

4A

CONSTRUCTION PLANS

HA020
TOTAL SHEETS: 24

FOR

HARRISBURG RALEIGH AIRPORT

CONSTRUCT, LIGHT AND MARK
A 1,010 FOOT EXTENSION
TO RUNWAY 6/24

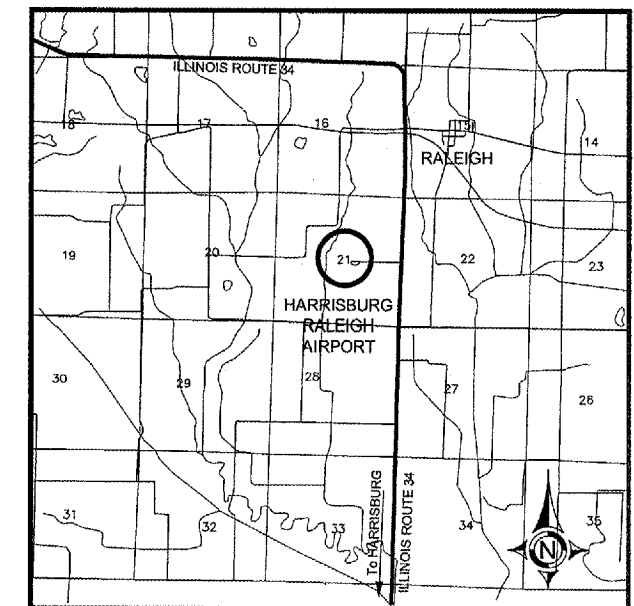
ILLINOIS PROJECT NUMBER: HSB-3422
AIP PROJECT NUMBER: 3-17-0050-B6

HARRISBURG, ILLINOIS

DATE: MAY 24, 2005



LOCATION MAP



VICINITY MAP

BROWN AND ROBERTS, INC.
CONSULTING ENGINEER
PRESIDENT
SUBMITTED BY: *Jim W. Brown*
JIM W. BROWN
DATE SUBMITTED: *5/24/05*
LISC. NUMBER: 062-035047
LISC. EXP. DATE: NOVEMBER 2005

PLANS PREPARED BY:

BROWN AND ROBERTS, INC.
1 WEST RIDGE ROAD
HARRISBURG, IL. 62946
(618) 252-8111

HARRISBURG RALEIGH AIRPORT AUTHORITY
CHAIRMAN
APPROVED BY: *Brad Henshaw* *5/24/05*
BRAD HENSHAW DATE
SECRETARY
ATTENDED BY: *Ken Wallace* *5/24/05*
KEN WALLACE DATE

SUMMARY OF QUANTITIES

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
AR108158	1/C #8 5KV UG CABLE IN UD	LIN.FT.	2,560
AR125410	MITL-STAKE MOUNTED	EACH	10
AR125505	MIRL-STAKE MOUNTED	EACH	8
AR125510	MIRL-BASE MOUNTED	EACH	2
AR125540	MI THRESHOLD LIGHT STAKE MTD	EACH	8
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	8
AR151450	CLEARING AND GRUBBING	ACRE	15
AR152410	UNCLASSIFIED EXCAVATION	CU YD	75,000
AR156511	DITCH CHECK	EACH	6
AR156530	TEMPORARY SEEDING	ACRE	21
AR201610	BITUMINOUS BASE COURSE	TON	2,475
AR209510	CRUSHED AGGREGATE BASE COURSE	TON	5,400
AR401610	BITUMINOUS SURFACE COURSE	TON	1,250
AR602510	BITUMINOUS PRIME COAT	GALLON	3,200
AR603510	BITUMINOUS TACK COAT	GALLON	1,000
AR620520	PAVEMENT MARKING - WATERBORNE	SQ. FT.	28,000
AR801250	MODIFY BASE MOUNTED LIGHT	EACH	10
AR801251	ACCESS ROAD	L.S.	1
AR801252	SPECIAL SEEDING	ACRE	15
AR801253	STONE DUMPED RIPRAP	TON	120
AR901510	SEEDING	ACRE	21
AR908510	MULCHING	ACRE	21

INDEX TO SHEETS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	COVER SHEET
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3	RUNWAY SAFETY PLAN
4	PROPOSED STORM WATER POLLUTION PREVENTION PLAN
5	PROPOSED EROSION CONTROL DETAIL
6	EXISTING SITE & CONSTRUCTION PLAN
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8-10	RUNWAY PLAN-PROFILE
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21	ELECTRICAL PLAN
22-24	ELECTRICAL DETAILS

SCOPE OF WORK

THE PROJECT SCOPE CONSISTS OF CONSTRUCTION OF A 1010-FT BY 75-FT RUNWAY EXTENSION TO RUNWAY 6 ALONG WITH NECESSARY AND RELATED WORK.

PROPOSED SAFETY PLAN

GENERAL- THE HARRISBURG-RALEIGH AIRPORT AUTHORITY CURRENTLY HAS A PAVED RUNWAY 6-24 WHICH IS 4005 FT. x 75 FT. AND A PAVED RUNWAY 14-32 WHICH IS 2820 FT. x 75 FT.

CONTRACTOR'S RESPONSIBILITIES

IDENTIFICATION- THE CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE PROPERLY MARKED WITH 3-FOOT SQUARE INTERNATIONAL ORANGE AND WHITE CHECKERED FLAGS ANYTIME THEY ARE ON AIRPORT PROPERTY.

THE CONTRACTOR AND HIS EMPLOYEES SHALL BE RESTRICTED TO THE WORK AREA.

EQUIPMENT PARKING AND STORAGE- THE CONTRACTOR'S EQUIPMENT PARKING, STORAGE, AND EMPLOYEE PARKING WILL BE AT THE LOCATION SHOWN ON THIS SHEET. ONLY CONTRACTOR VEHICLES AND EQUIPMENT REQUIRED FOR CONSTRUCTION WILL BE ALLOWED OUTSIDE THIS AREA.

BARRICADES AND TRAFFIC CONES- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS REQUIRED AND AS DIRECTED BY THE RESIDENT ENGINEER. BARRICADES, THEIR MAINTENANCE, PLACEMENT, AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE CONTRACTOR WILL NOT BE ALLOWED ON ANY AIRPORT PAVEMENT. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING PAVEMENTS CAUSED BY HIS PERSONNEL OR EQUIPMENT.

HAUL ROUTE AND EQUIPMENT PARKING

THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND EQUIPMENT PARKING AREA SHOWN ON THIS SAFETY PLAN. THE PROPOSED EQUIPMENT PARKING AREA WILL BE APPROXIMATELY 100-FT BY 200-FT. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND PARKING AREA THROUGHOUT THE COURSE OF THE PROJECT. AT THE CONCLUSION OF THE PROJECT, ALL AREAS DISTURBED WILL BE RESTORED AS NEEDED TO ITS ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND EQUIPMENT PARKING AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

UTILITY NOTE

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AND ORGANIZATIONS THAT HAVE LINES OR CONDUITS IN THE PROPOSED WORK AREA. ALL LINES AND CONDUITS SHALL BE LOCATED AND IDENTIFIED FOR DEPTH BEFORE ANY EXCAVATION BEGINS. THE CONTRACTOR SHALL CALL JULIE (1-800-892-0123) TO ACCOMPLISH THESE REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL NON-JULIE UTILITIES LOCATED WITHIN THE PROPOSED CONSTRUCTION LIMITS. THESE UTILITIES ARE TO BE LOCATED PRIOR TO THE START OF CONSTRUCTION.

J.U.L.I.E. INFORMATION

COUNTY.....SALINE
CITY.....HARRISBURG (5MI NORTH)
TOWNSHIP.....RALEIGH
SECTION NO.....21
NEAREST MAJOR ROAD INTERSECTION...ILLINOIS RT. 34 & AIRPORT DRIVE
AIRPORT ADDRESS...HARRISBURG-RALEIGH AIRPORT
PO BOX 33
HARRISBURG, IL 62946

NOTE:

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

HEIGHT OF CONSTRUCTION EQUIPMENT

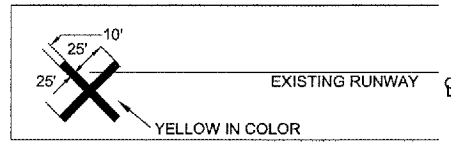
THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT IS 20 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A SEMI-TRUCK WITH TRAILER IN THE UP POSITION.

AIRPORT SECURITY

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE PROPOSED HAUL ROUTE SHOWN ON THIS SAFETY PLAN IS THE ONLY ACCESS CONTRACTOR EQUIPMENT AND PERSONNEL WILL BE ALLOWED TO USE. THE CONTRACTOR SHALL PROVIDE BARRICADES AT THIS ACCESS AND ENSURE THE BARRICADES ARE IN PLACE AT THE END OF EACH WORKING DAY.

AIRCRAFT OPERATIONAL AREA

THE CONTRACTOR, HIS EMPLOYEES, OR ANY EQUIPMENT WILL NOT PROCEED WITH ANY WORK WITHIN THE AIRCRAFT OPERATIONAL AREA WITHOUT FIRST CLOSING THE RUNWAY.



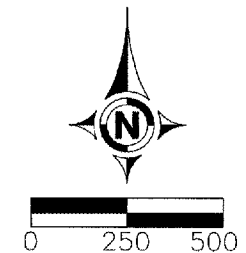
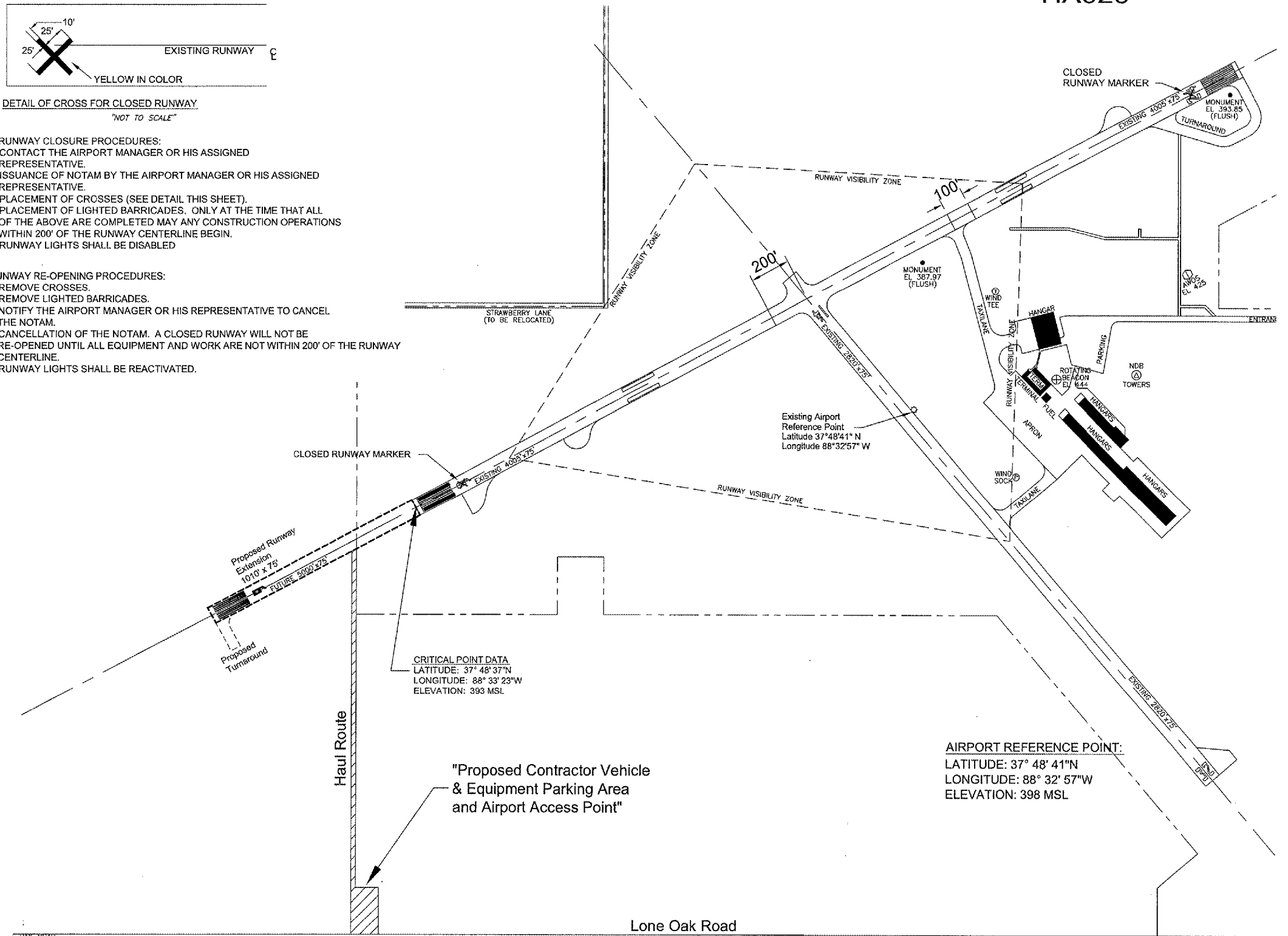
DETAIL OF CROSS FOR CLOSED RUNWAY
"NOT TO SCALE"

RUNWAY CLOSURE PROCEDURES:

- * CONTACT THE AIRPORT MANAGER OR HIS ASSIGNED REPRESENTATIVE.
- * ISSUANCE OF NOTAM BY THE AIRPORT MANAGER OR HIS ASSIGNED REPRESENTATIVE.
- * PLACEMENT OF CROSSES (SEE DETAIL THIS SHEET).
- * PLACEMENT OF LIGHTED BARRICADES. ONLY AT THE TIME THAT ALL OF THE ABOVE ARE COMPLETED MAY ANY CONSTRUCTION OPERATIONS WITHIN 200' OF THE RUNWAY CENTERLINE BEGIN.
- * RUNWAY LIGHTS SHALL BE DISABLED

RUNWAY RE-OPENING PROCEDURES:

- * REMOVE CROSSES.
- * REMOVE LIGHTED BARRICADES.
- * NOTIFY THE AIRPORT MANAGER OR HIS REPRESENTATIVE TO CANCEL THE NOTAM.
- * CANCELLATION OF THE NOTAM. A CLOSED RUNWAY WILL NOT BE RE-OPENED UNTIL ALL EQUIPMENT AND WORK ARE NOT WITHIN 200' OF THE RUNWAY CENTERLINE.
- * RUNWAY LIGHTS SHALL BE REACTIVATED.

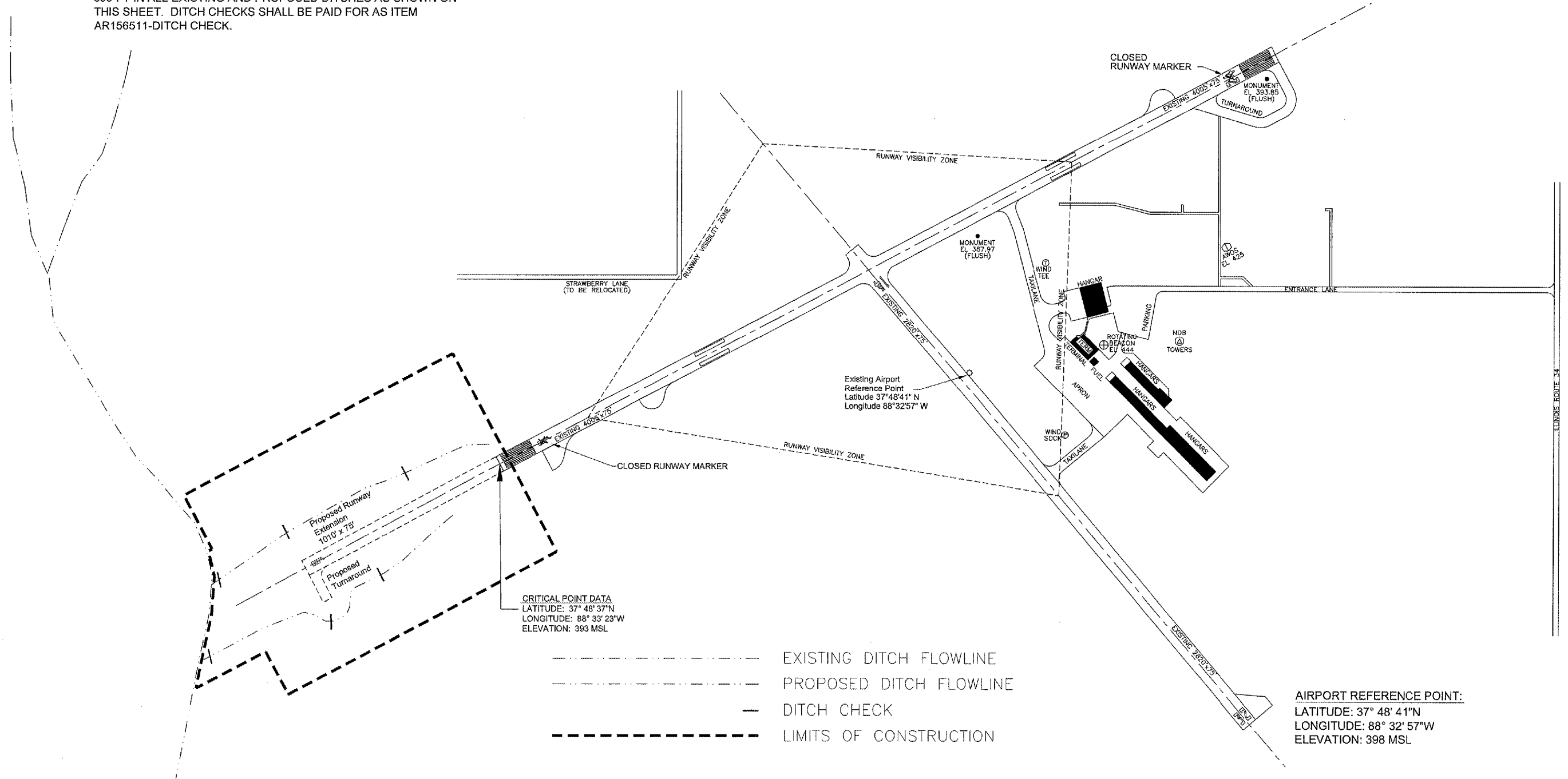
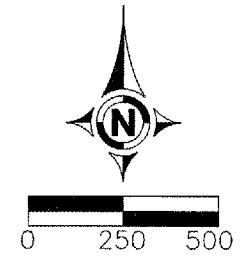


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RUNWAY SAFETY PLAN
SHEET 3 OF 24
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EROSION CONTROL NOTES:

1. ALL PROPOSED EROSION CONTROL MEASURES SHALL BE COMPLETED AS STATED ON THIS STORM WATER POLLUTION PREVENTION PLAN AND IN ACCORDANCE WITH THE SPECIFICATIONS. EROSION CONTROL DETAILS ARE LOCATED ON SHEET 5 OF THESE CONSTRUCTION PLANS.
2. EROSION CONTROL MEASURES ARE COVERED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. STRAW BALES SHALL BE USED FOR DITCH CHECKS AS SHOWN ON THE DETAILS AND AS SPECIFIED IN THE SPECIAL PROVISIONS.
4. ALL STRAW BALES PLACED ON THIS PROJECT SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, SHALL BE STAKED TO THE GROUND, AND SHALL BE PLACED SO THE BINDINGS ARE HORIZONTAL.
5. DITCH CHECKS SHALL BE PLACED APPROXIMATELY EVERY 500-FT IN ALL EXISTING AND PROPOSED DITCHES AS SHOWN ON THIS SHEET. DITCH CHECKS SHALL BE PAID FOR AS ITEM AR156511-DITCH CHECK.

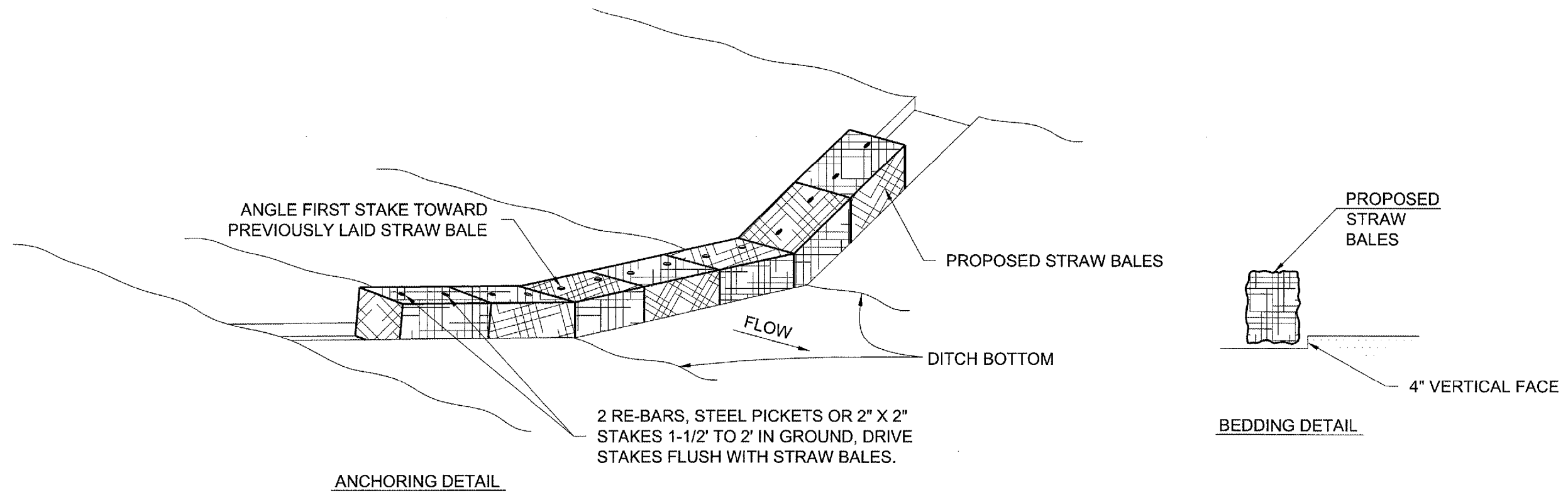
6. APPROXIMATELY 9 STRAW BALES SHALL BE REQUIRED PER DITCH CHECK. FOR BIDDING PURPOSES APPROXIMATELY 6 DITCH CHECKS SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.
7. INSPECTION OF THE STRAW BALES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE FREQUENT. REPAIR/REPLACEMENT SHALL BE COMPLETED BY THE CONTRACTOR AS NEEDED IN A TIMELY MANNER. AT A MINIMUM, STRAW BALES SHALL BE REPLACED EVERY 3 MONTHS OR WHEN DIRECTED BY THE RESIDENT ENGINEER.
8. STRAW BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM WATER DRAINAGE.
9. WHEN CONSTRUCTION ACTIVITIES ARE TO TEMPORARILY CEASE FOR A PERIOD OF 21 OR MORE CALENDAR DAYS, GRADED OR CLEARED AREAS SHALL BE TEMPORARILY SEEDED WITHIN 14 DAYS OF SUSPENSION OF WORK. TEMPORARY SEEDING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATION AND PAID FOR AS ITEM AR156530-TEMPORARY SEEDING.



CRITICAL POINT DATA
 LATITUDE: 37° 48' 37" N
 LONGITUDE: 88° 33' 23" W
 ELEVATION: 393 MSL

- EXISTING DITCH FLOWLINE
- PROPOSED DITCH FLOWLINE
- DITCH CHECK
- LIMITS OF CONSTRUCTION

AIRPORT REFERENCE POINT:
 LATITUDE: 37° 48' 41" N
 LONGITUDE: 88° 32' 57" W
 ELEVATION: 398 MSL



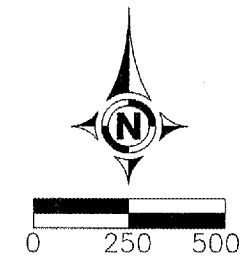
DITCH CHECK DETAIL

"NOT TO SCALE"

APPROXIMATELY 9 STRAW BALES SHALL BE REQUIRED PER DITCH CHECK

NOTES: 1. THE PROJECT CONSISTS OF A 1,010 FOOT EXTENSION TO RUNWAY 6, CONSTRUCTION OF A NEW TURNAROUND, NEW MEDIUM INTENSITY RUNWAY LIGHTS, NEW MEDIUM INTENSITY THRESHOLD LIGHTS, RUNWAY LIGHTS AND OTHER NECESSARY AND RELATED WORK.

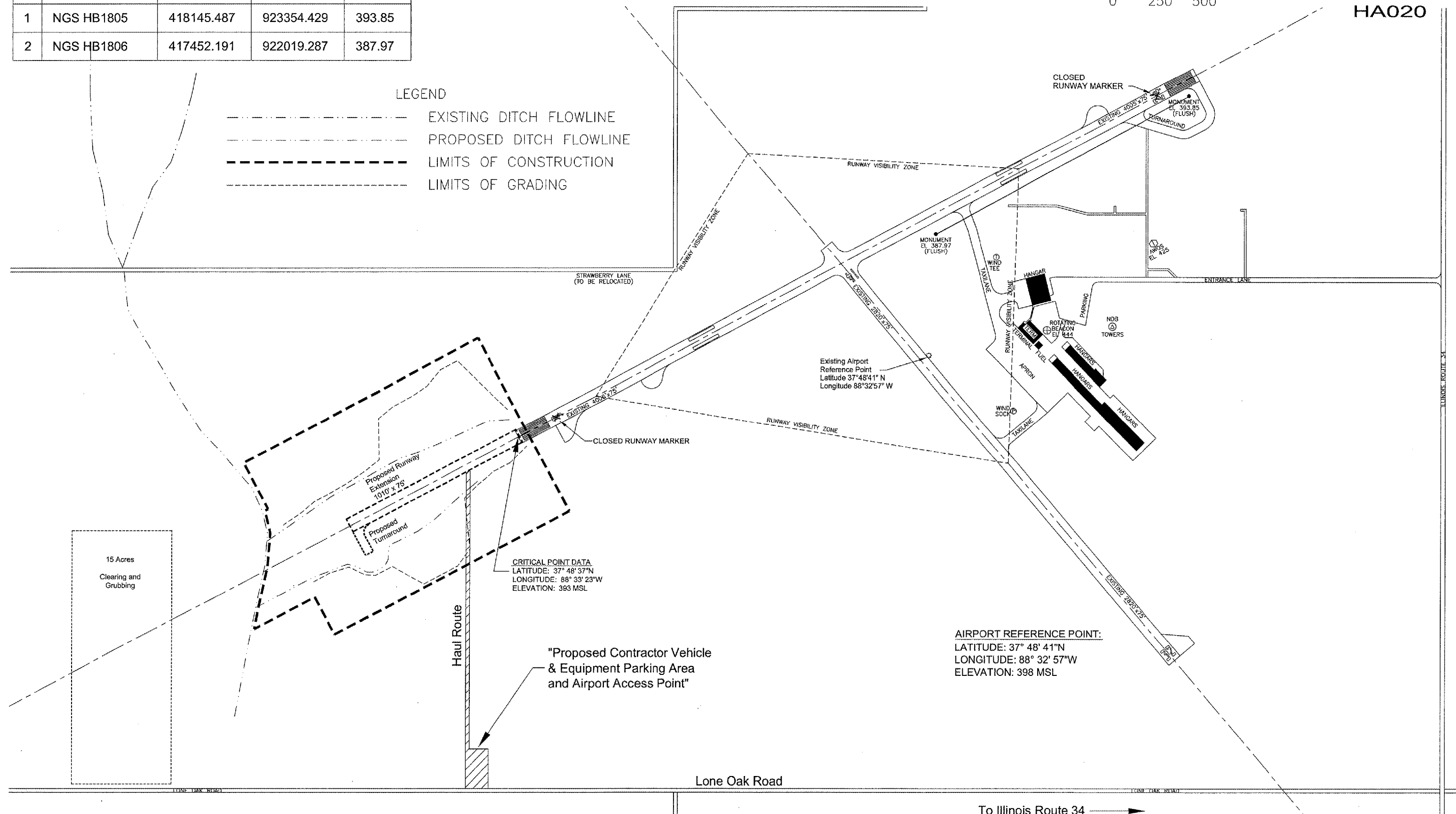
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 EXISTING SITE AND CONSTRUCTION PLAN
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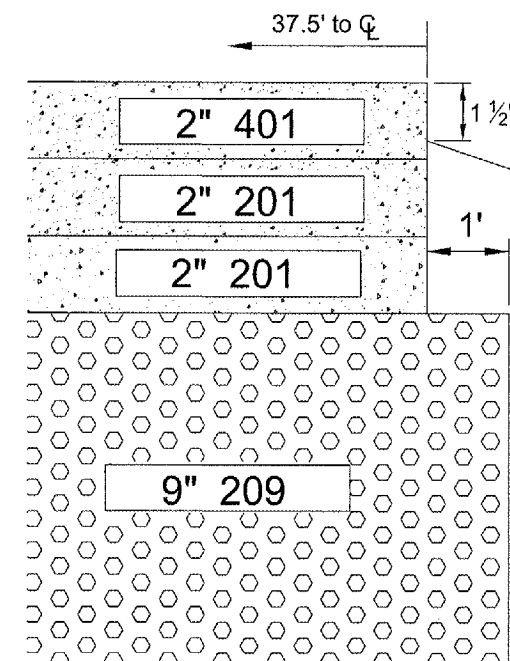
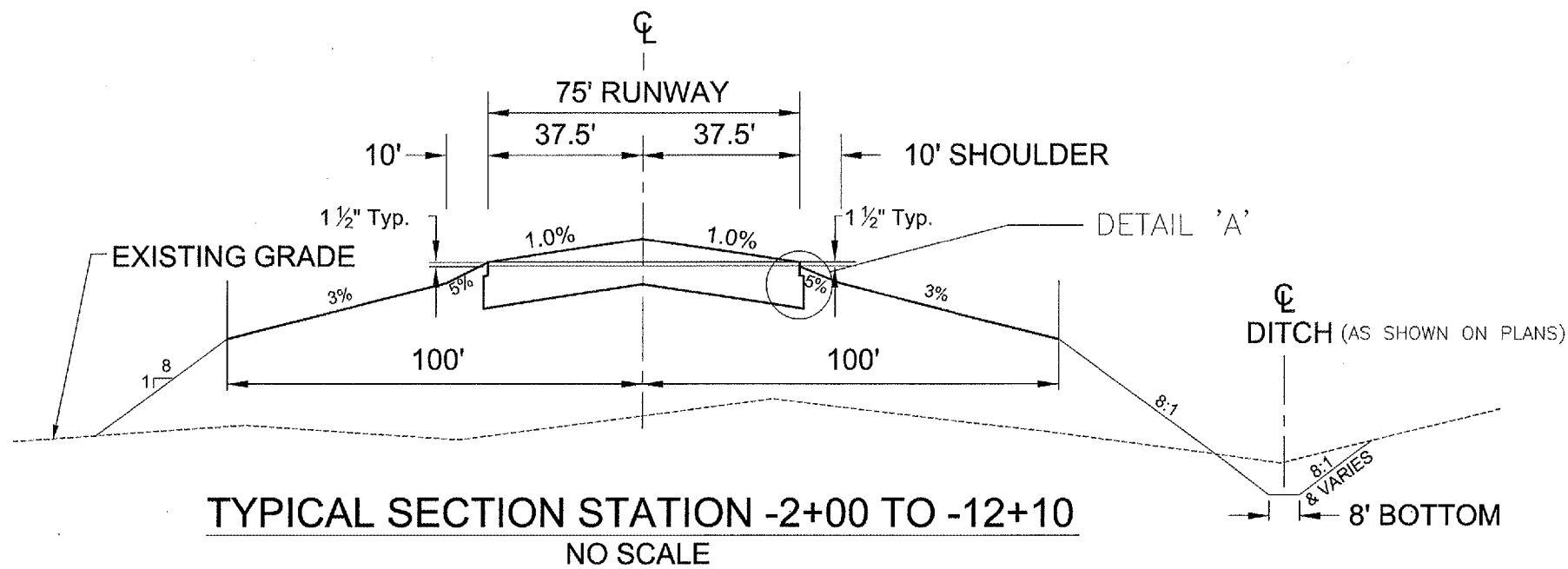


COORDINATE DATA				
NO	DESCRIPTION	NORTHING	EASTING	ELEV.
1	NGS HB1805	418145.487	923354.429	393.85
2	NGS HB1806	417452.191	922019.287	387.97

LEGEND

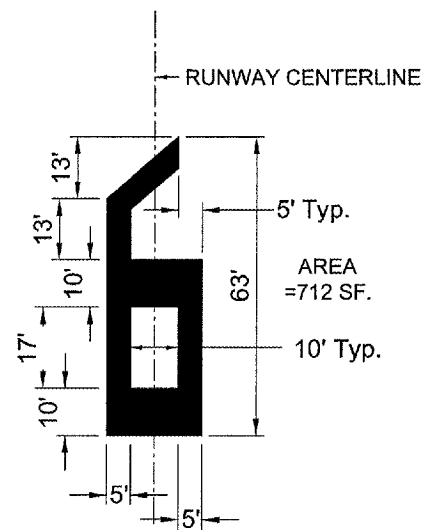
- EXISTING DITCH FLOWLINE
- - - PROPOSED DITCH FLOWLINE
- LIMITS OF CONSTRUCTION
- LIMITS OF GRADING



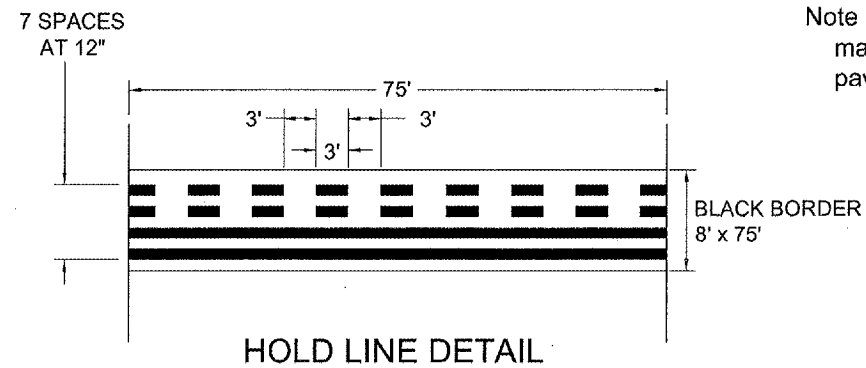
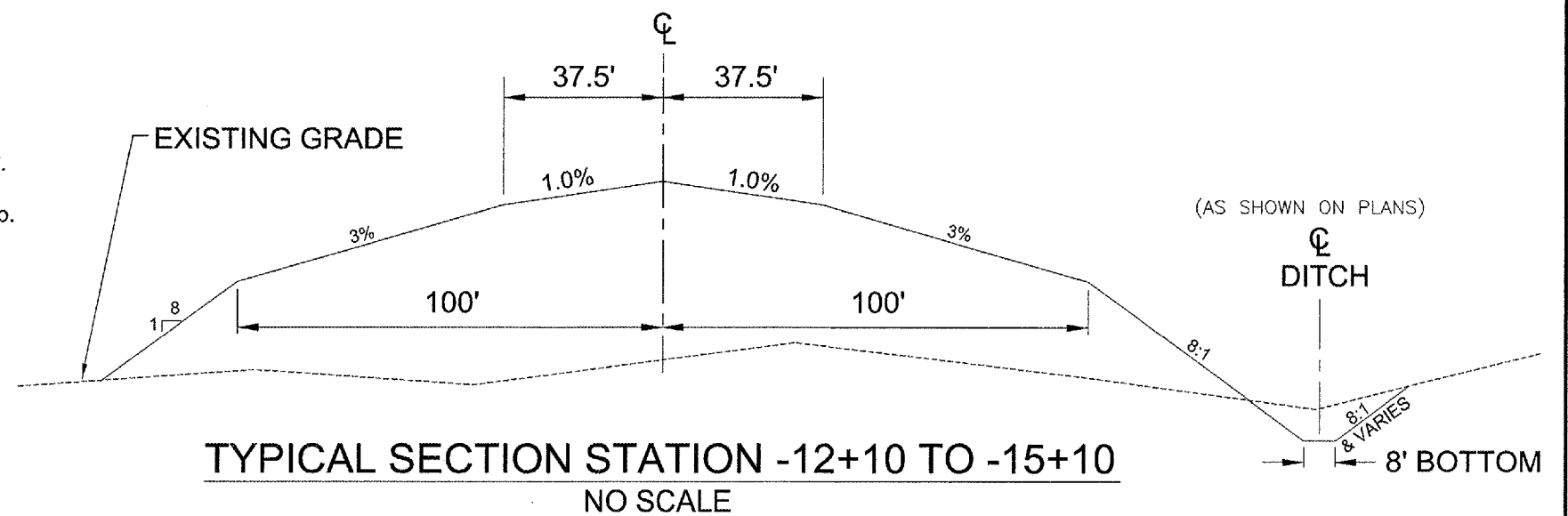


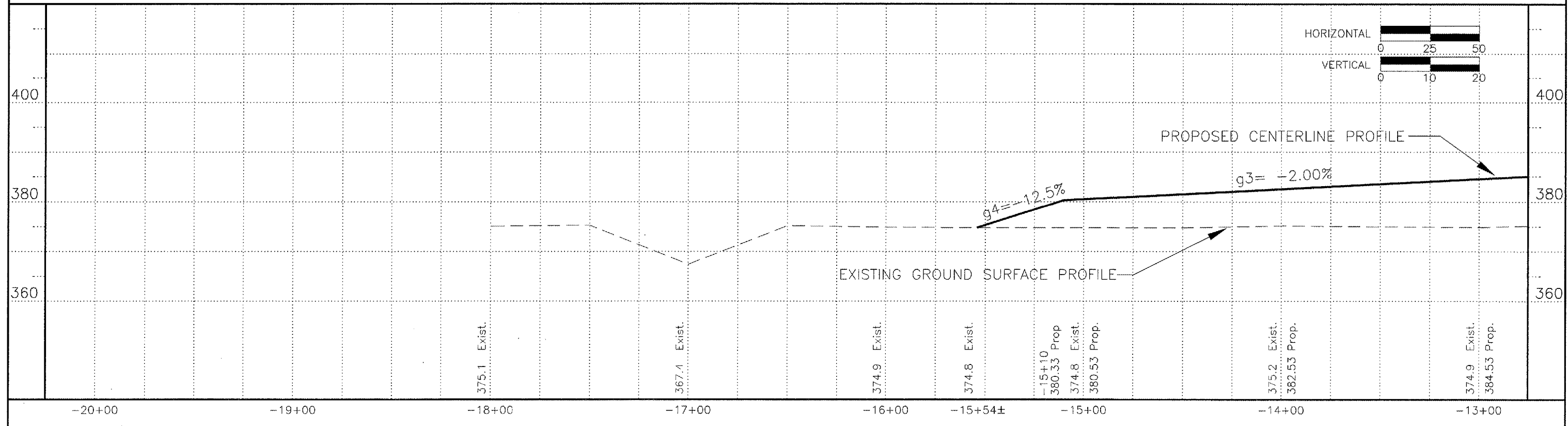
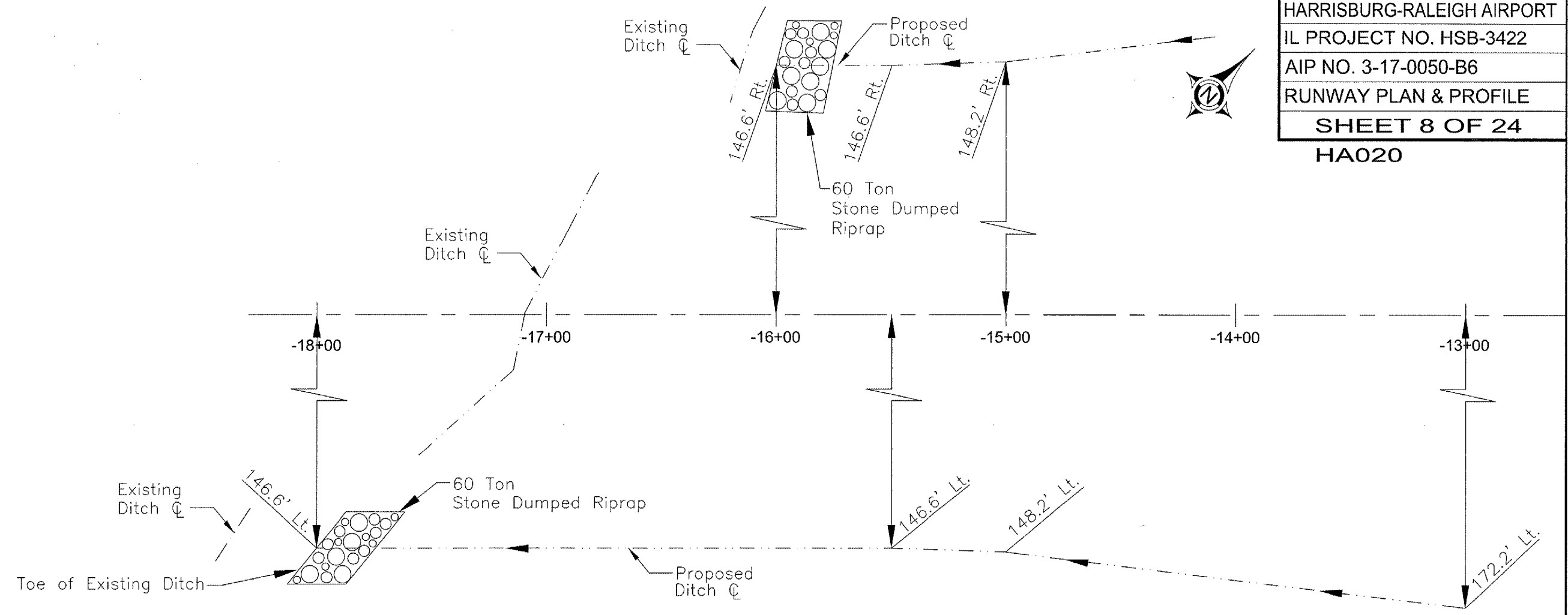
MARKING SCHEDULE

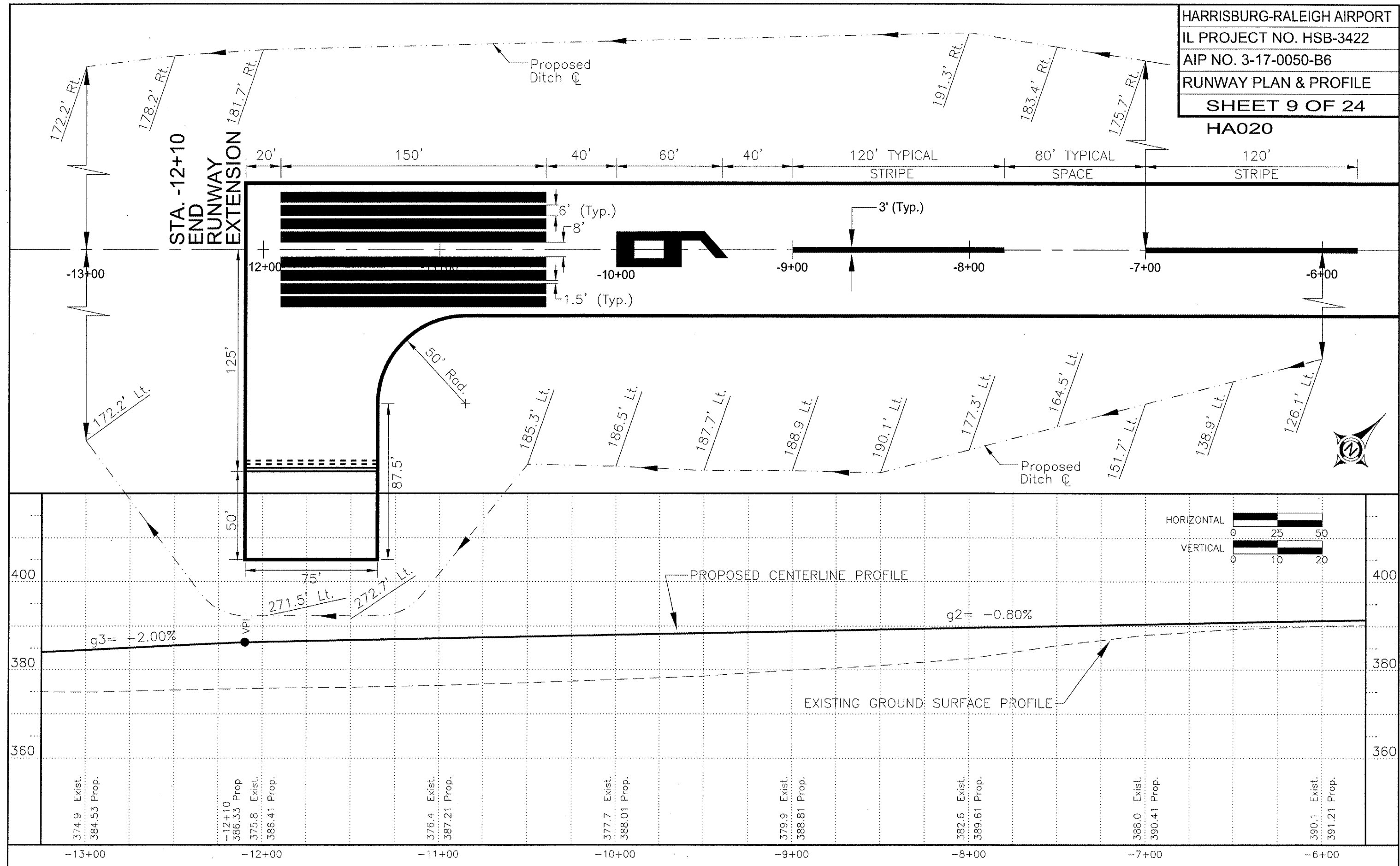
DESCRIPTION	UNIT AREA	NO. REQ'D	TOTAL
NUMERAL 6	720	1	720
15.00' x 150' STRIPE	2,250	2	4,500
6.00' x 150' STRIPE	900	8	7,200
HOLD LINE BORDER	600	1	600
TOTAL BLACK			13,020
NUMERAL 6	712	1	712
CENTERLINE STRIPE 130' x 3'	390	1	390
CENTERLINE STRIPE 120' x 3'	360	4	1,440
15.00' x 150' STRIPE	2,250	2	4,500
6.00' x 150' STRIPE	900	8	7,200
TOTAL WHITE			14,242
HOLD LINE SOUTHWEST END	225	1	225
TOTAL YELLOW			225
TOTAL MARKING			27,487



Note - Center the runway marking on the runway pavement centerline.



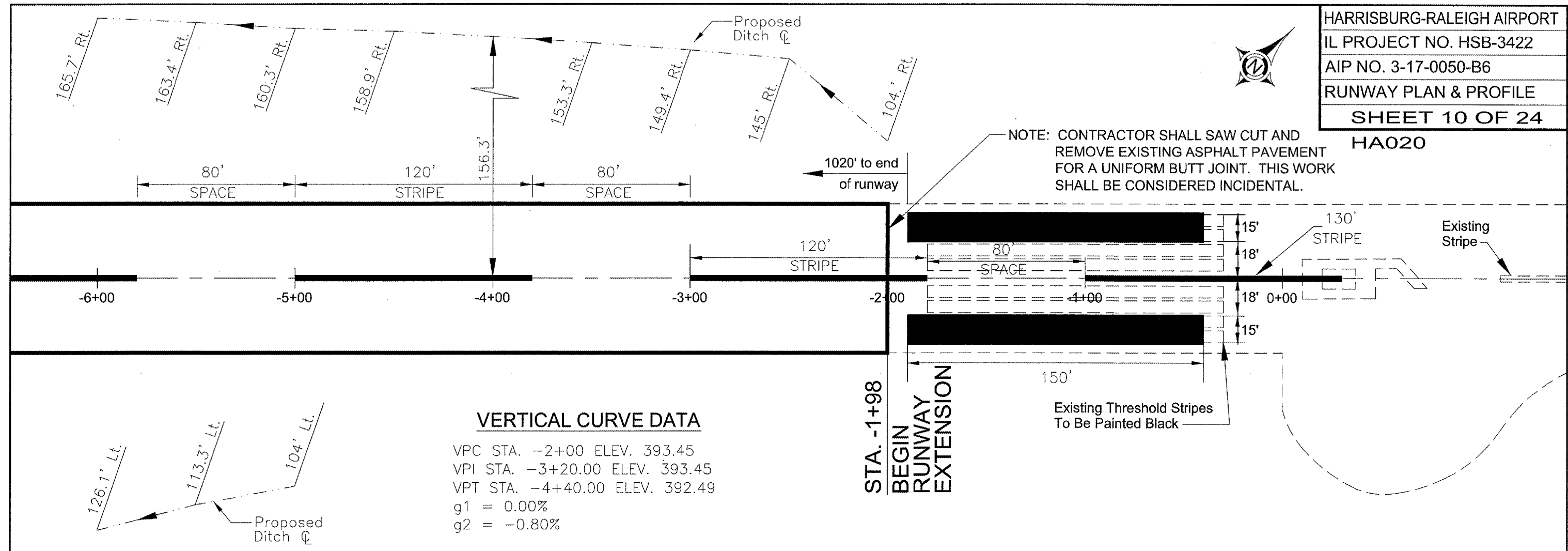






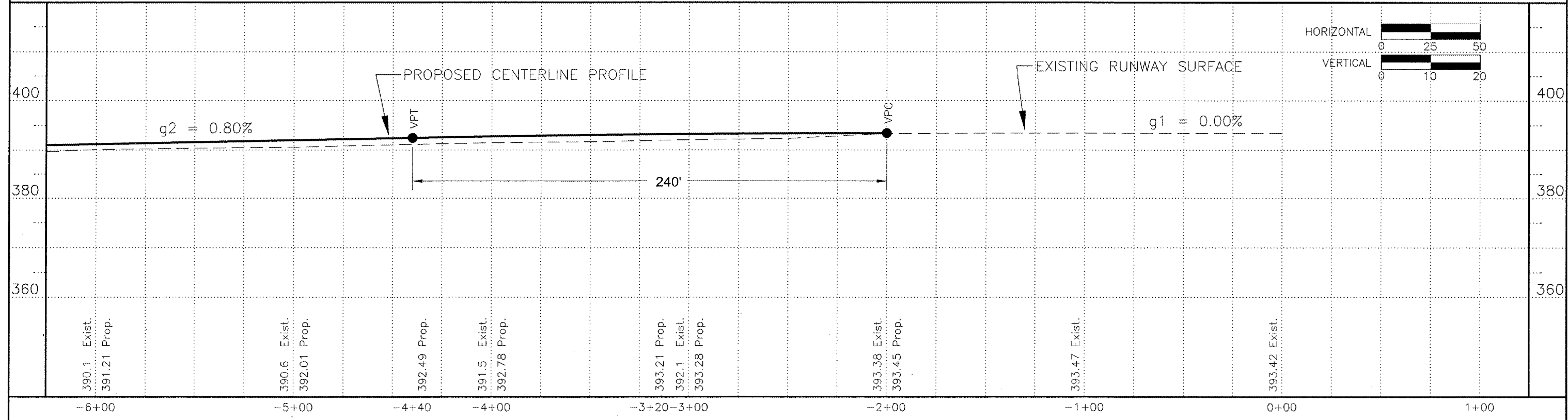
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NOTE: CONTRACTOR SHALL SAW CUT AND REMOVE EXISTING ASPHALT PAVEMENT FOR A UNIFORM BUTT JOINT. THIS WORK SHALL BE CONSIDERED INCIDENTAL.

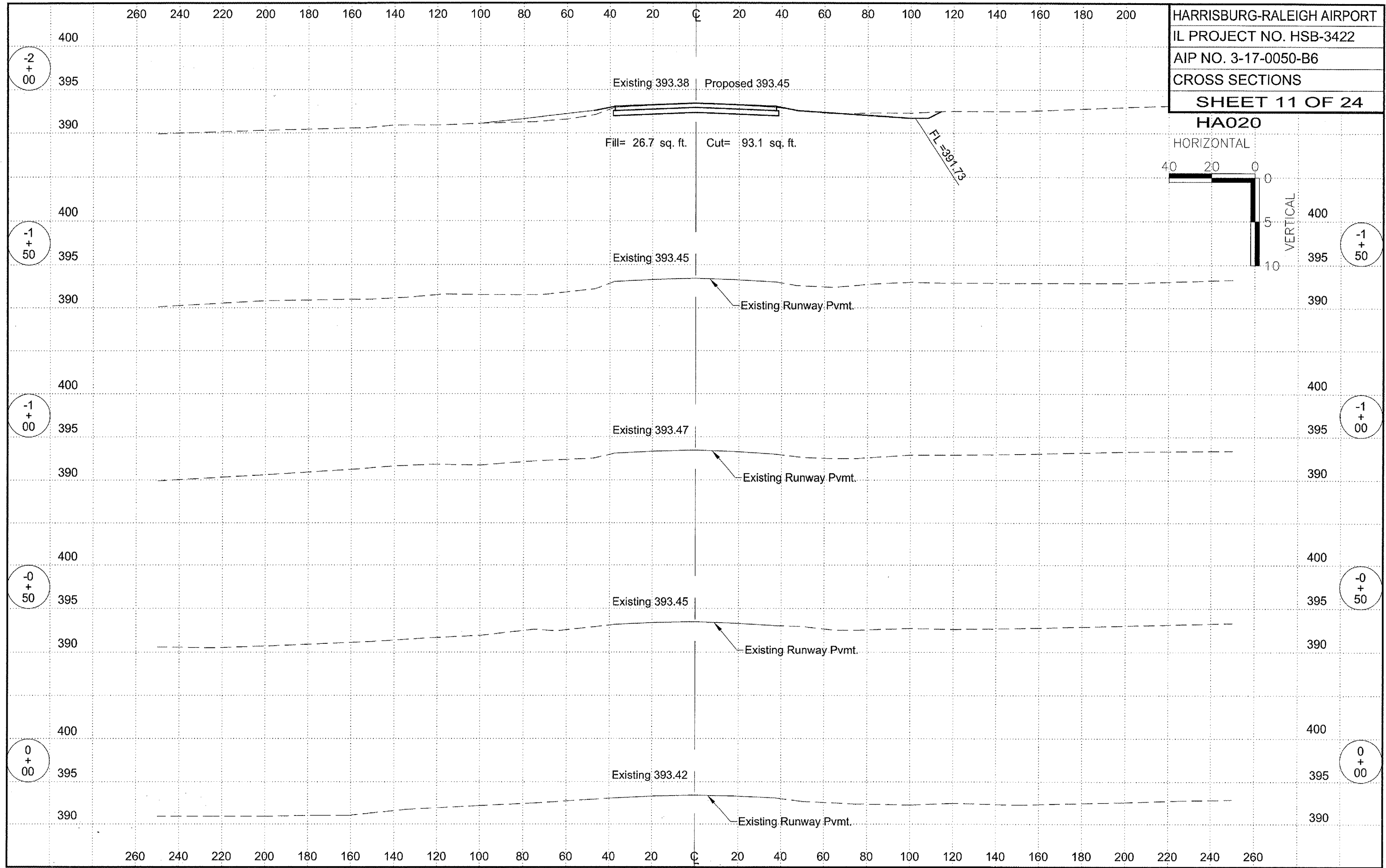
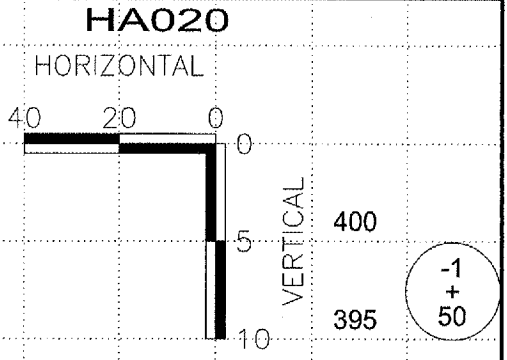


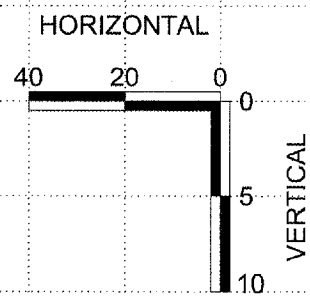
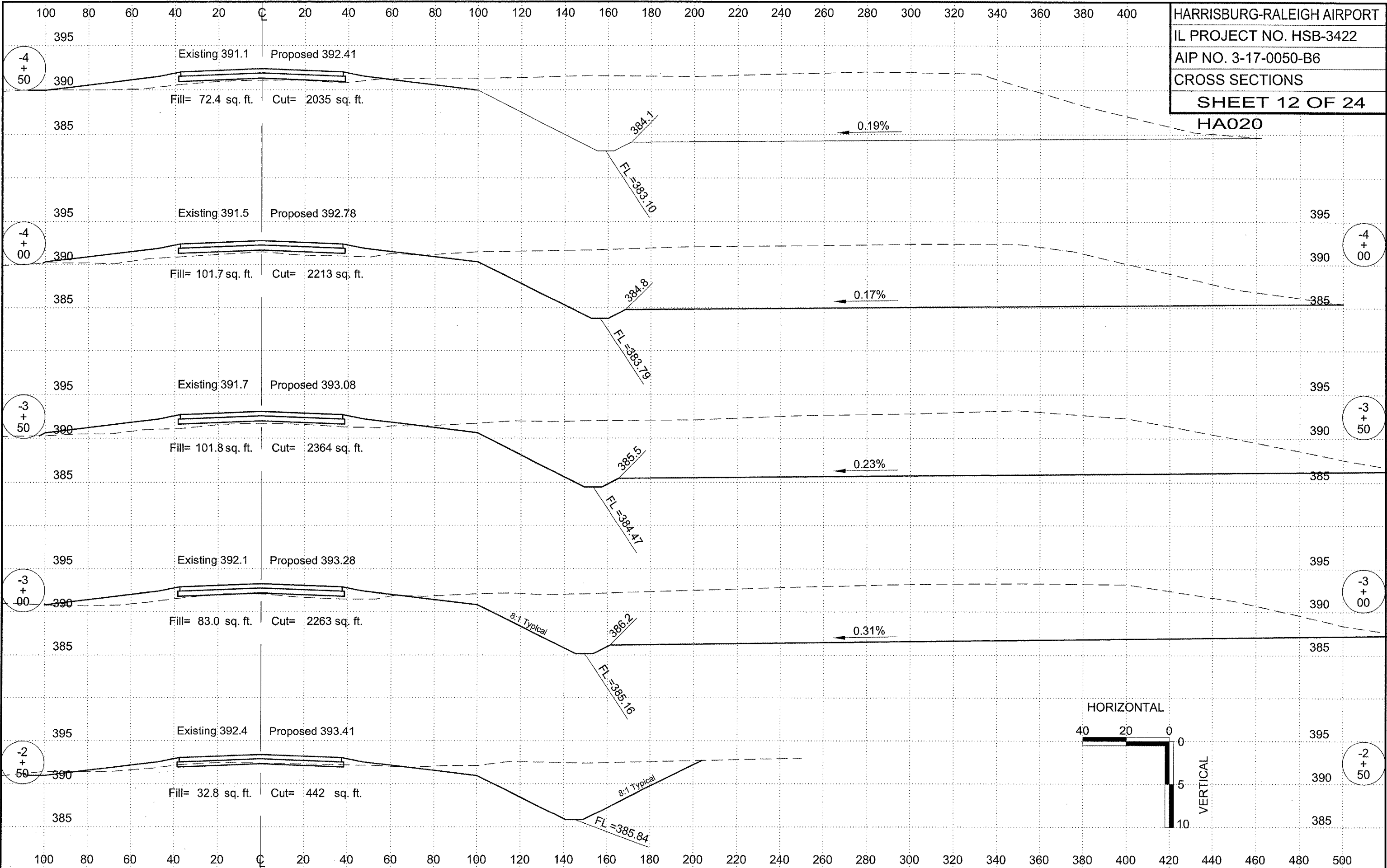
VERTICAL CURVE DATA

VPC STA. -2+00 ELEV. 393.45
 VPI STA. -3+20.00 ELEV. 393.45
 VPT STA. -4+40.00 ELEV. 392.49
 g1 = 0.00%
 g2 = -0.80%



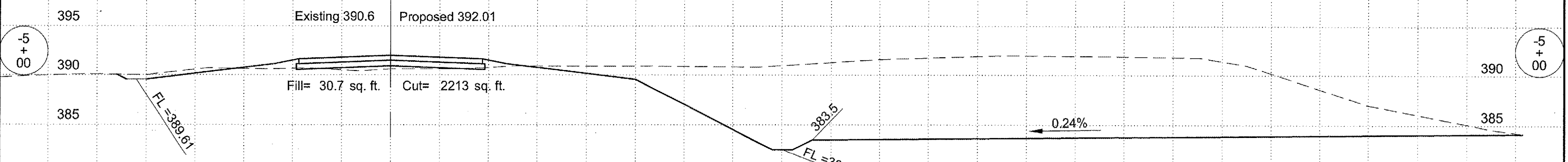
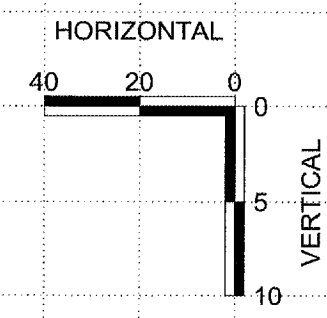
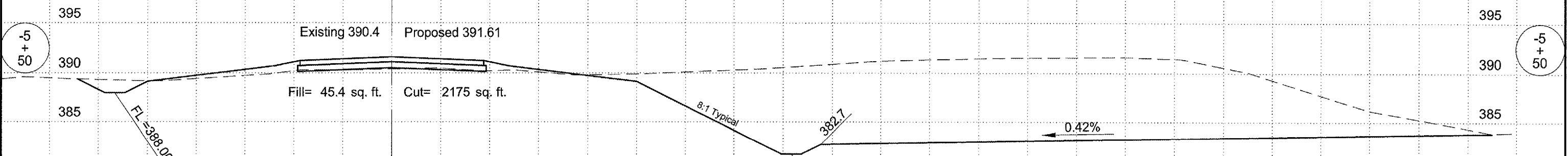
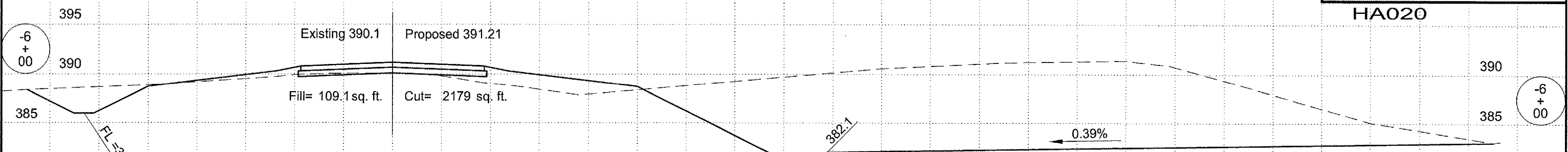
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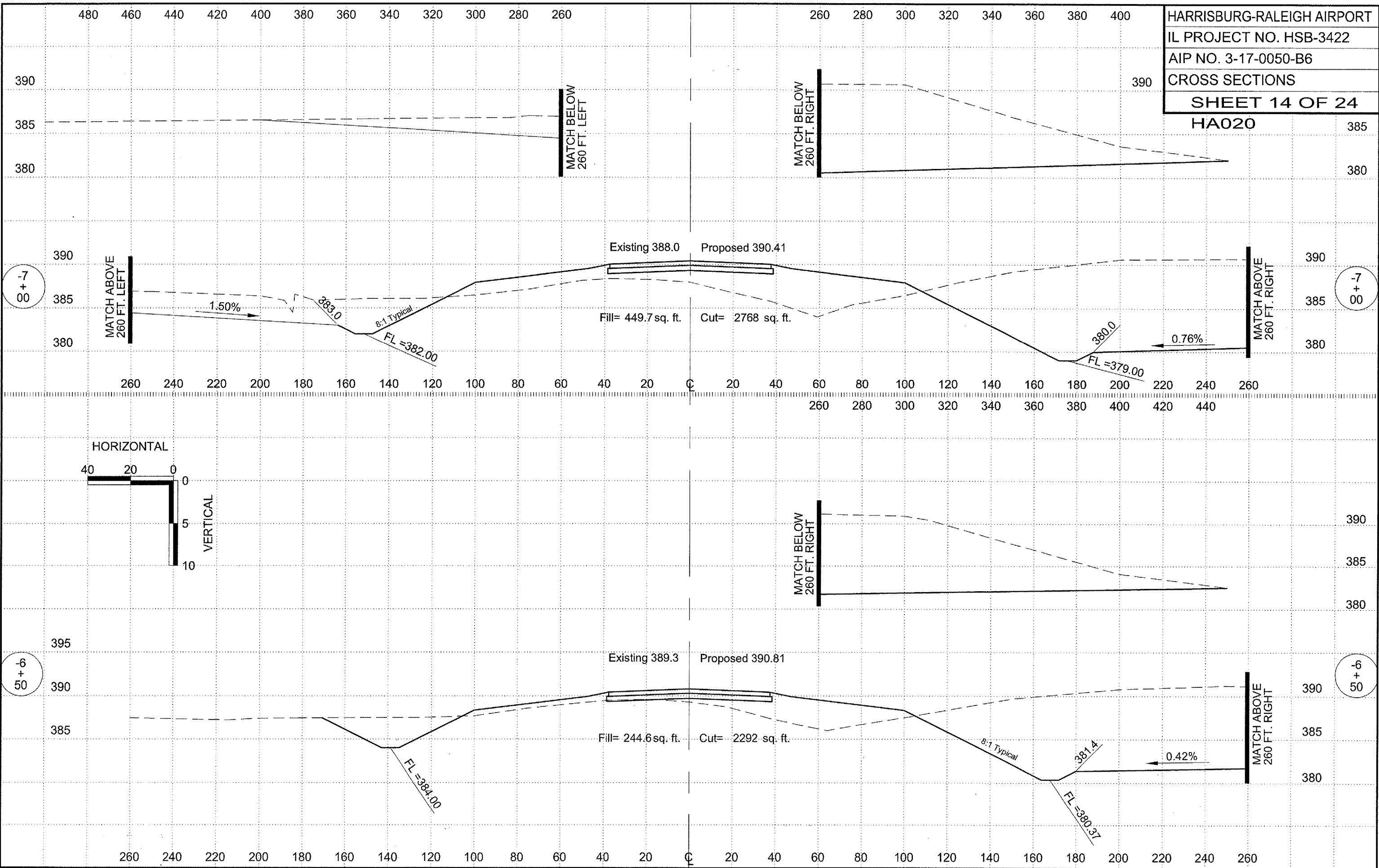


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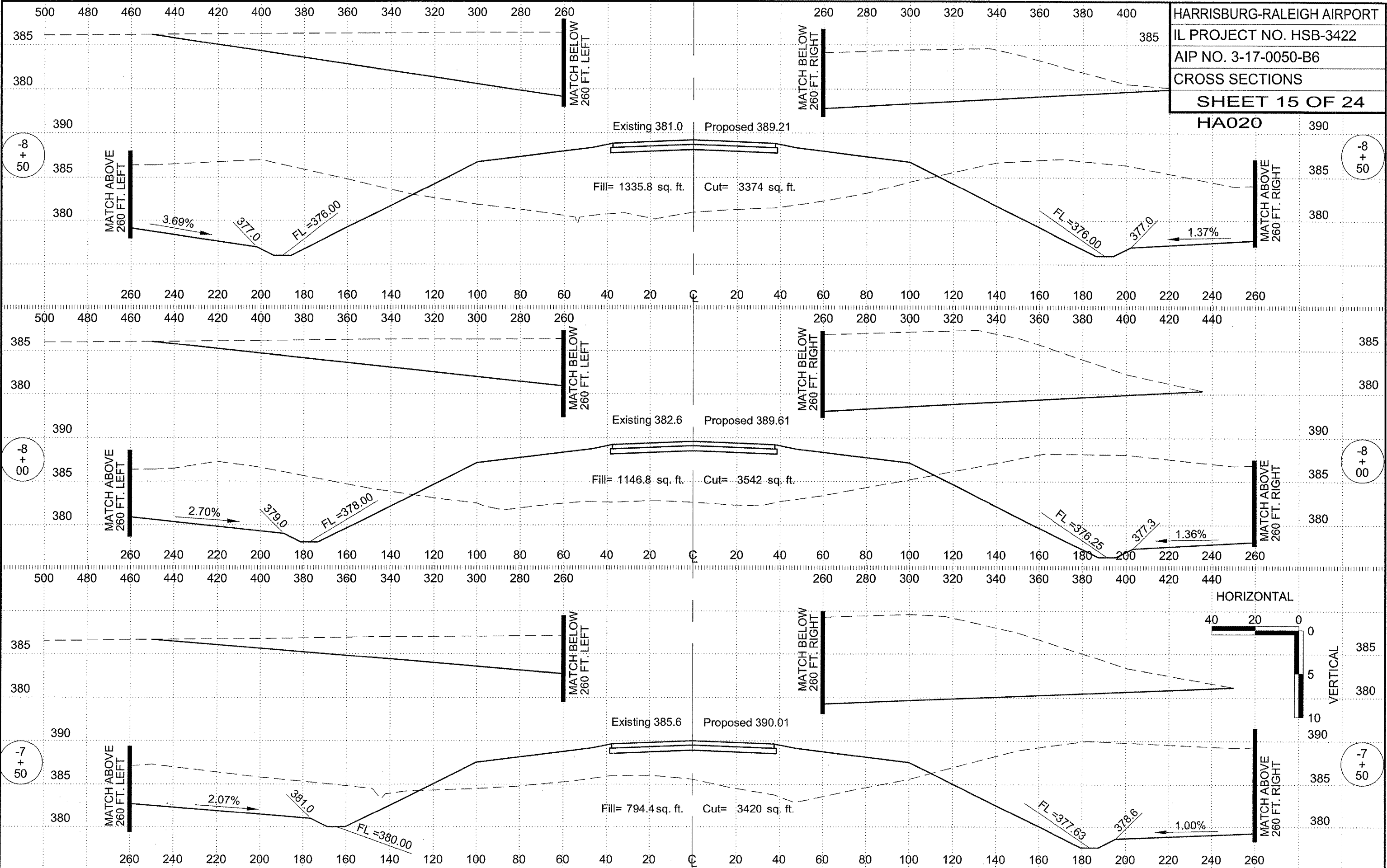
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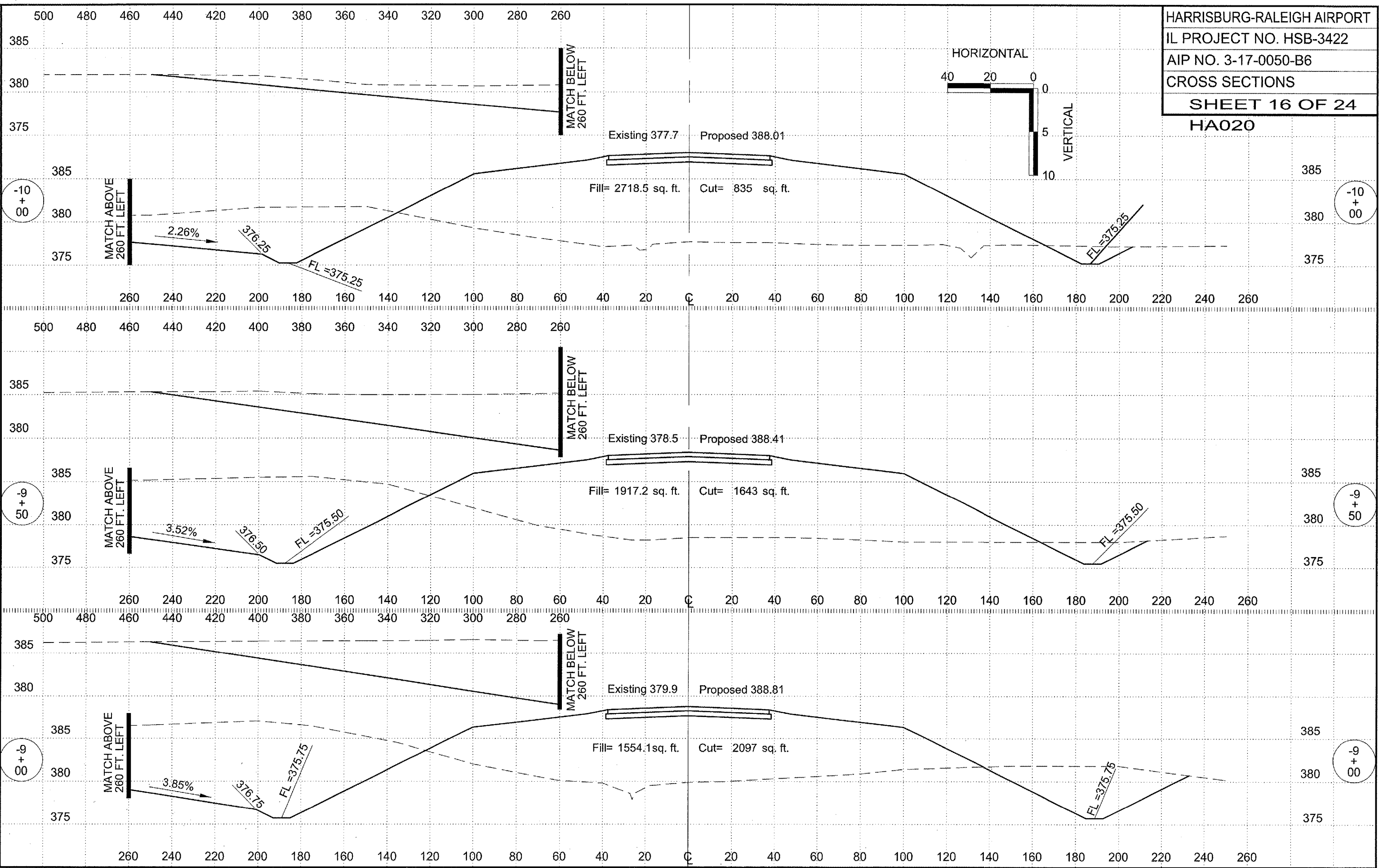


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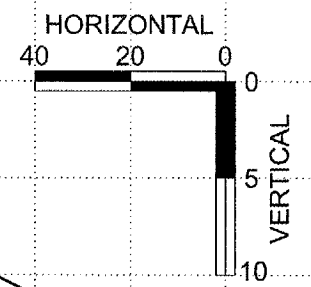
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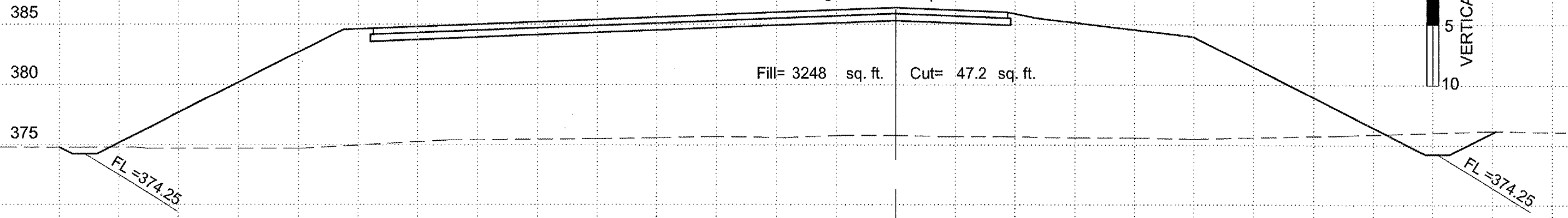


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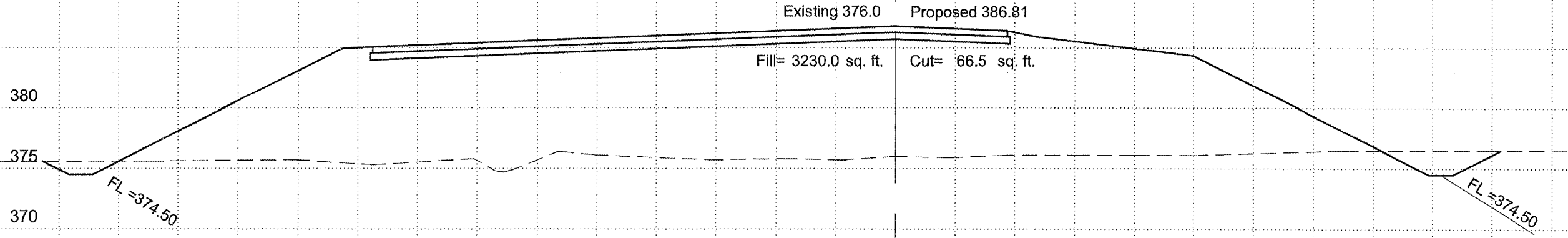
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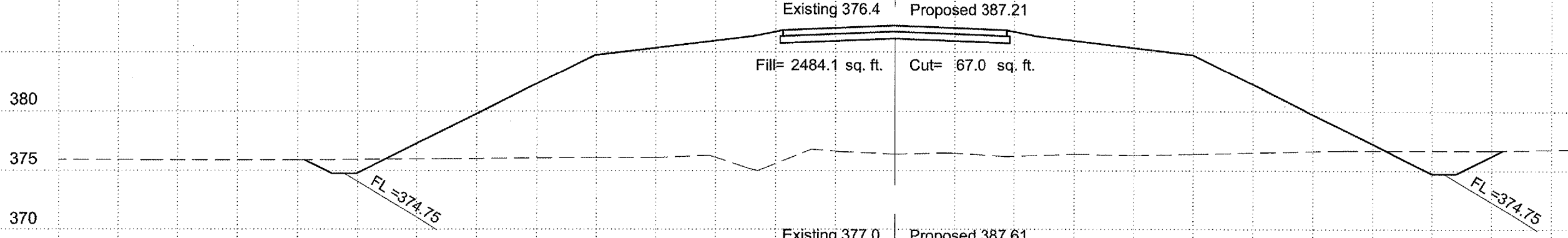


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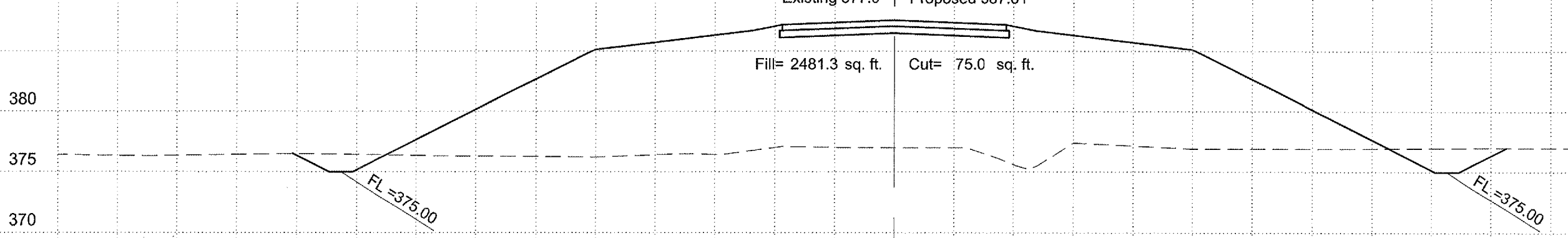
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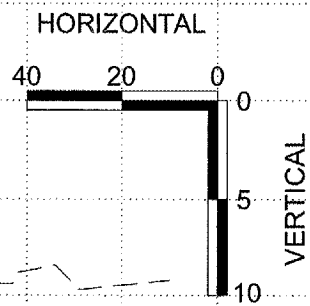
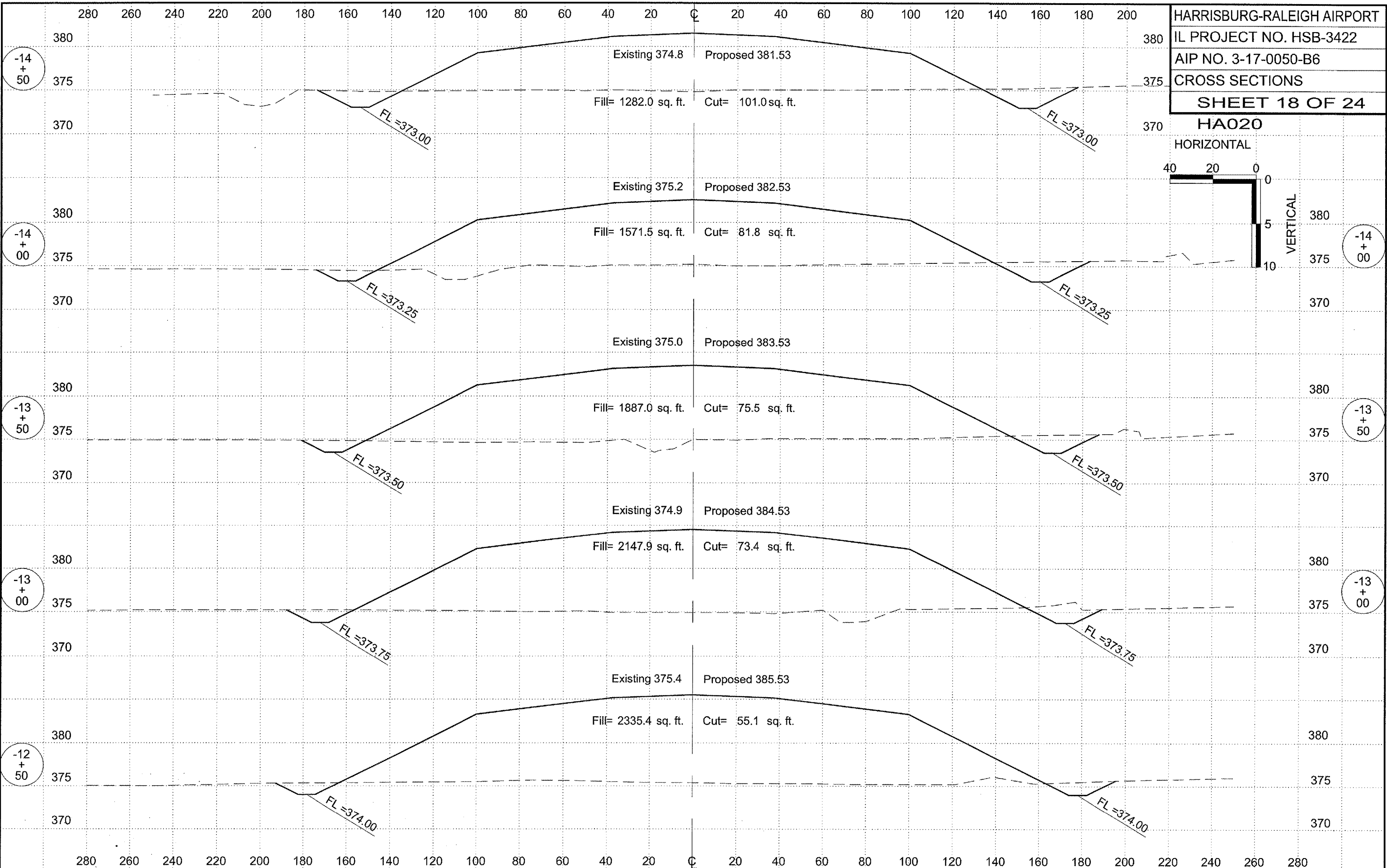
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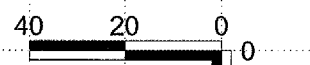
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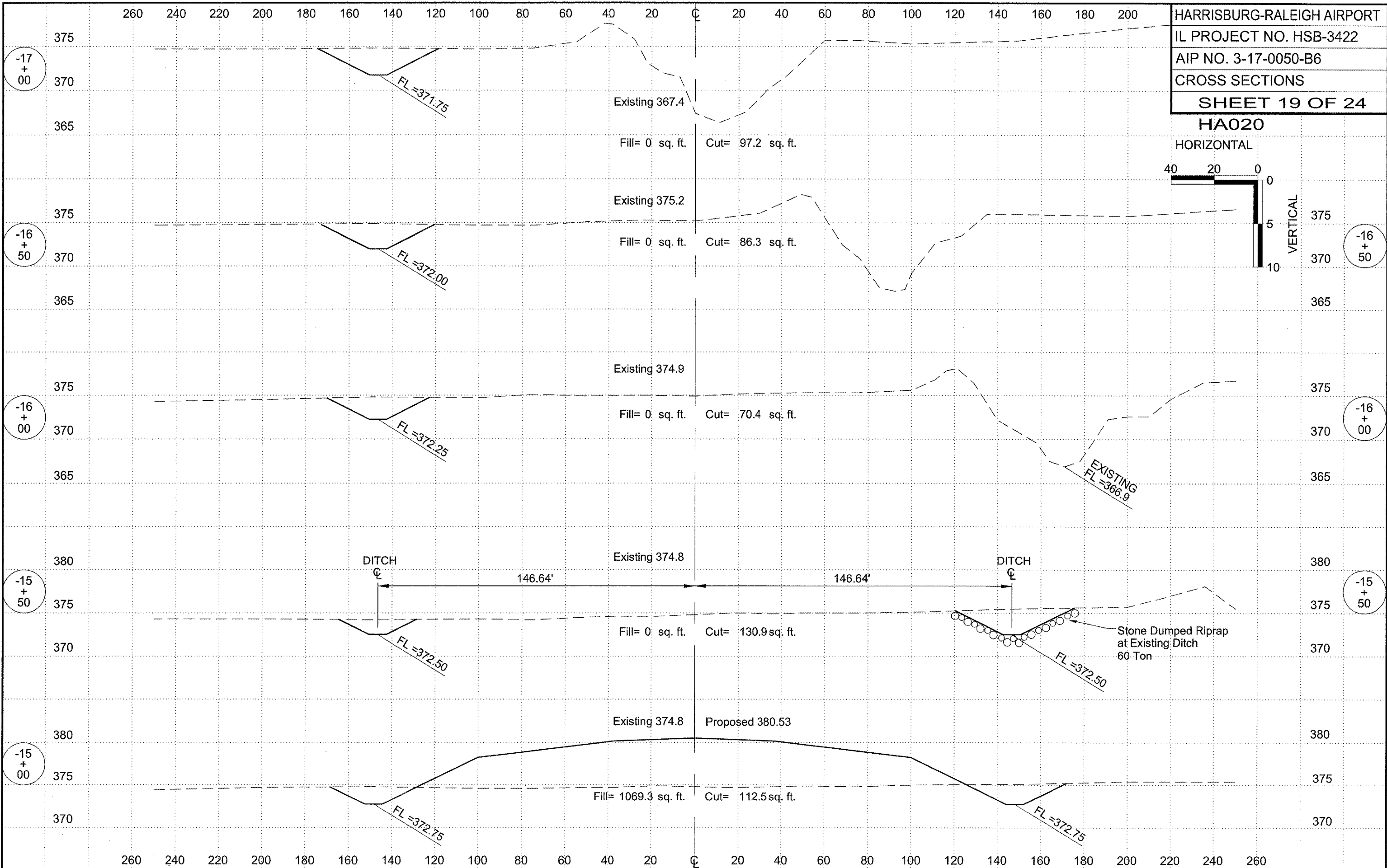
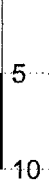
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HA020

HORIZONTAL

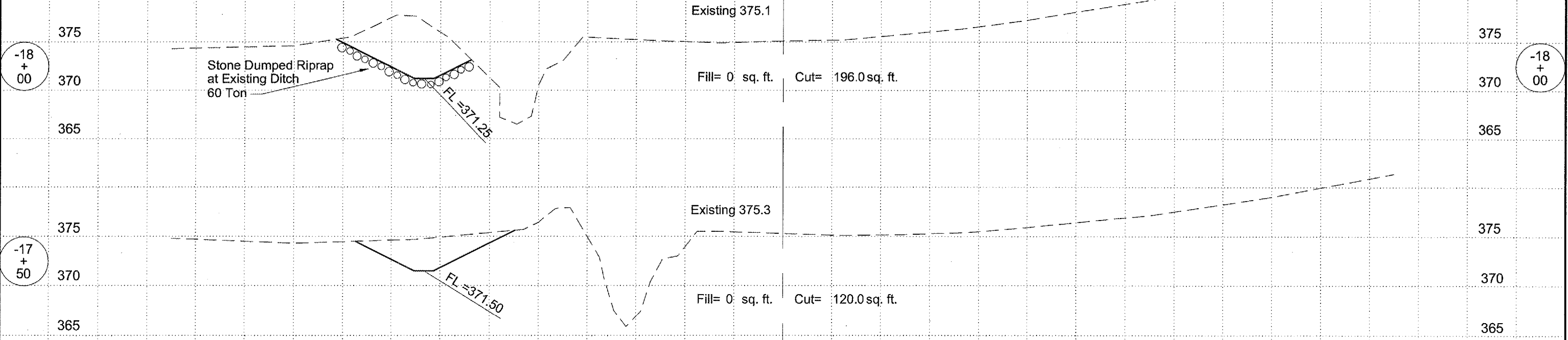
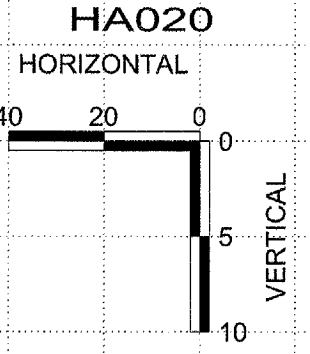


VERTICAL

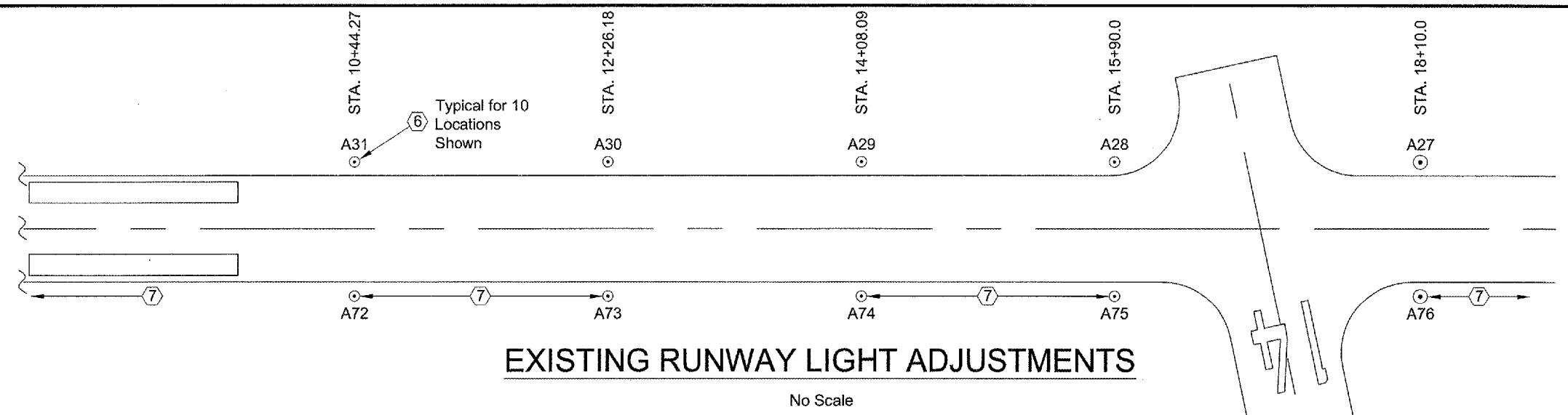


260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200

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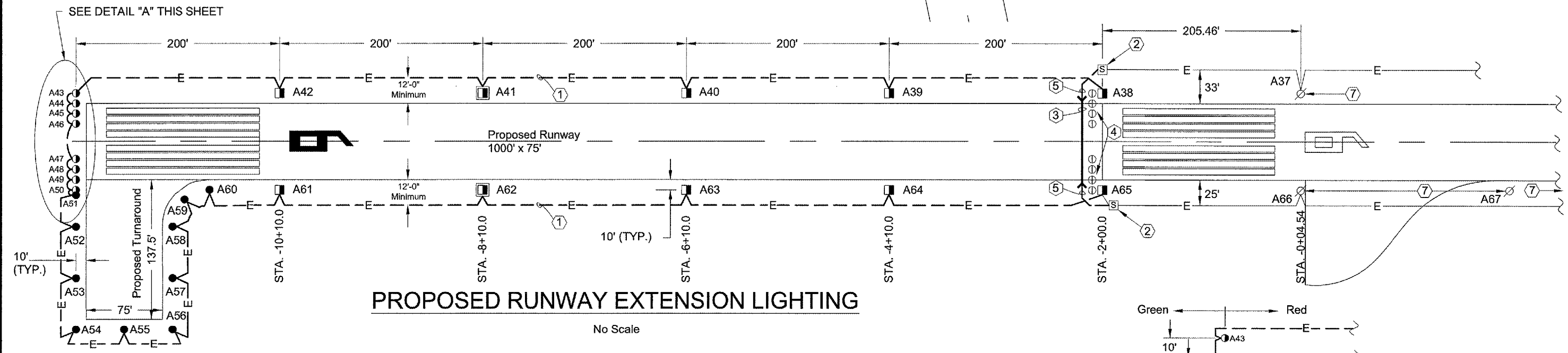


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EXISTING RUNWAY LIGHT ADJUSTMENTS

No Scale



PROPOSED RUNWAY EXTENSION LIGHTING

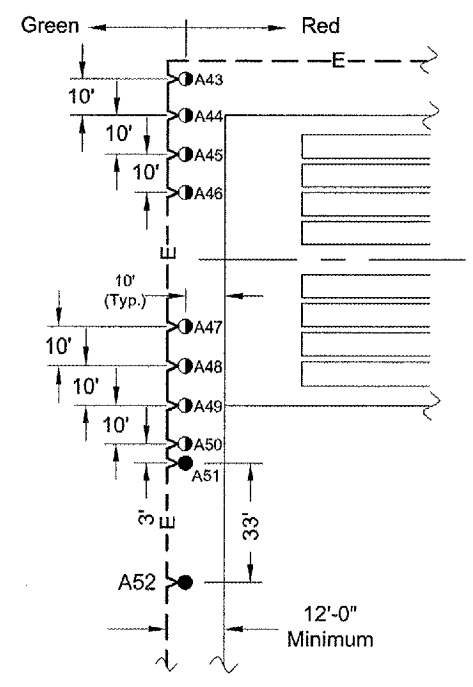
No Scale

PLAN NOTES

- ① 1/C, #8, 5 KV, Type C in UD, typical.
- ② Point of splicing from existing underground cable to proposed. Remove existing cable to at least 1' away from splice point. Provide marker over splice. Carefully locate and expose existing cable in this area. Splices shall be inspected by the Engineer before backfilling. Use fill sand for the first 6" of backfill, and imbed the splice and cable in this first layer. This work shall be paid for as incidental to item AR108158.
- ③ 90 L.F. - 1 1/2" PVC 1-way duct in 3' deep trench for temporary runway wiring cable. Duct shall remain in place after temporary wiring is removed. This work shall be paid for as incidental to item AR108158.
- ④ Existing threshold lights shall be removed and delivered to Owner's on-site storage area.
- ⑤ #8, 5KV, Type C cable in conduit for temporary runway wiring during construction. Make splices into existing cable where shown. This work shall be paid for under item AR108158.
- ⑥ Typical for 10 existing MIRL to be modified. Fixture to have split white/yellow lens removed and replaced with white/white lens.
- ⑦ Remove and replace legend tag, per Tag Detail, Note 2, Sheet 24.

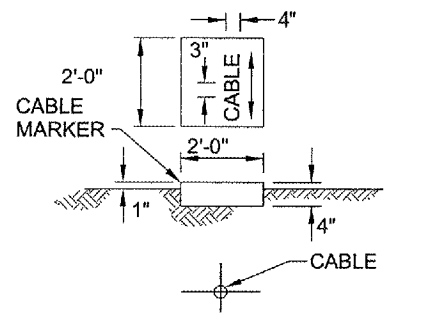
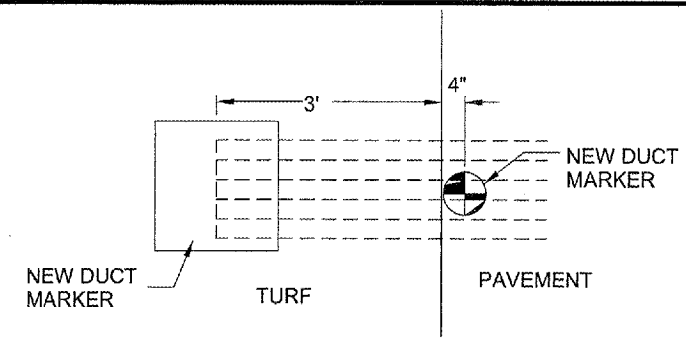
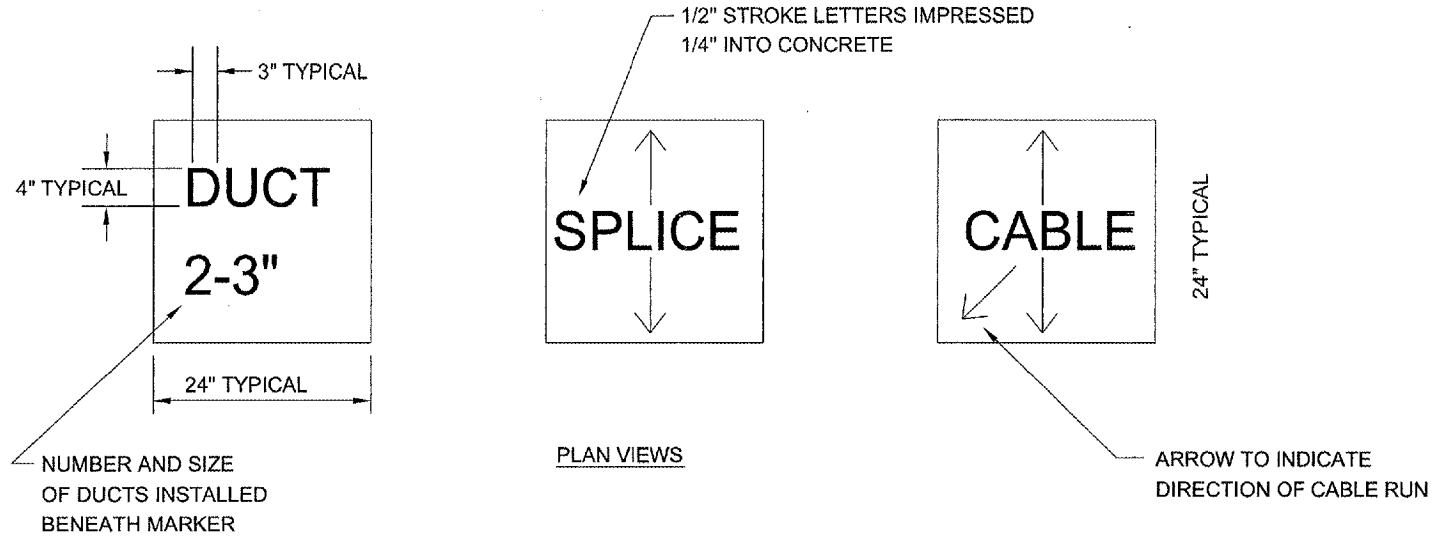
ELECTRICAL LEGEND

- ⊙ Existing MIRL, to be Modified
- ⊕ Existing MITHL, Stake Mounted
- ⊘ Existing MIRL, Stake Mounted
- Proposed MIRL, Stake Mounted, Bidirectional, White/Yellow Split Lens
- ▣ Proposed MIRL, Base Mounted, Bidirectional, White/Yellow Split Lens
- Proposed MITL, Stake Mounted
- ⦿ Proposed MITHL, Stake Mounted
- E- Proposed Underground Wiring
- E- Existing Underground Wiring
- Ⓢ Proposed Splice
- Duct Bank - As Noted

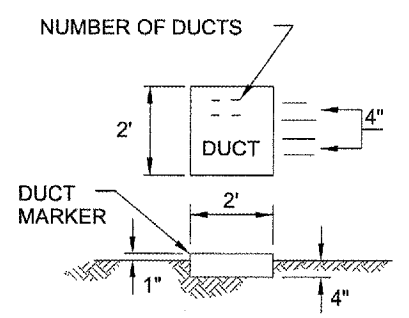


DETAIL "A"

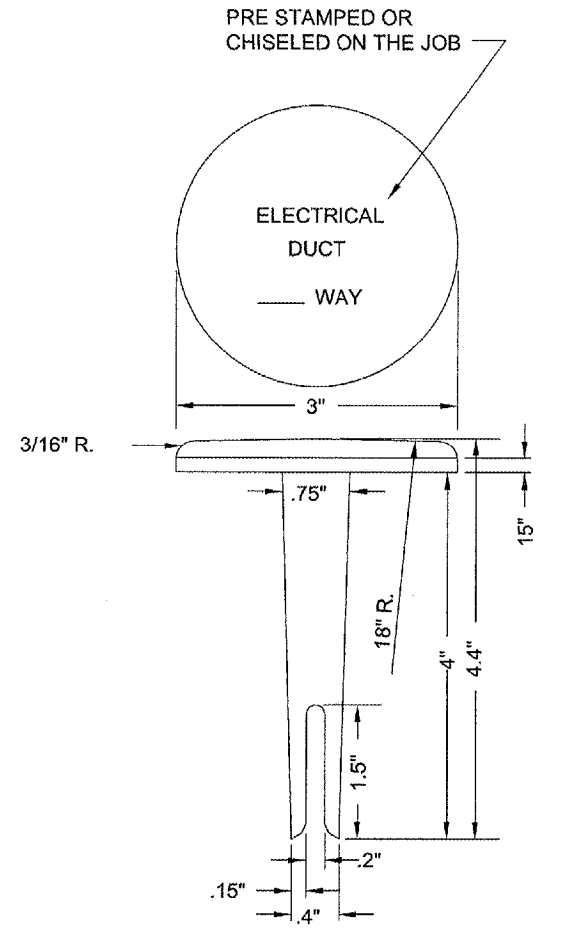
No Scale



TURF CABLE MARKERS
NO SCALE



TURF DUCT MARKER
NO SCALE

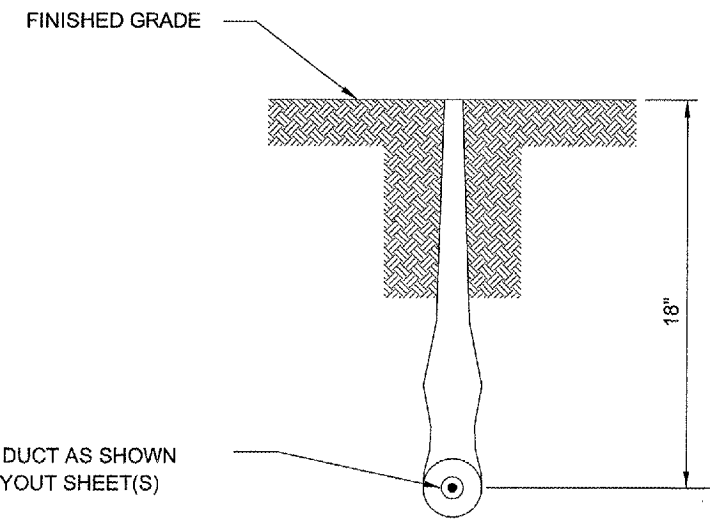


PAVEMENT DUCT MARKER
NO SCALE

NOTES:

1. MARKERS SHALL BE PLACED AS SPECIFIED IN ITEMS 108, 109 & 125 OF THE SPECIFICATIONS.
2. COST OF CONCRETE MARKERS IS INCIDENTAL TO THE ASSOCIATED ITEMS OF DUCT OR CABLE.
3. EDGE EXPOSED CONCRETE WITH A 1/2" RADIUS TOOL.
4. WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED, SOME OF THE FOLLOWING METHODS SHALL BE EMPLOYED:
 - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE
 - B. INCREASE THE MARKER SIZE TO 30" x 30" MAX.
 - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.

CABLE AND DUCT MARKERS
NO SCALE



CABLES IN UNIT DUCT AS SHOWN
ON LIGHTING LAYOUT SHEET(S)

PLOWED CABLE
NO SCALE

GENERAL ELECTRICAL NOTES:

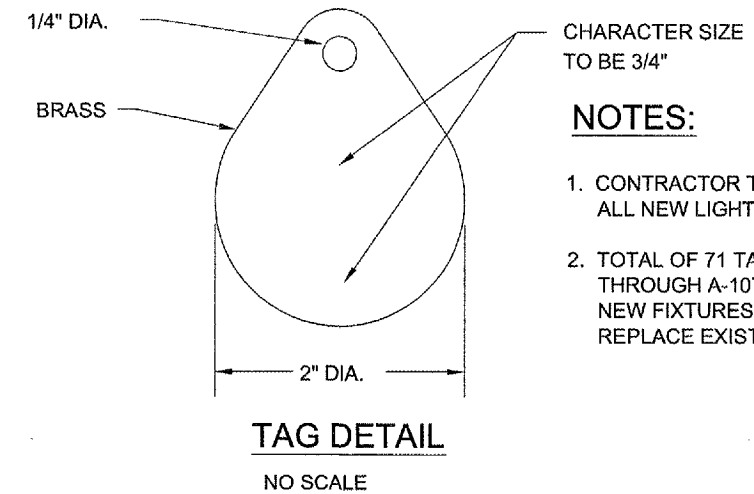
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1. THE ELECTRICAL INSTALLATION, AS A MINIMUM, SHALL MEET THE NATIONAL ELECTRIC CODE AND LOCAL REGULATIONS.
2. GROUND ALL NONCURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT BY USING INSULATED COPPER WIRE TO BE RUN INSIDE CABINETS AND IN CONDUITS TOGETHER WITH OTHER WIRES.
3. ALL GROUND CONNECTIONS TO BUSSES, PANEL, ETC., SHALL BE MADE WITH PRESSURE TYPE SOLDERLESS LUG CLAMPS. SOLDERED OR BOLT & WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. CONNECTIONS TO GROUND RODS & GROUND RING SHALL BE MADE WITH EXOTHERMIC WELDING PROCESS.
4. RIGID STEEL CONDUIT SHALL BE USED THROUGHOUT THE INSTALLATION UNLESS OTHERWISE SPECIFIED.
5. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
6. USE INSULATED CONDUIT BUSHING AT EACH CONDUIT TERMINATION.
7. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
8. UNLESS OTHERWISE NOTED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS SHALL BE FAA APPROVED L-824, TYPE, INSULATION. VOLTAGE AND SIZE SHALL BE AS SPECIFIED.
9. THE JOINT OF THE PRIMARY 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 1/2 INCHES ON EACH SIDE OF THE JOINT. HEAT-SHRINK TUBING SHALL BE APPLIED WHERE CABLE ENTERS BACK OF CONNECTOR. SEE DETAIL DRAWING.
10. THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS SHALL MATCH THE CABLE OD TO PROVIDE A WATERTIGHT CABLE ENTRANCE.
11. ALL POWER AND CONTROL CIRCUIT CONDUCTORS SHALL BE COPPER. ALUMINUM SHALL NOT BE ACCEPTED. THIS INCLUDES WIRE, CABLE, BUSSES, TERMINALS, SWITCH/PANEL COMPONENTS, ETC.
12. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF SIZE SHOWN. LETTER/NUMBERS FOR THE LEGEND TO BE IMPRESSED INTO TOPS OF THE MARKERS SHALL BE PREASSEMBLED AND SECURED IN MOLD BEFORE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
13. 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 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 OF DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
14. IN CASE THE CONTRACTOR SELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
15. THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR, AT NO ADDITIONAL COST, BY EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
16. ALL EXISTING LIGHTS REMOVED UNDER THIS CONTRACT SHALL BE DELIVERED TO OWNER'S ON-SITE STORAGE AREA.
17. WHERE EXISTING FOUNDATIONS ARE TO BE REMOVED, THE AREA SHALL BE BACKFILLED WITH EARTH TO THE ORIGINAL GRADE, COMPACTED AND SEEDED. SUCH REMOVAL SHALL BECOME CONTRACTOR SALVAGE UNLESS NOTED OTHERWISE.
18. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND CIRCUITS, GAS OR WATER LINES WITH A PORTABLE CABLE OR PIPE LOCATOR WHERE POSSIBLE TO AVOID DAMAGE TO EXISTING UTILITIES TO BE RETAINED. EXCAVATING REQUIRED IN CONGESTED AREAS CONTAINING OTHER UTILITIES SHALL BE DONE BY HAND. ANY SUCH WIRING DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY AFTER DISCOVERY AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. ALL UNDERGROUND SPLICES SHALL BE INSPECTED BY THE ENGINEER PRIOR TO BACKFILLING TRENCHES.
19. SHOP DRAWINGS SHALL BE REQUIRED FOR ALL PROPOSED LIGHTING EQUIPMENT INCLUDING CABLE, RUNWAY & TAXI WAY EDGE LIGHTS, CABLE CONNECTIONS, ISOLATION TRANSFORMERS, AND L-867 BASES.
20. RUNWAY EDGE LIGHTING FIXTURES SHALL BE SUPPLIED WITH 45 WATT INCANDESCENT LAMPS. TAXIWAY EDGE LIGHTING FIXTURES SHALL BE SUPPLIED WITH 30 WATT INCANDESCENT LAMPS. QUARTZ FIXTURES WILL NOT BE ALLOWED.
21. EXISTING ID TAGS FOR FIXTURES SHALL BE REMOVED AND REPLACED WHERE DESCRIBED ON THE PLANS.

CABLE SPLICING NOTES:

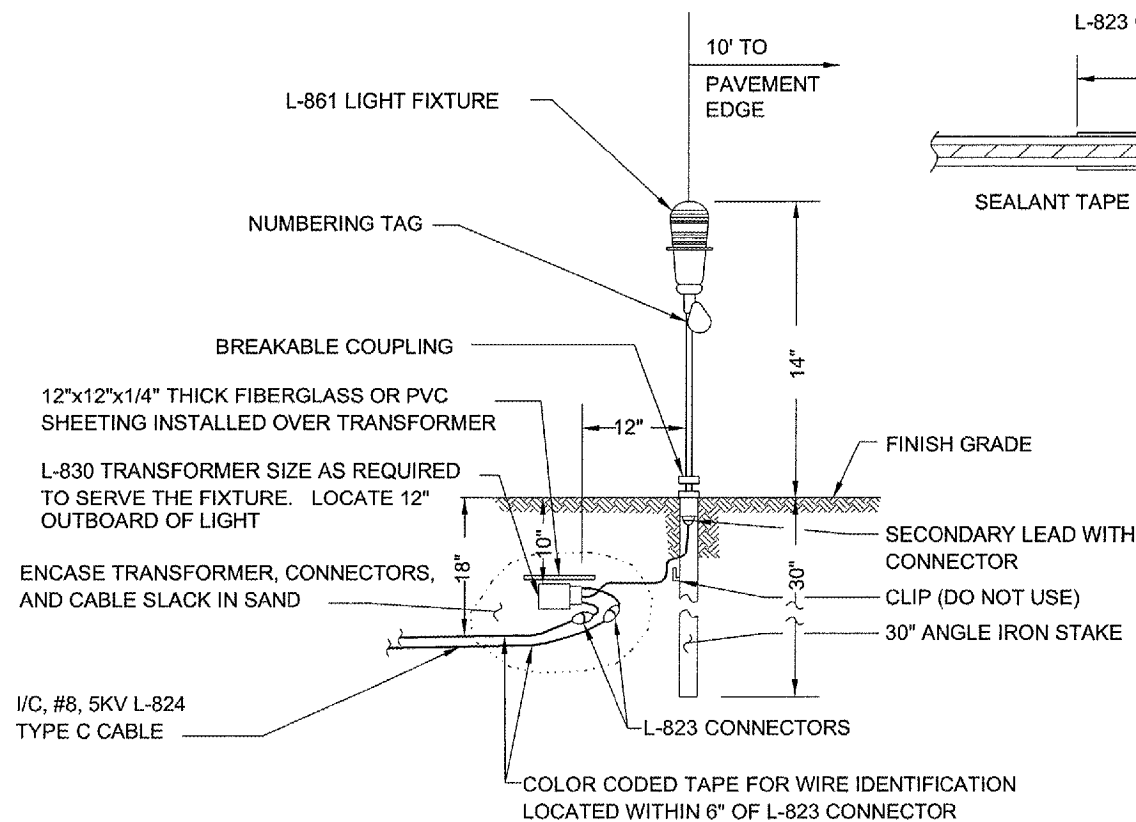
- HEAT-SHRINKABLE TUBING WILL NOT BE REQUIRED FOR ISOLATION TRANSFORMER PRIMARY CONNECTORS WHICH ARE MOLDED ON TO THE CABLE LEADS AT THE FACTORY.
- THE SEALANT TAPE AROUND THE CONNECTOR SHALL BE WATER INSOLUBLE, MAINTAINING ELASTICITY OVER A WIDE RANGE OF TEMPERATURE, AND SHALL BE RAYCHEM NO. S-1011 OR APPROVED EQUAL.
- HEAT-SHRINKABLE TUBING SHALL HAVE MINIMUM EXPANDED ID. OF 1.200", MAXIMUM RECOVERED ID. OF .300", MINIMUM EXPANDED WALL THICKNESS OF .04", NOMINAL RECOVERY WALL THICKNESS OF 0.17", A MASTIC WATER SEALANT COATING APPLIED ON THE INSIDE, AND SHALL BE RAYCHEM NO. WCS-300-6-S OR APPROVED EQUAL.
- MINIMUM LENGTH OF THE HEAT-SHRINKABLE TUBING SHALL BE 6".
- CLEAN THE CABLE INSULATION BEFORE APPLYING THE TUBING WITH A SOLVENT SPECIFIED BY THE TUBING MANUFACTURER.
- TO HEAT THE TUBING, USE PROPANE TORCH, OR ELECTRIC HEATER RECOMMENDED BY THE TUBING MANUFACTURER.
- BEGIN HEATING THE TUBING AT THE CENTER, GO COMPLETELY AROUND, THEN MOVE TOWARD THE ENDS.
- CONTINUE HEATING THE TUBING UNTIL IT SHRINKS COMPLETELY AND THE SEALANT IS BEING SQUEEZED OUT AT BOTH ENDS.
- IF THERE IS ANY NOTICEABLE HEAT DAMAGE TO THE CABLE OR THE TUBING, THE CONNECTION, INCLUDING THE DAMAGED PORTION, WILL BE REMOVED AND ANOTHER CONNECTION MADE.
- ALLOW THE CONNECTION TO COOL BEFORE HANDLING.
- INSTALL THE CONNECTIONS WITHOUT BENDING THEM.
- THE CONTRACTOR SHALL TRAIN THE AIRPORT MAINTENANCE PERSONNEL IN THE EMPLOYMENT OF CABLE CONNECTION WITH HEAT-SHRINKABLE TUBING. THE INSTRUCTION SHALL INCLUDE AT LEAST TWO ASSEMBLIES AND DISASSEMBLIES FOR SUCH CONNECTIONS.
- AFTER COMPLETION OF THE CONSTRUCTION, THE CONTRACTOR SHALL TRANSFER ONE OF THE HEATER UNITS TO THE AIRPORT MANAGER. IT SHALL BECOME THE PROPERTY OF THE AIRPORT.

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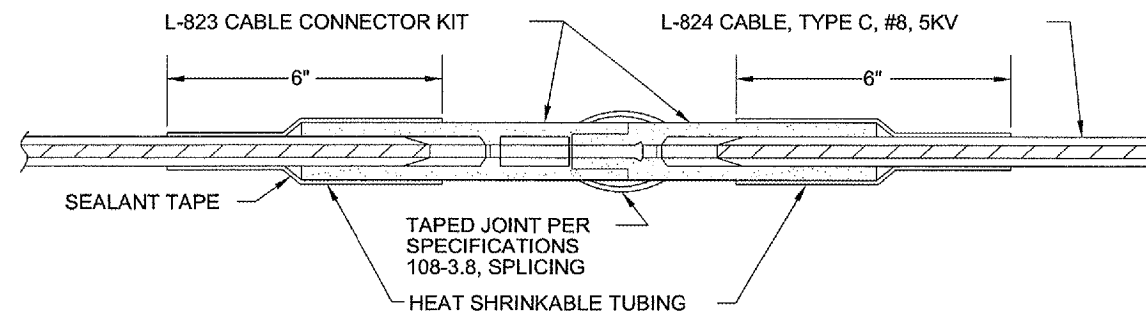
NOTES:

- CONTRACTOR TO INSTALL NEW TAGS ON ALL NEW LIGHTS.
- TOTAL OF 71 TAGS REQUIRED - LABELED A-37 THROUGH A-107. 20 TAGS ARE DEDICATED TO NEW FIXTURES, AND THE REMAINDER SHALL REPLACE EXISTING TAGS.



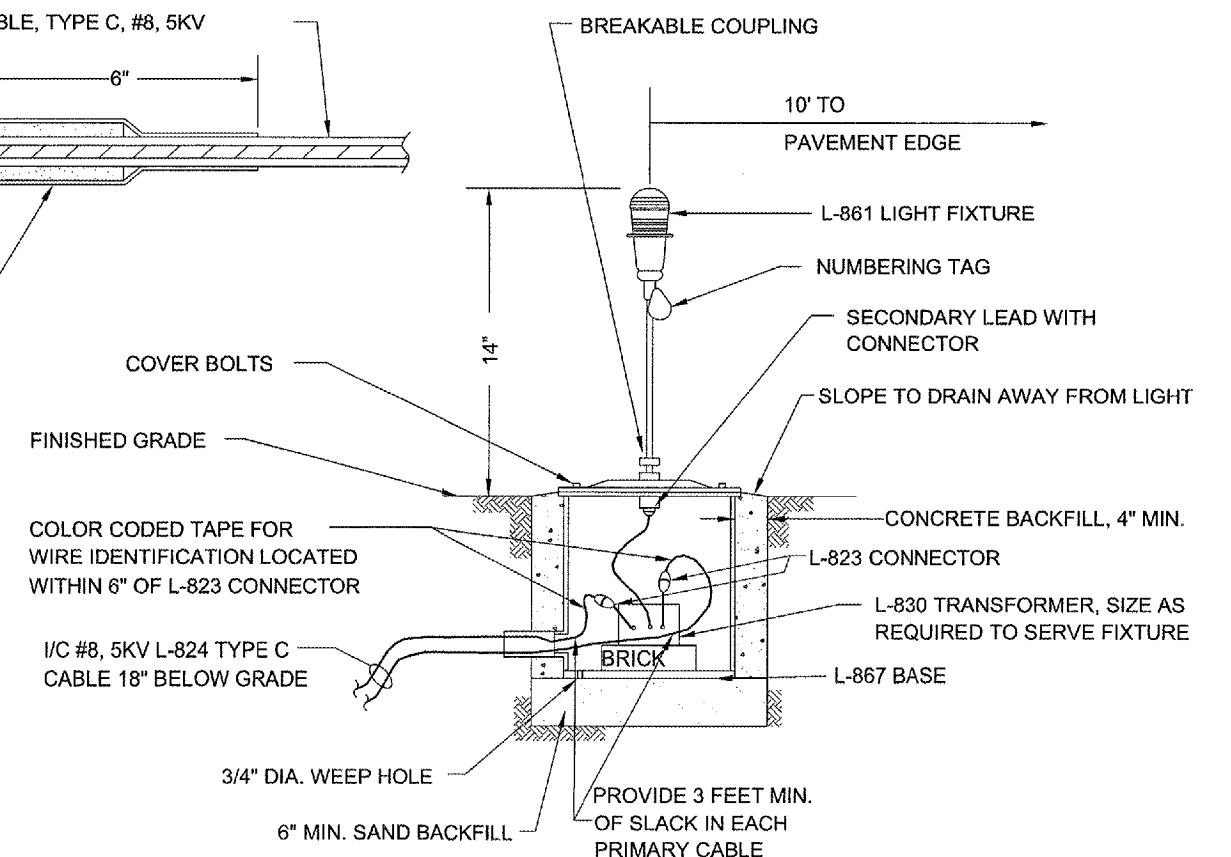
MEDIUM INTENSITY LIGHT - STAKE MOUNTED

NO SCALE



DETAIL - CABLE SPLICING

NO SCALE



MEDIUM INTENSITY LIGHT - BASE MOUNTED

NO SCALE