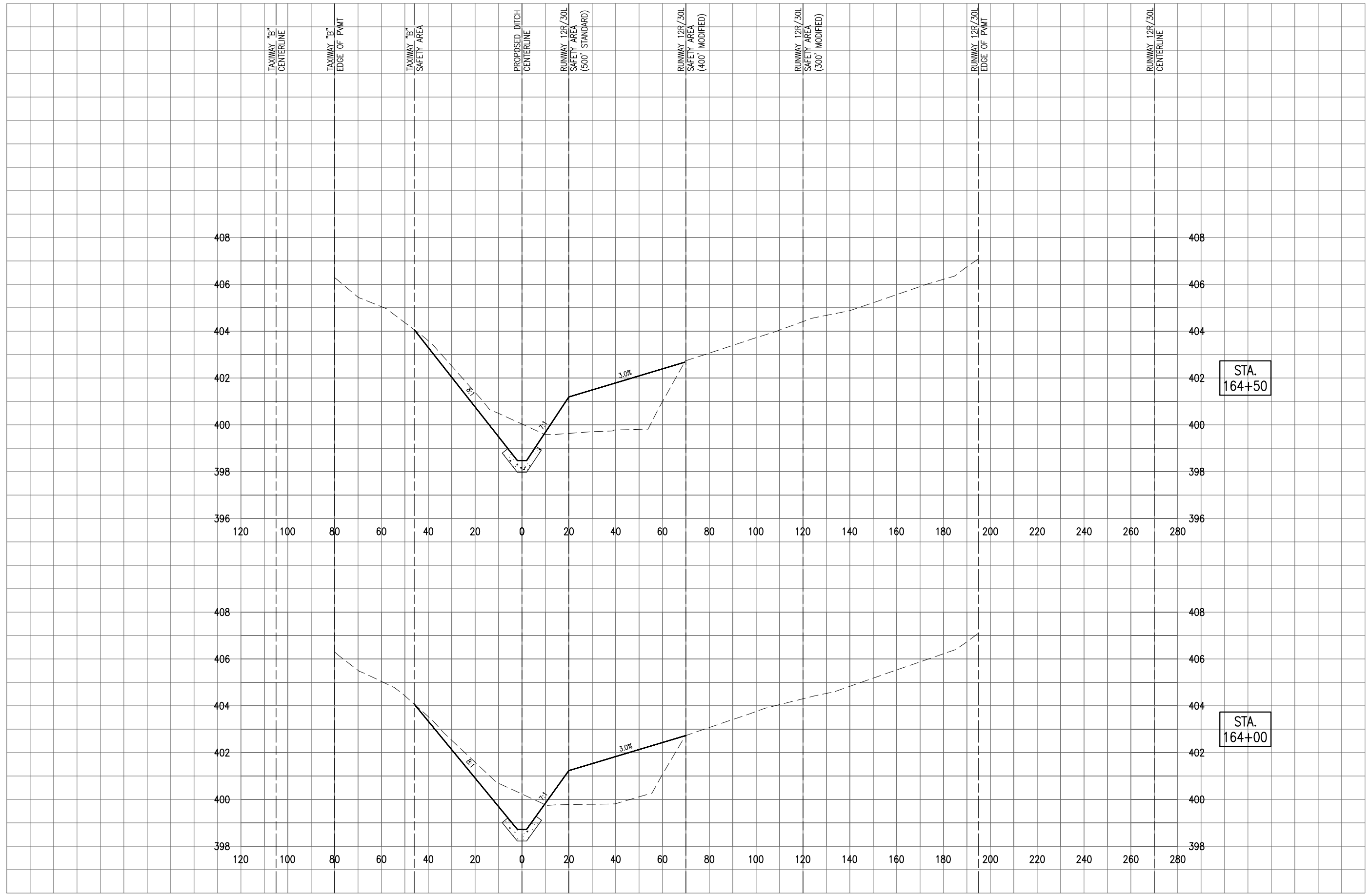
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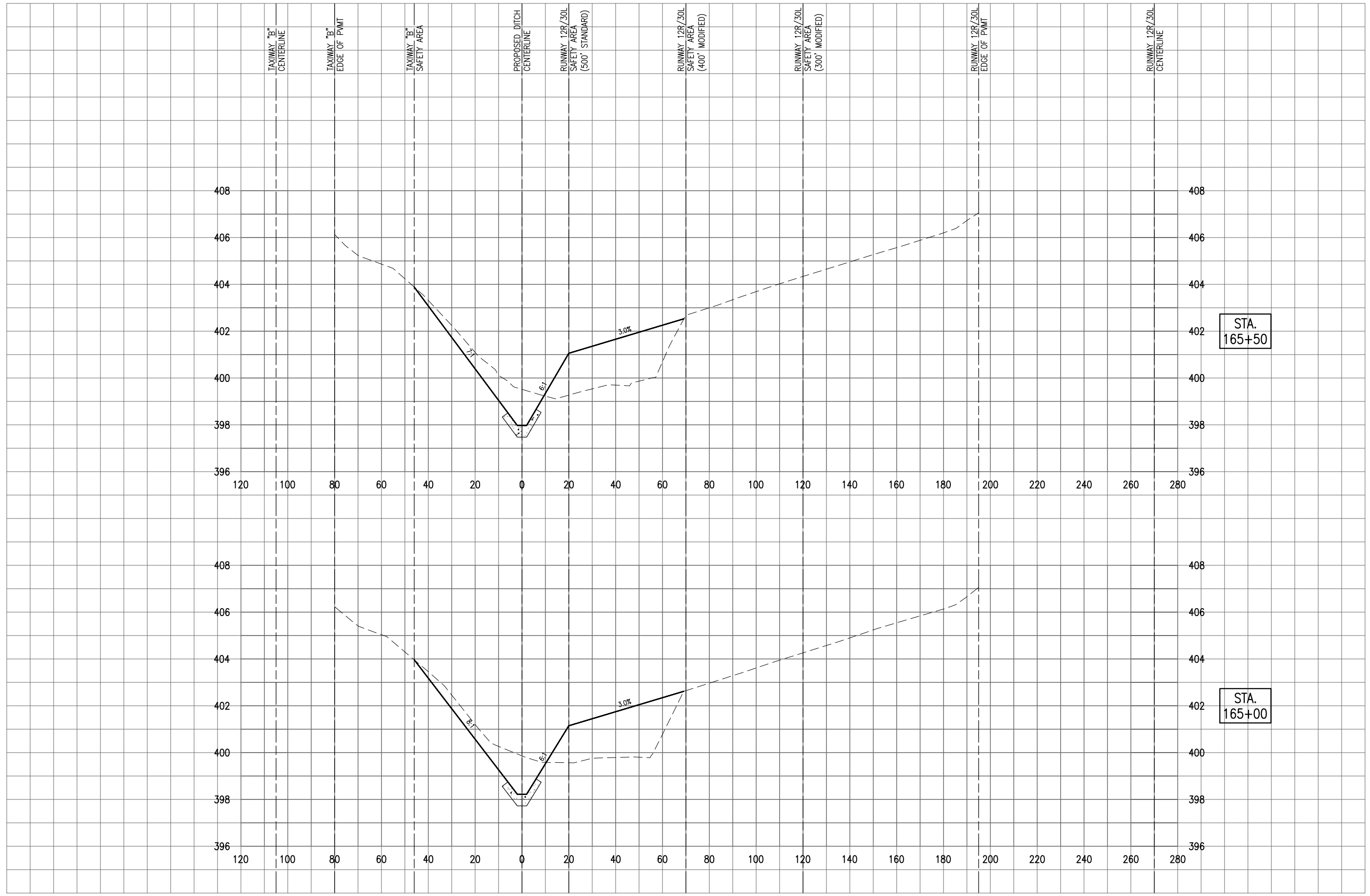
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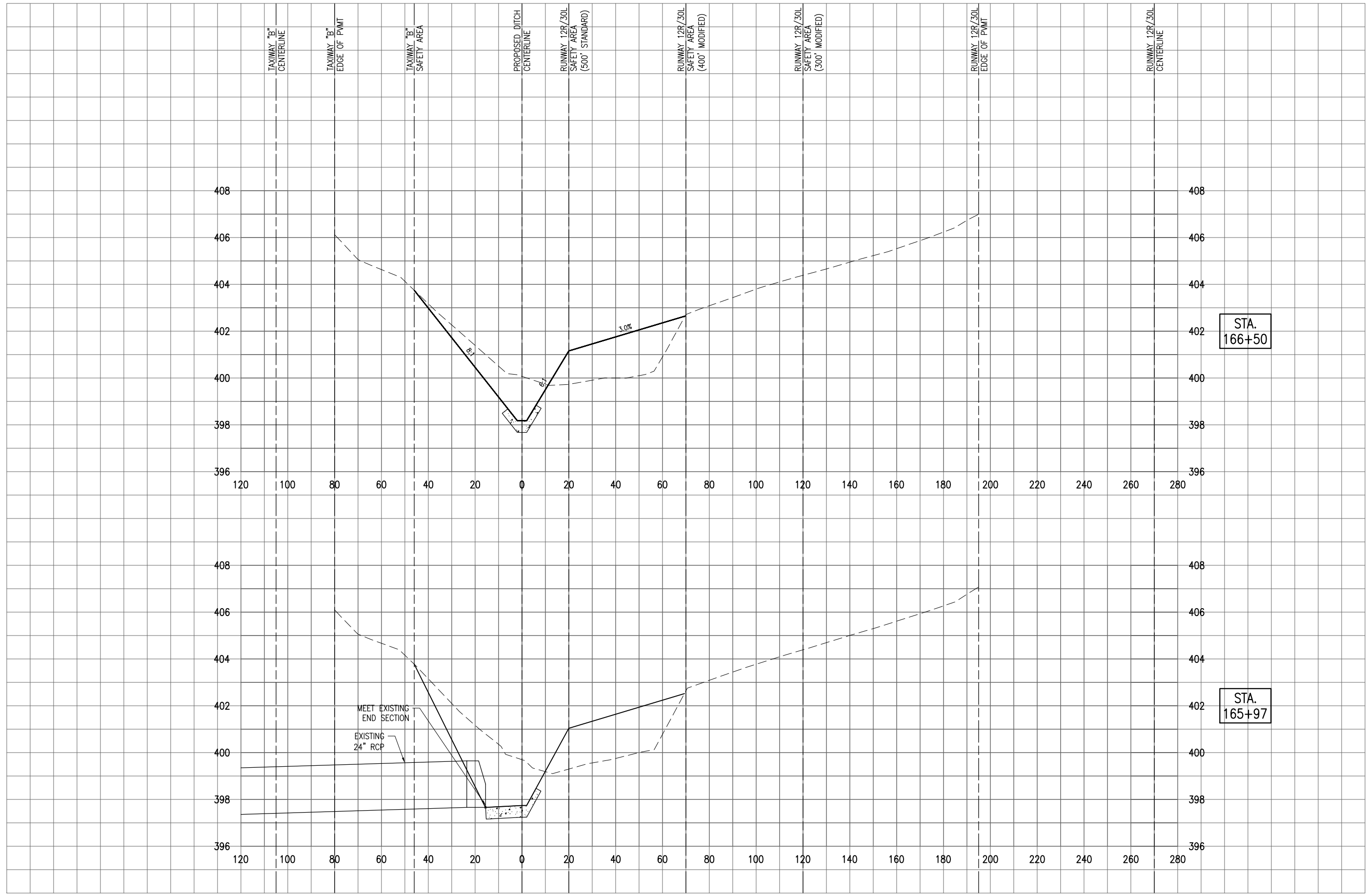
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 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190
Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 165+00 TO STA. 165+50



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REVISION	DATE

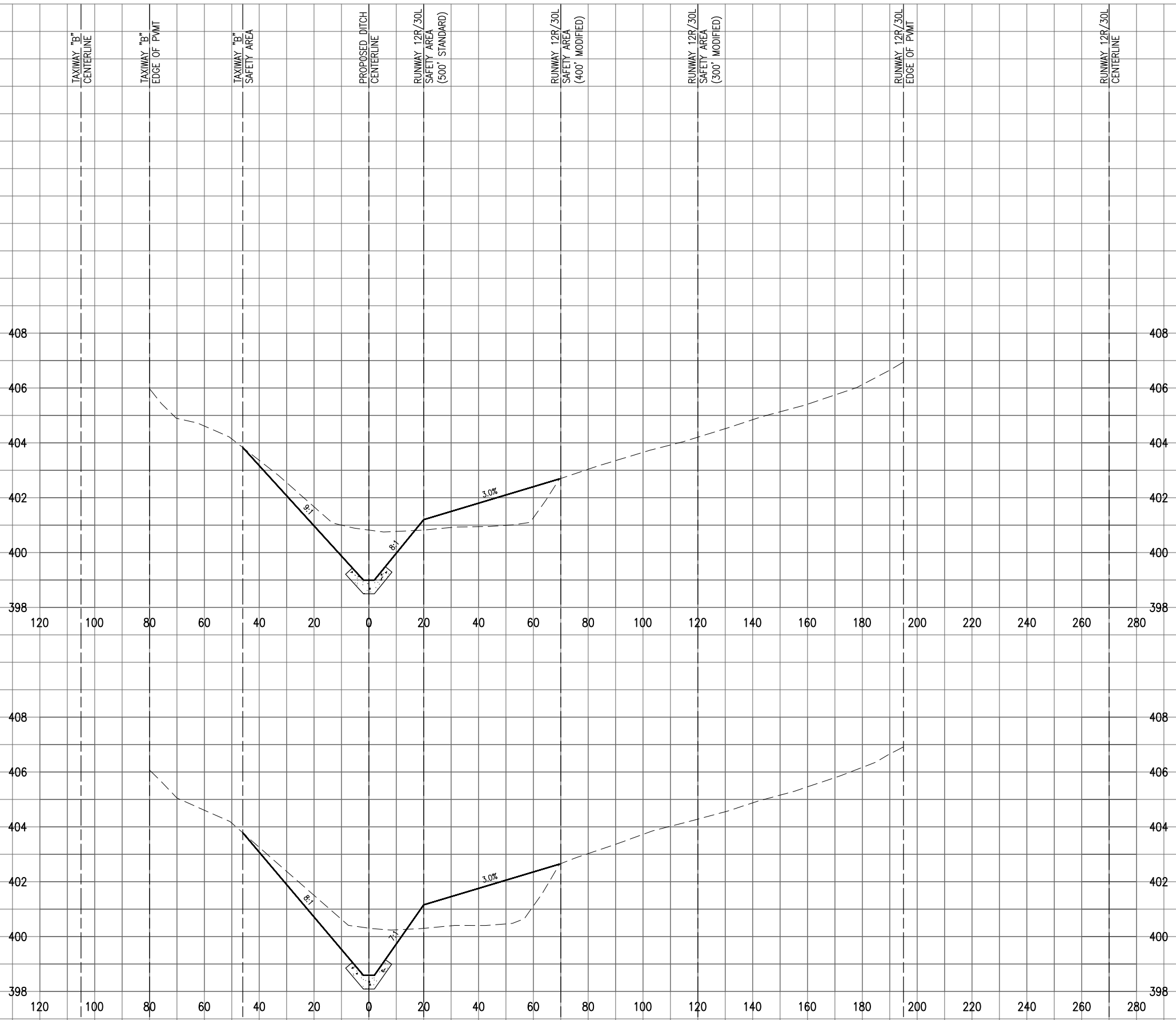
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190
Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13

LAYOUT	DAW	01/23/13
DRAWN	MLH	01/23/12
REVIEWED	BSS	03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 165+97 TO STA. 166+50



REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

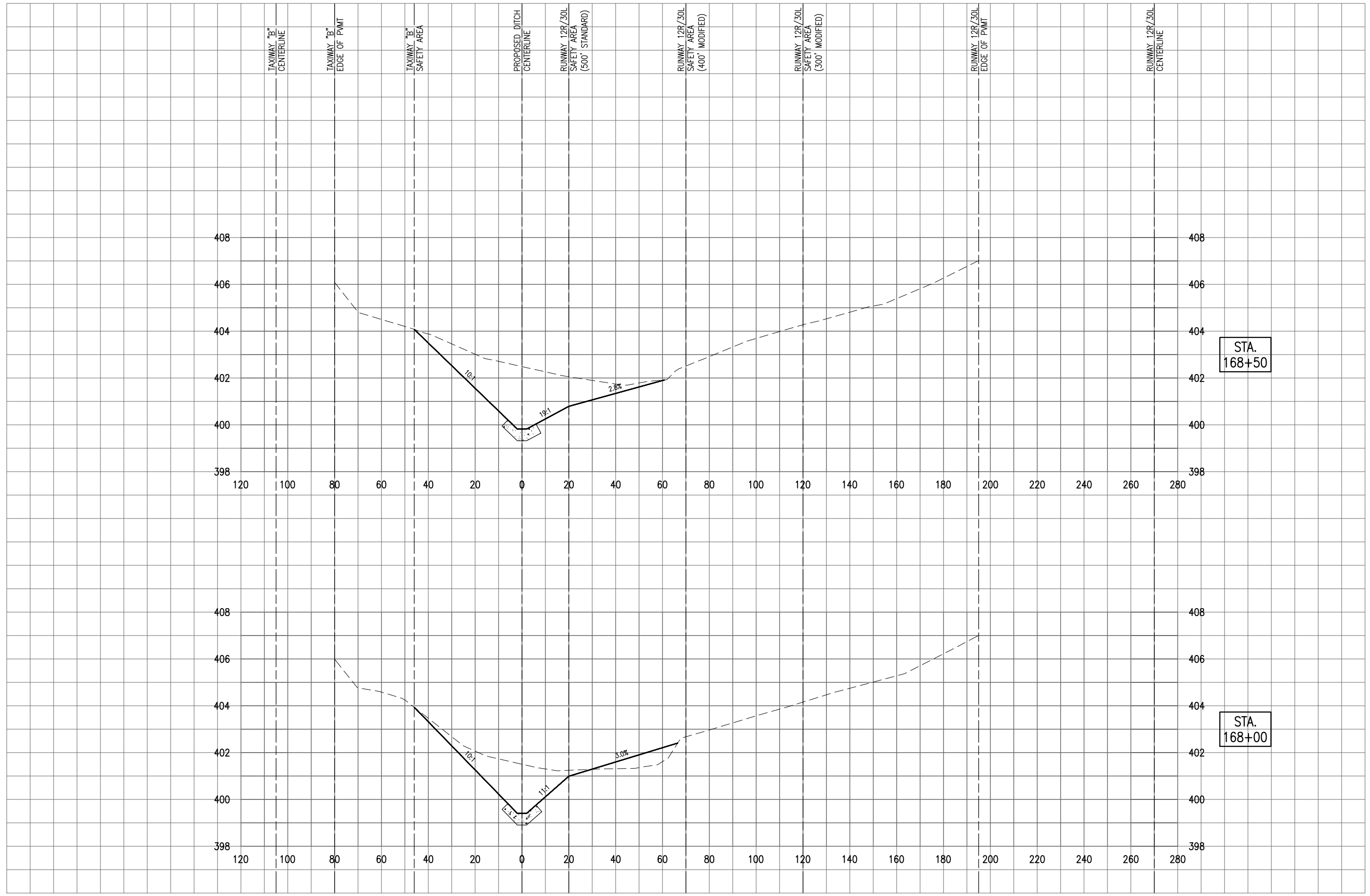
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Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 167+00 TO STA. 167+50

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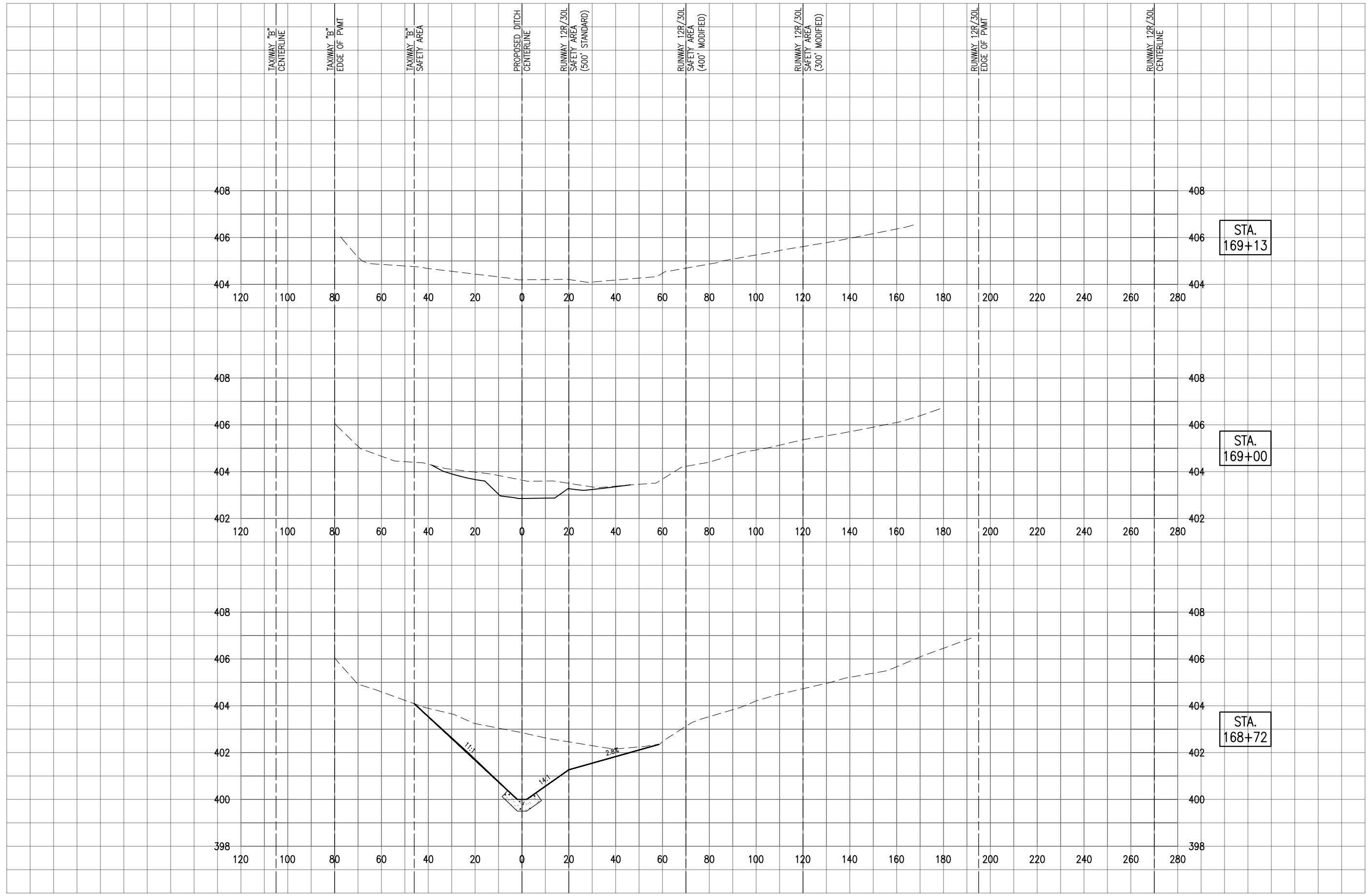
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CFS-4210

Hanson Project No.	11A0190
Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 168+00 TO STA. 168+50



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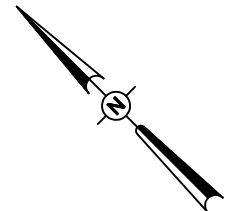
REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: J-17-0039-B29
 IL PROJ.: CFS-4210

Hanson Project No.	11A0190
Filename	C-302-XS.dwg
Scale	1"=20'H 1"=2'V
Date	03/08/13
LAYOUT	DAW 01/23/13
DRAWN	MLH 01/23/12
REVIEWED	BSS 03/08/13

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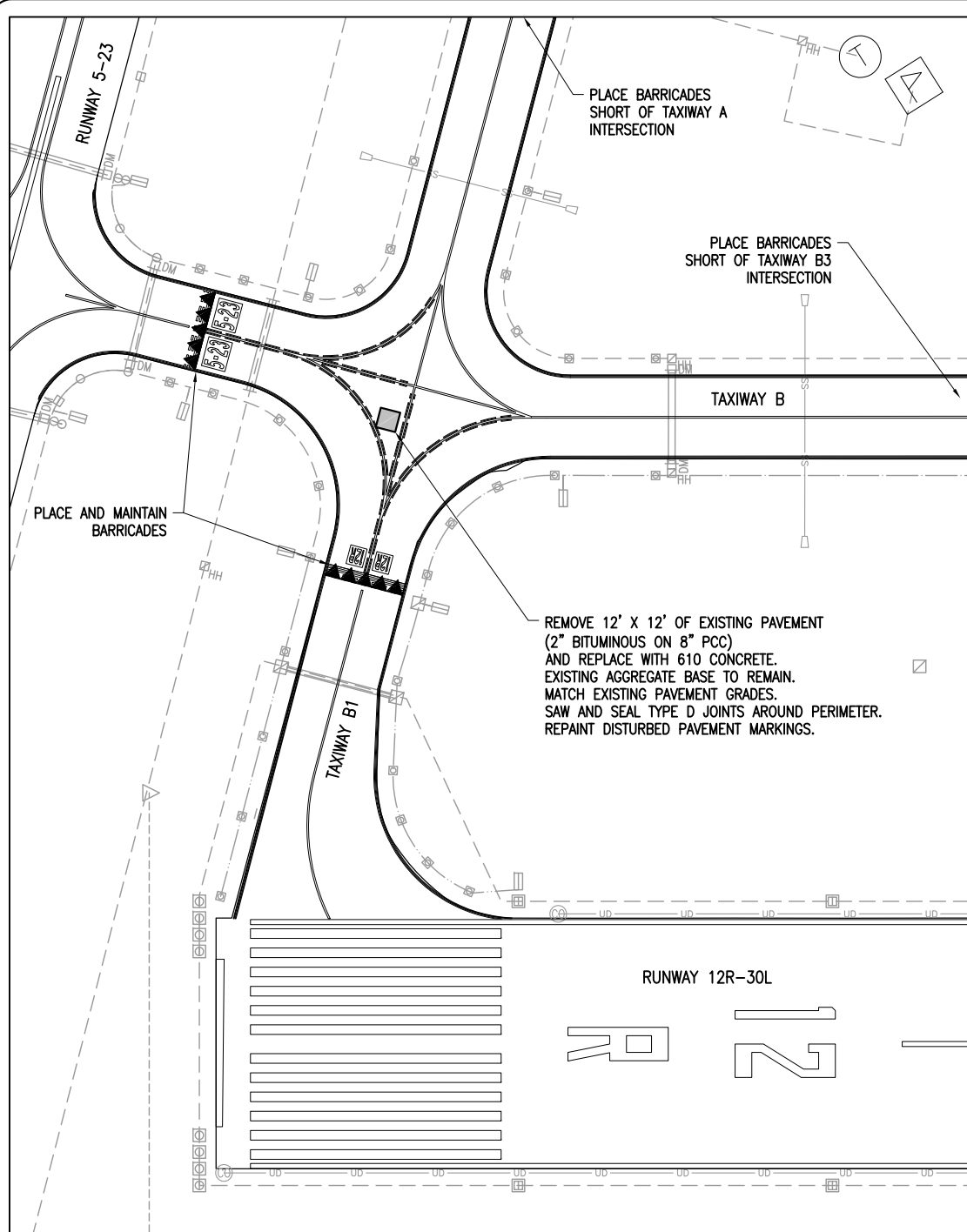
GRADE DITCH PARALLEL TO MAIN RUNWAY
 CROSS SECTIONS STA. 168+72 TO STA. 169+13



0' 25' 50' 100'
 HALF SIZE SCALE: 1" = 100'
 FULL SIZE SCALE: 1" = 50'

LEGEND

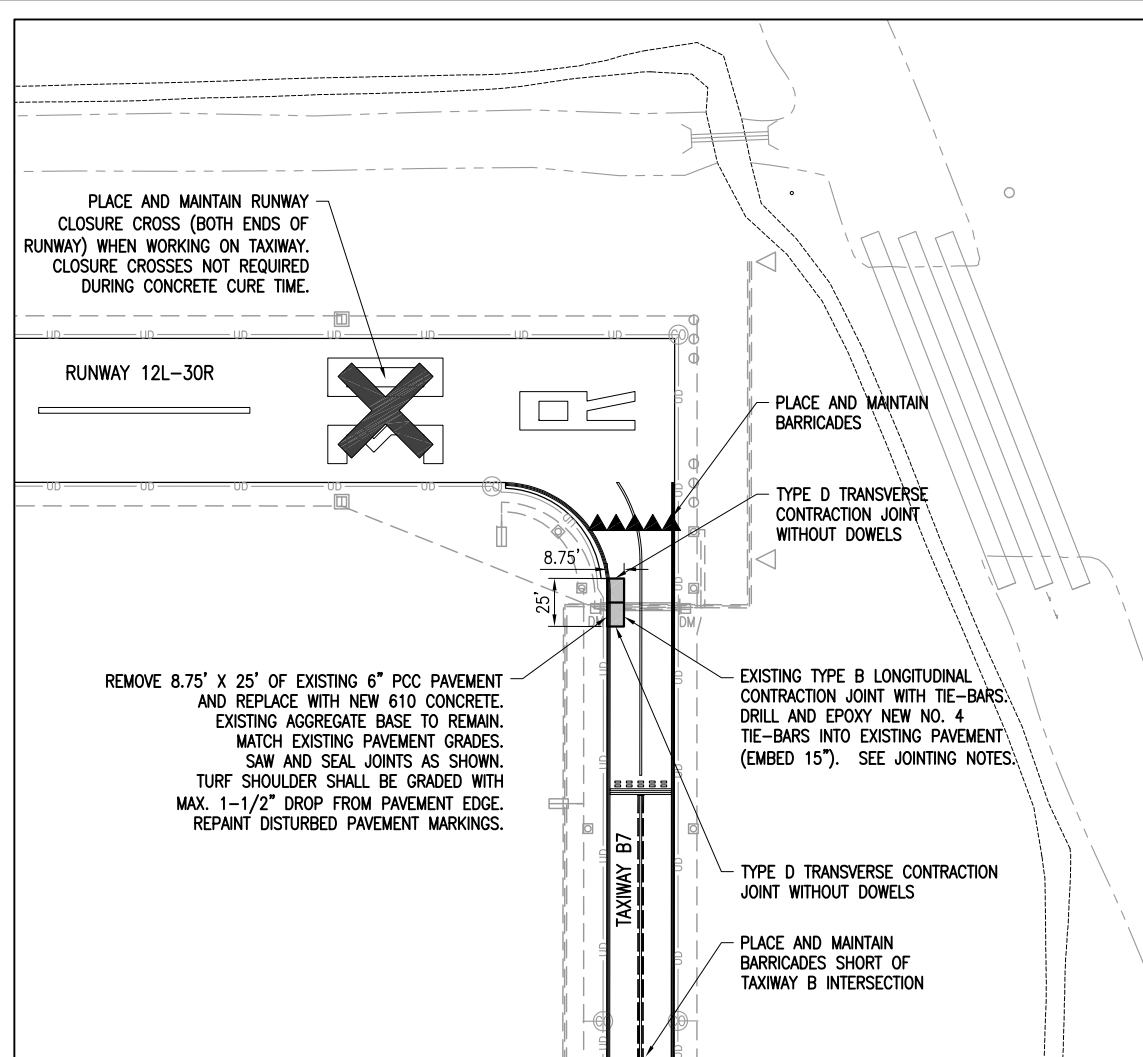
- EXISTING PAVEMENT
- PROPOSED PAVEMENT REPLACEMENT
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING ELECTRIC
- EXISTING ELECTRICAL DUCT
- EXISTING TAXI GUIDANCE SIGN
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE



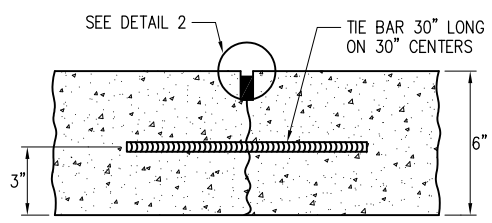
TAXIWAY B1 PAVEMENT REPAIR PLAN

ADDITIVE ALTERNATE PLAN NOTES

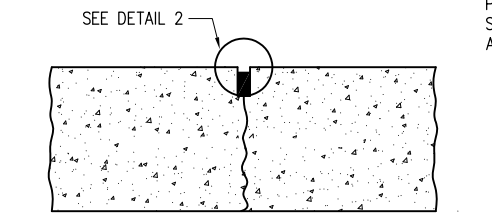
1. THE CONTRACTOR SHALL HAVE A MAXIMUM OF 2 CONSECUTIVE CALENDAR DAYS TO COMPLETE THE WORK ON TAXIWAY B1, EXCLUDING CONCRETE CURE TIME. THE CONTRACTOR SHALL HAVE A MAXIMUM OF 2 CONSECUTIVE CALENDAR DAYS TO COMPLETE THE WORK ON TAXIWAY B7, EXCLUDING CONCRETE CURE TIME.
2. THE CONTRACTOR MAY PERFORM WORK ON BOTH TAXIWAYS WITHIN THE SAME TIME FRAME IF COORDINATED CLOSELY WITH THE OWNER AND RESIDENT ENGINEER IN ADVANCE, HOWEVER CONSTRUCTION TRAFFIC WILL NOT BE PERMITTED TO TRAVEL CONTINUOUSLY BETWEEN THE TWO SITES.
3. CLOSURE CROSSES AND BARRICADES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION. CLOSURE CROSSES SHALL BE REMOVED UPON COMPLETION OF ACTIVE CONSTRUCTION AT THE SITE, BUT BARRICADES SHALL REMAIN IN PLACE UNTIL THE NEW CONCRETE HAS PROPERLY CURED AND THE PAVEMENTS HAVE BEEN CLEANED TO THE SATISFACTION OF THE OWNER.
4. THE CONTRACTOR SHALL COORDINATE THE SCHEDULE FOR THIS WORK WITH THE OWNER AND RESIDENT ENGINEER IN ADVANCE IN ORDER TO PROPERLY SCHEDULE THE RUNWAY/TAXIWAY CLOSURES AND ALLOW FOR THE WORK TO AVOID CLOSURES DURING CRITICAL AIRCRAFT OPERATIONAL PERIODS. AT ALL TIMES, THE CONTRACTOR'S OPERATIONS SHALL BE SUCH AS TO MINIMIZE CLOSURES.
5. CONTRACTOR ACCESS TO EACH SITE WILL BE COORDINATED PRIOR TO BEGINNING THE WORK. THE CONTRACTOR WILL BE ESCORTED FROM A PERIMETER ACCESS GATE TO EACH SITE.



TAXIWAY B7 PAVEMENT REPAIR PLAN

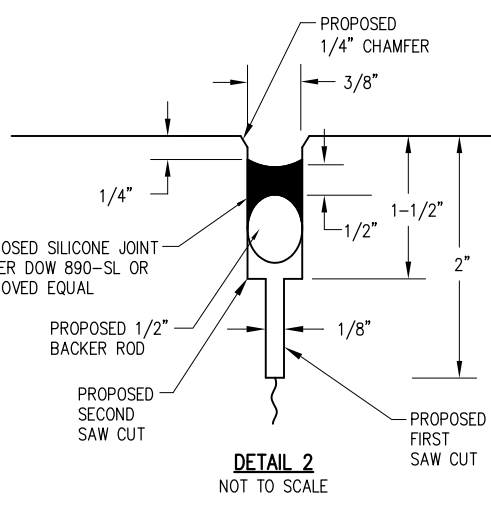


TYPE B HINGED



TYPE D DUMMY

CONTRACTION JOINTS



DETAIL 2
NOT TO SCALE

JOINT SEALING DETAIL

JOINTING NOTES

1. ALL JOINT EDGES SHALL BE SAWCUT TO PRODUCE THE REQUIRED CHAMFER. ALL LONGITUDINAL AND TRANSVERSE CONTRACTION JOINTS SHALL BE SAWED.
2. ALL TIE BARS SHALL BE PLACED AT A POINT NOT LESS THAN 6" OR MORE THAN 15" FROM A TRANSVERSE OR EXPANSION JOINT. TIE BARS FOR THE 6" PAVEMENT SHALL BE 1/2" DIA., 30" IN LENGTH AND SPACED 30" CENTER TO CENTER.
3. ALLOWABLE TOLERANCES FOR GROOVE DEPTH WILL BE ±1/8" FOR CONSTRUCTION JOINTS AND ±1/4" FOR CONTRACTION JOINTS.
4. THE CONTRACTOR IS REQUIRED TO DRILL AND EPOXY THE PROPOSED TIE-BARS IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS. THE EPOXY MATERIAL MUST BE APPROVED BY THE DIVISION OF AERONAUTICS PRIOR TO USE.
5. THE COST OF ALL DOWEL BARS, TIE-BARS, SAWING AND SEALING SHALL BE INCLUDED IN THE COST OF THE P.C.C. PAVEMENT.
6. REFER TO SPECIFICATION ITEM 610 FOR ADDITIONAL INFORMATION.

REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	DAW	01/28/13
Filename	C-122-CONZ.dwg	DRAWN	MLH	01/29/13
Scale	1"=50'	REVIEWED	BSS	03/08/13
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GRADE DITCH PARALLEL TO MAIN RUNWAY
 CONSTRUCTION PLAN - ADDITIVE ALTERNATE

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