

ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

THIS ITEM SHALL CONFORM TO ALL ASPECTS OF ITEM 623 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

DUE TO THE NATURE OF TIGHT WORK LIMITS RELATIVE TO R/W ON THIS PROJECT, PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL STAKE THE EXISTING RIGHT-OF-WAY LINE AS CALLED OUT IN THESE PLANS. THIS WORK IS TO BE COMPLETED BY A LICENSED PROFESSIONAL SURVEYOR IN THE STATE OF OHIO AND MUST BE APPROVED BY THE ENGINEER.

ALL LABOR, EQUIPMENT, AND MATERIALS ARE NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED WITH THE PAYMENT OF ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ELECTRIC: AMERICAN ELECTRIC POWER 38831 SR 7 REEDSVILLE, OH 45769 CLARKE SAUNDERS 614-312-5807

GAS: COLUMBIA GAS OF OHIO 2429 LINDEN AVENUE ZANESVILLE, OH 43701 MICHAEL DIBENEDETTO 740-450-1216

WATER: MORGAN-MEIGSVILLE WATER PO BOX 46 MCCONNELSVILLE, OH 43756 TRISTA LINDIMORE 740-962-6395

TELEPHONE: CENTURYLINK 2025 AKRON ROAD WOOSTER, OH 44691 JEFF SCHNOOVER 330-262-1128

CABLE: CHARTER / SPECTRUM 111 NORTH 11TH STREET NEWARK, OH 43055 JARED SMITH 614-226-0321

ELECTRIC: AMERICAN ELECTRIC POWER (TRANSMISSION) 301 CLEVELAND AVENUE SW CANTON, OH 44702 JIM RIGDON 330-413-6132 MATT RIGNEY 614-883-7301

SURVEYING PARAMETERS

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

POSITIONING METHOD: ODOT VRS MONUMENT TYPE: B (3/4" x 30" REBAR WITH ODOT DISTRICT 10 CONTROL CAP)

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88 GEOID: GEOID18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD 83(2011) (epoch 2010.0) ELLIPSOID: GRS80 MAP PROJECTION: LAMBERT CONFORMAL CONIC COORDINATE SYSTEM: OHIO STATE PLANE SOUTH ZONE COMBINED SCALE FACTOR: N/A

UNITS ARE IN U.S. SURVEY FEET.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

THE SCOPE OF THIS PROJECT WAS DRIVEN TO MAINTAIN WORK INSIDE EXISTING R/W AND THUS MUCH OF THE GRADING EXTENDS UP TO THE R/W LINE. PRIOR TO BEGINNING GRADING AND EXCAVATION, THE CONTRACTOR SHALL BE CERTAIN TO PLACE PERIMETER FILTER FABRIC FENCE OR CONSTRUCTION FENCE ALONG THE R/W BOUNDARIES. ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 832, EROSION CONTROL.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

- 659, SEEDING AND MULCHING 5593 SQ. YD.
659, REPAIR SEEDING AND MULCHING 1119 SQ. YD.
20% OF SEEDING AND MULCHING
659, COMMERCIAL FERTILIZER 0.5 TON
5593 SY X 20 LB/1000 SF X 9 SF/SY 2000 LB/TON
659, LIME 1.16 ACRES
5593 SY X 9 SF/SY 43,560 AC/SF
659, WATER 6 M. GAL.
5593 SY X 9 SF/SY X 0.12 MGAL/1000SF

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIPS FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

659, TOPSOIL ( 908.5' X 29.6' AVG WIDTH X 4"/12)/27 = 339 CY

670, SLOPE EROSION PROTECTION (908.5' X 29.6' AVG WIDTH)/9 = 2988 SY

670, DITCH EROSION PROTECTION (180' X 5.9' AVG WIDTH)/9 = 118 SY

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET NO. 4 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING: 3 HOURS

ITEM 204 - EXCAVATION OF SUBGRADE: 282 CY

ITEM 204 - EMBANKMENT: 282 CY

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, NOTIFY THE ENGINEER BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, NOTIFY THE ENGINEER BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE IS INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

EARTHWORK AND SEEDING SUMMARY

Table with columns: FROM SHEET NO., STATION TO STATION, SEEDING AND MULCHING (SY), EXCAVATION (CY), EMBANKMENT (CY). Includes rows for stations 743+43.34 to 766+95.24 and a TOTALS TO GENERAL SUMMARY SHEET row.

SEEDING GRAND TOTALS:

ITEM 659, SEEDING AND MULCHING: 5593 SY

ITEM 659, COMMERCIAL FERTILIZER: (5593 SY) x 20LB/1000 SF x 9 SF/SY / 2000LB/TON = 0.50 TON

ITEM 659, LIME: 5593 SY x 9 SF/SY / 43560 AC/SF = 1.16 ACRES

ITEM 659, WATER: 5593 SY x 9 SF/SY x 0.12MGAL/1000 SF = 6.04 MGAL





**ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN**

FOR THE CULVERT EXTENSION WINGWALL/FOOTER CONSTRUCTION, THE MAJORITY OF EXCAVATION REQUIRED IS QUANTIFIED IN THE CROSS SECTIONS. UNDERCUT WORK AT THE OUTLET IS ALSO QUANTIFIED SEPARATELY AND CARRIED TO THE GENERAL SUMMARY.

ANY EXCAVATION IN THIS AREA, DEEMED BY THE ENGINEER TO NOT ADEQUATELY BE CAPTURED UNDER ITEM 204-EXCAVATION, SHALL BE PAID UNDER THE CONTRACT PRICE FOR ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN, LUMP.

IN ADDITION, THE EXISTING ROCK CHANNEL PROTECTION ALONG THE BANKS OF THE OUTLET, SHALL BE REMOVED AND REPLACED UPON COMPLETION OF FINAL GRADING AROUND THE NEW WINGWALLS. EXTRA ROCK NOT REUSED SHALL BECOME PROPERTY OF THE CONTRACTOR. PAYMENT FOR THIS WORK SHALL ALSO BE PAID UNDER THE CONTRACT PRICE FOR ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN, LUMP.

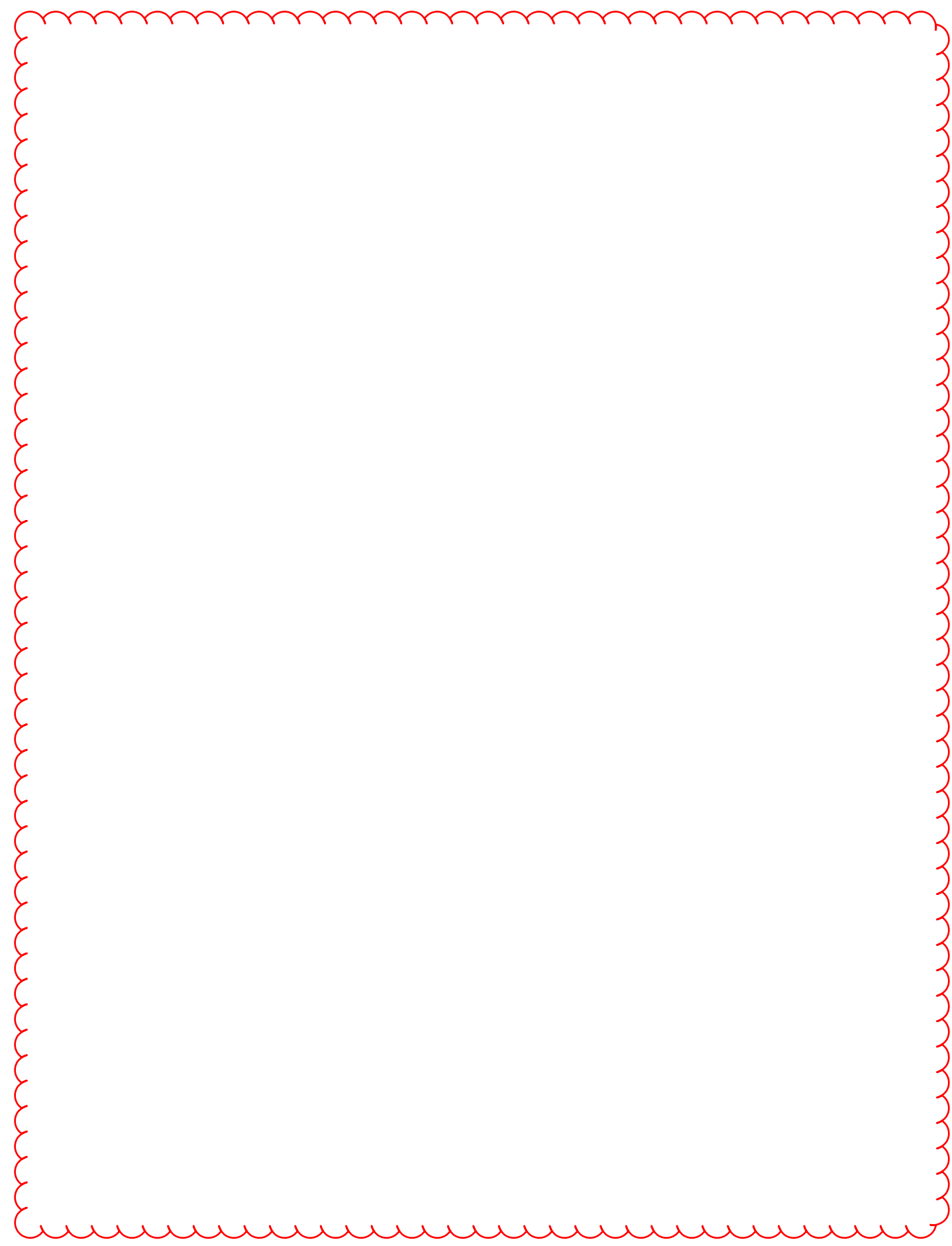
**ITEM 601 - DUMPED ROCK FILL, TYPE C, AS PER PLAN**

CONSTRUCTION OF DUMPED ROCK FILL, TYPE C, AS PER PLAN, AS SHOWN ON THE CROSS SECTIONS AND THE CULVERT PLAN & PROFILE WILL BE IN ACCORDANCE WITH C&MS 203.05 AND 203.07 INCLUSIVE.

IF THE TOE MUST BE EXCAVATED WITHOUT COFFERDAMS AND EXCAVATION BRACING, CARE SHALL BE TAKEN.

A 2'-0" LAYER OF DUMPED ROCK RILL, TYPE D SHALL BE PLACED OVER THE TYPE C ROCK. FILL VOIDS AND CHOKE OFF THE DUMPED ROCK FILL USING 703.16 GRANULAR TYPE C MATERIAL.

EXCAVATION QUANTITIES HAVE BEEN SEPARATELY ITEMIZED WHERE DUMPED ROCK FILL WILL BE PLACED.



**ITEM 602 - CONCRETE MASONRY, AS PER PLAN (LINER PIPE OUTLET)**

THE OUTLET FOOTER AND WINGWALLS OF THE LINER PIPE EXTENSION SHALL FOLLOW HW-1.1 DIMENSIONS OF AN 84" DIAMETER PIPE, THETA = 45 DEGREES WITH THE EXCEPTION OF THE FOLLOWING:

$c = 3'-9"$   
 $L2 = 16'-5"$   
 $h2 = 7'-1"$

STEEL REBAR SHALL BE #8 AS PRESCRIBED IN THE STANDARD WITH ANY DEVIATION OF QUANTITY IN LBS., THE RESPONSIBILITY OF THE CONTRACTOR.

CONCRETE QUANTITY FOR THESE REVISED DIMENSIONS WITH A 72" DIAMETER PIPE (WALL THICKNESS NOT CONSIDERED) IS 28.9 CY AND IS CARRIED TO THE GENERAL SUMMARY FROM THE SUBSUMMARY SHEET.

ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO PERFORM CONSTRUCTION OF THIS MODIFIED FOOTER/WINGWALLS SHALL BE INCLUDED UNDER ITEM 602 CONCRETE MASONRY, AS PER PLAN.

**ITEM SPECIAL - PIPE CLEANOUT**

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17.

CLEANOUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

**ITEM SPECIAL - MAILBOX SUPPORT**

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181.

ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT SYSTEM, (SINGLE) (DOUBLE).

**ITEM 837 - BACKFILL FOR LINER PIPE, AS PER PLAN**

THIS ITEM SHALL INCLUDE THE DESIGN AND PLACEMENT OF CELLULAR GROUT BETWEEN THE HOST PIPE AND THE NEW SLIP LINER. THE CONTRACTOR SHALL PROVIDE A CELLULAR GROUT DESIGN FOR REVIEW APPROVAL PRIOR TO STARTING ANY WORK ON THE PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE A GROUTING PLAN FOR REVIEW AND APPROVAL. THE GROUTING PLANS SHALL INCLUDE METHOD FOR MEASURING PRESSURE AND VOLUME INJECTED INTO THE ANNULAR SPACE AS WELL AS A MEANS FOR FASTENING DOWN THE LINER PIPE.

DESIGN THE GROUT IN ACCORDANCE WITH THE TABLE BELOW AND MEETING THE REQUIREMENTS OF ASTM C 403.

MATERIALS	PROPORTIONS PER UNIT BATCH AND MIX PARAMETERS
PORTLAND CEMENT	≥ 100 LB
TOTAL CEMENTITIOUS (PORTLAND CEMENT AND CLASS C FLY ASH)	≥ 500 LB
WATER / CEMENTITIOUS RATIO	0.50
PRE-FORMED FOAM *	20 CU.FT
GROUT (CAST DENSITY)	30 LB ± 3LB PER CU.FT
SLUMP	10 IN ± 1 IN
28-DAY COMPRESSIVE STRENGTH	150 PSI - 400 PSI

\*PROVIDE A FOAMING AGENT MEETING THE REQUIREMENTS OF ASTM C 869 WHEN TESTED IN ACCORDANCE WITH ASTM C 796.

**BEGIN CONSTRUCTION DATE**

UNLESS OTHERWISE APPROVED BY THE CONSTRUCTION SECTION OF THE ODOT DISTRICT 10 CAPITAL PROGRAMS DEPT., WORK ON THIS PROJECT SHALL NOT BEGIN UNTIL APRIL 1, 2024.

DESIGN AGENCY



DESIGNER  
EPR

REVIEWER  
JDC 06-14-23

PROJECT ID  
115604

SHEET TOTAL  
6 62









UNDERDRAIN SUBSUMMARY

REF. NO.	SHEET NO.	UNDERDRAIN LOCATION		605	611	FOR INFORMATION		OUTLET STATION	OUTLET OFFSET	NOTES
				4" BASE PIPE UNDERDRAINS	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	TEE CONNECT	90 ELL CONNECT			
				FT	FT	EA	EA			
UD1	21,22	743+92.31	749+65	495	7		1	743+92.31	7' RT	18" DEEP TRENCH FOR ALL UD
UD2	21,22	743+66.12	749+67.22	524	9		1	744+66.12	9' LT	
UD3	22,23	749+65	754+41.13	476	10	1		754+41.13	10' RT	
UD4	22,23	749+67.22	754+41.63	476	9	1		754+41.63	9' LT	
UD5	23,24	754+41.13	760+27.36	586						
UD6	23,24	754+41.63	760+27.36	586						
UD7	24,25	760+27.36	765+11.49	498	9		1	765+11.49	9' RT	
UD8	24,25	760+27.36	765+74.14	547	14		1	765+74.14	14' LT	
TOTALS CARRIED TO GENERAL SUMMARY				4188	58	2	4			

OUTLET WILL TERMINATE IN NEW CATCH BASIN AT 765+11.5

CULVERT LINER EXTENSION , 754+48.48, SUBSUMMARY, PG 59

REF. NO.	STATION		SIDE OF SR60	202		203		204			503		601		602		837		
	FROM	TO		LS	FT	CY	CY	CY	SY	SY	LS	LS	CY	CY	CY	CY	FT	FT	
1-LP	0+27.29	1+14.30	RT/LT	1	67							1					87	67	
1-EC	754+30	754+85	LT			39							416	72					
2-EC	1+14.30	1+24.74	LT									9							
1-HW	0+27.29		RT												17.5				
2-HW	1+14.30		LT					51	51	102	51	1				28.9			
TOTALS CARRIED TO GENERAL SUMMARY				1	67	39	51	51	102	51	1	1	9	416	72	17.5	28.9	87	67

PAVEMENT CALC TABLE ADJUSTED THROUGHOUT FOR ACCURACY

PAVEMENT CALCULATION

STATION RANGE	TYPICAL SECTION	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=D*W/9	202	204	304	301	407	407	441	441
						PAVEMENT REMOVED	SUBGRADE COMPACTION	6" AGGREGATE BASE	6" ASPHALT CONCRETE BASE	TACK COAT (INTERMEDIATE)	TACK COAT (SURFACE)	1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2	1.25" ASPHALT SURFACE COURSE, TYPE 1
						SY	SY	CY	CY	GAL	GAL	CY	CY
744+43.34 TO 765+25.00		RT	2081.7	5.00	1156.48	1156.48							
744+43.34	747+73.34	RT	330.00	9.00	330.00					18.15	18.15	16.04	11.46
747+73.34	763+65.24	RT	1591.90	12.00	2122.53					116.74	116.74	103.18	73.70
763+65.24	765+25.00	RT	159.76	10.55	187.27					10.30	10.30	9.10	6.50
765+25.00	766+95.24		170.24	18.10	342.37						18.83		11.89
744+43.34	747+73.34	RT	330.00	9.50	348.33				58.06				
747+73.34	763+65.24	RT	1591.90	12.50	2210.97				368.50				
763+65.24	765+25.00	RT	159.76	11.05	196.15				32.69				
744+43.34	747+73.34	RT	330.00	10.00	366.67			61.11					
747+73.34	763+65.24	RT	1591.90	13.00	2299.41			383.24					
763+65.24	765+25.00	RT	159.76	11.55	205.03			34.17					
744+43.34	747+73.34	RT	330.00	10.50	385.00		385.00						
747+73.34	763+65.24	RT	1591.90	13.50	2387.85		2387.85						
763+65.24	765+25.00	RT	159.76	12.05	213.90		213.90						
744+43.34 TO 765+75.00		LT	2131.7	5.00	1184.26	1184.26							
744+43.34	747+73.34	LT	330.00	9.00	330.00					18.15	18.15	16.04	11.46
747+73.34	763+65.24	LT	1591.90	12.00	2122.53					116.74	116.74	103.18	73.70
763+65.24	765+25.00	LT	159.76	10.55	187.27					10.30	10.30	9.10	6.50
765+25.00	765+75.00	LT	50.00	8.65	48.06					2.64	2.64	2.34	1.67
744+43.34	747+73.34	LT	330.00	9.50	348.33				58.06				
747+73.34	763+65.24	LT	1591.90	12.50	2210.97				368.50				
763+65.24	765+25.00	LT	159.76	11.05	196.15				32.69				
765+25.00	765+75.00	LT	50.00	9.15	50.83				8.47				
744+43.34	747+73.34	LT	330.00	10.00	366.67			61.11					
747+73.34	763+65.24	LT	1591.90	13.00	2299.41			383.24					
763+65.24	765+25.00	LT	159.76	11.55	205.03			34.17					
765+25.00	765+75.00	LT	50.00	9.65	53.61			8.94					
744+43.34	747+73.34	LT	330.00	10.50	385.00		385.00						
747+73.34	763+65.24	LT	1591.90	13.50	2387.85		2387.85						
763+65.24	765+25.00	LT	159.76	12.05	213.90		213.90						
765+25.00	765+75.00	LT	50.00	10.15	56.39		56.39						
742+68.24	744+43.34	LT/MID/RT	175.10	30.00	583.67						49.61		20.27
744+43.34	766+95.24	MIDDLE	2251.90	20.00	5004.22						425.36		173.76
766+95.24	768+70.25	LT/MID/RT	175.01	30.00	583.37						49.59		20.26
SUBTOTALS						2340.73	6029.89	965.97	926.96	293.02	936.41	258.98	414.16
TOTALS CARRIED TO GENERAL SUMMARY						2341	6030	966	927	1130	259	412	

DESIGN AGENCY



DESIGNER

MVP

REVIEWER

EPR 07/07/23

PROJECT ID

115604

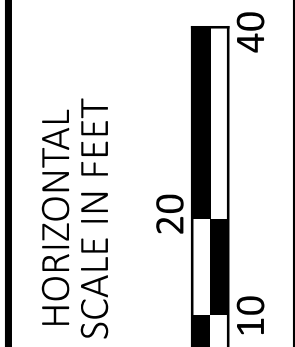
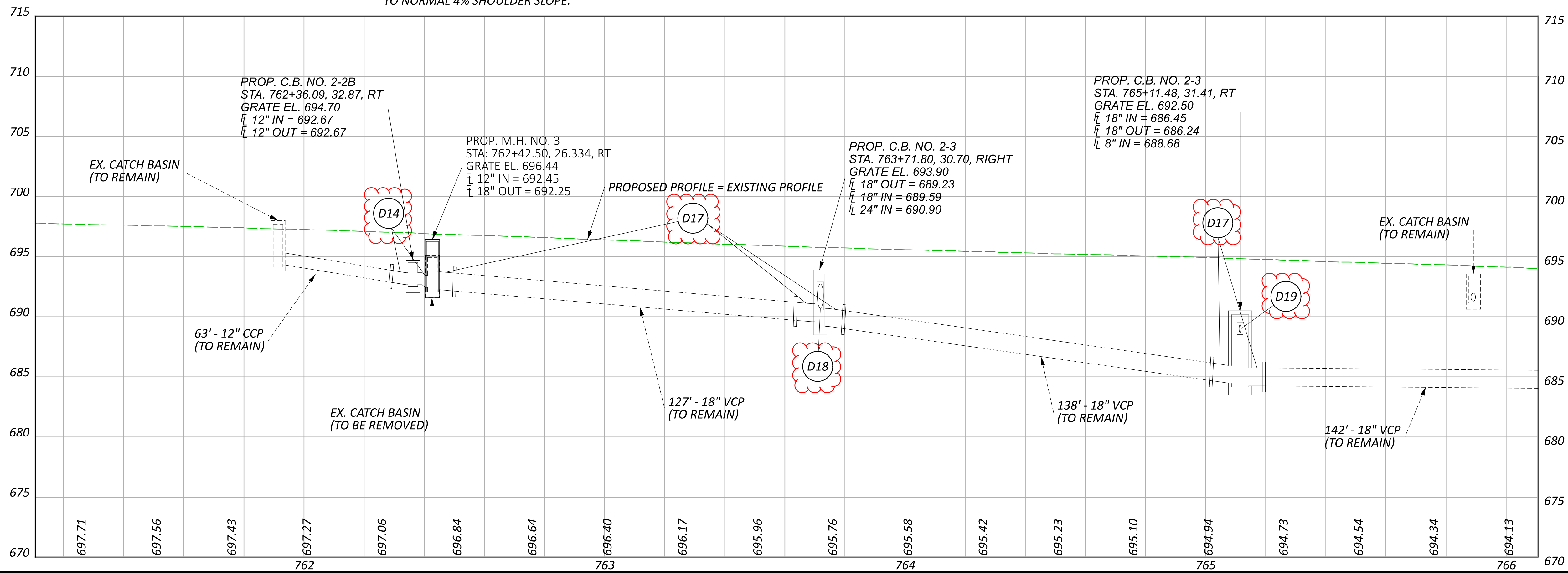
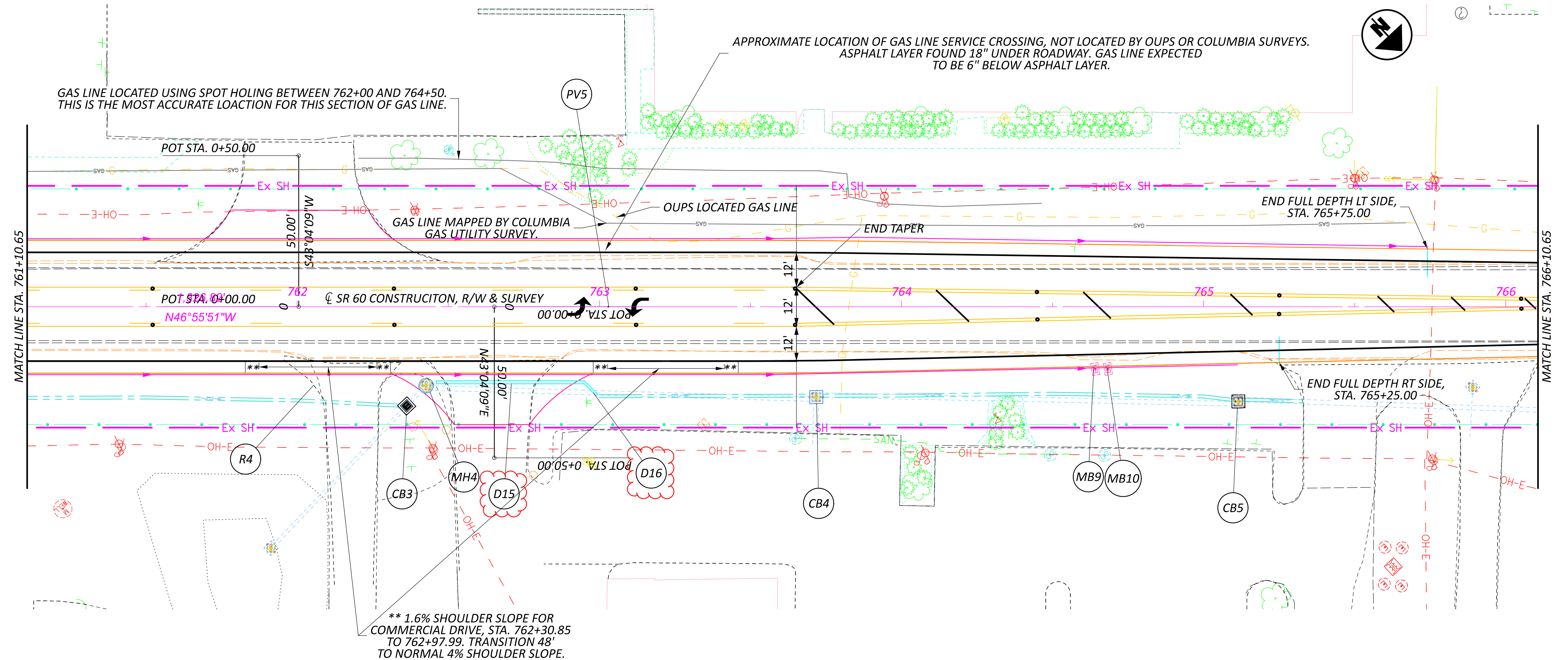
SHEET

19

TOTAL

62





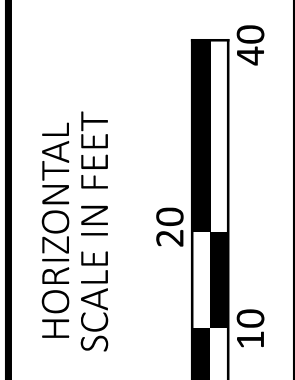
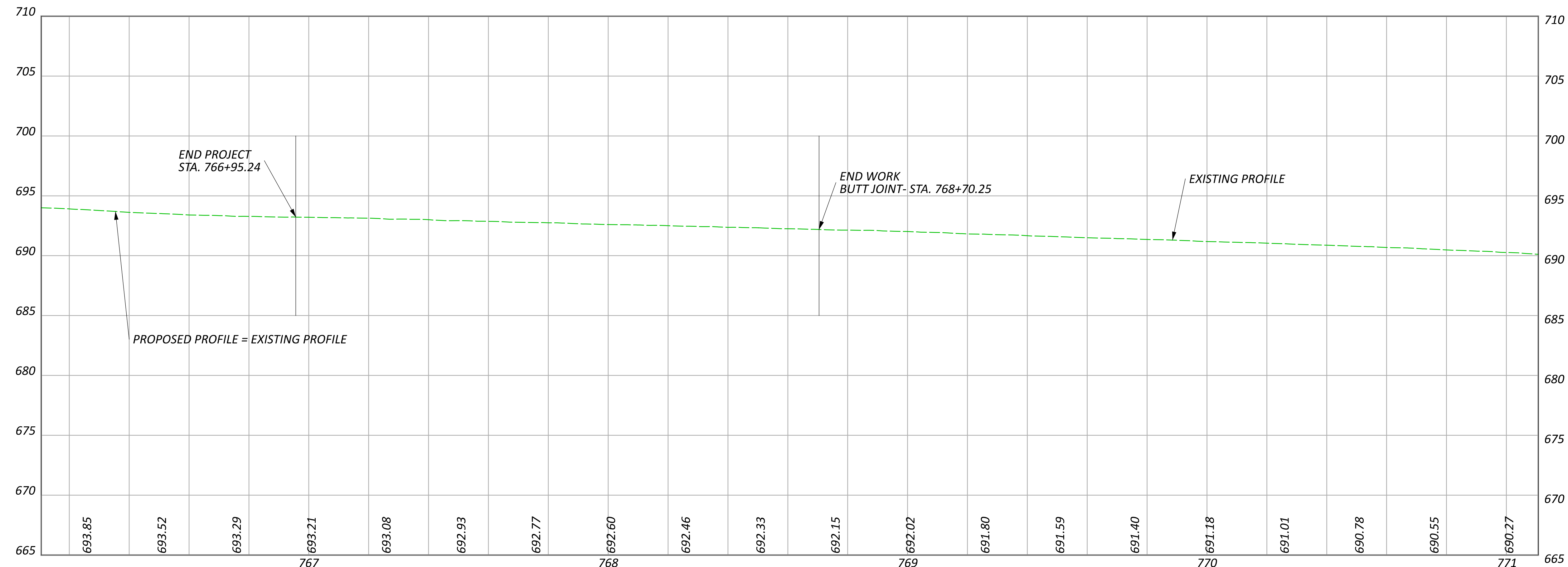
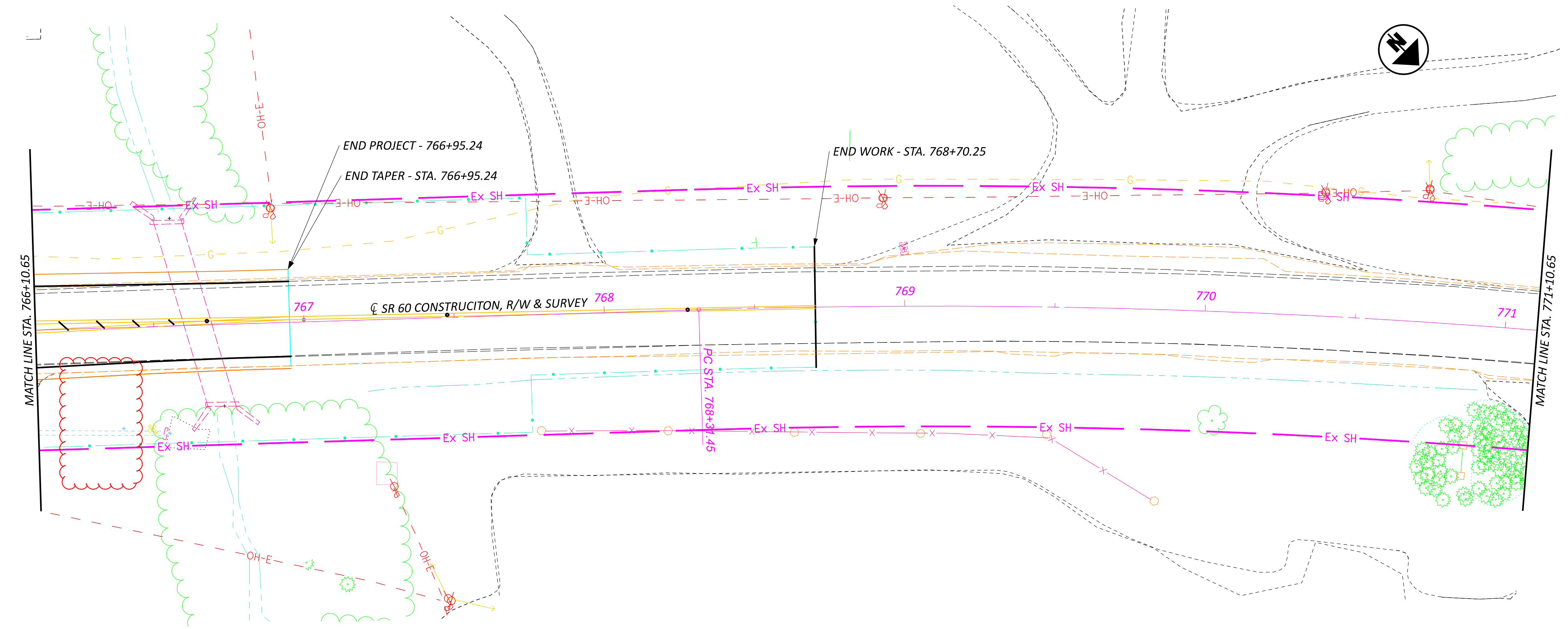
PLAN AND PROFILE  
 STA. 761+10.65 TO STA. 766+10.65

DESIGN AGENCY



DESIGNER	EPR
REVIEWER	JDC
DATE	06/14/23
PROJECT ID	115604
SHEET	25
TOTAL	62





PLAN AND PROFILE  
 STA. 766+10.65 TO END OF PROJECT

DESIGN AGENCY



DESIGNER  
 EPR

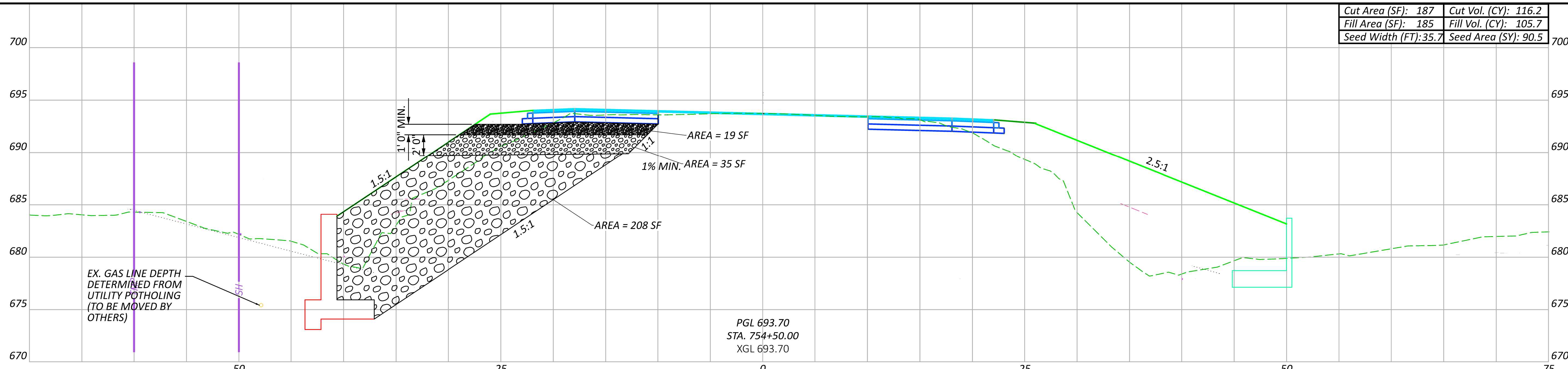
REVIEWER  
 JDC 06/14/23

PROJECT ID  
 115604

SHEET TOTAL  
 26 62

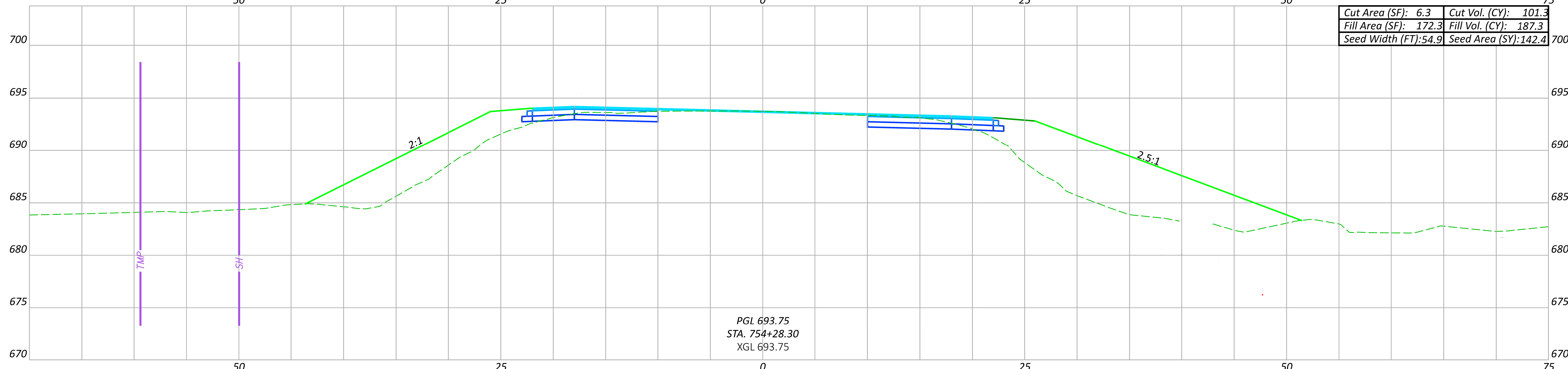






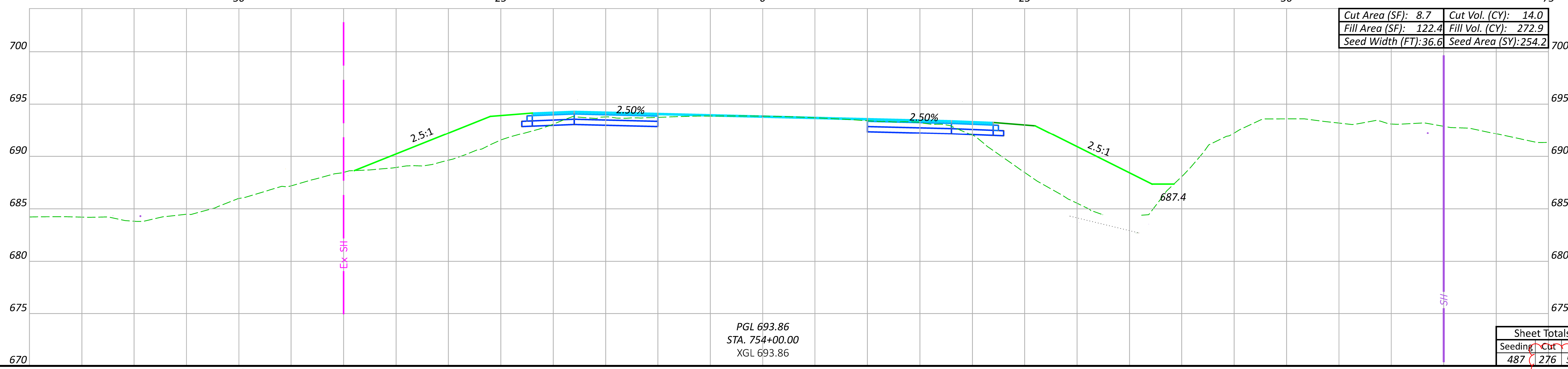
Cut Area (SF): 187	Cut Vol. (CY): 116.2
Fill Area (SF): 185	Fill Vol. (CY): 105.7
Seed Width (FT): 35.7	Seed Area (SY): 90.5

PGL 693.70  
STA. 754+50.00  
XGL 693.70



Cut Area (SF): 6.3	Cut Vol. (CY): 101.3
Fill Area (SF): 172.3	Fill Vol. (CY): 187.3
Seed Width (FT): 54.9	Seed Area (SY): 142.4

PGL 693.75  
STA. 754+28.30  
XGL 693.75

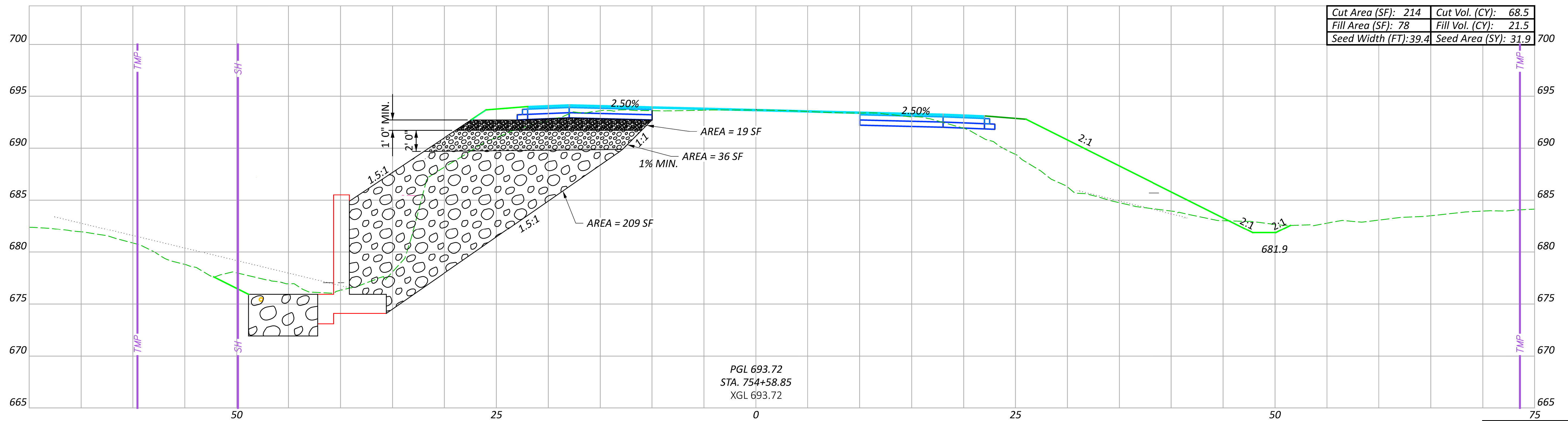
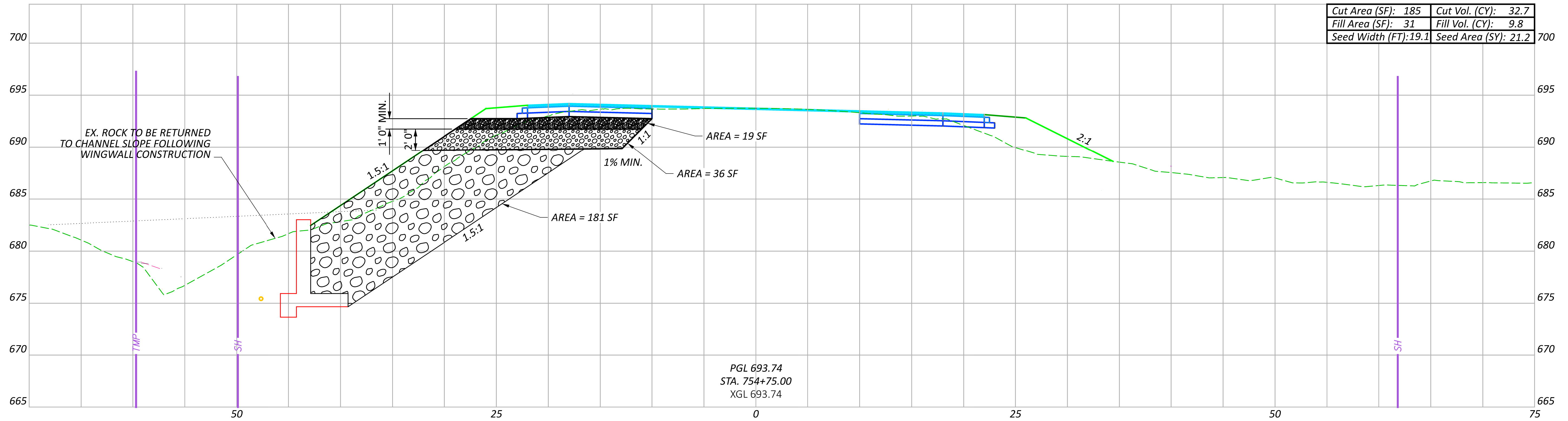


Cut Area (SF): 8.7	Cut Vol. (CY): 14.0
Fill Area (SF): 122.4	Fill Vol. (CY): 272.9
Seed Width (FT): 36.6	Seed Area (SY): 254.2

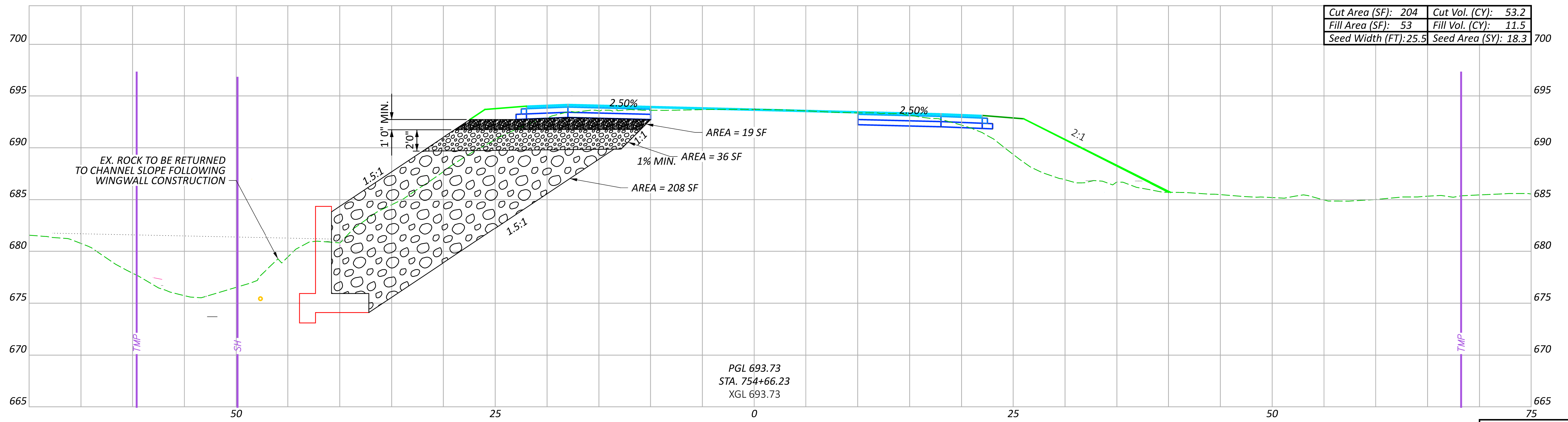
PGL 693.86  
STA. 754+00.00  
XGL 693.86

DESIGN AGENCY	
DESIGNER	EPR
REVIEWER	JDC 06/14/23
PROJECT ID	115604
Sheet Totals	115604
Seeding	487
Cut	276
Fill	566
SHEET	37
TOTAL	62





Sheet Totals			SHEET TOTAL	
Seeding	Cut	Fill	SHEET	TOTAL
53	100	31	38	62



Cut Area (SF): 204	Cut Vol. (CY): 53.2
Fill Area (SF): 53	Fill Vol. (CY): 11.5
Seed Width (FT): 25.5	Seed Area (SY): 18.3

Sheet Totals			115604	
Seeding	Cut	Fill	SHEET	TOTAL
18	53	12	39	62

DESIGN AGENCY

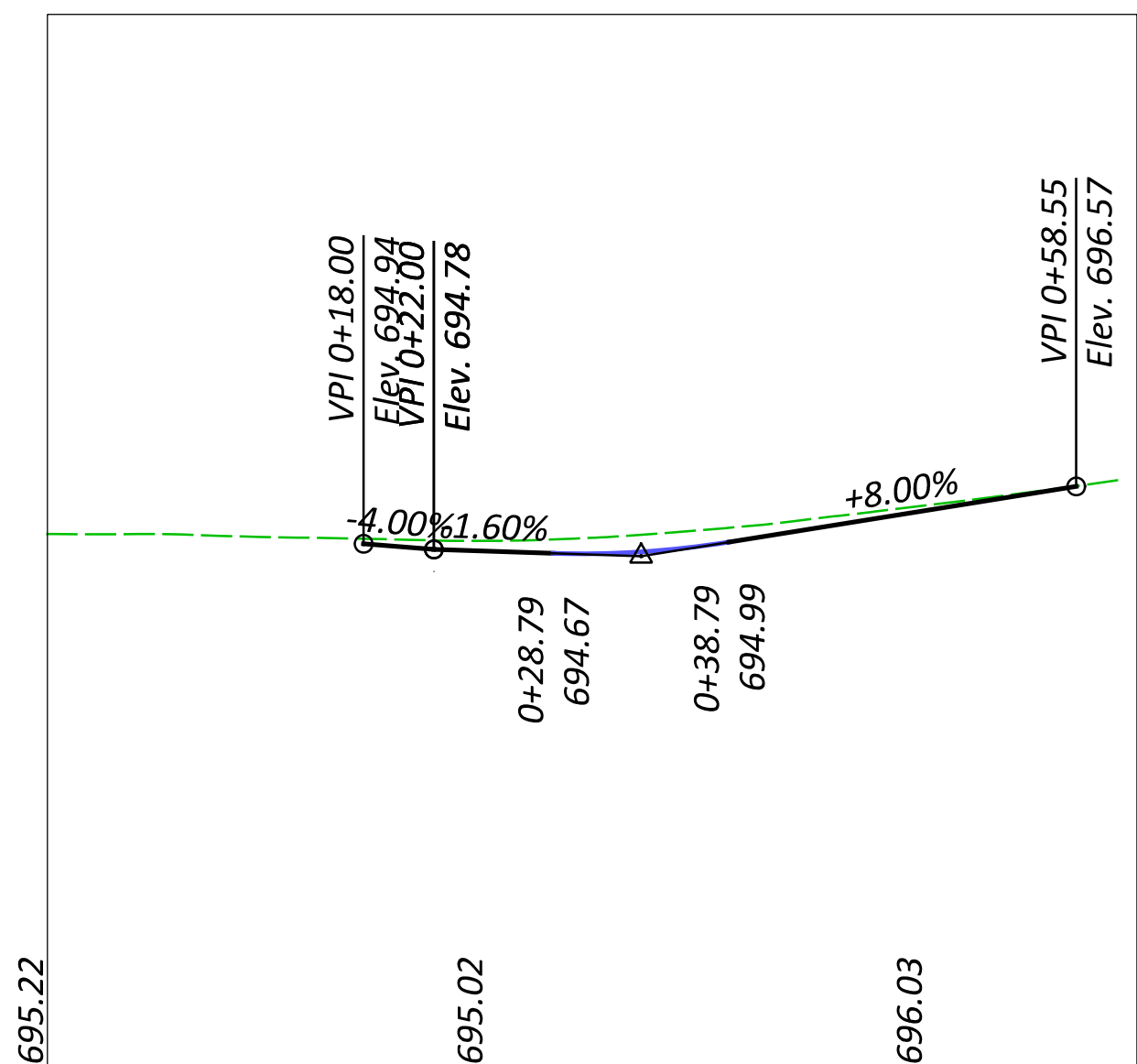
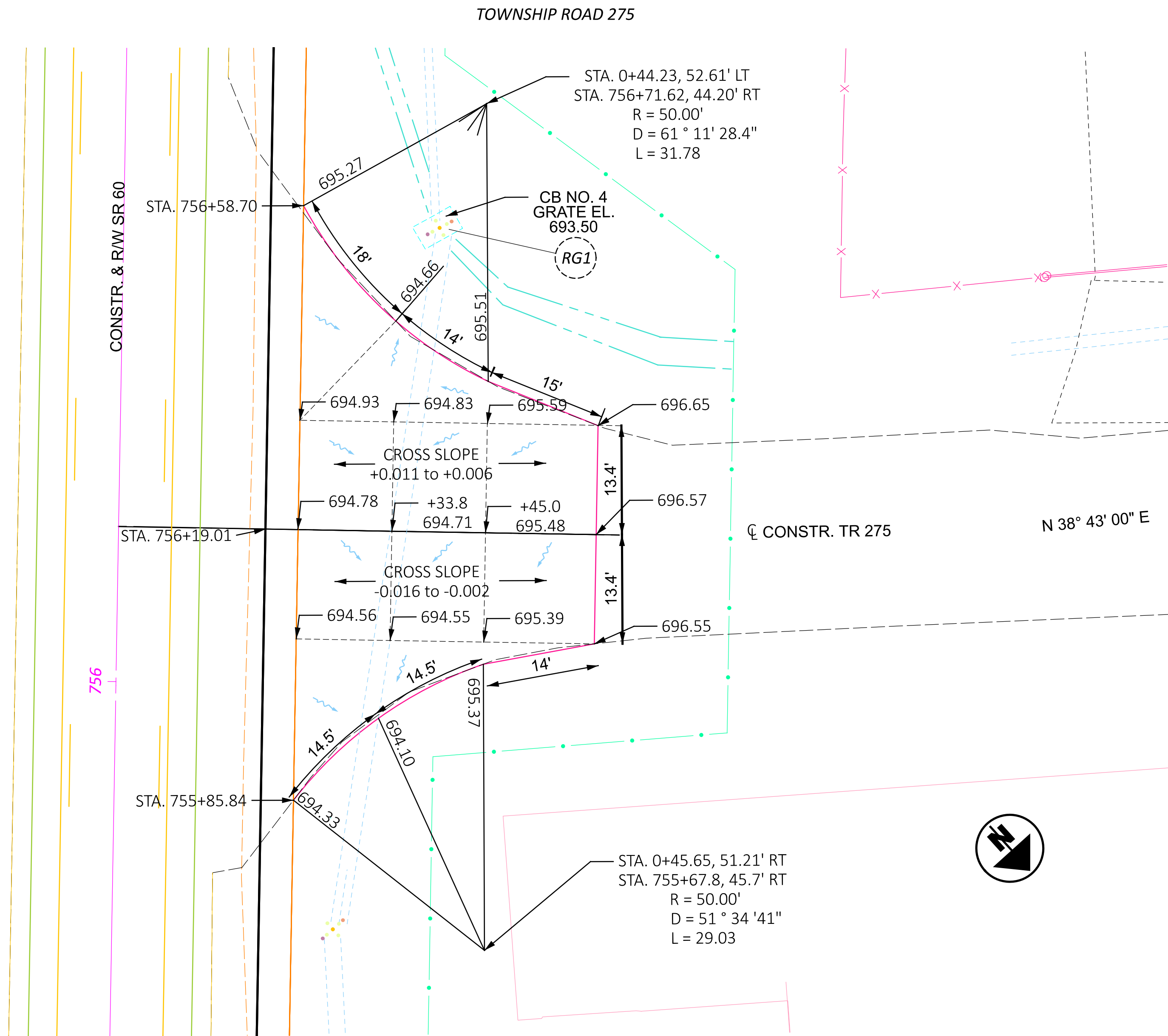


DESIGNER  
EPR

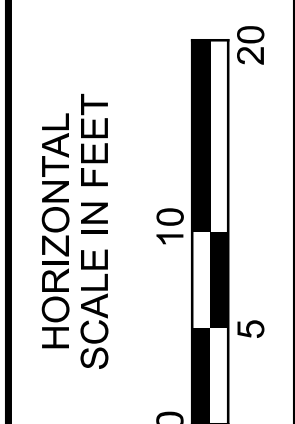
REVIEWER  
JDC 06/14/23

PROJECT ID  
115604





REFERENCE NO.	STATION	SIDE	DRIVE TYPE	APRON LENGTH (L1)		DRIVEWAY LENGTH (L2)		WIDTH (W)	R1 (LEFT SIDE RADIUS OF DRIVE LOOKING FROM CL)	R2 (RIGHT SIDE RADIUS OF DRIVE LOOKING FROM CL)	DRIVEWAY AREA	202		203		204		301		304		407		441		452	
				FT	FT	FT	FT					SY	CY	CY	SY	CY	CY	GAL	CY	CY	SY	SY					
DR-744+45	744+45	RT	COMM.	4	18.8	25.0	25	25	649.1	72.1		12	72.1														72.1
DR-748+30	748+30	RT	COMM.	4	1.0	43.6	25	25	469.8	52.2			52.2														52.2
DR-748+70	748+70	LT	COMM.	4	8.0	33.4	25	25	289.4	32.2			32.2														32.2
DR-751+00	751+00	RT	COMM.	4	16.0	29.7	25	25	566.0	62.9		7	62.9														62.9
DR-753+10	753+10	LT	COMM.	4	16.0	14.8	25	25	275.0	30.6	7		30.6														30.6
DR-753+25	753+25	RT	COMM.	4	16.0	12.7	25	25	267.7	29.7			29.7			5.0											29.7
DR-755+55	755+55	LT	COMM.	4	16.0	36.7	25	25	697.4	77.5		9	77.5														77.5
DR-756+95	756+95	LT	COMM.	4	8.0	44.7	25	25	369.7	41.1		5	41.1														41.1
DR-758+40	758+40	RT	COMM.	4	16.0	36.2	25	25	695.6	77.3			77.3														77.3
DR-760+30	760+30	LT	COMM.	4	8.0	35.6	25	25	296.8	33.0		4	33.0														33.0
DR-762+00	762+00	LT	COMM.	4	10.0	45.8	25	25	528.0	58.7			58.7														58.7
DR-762+65	762+65	RT	COMM.	4	17.0	25.0	25	25	713.9	79.3		9	79.3														79.3
TOWNSHIP ROAD 275	756+15	RT	SIDE ROAD	4	36.6	26.8	50	50	1561.2	173.5		10	173.5	28.9	28.9	21	8.4	6.0									617
TOTALS											7380	820	7	54	820	29	34	21	8	6.0							



TR 275 DETAIL/ DRIVE SUB-SUMMARY

DESIGN AGENCY

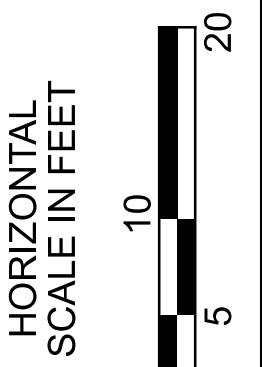
DESIGNER: MVP

REVIEWER: EPR 07/07/23

PROJECT ID: 115604

SHEET: 51 TOTAL: 62



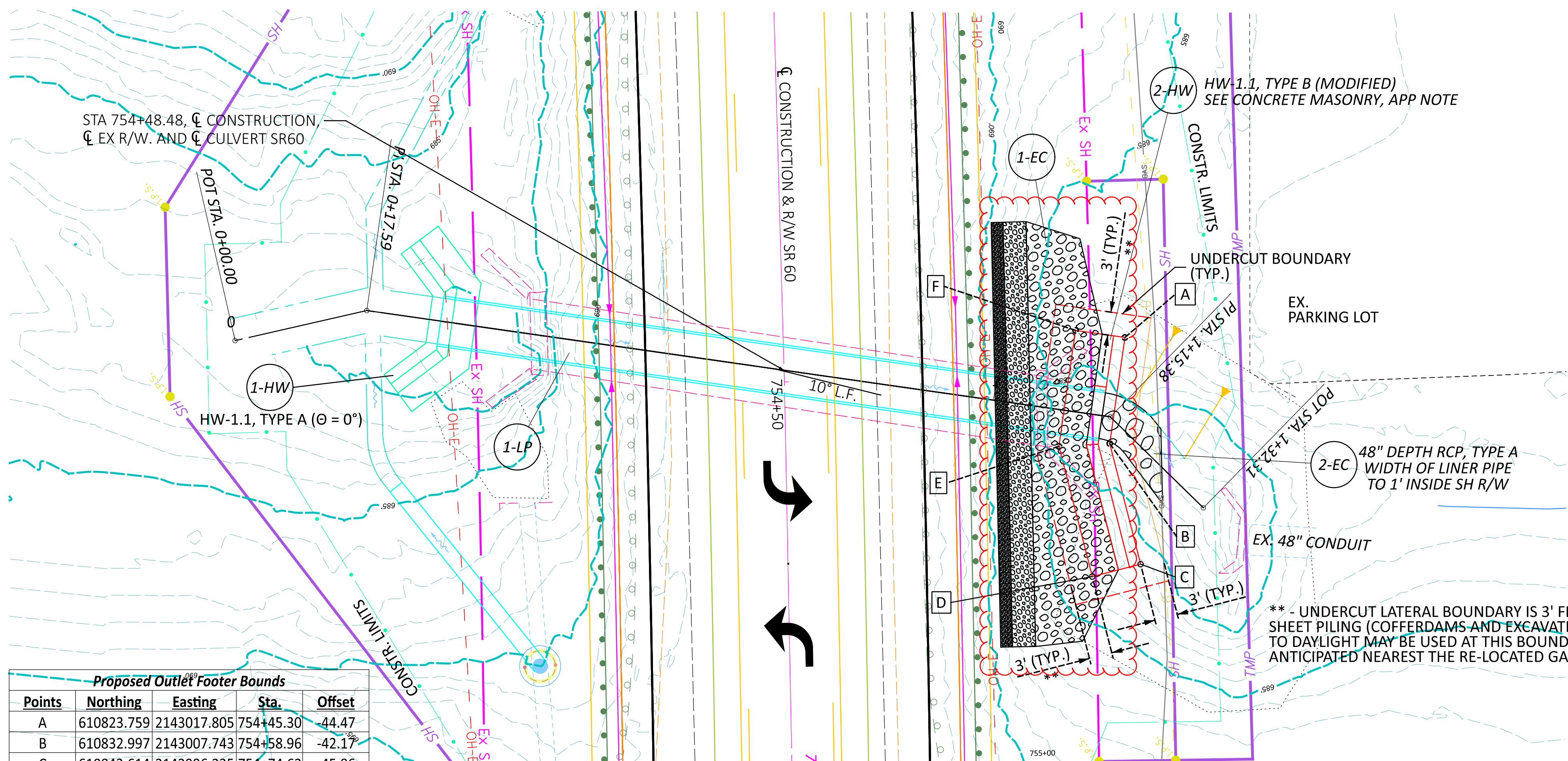


DRAINAGE CULVERT PLAN & PROFILE

UNDERCUT CALCULATIONS:  
 ITEM 203 - EXCAVATION  
 459 SQ. FT. x 3' DEPTH / 27 = 51 CU. YD.  
 (NOTE: USE OF 1:1 SLOPE IN LIEU OF SHEET PILING NOT INCLUDED IN CALC.)

ITEM 204 - GRANULAR MATERIAL, TYPE C  
 459 SQ. FT. x 3' DEPTH / 27 = 51 CU. YD.  
 ITEM 204 - GEOGRID = 459 SQ. FT. x 2 layers / 9 = 102 SQ. YD.  
 ITEM 204 - GEOTEXTILE FABRIC = 459 SQ. FT. / 9 = 51 SQ. YD.  
 ITEM 503 - COFFERDAMS AND EXCAVATION BRACING = LUMP

OTHER NOTES:  
 ITEM 202 - PORTIONS OF STRUCTURE REMOVED - LUMP  
 (INCLUDED AS PAYMENT FOR REMOVAL OF WINGWALLS ON EX. BOX CULVERT, AS NEEDED, TO FACILITATE CONSTRUCTION OF LINER FOOTER/WINGWALLS.  
 ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN SEE GENERAL NOTE SHEET FOR GUIDANCE  
 ITEM 601 - DUMPED ROCK FILL, TYPE C, AS PER PLAN SEE GENERAL NOTE SHEET FOR GUIDANCE  
 ITEM 602 - CONCRETE MASONRY, AS PER PLAN SEE GENERAL NOTE SHEET FOR GUIDANCE



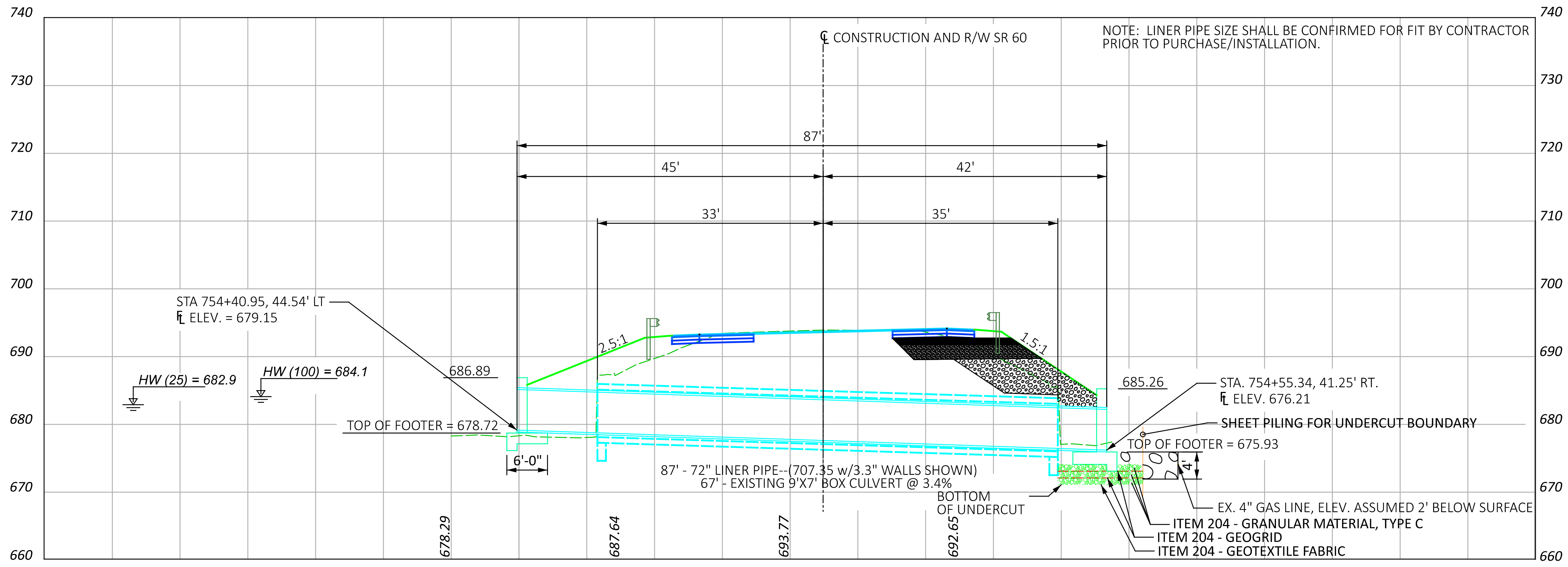
Proposed Outlet Footer Bounds				
Points	Northing	Easting	Sta.	Offset
A	610823.759	2143017.805	754+45.30	-44.47
B	610832.997	2143007.743	754+58.96	-42.17
C	610843.614	2142996.235	754+74.62	-45.86
D	610844.619	2142995.150	754+76.10	-39.54
E	610833.140	2143007.587	754+59.17	-35.55
F	610823.036	2143018.595	754+44.23	-38.06

PROPOSED HYDRAULIC DESIGN DATA (72" CIRCULAR SMOOTH, AS SHOWN)	
DRAINAGE AREA =	43.7 ac.
Q25 =	98 cfs
Q100 =	159 cfs
HW25 =	682.9 ft
HW100 =	684.1 ft
V 25 =	20.0 fps
V 100 =	22.9 fps

EXISTING HYDRAULIC DESIGN DATA	
DRAINAGE AREA =	43.7 ac.
Q25 =	98 cfs
Q100 =	159 cfs
HW25 =	680.7 ft
HW100 =	681.6 ft
V 25 =	16.1 fps
V 100 =	19.1 fps
ORDINARY HIGH WATER =	678.5 ft

**PROPOSED STRUCTURE**  
 TYPE: 72" LINER PIPE WITH BACKFILL  
 SKEW: 10° L.F.  
 ALIGNMENT: TANGENT  
 CFN: 1810124

**EXISTING STRUCTURE**  
 TYPE: CONDUIT, TYPE A, 706.05  
 SIZE: 9' X 7'  
 SKEW: 10% L.F.  
 ALIGNMENT: TANGENT  
 DATE BUILT: 1929  
 CONDITION: G.A: 6, 12/6/2018  
 CFN: 1810124



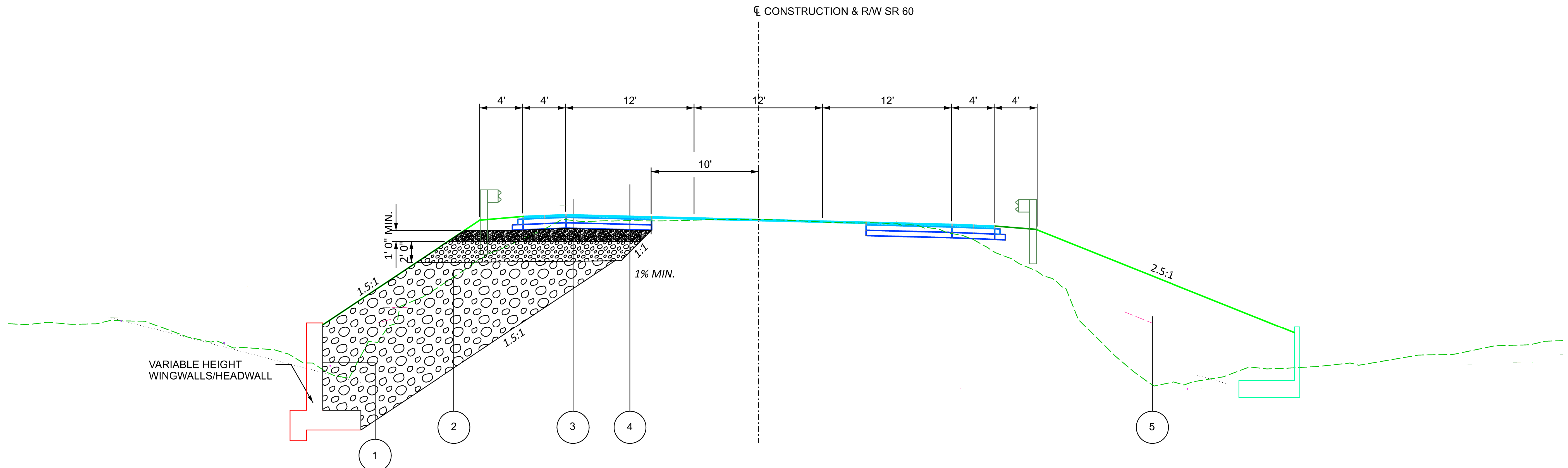
MRG-60-14-11

MODEL: CLINER\_14 - Plan 7 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 12/7/2023 TIME: 10:18:05 AM USER: mpenmck  
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DESIGN AGENCY

DESIGNER: MVP  
 REVIEWER: EPR 07/07/23  
 PROJECT ID: 115604  
 SHEET: 59 TOTAL: 62





**1.5:1 REINFORCED SLOPE SECTION**  
 STA. 754+30 TO STA. 754+85

- 1 ITEM 602 - CONCRETE MASONRY, AS PER PLAN
- 2 ITEM 601 - DUMPED ROCK FILL, TYPE C, AS PER PLAN
- 3 ITEM 601 - DUMPED ROCK FILL, TYPE D
- 4 ITEM 203 - GRANULAR MATERIAL, TYPE C
- 5 ITEM 203 - EMBANKMENT

DUMPED ROCK FILL, TYPE C  
**754+30.00 TO 754+50.00**  
 (28.85 FT X 208 SF)/27 = 222 CY  
**754+58.85 TO 754+66.23**  
 (7.38 FT X 209 SF)/27 = 57 CY  
**754+66.23 TO 754+85.00**  
 (18.77 FT X 181 SF)/27 = 126 CY

DUMPED ROCK FILL, TYPE D  
**754+30.00 TO 754+50.00**  
 (28.85 FT X 35 SF)/27 = 38 CY  
**754+58.85 TO 754+66.23**  
 (7.38 FT X 36 SF)/27 = 10 CY  
**754+66.23 TO 754+85.00**  
 (18.77 FT X 36 SF)/27 = 25 CY

GRAULAR MATERIAL, TYPE C  
**754+30.00 TO 754+50.00**  
 (28.85 FT X 19 SF)/27 = 20 CY  
**754+58.85 TO 754+66.23**  
 (7.38 FT X 19 SF)/27 = 5 CY  
**754+66.23 TO 754+85.00**  
 (18.77 FT X 19 SF)/27 = 13 CY

