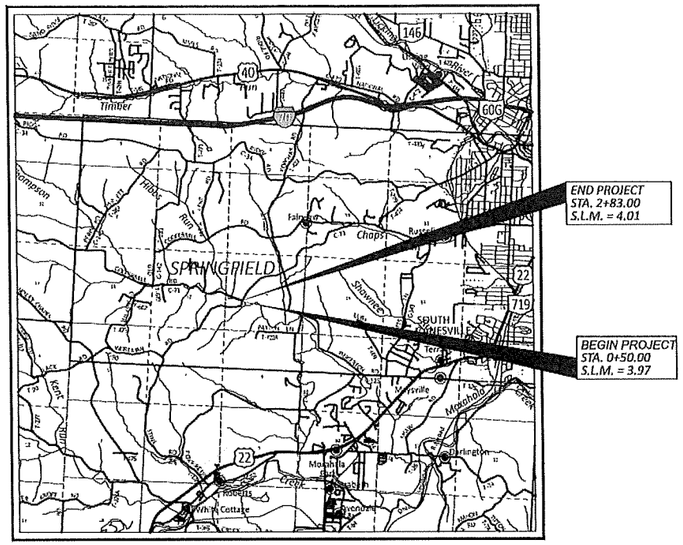
MUSKINGUM COUNTY ENGINEER'S OFFICE

MUS-T.R.90-4.00

SPRINGFIELD TOWNSHIP

MUSKINGUM COUNTY



LOCATION MAP

LATITUDE: 39°54'40" N LONGITUDE: 82°05'00" W

N

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

DESIGN DESIGNATION

CURRENT ADT (2022)	220
DESIGN YEAR ADT (2042)	242
DESIGN HOURLY VOLUME (2042)	29
DIRECTIONAL DISTRIBUTION	0.55
TRUCKS (24 HOUR B&C)	
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	07 - LOCAL (RURAL)
NHS PROJECT:	NO

DESIGN EXCEPTIONS

LANE WIDTH/HORIZONTAL CURVE RADIUS / SSD/ SUPERELEVATION RATE	APPROVED: 11/2/22

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:

Muskingum County ENGINEER'S OFFICE
Mark J. Eicher, P.E., P.S.
155 Rehl Road
Zanesville, Ohio 43701
740-454-0155

ENGINEER'S SEAL:

STATE OF OHIO
MARK J. EICHER
E-65010
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: Mark J. Eicher
DATE: 3-23-23

INDEX OF SHEETS:

FEDERAL PROJECT NUMBER

E222 (536)

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

IMPROVEMENT OF 0.04 MILES OF T.R.90 IN SPRINGFIELD TOWNSHIP, BY REPLACING A SINGLE SPAN TRUSS BRIDGE OVER THOMPSON RUN WITH A SINGLE SPAN CONCRETE BOX BEAM BRIDGE INCLUDING GUARDRAIL AND MINIMAL APPROACH ROADWAY WORK.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.15 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.15 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A

2019 SPECIFICATIONS

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

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	1/21/22	MT-101.60	1/17/20			
		MT-105.10	1/17/20			
DM-4.3	1/15/16					
DM-4.4	1/15/16	TC-41.20	10/18/13			
		TC-42.20	10/18/13			
MGS-1.1	7/16/21	TC-52.10	10/18/13			
MGS-2.1	1/19/18	TC-52.20	1/15/21			
MGS-3.1	1/19/18					
MGS-4.1	1/20/17					
MGS-4.2	7/19/13					
AS-1-15	7/17/15					
OS-1-92	7/15/22					
PSBD-2-07	7/20/18					

SUPPLEMENTAL SPECIFICATIONS

800	4/21/23
832	7/15/22

SPECIAL PROVISIONS

ASBESTOS SURVEY REPORT 8/09/22

APPROVED Mark J. Eicher
DATE 3-23-23 MUSKINGUM COUNTY ENGINEER

TITLE SHEET

DESIGN AGENCY: Muskingum County ENGINEER'S OFFICE
DESIGNER: SEJ
REVIEWER: GJW 3/20/23
PROJECT ID: 117331
SHEET 1 TOTAL 18

MUS-T.R.90-4.00

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/22/2023 TIME: 4:02:45 PM USER: sejohnson
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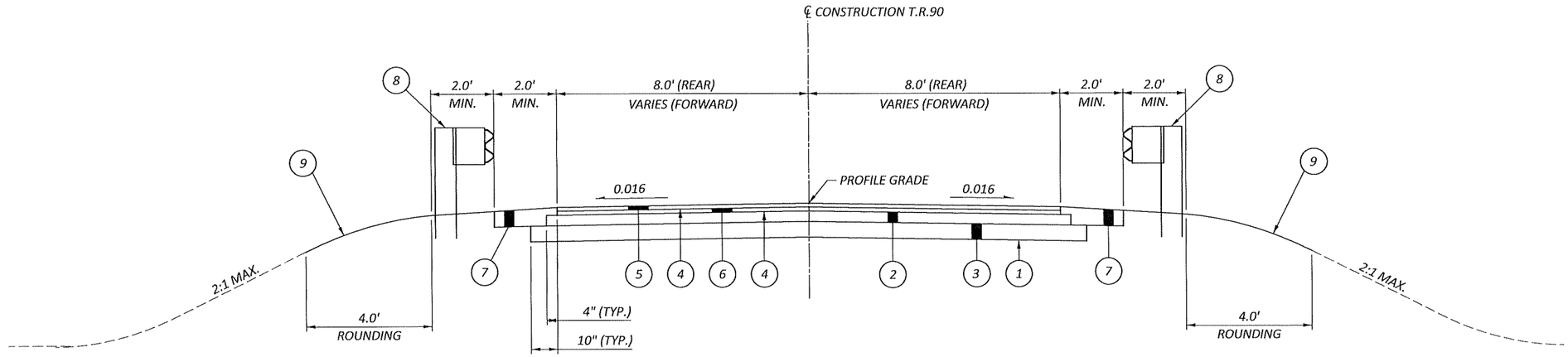

ROADWAY SECTION

REAR
STA. 0+50.00 TO STA. 1+40.00

FORWARD
STA. 2+04.00 TO STA. 2+83.00

LEGEND

1. ITEM 204 - SUBGRADE COMPACTION
2. ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22
3. ITEM 304 - 6" AGGREGATE BASE
4. ITEM 407 - TACK COAT (@ 0.05 GAL./SQ.YD.)
5. ITEM 441 - 1¼" - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG64-22
6. ITEM 441 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
7. ITEM 411 - 6" STABILIZED CRUSHED AGGREGATE
8. ITEM 606 - GUARDRAIL, TYPE MGS
9. ITEM 659 - SEEDING AND MULCHING

ROADWAY TYPICAL SECTIONS

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER
SEJ

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SHEET 2 | TOTAL 18

MUS-T.R.90-4.00

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:23:57 PM USER: sejohnson
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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:

AEP OHIO POWER:
777 HOPEWELL DRIVE, HEATH, OHIO 43056
ATTN: PAUL PAXTON, 740-348-5322 (PTPAXTON@AEP.COM)

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON NADV 88 DATUM.

EXISTING PLANS

EXISTING PLANS ARE AVALIABLE UPON REQUEST AT THE MUSKINGUM COUNTY ENGINEER'S OFFICE, 740-454-0155.

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

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

CONTRACTOR'S USE OF RIGHT-OF-WAY

THE CONTRACTOR SHALL NOT USE OR ENTER ANY AREA OUTSIDE OF THE RIGHT-OF-WAY LIMITS THAT ARE SHOWN ON THE PLANS.

FLOOD PLAIN

NO STORAGE OF MATERIALS OR STAGING SHALL OCCURE WITHIN THE FLOODPLAIN OF THOMPSON RUN.

NO IN STREAM WORK

NO WORK SHALL TAKE PLACE BELOW THE ORDINARY HIGH-WATER MARK (OHWM) OF THOMPSON RUN. SHOULD WORK BELOW THE OHWM ELEVATION OF 762.50 NEED TO TAKE PLACE, THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING THEIR OWN WATERWAY PERMIT FROM THE HUNTINGTON OFFICE OF THE US ARMY CORPS OF ENGINEERS.

DEMOLITION DEBRIS

THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED WITHIN 72 HOURS.

SEEDING AND MULCHING

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

659, SEEDING AND MULCHING	161 SQ. YD.
659, COMMERCIAL FERTILIZER	0.03 TON
659, LIME	0.1 ACRES
659, WATER	2 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.

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.

BENCHING OF FOUNDATION SLOPES

BENCH ALL 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

OEPA NOTIFICATION OF DEMOLITION AND RENOVATION

AN ASBESTOS SURVEY FOR THE MUS-TR90-4.00 BRIDGE SCHEDULED FOR DEMOLITION WORK WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. A COPY OF THE ASBESTOS SURVEY REPORT FOR THE BRIDGE HAS BEEN INCLUDED IN THE PLAN PACKAGE FOR THIS PROJECT. THE ASBESTOS SURVEY REPORT DID NOT IDENTIFY THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED BY THE ASBESTOS HAZARD EVALUATION SPECIALIST, HAS BEEN INCLUDED AT THE END OF THE ASBESTOS SURVEY REPORT. THE CONTRACTOR SHALL COMPLETE THE NECESSARY SECTIONS OF THE FORM AND SUBMIT IT WITH A COPY OF THE ASBESTOS SURVEY REPORT TO:

ASBESTOS PROGRAM
OHIO EPA, DAPC
PO BOX 1049
COLUMBUS OH 43216-1049

AT LEAST 10 WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION WORK. NOTIFICATION CAN BE MADE EITHER BY HARD COPY OR ELECTRONICALLY. ADDITIONAL INFORMATION CAN BE FOUND HERE:
http://epa.ohio.gov/dapc/atu/asbestos.aspx#179575188-project-notification

BASIS FOR PAYMENT:

THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENTS FOR THIS WORK SHALL BE INCIDENTAL TO THE ITEM 202 STRUCTURE REMOVAL ITEM(S) IN THE PLAN.

GENERAL NOTES

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER
SEJ

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SHEET 3 TOTAL 18

MUS-T.R.90-4.00

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:23:58 PM USER: sejohnson
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ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48"x30" ROAD CLOSED SIGNS, ADVANCED WARNING SIGNS, SIGN SUPPORTS, BARRICADES, GATES AND LIGHTS AS SHOWN ON SCD MT-101.60 AT THE LOCATIONS SHOWN DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS, SIGN SUPPORTS, AND TYPE 3 BARRICADES OF THE TYPE AND LOCATION AS SHOWN ON THIS SHEET.

ALL WORK AND TRAFFIC DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

DETOUR NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE MCEO EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE WILL BE IN EFFECT. THE CONTRACTOR SHALL THEN PROVIDE AND INSTALL ALL DEVICES NECESSARY TO DEFINE THE ROUTE OF THE DETOUR AND SHALL MAINTAIN THE SAME THROUGHOUT THE DETOUR LIMITATION DATES. ALL TRAFFIC CONTROL DEVICES REQUIRED, SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR.

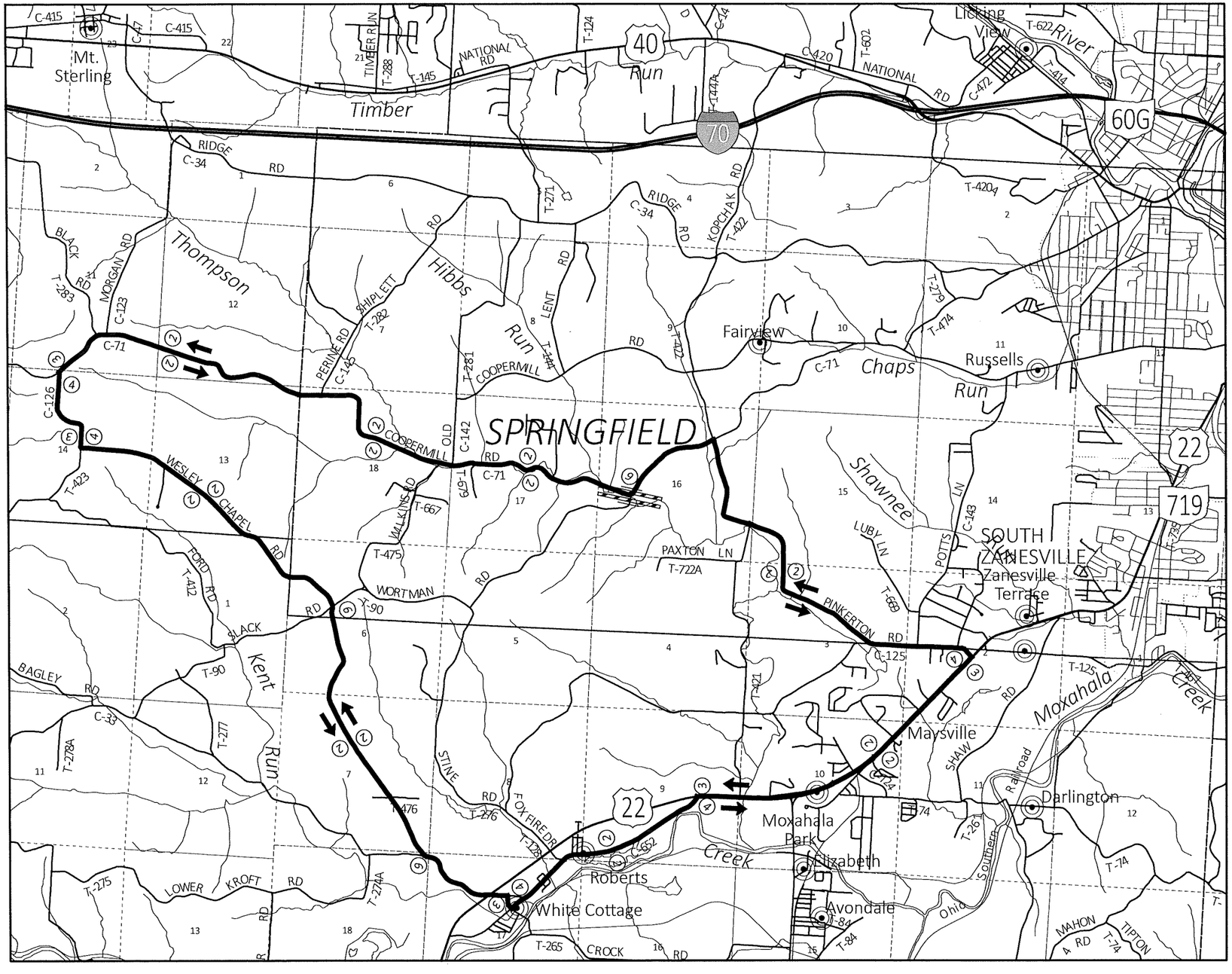
DETOUR SIGNAGE

THE CONTRACTOR SHALL ERECT AND MAINTAIN DETOUR SIGNAGE AND ADVANCED NOTICE SIGNS AS SHOWN ON THIS SHEET.

THIS WORK SHALL BE PAID UNDER THE LUMP SUM PAY ITEM 614 - DETOUR SIGNING, AS PER PLAN

DETOUR LIMITATION

THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE NINETY DAYS (90) CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 TO BE ASSESSED. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF 108.07 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.



HORIZONTAL SCALE IN FEET
0 1000 2000 4000

MAINTENANCE OF TRAFFIC DETOUR PLAN AND NOTES

TYPICAL SIGNS AS NEEDED

① END DETOUR — *M4-8A (24"x18")*

② WORTMAN RD / DETOUR — *SPECIAL (30"x12") M4-8 (30"x15")*

③ WORTMAN RD / DETOUR ← — *SPECIAL (30"x12") M4-9L (30"x24")*

④ WORTMAN RD / DETOUR → — *SPECIAL (30"x12") M4-9R (30"x24")*

⑤ WORTMAN RD / ROAD CLOSED X.X MILES AHEAD LOCAL TRAFFIC ONLY / DETOUR ← — *SPECIAL (30"x12") R11-3a (60"x30") M4-10L (48"x18")*

⑥ WORTMAN RD / ROAD CLOSED X.X MILES AHEAD LOCAL TRAFFIC ONLY / DETOUR → — *SPECIAL (30"x12") R11-3a (60"x30") M4-10R (48"x18")*

⑦ ROAD CLOSED — *R11-2 (48"x30")*

LEGEND

GATES, SIGNS, BARRICADES, ECT. AS SHOWN ON SCD MT-101.60

DETOUR ROUTE

DESIGN AGENCY: Muskingum County Engineer's Office

DESIGNER	SEJ
REVIEWER	GJW 3/20/23
PROJECT ID	117331
SHEET	4
TOTAL	18

MUS-T.R.90-4.00

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SHEET NUM.	PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
						ROADWAY	
		201	11000	LS		CLEARING AND GRUBBING	
		202	75000	110	FT	FENCE REMOVED	
		203	10000	111	CY	EXCAVATION	
		203	20000	74	CY	EMBANKMENT	
		204	10000	422	SY	SUBGRADE COMPACTION	
		606	15050	187.5	FT	GUARDRAIL, TYPE MGS	
		606	25550	2	EACH	ANCHOR ASSEMBLY, MGS TYPE A	
		606	26550	2	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
						EROSION CONTROL	
		601	32204	25	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
		659	00530	161	SY	SEEDING AND MULCHING, CLASS 3B	
		659	20000	0.03	TON	COMMERCIAL FERTILIZER	
		659	31000	0.1	ACRE	LIME	
		659	35000	2	MGAL	WATER	
		832	30000	2,000	EACH	EROSION CONTROL	
						PAVEMENT	
		301	46000	38	CY	ASPHALT CONCRETE BASE, PG64-22	
		304	20000	58	CY	AGGREGATE BASE	
		407	10000	17	GAL	TACK COAT	
		411	10000	14	CY	STABILIZED CRUSHED AGGREGATE	
		441	50000	12	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
		441	50300	17	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	
						TRAFFIC CONTROL	
		626	00110	8	EACH	BARRIER REFLECTOR, TYPE 2, BI-DIRECTIONAL	
		642	00300	0.05	MILE	CENTER LINE, TYPE 1	
						MAINTENANCE OF TRAFFIC	
		614	12421	LS		DETOUR SIGNING, AS PER PLAN	4
						STRUCTURE OVER 20 FOOT SPAN (MUS-TR90-4.00)	
						FOR BRIDGE ESTIMATED QUANTITIES SEE SHEET 11	
						INCIDENTALS	
		614	11000	LS		MAINTAINING TRAFFIC	
		623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
		624	10000	LS		MOBILIZATION	

GENERAL SUMMARY

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER SEJ

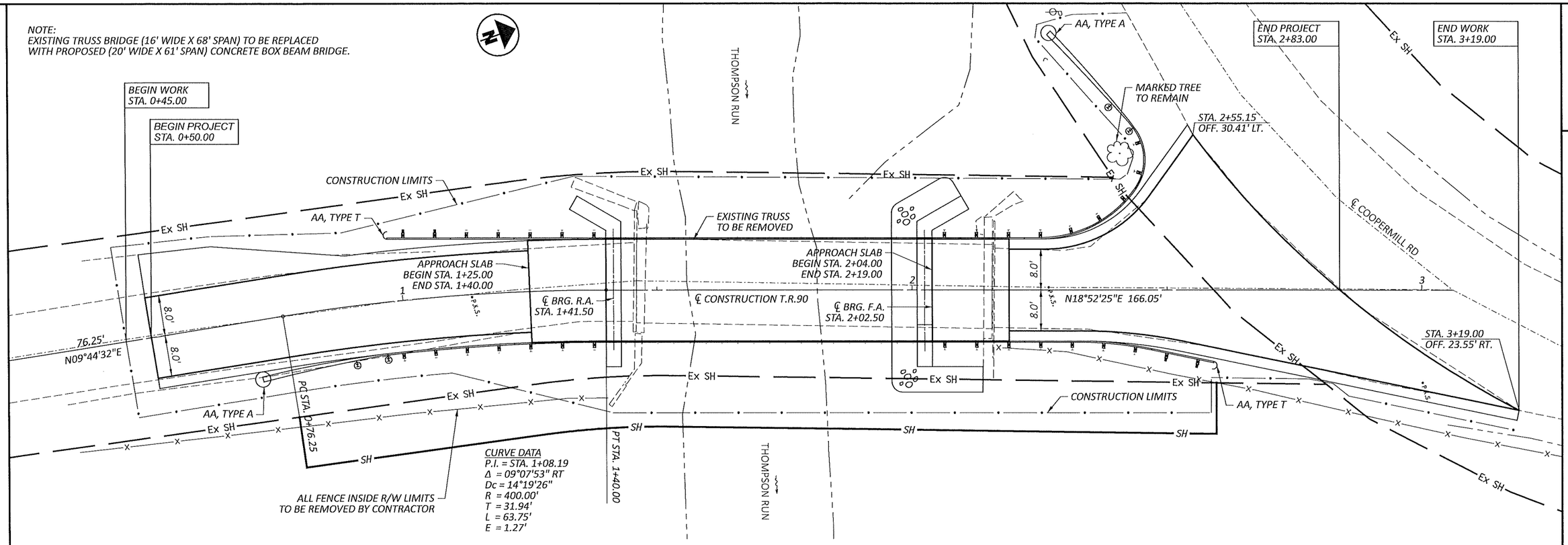
REVIEWER GJW 3/20/23

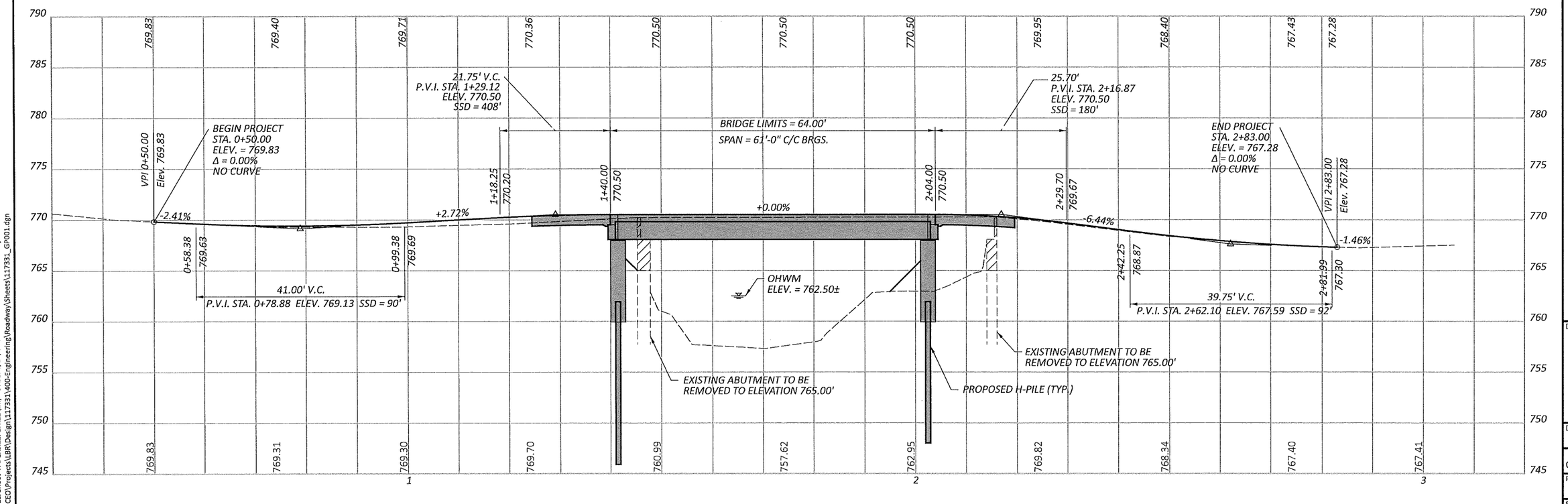
PROJECT ID 117331

SHEET 5 TOTAL 18

MUS-T.R.90-4.00

NOTE:
EXISTING TRUSS BRIDGE (16' WIDE X 68' SPAN) TO BE REPLACED
WITH PROPOSED (20' WIDE X 61' SPAN) CONCRETE BOX BEAM BRIDGE.





HORIZONTAL SCALE IN FEET
0 10 20 40

PLAN AND PROFILE
STA. 0+45 TO STA. 3+19

MUS-T.R.90-4.00

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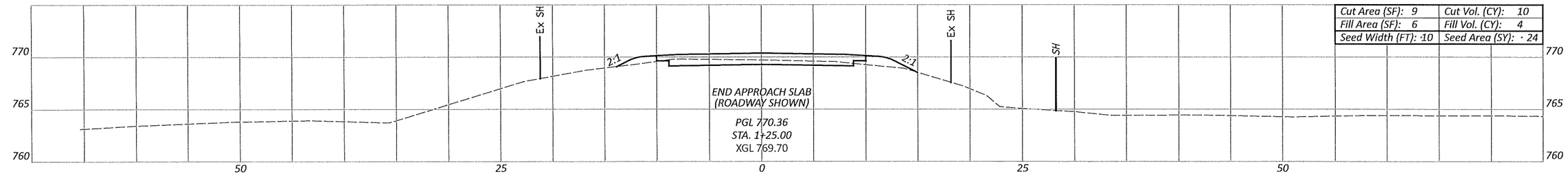
DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER	SEJ
REVIEWER	GJW 3/20/23
PROJECT ID	117331
SHEET	6
TOTAL	18



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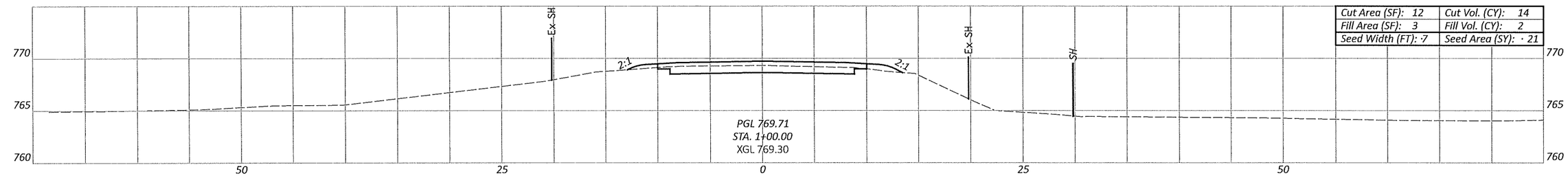

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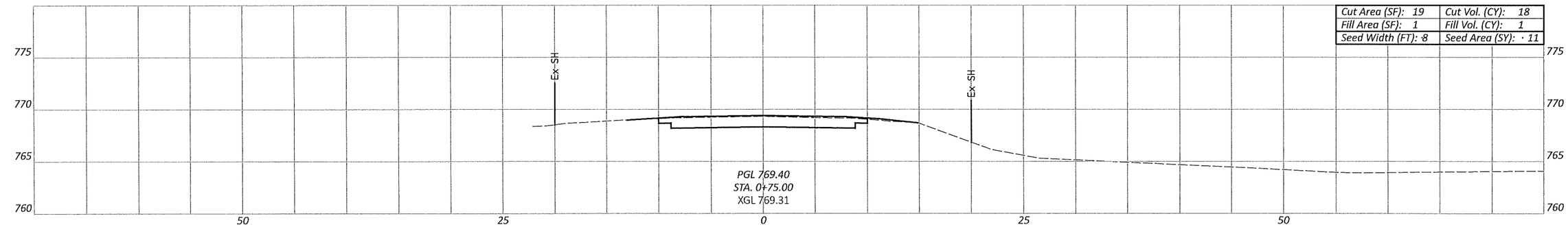

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Fill Area (SF): 1	Fill Vol. (CY): 1
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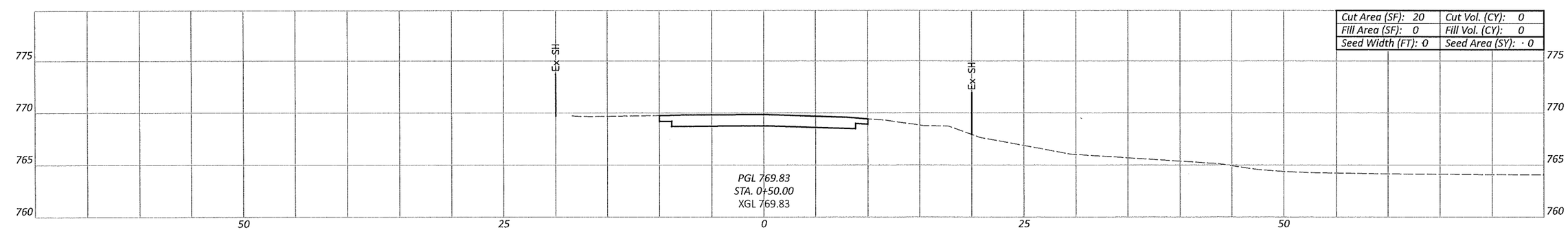

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Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 0	Seed Area (SY): 0

ROADWAY CROSS SECTIONS
STA. 0+50.00 TO 1+25.00

MUS-T.R.90-4.00

MODEL: CLP_1 - 0+50.00 [Sheet] PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:24:22 PM USER: sejohnson
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DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER
SEJ

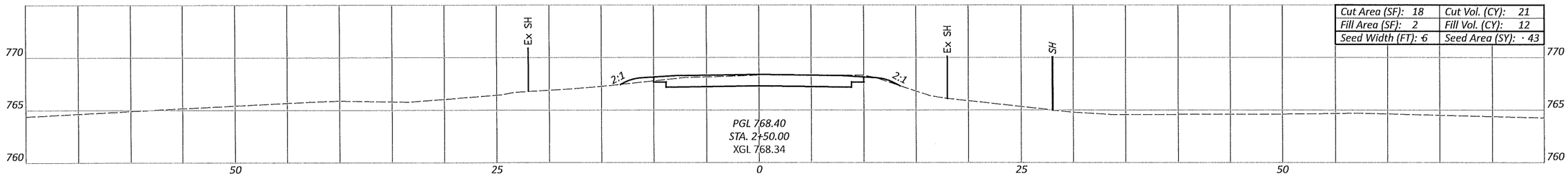
REVIEWER
GJW 3/20/23

PROJECT ID
117331

SHEET 7 TOTAL 18

Sheet Totals

Seeding	Cut	Fill
56	42	7



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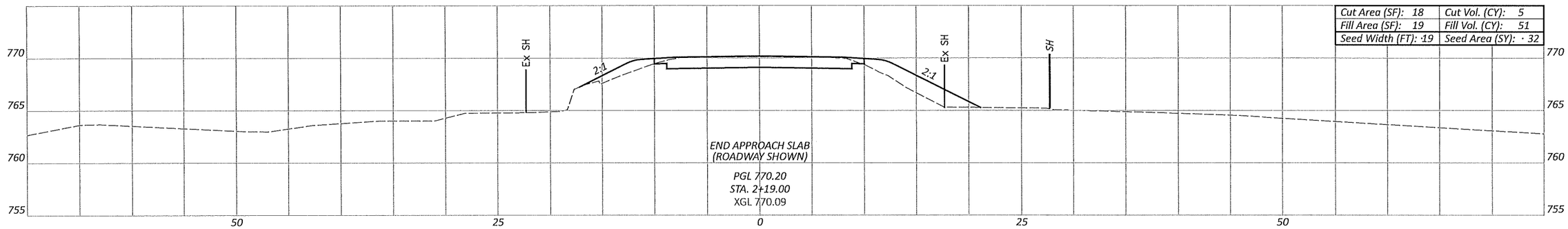
Fill Area (SF): 2	Fill Vol. (CY): 12
Seed Width (FT): 6	Seed Area (SY): .43

PGL 768.40
STA. 2+50.00
XGL 768.34



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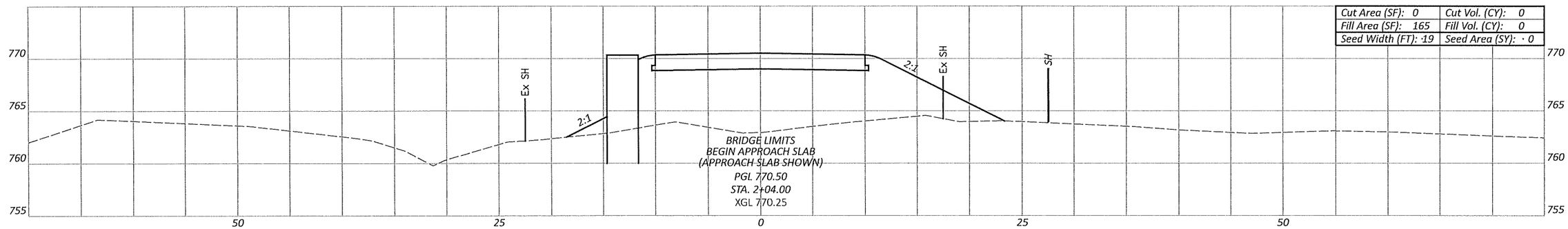
Fill Area (SF): 19	Fill Vol. (CY): 51
Seed Width (FT): 19	Seed Area (SY): .32

END APPROACH SLAB
(ROADWAY SHOWN)

PGL 770.20
STA. 2+19.00
XGL 770.09



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Fill Area (SF): 165	Fill Vol. (CY): 0
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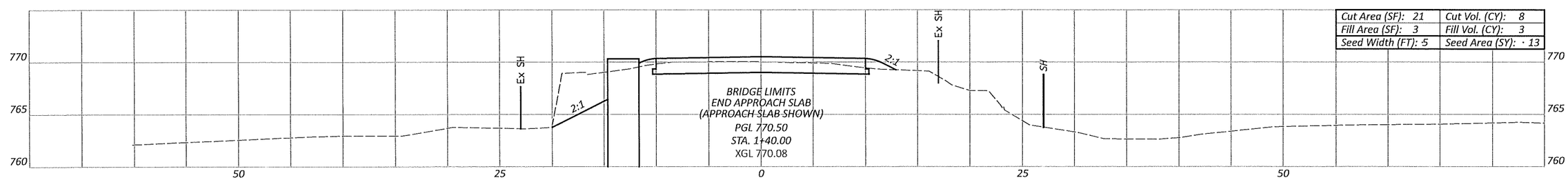
BRIDGE LIMITS
BEGIN APPROACH SLAB
(APPROACH SLAB SHOWN)
PGL 770.50
STA. 2+04.00
XGL 770.25



Cut Area (SF): 21	Cut Vol. (CY): 8
Fill Area (SF): 3	Fill Vol. (CY): 3
Seed Width (FT): 5	Seed Area (SY): .13

BRIDGE LIMITS
END APPROACH SLAB
(APPROACH SLAB SHOWN)
PGL 770.50
STA. 1+40.00
XGL 770.08

ROADWAY CROSS SECTIONS
STA. 1+40.00 TO 2+50.00

Sheet Totals		
Seeding	Cut	Fill
88	34	66

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER
SEJ

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SHEET 8 TOTAL 18

MUS-T.R.90-4.00

MODEL: CLP_1 - 1+00.00 [Sheet] PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:24:22 PM USER: sejohnson
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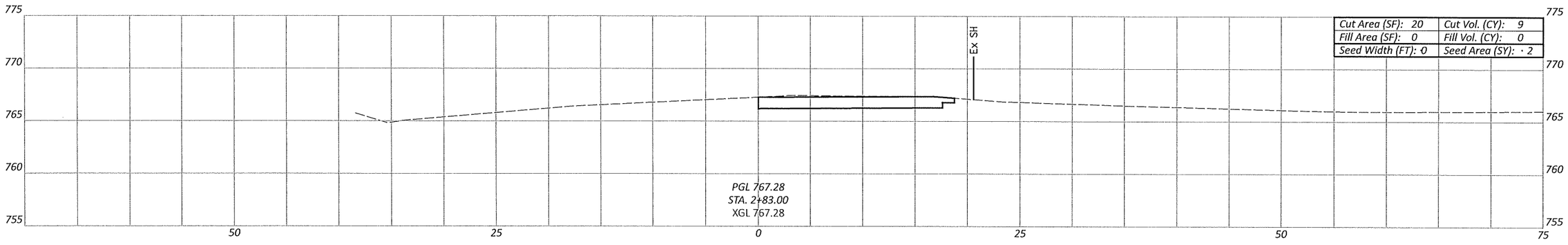
ROADWAY CROSS SECTIONS
STA. 2+75.00 TO 2+83.00



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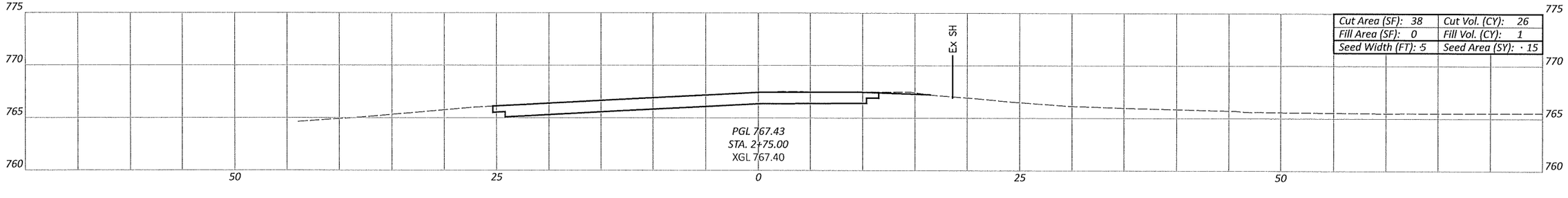
Seed Width (FT): 0	Seed Area (SY): 2



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Sheet Totals		
Seeding	Cut	Fill
17	35	1

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER
SEJ

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SHEET	TOTAL
9	18

MUS-T.R.90-4.00

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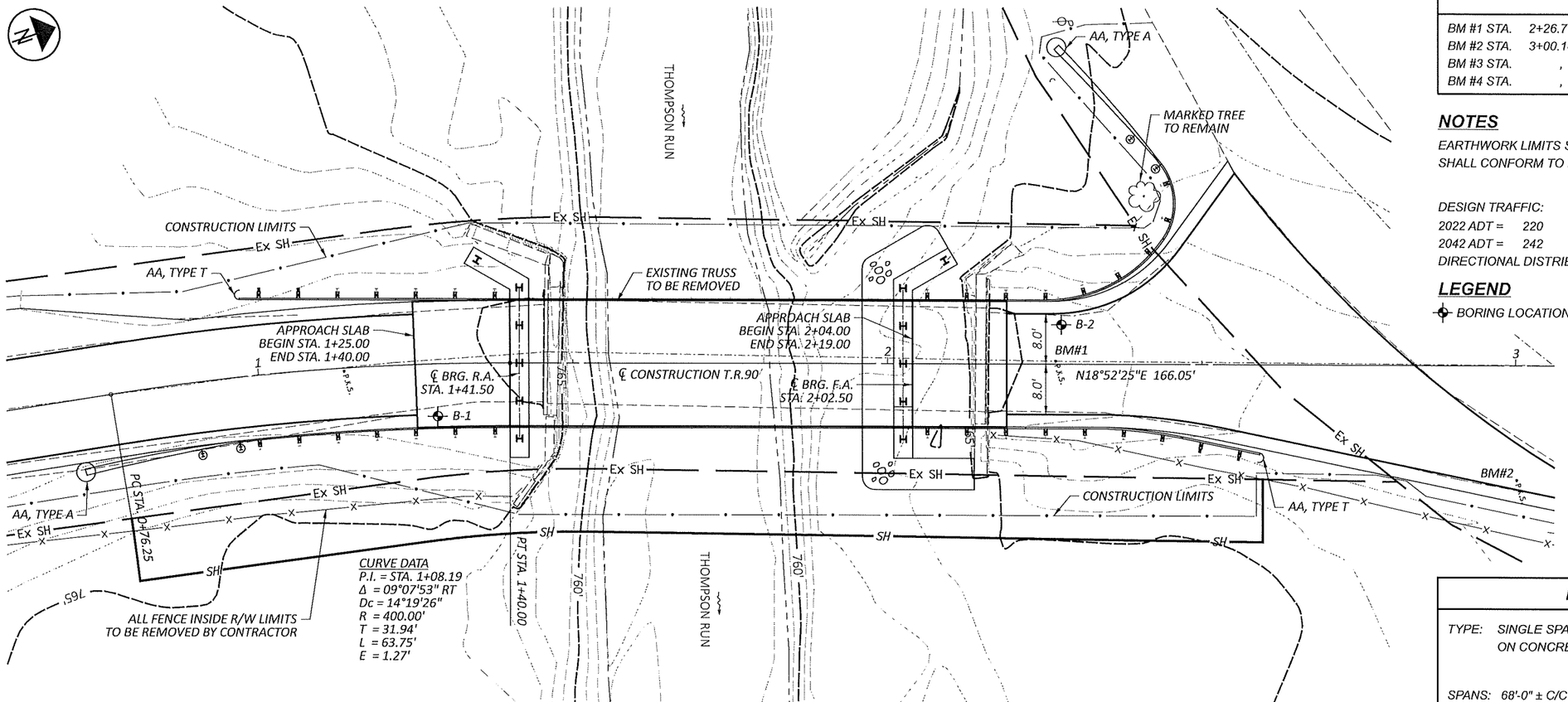

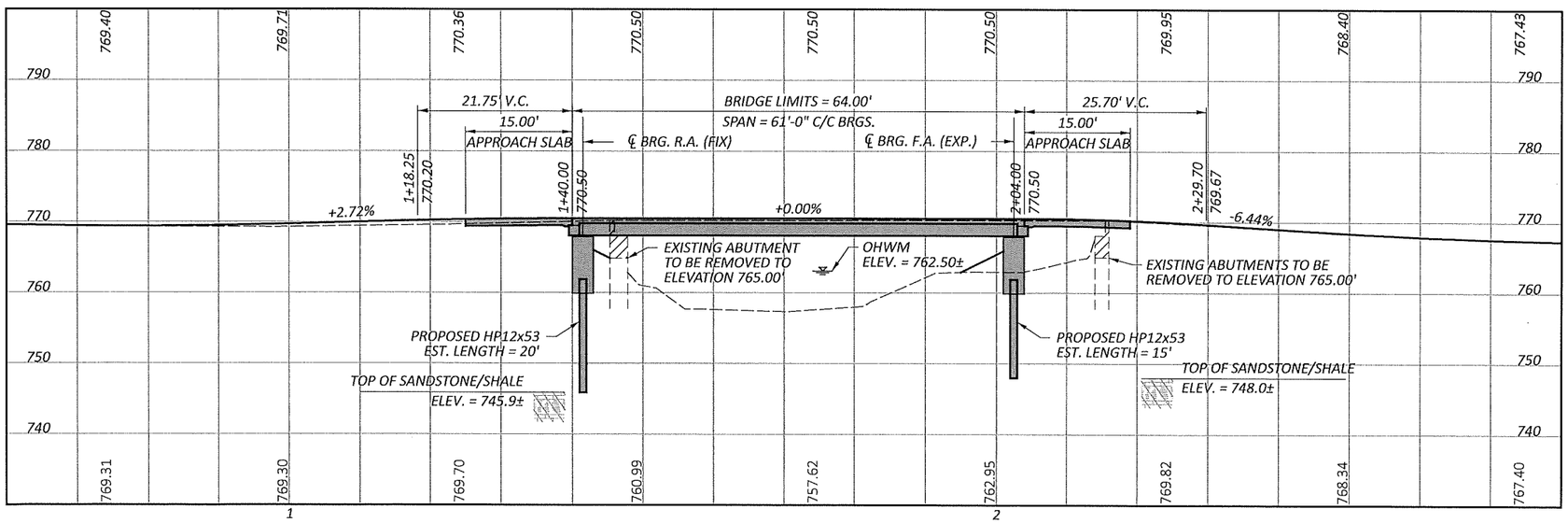

BENCHMARK DATA

BM #1 STA.	2+26.71,	ELEV.	769.74',	OFFSET	0.49',	LT.
BM #2 STA.	3+00.14,	ELEV.	767.59',	OFFSET	18.20',	RT.
BM #3 STA.	,	ELEV.	,	OFFSET	,	
BM #4 STA.	,	ELEV.	,	OFFSET	,	

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:

2022 ADT = 220 2022 ADTT = UNKNOWN
2042 ADT = 242 2042 ADTT = UNKNOWN
DIRECTIONAL DISTRIBUTION = 0.55

LEGEND

BORING LOCATION

HYDRAULIC DATA

DRAINAGE AREA = 22.3 SQ. MILES
Q (10) = 2410 CFS V (10) = N/A
Q (100) = 4620 CFS V (100) = N/A

EXISTING STRUCTURE

TYPE: SINGLE SPAN STEEL TRUSS BRIDGE WITH CONCRETE DECK ON CONCRETE/SANDSTONE ABUTMENTS.

SPANS: 68'-0" ± C/C BEARINGS
ROADWAY: 16-3" F/F GUARDRAIL
LOADING: S-12
SKEW: NONE
WEARING SURFACE: ASPHALT
APPROACH SLABS: NONE
ALIGNMENT: TANGENT
CROWN: 0.02 ± FT/FT
STRUCTURE FILE NUMBER: 6038395
DATE BUILT: 1952
DISPOSITION: TO BE REPLACED

PROPOSED STRUCTURE

TYPE: SINGLE SPAN COMPOSITE PRESTRESSED CONCRETE BOX BEAM BRIDGE SUPPORTED ON NEW CAPPED PILE ABUTMENTS NEW CONCRETE ABUTMENTS.

SPANS: 61'-0" C/C BEARINGS
ROADWAY: 20'-0" (PLUS FIT-UP) F/F GUARDRAIL
LOADING: HL93 AND 1" FUTURE WEARING SURFACE
SKEW: NONE
WEARING SURFACE: CONCRETE
APPROACH SLABS: 15' LONG (AS-1-81)
ALIGNMENT: TANGENT
CROWN: 0.0156 FT/FT
DECK AREA: 1280 SF

COORDINATES: LATITUDE 39°54'40" N
LONGITUDE 82°05'00" W

SITE PLAN
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN 6038396

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER	CHECKER
SEJ	GJW

REVIEWER GJW 3/20/23

PROJECT ID 117331

SUBSET	TOTAL
1	9

SHEET	TOTAL
10	18

MUS-T.R.90-4.00

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-15 DATED (REVISED) 7/17/15
DS-1-92 DATED (REVISED) 7/15/22
PSBD-2-07 DATED (REVISED) 7/20/18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

800 DATED 4/21/23
832 DATED 7/15/22

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, 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

DESIGN LOADING INCLUDES:
VEHICULAR LIVE LOAD: HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ.FT

DESIGN DATA

CONCRETE CLASS QC2:
COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QC1:
COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

REINFORCING STEEL MINIMUM YIELD STRENGTH 60 KSI

STEEL H-PILES - ASTM A572: YIELD STRENGTH 50 KSI

CONCRETE FOR PRESTRESSED BEAMS:
COMPRESSIVE STRENGTH (FINAL) - 7.0 KSI
COMPRESSIVE STRENGTH (RELEASE) - 5.0 KSI

PRE-STRESSING STRAND:
AREA = 0.153 SQUARE INCHES
ULTIMATE STRENGTH = 270 KSI
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS, SECTIONS 102.05, 105.02, AND 513.04. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	SUPER	GEN'L	SPEC & AS PER PLAN BRIDGE SHEET NO.
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN			LS	2/9
202	23500	126	SY	WEARING COURSE REMOVED			126	
203	35110	55	CY	GRANULAR MATERIAL, TYPE B			55	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING			LS	
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN			LS	2/9
505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION			LS	
507	00200	270	FT	STEEL PILES HP12X53, FURNISHED	270			
507	00250	210	FT	STEEL PILES HP12X53, DRIVEN	210			
509	10000	8954	LB	EPOXY COATED REINFORCING STEEL	4266	4688		
511	21533	28	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN		28		2/9
511	45511	156	CY	CLASS QC1 CONCRETE, ABUTMENT	156			
512	10100	80	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	43	37		
515	12051	5	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM MEMBERS, LEVEL 1, CB21-48, AS PER PLAN		LS		2/9
516	13600	15	SF	1" PREFORMED EXPANSION JOINT FILLER		15		
516	14002	60	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL		60		
516	41100	40	EACH	1/8" PREFORMED BEARING PADS		40		
516	44000	20	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), 6"x12"x1.5"		20		
526	10000	68	SY	REINFORCED CONCRETE APPROACH SLAB (T=12")			68	
606	98000	112.5	FT	GUARDRAIL,MISC.: RAILING SYSTEM SIDE MOUNTED MGS		112.5		2/9
SPECIAL	51822300	116	FT	STEEL DRIP STRIP		116		

MONOLITHIC WEARING SURFACE

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

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

THE BACKFILL MATERIAL SHALL BE GRANULAR MATERIAL, TYPE B AS SHOWN ON SHEETS 4/9 AND 6/9 . THIS COST SHALL BE INCLUDED IN THIS PAY ITEM.

ITEM 511 - CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN

THE CONTRACTOR SHALL ENSURE THAT IPANEX WATERPROOFING, OR APPROVED EQUAL, IS ADDED TO THE CONCRETE MIXTURE AS REQUIRED BY THE ENGINEER. STANDARD CLASS QC2 CONCRETE SHALL BE USED WITH THE ADDITION OF IPANEX WATERPROOFING AT A RATE OF 13.8 OZ PER 100 LB OF CEMENT OR CEMENTATIOUS MATERIAL. THIS COST SHALL BE INCLUDED IN THIS PAY ITEM.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

THE EXISTING ABUTMENTS SHALL BE REMOVED TO ELEVATION 765.00. THE STEEL SUPERSTRUCTURE MEMBERS SHALL BE REMOVED FOR SALVAGE AND BECOME PROPERTY OF THE LANDOWNER. THE CONTRACTOR SHALL MOVE THE SALVAGED STEEL TO A LOCATION DESIGNATED BY THE LANDOWNER ON THE SAME PARCEL.

THE DECK SHALL BE CAREFULLY REMOVED ABOVE THE STRINGERS AND FLOOR BEAMS, THEN DISPOSED OF BY THE CONTRACTOR. THE STRINGERS AND FLOOR BEAMS SHALL BE CAREFULLY CUT AS CLOSE TO THE CONNECTION POINTS AS POSSIBLE AND HAULED AWAY. EACH STEEL TRUSS SHALL BE REMOVED AND HAULED AWAY IN ONE PIECE.

PRIOR TO THE DEMOLITION, THE CONTRACTOR SHALL ESTABLISH A RIGHT-OF-ENTRY AGREEMENT WITH THE LANDOWNER TO RELOCATE THE SALVAGED STEEL.

PILES TO BEDROCK

DRIVE PILES TO REFUSAL ON BEDROCK. THE COUNTY WILL WILL CONSIDER REFUSAL TO BE OBTAINED WHEN THE PILE PENETRATION IS AN INCH OR LESS AFTER RECEIVING AT LEAST 20 BLOWS FROM THE PILE HAMMER. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE TOTAL FACTORED LOAD IS 45 KIPS PER PILE FOR THE HP12X53 ABUTMENT PILES.

ABUTMENT PILES:
6 PILES 25 FEET LONG, ORDER LENGTH AT REAR ABUTMENT
6 PILES 20 FEET LONG, ORDER LENGTH AT FORWARD ABUTMENT

BEARING PAD SHIMS

PLACE 1/8" THICK PREFORMED BEARING PAD SHIMS, PLAN AREA 6 INCHES BY 10 INCHES, UNDER THE ELASTOMERIC BEARING PADS WHERE REQUIRED FOR PROPER BEARING. FURNISH TWO SHIMS PER BEAM. THE COUNTY WILL MEASURE THIS ITEM BY THE TOTAL NUMBER SUPPLIED. THE COUNTY WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516 - 1/8" PREFORMED BEARING PADS. ANY UNUSED SHIMS BECOME THE PROPERTY OF THE COUNTY

ITEM 515 - PRESTRESSED CONCRETE COMPOSITE BOX BEAM MEMBERS, LEVEL 1, CB21-48, AS PER PLAN

PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT TO THE COUNTY A LOAD RATING REPORT WITH BR100 PER THE LATEST ODOT BRIDGE DESIGN MANUAL.

THE LOAD RATING REPORT SHALL ALSO INCLUDE THE CALCULATED CAMBER AT RELEASE AND TIME OF DECK POUR. LONG TERM CAMBER AND TOTAL CALCULATED DEAD LOAD DEFLECTION SHALL BE PROVIDED AS WELL IN ORDER FOR THE CONTRACTOR TO ESTABLISH SCREED ELEVATIONS AND ADJUST BEAM SEAT ELEVATIONS IF NEEDED.

ITEM 606 - GUARDRAIL, MISC.: RAILING SYSTEM SIDE MOUNTED MGS

THE CONTRACTOR SHALL REFER TO THE PLAN INSERTION SHEET "RAILING SYSTEM SIDE MOUNTED MGS" INCLUDED IN THE PLANS FOR DETAILS ON THE BRIDGE RAIL SYSYEM.

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN 6038396

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER	CHECKER
SEJ	GJW

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SUBSET	TOTAL
2	9

SHEET	TOTAL
11	18

MUS-T.R.90-4.00

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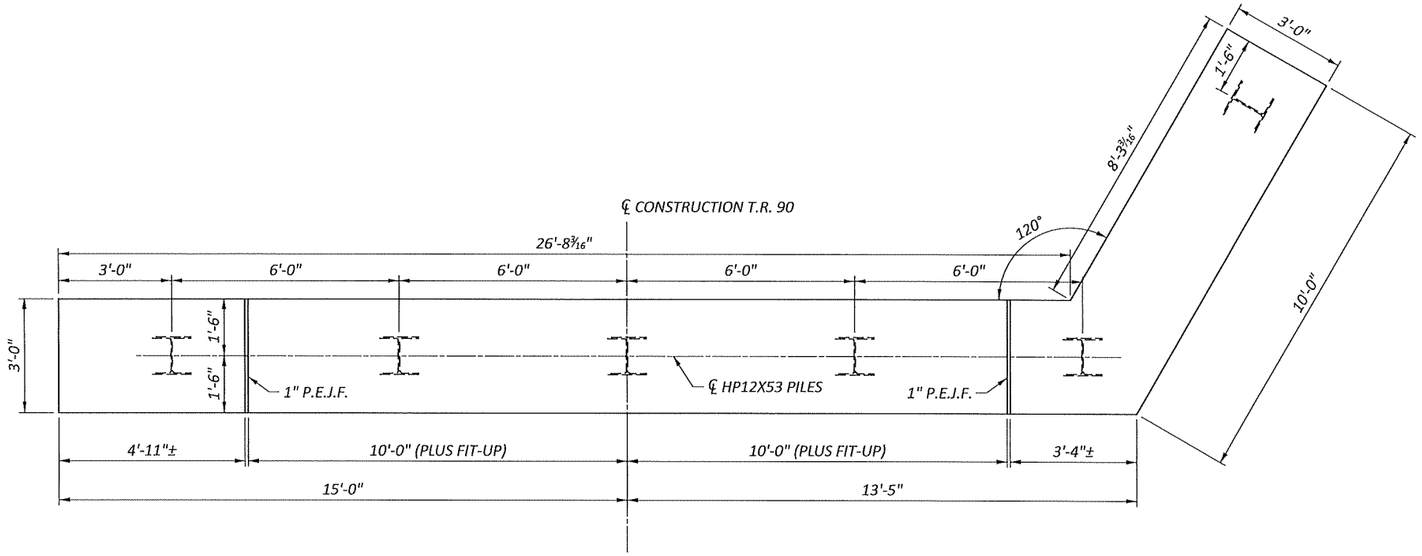
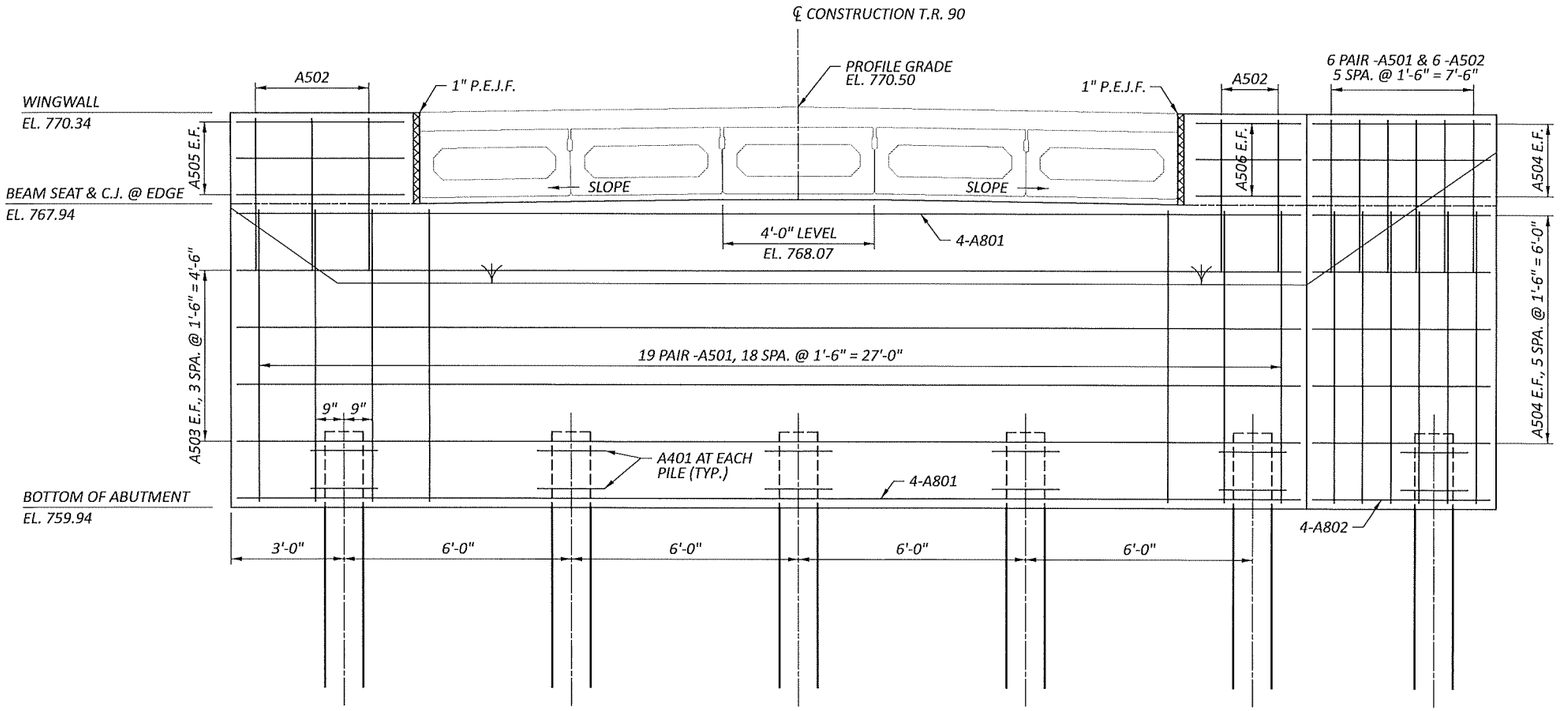


ABUTMENT PLAN VIEW



ABUTMENT ELEVATION VIEW

NOTES:

1. S501, S502, S503, S801 BARS NOT SHOWN, SEE BRIDGE SHEET 4/9

REAR ABUTMENT DETAILS
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN	6038396
DESIGN AGENCY	Muskingum County ENGINEER'S OFFICE
DESIGNER	SEJ
CHECKER	GJW
REVIEWER	GJW 3/20/23
PROJECT ID	117331
SUBSET	3
TOTAL	9
SHEET	12
TOTAL	18

MUS-T.R.90-4.00

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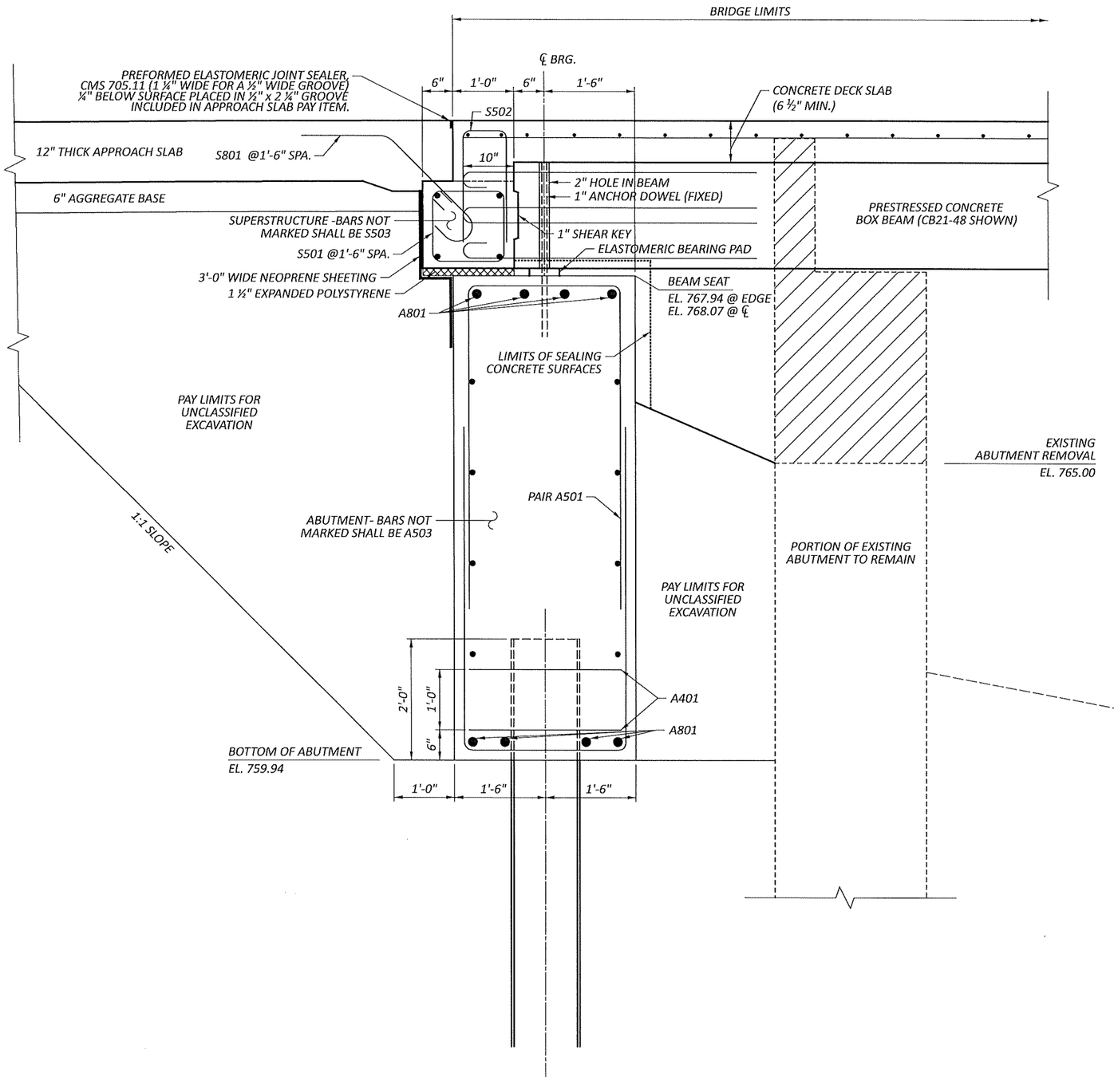

ABUTMENT SECTION

NOTES

1. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES.
2. ABUTMENT CONCRETE: DO NOT PLACE THE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED.
3. SEALING OF BEAM SEATS: IF THE BEAM SEATS ARE SEALED WITH AN EPOXY SEALER PRIOR TO SETTING BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE COUNTY WILL NOT PAY FOR THIS REMOVAL.
4. SEE STD. DWG. PSBD-2-07 FOR ANCHOR DOWEL DETAILS.
5. 1 ½" EXPANDED POLYSTYRENE SHALL BE INCLUDED IN ITEM 511 - CLASS QC2 CONCRETE SUPERSTRUCTURE, AS PER PLAN.
6. LAP SPLICE LENGTHS:
   #5 BAR = 33 INCHES, U.N.O.
   #8 BAR = 87 INCHES, U.N.O.

LEGEND

EXISTING ABUTMENT REMOVAL LIMITS

REAR ABUTMENT DETAILS
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN	6038396
DESIGN AGENCY	Muskingum County Engineer's Office
DESIGNER	SEJ
CHECKER	GJW
REVIEWER	GJW 3/20/23
PROJECT ID	117331
SUBSET	4
TOTAL	9
SHEET	13
TOTAL	18

MUS-T.R.90-4.00

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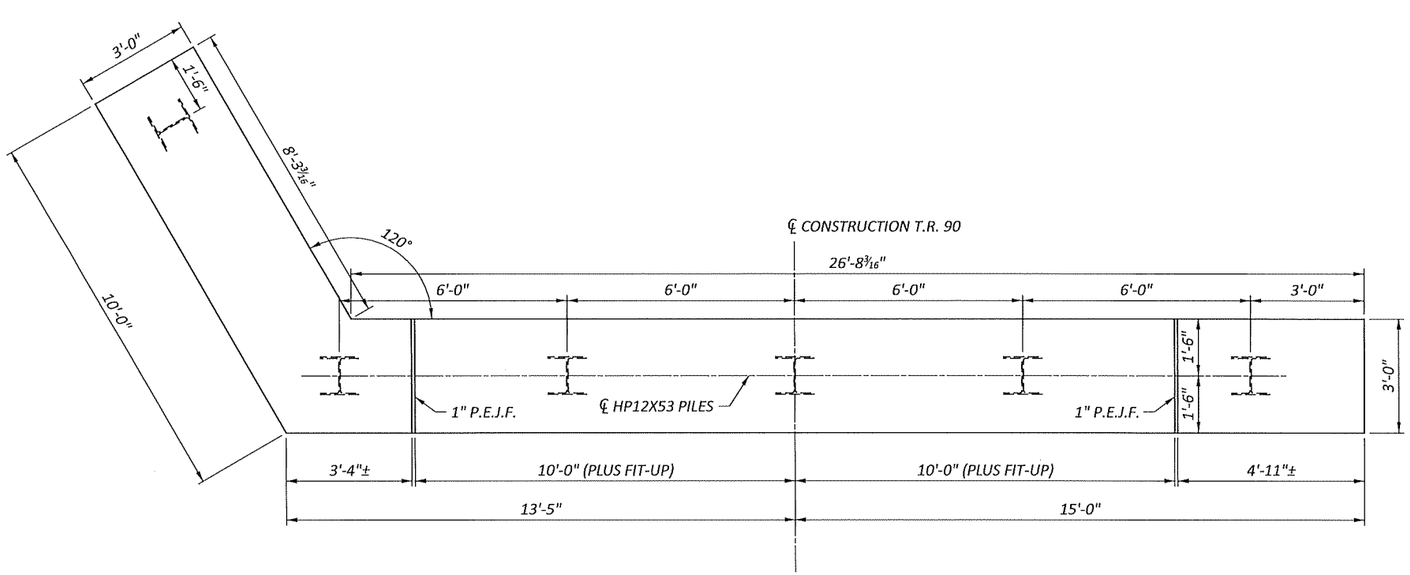
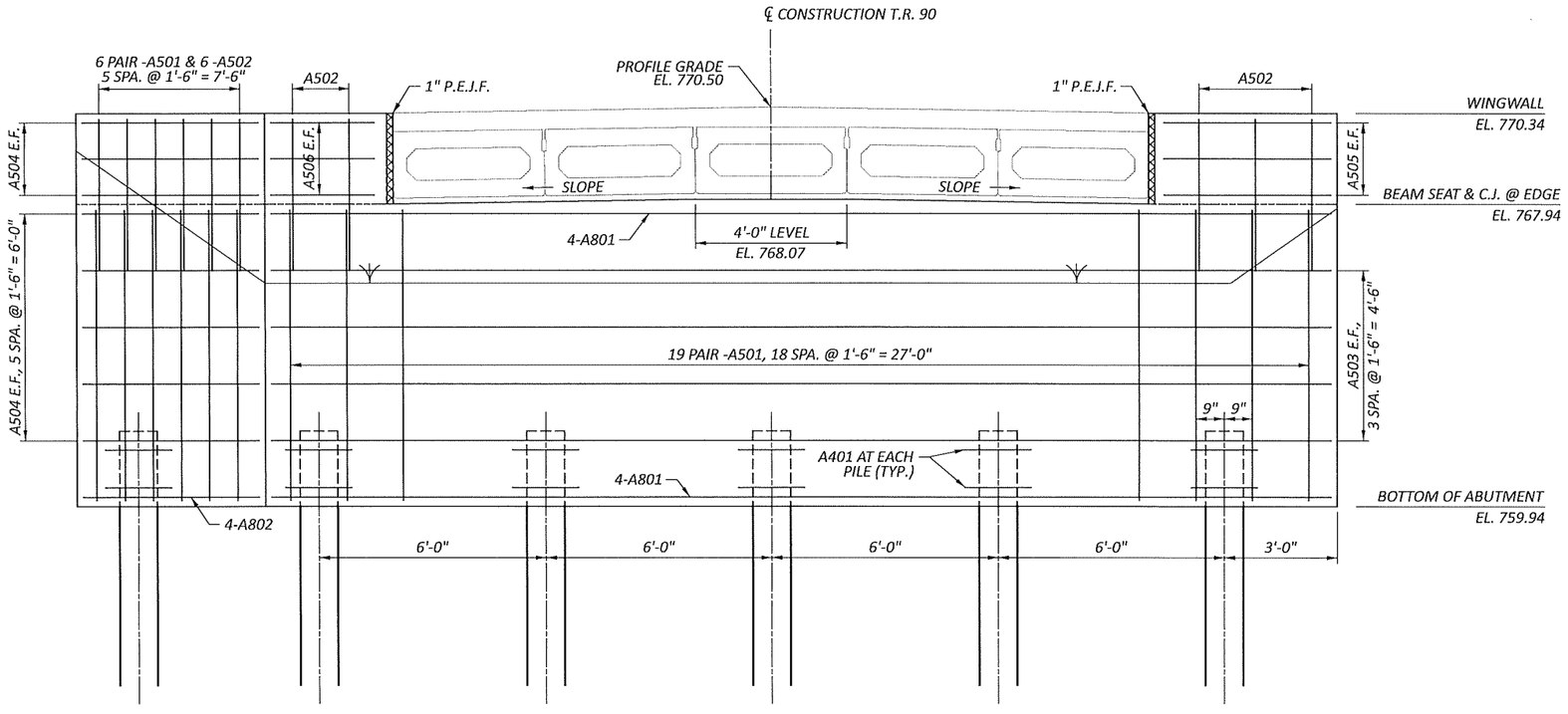


ABUTMENT PLAN VIEW



ABUTMENT ELEVATION VIEW

NOTES:

1. S501, S502, S503, S801 BARS NOT SHOWN, SEE BRIDGE SHEET 6/9

FORWARD ABUTMENT DETAILS
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN	6038396
DESIGN AGENCY	Washington County ENGINEER'S OFFICE
DESIGNER	SEJ
CHECKER	GJW
REVIEWER	GJW 3/20/23
PROJECT ID	117331
SUBSET	5
TOTAL	9
SHEET	14
TOTAL	18

MUS-T.R.90-4.00

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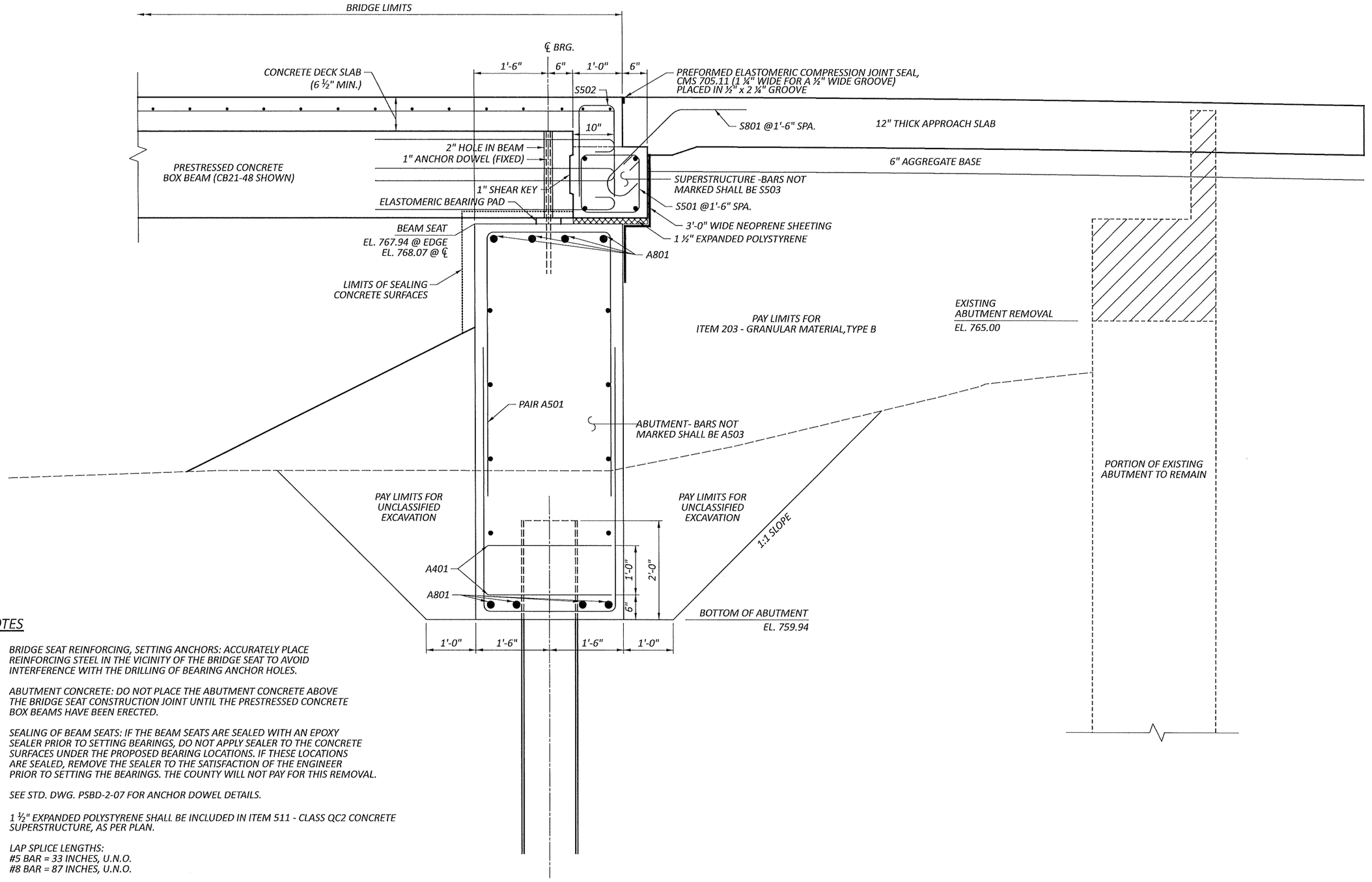

NOTES

1. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES.
2. ABUTMENT CONCRETE: DO NOT PLACE THE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED.
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6. LAP SPLICE LENGTHS:
   #5 BAR = 33 INCHES, U.N.O.
   #8 BAR = 87 INCHES, U.N.O.

LEGEND

EXISTING ABUTMENT REMOVAL LIMITS

ABUTMENT SECTION

FORWARD ABUTMENT DETAILS
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN 6038396

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER	CHECKER
SEJ	GJW

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SUBSET	TOTAL
6	9

SHEET	TOTAL
15	18

MUS-T.R.90-4.00

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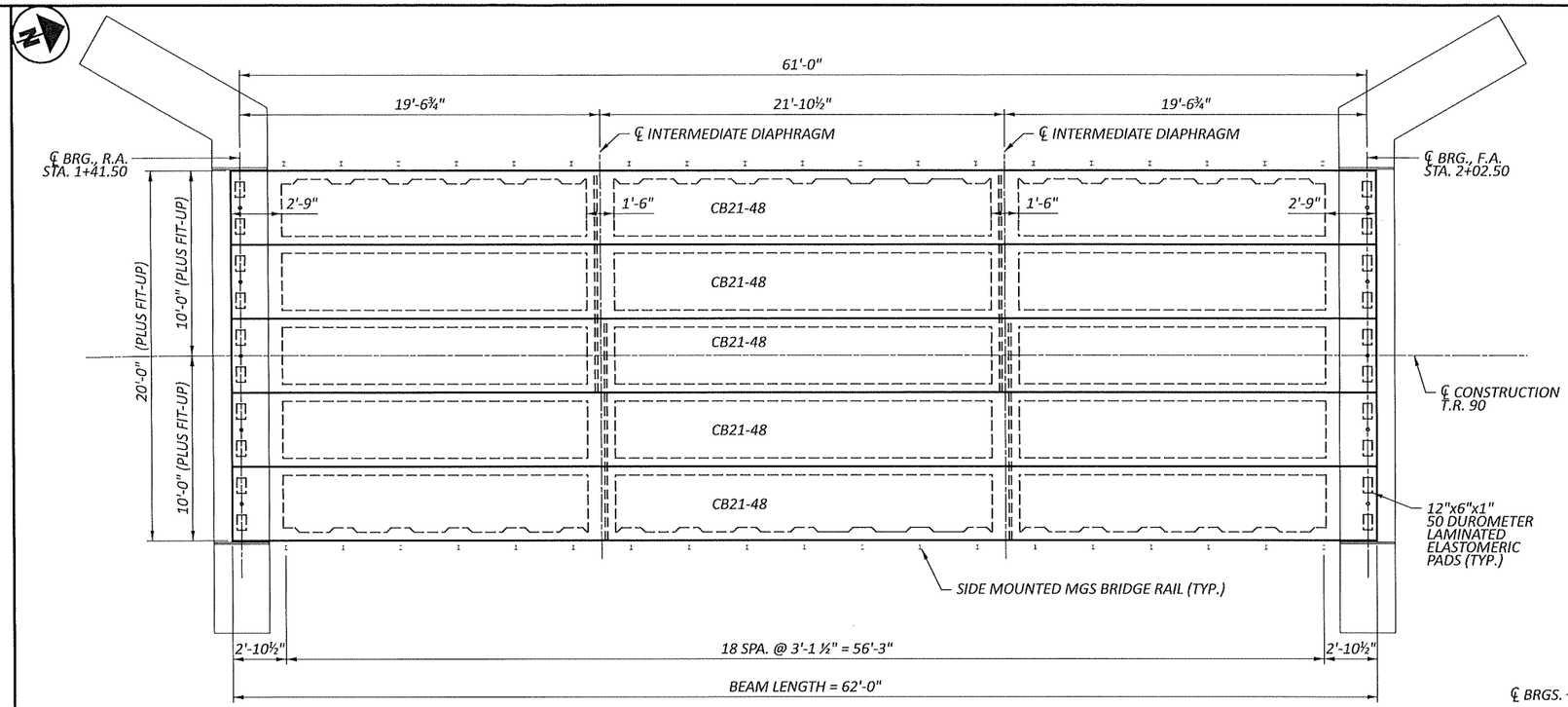
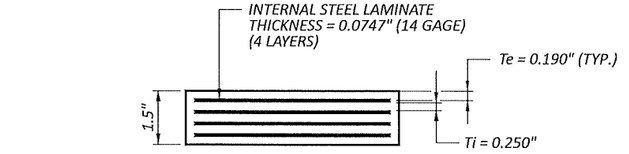
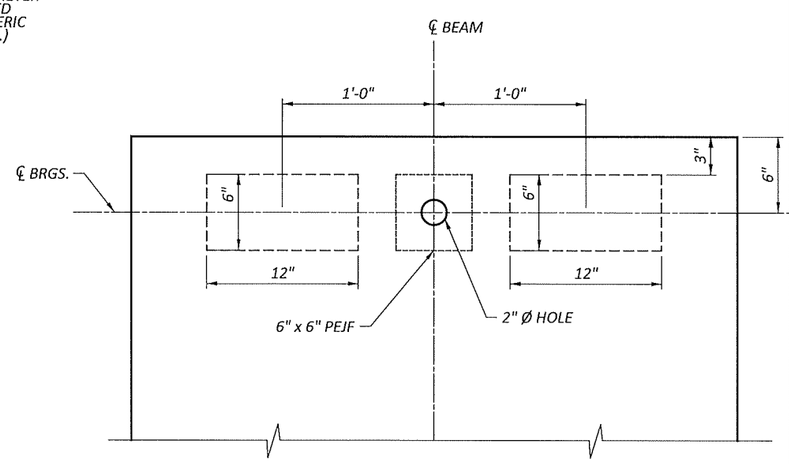


FRAMING PLAN

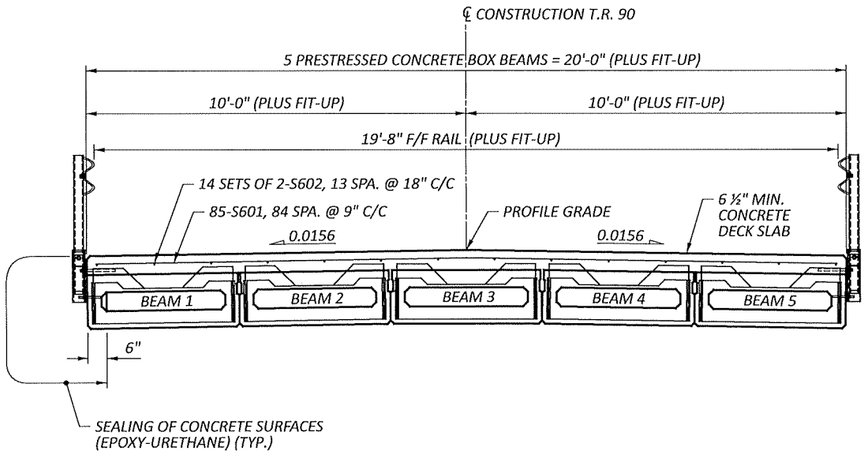


LAMINATED ELASTOMERIC BEARING PAD (CB21-48)
6"x12"x1.5"

DEAD LOAD = 15.00 KIPS
LIVE LOAD = 7.25 KIPS
TOTAL LOAD = 22.50 KIPS

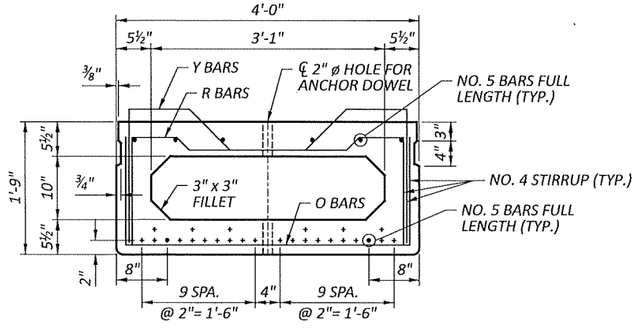


BEARING PAD LAYOUT



TRANSVERSE SECTION

ALL BEAMS SHALL BE CB21-48



CB21-48 SECTION

FOR ADDITIONAL DETAILS SEE SCD PSBD-2-07.
(24 STRANDS)

SUPERSTRUCTURE FRAMING PLAN
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN	6038396
DESIGN AGENCY	Washington County Engineer's Office
DESIGNER	SEJ
CHECKER	GJW
REVIEWER	GJW 3/20/23
PROJECT ID	117331
SUBSET	7
TOTAL	9
SHEET	16
TOTAL	18

MUS-T.R.90-4.00

MODEL: Sheet#1 PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:24:29 PM USER: sejohnson
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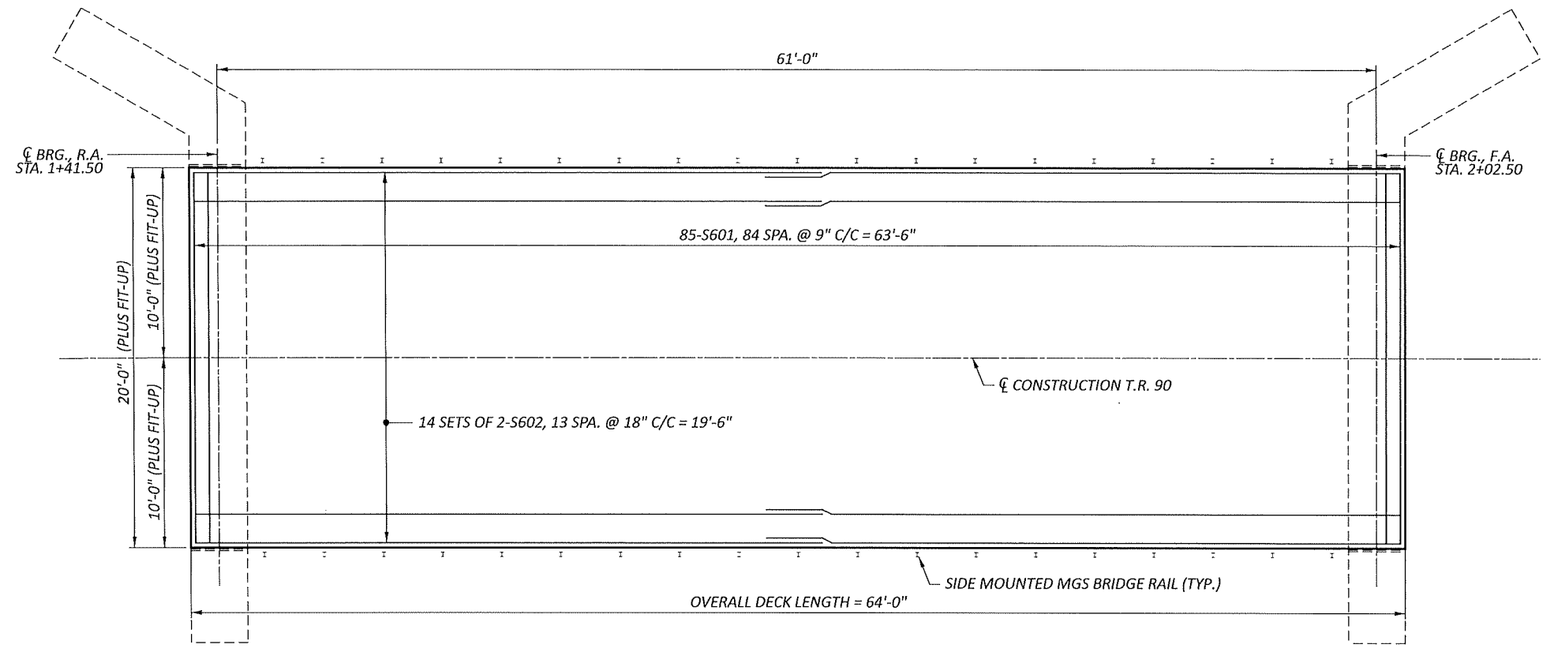

DECK PLAN

NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
2. MAINTAIN A 3" CLEARANCE TO THE EDGE OF DECK FOR ALL TRANSVERSE REINFORCING STEEL.
3. MINIMUM LAP SPLICES:
   #4 BAR = 2'-3"
   #5 BAR = 2'-11"
4. SEE SHEET 7/9 FOR TRANSVERSE SECTION.
5. SCREED ELEVATIONS SHALL BE CALCULATED AND PROVIDED BY THE LOAD RATING CONSULTANT. SCREED ELEVATIONS REPRESENT THE THEORETICAL DECK SURFACE ELEVATIONS PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

DECK PLAN
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

SFN 6038396

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER	CHECKER
SEJ	GJW

REVIEWER
GJW 3/20/23

PROJECT ID
117331

SUBSET	TOTAL
8	9

SHEET	TOTAL
17	18

MUS-T.R.90-4.00

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:24:32 PM USER: sejohnson
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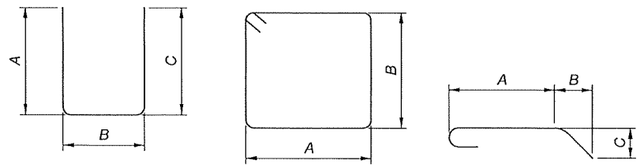
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD	TOTAL				A	B	C	D	E	R	INC
ABUTMENTS													
A401	12	12	24	8'-11"	143	3	1'-9"	2'-6"					
A501	50	50	100	13'-1"	1365	2	5'-4"	2'-8"	5'-4"				
A502	22	22	44	10'-5"	478	2	4'-0"	2'-8"	4'-0"				
A503	8	8	16	28'-0"	467	STR							
A504	16	16	32	9'-8"	323	STR							
A505	6	6	12	4'-4"	54	STR							
A506	6	6	12	2'-9"	34	STR							
A801	8	8	16	28'-0"	1196	STR							
A802	4	4	8	9'-8"	206	STR							
SUB-TOTAL					4,266								

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD	TOTAL				A	B	C	D	E	R	INC
DECK													
S501	14	14	28	5'-4"	156	3	1'-2"	1'-2"					
S502	14	14	28	4'-1"	119	2	1'-10"	0'-8"	1'-10"				
S503	4	4	8	19'-6"	163	STR							
S601			28	33'-7"	1413	STR							
S602			86	19'-6"	2519	STR							
S801	14	14	28	4'-3"	318	18	2'-0"	1'-1"	1'-0"				
SUB-TOTAL					4,688								

BENDING DIAGRAM



TYPE-2 TYPE-3 TYPE-18

NOTES

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
2. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED.

REINFORCING STEEL LIST
BRIDGE NO. MUS-TR90-0400
OVER THOMPSON RUN

MUS-T.R.90-4.00

SFN 6038396
DESIGN AGENCY Washington County ENGINEER'S OFFICE
DESIGNER SEJ | CHECKER GJW
REVIEWER GJW 3/20/23
PROJECT ID 117331
SUBSET 9 | TOTAL 9
SHEET 18 | TOTAL 18

PROJECT: WORTMAN RD. BRIDGE
TYPE: ROADWAY
PID: SFN: 6038-395
START: 5/7/15 END: 5/7/15

DRILLING FIRM / OPERATOR: DHDC / DONALD
SAMPLING FIRM / LOGGER: DHDC / M.O.H.
DRILLING METHOD:
SAMPLING METHOD:

DRILL RIG: CME 55 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 7/21/14
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 0.0 (MSL) EOB: 45.0 ft.
COORD: Not Recorded

EXPLORATION ID B-1
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS
FILL: A mixture of SAND and GRAVEL, SANDSTONE fragments, and tree roots, Moist	0.0 / -1.2	
FILL: Dark brown, SILTY SAND and ROCK fragments, Moist	-3.0	
Loose, Brown and gray, SANDY SILT (A-4a), with trace to little gravel, Moist	-5.0	
Soft, Brown and gray, SILTY CLAY (A-6b), with trace to little gravel, Moist	-6.5	
Soft, Dark brown, SILTY CLAY (A-6b), with trace sand, Moist	-11.0	
Loose, Brown and gray, SANDY SILT (A-4b), Moist	-12.5	
Medium dense, SAND with SANDSTONE fragments, with little silt and clay (A-1-b), Very moist	-15.0	
Very stiff to hard, Brownish gray to gray, CLAY (A-7-6), [extremely weathered soft SHALE], and interbedded SANDSTONE fragments, Very moist	-24.0	
Interbedded layers of extremely weathered soft, SHALE and hard SANDSTONE	-45.0	EOB 45.0

SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
8 8 10	21	67	SS-1	-	-	-	-	-	-	-	-	-	-		
4 3 4	9	100	SS-2	-	-	-	-	-	-	-	-	-	-		
3 4 3	7	67	SS-3	-	-	-	-	-	-	-	-	-	-		
1 4 3	7	83	SS-4	-	-	-	-	-	-	-	-	-	23		
2 3 2	5	100	SS-5	-	-	-	-	-	-	-	-	-	22		
2 3 4	12	100	SS-6	-	-	-	-	-	-	-	-	-	25		
2 3 4	21	100	SS-7	-	-	-	-	-	-	-	-	-	19		
3 6 7	28	67	SS-8	-	-	-	-	-	-	-	-	-	13		
8 8 9	43	83	SS-9	-	-	-	-	-	-	-	-	-	14		
10 11 9	52	67	SS-10	-	-	-	-	-	-	-	-	-	18		
10 14 16	-	100	SS-11	-	-	-	-	-	-	-	-	-	13		
9 13 26	-	100	SS-12	-	-	-	-	-	-	-	-	-	18		
10 50/3"	50/3"	-	SS-13	-	-	-	-	-	-	-	-	-	13		
50/3"	-	100	SS-14	-	-	-	-	-	-	-	-	-	-		
50/2"	-	100	SS-15	-	-	-	-	-	-	-	-	-	-		

Boring discontinued at 45.0 feet due to auger refusal.

NOTES: BOTTOM OF CREEK 8.0 FEET BELOW THE BRIDGE DECK. 12" OF WATER IN THE CREEK.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

B-001-0-15

PROJECT: WORTMAN RD. BRIDGE
TYPE: ROADWAY
PID: SFN: 6038-395
START: 5/7/15 END: 5/7/15

DRILLING FIRM / OPERATOR: DHDC / DONALD
SAMPLING FIRM / LOGGER: DHDC / M.O.H.
DRILLING METHOD:
SAMPLING METHOD:

DRILL RIG: CME 55 TRUCK
HAMMER: CME AUTOMATIC
CALIBRATION DATE: 7/21/14
ENERGY RATIO (%): 80

STATION / OFFSET:
ALIGNMENT:
ELEVATION: 0.0 (MSL) EOB: 44.0 ft.
COORD: Not Recorded

EXPLORATION ID B-2
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS
ASPHALT PAVEMENT (8")	0.0 / -0.7	
GRANULAR BASE (8")	-1.3	
FILL: Dark brown, SILTY SAND and ROCK fragments, Moist	-3.0	
Loose, Brown and gray, SANDY SILT (A-4a), with trace to little gravel, Moist	-8.0	
Medium stiff, Dark brown with trace gray, SILTY CLAY (A-6b), with little sand, Moist	-10.0	
Gray, SILTY CLAY, with trace sand, trace decomposed organics and odor, Very moist to wet	-11.5	
Dense, SAND with SANDSTONE fragments, with little silt and clay (A-1-b), Very moist	-19.0	
Hard, Brownish gray to gray, CLAY (A-7-6), [extremely weathered soft SHALE], and interbedded SANDSTONE fragments, Moist	-22.0	
Interbedded layers of extremely weathered soft, SHALE and hard SANDSTONE	-44.0	EOB

SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	ABAN-DONED
6 4 3	9	67	SS-1	-	-	-	-	-	-	-	-	-	-		
2 2 3	5	100	SS-2	-	-	-	-	-	-	-	-	-	16		
2 2 3	7	100	SS-3	-	-	-	-	-	-	-	-	-	18		
2 2 3	8	72	SS-4	-	-	-	-	-	-	-	-	-	21		
3 3 3	8	100	SS-5	-	-	-	-	-	-	-	-	-	29		
3 4 3	4	100	SS-6	-	-	-	-	-	-	-	-	-	34		
3 3 3	63	72	SS-7	-	-	-	-	-	-	-	-	-	9		
1 2 5	55	89	SS-8	-	-	-	-	-	-	-	-	-	-		
12 36 20	-	50	SS-9	-	-	-	-	-	-	-	-	-	-		
10 3 50	50/3"	-	SS-10	-	-	-	-	-	-	-	-	-	15		
50/3"	-	100	SS-11	-	-	-	-	-	-	-	-	-	-		
50/3"	-	100	SS-12	-	-	-	-	-	-	-	-	-	-		
50/4"	-	50	SS-13	-	-	-	-	-	-	-	-	-	-		
50/0"	-		SS-14	-	-	-	-	-	-	-	-	-	-		

Boring discontinued at 44.0 feet due to auger refusal.

NOTES: BOTTOM OF CREEK 8.0 FEET BELOW THE BRIDGE DECK. 12" OF WATER IN THE CREEK.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

B-002-0-15

NOTE:

FOUNDATION EXPLORATION PERFORMED BY:

DHDC ENGINEERING CONSULTING SERVICES, INC.
2390 ADVANCED BUSINESS CENTER DRIVE
COLUMBUS, OHIO 43228

COPIES OF THIS REPORT IS AVAILIABLE UPON REQUEST AT:

MUSKINGUM COUNTY ENGINEER'S OFFICE
155 REHL ROAD
ZANESVILLE, OHIO 43701

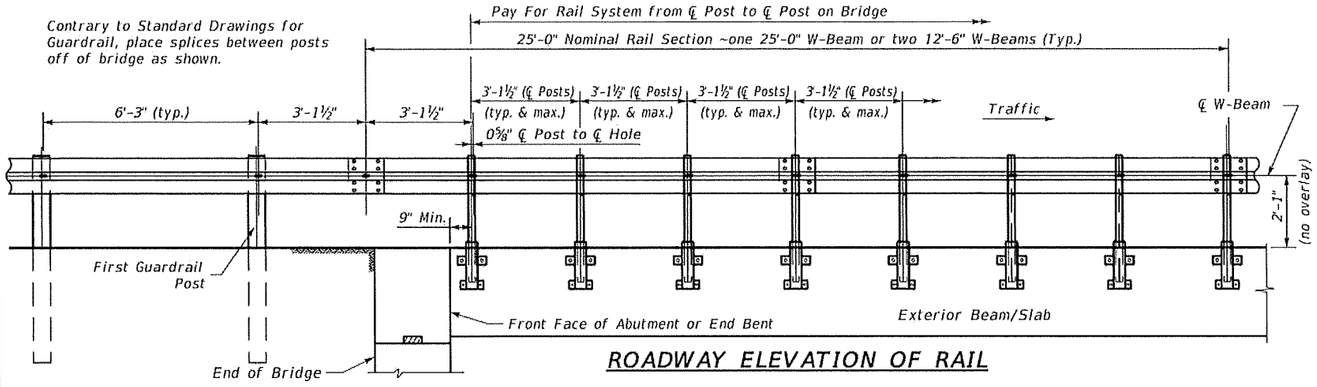
STRUCTURE FOUNDATION EXPLORATION
TOWNSHIP ROAD 70 OVER THOMPSON RUN

DESIGN AGENCY
Muskingum County ENGINEER'S OFFICE

DESIGNER SEJ
REVIEWER MJE 3/20/23
PROJECT ID 117331
SUBSET 1 TOTAL 1
SHEET TOTAL

MUS-T.R.90-4.00

Contrary to Standard Drawings for Guardrail, place splices between posts off of bridge as shown.



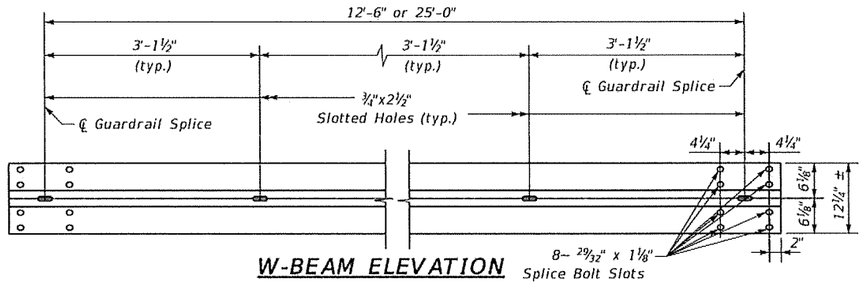
ROADWAY ELEVATION OF RAIL

TRANSITION AND END TREATMENT NOTES:
This traffic railing must be anchored by a minimum of 25 feet of guardrail. This 25 feet at each corner of the bridge is to be paid with the roadway plans. See roadway plans for layout.

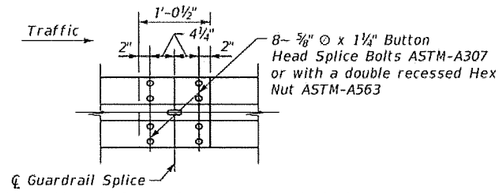
CONSTRUCTION NOTES:
Face of rail post must be plumb unless otherwise approved by the Engineer. Post must be perpendicular to adjacent roadway grade. Fully anchored guardrail must be attached to each end of rail. Typical guardrail construction as indicated above and not bridge rail transition or bridge end connector. It is recommended that the bridge plans show rail post locations. Round or chamfer exposed edges of rail posts and backer Plate to approximately 1/16" by grinding. Shop drawings are not required. Threaded rod may be cast in the beam/slab or may be drilled and epoxy grouted. Epoxy grout must conform to Section 826 and must have a minimum bond strength of 1,305 psi. Follow all manufacturers recommendations for installation.

MATERIAL NOTES:
All components must be supplied galvanized including fasteners, anchor rods, threaded rods, etc. Galvanize all steel components after fabrication in accordance with ASTM A123. W-beam must meet the requirements of Std. Dwg. RBR-001, c.e. except as modified in these plans. The contractor may furnish rail elements of 25'-0" or 12'-6" (Nominal) lengths. W-beam must have slotted holes at 3'-1½".

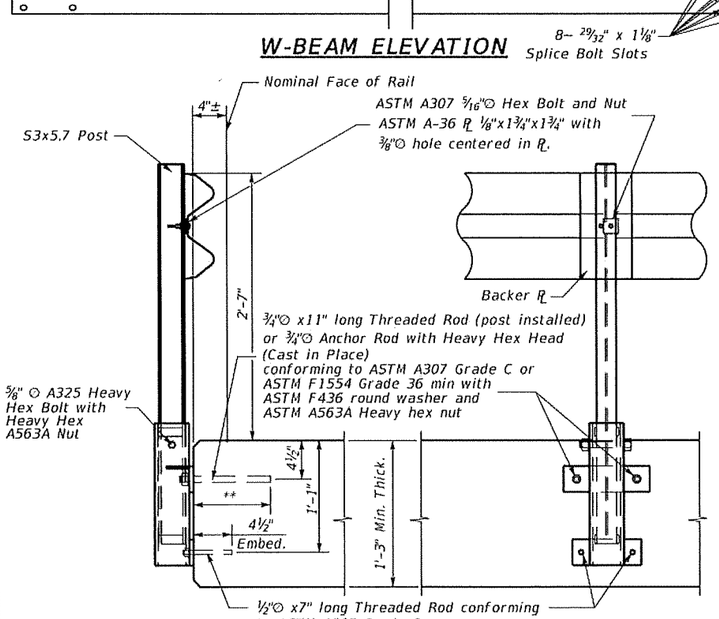
GENERAL NOTES:
This railing has been successfully evaluated by full scale crash test to meet MASH TL-3 criteria. This railing can be used for speeds 45 mph and greater.
This rail is designed to deflect approximately 4'-0" - 4'-6" as it contains and redirects the errant vehicle. This rail may not be installed on top of or behind curbs that project above finished grade, on bridges with expansion joints providing more than 5" of movement, on retaining walls, or on grade separations and interchanges.
Repairs to impact-damaged post and mounting bracket unit are not permitted. Replace all impact-damaged posts with a new post. If mounting bracket is visibly damaged, replace the bracket with a new one as well.
Average weight of railing with no overlay: 19 plf total.



W-BEAM ELEVATION



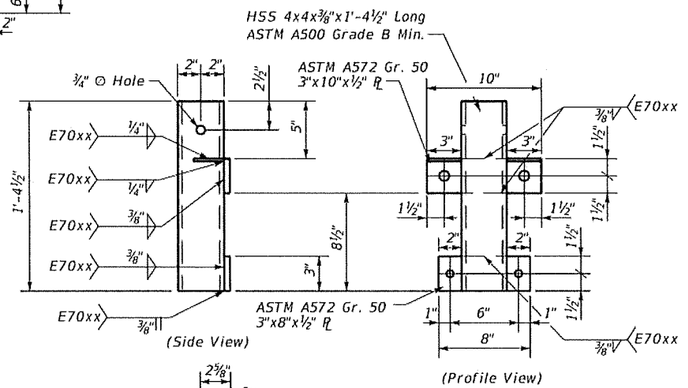
W-BEAM SPLICE ELEVATION



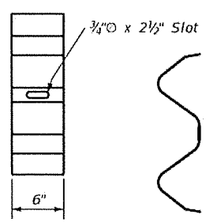
X-SECTION VIEW

BACK VIEW

** Use 9" Min. Embed for Threaded Rod post installed
Use 12" Min. Embed for Headed Anchors Cast in Place

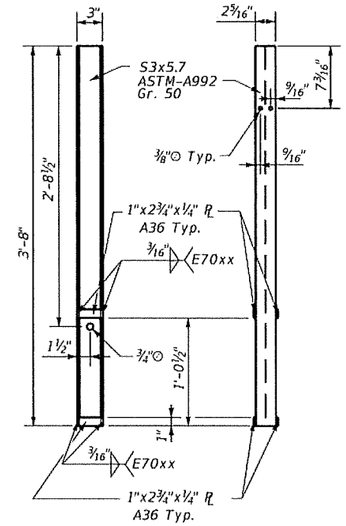


MOUNTING BRACKET



ELEVATION (Backer Plate)

SIDE VIEW (Backer Plate)



POST ELEVATION

Note: Fabricator may elect to provide a ¾"⌀ ASTM A563A heavy hex sleeve nut with a minimum length of 2¼" and minimum 1¼" across the flats along with threaded rod and the Anchor Rod. Maintain 12" minimum embedment with the ¾" Anchor Rod behind the sleeve nut. The fabricator may elect to provide a ½" ferrule insert for the bottom anchors with a minimum length of 2¾" and a safe working load of 2000 lbs in tension and shear along with the threaded rod. Alternatively, the bottom anchors may also be supplied with a ½"⌀ ASTM A563A heavy hex sleeve nut with a minimum length of 1½" and a minimum of ⅞" across the flats. Maintain 4½" embedment behind the sleeve nut. All costs for sleeve nuts, threaded rods, anchor rods, etc. are incidental to the price bid for the Railing System Side Mounted MGS.

KENTUCKY DEPARTMENT OF HIGHWAYS

RAILING SYSTEM
SIDE MOUNTED MGS
DETAILS

STANDARD DRAWING NO. BHS-011

SUBMITTED — DIRECTOR DIVISION OF STRUCTURAL DESIGN — 02-26-20 DATE

APPROVED — STATE HIGHWAY ENGINEER — 02-26-20 DATE

KENTUCKY DEPARTMENT OF HIGHWAYS
STANDARD DRAWING BHS-011
REVISION DATE: 02-26-2022

PLAN INSERTION SHEET
RAILING SYSTEM
SIDE MOUNTED MGS

DESIGN AGENCY: Washington County Engineer's Office
DESIGNER: SEJ
REVIEWER: GJW 3/20/23
PROJECT ID: 117331
SUBSET: 1 TOTAL: 1
SHEET TOTAL

MUS-T.R.90-4.00

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 2:24:43 PM USER: sejohnson
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