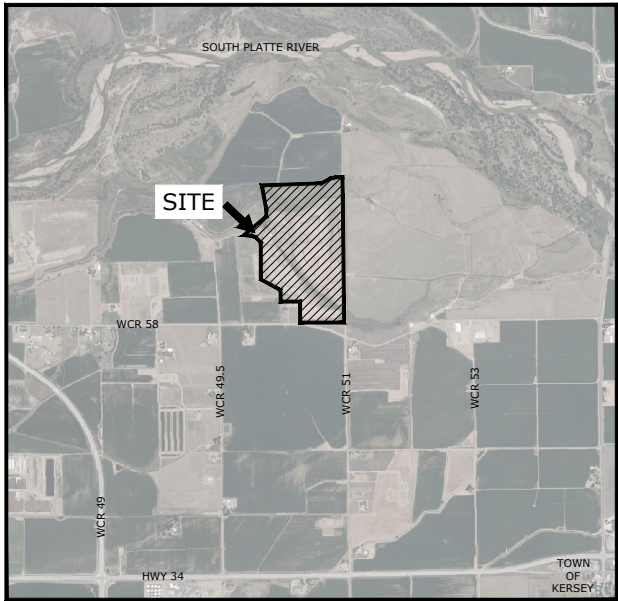


CONSTRUCTION PLANS FOR
PHASE II - PIONEER RESERVOIR
WATER DELIVERY INFRASTRUCTURE
WELD COUNTY, COLORADO



PROJECT LOCATION MAP

SCALE: 1" = 2,000 UNITS



STATE OF COLORADO
PROJECT LOCATION MAP

N.T.S.

Sheet List Table	
SHEET NUMBER	SHEET TITLE
1	COVER
2	LEGEND AND NOTES
3	OVERALL PLAN
4	INLET PLAN & PROFILE-1
5	INLET PLAN & PROFILE-2
6	INLET PLAN & PROFILE-3
7	INLET PLAN & PROFILE-4
8	DISCHARGE PIPE PLAN & PROFILE
9	RESERVOIR PIPE P&P
10	EXCAVATION PROFILES
11	PUMP STATION GRADING PLAN
12	PUMP STATION BUILDING & LAYOUT PLAN
13	DIVERSION DETAILS-1
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15	FLUME DETAILS
16	RUNDOWN INFLOW STRUCTURE DETAILS
17	16 RUNDOWN DETAILS
18	SITE DETAILS-1
19	SITE DETAILS-2
20	SITE DETAILS-3
21	SITE DETAILS-4

CERTIFICATION:

I HEREBY CERTIFY THAT THESE PLANS FOR THE CONSTRUCTION THE PIONEER RESERVOIR WERE PREPARED UNDER MY DIRECT SUPERVISION FOR THE OWNERS THEREOF.

BY: _____
BRAD L. HAGEN, P.E.
COLORADO, P.E. #32982

DATE: _____

THE CENTRAL COLORADO WATER CONSERVANCY DISTRICT DOES HEREBY ACCEPT AND APPROVE THESE PLANS FOR THE CONSTRUCTION OF A WATER DELIVERY ON THE TRACT DESCRIBED WITHIN.

BY: _____
AUTHORIZED REPRESENTATIVE
CENTRAL COLORADO WATER CONSERVANCY DISTRICT

DATE: _____

PREPARED FOR:
CENTRAL COLORADO WATER CONSERVANCY DISTRICT
3209 WEST 28TH STREET
GREELEY, CO 80634
970.330.4540

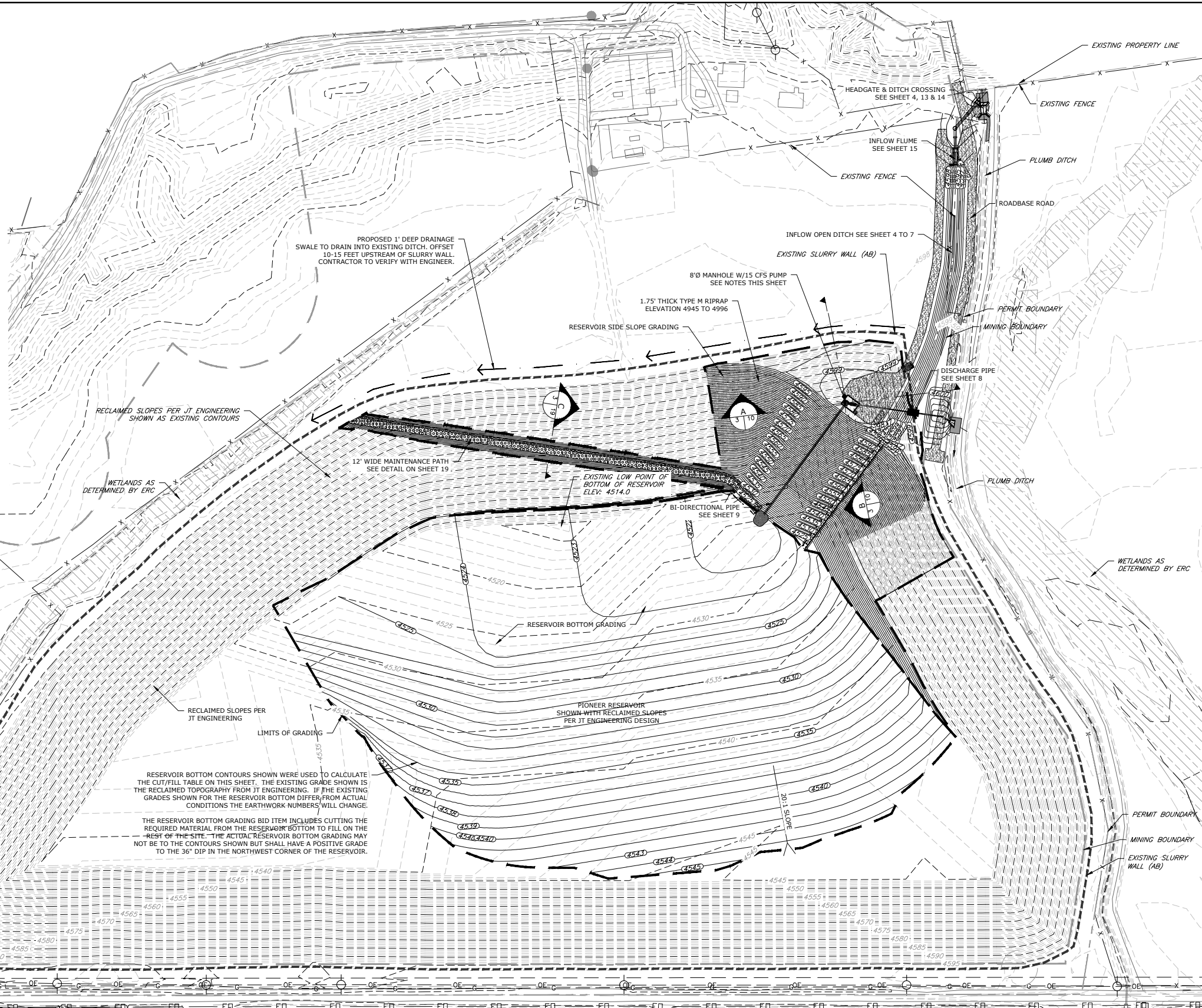
PREPARED BY:
CIVIL RESOURCES, LLC
8308 COLORADO BLVD, SUITE 200
FIRESTONE, CO 80504
303.833.1416



REVISIONS				DATE:
NO.	DESCRIPTION	DATE	BY	JUNE 2023
				DWG:
				COVER AND NOTES - Final.dwg
				SHEET:
				1

FINISH GRADE STAGE-STORAGE (NO POROSITY STORAGE)				
Contour Elevation (ft)	Contour Area (sq)	Incr. (ac-ft)	Cumul. (ac-ft)	Notes
4521	0	0.0	0	0.0
4522	18,240	0.4	0.2	0.2
4523	67,641	1.6	1.0	1.2
4524	137,171	3.1	2.4	3.5
4525	193,493	4.4	3.8	7.3
4526	229,061	5.3	4.9	12.2
4527	262,183	5.8	5.5	17.7
4528	275,399	6.3	6.1	23.8
4529	300,571	6.9	6.6	30.4
4530	326,256	7.5	7.2	37.6
4531	362,175	8.1	7.8	45.4
4532	379,397	8.7	8.4	53.8
4533	453,456	10.4	9.6	63.3
4534	507,768	11.7	11.0	74.4
4535	559,560	12.8	12.3	86.6
4536	613,961	14.1	13.5	100.1
4537	657,032	15.1	14.6	114.7
4538	693,703	15.9	15.5	130.2
4539	726,361	16.7	16.3	146.5
4540	757,578	17.4	17.0	163.5
4541	788,032	18.1	17.7	181.2
4542	817,014	18.8	18.4	199.7
4543	862,864	19.8	19.3	219.0
4544	894,110	20.5	20.2	239.1
4545	941,747	21.6	21.1	260.2
4546	959,413	22.0	21.8	282.0
4547	972,376	22.3	22.2	304.2
4548	985,418	22.6	22.5	326.7
4549	999,492	22.9	22.8	349.4
4550	1,011,644	23.2	23.1	372.5
4551	1,024,875	23.5	23.4	395.9
4552	1,038,175	23.8	23.7	419.6
4553	1,051,541	24.1	24.0	443.5
4554	1,064,986	24.4	24.3	467.8
4555	1,078,526	24.8	24.6	492.4
4556	1,092,134	25.1	24.9	517.4
4557	1,105,806	25.4	25.2	542.6
4558	1,119,555	25.7	25.5	568.1
4559	1,133,390	26.0	25.9	594.0
4560	1,147,311	26.3	26.2	620.2
4561	1,161,275	26.7	26.5	646.7
4562	1,175,306	27.0	26.8	673.5
4563	1,189,403	27.3	27.1	700.6
4564	1,203,580	27.6	27.5	728.1
4565	1,217,810	28.0	27.9	755.9
4566	1,232,186	28.3	28.1	784.0
4567	1,246,490	28.6	28.5	812.5
4568	1,260,991	28.9	28.8	841.3
4569	1,275,364	29.3	29.1	870.4
4570	1,290,916	29.6	29.4	899.8
4571	1,304,500	29.9	29.9	929.6
4572	1,319,186	30.3	30.1	959.7
4573	1,333,890	30.6	30.5	990.2
4574	1,348,451	31.0	30.8	1,020.9
4575	1,363,277	31.3	31.1	1,052.1
4576	1,378,396	31.6	31.5	1,083.5
4577	1,393,319	32.0	31.8	1,115.4
4578	1,408,306	32.3	32.2	1,147.5
4579	1,423,357	32.7	32.5	1,180.0
4580	1,438,467	33.0	32.8	1,212.9
4581	1,453,454	33.4	33.2	1,246.1
4582	1,468,730	33.7	33.5	1,279.6
4583	1,484,018	34.1	33.9	1,313.5
4584	1,499,471	34.4	34.2	1,347.7
4585	1,514,862	34.8	34.6	1,382.3
4586	1,530,317	35.1	35.0	1,417.3
4587	1,545,829	35.5	35.3	1,452.6
4588	1,561,404	35.8	35.7	1,488.3
4589	1,577,037	36.2	36.0	1,524.3
4590	1,592,719	36.6	36.4	1,560.7
4591	1,608,453	36.9	36.7	1,597.4
4592	1,624,243	37.3	37.1	1,634.5
4593	1,640,091	37.7	37.5	1,672.0
4594	1,655,936	38.0	37.8	1,709.8

Top of Reservoir (SW Corner)



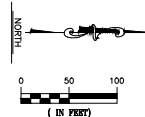
WCR 51

- NOTES:
1. FILL BOTTOM OF RESERVOIR FROM ELEVATION 4514 TO NEW BOTTOM LOW POINT ELEVATION 4523.
 2. GRADING WILL BE ADJUSTED TO OBTAIN FILL MATERIAL FROM THE BOTTOM OF THE RESERVOIR TO REDUCE THE AMOUNT OF LOST WATER STORAGE (IF ANY). APPROXIMATELY 63,400 CY OF MATERIAL NEEDED FROM BOTTOM OF RESERVOIR.
 3. 2 - 30 CFS - (GRAVITY) INFLOW FROM PLUMB DITCH.
 4. 5 - 15 CFS - (PUMPED WITH VERTICAL TURBINE PUMP) FLOWRATE TO PLUMB DITCH

EARTHWORK QUANTITIES TO NEAT LINE:

AREA	CUT (CY)	FILL (CY)
RESERVOIR SIDE SLOPES	1,530	48,830
RESERVOIR BOTTOM	70,500	12,500
INFLOW DITCH	1,520	380
FILL OVER DISCHARGE PIPE	0	375
TOTAL EARTHWORK	73,550	62,085

NOTE: THE ABOVE QUANTITIES DO NOT INCLUDE SHRINK OR SWELL. IF EXCESS MATERIAL IS EXPERIENCED THE SLOPE ON THE EAST SIDE OF THE BOTTOM OF THE RESERVOIR SHALL BE CONSTRUCTED STEEPER THAN 20:1 AS SHOWN ON THIS PLAN TO BALANCE THE MATERIAL.



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GREELEY, CO 80634
970.330.4540 (p)
RANDY RAY

PIONEER RESERVOIR

WELD COUNTY, COLORADO

REVISIONS		
NO.	DESCRIPTION	DATE

DESIGNED BY: AJS DATE: June, 2023
DRAWN BY: AJS SCALE: AS NOTED
CHECKED BY: BLH AS NOTED

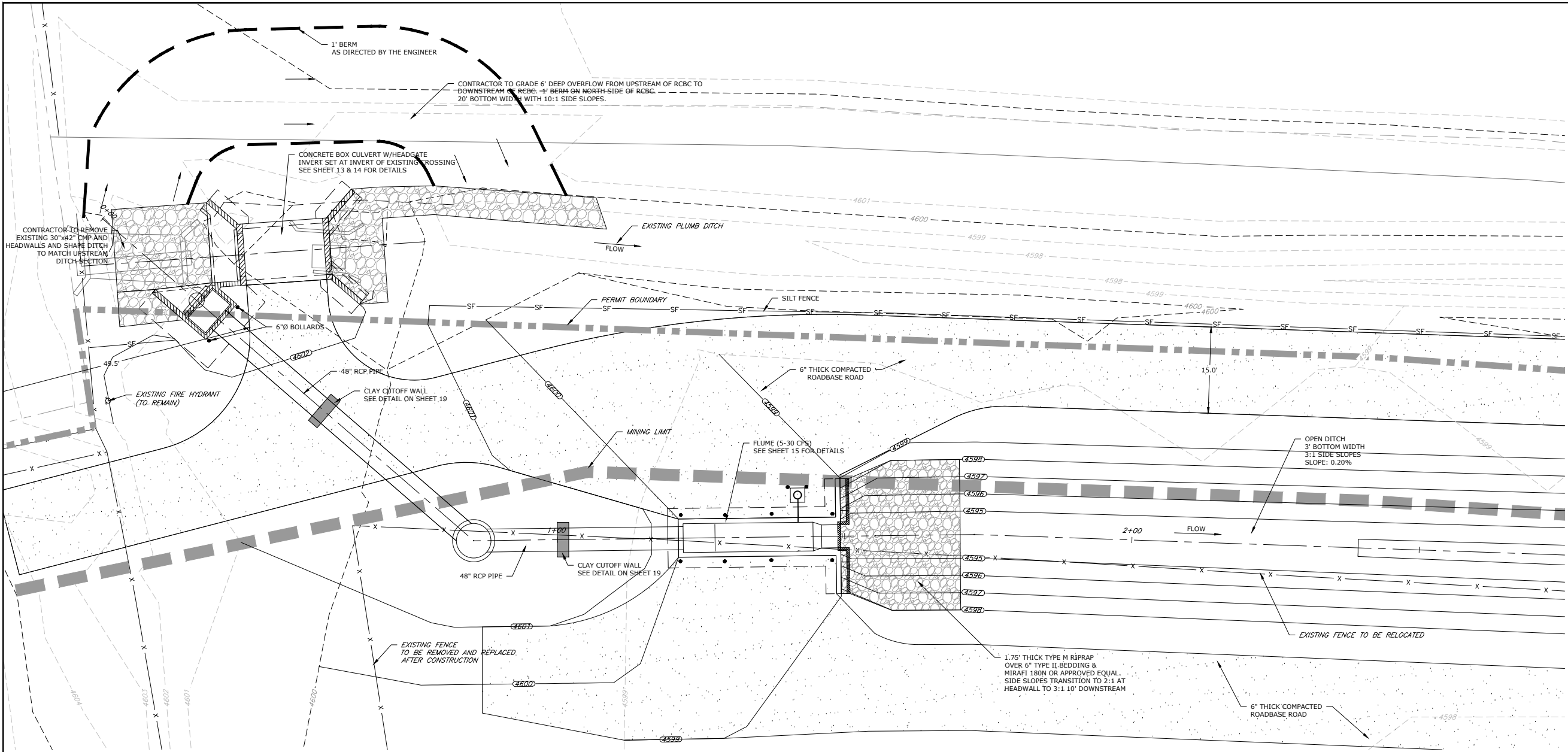
JOB NO.: 197.004.01

DWG NAME: PIONEER SITE INFRASTRUCTURE-FINAL.DWG

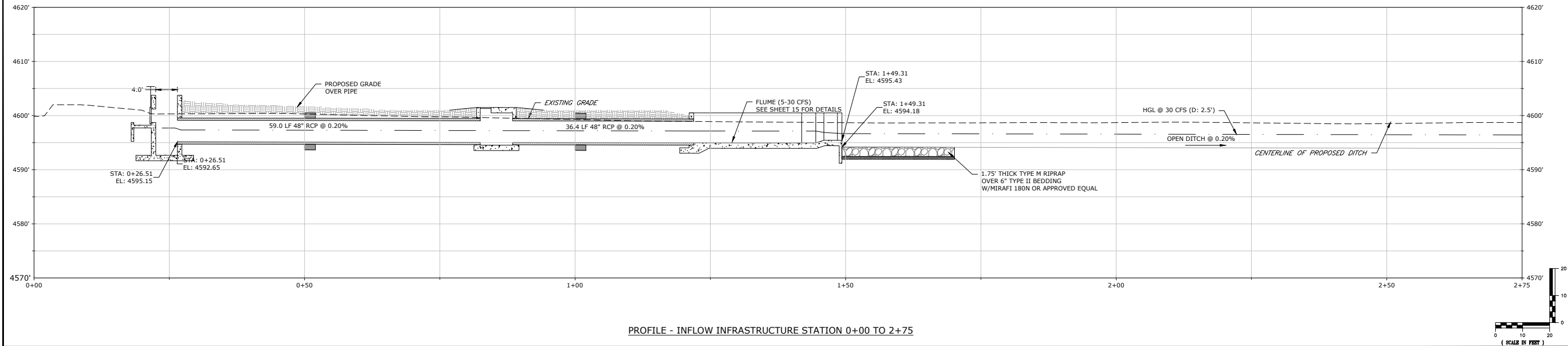
OVERALL PLAN

SHEET:

3



PLAN - INFLOW INFRASTRUCTURE STATION 0+00 TO STATION 2+75



PROFILE - INFLOW INFRASTRUCTURE STATION 0+00 TO 2+75



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INLET PLAN
&
PROFILE-1

SHEET:
4



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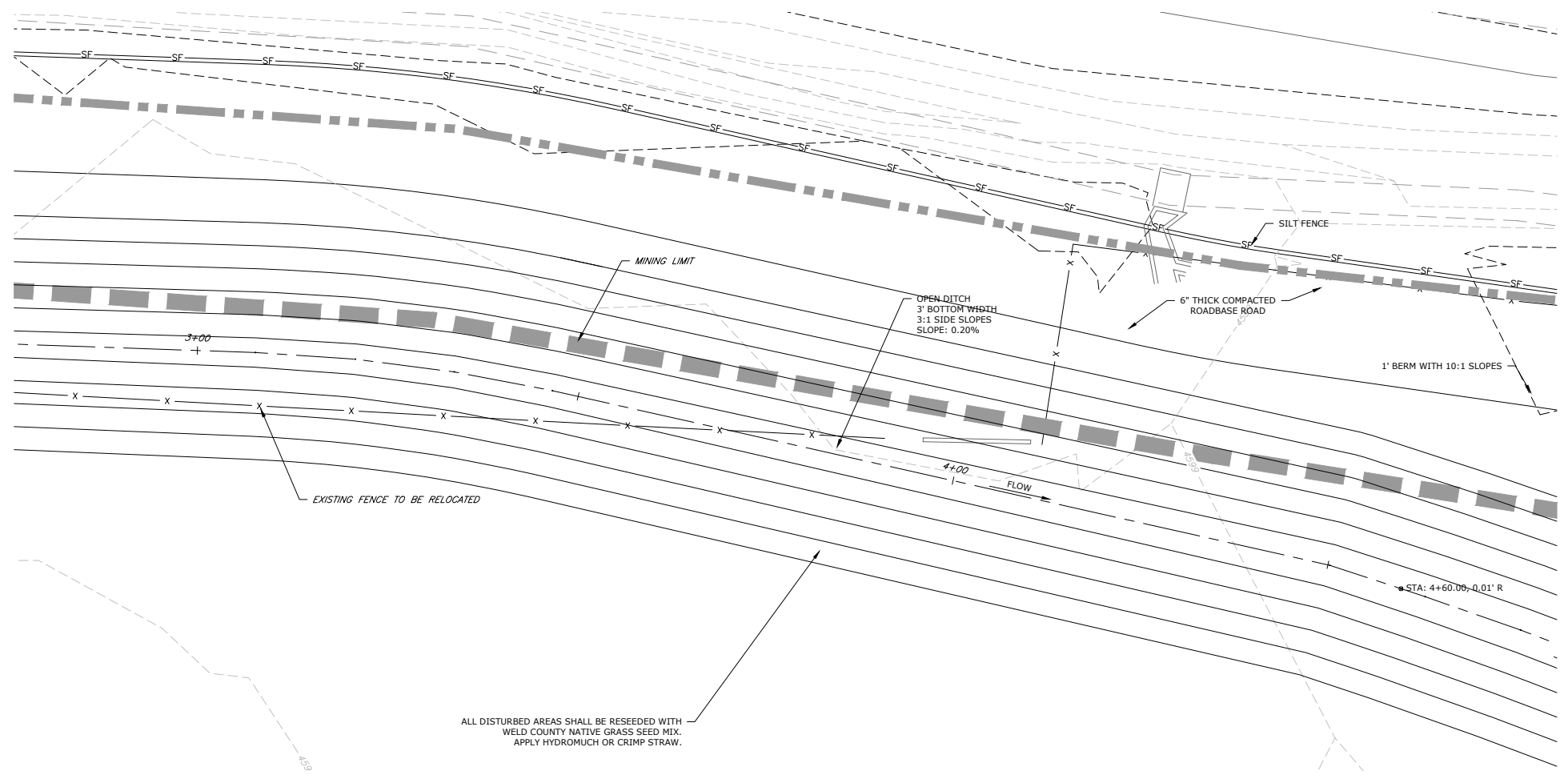
REVISIONS		
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DESIGNED BY: <u>AJS</u>	DATE: <u>June, 2023</u>
DRAWN BY: <u>JPM</u>	SCALE: <u>AS NOTED</u>
CHECKED BY: <u>BLH</u>	<u>AS NOTED</u>
JOB NO.: <u>197.004.01</u>	
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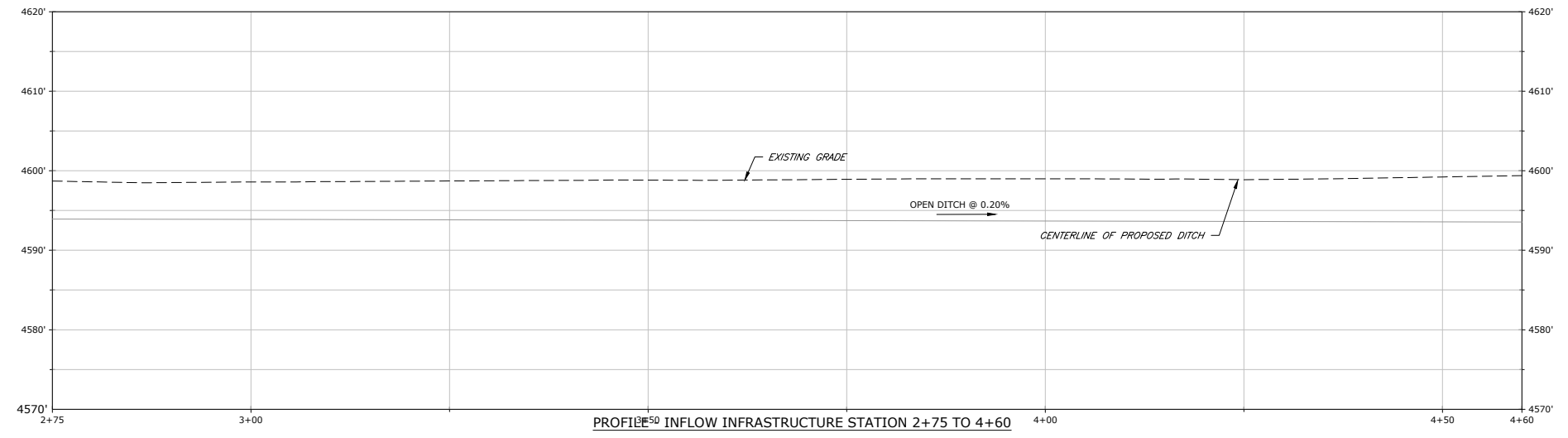
INLET PLAN &
PROFILE-2

SHEET:

5



PLAN - INFLOW INFRASTRUCTURE STATION 2+75 TO STATION 4+60



PROFILE - INFLOW INFRASTRUCTURE STATION 2+75 TO 4+60

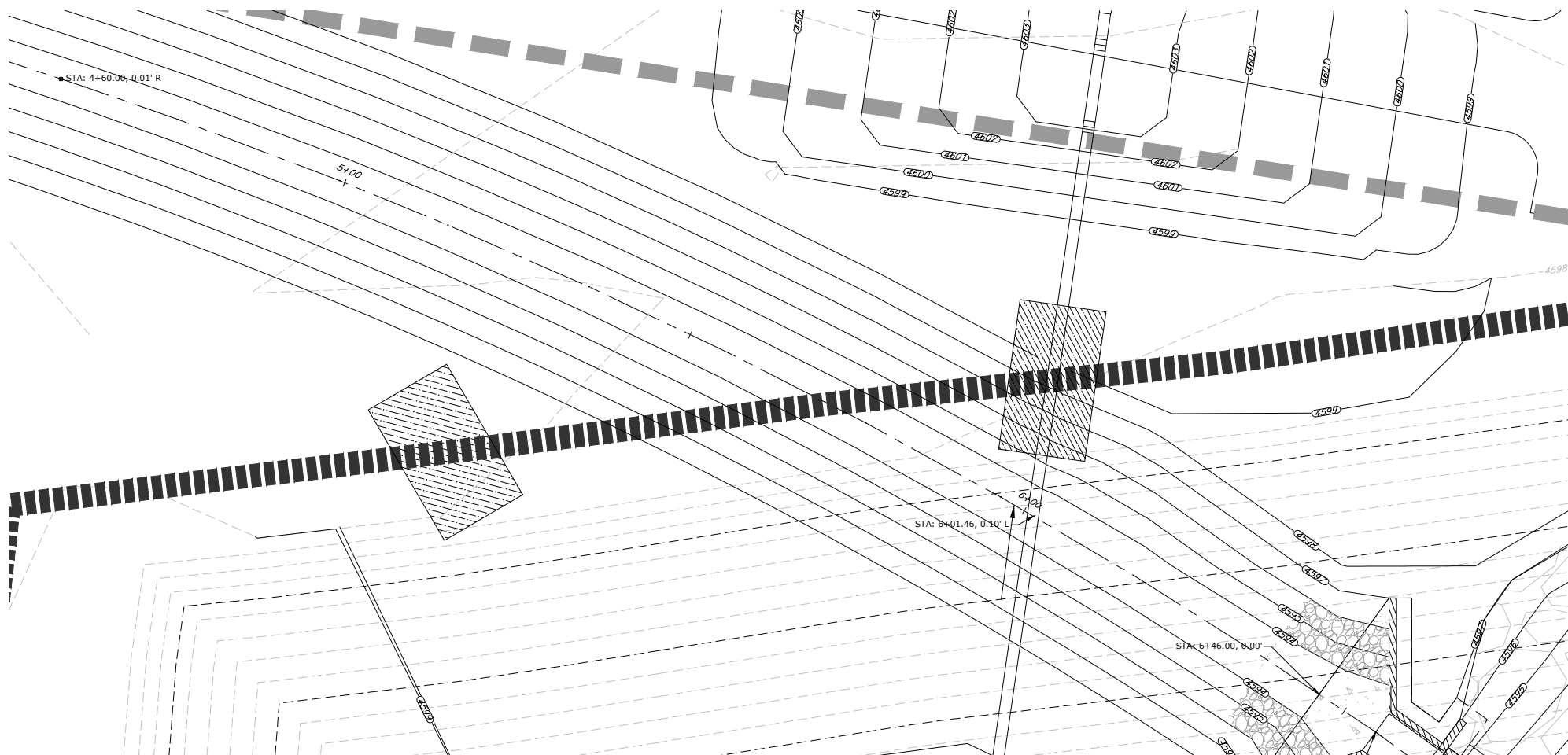


WELD COUNTY, COLORADO

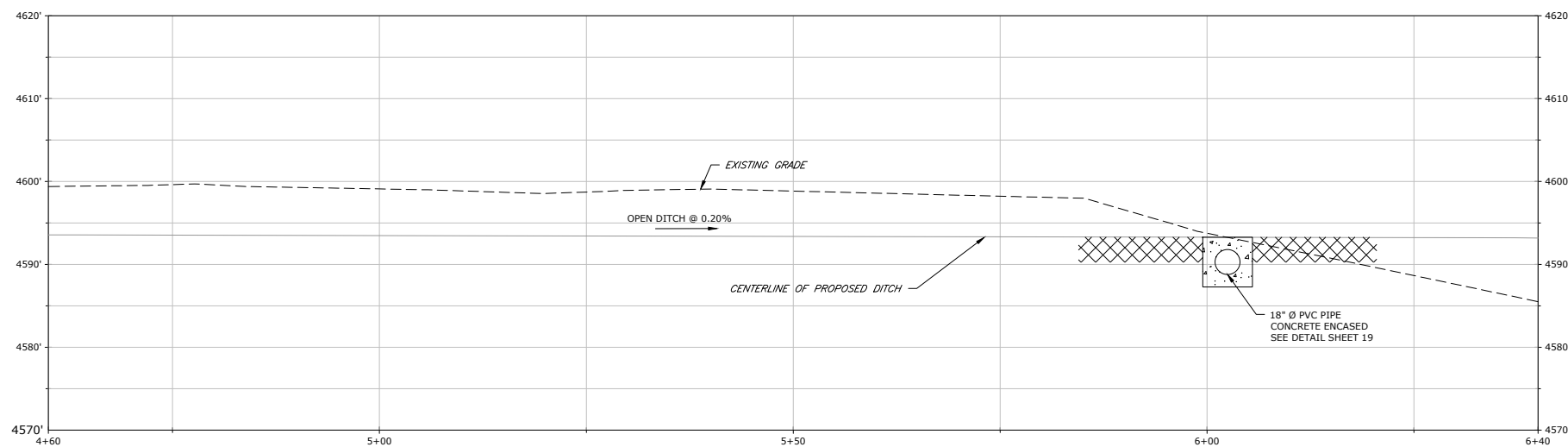
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INLET PLAN
PROFILE-3

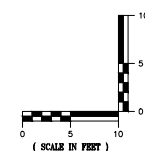
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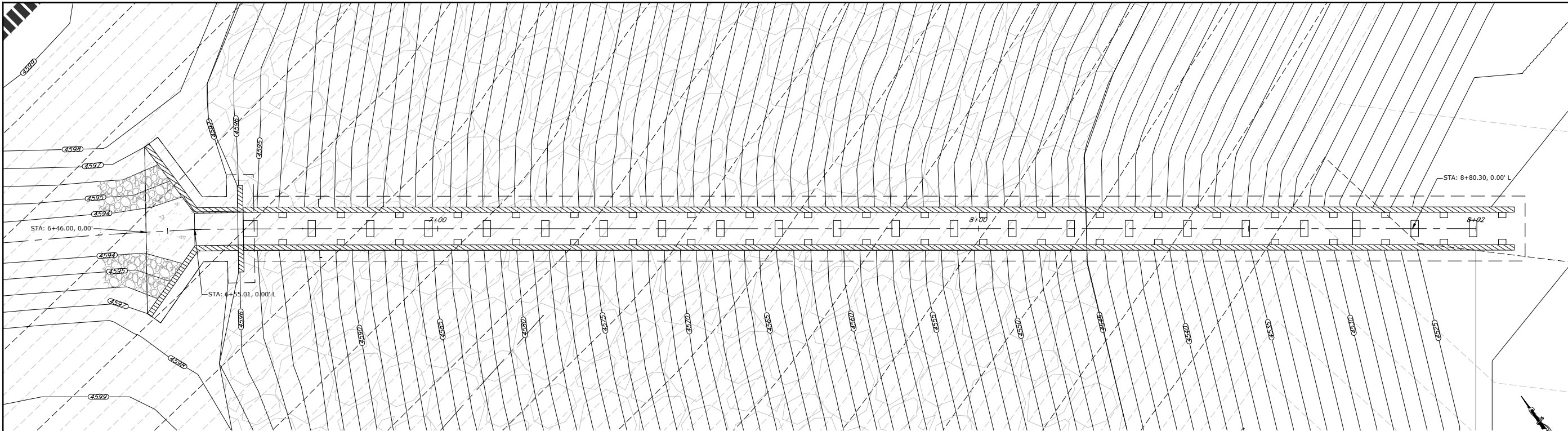


PLAN - INFLOW INFRASTRUCTURE STATION 4+60 TO STATION 6+4

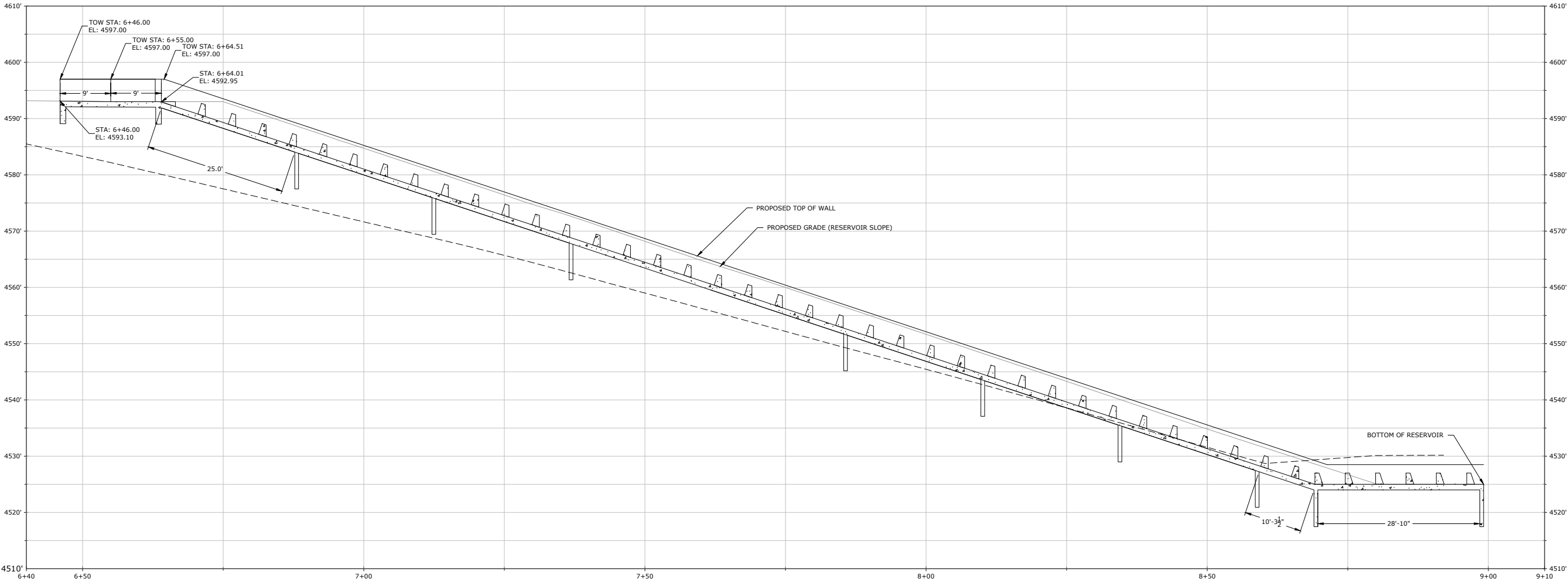
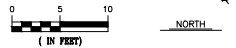


PROFILE - INFLOW INFRASTRUCTURE STATION 4+60 TO 6+40

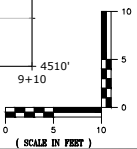




PLAN - INFLOW INFRASTRUCTURE STATION 6+40 TO STATION 9+10



PROFILE - INFLOW INFRASTRUCTURE STATION 6+40 TO 9+10



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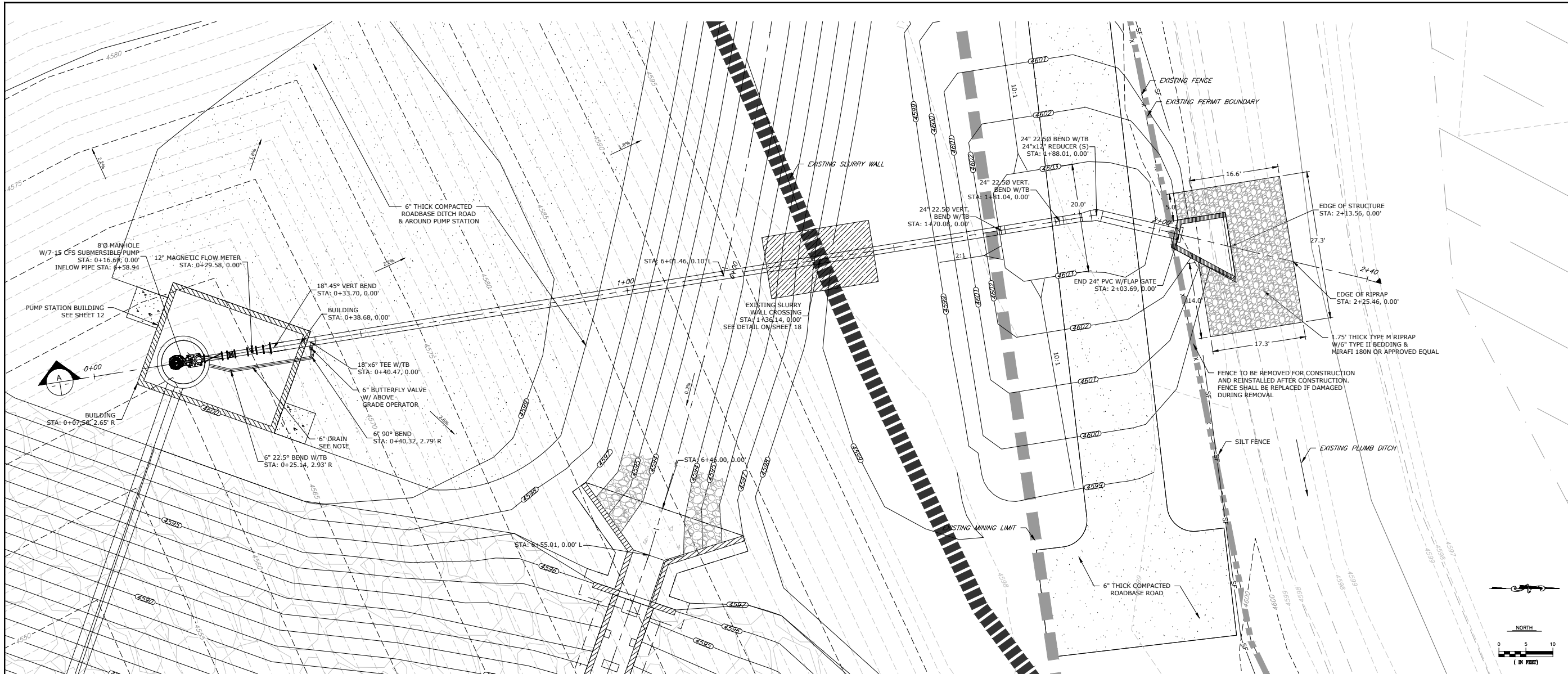
PIONEER RESERVOIR
WELD COUNTY, COLORADO

REVISIONS		
NO.	DESCRIPTION	DATE

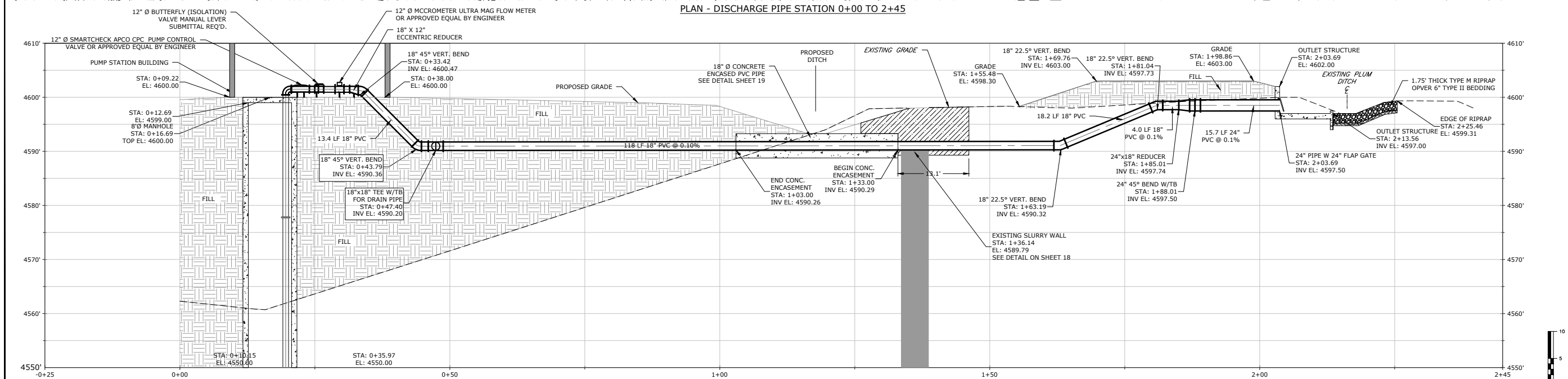
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DRAWN BY: JPM SCALE: AS NOTED
CHECKED BY: BLH AS NOTED
JOB NO.: 197.004.01
DWG NAME: PIONEER SITE INFRASTRUCTURE - FINAL.DWG

INLET PLAN &
PROFILE-4

SHEET:



PLAN - DISCHARGE PIPE STATION 0+00 TO 2+45



PROFILE - DISCHARGE PIPE STATION 0+00 TO 2+45



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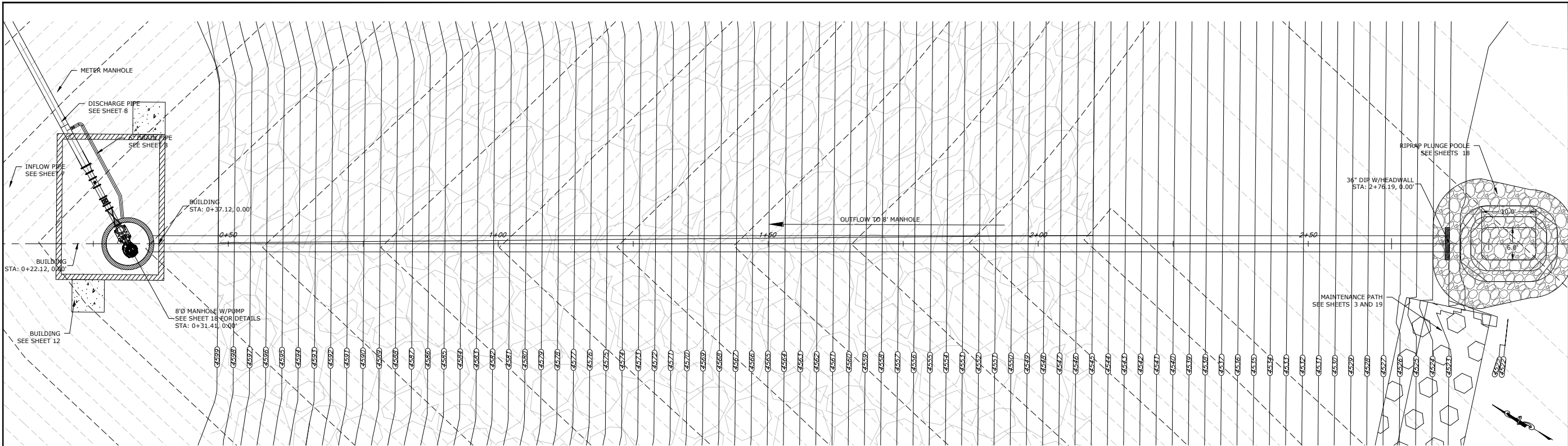
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CHECKED BY: BLH
JOB NO.: 197.004.01

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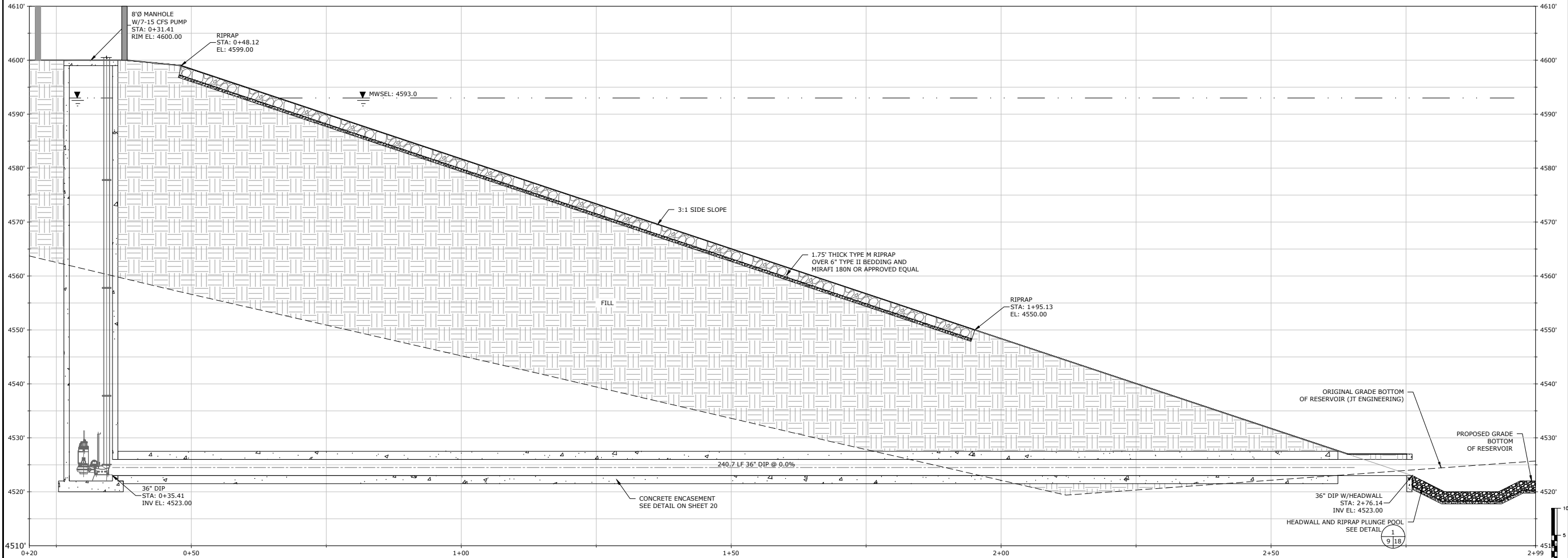
DISCHARGE PIPE
PLAN & PROFILE

SHEET:

8



PLAN - RESERVOIR PIPE STATION 0+18 TO 2+95



PROFILE - RESERVOIR PIPE STATION 0+18 TO 2+95



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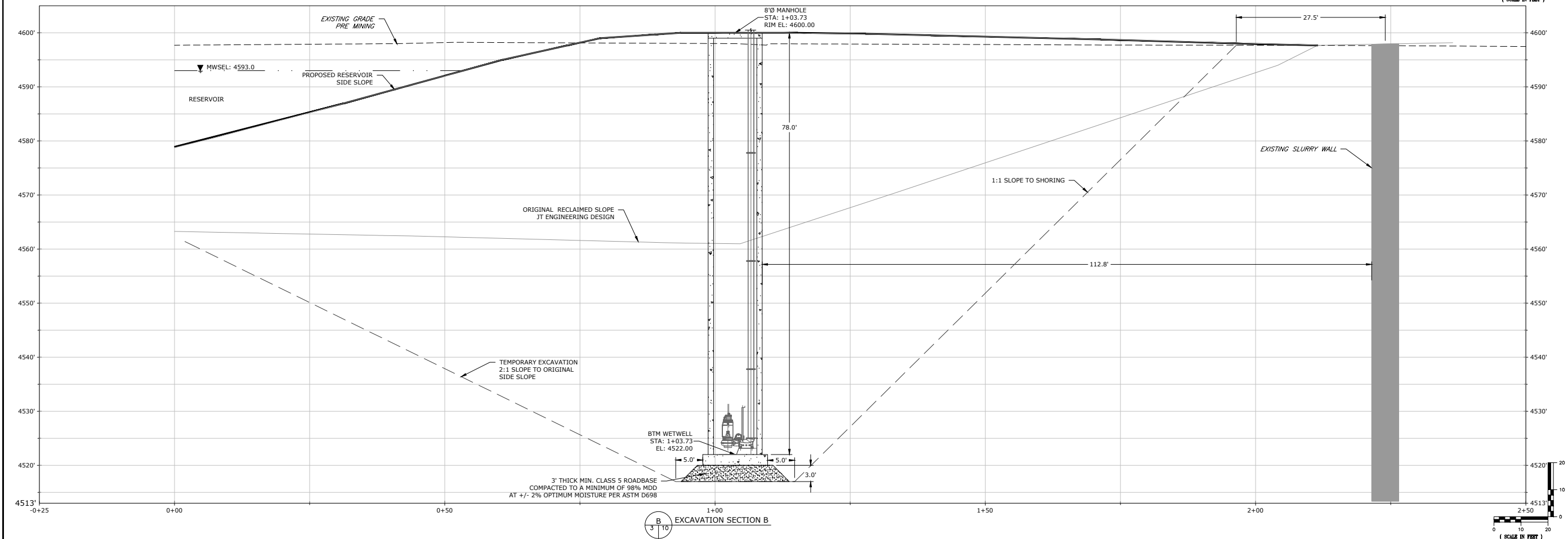
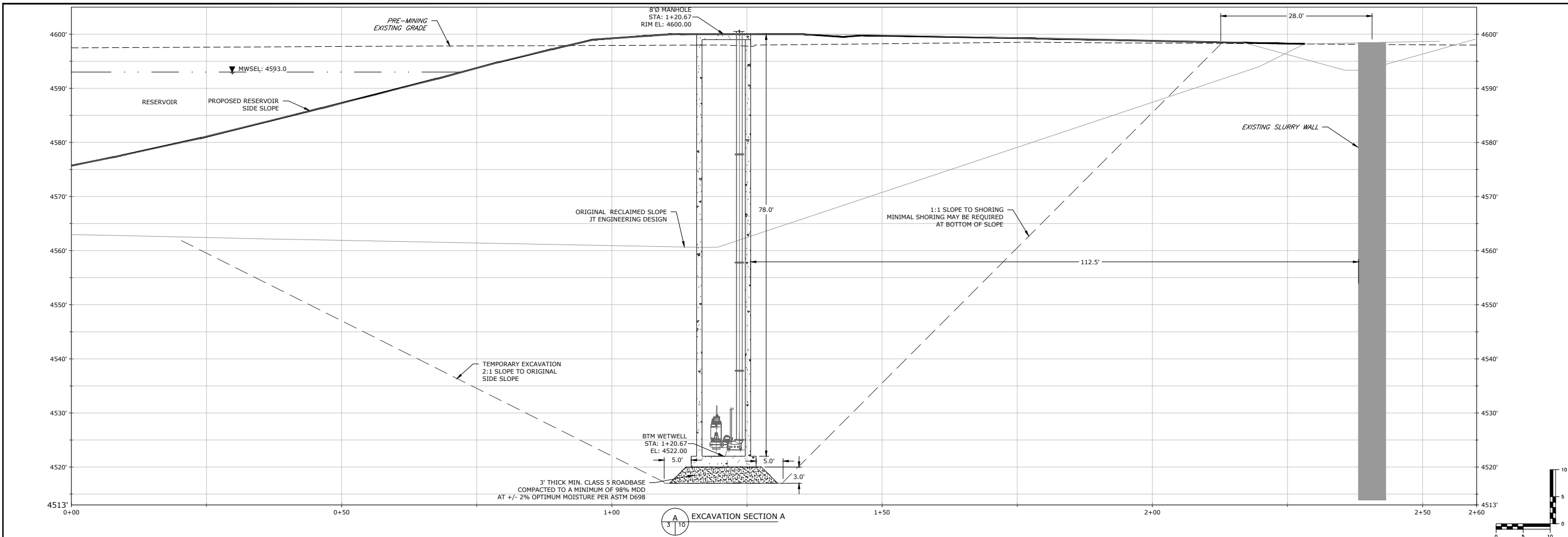
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DWG NAME: PIONEER SITE INFRASTRUCTURE-FINAL.DWG

RESERVOIR
PIPE P&P

SHEET:



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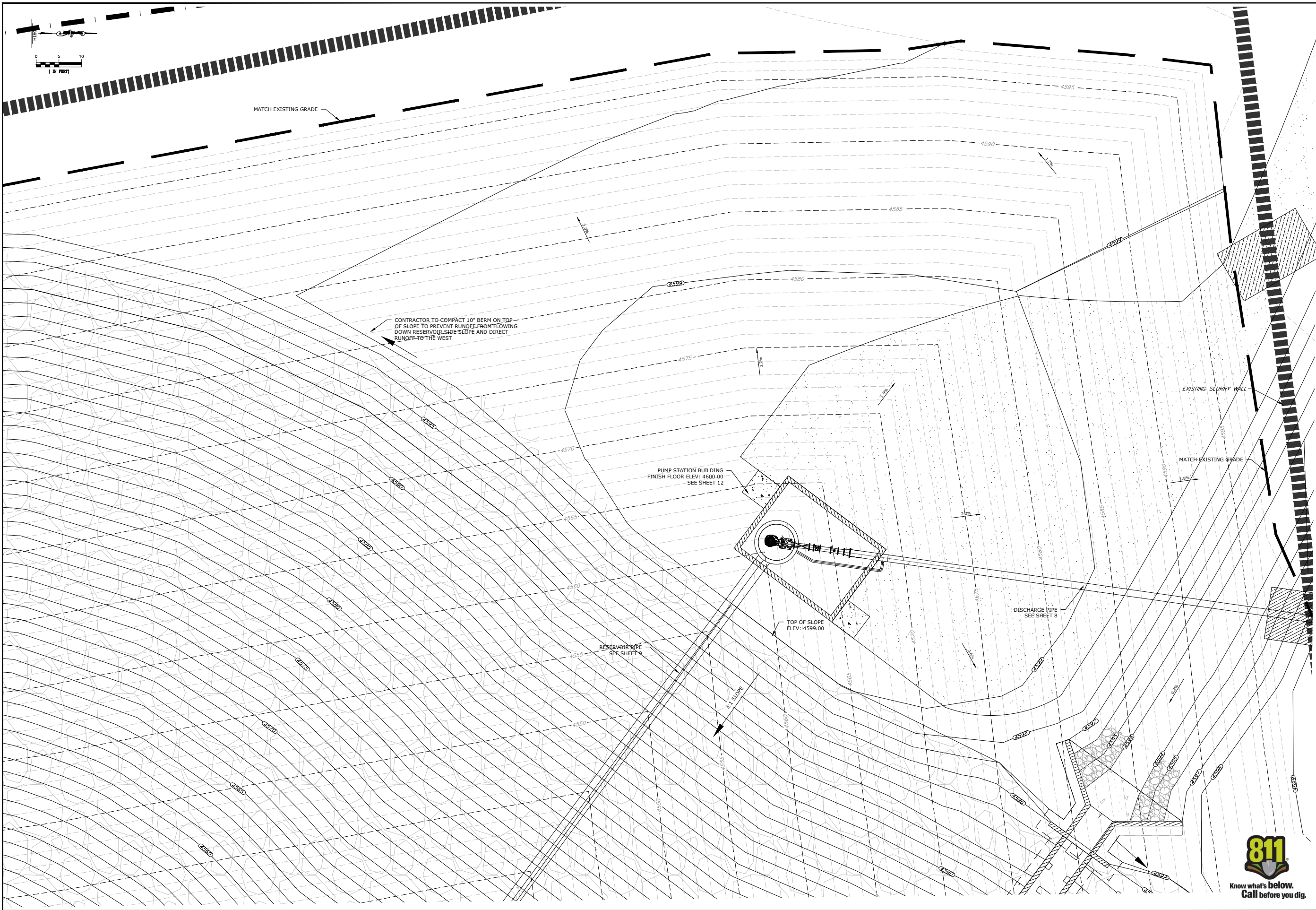
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CHECKED BY: BLH AS NOTED
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EXCAVATION
PROFILES

SHEET:

10



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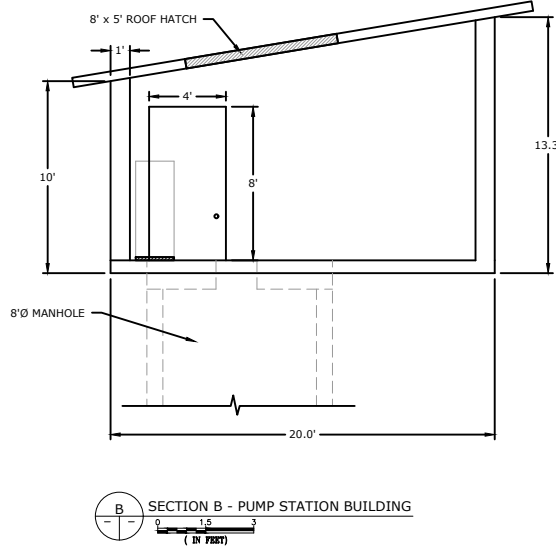
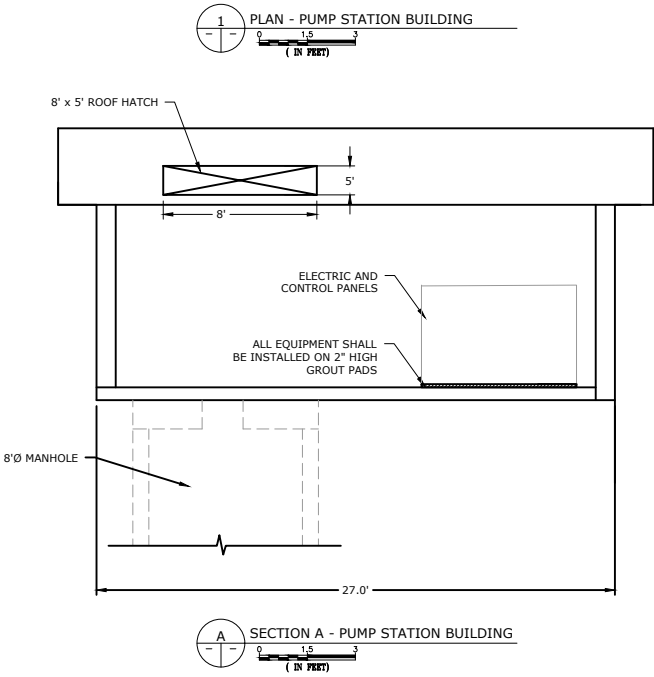
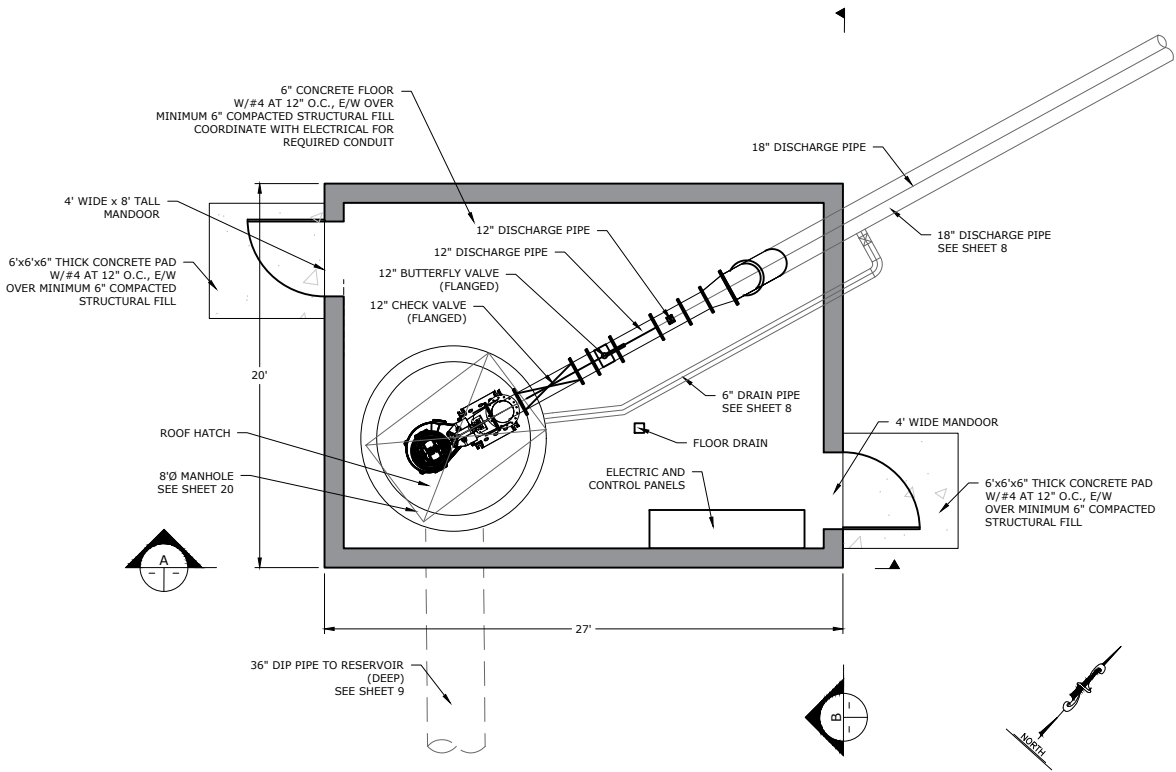
PIONEER RESERVOIR
WELD COUNTY, COLORADO

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DWG NAME: PIONEER SITE INFRASTRUCTURE-FINAL.DWG

PUMP STATION
GRADING PLAN





- PUMP NOTES:**
1. SUBMERSIBLE PUMP SHALL BE MANUFACTURED BY FLYGT WATER & WASTEWATER SOLUTIONS MODEL CP 3306/ 736 3~ 631 OR APPROVED EQUALS MUST MEET OR EXCEED ALL OPTIONS AS SHOWN IN THE TECHNICAL SPECIFICATIONS. THE LOCAL REPRESENTATIVE WHO PROVIDED PUMP DATA IS COGENT COMPANIES C/O CHARLES GREAVES. PHONE NUMBER: 303.885.9889. EMAIL: CGREAVES@COGENTCOMPANIES.COM
 2. MAGMETER SHALL HAVE OUTPUTS TO COMMUNICATE WITH THE VFD TO ALLOW A SET TARGET FLOWRATE TO BE MAINTAINED.
 3. THE TOTAL DYNAMIC HEAD REQUIRED IS AS FOLLOWS:
 - 7 CFS - MINIMUM 20', MAXIMUM 99';
 - 15 CFS - MINIMUM 30', MAXIMUM 102'

- ELECTRICAL AND CONTROLS (SCADA) NOTES:**
1. THE ELECTRICAL FOR THE PROJECT (TO THE PUMP STATION AND INSIDE THE BUILDING) IS NOT A PART OF THIS PLANSET OR CONTRACT. CCWCD WILL CONTRACT WITH ONEIL ELECTRIC FOR THE ELECTRIC DESIGN AND CONSTRUCTION. CONTRACTOR SHALL INCLUDE COST IN THIS CONTRACT TO COORDINATE WITH THE ELECTRICAL CONTRACTOR.
 2. THE CONTROLS (SCADA) FOR THE PROJECT IS NOT A PART OF THIS PLANSET OR CONTRACT. CCWCD WILL CONTRACT WITH HYDROLOGIK FOR THE DESIGN AND INSTALLATION OF CONTROL EQUIPMENT. CONTRACTOR SHALL INCLUDE COST IN THIS CONTRACT TO COORDINATE WITH THE CONTROLS CONTRACTOR.

- GENERAL PUMP STATION BUILDING NOTES:**
1. PROVIDE DESIGN BUILD PUMP STATION BUILDING PER THE PLAN, DETAILS AND SPECIFICATIONS PROVIDED. PROVIDE PLANS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. BUILDING TO MEET THE FOLLOWING MINIMUM SPECIFICATIONS AS WELL AS ALL LOCAL BUILDING CODES.

- PUMP STATION BUILDING GENERAL DESCRIPTION:**
2. 27' x 20' WITH MINIMUM CEILING CLEARANCE OF 13 FEET.
 3. PROVIDE TWO ACCESS DOORS PER THE PLAN.

- BUILDING EXTERIOR:**
4. BROKEN FACE CMU BLOCK.
 5. BLOCK: BASALITE 8" NORMAL WEIGHT.
 6. MORTAR: AMERIMIX COLORED, TYPE S, COLOR 470R. SUBMIT SAMPLE FOR REVIEW AND APPROVAL BY OWNER.
 7. CONTROL JOINT: WIRE-BOND PVC CONTROL JOINT MODEL NO. 2901.
 8. LADDER MESH: WIRE-BOND SERIES 200, STANDARD WEIGHT, NOT DIPPED GALVANIZED.
 9. INSULATION: PERLITE LOOSE-FILL MASONRY INSULATION.

- BUILDING ROOF:**
10. SLOPE STYLE METAL ROOF WITH 24-INCH OVERHANG. PROVIDE 1/5 ROOF SLOPE.
 11. METAL ROOFING: SHEFFIELD METALS INTERNATIONAL SMI 1.5-INCH SNAPLOCK 450 SL STANDING SEAM. COLOR TO BE SLATE BLUE.
 12. SOFFIT PANEL: SHEFFIELD METALS INTERNATIONAL SMI 1.0-INCH FWP.
 13. UNDERLAYMENT: TAMKO TW METAL AND TILE.
 14. A 8' x 5' ROOF HATCH LOCATED ABOVE THE PUMP FOR PUMP REMOVAL IS REQUIRED.

ROOF INSULATION: SHEETROCK CEILING W/5/8-INCH SHEET ROCK AS MINIMUM OR PER LOCAL CODE. PROVIDE R30 CEILING INSULATION. PROVIDE ROOF VENTS PER LOCAL CODE.

- BUILDING FOUNDATION AND FLOOR:**
15. FOUNDATION AND FLOOR TO BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER. PLANS FOR THE FOUNDATION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL AND MUST MEET ALL LOCAL CODES AND RULES.
 16. FOUNDATION DESIGN SHALL BE DESIGNED FOR PIPE PENETRATIONS INTO AND OUT OF THE BUILDING AS SHOWN IN THE DETAILS.

- BUILDING DOORS:**
17. DOORS SHALL BE STEEL WITH STEEL FRAMES RATED FOR EXTERIOR USE.
 18. PAINT DOORS AND FRAMES WITH COLOR TO MATCH METAL ROOF.
 19. EACH DOOR SHALL BE PROVIDED WITH A HEAVY DUTY DEAD BOLT LOCK. LOCK TO BE KEYED PER OWNER'S REPRESENTATIVE.

- COORDINATION WITH OTHER TRADES:**
20. ELECTRICAL SYSTEM FOR BUILDING AND PUMP IS DESIGN BUILD AND SHALL CONFORM TO ALL LOCAL CODES. COORDINATION CONDUIT PENETRATIONS THROUGH THE FLOOR, WALLS AND FOUNDATION WITH CIVIL RESOURCES, LLC.
 21. HVAC SYSTEM WILL BE PROVIDED BY THE OWNER. HVAC SYSTEM WILL BE DESIGNED TO PROVIDE ADEQUATE COOLING, HEATING AND VENTILATION FOR PROPERTY OPERATION OF THE ELECTRICAL CONTROL EQUIPMENT. COORDINATE INSTALLATION WITH THE OWNERS REPRESENTATIVE.

- GENERAL PIPE NOTES:**
1. INTERIOR ABOVE GRADE PIPE SHALL BE COATED WITH APOXY BLUE PAINT. PROVIDE PAINT COLOR SAMPLES FOR OWNER APPROVAL.
 2. PROVIDE ADJUSTABLE PIPE SUPPORTS FOR ALL INTERIOR PIPING. PAINT PIPE SUPPORTS THE SAME COLOR AS THE PIPE.
 3. ALL PRESSURE PIPE SHALL BE PVC DR25. SUBMITTAL REQUIRED.
 4. MAG METER SHALL BE MANUFACTURED BY MCCROMETER OR APPROVED EQUAL. SUBMITTAL REQUIRED.



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970.330.4540 (p)
RANDY RAY

PIONEER RESERVOIR
WELD COUNTY, COLORADO

REVISIONS		
NO.	DESCRIPTION	DATE

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PUMP STATION
BUILDING & LAYOUT
PLAN

SHEET:
12





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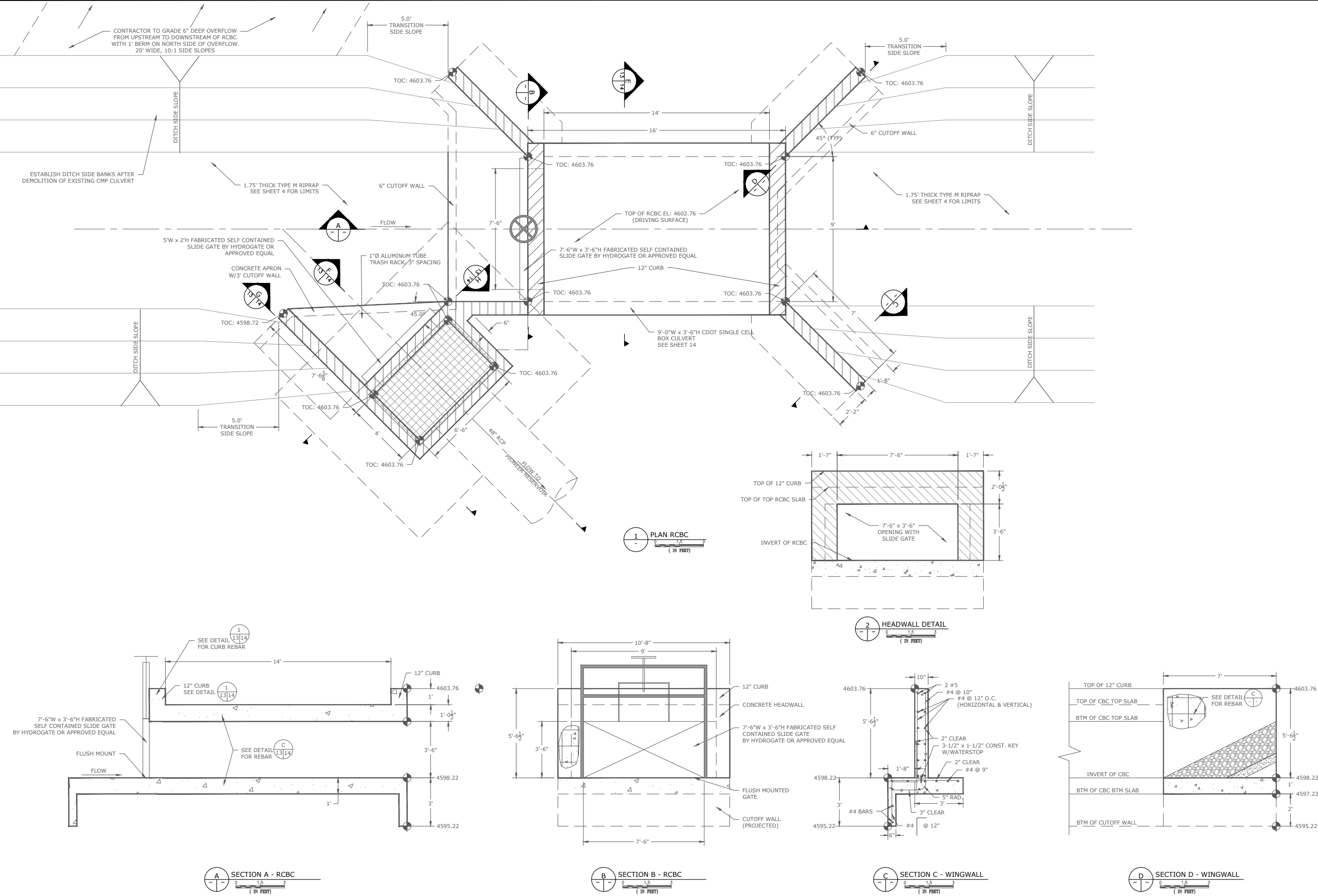
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DIVERSION
DETAILS-1

SHEET:

13





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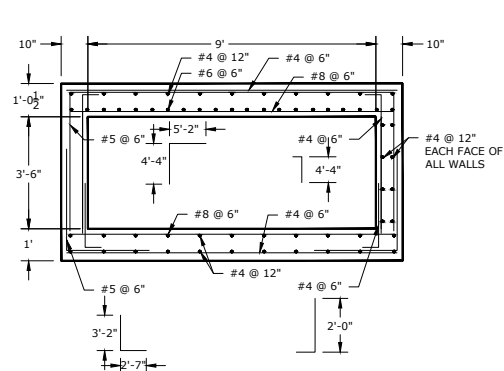
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DIVERSION
DETAILS-2

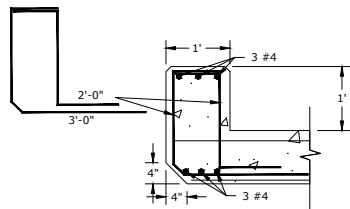
SHEET:

14

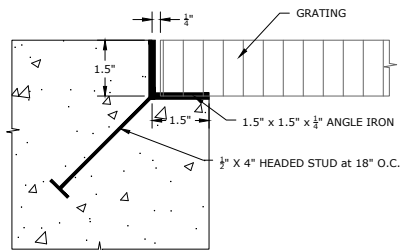
NOTES:
1. REINFORCED CONCRETE BOX CULVERT SHALL CONFORM TO CDOT M STANDARD NO. M-601-1. LATEST ADDITION.



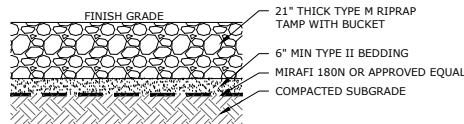
SECTION E - RCBC
(IN FEET)



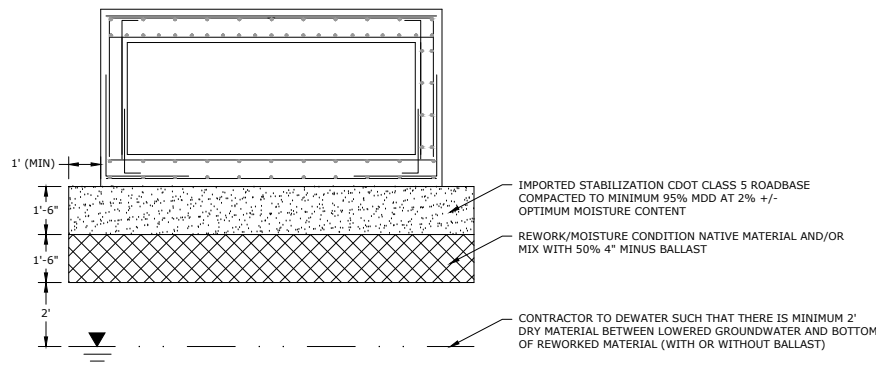
HEADWALL DETAIL
(IN FEET)



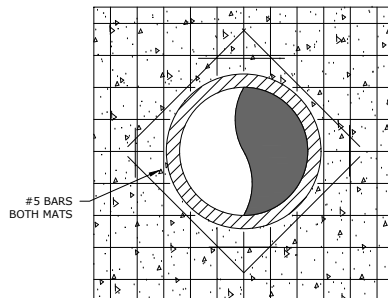
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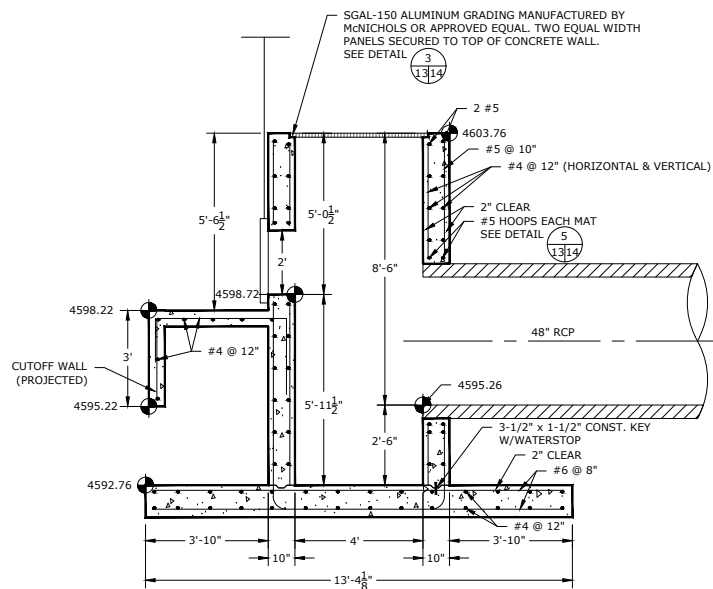
RIPRAP DETAIL
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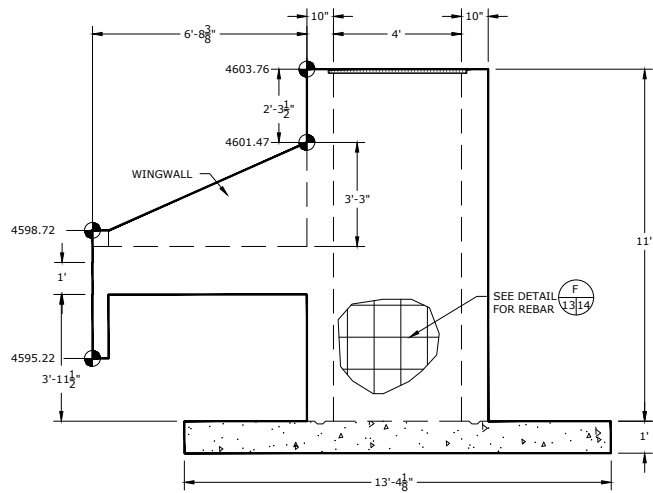
RCBC, WINGWALL AND DIVERSION SUBGRADE STABILIZATION
(IN FEET)



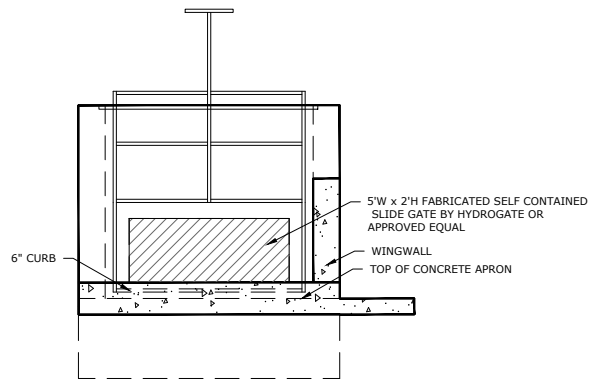
PIPE PENETRATION DETAIL
(IN FEET)



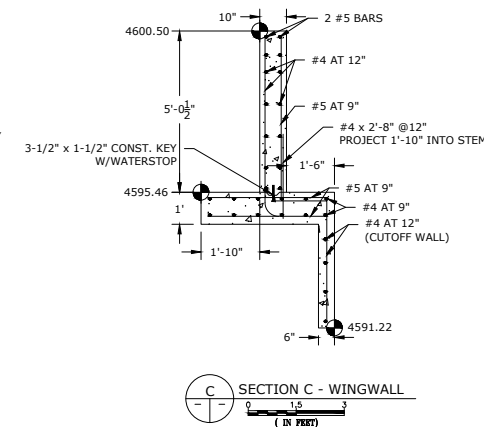
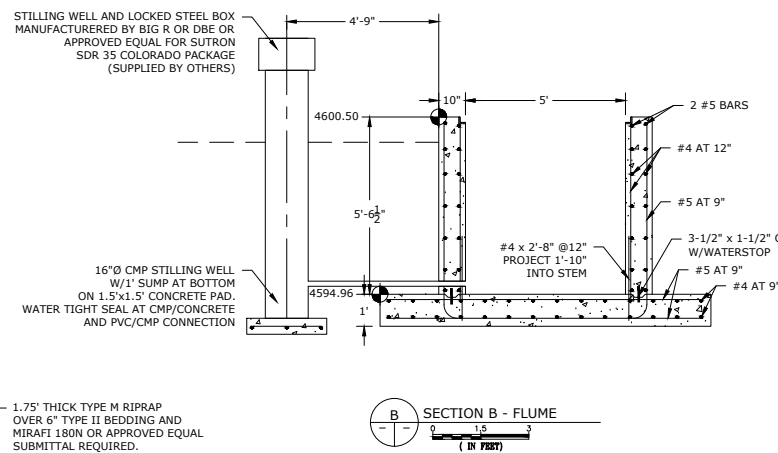
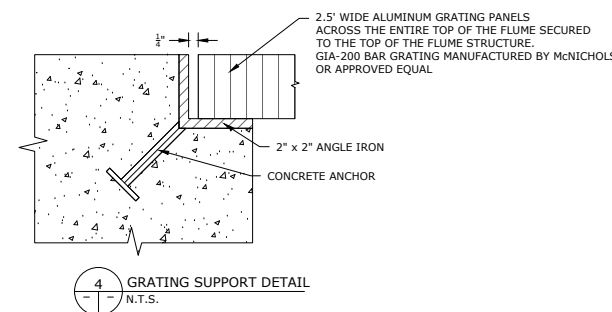
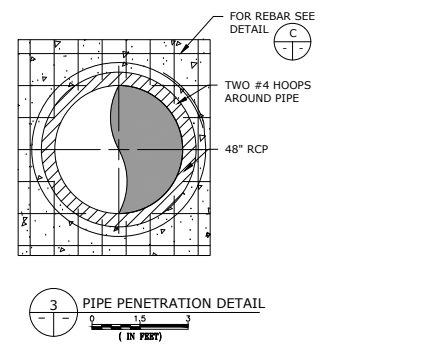
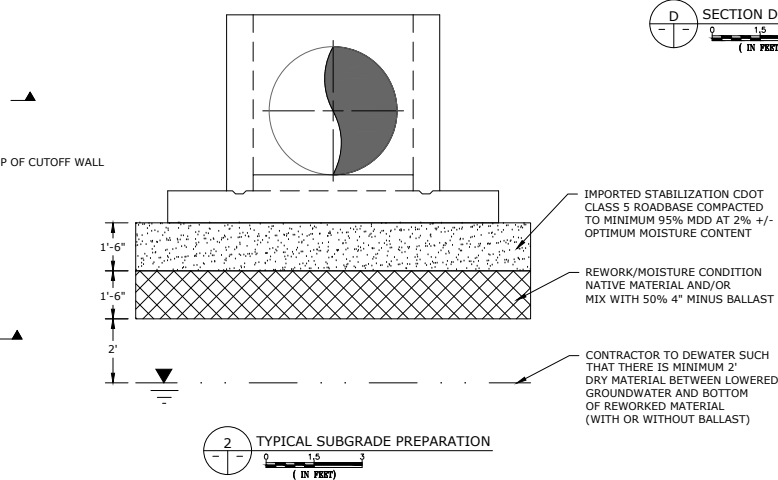
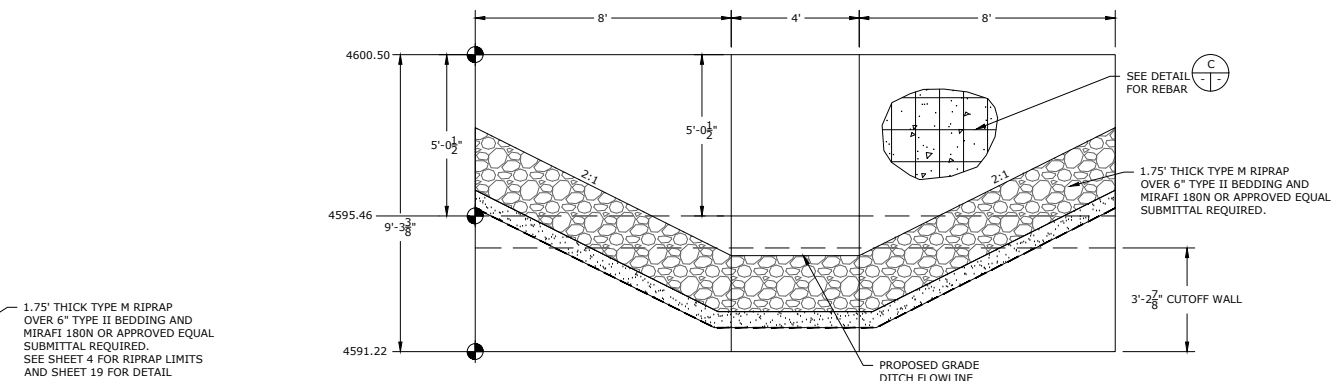
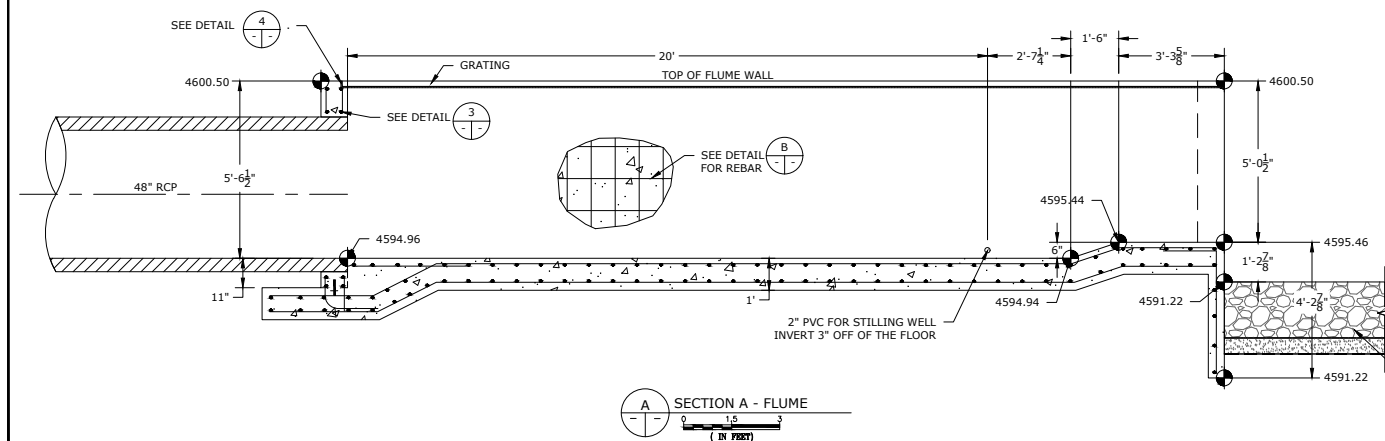
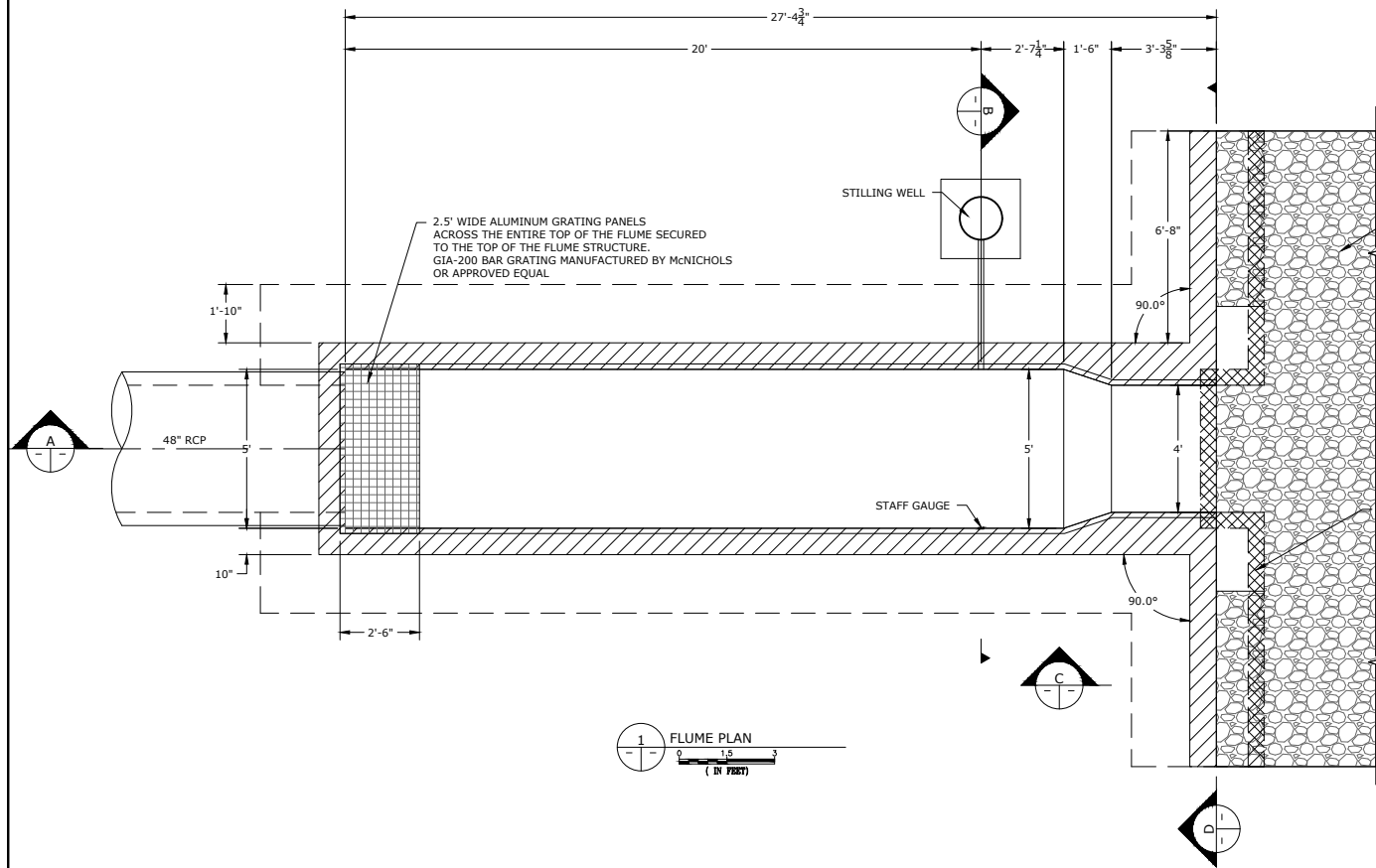
SECTION F - RCBC
(IN FEET)



SECTION G - DIVERSION
(IN FEET)



SECTION H - DIVERSION
(IN FEET)



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FLUME DETAILS

SHEET:



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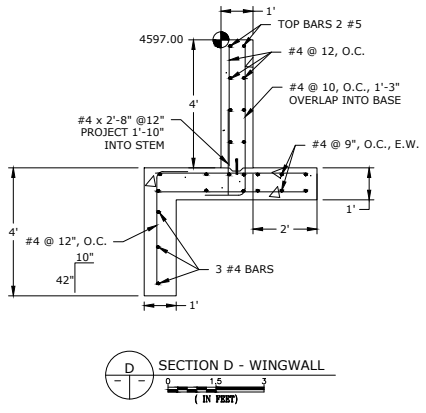
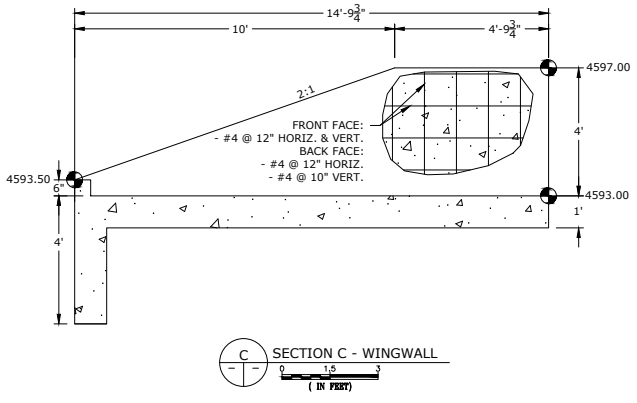
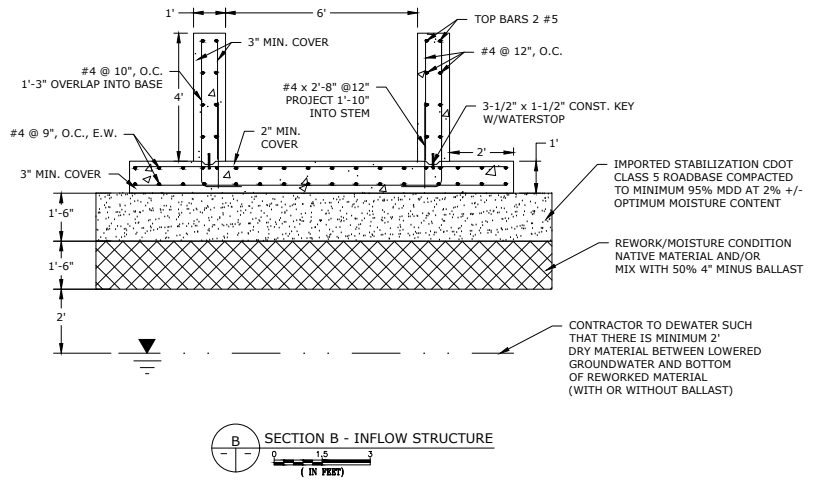
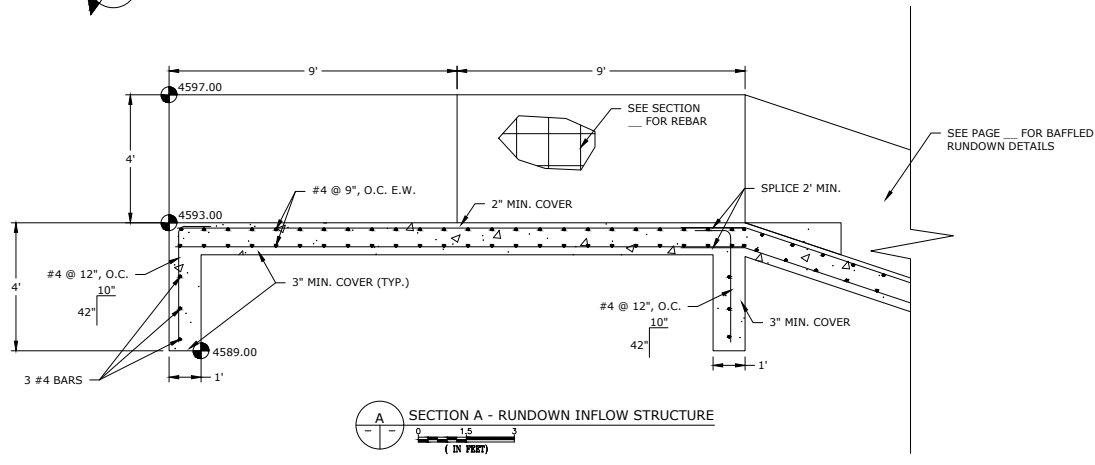
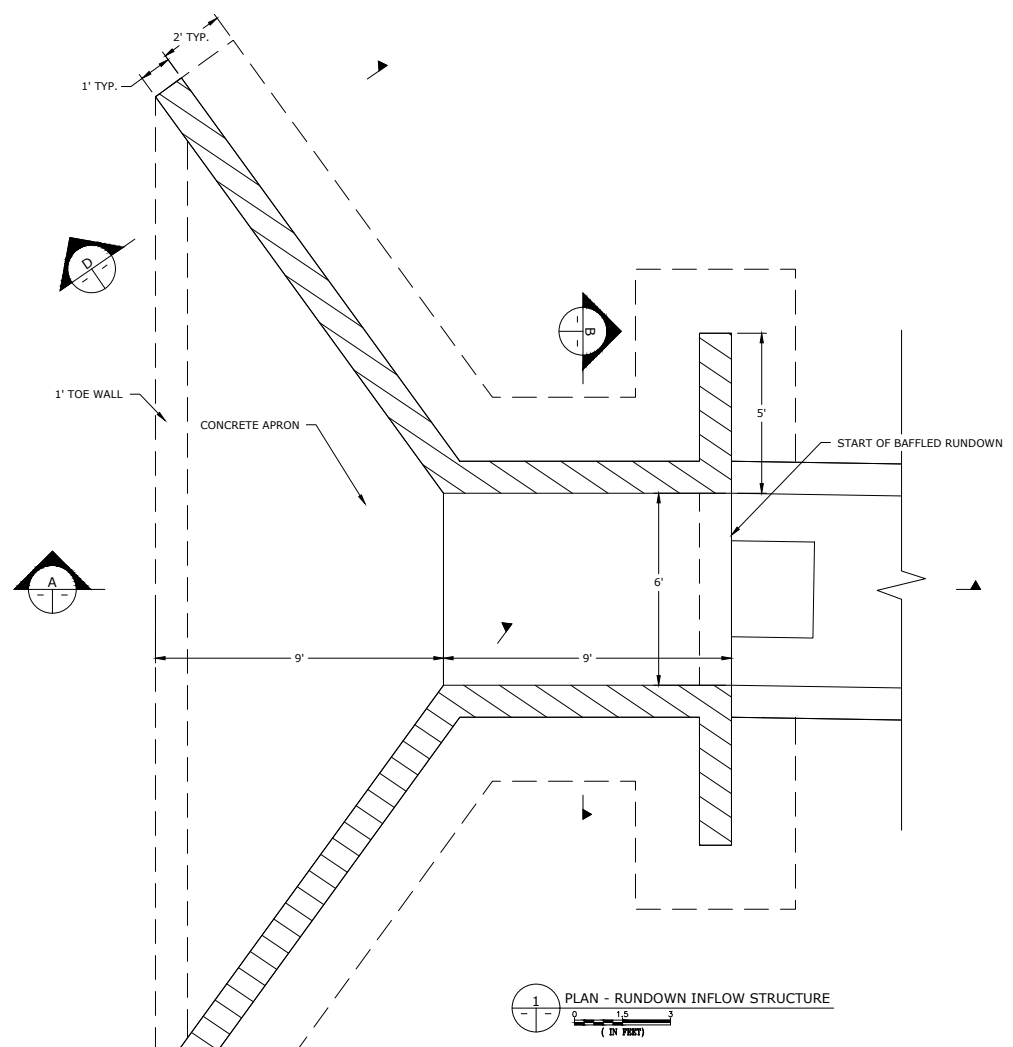
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SCALE: AS NOTED

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RUNDOWN
INFLOW
STRUCTURE
DETAILS

SHEET:





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REVISIONS

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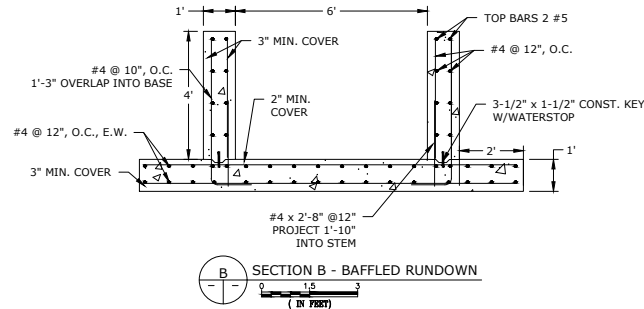
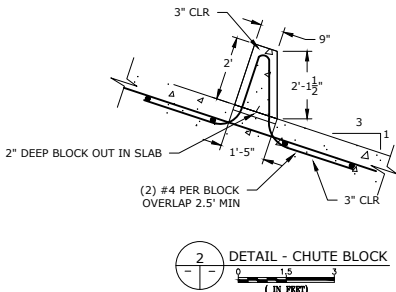
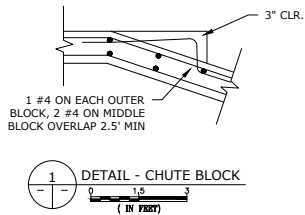
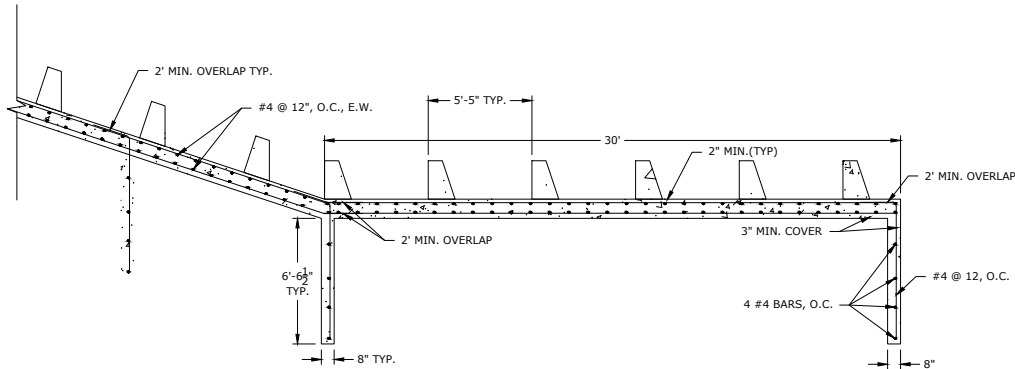
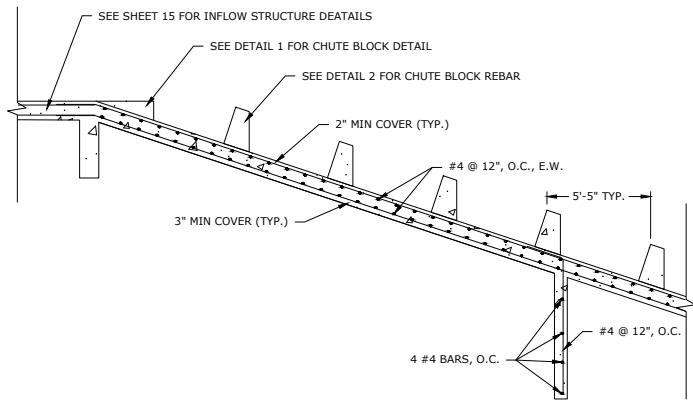
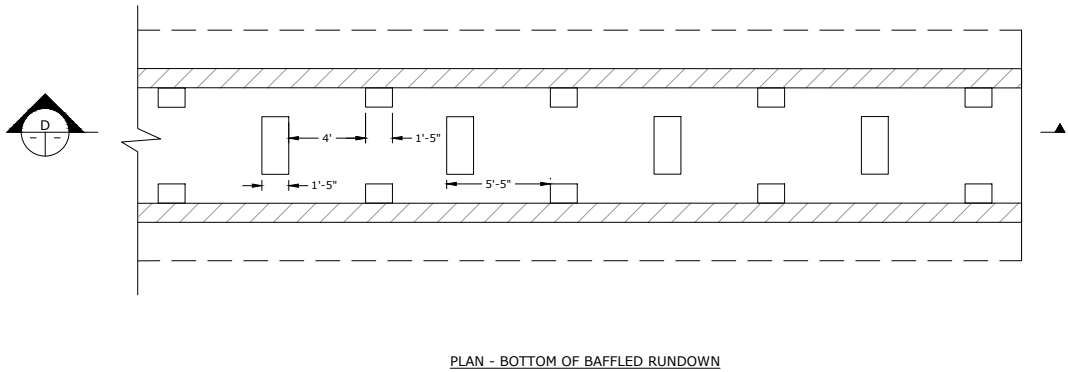
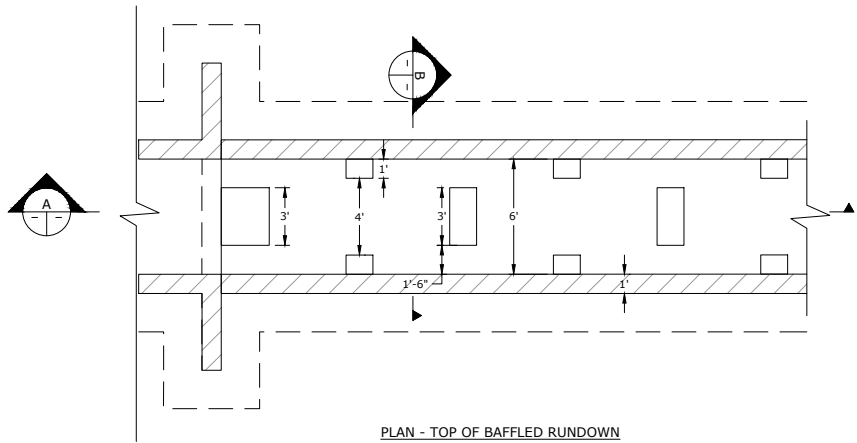
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BAFFLED
RUNDOWN
INFLOW
CHANNEL

SHEET:

17





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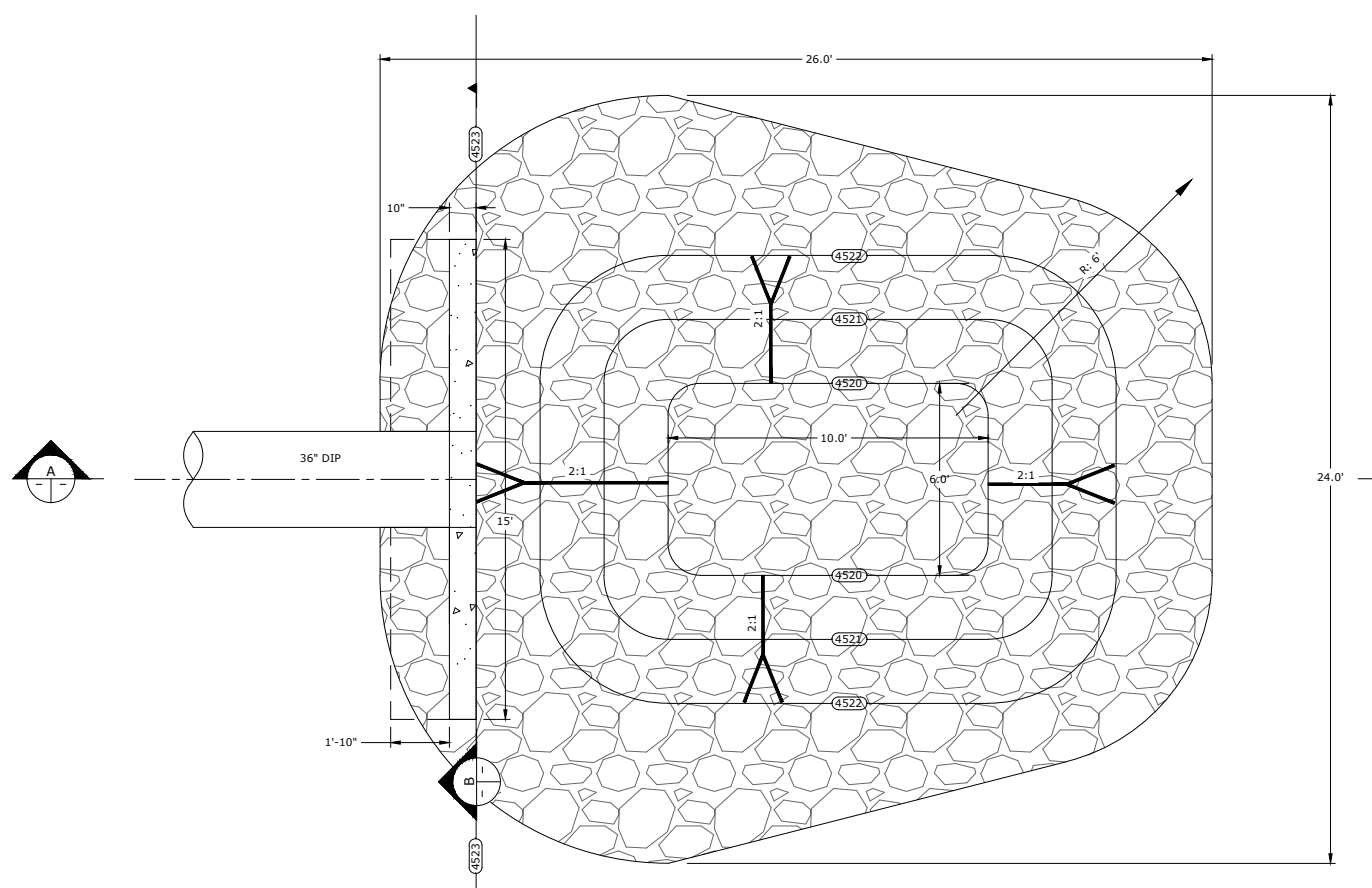
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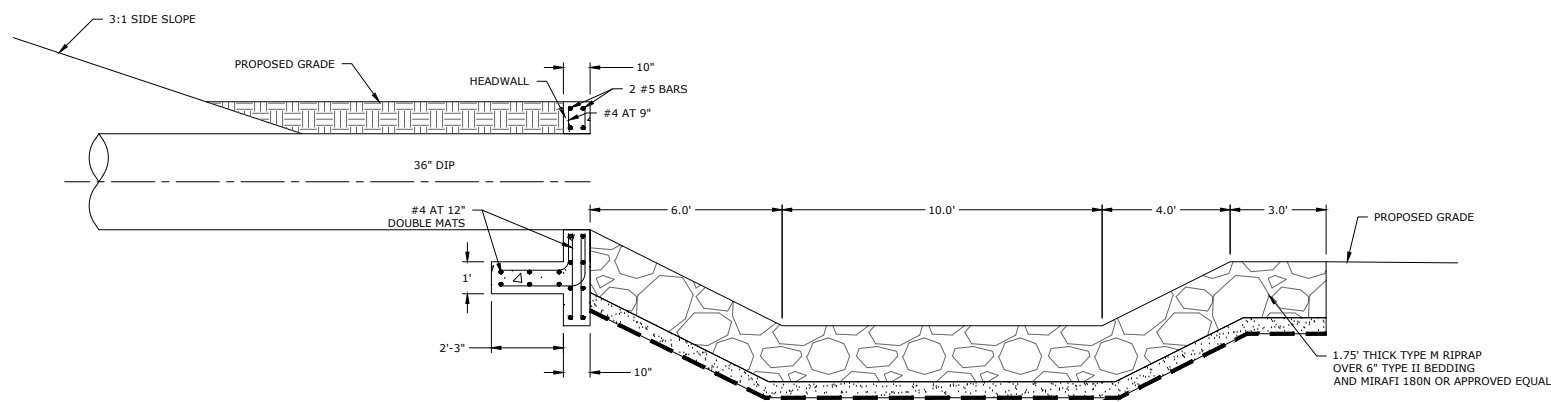
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SITE
DETAILS-1

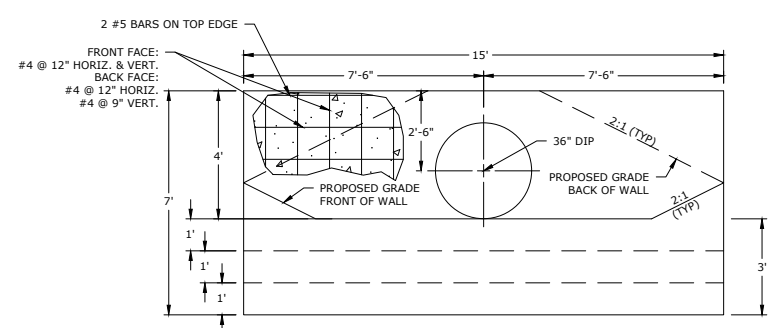
SHEET:
18



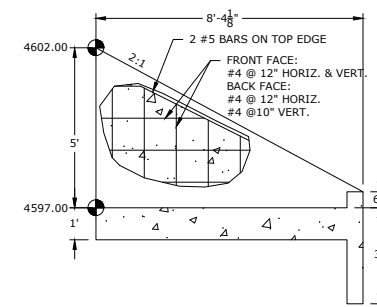
1 PLAN - HEADWALL & RIPRAP PLUNGE POOL
(IN FEET)



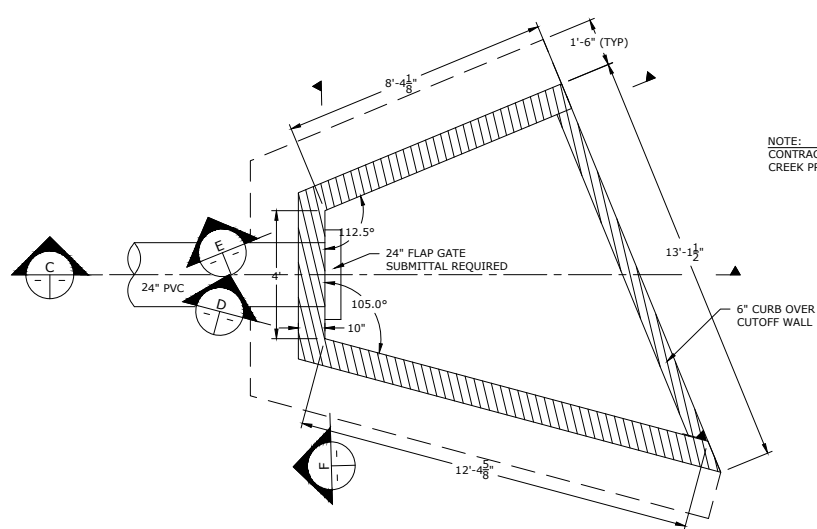
A SECTION - HEADWALL & RIPRAP PLUNGE POOL
(IN FEET)



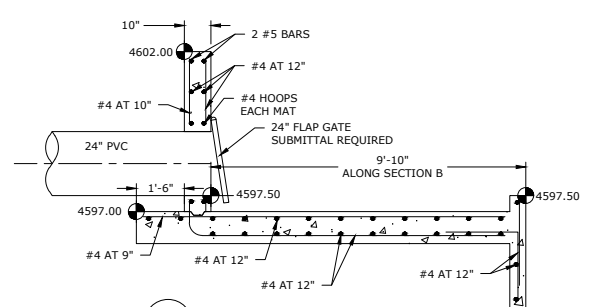
B SECTION - HEADWALL & RIPRAP PLUNGE POOL
(IN FEET)



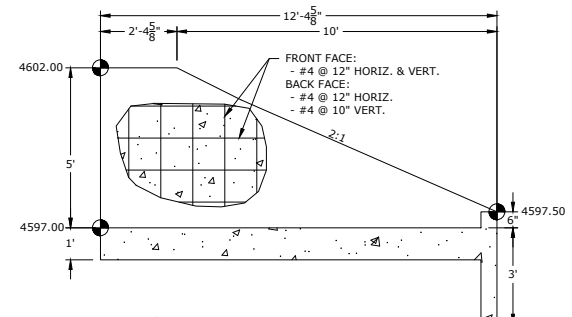
E SECTION E - DISCHARGE STRUCTURE
(IN FEET)



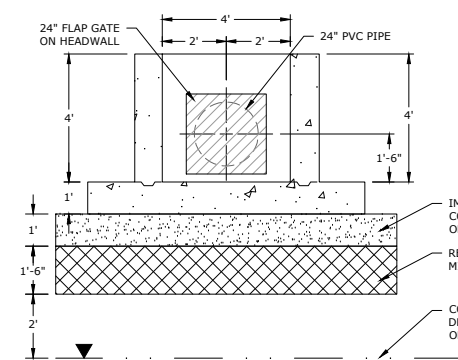
2 PLAN - DISCHARGE STRUCTURE
(IN FEET)



C SECTION C - DISCHARGE STRUCTURE
(IN FEET)



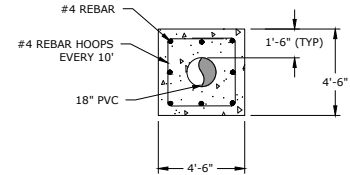
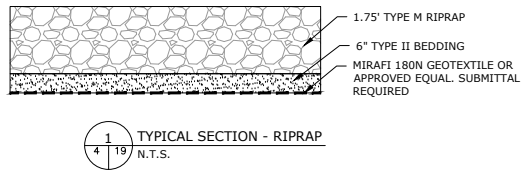
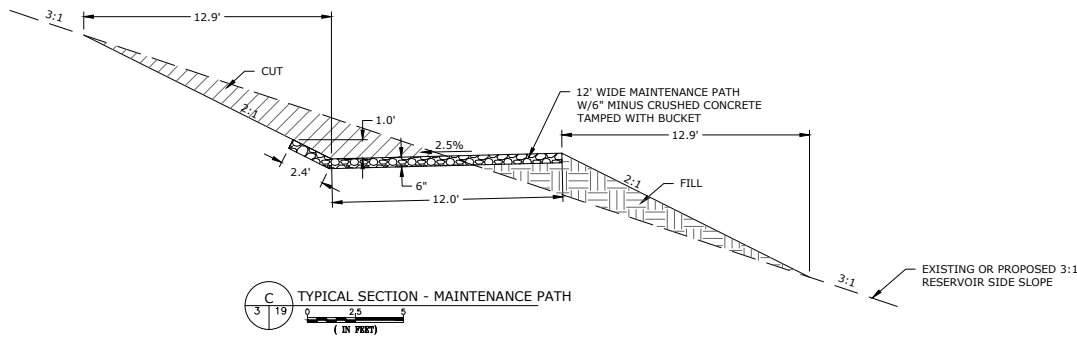
D SECTION D - DISCHARGE STRUCTURE
(IN FEET)



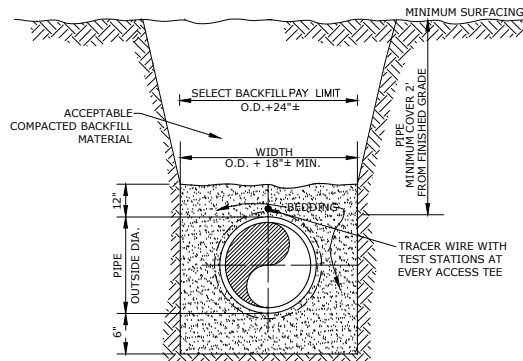
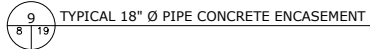
F SECTION F - DISCHARGE STRUCTURE
(IN FEET)

NOTE:
CONTRACTOR TO VERIFY ELEVATIONS OF PLUMB
CREEK PRIOR TO CONSTRUCTION.

IMPORTED STABILIZATION CDOT CLASS 5 ROADBASE
COMPACTED TO MINIMUM 95% MDD AT 2% +/-
OPTIMUM MOISTURE CONTENT
REWORK/MOISTURE CONDITION NATIVE MATERIAL AND/OR
MIX WITH 50% 4" MINUS BALLAST
CONTRACTOR TO DEWATER SUCH THAT THERE IS MINIMUM 2"
DRY MATERIAL BETWEEN LOWERED GROUNDWATER AND BOTTOM
OF REWORKED MATERIAL (WITH OR WITHOUT BALLAST)

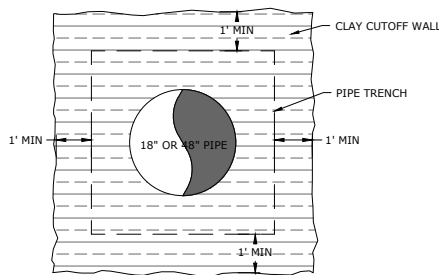
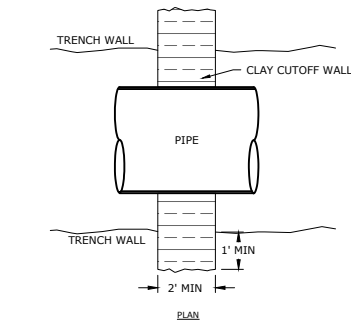


- NOTES:
1. ALL PVC SHALL BE SCHEDULE 40.
 2. BOND BREAKER REQUIRED BETWEEN CONCRETE AND PVC.
 3. CONCRETE SHALL BE ALLOWED TO CURE PER THE SPECIFICATIONS PRIOR TO BACKFILL.

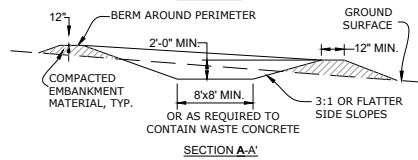
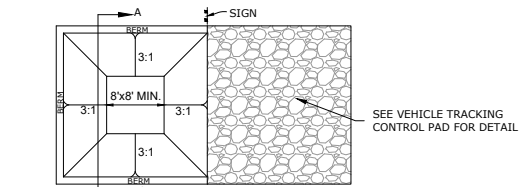


MINIMUM COMPACTION DENSITY	
PIPE BEDDING	90% OF MAXIMUM STANDARD DENSITY
TRENCH BACKFILL:	
FIELD AND OPEN AREAS	90% OF MAXIMUM STANDARD DENSITY

- NOTE:
1. MINIMUM BEDDING BELOW PIPE SHALL BE 6\"/>
 2. BEDDING SHALL BE TYPE 1 OR AS APPROVED BY ENGINEER.



SECTION A-A

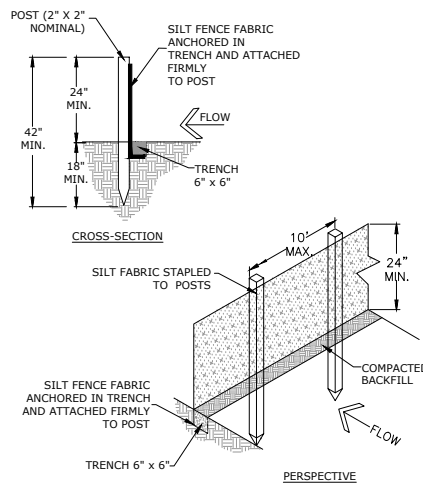


INSTALLATION NOTES:

1. SEE PLAN VIEW FOR THE LOCATIONS OF WASHOUT AREAS.
2. CONCRETE WASHOUT AREAS WILL BE IN PLACE PRIOR TO CASTING ANY CONCRETE ONSITE.
3. SIGNS WILL BE ERECTED TO CLEARLY DEFINE THE WASHOUT AREA.

MAINTENANCE NOTES:

1. THE CONCRETE WASHOUT AREAS WILL BE INSPECTED WEEKLY BEING CLEANED AND ENLARGED AS NEEDED.
2. AT THE END OF CONSTRUCTION ALL CONCRETE SPOIL WILL BE DISPOSED OF OFFSITE AT A CONSTRUCTION WASTE LANDFILL.
3. THE AREA WILL BE RECLAIMED AND REVEGETATED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AT THE END OF USE.

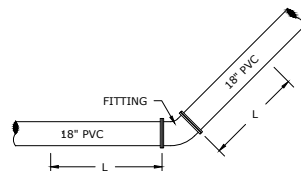


- NOTES:
1. SILT FENCE SHALL BE INSTALLED PER THE APPROVED EROSION CONTROL PLAN.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND REPAIRS TO SILT FENCE.



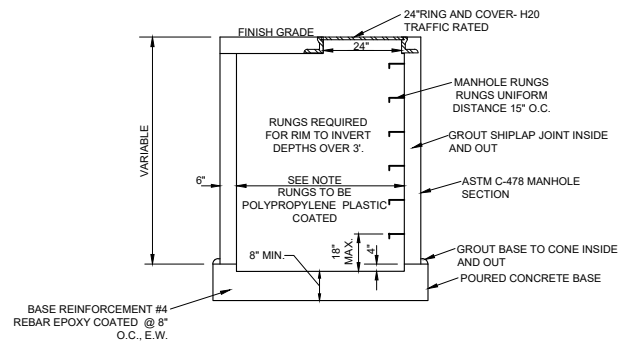
RESTRAINED PIPE LENGTH (L) EACH SIDE OF BEND IN FEET

DEGREE	HORIZONTAL BEND (L)	VERTICAL UP BEND (L)	VERTICAL DOWN BEND (L)
11.25°	5	5	15
22.5°	8	8	23
45°	17	17	45
90°	40	20	110



NOTES:

1. RESTRAINT LENGTHS ARE BASED ON 18\"/>
2. INCLUDES A 1.5 FACTOR OF SAFETY.
3. BASED ON SITE CONDITIONS ADDITIONAL LENGTH MAY BE REQUIRED BY THE ENGINEER.



- NOTES:
1. SUBGRADE PREPARATION SHALL BE THE SAME AS THE FLUME. REFER SHEET 15.
 2. CONCRETE COLLARS TO BE POURED ON THE INLET AND OUTLET PIPE.
 3. GROUT INSIDE OF MANHOLE AROUND ALL PIPE PENETRATIONS.



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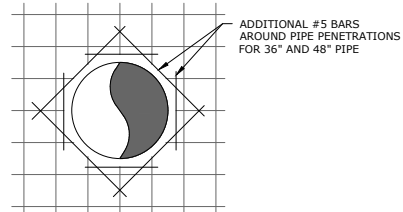
DESIGNED BY: AJS DATE: June, 2023
DRAWN BY: AJS SCALE: AS NOTED
CHECKED BY: BLH AS NOTED

JOB NO.: 197.004.01

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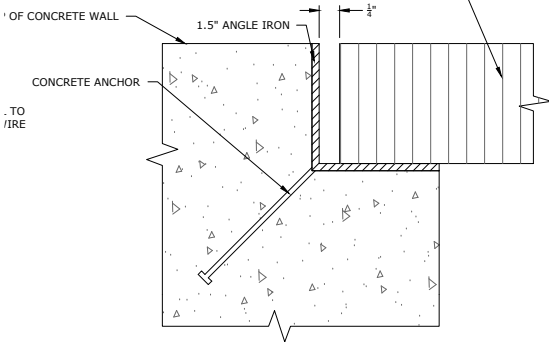
SITE
DETAILS-2

SHEET:

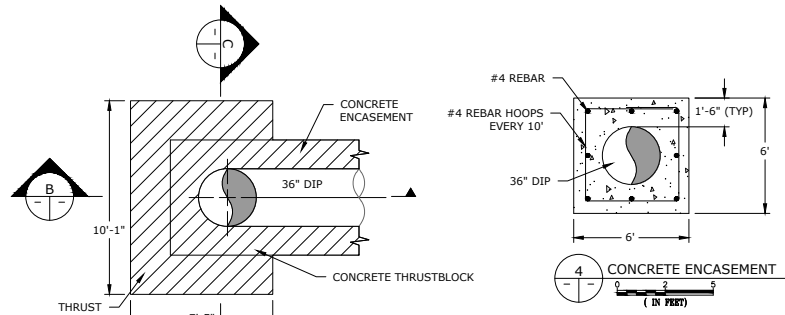


1 PIPE PENETRATION REBAR
(IN FEET)

3 PANELS, EACH 2'-1" x 6'-2 1/4" OF SGAL-150 19-S-4 GRATING
MANUFACTURED BY MCNICHOLS OR APPROVED EQUAL
WEIGHT: 4.3 LBS/SF
WEIGHT EACH PANEL: 55.9 LBS

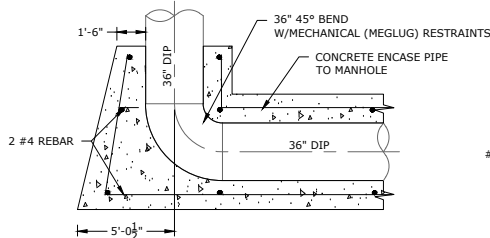


2 GRATING SUPPORT DETAIL
(IN FEET)

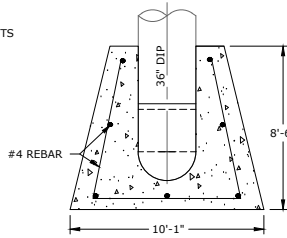


3 THRUST BLOCK ON 36" DIP
(IN FEET)

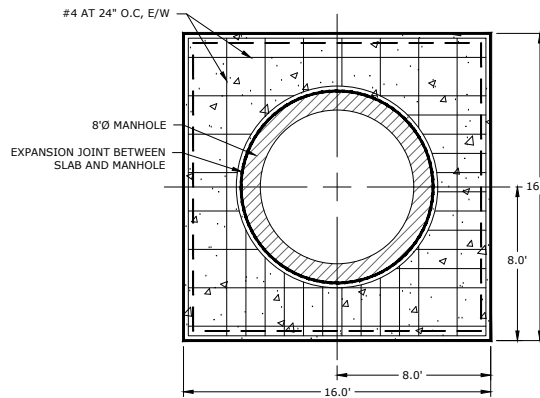
- NOTES:
- ALL DIP SHALL BE POLYWRAPPED.
 - BOND BREAKER REQUIRED BETWEEN CONCRETE AND DIP.
 - CONCRETE SHALL BE ALLOWED TO CURE PER THE SPECIFICATIONS PRIOR TO BACKFILL.



B SECTION B - THRUST BLOCK ON 36" DIP
(IN FEET)

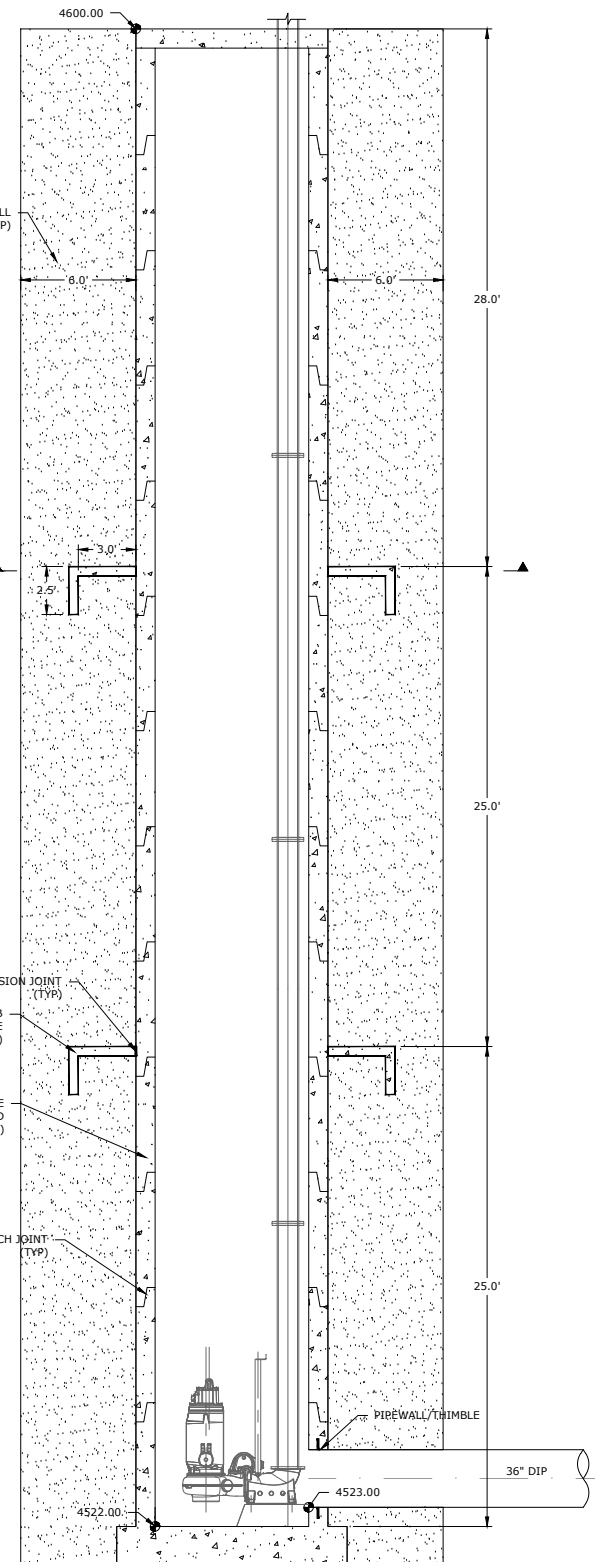


C SECTION C - THRUST BLOCK ON 36" DIP
(IN FEET)

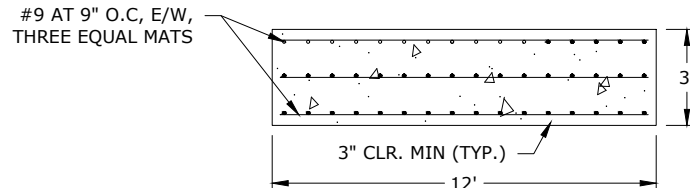
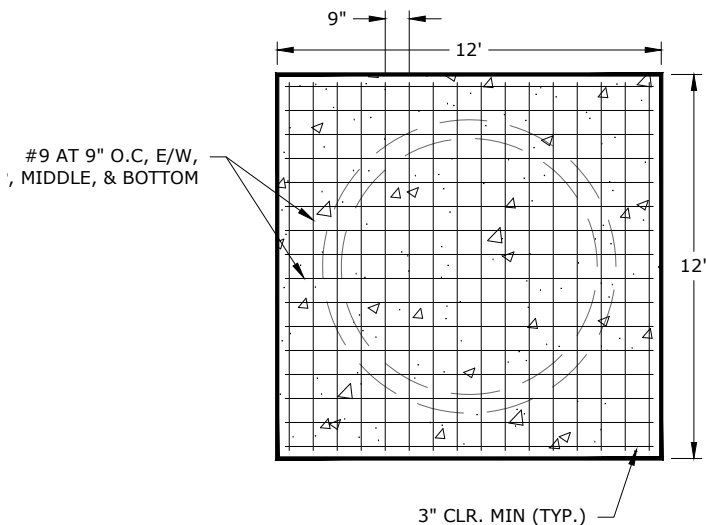


D PLAN CONCRETE SLAB/COLLAR
(IN FEET)

- NOTES:
- OUTSIDE OF MANHOLE SHALL HAVE "ROLLED ON WATER PROOFING".
 - CONTRACTOR SHALL FILL AND COMPACT IN EVEN LIFTS AROUND MANHOLE AND SHALL CHECK FOR PLUMB (VERTICAL) EVERY BARREL SECTION AFTER INSTALLATION. THIS INFORMATION SHOULD BE INCLUDED IN THE AS-BUILTS.



6 SECTION - 8" DIAMETER MANHOLE (OUTLET PIPE)
(IN FEET)



5 CAST IN PLACE MANHOLE FOUNDATION DETAIL
(IN FEET)



8308 COLORADO BLVD
SUITE 200
FIRESTONE, CO 80504
303.833.1416
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CENTRAL COLORADO WATER CONSERVANCY DISTRICT
3209 WEST 28TH STREET
GREELEY, CO 80634
970.330.4540 (p)
RANDY RAY

PIONEER RESERVOIR
WELD COUNTY, COLORADO

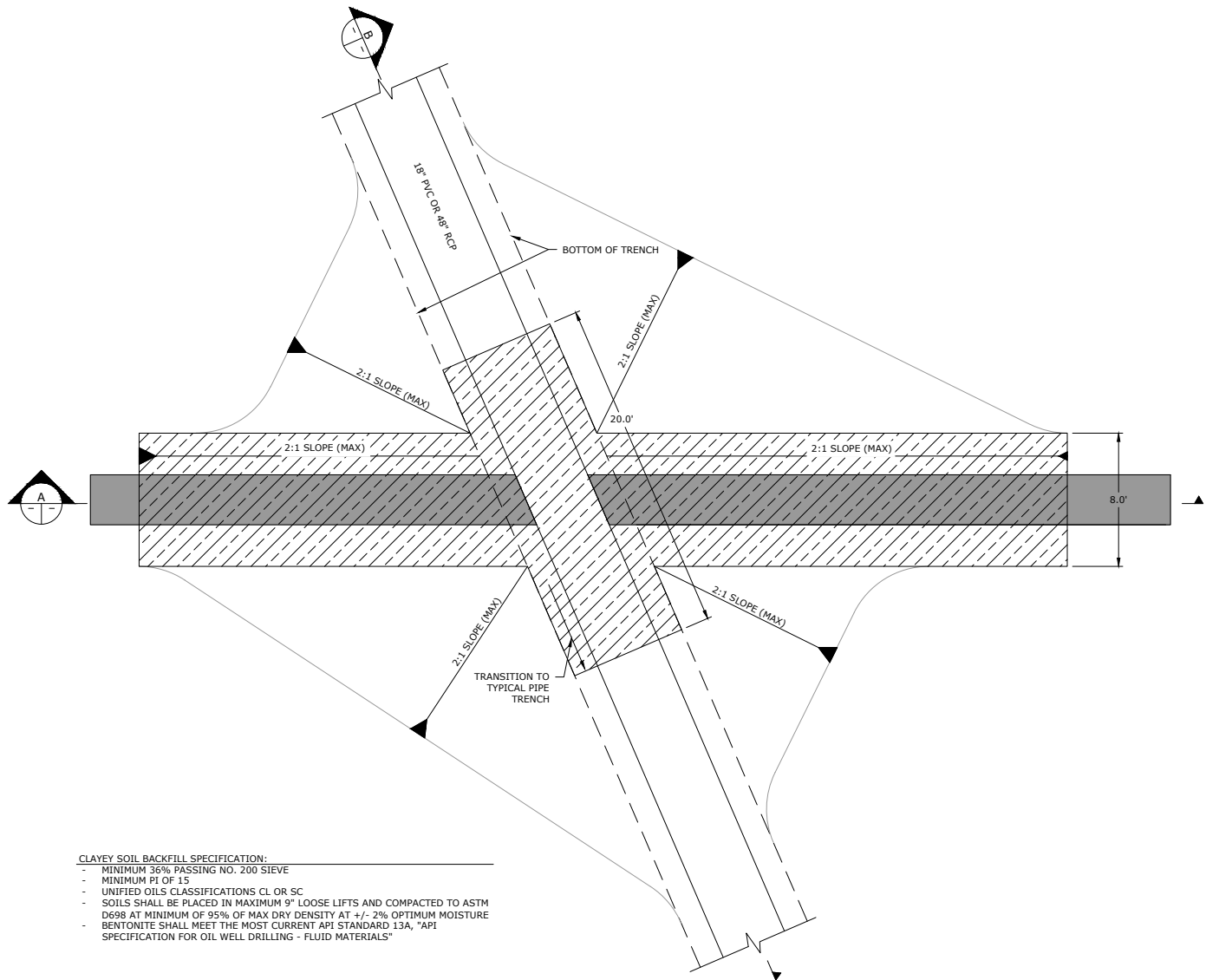
REVISIONS		
NO.	DESCRIPTION	DATE

DESIGNED BY: AJS DATE: June, 2023
DRAWN BY: JPM SCALE: AS NOTED
CHECKED BY: BLH AS NOTED
JOB NO.: 197.004.01

DWG NAME: PIONEER SITE INFRASTRUCTURE-FINAL.DWG

SITE
DETAILS-3

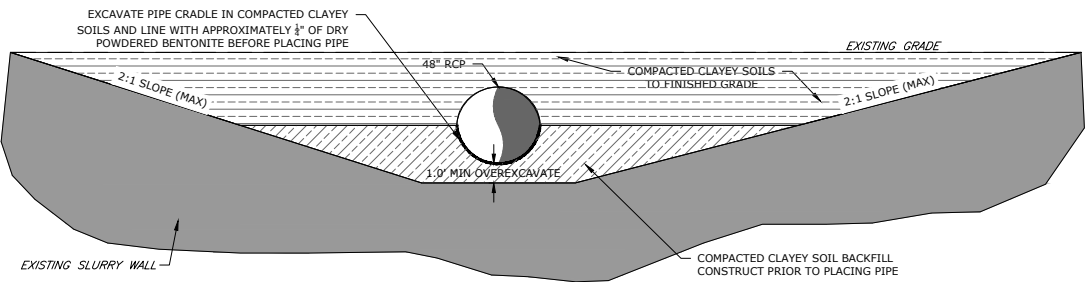
SHEET:



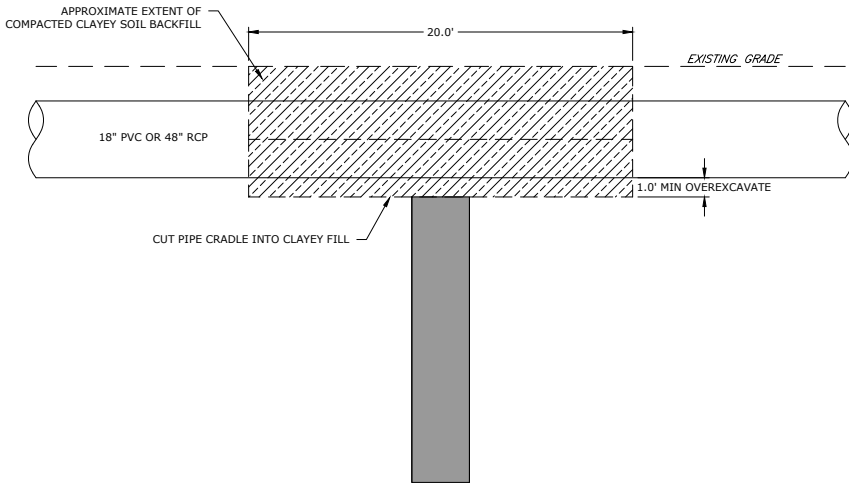
CLAYEY SOIL BACKFILL SPECIFICATION:

- MINIMUM 36% PASSING NO. 200 SIEVE
- MINIMUM PI OF 15
- UNIFIED SOILS CLASSIFICATIONS CL OR SC
- SOILS SHALL BE PLACED IN MAXIMUM 9" LOOSE LIFTS AND COMPACTED TO ASTM D698 AT MINIMUM OF 95% OF MAX DRY DENSITY AT +/- 2% OPTIMUM MOISTURE
- BENTONITE SHALL MEET THE MOST CURRENT API STANDARD 13A, "API SPECIFICATION FOR OIL WELL DRILLING - FLUID MATERIALS"

1 PLAN - SLURRY WALL CROSSING
0 2.5 5
(IN FEET)



A SECTION - SLURRY WALL/PIPE CROSSING
0 2.5 5
(IN FEET)



B SECTION - SLURRY WALL/PIPE CROSSING
0 2.5 5
(IN FEET)



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SITE
DETAILS-4

SHEET: