



A detailed map of Arizona showing county boundaries and major cities. A black arrow points to the location of the project in the north-central part of the state, near the border with New Mexico. The map includes labels for California, New Mexico, and Mexico, as well as various counties like Mohave, Coconino, Navajo, Yavapai, La Paz, Maricopa, Pinal, Pima, Graham, Cochise, Santa Cruz, and Yuma. Major cities like Phoenix, Tucson, and Flagstaff are also marked.

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COALMINE CANYON CHAPTER WWTP LAGOON REHABILITATION

COVER SHEET

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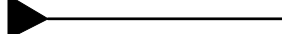
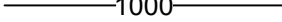
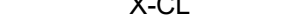
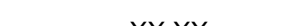
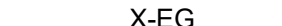
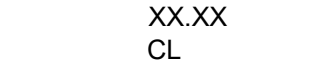
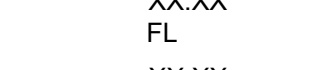
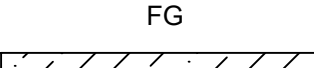
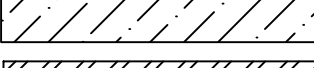
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G-1



LEGEND

SMITH LEGEND		LIST OF ABBREVIATIONS:	
SYMBOL	DESCRIPTOR	FG	FINISHED GRADE
	BENCHMARK	EG	EXISTING GRADE
	BAR SCALE	EOR	EDGE OF ROAD
	AZ-264 (ARIZONA HIGHWAY 264)	GRV	GRAVEL
	INDIAN ROUTE #6320	PT	POINT OF TANGENCY
	GATE	FL	FLOW LINE
	SLOPE	PC	POINT OF CURVATURE
	CENTERLINE		
	SANITARY SEWER MANHOLE		
	SINGLE POLE SIGN		
	SLOPE INDICATOR		
	TREE		
	UTILITY POLE		
	PLUG VALVE		
	EXISTING SANITARY SEWER LINE		
	EXISTING STORM DRAIN LINE		
	EXISTING OVERHEAD ELECTRIC		
	EXISTING UNDERGROUND ELECTRIC		
	EXISTING FENCE BARBWIRE		
	EXISTING MAJOR CONTOUR		
	EXISTING MINOR CONTOUR		
	PROPOSED MAJOR CONTOUR		
	PROPOSED MINOR CONTOUR		
	PROPOSED SANITARY SEWER LINE		
	PROPOSED STORM DRAIN LINE		
	EXISTING CENTERLINE ELEVATION		
	EXISTING FLOWLINE ELEVATION		
	EXISTING GRADE ELEVATION		
	PROPOSED CENTERLINE ELEVATION		
	PROPOSED FLOWLINE ELEVATION		
	PROPOSED FINISH GRADE ELEVATION		
	HDPE LINER REMOVAL		
	PIPE REMOVAL		
	EXISTING LAGOON LINER		
	BASE COURSE		

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COALMINE CANYON CHAPTER WWTP LAGOON REHABILITATION

G-2 LEGEND AND ABBREVIATIONS AND ABBREVIATIONS

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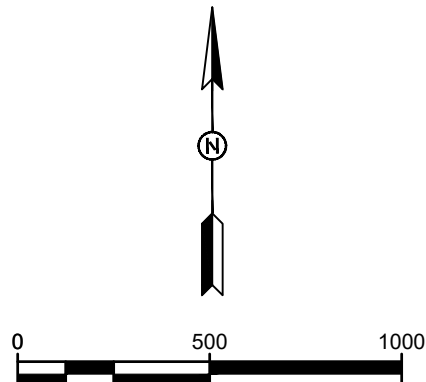


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KEYED NOTES

1. EXISTING POWERLINE
2. PROJECT FENCED SITE.
3. EXISTING 8" DUCTILE IRON SEWER LINE.
4. EXISTING LIFT STATION.
5. END OF EXISTING SANITARY FORCE-MAIN, START OF EXISTING SANITARY GRAVITY LINE.
6. EXISTING FACULTATIVE LAGOON 1.
7. EXISTING FACULTATIVE LAGOON 2.
8. EXISTING LAGOON 3.
9. EXISTING COALMINE CANYON CHAPTER BUILDING.

SHEET NOTES

1. IF THIS DRAWING IS OTHER THAN FULL SIZE, (22" X 34"), UTILIZE BAR SCALE IN LIEU OF NUMERIC SCALE.
2. PROPOSED IMPROVEMENTS NOT SHOWN FOR CLARITY.
3. STAGING OF MATERIAL, EQUIPMENT OR OTHER PROJECT COMPONENTS MUST BE INSIDE WITHIN FENCED NTUA LAGOON PERIMETER.
4. CONTRACTOR SHALL FIND A SOURCE FOR WATER FOR CONSTRUCTION.
5. CONTRACTOR SHALL COORDINATE WITH NTUA FOR ACCESS TO THE SITE. THE SITE SHALL REMAIN SECURED WHEN CONTRACTOR IS NOT PRESENT.
6. CONSTRUCTION STANDARD SPECIFICATIONS ARE THE MARICOPA ASSOCIATION OF GOVERNMENTS (AZMAG) AND ARE SUPPLEMENTED OR MODIFIED BY THE SUPPLEMENTAL TECHNICAL SPECIFICATIONS.
7. SANITARY SEWER SERVICE SHALL BE MAINTAINED TO THE COMMUNITY DURING CONSTRUCTION



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COALMINE CANYON CHAPTER WWTP LAGOON
REHABILITATION

VICINITY MAP

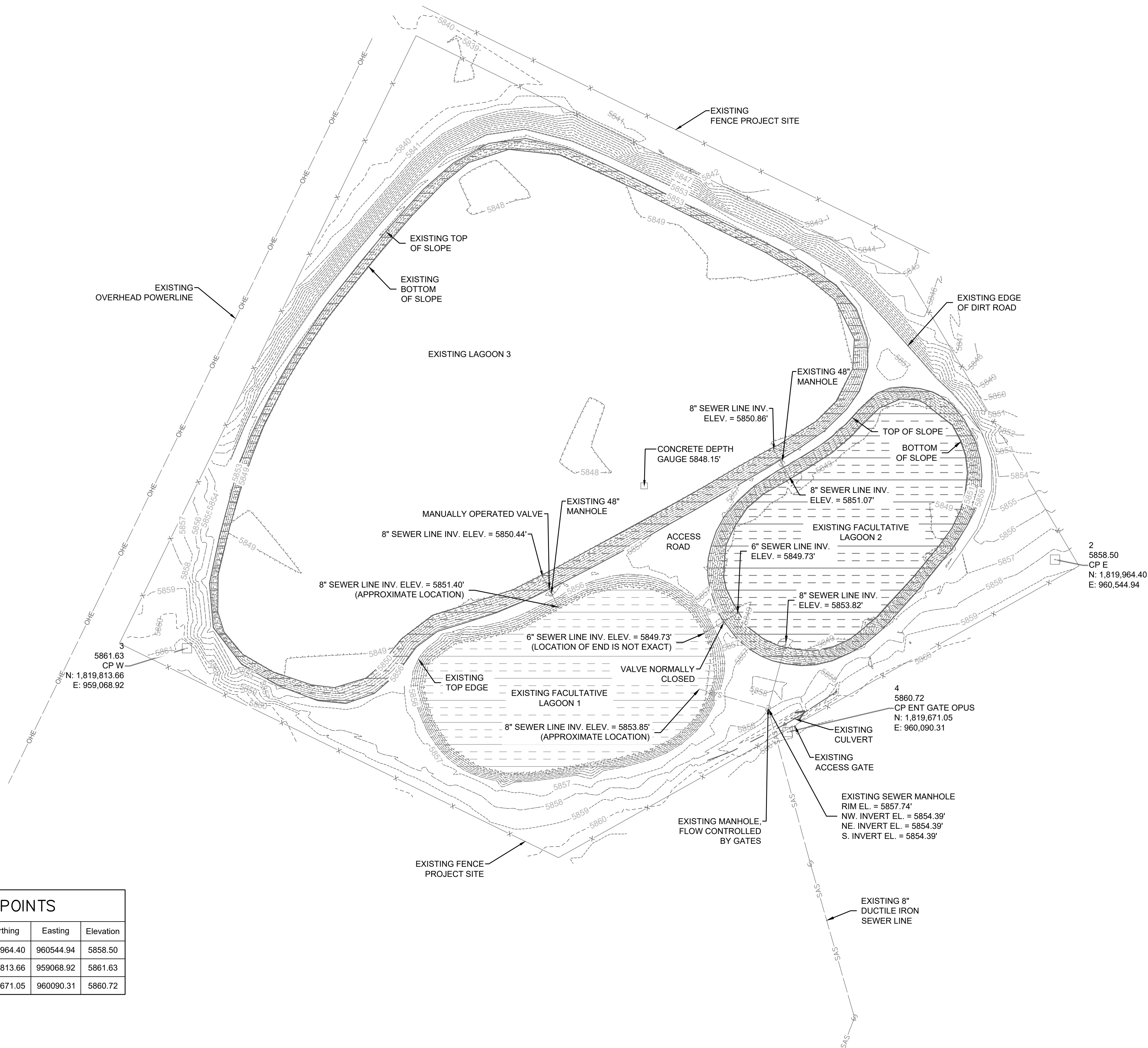
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CONTROL POINTS

Point #	Description	Northing	Easting	Elevation
2	CP E	1819964.40	960544.94	5858.50
3	CP W	1819813.66	959068.92	5861.63
4	CP ENT GATE OPUS	1819671.05	960090.31	5860.72

SHEET NOTES

- COORDINATES ARE ARBITRARILY DERIVED FROM G.P.S. SINGLE POINT POSITIONING. BEARINGS ARE BASED UPON THE ARIZONA STATE PLANE COORDINATE SYSTEM, NAD83 GRID ZONE CENTRAL, COMBINED SCALE FACTOR (CSF) = 1.000299339577 GRID TO GROUND. MEASUREMENTS ARE U.S. SURVEY FEET. ALL CONTROL POINTS SET FOR THIS PROJECT ARE 1/2" REBAR WITH PLASTIC CAP STAMPED "CONTROL POINT".



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TOPOGRAPHIC SURVEY

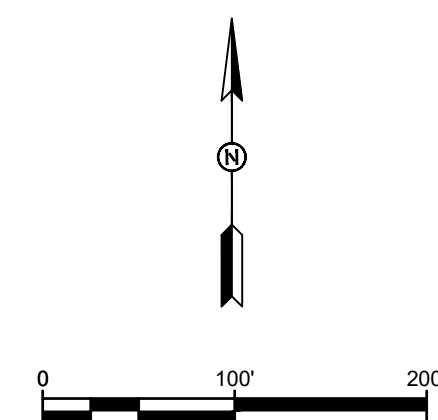
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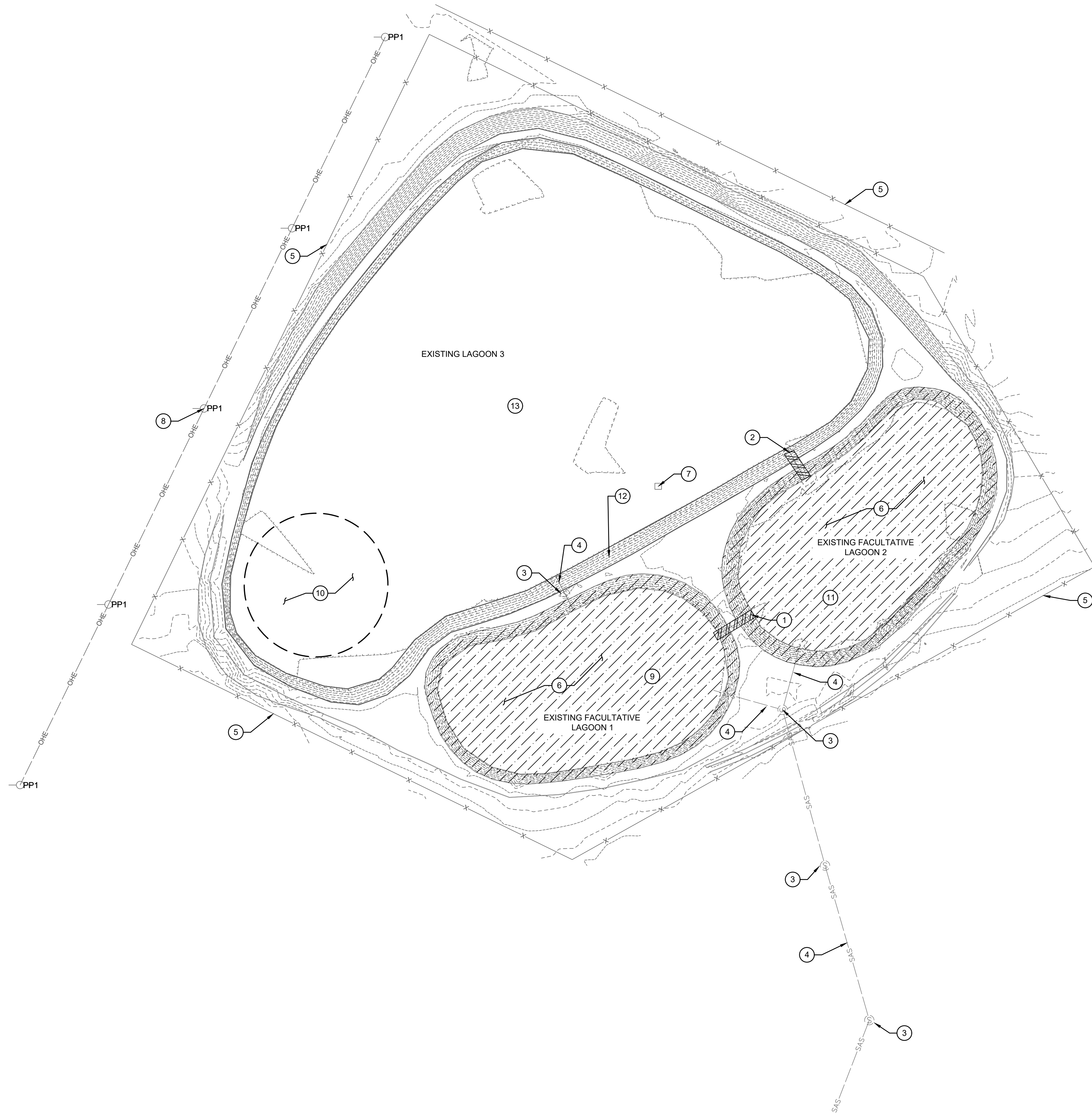


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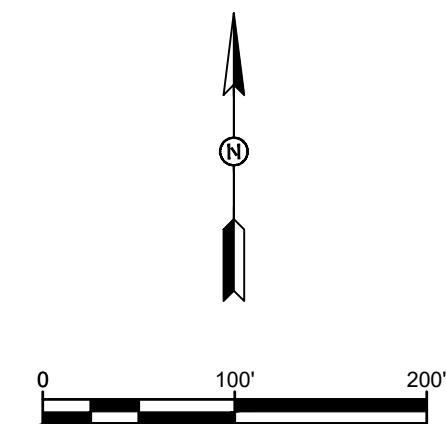


KEYED NOTES

1. REMOVE AND DISPOSE EXISTING 6" SEWER LINE APPROX. 66 LF.
2. REMOVE AND DISPOSE EXISTING 8" SEWER LINE APPROX. 53 LF AND EXISTING 48" MANHOLE.
3. EXISTING 48" SEWER MANHOLE TO REMAIN IN PLACE.
4. EXISTING 8" SEWER LINE TO REMAIN IN PLACE.
5. EXISTING FENCE, PROTECT IN PLACE.
6. REMOVE AND DISPOSE LINER.
7. EXISTING CONCRETE DEPTH GAUGE, PROTECT IN PLACE.
8. EXISTING OVERHEAD ELECTRICAL LINE.
9. OWNER TO REMOVE SLUDGE FROM EXISTING FACULTATIVE LAGOON #1, AND STOCK PILE IN EXISTING LAGOON #3.
10. APPROXIMATE SLUDGE STOCKPILE LOCATION.
11. CONTRACTOR TO REMOVE SLUDGE IN EXISTING FACULTATIVE LAGOON #2 AS REQUIRED. STOCKPILE WITH SLUDGE IN EXISTING LAGOON #3.
12. PROTECT LINED SLOPES OF EXISTING LAGOON #3.
13. BORROW MATERIAL AS NEEDED MAY BE OBTAINED FROM THE BOTTOM OF EXISTING LAGOON #3. BORROW PIT SHALL BE GRADED UNIFORMLY WITH SLOPES 15:1 OR FLATTER.

SHEET NOTES

1. BELOW GRADE PIPES AND UTILITIES WERE NOT SURVEYED AND EXACT LOCATIONS ARE UNKNOWN. CONTRACTOR SHALL EXERCISE CARE WHEN EXCAVATING IN THE AREA. PIPES ENCOUNTERED SHALL BE MARKED AND LOCATED ON THE CONTRACTORS AS-BUILT DRAWINGS.
2. CONTRACTOR SHALL REPAIR ANY DAMAGED PIPE OR UTILITY CAUSED BY CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
3. SLUDGE SHALL BE SUFFICIENTLY REMOVED FROM LINER PRIOR TO DISPOSING LINER. CONTACT LANDFILL FOR REQUIREMENTS.
4. CONTRACTOR MAY BUILD INGRESS AND EGRESS RAMPS TO EXISTING LAGOON 3 AS NECESSARY. NO ADDITIONAL PAYMENT WILL BE MADE FOR CONSTRUCTION OF THE RAMPS.
5. CONTRACTOR TO STOCKPILE ANY SLUDGE FROM EXISTING LAGOON 2 IN DESIGNATED SLUDGE STOCKPILE LOCATION. CONTRACTOR TO TEST SLUDGE BEFORE DISPOSAL.
6. SLUDGE REMOVAL SEQUENCE:
 - 6.1. ANY TEMPORARY INFRASTRUCTURE REQUIRED TO REMOVE SLUDGE SHALL BE INSTALLED.
 - 6.2. SLUDGE FROM EXISTING FACULTATIVE LAGOON 1 TO BE REMOVED AND PLACED IN SLUDGE STOCKPILE LOCATION, BY OWNER.
 - 6.3. THE INFLUENT SHALL BE DIVERTED FROM EXISTING FACULTATIVE LAGOON 2 TO EXISTING FACULTATIVE LAGOON 1.
 - 6.4. SLUDGE IN EXISTING FACULTATIVE LAGOON 2 SHALL BE REMOVED AND PLACED IN THE SLUDGE STOCKPILE LOCATION.
 - 6.5. ONCE ALL SLUDGE IS PLACED IN THE STOCKPILE LOCATION, THE CONTRACTOR SHALL TAKE SLUDGE SAMPLES IN ACCORDANCE WITH CFR 40 SECTION 503.
 - 6.6. THE SLUDGE SHALL STAY IN THE STOCKPILE LOCATION UNTIL IT IS DETERMINED THAT NO MORE BORROW MATERIAL WILL BE REQUIRED FROM EXISTING LAGOON 3. ONCE THIS DETERMINATION HAS BEEN MADE THE STOCKPILED SLUDGE SHALL THEN BE SURFACE DISPOSED BY THE CONTRACTOR THROUGHOUT EXISTING LAGOON 3.
7. SLUDGE REMOVAL AND REMOVAL SHALL BE IN ACCORDANCE WITH STS 46 70 80.



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REMOVAL AND DISPOSAL PLAN

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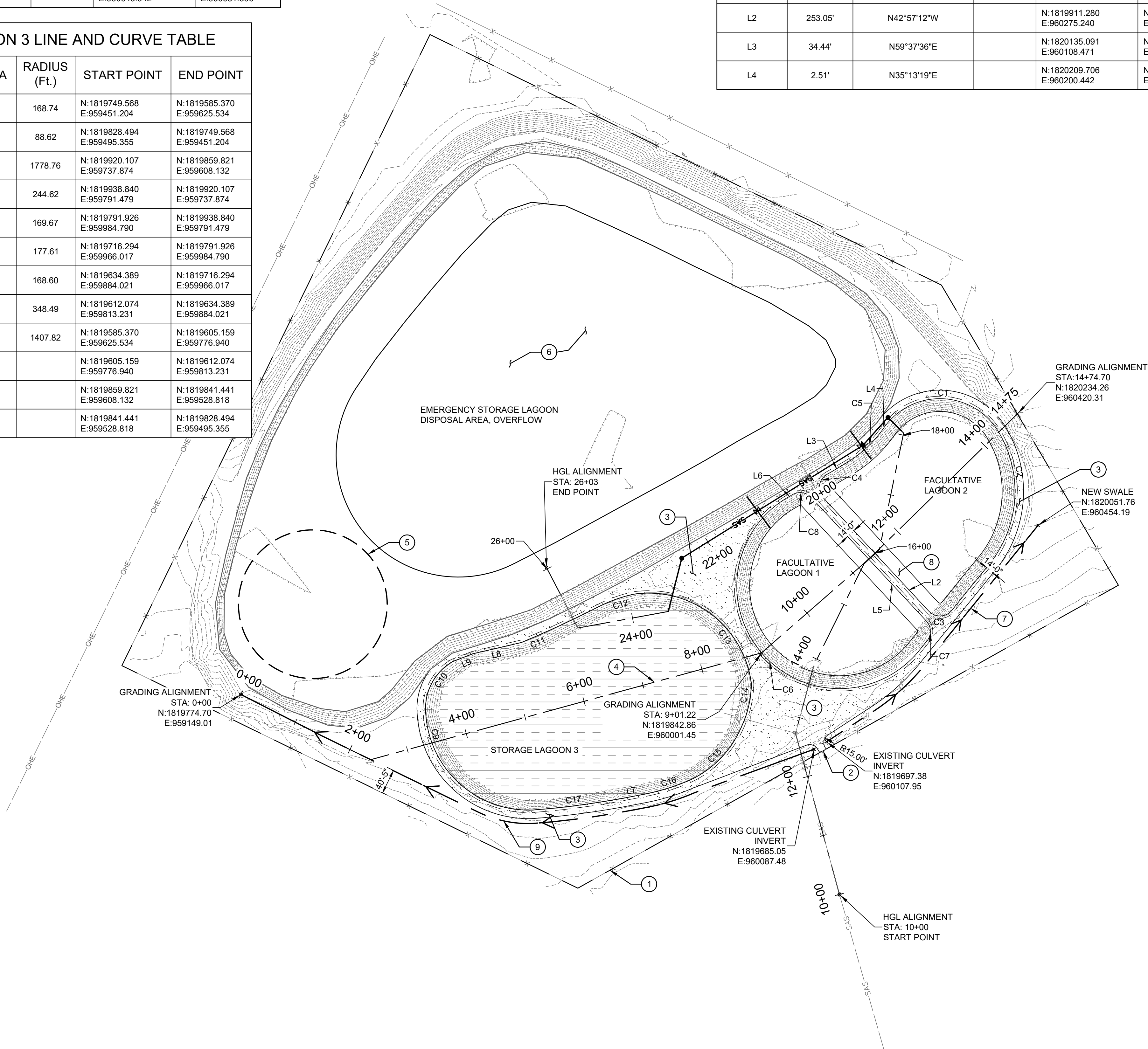


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C-1 NO.

TOP OF FACULTATIVE LAGOON 1 LINE AND CURVE TABLE					
NUMBER	LENGTH (Ft.)	BEARING/DELTA	RADIUS (Ft.)	START POINT	END POINT
C6	588.13'	200°34'45"	168.00	N:1819846.497 E:960259.361	N:1820097.273 E:960043.942
C7	35.78'	82°00'03"	25.00	N:1819895.158 E:960271.122	N:1819862.374 E:960272.240
C8	33.78'	77°25'12"	25.00	N:1820101.935 E:960051.896	N:1820097.401 E:960082.835
L5	276.32'	S42°57'12"E		N:1820097.401 E:960082.835	N:1819895.158 E:960271.122
L6	9.22'	N59°37'36"E		N:1820097.273 E:960043.942	N:1820101.935 E:960051.896

TOP OF STORAGE LAGOON 3 LINE AND CURVE TABLE					
NUMBER	LENGTH (Ft.)	BEARING/DELTA	RADIUS (Ft.)	START POINT	END POINT
C9	266.26'	90°24'39"	168.74	N:1819749.568 E:959451.204	N:1819585.370 E:959625.534
C10	94.91'	61°21'27"	88.62	N:1819828.494 E:959495.355	N:1819749.568 E:959451.204
C11	143.10'	4°36'34"	1778.76	N:1819920.107 E:959737.874	N:1819859.821 E:959608.132
C12	56.91'	13°19'48"	244.62	N:1819938.840 E:959791.479	N:1819920.107 E:959737.874
C13	270.57'	91°22'09"	169.67	N:1819791.926 E:959984.790	N:1819938.840 E:959791.479
C14	78.57'	25°20'39"	177.61	N:1819716.294 E:959966.017	N:1819791.926 E:959984.790
C15	118.31'	40°12'19"	168.60	N:1819634.389 E:959884.021	N:1819716.294 E:959966.017
C16	74.36'	12°13'35"	348.49	N:1819612.074 E:959813.231	N:1819634.389 E:959884.021
C17	152.77'	6°13'03"	1407.82	N:1819585.370 E:959625.534	N:1819612.074 E:959813.231
L7	36.94'	N79°12'43"E		N:1819605.159 E:959776.940	N:1819585.370 E:959625.534
L8	81.42'	S76°57'10"W		N:1819859.821 E:959608.132	N:1819605.159 E:959776.940
L9	35.88'	S68°50'54"W		N:1819841.441 E:959528.818	N:1819859.821 E:959608.132

TOP OF FACULTATIVE LAGOON 2 LINE AND CURVE TABLE					
NUMBER	LENGTH (Ft.)	BEARING/DELTA	RADIUS (Ft.)	START POINT	END POINT
C1	223.02'	114°05'26"	112.00	N:1820211.754 E:960201.888	N:1820204.319 E:960389.699
C2	231.25'	69°44'06"	190.00	N:1820204.319 E:960389.699	N:1819987.658 E:960373.865
C3	42.76'	97°59'57"	25.00	N:1819912.566 E:960312.954	N:1819911.280 E:960275.240
C4	44.76'	102°34'48"	25.00	N:1820096.487 E:960102.814	N:1820135.091 E:960108.471
C5	85.19'	24°24'17"	200.00	N:1820152.505 E:960138.183	N:1820209.706 E:960200.442
L2	253.05'	N42°57'12"W		N:1819911.280 E:960275.240	N:1820096.487 E:960102.814
L3	34.44'	N59°37'36"E		N:1820135.091 E:960108.471	N:1820152.505 E:960138.183
L4	2.51'	N35°13'19"E		N:1820209.706 E:960200.442	N:1820211.754 E:960201.888



KEYED NOTES

- EXISTING SITE BOUNDARY.
- ACCESS GATE.
- PLACE NEW AGGREGATE BASE COURSE 4-INCH THICK, ON PREPARED SUBGRADE.
- EARTHWORK GRADING ALIGNMENT.
- SLUDGE STOCKPILE LOCATION.
- BORROW AREA FOR FILL MATERIAL. EVENLY CUT THROUGHOUT SITE.
- NEW SWALE. SEE SHEET C-4.
- NEW EMBANKMENT. SEE SHEET C-4.
- NEW SWALE. SEE SHEET C-5.

SHEET NOTES

- CONTRACTOR TO PERFORM ALL NECESSARY SURVEYING AND CONSTRUCTION STAKING INCLUDING FINAL AS-BUILT PREPARATION. SEE STS 01 78 39 : PROJECT RECORD DRAWINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SUPPLYING WATER AS REQUIRED. SEE STS 01 57 23 : TEMPORARY STORM WATER POLLUTION CONTROL.
- CONTRACTOR SHALL PREPARE AND IMPLEMENT A SWPPP AND ALL BEST MANAGEMENT PRACTICES AS REQUIRED. SEE STS 01 57 23 : TEMPORARY STORM WATER POLLUTION CONTROL.
- CONTRACTOR SHALL SUBMIT THE SWPPP WITH PROPOSED CONSTRUCTION STAGING AREA. SEE STS 01 57 23 : TEMPORARY STORM WATER POLLUTION CONTROL.
- CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH CODES, ORDINANCES, REGULATIONS, AND ANTI-POLLUTION LAWS. SEE STS 01 74 00 : CLEANING AND WASTE MANAGEMENT.
- ALL DISTURBED AREAS TO BE PERMANENTLY STABILIZED. AREAS NOT COVERED WITH LINER OR GRAVEL SHALL BE SEEDED WITH NATIVE GRASS, INCLUDING THE BOTTOM OF THE EMERGENCY STORAGE LAGOON.
- HGL ALIGNMENT IS SHOWN FOR HYDRAULIC REFERENCE ONLY. NOT FOR CONSTRUCTION.
- ALL TASKS THAT ARE REQUIRED FOR FACULTATIVE LAGOONS 1 AND 2 TO FUNCTION (SUCH AS LINER REMOVAL, GRADING, LINER INSTALL, ETC.) ARE INCLUDED IN THE BASE BID SCHEDULE. ANY ADDITIONAL TASKS (SUCH AS LINING STORAGE LAGOON 3) ARE PART OF THE ADDITIVE SCHEDULE.
- AGGREGATE BASE COURSE SHALL CONFORM TO STANDARD SPECIFICATION 303 AND PLACED IN ACCORDANCE TO STANDARD SPECIFICATION 310. 90% COMPACTION IS REQUIRED.



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REHABILITATION

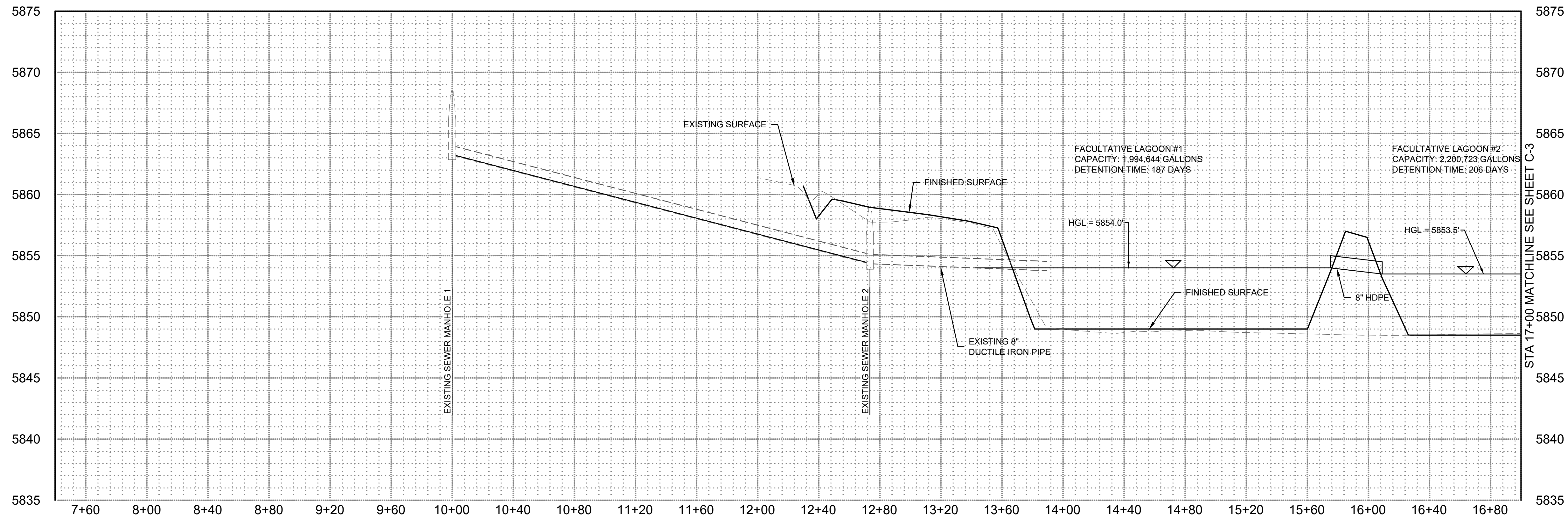
SITE PLAN

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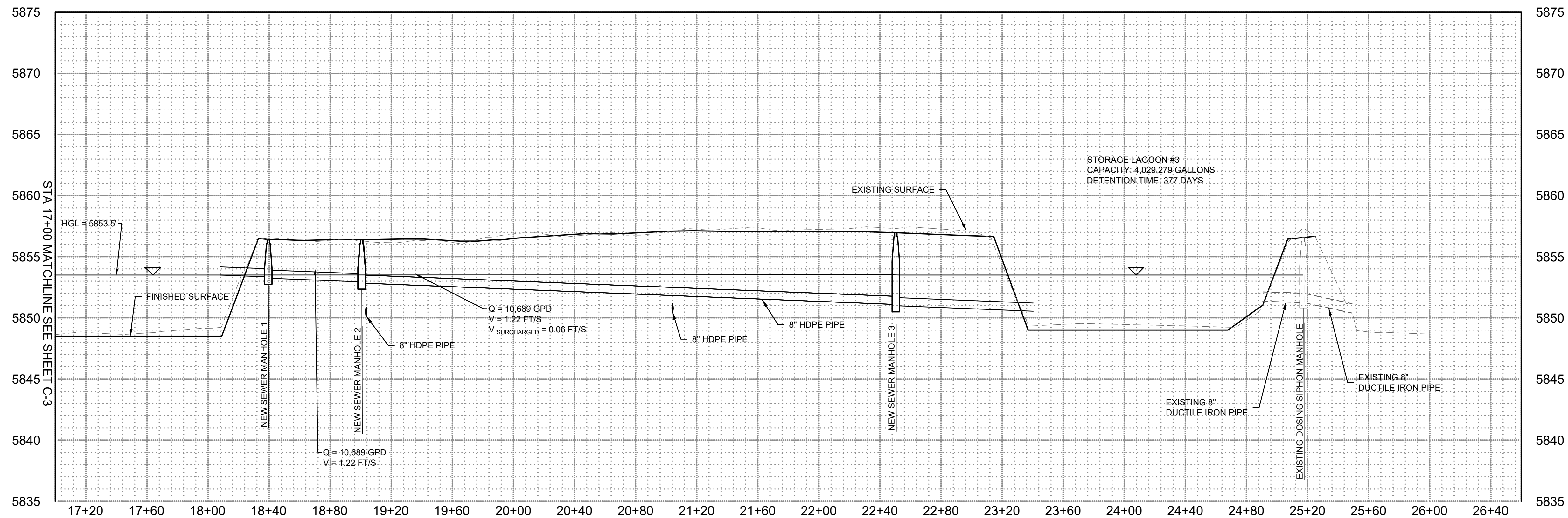
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NOTES:
1. HYDRAULIC PROFILE IS BASED ON WWTP MAXIMUM OPERATING CAPACITY.

HYDRAULIC PROFILE - FACULTATIVE LAGOON 1 AND 2

DESIGN CRITERIA:
INFLUENT BOD: 250 MG/L
AVERAGE DAILY FLOW: 10,689 GALLONS PER DAY



HYDRAULIC PROFILE - STORAGE LAGOON 3

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HYDRAULIC PROFILE

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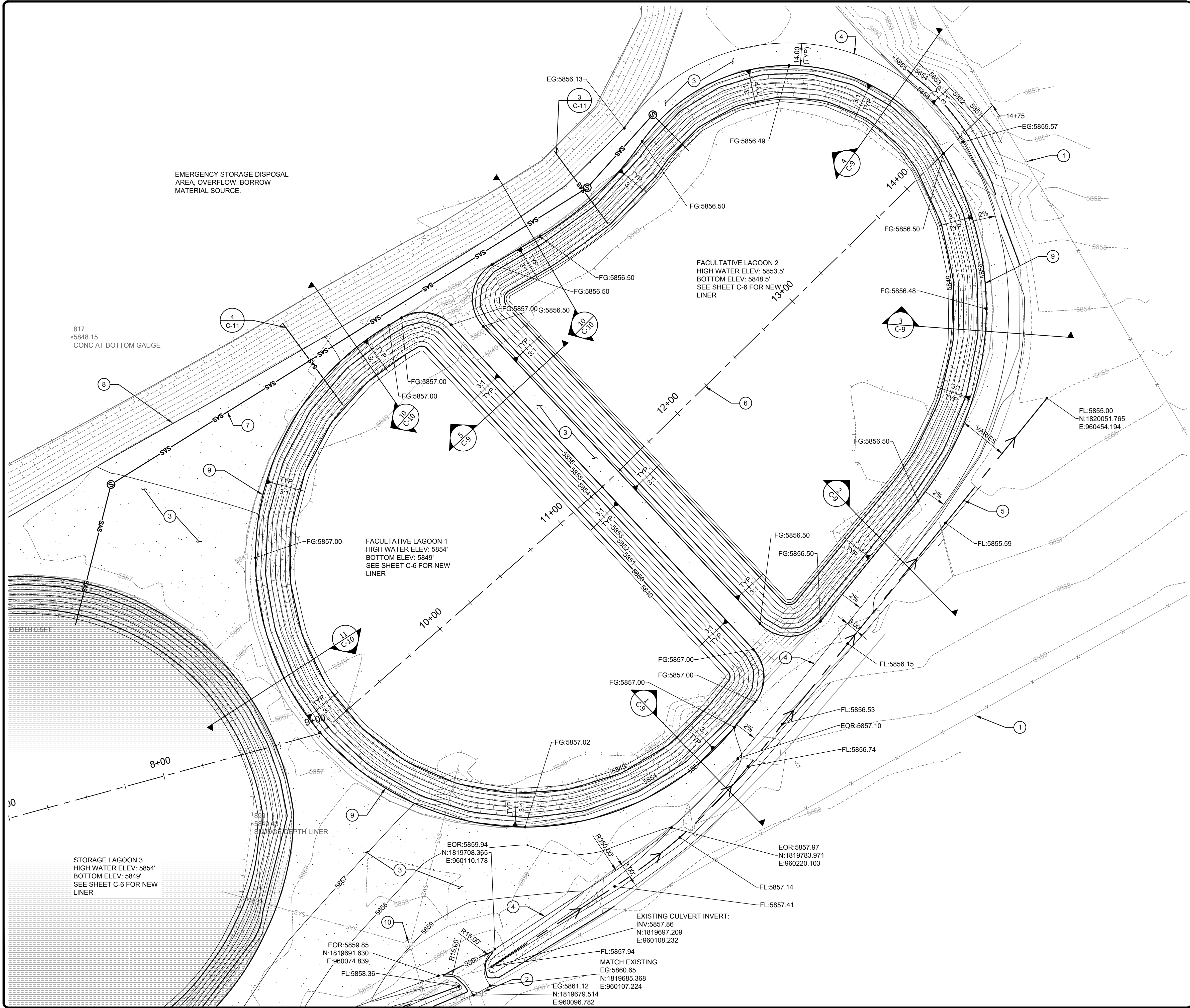


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Q:\SEC-PROJECTS\123107\CADD\PLANSET\C-3 HYDRAULIC PROFILE.dwg, Dec:20, 2023 - 4:32pm, Saved By: matheww



KEYED NOTES

1. FENCED PROJECT SITE.
2. EXISTING ACCESS GATE.
3. NEW AGGREGATE BASE COURSE PER DETAIL 8/C-6.
4. LIMITS OF AGGREGATE BASE COURSE
5. NEW SWALE FLOWLINE.
6. EARTHWORK/NEW GRADING ALIGNMENT SEE SHEET C-2 FOR ALIGNMENT LOCATION. SEE 1/C-10 FOR PROFILE.
7. NEW 8" DIA. SAS. SEE 1/C-10 FOR INFORMATION.
8. PLACE BASECOURSE TO MATCH TOP SURFACE OF EXISTING LINER.
9. TOP EDGE OF NEW LAGOON.
10. ADJUST MANHOLE TO GRADE.

SHEET NOTES

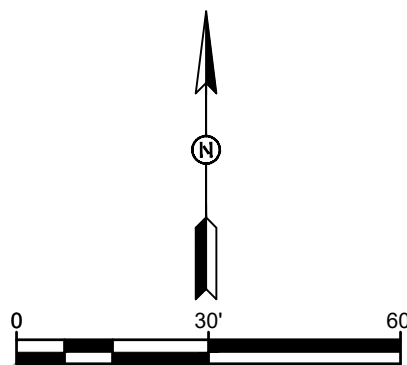
1. CUT AND FILL QUANTITIES ARE BASED ON SURVEY DATA COMPLETED IN SPRING 2023. CONTRACTOR SHALL PROVIDE A PRE-CONSTRUCTION SURVEY AND FINAL GRADE SURVEY PER STS 01 71 23 : FIELD ENGINEERING.
2. POND SIDE SLOPES SHALL BE COMPACTED IN ACCORDANCE WITH THE MARICOPA ASSOCIATION ON GOVERNMENTS SPECIFICATION 205.5.
3. POND GRADING TOLERANCES:

A VERTICAL TOLERANCE OF NONE ABOVE AND 3 INCHES BELOW THE SPECIFIED GRADE WILL BE ALLOWED ON POND BOTTOM, SIDE SLOPES IN CUT AND IN FILL, AND ACCESS ROAD SIDE SLOPES IN CUT.

A VERTICAL TOLERANCE OF NONE BELOW AND 3 INCHES ABOVE THE SPECIFIED GRADE WILL BE ALLOWED ON THE TOP SURFACE OF EMBANKMENT AND ACCESS ROAD IN BOTH CUT AND FILL, AND ACCESS ROAD SIDE SLOPES IN FILL.

REGARDLESS OF THE CONSTRUCTION TOLERANCES SPECIFIED, EXCAVATION AND GRADING SHALL BE PERFORMED SO THAT THE FINISHED SURFACES ARE IN UNIFORM PLANES WITH NO ABRUPT BREAKS IN THE SURFACE.
4. CONFORMANCE WITH THE GRADING TOLERANCES WILL BE BASED ON THE SURVEY DATA PROVIDED BY THE CONTRACTOR.
5. CONTRACTOR SHALL REMOVE EXISTING SLUDGE PRIOR TO GRADING ACTIVITIES. SLUDGE DISPOSAL AREA AS INDICATED ON SHEET C-## OR AS DIRECTED BY OWNER.
6. REVIEW OF EARTHWORK SURVEY DATA BY THE ENGINEER SHALL BE COMPLETED PRIOR TO PLACING LINER.

EARTHWORK		
CUT	5,343.77	CY
FILL	5,125.14	CY
NET	218.63	CY (CUT)



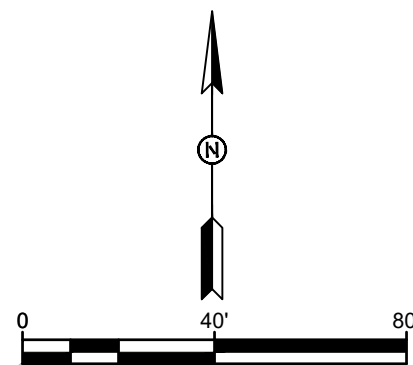
NAVAJO TRIBAL UTILITY AUTHORITY FORT DEFANCE, ARIZONA		REVISION DESCRIPTION	DATE	BY
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COALMINE CANYON CHAPTER WWTP LAGOON REHABILITATION	FACULTATIVE LAGOON 1 AND 2 GRADING PLAN
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SHEET NO: C-4

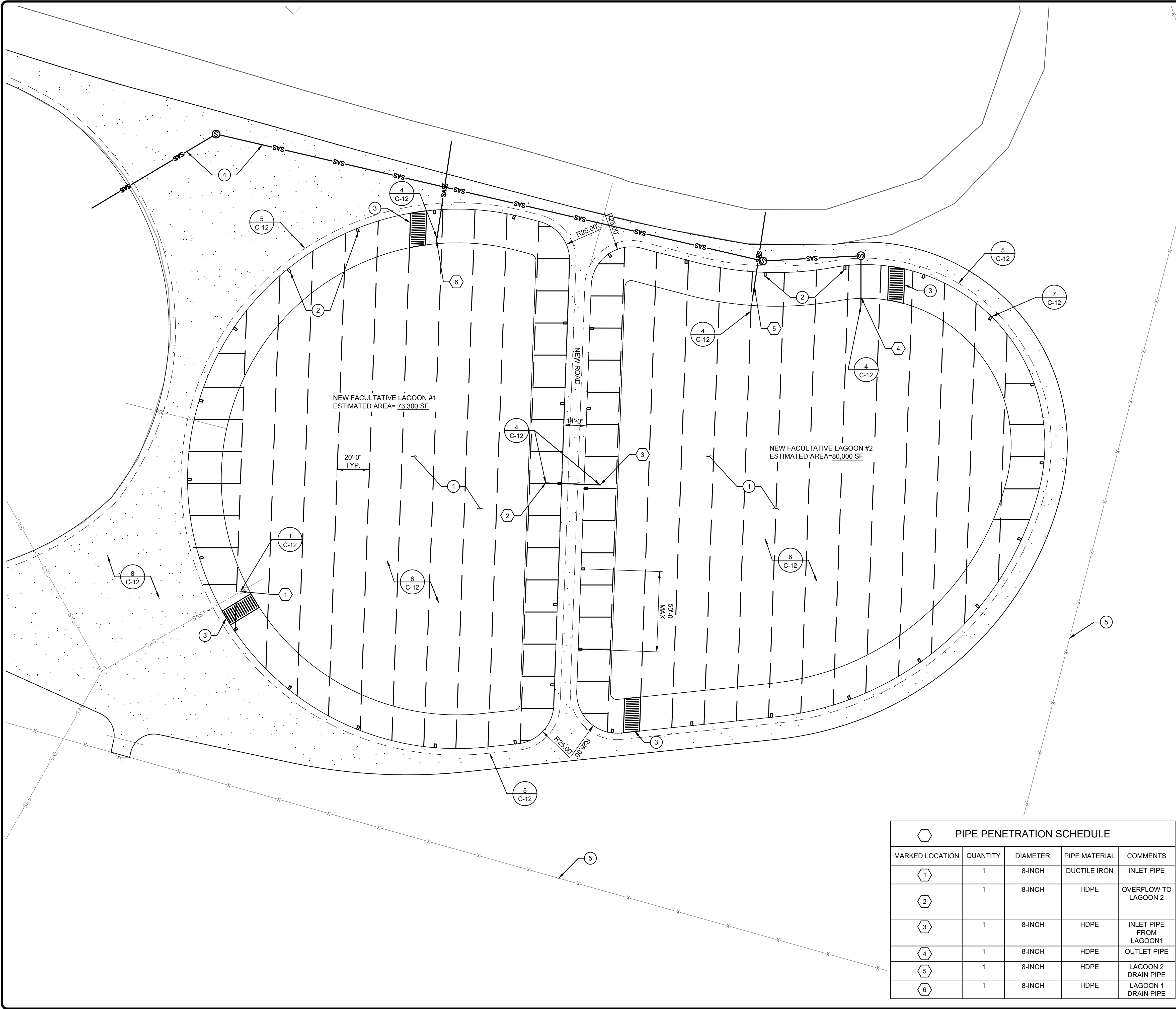


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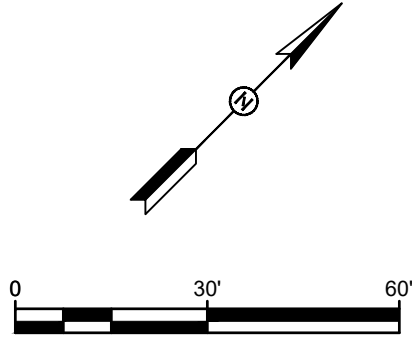
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PIPE PENETRATION SCHEDULE				
MARKED LOCATION	QUANTITY	DIAMETER	PIPE MATERIAL	COMMENTS
①	1	8-INCH	DUCTILE IRON	INLET PIPE
②	1	8-INCH	HDPE	OVERFLOW TO LAGOON 2
③	1	8-INCH	HDPE	INLET PIPE FROM LAGOON1
④	1	8-INCH	HDPE	OUTLET PIPE
⑤	1	8-INCH	HDPE	LAGOON 2 DRAIN PIPE
⑥	1	8-INCH	HDPE	LAGOON 1 DRAIN PIPE



KEYED NOTES

- FURNISH AND INSTALL TEXTURED 60 MIL (MINIMUM) BLACK HIGH DENSITY POLYETHYLENE GEOMEMBRANE LINER ON POND BOTTOM AND SLOPES PER STS 43 47 13 : HDPE LINER.
- FURNISH AND INSTALL NEW LINER VENTS.
- PROVIDE POND SAFETY ESCAPE PANELS PER MANUFACTURERS RECOMMENDATIONS.
- NEW 8" DIA. SAS, SEE SHEET C-8.
- EXISTING FENCE TO REMAIN IN PLACE.

SHEET NOTES

- POND LINING PLAN PROVIDED AS AN EXAMPLE ONLY. CONTRACTOR SHALL SUBMIT POND LINING PLAN WITH A PROPOSED PANEL LAYOUT FOR ENGINEERS REVIEW AND APPROVAL PER STS 43 47 13 : HDPE LINER.
- ALL PIPE PENETRATIONS THROUGH THE NEW LINER SHALL BE INSTALLED WITH A PIPE BOOT TO ENSURE WATER TIGHT SEAL.. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- ENGINEER SHALL REVIEW FINISHED SUBGRADE PRIOR TO PLACING LINER.



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REHABILITATION

FACULTATIVE LAGOONS 1 AND 2 LINING PLAN

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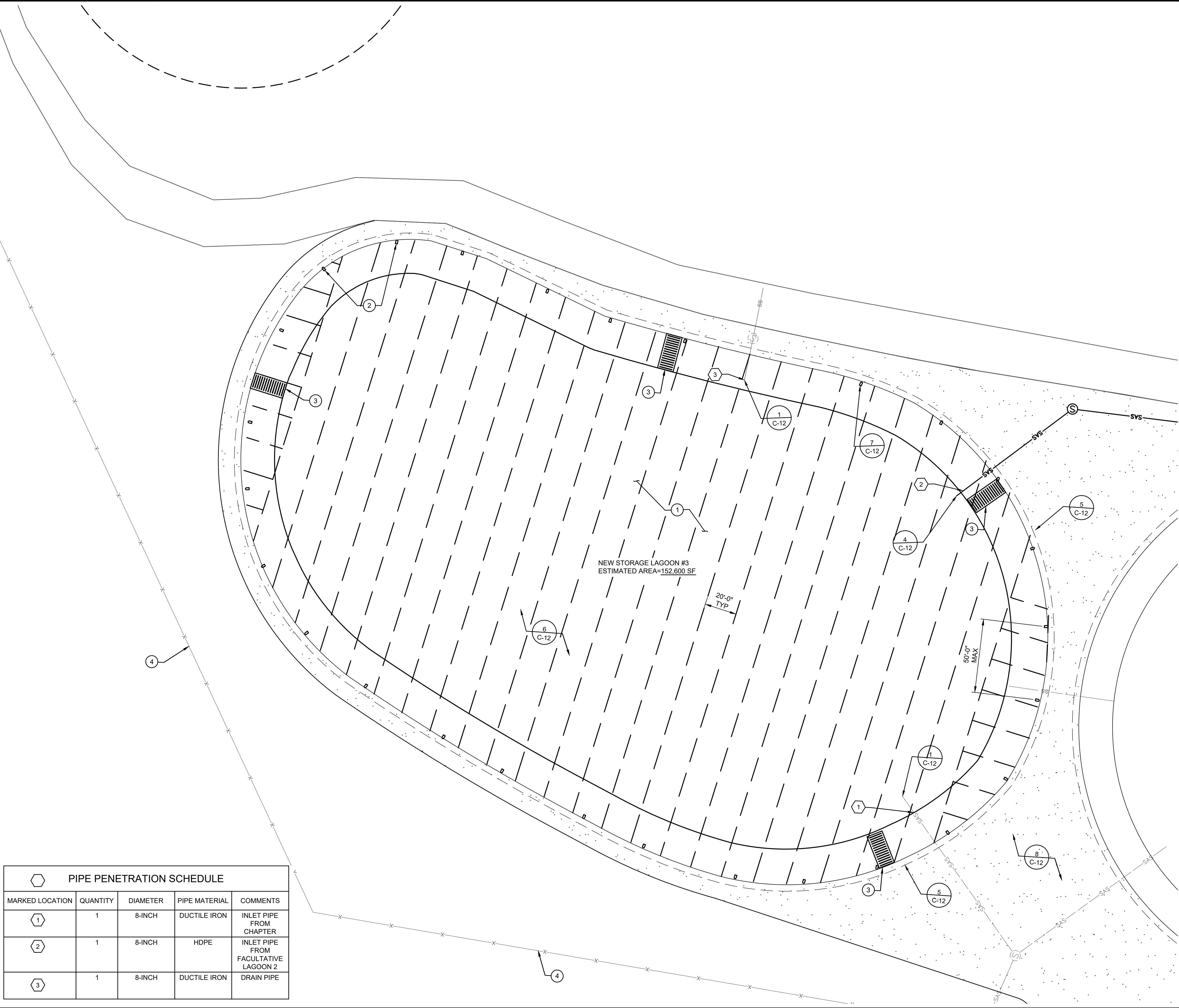


JOB NO:
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DATE:
DECEMBER 2023

SHEET NO:
C-6

PIPE PENETRATION SCHEDULE				
MARKED LOCATION	QUANTITY	DIAMETER	PIPE MATERIAL	COMMENTS
①	1	8-INCH	DUCTILE IRON	INLET PIPE FROM CHAPTER
②	1	8-INCH	HDPE	INLET PIPE FROM FACULTATIVE LAGOON 2
③	1	8-INCH	DUCTILE IRON	DRAIN PIPE



KEYED NOTES

1.

FURNISH AND INSTALL TEXTURED 60 MIL (MINIMUM) BLACK HIGH DENSITY POLYETHYLENE GEOMEMBRANE LINER ON POND BOTTOM AND SLOPES PER STS 43 47 13 : HDPE LINER.

2.

FURNISH AND INSTALL NEW LINER VENTS.

3.

PROVIDE POND SAFETY ESCAPE PANELS PER MANUFACTURERS RECOMMENDATIONS.

4.

EXISTING FENCE TO REMAIN IN PLACE.

SHEET NOTES

1.

POND LINING PLAN PROVIDED AS AN EXAMPLE ONLY. CONTRACTOR SHALL SUBMIT POND LINING PLAN WITH A PROPOSED PANEL LAYOUT FOR ENGINEERS REVIEW AND APPROVAL PER STS 43 47 13 : HDPE LINER.

2.

ALL PIPE PENETRATIONS THROUGH THE NEW LINER SHALL BE INSTALLED WITH A PIPE BOOT TO ENSURE WATER TIGHT SEAL. INSTALL PER MANUFACTURERS RECOMMENDATIONS.

Professional Engineer
CODY L. SITES
74877
DATE SIGNED 12/13/23
ARIZONA U.S.A.

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NO.	REVISION DESCRIPTION	DATE	BY
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COALMINE CANYON CHAPTER WWTP LAGOON REHABILITATION

STORAGE LAGOON 3 LINING PLAN

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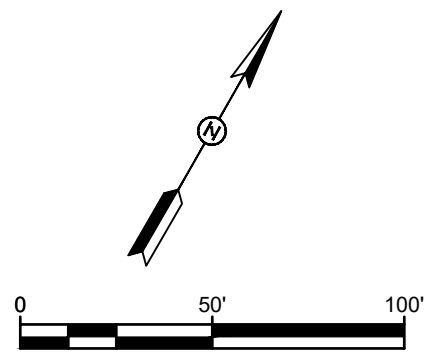
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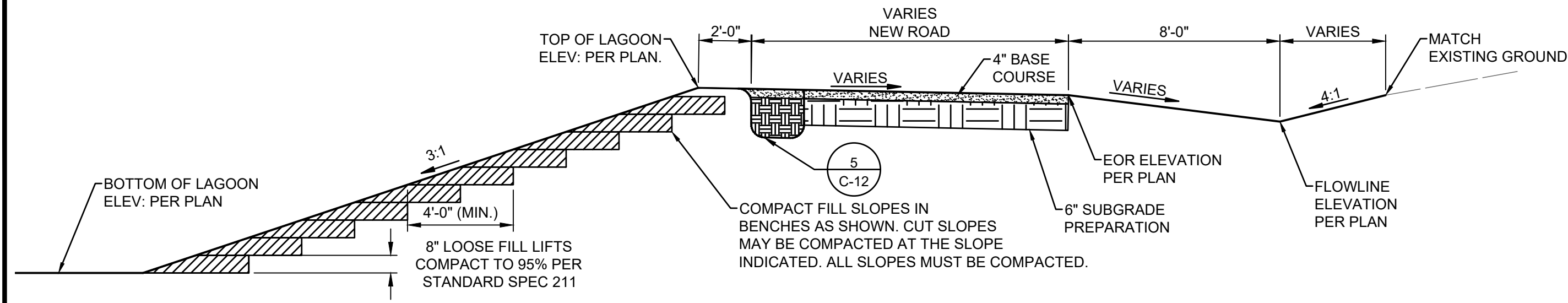
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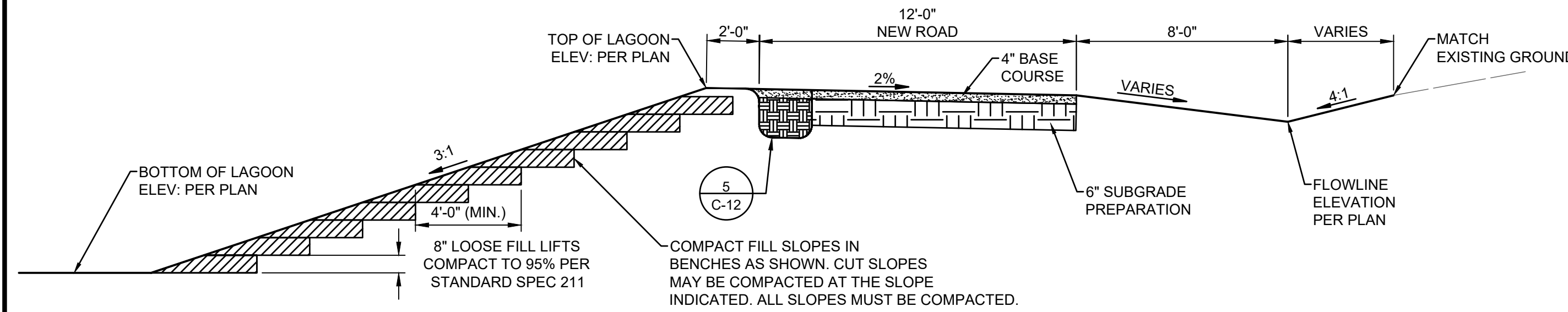


1. ALL PIPES WITHOUT SECTION CUTS ARE PART OF THE ADDITIVE BID SCHEDULE.

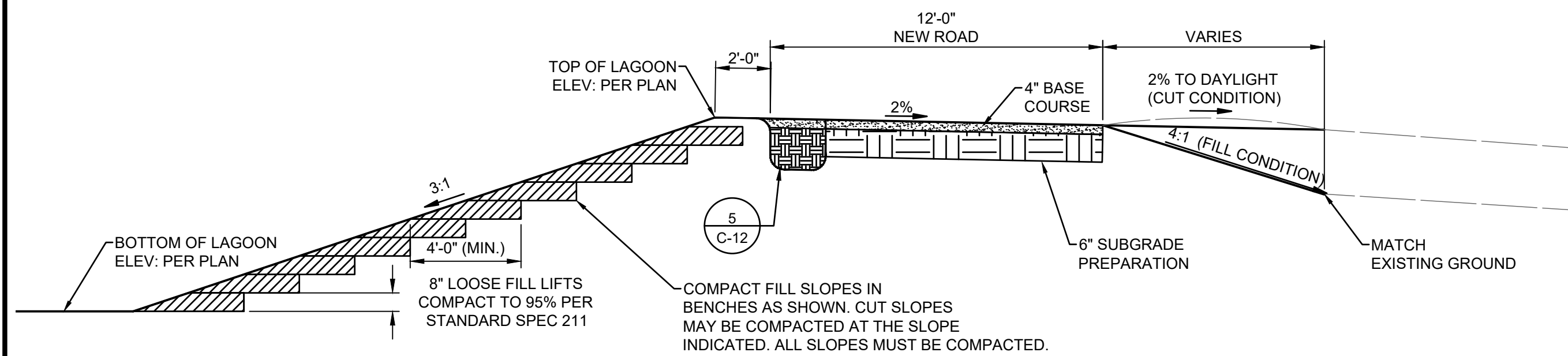
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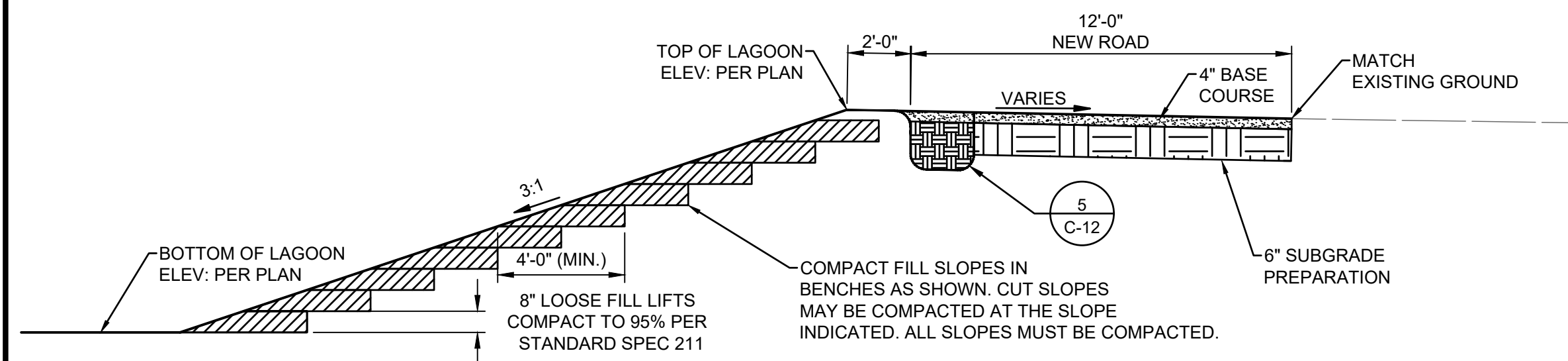
1 EMBANKMENT & SWALE SECTION
SCALE: 1:4



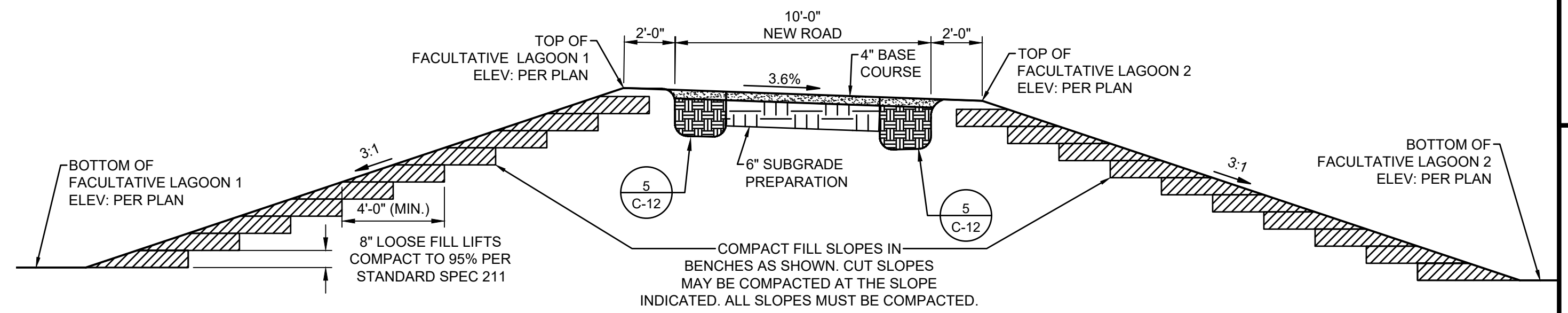
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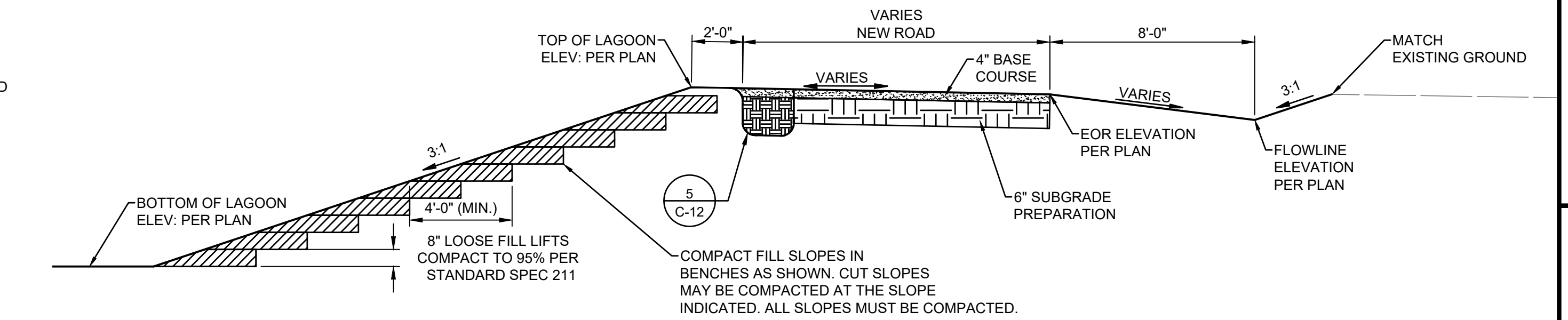
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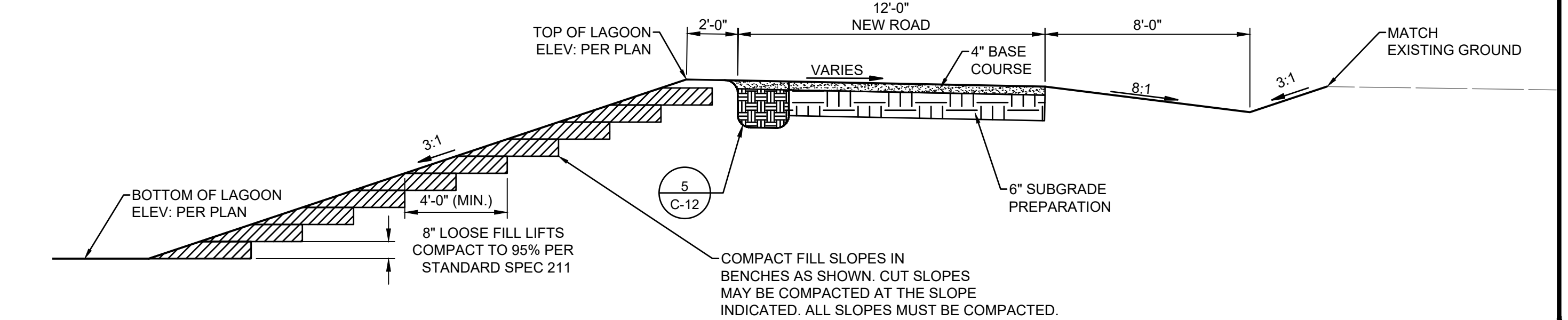
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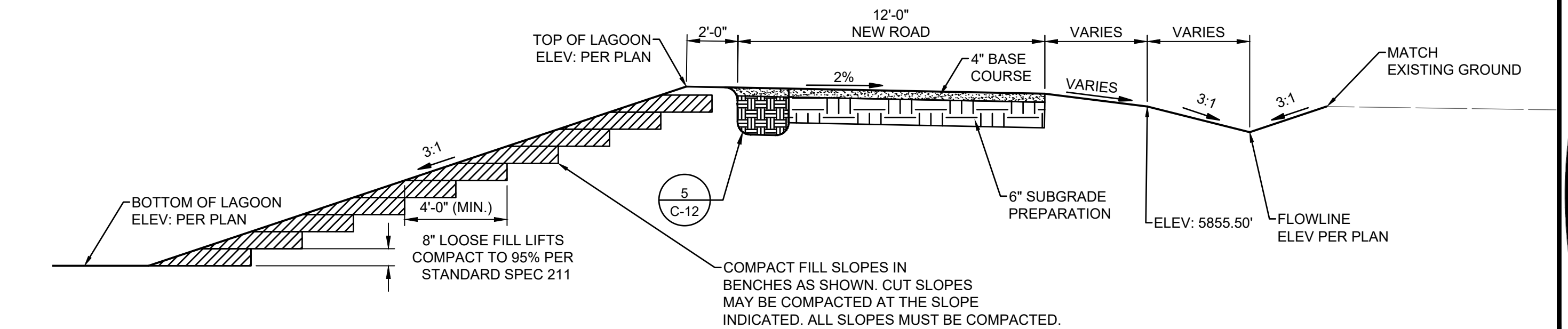
5 EMBANKMENT SECTION
SCALE: 1:4



6 EMBANKMENT SECTION
SCALE: 1:4



7 EMBANKMENT SECTION
SCALE: 1:4



8 EMBANKMENT SECTION
SCALE: 1:4



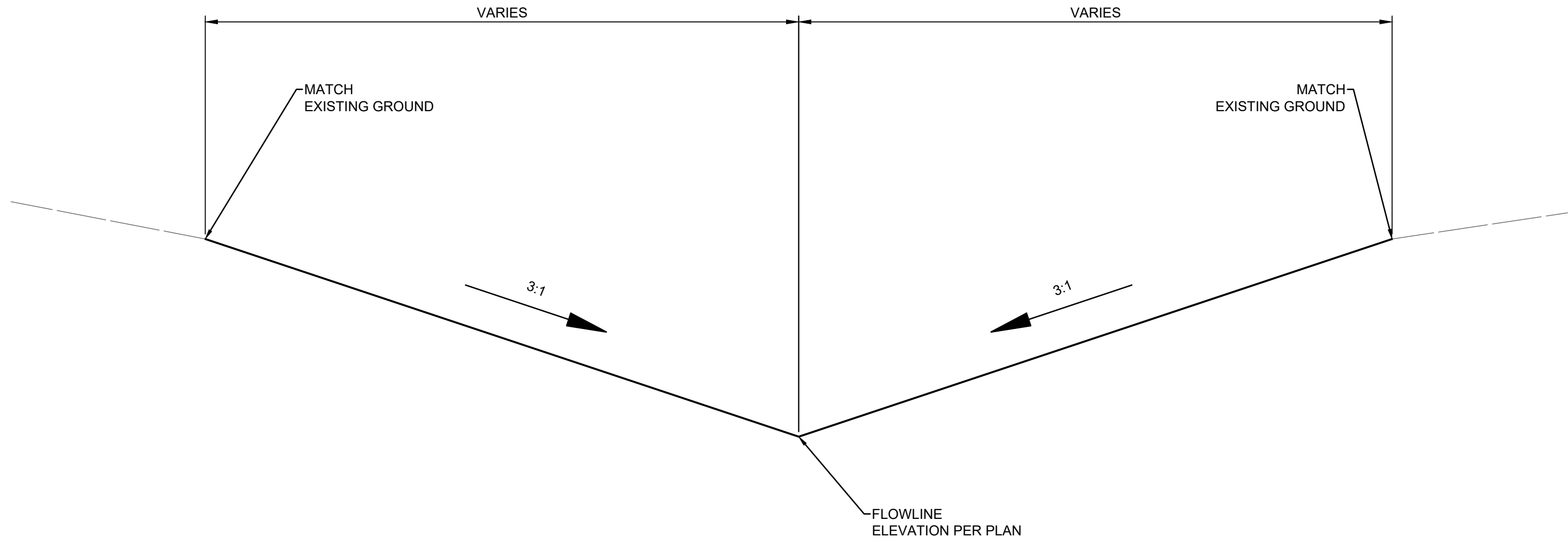
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REHABILITATION

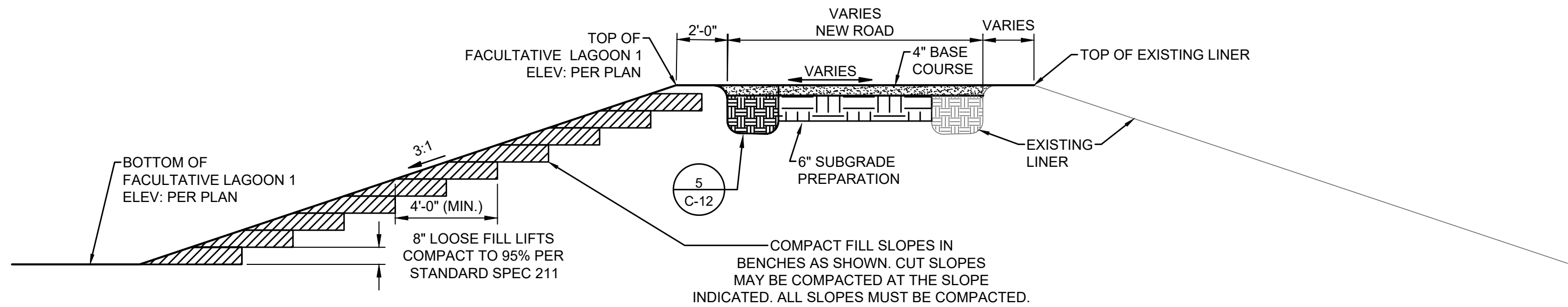
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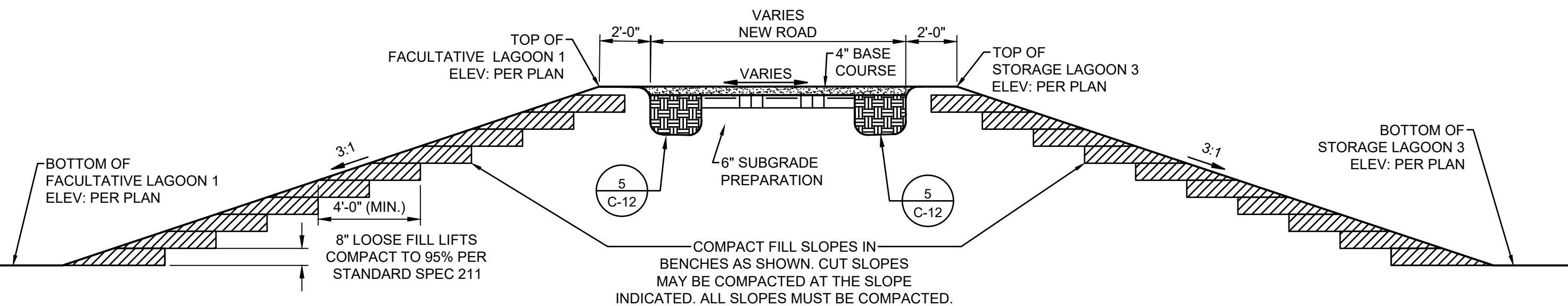
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9 SWALE SECTION
SCALE: 1:1



10 EMBANKMENT SECTION
SCALE: 1:4



11 EMBANKMENT SECTION
SCALE: 1:4



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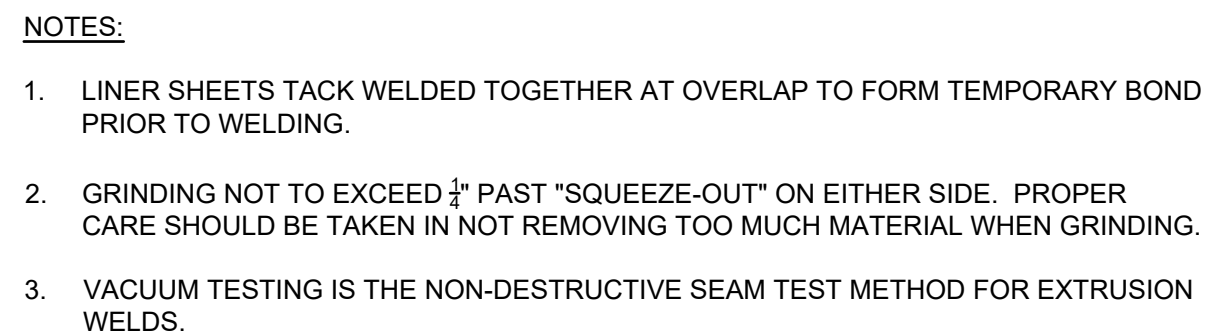
COALMINE CANYON CHAPTER WWTP LAGOON REHABILITATION	GRADING SECTIONS 2
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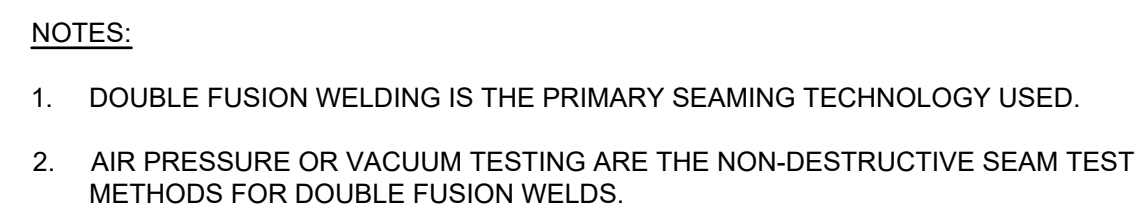
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2 LINER EXTRUSION WELD DETAIL

SCALE: NTS



3 LINER DOUBLE FUSION WELD DETAIL

SCALE: NTS



5		
4		
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COALMINE CANYON CHAPTER WWTP LAGOON
REHABILITATION

CIVIL DETAILS

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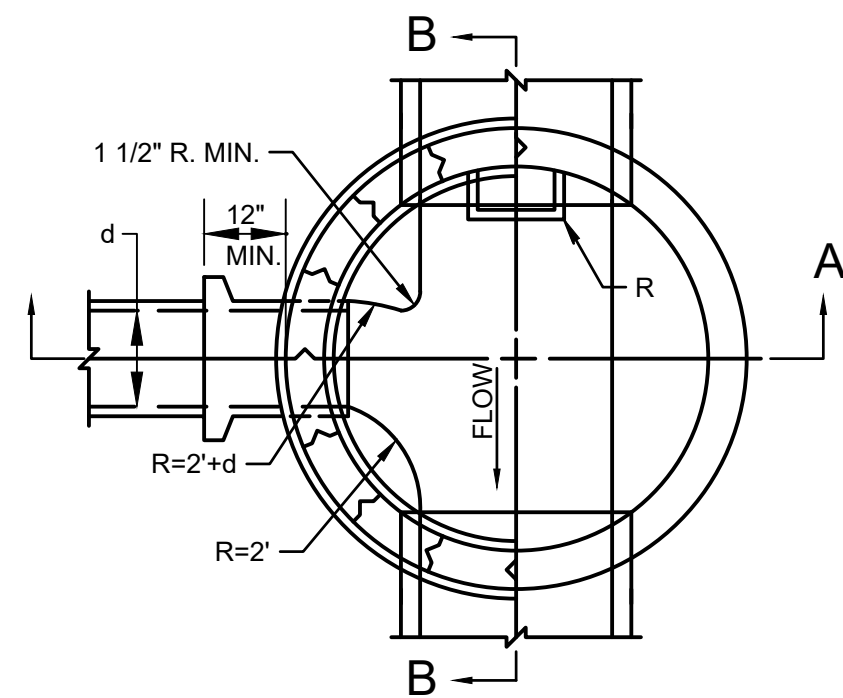


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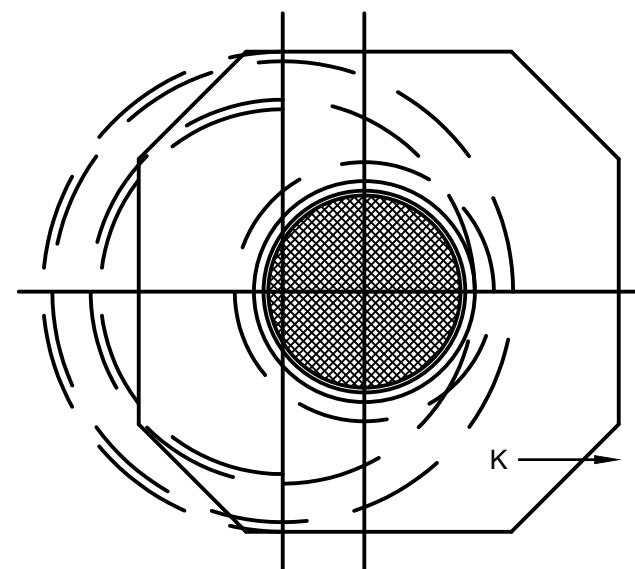
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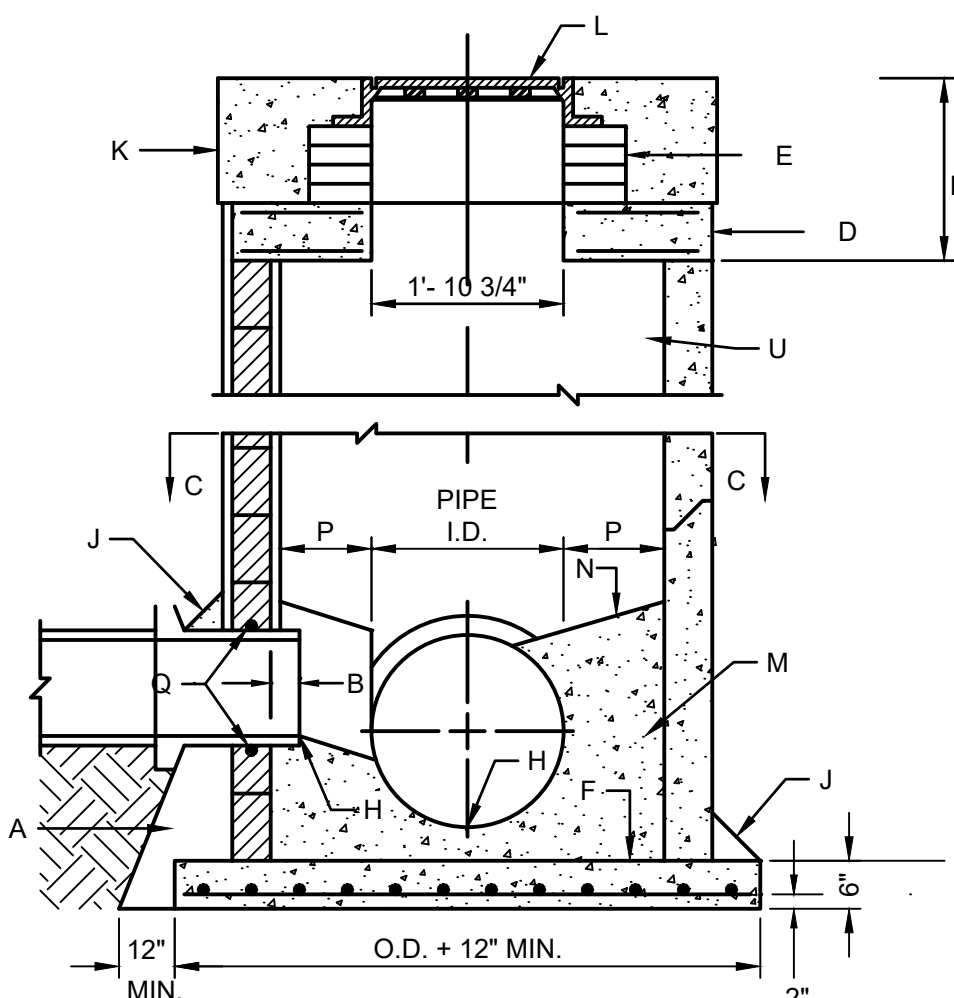
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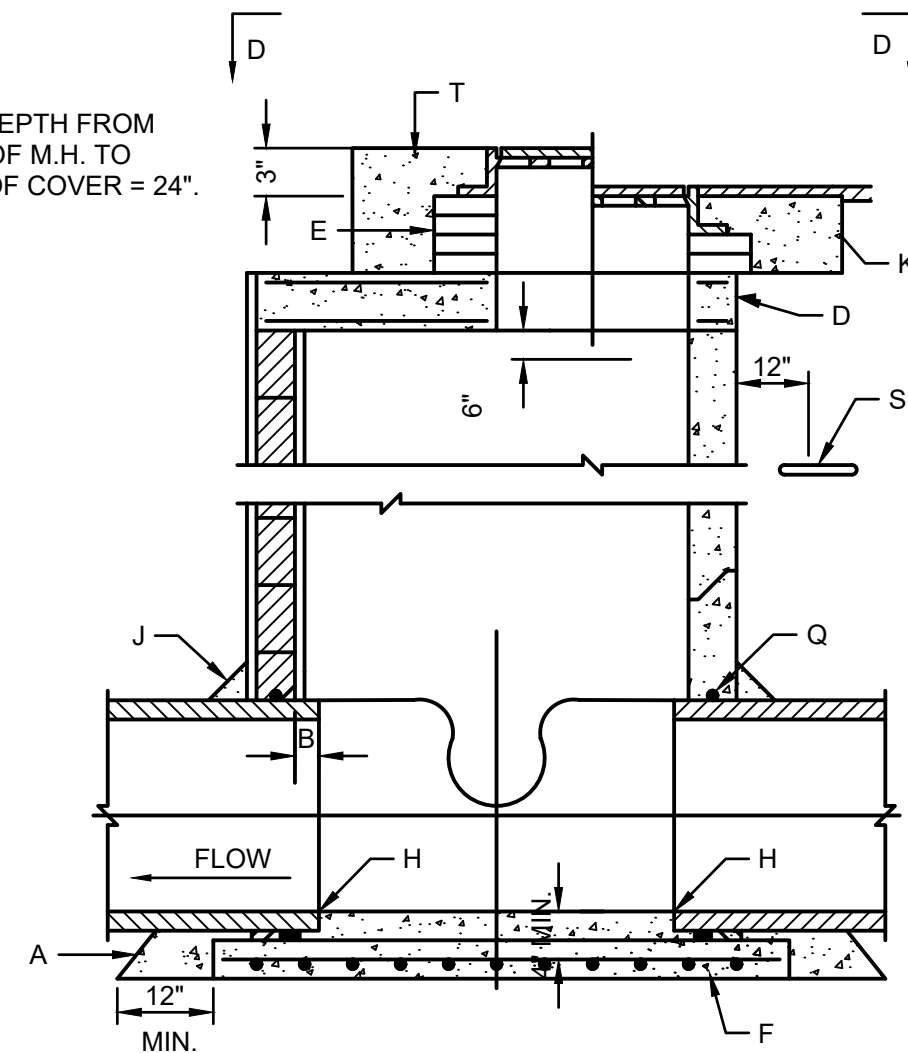
PLAN AT C-C



PLAN AT D-D

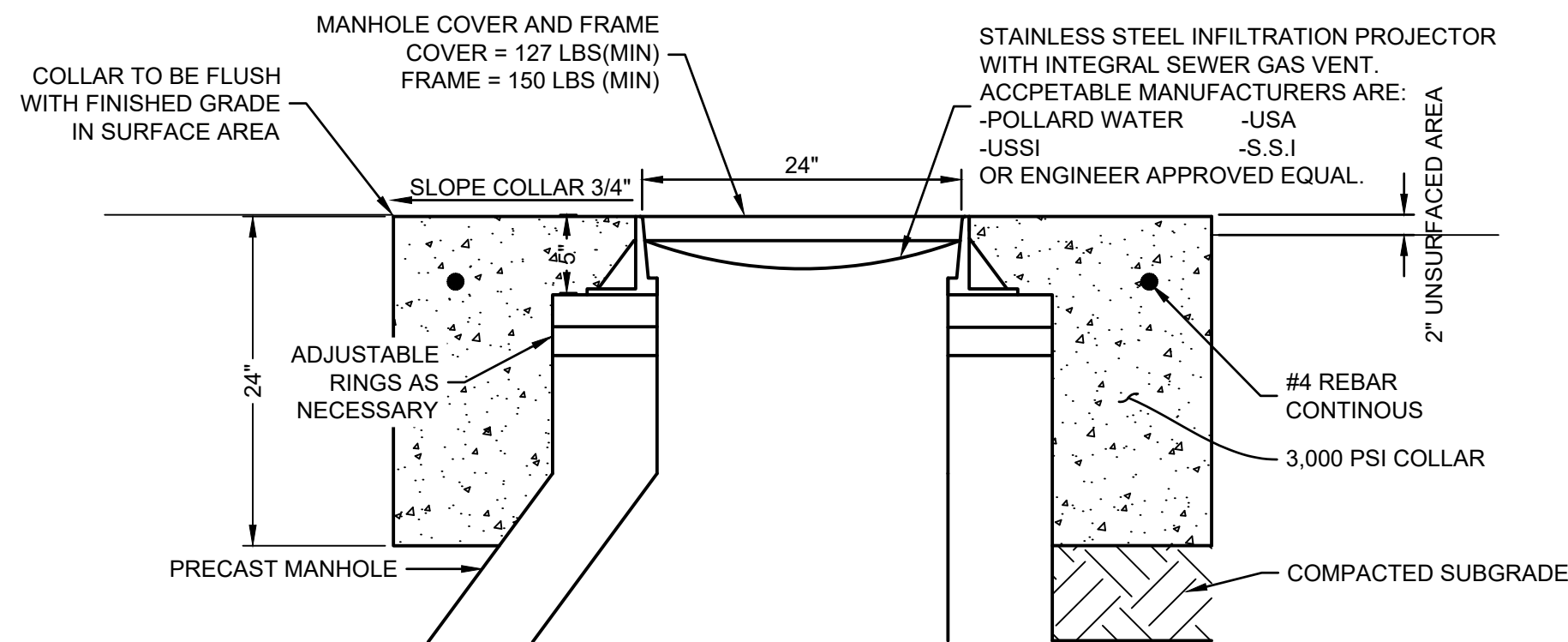


CROSS SECTION A-A

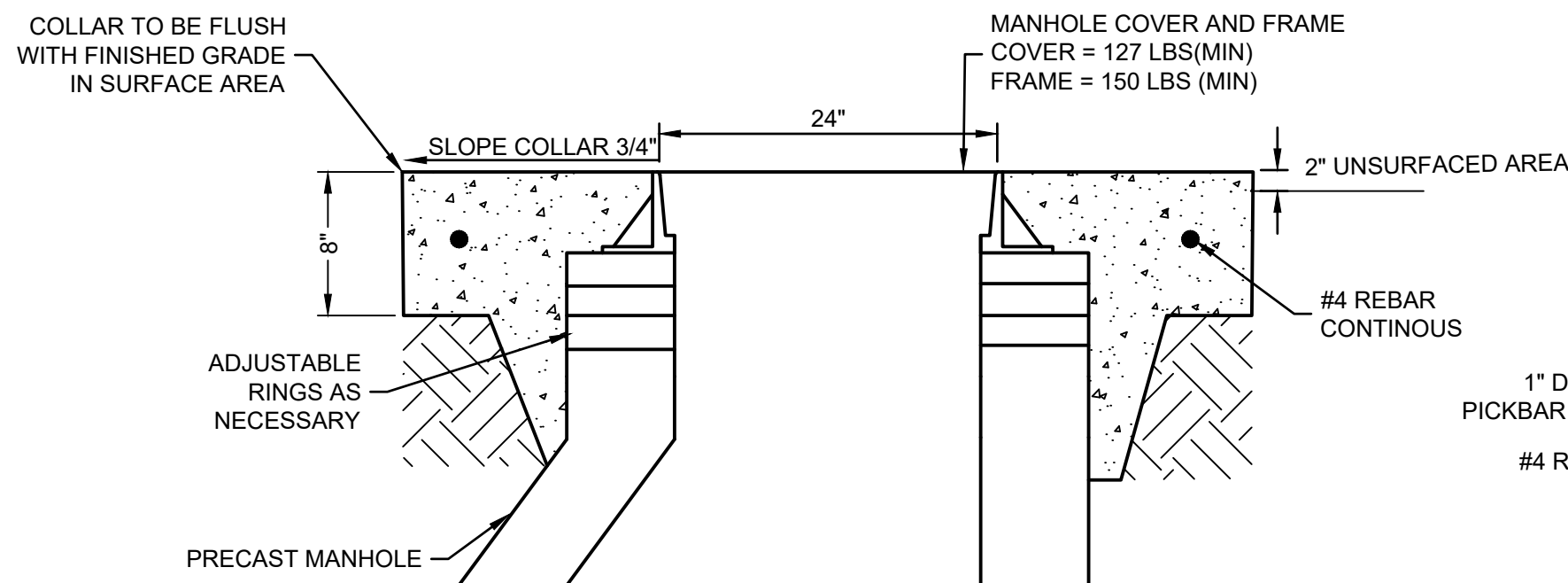


CROSS SECTION B-B

1 MANHOLE TYPE "C" DETAIL
SCALE: NTS



SEALED TYPE

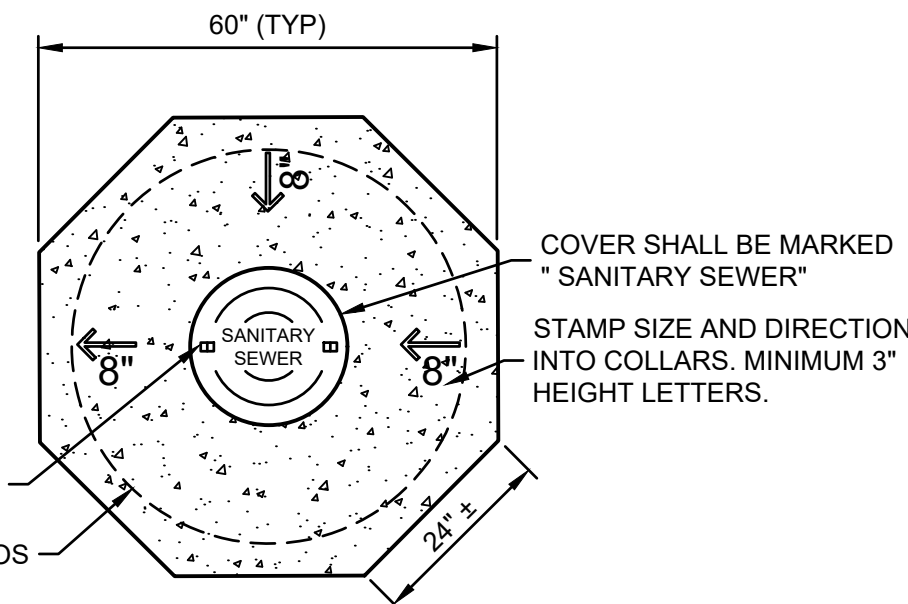


STANDARD TYPE

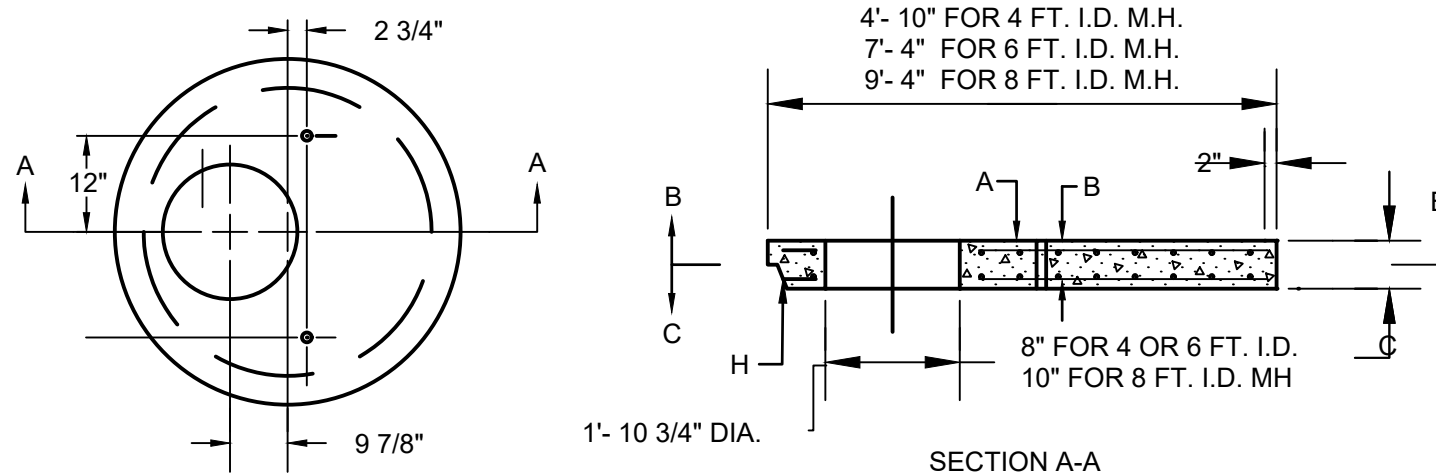
3 TYPICAL MANHOLE CONCRETE COLLAR DETAIL
SCALE: NTS

GENERAL NOTES:

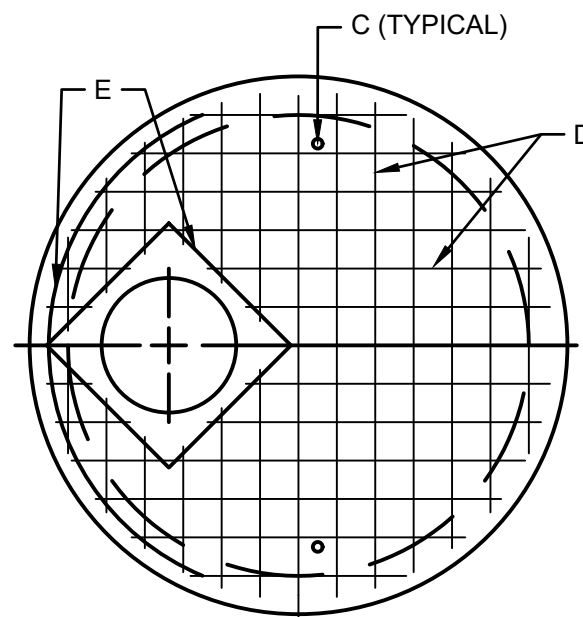
1. PLACE ELECTRONIC MARKING DEVICE UNDER COLLAR.
2. FAILURE TO STAMP COLLAR, OR TO PLACE EMD SHALL RESULT IN REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST TO THE OWNER.
3. SEALED LIDS ON TYPE "C" MANHOLES SHALL HAVE INFILTRATOR PAN AND COLLARS PLACED TO MANHOLE LID.
4. STANDARD TYPE TO BE USED UNLESS CALLED OUT OTHERWISE ON DRAWINGS.



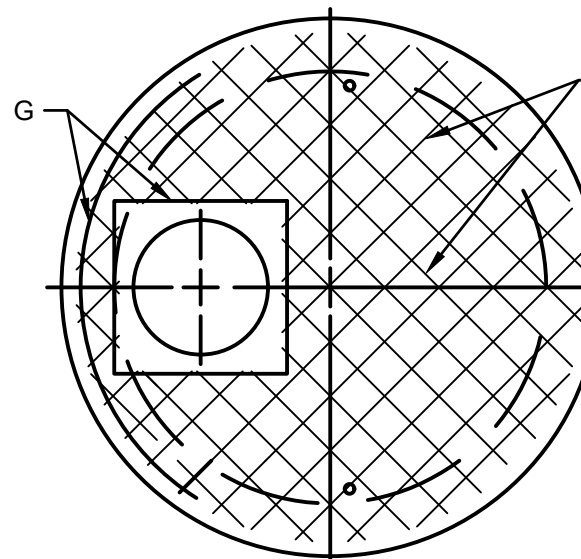
PLAN VIEW



4" I.D. MH

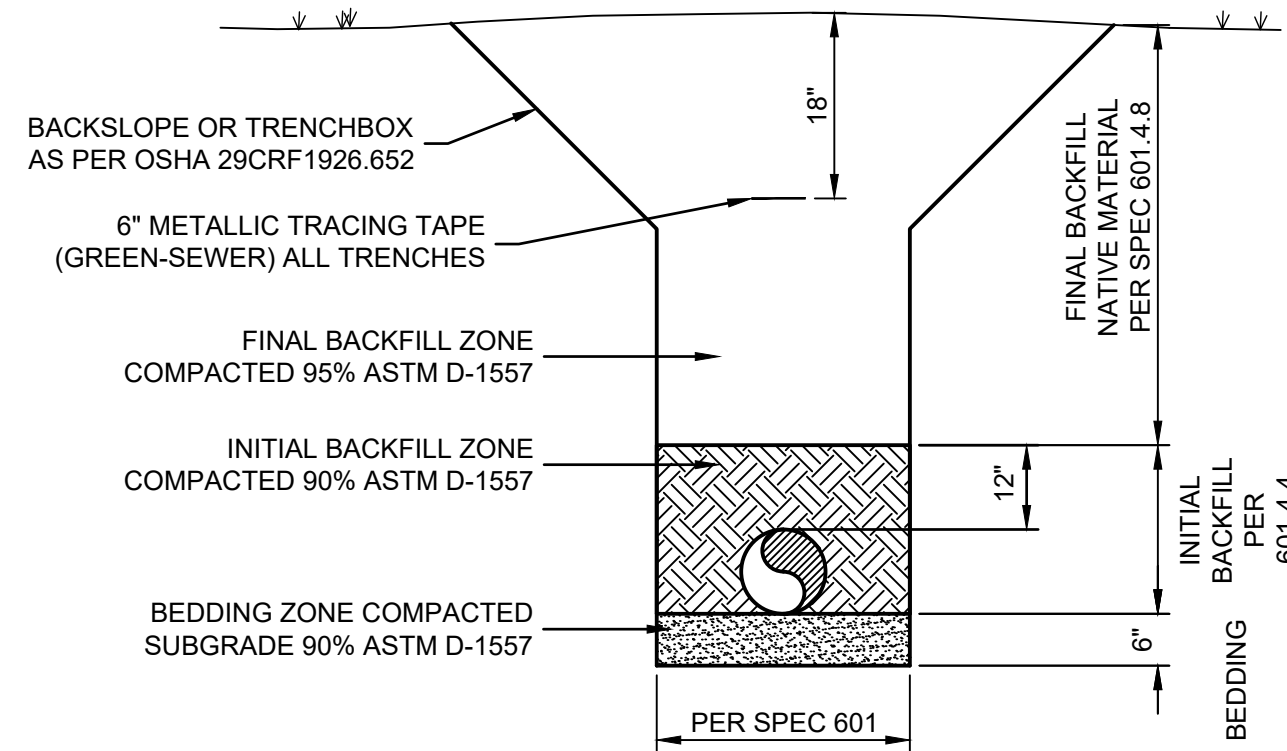


SECTION B-B
TOP MAT



SECTION C-C
BOTTOM MAT

2 MANHOLE LID DETAIL
SCALE: NTS



NOTE: EXISTING GRADE FOR TOP OF TRENCH MEASUREMENT IS GROUNDLINE AT TRENCH OR THE ADJACENT ROADWAY WHICH EVER IS LOWER

4 TYPICAL PIPE TRENCH SECTION
SCALE: NTS

SHEET NOTES

GENERAL NOTES:

1. USE TYPE C M.H. FOR DEPTHS OF LESS THAN 6' MEASURED FROM INV. TO RIM.
2. CONTRACTOR HAS OPTION TO CONSTRUCT TYPE C M.H. IN LIEU OF TYPE E M.H. FOR DEPTHS OF 6' OR MORE.
3. DESIGN APPLIES TO 4' & 6' I.D. MANHOLES.
4. M.H. GREATER THAN 18' IN DEPTH SHALL ONLY BE CONSTRUCTION PRECAST CONCRETE SECTIONS.
5. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PENETRATIONS.
6. COMPACT ALL BACKFILL AROUND MANHOLE IN ACCORDANCE TO STD. SPEC 920.
7. POSITION M.H. OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

LID CONSTRUCTION NOTES:

- A. PRECAST REINFORCED CONCRETE MANHOLE COVER.
- B. ALL BARS TO HAVE 1 1/2" MIN. COVER.
- C. 1" PIPE SLEEVE VERTICALLY THROUGH COVER.
- D. TOP MAT NO. 4 BARS AT 6" O.C. EA. WAY FOR 4 FT. MH 6 & 8 FT. I.D. MH.
- E. NO. 4 BARS AS SHOWN.
- F. BOTTOM MAT NO. 4 BARS 6" O.C. EA. WAY FOR 4 & 6 FT. I.D. MH, NO. 8 BARS 8" O.C. EA. WAY FOR 8 FT. I.D. MH.
- G. NO. 4 BARS FOR 4 & 6 FT. I.D. MANHOLE. NO. 8 BARS FOR 8 FT. I.D. MH.
- H. WHEN PRECAST MANHOLE SECTIONS ARE USED, COVER SHALL BE MODIFIED TO SHAPE OF APPROPRIATE SIZE T & G JOINT.

MANHOLE CONSTRUCTION NOTES:

- A. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF M.H. TO BELL OF FIRST JOINT & SHALL CRADLE PIPE TO SPRING LINE. NOT APPLICABLE FLEXIBLE PIPE.
- B. PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
- D. PRECAST CONCRETE COVER, SEE DETAIL THIS SHEET.
- E. USE MAX. 4 COURSES GR. MS BRICK ON UNPAVED STREET FOR FUTURE ADJ. OF M.H. FRAME TO PAVEMENT GRADE. PLASTER INSIDE WITH 1/2" MORTAR.
- F. CONCRETE BASE TO BE POURED IN PLACE USING NO. 4 BARS AT 6" O.C. EA. WAY FOR M.H. DEPTH OF 16' OR GREATER. NO. 4 BARS AT 12" O.C. EA. WAY FOR M.H. LESS THAN 16' IN DEPTH.
- H. INV. ELEV. OF STUB OR LATERAL AS SHOWN ON PLANS.
- J. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
- K. USE A 5' X 5' CONCRETE COLLAR IN ALL AREAS.
- L. FRAME AND COVER, SEE DETAIL ON THIS SHEET
- M. CONCRETE FILL, 3000 PSI.
- N. SLOPE 1" PER FT. FROM PIPE CROWN.
- P. SHELf TO BE 9" WIDE MIN.
- Q. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
- S. EMD PER SPECIFICATION 170.
- T. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE TOP OF PAD.
- U. POLYURETHANE OR EPOXY COAT INTERIOR OF MANHOLE WITH ZEBRON, RAVEN 405 OR ENGINEER APPROVED EQUAL COATING.



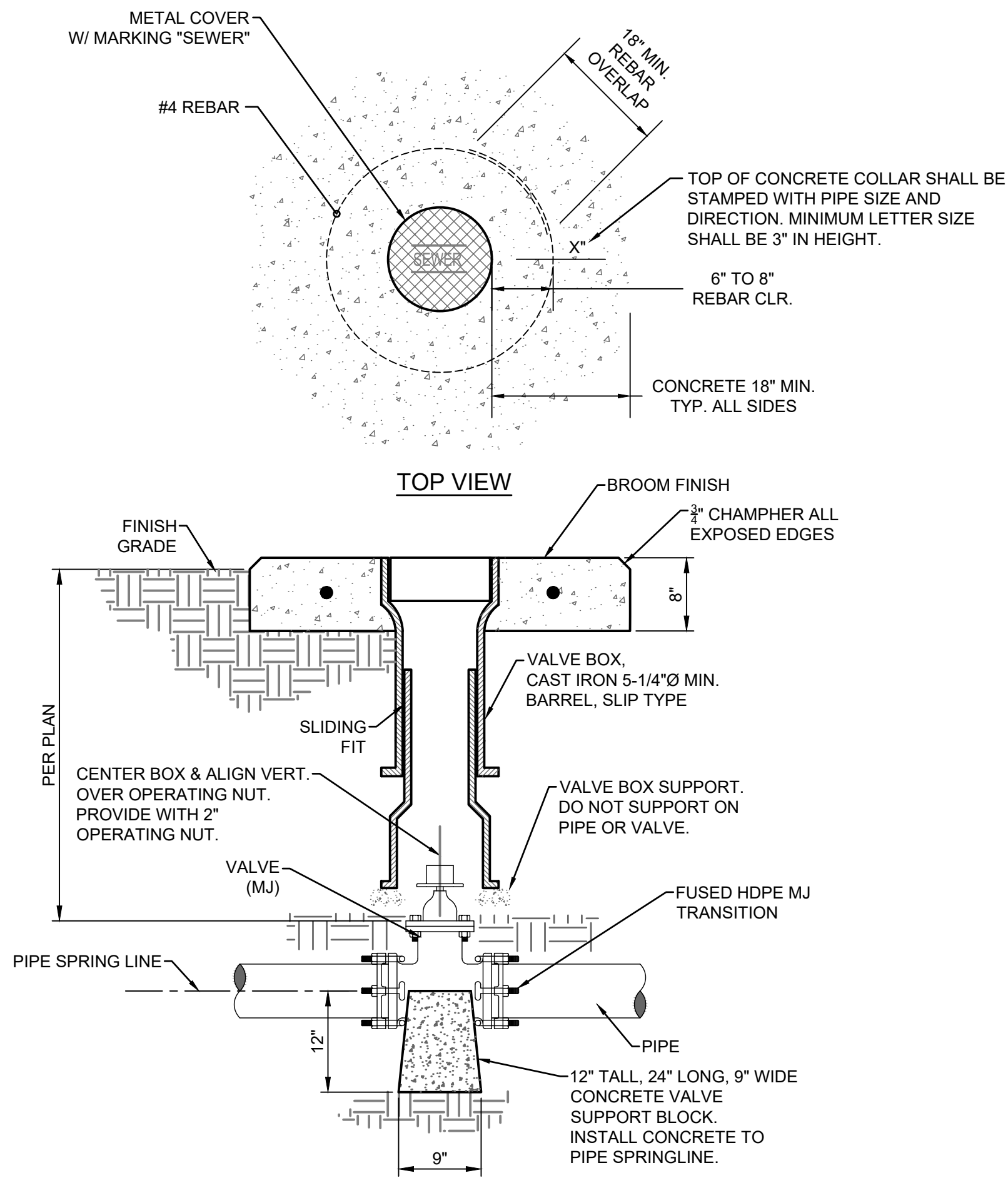
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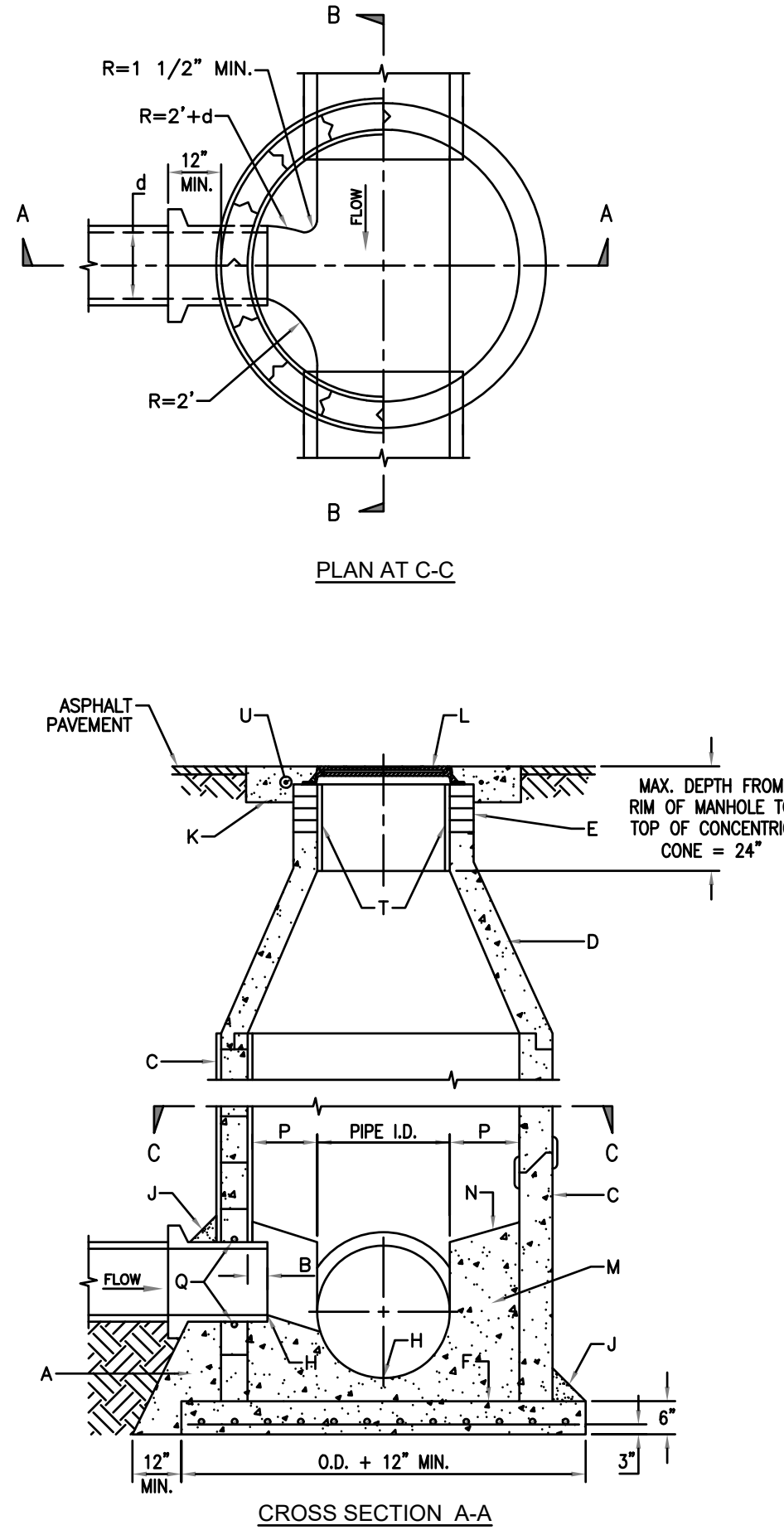
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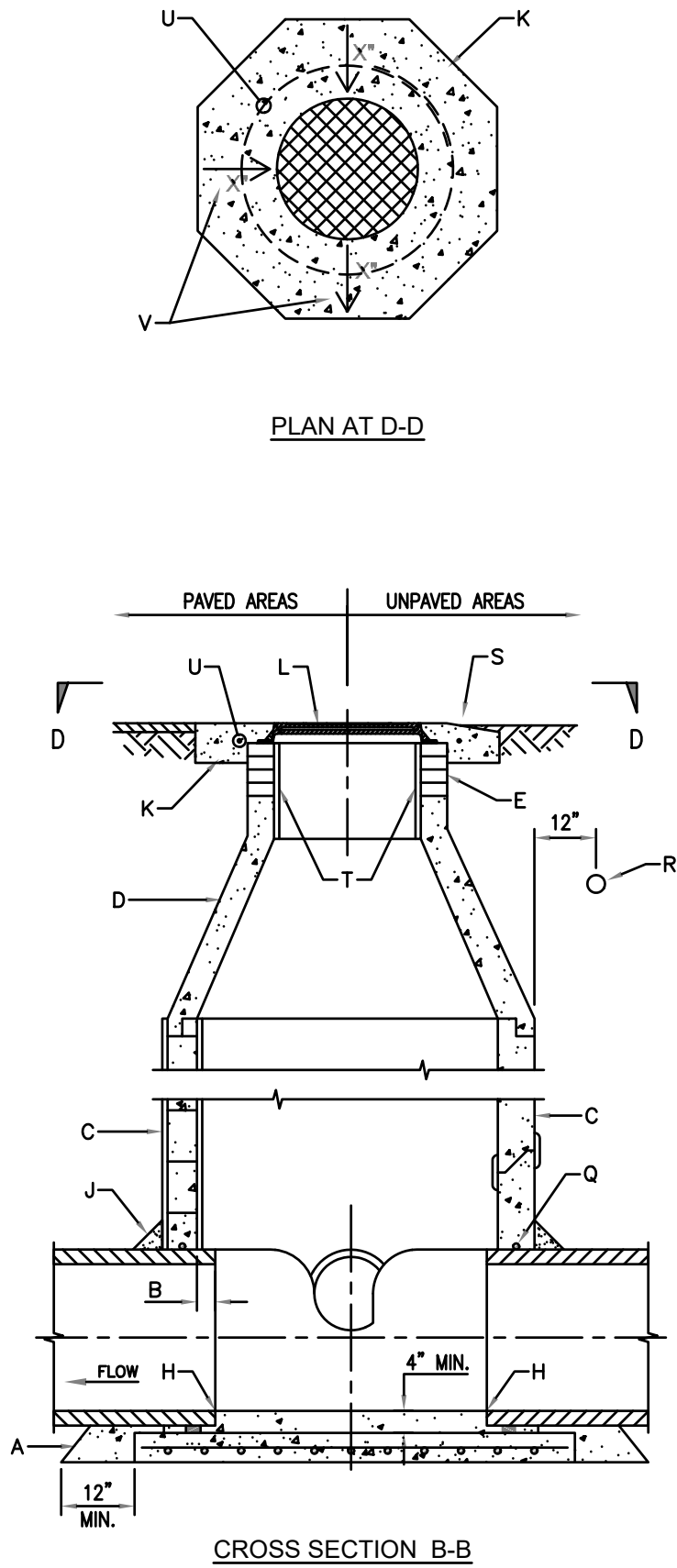
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SHEET NO:
C-13



1 **PLUG VALVE AND BOX DETAIL**
SCALE: NTS



2 **TYPE E MANHOLE**
SCALE: NTS



SHEET NOTES

- GENERAL NOTES**
- USE THE TYPE "E" MANHOLE FOR DEPTHS $\geq 6'$ MEASURED FROM INVERT TO RIM.
 - CONTRACTOR HAS OPTION TO CONSTRUCT TYPE "C" MANHOLE IN LIEU OF TYPE "E" MANHOLE FOR DEPTHS $\geq 6'$.
 - MANHOLES $>18'$ IN DEPTH SHALL BE CONSTRUCTED OF PRECAST CONCRETE SECTIONS ONLY.
 - DESIGN APPLIES TO 4' TO 6' I.D. MANHOLES.
 - COMPACT AND BACKFILL AROUND MANHOLE PER NMSSPW SECTION 290.
 - USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PIPE PENETRATIONS.
 - APPLY WATER PROOFING COATING TO EXTERIOR OF MANHOLE IN AREA WHERE GROUNDWATER IS PRESENT.
 - POLYURETHANE OR EPOXY COAT INTERIOR OF MANHOLE WITH ZEBRON, RAVEN 405 OR OTHER APPROVED DEVICES.

- CONSTRUCTION NOTES**
- CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE PIPE TO SPRING LINE. NOT APPLICABLE FOR FLEXIBLE PIPE.
 - PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
 - MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, POURED CONCRETE, OR PRECAST REINFORCED CONCRETE. IF PRECAST CONCRETE IS USED, USE MASTIC GASKETS AND APPLY NON-SHRINK GROUT TO EXTERIOR AND INTERIOR OF EXPANSION JOINTS. IF BLOCK IS USED, APPLY 1/2" THICK MORTAR COATING TO EXTERIOR AND INTERIOR OF MANHOLE.
 - PRECAST REINFORCED CONCRETE CONCENTRIC CONE. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL.
 - USE MAX. 4 COURSES GRADE MS BRICK ON UNPAVED STREET FOR FUTURE ADJUSTMENT OF MANHOLE FRAME TO PAVEMENT GRADE.
 - CONCRETE BASE TO BE POURED IN PLACE USING NO. 4 BARS AT 6" O.C. EA. WAY FOR MANHOLE DEPTH OF 216". NO. 4 BARS AT 12" O.C. EA. WAY FOR MANHOLE DEPTH OF $<16'$.
 - INVERT ELEVATION OF STUB OR LATERAL AS SHOWN ON PLANS.
 - 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
 - OCTAGONAL CONCRETE COLLAR, SEE DETAIL 4 ON SHEET C-22.
 - MANHOLE FRAME AND COVER, SEE DETAIL 4 ON SHEET C-22.
 - CONCRETE, SEE SPECIFICATION SECTION 101.
 - SLOPE 1" PER FT. FROM PIPE CROWN.
 - SHELF TO BE 9" WIDE MIN.
 - APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
 - ELECTRONIC MARKER DEVICE (EMD). SEE STANDARD SPECIFICATION SECTION 170.
 - CONCRETE COLLAR IN UNPAVED AREAS, SEE DETAIL 4 ON SHEET C-22.
 - APPLY 1/2" THICK MORTAR COATING TO INTERIOR OF OPENING.
 - #4 REBAR.
 - TOP OF CONCRETE COLLAR SHALL BE STAMPED WITH LINE SIZE AND FLOW DIRECTION ARROWS. MINIMUM LETTER SIZE SHALL BE 3" IN HEIGHT.



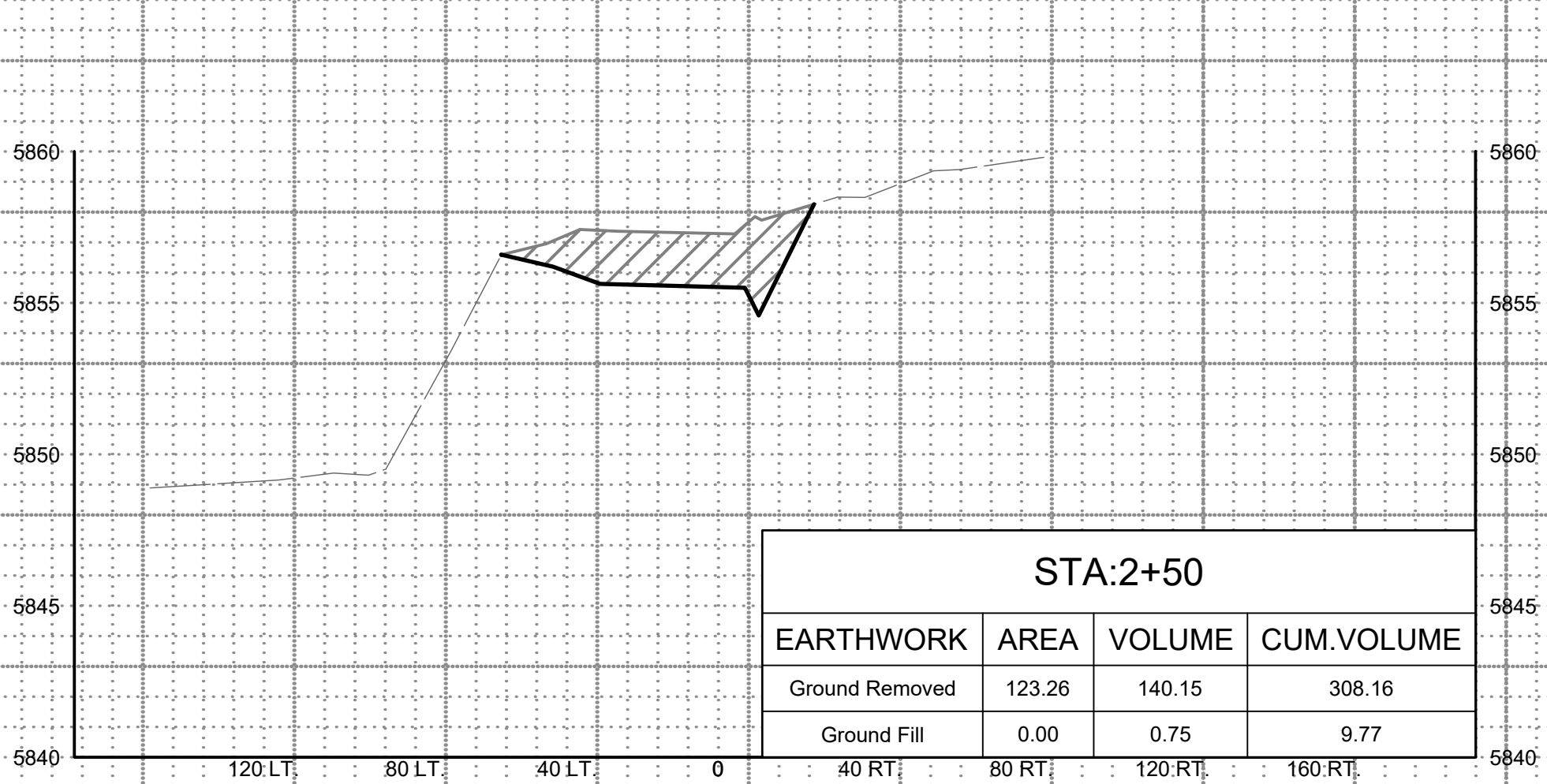
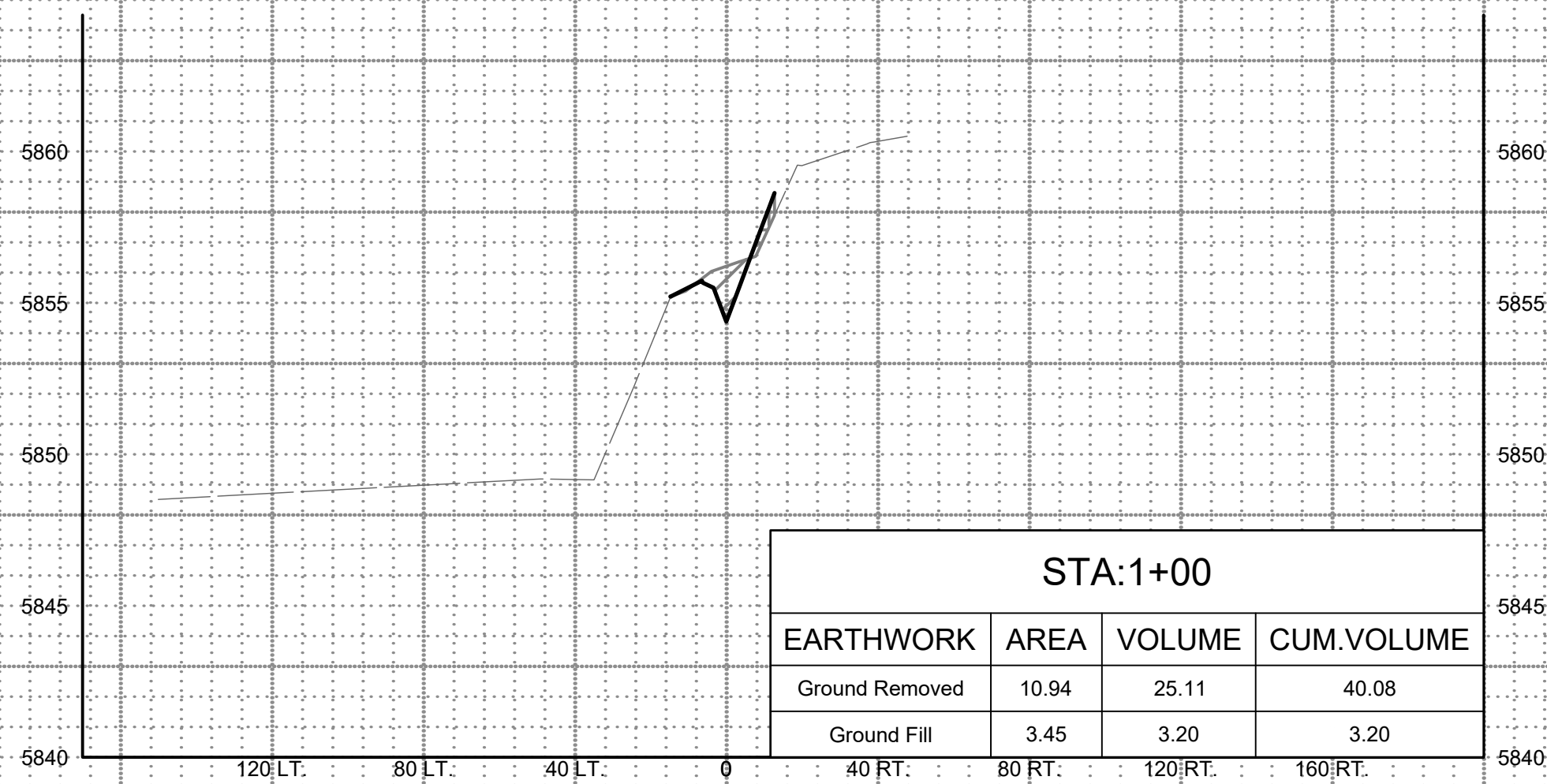
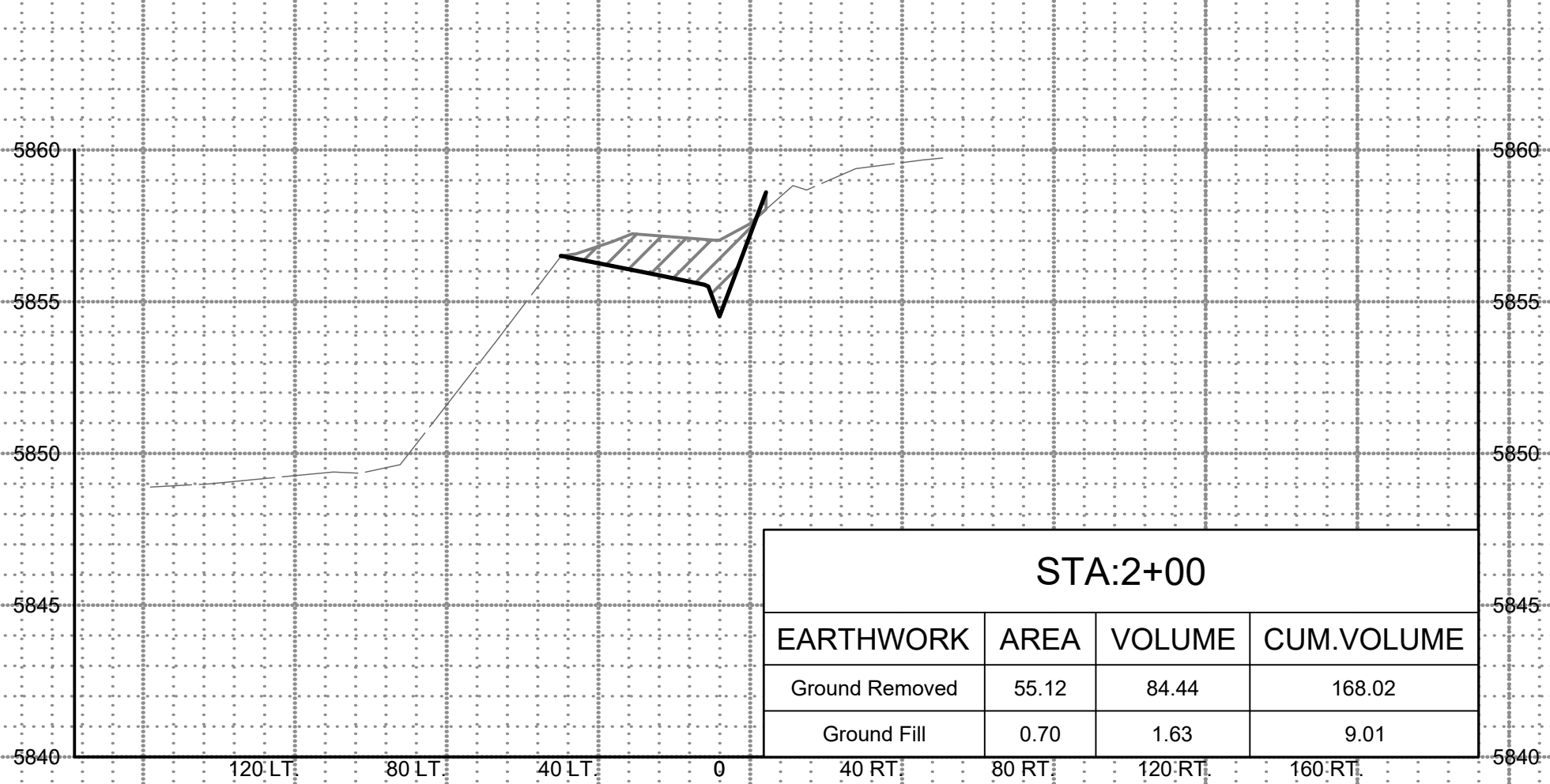
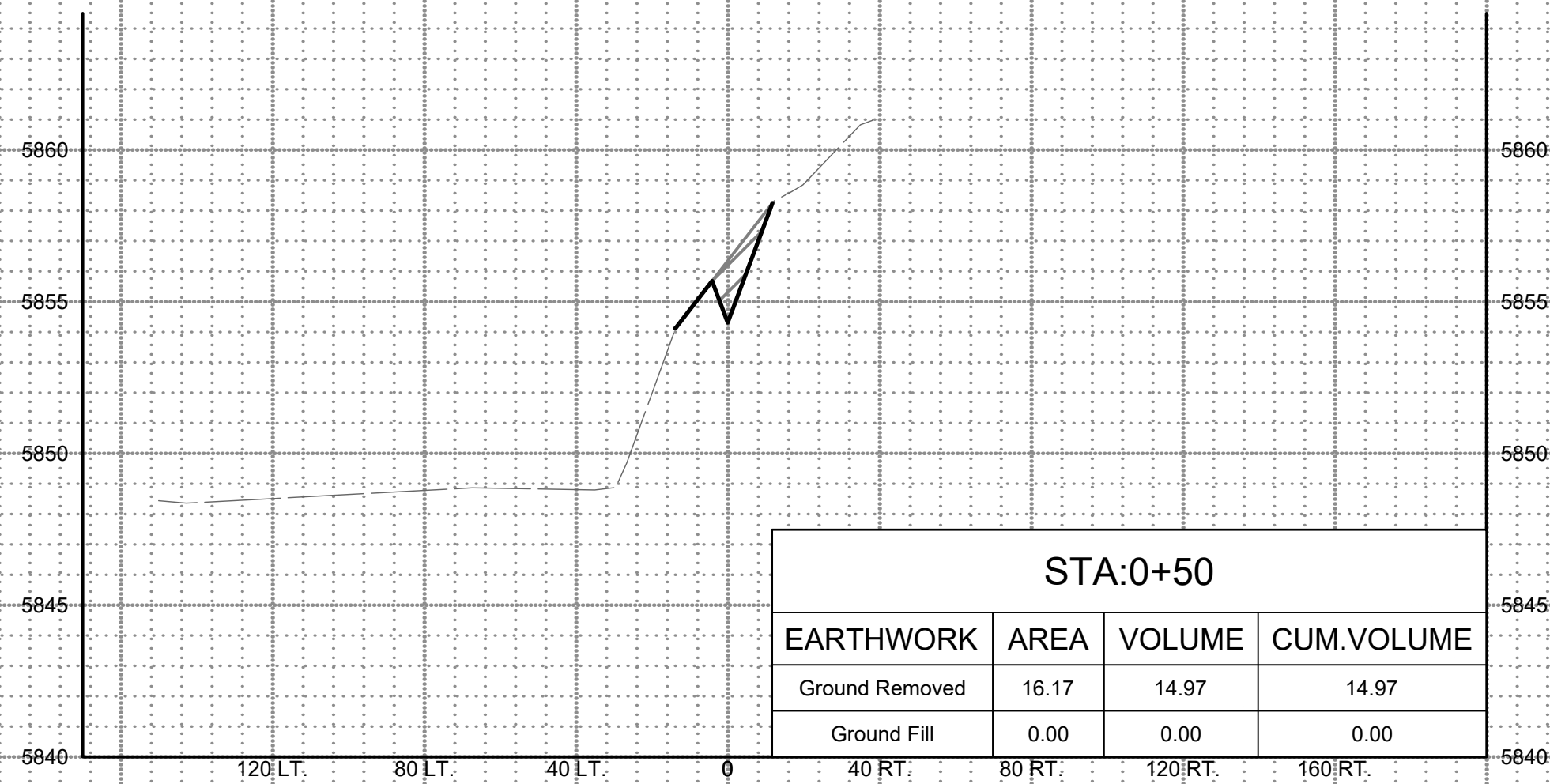
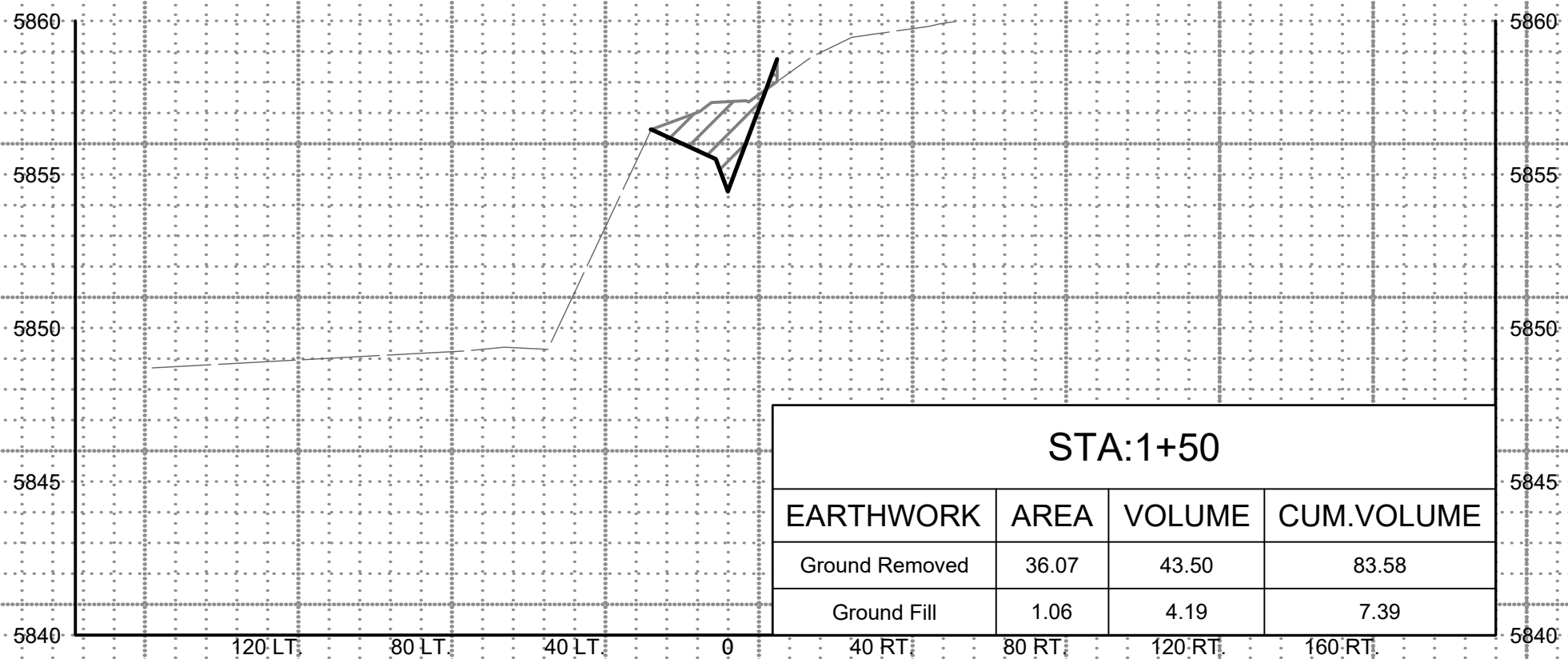
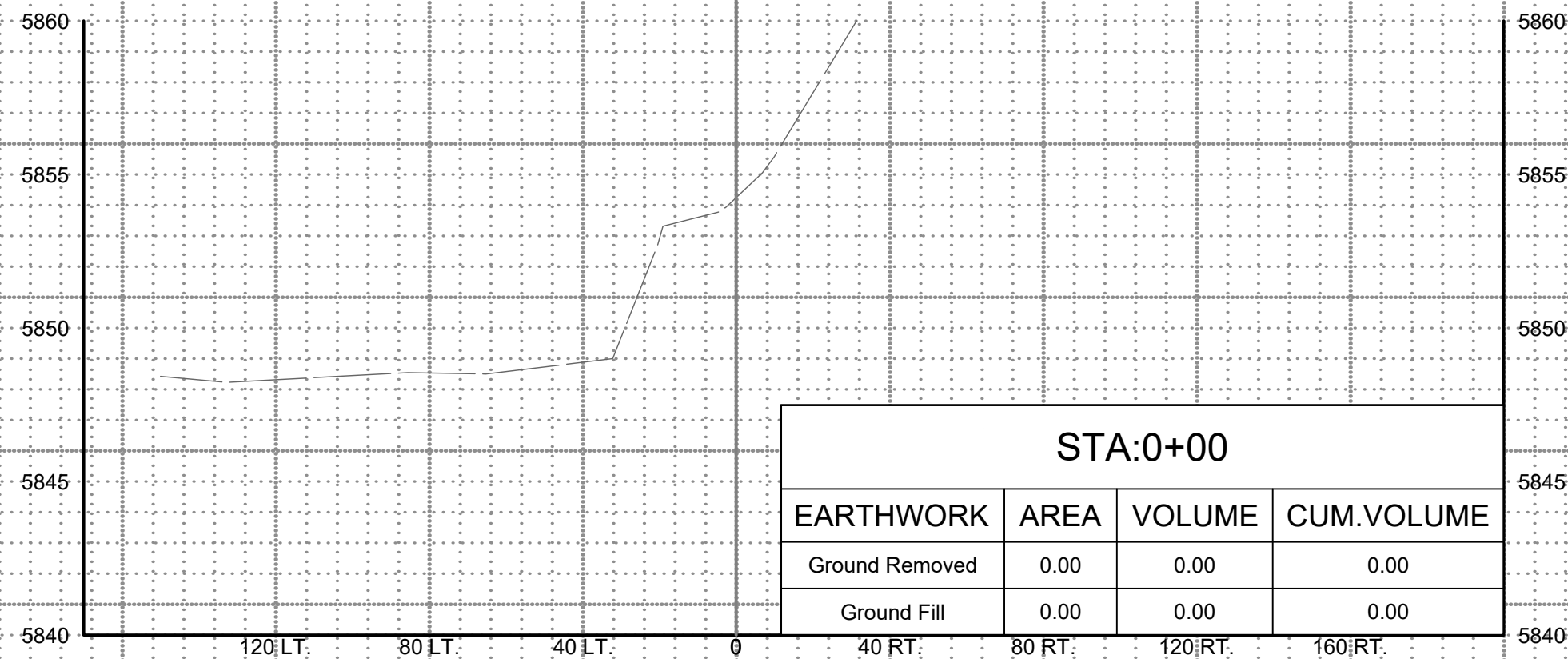
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REHABILITATION

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C-14



- NOTES:
- ESTIMATED EARTHWORK IS BASED ON CADD ESTIMATION AND IS FOR INFORMATIONAL PURPOSES ONLY
 - CUT AND FILL VOLUMES SHOWN ARE BASED ON A 1:1 RATIO WITH NO CONSIDERATION FOR WASTE, SHRINK, OR SWELL.

SHEET LEGEND:

 CUT

 FILL



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COALMINE CANYON CHAPTER WWTP LAGOON
REHABILITATION

EARTHWORK SECTIONS STA 0+00 TO 2+50

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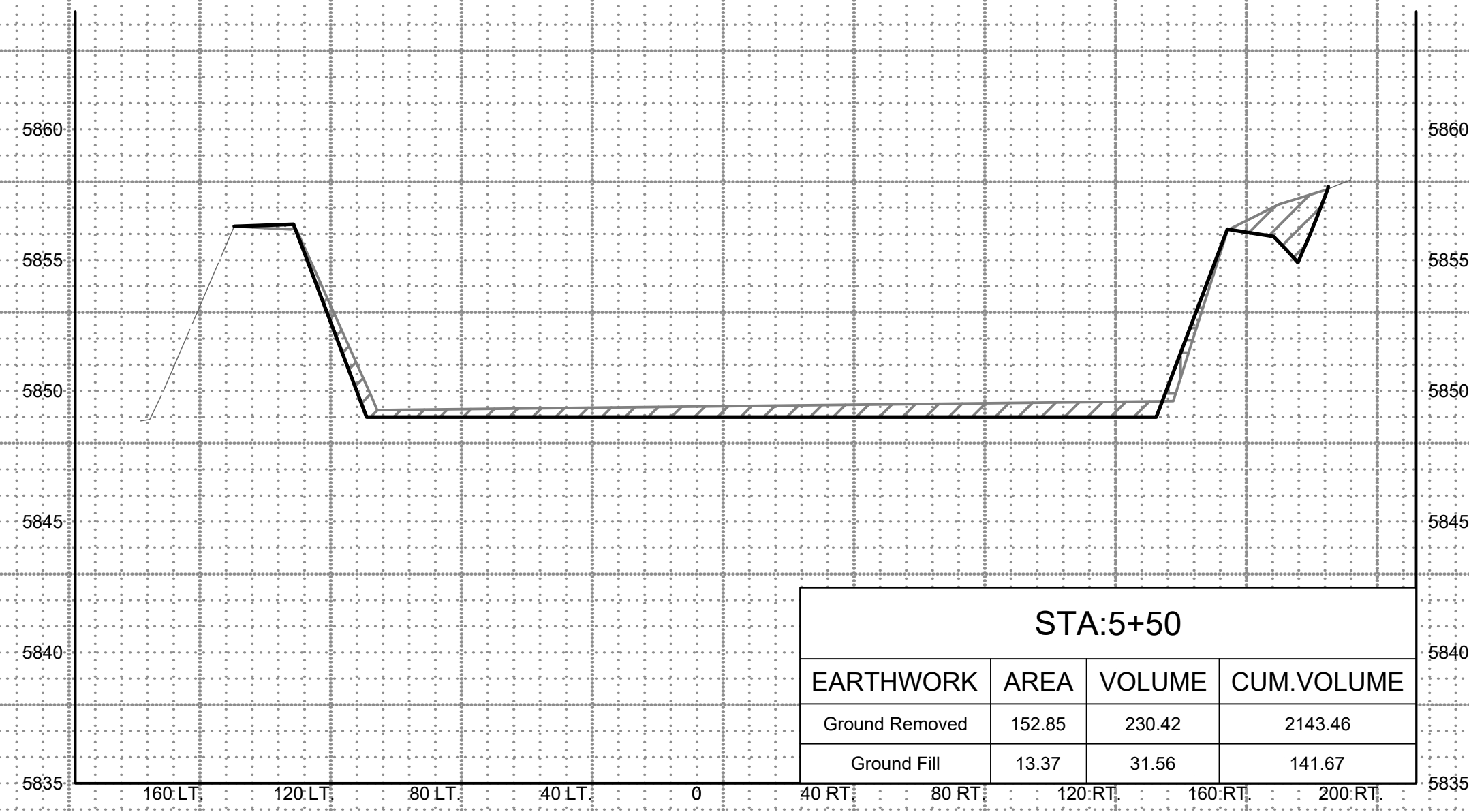
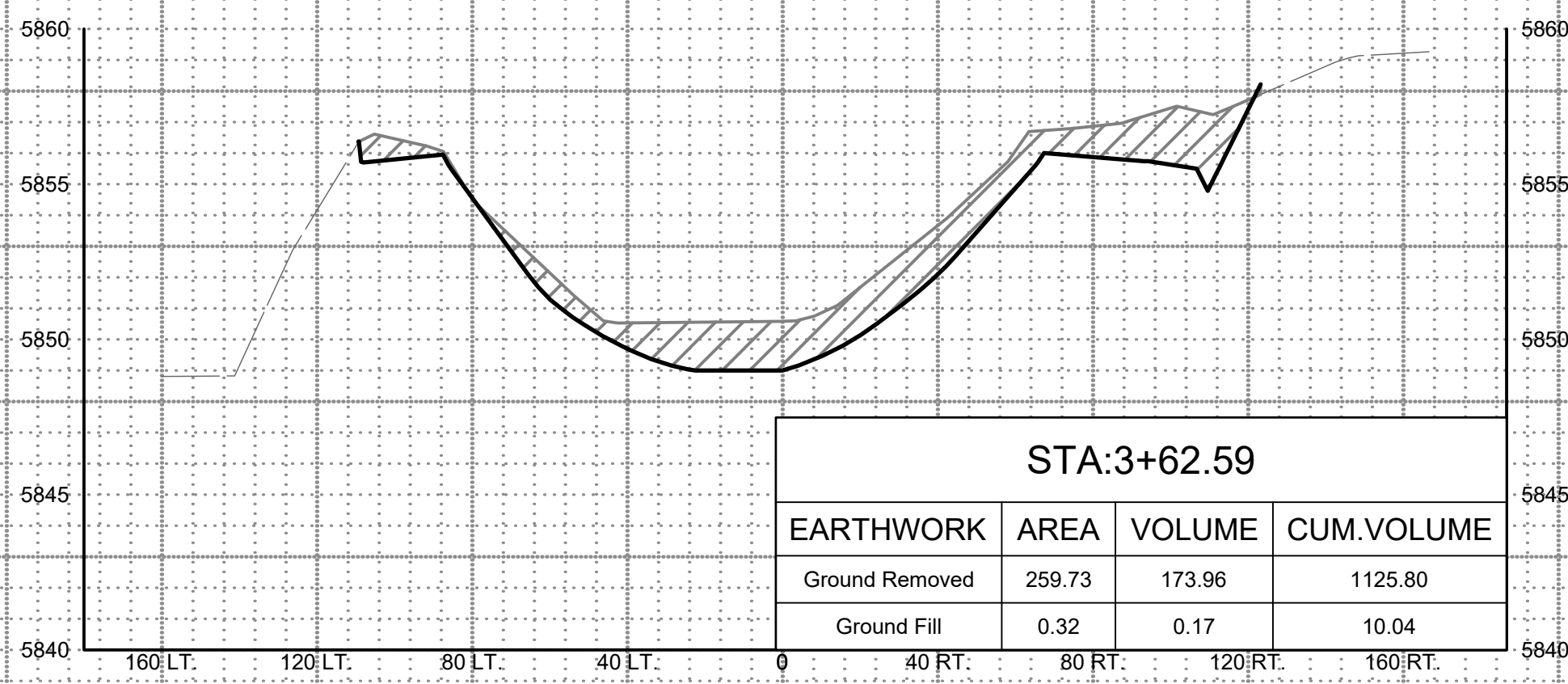
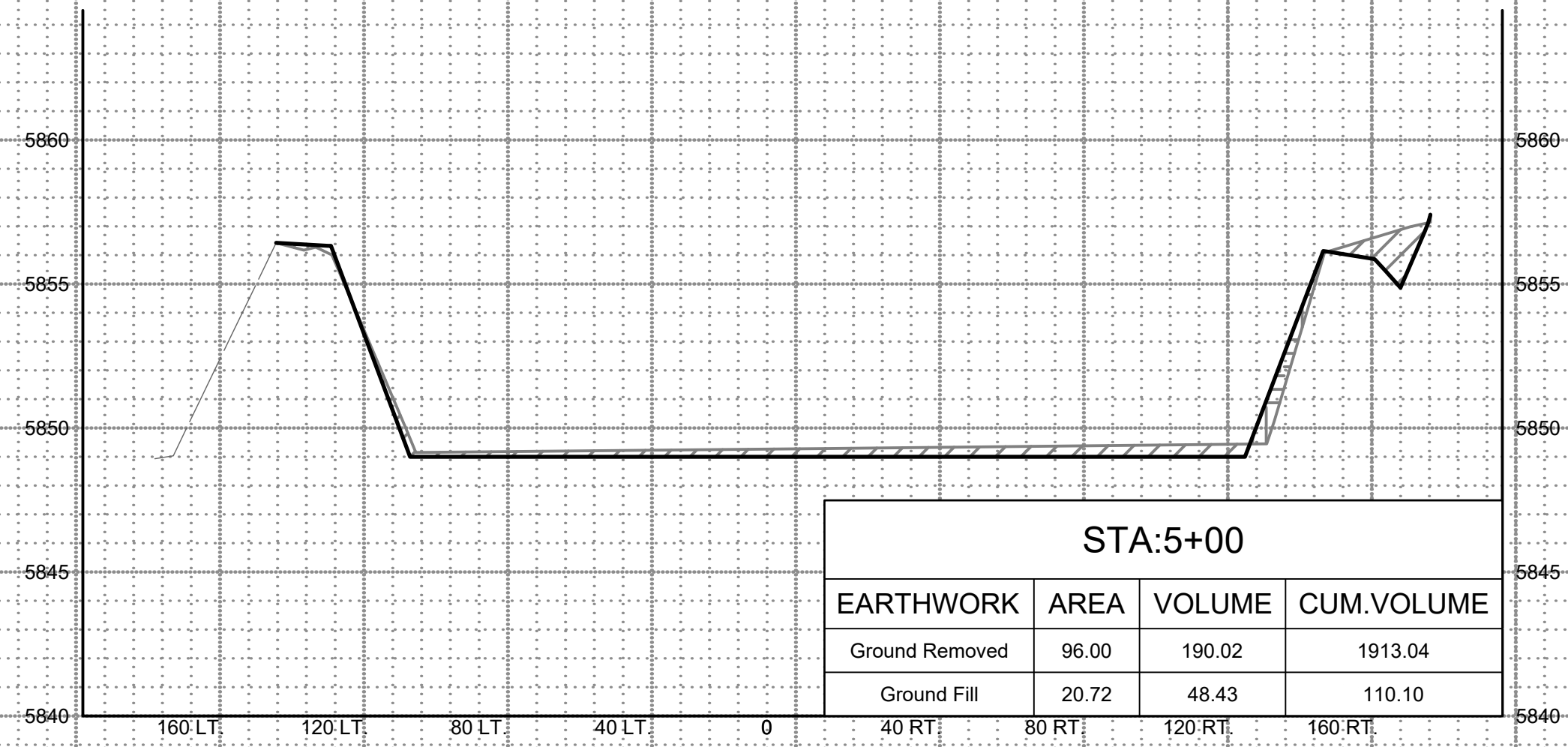
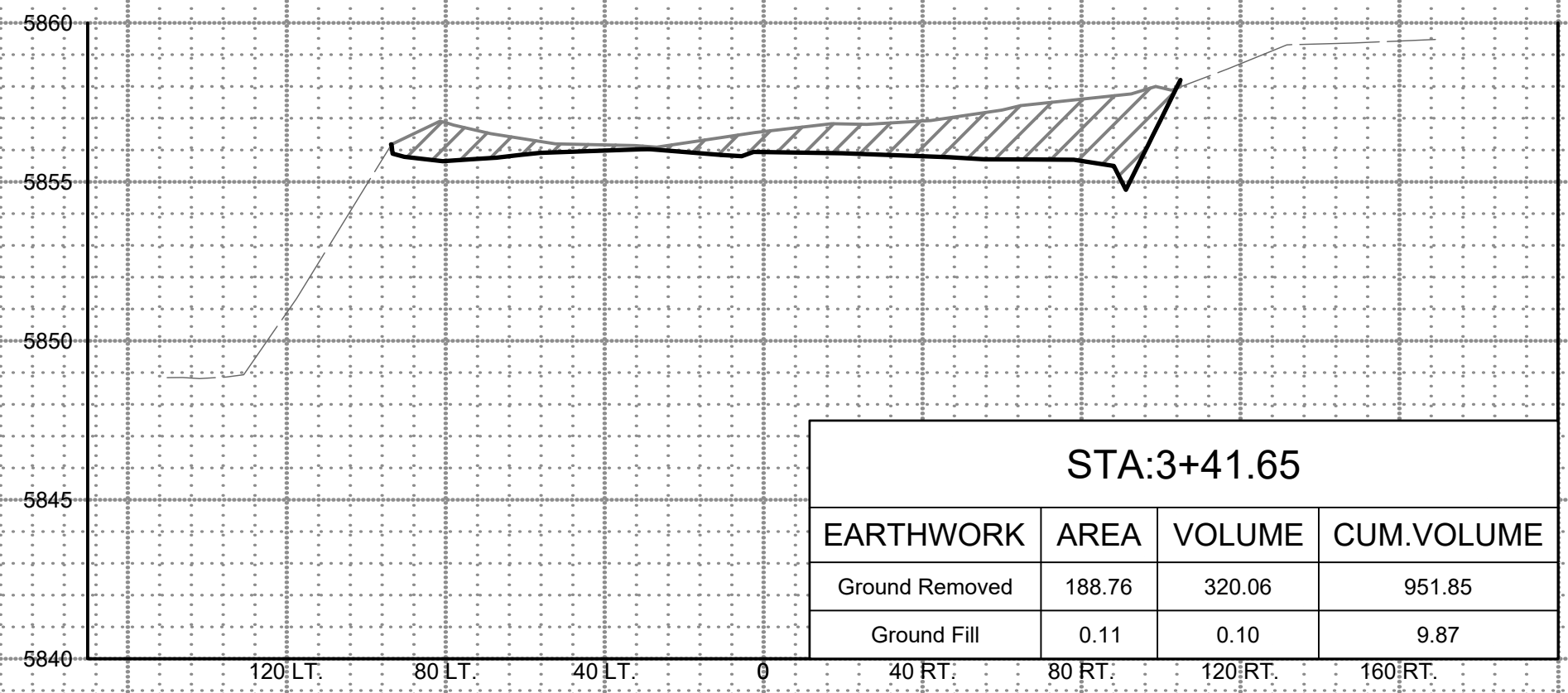
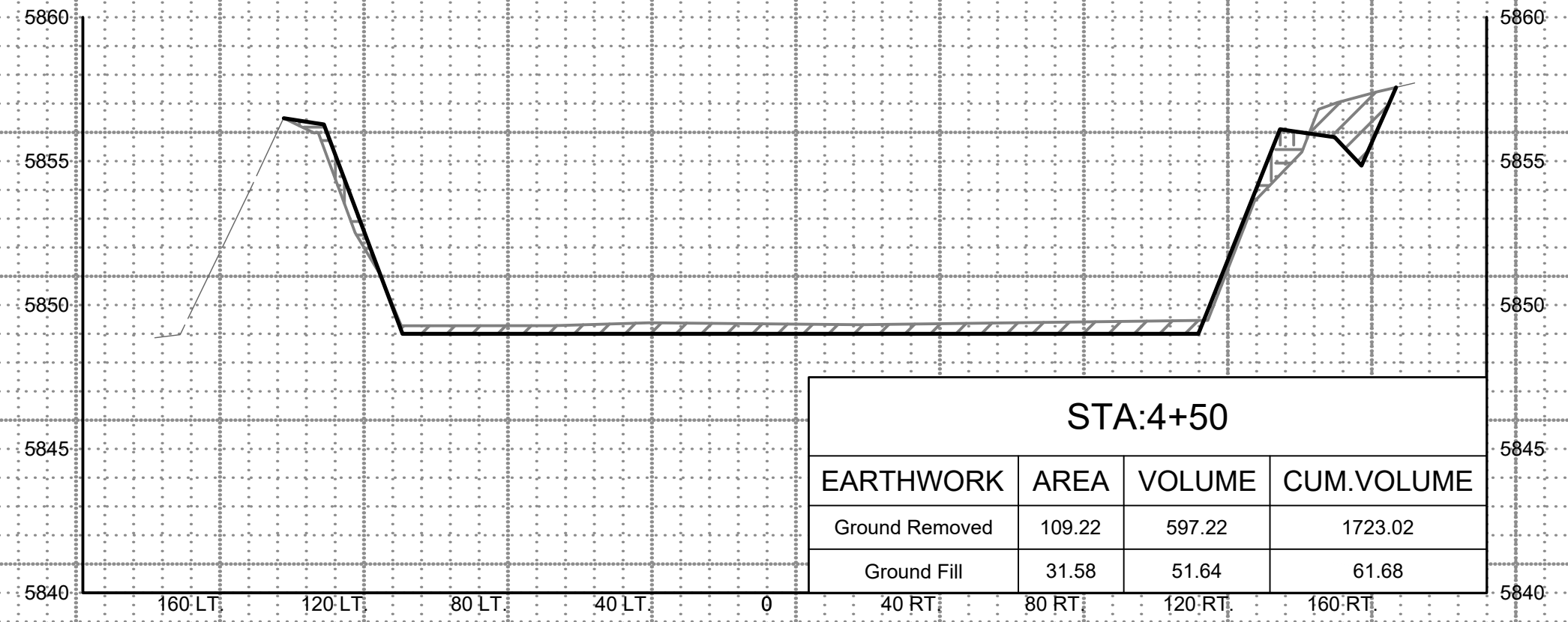
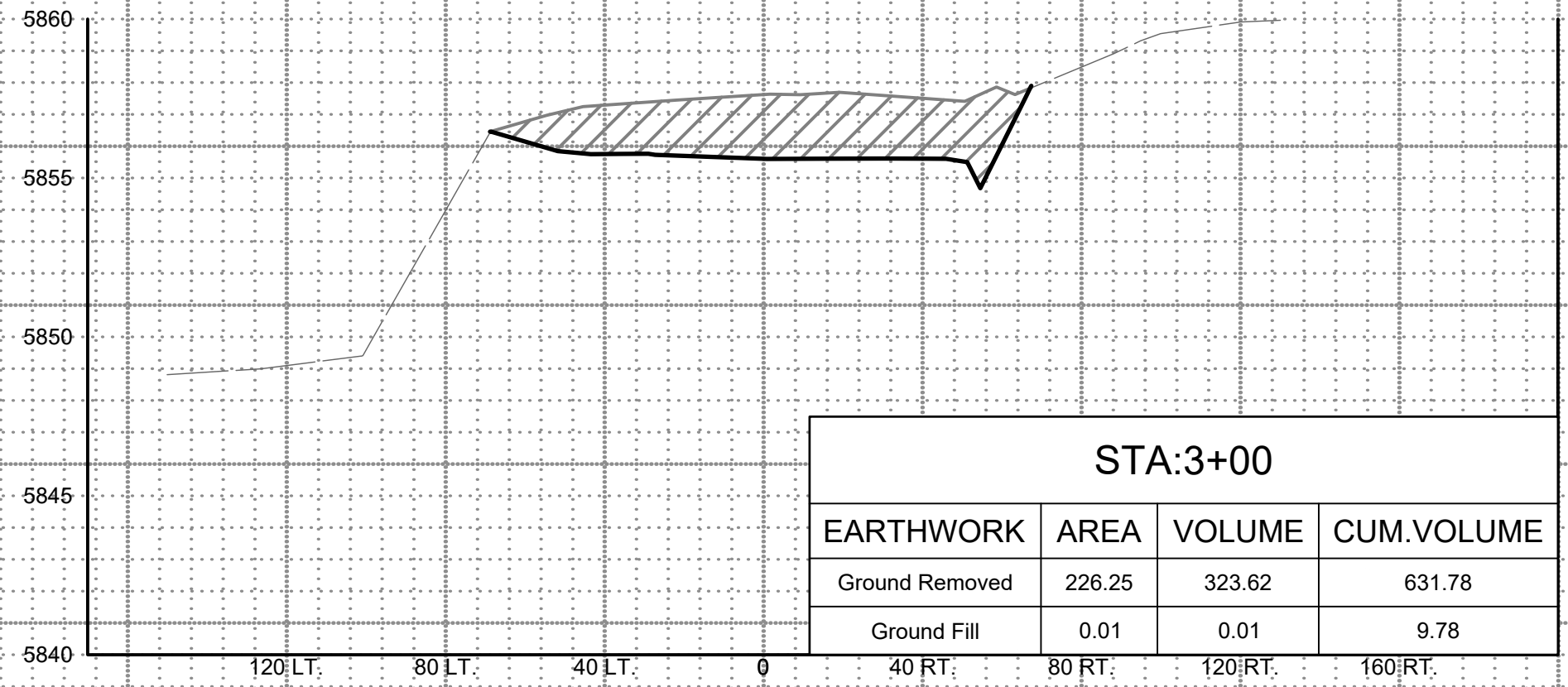
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DATE:
DECEMBER 2023

SHEET NO:
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NOTES:
1. ESTIMATED EARTHWORK IS BASED ON CADD ESTIMATION AND IS FOR INFORMATIONAL PURPOSES ONLY
2. CUT AND FILL VOLUMES SHOWN ARE BASED ON A 1:1 RATIO WITH NO CONSIDERATION FOR WASTE, SHRINK, OR SWELL.

SHEET LEGEND:
CUT
FILL



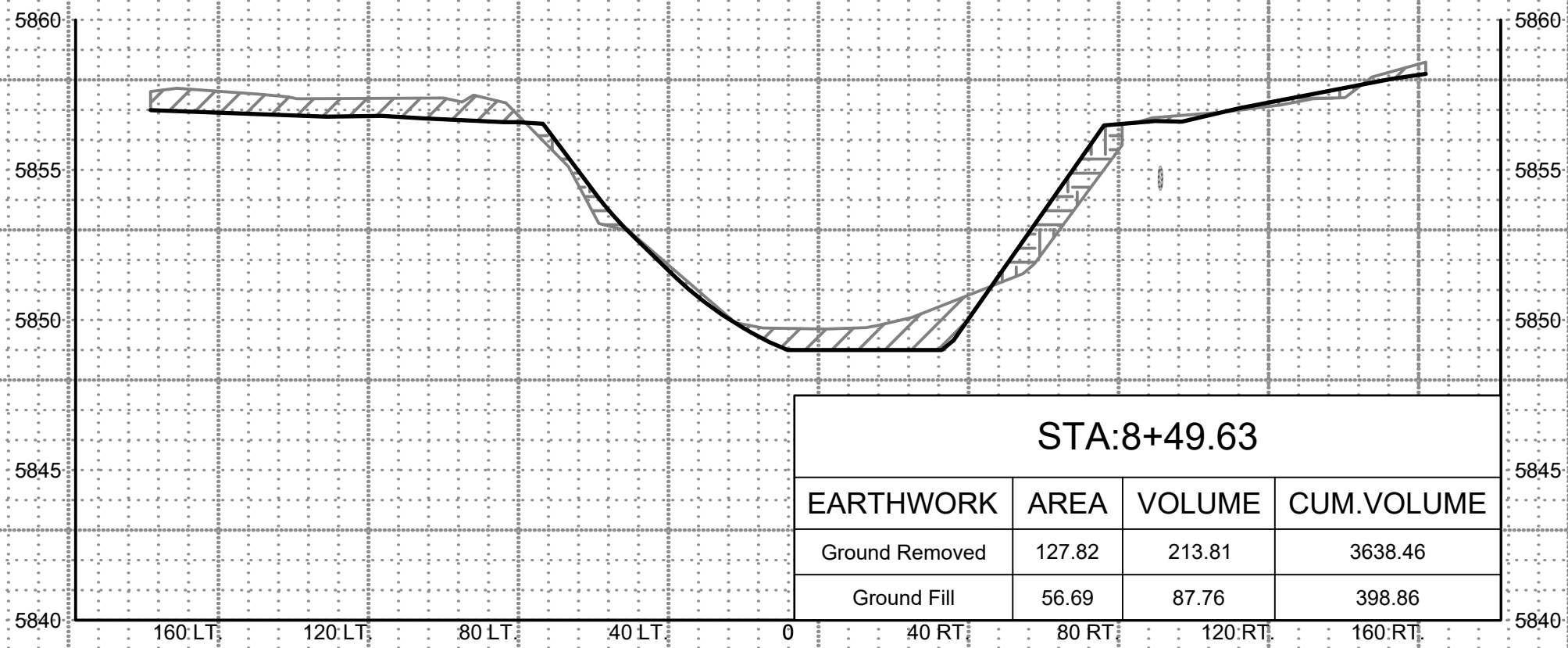
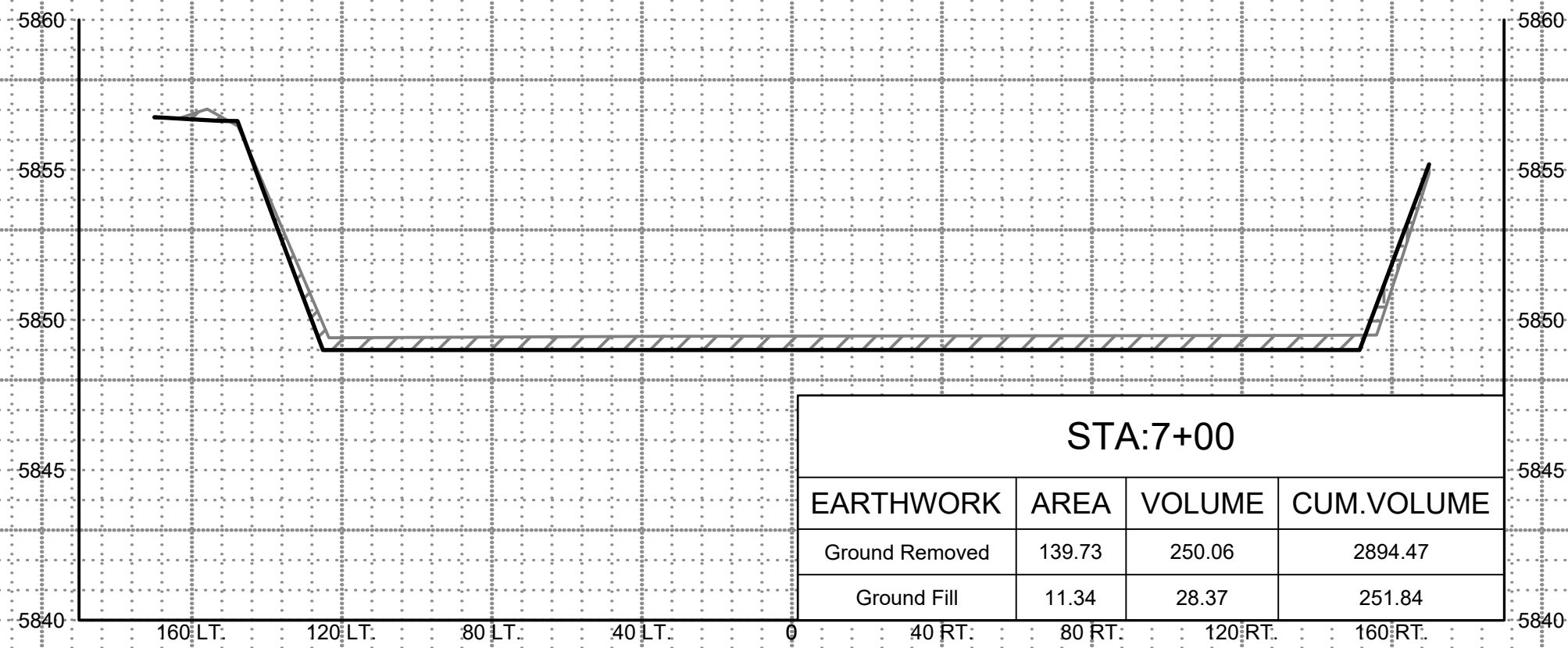
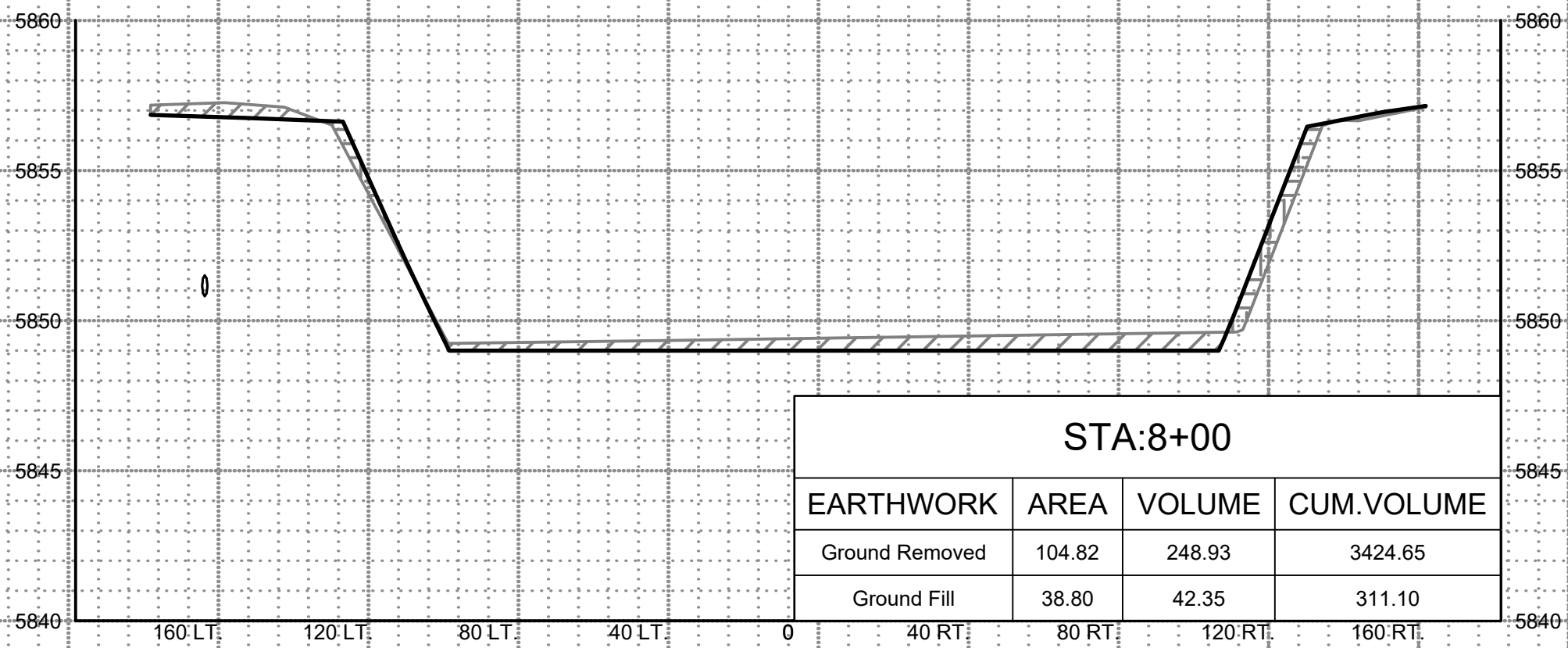
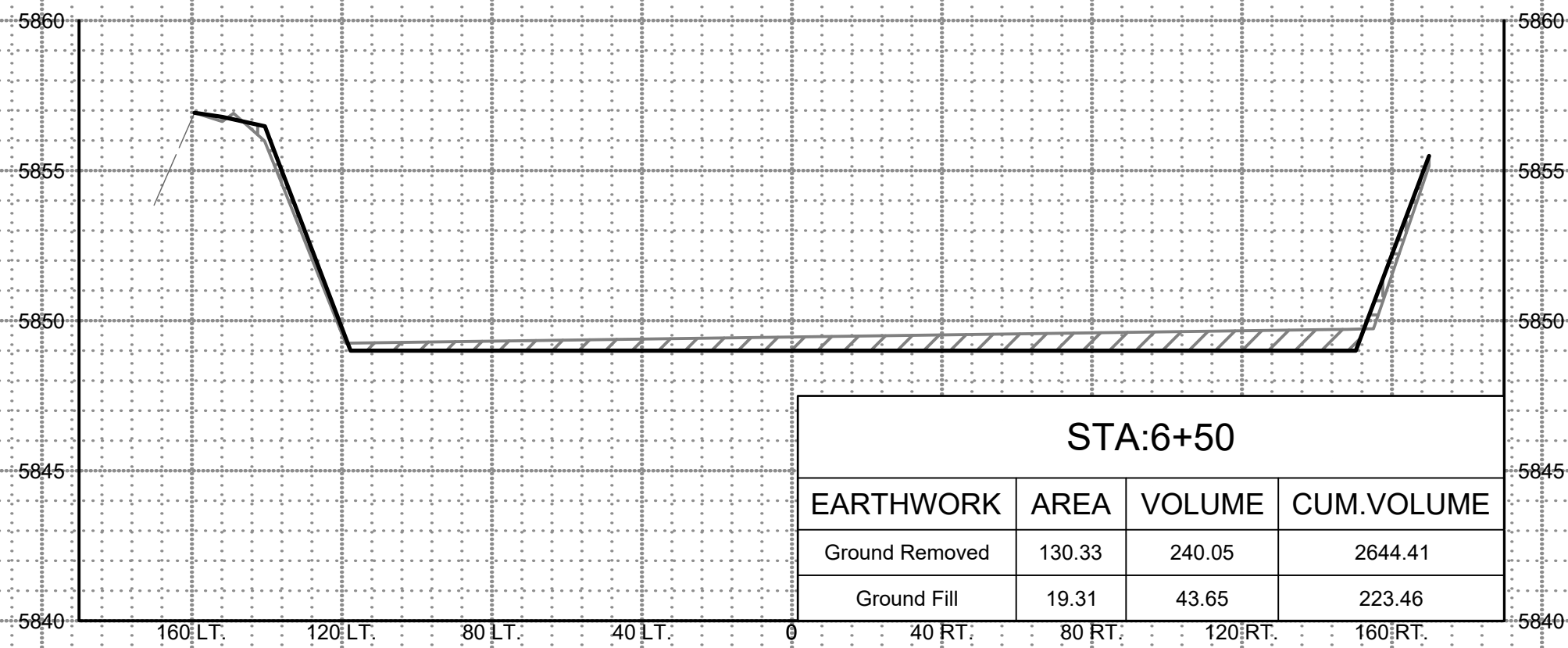
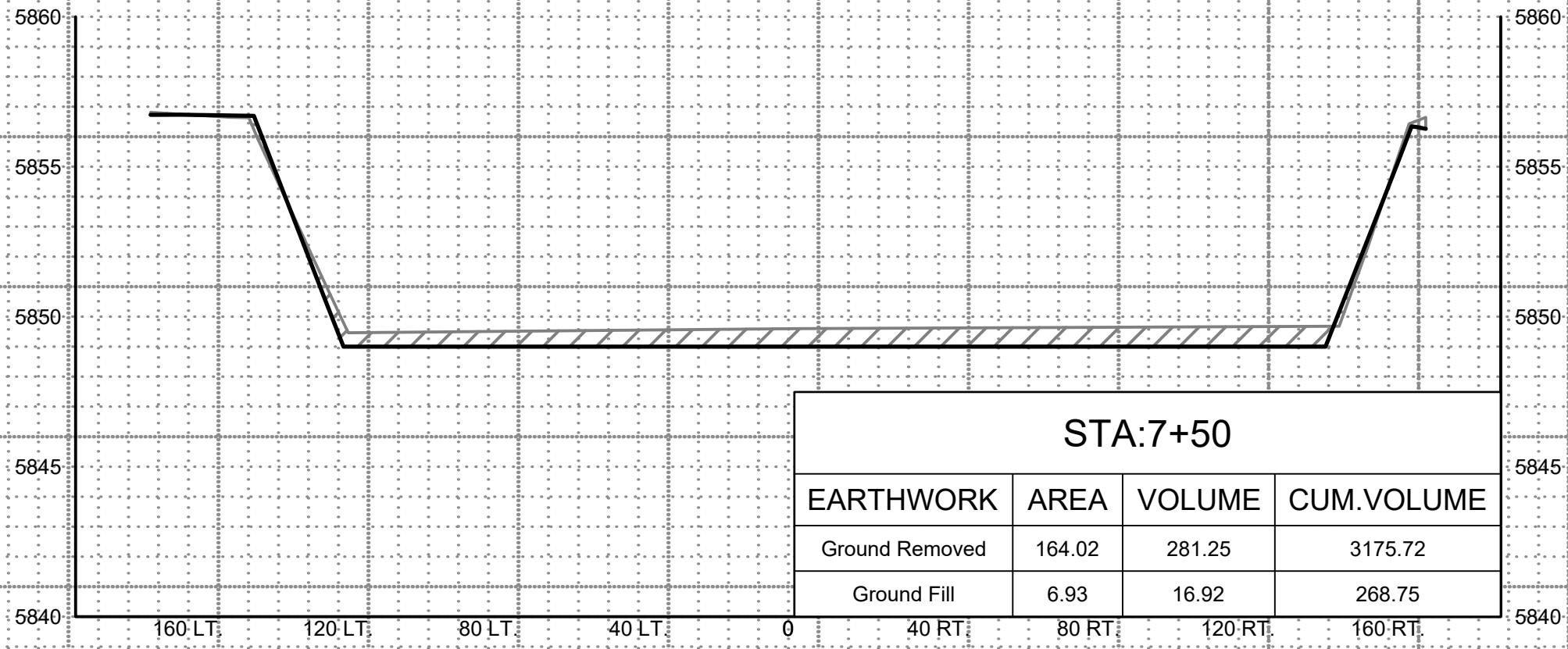
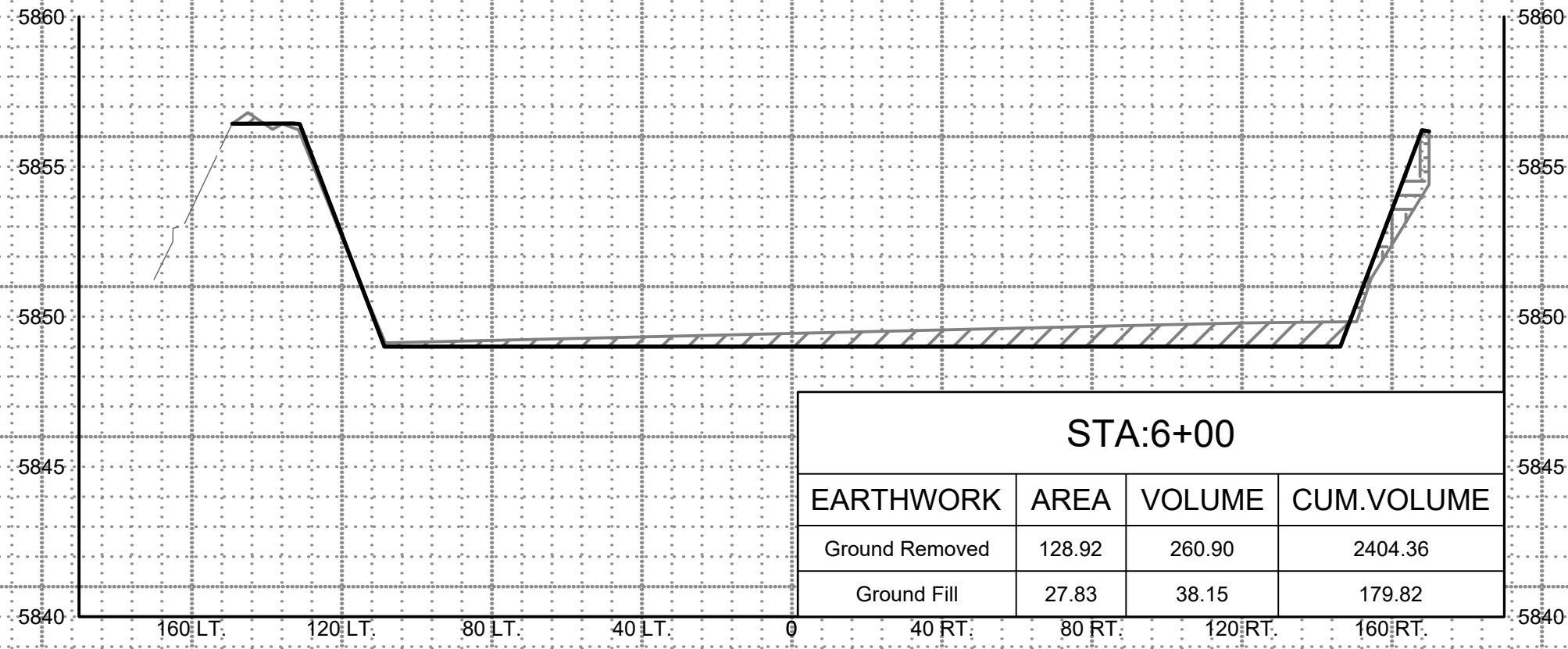
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EARTHWORK SECTIONS STA 3+00 TO 5+50

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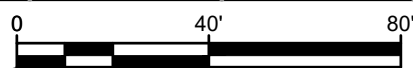


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NOTES:
1. ESTIMATED EARTHWORK IS BASED ON CADD ESTIMATION AND IS FOR INFORMATIONAL PURPOSES ONLY
2. CUT AND FILL VOLUMES SHOWN ARE BASED ON A 1:1 RATIO WITH NO CONSIDERATION FOR WASTE, SHRINK, OR SWELL.

SHEET LEGEND:
CUT
FILL



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COALMINE CANYON CHAPTER WWTP LAGOON
REHABILITATION

EARTHWORK SECTIONS STA 6+00 TO 8+50

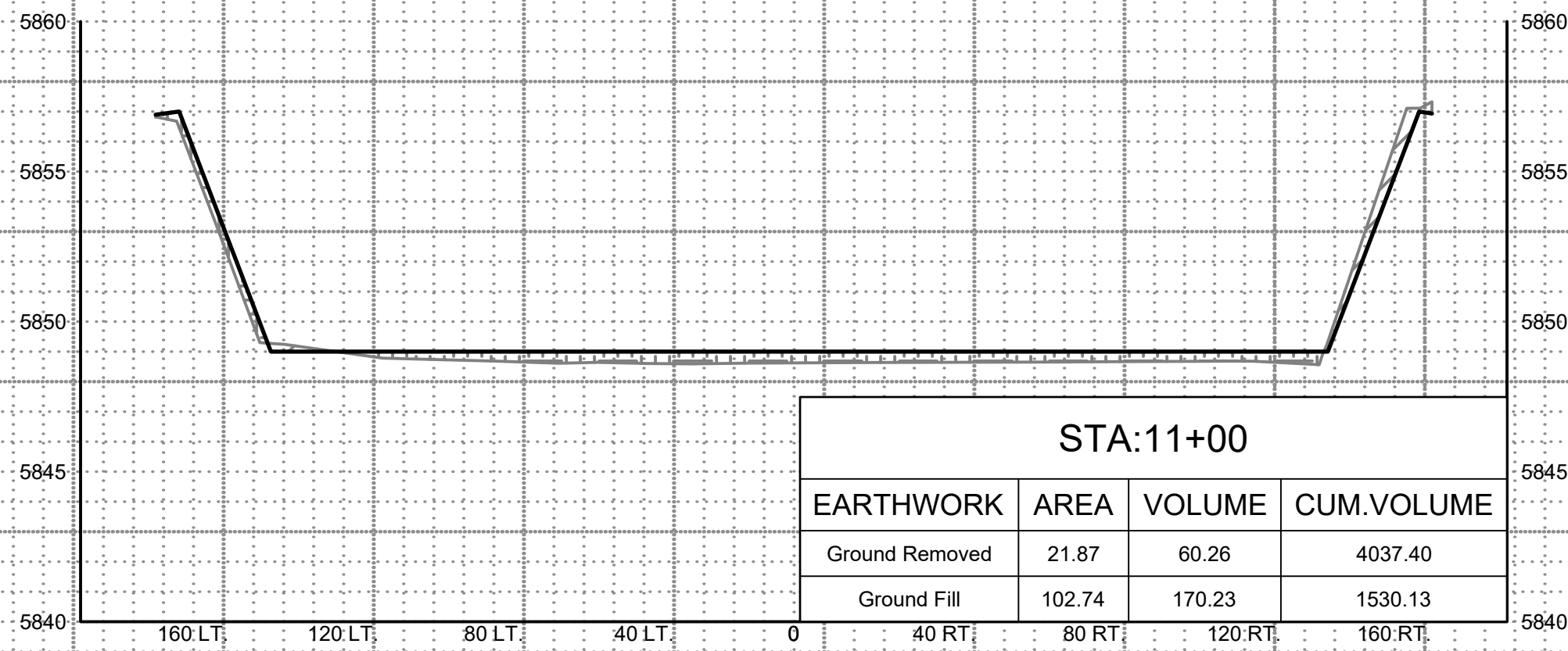
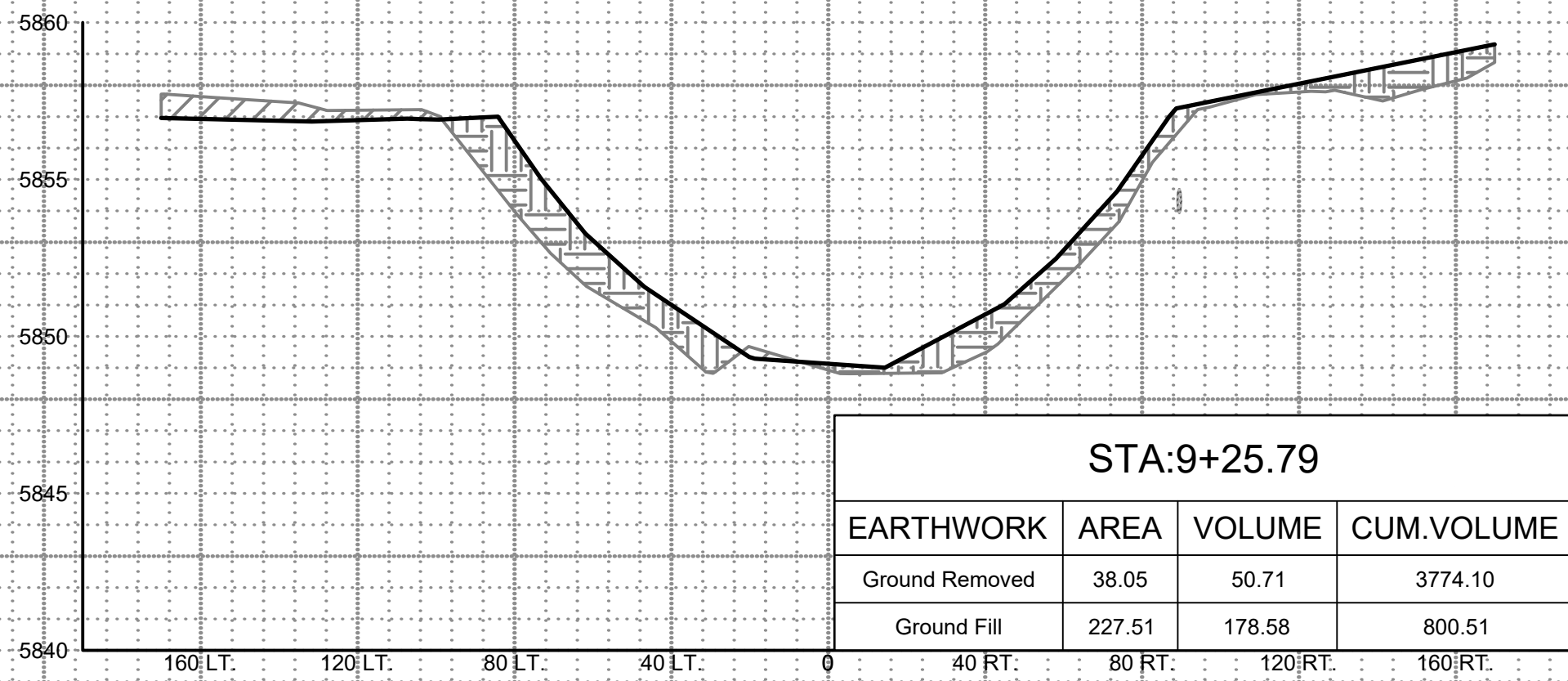
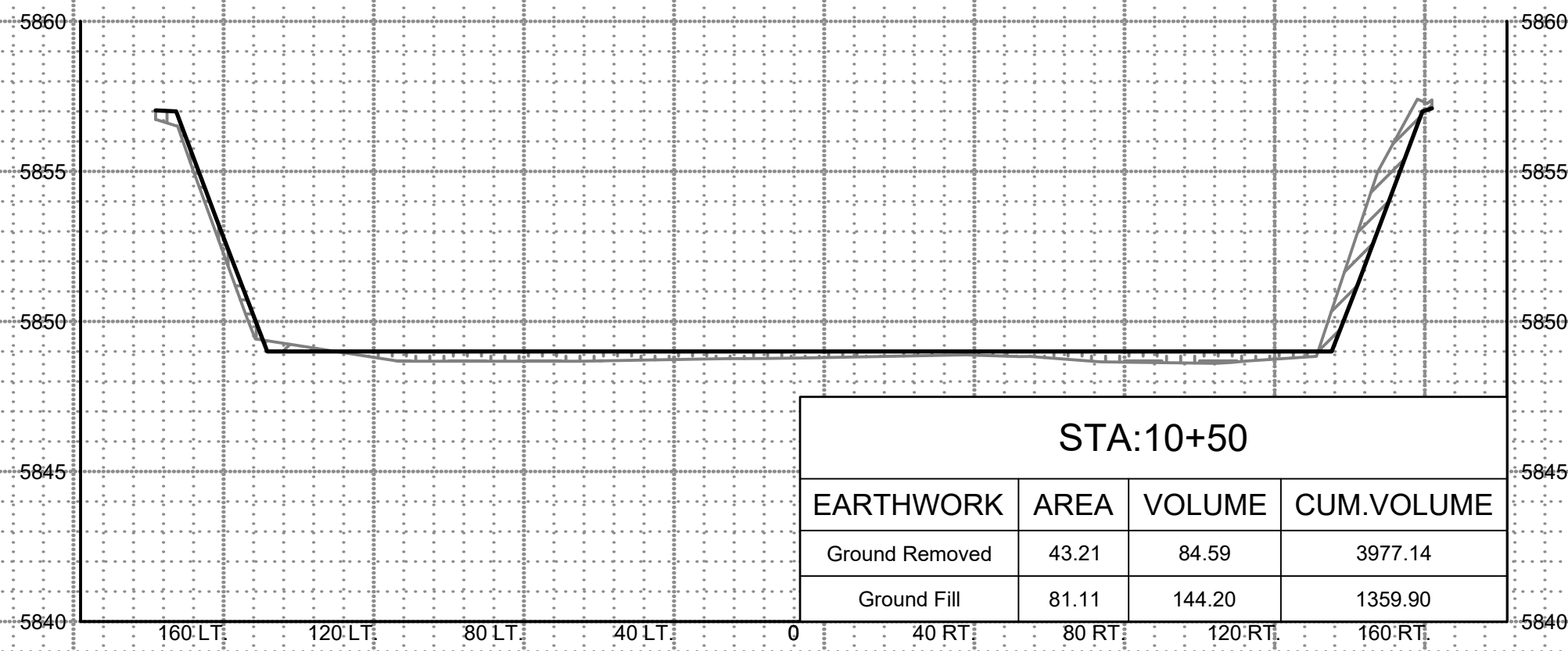
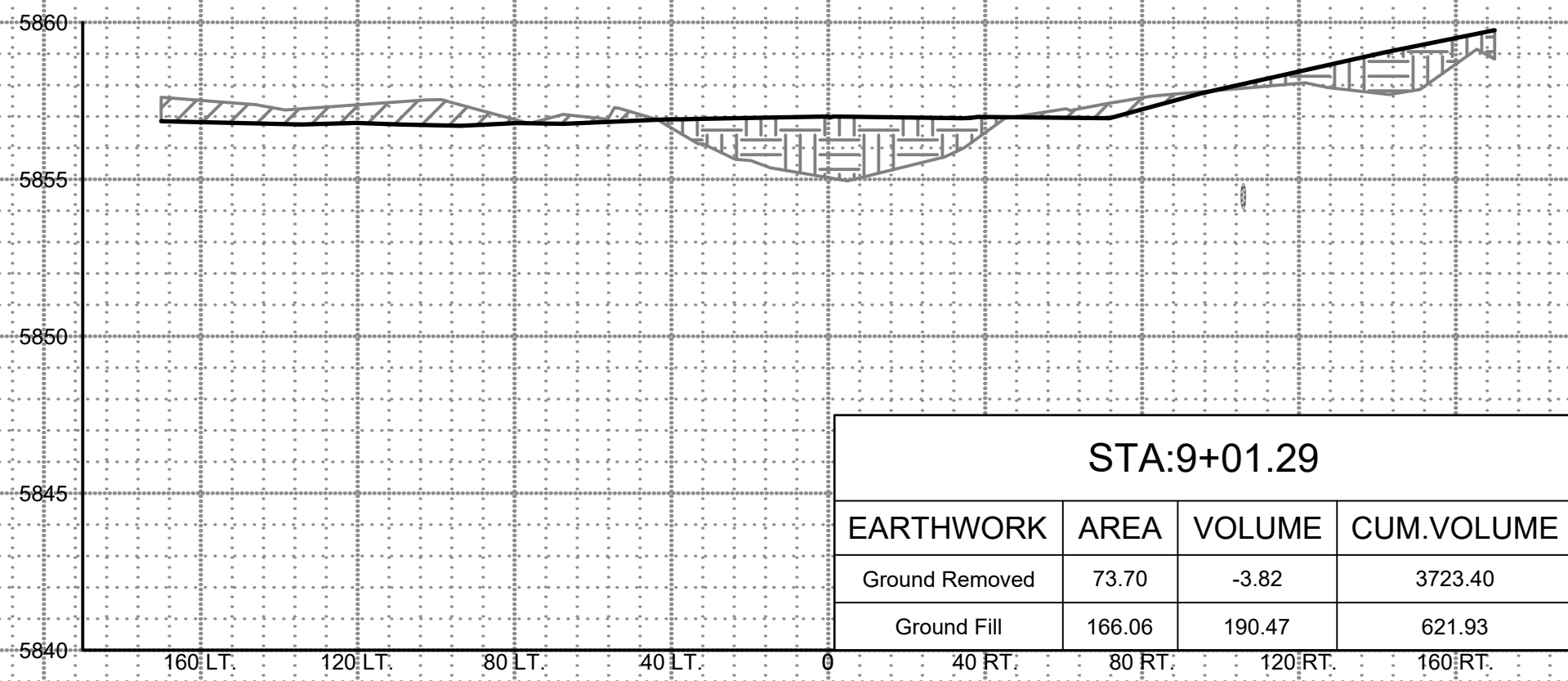
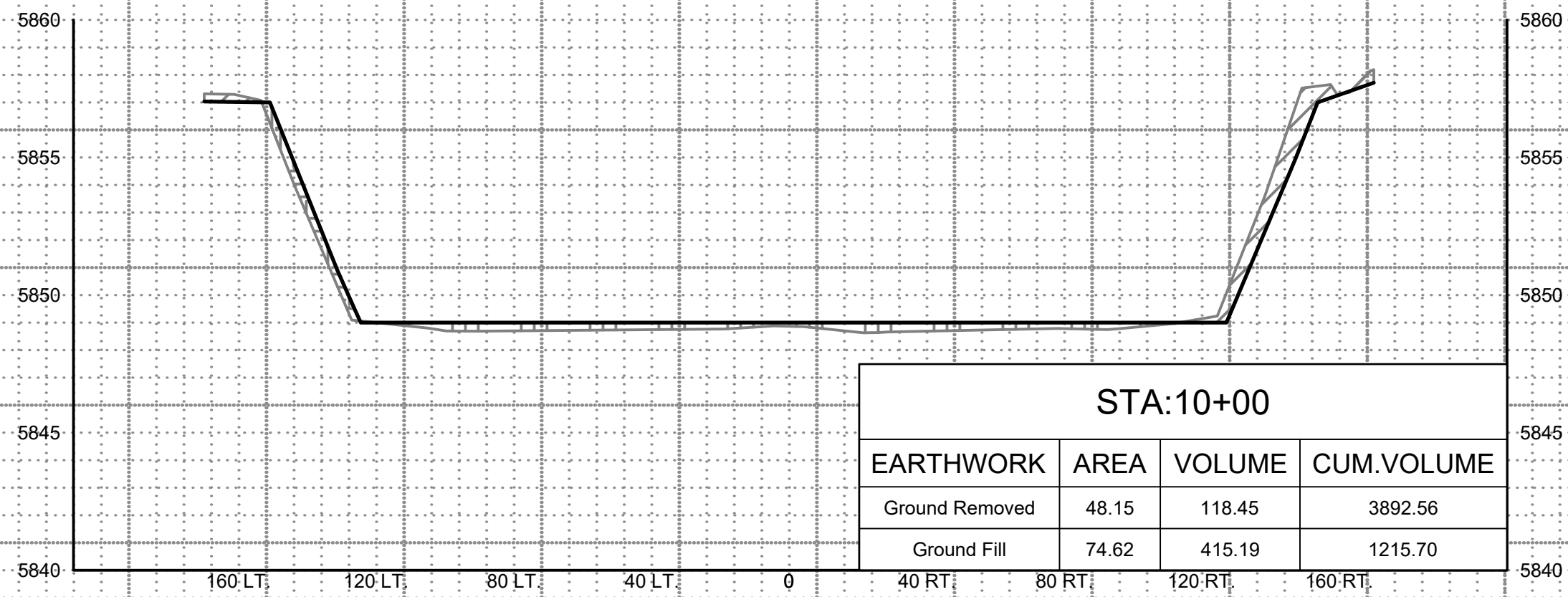
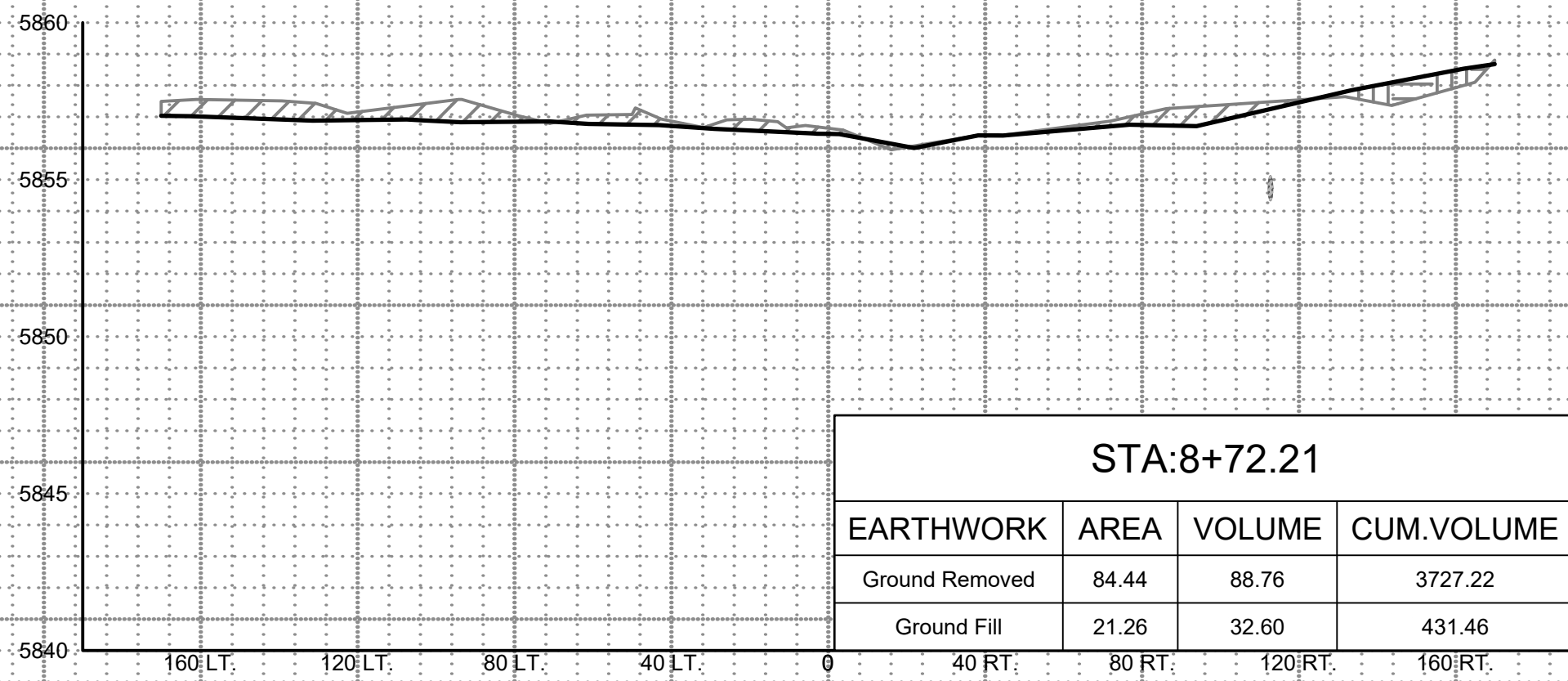
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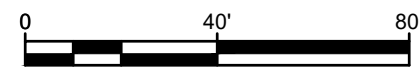
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NOTES:
1. ESTIMATED EARTHWORK IS BASED ON CADD ESTIMATION AND IS FOR INFORMATIONAL PURPOSES ONLY
2. CUT AND FILL VOLUMES SHOWN ARE BASED ON A 1:1 RATIO WITH NO CONSIDERATION FOR WASTE, SHRINK, OR SWELL.

SHEET LEGEND:
 CUT
 FILL



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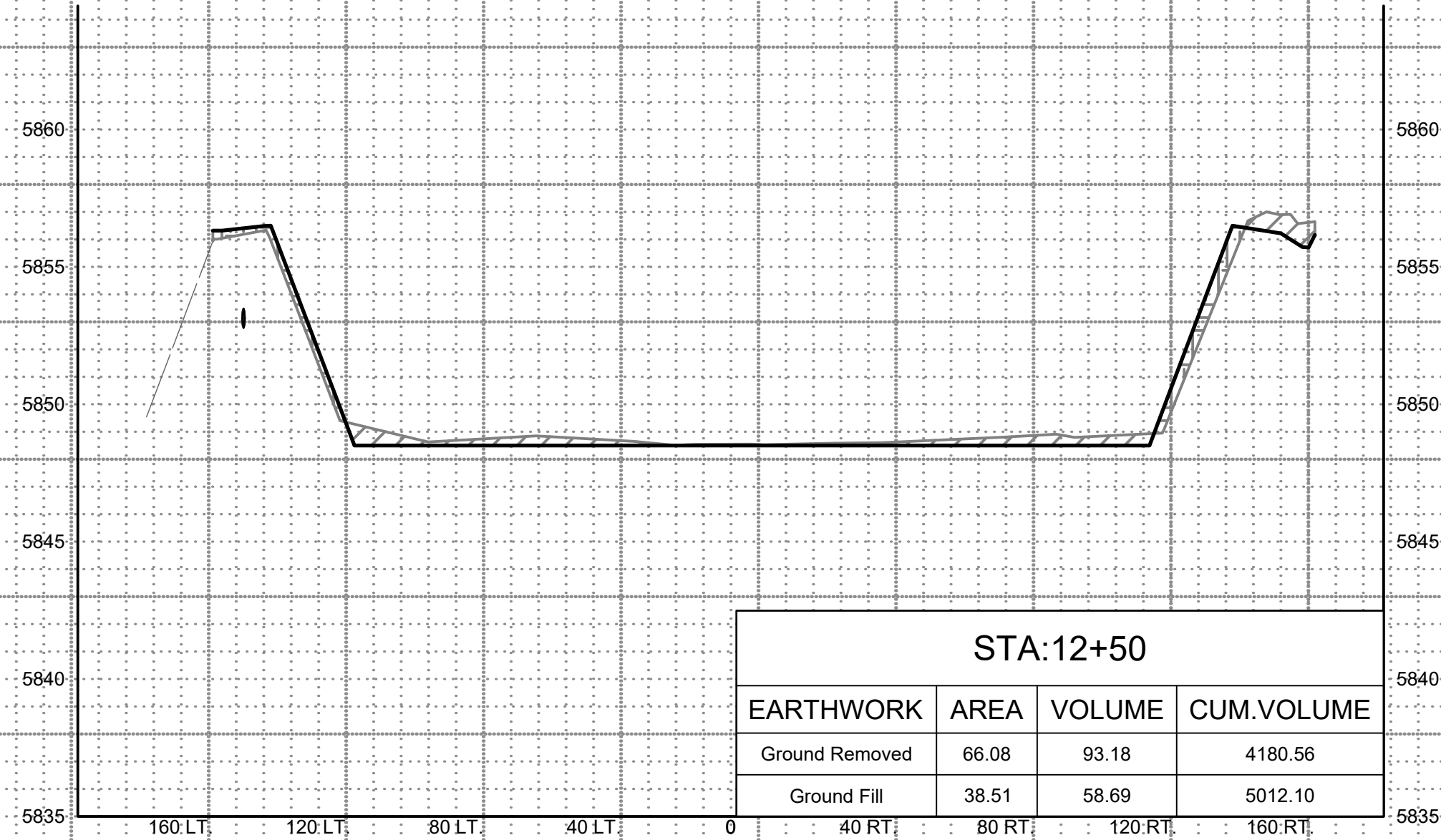
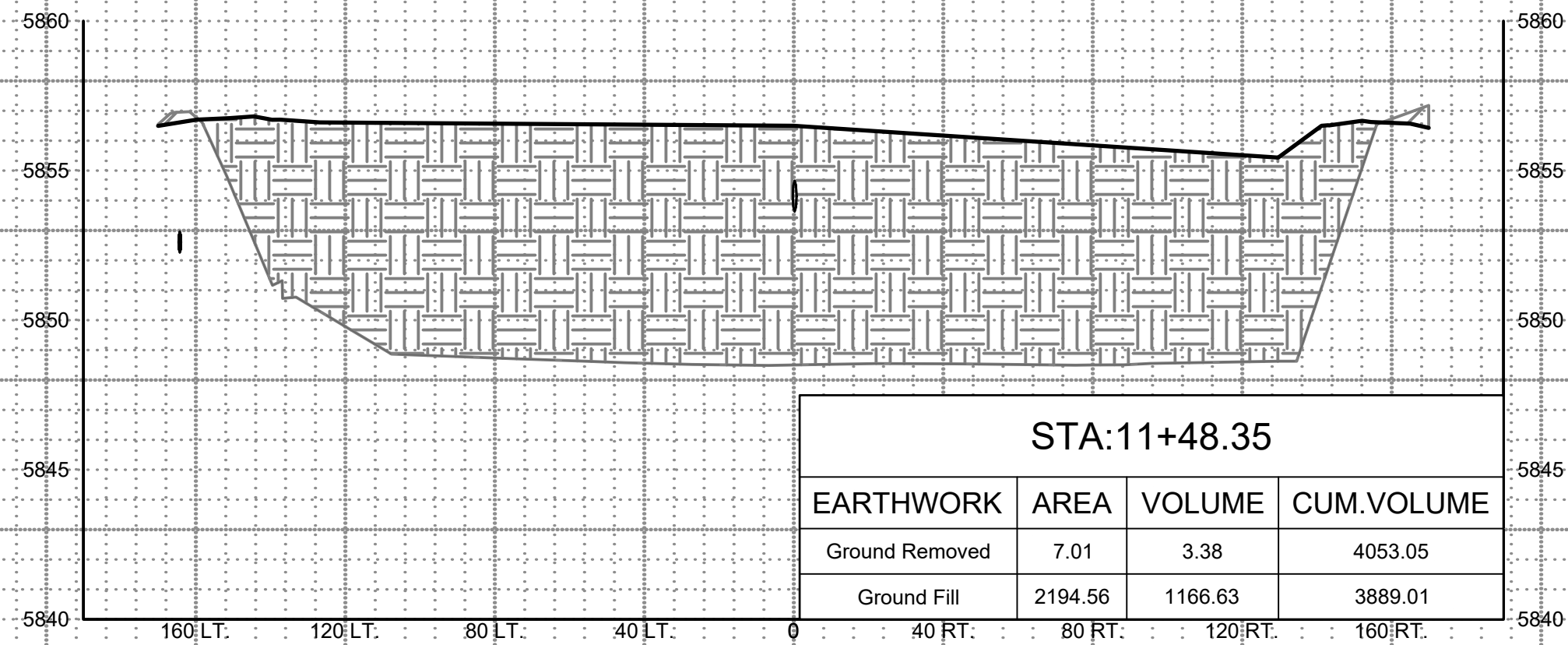
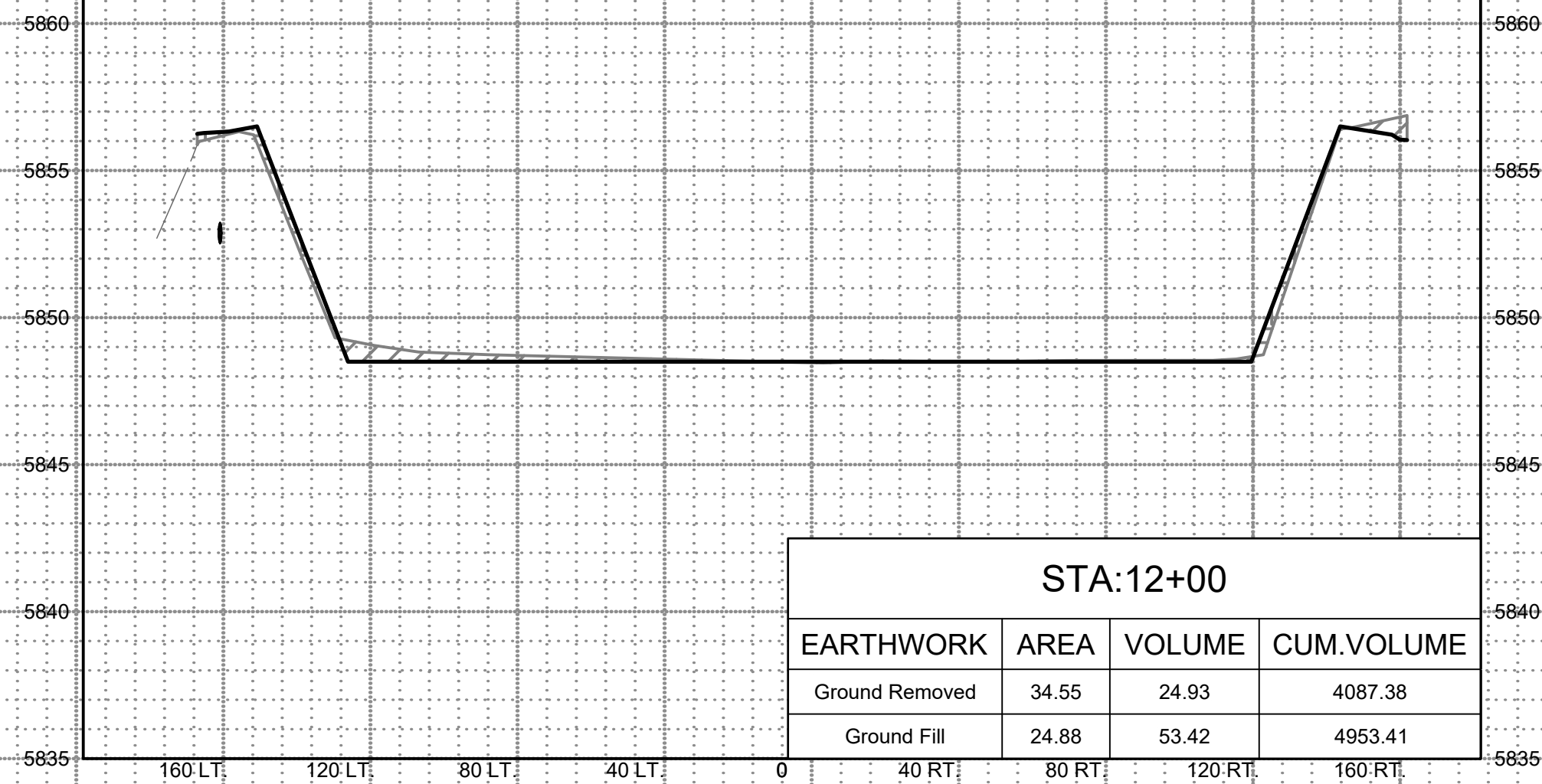
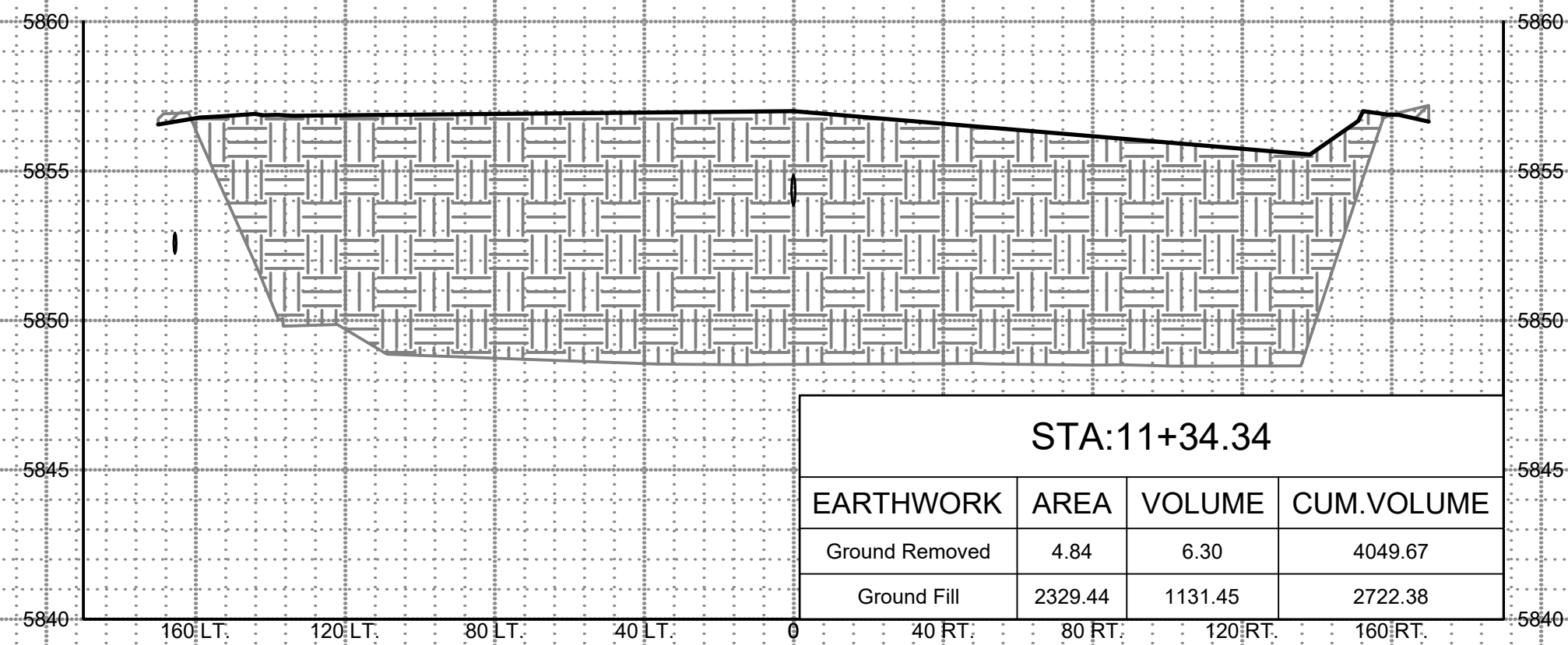
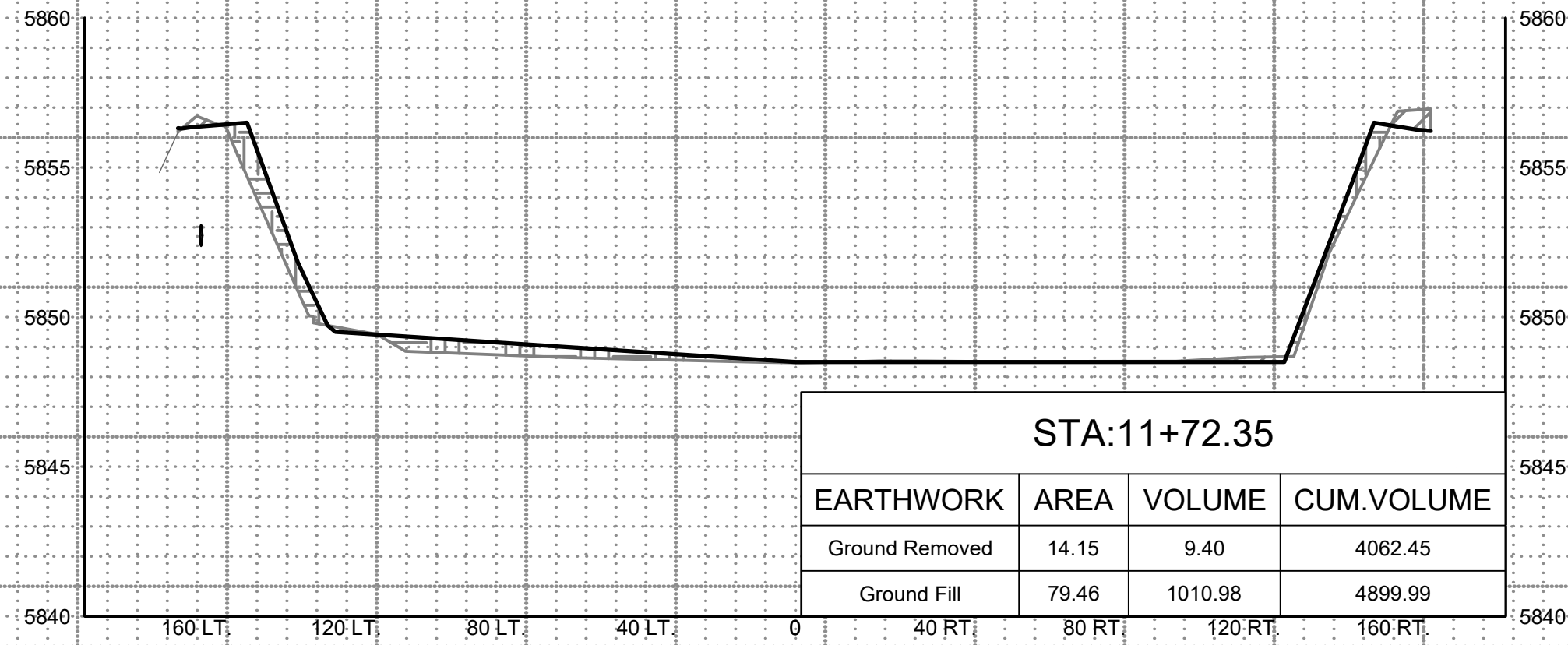
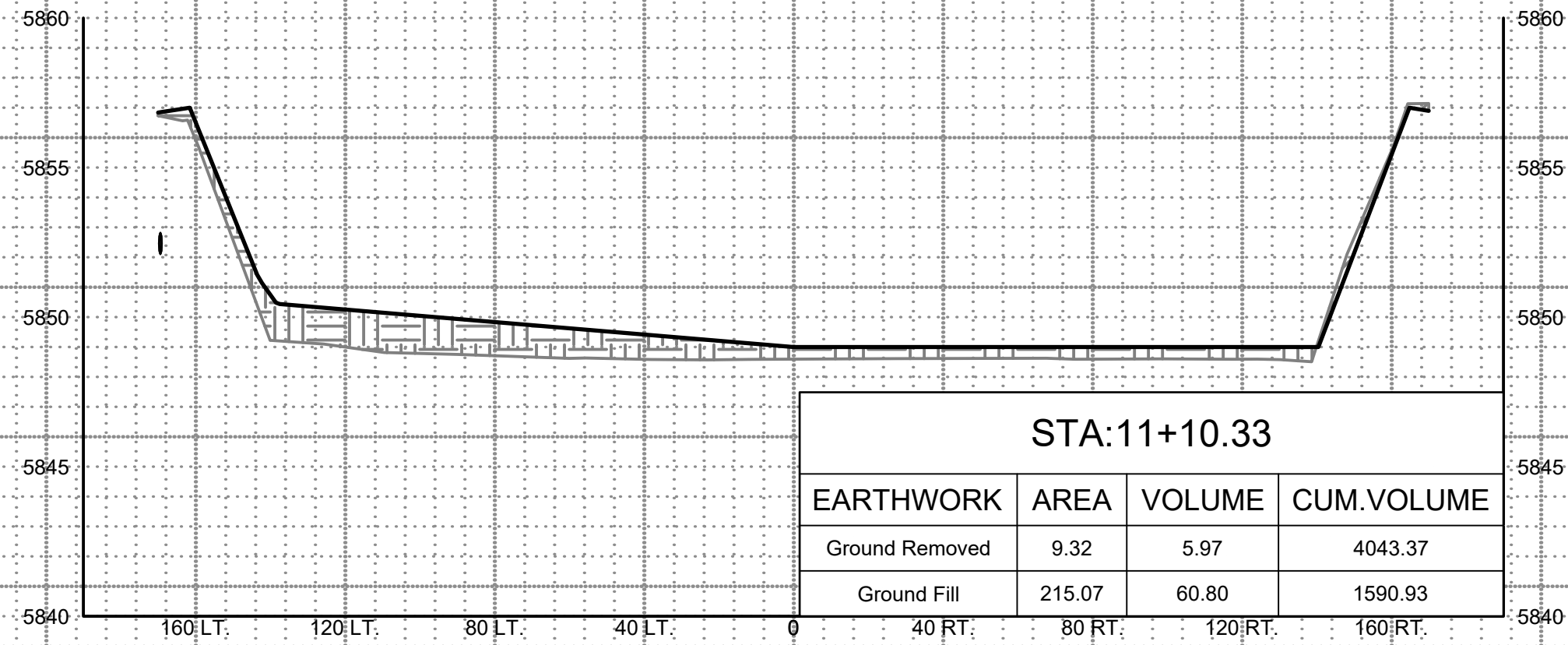
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REHABILITATION

EARTHWORK SECTIONS STA 8+72.21 TO 11+00

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NOTES:
1. ESTIMATED EARTHWORK IS BASED ON CADD ESTIMATION AND IS FOR INFORMATIONAL PURPOSES ONLY
2. CUT AND FILL VOLUMES SHOWN ARE BASED ON A 1:1 RATIO WITH NO CONSIDERATION FOR WASTE, SHRINK, OR SWELL.

SHEET LEGEND:
[Hatched Box] CUT
[Stippled Box] FILL



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COALMINE CANYON CHAPTER WWTP LAGOON
REHABILITATION

EARTHWORK SECTIONS STA 11+10.33 TO 12+50

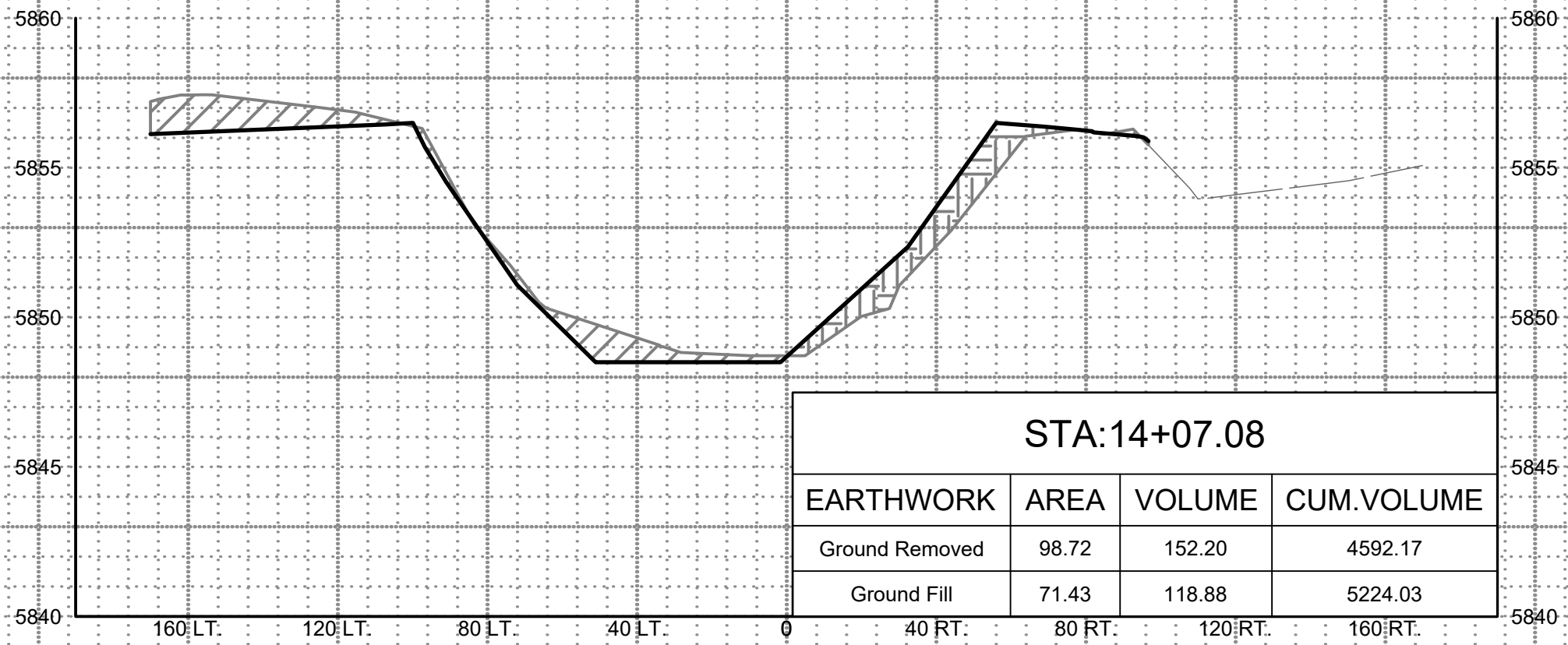
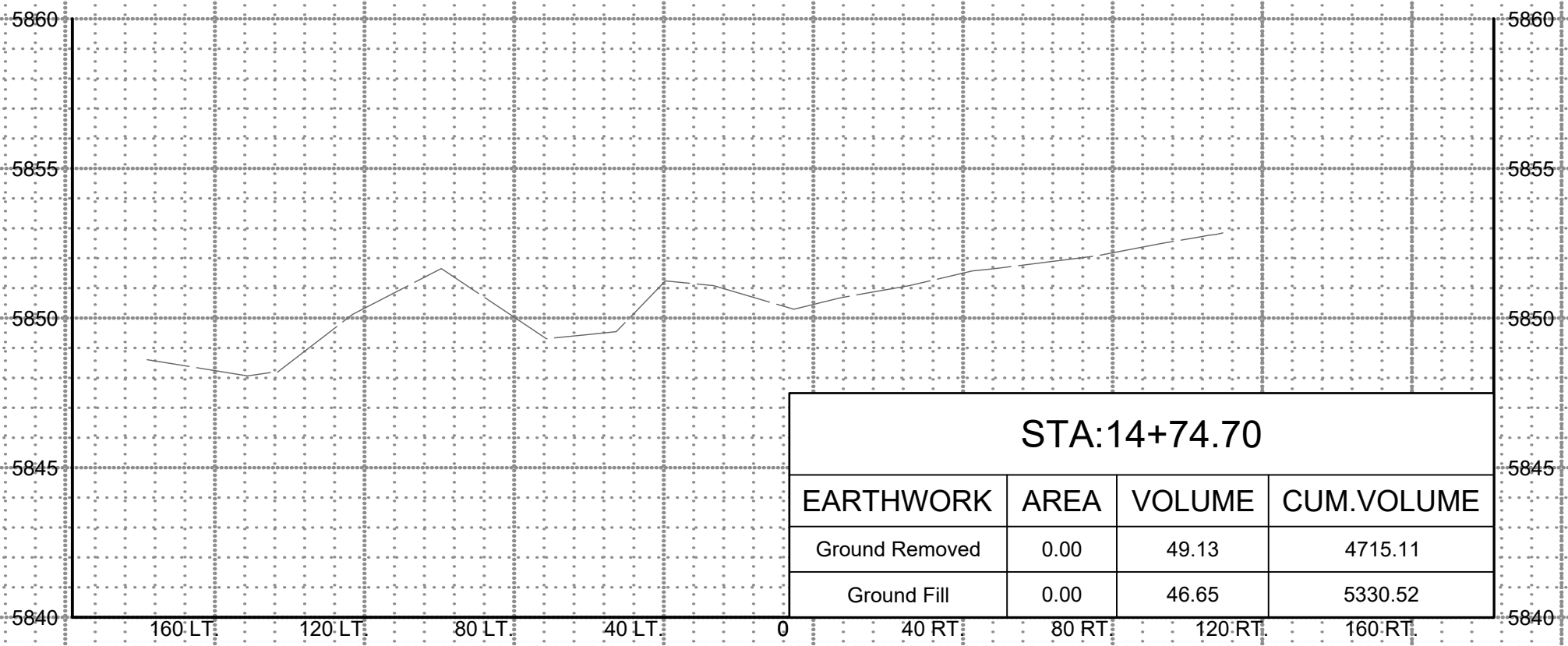
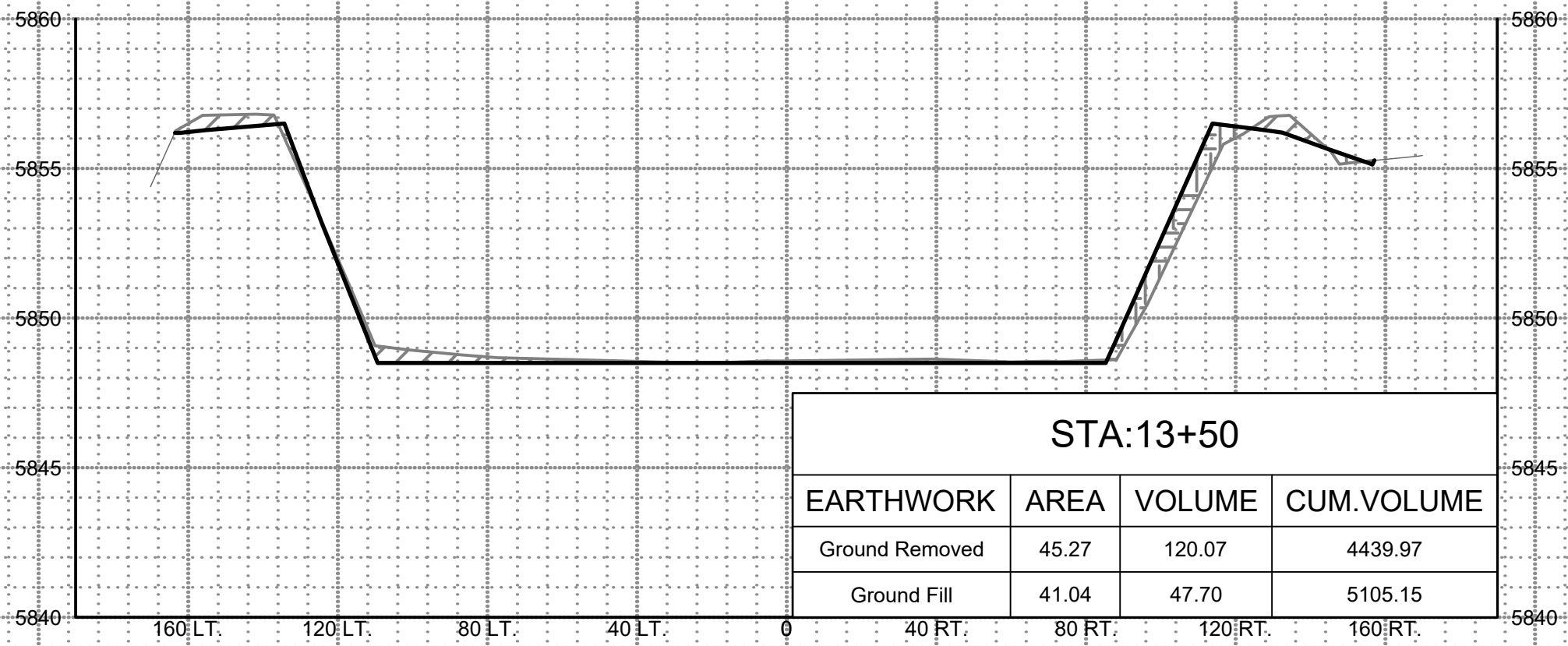
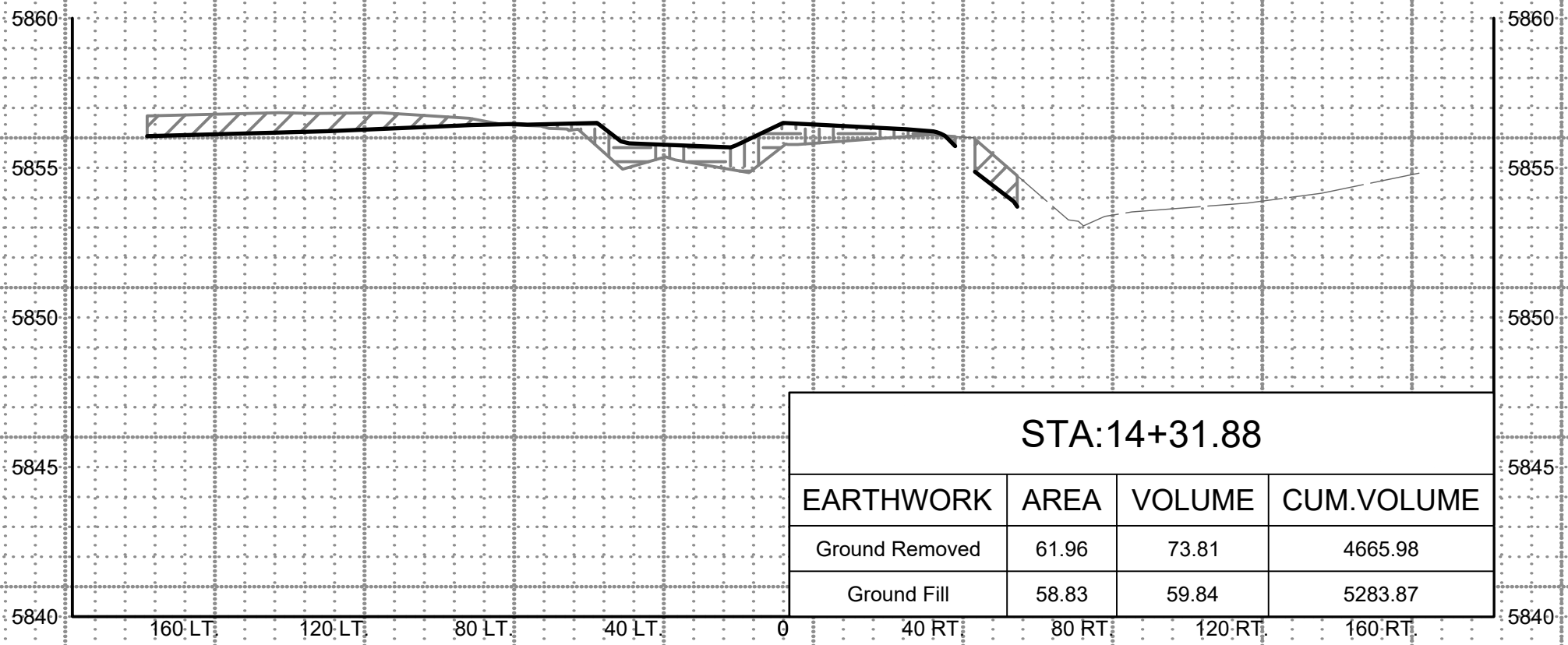
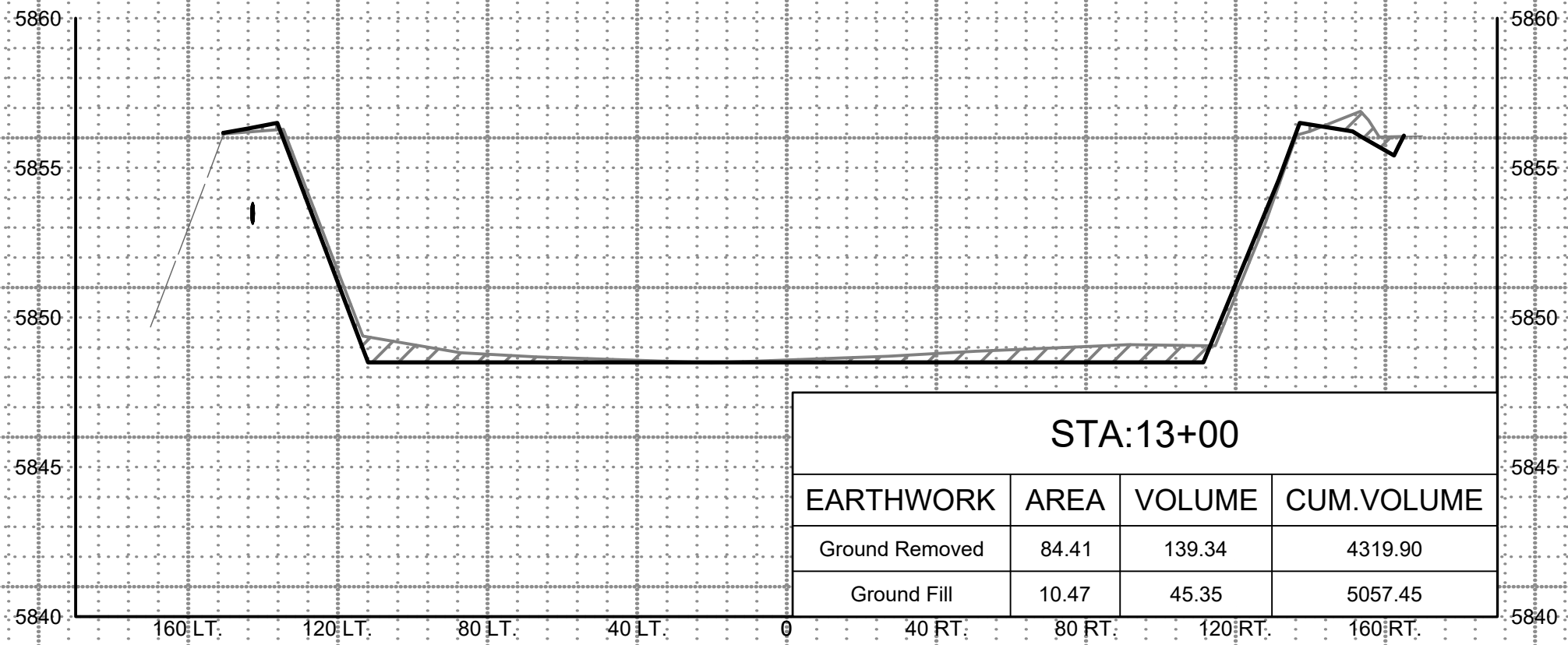
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1. ESTIMATED EARTHWORK IS BASED ON CADD ESTIMATION AND IS FOR INFORMATIONAL PURPOSES ONLY
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SHEET LEGEND:
CUT
FILL



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COALMINE CANYON CHAPTER WWTP LAGOON
REHABILITATION

EARTHWORK SECTIONS STA 13+00 TO 14+74.70

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