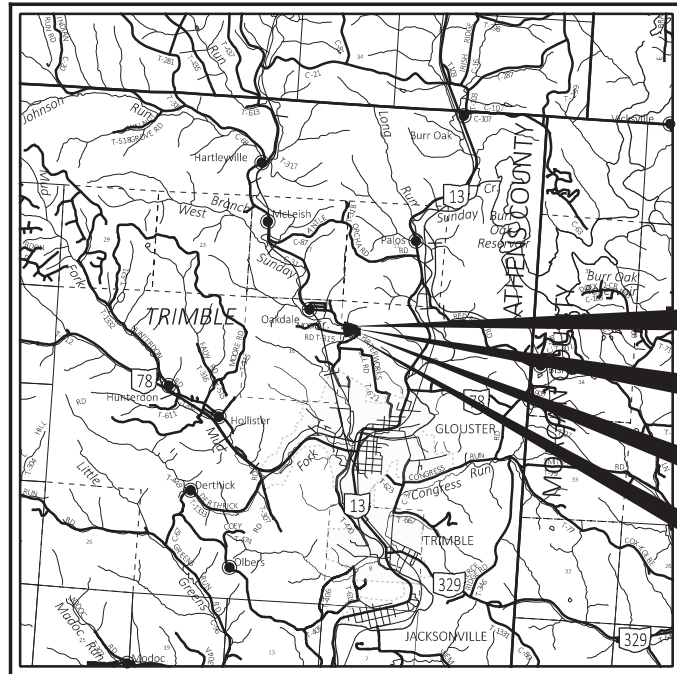


# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## ATH-TR 315-0.01

TRIMBLE TOWNSHIP  
ATHENS COUNTY



BEGIN PROJECT:  
CR 31  
STA. 102+00.00

END PROJECT:  
TR 315  
STA. 24+78.22

END PROJECT:  
CR 31  
STA. 106+50.00

BEGIN PROJECT:  
TR 315  
STA. 21+00.00

**LOCATION MAP**

LATITUDE: N 39°31'07" LONGITUDE: W 82°05'09"



PORTION TO BE IMPROVED	-----
INTERSTATE HIGHWAY	=====
FEDERAL ROUTES	-----
STATE ROUTES	-----
COUNTY & TOWNSHIP ROADS	-----
OTHER ROADS	-----

**DESIGN DESIGNATION**

	TR 315	CR 31
CURRENT ADT (2024)	82	348
DESIGN YEAR ADT (2044)	89	384
DESIGN HOURLY VOLUME (2044)	11	46
DIRECTIONAL DISTRIBUTION	55%	55%
TRUCKS (24 HOUR B&C)	0%	5%
DESIGN SPEED	25 MPH	35 MPH
LEGAL SPEED	25 MPH	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:		
TR 315 - 07 RURAL LOCAL, CR 31 - 07 RURAL LOCAL		
NHS PROJECT	NO	

**DESIGN EXCEPTIONS**

NONE

**ADA DESIGN WAIVERS**

NONE

**UNDERGROUND UTILITIES**  
Contact Two Working Days  
Before You Dig

**OHIO811.org**  
Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764  
(Non members must be called directly)

PLAN PREPARED BY:  
**MEAD & HUNT**  
4700 LAKEHURST CT, SUITE 110  
COLUMBUS OH, 43016

**INDEX OF SHEETS:**

TITLE SHEET	1
SCHEMATIC PLAN	2
TYPICAL SECTIONS	3
GENERAL NOTES	4
MAINTENANCE OF TRAFFIC	5-6
GENERAL SUMMARY	7-8
SUBSUMMARIES	9
PROJECT SITE PLAN	10
PLAN AND PROFILE - TR 315	11
PLAN AND PROFILE - CR 31	12
CROSS SECTIONS - TR 315	13-18
CROSS SECTIONS - CR 31	19-24
SUPERELEVATION TABLES	25
INTERSECTION DETAILS	26
CULVERT DETAILS	27
TRAFFIC CONTROL	28
STRUCTURE (OVER 20')	29-43
SOIL PROFILES	44-54

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
BP-3.1	1/19/24	CPP-1-08	7/21/17	TC-52.20	1/15/21	800-2023	1/19/24		
		CS-1-24	1/19/24	TC-61.30	7/19/19	832	7/21/23		
DM-4.2	7/20/12	HW-2.2	7/20/18						
DM-4.3	1/15/16	TST-1-99	1/15/21						
DM-4.4	1/15/16								
MGS-1.1	7/16/21	MT-97.10	4/19/19						
MGS-2.1	1/19/18	MT-97.12	1/20/17						
MGS-3.1	1/19/18	MT-99.20	4/19/19						
MGS-4.1	1/20/17	MT-101.60	4/21/23						
		MT-105.10	1/17/20						
WQ-1.2	1/15/16	TC-41.20	10/18/13						
		TC-41.30	4/21/23						
AS-1-15	1/20/23	TC-41.40	10/18/13						
AS-2-15	7/21/23	TC-42.20	10/18/13						
CPA-1-08	1/19/24	TC-52.10	10/18/13						

**FEDERAL PROJECT NUMBER**

E230832

**RAILROAD INVOLVEMENT**

NONE

**PROJECT DESCRIPTION**

THE PROJECT CONSISTS OF REALIGNING TR 315 (MOORE ROAD) AND REPLACING THE BRIDGE ACROSS WEST BRANCH SUNDAY CREEK. WORK WILL ALSO BE DONE TO RAISE CR 31 (OAKDALE ROAD) TO MEET THE RELOCATED ALIGNMENT FOR TR 315. THE PROJECT WORK LENGTH IS 0.16 MILES.

**EARTH DISTURBED AREAS**

PROJECT EARTH DISTURBED AREA:	1.44 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.77 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	2.22 ACRES

**2023 SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET P.06.

Rich Oster  
District 10 Deputy Director

Jack Marchbanks, PhD  
Director, Department of Transportation

ENGINEER'S SEAL ROADWAY	ENGINEER'S SEAL BRIDGE
 STEVEN J. SCHEID, JR. E-63357 REGISTERED PROFESSIONAL ENGINEER	 K.AVERIPATINAM V. BALASUBRAMANYAM E-52693 REGISTERED PROFESSIONAL ENGINEER
Steven Scheid	K.V. Balasubramanyam

TITLE SHEET

DESIGN AGENCY  
**Mead & Hunt**  
CLIENT

DESIGNER  
ARM

REVIEWER  
SJS 04/03/24

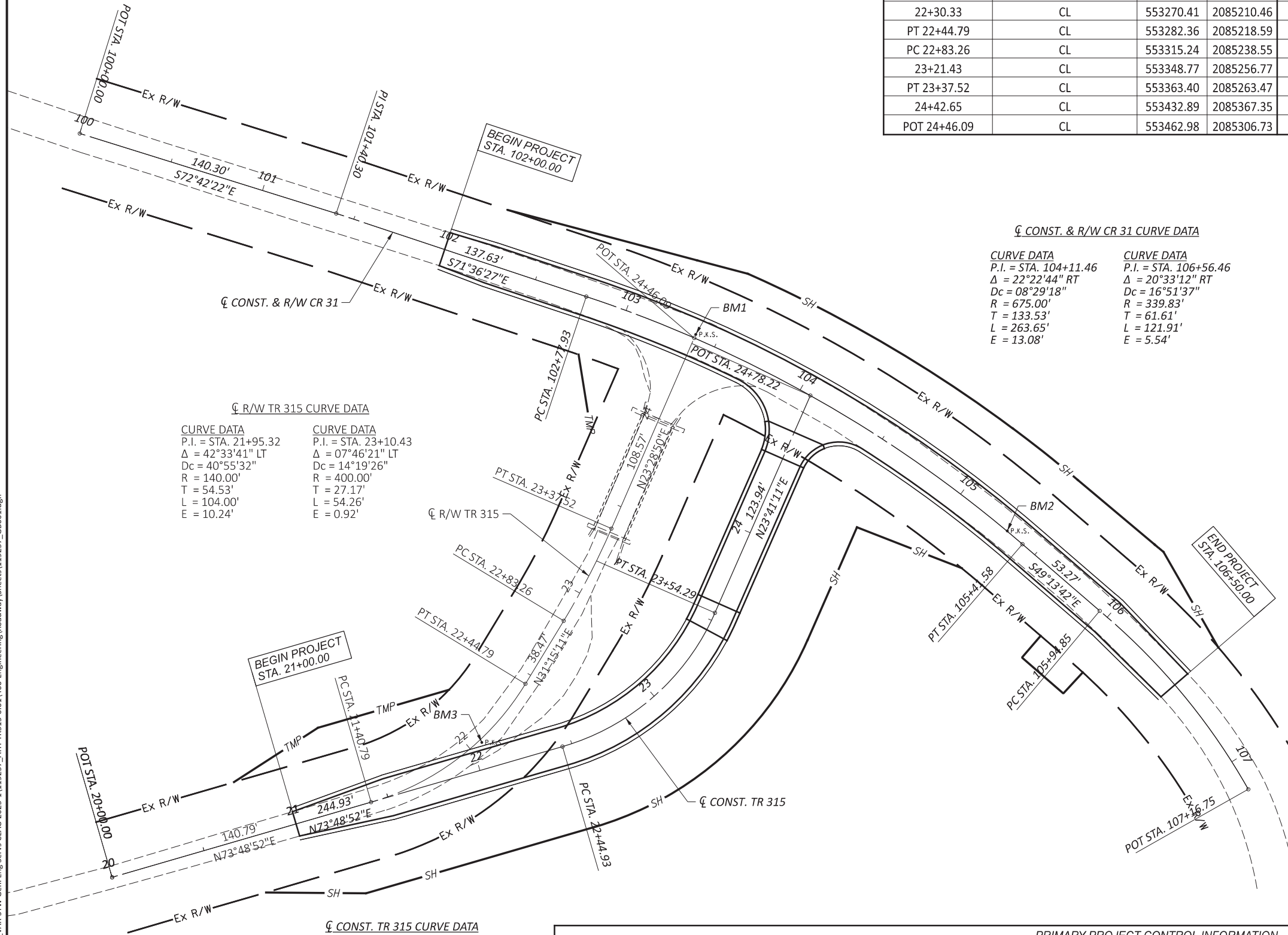
PROJECT ID  
119237

SHEET TOTAL  
P.01 54

ATH-TR315-0.01

MODEL: Sheet\_SurvF1 PAPER SIZE: 17x11 (in.) DATE: 4/9/2024 TIME: 9:01:34 AM USER: 02676 X:\4012500\221658\01116971\_VARR-STW\_Genl\_Eng\_Servs\_CEOA\_2023-11\19237\_ATH-TR315-0.01\400-Engineering\Roadway\Sheets\119237\_GT001.dgn





CENTERLINE COMPARISON TABLE							
Centerline of R/W TR-315				Centerline of CONST. TR-315			
Station (CL R/W)	Offset from CL of R/W	Northing	Easting	Station (CL Const.)	Offset from CL of R/W	Northing	Easting
POT 20+00.00	CL	553181.30	2085002.72	POT 20+00.00	0.00 RT	553181.30	2085002.72
PC 21+40.79	CL	553220.54	2085137.93	21+40.79	0.00' RT	553220.54	2085137.93
22+30.33	CL	553270.41	2085210.46	PC 22+44.93	34.48' RT	553249.57	2085237.94
PT 22+44.79	CL	553282.36	2085218.59	22+35.49	29.02' RT	553246.94	2085228.87
PC 22+83.26	CL	553315.24	2085238.55	22+81.85	54.17' RT	553264.91	2085271.37
23+21.43	CL	553348.77	2085256.77	PT 23+54.29	67.52' RT	553319.40	2085317.56
PT 23+37.52	CL	553363.40	2085263.47	23+72.85	67.21' RT	553336.40	2085325.02
24+42.65	CL	553432.89	2085367.35	POT 24+78.22	67.59' RT	553432.89	2085367.35
POT 24+46.09	CL	553462.98	2085306.73				

CONST. & R/W CR 31 CURVE DATA

<b>CURVE DATA</b> P.I. = STA. 104+11.46 Δ = 22°22'44" RT Dc = 08°29'18" R = 675.00' T = 133.53' L = 263.65' E = 13.08'	<b>CURVE DATA</b> P.I. = STA. 106+56.46 Δ = 20°33'12" RT Dc = 16°51'37" R = 339.83' T = 61.61' L = 121.91' E = 5.54'
---	---

R/W TR 315 CURVE DATA

<b>CURVE DATA</b> P.I. = STA. 21+95.32 Δ = 42°33'41" LT Dc = 40°55'32" R = 140.00' T = 54.53' L = 104.00' E = 10.24'	<b>CURVE DATA</b> P.I. = STA. 23+10.43 Δ = 07°46'21" LT Dc = 14°19'26" R = 400.00' T = 27.17' L = 54.26' E = 0.92'
---	---

CONST. TR 315 CURVE DATA

<b>CURVE DATA</b> P.I. = STA. 23+03.38 Δ = 50°07'41" LT Dc = 45°50'12" R = 125.00' T = 58.46' L = 109.36' E = 12.99'
---

PRIMARY PROJECT CONTROL INFORMATION

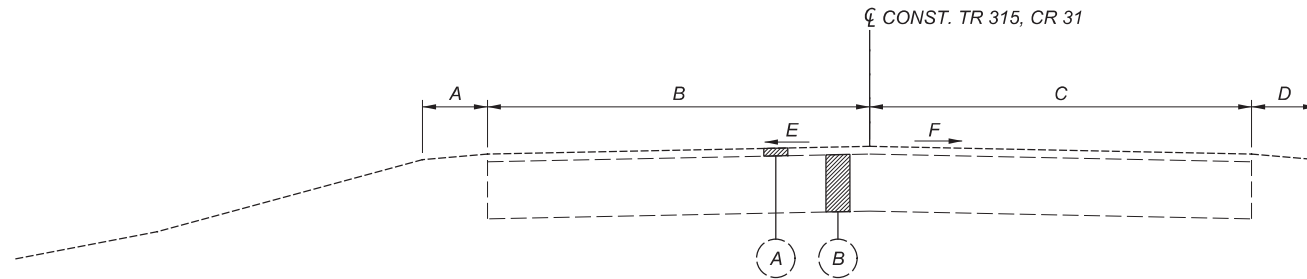
POINT NUMBER	COORDINATES US SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	STATION CENTERLINE R/W	OFFSET	STATION BASELINE OF CONSTRUCTION	OFFSET	DESCRIPTION
	NORTHING	EASTING						
BM1	553464.781	2085307.494	687.460	CLP_CR31 STA. 103+38.31	1.96 LT	CLP_CR31 STA. 103+38.31	1.96 LT	PK NAIL
BM2	553362.208	2085470.237	686.640	CLP_CR31 STA. 105+31.02	0.18 LT	CLP_CR31 STA. 105+31.02	0.18 LT	PK NAIL
BM3	553251.748	2085195.785	691.280	CLX_RW_TR315 STA. 22+06.75	1.58 RT	CLP_TR315 STA. 22+05.05	13.84 LT	PK NAIL



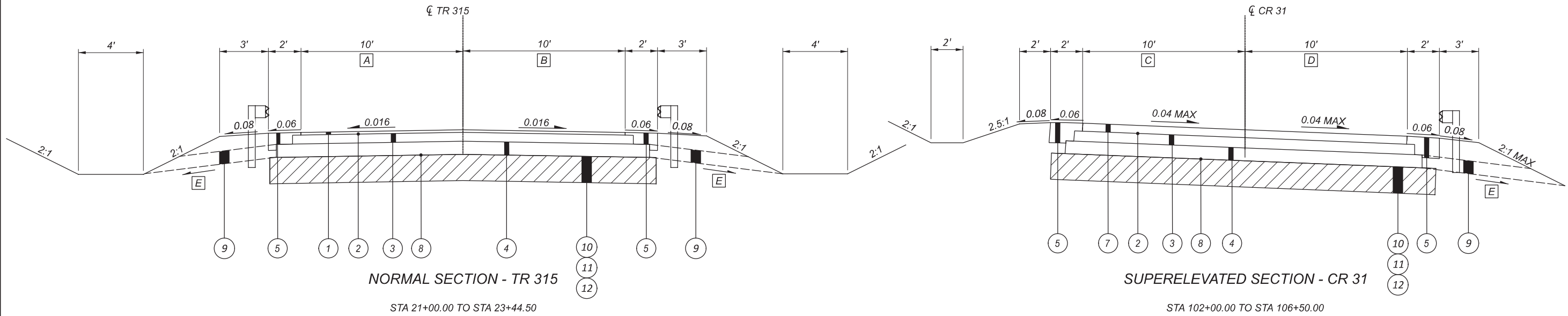
SCHEMATIC PLAN  
TR 315, CR 31



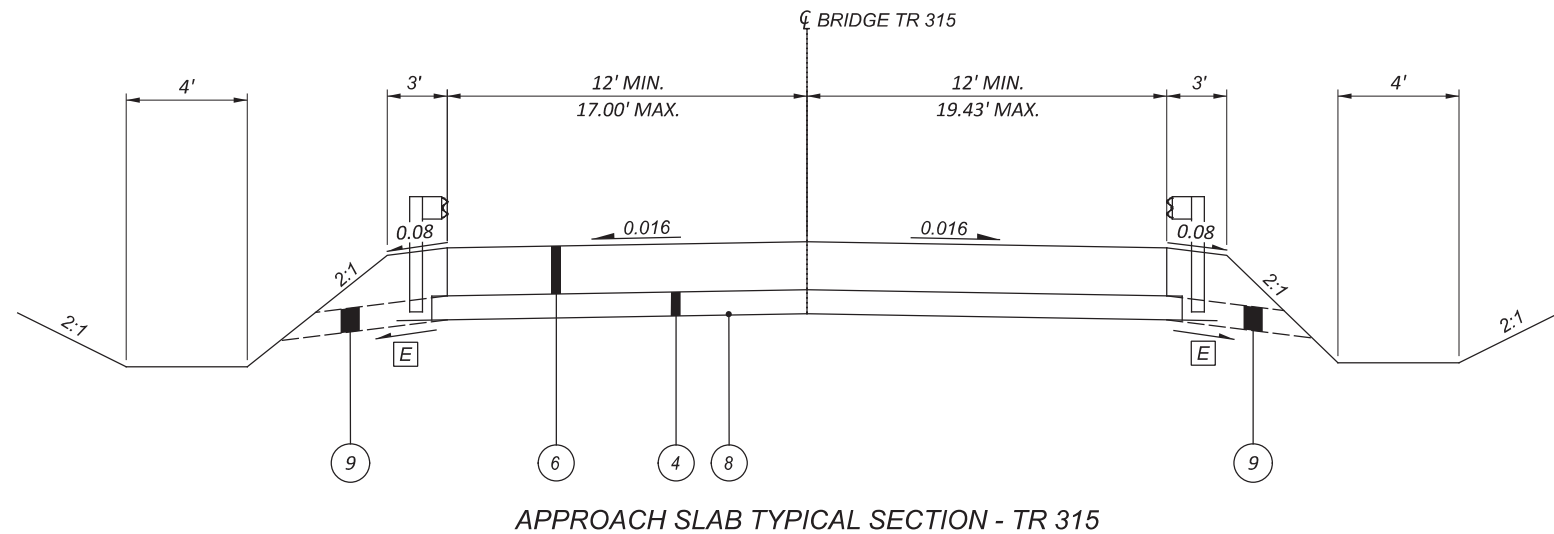
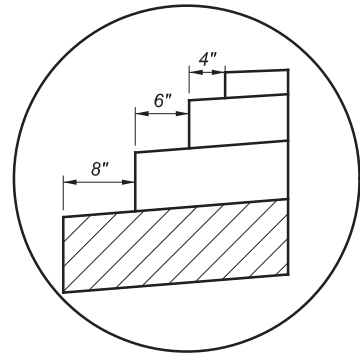
STATION	WIDTH (FEET)				SLOPE (FT/FT)	
	A	B	C	D	E	F
21+00.00	8.08	6.54	6.65	3.73	0.06	-0.00
102+00.00	9.39	8.29	9.87	4.92	0.05	0.01
106+50.00	2.65	7.37	10.29	7.00	-0.02	-0.07



TYPICAL SECTION - EXISTING TR 315, CR 31



TYPICAL SECTIONS



UNDERCUT IS ESTIMATED TO BE FROM STA. 21+00.00 TO STA. 22+25.00, STA. 102+00.00 TO STA. 103+00.00, STA. 105+25.00 TO STA. 106+50.00 AND CONSISTS OF THE FOLLOWING ITEMS:  
 ITEM 204 - EXCAVATION OF SUBGRADE, 12"  
 ITEM 204 - GEOTEXTILE FABRIC  
 ITEM 204 - GRANULAR MATERIAL, TYPE B, 12"

LEGEND

- |   |          |  |    |          |  |    |          |                                |     |                              |     |  |
|---|----------|--|----|----------|--|----|----------|--------------------------------|-----|------------------------------|-----|--|
| 1 | ITEM 441 | 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22 | 6  | ITEM 526 | REINFORCED CONCRETE APPROACH SLAB (T=12")                            | 11 | ITEM 204 | GEOTEXTILE FABRIC              | (A) | 2" EXISTING ASPHALT          | (A) | VARIABLES FROM 6.61' AT STA. 21+00.00 TO 10.00' AT STA. 21+50.00   |
| 2 | ITEM 407 | TACK COAT  | 7  | ITEM 441 | 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22 (2 LIFTS) | 12 | ITEM 204 | GRANULAR MATERIAL, TYPE B, 12" | (B) | 12" - 18" EXISTING AGGREGATE | (B) | VARIABLES FROM 6.59' AT STA. 21+00.00 TO 10.00' AT STA. 21+50.00   |
| 3 | ITEM 301 | 4" ASPHALT CONCRETE BASE, PG64-22, (449)                       | 8  | ITEM 204 | SUBGRADE COMPACTION  |    |          |                                |     |                              | (C) | VARIABLES FROM 9.24' AT STA. 102+00.00 TO 10.00' AT STA. 102+25.00<br>VARIABLES FROM 10.00' AT STA. 106+00.00 TO 8.87' AT STA. 106+50.00 |
| 4 | ITEM 304 | 6" AGGREGATE BASE  | 9  | ITEM 605 | AGGREGATE DRAINS   |    |          |                                |     |                              | (D) | VARIABLES FROM 8.92' AT STA. 102+00.00 TO 10.00' AT STA. 102+25.00<br>VARIABLES FROM 10.00' AT STA. 106+00.00 TO 9.54' AT STA. 106+50.00 |
| 5 | ITEM 304 | 8" AGGREGATE BASE  | 10 | ITEM 204 | EXCAVATION OF SUBGRADE, 12"  |    |          |                                |     |                              | (E) | 0.04 MIN., 0.08 DESIRABLE  |

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

SHEET TOTAL  
 P.03 54

**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:

BRIGHTSPEED (CENTURYLINK) - TELECOM  
115 N PLUM STREET  
MARYSVILLE, OHIO 43040  
937-599-9300 (BRANDEN CLARK)

AMERICAN ELECTRIC POWER - ELECTRIC  
38831 SR 7  
REEDSVILLE, OHIO 45769  
740-985-3009 (CHRISTOPHER HAYE)

OAKDALE WATER  
21850 OAKDALE ROAD  
GLOUSTER, OHIO 45732  
740-590-1908 (BOB LOWRY)

COLUMBIA GAS OF OHIO  
843 PIATT AVENUE  
CHILICOTHE, OHIO 45601  
740-774-8229 (MICHAEL PAULUS)

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

**SURVEYING PARAMETERS**

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET P.02 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

**PROJECT CONTROL**

POSITIONING METHOD: ODOT VRS  
MONUMENT TYPE: TYPE B

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: 18

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAD83 (2011)  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONIC 2 PARALELL  
COORDINATE SYSTEM: OHIO STATE PLANE SOUTH ZONE  
COMBINED SCALE FACTOR: 1.00000000 (GRID)  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

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.

**CLEARING AND GRUBBING, AS PER PLAN**

THE DEPARTMENT HAS NOT MARKED INDIVIDUAL TREES AND STUMPS FOR REMOVAL. UNLESS SPECIFICALLY DESIGNATED AS "DO NOT DISTURB" IN THE PLANS, REMOVE ALL TREES AND STUMPS WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201 CLEARING AND GRUBBING. ALL STUMPS WITHIN 20 FEET OF THE EXISTING WATERLINES SHALL BE REMOVED WITH A STUMP GRINDER. THE CONTRACTOR MAY USE THE METHOD OF THEIR CHOICE FOR OTHER STUMPS.

**SEEDING AND MULCHING**

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

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	495 CU. YD.
659, SEEDING AND MULCHING	3966 SQ. YD.
659, REPAIR SEEDING AND MULCHING	223 SQ. YD.
659, INTER-SEEDING	223 SQ. YD.
659, COMMERCIAL FERTILIZER	0.62 TON
659, LIME	0.92 ACRES
659, WATER	25 M. GAL.

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.

STOCK PILE EXISTING TOPSOIL PER CMS 659.05. IN THE EVENT THAT THE EXISTING TOPSOIL QUANTITY IS LESS THAN THE QUANTITY SPECIFIED ABOVE, IT IS NOT NECESSARY TO IMPORT ADDITIONAL TOPSOIL. ENSURE THAT TOPSOIL IS PRIORITIZED ON THE VEGETATED BIOFILTER BMPS.

**BENCHING OF FOUNDATION SLOPES**

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF SECTION 203.05.

**ITEM 605 - AGGREGATE DRAINS**

AGGREGATE DRAINS SHALL BE PLACED AT FIFTY (50) FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS, STAGGERED SO THAT EACH DRAIN IS 25 FEET FROM THE ADJACENT DRAIN ON THE OPPOSITE SIDE AND AT TWENTY-FIVE (25) FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS. AN AGGREGATE DRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED AND CARRIED TO THE GENERAL SUMMARY FOR THIS WORK.

ITEM 605, AGGREGATE DRAINS	332 FT.
----------------------------	---------

**POST CONSTRUCTION STORM WATER TREATMENT**

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

**VEGETATED BIOFILTER**

THIS PLAN UTILIZES VEGETATED BIOFILTER(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AS SHOWN IN THE PLANS TO ANY DISTURBED AREA ON THE SHOULDER AND FORESLOPE DRAINING TO A VEGETATED BIOFILTER. THE DITCH FOR EACH VEGETATED BIOFILTER SHALL BE TRAPEZOIDAL, AS SHOWN IN THE PLAN CROSS SECTIONS. PROVIDE ITEM 670 AS SPECIFIED IN THE PLANS.

**ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING**

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

- SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO SECTION 204.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS).  
  
IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.
- COMPACT THE SUBGRADE ACCORDING TO C&MS 204.03.
- APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.  
  
PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO C&MS 204.06.
- EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO C&MS 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
- PROOF ROLL THE STABILIZED AREAS ACCORDING TO C&MS 204.06 TO VERIFY STABILITY.
- FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204, EXCAVATION OF SUBGRADE.

**ITEM 204 - PROOF ROLLING**

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING 1 HOUR.

**ENDANGERED BAT HABITAT REMOVAL**

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT, AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT (ESA). FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

**MSG BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN**

THE WORK FOR FOR THIS ITEM CONSISTS OF PROVIDING AND INSTALLING AN MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1 PER STANDARD CONSTRUCTION DRAWING MGS-3.1 AND CMS 606. HOWEVER, THE BRIDGE TERMINAL ASSEMBLY SHALL BE CURVED AS SHOWN IN THE PLANS.

**NO ASBESTOS OR ASBESTOS BELOW REGULATORY LIMITS**

A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST SURVEYED THE BRIDGE STRUCTURE SCHEDULED FOR DEMOLITION AND/OR REHABILITATION; THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

ODOT SHALL PROVIDE A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED, AND SIGNED BY THE BRIDGE OWNER, TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO ONE OF THE ADDRESSES BELOW AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION.

ASBESTOS PROGRAM OHIO EPA, DAPC P.O. BOX 1049 COLUMBUS, OH 43216-1049	OR	ASBESTOS PROGRAM OHIO EPA, DAPC 50 W. TOWN ST, SUITE 700 COLUMBUS, OH 43215
--	----	--

THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION. THE FORM SHALL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. COPIES OF THE OEPA FORM AND BRIDGE INSPECTION REPORT ARE AVAILABLE FOR REVIEW AT THE ODOT DISTRICT 10 OFFICE, 338 MUSKINGUM DRIVE MARIETTA, OH 45850.

BASIS FOR PAYMENT - THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

**METER CHAMBER REMOVED AND RESET, AS PER PLAN**

THIS ITEM SHALL CONSIST OF REMOVING AN EXISTING METER AND CHAMBER AND REPLACING WITH A NEW METER AND CHAMBER. THE NEW METER AND CHAMBER SHALL BE MANUFACTURED BY THE FORD METER BOX COMPANY, INC. OR AN APPROVED EQUAL.

DESIGN AGENCY  
**Mead & Hunt**  
CLIENT

DESIGNER  
LNB

REVIEWER  
SJS 04/03/24

PROJECT ID  
119237

SHEET TOTAL  
P.04 54











REF NO.	SHEET NO.	STATION TO STATION		TO	202	202	630	630	630	630	630	606	606	606	606	606	626	638	638	644	644	644	646	646
					PIPE REMOVED, 24" AND UNDER	GUARDRAIL REMOVED	GROUND MOUNTED SUPPORT, NO. 3 POST	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	SIGN POST REFLECTOR	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	GUARDRAIL, TYPE MGS	ANCHOR ASSEMBLY, MGS TYPE A	ANCHOR ASSEMBLY, MGS TYPE T	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN	BARRIER REFLECTOR, TYPE 2, BIDIRECTIONAL	VALVE BOX ADJUSTED TO GRADE	METER AND CHAMBER REMOVED AND RESET, AS PER PLAN		EDGE LINE, 6"	CENTER LINE	STOP LINE	EDGE LINE, 6"
					FT	FT	FT	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	MILE	MILE	FT	MILE	MILE
R-1	11	21+84.34	LT	21+92.87	RT	22																		
R-2	11, 12	104+71.74	RT	106+64.65	RT		189																	
R-3	12	105+94.85	RT	105+98.00	LT	40																		
GR-1	11	22+76.20	LT	23+59.50	LT							25	1		1		3							
GR-2	11	22+89.88	RT	23+59.50	RT							25	1		1		3							
GR-3	11, 12	103+36.04	RT	24+42.25	LT							25	1			1	3							
GR-4	11, 12	24+42.25	RT	106+50.35	RT							175	1	1		1	4							
								2			1													
R-1	28	103+20	RT					2			1													
R-2	28	103+25	RT					2			1													
R-3	28	103+50	RT					2			1													
S-1	28	104+17	LT						11		1													
S-2	28	104+37	RT						11		1	1												
EL1	28	102+00	LT	106+50	LT															0.09				
EL2	28	102+00	RT	21+00	LT															0.08			0.02	
EL3	28	21+00	RT	106+50	RT															0.10			0.02	
CL1	28	102+00		106+50																	0.09			
CL2	28	21+00		24+64																		0.05		0.02
SL1	28	24+64																				22		
WV-1	11, 12	103+76.63	LT														1							
WV-2	11, 12	103+79.77	LT														1							
WM-1	11, 12	103+73.25	LT															1						
WM-2	11, 12	103+74.90	LT															1						
TOTALS CARRIED TO GENERAL SUMMARY					62	189	22	6	2	1	3	250	4	1	2	2	13	2	2	0.27	0.14	22	0.04	0.02
REF NO.	SHEET NO.	STATION TO STATION		TO	201	203	203	410	601	602	605	611		614	616	659	659	659	659	659	659	659	659	670
					CLEARING AND GRUBBING, AS PER PLAN	EXCAVATION	EMBANKMENT	TRAFFIC COMPACTED SURFACE, TYPE C	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CONCRETE MASONRY	AGGREGATE DRAINS	24" X 38" CONDUIT, TYPE A, 706.04		DETOUR SIGNING	WATER		SOIL ANALYSIS TEST	TOPSOIL	SEEDING AND MULCHING	REPAIR SEEDING AND MULCHING	INTER-SEEDING	COMMERCIAL FERTILIZER	LIME	WATER
					LS	CY	CY	CY	CY	FT	FT		LS	MGAL	EACH	CY	SY	SY	SY	TON	ACRE	MGAL	SY	
EC-1	11	20+99.88	LT	23+76.99	LT											24							213	
EC-2	11, 12	20+99.87	RT	23+88.33	RT											29							264	
EC-3	11, 12	23+61.25	LT	23+84.12	RT																			
EC-4	11, 12	24+22.90	LT	24+40.50	RT																			
EC-5	12	105+50.00	LT	105+96.67	LT																		12	
EC-6	12	105+92.17	RT	105+97.10	RT																			
DR-1	12	105+94.85	RT	105+98.69	LT							50												
DR-2	12	105+94.85	RT							0.44														
DR-3	12	105+98.69	LT							0.44														
	4, 5	General Notes											LS	20	2	495	3966	223	223	0.62	0.92	25		
	13 - 24	Cross Sections																						
TOTALS CARRIED TO GENERAL SUMMARY					LS	1229	2005	20	102	0.9	332	50		LS	20	2	548	3966	223	223	0.62	0.92	25	489

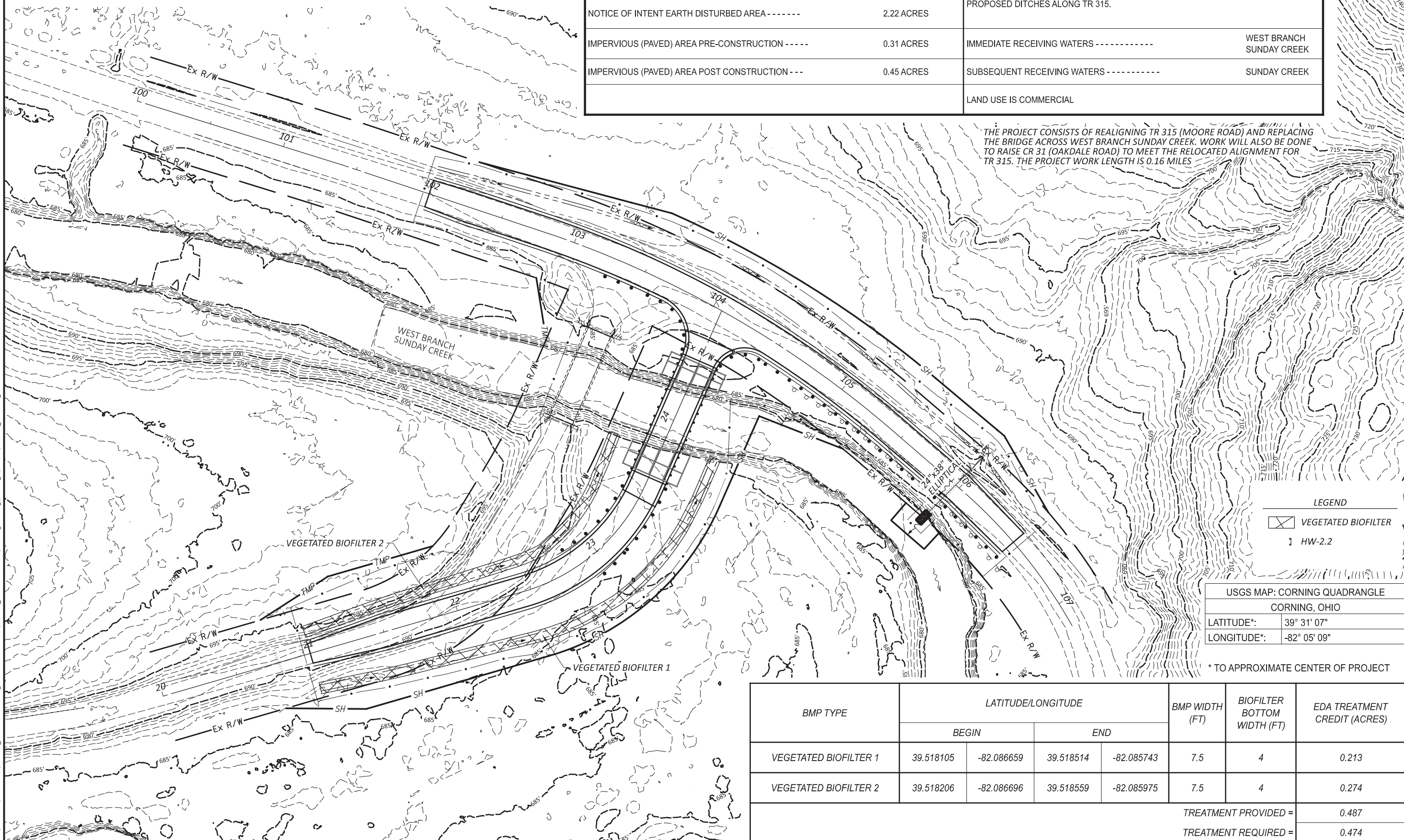
SUBSUMMARY

DESIGN AGENCY  
  
 CLIENT  
  
 DESIGNER  
 ARM  
 REVIEWER  
 SJS 04/03/24  
 PROJECT ID  
 119237  
 SHEET TOTAL  
 P.09 54

THE FOLLOWING EROSION CONTROL ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM	EXTENSION	TOTAL	UNIT	
832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN
832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS
832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE
832	30000	20000	EACH	EROSION CONTROL

PROJECT DATA			
TOTAL AREA (RIGHT-OF-WAY) -----	1.65 ACRES	RUNOFF COEFFICIENT PRE-CONSTRUCTION -----	0.40
PROJECT EARTH DISTURBED AREA -----	1.44 ACRES	RUNOFF COEFFICIENT POST CONSTRUCTION -----	0.41
ESTIMATED CONTRACTOR EARTH DISTURBED AREA ---	0.77 ACRES	POST CONSTRUCTION BMP: VEGETATED BIOFILTERS WERE PROVIDED IN THE PROPOSED DITCHES ALONG TR 315.	
NOTICE OF INTENT EARTH DISTURBED AREA -----	2.22 ACRES	IMMEDIATE RECEIVING WATERS -----	WEST BRANCH SUNDAY CREEK
IMPERVIOUS (PAVED) AREA PRE-CONSTRUCTION -----	0.31 ACRES	SUBSEQUENT RECEIVING WATERS -----	SUNDAY CREEK
IMPERVIOUS (PAVED) AREA POST CONSTRUCTION ---	0.45 ACRES	LAND USE IS COMMERCIAL	



THE PROJECT CONSISTS OF REALIGNING TR 315 (MOORE ROAD) AND REPLACING THE BRIDGE ACROSS WEST BRANCH SUNDAY CREEK. WORK WILL ALSO BE DONE TO RAISE CR 31 (OAKDALE ROAD) TO MEET THE RELOCATED ALIGNMENT FOR TR 315. THE PROJECT WORK LENGTH IS 0.16 MILES

LEGEND

- VEGETATED BIOFILTER
- HW-2.2

USGS MAP: CORNING QUADRANGLE  
CORNING, OHIO

LATITUDE\*: 39° 31' 07"  
LONGITUDE\*: -82° 05' 09"

\* TO APPROXIMATE CENTER OF PROJECT

BMP TYPE	LATITUDE/LONGITUDE				BMP WIDTH (FT)	BIOFILTER BOTTOM WIDTH (FT)	EDA TREATMENT CREDIT (ACRES)
	BEGIN	END	BEGIN	END			
VEGETATED BIOFILTER 1	39.518105	-82.086659	39.518514	-82.085743	7.5	4	0.213
VEGETATED BIOFILTER 2	39.518206	-82.086696	39.518559	-82.085975	7.5	4	0.274
TREATMENT PROVIDED =							0.487
TREATMENT REQUIRED =							0.474

PROJECT SITE PLAN  
STA. 100+00.00 TO STA. 107+00.00

ATH-TR315-0.01

MODEL: Project Site Plan - Plan 1 (Sheet) PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:35:37 PM USER: 02676  
X:\4012500\221658.01\119237\_VAR-STW\_Genl\_Eng\_Servs\_CEO\_2023-1\119237 ATH-TR315-0.01\400-Engineering\Drawings\Sheets\119237\_DE001.dgn

DESIGN AGENCY  
**Mead & Hunt**

CLIENT

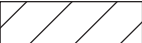


DESIGNER  
ARM

REVIEWER  
SJS 04/03/24

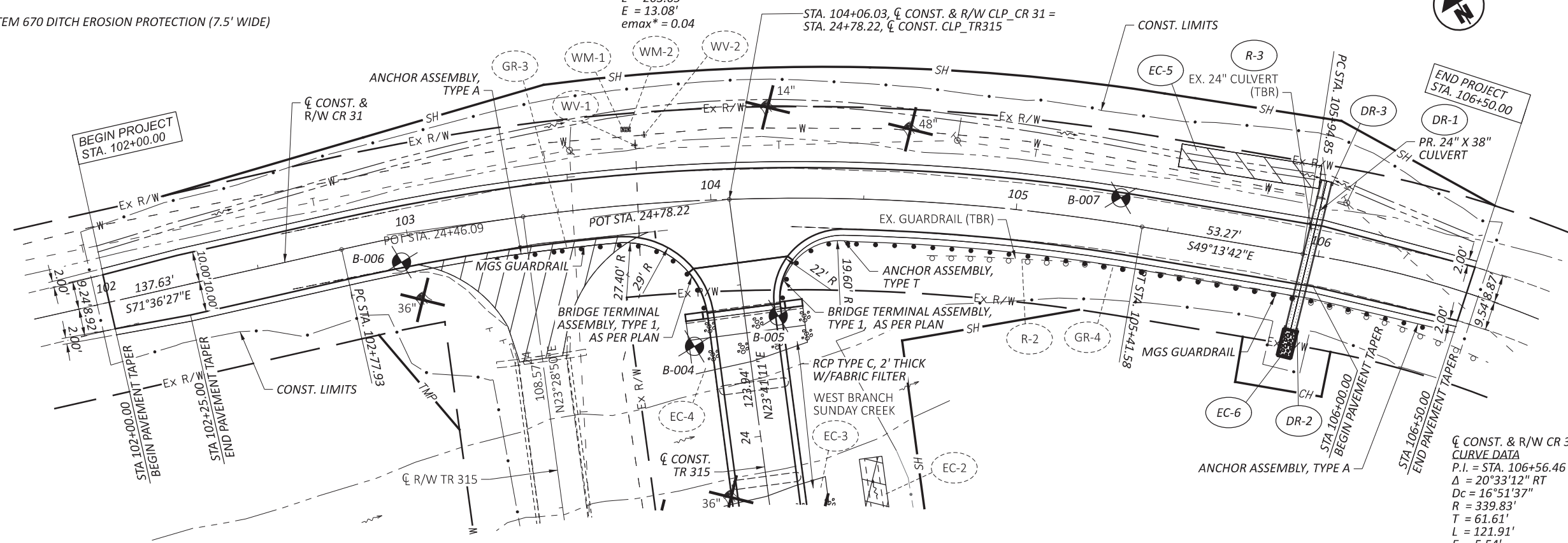
PROJECT ID  
119237

SHEET TOTAL  
P.10 54



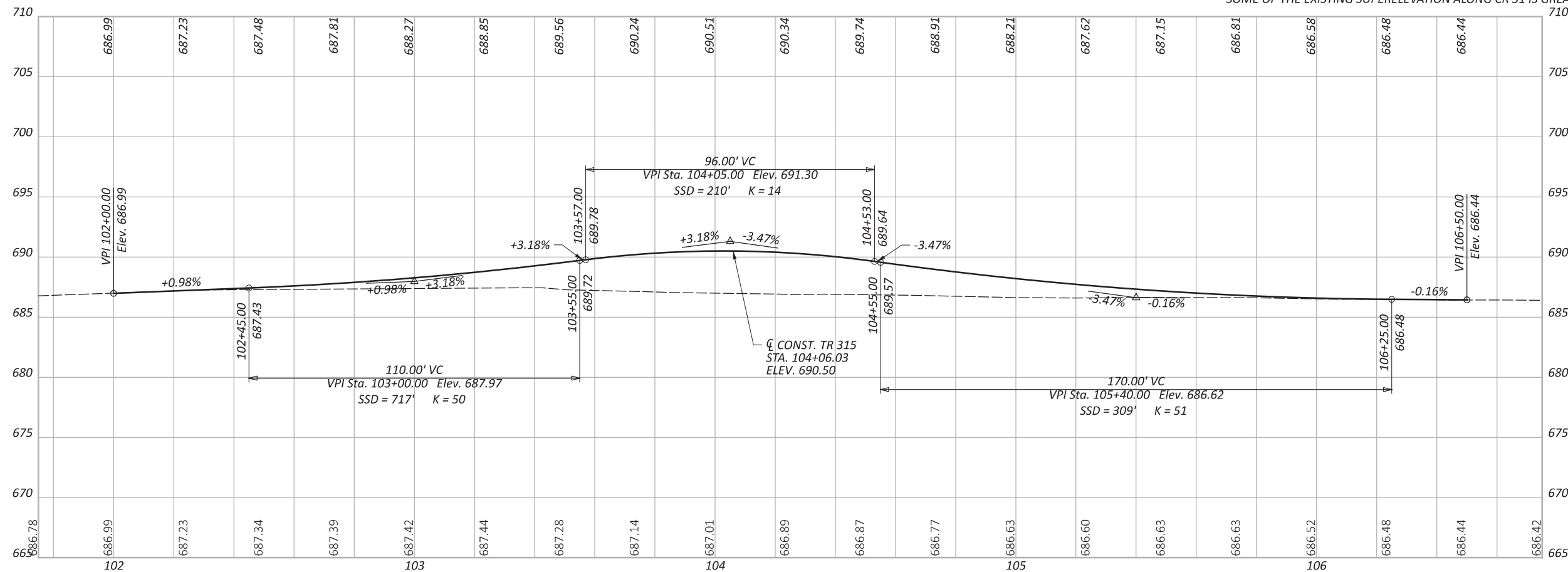
-  PAVEMENT REMOVED
-  VEGETATED BIOFILTER (7.5' WIDE)  
ITEM 659 TOPSOIL (4")  
ITEM 670 DITCH EROSION PROTECTION
-  ITEM 670 DITCH EROSION PROTECTION (7.5' WIDE)

$\bar{C}$  CONST. & R/W CR 31  
 CURVE DATA  
 P.I. = STA. 104+11.46  
 $\Delta$  = 22°22'44" RT  
 $D_c$  = 08°29'18"  
 $R$  = 675.00'  
 $T$  = 133.53'  
 $L$  = 263.65'  
 $E$  = 13.08'  
 $e_{max}$  = 0.04



$\bar{C}$  CONST. & R/W CR 31  
 CURVE DATA  
 P.I. = STA. 106+56.46  
 $\Delta$  = 20°33'12" RT  
 $D_c$  = 16°51'37"  
 $R$  = 339.83'  
 $T$  = 61.61'  
 $L$  = 121.91'  
 $E$  = 5.54'

\*SOME OF THE EXISTING SUPERELEVATION ALONG CR 31 IS GREATER THAN 0.04.



ATH-TR315-0.01

MODEL: CLP\_TR 31 - Plan 1 PAPER SIZE: 17x11 (in.) DATE: 4/9/2024 TIME: 9:29:55 AM USER: 02676  
 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEA0 2023-1\119237 ATH-TR315-0.01\400-Engineering\Roadway\Sheets\119237\_GP002.dgn

PLAN AND PROFILE - CR 31  
 STA. 101+75.00 TO STA. 106+75.00

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

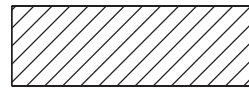


DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

SHEET TOTAL  
 P.12 54

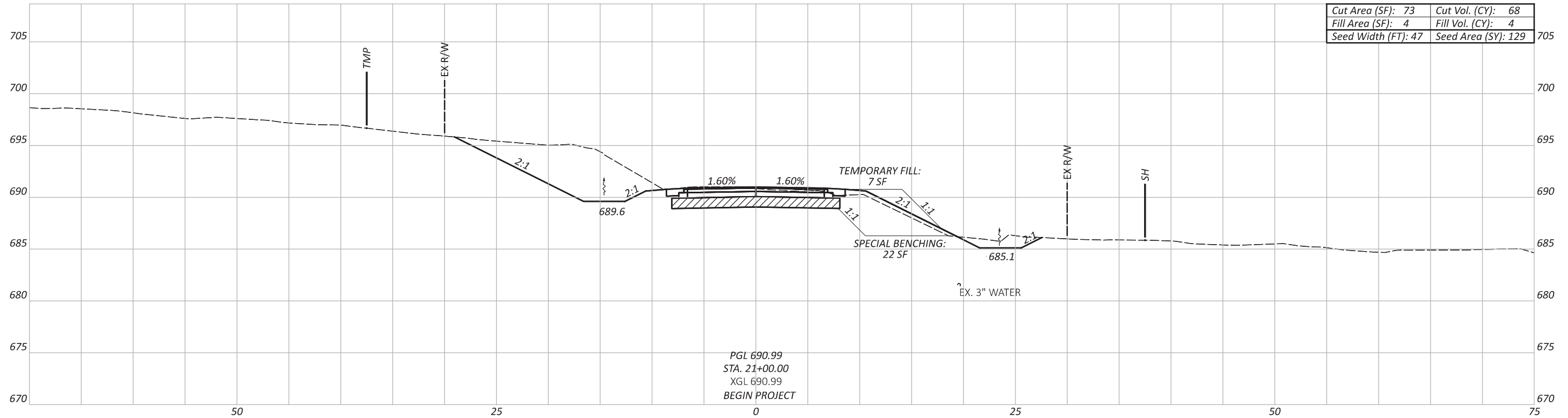


UNDERCUT, UNSTABLE  
 ITEM 204 - EXCAVATION OF SUBGRADE, 12"  
 ITEM 204 - GRANULAR MATERIAL, TYPE B, 12"  
 ITEM 204 - GEOTEXTILE FABRIC

SPECIAL BENCHING RIGHT FROM:  
 STA. 20+75.00 TO STA. 21+75.00  
 ITEM 203 EXCAVATION: 47 CY  
 ITEM 203 EMBANKMENT: 47 CY

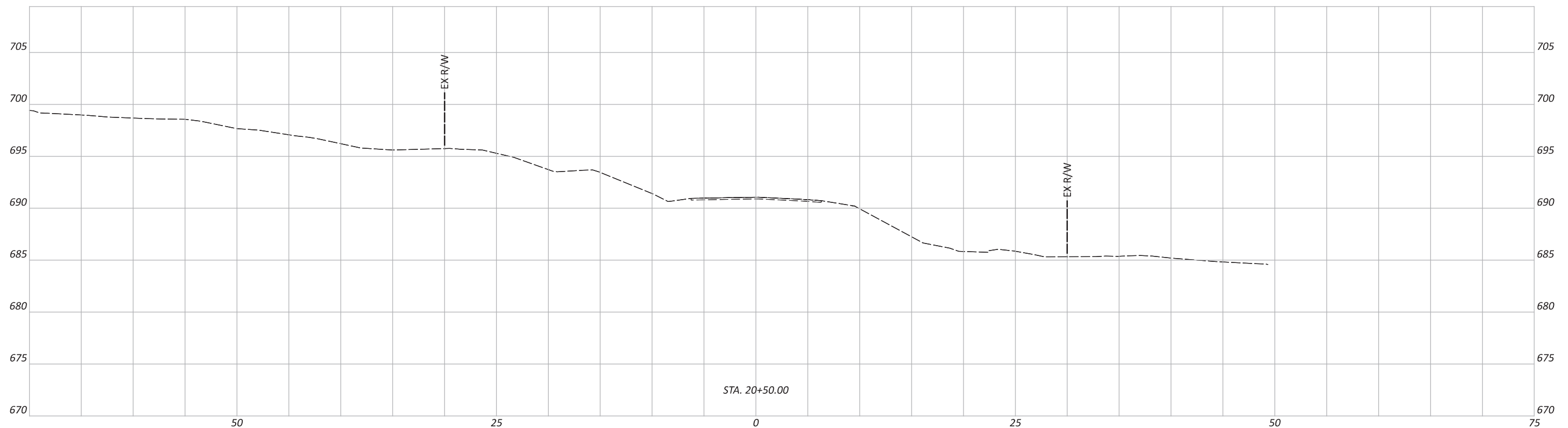
TEMPORARY FILL RIGHT FROM:  
 STA. 20+75.00 TO STA. 21+75.00  
 ITEM 203 EXCAVATION: 24 CY  
 ITEM 203 EMBANKMENT: 24 CY

ADDITIONAL SEEDING AND MULCHING AROUND  
 TR 315 BRIDGE AND PAVEMENT REMOVAL: 606 SY



Cut Area (SF): 73	Cut Vol. (CY): 68
Fill Area (SF): 4	Fill Vol. (CY): 4
Seed Width (FT): 47	Seed Area (SY): 129

PGL 690.99  
 STA. 21+00.00  
 XGL 690.99  
 BEGIN PROJECT



STA. 20+50.00

CROSS SECTIONS - TR 315  
 STA. 20+50.00 TO STA. 21+00.00

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

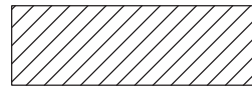


DESIGNER  
 ARM

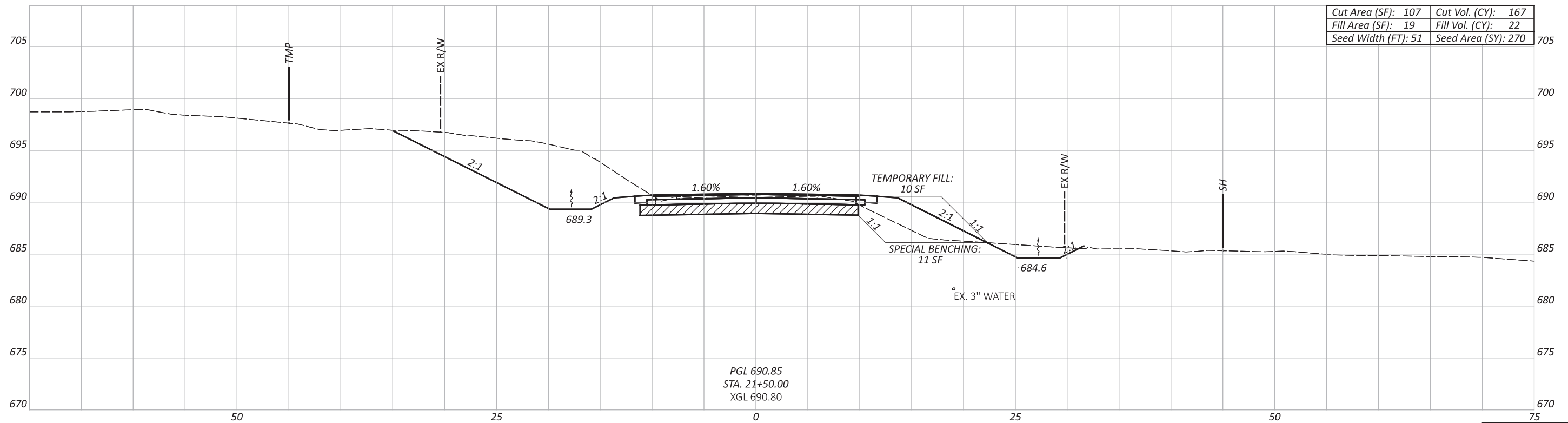
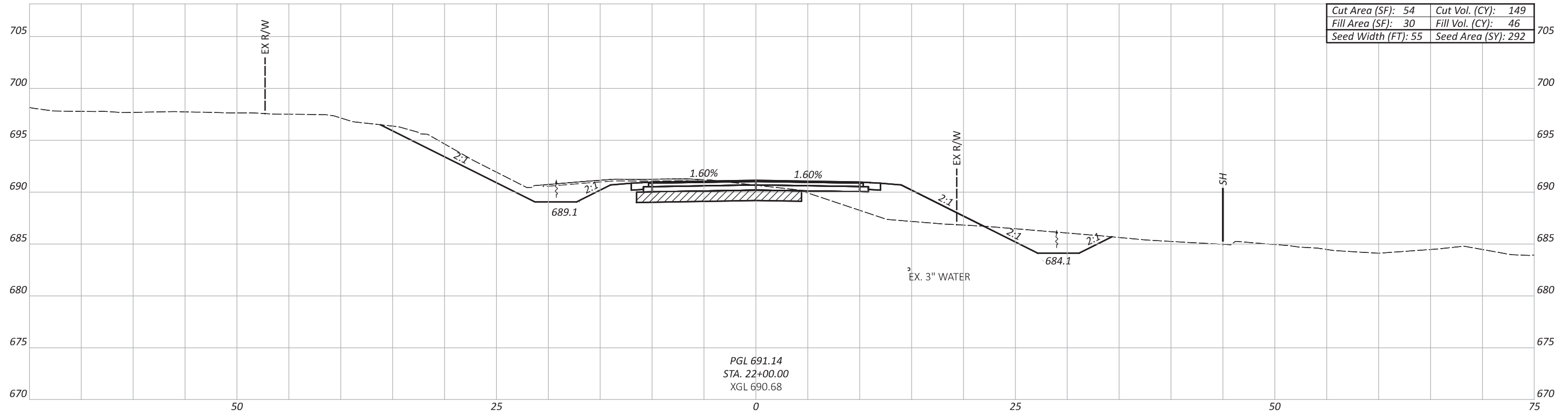
REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

Sheet Totals			119237
Seeding	Cut	Fill	TOTAL
735	139	75	P.13   54



UNDERCUT, UNSTABLE  
 ITEM 204 - EXCAVATION OF SUBGRADE, 12"  
 ITEM 204 - GRANULAR MATERIAL, TYPE B, 12"  
 ITEM 204 - GEOTEXTILE FABRIC



CROSS SECTIONS - TR 315  
 STA. 21+50.00 TO STA. 22+00.00

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

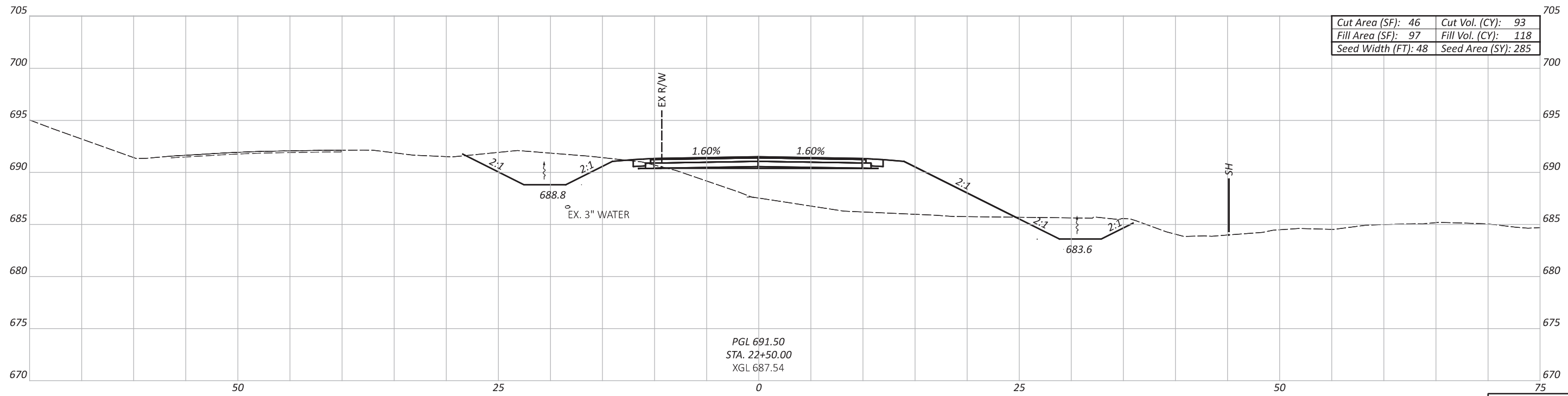
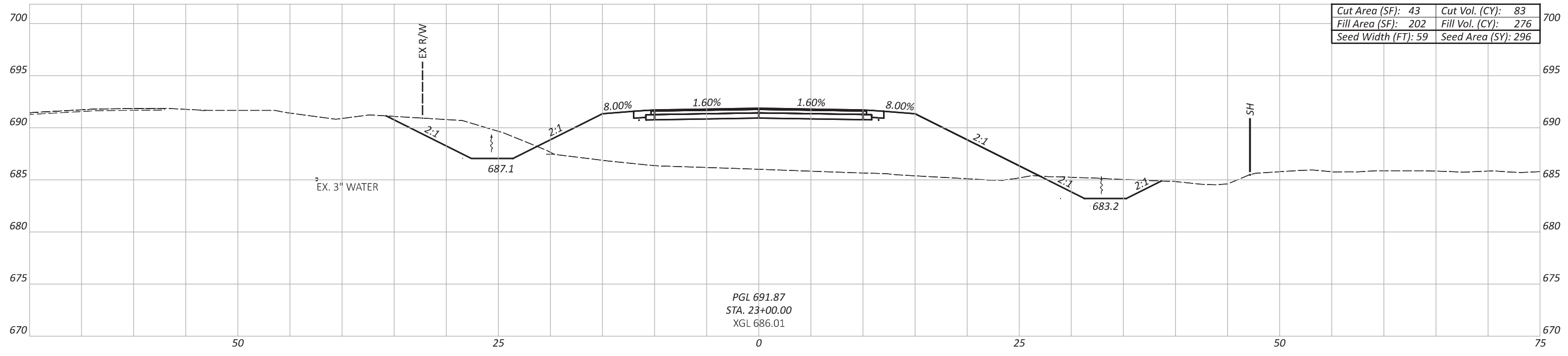


DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

Sheet Totals			119237
Seeding	Cut	Fill	SHEET TOTAL
562	316	68	P.14 54



CROSS SECTIONS - TR 315  
 STA. 22+50.00 TO STA. 23+00.00

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

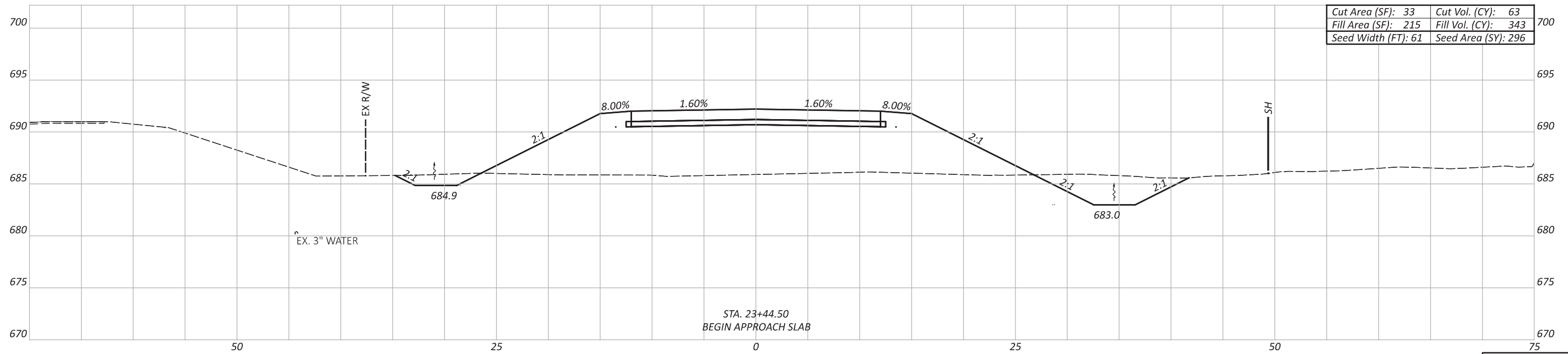
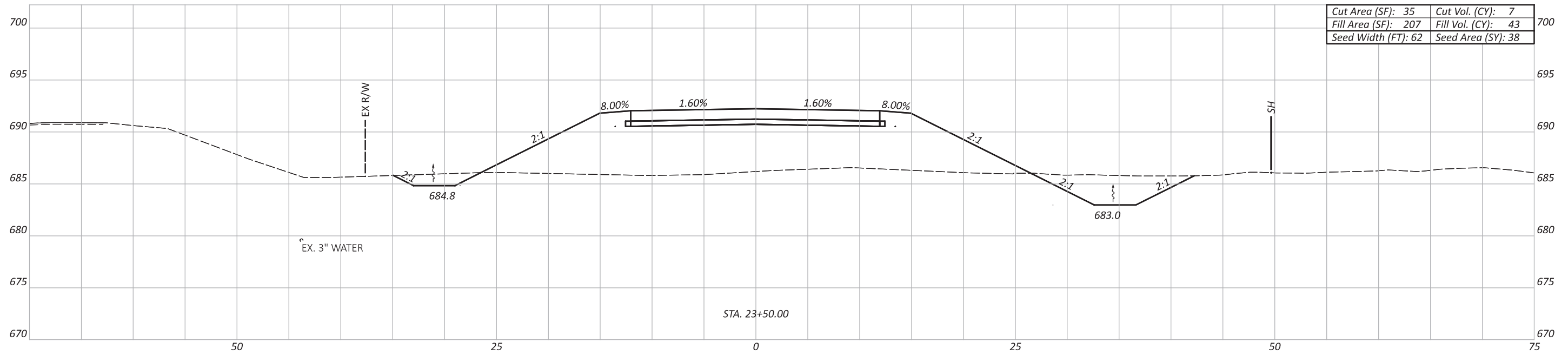


DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

Sheet Totals			TOTAL	
Seeding	Cut	Fill	P.15	54
581	176	394		



CROSS SECTIONS - TR 315  
 STA. 23+44.50 TO STA. 23+50.00

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT



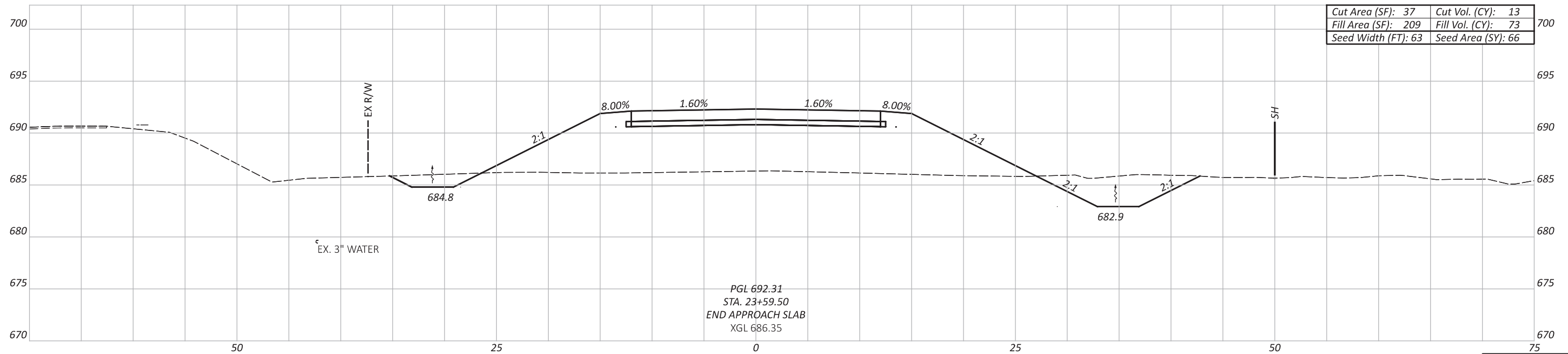
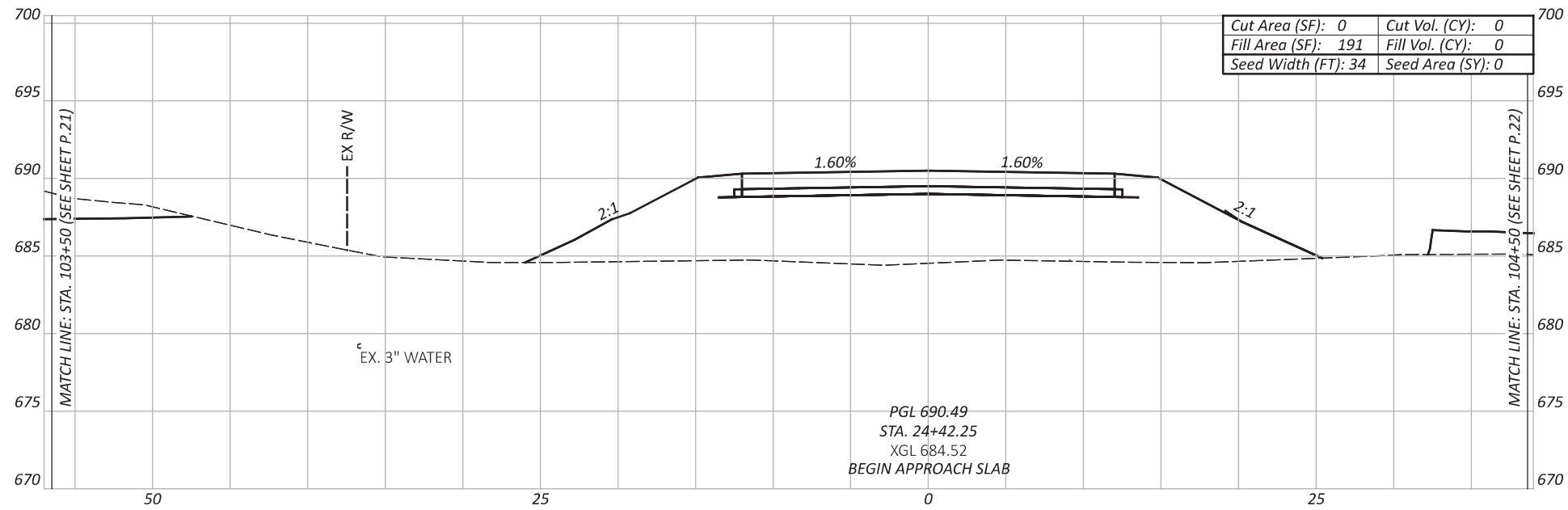
DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

Sheet Totals			119237	
Seeding	Cut	Fill	SHEET	TOTAL
334	70	386	P.16	54





Sheet Totals			119237	
Seeding	Cut	Fill	SHEET	TOTAL
66	13	73	P.17	54

CROSS SECTIONS - TR 315  
 STA. 23+59.50 TO STA. 24+42.25

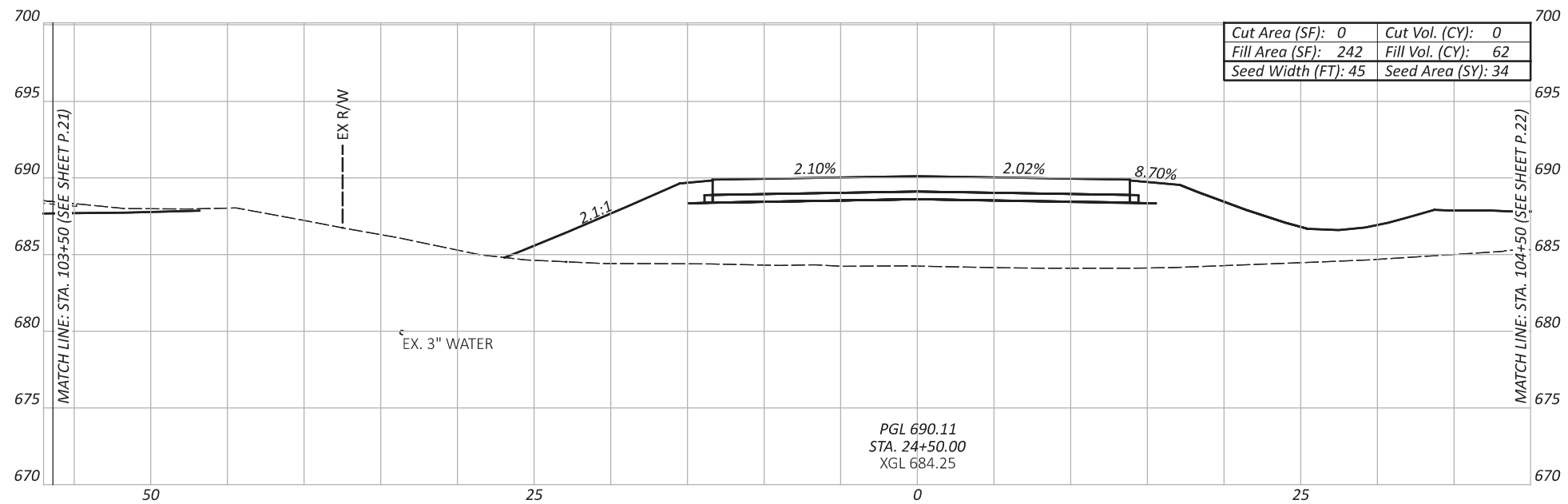
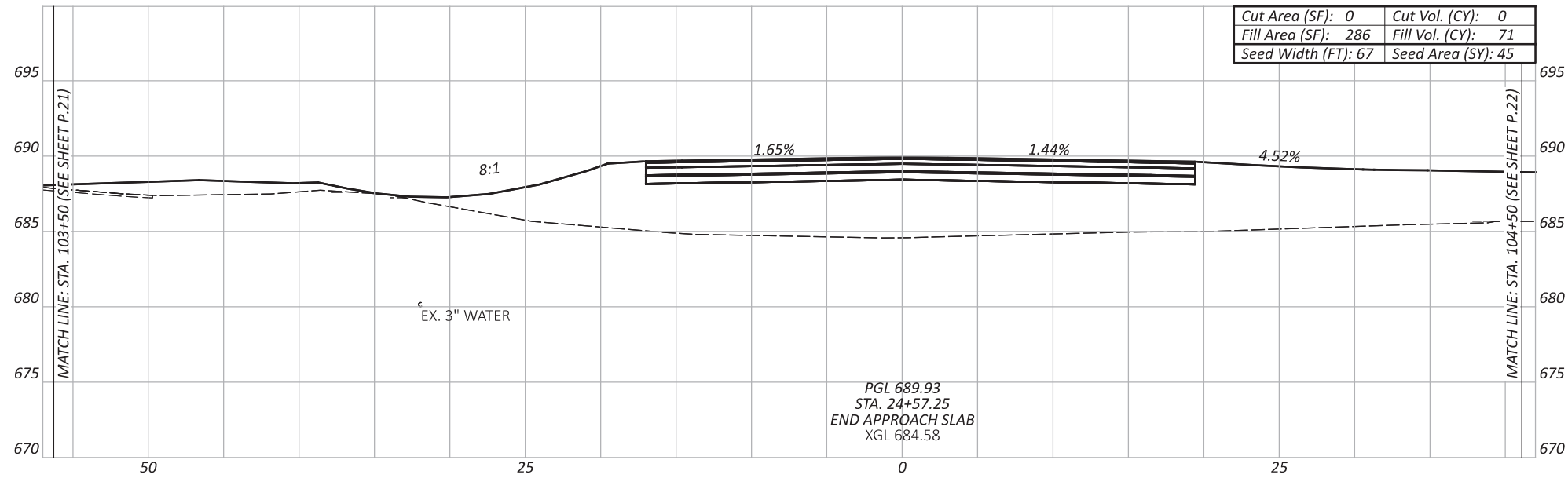
DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT



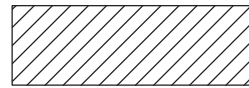
DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237



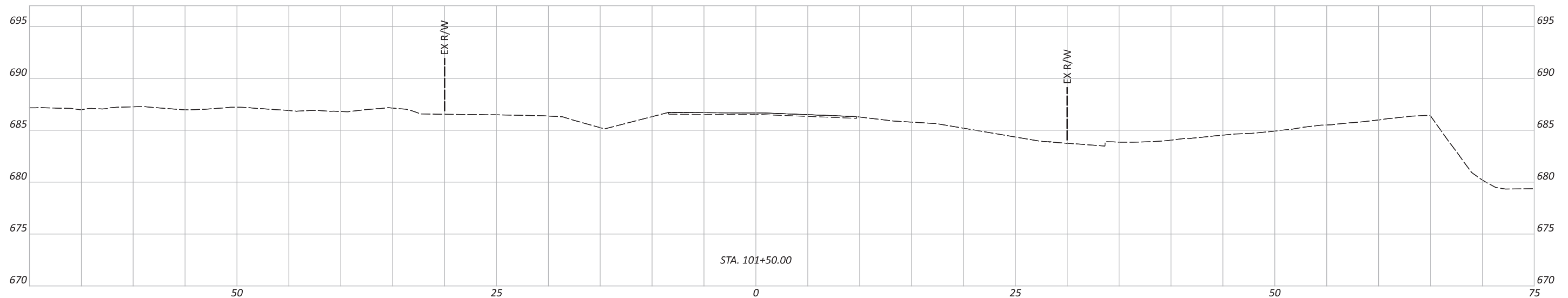
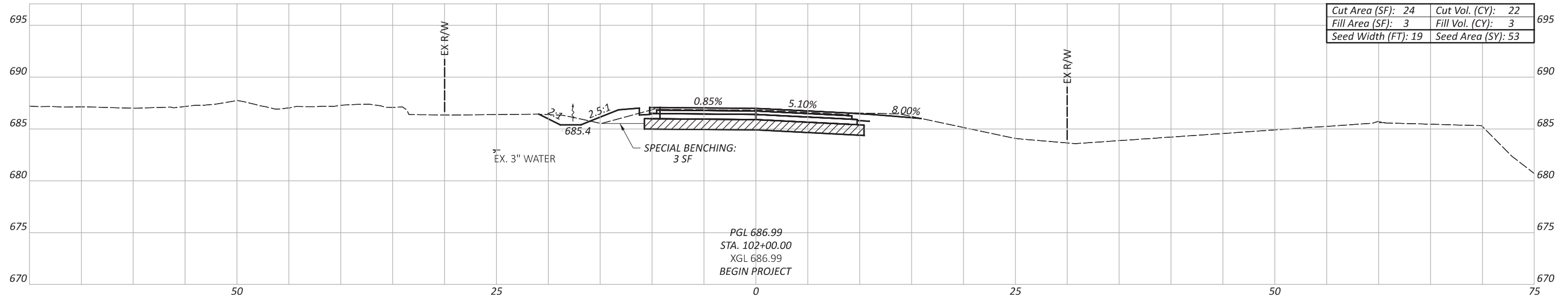
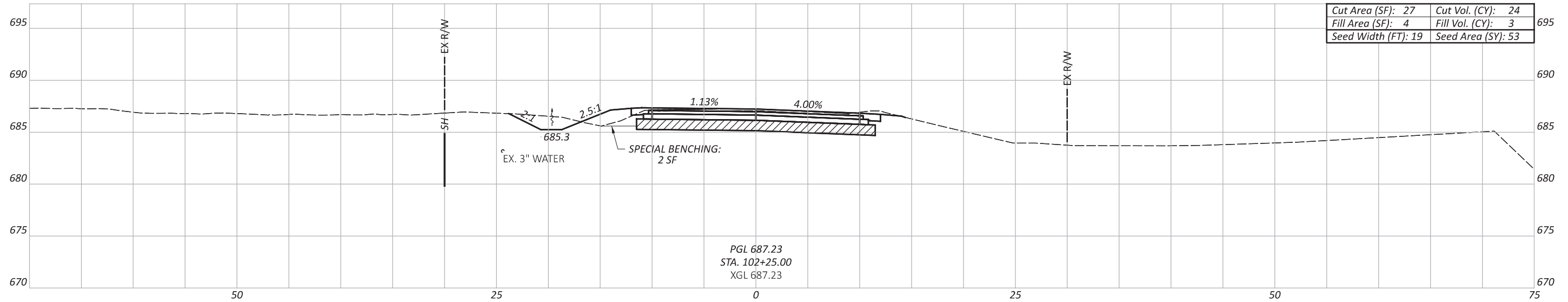
Sheet Totals			SHEET TOTAL	
Seeding	Cut	Fill	P.18	54
79	0	133		



UNDERCUT, UNSTABLE  
 ITEM 204 - EXCAVATION OF SUBGRADE, 12"  
 ITEM 204 - GRANULAR MATERIAL, TYPE B, 12"  
 ITEM 204 - GEOTEXTILE FABRIC

SPECIAL BENCHING LEFT FROM:  
 STA. 101+75.00 TO STA. 103+25.00  
 ITEM 203 EXCAVATION: 14 CY  
 ITEM 203 EMBANKMENT: 14 CY

SPECIAL BENCHING LEFT FROM:  
 STA. 104+75.00 TO STA. 106+25.00  
 ITEM 203 EXCAVATION: 39 CY  
 ITEM 203 EMBANKMENT: 39 CY



CROSS SECTIONS - CR 31  
 STA. 101+50.00 TO STA. 102+25.00

ATH-TR315-0.01

MODEL: CLIP\_CR\_31\_101+50.00 [Sheet] PAPER SIZE: 17x11 (in.) DATE: 4/3/2024 TIME: 5:13:56 PM USER: 02676  
 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEOA\_2023-1\119237 ATH-TR315-0.01\400-Engineering\Roadway\Sheets\119237\_XS002.dgn

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

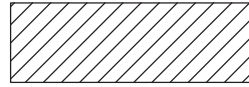


DESIGNER  
 ARM

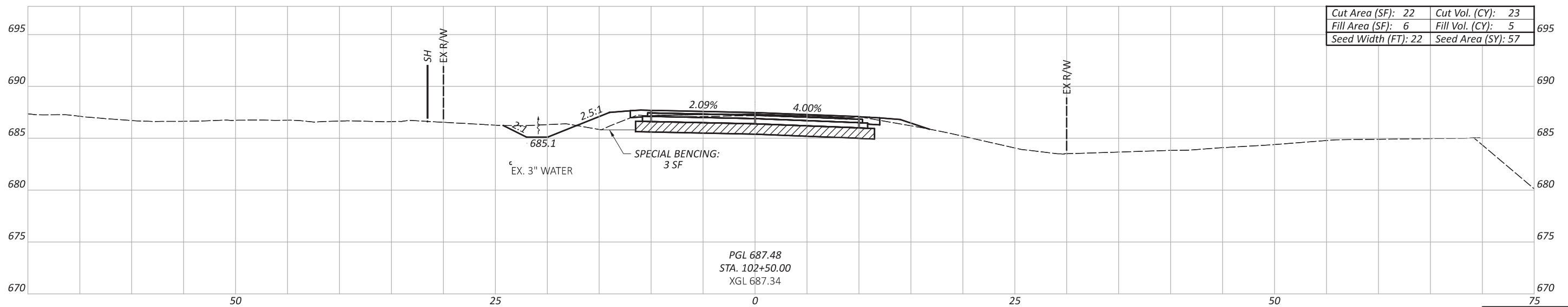
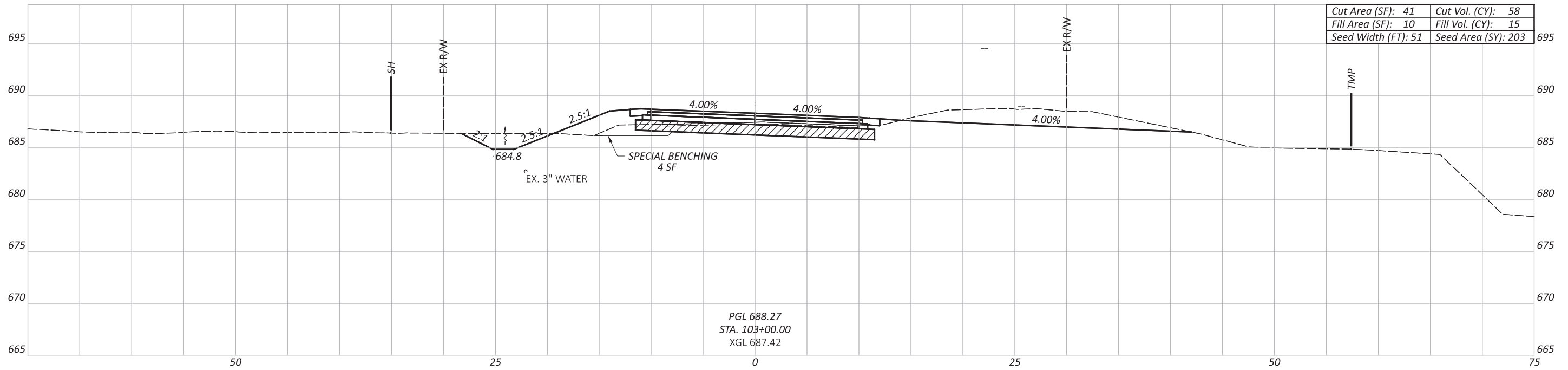
REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

Sheet Totals			119237	
Seeding	Cut	Fill	SHEET	TOTAL
106	99	59	P.19	54



UNDERCUT, UNSTABLE  
 ITEM 204 - EXCAVATION OF SUBGRADE, 12"  
 ITEM 204 - GRANULAR MATERIAL, TYPE B, 12"  
 ITEM 204 - GEOTEXTILE FABRIC



Sheet Totals			119237	
Seeding	Cut	Fill	SHEET	TOTAL
260	81	20	P.20	54

CROSS SECTIONS - CR 31  
 STA. 102+50.00 TO STA. 103+00.00

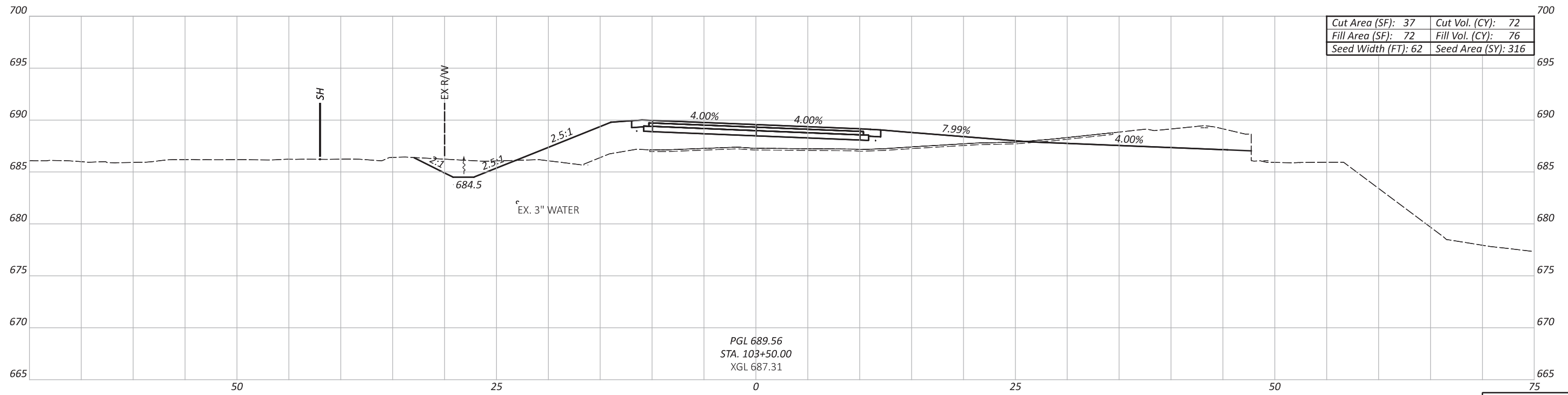
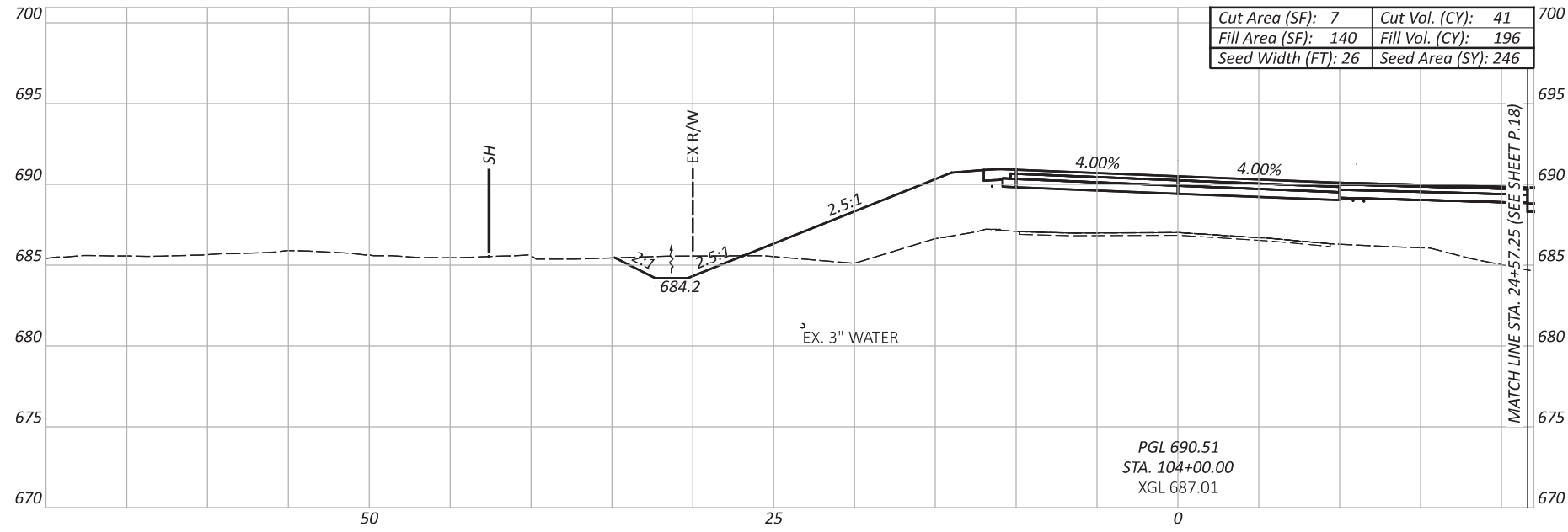
DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT



DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237



Sheet Totals			119237	
Seeding	Cut	Fill	SHEET	TOTAL
562	113	272	P.21	54

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

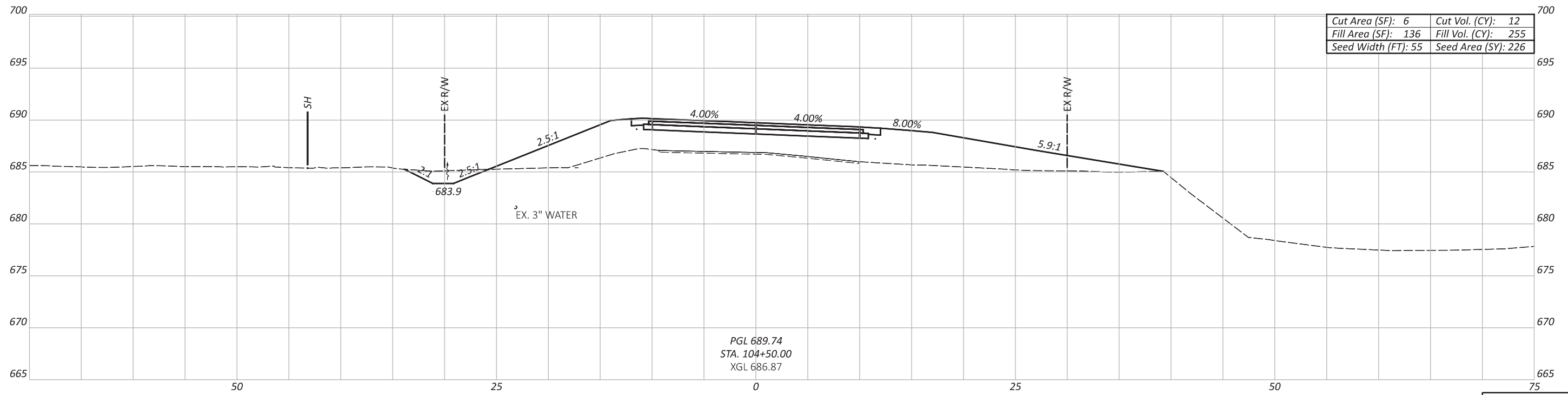
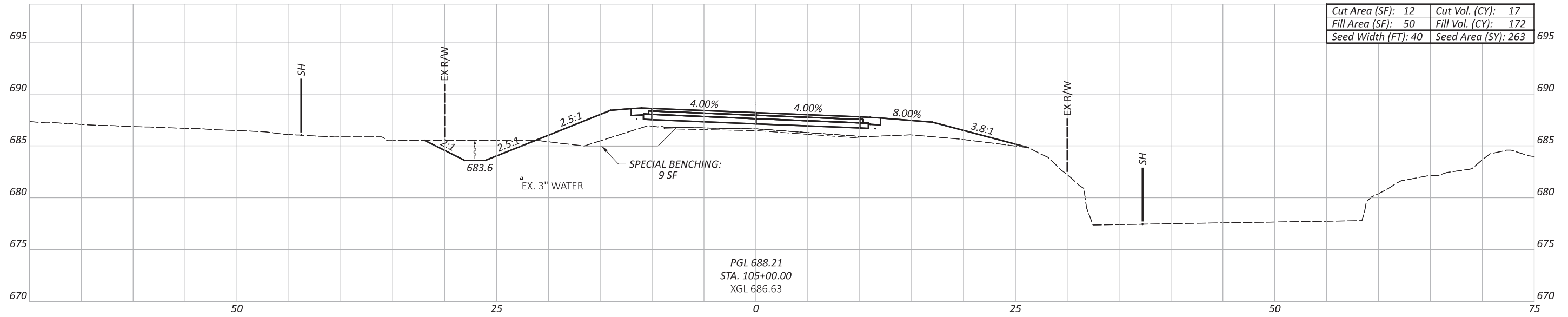


DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

CROSS SECTIONS - CR 31  
 STA. 103+50.00 TO STA. 104+00.00



Sheet Totals			119237	
Seeding	Cut	Fill	SHEET	TOTAL
489	29	427	P.22	54

CROSS SECTIONS - CR 31  
 STA. 104+50.00 TO STA. 105+00.00

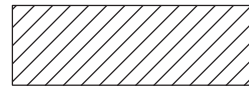
DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT



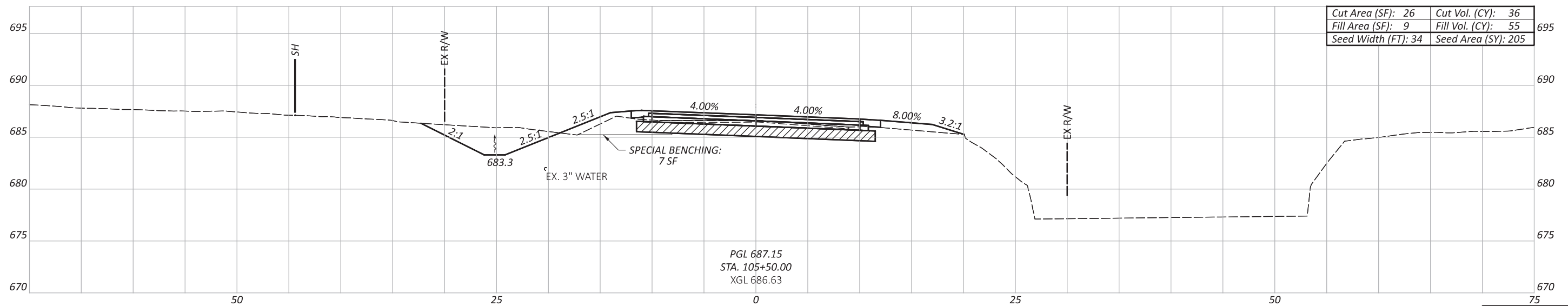
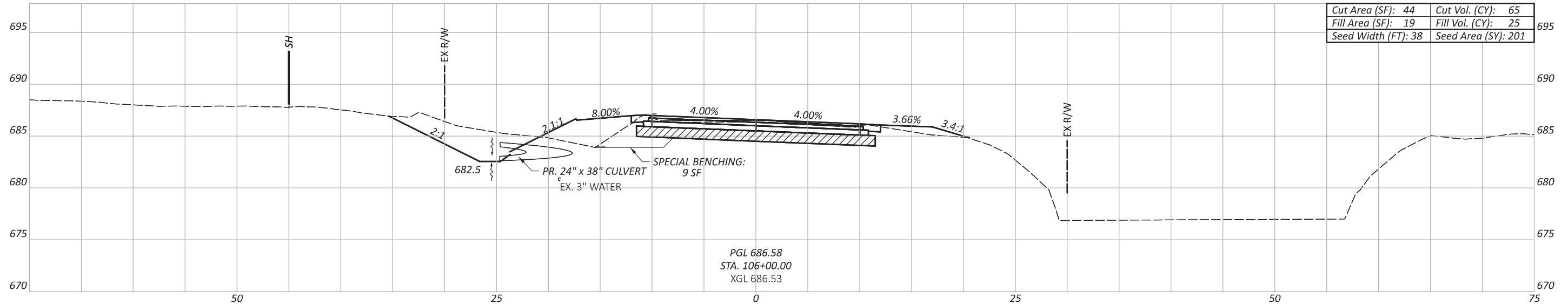
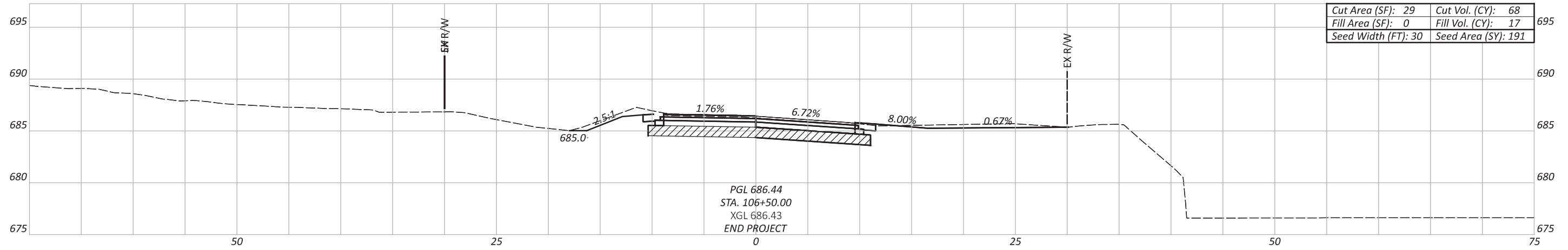
DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237



UNDERCUT, UNSTABLE  
 ITEM 204 - EXCAVATION OF SUBGRADE, 12"  
 ITEM 204 - GRANULAR MATERIAL, TYPE B, 12"  
 ITEM 204 - GEOTEXTILE FABRIC



ATH-TR315-0.01

MODEL: CLIP\_CR 31 - 105+50.00 [Sheet] PAPER SIZE: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:19 PM USER: 02676  
 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEA0 2023-1\119237 ATH-TR315-0.01\400-Engineering\Roadway\Sheets\119237\_XS002.dgn

CROSS SECTIONS - CR 31  
 STA. 105+50.00 TO STA. 106+50.00

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

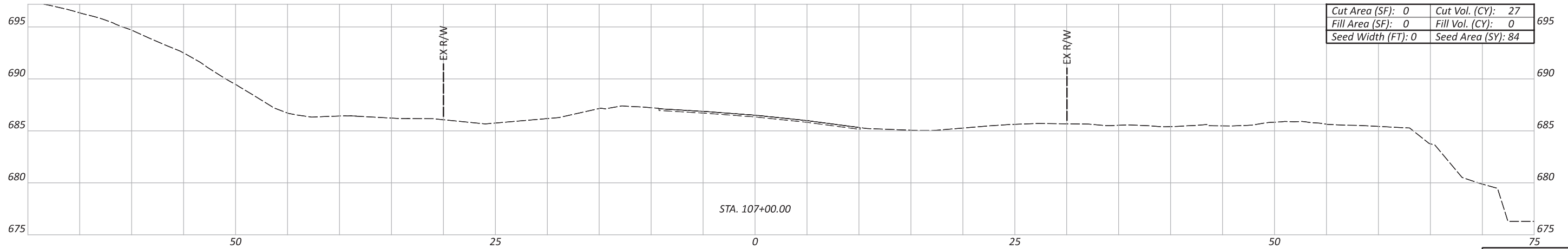


DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

Sheet Totals			TOTAL	
Seeding	Cut	Fill	P.23	54
597	167	97		



STA. 107+00.00



Sheet Totals			SHEET TOTAL	
Seeding	Cut	Fill	P.24	54
84	27	0		



LEFT EDGE OF PAVEMENT					STATION	PROFILE GRADE ELEVATION	RIGHT EDGE OF PAVEMENT					REMARKS
ELEVATION	ELEVATION CORRECTION	CROSS SLOPE	TRANSITION RATE	WIDTH			WIDTH	TRANSITION RATE	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION	
687.06	0.08	0.0085		9.05	102+00.00	686.99	8.92		-0.0510	-0.45	686.53	BEGIN PROJECT
687.24	0.08	0.0085		9.72	102+17.74	687.16	9.69	161:1	-0.0400	-0.39	686.77	FS RT
687.35	0.11	0.0113	259:1	10.00	102+25.00	687.23	10.00		-0.0400	-0.40	686.83	
687.69	0.21	0.0209	259:1	10.00	102+50.00	687.48	10.00		-0.0400	-0.40	687.08	
688.12	0.31	0.0306	259:1	10.00	102+75.00	687.81	10.00		-0.0400	-0.40	687.41	
688.18	0.32	0.0317	259:1	10.00	102+77.93	687.86	10.00		-0.0400	-0.40	687.46	PC
688.66	0.40	0.0400	259:1	10.00	102+99.44	688.26	10.00		-0.0400	-0.40	687.86	FS
688.67	0.40	0.0400		10.00	103+00.00	688.27	10.00		-0.0400	-0.40	687.87	
689.25	0.40	0.0400		10.00	103+25.00	688.85	10.00		-0.0400	-0.40	688.45	
689.96	0.40	0.0400		10.00	103+50.00	689.56	10.00		-0.0400	-0.40	689.16	
690.64	0.40	0.0400		10.00	103+75.00	690.24	10.00		-0.0400	-0.40	689.84	
690.91	0.40	0.0400		10.00	104+00.00	690.51	10.00		-0.0400	-0.40	690.11	
690.74	0.40	0.0400		10.00	104+25.00	690.34	10.00		-0.0400	-0.40	689.94	
690.14	0.40	0.0400		10.00	104+50.00	689.74	10.00		-0.0400	-0.40	689.34	
689.31	0.40	0.0400		10.00	104+75.00	688.91	10.00		-0.0400	-0.40	688.51	
688.60	0.40	0.0400		10.00	105+00.00	688.20	10.00		-0.0400	-0.40	687.80	
688.02	0.40	0.0400		10.00	105+25.00	687.62	10.00		-0.0400	-0.40	687.22	
687.69	0.40	0.0400		10.00	105+41.58	687.29	10.00		-0.0400	-0.40	686.89	PT
687.55	0.40	0.0400		10.00	105+50.00	687.15	10.00		-0.0400	-0.40	686.75	
687.21	0.40	0.0400		10.00	105+75.00	686.81	10.00		-0.0400	-0.40	686.41	
687.02	0.40	0.0400		10.00	105+94.85	686.62	10.00		-0.0400	-0.40	686.22	PC
686.98	0.40	0.0400		10.00	106+00.00	686.58	10.00		-0.0400	-0.40	686.18	
686.93	0.38	0.0400		9.45	106+06.13	686.55	10.33		-0.0400	-0.41	686.13	FS
686.74	0.26	0.0304	-196:1	8.49	106+25.00	686.48	10.66	161:1	-0.0517	-0.55	685.93	
686.60	0.16	0.0176	-196:1	8.87	106+50.00	686.44	9.54	161:1	-0.0672	-0.64	685.80	END PROJECT

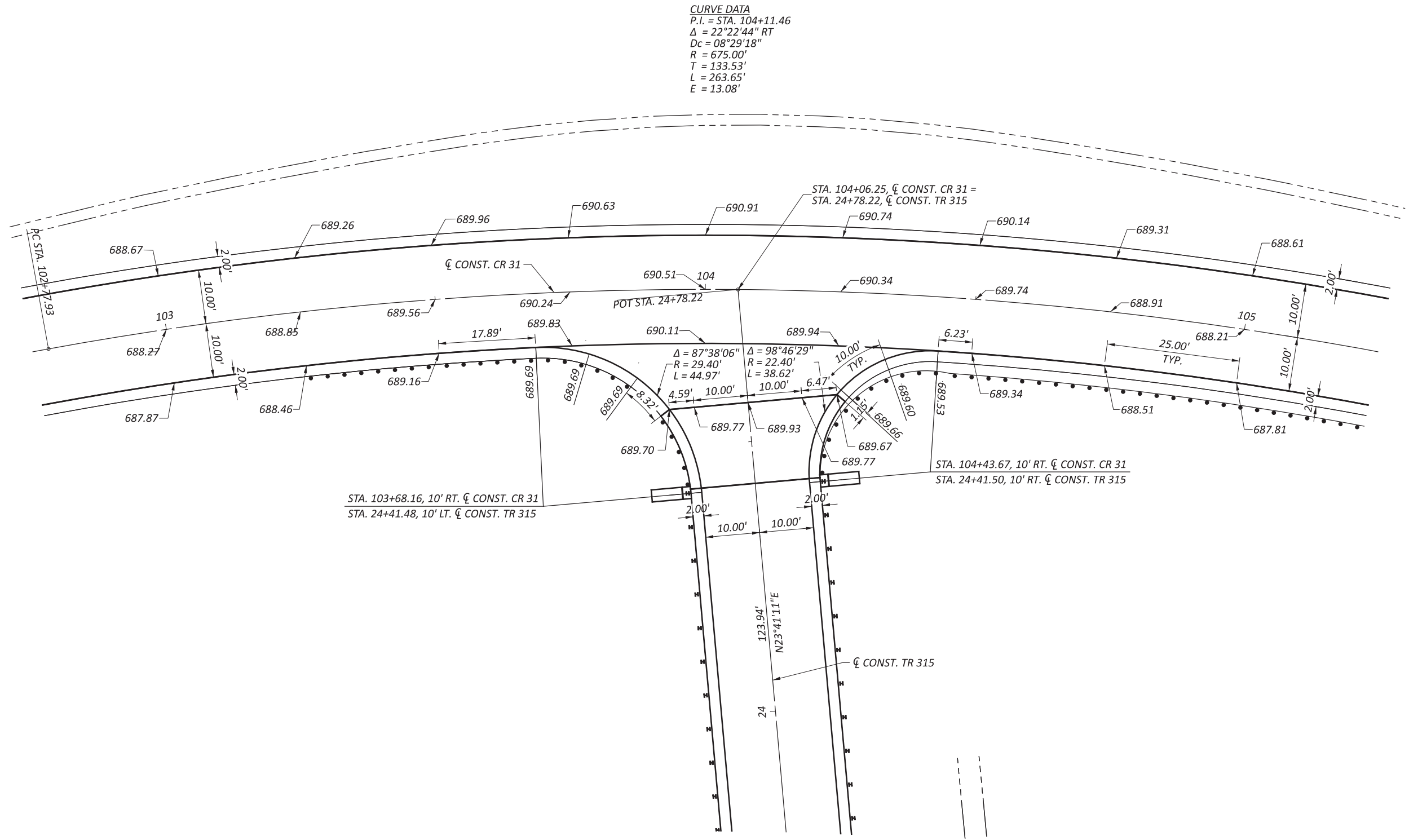
P.I. STA. 104+11.46      Dc = 8 29' 18"

P.I. STA. 106+56.46      Dc = 16 51' 37"

SUPERELEVATION TABLE



DESIGN AGENCY	ARM
REVIEWER	JJS 04/03/24
PROJECT ID	119237
SHEET	P.25
TOTAL	54



CURVE DATA  
 P.I. = STA. 104+11.46  
 Δ = 22°22'44" RT  
 Dc = 08°29'18"  
 R = 675.00'  
 T = 133.53'  
 L = 263.65'  
 E = 13.08'



INTERSECTION DETAIL  
 TR 315 AT CR 31



DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

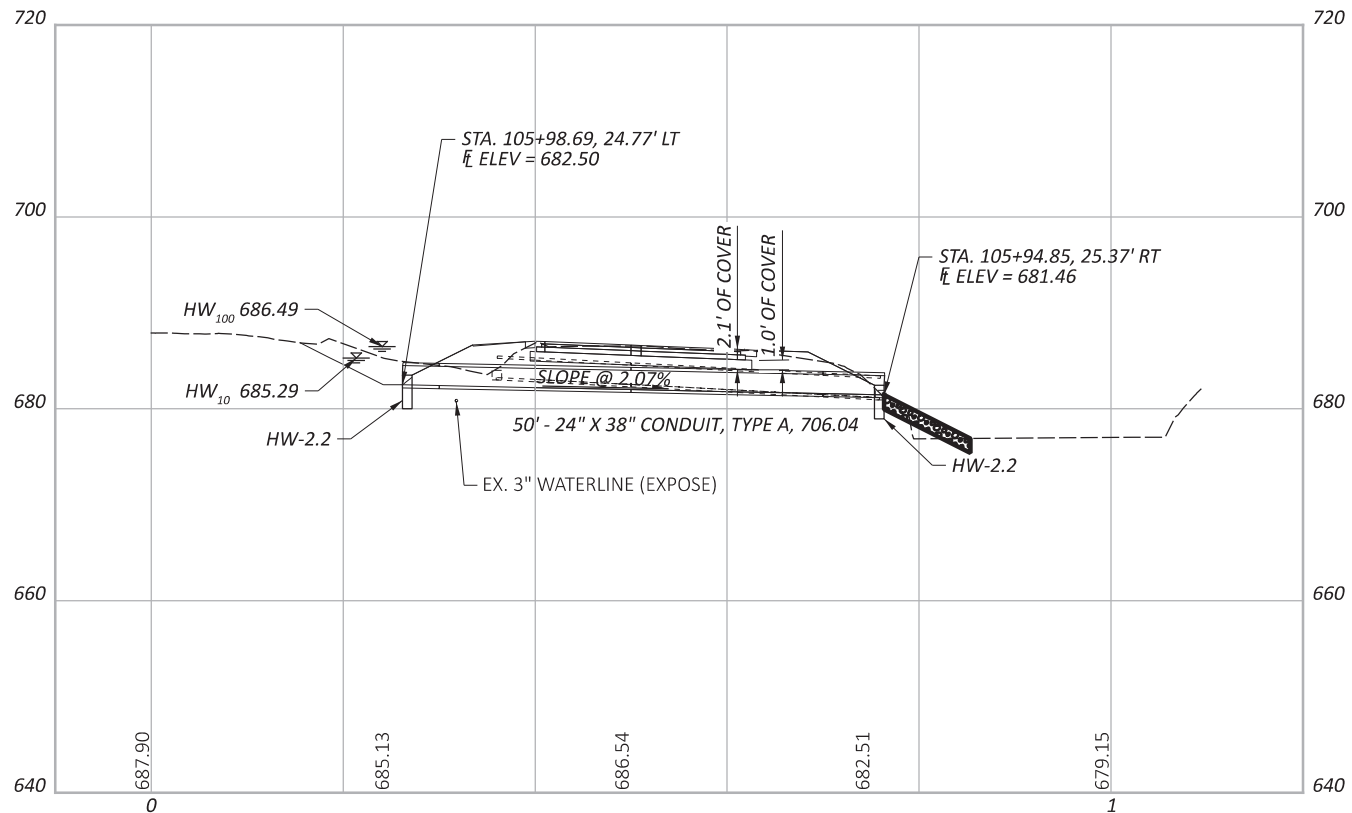
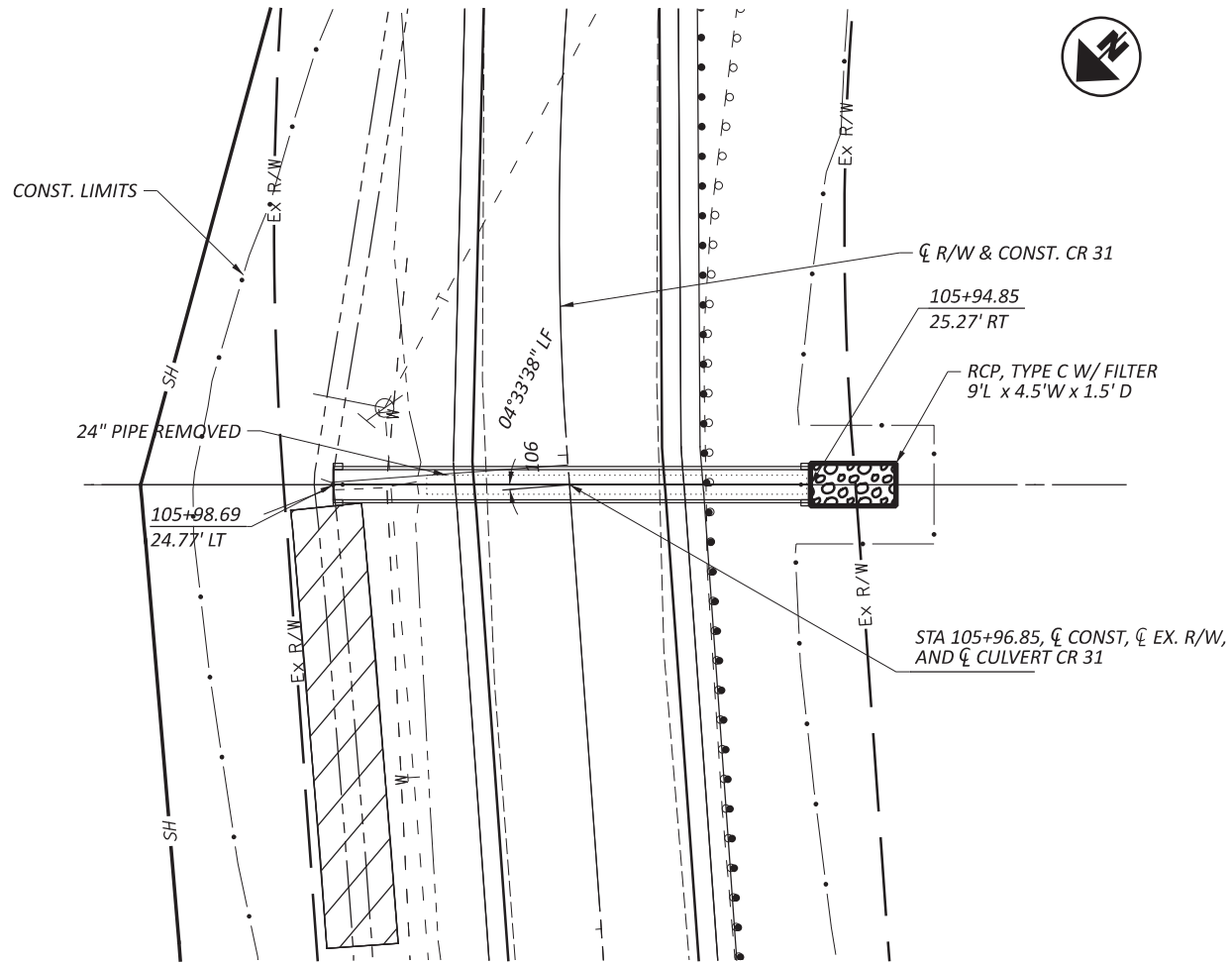
DESIGNER  
 ARM

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

SHEET TOTAL  
 P.26 54

PRIOR TO CONSTRUCTING THE CULVERT, THE CONTRACTOR SHALL EXPOSE AND VERIFY THE LOCATION OF THE EXISTING WATERLINE. THE ENGINEER SHALL THEN DETERMINE IF AN ADJUSTMENT TO THE CULVERT IS REQUIRED.



HYDRAULIC DATA		
DRAINAGE AREA =	8.52 ACRES	
Q (10) =	34.50 CFS	V (10) = 12.87 FT/S
Q (100) =	47.30 CFS	V (100) = 14.03 FT/S
ORDINARY HIGH WATER MARK:	679.98 FT	
DESIGN SERVICE LIFE:	75 YEARS	
ABRASION LEVEL:	1	
pH:	6.8	

EXISTING STRUCTURE	
TYPE:	24" CORRUGATED PLASTIC PIPE
SIZE:	24"
SKEW:	02°17'39" LF
ALIGNMENT:	TANGENT
DATE BUILT:	
CONDITION:	
CFN:	

PROPOSED STRUCTURE	
TYPE:	24" X 38" ELLIPTICAL CONCRETE PIPE
SKEW:	04°33'38" LF
ALIGNMENT:	TANGENT
CFN:	

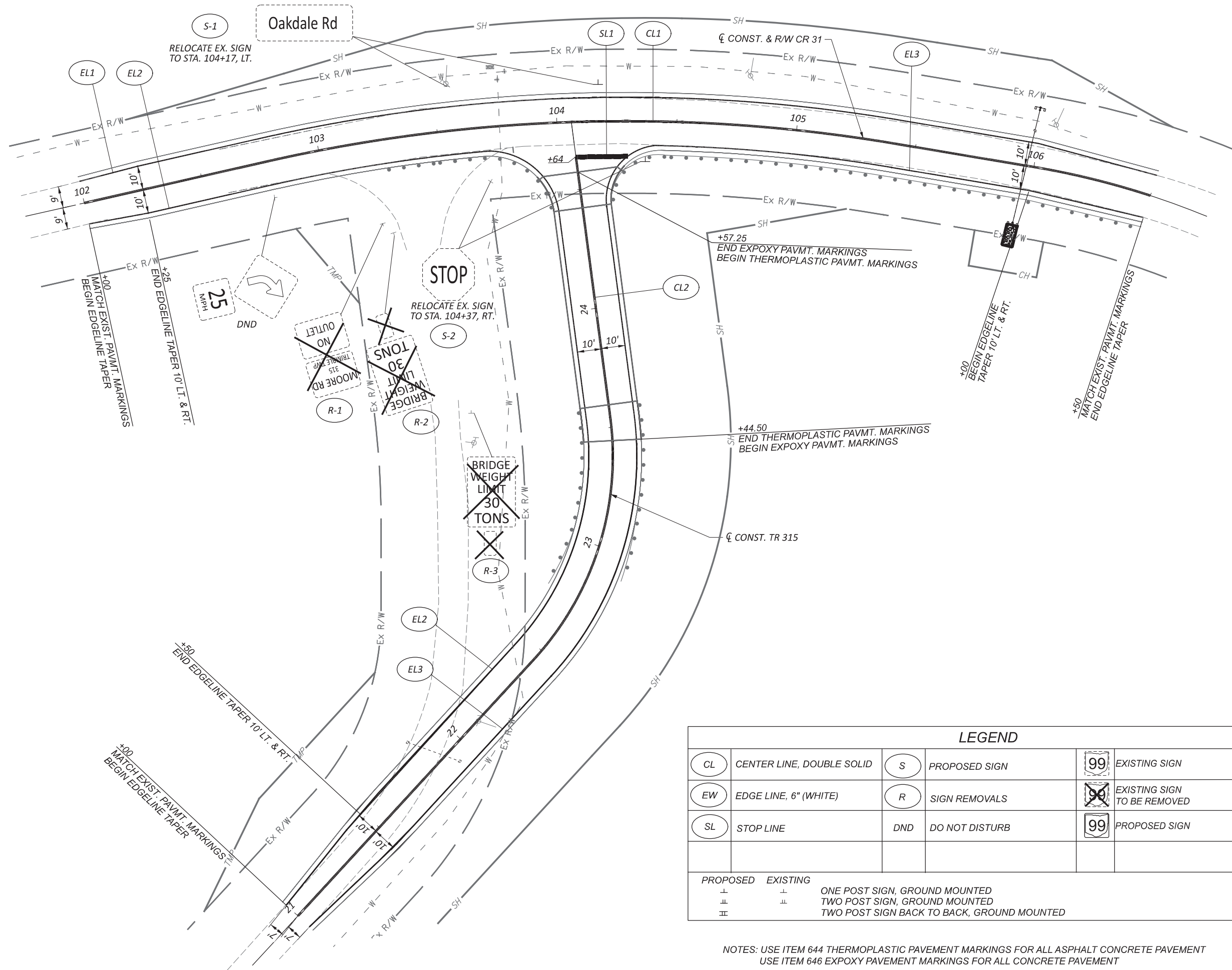


CULVERT DETAILS  
 STA 105+96.85

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT



DESIGNER  
 TK  
 REVIEWER  
 SJS 04/03/24  
 PROJECT ID  
 119237  
 SHEET TOTAL  
 P.27 54



LEGEND					
CL	CENTER LINE, DOUBLE SOLID	S	PROPOSED SIGN	99	EXISTING SIGN
EW	EDGE LINE, 6" (WHITE)	R	SIGN REMOVALS	<del>99</del>	EXISTING SIGN TO BE REMOVED
SL	STOP LINE	DND	DO NOT DISTURB	99	PROPOSED SIGN
	PROPOSED	EXISTING			
⊥	⊥	⊥	ONE POST SIGN, GROUND MOUNTED		
⊥	⊥	⊥	TWO POST SIGN, GROUND MOUNTED		
⊥	⊥	⊥	TWO POST SIGN BACK TO BACK, GROUND MOUNTED		

NOTES: USE ITEM 644 THERMOPLASTIC PAVEMENT MARKINGS FOR ALL ASPHALT CONCRETE PAVEMENT  
 USE ITEM 646 EXPOXY PAVEMENT MARKINGS FOR ALL CONCRETE PAVEMENT



TRAFFIC CONTROL PLAN  
 CR 31 STA 102+00 TO 106+50 & TR 315 STA. 21+00 TO STA. 24+78.22

DESIGN AGENCY  
**Mead & Hunt**  
 CLIENT

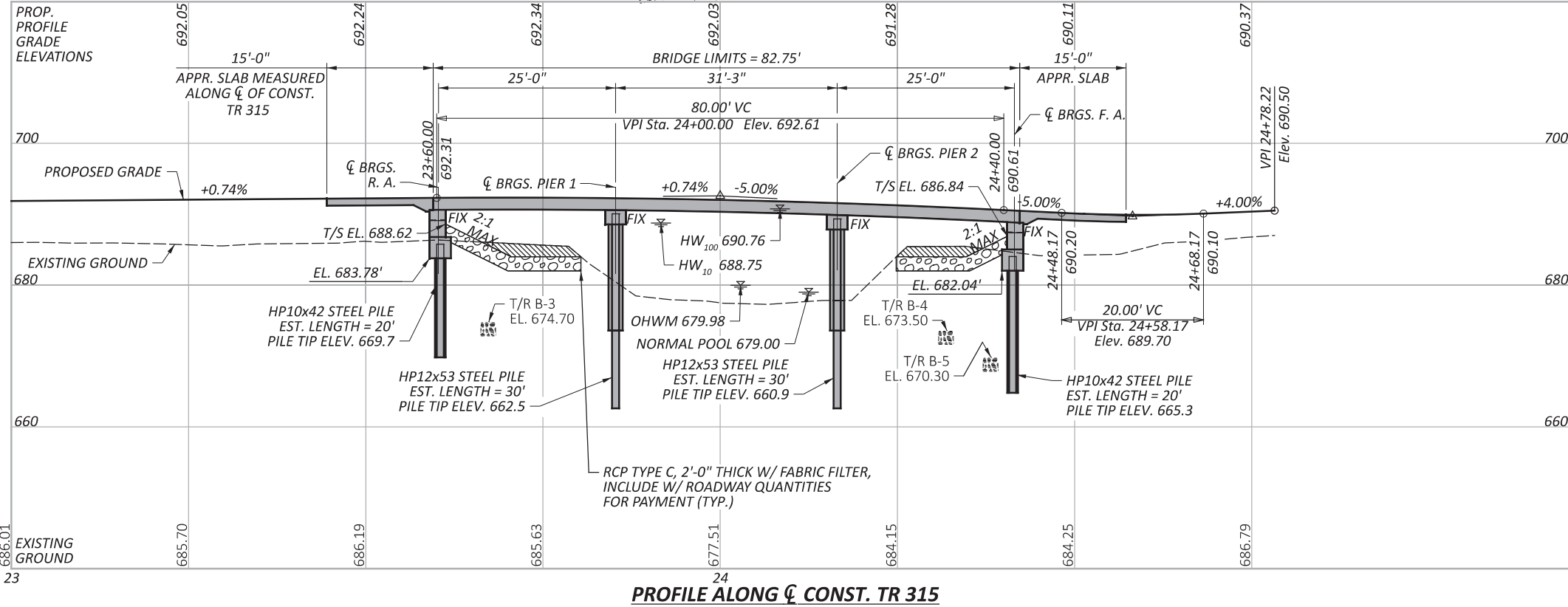
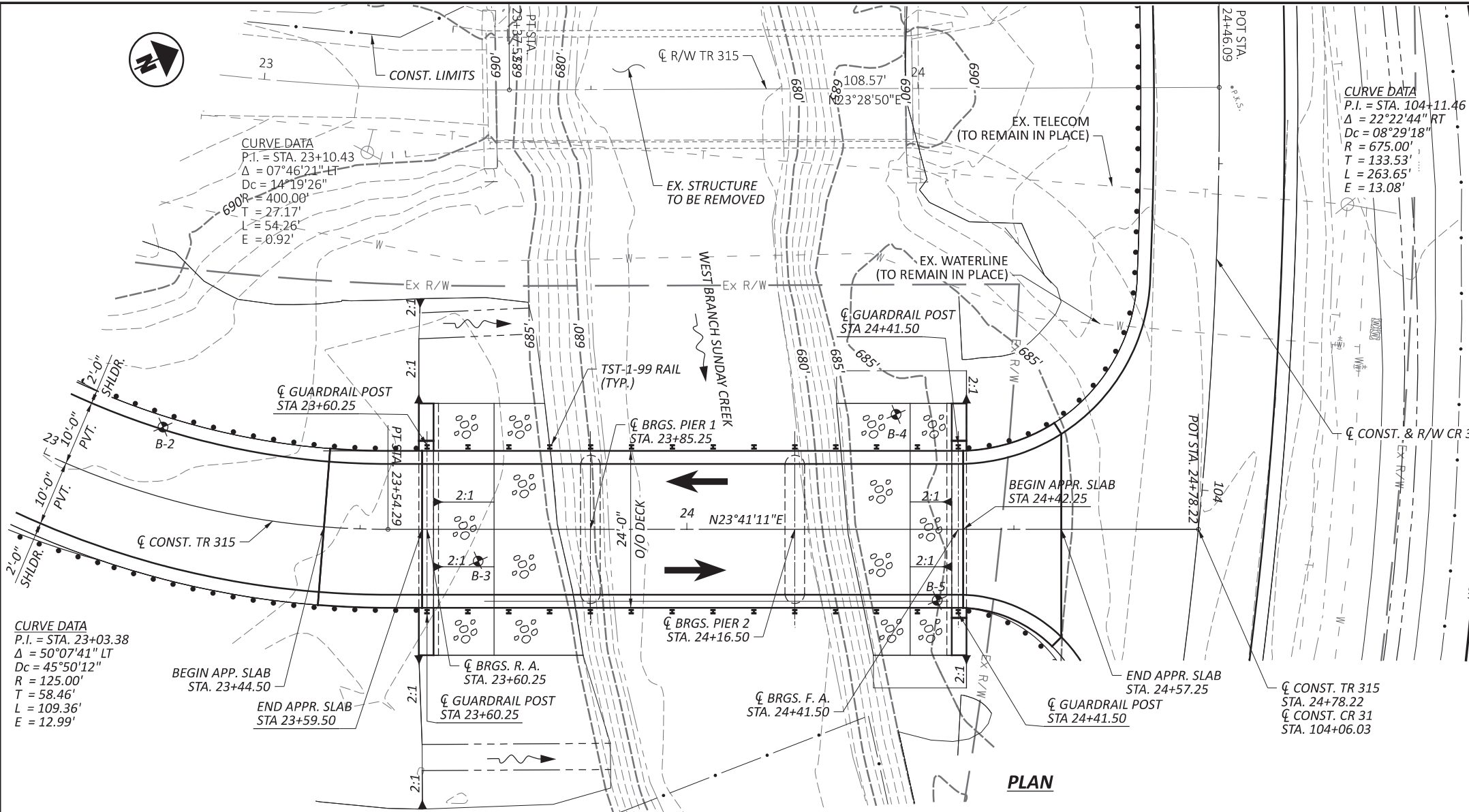


DESIGNER  
 DLW

REVIEWER  
 SJS 04/03/24

PROJECT ID  
 119237

SHEET TOTAL  
 P.28 54



**BENCHMARK DATA**

BM #1 STA.	103+38.31,	ELEV.	687.46,	OFFSET	1.96,	LT.
BM #2 STA.	105+31.02,	ELEV.	686.64,	OFFSET	0.18,	LT.
BM #3 STA.	22+06.75,	ELEV.	691.28,	OFFSET	1.58,	RT.

FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEET P.02  
 BENCHMARK DATA REFERENCES THE  $\dot{C}$  R/W.

**NOTES**

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.  
 FOR CONSTRUCTION LIMITS, SEE ROADWAY PLAN SHEETS P.11 & P.12

**DESIGN TRAFFIC:**

2024 ADT =	82	2024 ADTT =	0
2044 ADT =	89	2044 ADTT =	0
DIRECTIONAL DISTRIBUTION =	55%		

**LEGEND**

- BORING LOCATION
- CHANNEL EXCAVATION

**HYDRAULIC DATA**

DRAINAGE AREA =	34.3 SQ. MILES		
Q (10) =	2840 CFS	V (10) =	5.43 FT/S
Q (100) =	5240 CFS	V (100) =	4.10 FT/S
STRUCTURE CLEARS THE	10 YEAR DESIGN HW BY 0.14 FEET.		

**EXISTING STRUCTURE**

TYPE: SINGLE SPAN GIRDER AND FLOORBEAM SYSTEM WITH GRAVITY CONCRETE ABUTMENTS  
 SPANS: 63'-0"  
 ROADWAY: 16'-0" F/F RAIL  
 LOADING: HS 20  
 SKEW: NONE  
 WEARING SURFACE: TIMBER  
 APPROACH SLABS: NONE  
 ALIGNMENT: TANGENT  
 CROWN: NONE  
 STRUCTURE FILE NUMBER: 0540919  
 DATE BUILT: 1975  
 DISPOSITION: TO BE REMOVED

**PROPOSED STRUCTURE**

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH CAPPED PILE PIERS AND CAPPED PILE ABUTMENTS  
 SPANS: 25'-0" - 31'-3" - 25'-0"  
 ROADWAY: 24'-0" F/F GUARDRAIL  
 LOADING: HL93 AND 60 PSF FUTURE WEARING SURFACE  
 SKEW: NONE  
 WEARING SURFACE: 1" MONOLITHIC CONCRETE  
 APPROACH SLABS: 15'-0" LONG (AS-1-15, AS-2-15)  
 ALIGNMENT: TANGENT  
 CROWN: 0.016 FT/FT  
 DECK AREA: 1,986 SF  
 COORDINATES: LATITUDE N 39°31'07"  
 LONGITUDE W 82°05'09"

**SITE PLAN**  
**BRIDGE NO. ATH-TR315-00010**  
**OVER WEST BRANCH SUNDAY CREEK**

SFN	0540920
DESIGN AGENCY	
CLIENT	
DESIGNER	TK
CHECKER	LYH
REVIEWER	
KVB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
1	15
SHEET	TOTAL
29	54

**REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:**

AS-1-15	REVISED	01-20-23
AS-2-15	REVISED	07-21-23
CPA-1-08	REVISED	01-19-24
CPP-1-08	REVISED	07-21-17
CS-1-24	DATED	01-19-24
TST-1-99	REVISED	01-15-21

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**OPERATIONAL IMPORTANCE:**

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL.

**DESIGN LOADING INCLUDES:**

VEHICULAR LIVE LOAD: HL-93  
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/FT

**DESIGN DATA:**

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)  
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)  
CONCRETE REINFORCEMENT:  
EPOXY COATED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60KSI (SLAB, APPROACH SLABS, ABUTMENTS, PIERS)  
STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

**MONOLITHIC WEARING SURFACE:**

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

**SCOUR ELEVATIONS:**

THE DESIGN FLOOD AND CHECK FLOOD SCOUR ELEVATIONS ARE PROVIDED BELOW:

	REAR ABUTMENT	PIER 1	PIER 2	FORWARD ABUTMENT
DESIGN FLOOD	N/A	672.79	672.79	N/A
CHECK FLOOD	N/A	672.78	672.78	N/A

**ITEM 202. STRUCTURE REMOVED OVER 20 FOOT. AS PER PLAN:**

THE WORK CONSISTS OF REMOVING THE ENTIRE STRUCTURE, WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC. CAREFULLY DISMANTLE THE EXISTING THROUGH STEEL GIRDERS AND DELIVER TO THE ATHENS COUNTY ENGINEER'S REDTOWN OUTPOST LOCATED AT 9775 SR 685, GLOUSTER, OHIO.

**PILE SPLICES:**

IN LIEU OF USING THE FULL PENETRATION BUTT WELDS SPECIFIED IN C&MS 507.09 TO SPLICE STEEL H-PILES, THE CONTRACTOR MAY USE A MANUFACTURED H-PILE SPLICER. FURNISH SPLICERS FROM THE FOLLOWING MANUFACTURER:

ASSOCIATED PILE AND FITTING CORPORATION  
8 WOOD HOLLOW RD. PLAZA 1  
PARSIPPANY, NEW JERSEY 07054

INSTALL AND WELD THE SPLICER TO THE PILE SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN ASSEMBLY PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED.

**ITEM SPECIAL - PILE ENCASEMENT:**

ENCASE ALL STEEL H-PILES FOR THE CAPPED PILE PIERS IN CONCRETE CONFORMING TO C&MS 511 (F'C = 4.0-KSI). PROVIDE A CONCRETE SLUMP BETWEEN 6 TO 8 INCHES WITH THE USE OF A SUPERPLASTICIZER. PLACE THE CONCRETE WITHIN A FORM THAT CONSISTS OF POLYETHYLENE PIPE (C&MS 707.33), OR PVC PIPE (C&MS 707.42). THE ENCASEMENT SHALL EXTEND FROM TOP OF BEDROCK UP TO THE CONCRETE PIER CAP. POSITION THE PIPE SO THAT AT LEAST 3 INCHES OF CONCRETE COVER IS PROVIDED AROUND THE EXTERIOR OF THE PILE.

THE DEPARTMENT WILL MEASURE PILE ENCASEMENT BY THE NUMBER OF FEET. THE DEPARTMENT WILL DETERMINE THE SUM AS THE LENGTH MEASURED ALONG THE AXIS OF EACH PILE FROM THE BOTTOM OF THE ENCASEMENT TO THE BOTTOM OF THE PIER CAP. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM - SPECIAL, PILE ENCASEMENT.

**ITEM 507 PREBORED HOLES, AS PER PLAN:**

PREBORED HOLES SHALL EXTEND AT LEAST 5 FT INTO BEDROCK AT EACH PILE AT THE ABUTMENTS AND 11 FT INTO BEDROCK AT EACH PILE AT THE PIERS. THE DIAMETER OF THE PREBORED HOLE SHALL BE A MINIMUM 2-IN LARGER THAN THE DIAGONAL DIMENSION OF THE PILE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AN OPEN HOLE.

THE PREBORED HOLES SHALL BE CLEAN AND FREE OF ALL DELETERIOUS MATERIALS PRIOR TO BACKFILLING OPERATIONS. BACKFILL THE VOID BETWEEN THE PILE AND THE PREBORED HOLE WITH CLASS QC MISC. CONCRETE UP TO THE TOP OF ROCK ELEVATION. ABOVE THE TOP OF ROCK, BACKFILL THE VOID TO THE BOTTOM OF FOOTING ELEVATION WITH GRANULAR MATERIAL CONFORMING TO 703.11, STRUCTURAL BACKFILL TYPE 2, EXCEPT 100 PERCENT OF THE MATERIAL SHALL PASS THROUGH A 3/4-IN SIEVE. PAYMENT FOR THE PREBORED HOLES INCLUDES THE BACKFILL MATERIAL.

**ITEM 507 STEEL PILES HP10x42, FURNISHED, AS PER PLAN:**

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL PILES INTO PREBORED HOLES. PLACE EACH PILE VERTICALLY WITHIN THE HOLE SO IT IS NOT INCLINED MORE THAN ONE INCH BETWEEN THE TOP AND BOTTOM. SUPPORT THE PILE SO THAT IT DOES NOT MOVE DURING PLACEMENT OF BACKFILL MATERIAL.

THE TOTAL FACTORED LOAD IS 145 KIPS PER PILE FOR THE ABUTMENT PILES.

**ABUTMENT PILES:**

HP10X42 PILES 25 FT LONG, ORDER LENGTH



**ITEM 507 STEEL PILES HP12x53, FURNISHED, AS PER PLAN:**

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL PILES INTO PREBORED HOLES. PLACE EACH PILE VERTICALLY WITHIN THE HOLE SO IT IS NOT INCLINED MORE THAN ONE INCH BETWEEN THE TOP AND BOTTOM. SUPPORT THE PILE SO THAT IT DOES NOT MOVE DURING PLACEMENT OF BACKFILL MATERIAL. DO NOT REMOVE SUPPORTS FROM THE PIER PILES UNTIL THEY CAN FULLY SUPPORT THE PIER CAPS.

THE TOTAL FACTORED LOAD IS 276 KIPS PER PILE FOR THE PIER PILES. THE PIER PILES WERE DESIGNED TO ACCOMMODATE 6.5 FT OF SCOUR.

**PIER PILES:**



HP12X53 PILES 35FT LONG, ORDER LENGTH

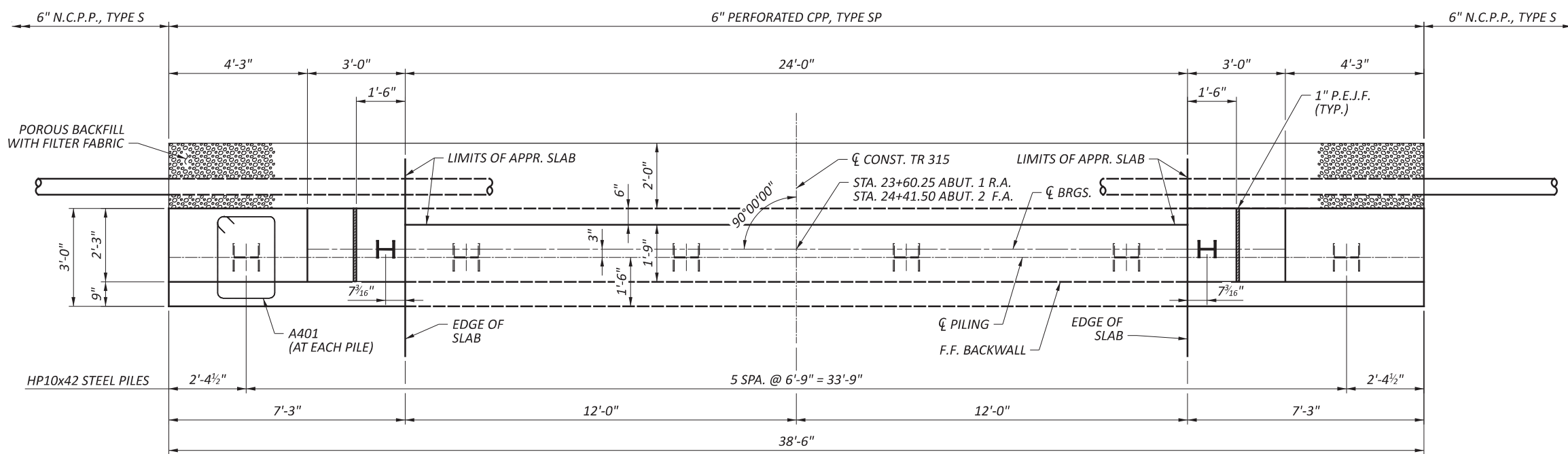
SFN	
0540920	
DESIGN AGENCY	
	
CLIENT	
	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB 03/29/24	
PROJECT ID	
119237	
SUBSET	TOTAL
2	15
SHEET	TOTAL
30	54

CALC:	LYH	DATE:	3/27/2024
CHECKED:	KVB	DATE:	3/29/2024

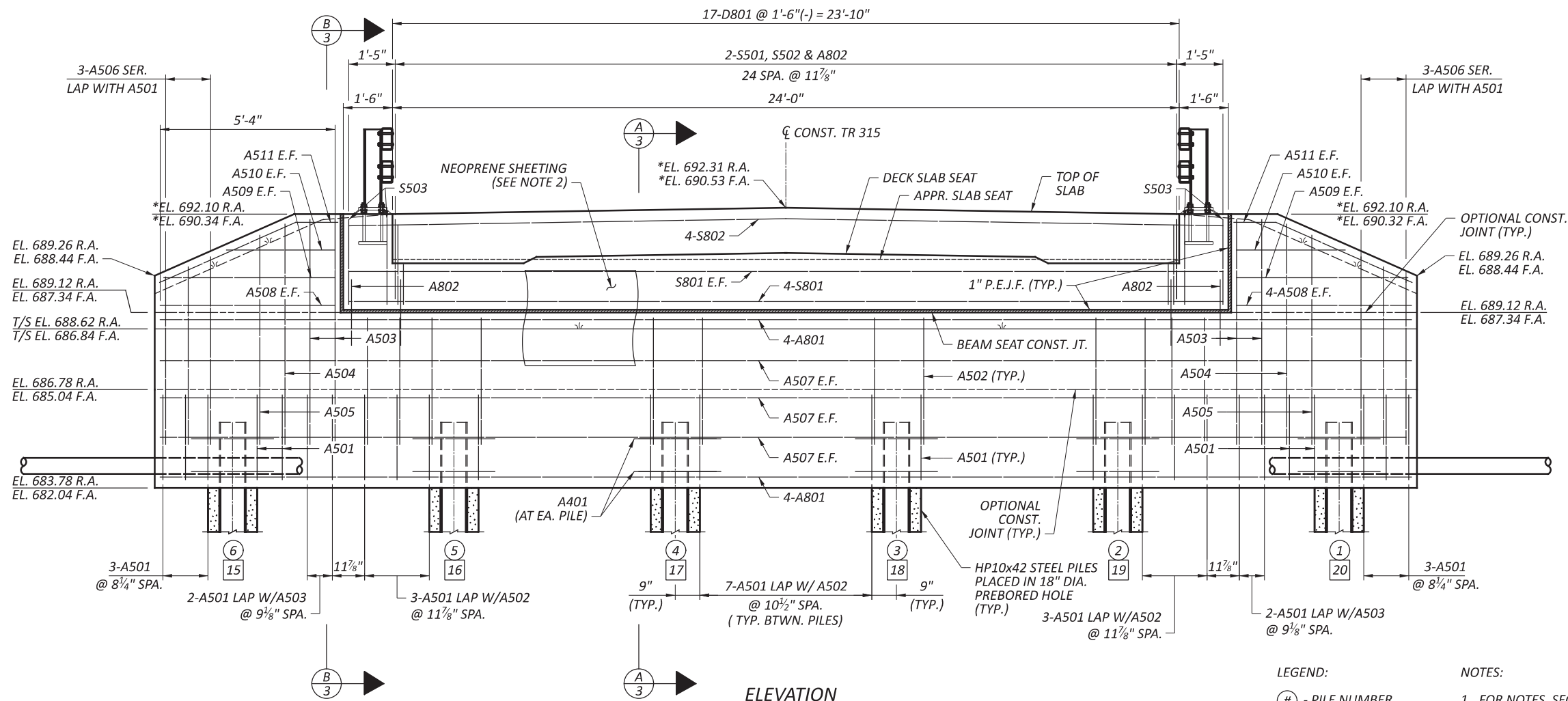
ESTIMATED QUANTITIES (01/NFA/10)									
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SEE SHEET
202	11003	LS	LS	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2 OF 15
503	11100	LS	LS	COFFERDAMS AND EXCAVATION BRACING		LUMP			
503	21300	LS	LS	UNCLASSIFIED EXCAVATION	LUMP				
507	00101	300	FT	STEEL PILES HP10X42, FURNISHED, AS PER PLAN	300				2 OF 15
507	00201	280	FT	STEEL PILES HP12X53, FURNISHED, AS PER PLAN		280			2 OF 15
SPECIAL	50771200	124	FT	PILE ENCASEMENT		124			
507	92201	380	FT	PREBORED HOLES, AS PER PLAN	240	140			2 OF 15
509	10000	35282	LB	EPOXY COATED REINFORCING STEEL	7977	1905	25400		
511	32210	112	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, CONTINUOUS CONCRETE SLAB			112		
511	42510	11	CY	CLASS QC1 CONCRETE, PIER CAP		11			
511	43510	45	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	45				
512	10100	84	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	30	6	48		
516	13200	41	SF	1/2" PREFORMED EXPANSION JOINT FILLER	41				
516	13600	36	SF	1" PREFORMED EXPANSION JOINT FILLER	36				
516	14014	60	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	60				
517	70000	163	FT	RAILING (TWIN STEEL TUBE)			163		
518	21230	LS	LS	POROUS BACKFILL WITH GEOTEXTILE FABRIC	LUMP				
SPECIAL	51822300	160	FT	STEEL DRIP STRIP			160		
518	40000	78	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	78				
518	40011	46	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	46				5 OF 15
									10-14 OF 15
526	10001	87	SY	REINFORCED CONCRETE APPROACH SLABS (T=12"), AS PER PLAN				87	
526	90010	59	FT	TYPE A INSTALLATION				59	
846	00110	25	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				25	

ESTIMATED QUANTITIES  
 BRIDGE NO. ATH-TR315-00010  
 OVER WEST BRANCH SUNDAY CREEK

SFN	0540920
DESIGN AGENCY	
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	03-29-24
PROJECT ID	119237
SUBSET	TOTAL
3	15
SHEET	TOTAL
31	54



**PLAN**  
(REAR ABUTMENT SHOWN, FORWARD ABUTMENT OPPOSITE HAND)



**ELEVATION**  
(REAR ABUTMENT SHOWN, FORWARD ABUTMENT OPPOSITE HAND)  
\* DENOTES ELEVATIONS GIVEN AT  $\bar{C}$  OF BRGS.

**LEGEND:**

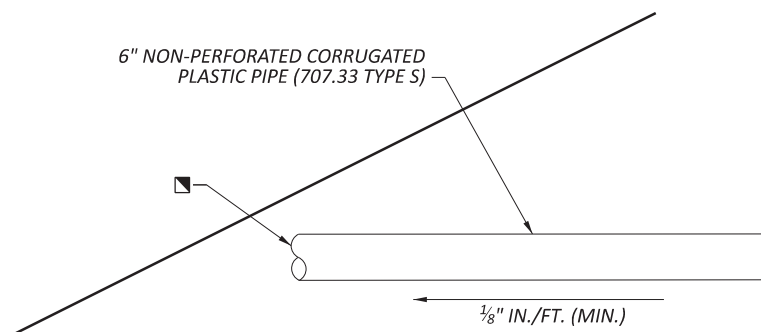
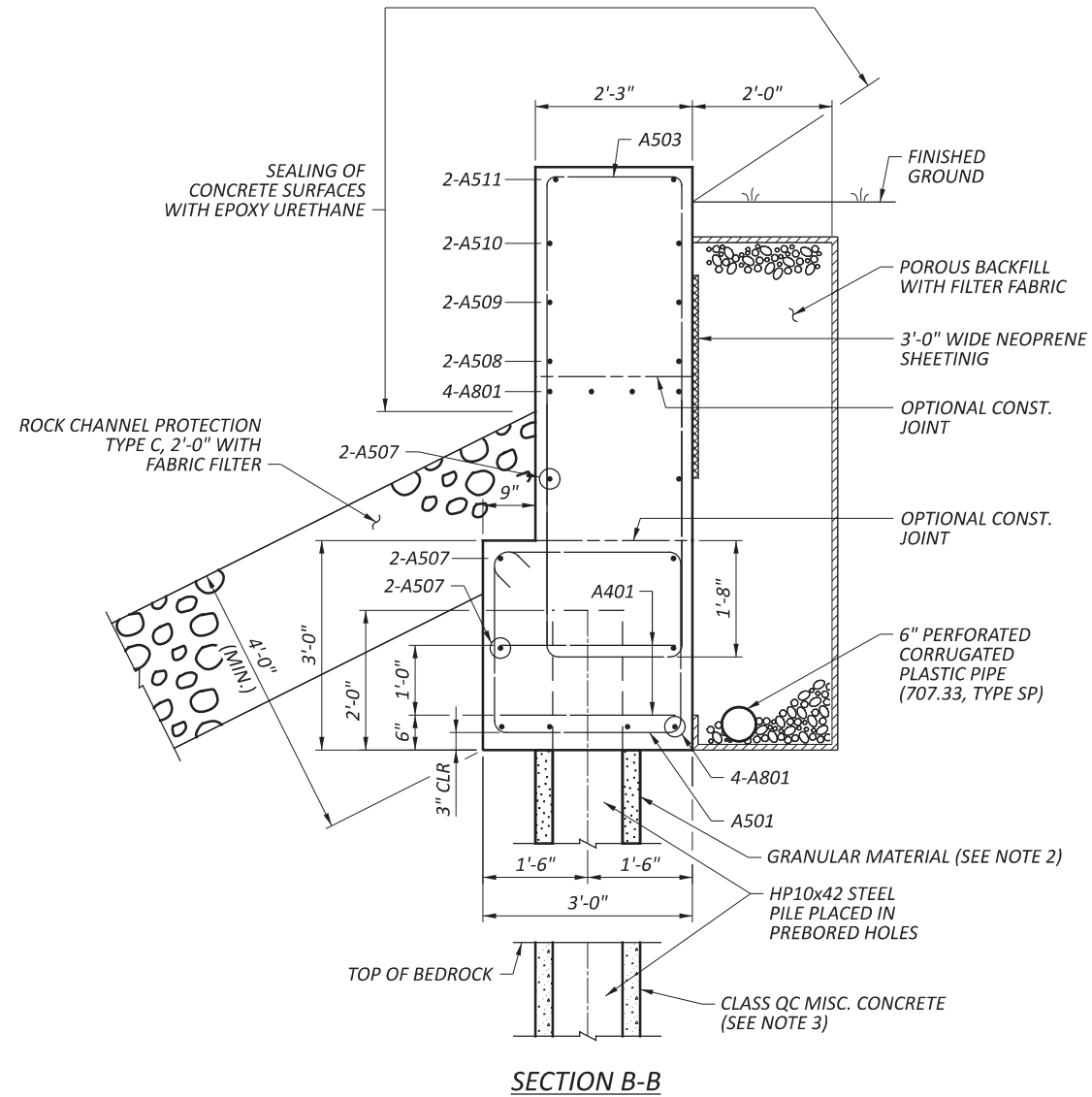
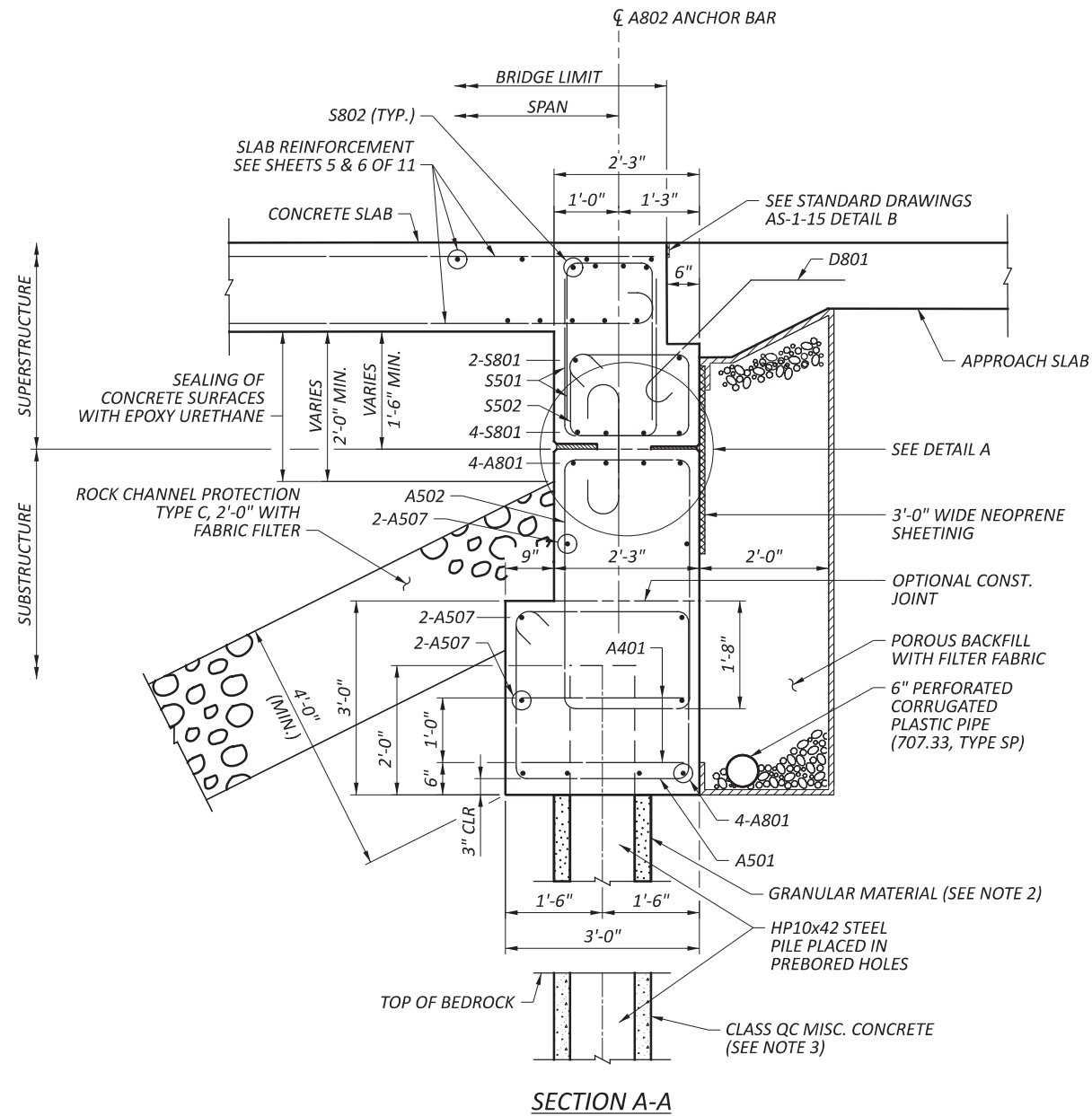
- Ⓝ - PILE NUMBER, REAR ABUTMENT
- Ⓜ - PILE NUMBER, FORWARD ABUTMENT

**NOTES:**

1. FOR NOTES, SECTION A-A AND B-B SEE SHEET 5 OF 15.
2. FOR NEOPRENE SHEETING DETAILS AND DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. CPA-1-08.

SFN 0540920	
DESIGN AGENCY <b>Mead &amp; Hunt</b>	
CLIENT	
DESIGNER LYH	CHECKER KVB
REVIEWER MAB 02/09/24	
PROJECT ID 119237	
SUBSET 4	TOTAL 15
SHEET P.32	TOTAL 54

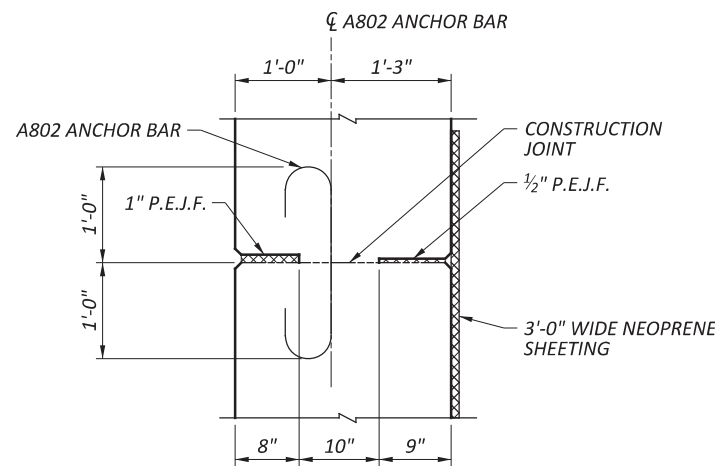




**LEGEND**

- PROVIDE PRECAST CONCRETE OUTLET WITH TYPE 1 TIED CONCRETE BLOCK MAT AS SHOWN IN DM-1.1. INCLUDE PAYMENT WITH ITEM 518 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN.

**TERMINATION OF 6" N.C.P.P. DETAIL**



**DETAIL A**

THE ANCHOR BARS, OR OPTIMAL DOWEL BARS, SHALL BE PLACED VERTICALLY AT THE LOCATION SHOWN.

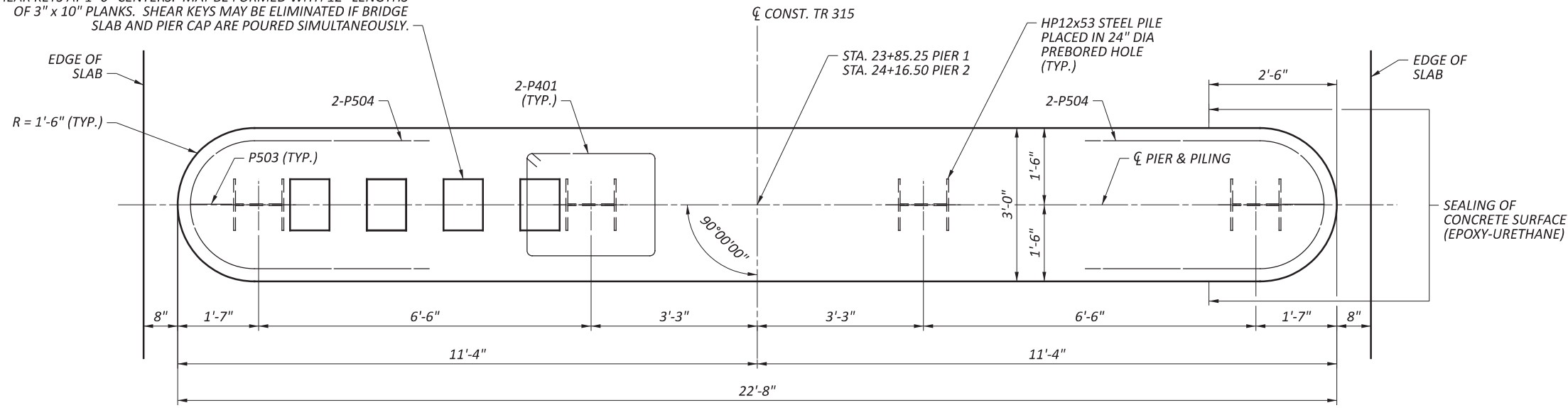
**NOTES:**

1. PLACE THE HP10x42 STEEL PILES IN THE PREBORED HOLES WITHOUT DRIVING THE PILES. THE PREBORED HOLES SHALL EXTEND FROM THE TOP OF EXISTING GROUND TO BOTTOM OF PILE TIP ELEVATION AS DETAILED IN SITE PLAN.
2. BACKFILL FROM THE TOP OF BEDROCK TO THE BOTTOM OF PILE CAP ELEVATION WITH GRANULAR MATERIAL CONFORMING TO 703.11, STRUCTURAL BACKFILL TYPE 2, EXCEPT 100 PERCENT OF THE MATERIAL SHALL PASS THROUGH A 3/4" INCH SLEEVE.
3. PLACE CLASS QC MISC. CONCRETE IN THE PREBORED HOLES FROM TOP OF BEDROCK TO PILE TIP ELEVATION.
4. FOR LOCATIONS OF SECTIONS A-A AND B-B SEE SHEET 4 OF 15.
5. FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. CPA-1-08.
6. POROUS BACKFILL: POROUS BACKFILL WITH FILTER FABRIC, 2'-0" SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1'-0" BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE ABUTMENT.

SFN	0540920
DESIGN AGENCY	Mead & Hunt
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
5	15
SHEET	TOTAL
P.33	54



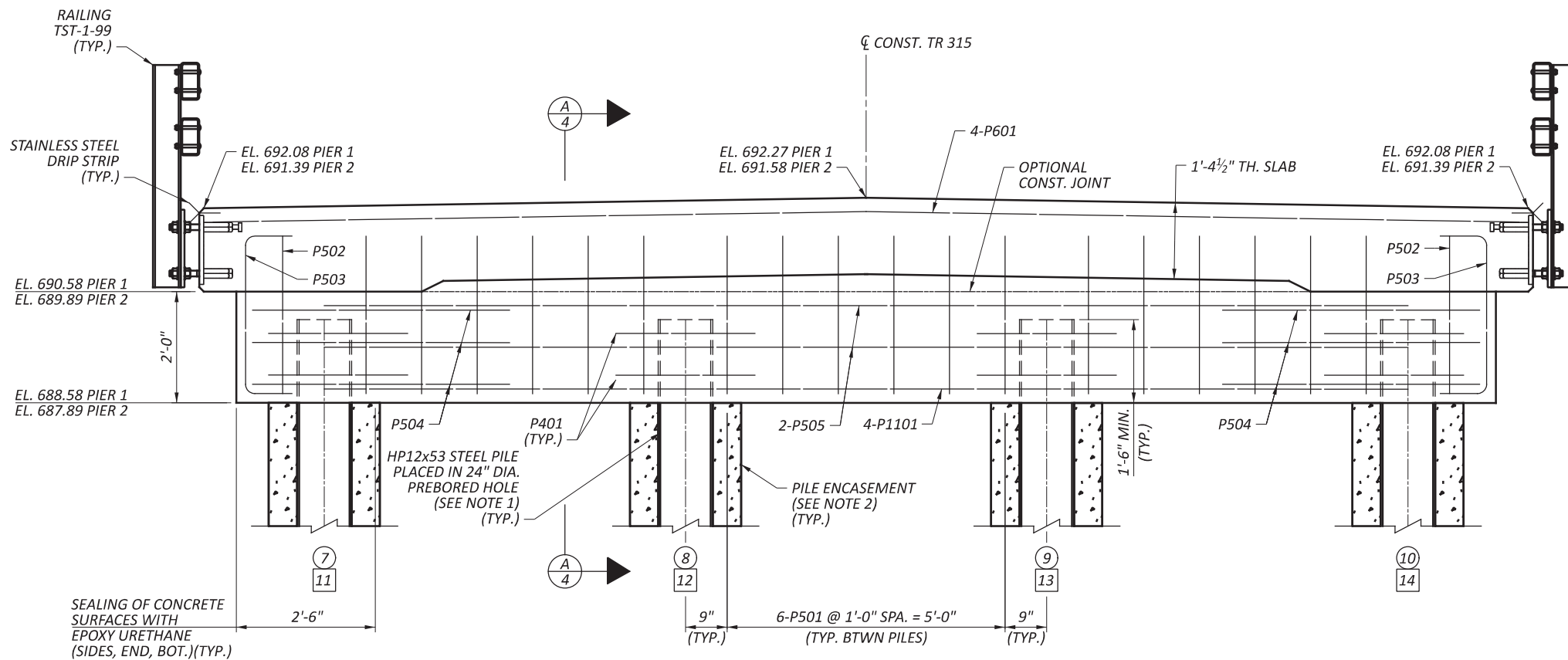
SHEAR KEYS AT 1'-6" CENTERS. MAY BE FORMED WITH 12" LENGTHS OF 3" x 10" PLANKS. SHEAR KEYS MAY BE ELIMINATED IF BRIDGE SLAB AND PIER CAP ARE POURED SIMULTANEOUSLY.



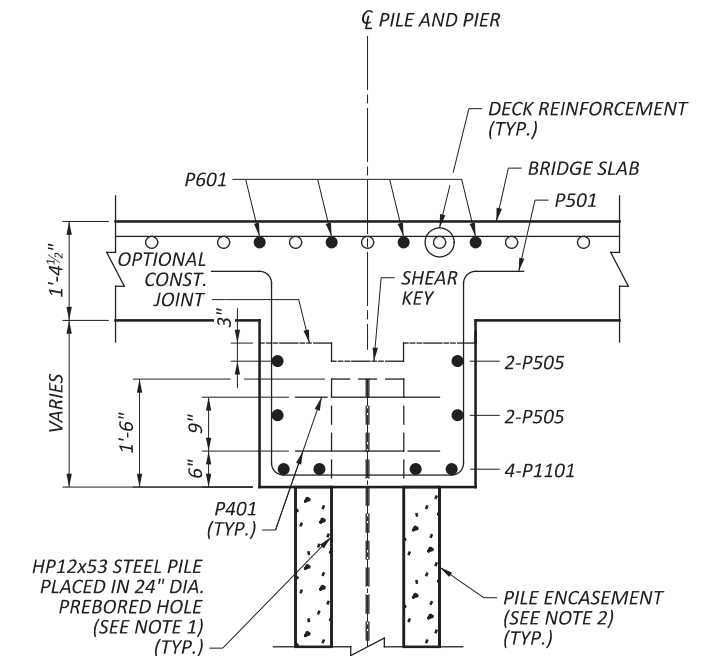
PLAN

NOTES:

1. PLACE THE HP12x53 STEEL PILES IN THE PREBORED HOLES WITHOUT DRIVING THE PILES. THE PREBORED HOLES SHALL EXTEND FROM TOP OF ROCK TO 11 FEET BELOW TOP OF ROCK.
2. THE PILE ENCASEMENT PER ODOT STANDARD DRAWING CPP-1-08 SHALL EXTEND FROM TOP OF BEDROCK TO BOTTOM OF PIER CAP.
3. BACKFILL FROM THE BOTTOM OF PILE TIP TO TOP OF PREBORED HOLES WITH CLASS QC MISC. CONCRETE.
4. FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. CPP-1-08.



ELEVATION



SECTION A-A

LEGEND:

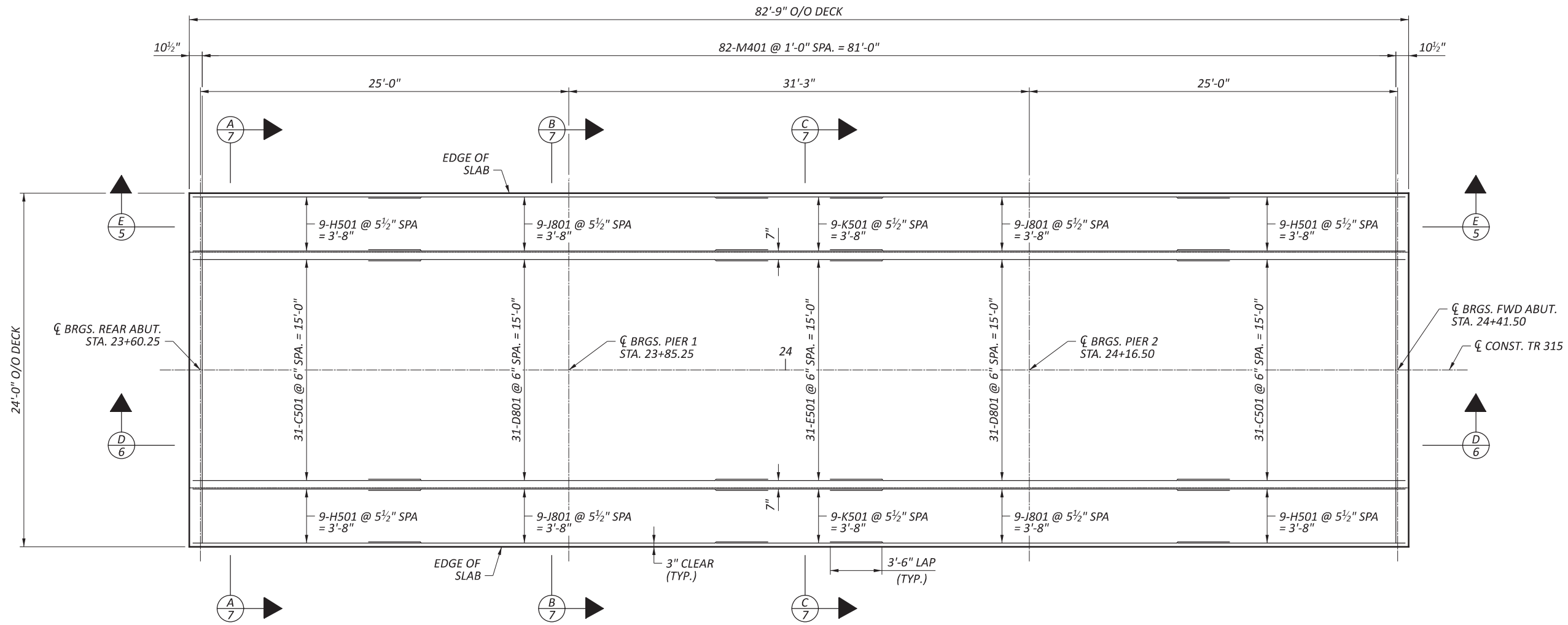
- ⊙ - PILE NUMBER, PIER 1
- ⊞ - PILE NUMBER, PIER 2

ATH-TR315-0.01

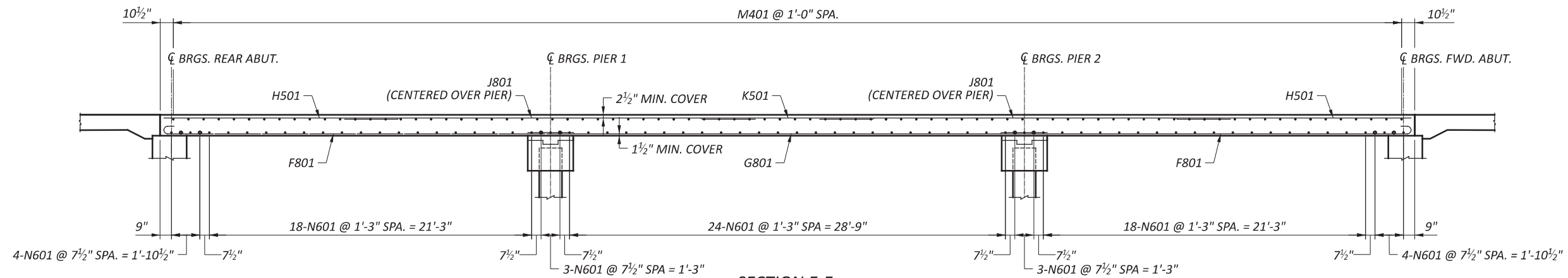
MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:44 PM USER: 02676 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEA0\_2023-1\119237 ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_P1001.dgn

PIER DETAILS  
BRIDGE NO. ATH-TR315-00010  
OVER WEST BRANCH SUNDAY CREEK

SFN	0540920
DESIGN AGENCY	Mead & Hunt
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
6	15
SHEET	TOTAL
P.34	54



TOP REINFORCEMENT PLAN



SECTION E-E

NOTES:

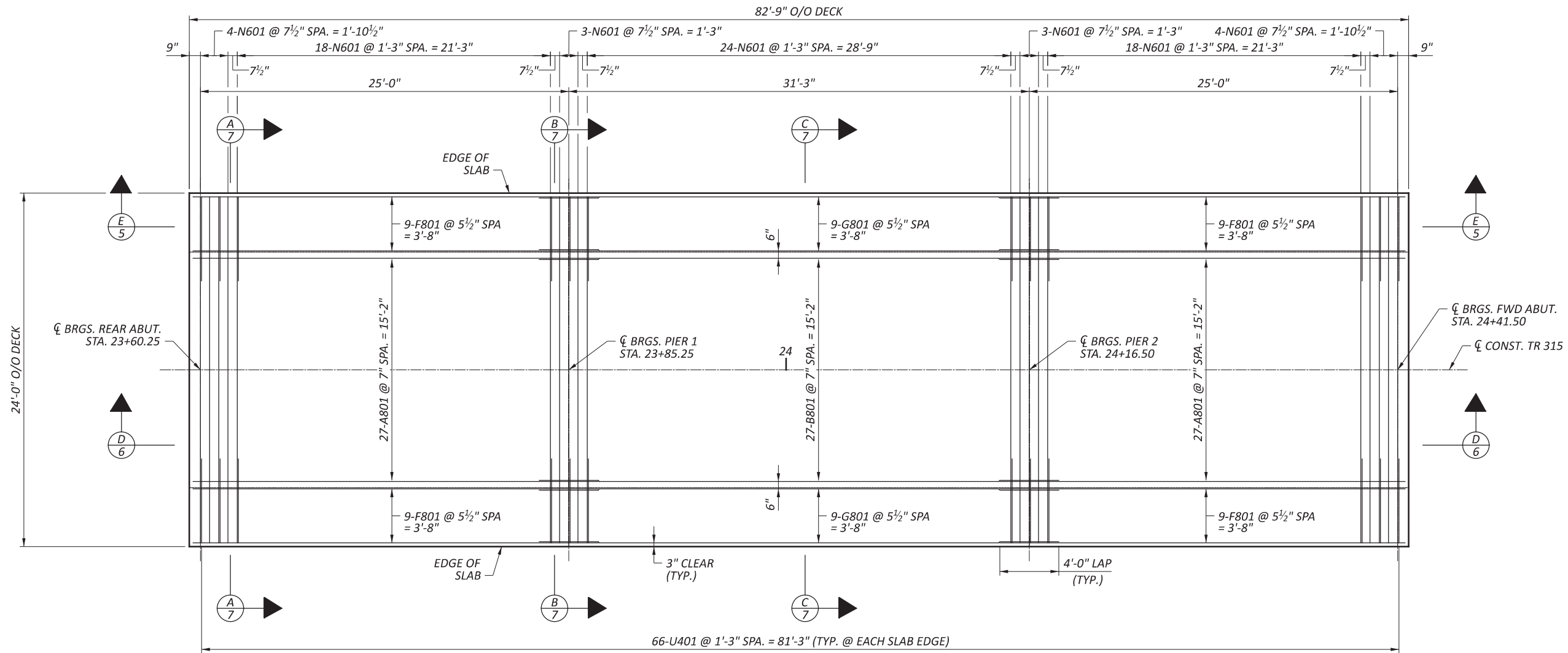
1. FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. CS-1-24.
2. FOR TOP OF DECK ELEVATIONS, SEE SHEET 10 OF 15.
3. FOR SECTION A-A, B-B AND C-C, SEE SHEET 9 OF 15.
4. FOR SECTION D-D, SEE SHEET 8 OF 15.
5. FOR GUARDRAIL POST SPACING, SEE SHEET 10 OF 15.

ATH-TR315-0.01

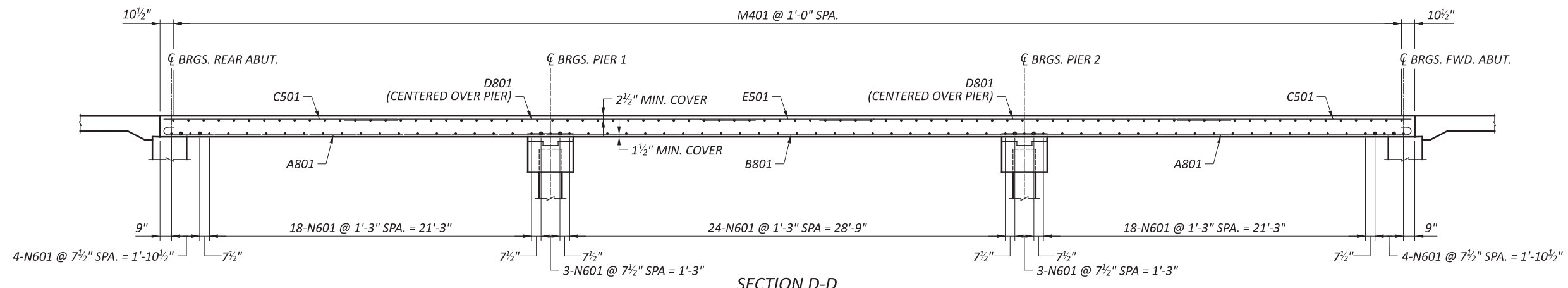
MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:45 PM USER: 02676  
 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEA0 2023-1\119237 ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_SS001.dgn

TOP REINFORCEMENT PLAN  
 BRIDGE NO. ATH-TR315-00010  
 OVER WEST BRANCH SUNDAY CREEK

SFN	0540920
DESIGN AGENCY	Mead & Hunt
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	12/15/23
PROJECT ID	119237
SUBSET	TOTAL
7	15
SHEET	TOTAL
P.35	54



**BOTTOM REINFORCEMENT PLAN**



**SECTION D-D**

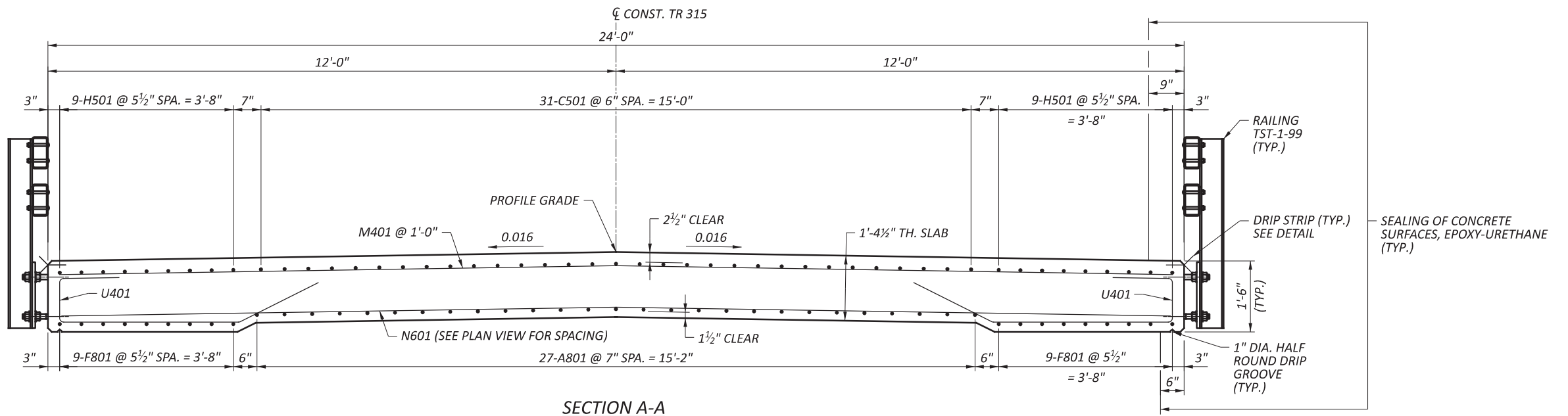
- NOTES:
1. FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. CS-1-24.
  2. FOR TOP OF DECK ELEVATIONS, SEE SHEET 10 OF 15.
  3. FOR SECTION A-A, B-B AND C-C, SEE SHEET 9 OF 15.
  4. FOR SECTION E-E, SEE SHEET 7 OF 15.
  5. FOR GUARDRAIL POST SPACING, SEE SHEET 10 OF 15.

ATH-TR315-0.01

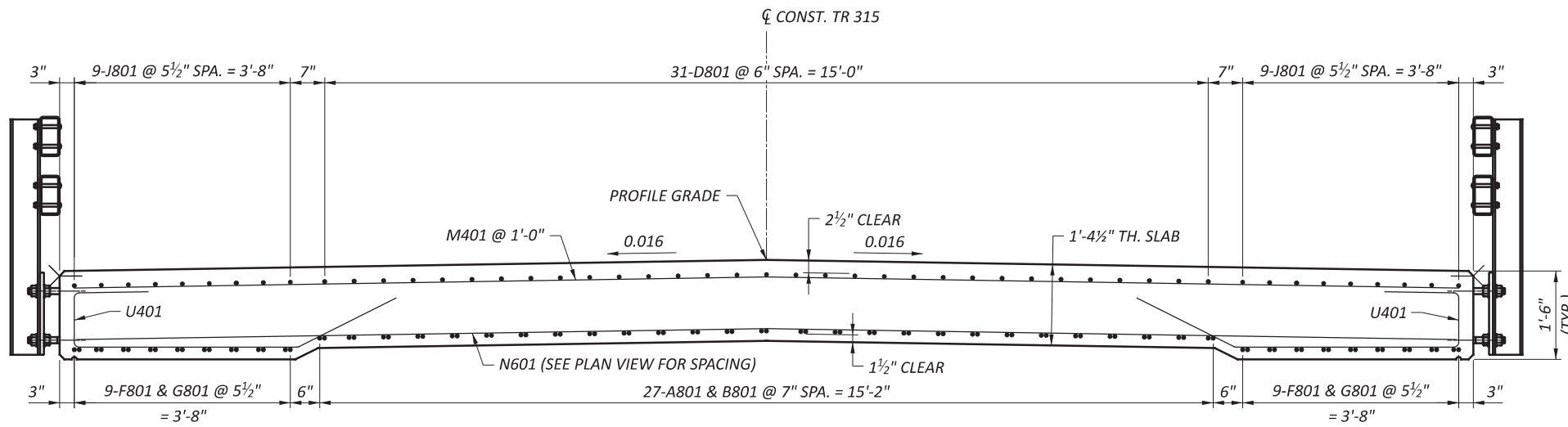
MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:47 PM USER: 02676 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEA0\_2023-1\119237 ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_SS002.dgn

BOTTOM REINFORCEMENT PLAN  
BRIDGE NO. ATH-TR315-00010  
OVER WEST BRANCH SUNDAY CREEK

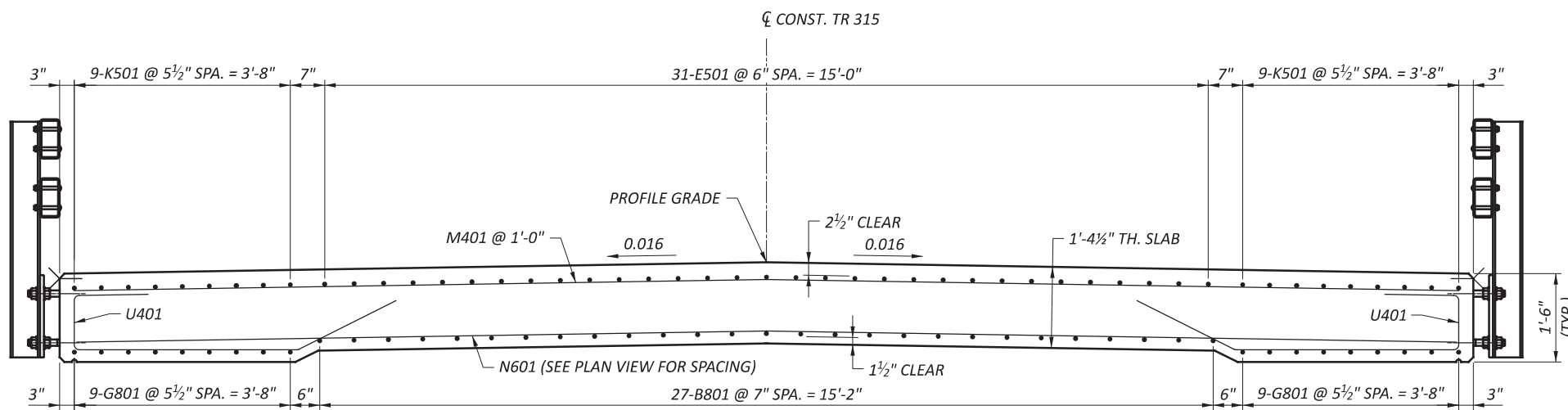
SFN	0540920
DESIGN AGENCY	Mead & Hunt
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
8	15
SHEET	TOTAL
P.36	54



SECTION A-A



SECTION B-B



SECTION C-C

SEALING OF CONCRETE SURFACES, EPOXY-URETHANE (TYP.)

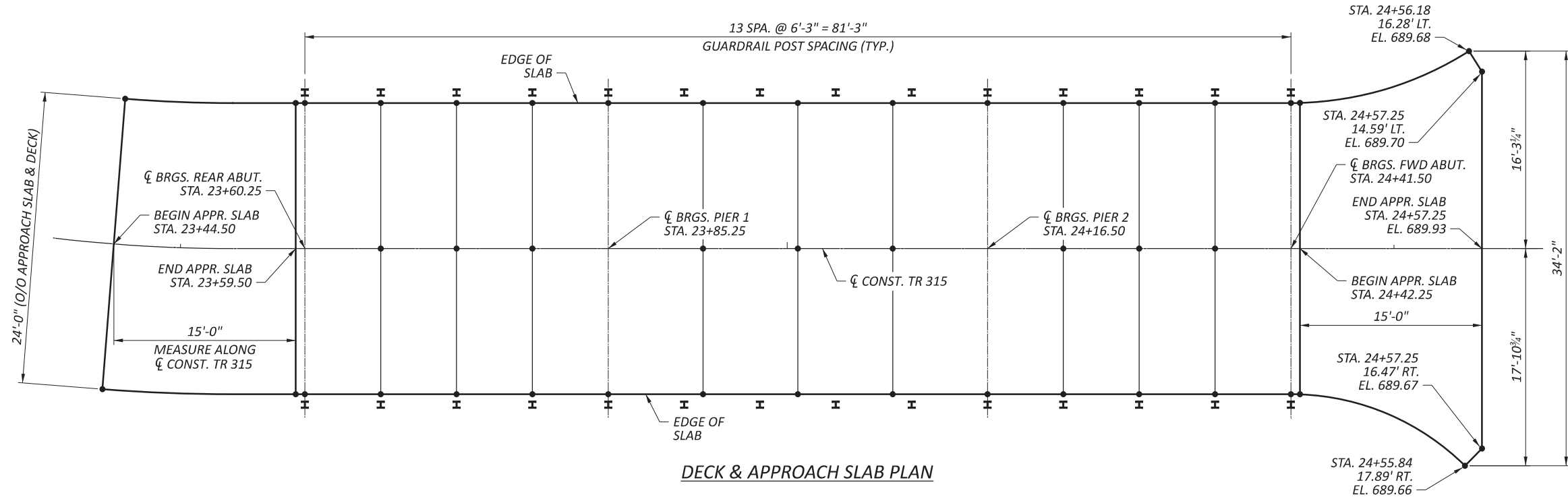
- NOTES:
- FOR DECK REINFORCEMENT PLAN, SEE SHEETS 7 & 8 OF 15.
  - FOR TOP OF DECK ELEVATIONS, SEE SHEET 10 OF 15.
  - FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. CS-1-24.

ATH-TR315-0.01

MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:49 PM USER: 02676 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEA0 2023-1\119237 ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_SS003.dgn

SUPERSTRUCTURE DETAILS  
BRIDGE NO. ATH-TR315-00010  
OVER WEST BRANCH SUNDAY CREEK

SFN	0540920
DESIGN AGENCY	Mead & Hunt
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
9	15
SHEET	TOTAL
P.37	54



TOP OF DECK & APPROACH SLAB ELEVATIONS TABLE			
LOCATION ON STRUCTURE	POINT LOCATION	STATION	DECK ELEVATION
BEGIN REAR APP. SLAB	LT. EDGE	23+44.50	692.01
	CL CROWN	23+44.50	692.20
	RIGHT EDGE	23+44.50	692.01
END REAR APP. SLAB	LT. EDGE	23+59.50	692.12
	CL CROWN	23+59.50	692.31
	RIGHT EDGE	23+59.50	692.12
CL BRGS. REAR ABUT.	LT. EDGE	23+60.25	692.12
	CL CROWN	23+60.25	692.31
	RIGHT EDGE	23+60.25	692.12
0.25 POINT SPAN 1	LT. EDGE	23+66.50	692.15
	CL CROWN	23+66.50	692.34
	RIGHT EDGE	23+66.50	692.15
0.50 POINT SPAN 1	LT. EDGE	23+72.75	692.16
	CL CROWN	23+72.75	692.35
	RIGHT EDGE	23+72.75	692.16
0.75 POINT SPAN 1	LT. EDGE	23+79.00	692.13
	CL CROWN	23+79.00	692.32
	RIGHT EDGE	23+79.00	692.13
CL BRGS. PIER 1	LT. EDGE	23+85.25	692.08
	CL CROWN	23+85.25	692.27
	RIGHT EDGE	23+85.25	692.08

TOP OF DECK & APPROACH SLAB ELEVATIONS TABLE			
LOCATION ON STRUCTURE	POINT LOCATION	STATION	DECK ELEVATION
0.25 POINT SPAN 2	LT. EDGE	23+93.06	691.97
	CL CROWN	23+93.06	692.16
	RIGHT EDGE	23+93.06	691.97
0.50 POINT SPAN 2	LT. EDGE	24+00.88	691.82
	CL CROWN	24+00.88	692.01
	RIGHT EDGE	24+00.88	691.82
0.75 POINT SPAN 2	LT. EDGE	24+08.69	691.63
	CL CROWN	24+08.69	691.82
	RIGHT EDGE	24+08.69	691.63
CL BRGS. PIER 2	LT. EDGE	24+16.50	691.39
	CL CROWN	24+16.50	691.58
	RIGHT EDGE	24+16.50	691.39
0.25 POINT SPAN 3	LT. EDGE	24+22.75	691.17
	CL CROWN	24+22.75	691.36
	RIGHT EDGE	24+22.75	691.17
0.50 POINT SPAN 3	LT. EDGE	24+29.00	690.92
	CL CROWN	24+29.00	691.11
	RIGHT EDGE	24+29.00	690.92

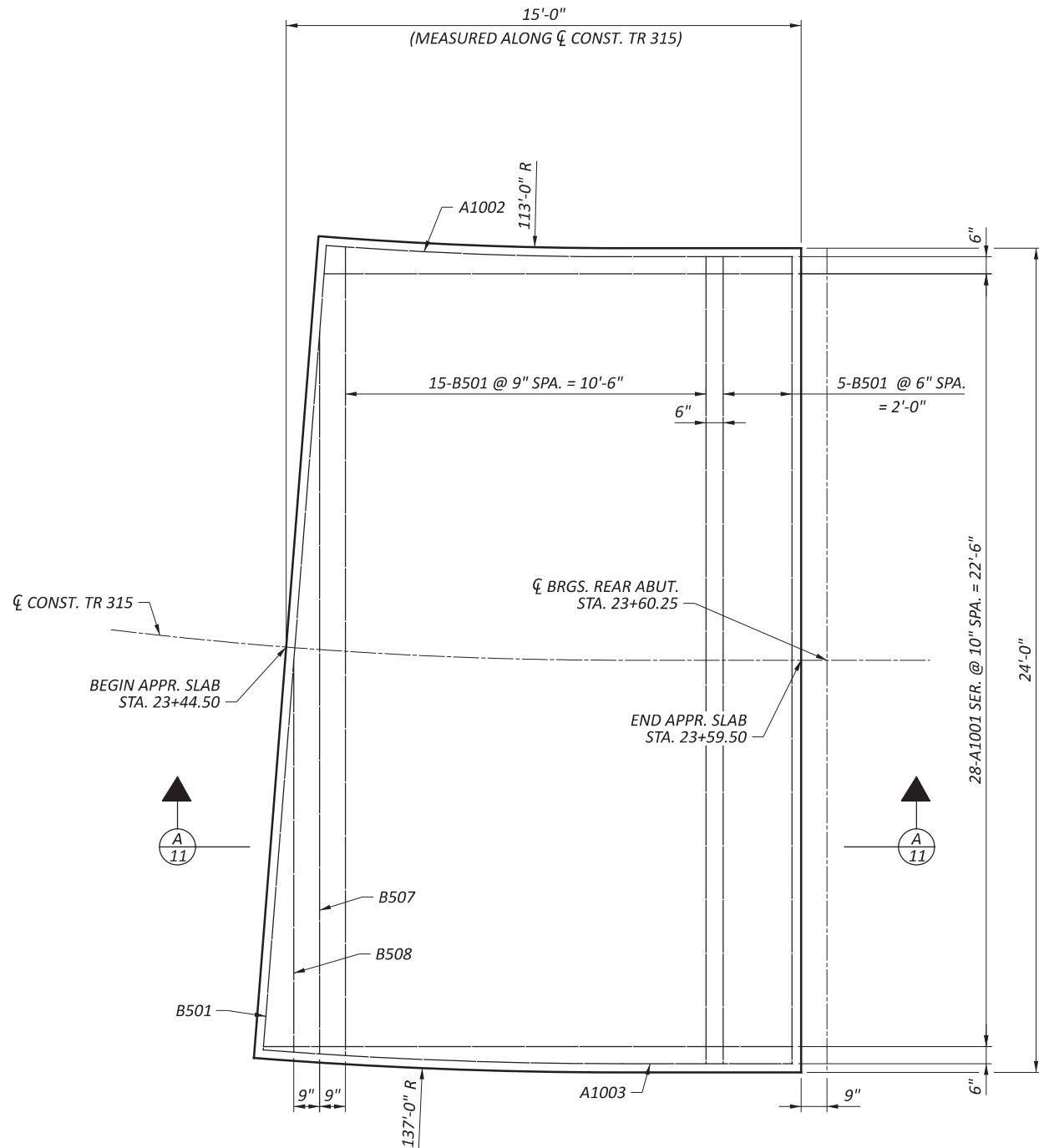
TOP OF DECK & APPROACH SLAB ELEVATIONS TABLE			
LOCATION ON STRUCTURE	POINT LOCATION	STATION	DECK ELEVATION
0.75 POINT SPAN 3	LT. EDGE	24+35.25	690.64
	CL CROWN	24+35.25	690.84
	RIGHT EDGE	24+35.25	690.64
CL BRGS. FWD. ABUT.	LT. EDGE	24+41.50	690.34
	CL CROWN	24+41.50	690.53
	RIGHT EDGE	24+41.50	690.34
BEGIN FWD. APP. SLAB	LT. EDGE	24+42.25	690.30
	CL CROWN	24+42.25	690.49
	RIGHT EDGE	24+42.25	690.30

ATH-TR315-0.01

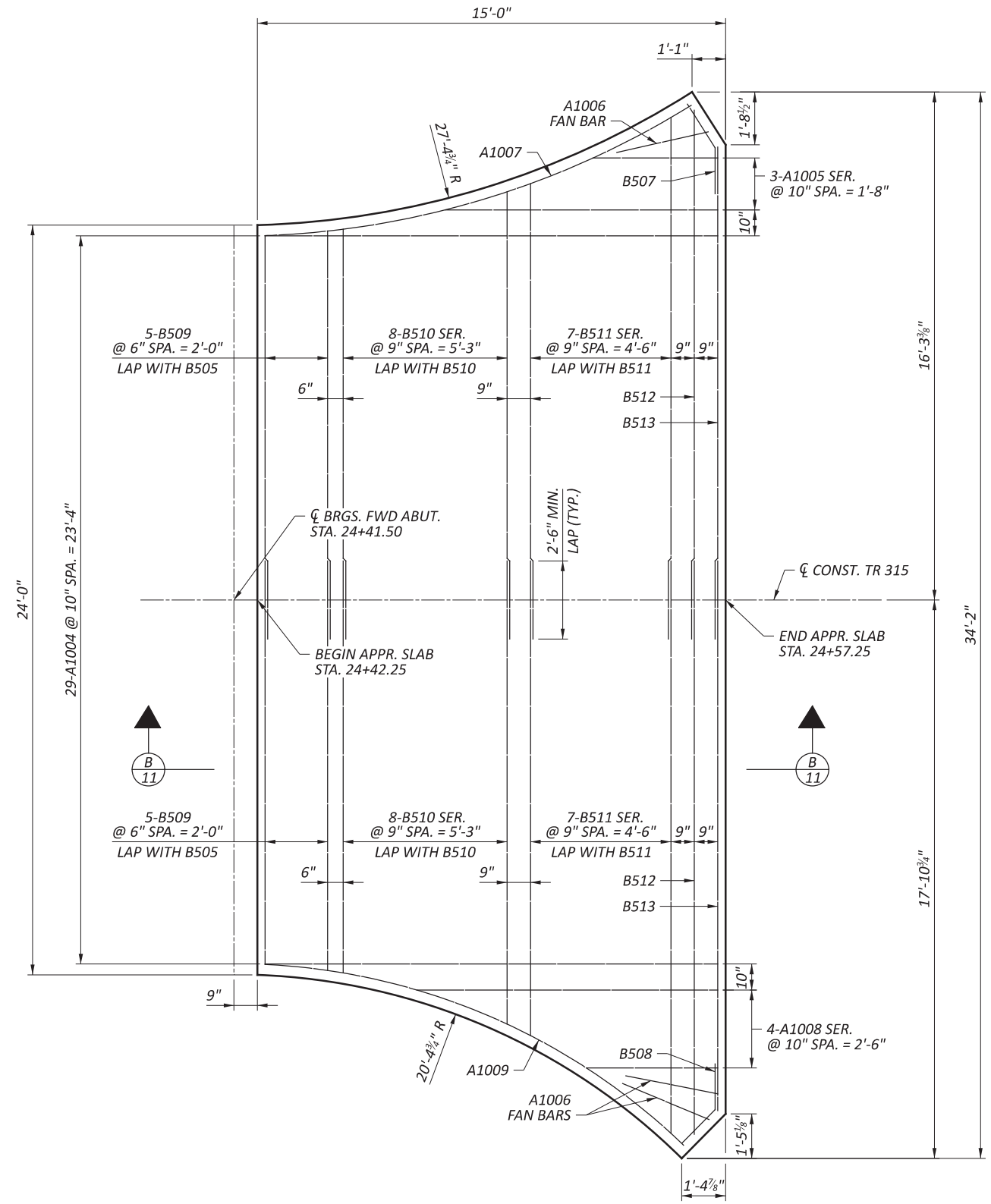
MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:50 PM USER: 02676 X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Serivs\_CEOA\_2023-1\119237 ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_SS007.dgn

TOP OF DECK & APPROACH SLAB ELEVATIONS  
BRIDGE NO. ATH-TR315-00010  
OVER WEST BRANCH SUNDAY CREEK

SFN 0540920  
DESIGN AGENCY  
**Mead & Hunt**  
CLIENT  
DESIGNER: LYH CHECKER: KVB  
REVIEWER: MAB 02/09/24  
PROJECT ID: 119237  
SUBSET: 10 TOTAL: 15  
SHEET: P.38 TOTAL: 54



**REAR APPROACH SLAB**  
(BOTTOM REINFORCEMENT PLAN)



**FORWARD APPROACH SLAB**  
(BOTTOM REINFORCEMENT PLAN)

**NOTES:**

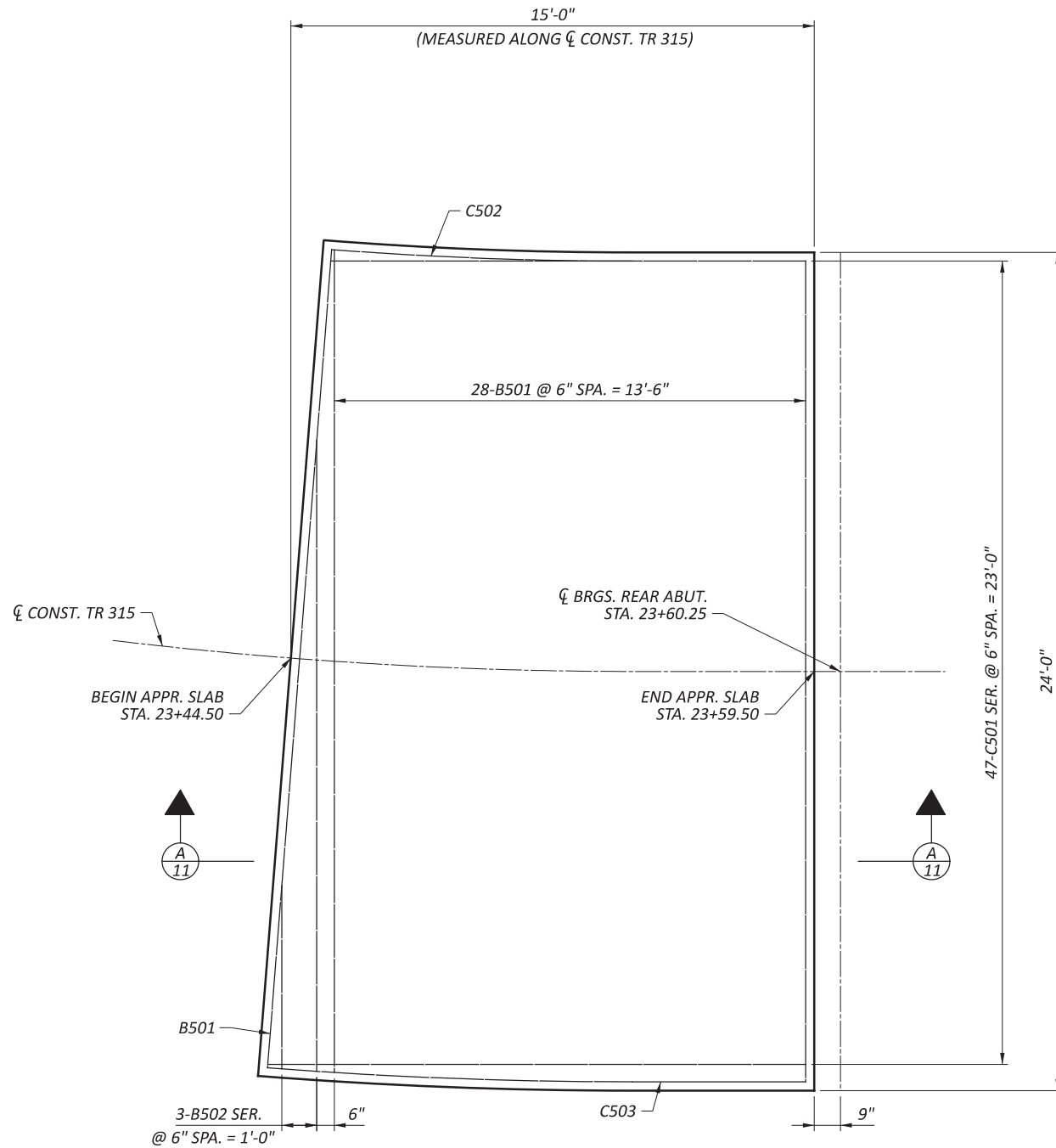
1. FOR SECTIONS A-A & B-B, SEE SHEET 13 OF 15.
2. FOR APPROACH SLAB ELEVATION, SEE SHEET 10 OF 15.
3. FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. AS-1-15.

ATH-TR315-0.01

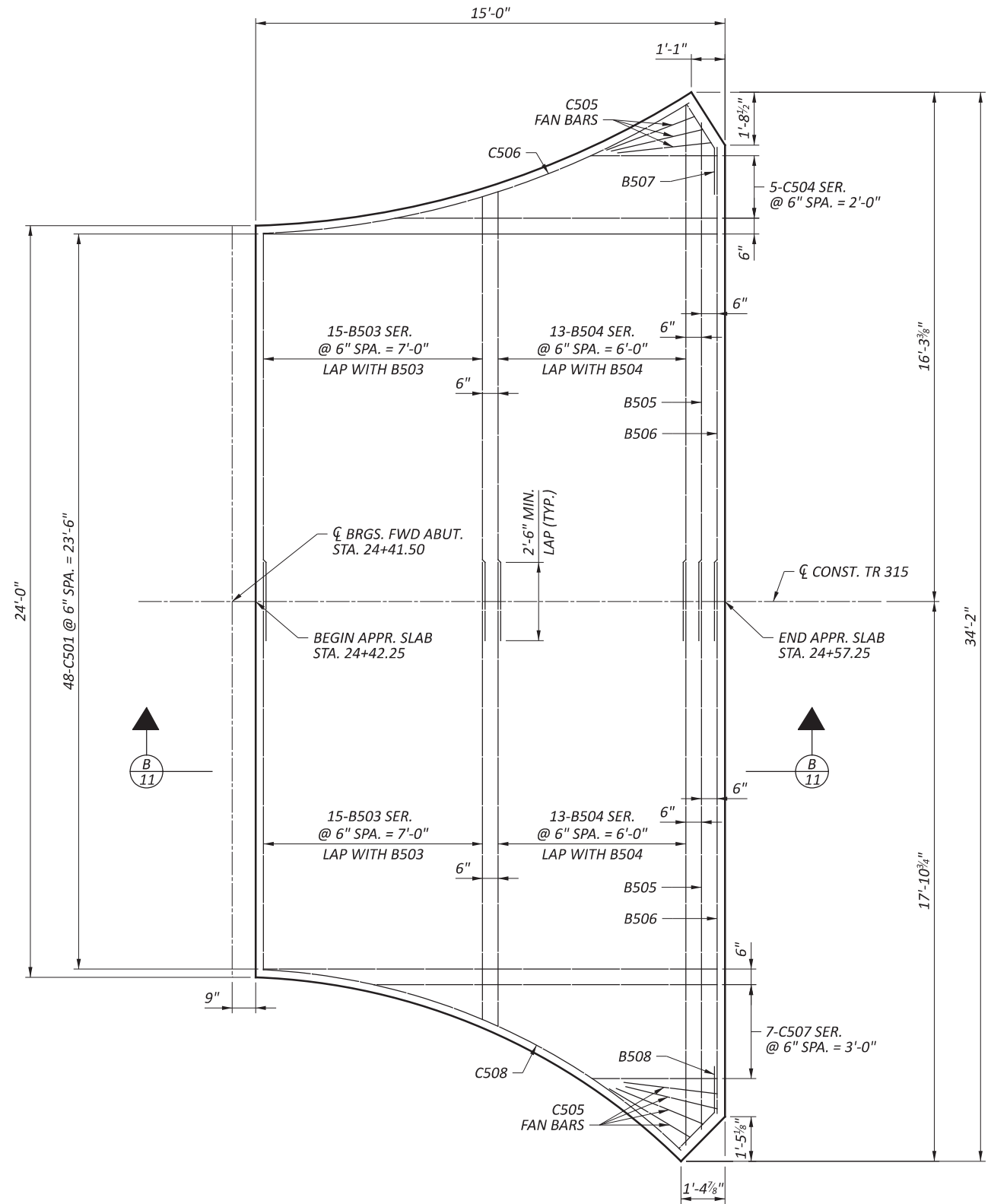
MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:52 PM USER: 02676  
X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEOA\_2023-1\119237\_ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_S1M002.dgn

APPROACH SLAB DETAILS  
BRIDGE NO. ATH-TR315-00010  
OVER WEST BRANCH SUNDAY CREEK

SFN	0540920
DESIGN AGENCY	<b>Mead &amp; Hunt</b>
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
11	15
SHEET	TOTAL
P.39	54



**REAR APPROACH SLAB**  
(TOP REINFORCEMENT PLAN)



**FORWARD APPROACH SLAB**  
(TOP REINFORCEMENT PLAN)

**NOTES:**

1. FOR SECTIONS A-A & B-B, SEE SHEET 13 OF 15.
2. FOR APPROACH SLAB ELEVATION, SEE SHEET 10 OF 15.
3. FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. AS-1-15.

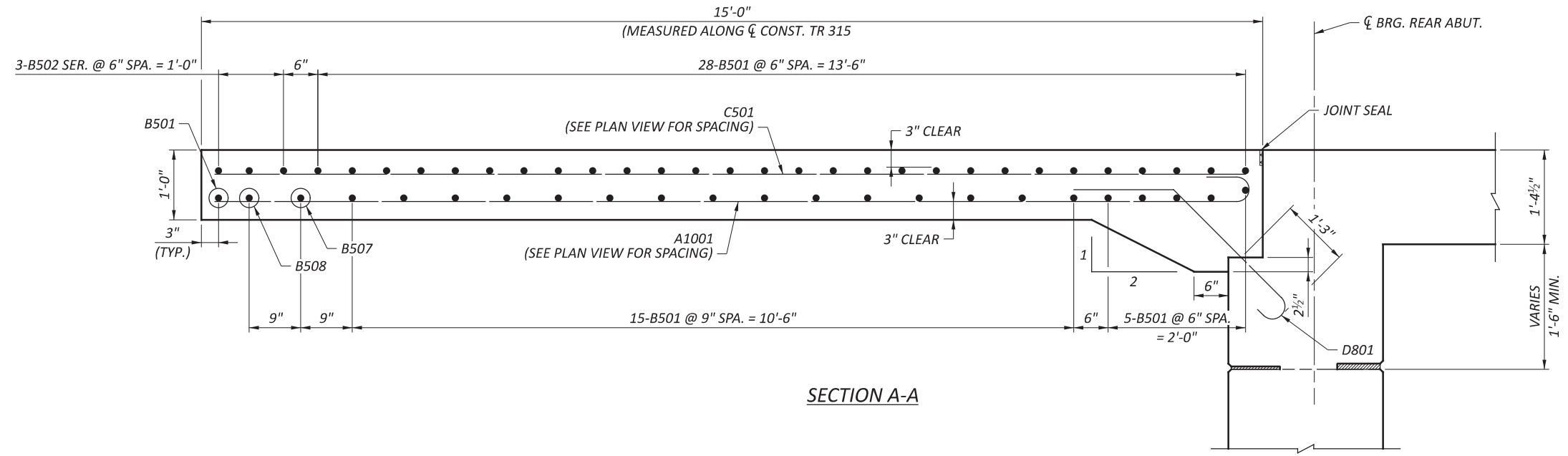
ATH-TR315-0.01

MODEL: Sheet PAPER: 17x11 (in.) DATE: 4/3/2024 TIME: 4:23:54 PM USER: 02676  
X:\4012500\221658.01\116971\_VAR-STW\_Genl\_Eng\_Servs\_CEOA\_2023-1\119237 ATH-TR315-0.01\400-Engineering\Structures\Sheets\119237\_S1M001.dgn

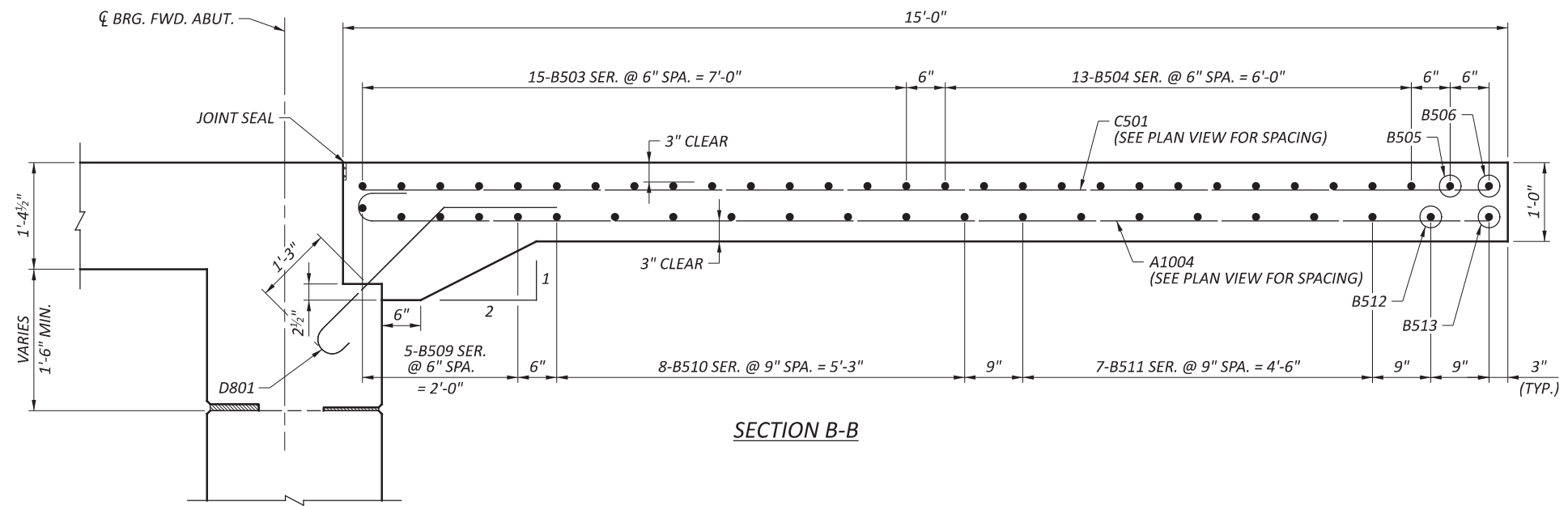
APPROACH SLAB DETAILS  
BRIDGE NO. ATH-TR315-00010  
OVER WEST BRANCH SUNDAY CREEK

SFN	0540920
DESIGN AGENCY	<b>Mead &amp; Hunt</b>
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
12	15
SHEET	TOTAL
P.40	54





SECTION A-A



SECTION B-B

NOTES:

- FOR DETAILS AND NOTES NOT SHOWN, REFER TO STD. DWG. AS-1-15.

SFN	0540920
DESIGN AGENCY	<b>Mead &amp; Hunt</b>
CLIENT	
DESIGNER	CHECKER
LYH	KVB
REVIEWER	
MAB	02/09/24
PROJECT ID	119237
SUBSET	TOTAL
13	15
SHEET	TOTAL
P.41	54

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL					A	B	C	D	E	R
<b>REAR APPROACH SLAB REINFORCING STEEL LIST (FOR INFORMATION ONLY)</b>											
	1 SR		15'-1"			13'-7 3/4"					
A1001	OF	TO	1918	16	TO						0'-0 3/4"
	28		16'-9"			15'-4"					
A1002	1		15'-0"	65	16*	13'-7"					
A1003	1		16'-10"	72	16*	15'-5"					
B501	50		23'-6"	1226	STR						
	1 SR		5'-3"								
B502	OF	TO	37	STR							6'-5"
	3		18'-1"								
B507	1		21'-0"	22	STR						
B508	1		11'-5"	12	STR						
	1 SR		13'-6"								
C501	OF	TO	709	STR							0'-0 1/2"
	47		15'-5"								
C502	1		13'-7"	14	STR*						
C503	1		15'-5"	16	STR*						
	<b>SUB-TOTAL</b>		<b>4,091</b>		<b>LBS</b>						

\* - DENOTES FIELD BEND TO FIT CURVE

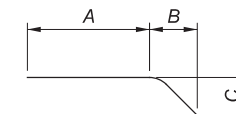
MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL					A	B	C	D	E	R
<b>FORWARD APPROACH SLAB REINFORCING STEEL LIST (FOR INFORMATION ONLY)</b>											
A1004	29		15'-11"	1986	16	14'-6"					
	1 SR		4'-0"								
A1005	OF	TO	82	STR							2'-4"
	3		8'-8"								
A1006	3		3'-0"	39	STR						
A1007	1		14'-5"	62	40	14'-5"					27'-7 3/4"
	1 SR		4'-2"								
A1008	OF	TO	117	STR							1'-9"
	4		9'-5"								
A1009	1		14'-10"	64	40	14'-10"					20'-7 3/4"
	2 SR		13'-0"								
B503	OF	TO	429	STR							0'-1 1/4"
	15		14'-5"								
	2 SR		14'-7"								
B504	OF	TO	440	STR							0'-3 1/4"
	13		17'-10"								
B505	2		17'-7"	37	STR						
B506	2		16'-9"	35	STR						
B507	2		3'-2"	7	19	1'-8"	1'-3"	0'-9 1/2"			
B508	2		3'-0"	6	19	1'-5 1/2"	1'-1"	1'-1"			
B509	10		13'-2"	137	STR						
	2 SR		13'-3"								
B510	OF	TO	232	STR							0'-2 1/4"
	8		14'-7"								
	2 SR		14'-10"								
B511	OF	TO	236	STR							0'-5 1/4"
	7		17'-6"								
B512	2		17'-8"	37	STR						
B513	2		16'-9"	35	STR						
C501	48		14'-6"	726	STR						
	1 SR		4'-0"								
C504	OF	TO	37	STR							1'-6 3/4"
	5		10'-3"								
C505	7		3'-0"	22	STR						
C506	1		14'-5"	15	40	14'-5"					27'-7 3/4"
	1 SR		4'-0"								
C507	OF	TO	55	STR							1'-2"
	7		11'-0"								
C508	1		14'-10"	15	40	14'-10"					20'-7 3/4"
	<b>SUB-TOTAL</b>		<b>4,851</b>		<b>LBS</b>						

**NOTE:**

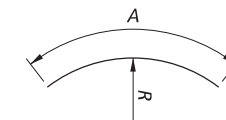
APPROACH SLAB REINFORCING STEEL LIST PROVIDED IS FOR INFORMATION ONLY. PAYMENT OF ALL APPROACH SLAB BARS INCLUDING FIELD BENDING SHALL BE INCLUDED WITH ITEM 526-10001, REINFORCED CONCRETE APPROACH SLAB, (T=12"), AS PER PLAN.



TYPE-16



TYPE-19



TYPE-40

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL					A	B	C	D	E	R
<b>ABUTMENTS</b>											
A401	24		8'-11"	143	3	1'-9"	2'-6"				
A501	82		11'-2"	955	3	2'-8"	2'-7"				
A502	54		12'-2"	685	3	1'-11"	3'-10"				
A503	8		18'-2"	152	3	1'-11"	6'-10"				
A504	4		17'-11"	75	3	1'-11"	6'-8 1/2"				
A505	4		17'-3"	72	3	1'-11"	6'-4 1/2"				
	4 SR		14'-8"				5'-1"				
A506	OF	TO		191	3	1'-11"	TO				0'-3 1/2"
	3		15'-10"				5'-8"				
A507	12		38'-2"	478	STR						
A508	8		5'-4"	45	STR						
A509	8		5'-2"	43	STR						
A510	8		3'-4"	28	STR						
A511	8		5'-9"	48	19	4'-6 1/4"	1'-2"	0'-6"			
A801	16		38'-2"	1630	STR						
A802	54		3'-8"	529	17	2'-0"					
D801	34		4'-7"	416	18	2'-5"	1'-0"	1'-0"			
S501	100		6'-0"	626	2	2'-5"	1'-5"	2'-5"			
S502	50		6'-10"	356	3	1'-11"	1'-2"				
S503	8		9'-8"	81	3	1'-11"	2'-7"				
S801	12		26'-8"	854	STR						
S802	8		26'-8"	570	STR*						
<b>SUB-TOTAL</b>			7,977		LBS						

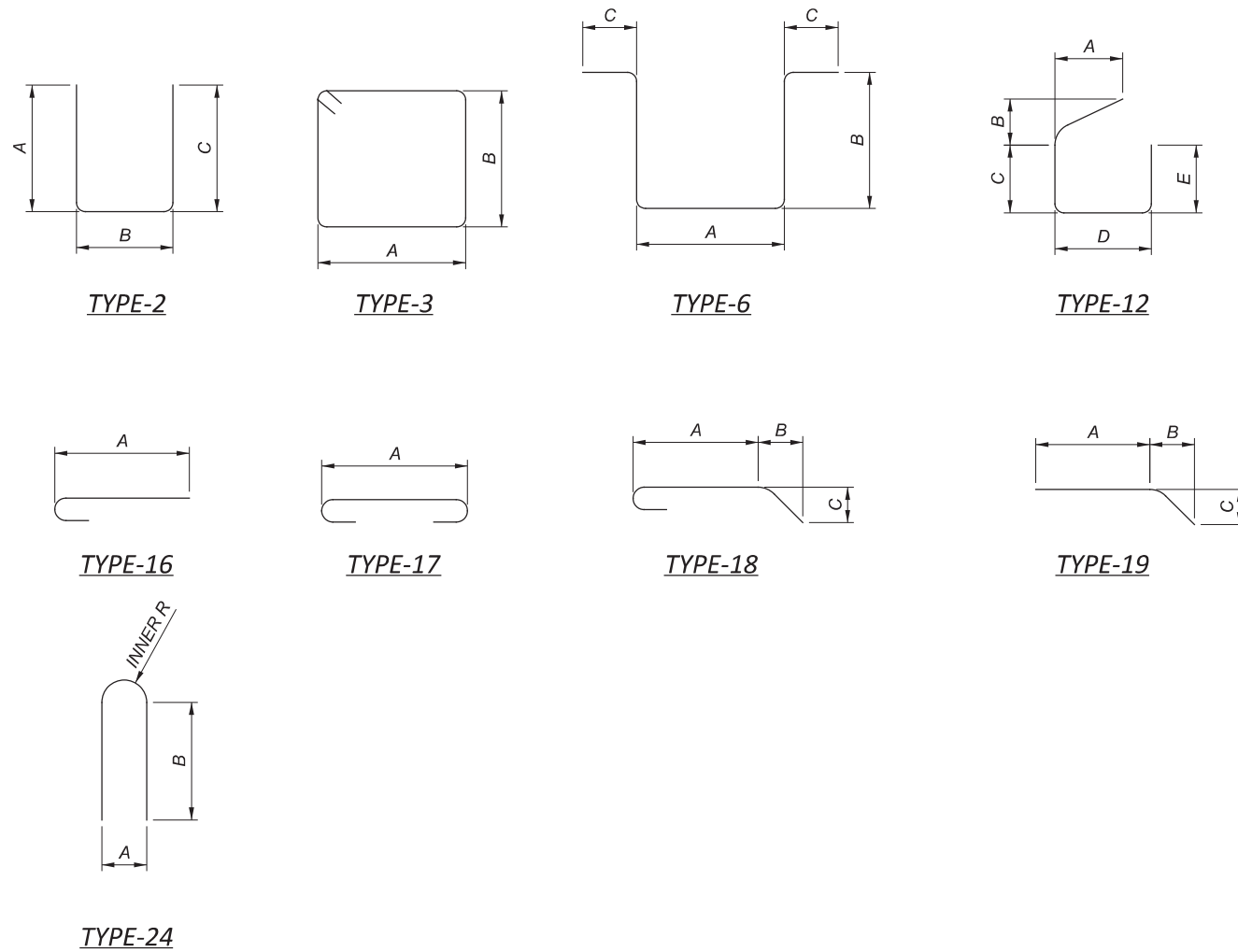
\* - DENOTES FIELD BEND TO FIT CROWN

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL					A	B	C	D	E	R
<b>PIERS</b>											
P401	16		9'-5"	101	3	2'-6"	2'-0"				
P501	36		9'-2"	344	6	2'-8"	2'-8 1/2"	0'-10"			
P502	4		8'-3"	34	6	1'-9"	2'-8 1/2"	0'-10"			
P503	4		4'-1"	17	2	0'-10"	2'-8 1/2"	0'-10"			
P504	12		10'-9"	135	24	2'-6"	3'-5"				1'-2 1/2"
P505	8		19'-6"	163	STR						
P601	8		23'-6"	282	STR						
P1101	8		19'-6"	829	STR*						
<b>SUB-TOTAL</b>			1,905		LBS						

\* - DENOTES FIELD BEND TO FIT CROWN

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS					
	TOTAL					A	B	C	D	E	R
<b>SUPERSTRUCTURE</b>											
A801	54		28'-5"	4097	16	27'-7"					
B801	27		35'-3"	2541	STR						
C501	62		14'-10"	959	STR						
D801	62		28'-6"	4718	STR						
E501	31		9'-9"	315	STR						
F801	36		28'-5"	2731	16	27'-7"					
G801	18		35'-3"	1694	STR						
H501	36		14'-10"	557	STR						
J801	36		31'-11"	3068	STR						
K501	18		6'-3"	117	STR						
M401	82		23'-6"	1287	STR*						
N601	75		23'-6"	2647	STR*						
U401	132		7'-7"	669	12	0'-10"	1'-8"	3'-8"	1'-0"	1'-3"	
<b>SUB-TOTAL</b>			25,400		LBS						
<b>GRAND TOTAL</b>			35,282		LBS						

\* - DENOTES FIELD BEND TO FIT CROWN



**PROJECT DESCRIPTION**

THIS PROJECT, ATH-TR315-0.01, IS THE EXPLORATION FOR A BRIDGE REPLACEMENT LOCATED ON MOORE ROAD (TOWNSHIP ROAD 315) CROSSING THE WEST BRANCH OF SUNDAY CREEK IN ATHENS COUNTY.

**HISTORIC RECORDS**

NO HISTORIC GEOTECHNICAL PROJECTS WERE DISCOVERED ALONG TR 315. THE CLOSEST PROJECTS, LOCATED APPROXIMATELY 1 MILE SOUTHEAST OF THE PROJECT LOCATION, WERE FOR A LANDSLIDE EXPLORATION (ATH-13-12.10 COMPLETED IN 2012) AND A BRIDGE (ATH-13-13.06 COMPLETED IN 1987). TWO BORINGS WERE ADVANCED FOR THE LANDSLIDE EXPLORATION. UNCONTROLLED FILL WAS DOCUMENTED TO DEPTHS RANGING FROM 3.0 TO 3.5 FEET FOLLOWED BY SOILS DESCRIBED AS CLAY (A-7-6) OR SILT AND CLAY (A-6A) TO DEPTHS RANGING FROM 10.0 TO 13.5 FEET. THESE SOILS WERE FURTHER DESCRIBED AS MEDIUM STIFF TO HARD AND DAMP TO WET. BEDROCK WAS DESCRIBED AS MODERATELY TO HIGHLY WEATHERED SHALE OR SANDSTONE. ONE BORING WAS COMPLETED FOR THE BRIDGE EXPLORATION. SOILS WERE DESCRIBED PRIMARILY AS COARSE AND FINE SAND (A-3A) OR SANDY SILT (A-4A). THE BORING WAS TERMINATED AT A DEPTH OF 45 FEET WITHOUT ENCOUNTERING BEDROCK.

**GEOLOGY**

THE PROJECT SITE IS LOCATED WITHIN THE MUSKINGUM-PITTSBURGH PLATEAU PHYSIOGRAPHIC REGION. THE REGION IS CHARACTERIZED BY DISSECTED PLATEAUS POSSESSING BROAD MAJOR VALLEYS THAT CONTAIN OUTWASH TERRACES AND LACUSTRINE TERRACES. THE REGION HAS MODERATELY HIGH TO HIGH RELIEF OF 300 TO 600 FEET WITH ELEVATIONS OF 650 TO 1,400 FEET. OVERBURDEN SOILS AT THE PROJECT SITE ARE UNDERLAIN PRIMARILY BY SEDIMENTARY BEDROCK FROM THE PENNSYLVANIAN AGE FROM THE ALLEGHENY AND POTTSVILLE GROUPS, UNDIVIDED. BEDROCK FROM THE ALLEGHENY AND POTTSVILLE GROUPS ARE DESCRIBED AS DARK GRAY TO GRAY SHALE AND SILTSTONE WITH LESSER AMOUNTS OF GRAY SANDSTONE WEATHERING TO YELLOWISH-BROWN. BEDROCK IS FURTHER DESCRIBED AS THIN TO THICK BEDDED.

**RECONNAISSANCE**

STANTEC REPRESENTATIVES VISITED THE SITE ON OCTOBER 27, 2023. THE LAND SURROUNDING THE PROJECT SITE CAN BE DESCRIBED AS RURAL. THE EXISTING SINGLE-SPAN BRIDGE WAS OBSERVED TO BE IN POOR CONDITION. CONCRETE DETERIORATION, EXTREMELY RUSTED STEEL SUPPORT STRUCTURES, AND EFFLORESCENCE ON THE BRIDGE FOUNDATION WAS OBSERVED. THE BOTTOM OF THE WEST BRANCH OF SUNDAY CREEK APPEARED TO BE BEDROCK OR SANDY GRAVEL DURING THE SITE VISIT, AND THE CREEK DEPTH WAS ESTIMATED TO BE A MAXIMUM OF APPROXIMATELY 3 FEET. THE PAVEMENT CONDITIONS ALONG MOORE ROAD AND OAKDALE ROAD WERE DESCRIBED AS POOR.

**SUBSURFACE EXPLORATION**

SEVEN BORINGS WERE ADVANCED IN NOVEMBER 2023 IN GENERAL ACCORDANCE WITH THE ODOT SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS (SGE) NEAR PROPOSED ABUTMENT LOCATIONS. THE BORINGS WERE DRILLED WITH A CME 55 TRACK MOUNTED DRILL RIG USING 3.25-INCH I.D. HOLLOW-STEM AUGERS. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT CONTINUOUS OR 2.5-FOOT INTERVALS UNTIL BEDROCK WAS ENCOUNTERED OR UNTIL THE SPECIFIED BORING DEPTH WAS REACHED. THE AUTOMATIC SAMPLING WAS CALIBRATED ON DECEMBER 12, 2022 AND HAS A DRILL ROD ENERGY RATIO (ER) OF 92.1 PERCENT. ROCK CORING WAS PERFORMED IN ALL THREE STRUCTURE BORINGS USING NQ2-SIZE CORING EQUIPMENT.

**EXPLORATION FINDINGS**

THE SURFACE MATERIAL ENCOUNTERED CONSISTED OF 1 TO 2 INCHES OF TOPSOIL IN THE ROADWAY AND STRUCTURE BORINGS OR 2 INCHES OF ASPHALT UNDERLAIN BY 12 TO 18 INCHES OF AGGREGATE BASE IN THE SUBGRADE BORINGS. BELOW THE SURFACE MATERIALS, THE SOIL WAS PREDOMINATELY FINE-GRAINED, CLASSIFYING PRIMARILY AS SANDY SILT (A-4A). ELASTIC CLAY (A-7-5) SOILS WERE ENCOUNTERED BELOW SURFICIAL MATERIALS IN BORINGS B-002-0-23, B-004-0-23, AND B-005-0-23. THESE FINE-GRAINED SOILS WERE DESCRIBED AS VERY SOFT TO STIFF AND DAMP TO WET.

LAYERS OF GRANULAR SOIL WERE CLASSIFYING AS COARSE AND FINE SAND (A-3A) WERE ENCOUNTERED BELOW COHESIVE SOILS IN BORINGS B-003-0-23 AND B-005-0-23. THESE SOILS WERE DESCRIBED AS VERY LOOSE TO LOOSE AND MOIST TO WET.

SANDSTONE INTERBEDDED WITH SHALE BEDROCK WAS ENCOUNTERED AT DEPTHS RANGING FROM 8.0 TO 14.5 FEET IN BORINGS B-001-0-23 THROUGH B-005-0-23. THE SANDSTONE (ABOUT 70 PERCENT OF THE FORMATION) WAS DESCRIBED AS GRAY, HIGHLY TO MODERATELY WEATHERED, MODERATELY FRACTURED, AND ARGILLACEOUS. THE SHALE WAS DESCRIBED AS DARK GRAY, SEVERELY TO HIGHLY WEATHERED, HIGHLY FRACTURED, AND ARGILLACEOUS. CORE RECOVERIES RANGED FROM 75 TO 100 PERCENT AND RQD VALUES VARIED FROM 0 TO 90. ROCK CORING WAS PERFORMED TO A DEPTH 30.2 FEET IN EACH OF THE STRUCTURE BORINGS.

GROUNDWATER WAS ENCOUNTERED AT DEPTHS RANGING FROM 6.0 TO 7.9 FEET DURING DRILLING IN THE STRUCTURE BORINGS AND ONE ROADWAY BORING (B-001-0-23).

**SPECIFICATIONS**

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JULY 2023.

**AVAILABLE INFORMATION**

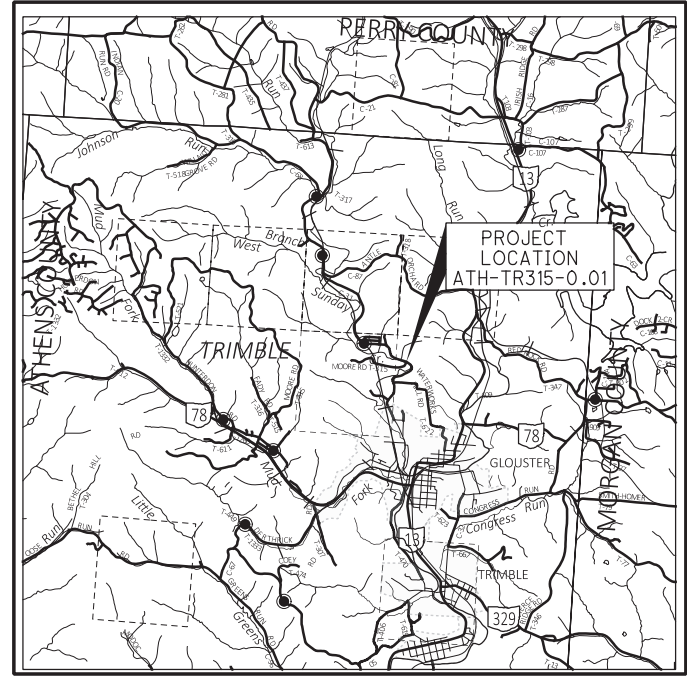
THE SOIL, BEDROCK, AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE SOIL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

**LEGEND**

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL
COARSE AND FINE SAND	A-3a	19 13
SANDY SILT	A-4a	4 1
ELASTIC CLAY	A-7-5	3 1
	TOTAL	26 15
INTERBEDDED SANDSTONE AND SHALE	VISUAL	
SOD AND/OR TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL	
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL	
BORING LOCATION - PLAN VIEW.		
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
WC	INDICATES WATER CONTENT IN PERCENT.	
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.	
X/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.	
TR	INDICATES TOP OF ROCK.	
SS	INDICATES A SPLIT SPOON SAMPLE.	
UCR	UNCONFINED COMPRESSIVE STRENGTH (ROCK) SHOWN IN (PSI).	
W	INDICATES FREE WATER ELEVATION.	
INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25% OR GREATER THAN 19% WITH A WET APPEARANCE.		
INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.		

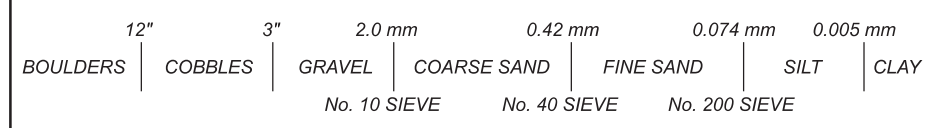
BEDROCK TEST SUMMARY				
EXPLOR. ID	SAMPLE ELEV. (FT.)	SAMPLE DEPTH (FT.)	QU (PSI)	LITHOLOGY
B-003-0-23	668.3'-667.9'	17.4'-17.8'	2,965	SHALE
	656.1'-655.7'	29.6'-30.0'	13,010	SANDSTONE
B-004-0-23	668.7'-668.3'	16.2'-16.6'	3,970	SHALE
	655.3'-654.9'	29.6'-30.0'	4,620	SHALE
B-005-0-23	667.5'-667.1'	17.3'-17.7'	3,204	SHALE
	655.6'-655.2'	29.2'-29.6'	2,541	SHALE

RECON. - JS & NU 10/30/2023  
 DRILLING - BM & NU 11/07/2023-11/09/2023  
 DRAWN - MJ & AH 03/2024  
 REVIEWED - EMK 03/15/2024



LOCATION MAP  
 SCALE IN MILES  
 0 1 2 3 4

**PARTICLE SIZE DEFINITIONS**



SCOUR SAMPLES						
EXPLOR. ID	SAMPLE	ELEVATION (FT.)	D <sub>50</sub> VALUE (mm)	T <sub>c</sub> VALUE (psf)	D <sub>50</sub> EQUIV (mm)	EROSION CATEGORY (EC)
B-003-0-23 (SOUTH ABUTMENT)	SS-3	682.7'-681.2'	0.0166	0.1391	6.6588	2.868
	SS-4	681.2'-679.7'	0.0398	0.0374	1.7920	2.632
	SS-5	679.7'-678.2'	0.0526	0.0115	0.5513	2.211
	SS-6	678.2'-676.7'	0.0903	0.0070	0.3355	2.211
	SS-7	676.7'-674.7'	0.1489	0.0016	0.0770	2.211
B-004-0-23 (NORTH PIER)	SS-3	681.9'-680.4'	0.0138	0.0379	1.8155	2.501
	SS-4	680.4'-678.9'	0.0464	0.0229	1.0987	2.501
	SS-5	678.9'-677.4'	0.0490	0.0107	0.5123	2.211
	SS-6	677.4'-675.9'	0.1034	0.0062	0.2953	2.211
	SS-7	675.9'-671.9'	0.0351	0.0191	0.9154	2.361
B-005-0-23 (NORTH ABUTMENT)	SS-6	676.9'-675.4'	0.1090	0.0054	0.2587	2.211
	SS-7	675.4'-673.9'	0.1645	0.0036	0.1740	2.211
	SS-8	673.9'-672.4'	0.1728	0.0007	0.0355	2.211
	SS-9	672.4'-670.3'	0.1808	0.0075	0.3584	2.211

DESIGN AGENCY  
  
 10200 Alliance Road,  
 Suite 300  
 Cincinnati, OH 45242  
 (513) 842-8200

DESIGNER  
 MSJ

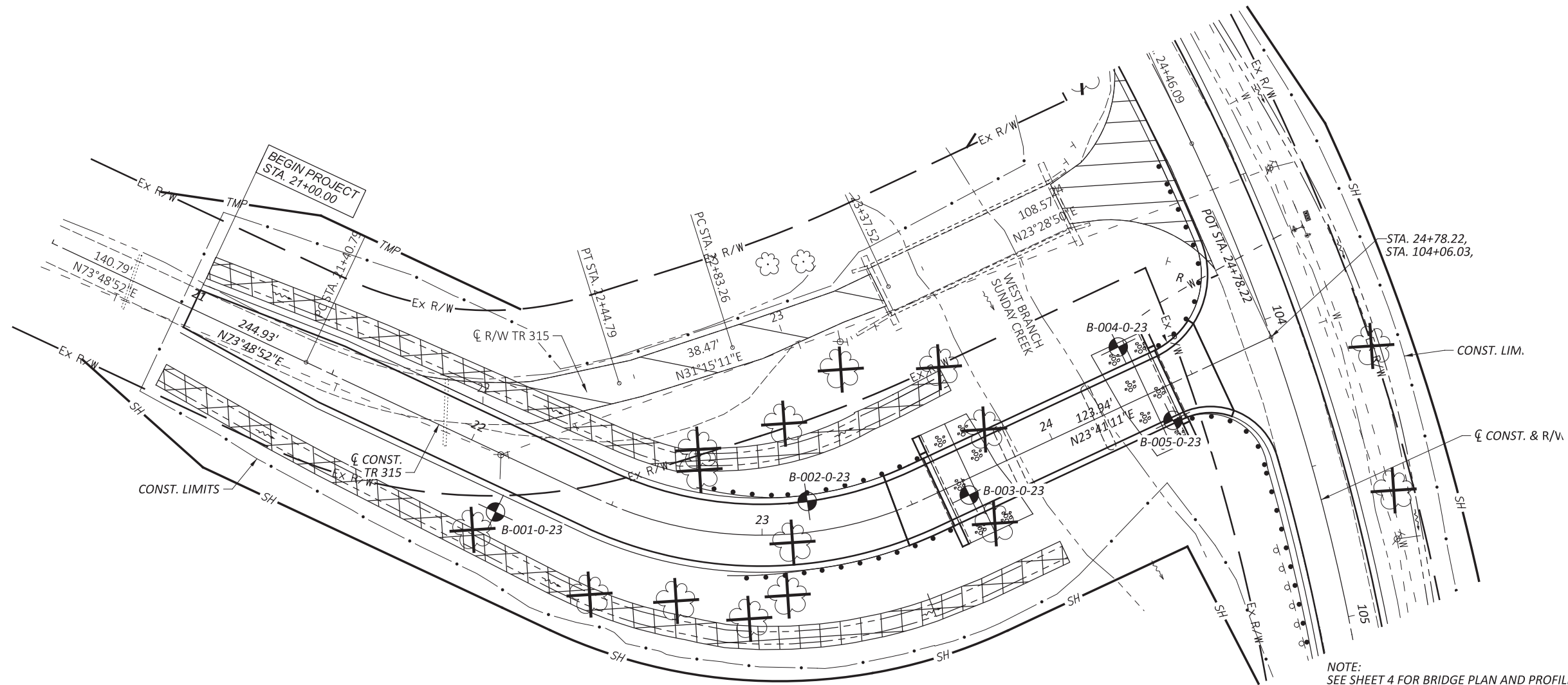
REVIEWER  
 EMK 03-15-24

PROJECT ID  
 119237

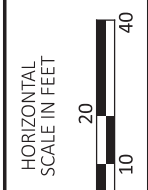
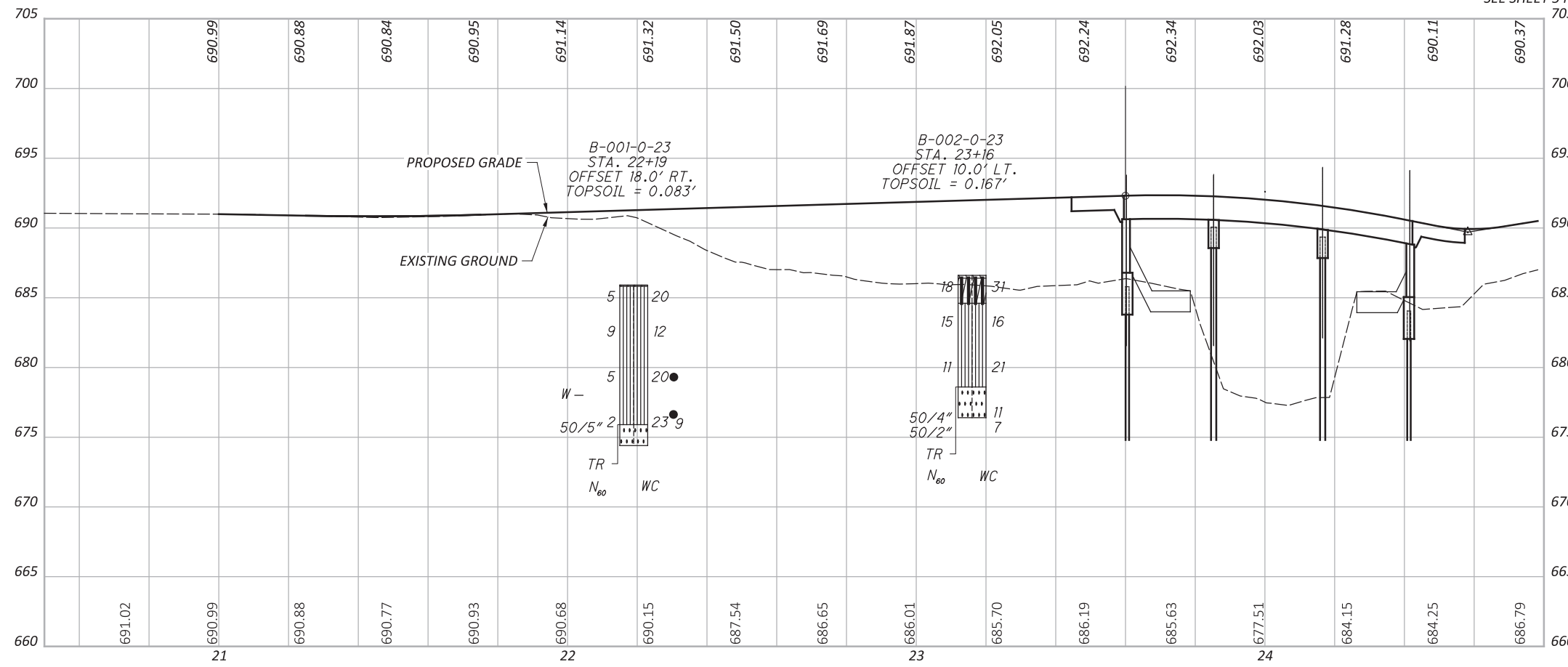
SUBSET	TOTAL
1	11

SHEET	TOTAL
P.44	54

SUMMARY OF SOIL TEST DATA																	
ATH-TR315-00.01																	
TR 315 (MOORE RD)																	
EXPLOR. ID	FROM-TO	SAMPLE IC	N60	% REC	tsf HP	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4	
B-001-0-23	00.00-01.50	SS-1	5	87	1.75				SAME AS SS-3						20	A-4a (VISUAL)	-
STA. 22+19, 18' RT.	02.50-04.00	SS-2	9	100	1.75				SAME AS SS-3						12	A-4a (VISUAL)	-
Latitude = 39.51821	05.00-06.50	SS-3	5	100	0.5	0	0	49	35	16	22	20	2	20	A-4a (3)	-	
Longitude = -82.086258	07.50-09.00	SS-4	2	100	0	0	1	49	34	16	24	21	3	23	A-4a (3)	-	
	10.00-10.40	SS-5	50/5"	100	-				INTERBEDDED SHALE AND SANDSTONE						9	Rock (VISUAL)	-
B-002-0-23	00.00-01.50	SS-1	18	67	1.75	24	11	22	22	21	48	36	12	31	A-7-5 (2)	-	
STA. 23+16, 10' LT.	02.50-04.00	SS-2	15	100	3.25	0	2	29	41	28	29	22	7	16	A-4a (7)	-	
Latitude = 39.518398	05.00-06.50	SS-3	11	100	3.5				SAME AS SS-2						21	A-4a (VISUAL)	-
Longitude = -82.086004	07.50-08.80	SS-4	5/41/50/4"	92	1				INTERBEDDED SHALE AND SANDSTONE						11	Rock (VISUAL)	-
	10.00-10.20	SS-5	50/2"	100	-				INTERBEDDED SHALE AND SANDSTONE						7	Rock (VISUAL)	-
B-003-0-23	00.00-01.50	SS-1	9	93	2	0	4	50	24	22	32	27	5	22	A-4a (2)	-	
STA. 23+68, 5' RT.	01.50-03.00	SS-2	9	67	1.75				SAME AS SS-1						19	A-4a (VISUAL)	-
Latitude = 39.518496	03.00-04.50	SS-3	9	100	2	0	7	28	33	32	35	26	9	19	A-4a (6)	-	
Longitude = -82.085869	04.50-06.00	SS-4	8	100	1	5	6	31	33	25	30	23	7	24	A-4a (5)	-	
	06.00-07.50	SS-5	3	100	0.75	0	1	43	34	22	26	22	4	29	A-4a (4)	-	
	07.50-09.00	SS-6	0	67	0.25	1	1	54	27	17	22	21	1	30	A-4a (2)	-	
	09.00-10.50	SS-7	3	100	-	3	9	63	15	10	NP	NP	NP	36	A-3a (0)	-	
	10.50-11.70	SS-8	5/37/50/2"	100	-				INTERBEDDED SHALE AND SANDSTONE						15	A-3a (VISUAL)	-
	12.00-12.40	SS-9	50/5"	100	-				INTERBEDDED SHALE AND SANDSTONE						11	Rock (VISUAL)	-
B-004-0-23	00.00-01.50	SS-1	5	87	1	0	0	10	54	36	49	36	13	32	A-7-5 (11)	-	
STA. 24+32, 18' LT.	01.50-03.00	SS-2	6	87	1				SAME AS SS-3						25	A-4a (VISUAL)	-
Latitude = 39.518682	03.00-04.50	SS-3	5	100	0.75	0	0	21	49	30	30	24	6	30	A-4a (8)	-	
Longitude = -82.085849	04.50-06.00	SS-4	0	100	0	0	0	40	39	21	27	21	6	29	A-4a (5)	-	
	06.00-07.50	SS-5	0	100	0	0	0	42	38	20	25	22	3	32	A-4a (5)	-	
	07.50-09.00	SS-6	2	93	0	0	5	55	25	15	21	20	1	29	A-4a (1)	-	
	09.00-10.50	SS-7	2	80	0	0	3	37	36	24	25	20	5	29	A-4a (5)	-	
	10.50-12.00	SS-8	6	93	0				SAME AS SS-7						29	A-4a (VISUAL)	-
	12.00-13.40	SS-9	5/9/50/5"	86	3.5				SAME AS SS-7						15	A-4a (VISUAL)	-
	13.50-13.90	SS-10	50/5"	100	-				INTERBEDDED SHALE AND SANDSTONE						12	Rock (VISUAL)	-
B-005-0-23	00.00-01.50	SS-1	8	67	1				SAME AS SS-2						32	A-7-5 (VISUAL)	-
STA. 24+38, 11' RT.	01.50-03.00	SS-2	8	80	1	0	0	5	48	47	43	30	13	30	A-7-5 (10)	-	
Latitude = 39.518666	03.00-04.50	SS-3	3	73	0.75	-	-	-	-	-	-	-	-	24	A-4a (VISUAL)	-	
Longitude = -82.085748	04.50-06.00	SS-4	0	87	0	0	1	45	33	21	23	19	4	31	A-4a (4)	-	
	06.00-07.50	SS-5	0	100	0				SAME AS SS-4						30	A-4a (VISUAL)	-
	07.50-09.00	SS-6	3	100	0	0	1	62	23	14	19	18	1	28	A-4a (0)	-	
	09.00-10.50	SS-7	5	100	-	5	23	41	17	14	NP	NP	NP	29	A-3a (0)	-	
	10.50-12.00	SS-8	3	100	-	3	14	64	9	10	NP	NP	NP	40	A-3a (0)	-	
	12.00-13.50	SS-9	9	93	-	12	21	35	20	12	24	20	4	22	A-3a (0)	-	
	13.50-14.80	SS-10	7/13/50/4"	100	-				SAME AS SS-9						18	A-3a (VISUAL)	-
CR 31 (OAKDALE RD)																	
B-006-0-23	02.00-03.50	SS-1	9	93	3				SAME AS SS-2						25	A-4a (VISUAL)	-
STA. 102+96, 8' RT.	03.50-05.00	SS-2	6	87	0.75	19	19	14	23	25	37	28	9	23	A-4a (3)	100	
Latitude = 39.518884	05.00-06.50	SS-3	6	93	1.5				SAME AS SS-2						21	A-4a (VISUAL)	-
Longitude = -82.086088	06.50-08.00	SS-4	3	100	0.5	0	0	36	42	22	27	20	7	24	A-4a (6)	-	
B-007-0-23	01.50-03.00	SS-1	8	100	1.25	0	2	34	37	27	27	21	6	18	A-4a (6)	-	
STA. 105+33, 8' LT.	03.00-04.50	SS-2	6	60	1				SAME AS SS-1						26	A-4a (VISUAL)	100
Latitude = 39.518596	04.50-06.00	SS-3	3	73	0.25				SAME AS SS-1						25	A-4a (VISUAL)	-
Longitude = -82.085338	06.00-07.50	SS-4	2	87	0	0	1	26	46	27	30	23	7	31	A-4a (8)	-	



NOTE:  
 SEE SHEET 4 FOR BRIDGE PLAN AND PROFILE  
 SEE SHEET 5 FOR ROADWAY PLAN AND PROFILE



GEOTECHNICAL PROFILE - BRIDGE  
 TR 315 - STA. 20+75.00 TO STA. 24+78.22

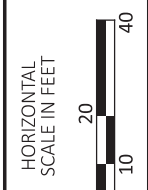
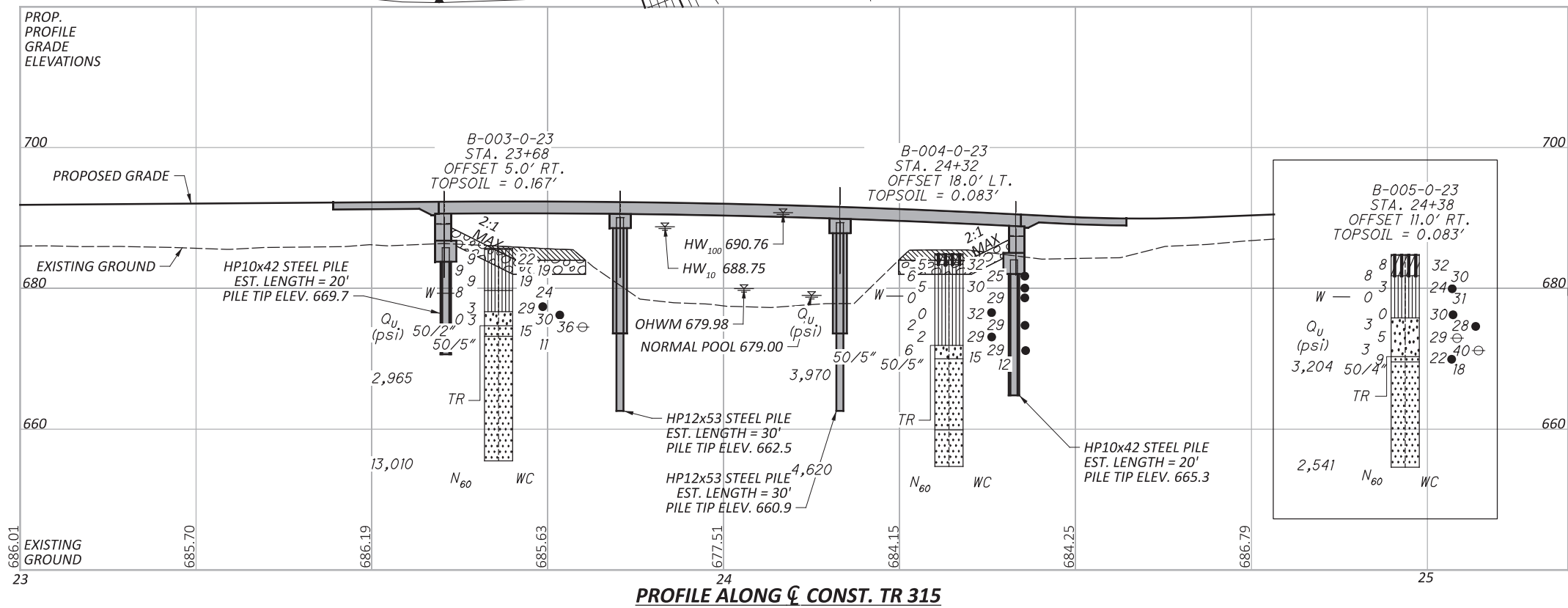
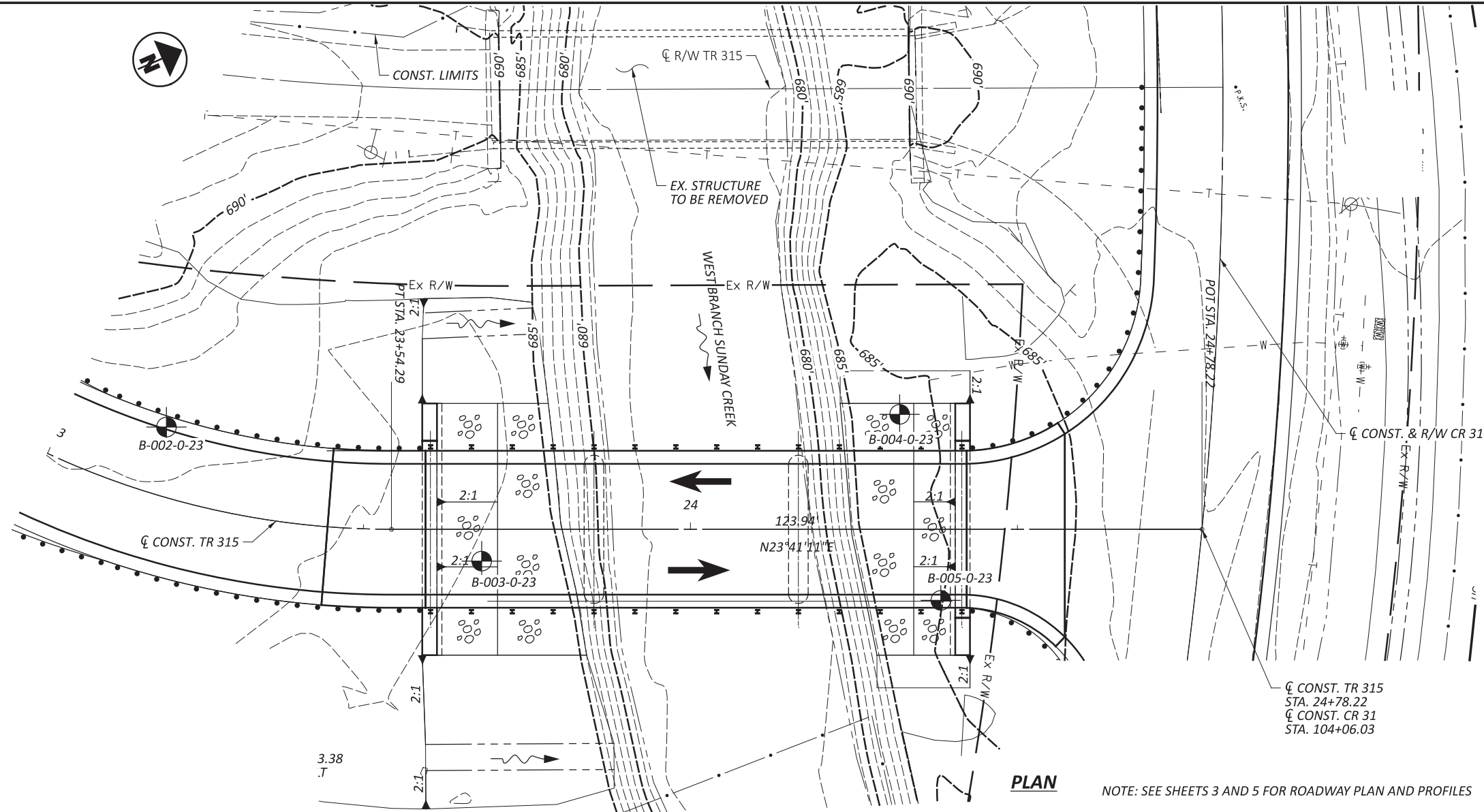
DESIGN AGENCY  
  
 10200 Alliance Road,  
 Suite 300  
 Cincinnati, OH 45242  
 (513) 842-8200

DESIGNER  
 ALH

REVIEWER  
 EMK 03-15-24

PROJECT ID  
 119237

SUBSET	TOTAL
3	11
SHEET	TOTAL
P.46	54



GEOTECHNICAL PROFILE - BRIDGE  
ATH-TR315-0.01 OVER WEST BRANCH SUNDAY CREEK

DESIGN AGENCY  
**Stantec**  
10200 Alliance Road, Suite 300  
Cincinnati, OH 45242  
(513) 842-8200

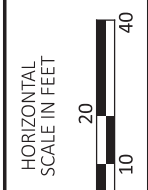
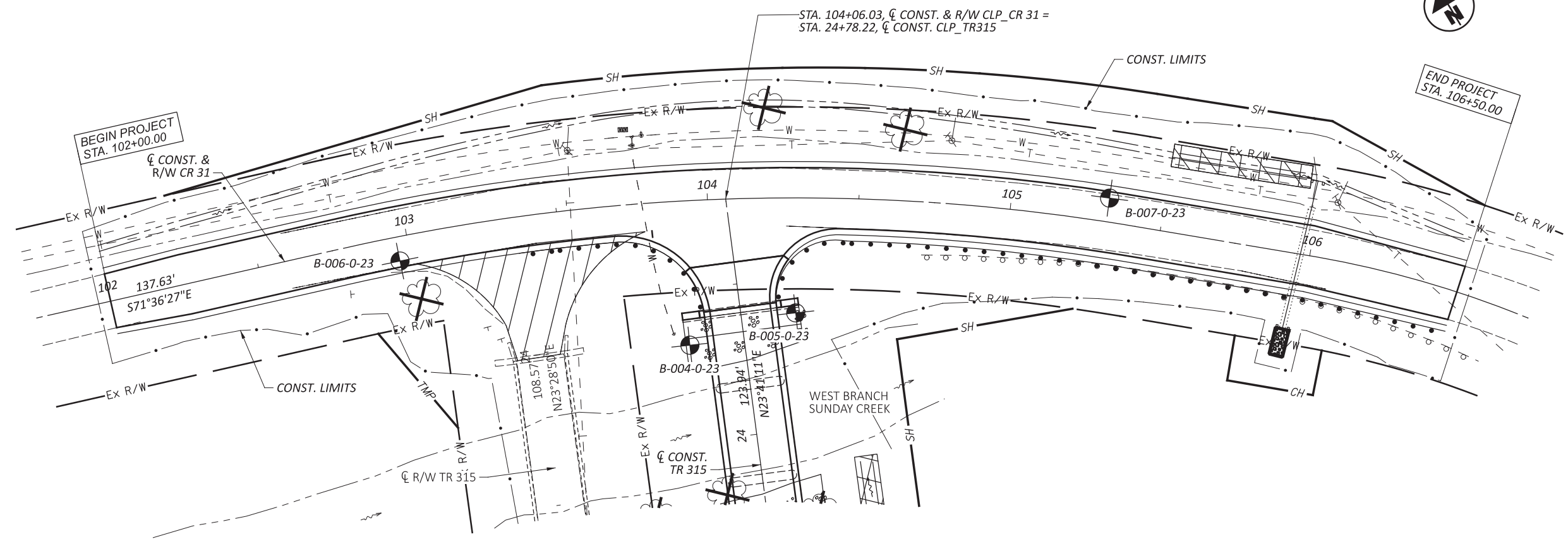
DESIGNER  
ALH

REVIEWER  
EMK 3-15-24

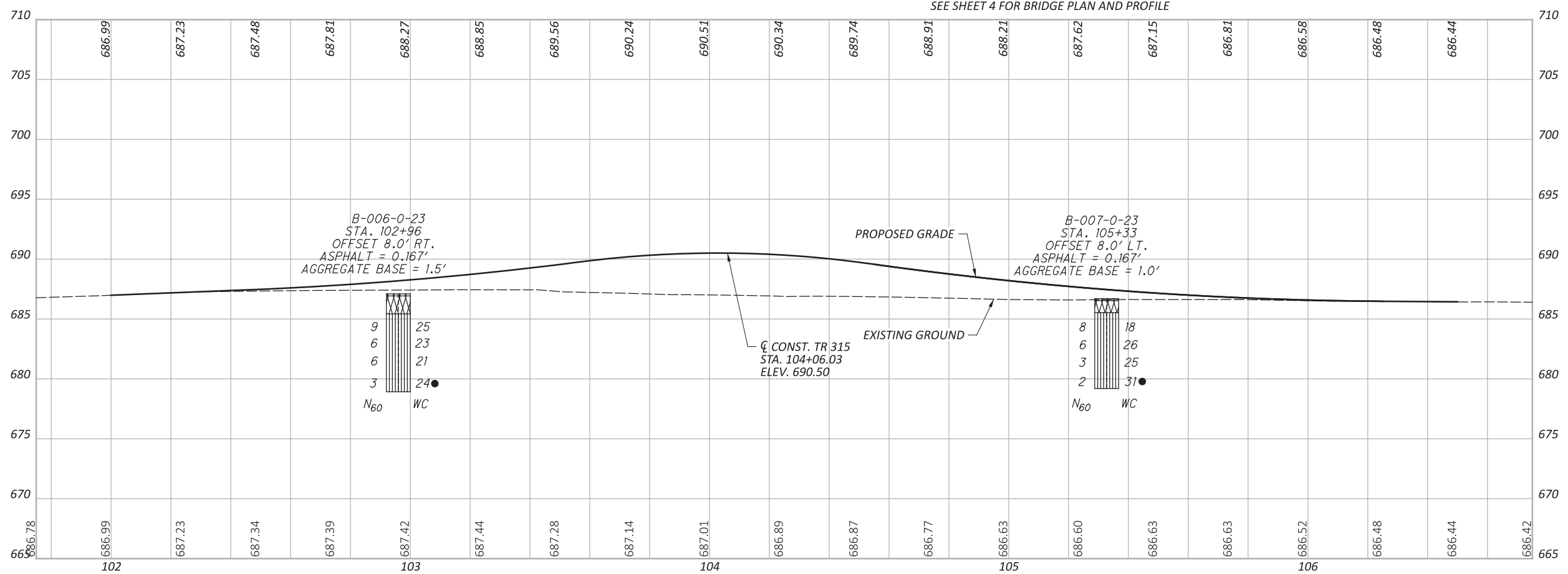
PROJECT ID  
119237

SUBSET	TOTAL
4	11

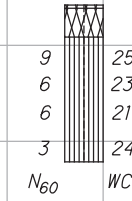
SHEET	TOTAL
P.47	54



NOTE:  
SEE SHEET 4 FOR BRIDGE PLAN AND PROFILE

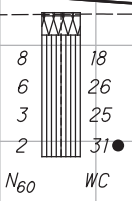


B-006-0-23  
STA. 102+96  
OFFSET 8.0' RT.  
ASPHALT = 0.167'  
AGGREGATE BASE = 1.5'



CONST. TR 315  
STA. 104+06.03  
ELEV. 690.50

B-007-0-23  
STA. 105+33  
OFFSET 8.0' LT.  
ASPHALT = 0.167'  
AGGREGATE BASE = 1.0'



GEOTECHNICAL PROFILE - BRIDGE  
CR 31 - STA. 101+75.00 TO STA. 106+75.00



DESIGNER	ALH
REVIEWER	EMK
PROJECT ID	119237
SUBSET	TOTAL
5	11
SHEET	TOTAL
P.48	54



**ATH-TR315-0.01**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 3/29/2024 TIME: 9:03:49 AM USER: Mlenings V:\1736\active\175538118\engineering\119237\400-Engineering\Geotechnical\Sheets\119237\_ZL001.dgn

PROJECT: ATH-TR315-00.01 DRILLING FIRM / OPERATOR: STANTEC / BM HIGHWAY  
 TYPE: STRUCTURE FOUNDATION SAMPLING FIRM / LOGGER: STANTEC / NU  
 PID: 119237 SFN: 0540919 DRILLING METHOD: 3.25" HSA / NQ2  
 START: 11/8/23 END: 11/8/23 SAMPLING METHOD: SPT / NQ2

DRILL RIG: CME 55 #3 (714) STATION / OFFSET: 23+68.5' RT. TR315  
 EXPLORATION ID: B-003-0-23  
 CALIBRATION DATE: 12/12/22 ELEVATION: 685.7 (MSL) EOB: 30.2 ft.  
 ENERGY RATIO (%): 90\* LAT / LONG: 39.518496, -82.085869

DEPTH (ft)	SPT / RQD	REC SAMPLE (%)	HP (tsf)	GRADATION (%)								WC	ODOT CLASS (gl)	BACK FILL
				CS	FS	SI	CL	LL	PL	PI	WC			
1	2	93	2.00	0	4	50	24	22	32	27	5	22	A-4a (2)	
2	1	67	1.75	-	-	-	-	-	-	-	-	19	A-4a (V)	
3	3	100	2.00	0	7	28	33	32	35	26	9	19	A-4a (6)	
4	3	100	1.00	5	6	31	33	25	30	23	7	24	A-4a (5)	
5	3	100	0.75	0	1	43	34	22	26	22	4	29	A-4a (4)	
6	1	67	0.25	1	1	54	27	17	22	21	1	30	A-4a (2)	
7	0	100	-	3	9	63	15	10	NP	NP	NP	36	A-3a (0)	
8	0	100	-	-	-	-	-	-	-	-	-	15	A-3a (V)	
9	5	100	-	-	-	-	-	-	-	-	-	11	Rock (V)	
10	37	100	-	-	-	-	-	-	-	-	-	-		
11	50/2"	100	-	-	-	-	-	-	-	-	-	-		
12	50/5"	100	-	-	-	-	-	-	-	-	-	-		
13	15	100	NQ2-1										CORE	
14														
15														
16														
17														
18	88	100	NQ2-2										CORE	
19														
20														
21														
22														
23	64	96	NQ2-3										CORE	
24														
25														
26														
27														
28	64	96	NQ2-4										CORE	
29														
30														

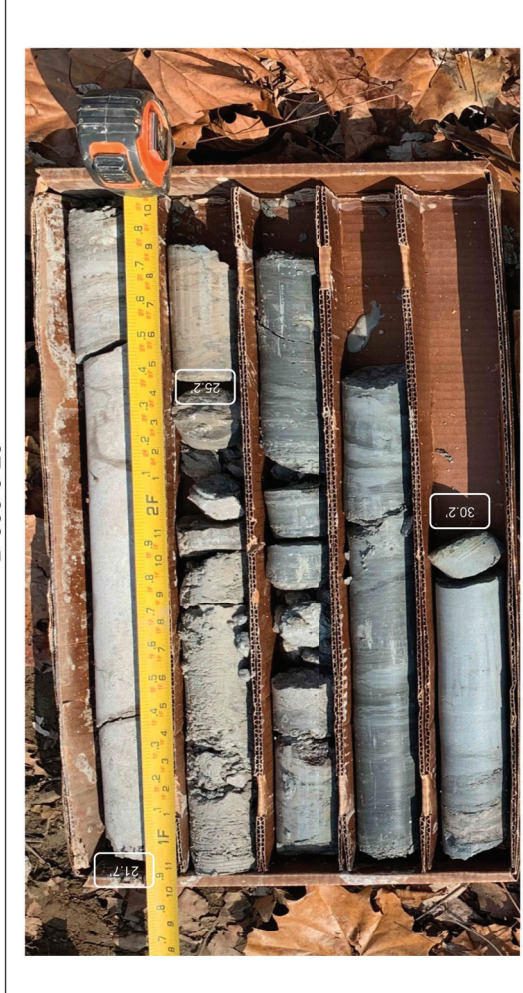
FROM 29.6 FT. TO 30.0 FT., UCR = 13,010 PSI

NOTES: NONE  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH BENTONITE CHIPS



B-003-0-23

Run #	Depth	Recovery	RQD
NQ2-1	12.5'	32/52	15%
NQ2-2	15.2'	60/60	100%
NQ2-3	20.2'	58/60	96%



B-003-0-23

Run #	Depth	Recovery	RQD
NQ2-3	25.2'	58/60	96%
NQ2-4	30.2'	58/60	96%

**ATH-TR315-0.01**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 3/29/2024 TIME: 9:04:54 AM USER: Mlenings  
 V:\1736\active\175538118\engineering\119237\400-Engineering\Geotechnical\Sheets\119237\_ZL002.dgn

PROJECT: ATH-TR315-00.01 DRILLING FIRM / OPERATOR: STANTEC / BM STATION / OFFSET: 24+32, 18' LT. EXPLORATION ID: B-004-0-23  
 TYPE: STRUCTURE FOUNDATION SAMPLING FIRM / LOGGER: STANTEC / NU HAMMER: CME 55 #3 (714) TR315  
 PID: 119237 SFN: 0540919 DRILLING METHOD: 3.25" HSA / NQ2 684.9 ELEVATION: 684.9 (MSL) EOB: 30.2 ft. PAGE: 1 OF 1  
 START: 11/8/23 END: 11/8/23 SAMPLING METHOD: SPT / NQ2 683.4 ENERGY RATIO (%): 90\* LAT / LONG: 39.518682, -82.085849

**MATERIAL DESCRIPTION AND NOTES**

DARK BROWN, TOPSOIL, 1 INCH  
 MEDIUM STIFF, DARK BROWN, ELASTIC CLAY, TRACE SAND, "AND" SILT, DAMP  
 SOFT TO MEDIUM STIFF, DARK BROWN TO BROWN, SANDY SILT, LITTLE TO SOME CLAY, WET TO MOIST

VERY SOFT FROM SS-4 TO SS-5.

SANDSTONE, GRAY, SEVERELY WEATHERED, VERY WEAK.  
 INTERBEDDED SANDSTONE (70%) AND SHALE (30%), RQD 66%, REC. 93%.  
 SANDSTONE, GRAY, MODERATELY TO HIGHLY WEATHERED, MODERATELY STRONG, COARSE GRAINED, MEDIUM BEDDED, ARGILLACEOUS, MODERATELY FRACTURED.  
 SHALE, DARK GRAY, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, LAMINATED, ARGILLACEOUS, HIGHLY FRACTURED.  
 FROM 16.2 FT. TO 16.6 FT., UCR = 3.970 PSI

FROM 29.6 FT. TO 30.0 FT., UCR = 4.620 PSI

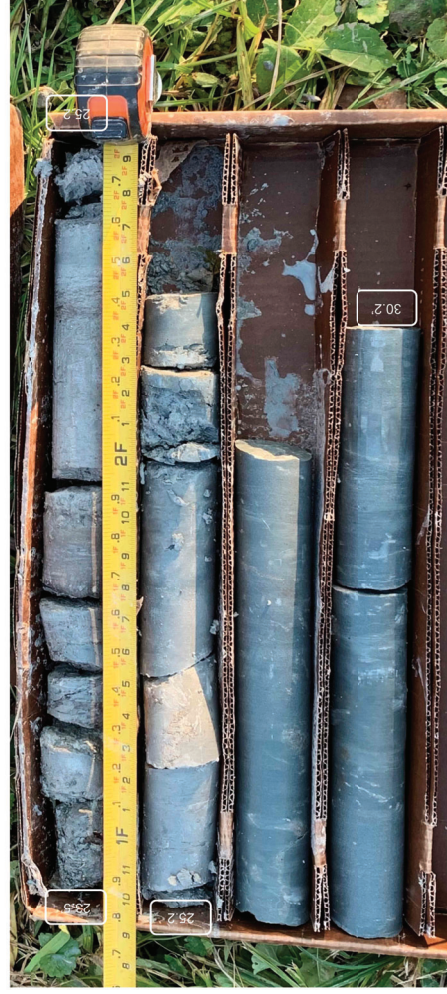
NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH BENTONITE CHIPS

SPT/ RQD	REC SAMPLE ID	N <sub>60</sub>	HP (tsf)	GRADATION (%)							WC	ODOT CLASS (GI)	BACK FILL
				GR	CS	FS	SI	CL	LL	PL			
0	1	5	1.00	0	10	54	36	49	36	13	32	A-7-5 (11)	
2	2	6	1.00	-	-	-	-	-	-	-	25	A-4a (V)	
0	1	5	0.75	0	21	49	30	24	6	30	A-4a (8)		
0	0	0	0.00	0	40	39	21	27	6	29	A-4a (5)		
0	0	0	0.00	0	42	38	20	25	3	32	A-4a (5)		
0	0	2	0.00	5	55	25	15	21	20	1	29	A-4a (1)	
0	0	2	0.00	3	37	36	24	25	20	5	29	A-4a (5)	
0	2	6	0.00	-	-	-	-	-	-	-	29	A-4a (V)	
5	9	-	3.50	-	-	-	-	-	-	-	15	A-4a (V)	
50/5"	50/5"	-	-	-	-	-	-	-	-	-	12	Rock (V)	
0	75	NQ2-1										CORE	
84	100	NQ2-2										CORE	
40	84	NQ2-3										CORE	
90	100	NQ2-4										CORE	



B-004-0-23



B-004-0-23

Run #:	Depth	Recovery	RQD
NQ2-1	14.0'	11/14	0/14
NQ2-2	15.2'	75%	50/60
NQ2-3	20.2'	100%	24/60
	25.2'	84%	40%

Run #:	Depth	Recovery	RQD
NQ2-3	20.2'	50/60	24/60
NQ2-4	25.2'	60/60	54/60
	30.2'	84%	40%
		100%	90%

ATH-TR315-0.01, PID 119237



DESIGNER: MSI  
 REVIEWER: EMK 03-15-23  
 PROJECT ID: 119237  
 SUBSET: 7 / 11  
 SHEET: P.50 / 54

GEOTECHNICAL PROFILE - BRIDGE  
 BRIDGE REPLACEMENT ATH-TR315-0.01 OVER WEST BRANCH SUNDAY CREEK  
 BORING LOG B-004-0-23

**ATH-TR315-0.01**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 3/29/2024 TIME: 9:05:45 AM USER: Mlenings V:\1736\active\175538118\engineering\119237\400-Engineering\Geotechnical\Sheets\119237\_ZL003.dgn

PROJECT: ATH-TR315-00.01		DRILLING FIRM / OPERATOR: STANTEC / BM		STATION / OFFSET: 24+38, 11' RT.		EXPLORATION ID									
TYPE: STRUCTURE FOUNDATION		SAMPLING FIRM / LOGGER: STANTEC / NU		ALIGNMENT: TR315		B-005-0-23									
PID: 119237 SFN: 0540919		DRILLING METHOD: 3.25" HSA / NQ2		ELEVATION: 684.8 (MSL) EOB: 30.2 ft.		PAGE									
START: 11/9/23 END: 11/9/23		SAMPLING METHOD: SPT / NQ2		LAT / LONG: 39.518666, -82.085748		1 OF 1									
MATERIAL DESCRIPTION AND NOTES				GRADATION (%)											
				GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL	
DARK BROWN, TOPSOIL, 1 INCH				HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
MEDIUM STIFF, BROWN, ELASTIC CLAY, TRACE GRAVEL, TRACE SAND, "AND" CLAY, MOIST				REC SAMPLE ID	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
VERY SOFT TO SOFT, BROWN, SANDY SILT, TRACE GRAVEL, LITTLE TO SOME CLAY, WET				N <sub>60</sub>	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
VERY LOOSE TO LOOSE, BROWN TO DARK GRAY, COARSE AND FINE SAND, TRACE TO LITTLE GRAVEL, TRACE TO SOME SILT, LITTLE CLAY, WET TO MOIST				SPT/RQD	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
SANDSTONE, GRAY, SEVERELY WEATHERED, VERY WEAK.					GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
INTERBEDDED SANDSTONE (70%) AND SHALE (30%). ROD 77% REC, 98%.					GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
SANDSTONE, GRAY, HIGHLY TO MODERATELY WEATHERED, MODERATELY STRONG, COARSE GRAINED, MEDIUM BEDDED, ARGILLACEOUS, MODERATELY FRACTURED.					GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
SHALE, DARK GRAY, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED TO LAMINATED, ARGILLACEOUS, HIGHLY FRACTURED. FROM 17.3 FT. TO 17.7 FT., UCR = 3,204 PSI					GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL
FROM 29.2 FT. TO 29.6 FT., UCR = 2,541 PSI					GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (gl)	BACK FILL

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS MIXED WITH BENTONITE CHIPS

B-005-0-23



Run #:	Depth	Recovery	RQD
NQ2-1	15.2'	20.2'	60/60
NQ2-2	20.2'	25.2'	56/60
			34/60
		100%	53/60
		94%	34/60
			88%
			56%

ATH-TR315-0.01, PID 119237

B-005-0-23



Run #:	Depth	Recovery	RQD
NQ2-2	20.2'	25.2'	56/60
NQ2-3	25.2'	30.2'	60/60
			94%
		100%	52/60
			86%

ATH-TR315-0.01, PID 119237

**Uniaxial Compressive Strength  
of Intact Rock Core Specimens**  
 ASTM D 7012, Method C

Project Name ATH-TR315-0.01 Project Number 175538118  
 Lithology Shale, gray/brown, moderately hard Lab ID UCR-282  
 Hole Number B-003-0-23 Depth (ft) 17.4'-17.8' Date Received 11/20/2023

Temperature (°C) 21 Moisture Condition As Prepared, Moist Date Tested 11/28/2023

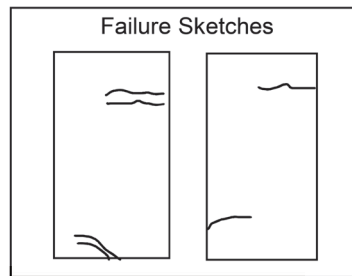
Side Planeness N/A Height (in) 4.708 Wet Unit Weight (pcf) 144.4  
 Perpendicularity N/A Diameter (in) 1.941 Dry Unit Weight (pcf) N/A  
 End Planeness N/A Area (in<sup>2</sup>) 2.958 Moisture Content (%) N/A  
 Parallelism N/A

Dimensions were not confirmed.

Loading Rate (lbf/sec) 55  
 Peak Load (lbf) 8745

Failure Type Undetermined

Compressive Strength (psi) 2956  
 Compressive Strength (psf) 425664  
 Compressive Strength (tsf) 213

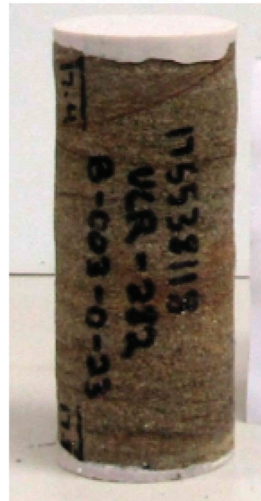


Comments Fragile nature of specimen inhibited preparation, required capping of ends with Hydro-Stone.  
Dimensional tolerances were not confirmed.

CORE PREP



POST PREP



Reviewed By RJ

**Uniaxial Compressive Strength  
of Intact Rock Core Specimens**  
 ASTM D 7012, Method C

Project Name ATH-TR315-0.01 Project Number 175538118  
 Lithology Sandstone, gray, hard Lab ID UCR-283  
 Hole Number B-003-0-23 Depth (ft) 29.6'-30.0' Date Received 11/20/2023

Temperature (°C) 21 Moisture Condition As Prepared, Moist Date Tested 11/28/2023

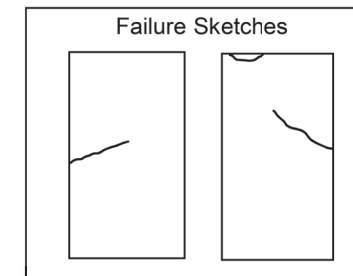
Side Planeness N/A Height (in) 4.818 Wet Unit Weight (pcf) 160.8  
 Perpendicularity N/A Diameter (in) 1.982 Dry Unit Weight (pcf) N/A  
 End Planeness N/A Area (in<sup>2</sup>) 3.086 Moisture Content (%) N/A  
 Parallelism N/A

Dimensions were not confirmed.

Loading Rate (lbf/sec) 59  
 Peak Load (lbf) 40167

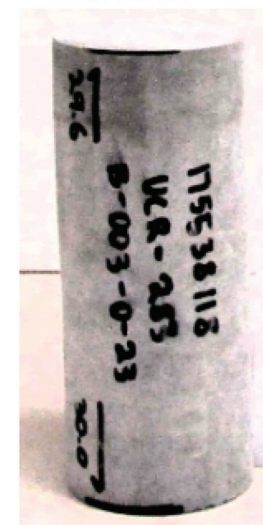
Failure Type Undetermined

Compressive Strength (psi) 13010  
 Compressive Strength (psf) 1873440  
 Compressive Strength (tsf) 937

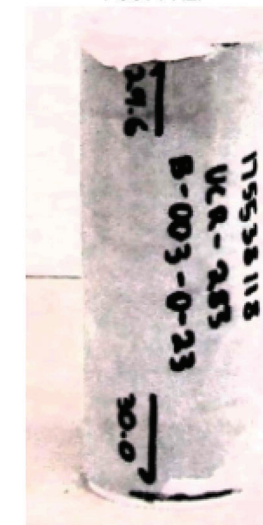


Comments Fragile nature of specimen inhibited preparation, required capping of ends with Hydro-Stone.  
Dimensional tolerances were not confirmed.

CORE PREP



POST PREP



Reviewed By RJ

**Uniaxial Compressive Strength  
 of Intact Rock Core Specimens**  
 ASTM D 7012, Method C

Project Name ATH-TR315-0.01 Project Number 175538118  
 Lithology Shale, gray, moderately hard Lab ID UCR-284  
 Hole Number B-004-0-23 Depth (ft) 16.2'-16.6' Date Received 11/20/2023

Temperature (°C) 21 Moisture Condition As Prepared, Moist Date Tested 11/28/2023

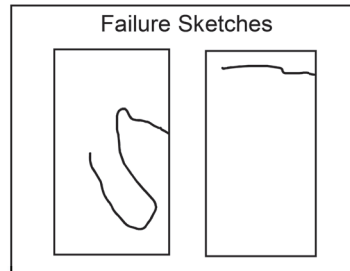
Side Planeness N/A Height (in) 4.768 Wet Unit Weight (pcf) 147.9  
 Perpendicularity N/A Diameter (in) 1.923 Dry Unit Weight (pcf) N/A  
 End Planeness N/A Area (in<sup>2</sup>) 2.904 Moisture Content (%) N/A  
 Parallelism N/A

Dimensions were not confirmed.

Loading Rate (lbf/sec) 57  
 Peak Load (lbf) 11516

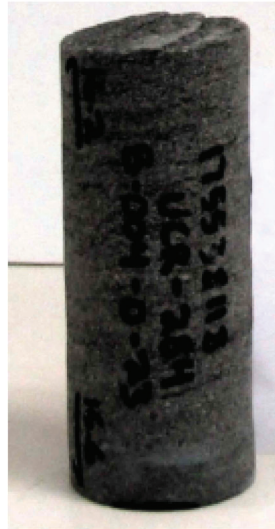
Failure Type Undetermined

Compressive Strength (psi) 3970  
 Compressive Strength (psf) 571680  
 Compressive Strength (tsf) 286

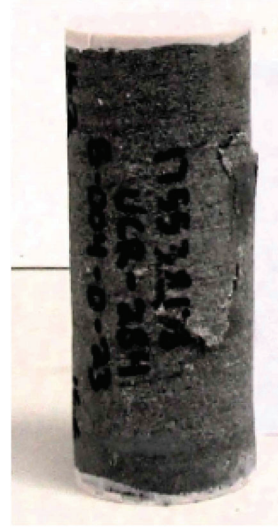


Comments Fragile nature of specimen inhibited preparation, required capping of ends with Hydro-Stone.  
Dimensional tolerances were not confirmed.

CORE PREP



POST PREP



Reviewed By RJ

**Uniaxial Compressive Strength  
 of Intact Rock Core Specimens**  
 ASTM D 7012, Method C

Project Name ATH-TR315-0.01 Project Number 175538118  
 Lithology Shale, gray, moderately hard Lab ID UCR-285  
 Hole Number B-004-0-23 Depth (ft) 29.6'-30.0' Date Received 11/20/2023

Temperature (°C) 21 Moisture Condition As Prepared, Moist Date Tested 11/28/2023

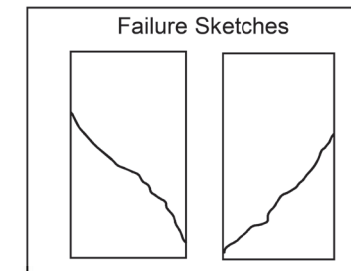
Side Planeness N/A Height (in) 4.831 Wet Unit Weight (pcf) 163.7  
 Perpendicularity N/A Diameter (in) 1.970 Dry Unit Weight (pcf) N/A  
 End Planeness N/A Area (in<sup>2</sup>) 3.048 Moisture Content (%) N/A  
 Parallelism N/A

Dimensions were not confirmed.

Loading Rate (lbf/sec) 56  
 Peak Load (lbf) 14097

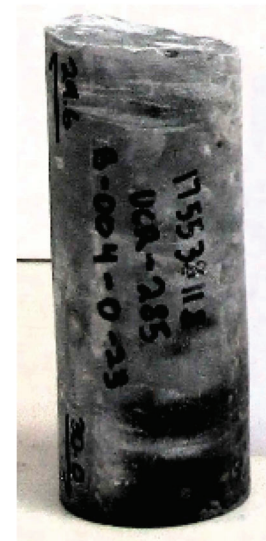
Failure Type Shear

Compressive Strength (psi) 4620  
 Compressive Strength (psf) 665280  
 Compressive Strength (tsf) 333

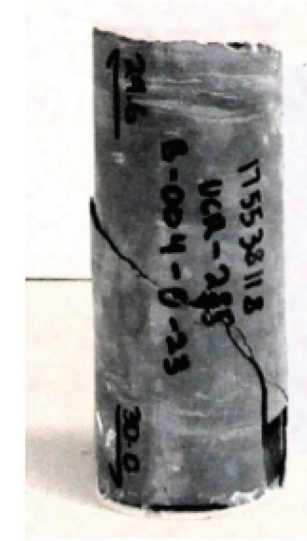


Comments Fragile nature of specimen inhibited preparation, required capping of ends with Hydro-Stone.  
Dimensional tolerances were not confirmed.

CORE PREP



POST PREP



Reviewed By RJ

**Uniaxial Compressive Strength  
 of Intact Rock Core Specimens**  
 ASTM D 7012, Method C

Project Name ATH-TR315-0.01 Project Number 175538118  
 Lithology Shale, gray, moderately hard Lab ID UCR-286  
 Hole Number B-005-0-23 Depth (ft) 17.3'-17.7' Date Received 11/20/2023

Temperature (°C) 21 Moisture Condition As Prepared, Moist Date Tested 11/28/2023

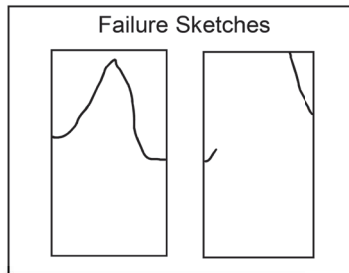
Side Planeness N/A Height (in) 4.846 Wet Unit Weight (pcf) 145.8  
 Perpendicularity N/A Diameter (in) 1.978 Dry Unit Weight (pcf) N/A  
 End Planeness N/A Area (in<sup>2</sup>) 3.071 Moisture Content (%) N/A  
 Parallelism N/A

Dimensions were not confirmed.

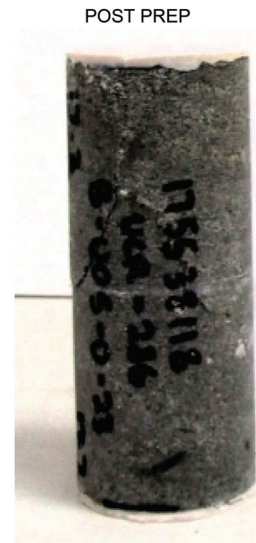
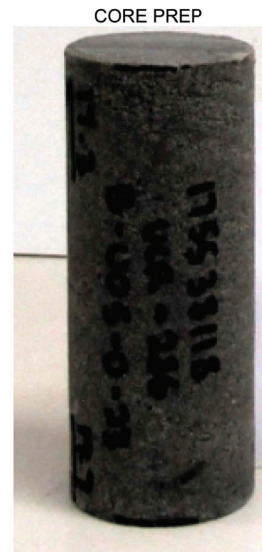
Loading Rate (lbf/sec) 59  
 Peak Load (lbf) 9840

Failure Type Undetermined

Compressive Strength (psi) 3204  
 Compressive Strength (psf) 461376  
 Compressive Strength (tsf) 231



Comments Fragile nature of specimen inhibited preparation, required capping of ends with Hydro-Stone.  
Dimensional tolerances were not confirmed.



Reviewed By RJ

**Uniaxial Compressive Strength  
 of Intact Rock Core Specimens**  
 ASTM D 7012, Method C

Project Name ATH-TR315-0.01 Project Number 175538118  
 Lithology Shale, gray, moderately hard Lab ID UCR-287  
 Hole Number B-005-0-23 Depth (ft) 29.2'-29.6' Date Received 11/20/2023

Temperature (°C) 21 Moisture Condition As Prepared, Moist Date Tested 11/28/2023

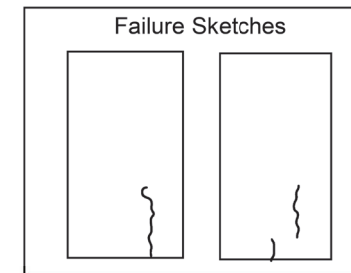
Side Planeness N/A Height (in) 4.869 Wet Unit Weight (pcf) 163.1  
 Perpendicularity N/A Diameter (in) 1.972 Dry Unit Weight (pcf) N/A  
 End Planeness N/A Area (in<sup>2</sup>) 3.053 Moisture Content (%) N/A  
 Parallelism N/A

Dimensions were not confirmed.

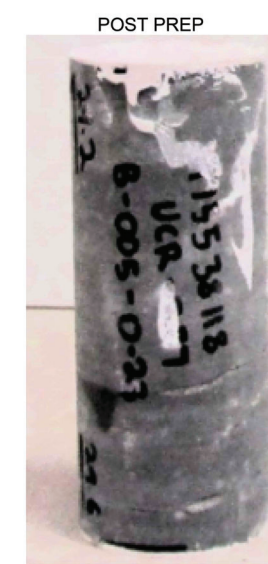
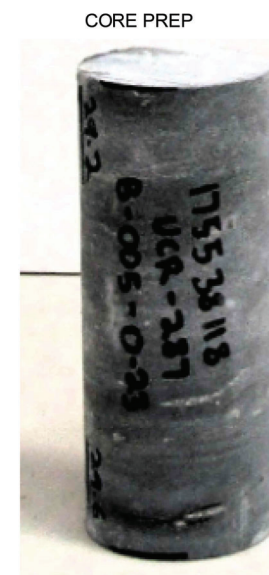
Loading Rate (lbf/sec) 56  
 Peak Load (lbf) 7756

Failure Type Undetermined

Compressive Strength (psi) 2541  
 Compressive Strength (psf) 365904  
 Compressive Strength (tsf) 183



Comments Fragile nature of specimen inhibited preparation, required capping of ends with Hydro-Stone.  
Dimensional tolerances were not confirmed.



Reviewed By RJ