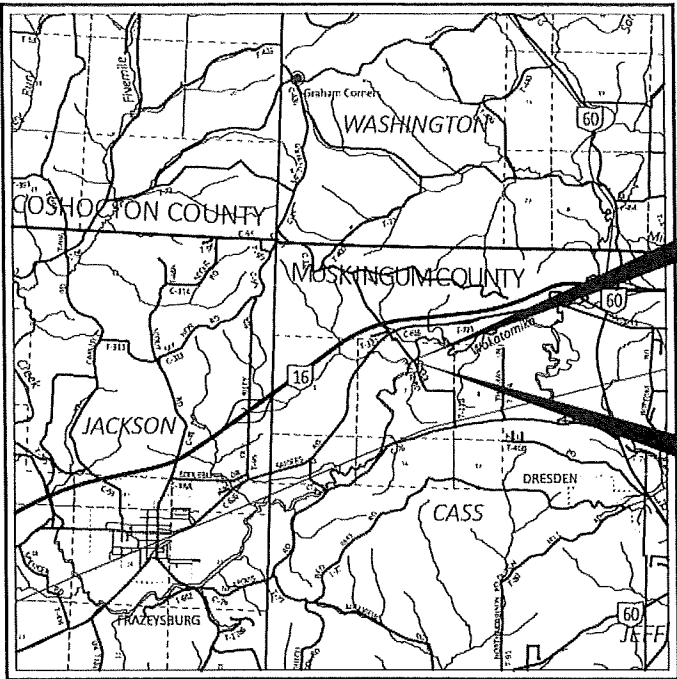


MUS-T.R.118-0.98

MODEL: Sheet PAPER: 17x11 (in.) DATE: 3/20/2023 TIME: 2:08:35 PM USER: sejdman D:\NCEQP\Project\BRD\Design\117330\400-Engineering\Roadway\Sheets\117330\_GTO01.dgn



LOCATION MAP

LATITUDE: 40°8'40" N LONGITUDE: 82°3'58" W



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

DESIGN DESIGNATION

CURRENT ADT (2022)	209
DESIGN YEAR ADT (2042)	230
DESIGN HOURLY VOLUME (2042)	28
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:  
11/02/22

ADA DESIGN WAIVERS

NONE

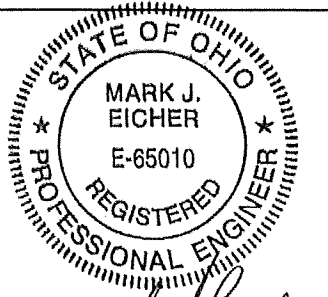
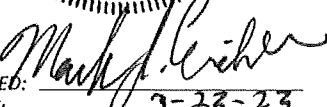
<b>UNDERGROUND UTILITIES</b>
Contact Two Working Days Before You Dig

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

PLAN PREPARED BY:



Mark J. Eicher, P.E., P.S.  
155 Rehl Road  
Zanesville, Ohio 43701  
740-454-0155

ENGINEER'S SEAL:		STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
	SIGNED:  DATE: 3-23-23	BP-3.1	1/21/22	MT-101.60	1/17/20			800	4/21/23
				MT-105.10	1/17/20			832	7/15/22
		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						
		DS-1-92	7/15/22						
		EXI-4-87	1/20/23						
		GSD-1-19	1/15/21						
		TST-1-99	1/15/21						

MUSKINGUM COUNTY  
ENGINEER'S OFFICE

MUS-T.R.118-0.98

CASS TOWNSHIP  
MUSKINGUM COUNTY

INDEX OF SHEETS:

TITLE SHEET	1
TYPICAL SECTIONS	2
GENERAL NOTES	3
MAINTENANCE OF TRAFFIC	4
GENERAL SUMMARY	5
PLAN AND PROFILE	6
CROSS SECTIONS	7-9
STRUCTURES OVER 20' SPAN	10-22

FEDERAL PROJECT NUMBER

E220 (535)

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

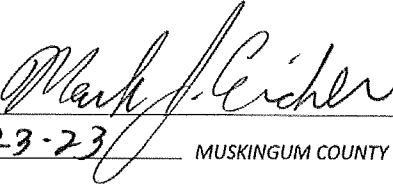
IMPROVEMENT OF 0.05 MILES OF T.R.118 IN CASS TOWNSHIP,  
BY REPLACING A SINGLE SPAN TRUSS BRIDGE OVER WAKATOMIKA CREEK  
WITH A SINGLE SPAN STEEL TRUSS BRIDGE INCLUDING GUARDRAIL  
AND MINIMAL APPROACH ROADWAY WORK.

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

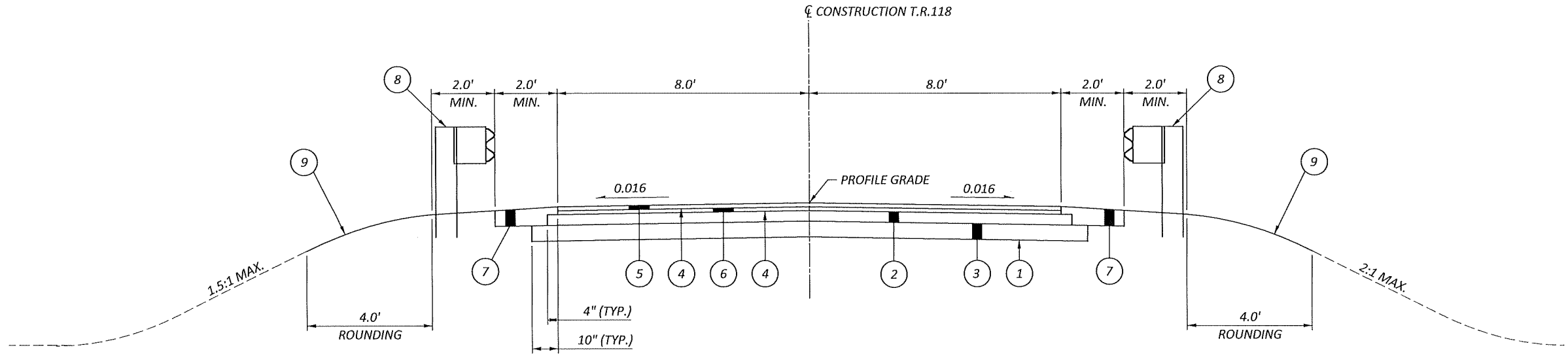
THE STANDARD SPECIFICATIONS OF THE STATE OF  
OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING  
SUPPLEMENTAL SPECIFICATIONS LISTED IN THE  
PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL  
GOVERN THIS IMPROVEMENT.

APPROVED   
DATE 3-23-23 MUSKINGUM COUNTY ENGINEER



DESIGN AGENCY	SEJ
DESIGNER	SEJ
REVIEWER	GJW
PROJECT ID	117330
SHEET	1
TOTAL	22

TITLE SHEET



ROADWAY SECTION

REAR  
STA. 0+10.00 TO STA. 0+80.00  
FORWARD  
STA. 1+82.67 TO STA. 2+80.67

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 - 1½" - 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

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)

BRIGHTSPEED  
2025 AKRON ROAD, WOOSTER, OHIO 44691  
ATTN: JEFF SCHOONOVER, 740-263-2819, 330-262-1128  
(JEFFERY.L.SCHOONOVER@BRIGHTSPEED.COM)  
(RELOCATIONS@BRIGHTSPEED.COM)

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON NADV 88 DATUM.

EXISTING PLANS

EXISTING PLANS ARE AVAILABLE 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 WAKATOMIKA CREEK.

NO IN STREAM WORK

NO WORK SHALL TAKE PLACE BELOW THE ORDINARY HIGH-WATER MARK (OHWM) OF WAKATOMIKA CREEK. SHOULD WORK BELOW THE OHWM ELEVATION OF 721.25 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	203 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.

OEPA NOTIFICATION OF DEMOLITION AND RENOVATION

AN ASBESTOS SURVEY FOR THE MUS-TR-118-0.98 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.

DESIGN AGENCY



DESIGNER

SEJ

REVIEWER

GJW 3/20/23

PROJECT ID

117330

SHEET

3

TOTAL

22

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.

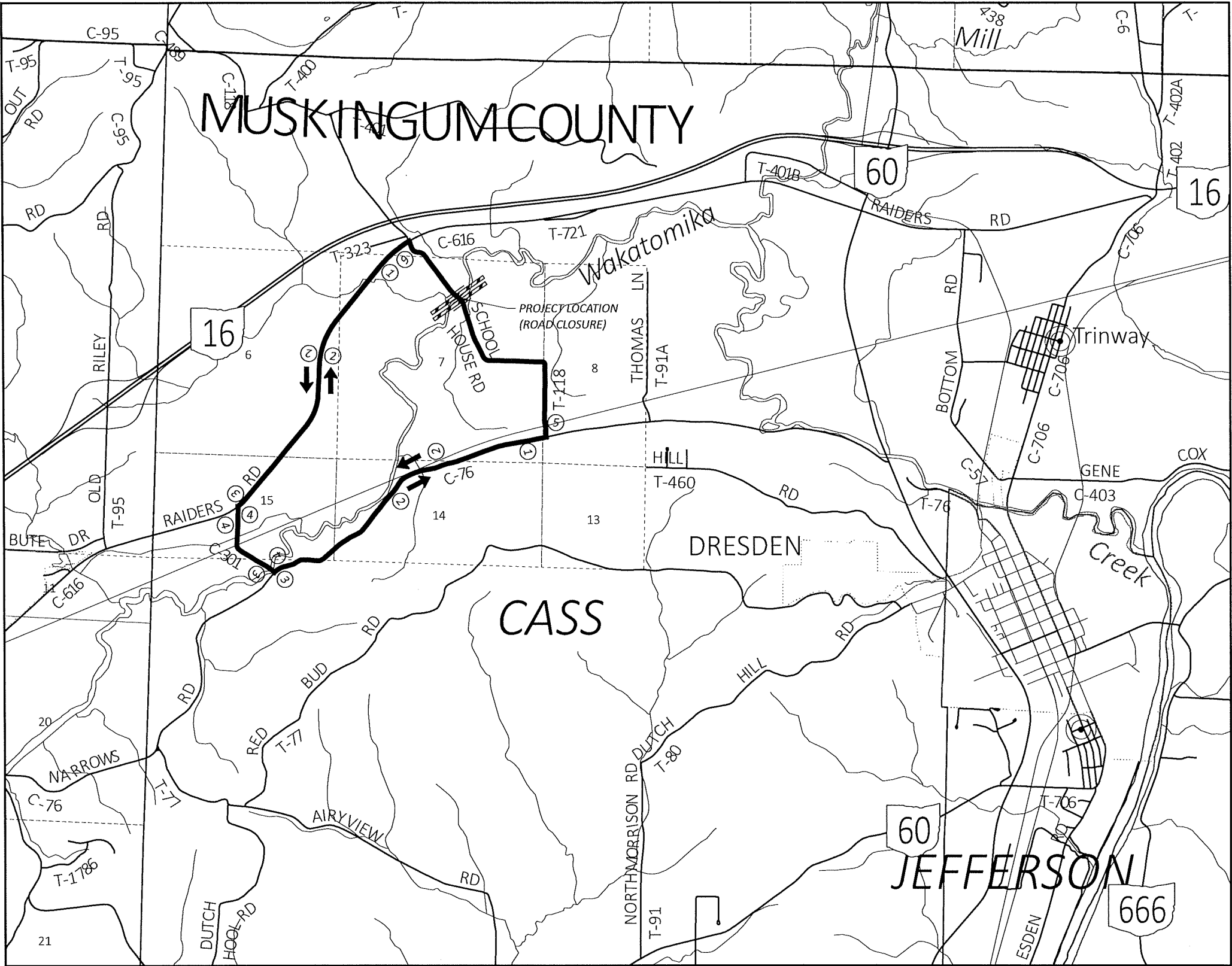
DETOUR SIGNAGE

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

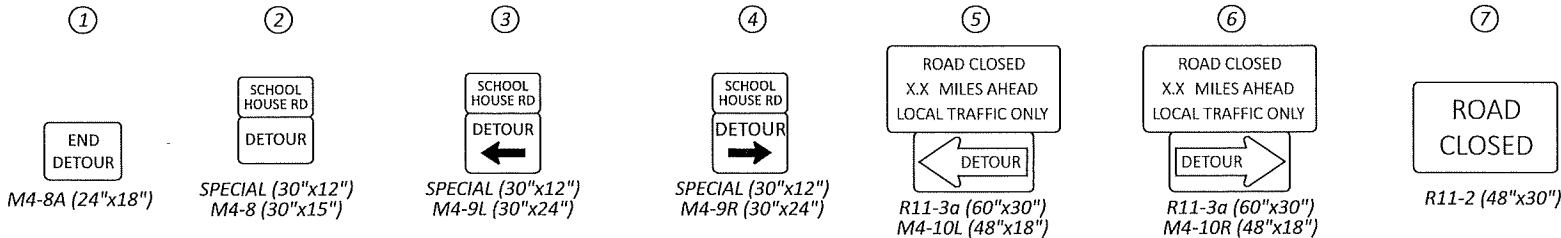
THIS WORK SHALL BE PAID UNDER THE LUMP SUM PAY ITEM 614 - DETOUR SIGNING, AS PER PLAN

DETOUR LIMITATION

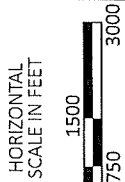
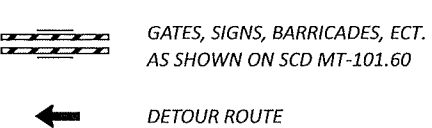
THE MAXIMUM LENGTH OF TIME FOR THE DETOUR ROUTE TO BE IN EFFECT SHALL BE NINETY DAYS (90) CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED BEFORE AND AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 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.



TYPICAL SIGNS AS NEEDED



LEGEND



MAINTENANCE OF TRAFFIC  
DETOUR PLAN AND NOTES

DESIGN AGENCY	Muskingum County Engineer's Office
DESIGNER	SEJ
REVIEWER	GJW
DATE	3/20/23
PROJECT ID	117330
SHEET	4
TOTAL	22

MUS-T-R.118-0.98

MODEL: Sheet PAPER SIZE: 17x11 (in.) DATE: 3/23/2023 TIME: 1:40:22 PM USER: sejohnson  
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[illegible]

GENERAL SUMMARY

GENERAL SUMMARY	
DESIGN AGENCY	
	
DESIGNER	SEJ
REVIEWER	GJW 3/20/
PROJECT ID	117330
SHEET	TOTAL
5	2

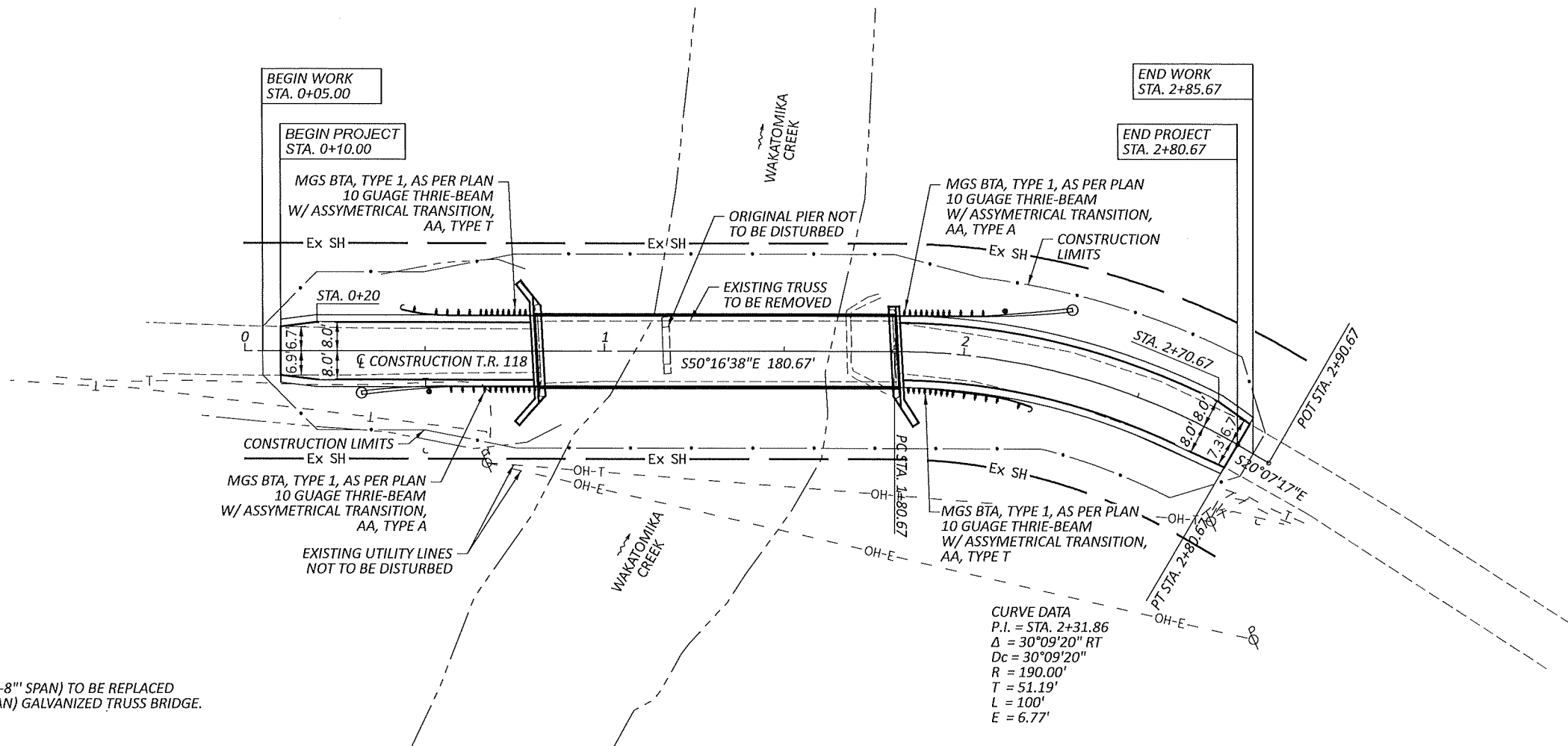
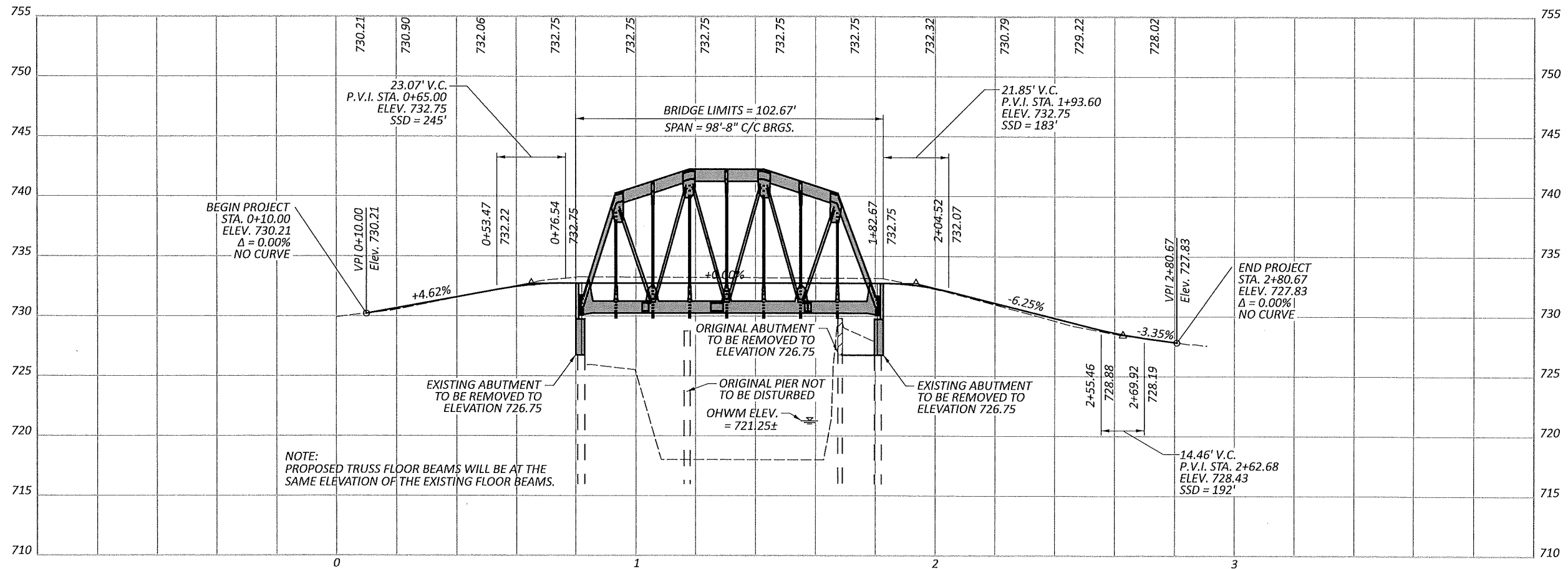
GENERAL SUMMARY	
DESIGN AGENCY	
	
DESIGNER	SEJ
REVIEWER	GJW 3/20/
PROJECT ID	117330
SHEET	TOTAL
5	2

GENERAL SUMMARY	
DESIGN AGENCY	
	
DESIGNER	SEJ
REVIEWER	GJW 3/20/
PROJECT ID	117330
SHEET	TOTAL
5	2

<h1 style="text-align: center;">GENERAL SUMMARY</h1>		DESIGN AGENCY  WASHINGTON COUNTY ENGINEER'S OFFICE	
		DESIGNER SEJ	
		REVIEWER GJW 3/20/	
		PROJECT ID 117330	
		SHEET 5	TOTAL 2

<h1 style="text-align: center;">GENERAL SUMMARY</h1>		DESIGN AGENCY  WASHINGTON COUNTY ENGINEER'S OFFICE	
		DESIGNER SEJ	
		REVIEWER GJW 3/20/	
		PROJECT ID 117330	
		SHEET 5	TOTAL 2

NOTE:  
EXISTING TRUSS BRIDGE (20' WIDE X 98'-8" SPAN) TO BE REPLACED  
WITH PROPOSED (20' WIDE X 98'-8" SPAN) GALVANIZED TRUSS BRIDGE.



PLAN AND PROFILE  
STA. 0+10 TO STA. 2+80.67

DESIGN AGENCY



DESIGNER

SEJ

REVIEWER

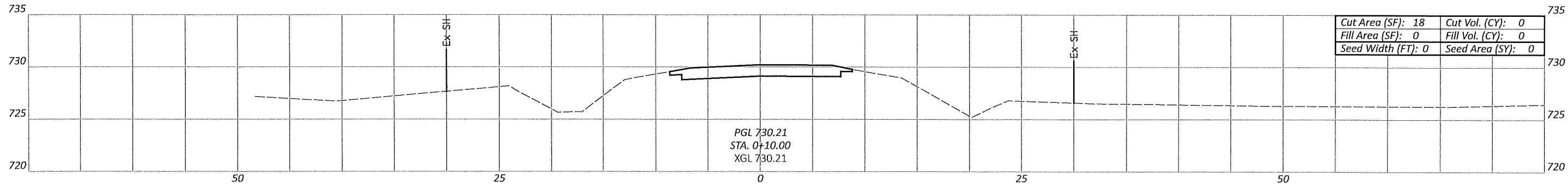
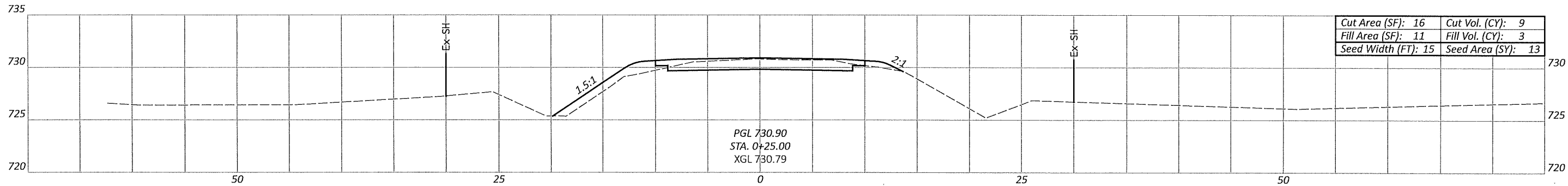
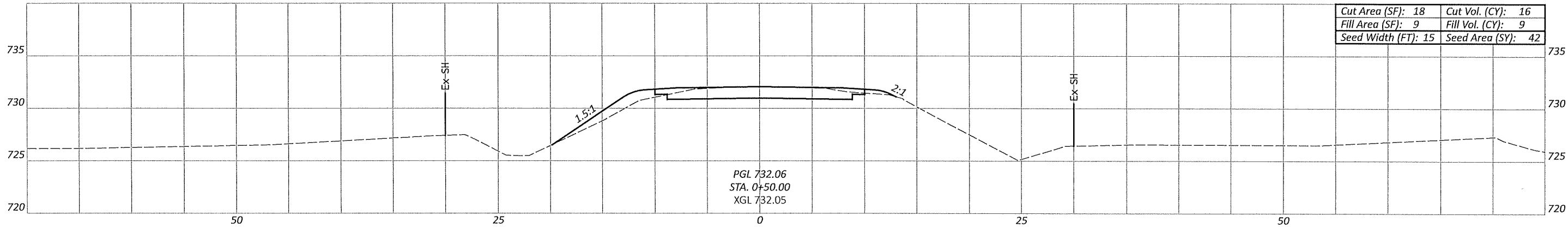
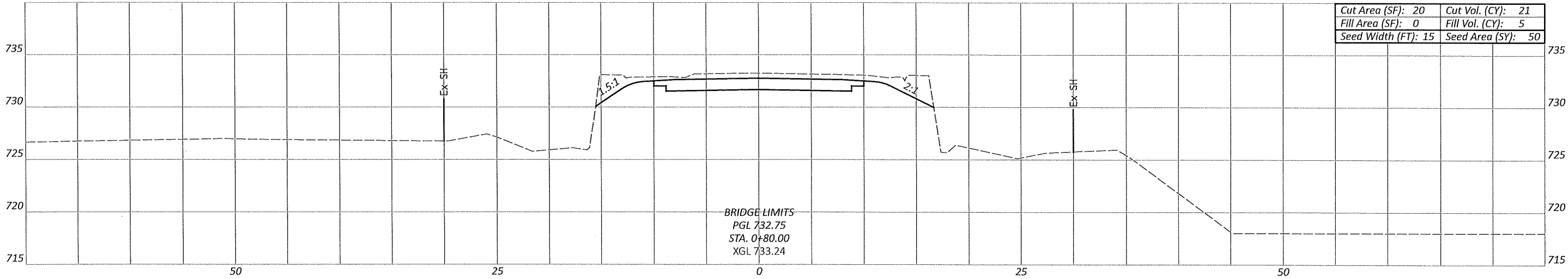
GJW 3/20/23

PROJECT ID

117330

SHEET TOTAL

6 22



ROADWAY CROSS SECTIONS  
STA. 0+10.00 TO STA. 0+80.00

DESIGN AGENCY



DESIGNER

SEJ

REVIEWER

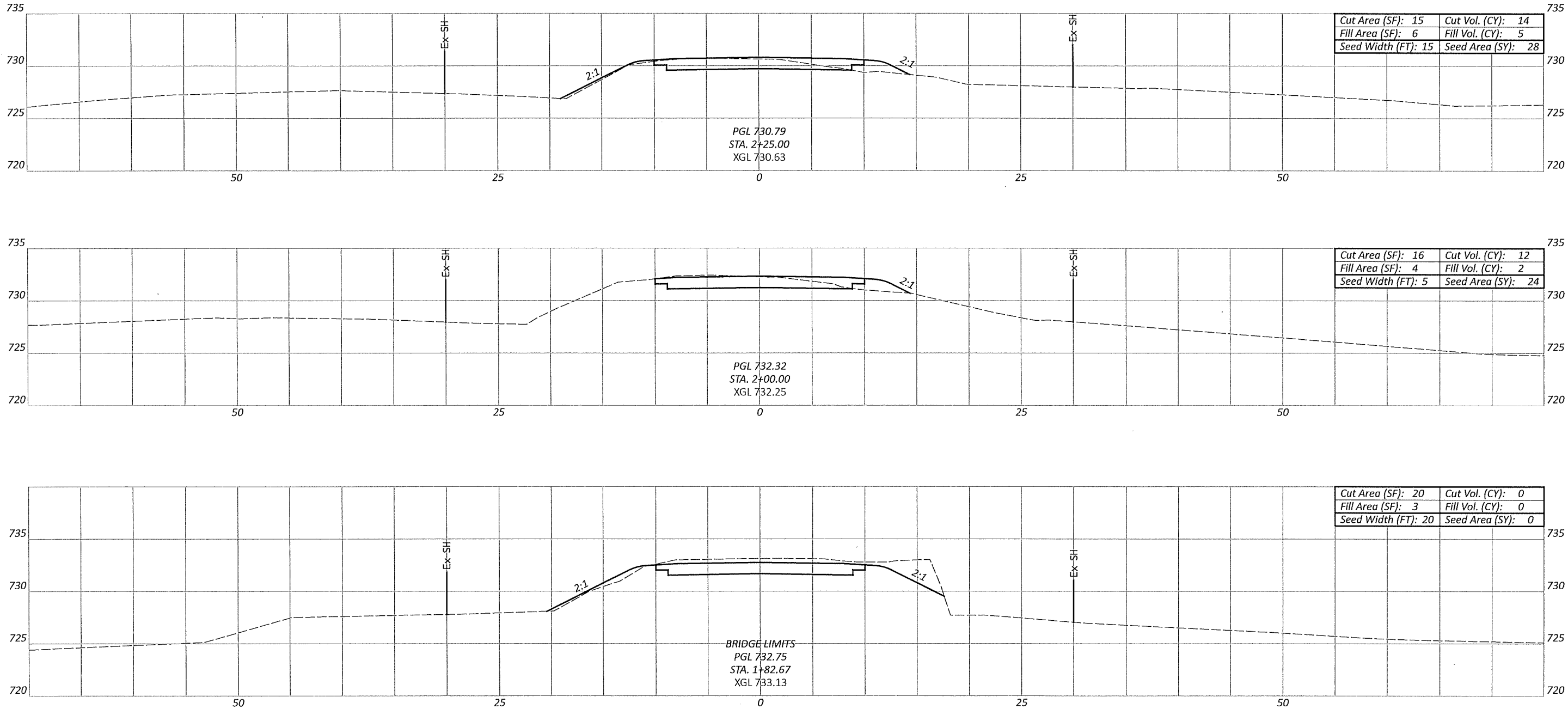
GWJ 3/20/23

PROJECT ID

117330

Sheet Totals		
Seeding	Cut	Fill
105	46	17

SHEET	TOTAL
7	22



ROADWAY CROSS SECTIONS  
STA. 1+82.67 TO STA. 2+25.00



DESIGNER  
SEJ

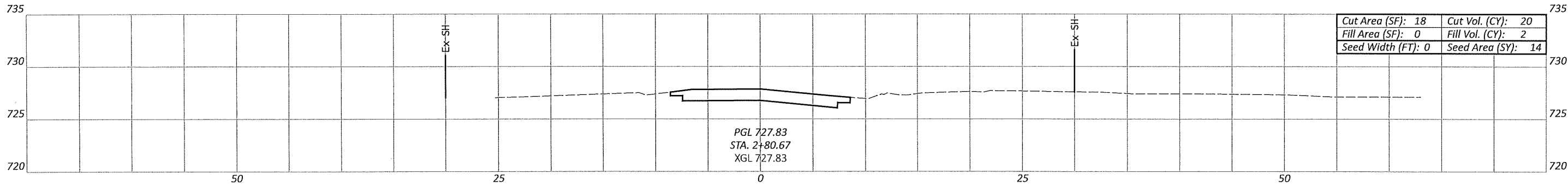
REVIEWER  
GJW 3/20/23

PROJECT ID  
117330

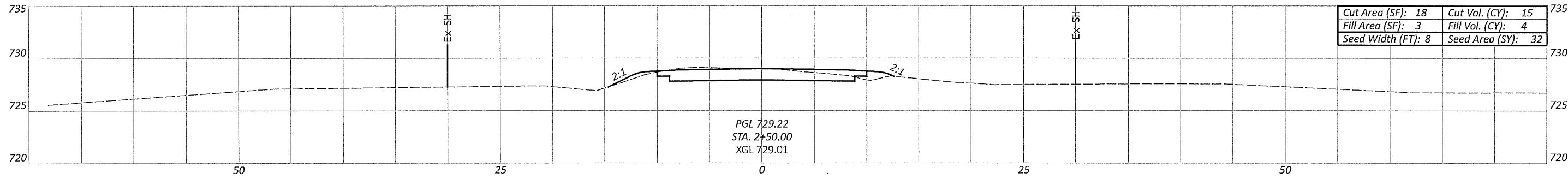
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Seeding	Cut	Fill
52	26	7

SHEET	TOTAL
8	22





PGL 727.83  
STA. 2+80.67  
XGL 727.83



PGL 729.22  
STA. 2+50.00  
XGL 729.01

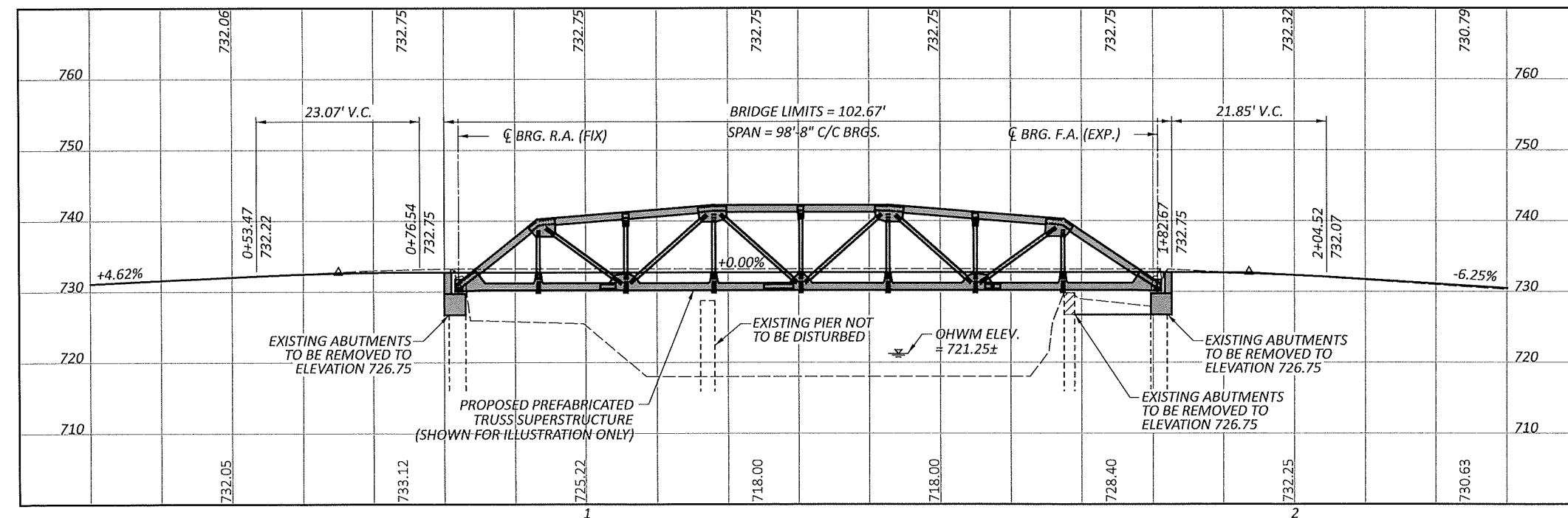
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Seeding	Cut	Fill
46	35	6

SHEET	TOTAL
9	22


ROADWAY CROSS SECTIONS  
STA. 2+50.00 TO STA. 2+80.67



DESIGN AGENCY  
SEJ  
REVIEWER  
GJW 3/20/23  
PROJECT ID  
117330



SITE PLAN  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

SFN		6044264	
DESIGN AGENCY			
			
DESIGNER	CHECKER		
SEJ	GJW		
REVIEWER			
GJW		3/20/23	
PROJECT ID			
117330			
SUBSET	TOTAL		
1	13		
SHEET	TOTAL		
10	22		

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

DS-1-92 DATED (REVISED) 7/15/22  
EXJ-4-87 DATED (REVISED) 1/20/23  
GSD-1-19 DATED (REVISED) 1/15/21  
TST-1-99 DATED (REVISED) 1/15/21

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

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

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE 9<sup>th</sup> 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

STRUCTURAL STEEL - ASTM A709 GRADE 50 GALVANIZED  
PER CMS 711.02, YIELD STRENGTH = 50 KSI

MONOLITHIC WEARING SURFACE

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

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									SPEC & AS PER PLAN BRIDGE SHEET NO.
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	SUPER	GEN'L		
202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN			LS		
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING			LS		
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN			LS	2/13	
509	10000	16928	LB	EPOXY COATED REINFORCING STEEL	3069	13859		13/13	
510	10000	88	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	88				
511	21533	59	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN		59		2/13	
511	45511	34	CY	CLASS QC1 CONCRETE, ABUTMENT	34				
512	10100	130	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	55	75			
513	10121	LS		STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN		LS		2/13	
513	20000	400	EACH	WELDED STUD SHEAR CONNECTORS		400			
517	70001	200	FT	RAILING (TWIN STEEL TUBE), AS PER PLAN		200		11/13	
516	11211	40	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN		40		11/13	
SPECIAL	51822301	42	FT	STEEL DRIP STRIP, AS PER PLAN		42		12/13	

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

ENTIRE SUPERSTRUCTURE TO BE REMOVED. SAW CUT AND REMOVE EXISTING ABUTMENTS TO ELEVATION 726.75.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B, AND LOW STRENGH MORTAR BACKFILL, AS SHOWN ON SHEETS 6/13 AND 8/13 . 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 513, STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN

THIS ITEM SHALL CONSIST OF DESIGNING, FURNISHING, GALVANIZING, TRANSPORTING, ERECTING AND INSTALLING IN PLACE THE COMPLETE TRUSS SUPERSTRUCTURE, INCLUDING ALL FRAMING, RAILINGS, BEARINGS AND ALL INCIDENTALS, IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS AND THESE SPECIFICATIONS.

SEPARATE PAYMENT WILL BE MADE FOR DECK CONCRETE, EXPANSION JOINT, TST RAIL AND SUBSTRUCTURE ITEMS LISTED ON THE ESTIMATED QUANTITIES SHEET. HOWEVER, ALL OTHER WORK OR ITEMS NECESSARY TO PROVIDE THE COMPLETED IN-PLACE TRUSS SUPERSTRUCTURE ARE INCIDENTAL TO AND INCLUDED FOR PAYMENT WITH THIS ITEM.

THESE SPECIFICATIONS ARE FOR A TRUSS STRUCTURE OF BOLTED STEEL CONSTRUCTION AND SHALL BE REGARDED AS MINIMUM STANDARDS FOR DESIGN AND CONSTRUCTION. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF ODOT CMS SECTION 513.

DESIGNER

- THE DESIGN FIRM SHALL BE AN ODOT PREQUALIFIED LEVEL 2 CONSULTANT WITH TRUSS DESIGN EXPERIENCE OF SIMILAR OR LARGER SIZE OR THE DESIGN FIRM SHALL HAVE EXPERIENCE OF THE DESIGNING AT LEAST 5 TRUSS BRIDGES OF SIMILAR SIZE OR LARGER.
- THE DESIGNER SHALL PROVIDE THE ENGINEER WITH SHOP DRAWINGS AS PER SECTION 501.04 OF THE CMS AND LOAD RATING REPORT WITH BR100 PER LATEST ODOT BRIDGE DESIGN MANUAL. INCLUDE PROOF OF CONSULTANT PREQUALIFICATION AND TRUSS DESIGN EXPERIENCE WITH THE SHOP DRAWING SUBMITTAL.
- THE DESIGNER SHALL DESIGNATE THE TENSION AND COMPRESSION ZONE IN THE FRACTURE CRITICAL MEMBERS.

DIMENSIONS

- WIDTH: INSIDE CLEAR WIDTH OF BRIDGE SHALL BE 20'-0".
- LENGTH: BRIDGE CENTER TO CENTER BEARING LENGTH IS TO BE 98'-8".

DESIGN

- DESIGN TRUSS IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL WITH AN ALLOWANCE FOR A 0.060 KSF FUTURE WEARING SURFACE.
- BRIDGE TYPE: THE BRIDGE SHALL BE GIRDER TRUSS TYPE. TRUSS TO CONSIST OF A CONTINUOUS TOP CHORD CAMBERED ON A SMOOTH RADIUS WITH INTERMEDIATE VERTICAL MEMBERS AT THE INTERIOR BOTTOM CHORD PANEL POINTS AND AT LEAST ONE DIAGONAL PER PANEL. A CHORDED APPEARANCE WILL BE ACCEPTABLE FOR THE TOP CHORD.
- GUSSET PLATES TO BE DESIGNED TO ADEQUATELY TRANSFER MEMBER STRESSES AT PANEL POINTS. ALL GUSSET PLATE CORNERS SHALL HAVE A 1" RADIUS.
- CLEARLY IDENTIFY MEMBERS OR THEIR COMPONENTS THAT ARE FRACTURE CRITICAL (FCM) IN THE PLANS.
- ALL SHOP AND FIELD BOLTED CONNECTIONS SHALL UTILIZE ZINC COATED ASTM A-325 TYPE 1 HIGH STRENGTH BOLTS.
- BEARING DEVICES SHALL BE ELASTOMERIC BEARING IN ACCORDANCE WITH ODOT SPECIFICATION SECTION 516.
- RAILING SHALL BE IN ACCORDANCE WITH ODOT SPECIFICATION SECTION 517.

ITEM 513, STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN (CONTINUED)

FABRICATOR

1.

FABRICATOR SHALL BE AN ODOT LEVEL 6 QUALIFIED FABRICATOR AS PER ODOT CMS 513.
2.

WORKMANSHIP, FABRICATION, AND SHOP DESIGN SHALL BE IN ACCORDANCE WITH AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS SPECIFICATIONS (AASHTO).
3.

THE DESIGN OF THE TRUSS SUPERSTRUCTURE, INCLUDING ALL FRAMING, RAILINGS, FLOOR SYSTEM, BEARINGS AND ALL INCIDENTALS, IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS IS THE RESPONSIBILITY OF MANUFACTURER OF THE TRUSS SUPERSTRUCTURE UNIT.
4.

TRUSS, STRINGERS AND FLOOR BEAMS SHALL MEET CHARPY V-NOTCH REQUIREMENTS PER CMS 711.01 15 FT-LBS @ 40° F.
5.

FAYING SURFACES OF THE BOLTED SPLICES SHALL BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSH. POWER WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPlice BOLT HOLES SHALL BE FREE OF ZINC BUILD UP AND EACH HOLE SHALL BE CHECKED IN THE SHOP AFTER GALVANIZING TO RECEIVE A 7⁄8" DIAMETER DRIFT PIN.
6.

AREAS OF FIELD CONNECTIONS SHALL HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPlice PLATES, BEARINGS, OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.
7.

MATERIAL SHALL BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER, AND ERECTOR SHALL USE LIFTING CLAMPS OR SOFT HANDLING. PRIOR TO GALVANIZING, IMPERFECTIONS THAT ARE GREATER THAN THE LIMITS ALLOWED BY GRINDING PER A6 SHALL BE DOCUMENTED.
8.

AFTER GALVANIZING, MATERIAL SHALL BE PLACED IN SHOP ASSEMBLY PER SECTION 513.24 OF THE SPECIFICATION 513 TO CHECK ALIGNMENT OF HOLES, SWEEP, AND CAMBER AGAINST THE FABRICATORS ORIGINAL RECORDED LAY DOWN DIMENSIONS.
9.

ROLLED, SHEARED, AND FLAMED CUT SURFACES SHALL BE FINISHED IN ACCORDANCE WITH ODOT CMS 513.12. WHERE STEEL BEAM SURFACES ARE TO RECEIVE A COATING OR GALVANIZING, ALL FOUR ROLLED EDGES OF THE BOTTOM FLANGE AND THE TWO BOTTOM EDGES OF THE TOP FLANGE SHALL BE GROUND TO A 1⁄8" RADIUS ± 1⁄16" IN ACCORDANCE WITH ODOT CMS 514.13 B.
10.

BEAM HOLES SHALL BE DRILLED FULL SIZE IN ASSEMBLY USING A TEMPLATE AND ROTO-BROACH, SHELL DRILL OR OTHER SIMILAR TOOL AS PER 513.19.
11.

CAMBER TOLERANCE: - 0" TO + 3⁄4".
12.

ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5 BRIDGE WELDING CODE AS AMENDED BY SUPPLEMENT 1011 PER 513.21.
13.

SUBMIT ERECTION PLANS ACCORDING TO C&MS 501.05.
14.

IN ADDITION TO THE REQUIREMENTS OF CMS 513 & 711.02, GALVANIZED COATING SYSTEM SHALL MEET THE REQUIREMENTS OF THE NOTE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" ON SHEETS 3/13 AND 4/13.

METHOD OF MEASUREMENT:

THE OWNER WILL MEASURE THE TRUSS SUPERSTRUCTURE AS LUMP SUM. THE LUMP SUM PRICE INCLUDES DESIGNING, FURNISHING, GALVANIZING, DELIVERING, TRANSPORTING AND INSTALLING.

BASIS OF PAYMENT:

THE OWNER WILL PAY THE CONTRACT LUMP SUM UNIT PRICE FOR ITEM 513, STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN.

GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES

1.1.1 DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 513, THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO CLEAN AND GALVANIZE ALL STRUCTURAL STEEL SURFACES, AS SPECIFIED HEREIN. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT QUALIFIED AS A FABRICATION SHOP UNDER CMS ITEM 513, BUT THE APPROVED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATING, ADDITIONAL LAYDOWNS REQUIRED TO ASSURE THE FABRICATED STEEL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION. CMS SECTIONS 513.27 AND 513.28 SHALL NOT APPLY.

THIS ITEM SHALL ALSO INCLUDE GALVANIZING, PER 711.02, OF ALL NUTS, WASHERS, BOLTS, ANCHOR BOLTS.

GRIND THE GALVANIZED COATING OFF THE TOP FLANGE AT EACH SHEAR STUD PRIOR TO FIELD WELDING IT.

1.1.2 PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER CMS SECTION 513.07, BOTH THE FABRICATOR'S QUALITY CONTROL PAINT SPECIALIST, (QCPS) AND GALVANIZED COATING APPLICATOR SHALL BE PRESENT AND DISCUSS METHODS OF OPERATION, QUALITY CONTROL, INCLUDING REPAIRS, TRANSPORTATION, ERECTION METHODS TO ACCOMPLISH ALL PHASES OF THE PREPARATION AND COATING WORK REQUIRED BY THIS SPECIFICATION.

1.1.3 QUALITY CONTROL

1.1.3.1 QUALITY CONTROL SPECIALIST

THE QCPS (QUALITY CONTROL PAINT SPECIALIST) REQUIRED UNDER CMS SECTION 514.04A, IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCPS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN CMS SECTION 514.05.

1.1.3.2 QUALITY CONTROL POINTS (QCP)

QUALITY CONTROL POINTS (QCP) ARE POINTS IN TIME WHEN ONE PHASE OF THE WORK IS COMPLETE AND READY FOR INSPECTION BY THE FABRICATOR'S QCPS AND THE OWNERS'S QA REPRESENTATIVE. THE NEXT OPERATIONAL STEP MUST NOT PROCEED UNLESS THE QCP HAS BEEN ACCEPTED OR QA INSPECTION WAIVED BY THE OWNER'S QA REPRESENTATIVE. AT THESE POINTS THE FABRICATOR MUST AFFORD ACCESS TO INSPECT ALL AFFECTED SURFACES. IF INSPECTION INDICATES A DEFICIENCY, THAT PHASE OF THE WORK MUST BE CORRECTED IN ACCORDANCE WITH THESE SPECIFICATIONS PRIOR TO BEGINNING THE NEXT PHASE OF WORK. DISCOVERY OF DEFECTIVE WORK OR MATERIAL AFTER A QUALITY CONTROL POINT IS PAST OR FAILURE OF THE FINAL PRODUCT BEFORE FINAL ACCEPTANCE, MUST NOT IN ANY WAY PREVENT REJECTION OR OBLIGATE THE OWNER TO FINAL ACCEPTANCE.

1.1.3.2.1 SOLVENT CLEANING (QCP #1)

THE STEEL MUST BE SOLVENT CLEANED WHERE NECESSARY TO REMOVE ALL TRACES OF ASPHALTIC CEMENT, OIL, GREASE, DIESEL FUEL DEPOSITS, AND OTHER SOLUBLE CONTAMINANTS PER SSPC-SP 1 SOLVENT CLEANING. UNDER NO CIRCUMSTANCES MUST ANY ABRASIVE BLASTING BE DONE TO AREAS WITH ASPHALTIC CEMENT, OIL, GREASE, OR DIESEL FUEL DEPOSITS. STEEL MUST BE ALLOWED TO DRY BEFORE BLAST CLEANING BEGINS. THE QCPS SHALL INSPECT AND DOCUMENT THAT THE CLEANING CONFORMS TO SSPC-SP1 AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

1.1.3.2.2 GRINDING EDGES (QCP #2)

ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES MUST HAVE A 1⁄16 INCH [1.6 MM] RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1 1⁄2 INCH [40 MM] MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT EFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE GRINDING CONFORMS TO THIS SPECIFICATION AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

1.1.3.2.3 ABRASIVE BLASTING (QCP #3)

BEAMS AND GIRDERS MUST BE PREPARED BY THE FABRICATOR TO STEEL STRUCTURES PAINTING COUNCIL (SSPC) GRADE SIX (6) COMMERCIAL BLAST CLEANING PRIOR TO GALVANIZING. ALL MATERIAL MUST BE FREE OF PAINT MARKS. SECONDARY ANGLE, PLATES, BARS AND SHAPES NEED NOT BE BLAST CLEANED.

ABRASIVES MUST ALSO BE CHECKED FOR OIL CONTAMINATION BEFORE USE. A SMALL SAMPLE OF ABRASIVES MUST BE ADDED TO ORDINARY TAP WATER. ANY DETECTION OF AN OIL FILM ON THE SURFACE OF THE WATER MUST BE CAUSE FOR REJECTION. THE QCPS MUST PERFORM AND RECORD THIS TEST AT THE START OF EACH SHIFT.

ALL FINS, TEARS, SLIVERS AND BURRED OR SHARP EDGES THAT ARE PRESENT ON ANY STEEL MEMBER OR THAT APPEAR AFTER THE BLASTING OPERATION MUST BE CONDITIONED PER ASTM A6. WELDING REPAIRS MUST ONLY BE PERFORMED BY THE ITEM 513 FABRICATOR.

THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE BLAST CONFORMS TO SSPC-SP6, THAT ALL CONDITIONING IS PERFORMED PER ASTM A6, AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

1.1.3.2.4 GALVANIZING (QCP #4)

GALVANIZED PER 711.02 AND THIS SPECIFICATION. COATING THICKNESS MUST BE A MINIMUM OF 4 MILS [100 μm] MEASURED AS SPECIFIED. MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER AND ERECTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. PRIOR TO GALVANIZING, SURFACE IMPERFECTIONS MAY BE REPAIRED BY THE FABRICATOR IN CONFORMANCE WITH ASTM A6. IMPERFECTIONS GREATER THAN THE LIMITS ALLOWED BY ASTM A6 MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE DEPARTMENT.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DOCUMENTATION OF COATING THICKNESS MUST BE PERFORMED BY THE QCPS. THE QCPS MUST RECORD THE GAGE READINGS AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

1.1.3.2.5 FAYING SURFACE CLEANING (QCP #5)

AREAS OF FIELD CONNECTIONS MUST HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPlice PLATES, BEARINGS OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

FAYING SURFACES OF THE BOLTED SPLICES MUST BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSHING. POWER WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPlice BOLT HOLES MUST BE FREE OF ZINC BUILD UP. AFTER GALVANIZING, EACH HOLE MUST BE CHECKED IN THE SHOP BY USING A DRIFT PIN WITH A DIAMETER 1⁄16 INCH [1.6 MM] GREATER THAN THE DIAMETER OF THE BOLT TO BE USED IN THAT HOLE. CONSIDERATION WILL BE GIVEN TO OTHER METHODS OF TREATING THE FAYING SURFACES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF STRUCTURAL ENGINEERING (OSE) IN ACCORDANCE WITH CMS 108.05.

INSPECTION OF THE ROUGHENING OF THE FAYING SURFACES AND CHECKING OF HOLES WITH DRIFT PINS MUST BE PERFORMED BY THE QCPS. ACCEPTANCE OF THE FAYING SURFACES AND HOLES SHALL BE DOCUMENTED BY THE QCPS.

1.1.3.2.6 SECOND LAY DOWN (QCP # 6)

AFTER GALVANIZING, MATERIALS MUST BE PLACED IN A SECOND SHOP ASSEMBLY PER CMS SECTION 513.24 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST THE FABRICATORS ORIGINAL RECORDED LAY DOWN DIMENSIONS. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZERS FACILITY, BY THE FABRICATOR'S PERSONNEL, IF APPROVED BY THE OSE. THE SECOND LAY DOWN MAY BE WAIVED BY THE OSE IF THE FABRICATOR RECORDS INDIVIDUAL BEAM CAMBERS AND SWEEPS DURING THE FIRST LAY DOWN, AND THE NEW INDIVIDUAL BEAM CAMBERS AND SWEEPS, AFTER GALVANIZING, COMPARED TO THE FIRST LAY DOWN ARE WITHIN THE FOLLOWING TOLERANCES:


BEARING POINTS AFTER GALVANIZING MUST BE WITHIN ± 1⁄8 INCH [3.2 MM] OF THE APPROVED SHOP DRAWING LAY DOWN.

CAMBER POINTS AFTER GALVANIZING MUST BE + 1⁄4 INCH [6 MM] OR - 0 INCHES FROM THE FIRST LAY DOWN.

SWEEP POINTS AFTER GALVANIZING MUST BE ± 3⁄8 INCH [9 MM] FROM THE FIRST LAY DOWN.

INDIVIDUAL BEAMS THAT EXCEED THE LISTED TOLERANCES MUST BE PLACED WITH AT LEAST TWO ADJACENT BEAMS IN LAY DOWN FOR CHECKING AGAINST THE RECORDED SHOP ASSEMBLY RECORDS PER CMS SECTION 513.04. DOCUMENTATION OF THE SECOND LAY DOWN OR INDIVIDUAL MEMBER CAMBERS MUST BE RECORDED BY THE QCPS PER CMS SECTION 513.24.

GENERAL NOTES  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

SFN 6044264	
DESIGN AGENCY  MISSOURI COUNTY ENGINEER'S OFFICE	
DESIGNER SEJ	CHECKER GJW
REVIEWER GJW 3/20/23	
PROJECT ID 117330	
SUBSET 3	TOTAL 13
SHEET 12	TOTAL 22

GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES, CONT.

1.1.3.2.7 FIELD REPAIR OF DAMAGED AREAS (QCP #7)

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE CONTRACTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. IMPERFECTIONS MAY BE REPAIRED BY GRINDING AS ALLOWED BY ASTM A6 BY THE CONTRACTOR. IMPERFECTIONS THAT ARE GREATER THAN THE GRINDING LIMITS ALLOWED BY ASTM A6, MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE OSE.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DAMAGED GALVANIZING WHICH WILL BE INACCESSIBLE FOR REPAIR AFTER ERECTION MUST BE REPAIRED PRIOR TO ERECTION.

IN ORDER TO MINIMIZE DAMAGE TO THE GALVANIZED STEEL, CONCRETE SPLATTER AND FORM LEAKAGE MUST BE WASHED FROM THE SURFACE OF THE STEEL SHORTLY AFTER THE CONCRETE IS PLACED AND BEFORE IT IS DRY. IF THE CONCRETE DRIES, IT MUST BE REMOVED.

TEMPORARY ATTACHMENTS, SUPPORTS FOR SCAFFOLDING AND FINISHING MACHINE OR FORMS MUST NOT DAMAGE THE COATING SYSTEM. IN PARTICULAR, SUFFICIENT SIZE SUPPORT PADS MUST BE USED ON THE FASCIAS WHERE BRACING IS USED.

DOCUMENTATION OF GALVANIZING REPAIRS MUST BE PROVIDED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

1.1.3.2.8 FINAL REVIEW (QCP # 8)

AFTER THE ERECTION WORK HAS BEEN COMPLETED, INCLUDING ALL CONNECTIONS AND THE APPROVED REPAIR OF ANY DAMAGED BEAMS, GIRDERS OR OTHER STEEL MEMBERS, AND THE DECK HAS BEEN PLACED, THE CONTRACTOR AND ENGINEER MUST INSPECT THE STRUCTURE FOR DAMAGED COATING. (QCP #8). DAMAGED AREAS MUST BE REPAIRED BY QCP #7. AT THE COMPLETION OF CONSTRUCTION, THE GALVANIZING MUST BE UNDAMAGED AND THE SURFACES FREE FROM GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER OR OTHER SPILAGE. SUCH SPILAGE WILL BE REMOVED BY SOLVENT CLEANING PER SSPC-SP1 (QCP #1).

DOCUMENTATION OF FINAL REVIEW MUST BE PROVIDED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

1.1.4 TESTING EQUIPMENT

THE FABRICATOR MUST PROVIDE THE QCPS INSPECTOR THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER FOR THE DURATION OF THE PROJECT:

ONE (POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FB11) AND THE CALIBRATION PLATES, 38-200 MM AND 250-625 MM [1.5 -8 MILS AND 10-25 MILS] AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D-1186.

1.1.5 COATING THICKNESS

GALVANIZED THICKNESS MUST BE DETERMINED BY USE OF TYPE 2 MAGNETIC GAUGE IN ACCORDANCE WITH THE FOLLOWING:

FIVE SEPARATE SPOT MEASUREMENTS MUST BE MADE, SPACED EVENLY OVER ONE (1) RANDOMLY SELECTED, 100 SQUARE FEET [9 SQUARE METERS] OF SURFACE AREA ON EACH STRUCTURAL MEMBER. THREE GAUGE READINGS MUST BE MADE FOR EACH SPOT MEASUREMENT. THE PROBE MUST BE MOVED A DISTANCE OF 1 TO 3 INCHES [25 TO 75 MM] FOR EACH NEW GAUGE READING. ANY UNUSUALLY HIGH OR LOW GAUGE READING THAT CANNOT BE REPEATED CONSISTENTLY MUST BE DISCARDED. THE AVERAGE (MEAN) OF THE 3 GAUGE READINGS MUST BE USED AS THE SPOT MEASUREMENT. THE AVERAGE OF FIVE SPOT MEASUREMENTS FOR EACH SUCH 100 SQUARE FOOT [9 SQUARE METERS] AREA MUST NOT BE LESS THAT THE SPECIFIED THICKNESS. NO SINGLE SPOT MEASUREMENT IN ANY 100 SQUARE FOOT [9 SQUARE METERS] AREA MUST BE LESS THAN 80% OF THE SPECIFIED MINIMUM THICKNESS. ANY ONE OF 3 READINGS WHICH ARE AVERAGED TO PRODUCE EACH SPOT MEASUREMENT, MAY UNDER-RUN OR OVER-RUN BY A GREATER AMOUNT. ALL SPLICE MATERIAL AND SECONDARY MEMBERS MUST HAVE AT LEAST ONE SPOT MEASURED ON EACH PIECE. THE PROBE MUST BE MOVED SO THAT ONE READING IS TAKEN AT EACH END AND MIDDLE OF THE PIECE FOR A TOTAL OF THREE READINGS.

THE QCPS MUST INSPECT AND PROVIDE DOCUMENTATION OF ACTUAL DATA, THE GALVANIZED THICKNESS CHECKS WERE PERFORMED PER SPECIFICATION, AND THE COATING THICKNESS MEETS SPECIFICATION REQUIREMENTS.

1.1.6 HANDLING AND SHIPPING

REASONABLE CARE MUST BE EXERCISED IN HANDLING THE GALVANIZED STEEL DURING SHIPPING, ERECTION, AND SUBSEQUENT CONSTRUCTION OF THE BRIDGE. THE STEEL MUST BE INSULATED FROM THE BINDING CHAINS BY SOFTENERS. HOOKS AND SLINGS USED TO HOIST STEEL MUST BE PADDED. DIAPHRAGMS AND SIMILAR PIECES MUST BE SPACED IN SUCH A WAY THAT NO RUBBING WILL OCCUR DURING SHIPMENT THAT MAY DAMAGE THE GALVANIZING. THE STEEL MUST BE STORED ON PALLETS AT THE JOB SITE, OR BY OTHER MEANS, SO THAT IT DOES NOT REST ON THE GROUND OR SO THAT COMPONENTS DO NOT FALL OR REST ON EACH OTHER.

1.1.7 SAFETY REQUIREMENTS AND PRECAUTIONS

THE CONTRACTOR MUST MEET THE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), IN ADDITION TO THE SCAFFOLDING REQUIREMENTS BELOW.

1.1.8 SCAFFOLDING

RUBBER ROLLERS, OR OTHER PROTECTIVE DEVICES MEETING THE APPROVAL OF THE ENGINEER, MUST BE USED ON SCAFFOLD FASTENINGS. METAL ROLLERS OR CLAMPS AND OTHER TYPES OF FASTENINGS WHICH WILL MAR OR DAMAGE COATED SURFACES MUST NOT BE USED.

1.1.9 INSPECTION ACCESS FOR FIELD REPAIR

IN ADDITION TO THE REQUIREMENT OF 105.11, THE CONTRACTOR MUST FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT (CLOSELY OBSERVE) ALL AFFECTED SURFACES. THIS OPPORTUNITY MUST BE PROVIDED TO THE INSPECTOR DURING ALL PHASES OF THE WORK AND CONTINUE FOR A PERIOD OF AT LEAST TEN (10) WORKING DAYS AFTER THE TOUCH-UP WORK HAS BEEN COMPLETED. WHEN SCAFFOLDING IS USED, IT MUST BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

WHEN SCAFFOLDING, OR THE HANGERS ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, OR WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE PAINTED, THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH:

WHEN SCAFFOLDING IS SUSPENDED 43" [1100 MM] OR MORE BELOW THE COATED SURFACE TO BE REPAIRED, TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING. ONE ROW OF GUARDRAIL MUST BE PLACED AT 42" [1050 MM] ABOVE THE SCAFFOLDING AND THE OTHER ROW AT 20" [500 MM] ABOVE THE SCAFFOLDING.

WHEN THE SCAFFOLDING IS SUSPENDED AT LEAST 21" [530 MM], BUT LESS THAN 43" [1100 MM] BELOW THE COATED SURFACE TO BE REPAIRED, A ROW OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING AT 20" [500 MM] ABOVE THE SCAFFOLDING.

TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF SCAFFOLDING NOT PREVIOUSLY MENTIONED. THE ROWS OF GUARDRAIL MUST BE PLACED AT 42" [1050 MM] AND 20" 500 MM] ABOVE SCAFFOLDING, AS PREVIOUSLY MENTIONED.

ALL SCAFFOLDING MUST BE AT LEAST 24" [610 MM] WIDE WHEN GUARDRAIL IS USED AND 28" [710 MM] WIDE WHEN THE SCAFFOLDING IS SUSPENDED LESS THAN 21" [530 MM] BELOW THE COATED SURFACE TO BE REPAIRED AND GUARDRAIL IS NOT USED. IF TWO OR MORE SCAFFOLDING ARE LAID PARALLEL TO ACHIEVE THE PROPER WIDTH, THEY MUST BE RIGIDLY ATTACHED TO EACH OTHER TO PRECLUDE ANY DIFFERENTIAL MOVEMENT.

ALL GUARDRAIL MUST BE CONSTRUCTED AS A SUBSTANTIAL BARRIER WHICH IS SECURELY FASTENED IN PLACE AND IS FREE FROM PROTRUDING OBJECTS SUCH AS NAILS, SCREWS AND BOLTS. THERE MUST BE AN OPENING IN THE GUARDRAIL, PROPERLY LOCATED, TO ALLOW THE INSPECTOR ACCESS ONTO THE SCAFFOLDING.

THE RAILS AND UPRIGHTS MUST BE EITHER METAL OR WOOD. IF PIPE RAILING IS USED, THE RAILING MUST HAVE A NOMINAL DIAMETER OF NO LESS THAN ONE AND ONE HALF INCHES. IF STRUCTURAL STEEL RAILING IS USE, THE RAILS MUST BE 2 X 2 X ¾ INCH [50 X 50 X 10 MM] STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING MUST BE 2 X 4 INCH [50 X 100 MM] (NOMINAL) STOCK. ALL UPRIGHTS MUST BE SPACED AT NO MORE THAN 8 FEET [2.4 M] ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS MUST BE 2 X 4 INCHES [50 X 100 MM] (NOMINAL) STOCK.

WHEN THE SURFACE TO BE INSPECTED IS MORE THAN 15 FEET [4.6 M] ABOVE THE GROUND OR WATER, AND THE SCAFFOLDING IS SUPPORTED FROM THE STRUCTURE BEING PAINTED, THE CONTRACTOR MUST PROVIDE THE INSPECTOR WITH A SAFETY BELT AND LIFELINE. THE LIFELINE MUST NOT ALLOW A FALL GREATER THAN 6 FEET [2 M]. THE CONTRACTOR MUST PROVIDE A METHOD OF ATTACHING THE LIFELINE TO THE STRUCTURE INDEPENDENT OF THE SCAFFOLDING, CABLES, OR BRACKETS SUPPORTING THE SCAFFOLDING.

WHEN SCAFFOLDING IS MORE THAN TWO AND ONE HALF FEET [0.75 M] ABOVE THE GROUND, THE CONTRACTOR MUST PROVIDE A LADDER FOR ACCESS ONTO THE SCAFFOLDING. THE LADDER AND ANY EQUIPMENT USED TO ATTACH THE LADDER TO THE STRUCTURE MUST BE CAPABLE OF SUPPORTING 250 POUNDS [115 KG] WITH A SAFETY FACTOR OF AT LEAST FOUR (4). ALL RUNGS, STEPS, CLEATS, OR TREADS MUST HAVE UNIFORM SPACING AND MUST NOT EXCEED 12" [305 MM] ON CENTER. AT LEAST ONE SIDE RAIL MUST EXTEND AT LEAST 36" [915 MM] ABOVE THE LANDING NEAR THE TOP OF THE LADDER.

AN ADDITIONAL LANDING MUST BE REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED, EXCEEDS 12" [305 MM]. THE LANDING MUST BE A MINIMUM OF AT LEAST 24" [610 MM] WIDE AND 24" [610 MM] LONG. IT MUST ALSO BE OF ADEQUATE SIZE AND SHAPE SO THAT THE DISTANCE FROM THE LANDING TO THE POINT WHERE THE SCAFFOLDING IS ACCESSED DOES NOT EXCEED 12" [305 MM]. THE LANDING MUST BE RIGID AND FIRMLY ATTACHED TO THE LADDER; HOWEVER, IT MUST NOT BE SUPPORTED BY THE LADDER. THE SCAFFOLDING MUST BE CAPABLE OF SUPPORTING A MINIMUM OF 1000 LBS [455 KG].

IN ADDITION TO THE AFOREMENTIONED REQUIREMENTS, THE CONTRACTOR IS STILL RESPONSIBLE TO OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES.

THE CONTRACTOR MUST FURNISH ALL NECESSARY TRAFFIC CONTROL TO PERMIT INSPECTION DURING AND AFTER ALL PHASES OF THE PROJECT.

1.1.10 PROTECTION OF PERSONS AND PROPERTY

THE CONTRACTOR MUST INSTALL AND MAINTAIN SUITABLE SHIELDS OR ENCLOSURES TO PREVENT DAMAGE TO ADJACENT BUILDINGS, PARKED CARS, TRUCKS, BOATS, OR VEHICLES TRAVELING ON, OVER, OR UNDER STRUCTURES HAVING GALVANIZED REPAIRS. THEY MUST BE SUITABLY ANCHORED AND REINFORCED TO PREVENT INTERFERING WITH NORMAL TRAFFIC OPERATIONS IN THE OPEN LANES.

PAYMENT FOR THE SHIELDS MUST BE INCLUDED AS INCIDENTAL TO THE APPLICABLE FIELD COATING OPERATION. WORK MUST BE SUSPENDED WHEN DAMAGE TO ADJACENT BUILDINGS, MOTOR VEHICLES, BOATS, OR OTHER PROPERTY IS OCCURRING.


WHEN OR WHERE ANY DIRECT OR INDIRECT DAMAGE OR INJURY IS DONE TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR MUST RESTORE, AT HIS OWN EXPENSE, SUCH PROPERTY, TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE OR INJURY WAS DONE.

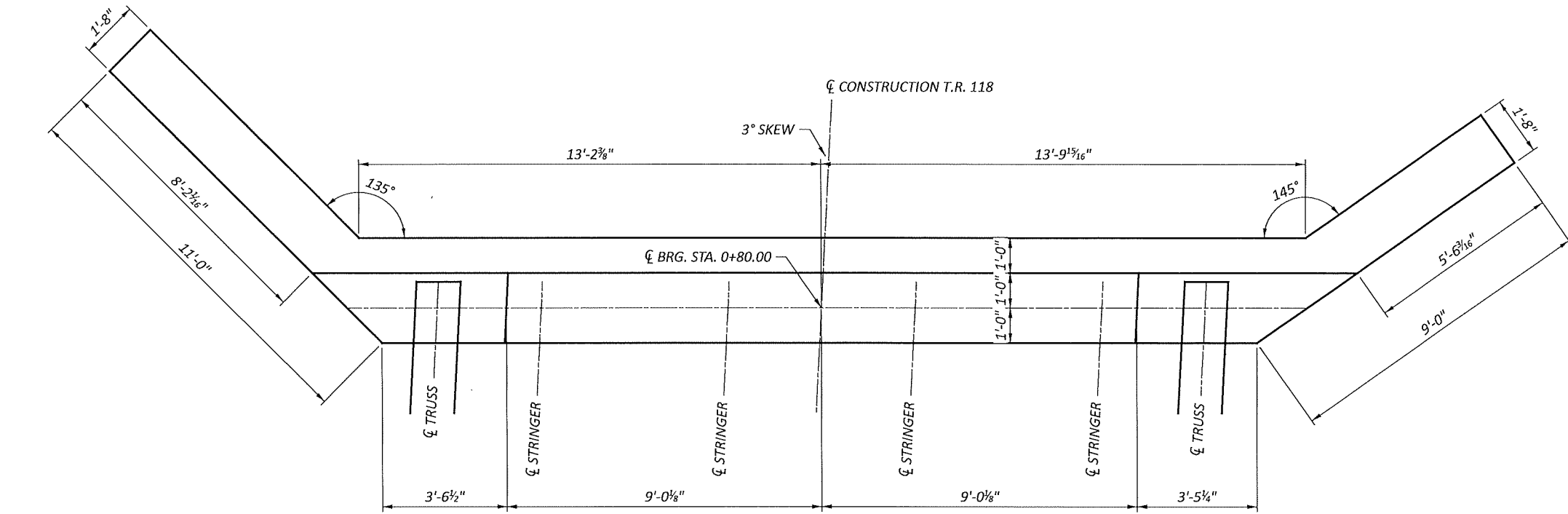
1.1.11 POLLUTION CONTROL

THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES.

1.1.12 WARRANTY

THE STEEL GALVANIZER OF THE BRIDGE ELEMENTS (OTHER THAN BRIDGE FLOORING) SHALL BE A MEMBER OF THE AMERICAN GALVANIZER'S ASSOCIATION AND SHALL PROVIDE THE BRIDGE OWNER A WRITTEN LIMITED WARRANTY AGAINST CORROSION OF THE SUPERSTRUCTURE COMPONENTS FOR A PERIOD OF NOT LESS THAN 35 YEARS.

SFN 6044264	
DESIGN AGENCY  Missouri Department of Transportation ENGINEER'S OFFICE	
DESIGNER SEJ	CHECKER GJW
REVIEWER GJW 3/20/23	
PROJECT ID 117330	
SUBSET 4	TOTAL 13
SHEET 13	TOTAL 22



This technical drawing illustrates the cross-section of a bridge abutment, detailing its reinforcement and structural components. The drawing includes the following elements:

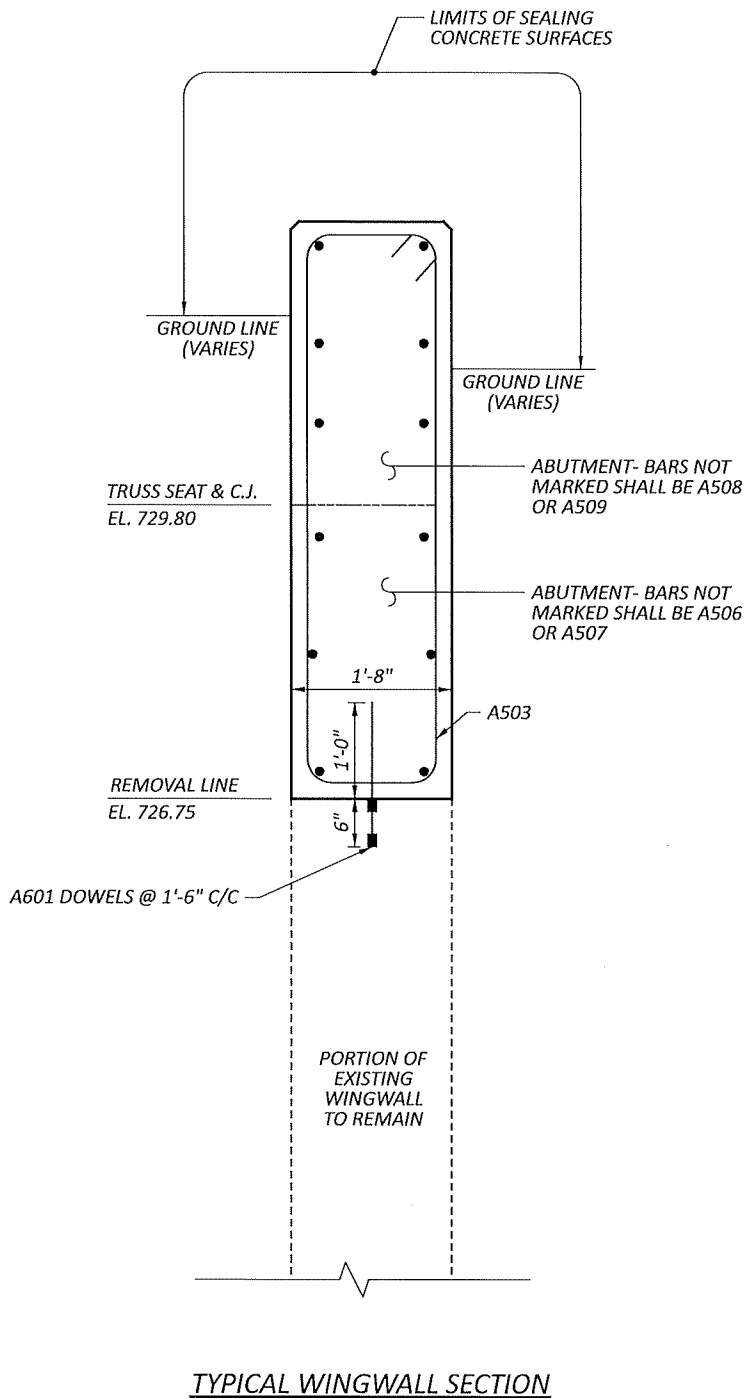
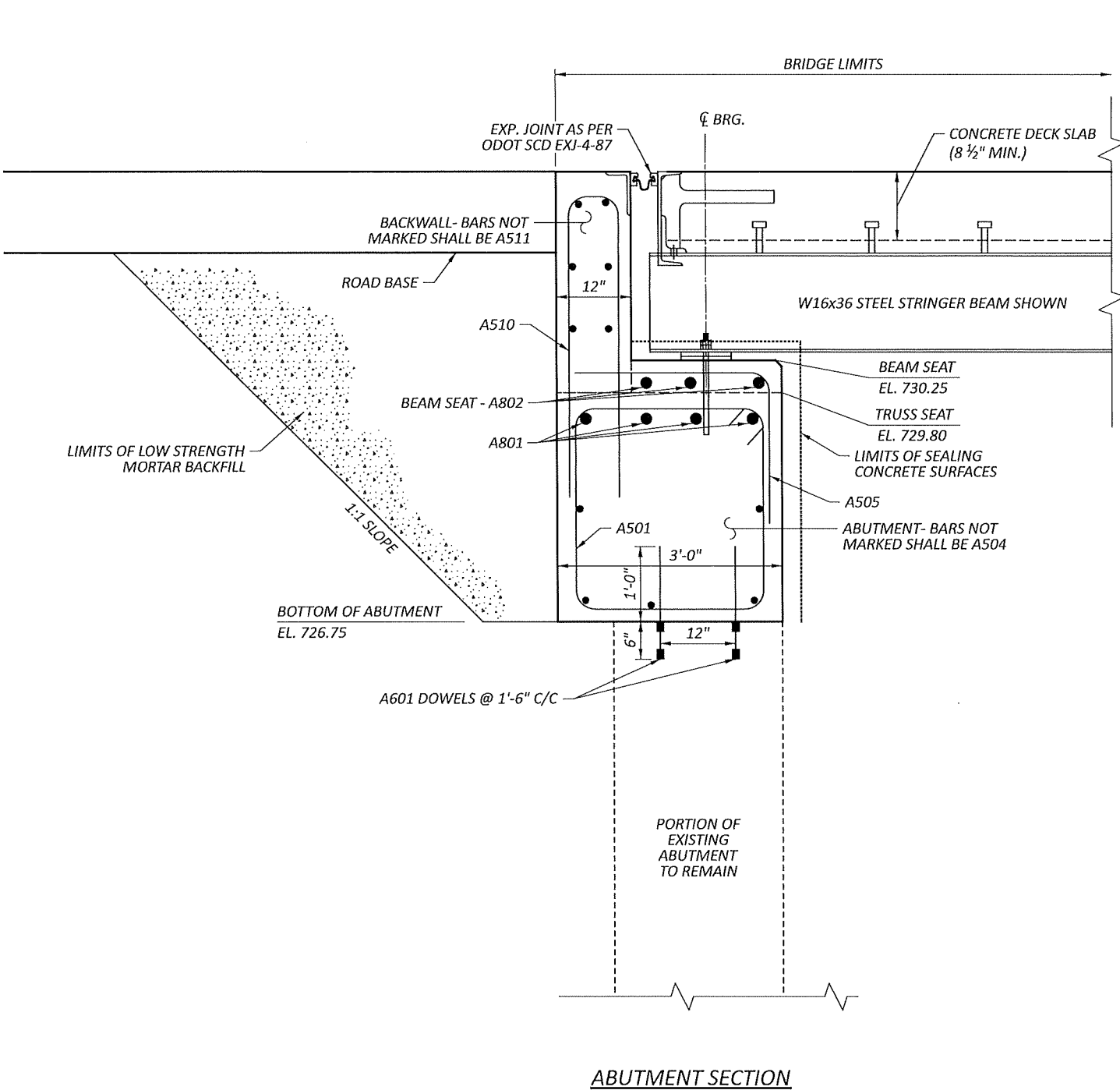
- Top Section:**
  - CL CONSTRUCTION T.R. 118** (Centerline Construction T.R. 118)
  - 20 - A510, 19 SPA. @ 1'-6" c/c = 28'-6"** (20 A510 reinforcement bars, 19 spaces, at 1'-6" center-to-center spacing = 28'-6")
  - SLOPE BACKWALL 10'-0"** (Slope backwall dimensions)
  - BEAM SEAT EL. 730.25** (Beam seat elevation)
  - PROFILE GRADE EL. 732.75** (Profile grade elevation)
- Reinforcement Details:**
  - 3-A802** (3 A802 reinforcement bars)
  - 4-A801** (4 A801 reinforcement bars)
  - 2-A511** (2 A511 reinforcement bars)
  - 6 - A503 @ 1'-6" SPA.** (6 A503 reinforcement bars, 1'-6" spacing)
  - 13 - A505, 12 SPA. @ 1'-6" c/c = 18'-0"** (13 A505 reinforcement bars, 12 spaces, at 1'-6" center-to-center spacing = 18'-0")
  - 4 - A503 @ 1'-6" SPA.** (4 A503 reinforcement bars, 1'-6" spacing)
  - 7 - A601 DOWELS @ 1'-6" SPA.** (7 A601 dowels, 1'-6" spacing)
  - 17 - A501 & 17 PAIRS - A601 DOWELS, 16 SPA. @ 1'-6" c/c = 24'-0"** (17 A501 reinforcement bars and 17 pairs of A601 dowels, 16 spaces, at 1'-6" center-to-center spacing = 24'-0")
  - 6 - A601 DOWELS @ 1'-6" SPA.** (6 A601 dowels, 1'-6" spacing)
  - A502** (A502 reinforcement bars)
  - 3-A504** (3 A504 reinforcement bars)
  - 2-A504** (2 A504 reinforcement bars)
- Structural Features:**
  - A508 E.F.** (A508 Elevation Face)
  - A506 E.F.** (A506 Elevation Face)
  - A509 E.F.** (A509 Elevation Face)
  - C.J. & TRUSS SEAT EL. 729.80** (Centerline and Truss Seat Elevation)
  - A507 E.F.** (A507 Elevation Face)
  - REMOVAL LINE EL. 726.75** (Removal Line Elevation)
- Other Labels:**
  - PORTION OF EXISTING ABUTMENT TO REMAIN** (Portion of existing abutment to remain)

MUS-T.R.118-0.98

REAR ABUTMENT DETAILS  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

FEET	TOTAL
14	22





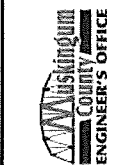
# NOTES

1. ABUTMENT REMOVAL:  
THE CONTRACTOR SHALL REMOVE ALL MATERIAL DOWN TO THE CUT LINE SHOWN ON THIS SHEET.
2. BASIS OF PAYMENT:  
PAYMENT FOR ALL REMOVAL SHALL BE MADE AT THE LUMP SUM CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

REAR ABUTMENT DETAILS  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

SFN  
6044264

DESIGN AGENCY



DESIGNER

SEJ

CHECKER

GJW

REVIEWER

GJW 3/20/23

PROJECT ID

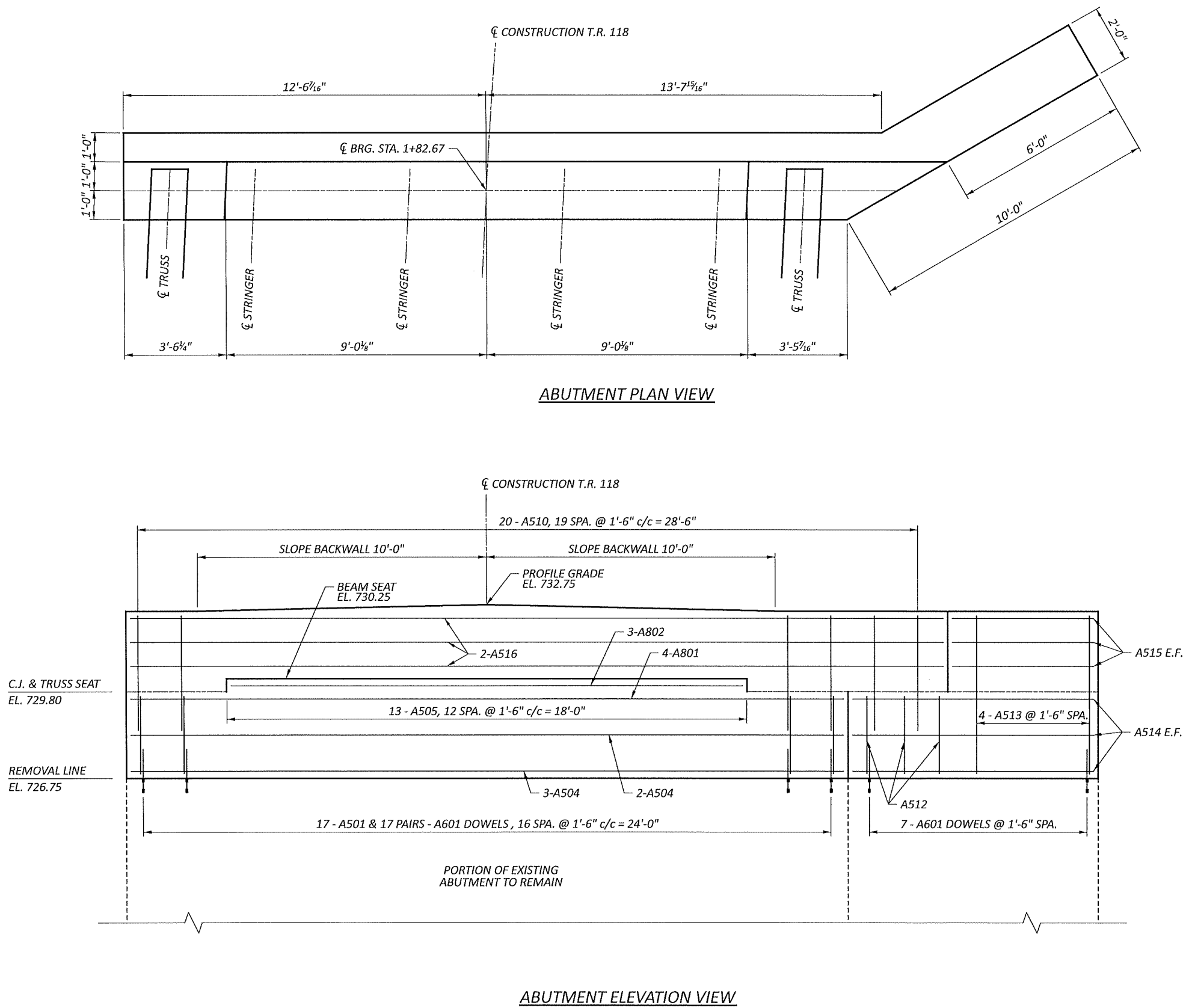
117330

SUBSET

6 13

SHEET

15 22



FORWARD ABUTMENT DETAILS  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

SFN  
6044264

DESIGN AGENCY



DESIGNER  
SEJ

CHECKER  
GJW

REVIEWER  
GJW

3/20/23

PROJECT ID  
117330

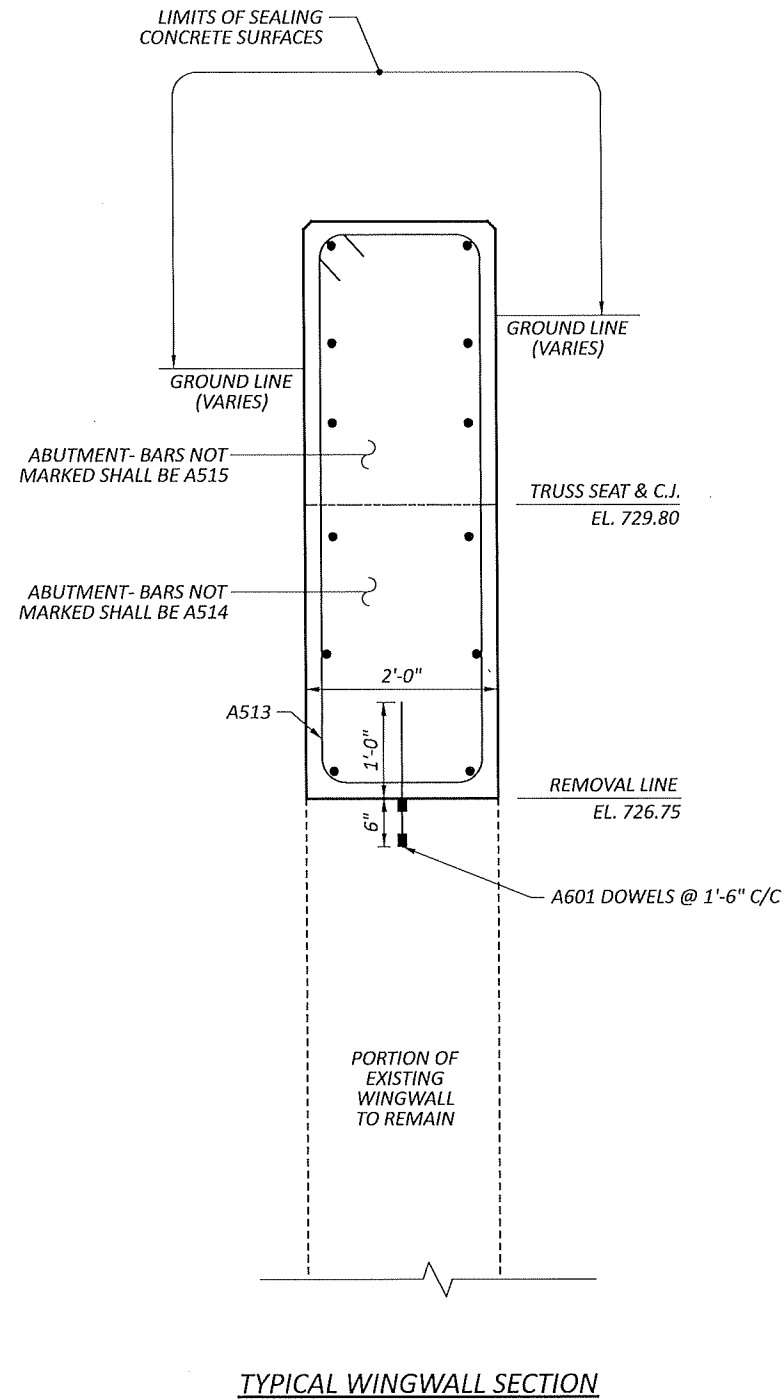
SUBSET  
7

TOTAL  
13

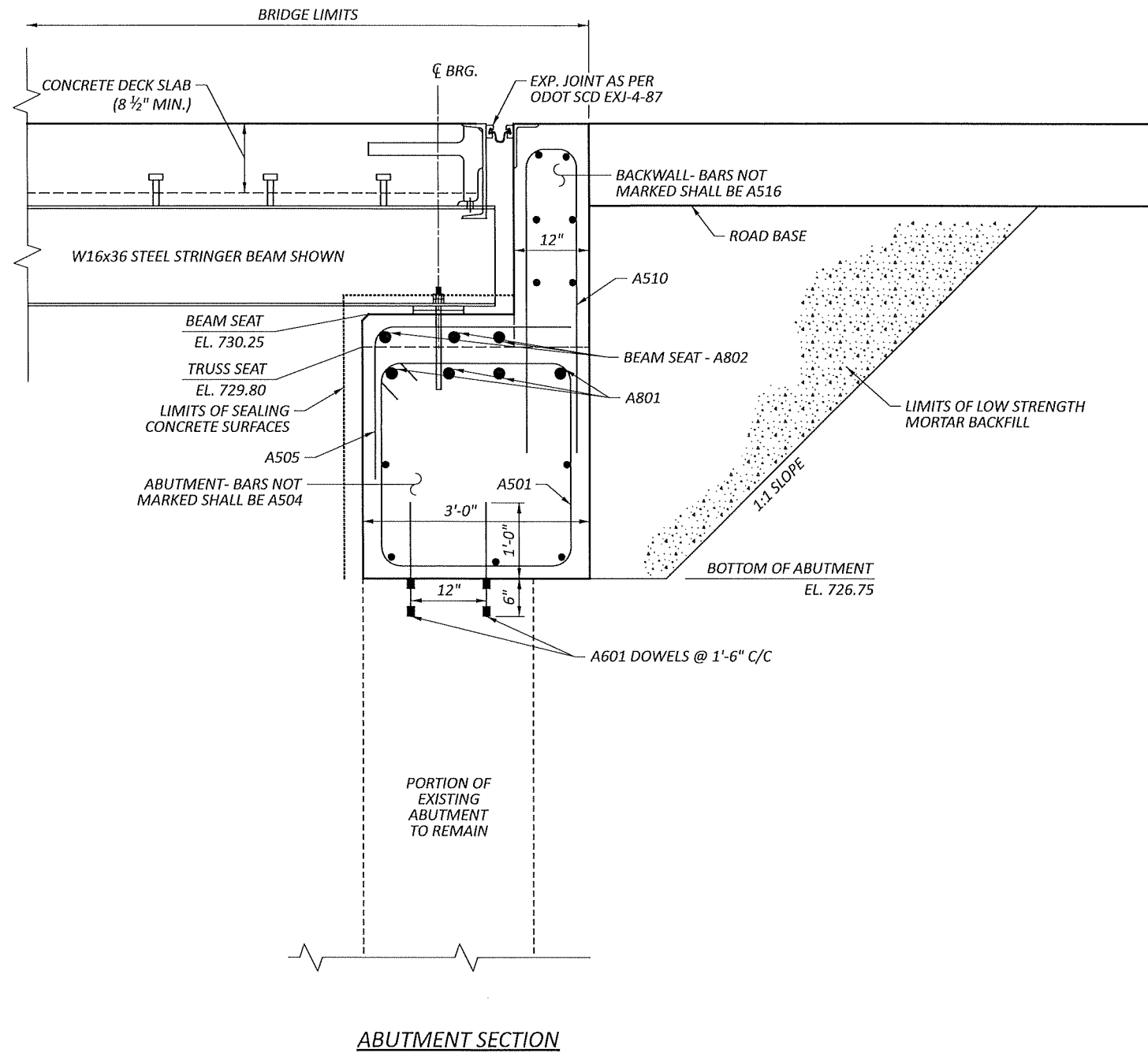
SHEET  
16

TOTAL  
22



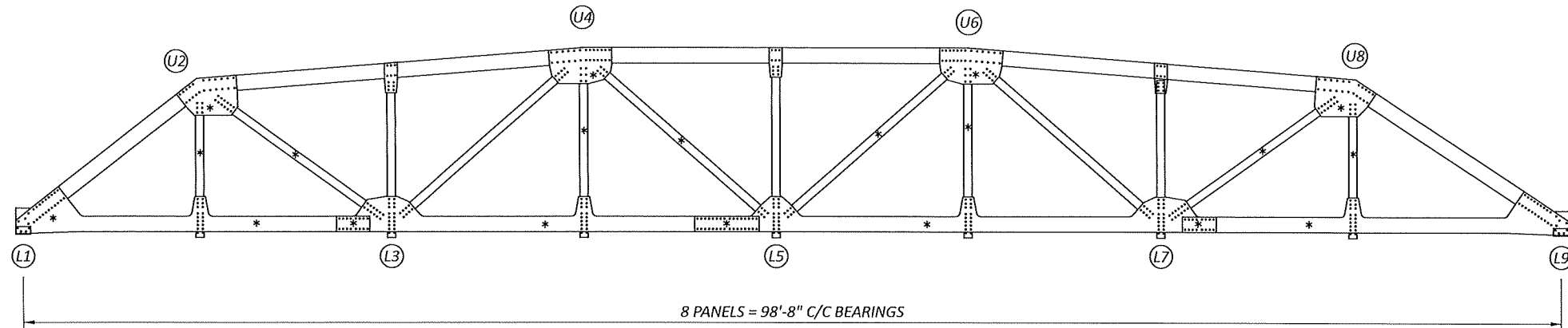
**NOTES**

1. **ABUTMENT REMOVAL:**  
THE CONTRACTOR SHALL REMOVE ALL MATERIAL DOWN TO THE CUT LINE SHOWN ON THIS SHEET.
2. **BASIS OF PAYMENT:**  
PAYMENT FOR ALL REMOVAL SHALL BE MADE AT THE LUMP SUM CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.



FORWARD ABUTMENT DETAILS  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

SFN 6044264	
DESIGN AGENCY	
DESIGNER	CHECKER
SEJ	GJW
REVIEWER	
GJW	3/20/23
PROJECT ID 117330	
SUBSET	TOTAL
8	13
SHEET	TOTAL
17	22

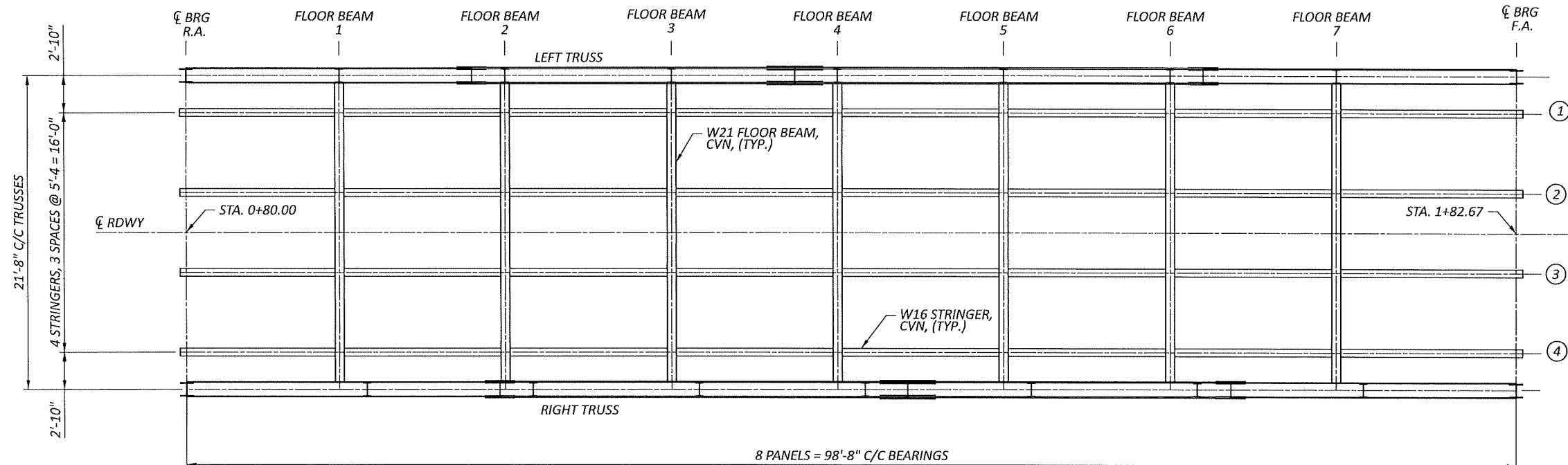


### TRUSS ELEVATION

\* DESIGNATED MEMBERS THAT UNDERGO AXIAL TENSION FORCES AND ARE CONSIDERED FRACTURE CRITICAL MEMBERS (FCM) FOR FABRICATION PURPOSES

TRUSS VERTICALS, DIAGONALS AND TOP CHORD MEMBERS SHALL BE FABRICATED FROM W12 ROLLED MEMBERS  
TRUSS BOTTOM CHORD SHALL BE FABRICATED FROM TWO PLATE MEMBERS

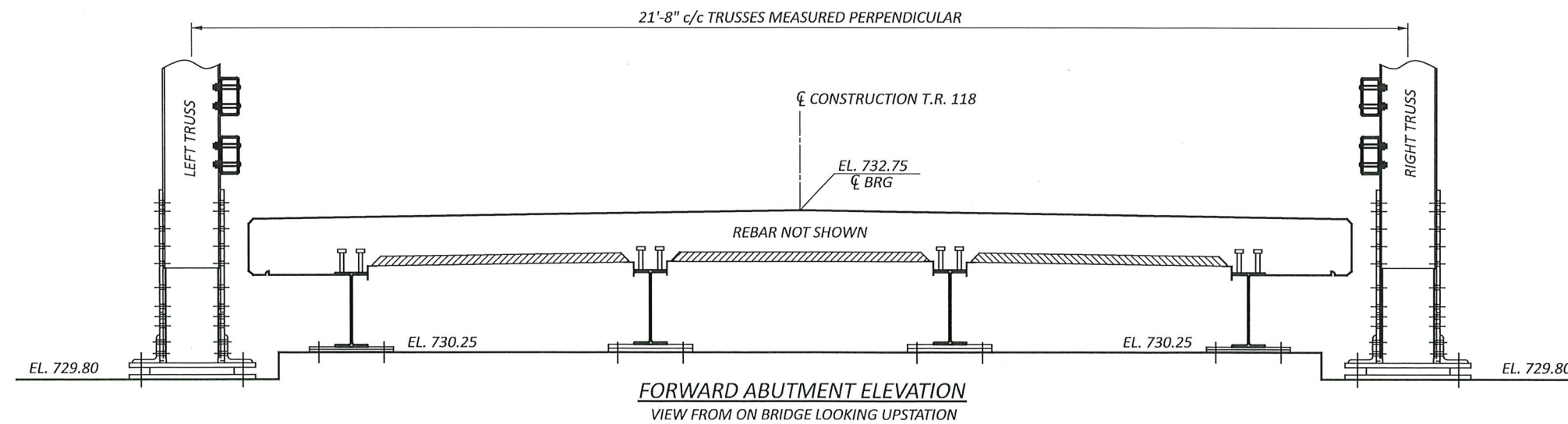
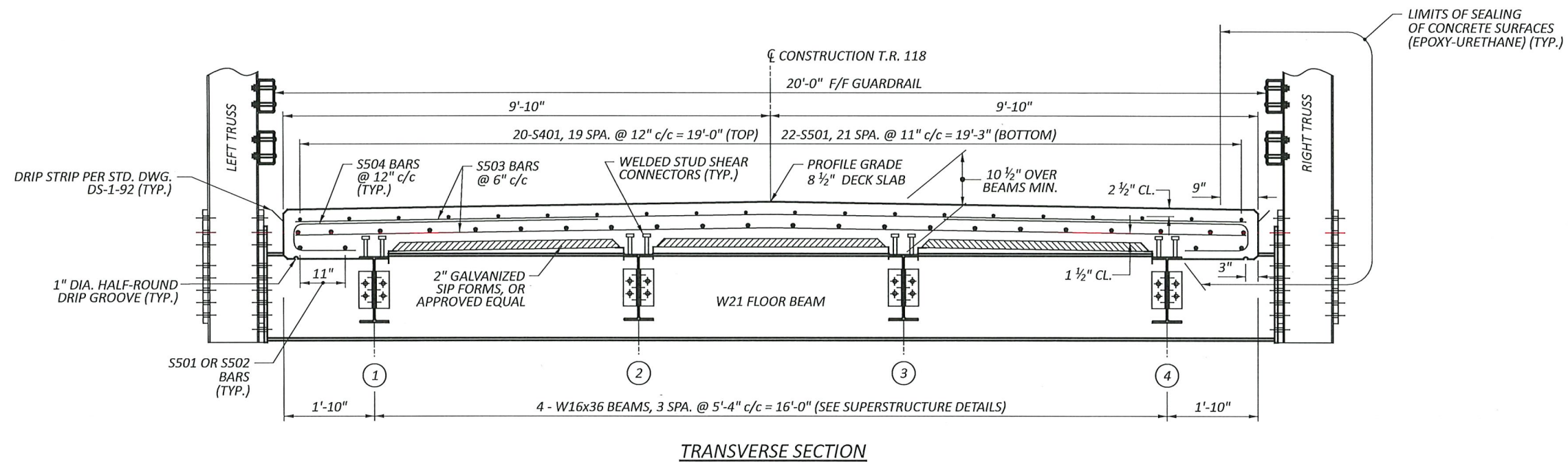
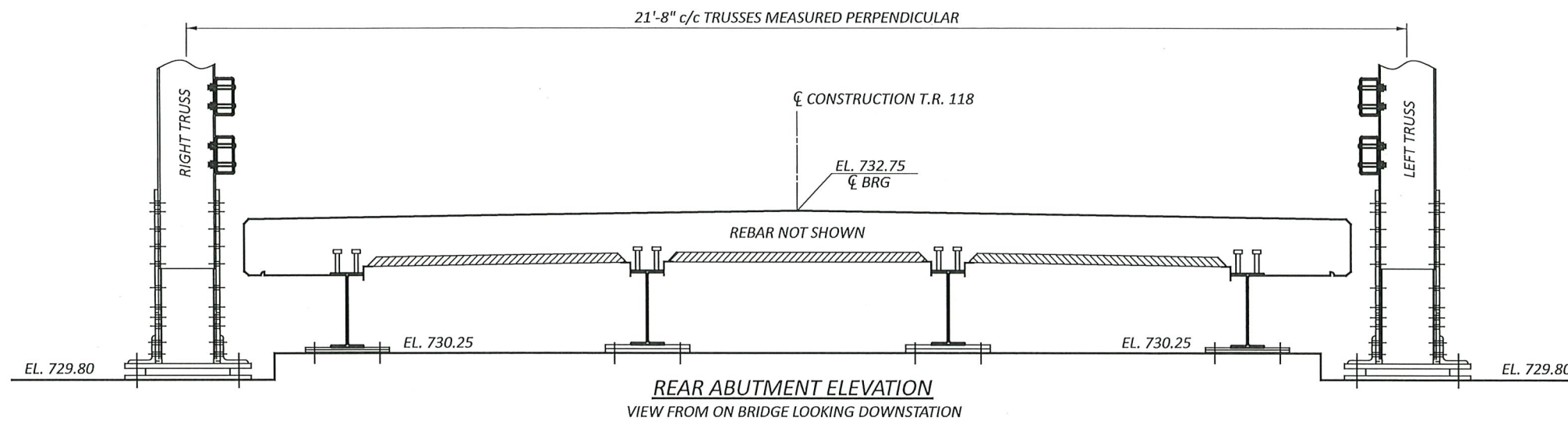
TRUSSES TO BE CAMBERED FOR DEAD LOADS ONLY AND SHALL BE FLAT AFTER ALL DEAD LOADS ARE APPLIED  
REQUIRED TRUSS CAMBER TO BE DETERMINED BY TRUSS BRIDGE MANUFACTURER



### FRAMING PLAN

#### NOTE:

- ALL ITEMS DESIGNATED (FCM) ARE FRACTURE CRITICAL MEMBERS AND COMPONENTS AND SHALL BE FURNISHED AND FABRICATED ACCORDING TO THE REQUIREMENTS OF SECTION 12 OF AASHTO AWS BRIDGE WELDING CODE D1.5.
- WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01



SUPERSTRUCTURE SECTIONS  
 BRIDGE NO. MUS-TR118-0098  
 OVER WAKATOMIKA CREEK

SFN  
 6044264

DESIGN AGENCY



DESIGNER

SEJ

CHECKER

GJW

REVIEWER

3/20/23

PROJECT ID

117330

SUBSET

10

TOTAL

13

SHEET

19

TOTAL

22

SUPERSTRUCTURE NOTES:

1.

ALL STEEL SHALL BE ASTM A572/A709 GRADE 50 UNLESS NOTED.
2.

STRINGERS AND FLOOR BEAMS SHALL MEET CHARPY V-NOTCH REQUIREMENTS PER CMS 711.01 15 FT-LBS @ 40°F.
3.

THE STRUCTURAL STEEL MEMBERS AND OTHER MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02.
4.

CONCRETE DECK TO BE MIN. 8 ½" REINFORCED ODOT TYPE QC2 CONCRETE FORMED ON 2" GALVANIZED SIP FORMS OR APPROVED EQUAL.
5.

FAYING SURFACES OF THE BOLTED SPLICES SHALL BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSH. POWER WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPlice BOLT HOLES SHALL BE FREE OF ZINC BUILD UP AND EACH HOLE SHALL BE CHECKED IN THE SHOP AFTER GALVANIZING TO RECEIVE A 7⁄8" DIAMETER DRIFT PIN.
6.

BEAMS SHALL BE PREPARED BY THE FABRICATOR TO STEEL STRUCTURES PAINTING COUNCIL (SSPC) GRADE SIX (6) COMMERCIAL BLAST CLEANING PRIOR TO GALVANIZING. ALL MATERIAL SHALL BE FREE OF PAINT MARKS. SECONDARY ANGLES, PLATES, BARS, AND SHAPES NEED NOT TO BE BLAST CLEANED.
7.

AREAS OF FIELD CONNECTIONS SHALL HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPLICE PLATES, BEARINGS, OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.
8.

MATERIAL SHALL BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER, AND ERECTOR SHALL USE LIFTING CLAMPS OR SOFT HANDLING. PRIOR TO GALVANIZING, IMPERFECTIONS THAT ARE GREATER THAN THE LIMITS ALLOWED BY GRINDING PER A6 SHALL BE DOCUMENTED.
9.

ALL DAMAGED GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.
10.

AFTER GALVANIZING, MATERIAL SHALL BE PLACED IN SHOP ASSEMBLY PER SUPPLEMENTAL SPECIFICATION 513 TO CHECK ALIGNMENT OF HOLES, SWEEP, AND CAMBER AGAINST THE FABRICATOR'S ORIGINAL RECORDED LAY DOWN DIMENSIONS. LAYDOWN TOLERANCES BELOW:

10.1.

BEARING POINTS AFTER GALVANIZING SHALL BE ⅛" ± FROM FIRST LAY DOWN.

10.2.

CAMBER POINTS AFTER GALVANIZING SHALL BE +¼" OR -0" FROM FIRST LAY DOWN

10.3.

SWEEP POINTS AFTER GALVANIZING SHALL BE ⅜" ± FROM FIRST LAY DOWN.
11.

ROLLED, SHEARED, AND FLAMED CUT SURFACES SHALL BE FINISHED IN ACCORDANCE WITH ODOT CMS 513.12. WHERE STEEL BEAM SURFACES ARE TO RECEIVE A COATING OR GALVANIZING, ALL FOUR ROLLED EDGES OF THE BOTTOM FLANGE AND THE TWO BOTTOM EDGES OF THE TOP FLANGE SHALL BE GROUND TO A ⅛" RADIUS ± ⅛" IN ACCORDANCE WITH ODOT CMS 514.13 B.
12.

BEAM HOLES SHALL BE DRILLED FULL SIZE AND FABRICATED AS PER 513.19.
13.

STRUCTURAL BOLTS SHALL BE 7⁄8" DIA. ASTM A325 TYPE 1 GALVANIZED UNLESS NOTED.
14.

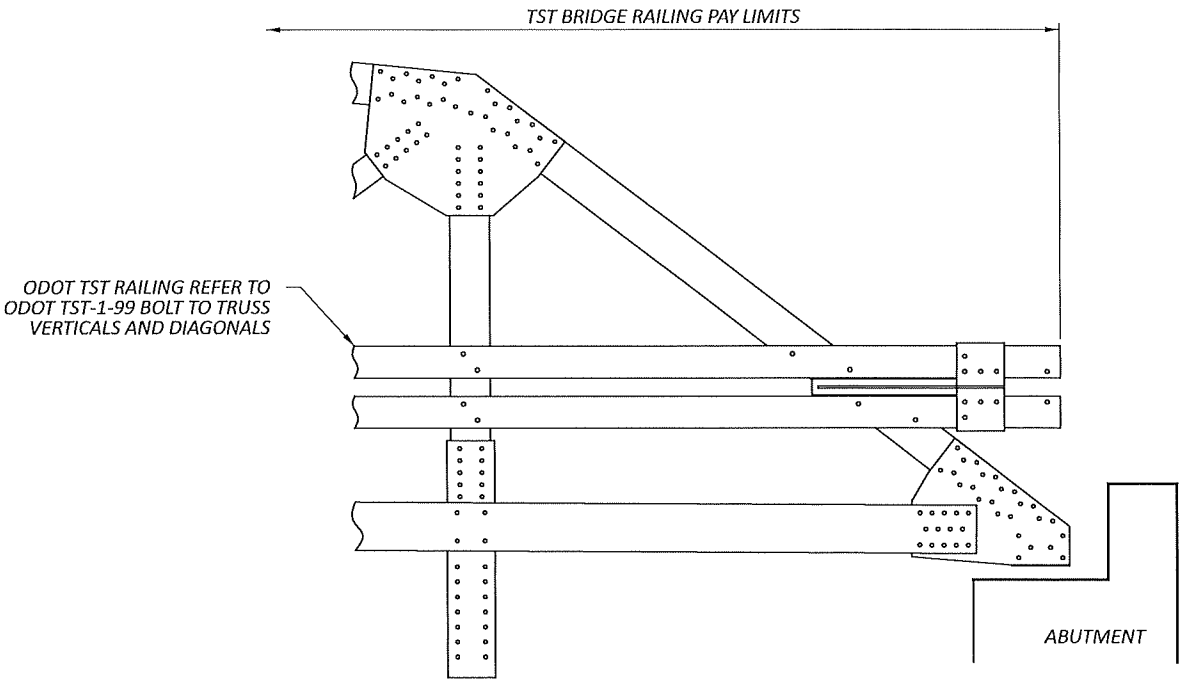
THIS STRUCTURE CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATIONS", 8th EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017, INCLUDING THE 2012 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2019.
15.

CAMBER TOLERANCE: -0" TO +¾"
16.

STRUCTURE SHALL COMPLY TO THE CURRENT EDITION, INCLUDING UPDATES RELEASED ON OR BEFORE THE ADVERTISING DATE, OF THE ODOT CMS (2019).
17.

STEEL STAMPS FOR MARKING SHALL BE OF THE STRESSLESS TYPE PER 513.04.
18.

ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO/AWS D1.5 BRIDGE WELDING CODE AS AMENDED BY SUPPLEMENT 1011 PER 513.21.

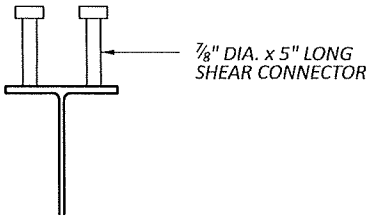


TWIN STEEL TUBE TERMINATION DETAIL (TYP.)

NOTE: IF TRUSS GEOMETRY IS MODIFIED FROM WHAT IS SHOWN ON CONTRACT PLANS, RAILING LENGTH MAY NEED MODIFIED AT NO ADDITIONAL COST TO THE OWNER.

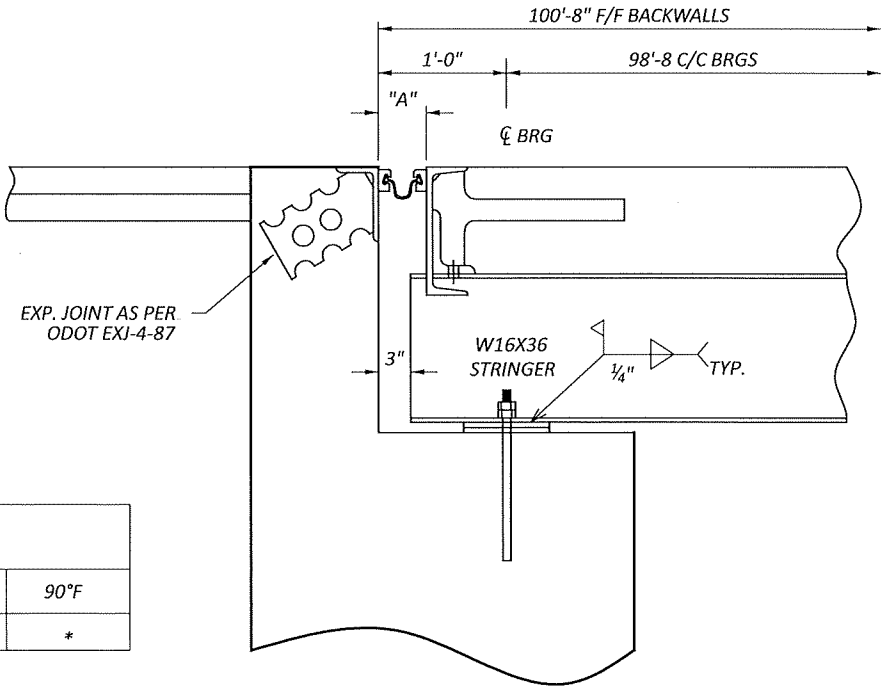
TEMPERATURE / JOINT GAP						
TEMPERATURE	40°F	50°F	60°F	70°F	80°F	90°F
GAP "A" REQ'D	*	*	*	*	*	*

\* VALUES TO BE PROVIDED BY TRUSS MANUFACTURER



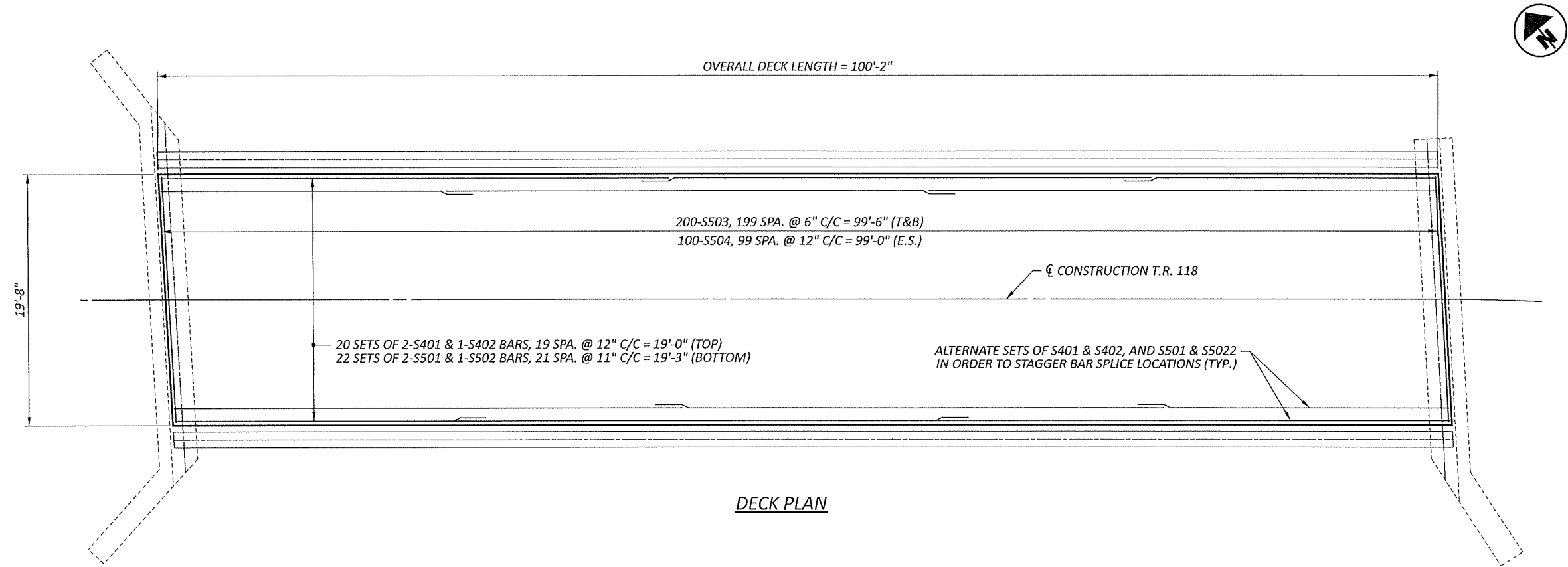
WELDED STUD SHEAR CONNECTOR DETAIL

TYPICAL, FOUR BEAM LINES  
(DECK NOT SHOWN)



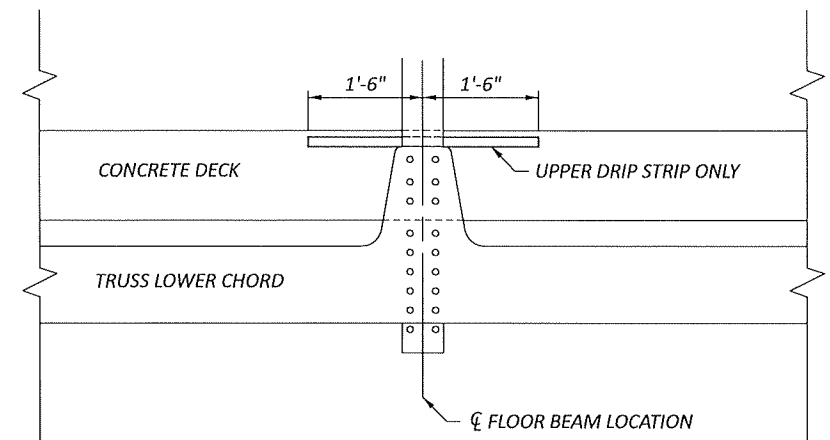
EXPANSION JOINT DETAIL

NOTE: FIXED BEARINGS AT REAR ABUTMENT  
EXPANSION BEARINGS AT FORWARD ABUTMENT



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 10/13 FOR TRANSVERSE SECTION.
5. WELDED STUD SHEAR CONNECTORS SHALL CONFORM TO AASHTO M-169 AND ITEM 513.
6. SCREED ELEVATIONS SHALL BE CALCULATED AND PROVIDED BY THE TRUSS MANUFACTURER. SCREED ELEVATIONS REPRESENT THE THEORETICAL DECK SURFACE ELEVATIONS PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.



DRIP STRIP DETAIL  
ABOVE EACH FLOOR BEAM (TYP.)



DECK PLAN  
BRIDGE NO. MUS-TR118-0098  
OVER WAKATOMIKA CREEK

SFN 6044264	
DESIGN AGENCY  MISSOURI STATE ENGINEER'S OFFICE	
DESIGNER SEJ	CHECKER GJW
REVIEWER GJW 3/20/23	
PROJECT ID 117330	
SUBSET 12	TOTAL 13
SHEET 21	TOTAL 22

**BENDING DIAGRAM**

TYPE-1                      TYPE-2                      TYPE-3                      TYPE-10

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-TR118-0098  
OVER WAKATOMIKA CREEK