

ELEVATIONS TABLE			
CUT/FILL	MIN ELEVATION (FT)	MAX ELEVATION (FT)	COLOR
CUT	-80	-75	
CUT	-75	-70	
CUT	-70	-65	
CUT	-65	-60	
CUT	-60	-55	
CUT	-55	-50	
CUT	-50	-45	
CUT	-45	-40	
CUT	-40	-35	
CUT	-35	-30	
CUT	-30	-25	
CUT	-25	-20	
CUT	-20	-15	
CUT	-15	-10	
CUT	-10	-5	
CUT	-5	0	
FILL	0	5	
FILL	5	10	
FILL	10	15	
FILL	15	20	
FILL	20	25	
FILL	25	30	
FILL	30	35	
FILL	35	40	
FILL	40	45	
FILL	45	50	
FILL	50	55	
FILL	55	60	
FILL	60	65	

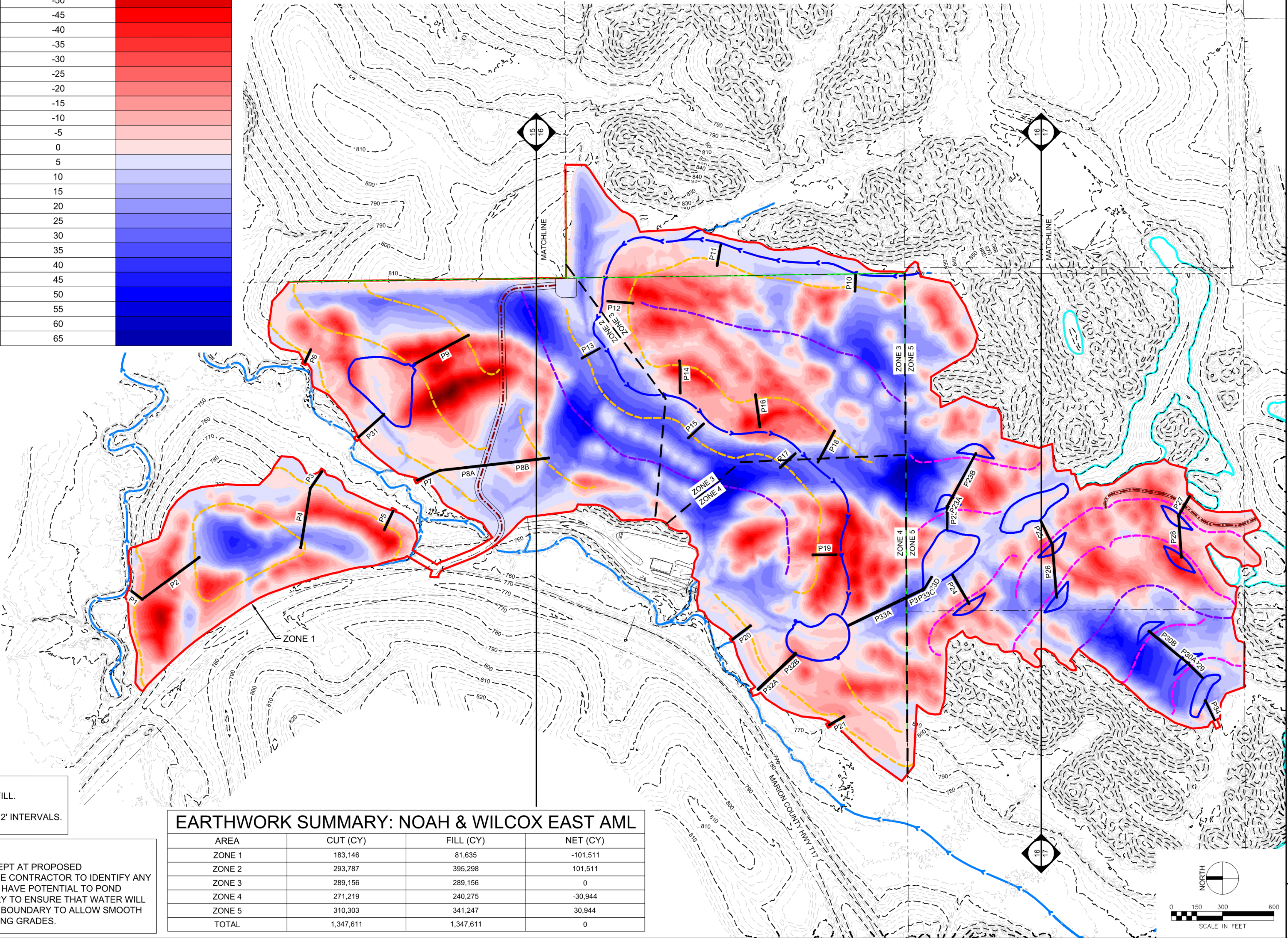
EARTHWORK BALANCE NOTE:
A SHRINKAGE FACTOR OF 12% IS ASSUMED FOR FILL.

EXISTING AND PROPOSED CONTOURS SHOWN AT 2' INTERVALS.

NOTES:

NO PONDING OF WATER WILL BE ACCEPTED, EXCEPT AT PROPOSED IMPOUNDMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREA OF EXISTING OR PROPOSED GROUND THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN. ADJUST GRADES AT PROJECT BOUNDARY TO ALLOW SMOOTH TRANSITION FROM PROPOSED GRADES TO EXISTING GRADES.

EARTHWORK SUMMARY: NOAH & WILCOX EAST AML			
AREA	CUT (CY)	FILL (CY)	NET (CY)
ZONE 1	183,146	81,635	-101,511
ZONE 2	293,787	395,298	101,511
ZONE 3	289,156	289,156	0
ZONE 4	271,219	240,275	-30,944
ZONE 5	310,303	341,247	30,944
TOTAL	1,347,611	1,347,611	0



DESIGN BY: AJH

DRAWN BY: GHK

CHKD. BY: LTM

ISSUED: 08-17-2026

REVISED: ---

S-H PROJECT NUMBER: 2142305281

NOAH AND WILCOX EAST
AML RECLAMATION PROJECT

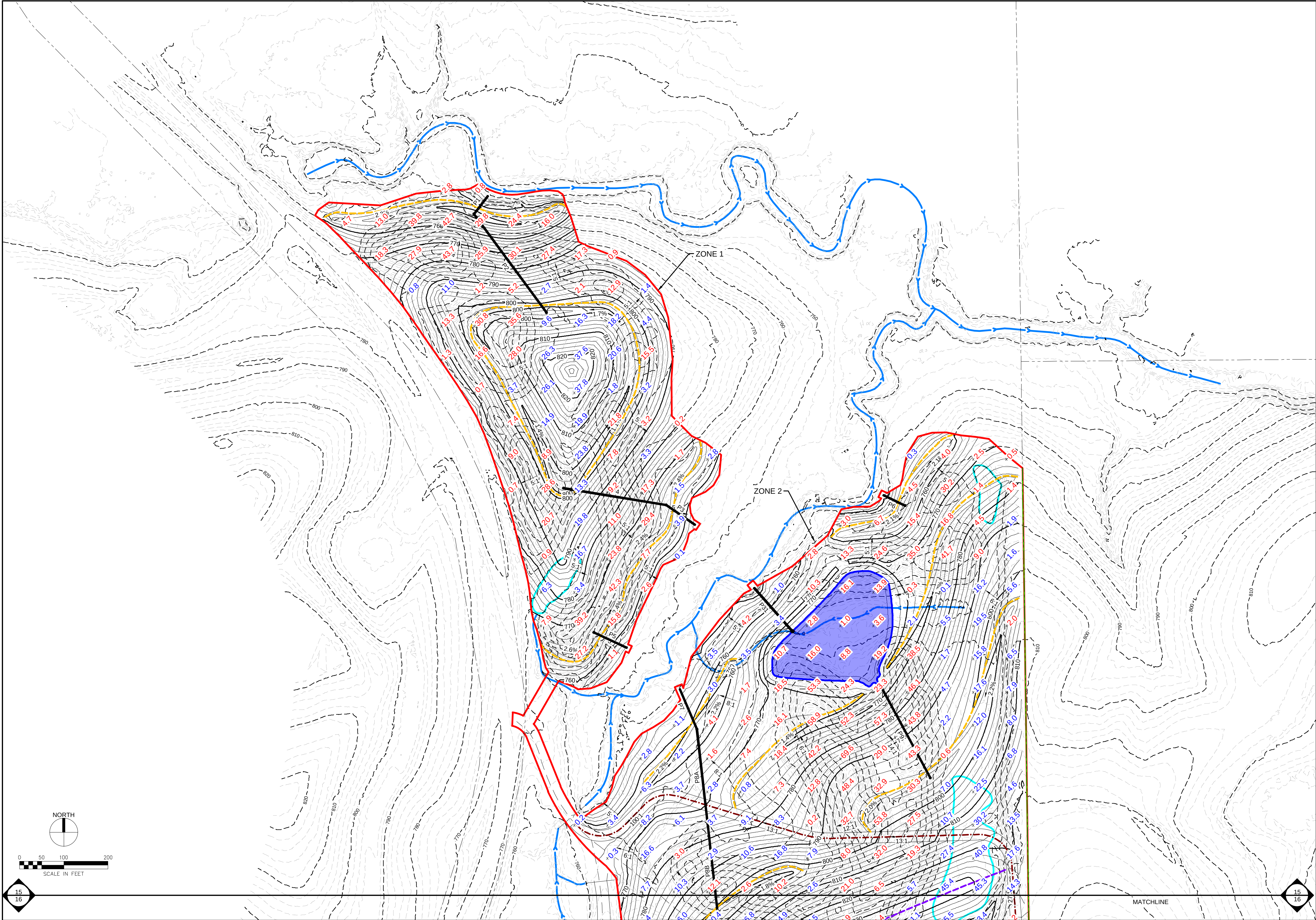
OVERALL CUT-FILL PLAN

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HOOVER STATE OFFICE BUILDING
1305 E. WALNUT STREET DES MOINES, IA 50319
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SHEET

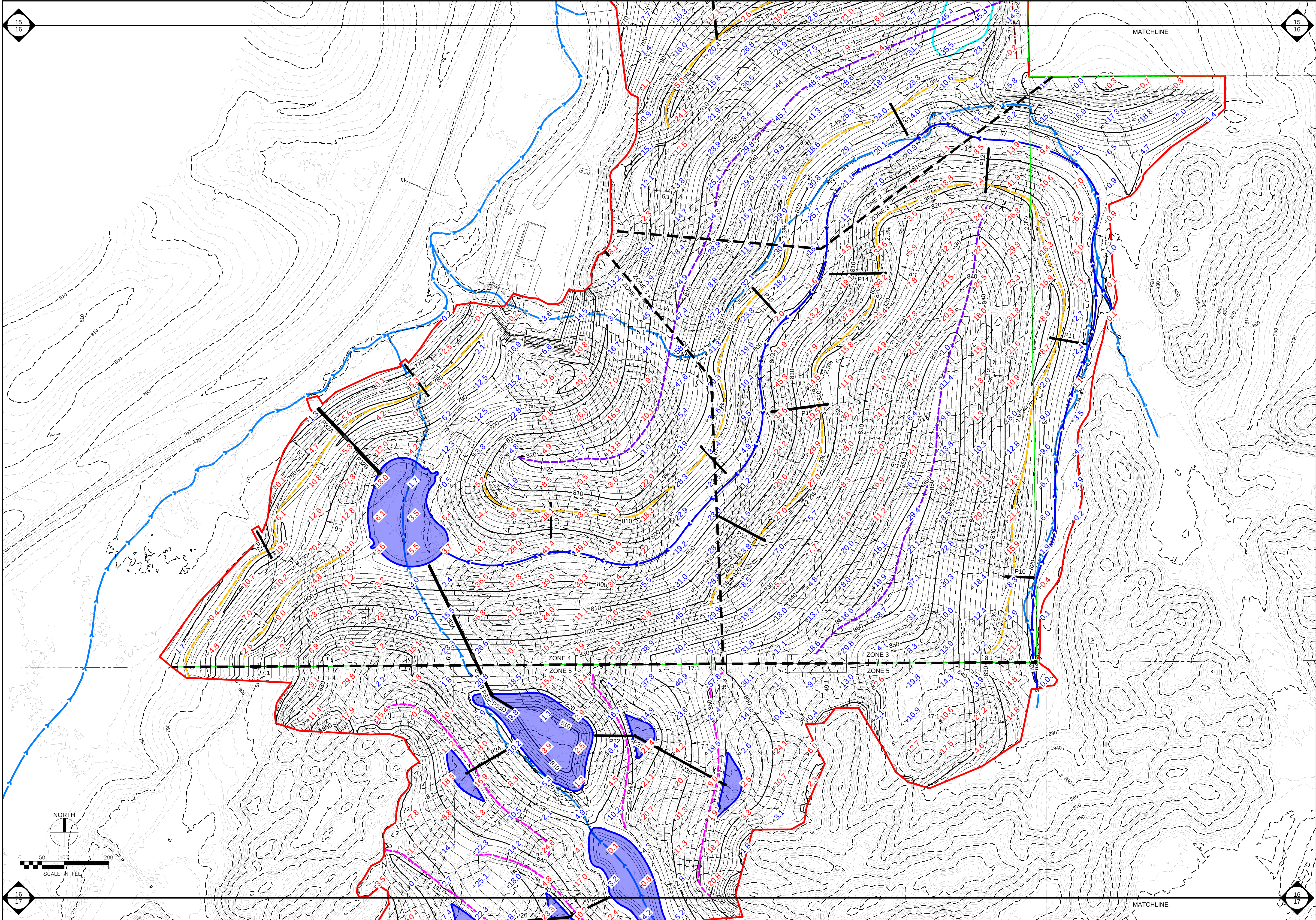
14 OF 36



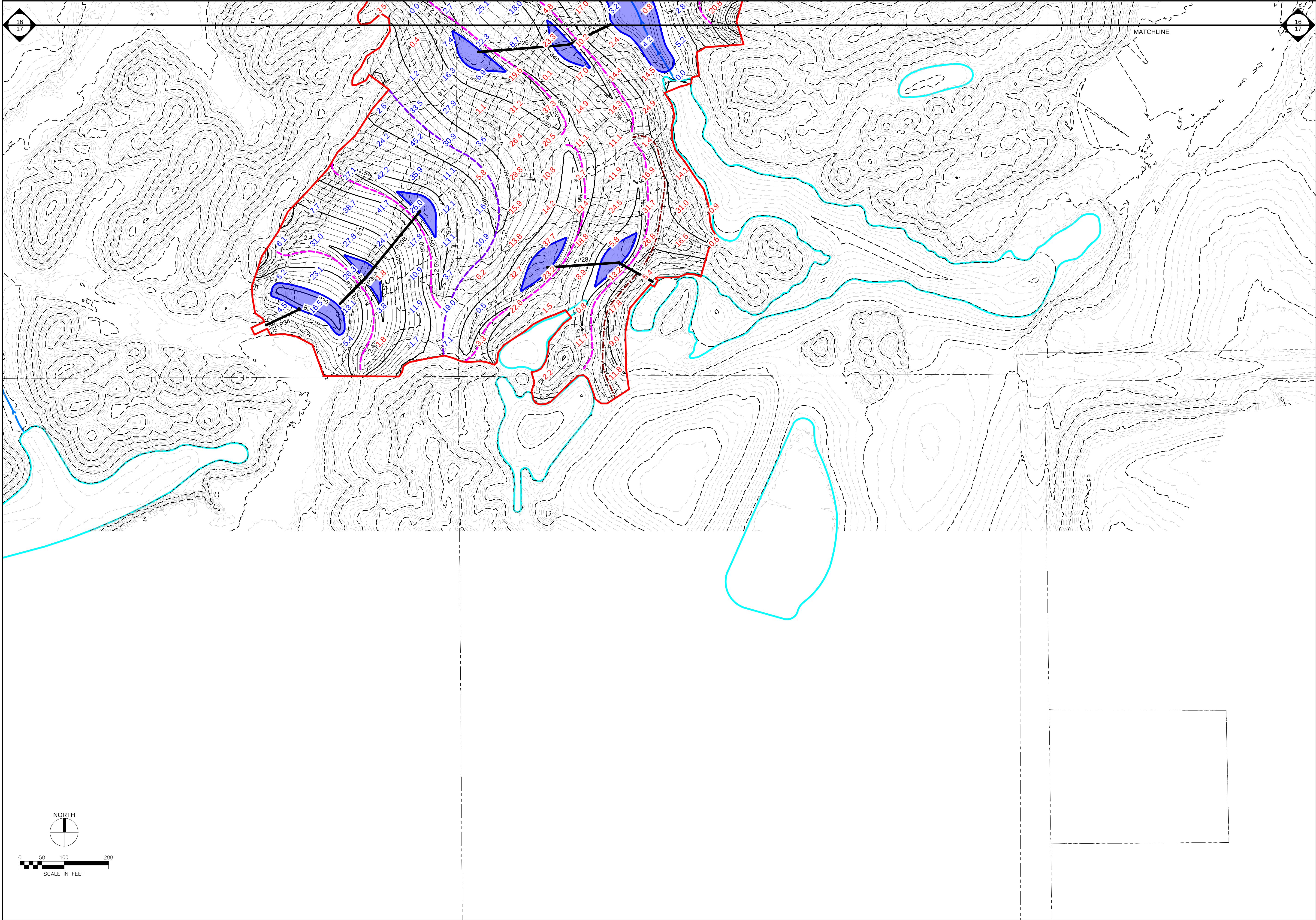
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DESIGN BY: AJH		DRAWN BY: GHK	CHKD. BY: LTM	ISSUED: 08-17-2026	REVISED: ---	S-H PROJECT NUMBER: 2142305281
NOAH AND WILCOX EAST AML RECLAMATION PROJECT		 IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HOOVER STATE OFFICE BUILDING 1305 E. WALNUT STREET DES MOINES, IA 50319 (515) 281-5321				
CUT-FILL PLAN		 SHIVE-HATTERY ARCHITECTURE+ENGINEERING 4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.8104 fax: 515.223.0622 shive-hattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214				
SHEET 15 OF 36						



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NOAH AND WILCOX EAST AML RECLAMATION PROJECT		IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HOOVER STATE OFFICE BUILDING 1305 E. WALNUT STREET DES MOINES, IA 50319 (515) 281-5331				
SHEET 16 OF 36		SHIVEHATTERY ARCHITECTURE+ENGINEERING 4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.8104 fax: 515.223.0622 shivehattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214				



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NOAH AND WILCOX EAST AML RECLAMATION PROJECT		 IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HOOVER STATE OFFICE BUILDING 1305 E. WALNUT STREET DES MOINES, IA 50319 (515) 281-5321				
CUT-FILL PLAN						
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PIPES							
NO.	LENGTH (LF)	MATERIAL	DIAMETER (IN)	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)	SLOPE	NOTES
P1	51	PPHP	12	744.00	742.00	3.90%	
P2	280	PPHP	12	793.00	744.00	17.77%	
P3	79	PPHP	12	758.00	755.30	3.42%	
P4	237	PPHP	12	793.00	758.00	14.92%	
P5	82	HDPE	8	758.00	753.50	5.50%	DL
P6	54	HDPE	8	749.00	748.00	1.85%	DL
P7	98	PPHP	12	752.00	750.00	2.05%	
P8A	216	PPHP	12	768.00	752.00	7.43%	
P8B	212	PPHP	12	792.00	768.00	11.42%	
P9	233	PPHP	12	788.00	766.25	9.37%	
P10	63	HDPE	8	819.00	818.00	1.60%	DL
P11	82	HDPE	8	813.00	811.00	2.44%	DL
P12	100	HDPE	8	812.00	805.70	6.34%	DL
P13	79	HDPE	8	806.00	804.20	2.28%	DL
P14	127	HDPE	8	812.00	801.10	8.65%	DL
P15	81	HDPE	8	801.00	800.00	1.23%	DL
P16	129	PPHP	12	812.00	798.30	10.71%	
P17	81	HDPE	8	800.00	797.00	3.71%	DL
P18	139	PPHP	12	812.00	796.30	11.38%	
P19	91	HDPE	8	800.00	793.20	7.45%	DL
P20	87	HDPE	8	772.00	766.00	6.87%	DL
P21	67	HDPE	8	774.00	773.00	1.49%	DL
P22	90	PPHP	12	822.00	819.25	3.07%	
P23A	42	PPHP	12	823.00	822.00	2.36%	
P23B	191	PPHP	12	838.00	823.00	7.88%	
P24	129	PPHP	12	827.00	819.25	6.01%	
P25	105	PPHP	12	833.00	830.25	2.63%	
P26	204	PPHP	12	840.00	833.00	3.43%	
P27	88	PPHP	12	833.00	831.70	1.48%	
P28	161	PPHP	12	840.00	833.00	4.36%	
P29	84	PPHP	12	824.00	822.25	2.09%	
P30A	49	PPHP	12	826.00	824.00	4.10%	
P30B	145	PPHP	12	842.00	826.00	11.07%	
P31	132	PPHP	12	762.00	744.00	13.76%	ASC
P32A	92	PPHP	36	772.40	765.20	7.89%	
P32B	111	PPHP	36	786.00	772.40	12.35%	ASC
P33A	229	C900 PVC	24	807.20	790.25	7.42%	
P33B	94	C900 PVC	24	810.00	807.20	2.99%	ASC
P33C	5	PPHP	12	810.00	810.00	0.00%	
P33D	55	PPHP	12	810.00	810.00	0.00%	
P34	84	PPHP	12	818.00	817.00	1.20%	ASC

NOTE:
ASC = ANTI-SEEPAGE COLLAR - SEE DETAIL
DL = DAYLIGHT - SEE DETAIL

RISER INTAKES							
NO.	SIZE (IN)	HEIGHT (FT)	TYPE	RIM ELEVATION (FT)	TERRACE FLOWLINE ELEVATION (FT)	INVERT ELEVATION OUT (FT)	NOTES
R1	12	3	MR	751.00	748.00	744.00	
R2	10	3	MR	800.00	797.00	793.00	
R3	12	3	MR	765.00	762.00	758.00	
R4	10	3	MR	800.00	797.00	793.00	
R5	10	3	MR	765.00	762.00	758.00	
R6	10	3	MR	756.00	753.00	749.00	
R7	12	3	MR	759.00	756.00	752.00	
R8	10	3	MR	799.00	796.00	792.00	
R9	10	3	MR	795.00	792.00	788.00	
R10	10	3	MR	826.00	823.00	819.00	
R11	10	3	MR	820.00	817.00	813.00	
R12	10	3	MR	819.00	816.00	812.00	
R13	10	3	MR	813.00	810.00	806.00	
R14	10	3	MR	819.00	816.00	812.00	
R15	10	3	MR	808.00	805.00	801.00	
R16	10	3	MR	819.00	816.00	812.00	
R17	10	3	MR	807.00	804.00	800.00	
R18	10	3	MR	819.00	816.00	812.00	
R19	10	3	MR	807.00	804.00	800.00	
R20	12	3	MR	779.00	776.00	772.00	
R21	10	3	MR	781.00	778.00	774.00	
R22	12	4	MR	830.00	826.00	822.00	
R23	10	4	MR	846.00	842.00	838.00	
R24	10	4	MR	835.00	831.00	827.00	
R25	12	4	MR	841.00	837.00	833.00	
R26	10	4	MR	848.00	844.00	840.00	
R27	12	4	MR	841.00	837.00	833.00	
R28	10	4	MR	848.00	844.00	840.00	
R29	12	4	MR	832.00	828.00	824.00	
R30	10	4	MR	850.00	846.00	842.00	
R31	48	-	CR	766.00	-	762.00	
R32	48	-	CR	790.00	-	786.00	
R33	48	-	CR	819.00	-	810.00	MODIFIED SW-403
R34	48	-	CR	822.00	-	818.00	

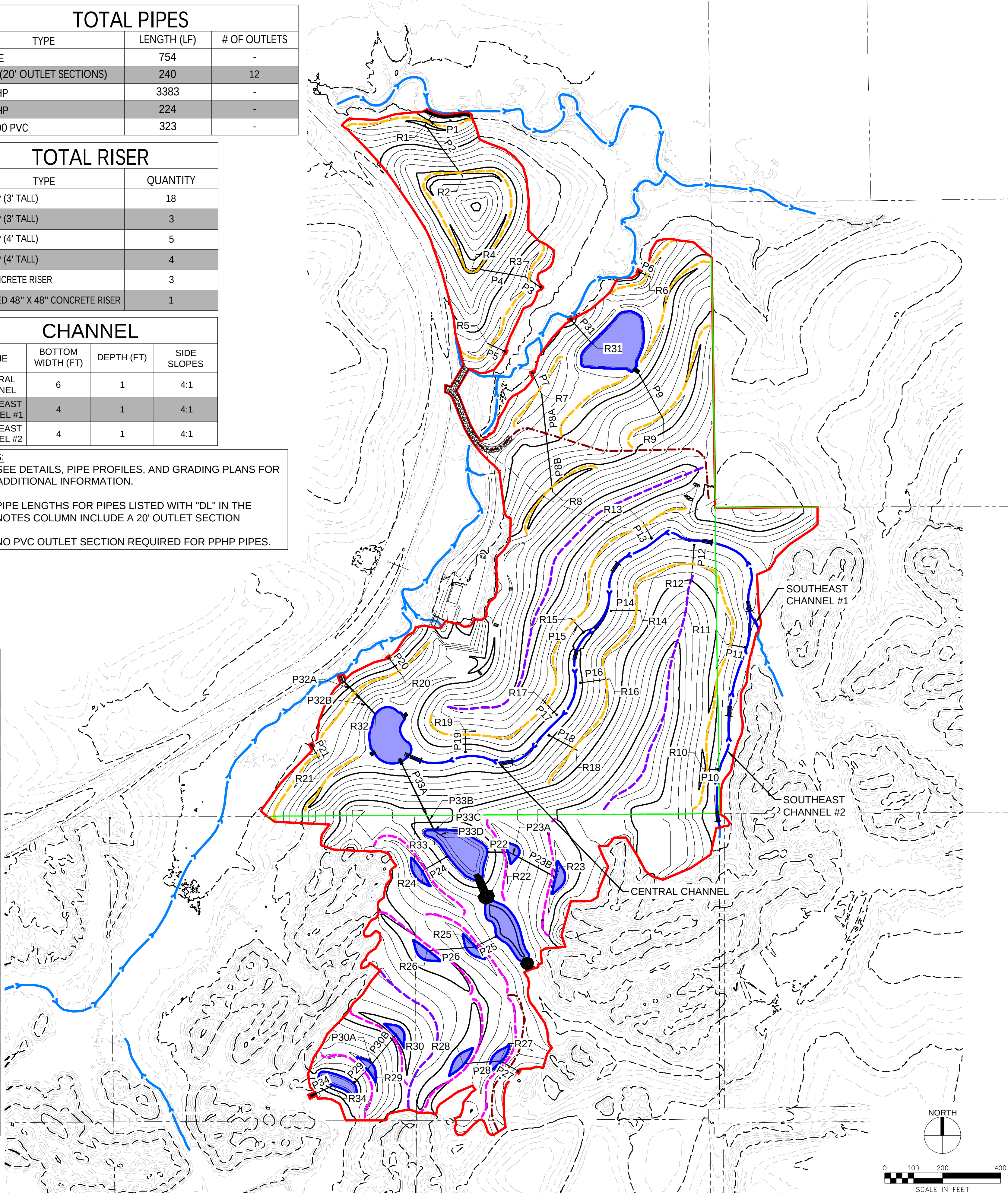
NOTE:
MR = METAL RISER - SEE DETAIL
PR = PLASTIC RISER - SEE DETAIL
CR = CONCRETE RISER WITH TRASH RACK - SEE DETAIL

TOTAL PIPES		
TYPE	LENGTH (LF)	# OF OUTLETS
8" HDPE	754	-
8" PVC (20' OUTLET SECTIONS)	240	12
12" PPHP	3383	-
36" PPHP	224	-
24" C900 PVC	323	-

TOTAL RISER	
TYPE	QUANTITY
10" CMP (3' TALL)	18
12" CMP (3' TALL)	3
10" CMP (4' TALL)	5
12" CMP (4' TALL)	4
48" CONCRETE RISER	3
MODIFIED 48" X 48" CONCRETE RISER	1

CHANNEL			
NAME	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES
CENTRAL CHANNEL	6	1	4:1
SOUTHEAST CHANNEL #1	4	1	4:1
SOUTHEAST CHANNEL #2	4	1	4:1

- NOTES:
- SEE DETAILS, PIPE PROFILES, AND GRADING PLANS FOR ADDITIONAL INFORMATION.
 - PIPE LENGTHS FOR PIPES LISTED WITH "DL" IN THE NOTES COLUMN INCLUDE A 20' OUTLET SECTION
 - NO PVC OUTLET SECTION REQUIRED FOR PPHP PIPES.



S-H PROJECT NUMBER: 2142305281

REVISED: ---

ISSUED: 08-17-2026

CHKD. BY: LTM

GHK

DRAWN BY:

AJH

DESIGN BY:

IOWA DEPARTMENT OF AGRICULTURE
AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION
AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
1305 E. WALNUT STREET DES MOINES, IA 50319
(515) 281-5321



NOAH AND WILCOX EAST
AML RECLAMATION PROJECT

DRAINAGE PLAN

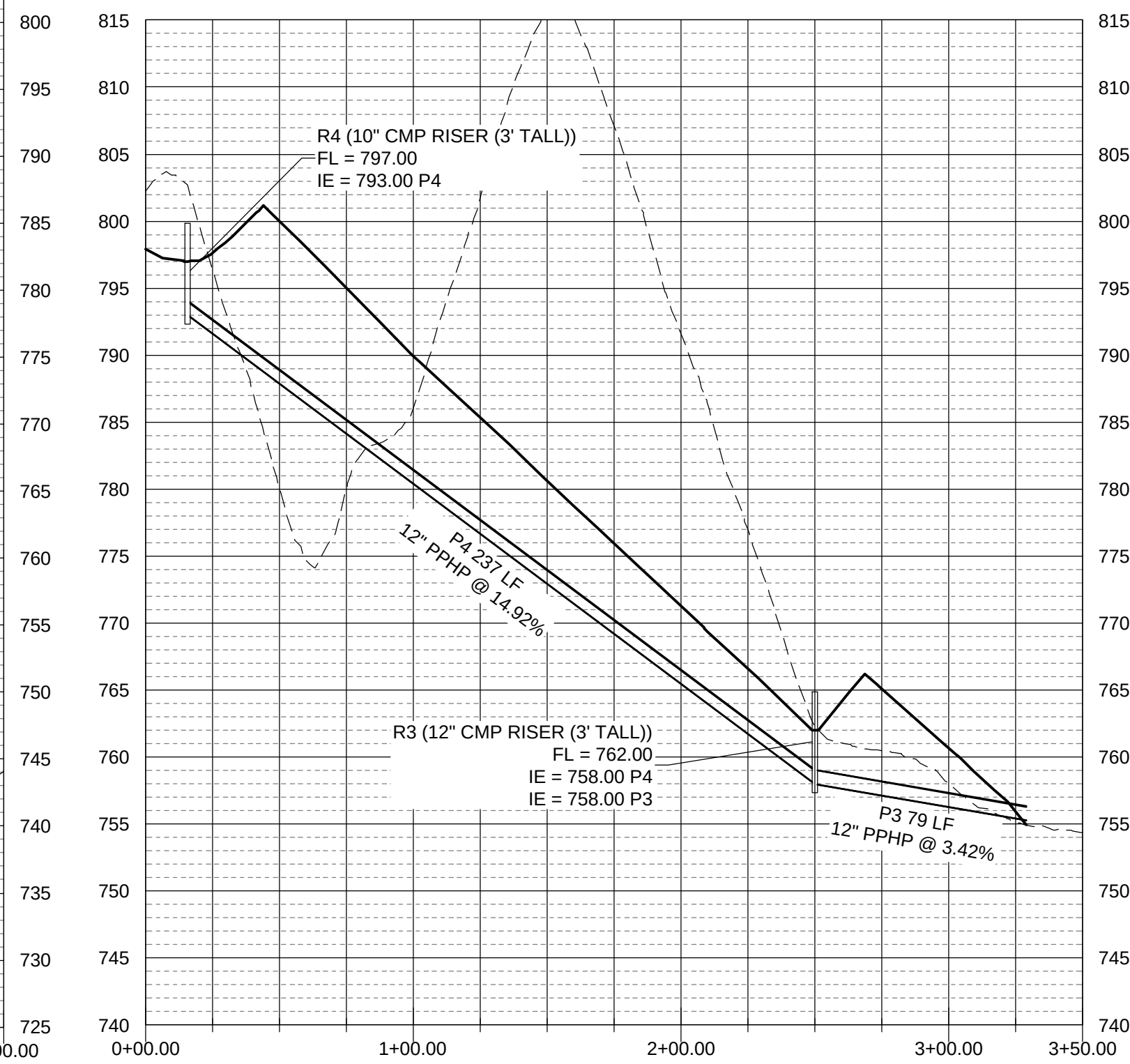
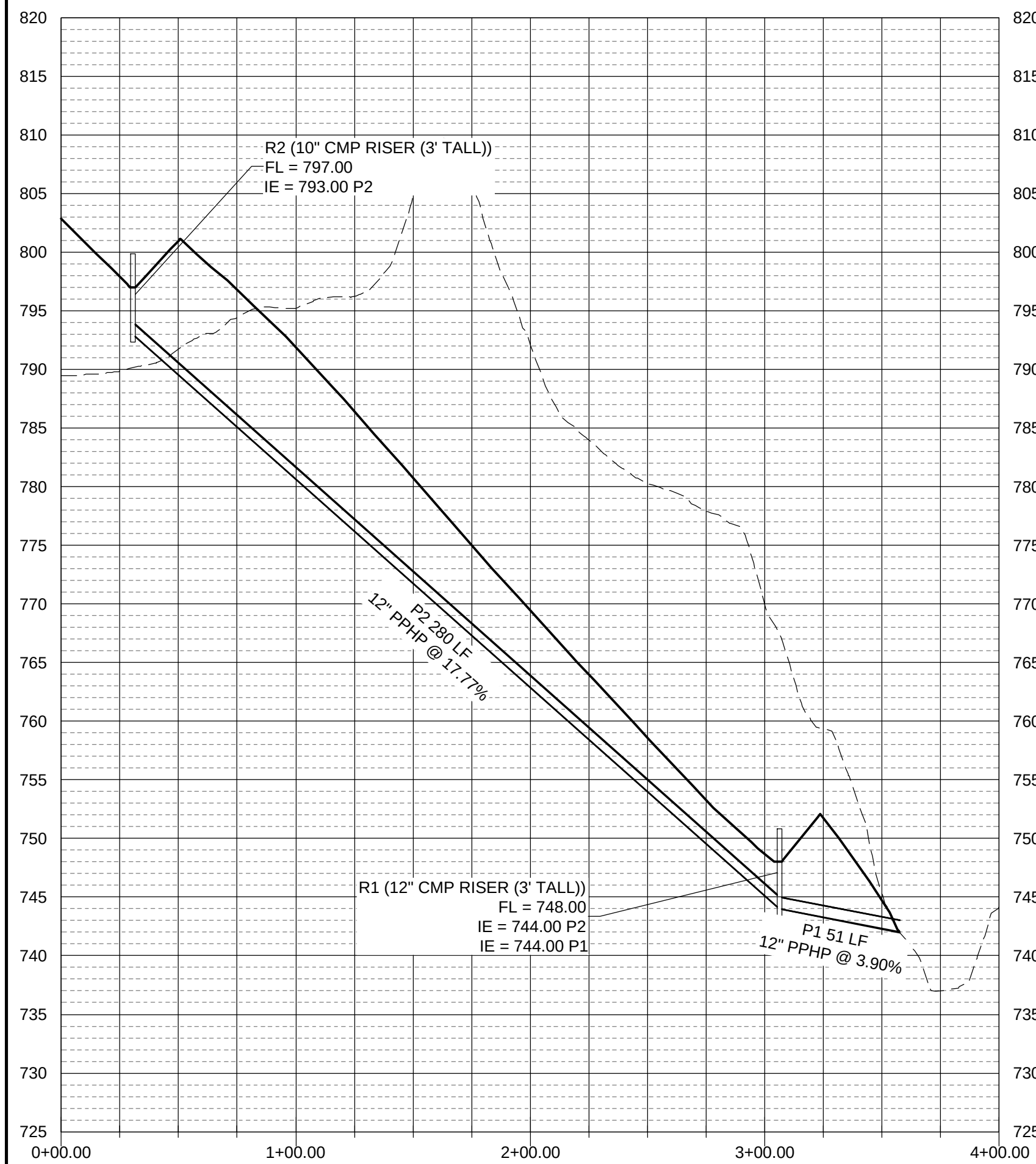
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SHEET

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HDPE PIPE COVER INFORMATION

SIZE (IN)	MIN (FT)	MAX (FT)
8"	1	11
10"	1	11

C900 PIPE COVER INFORMATION

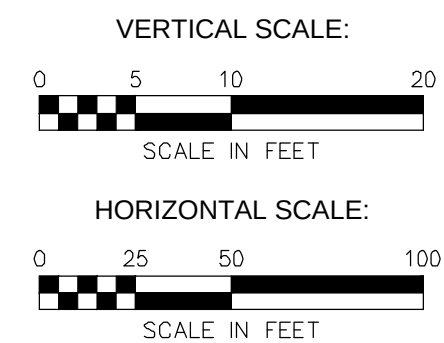
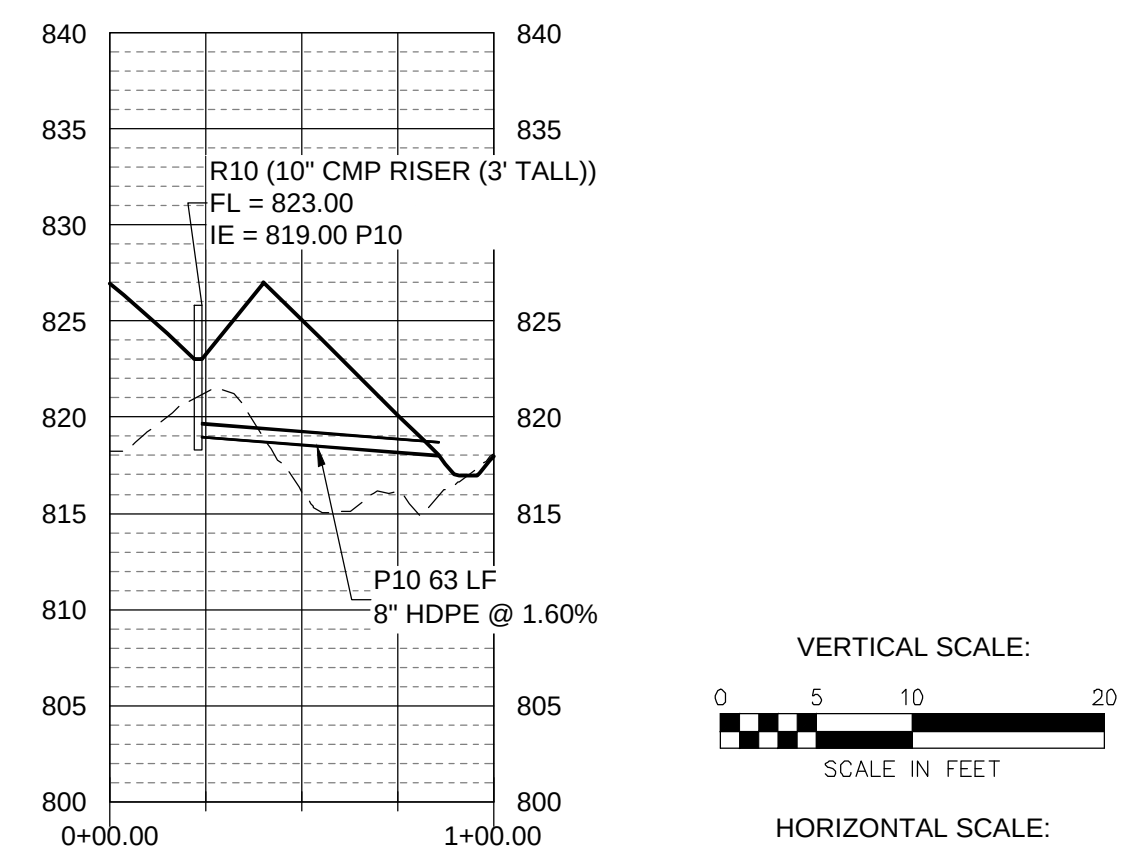
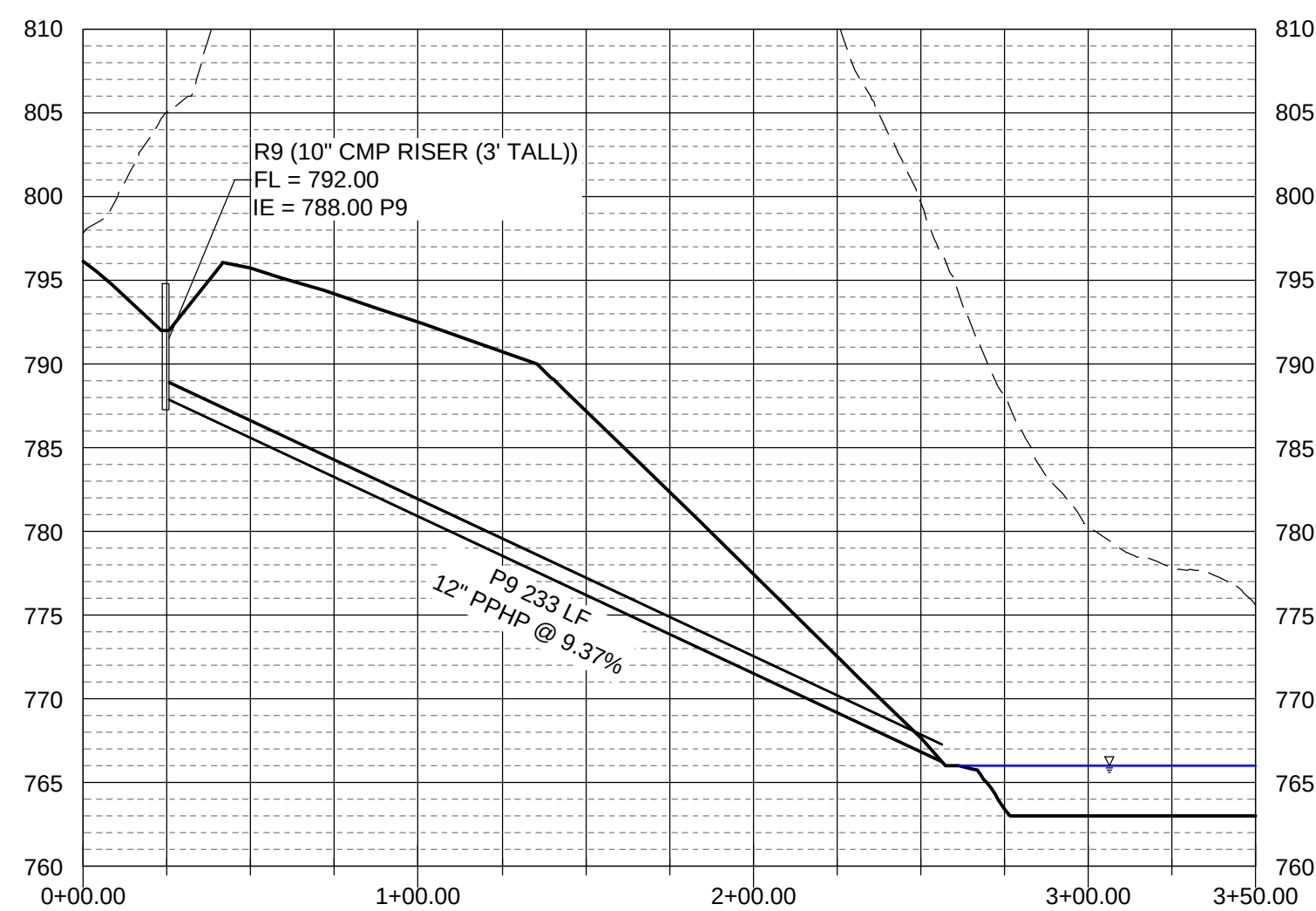
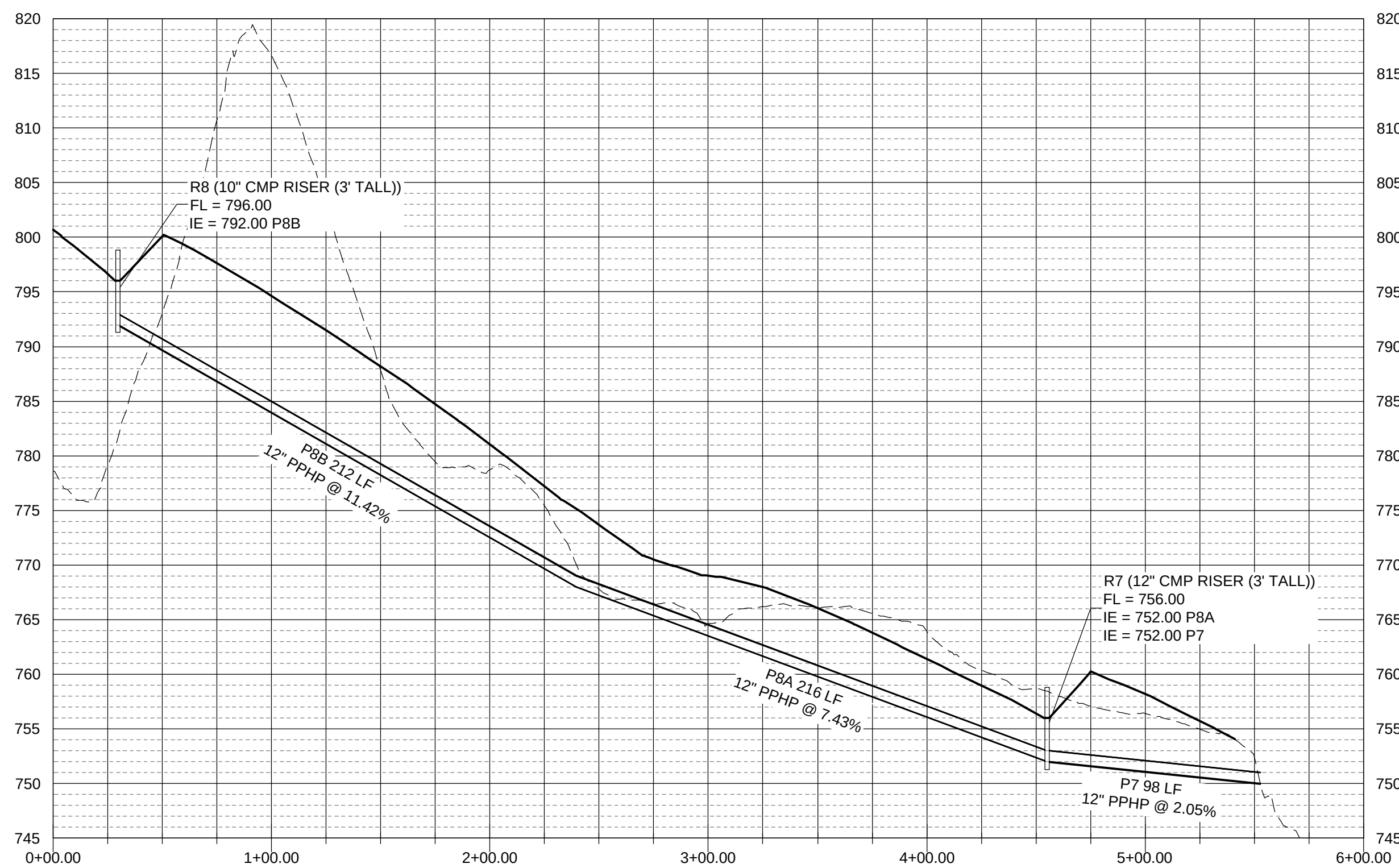
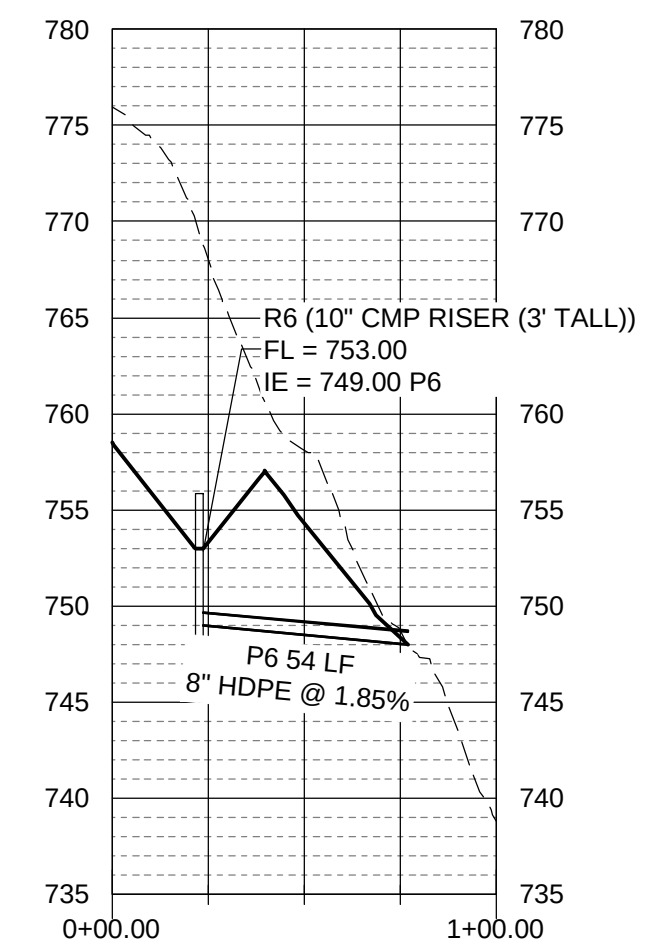
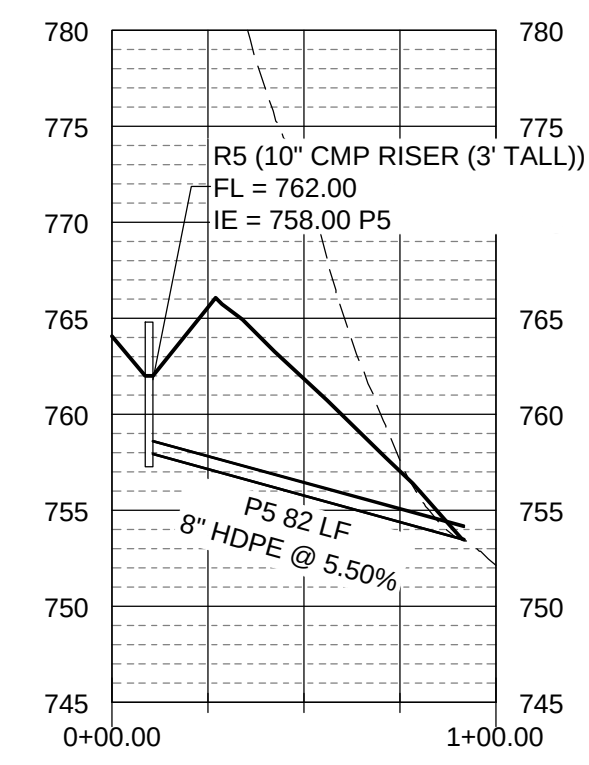
SIZE (IN)	MIN (FT)	MAX (FT)
24"	2	23

PPHP PIPE COVER INFORMATION

SIZE (IN)	MIN (FT)	MAX (FT)
12"	1	16
36"	1	16

NOTES:

1. MINIMUM PIPE SLOPE = 1.0%
2. WHERE PIPES ARE SHOWN TO OUTLET BELOW GRADE, CREATE 4' WIDE SWALE FROM PIPE OUTLET TO FLOWLINE OF NEAREST CHANNEL OR NORMAL WATER LEVEL OF NEAREST WETLAND.
3. IF PIPE IS PROJECTING BEYOND PROPOSED SLOPE, PROVIDE A 2-FOOT COVER BERM OVER PIPE.



S-H PROJECT NUMBER: 2142305281

SED:

ED: 08-17-2026

CHKD. BY: LTM

GHK

DRAWN BY:

А.А.И

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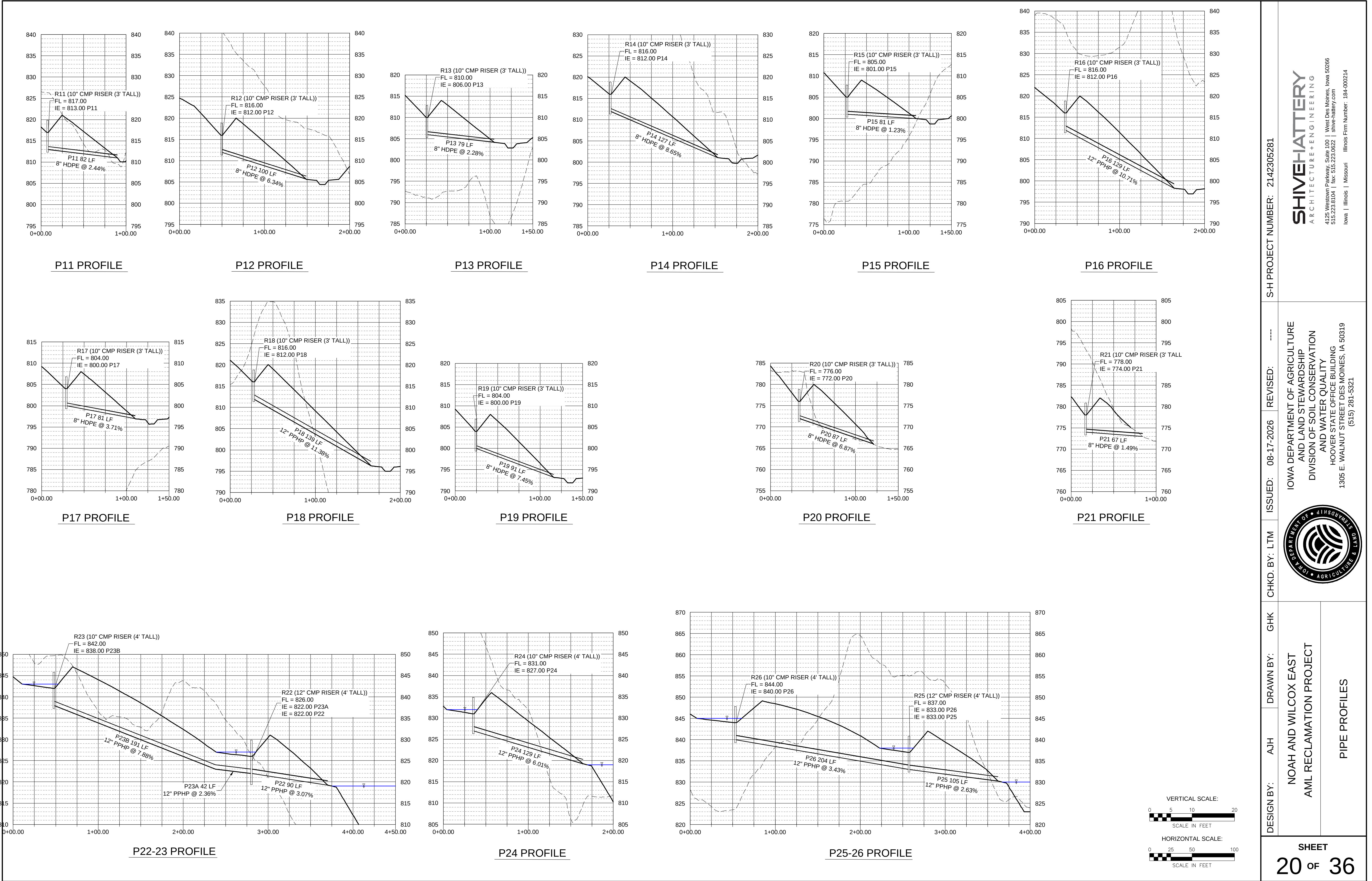
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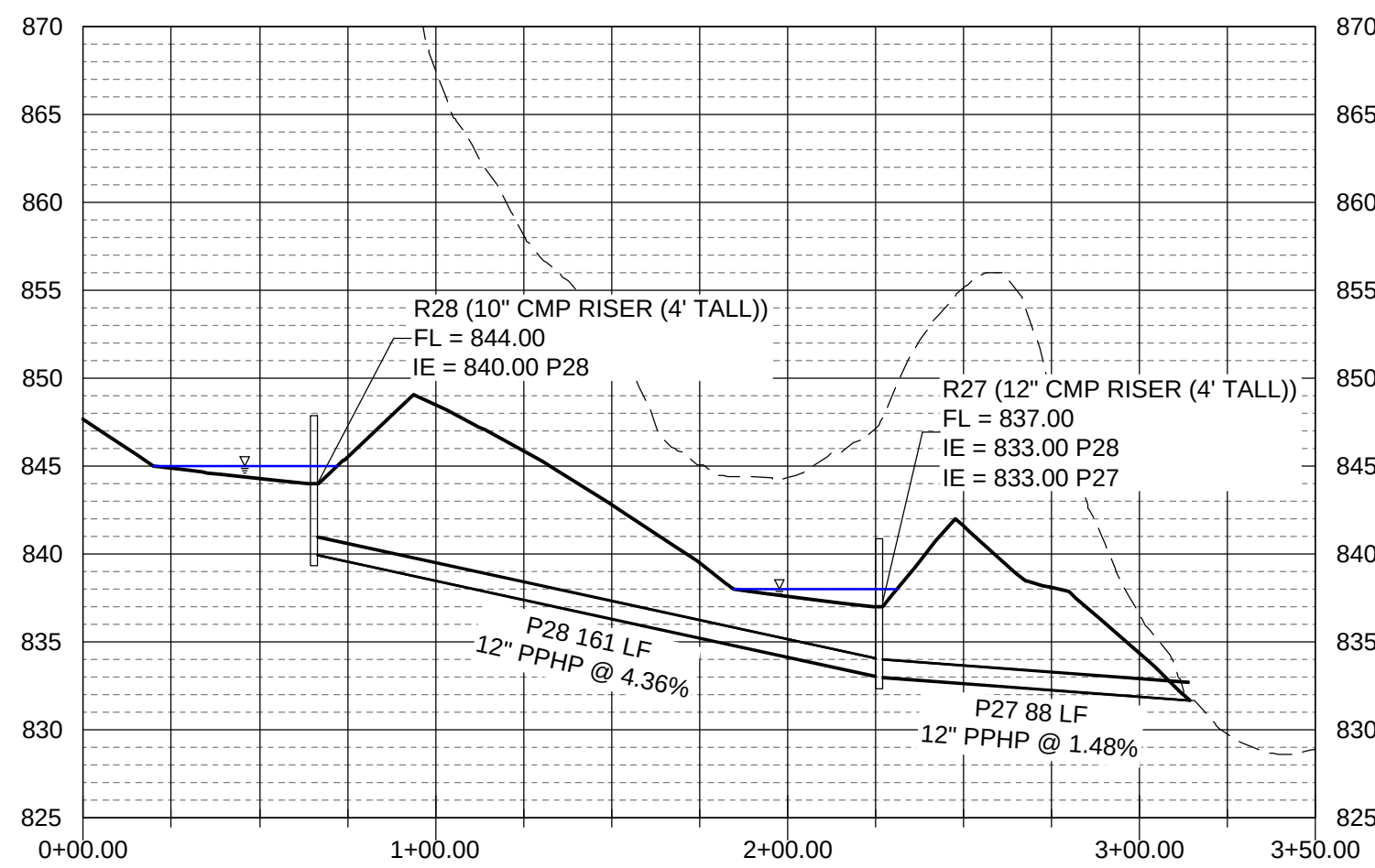
NOAH AND WILCOX EAST
AML RECLAMATION PROJECT

PIPE PROFILES

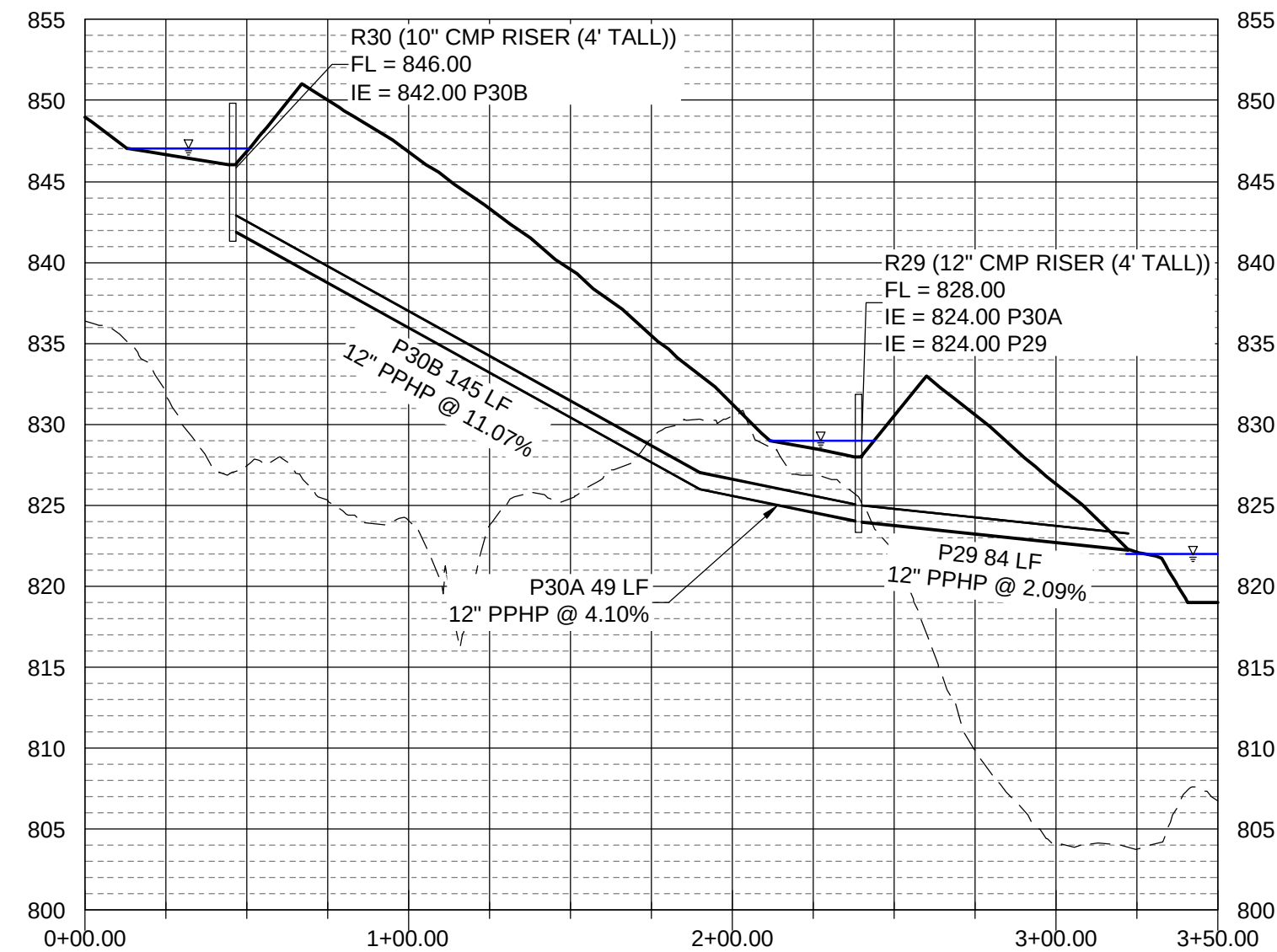
SHEET

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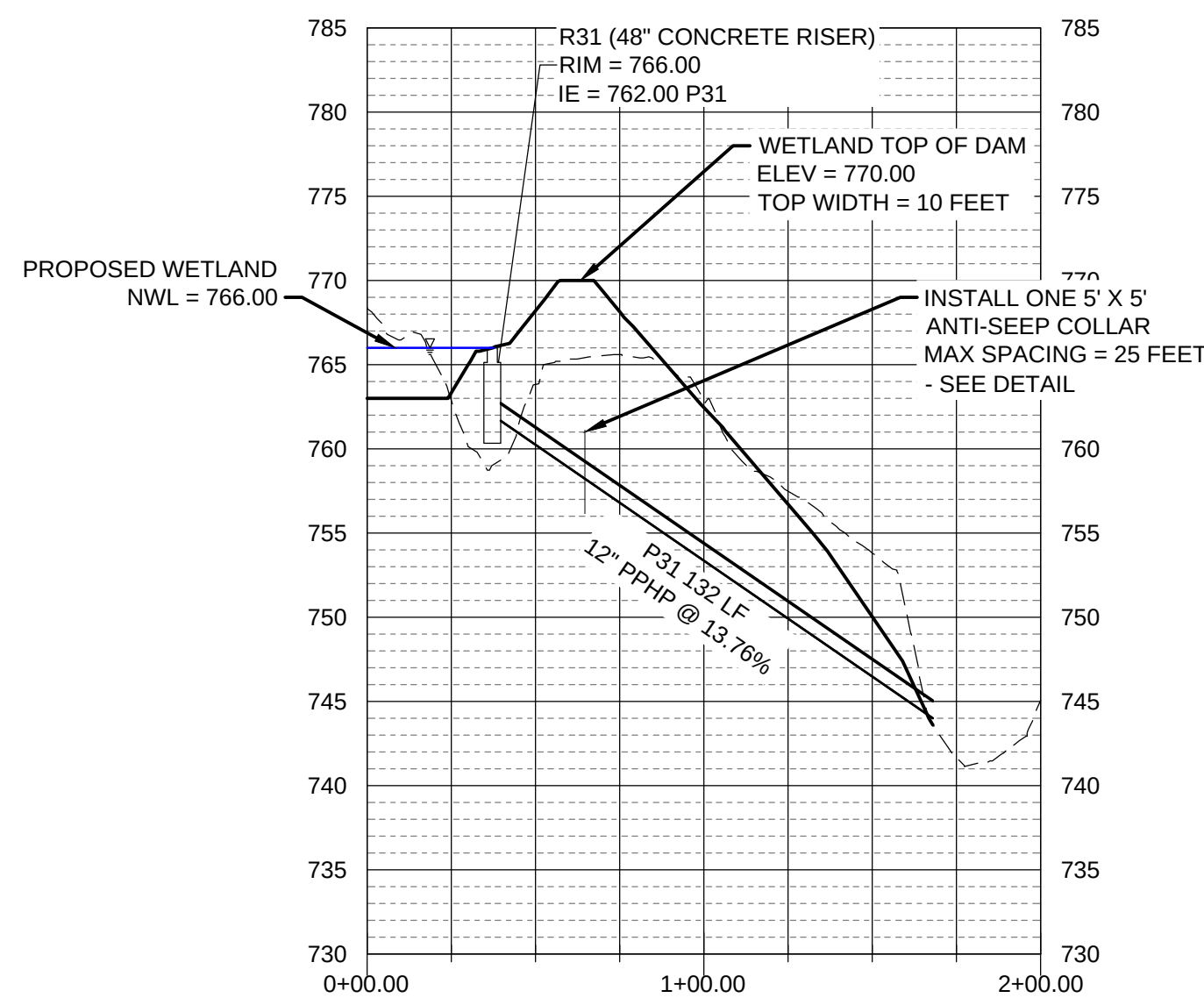




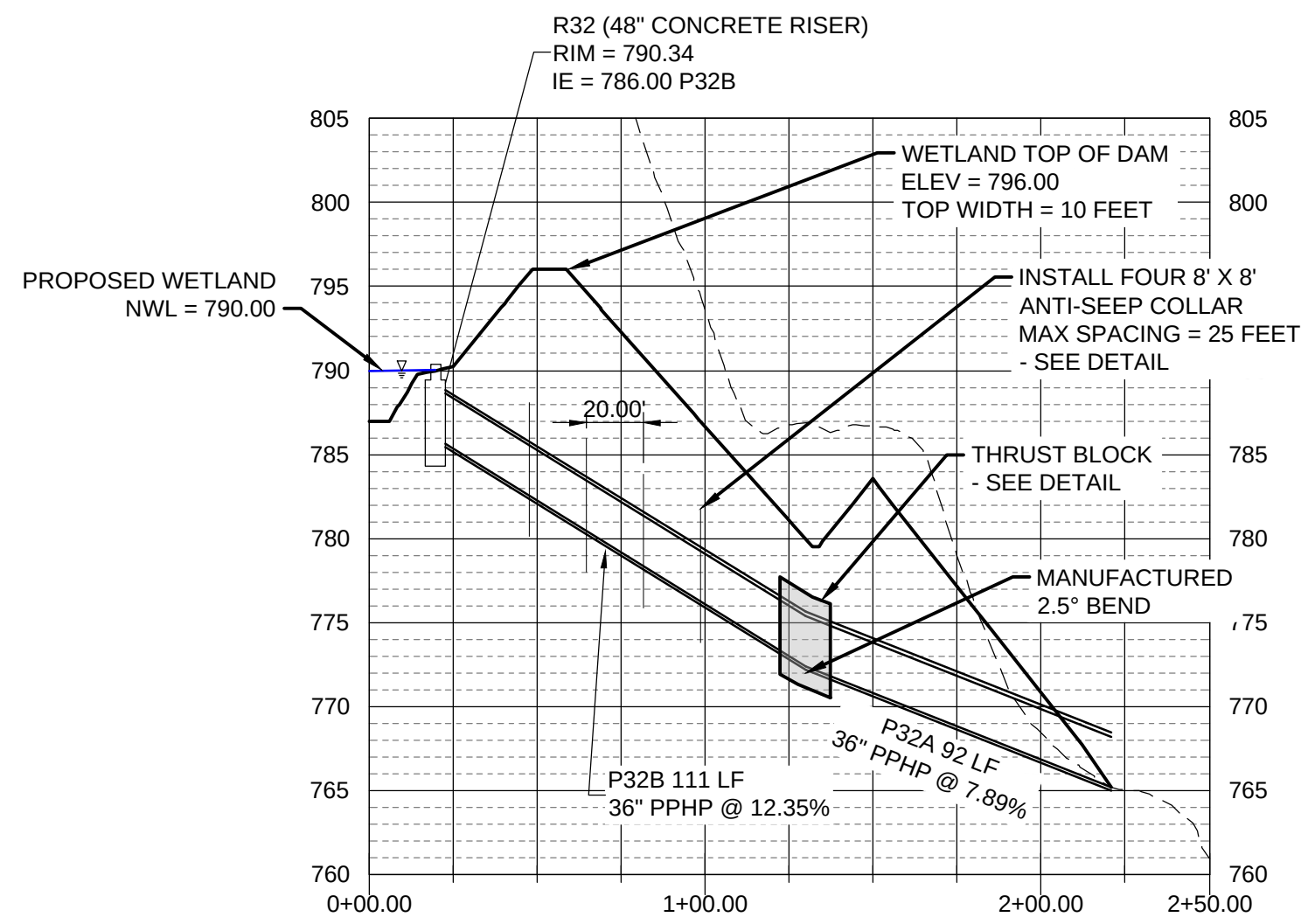
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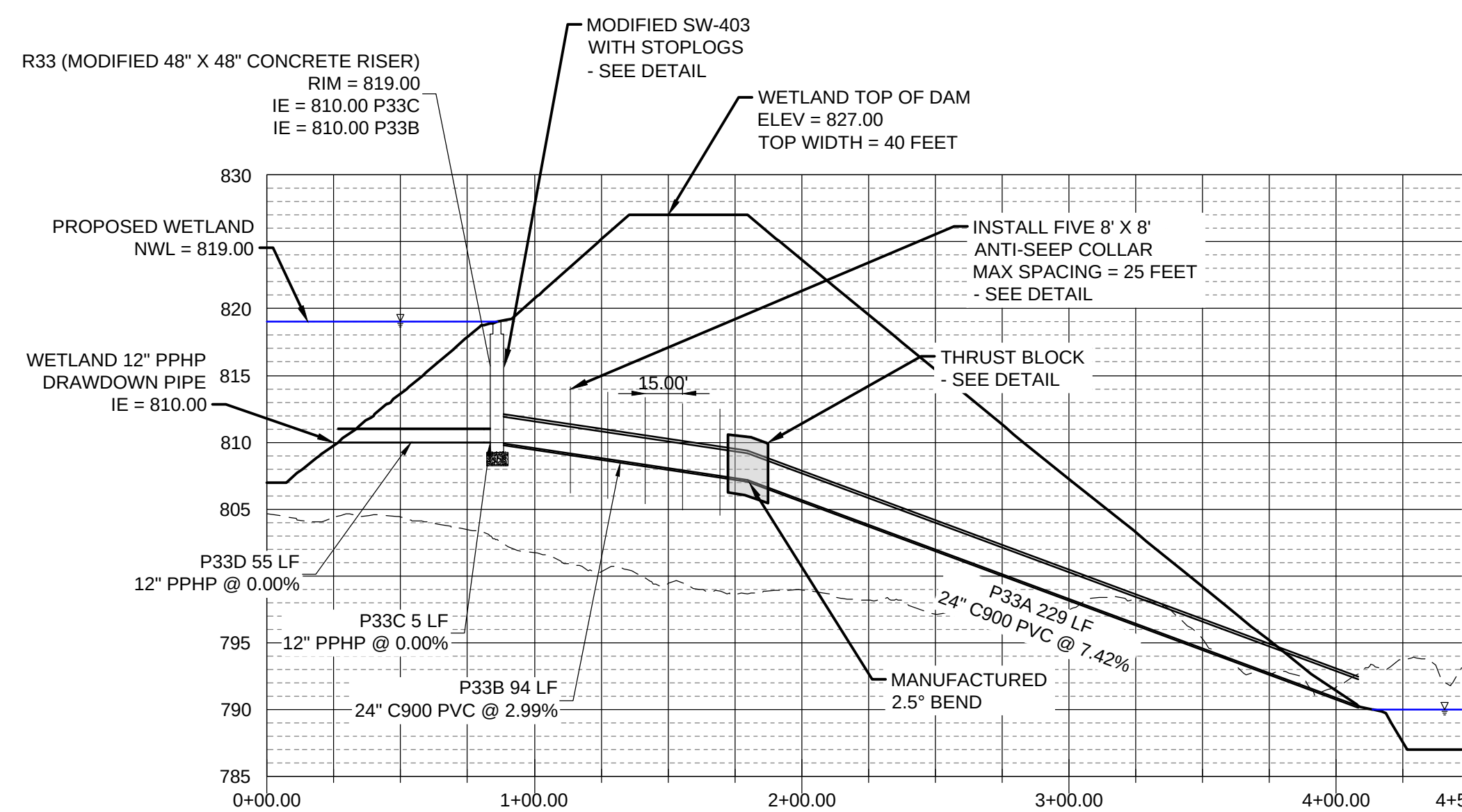
P29-30 PROFILE



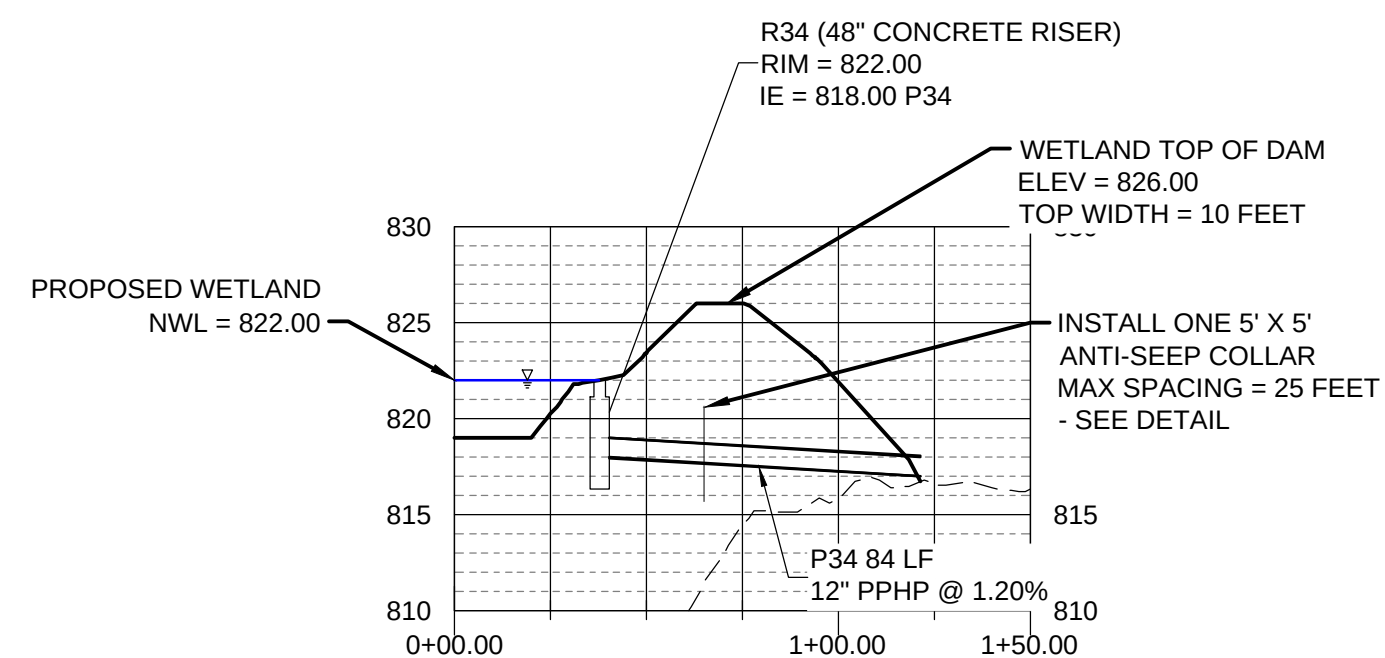
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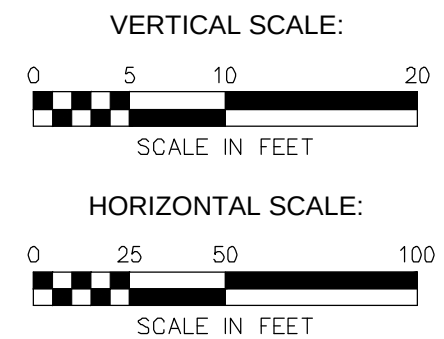
P32 PROFILE



P33 PROFILE



P34 PROFILE



S-H PROJECT NUMBER: 2142305281

REVISED: ---

ISSUED: 08-17-2026

CHKD. BY: LTM

GHK

DRAWN BY:

AJH

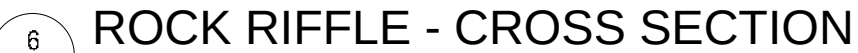
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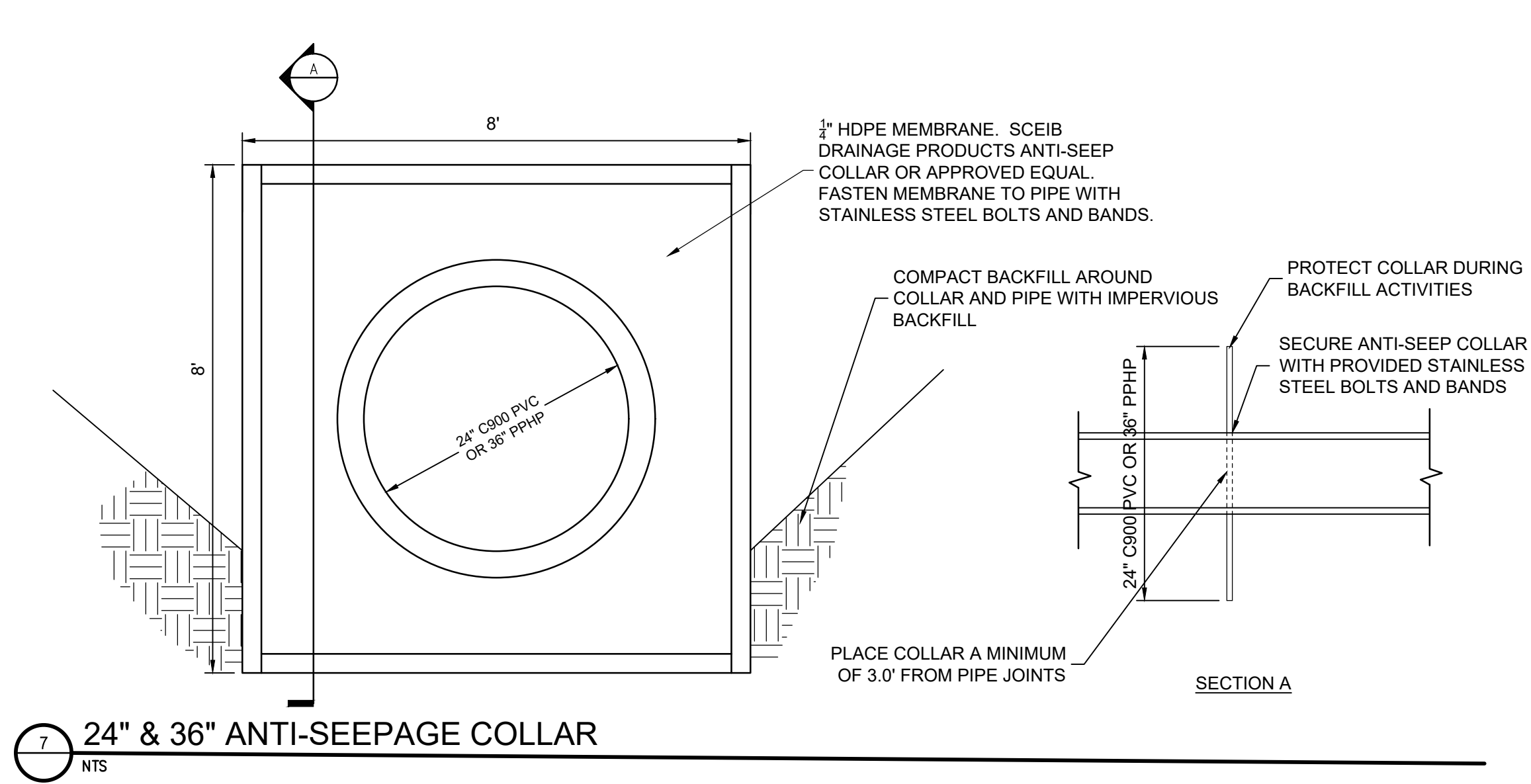
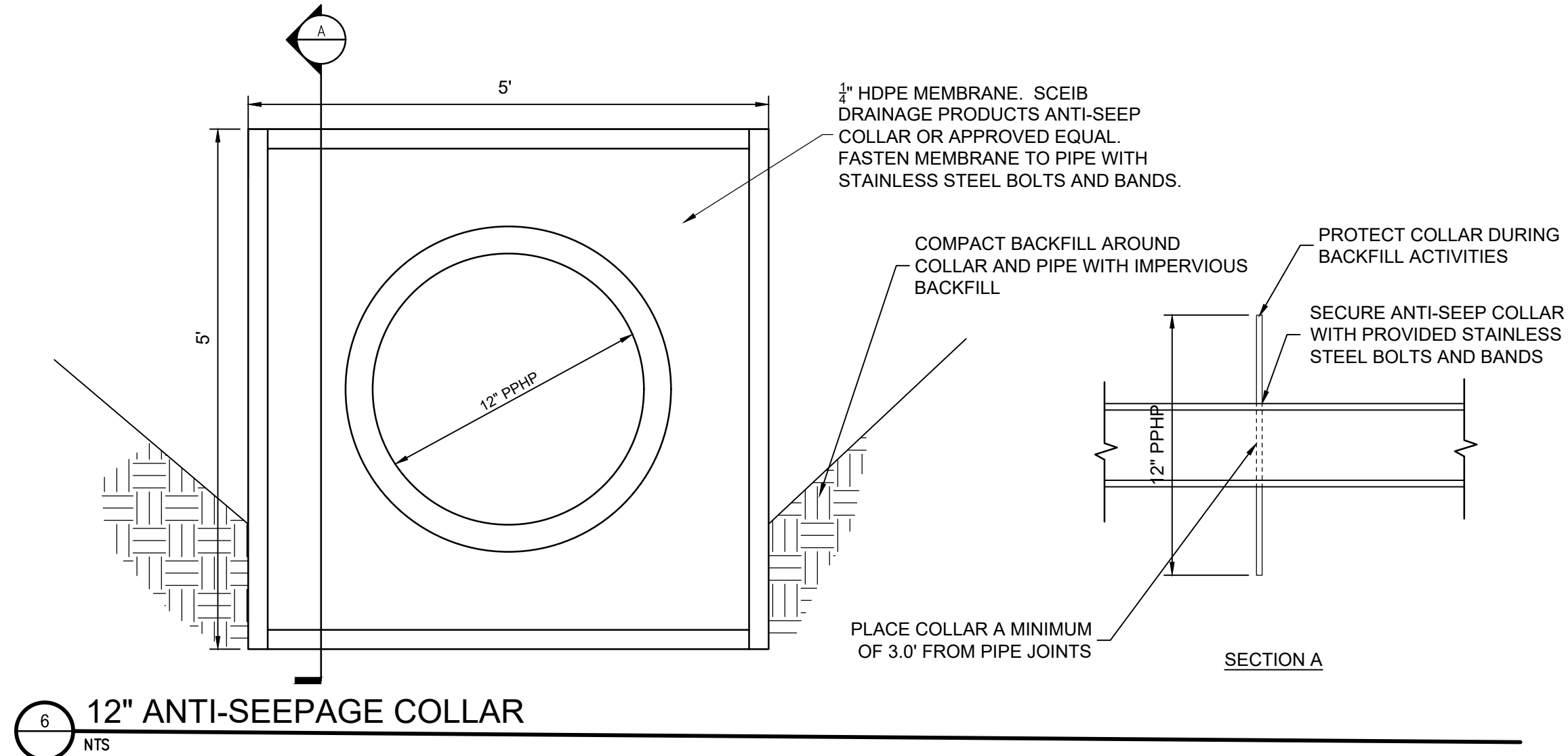
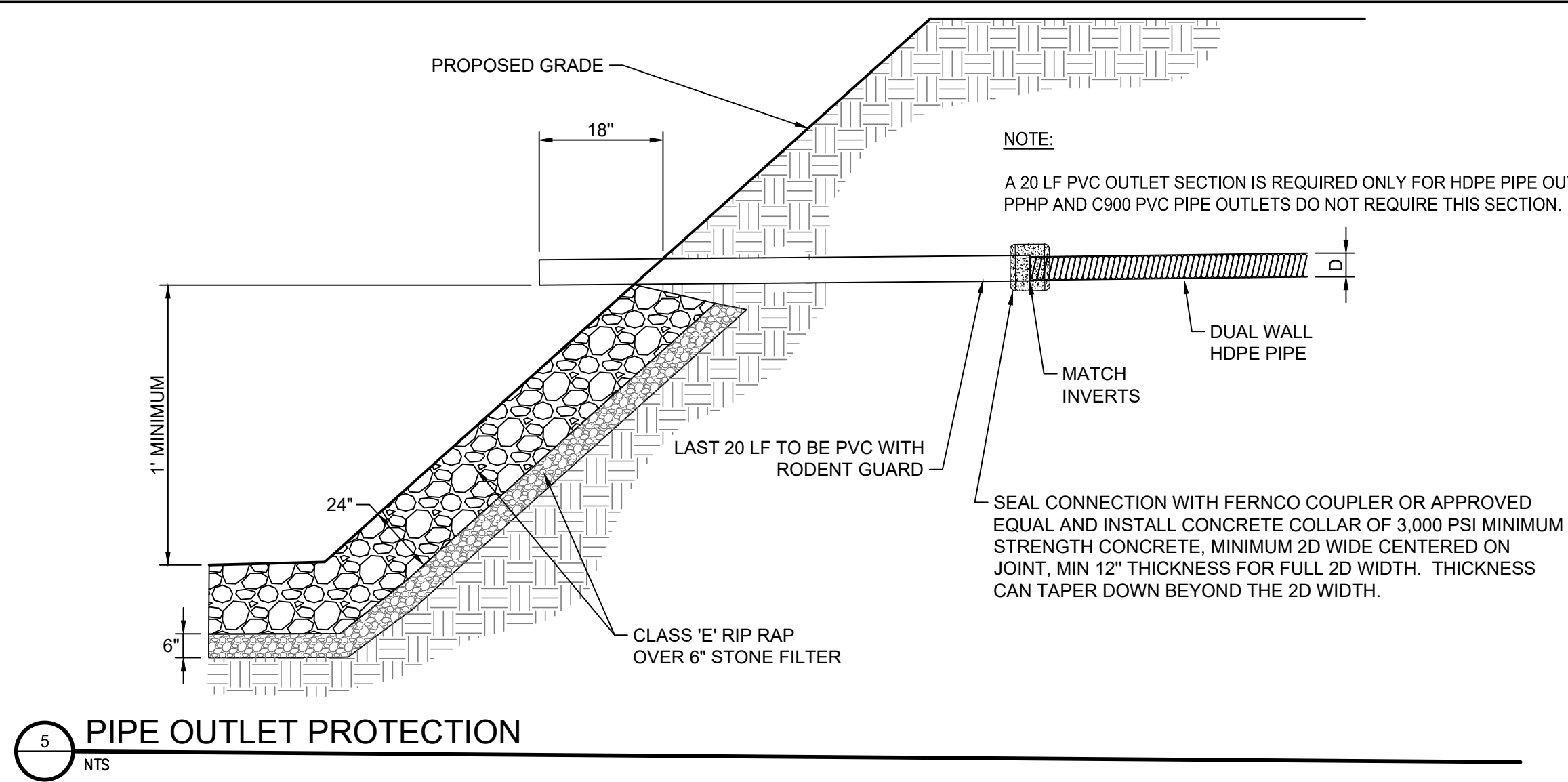
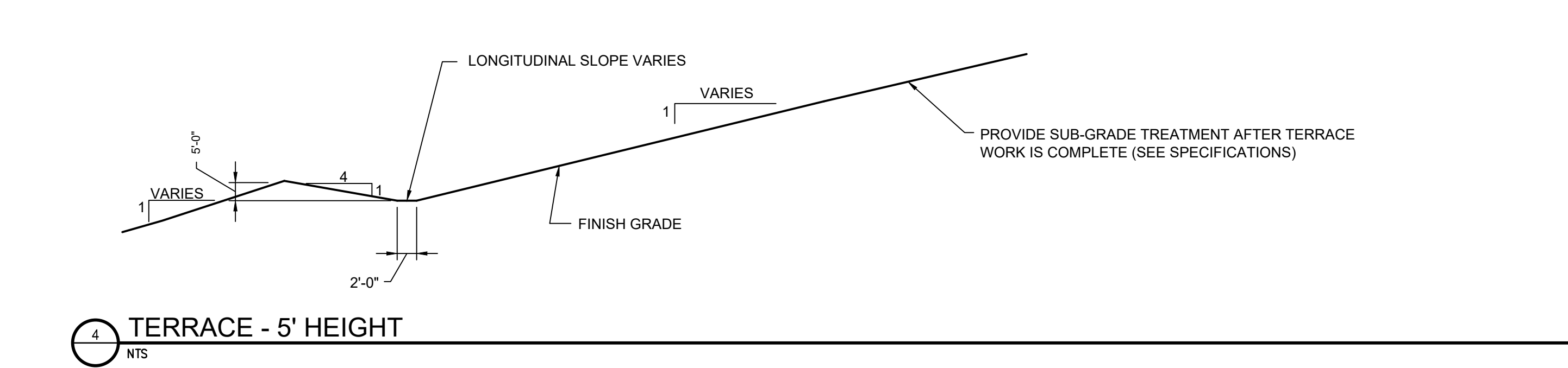
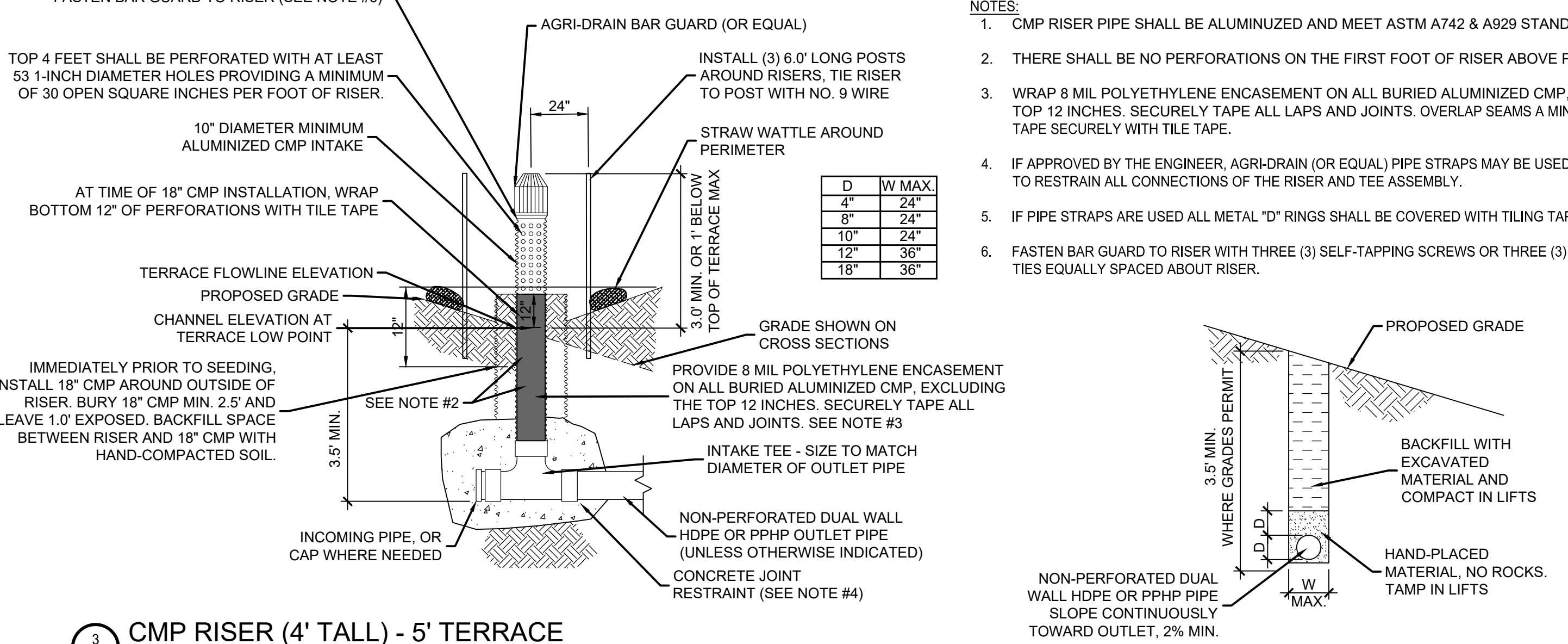
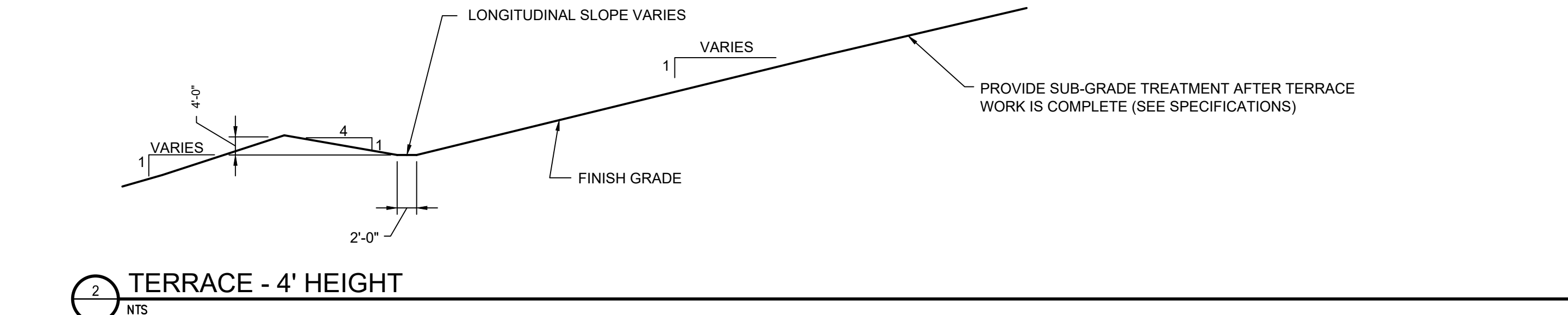
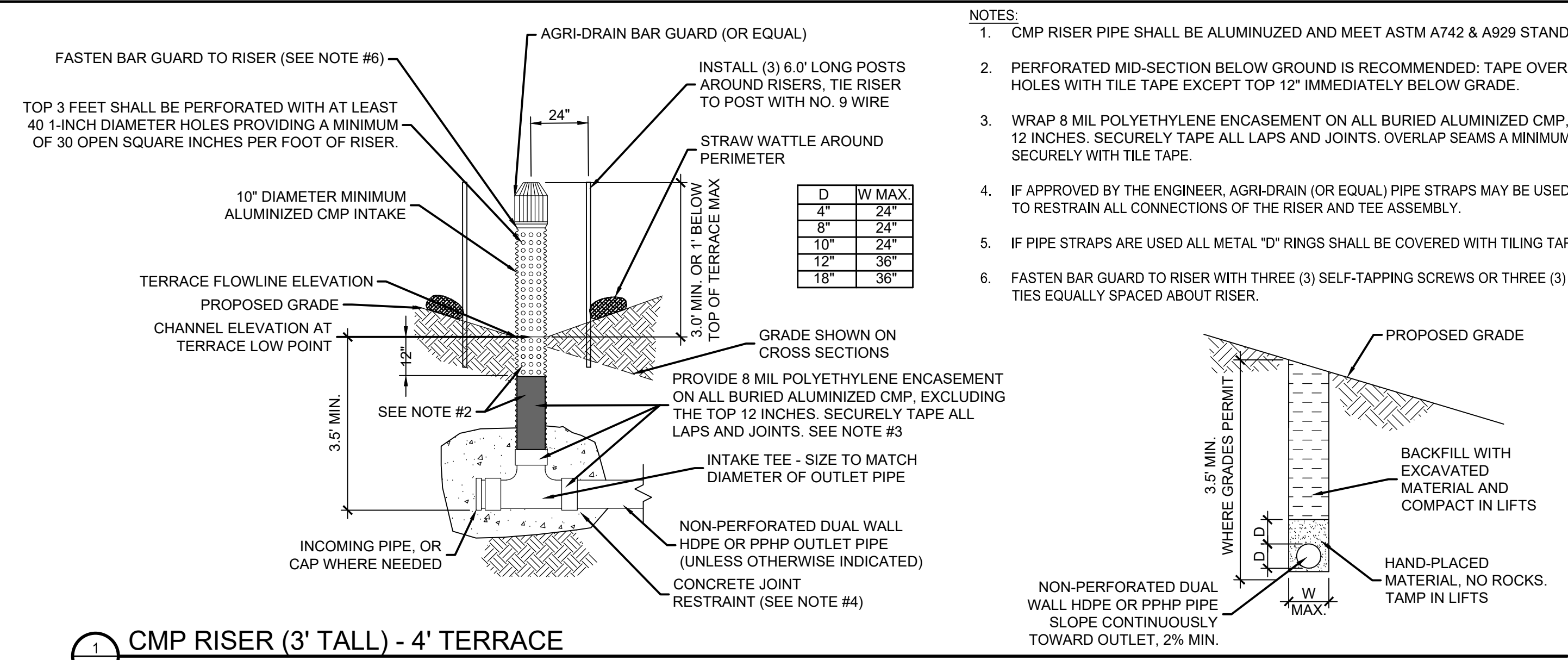
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NOAH AND WILCOX EAST
AML RECLAMATION PROJECT

PIPE PROFILES





S-H PROJECT NUMBER: 2142305281

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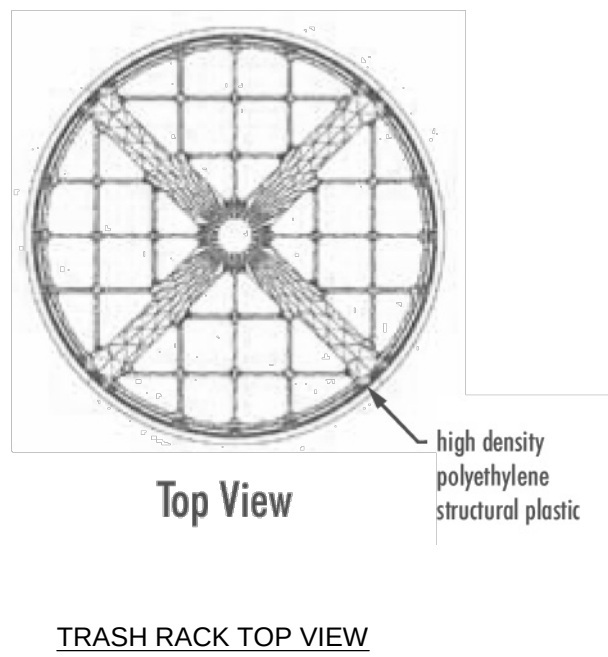
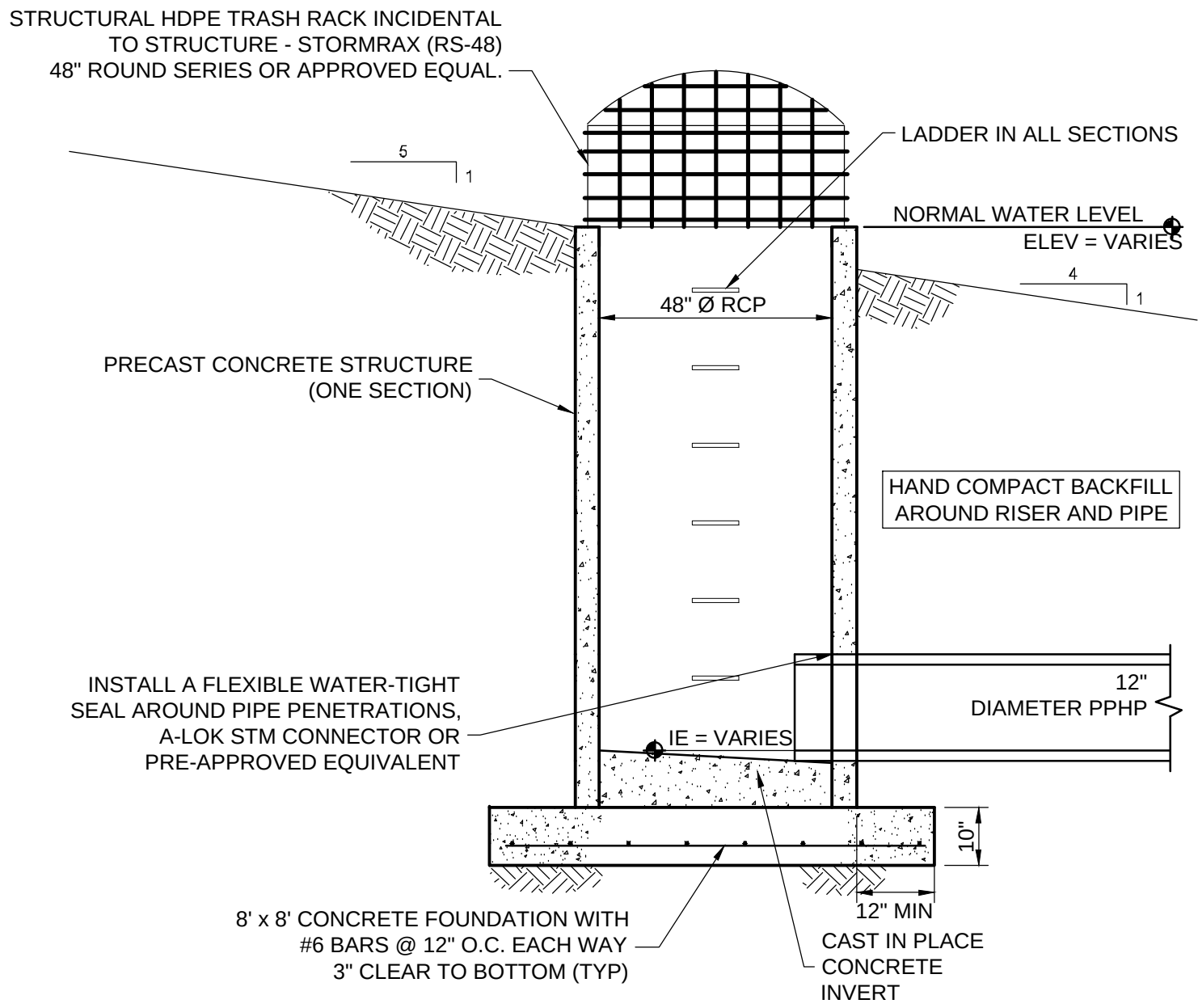
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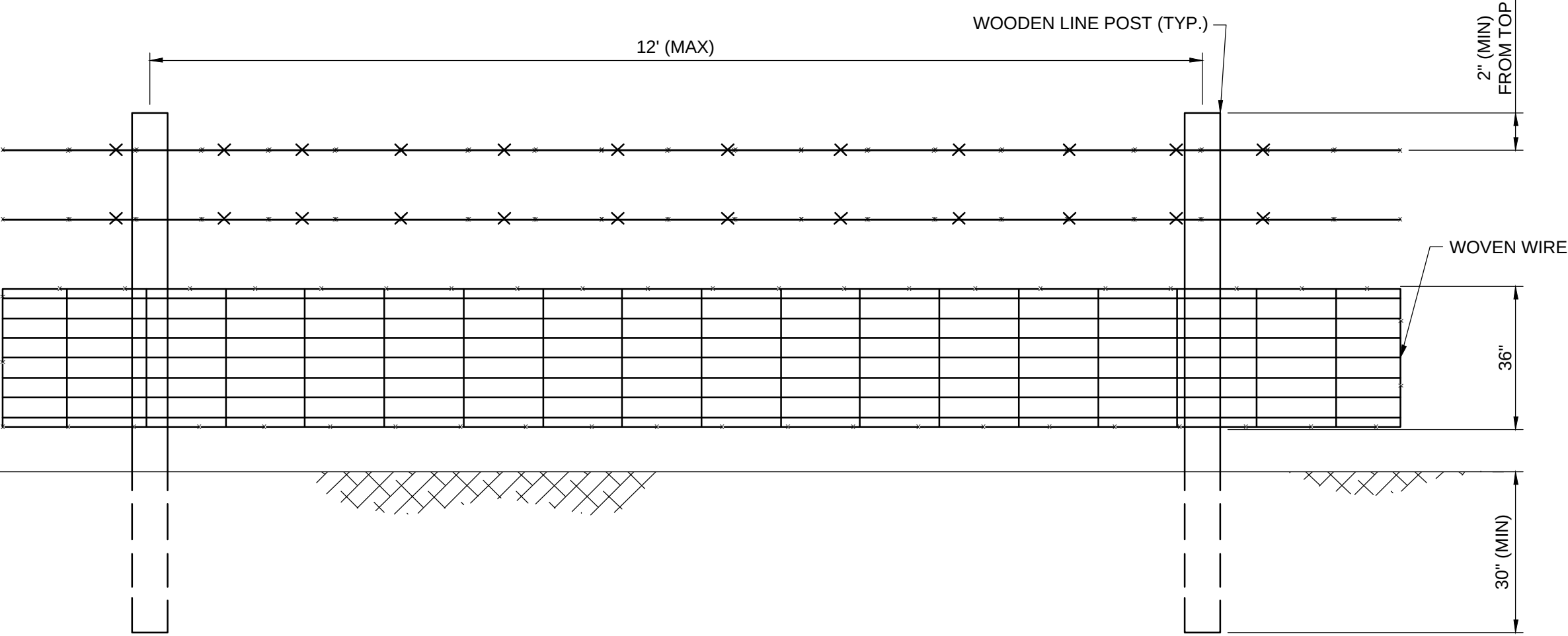


NOAH AND WILCOX EAST
AML RECLAMATION PROJECT

PROJECT DETAILS

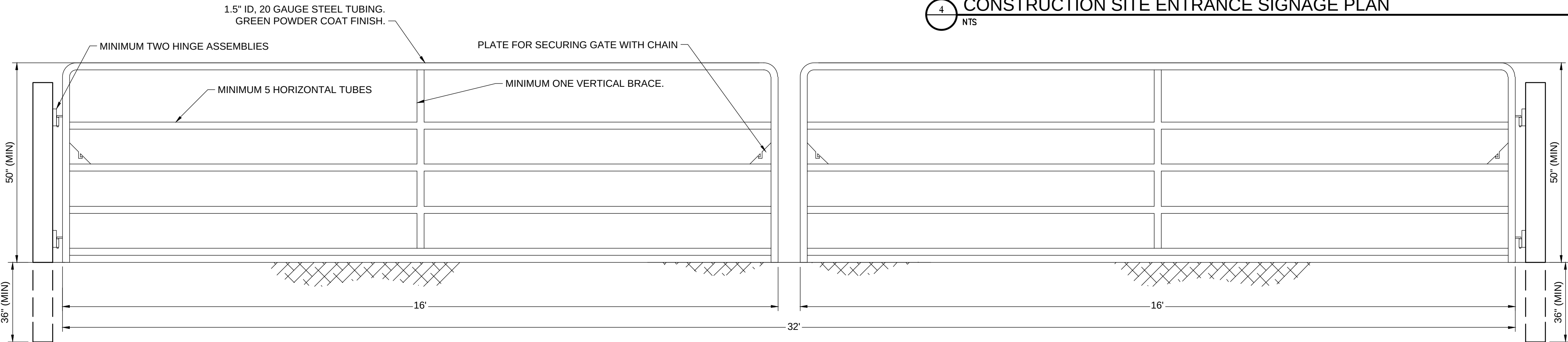


1 CONCRETE WATER CONTROL STRUCTURE WITH TRASH RACK



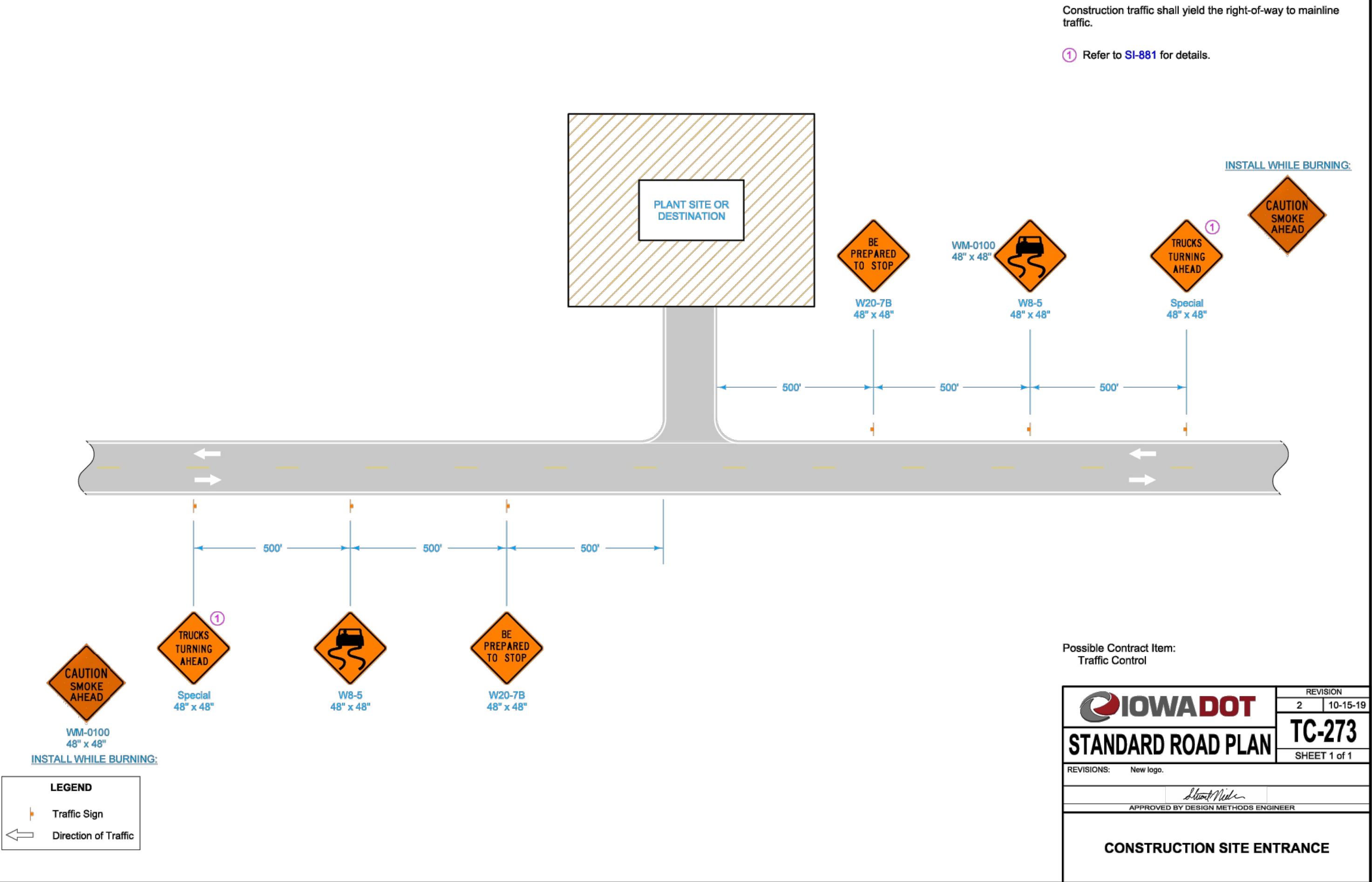
- NOTES:
1. BARBED WIRE SHALL BE GALVANIZED STEEL WITH A 4-POINT PATTERN OF ROUND BARBS SPACED 5 INCHES ON CENTER MEETING THE REQUIREMENTS OF IDOT SECTION 4154.04.
 2. WOVEN WIRE SHALL BE 12.5 GAUGE WIRE AND 36" TALL, FENCE SHALL MEET THE REQUIREMENTS OF IDOT SECTION 4154.04.
 3. POSTS SHALL BE WOOD PRESSURE TREATED FOR GROUND CONTACT MEETING THE REQUIREMENTS OF IDOT SECTION 4154.02.

2 WOVEN WIRE AND 2-STRAND BARBED WIRE FIELD FENCE



3 DOUBLE WIDE 16' TUBE GATE

4 CONSTRUCTION SITE ENTRANCE SIGNAGE PLAN



IOWA DOT		REVISION
STANDARD ROAD PLAN		2 10-15-19
REVISIONS: New logo.		TC-273
APPROVED BY DESIGN METHODS ENGINEER		SHEET 1 of 1
CONSTRUCTION SITE ENTRANCE		

- NOTES:
1. GATE END BRACING SHALL SINGLE H BRACE BE IN ACCORDANCE WITH NRCS PRACTICE SPECIFICATION IA-382-PS AND SHALL BE INSTALLED AT EACH SIDE OF THE GATE.

S-H PROJECT NUMBER: 2142305281

REVISED: ---

ISSUED: 08-17-2026

CHKD. BY: LTM

GHK

DRAWN BY:

AJH

DESIGN BY:

IOWA DEPARTMENT OF AGRICULTURE
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AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
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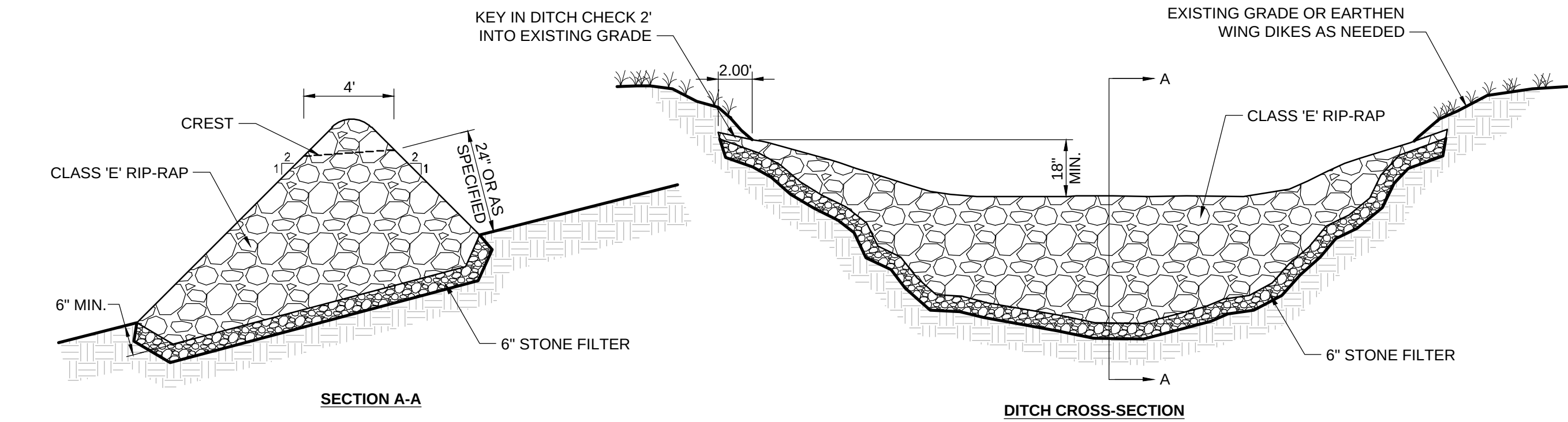


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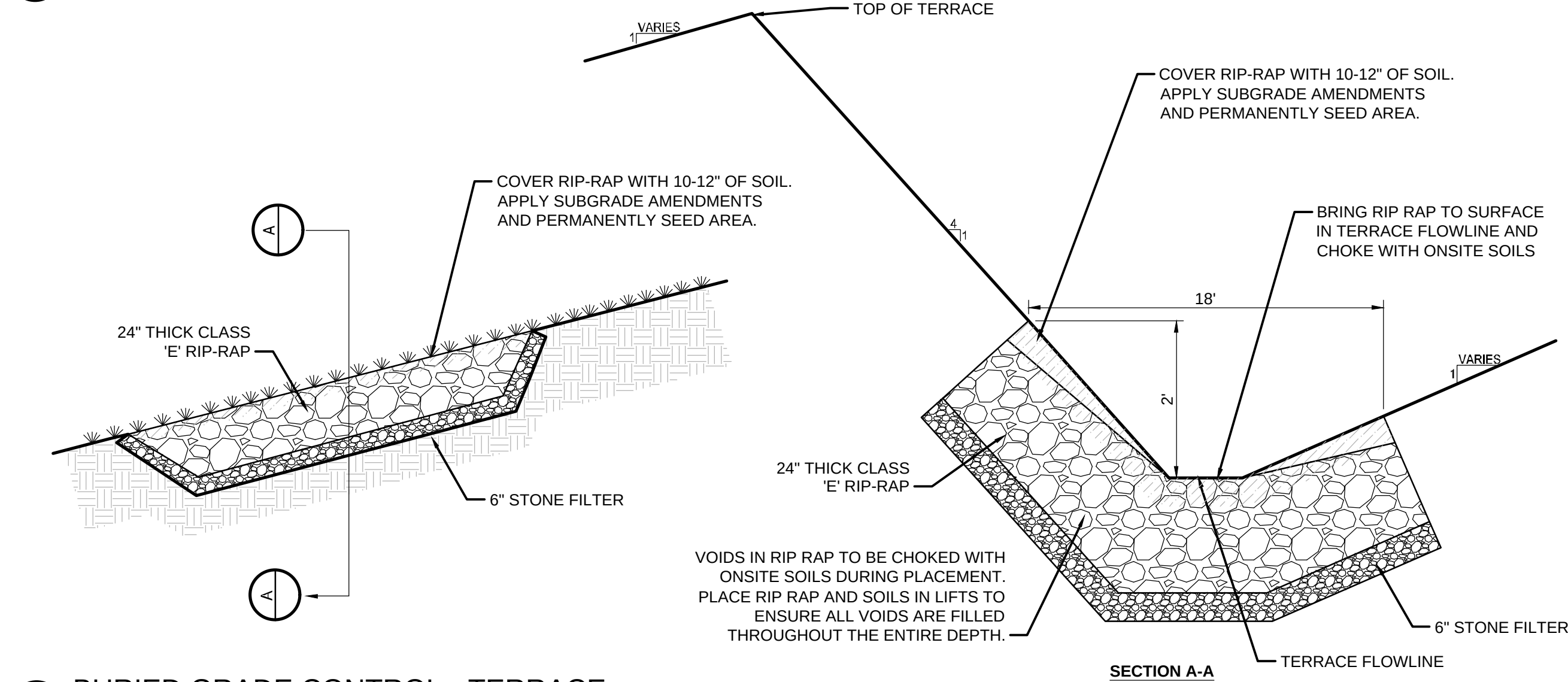
PROJECT DETAILS

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ARCHITECTURE+ENGINEERING

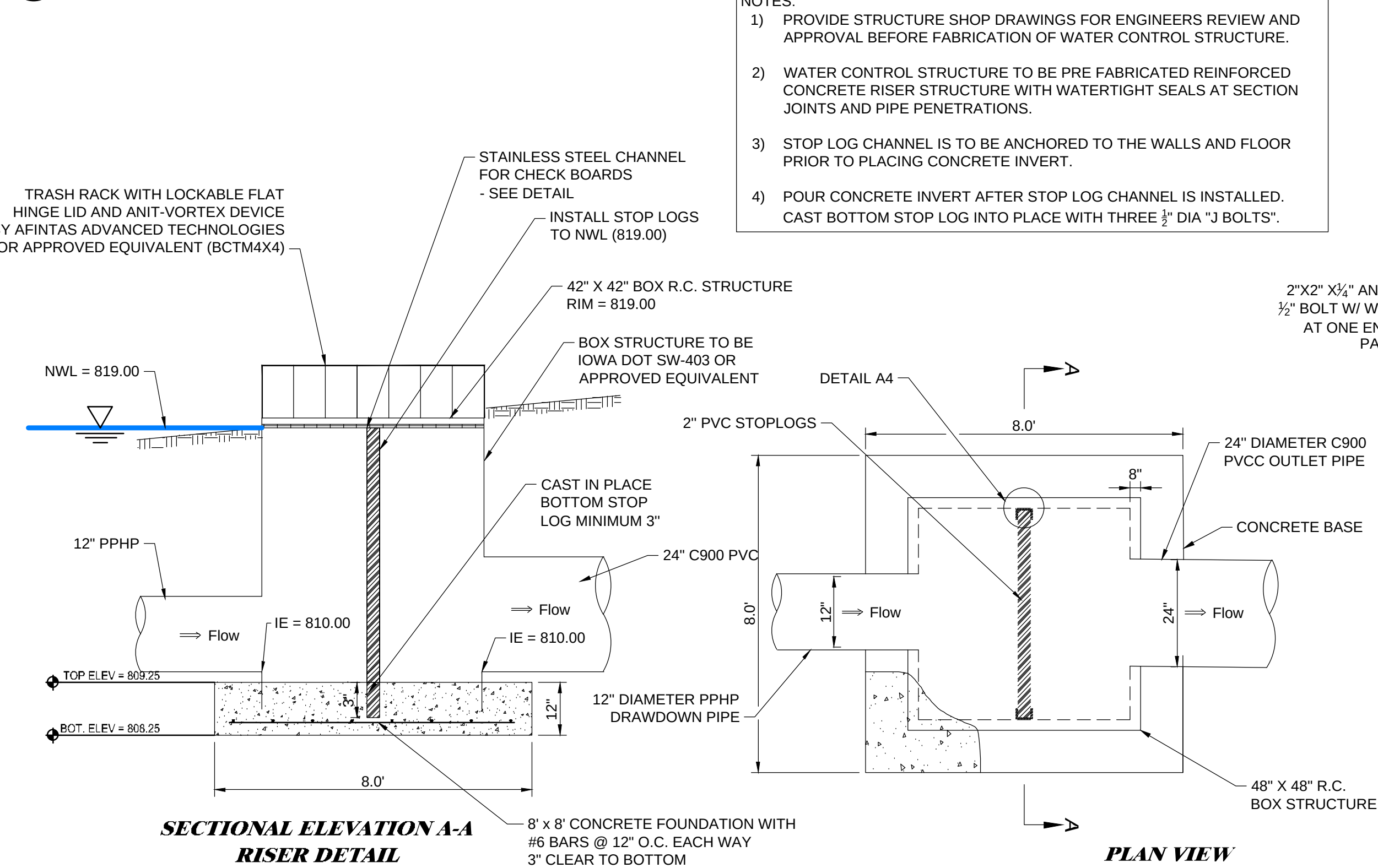
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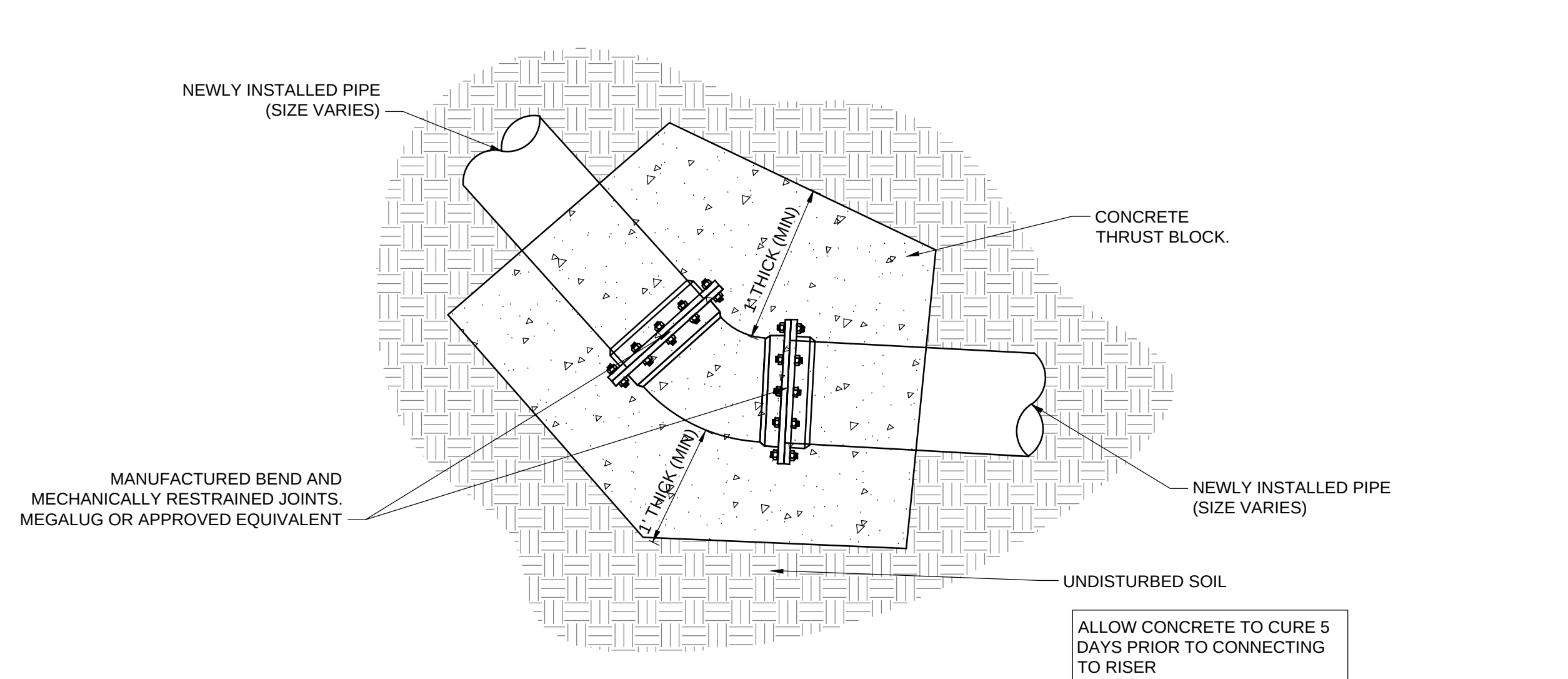
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NTS



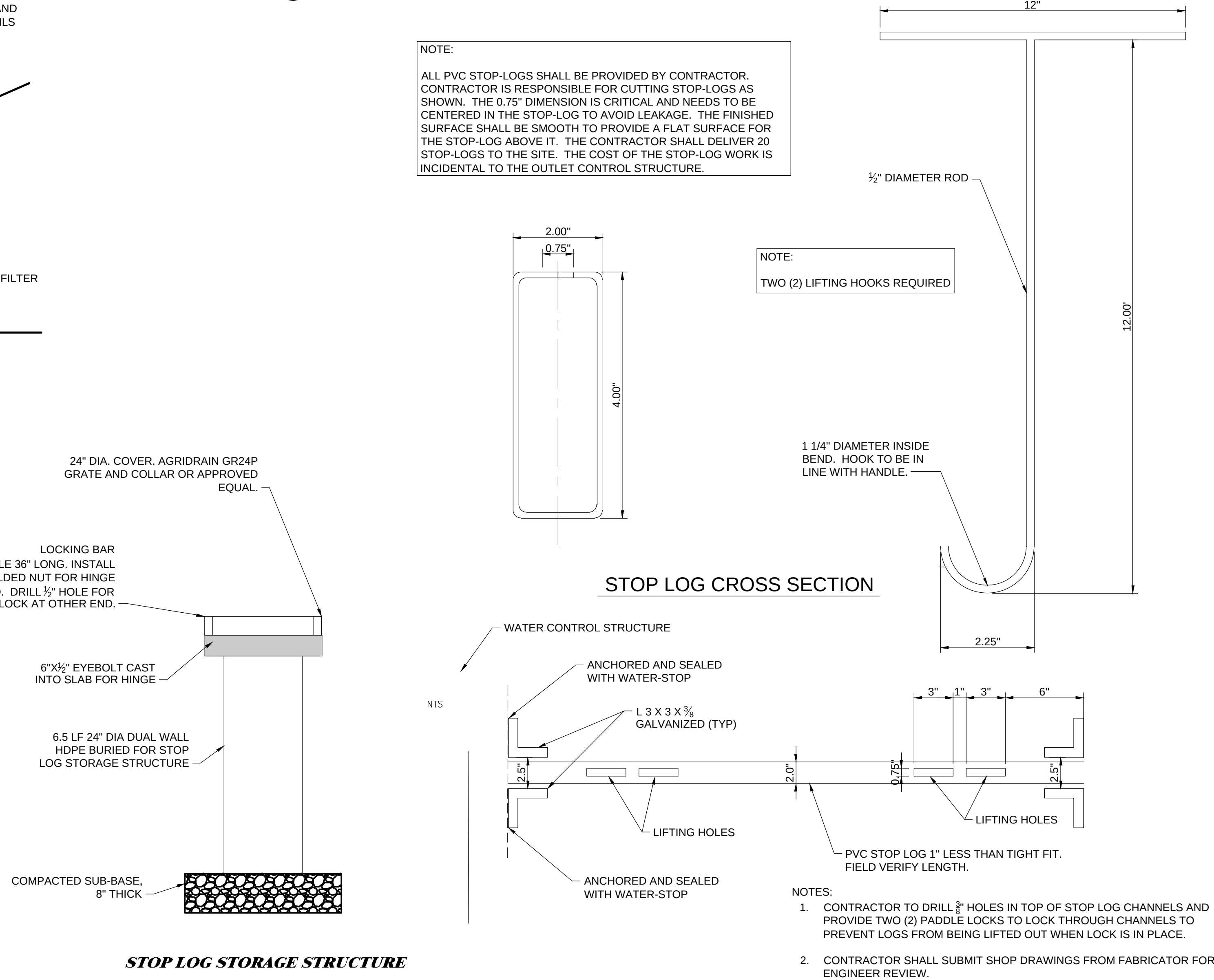
2 BURIED GRADE CONTROL - TERRACE
NTS



3 MODIFIED SW-403 WATER CONTROL STRUCTURE AND APPURTENANCES
NTS



4 GRAVITY THRUST BLOCK
NTS



5 STOP LOG AND LIFTING HOOK
NTS

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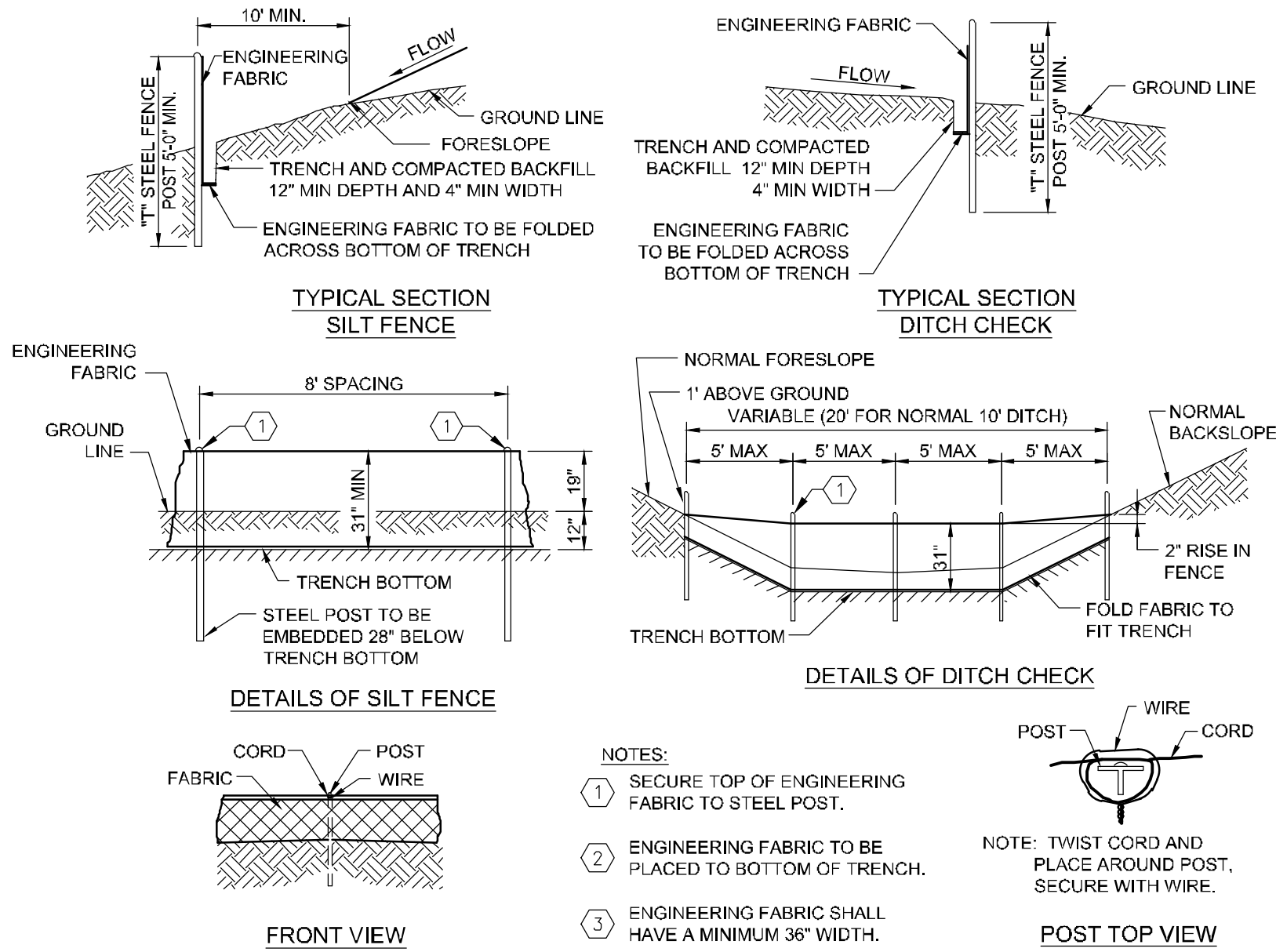
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1 SILT FENCE

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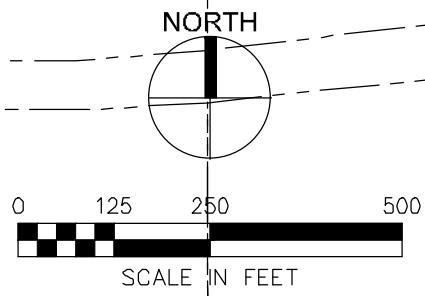
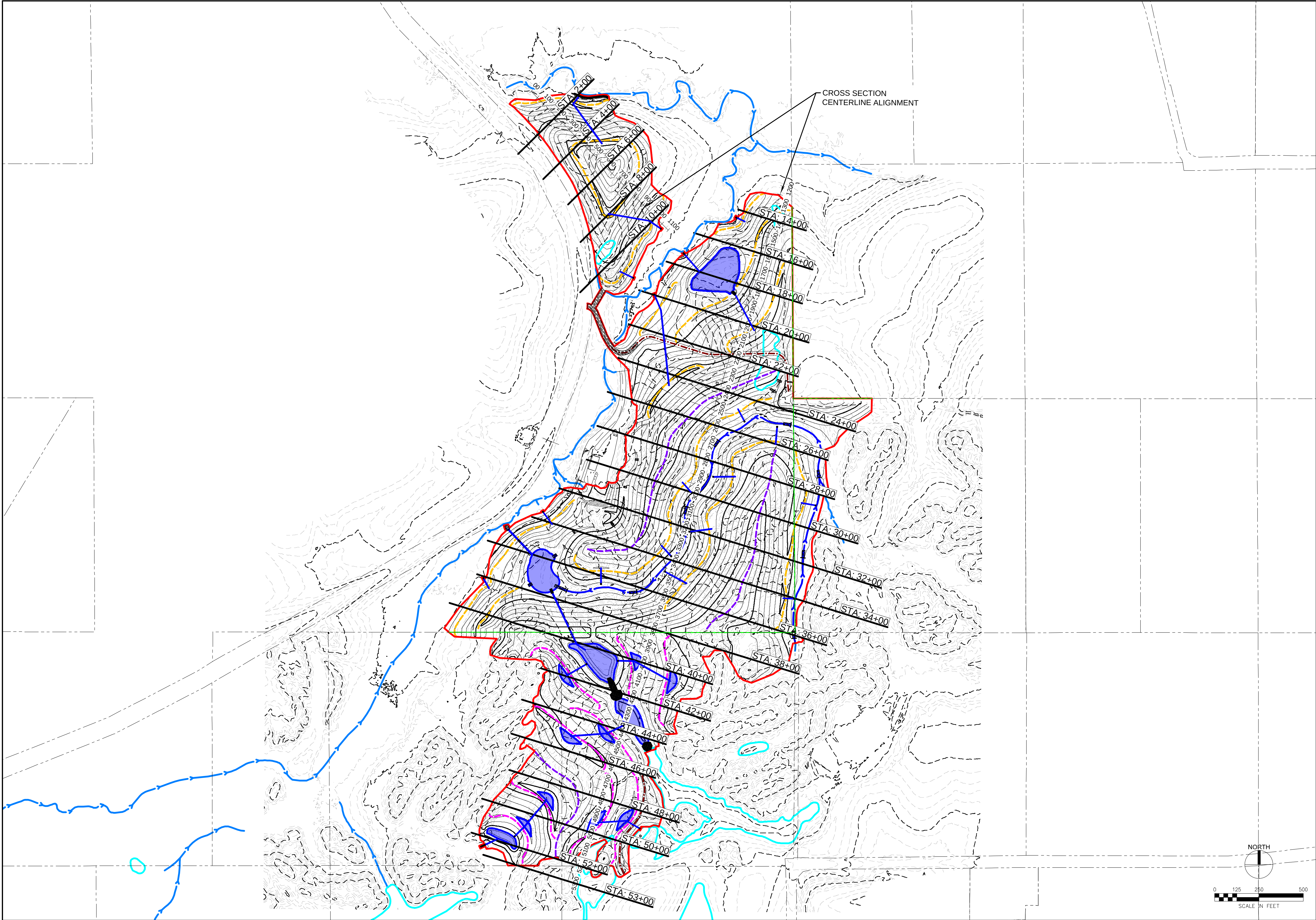
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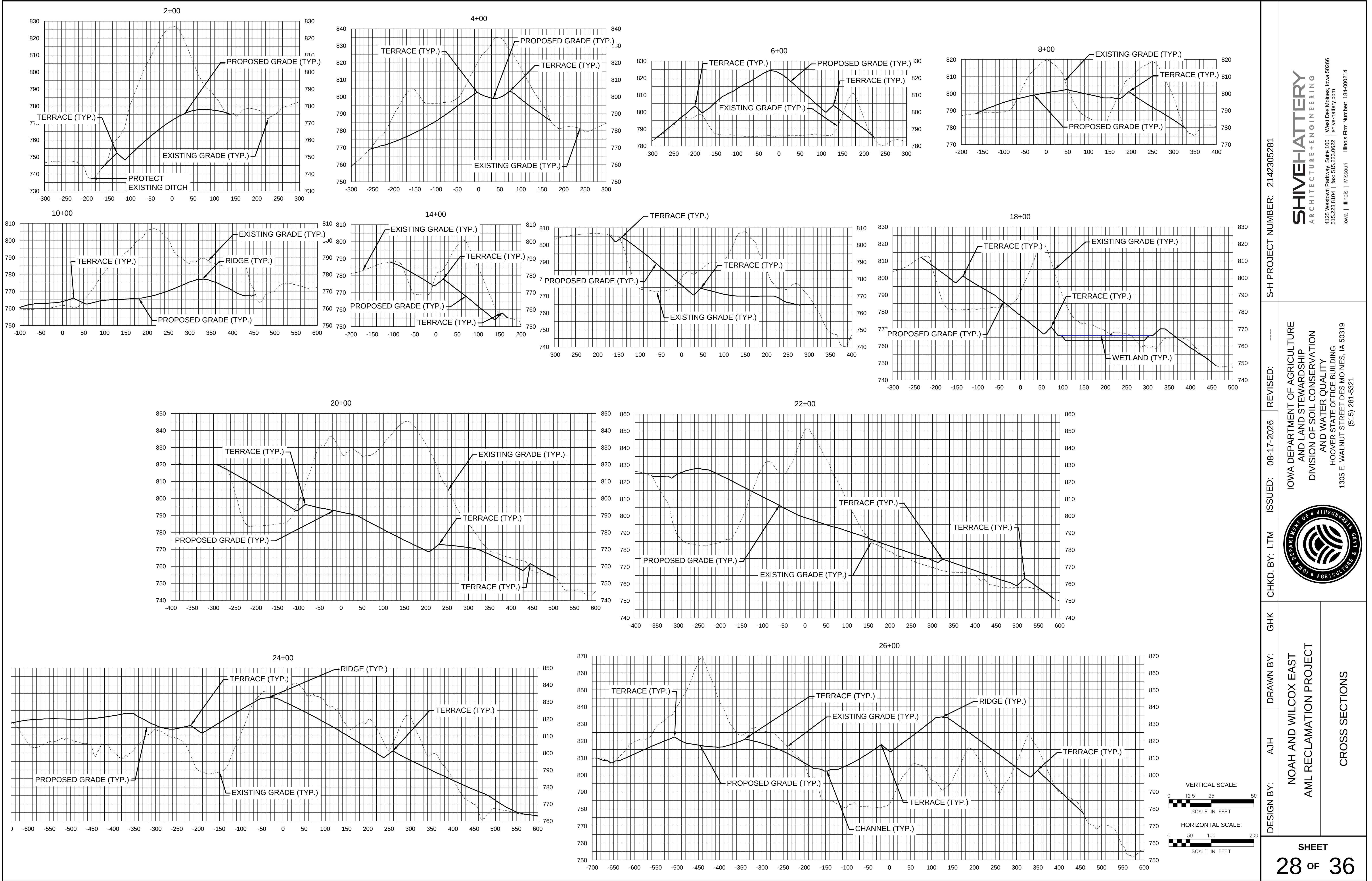
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AJH

DESIGN BY:



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SHEET 27 OF 36		CROSS SECTIONS PLAN				
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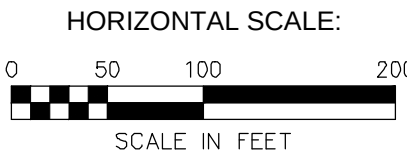
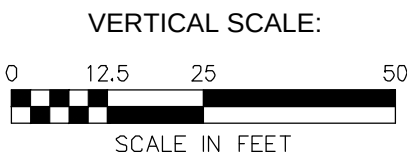
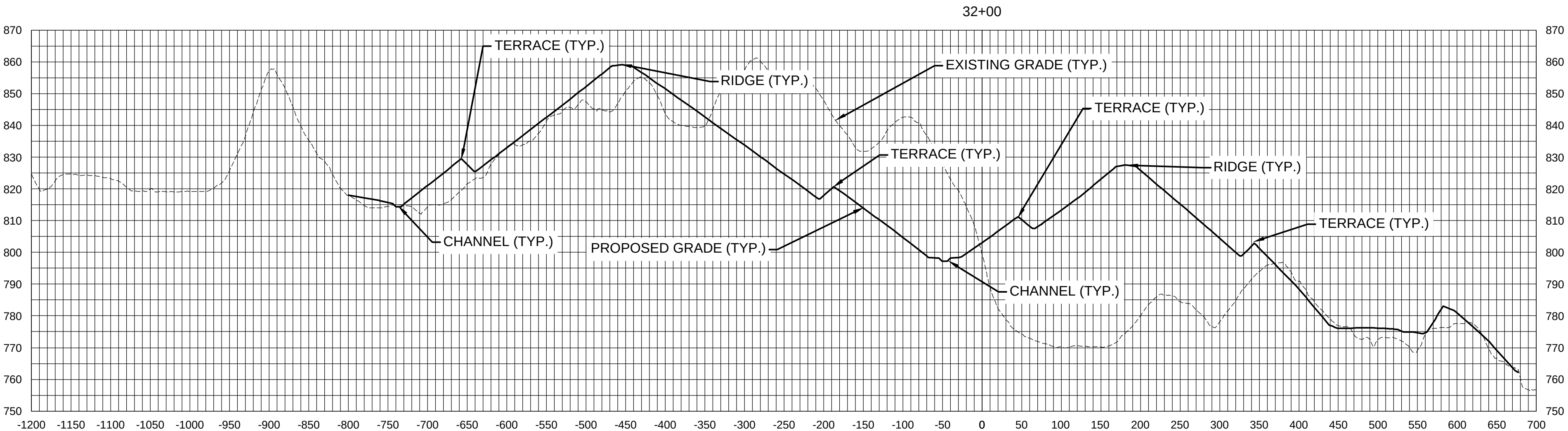
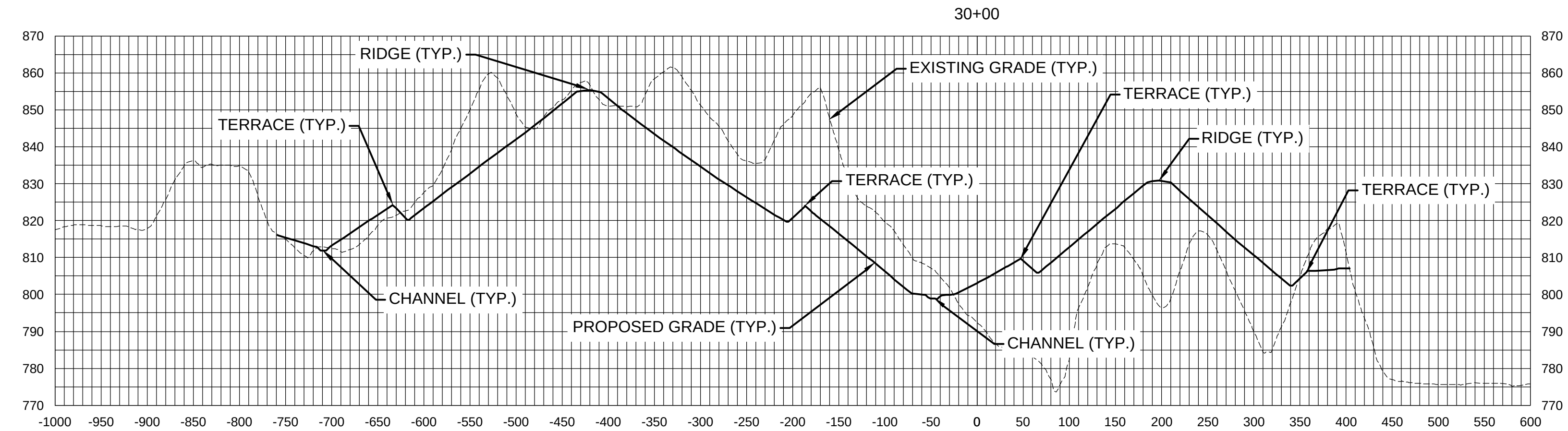
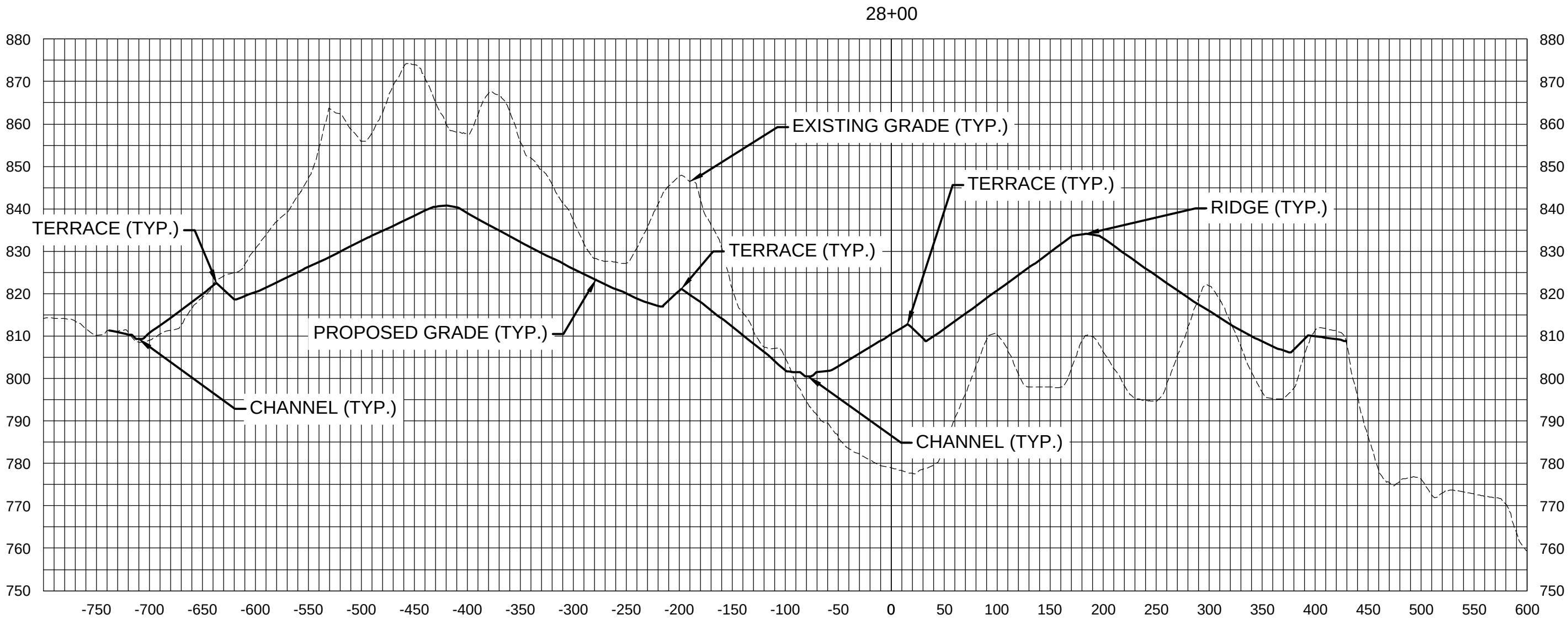


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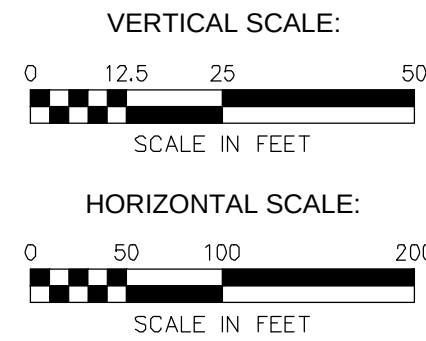
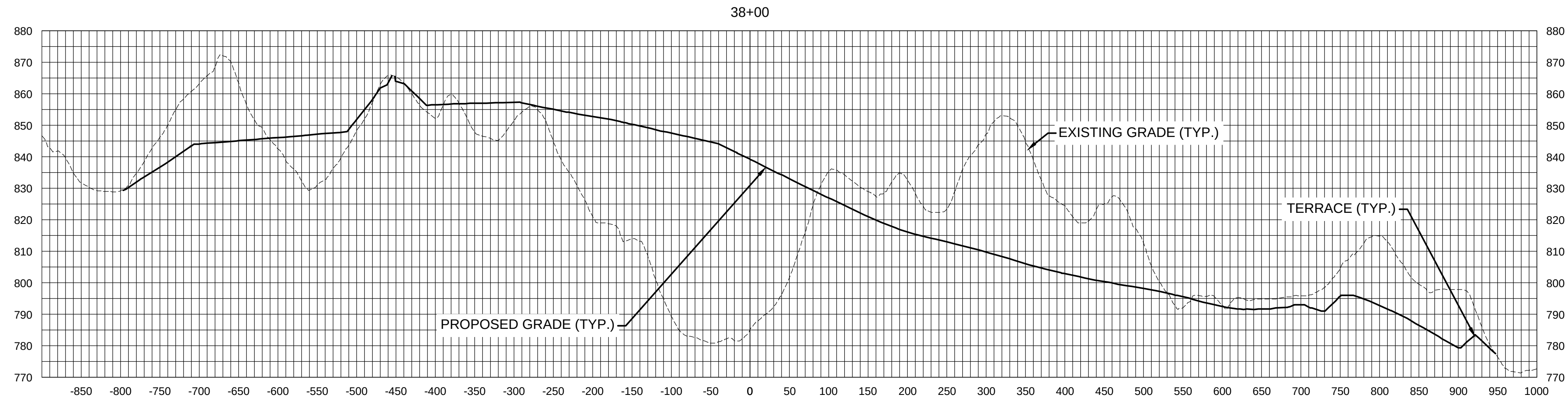
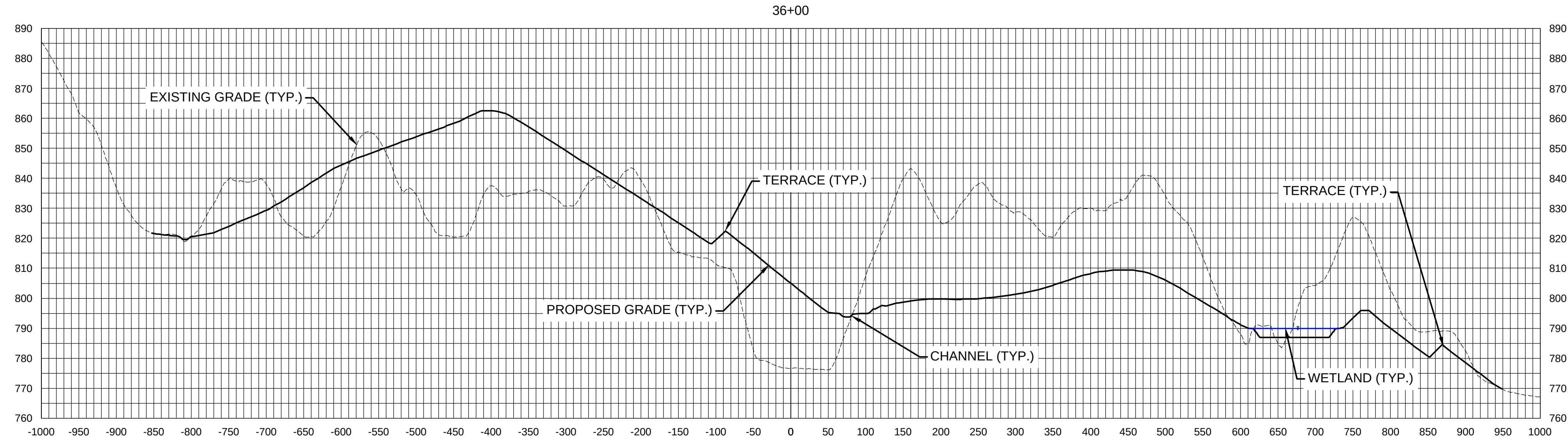
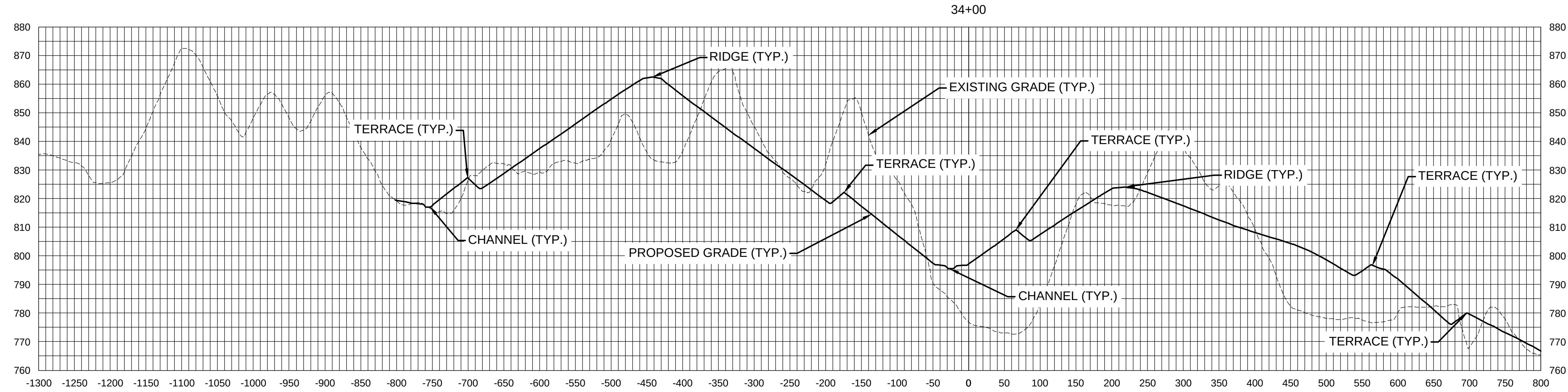
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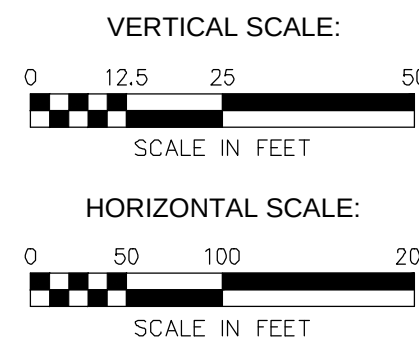
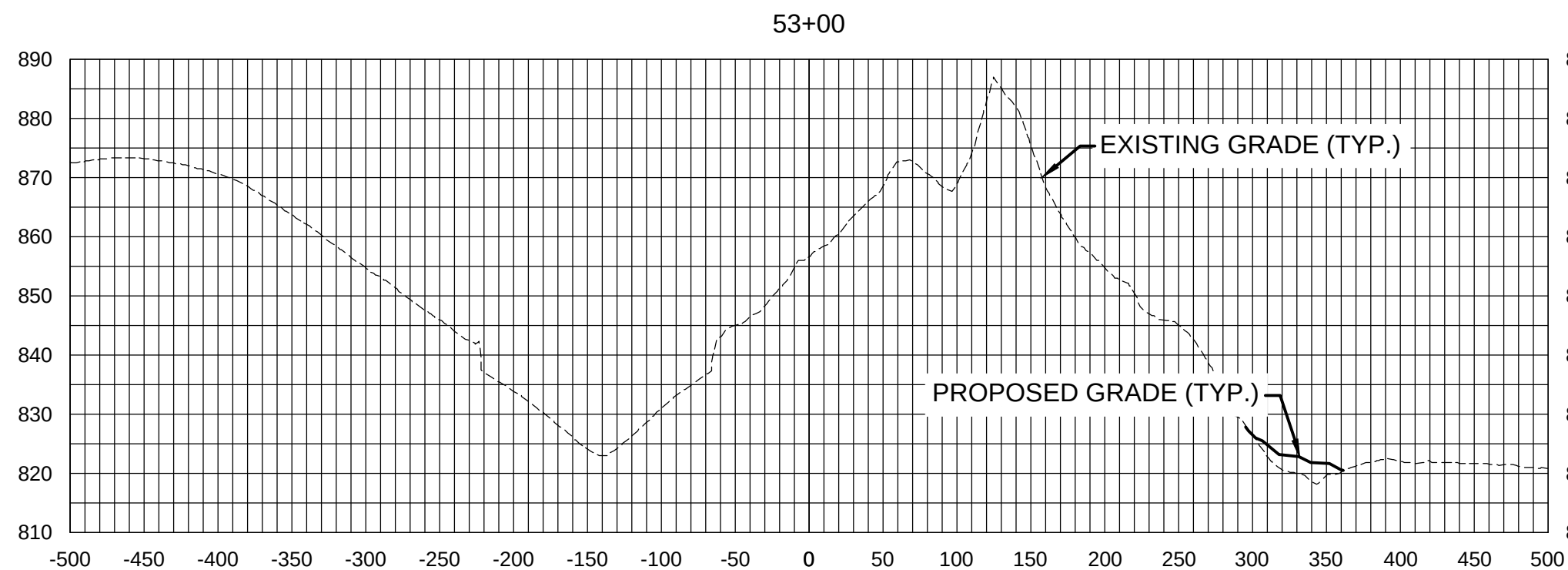
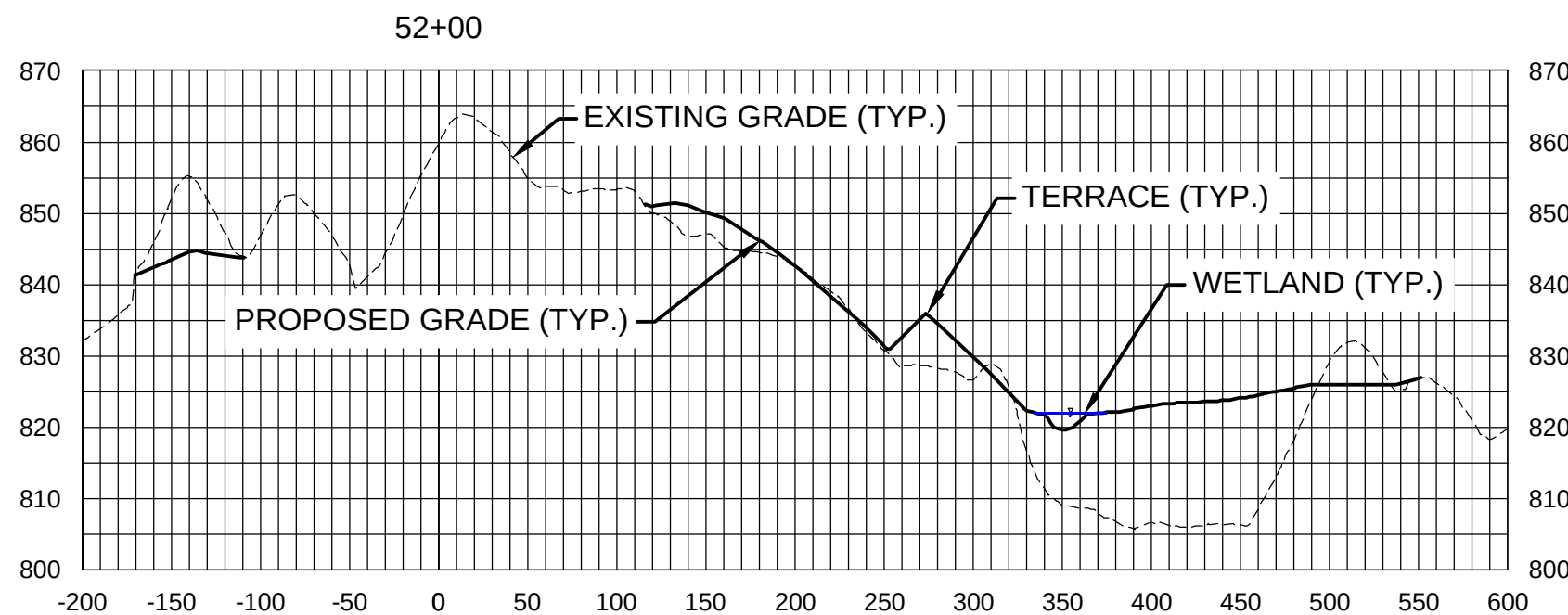
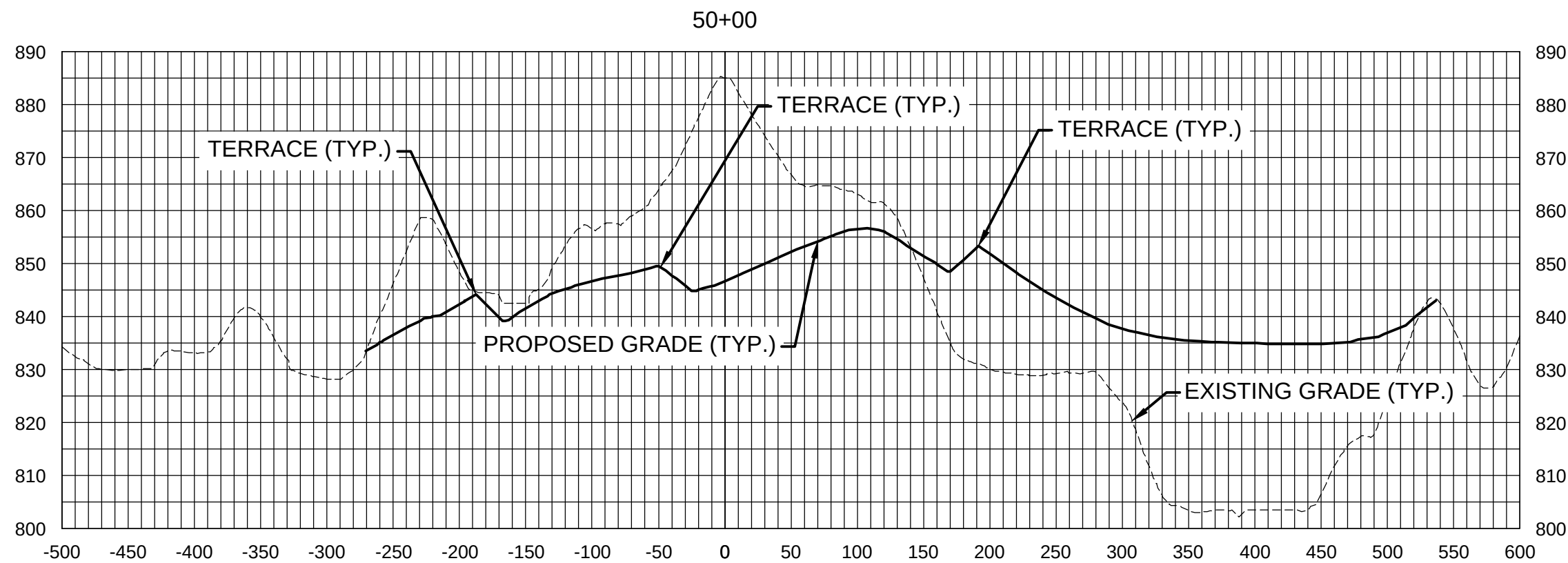
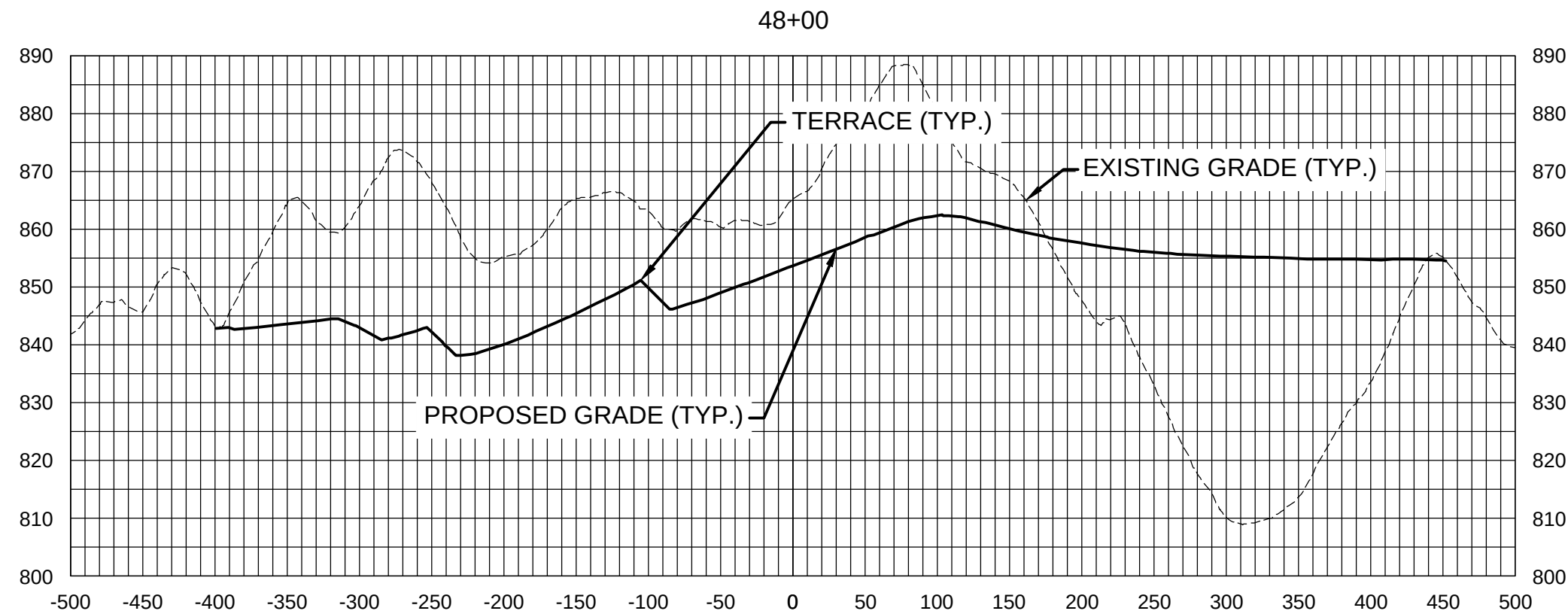
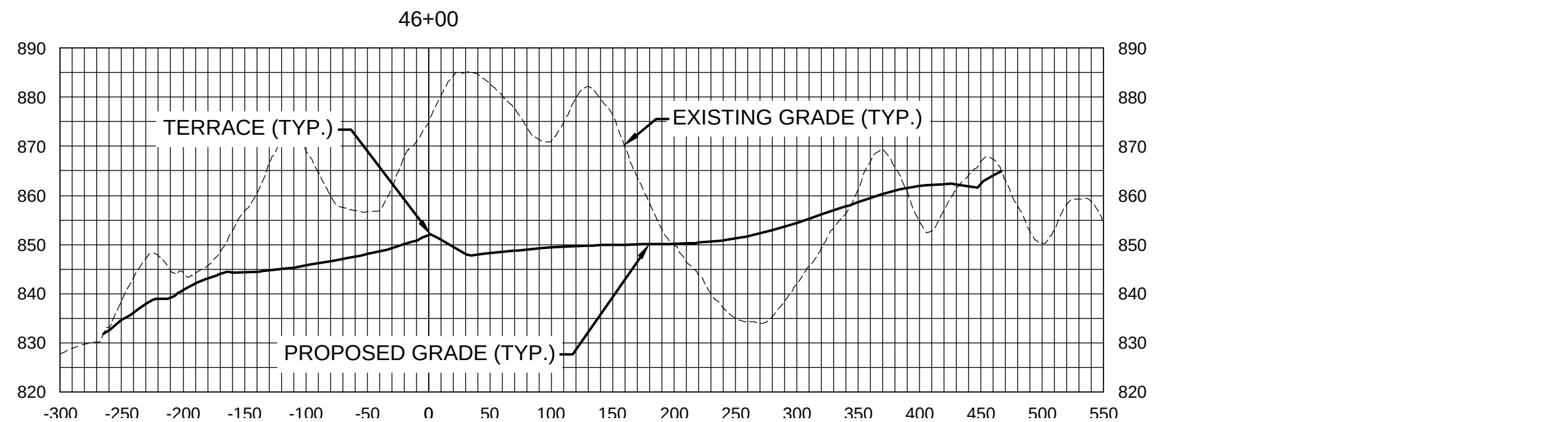
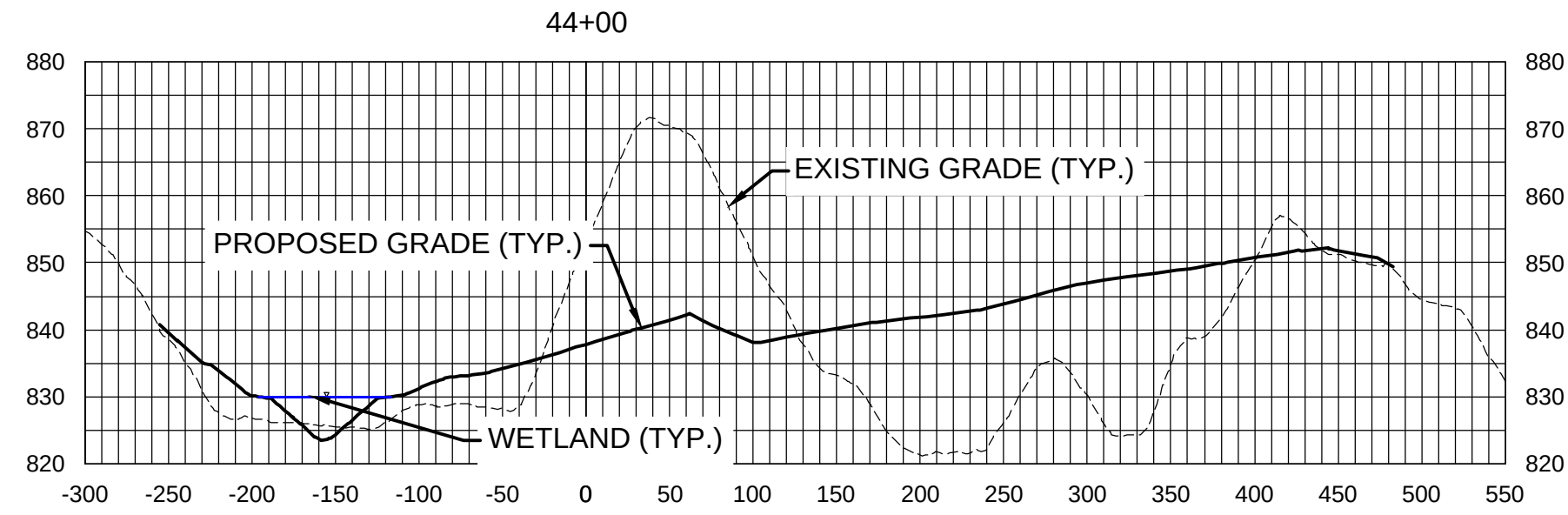
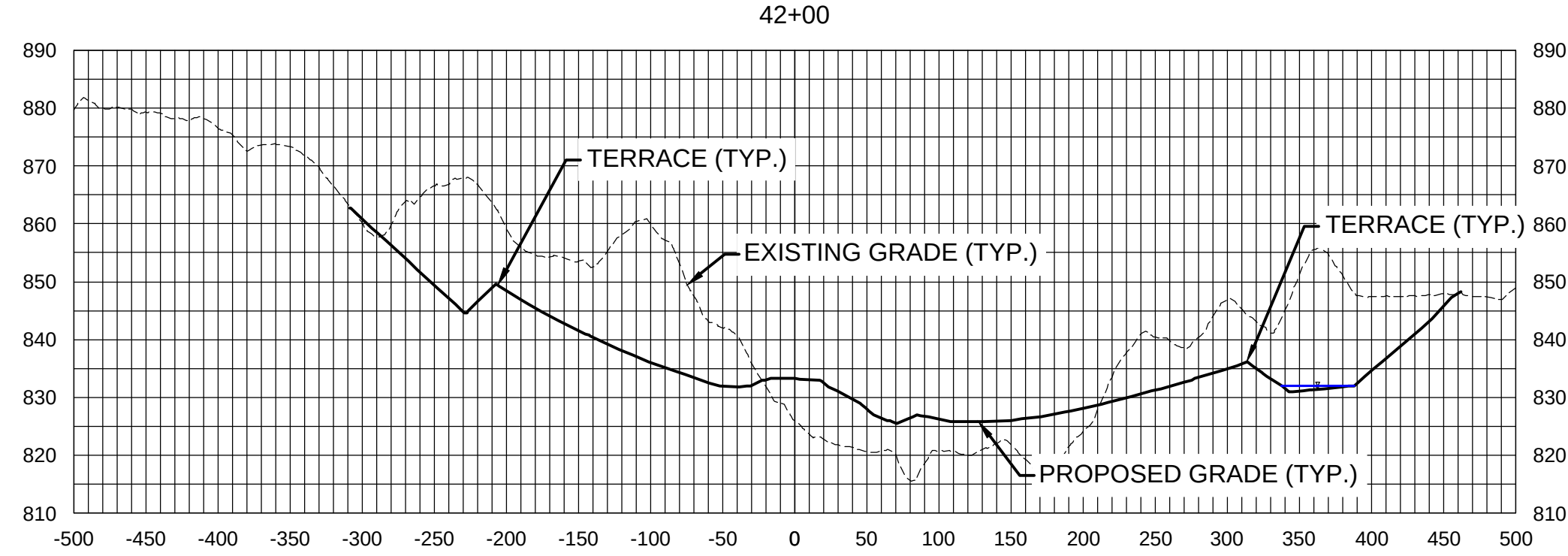
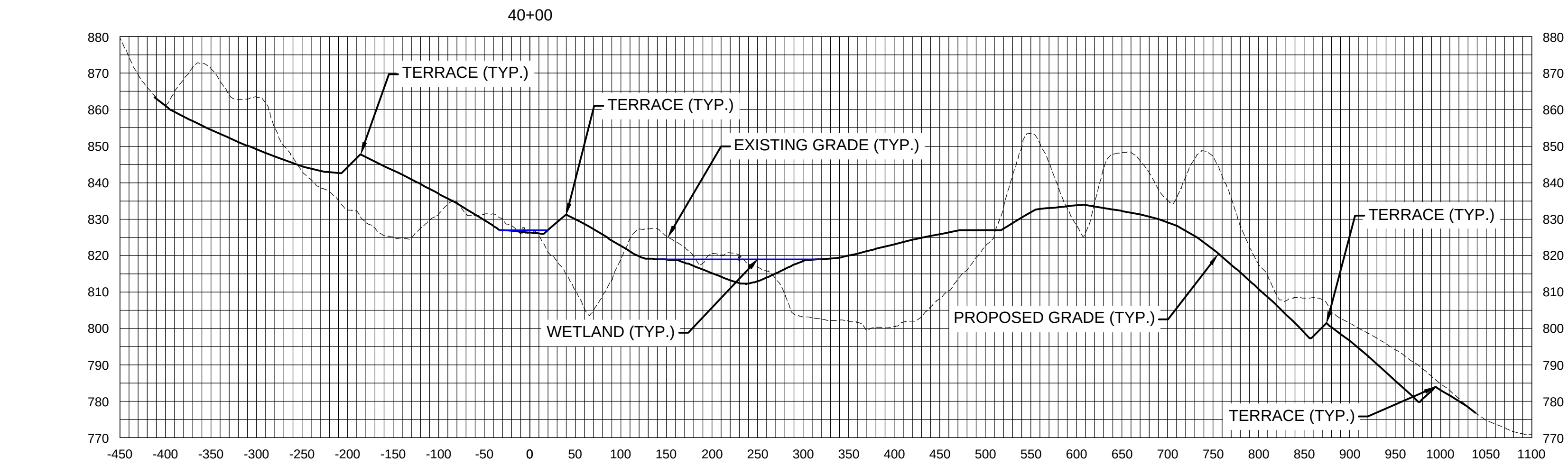
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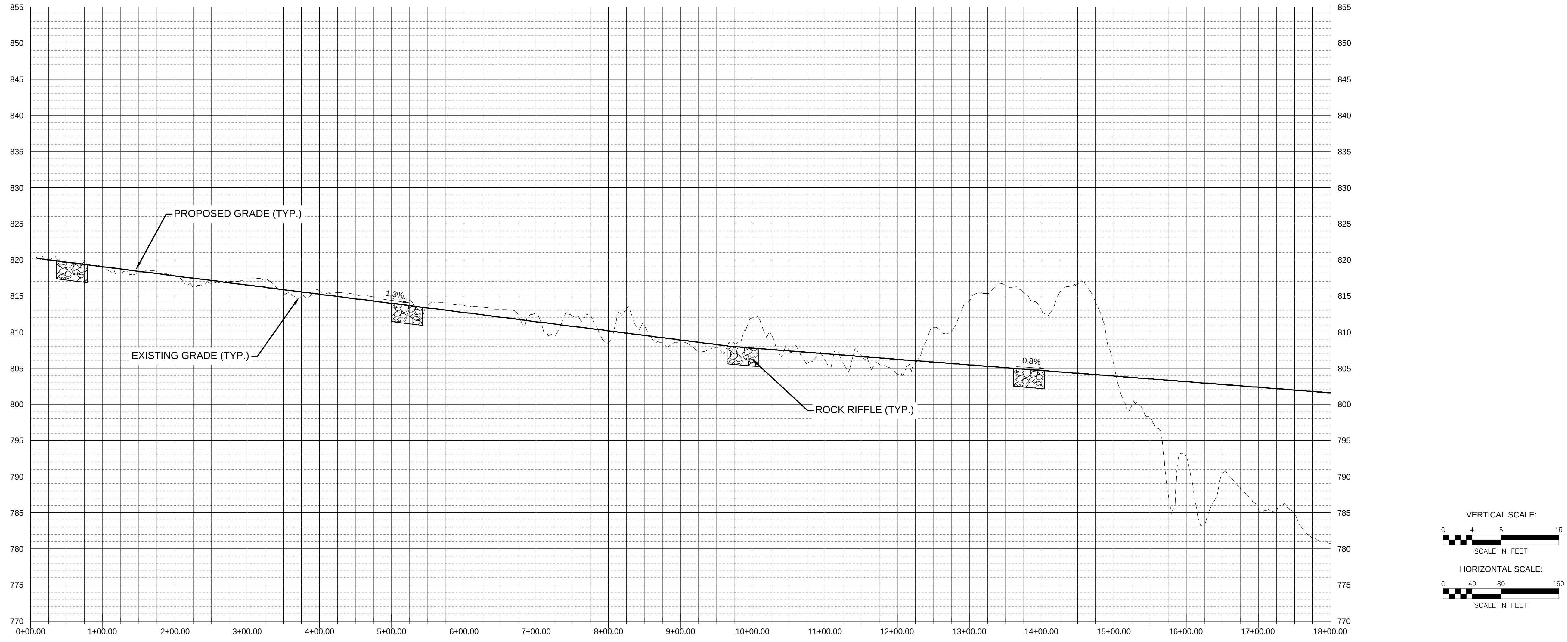
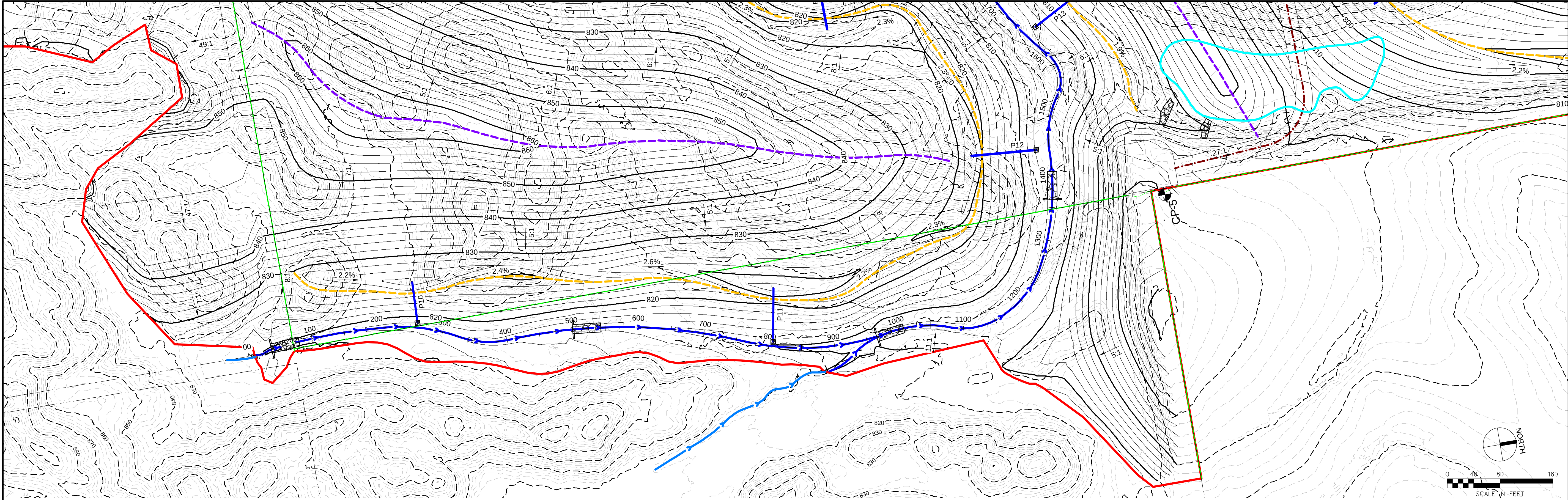
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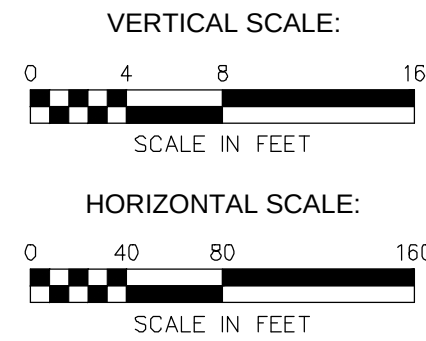
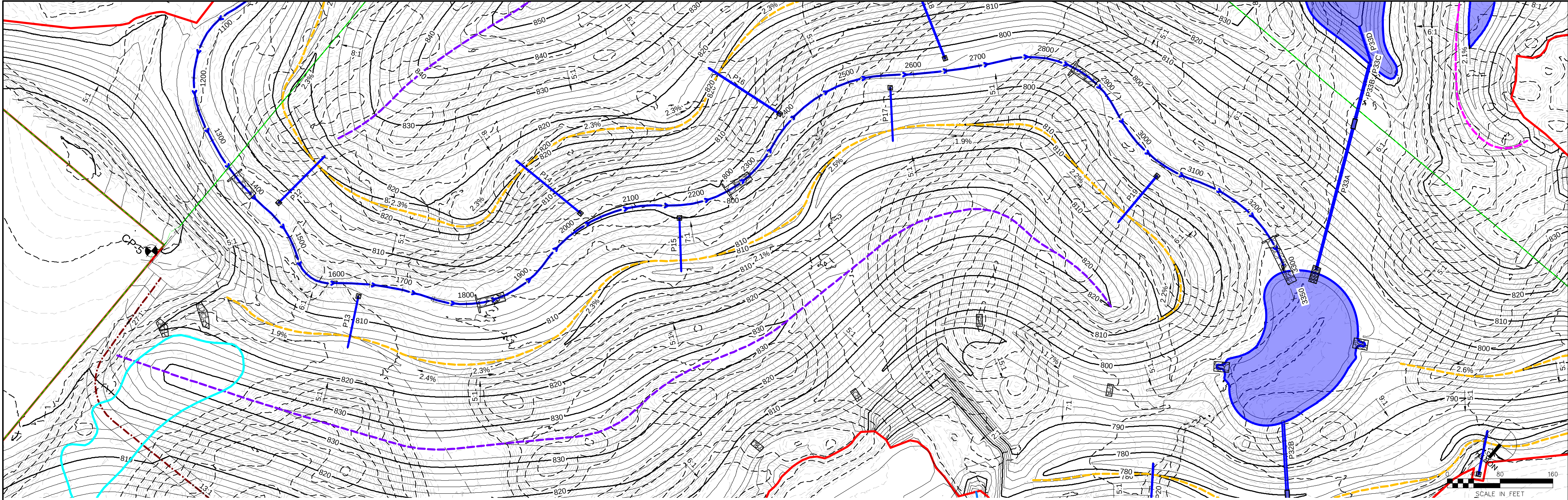


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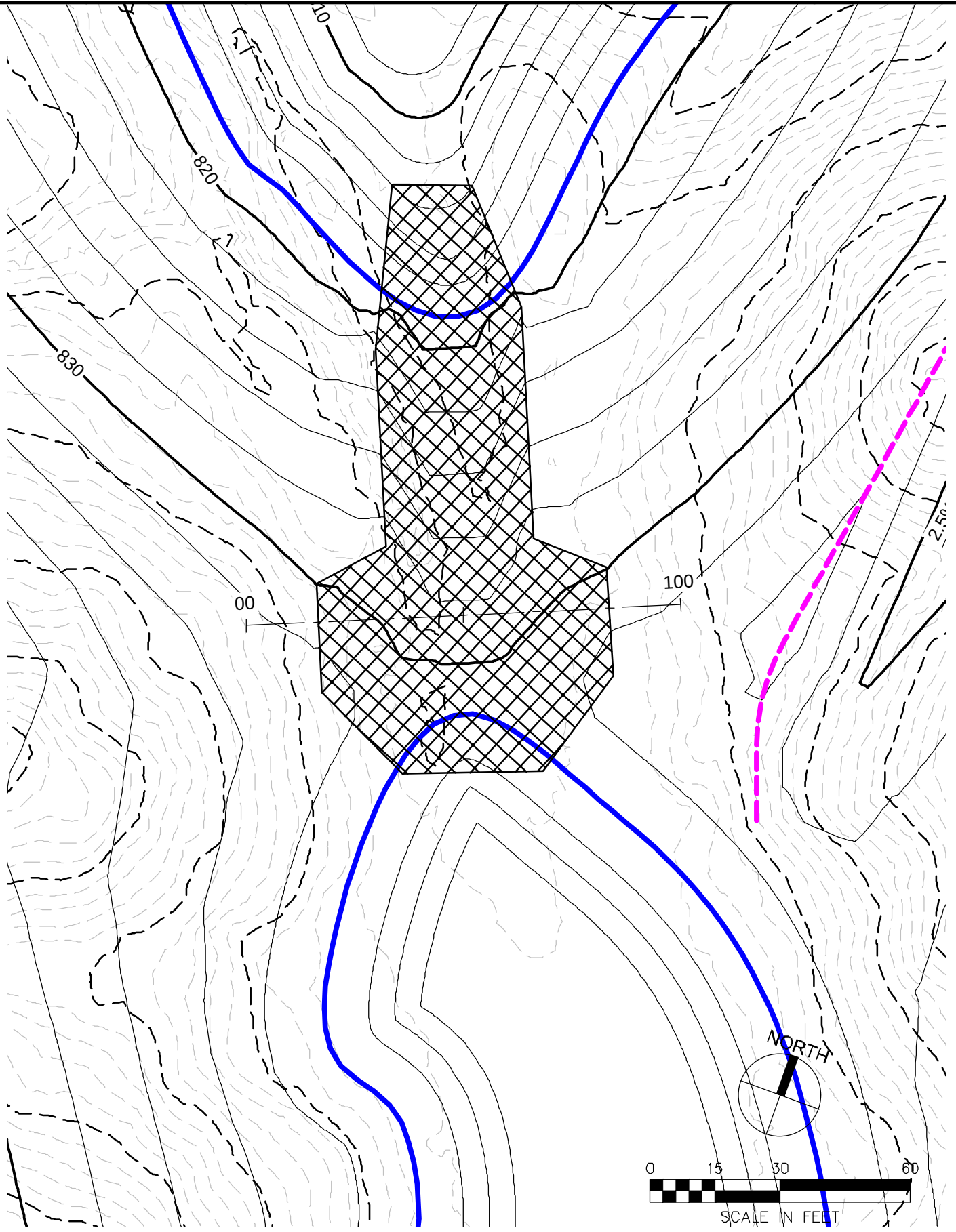
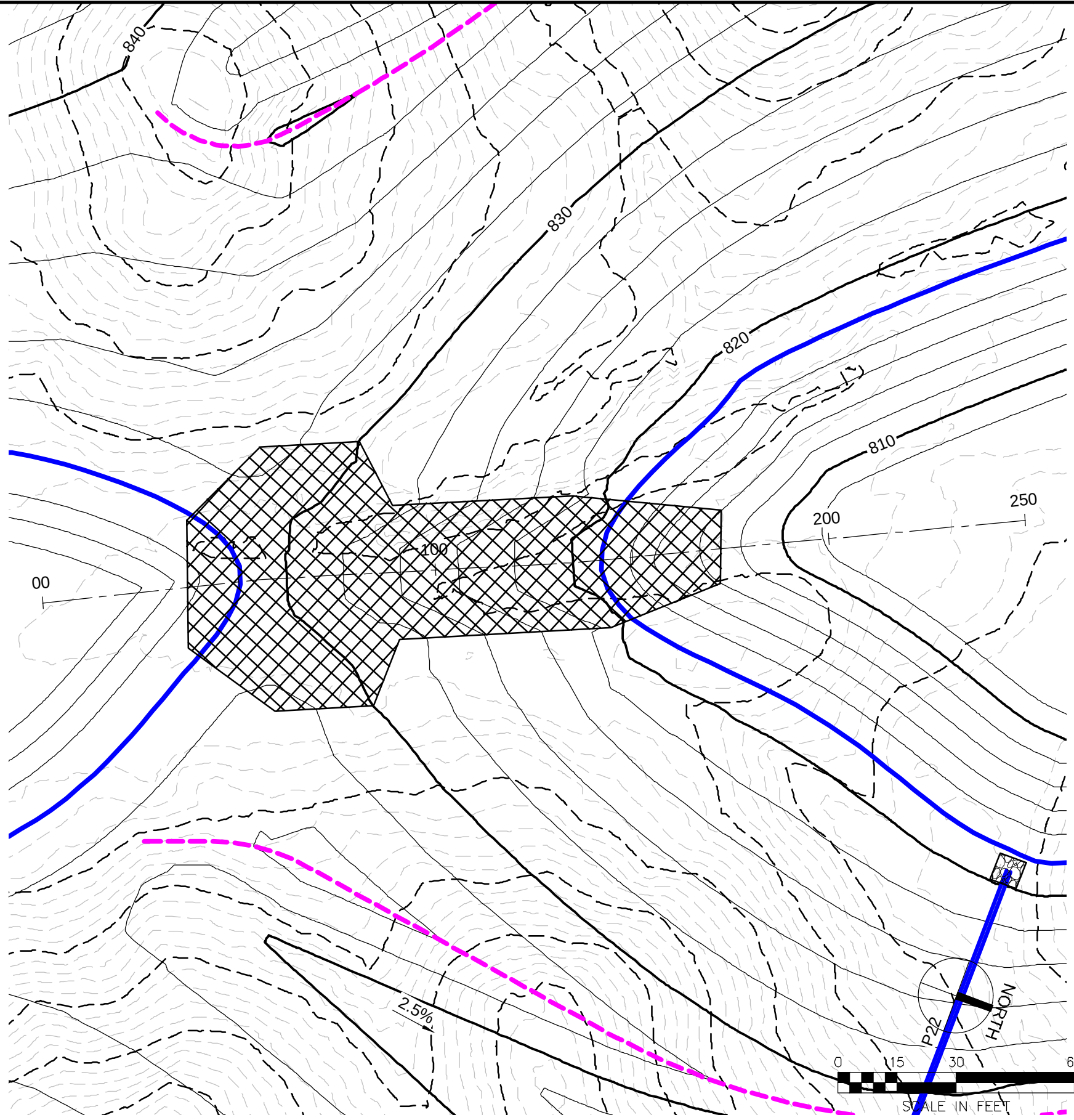
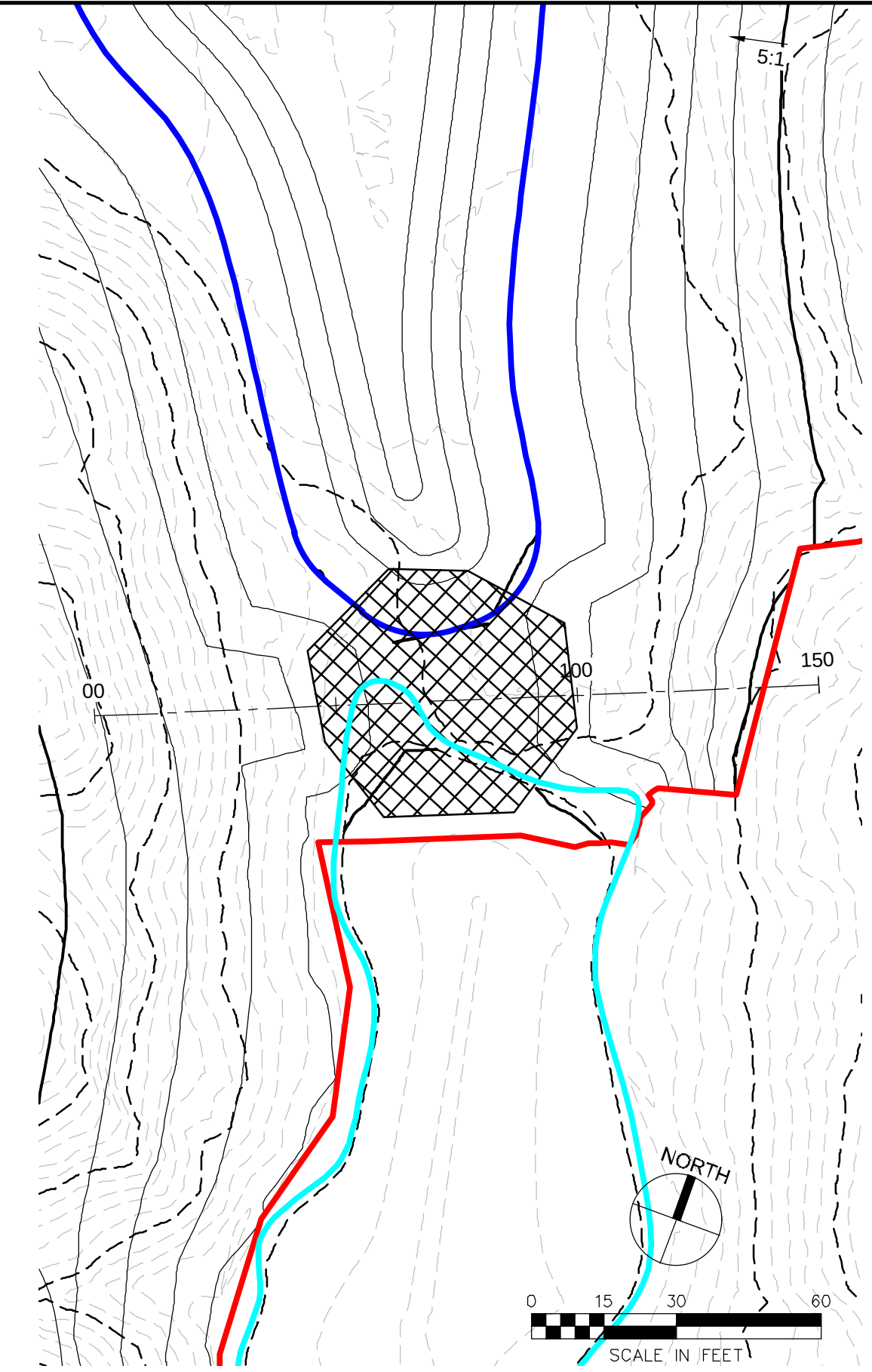
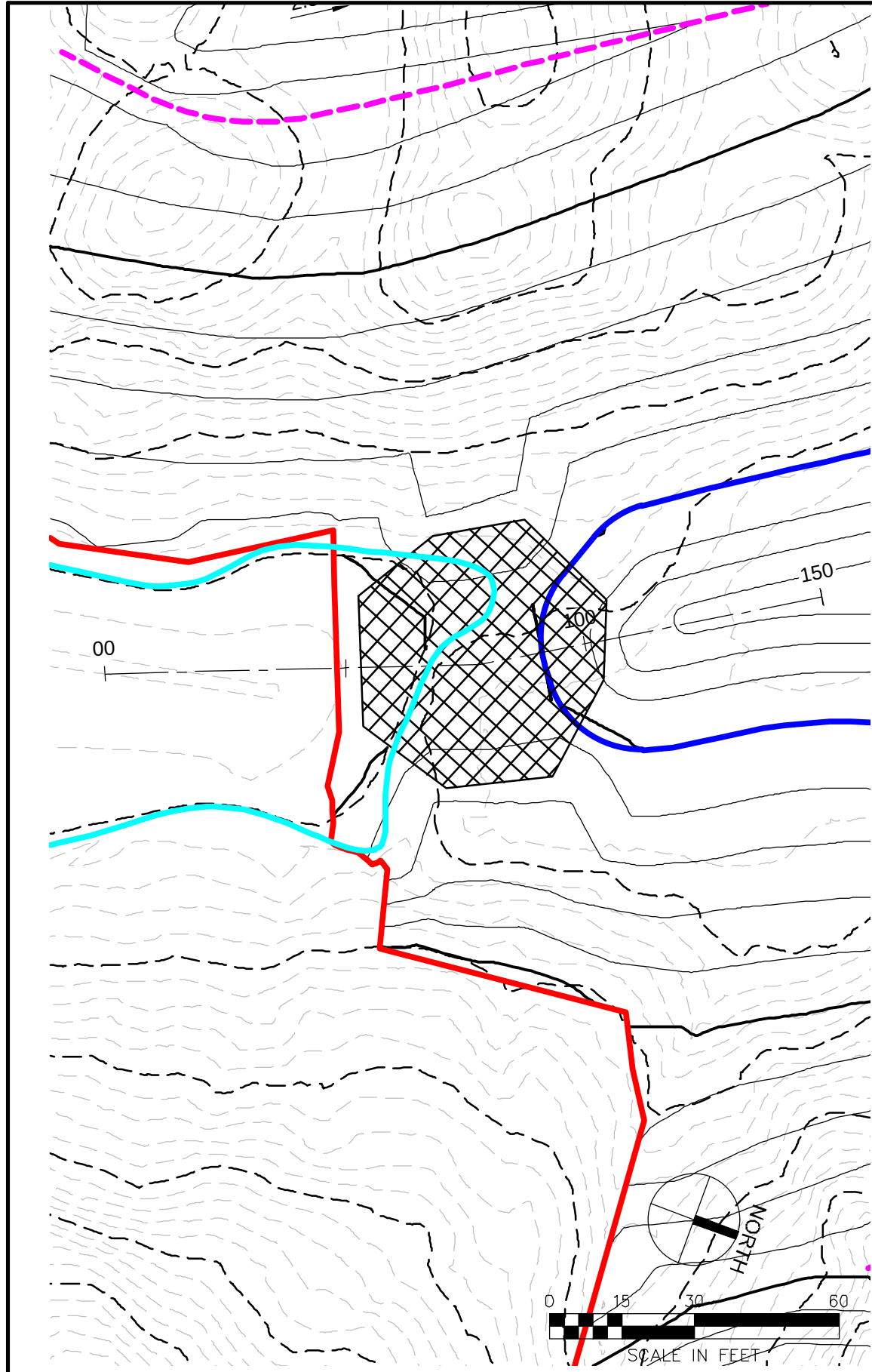
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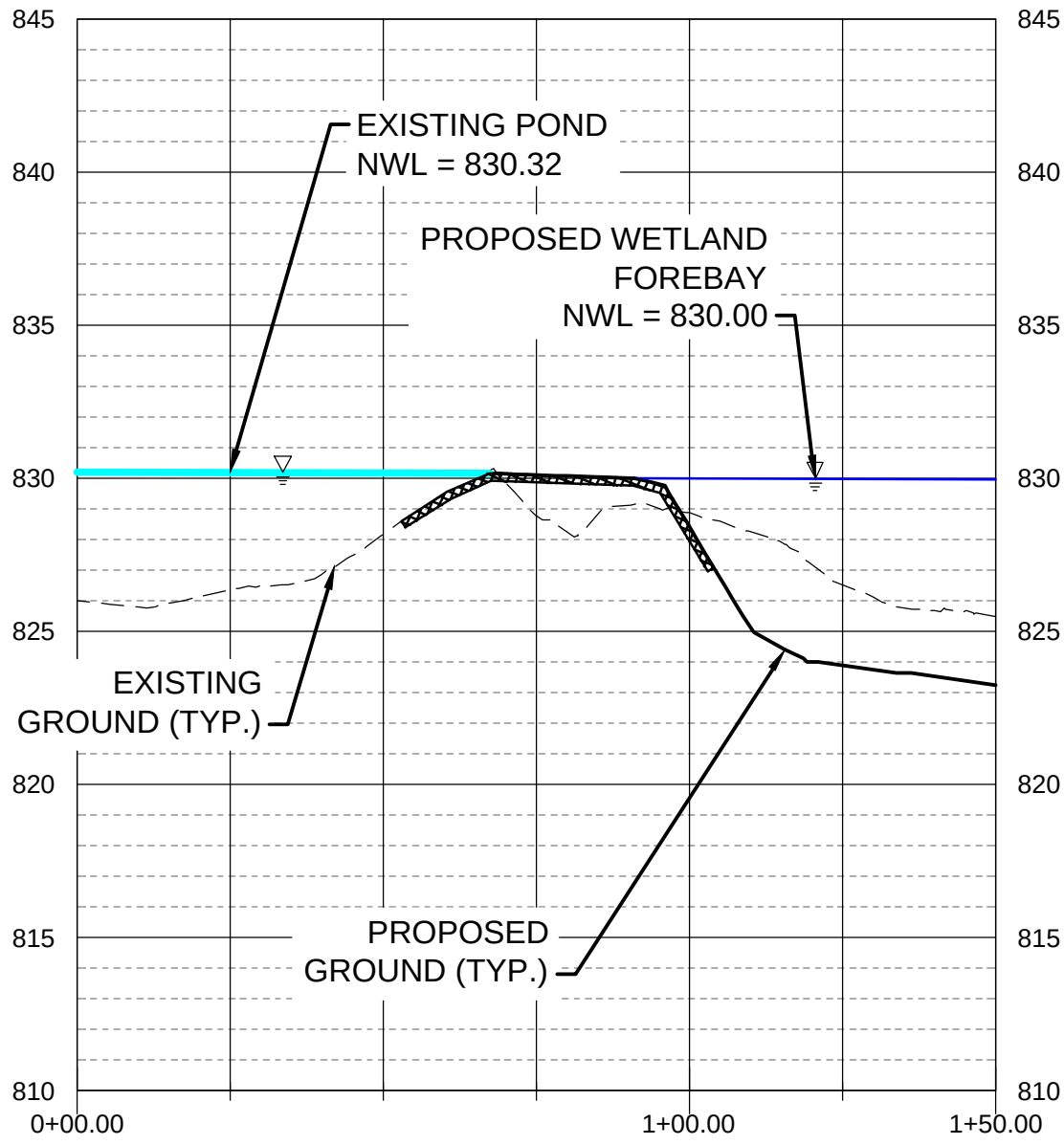
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STREAM PLAN & PROFILE		 SHIVE-HATTERY ARCHITECTURE+ENGINEERING 4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.8104 fax 515.223.0622 shive-hattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214				
SHEET 32 OF 36						



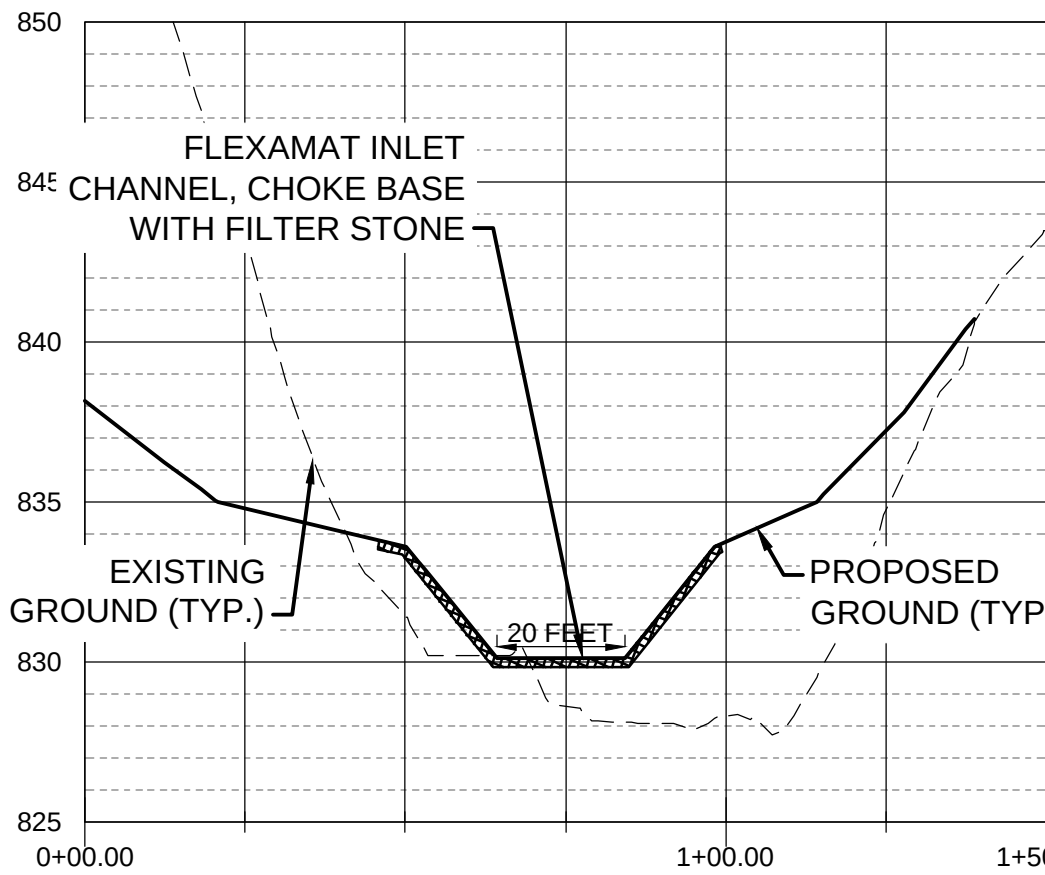
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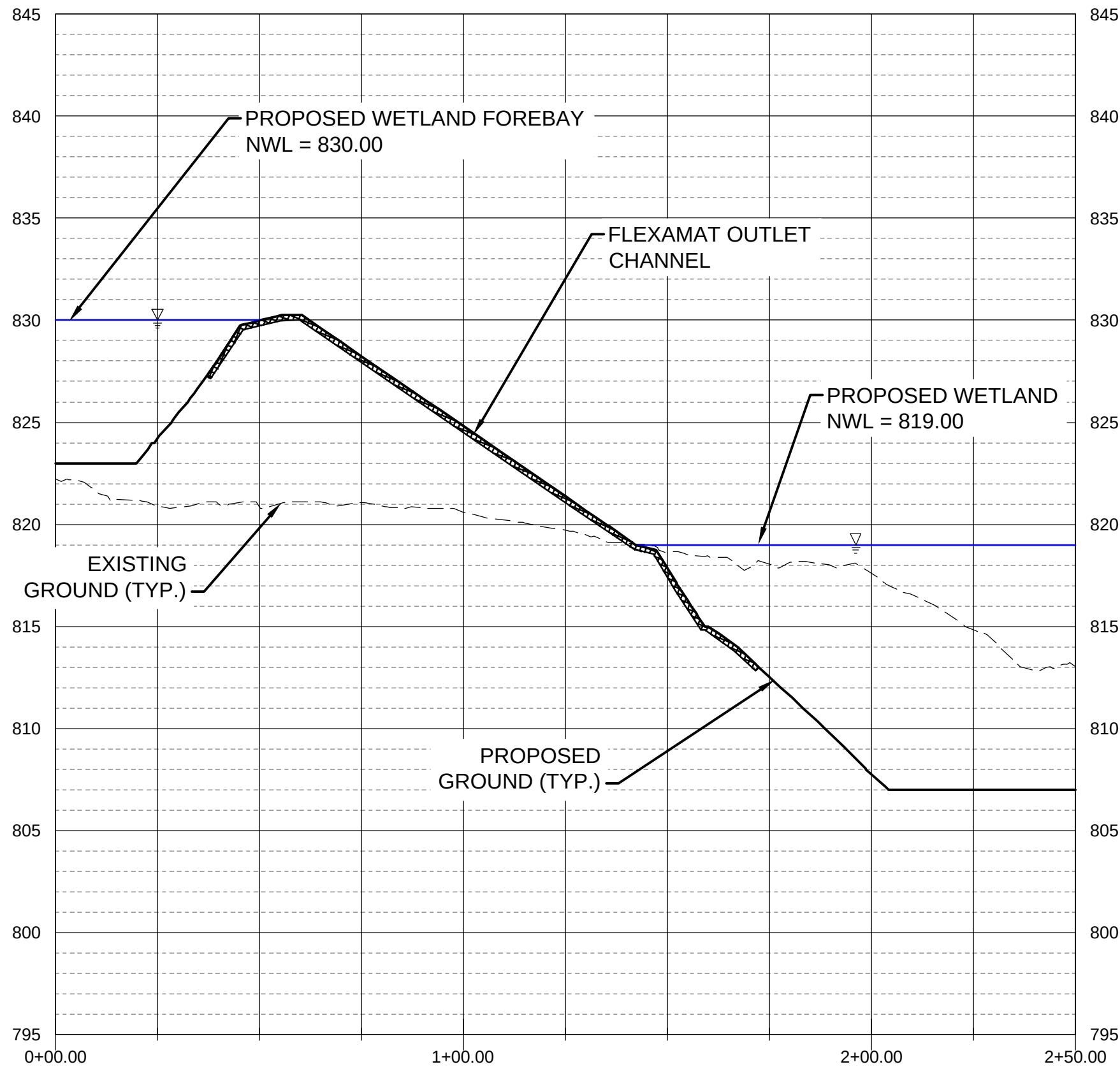
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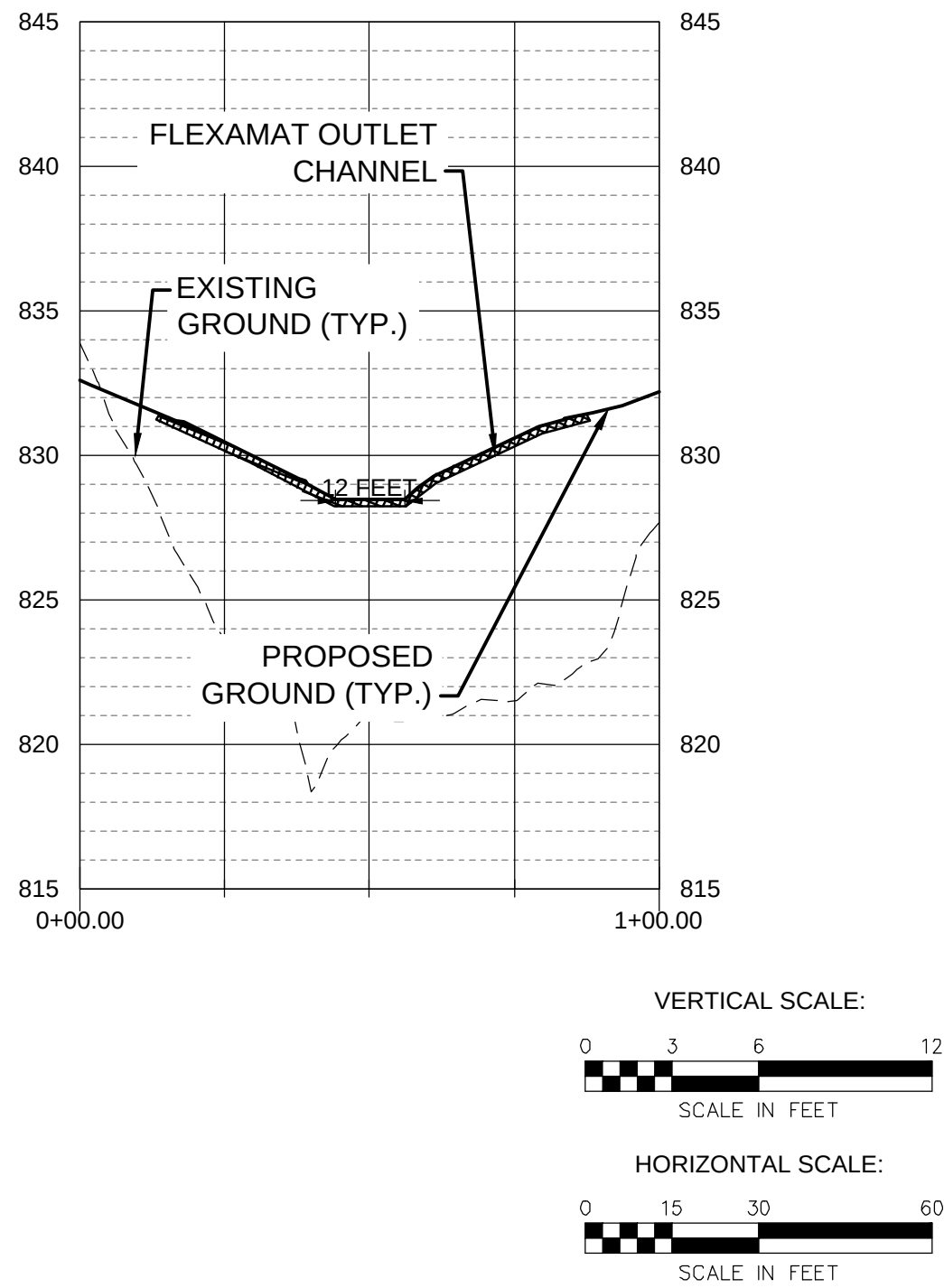
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FOREBAY OUTLET CENTERLINE PROFILE



FOREBAY OUTLET CROSS SECTION PROFILE



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STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

REFER TO: CONTENTS OF THE POLLUTION PREVENTION PLAN IN PART IV. D. OF IOWA NPDES GENERAL PERMIT NO. 2 -- EFFECTIVE MARCH 1, 2023 THROUGH FEBRUARY 29, 2028.

1. SITE DESCRIPTION

A. DESCRIBE NATURE OF CONSTRUCTION ACTIVITY:

- THE PROJECT CONSISTS OF RECLAIMING THE AML SITES DISTURBED BY PAST COAL MINING ACTIVITIES. THE MAIN OBJECTIVE OF THE AML RECLAMATION IS TO MITIGATE PRIORITY FEATURES THAT PRESENT A DANGER TO THE HEALTH AND SAFETY OF THE GENERAL PUBLIC.
- THE MAJOR PHASES OF THE PROJECT ARE TEMPORARY EROSION CONTROL; ROUGH GRADING; LIME TREATMENT OF SURFACE SOILS, FERTILIZING, MULCHING, PERMANENT SEEDING INCLUDING INSTALLATION OF PERMANENT EROSION CONTROL PRACTICES LIKE (engineer to name typical practices used).
- END USE OF SITE IS: WILDLIFE HABITAT AND/OR RECREATIONAL USE
- THE ESTIMATED PROJECT TIMELINE IS: OCTOBER 2026 TO DECEMBER 2027

B. ESTIMATE THE TOTAL AREA OF THE SITE AND THE AREA EXPECTED TO BE DISTURBED BY EXCAVATION, GRADING OR OTHER ACTIVITIES:

- 106.5 ACRES DISTURBED BY MASS GRADING AND CONSTRUCTION ACCESS.

C. ESTIMATE THE SOIL RUNOFF COEFFICIENT OF THE SITE AFTER CONSTRUCTION IS COMPLETED, AND DESCRIBE THE WATER QUALITY OF ANY EXISTING DISCHARGE FROM THE SITE.

- THE RATIONAL RUNOFF COEFFICIENT FOLLOWING THE ESTABLISHMENT OF FINAL VEGETATION IS ESTIMATED TO BE ABOUT 0.4 TO 0.5. THIS IS ROUGHLY EQUIVALENT TO AN SCS CURVE NUMBER OF 70 WHICH IS TYPICAL FOR PASTURE-GRASS VEGETATION.
- THE WATER QUALITY BEING DISCHARGED FROM THE SITE, AT PRESENT, IS IMPAIRED WITH ACIDIC PH AND HIGH DISSOLVED IRON CONCENTRATIONS WHICH ARE DERIVED FROM THE WATER'S CONTACT WITH BARE MINE SPOIL MATERIAL ON THE SITE. THIS POOR WATER QUALITY IS OFTEN INDICATED BY RUST-COLORED PRECIPITANT IN THE RECEIVING WATERS.

D. PROVIDE A SITE MAP SATISFYING REQUIREMENTS DESCRIBED IN PART IV. D.1.A.D.:

- SEE BMP PLAN SHEET 36 FOR CONTROLS THAT WILL BE IMPLEMENTED. FOR CONTROLS DURING AND IMMEDIATELY FOLLOWING CLEARING

E. PROVIDE NAME OF THE RECEIVING WATER(S) AND THE ULTIMATE RECEIVING WATERS(S).

- THE RECEIVING WATER IS AN UNNAMED TRIBUTARY TO THE HONEY CREEK.

2. CONTROLS -- A.(1) STABILIZATION PRACTICES:

DESCRIBE TEMPORARY & PERMANENT STABILIZATION PRACTICES WITH SEQUENCE FOR IMPLEMENTATION.

1. UNLESS PRECLUDED BY SNOW COVER OR FROZEN SITE CONDITIONS, AREAS TO BE GRADED AND LEFT UNDISTURBED FOR 14 OR MORE CALENDAR DAYS WILL BE ROUGH DISKED ON THE CONTOUR TO INCREASE SURFACE ROUGHNESS. ROUGH DISKING WILL BE USED EXCLUSIVELY PRIOR TO SEEDING THE FINAL VEGETATION. ROUGH DISKING IS USUALLY CONCURRENT WITH INCORPORATION OF AG LIME AND MULCH FOR THE WORK OF SUBGRADE PREPARATION.
2. ONCE ALL GRADING IS COMPLETE, AND THE SOIL PH ADJUSTMENT IS ACCOMPLISHED, A PERMANENT SEEDING MIX CONSISTING OF WARM AND COOL SEASON GRASSES WILL BE PLANTED WITH AN APPROPRIATE COVER CROP OF OATS, WINTER WHEAT.
3. APPROXIMATELY 2 TONS OF STRAW MULCH PER ACRE WILL BE SPREAD ACROSS THE SEEDED SOIL AND TUCKED IN WITH A TUCKING MACHINE TO PROVIDE PROTECTION FROM RAIN DROPLET IMPACT WHILE THE SEEDING BECOMES ESTABLISHED.
4. THE SEEDING TYPICALLY GERMINATES WITHIN 14 DAYS & LATER PROVIDES AT LEAST 70% VEGETATIVE COVER.

A.(2) STRUCTURAL PRACTICES DESCRIBE EROSION AND SEDIMENT CONTROL PRACTICES THAT WILL USED ON THE SITE:

EROSION CONTROL PRACTICES

1. ROUGH DISKING AS DESCRIBED IN "STABILIZING PRACTICES" ABOVE WILL BE USED AS NECESSARY TO REDUCE SURFACE RUNOFF VELOCITIES AND INCREASE INFILTRATION.
2. TERRACES WILL BE USED TO REDUCE SLOPE LENGTHS AND DETAIN/RETAIN STORM WATER RUNOFF. TERRACES WILL BE DRAINED WITH PERFORATED PLASTIC RISERS AND CONCRETE OPEN-SIDED INTAKES.
3. AT TILE DRAINAGE OUTLETS RIPRAP APRON POOLS WILL BE USED TO ABSORB ENERGY OF FLOWING STORM DRAINAGE.
4. ROLLED EROSION CONTROL MATTING WILL BE INSTALLED ALONG STEEPER SLOPES TO REDUCE RILL EROSION.

A.(2) STRUCTURAL PRACTICES CONT'D:

DESCRIBE EROSION AND SEDIMENT CONTROL PRACTICES THAT WILL USED ON THE SITE:

SEDIMENT CONTROL PRACTICES:

1. STRAW WATTLES OR FILTER SOCK OR SHALLOW DITCHES ACTING AS SEDIMENT TRAPS WILL BE USED ALONG THE PERIMETERS OF THE AS NECESSARY TO PREVENT MIGRATION OF SEDIMENT INTO THOSE WATERS OUTSIDE THE PROJECT BOUNDARY. PROPOSED WATER BODIES WITHIN THE PROJECT BOUNDARY MAY INCLUDE STORAGE VOLUME BELOW THE NORMAL POOL ELEVATION FOR SOME ACCUMULATED SEDIMENT.
2. SILT FENCE DITCH CHECKS, FABRIC CHECKS, FILTER SOCK CHECKS OR SHALLOW TRENCHES WILL BE INSTALLED IN DRAINAGE WAYS AS NECESSARY TO TRAP SEDIMENT TRANSPORTED FROM THE SITE'S SLOPES DURING CONSTRUCTION. IN CONCENTRATED DRAINAGES RIPRAP WILL BE INCLUDED TO SLOW FLOW VELOCITIES AND TRAP TRANSPORTED SEDIMENTS.
3. FOUR WETLAND BASINS WILL BE CONSTRUCTED AT TOWARDS THE LOWER PORTION OF THE SITE AS SHOWN ON THE PLANS. AS THESE PROPOSED WATER BODIES ARE CONSTRUCTED THEY WILL BEGIN TO RETAIN SEDIMENT ERODED FROM THE UPLAND SLOPES. THE WETLAND BASINS WILL BE CLEANED OUT JUST PRIOR TO PROJECT COMPLETION AND IT WILL BE CONVERTED INTO A PERMANENT WETLAND. SEDIMENT CLEANED OUT WILL BE RE-SPREAD ONTO THE LANDSCAPE. PRIOR TO CONSTRUCTION OF THE WETLANDS A TEMPORARY PRACTICES INDICATED IN ITEM 2 ABOVE WILL BE INSTALLED.
4. ALL PROPOSED PERMANENT WETLANDS HAVE OUTLETS PROTECTED FROM EROSION WITH EITHER TIED CONCRETE BLOCK MAT FOR SURFACE FLOWS OR PRECAST CONCRETE RISERS CONNECTED TO PIPES THAT OUTLET INTO A RIPRAP APRON POOL OR OTHER STABLE LOCATION.

A.(2)(a). DESCRIBE PRACTICES WHICH PROVIDE AT LEAST 3600 CUBIC FEET OF STORAGE PER [DISTURBED] ACRE FOR COMMON DRAINAGE LOCATIONS SERVING MORE THAN TEN (10) ACRES OF DISTURBED AREA:

THE GRADING LIMITS FOR THE NOAH & WILCOX EAST AML SITE CONTAINS 106.5 ACRES OF DISTURBED AREA IN WHOLE. OF THAT AREA, 68.0 ACRES ARE SITUATED UPHILL, OF THE PROPOSED WETLAND BASINS. PER THE DESIGN DRAWINGS, THE PLANNED WETLAND BASINS PROVIDE 513,000 CUBIC FEET OF SEDIMENT STORAGE IN TOTAL. THIS IS EQUIVALENT TO SLIGHTLY MORE THAN 7,500 CUBIC FEET OF SEDIMENT STORAGE PER DISTURBED ACRE.

A.(2)(b). DESCRIBE PRACTICES WHICH ARE USED TO RETAIN SEDIMENT ON SITE FOR COMMON DRAINAGE LOCATIONS SERVING TEN (10) OR FEWER ACRES OF DISTURBED AREA:

DRAINAGE LOCATIONS SERVING 10 OR FEWER ACRES WILL BE PROTECTED FROM SEDIMENTATION BY SILT FENCES OR STRAW WATTLES, FABRIC CHECKS, RIPRAP CHECKS OR SMALL SEDIMENT CATCHMENTS TO ARREST OR SEDIMENT MOVEMENT FROM THE SITE.

A.(2)(c). SURFACE WATER WITHDRAWAL, SURFACE WATER BUFFERS, STORM WATER DISCHARGE INTO VEGETATED AREAS, & TOPSOIL PRESERVATION:

i. DESCRIBE OUTLETS THAT WITHDRAW WATER FROM SURFACE OF BASINS:

PERFORATED CMP INTAKES ARE USED TO DRAIN DRY DETENTION BASINS AND TERRACES. CONCRETE CIRCULAR STRUCTURES WITH OPEN RIM INLETS AND TRASH RACKS ARE USED TO WITHDRAW WATER FROM CONSTRUCTED WETLANDS.

ii. DESCRIBE NATURAL BUFFERS AROUND SURFACE WATERS:

TO THE EXTENT PRACTICABLE A BUFFER OF VARYING WIDTH CONSISTING OF TREES AND UNDERSTORY VEGETATION WAS LEFT UNDISTURBED BETWEEN THE PROJECT BOUNDARY AND THE NEAREST STREAM CHANNEL.

iii. REDIRECTION OF STORM WATER DISCHARGES TO AND THROUGH VEGETATED AREAS FOR INCREASED SEDIMENT REMOVAL AND OPPORTUNITY FOR INFILTRATION TO THE SOIL.

WHERE PRACTICABLE OFFSITE AND ONSITE RUNOFF FLOWS ARE DIRECTED INTO TERRACES, DETENTION BASINS OR CONSTRUCTED WETLANDS.

iv. TOPSOIL PRESERVATION:

THE SITE IS AN ABANDONED COAL MINE RECLAMATION PROJECT; NO TOPSOIL EXISTS PRIOR TO RECLAMATION-RELATED CONSTRUCTION ACTIVITIES. THEREFORE, THE TOPSOIL PRESERVATION REQUIREMENT WILL NOT BE MET. THE SITE CONSISTS OF MINE SPOIL MATERIAL CLASSIFIED AS MINE PITS AND DUMPS - SOIL TYPE 502 ON USDA SOIL SURVEY MAPS. AFTER FINAL GRADE IS ACHIEVED, AGRICULTURAL LIME WILL BE APPLIED AT A RATE TO BE DETERMINED BY SOIL TESTS. THE AGRICULTURAL LIME, ALONG WITH 5 TONS OF MULCH WILL BE INCORPORATED INTO THE UPPER ONE (1) FOOT OF THE MINE SPOIL TO PRODUCE A GROWING MEDIUM AS OUTLINED IN PROJECT SPECIFICATION 02400. AFTER A PERIOD OF TIME TO ALLOW FOR NEUTRALIZATION AND MULCH DECOMPOSITION, THE SITE WILL BE PREPARED FOR SEEDING. AGRICULTURAL LIME, FERTILIZER, SEED AND CRIMPED MULCH WILL BE APPLIED AS OUTLINED IN PROJECT SPECIFICATION 02700.

B.(1). DESCRIBE POST-CONSTRUCTION PRACTICES THAT WILL ATTENUATE PEAK RUNOFF FLOWS AND REDUCE SUSPENED SOLIDS IN WATER FLOWS:

PROPOSED WETLAND WATER BODIES ARE ANTICIPATED TO ATTENUATE PEAK RUNOFF FLOWS AND PROVIDE OPPORTUNITY FOR SETTLEMENT OF SUSPENDED SOLID PRIOR TO RUNOFF EXITING THE PROJECT BOUNDARIES. SEE PLAN SHEETS.

B.(2). DESCRIBE TYPE AND LOCATION OF VELOCITY DISSIPATION DEVICES:

RIPRAP APRON POOLS ARE DESIGNED TO BE PLACED AT THE OUTLET OF THE TERRACE DRAIN PIPES TO ABSORB ENERGY AND REDUCE THE VELOCITY OF FLOW EXITING BURIED PIPE CONDUITS.

C.(1). WASTE DISPOSAL -- DESCRIBE HOW BUILDING MATERIALS WASTE WILL BE ADDRESSED ON THE SITE:

THIS PROJECT IS PRIMARILY A GRADING AND DRAINAGE PROJECT. BUILDING MATERIALS WASTES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, CARDBOARD PACKAGING, PIECES OF WOOD, PLASTIC SHRINK WRAP, STEEL BANDS USED FOR PACKAGING, PIECES OF UNUSED PLASTIC PIPE OR FITTINGS, AND PORTLAND CEMENT CONCRETE WASHOUT RESIDUE. ALL CONSTRUCTION WASTES WILL BE DISPOSED OFFSITE.

C.(2). TRACKING OF SEDIMENTS -- DESCRIBE HOW VEHICLE TRACKING OF SEDIMENTS TO OFFSITE AREAS WILL BE MINIMIZED:

- a. TRACKING OF SEDIMENTS OFFSITE WILL BE REDUCED BY AVOIDING VEHICLE TRAVEL ACROSS THE SITE SURFACE SOILS WHEN THEY ARE WET.
- b. A GRAVELED ENTRANCE WILL BE INSTALLED USING 3" NOMINAL MACADAM STONE. THE INSTALLATION WILL FUNCTION TO AID IN CLEANING OFF THE TIRES OF VEHICLES LEAVING THE SITE.
- c. IF "a" CANNOT BE ACCOMPLISHED, AND "b" PROVES INEFFECTIVE, THEN MUD FROM VEHICLE TIRES WILL BE MANUALLY CLEANED OFF, TO THE EXTENT PRACTICABLE, BEFORE THE VEHICLE LEAVES THE SITE.

C.(3). COMPLIANCE WITH STATE OR LOCAL SANITARY WASTE DISPOSAL REGULATIONS:

POLLUTION FROM HUMAN SANITARY WASTE WILL BE PREVENTED WITH THE USE OF A PORTABLE TOILET INSTALLED ON THE SITE. THE PORTABLE TOILET WILL BE SUPPLIED AND MAINTAINED BY THE CONTRACTOR. ON TIMELY INTERVALS, HUMAN SANITARY WASTE FROM THE PORTABLE TOILET WILL BE COLLECTED AND DISPOSED OFFSITE BY A QUALIFIED PROFESSIONAL SERVICES COMPANY RETAINED BY THE CONTRACTOR. PORTABLE TOILET FACILITIES MUST BE ANCHORED TO THE SOIL SURFACE TO RESIST OVERTURNING BY WIND OR VANDALISM.

3. MAINTENANCE -- DESCRIBE MAINTENANCE AND PROTECTIVE MEASURES TO KEEP CONTROLS AND PRACTICES IN WORKING ORDER:

TO THE EXTENT PRACTICABLE, THE EFFORTS WILL BE MADE TO AVOID TRAFFIC OVER OR DAMAGE TO INSTALLED PRACTICES AND CONTROLS. IF DAMAGED, REPAIRS OR REPLACEMENTS TO BMP'S WILL BE MADE AS SOON AS POSSIBLE OR WITHIN SEVEN (7) DAYS FOLLOWING INSPECTION.

4. INSPECTIONS, REVISIONS & REPAIRS -- NOTE SPECIAL CONSIDERATIONS OR PROCEDURES, IF ANY, FOR ROUTINE WEEKLY INSPECTIONS:

PER CONTRACT DOCUMENTS, IDALS-DSCWQ IN PARTNERSHIP WITH PATHFINDERS RC&D WILL PERFORM AND DOCUMENT ALL WEEKLY INSPECTIONS FOR THIS SWPPP IN ACCORDANCE WITH PART IV.D.4.C. ELECTRONIC COPIES OF WEEKLY INSPECTIONS REPORTS WILL BE AVAILABLE UPON REQUEST. REQUIRED REVISIONS OR REPAIRS WILL BE MADE WITHIN SEVEN (7) DAYS FOLLOWING INSPECTION.

5. NON-STORMWATER DISCHARGES -- DESCRIBE PRACTICES TO PREVENT NON-STORMWATER POLLUTION:

LESS THAN 1000 GALLONS OF DIESEL FUEL AND/OR LUBRICATING OILS ARE EXPECTED TO BE ON SITE AT ANY ONE TIME. THEREFORE, RISK OF GROSS POLLUTION TO RECEIVING WATERS IS MINIMAL. IF FUEL OR OIL SPILLS OCCUR, LIQUID POLLUTANTS WILL BE CONTAINED USING SMALL BERMS MADE FROM SITE SOILS TO PREVENT TRAVEL OF POLLUTANTS TO RECEIVING WATERS. SUFFICIENT TIME WILL BE GIVEN FOR THE POLLUTANTS IN IT TO VOLATILIZE IN THE CONTAMINATED SOIL AND/OR CONTAMINATED SOIL WILL BE DISPOSED OFF-SITE.

6. ADDITIONAL REQUIREMENTS FOR STORM WATER DISCHARGE FROM INDUSTRIAL ACTIVITIES OTHER THAN CONSTRUCTION:

THERE ARE NO ADDITIONAL REQUIREMENTS BECAUSE THIS SWPPP IS FOR A "CONSTRUCTION ONLY" SITE WHERE THERE IS NO INDUSTRIAL SOURCE, OTHER THAN CONSTRUCTION, THAT IS GENERATING THE DISCHARGE.

7. IMPLEMENTATION OF CONTROLS:

THE GENERAL CONTRACTOR IDENTIFIED ON THE CONTRACT, WILL BE ULTIMATELY RESPONSIBLE FOR ALL ASPECTS OF THE PROJECT. THESE INCLUDE GRADING, PIPE INSTALLATION, AND INSTALLATION OF BMPS. AN EROSION CONTROL OR SEEDING SUBCONTRACTOR MAY BE RESPONSIBLE IN SOME SITUATIONS.

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SWPPP NOTES						
SHEET 35 OF 36						
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