

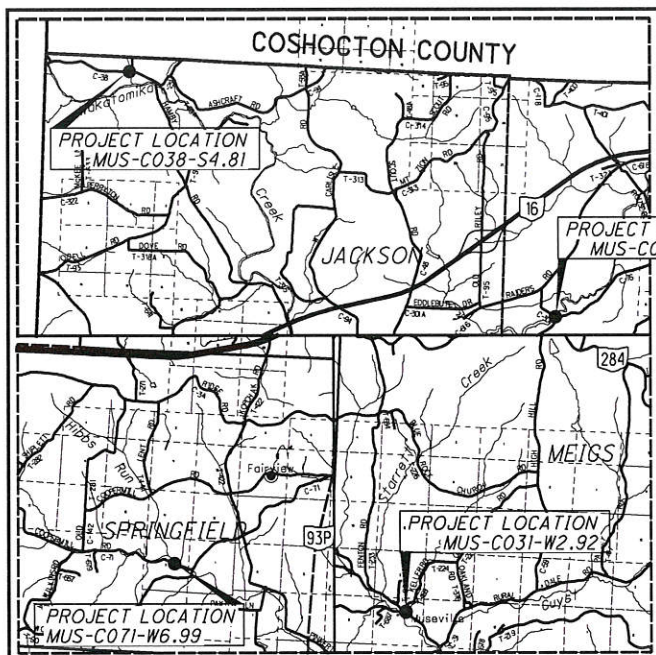
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

# PART 2

## MUS-CR31/71/301/38

(FOR PART 1 - SEE MUS-C031-W2.92)

### MUSKINGUM COUNTY CASS TOWNSHIP JACKSON TOWNSHIP SPRINGFIELD TOWNSHIP



LOCATION MAP

LATITUDE: 39°54'43.9" LONGITUDE: 82°05'11.8" (CR-71)  
 LATITUDE: 40°07'30.4" LONGITUDE: 82°05'01.3" (CR-301)  
 LATITUDE: 40°09'54.5" LONGITUDE: 82°11'12.2" (CR-38)



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

DESIGN DESIGNATION	CR-71	CR-301	CR-38
CURRENT ADT (2015)	399	150	146
DESIGN YEAR ADT (2035)	420	170	160
DESIGN HOURLY VOLUME (2035)			
DIRECTIONAL DISTRIBUTION	0.55	0.55	0.55
TRUCKS (24 HOUR B&C)	0.03	0.03	0.03
DESIGN SPEED	40 MPH	55 MPH	55 MPH
LEGAL SPEED	40 MPH	55 MPH	55 MPH

DESIGN FUNCTIONAL CLASSIFICATION:  
07 - LOCAL ROAD-RURAL  
NHS PROJECT ----- NO

DESIGN EXCEPTIONS	APPROVED:
CR301: LANE WIDTH/GRADED SHOULDER WIDTH/ VERTICAL ALIGNMENT/SSD	///
CR38: LANE WIDTH/GRADED SHOULDER WIDTH/ VERTICAL ALIGNMENT/SSD/GRADE BREAK	///
CR71: LANE WIDTH/GRADED SHOULDER WIDTH/ VERTICAL ALIGNMENT/SSD	///

**UNDERGROUND UTILITIES**  
CONTACT BOTH SERVICES  
CALL TWO WORKING DAYS  
BEFORE YOU DIG

CALL  
**1-800-362-2764**  
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS UNDERGROUND  
PROTECTION SERVICE CALL: **1-800-925-0988**

PLAN PREPARED BY:  
**Palmer ENGINEERING**  
ENGINEERING AKRON, OHIO 44320

INDEX OF SHEETS:

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ENGINEERS SEAL:



SIGNED: *Matthew L. Johnson*  
DATE: 9-1-2016

ENGINEERS SEAL:



SIGNED: *Daniel P. Pickler*  
DATE: 9/1/16

STANDARD CONSTRUCTION DRAWINGS

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
BP-3.1	7/18/14	AS-1-15	7/17/15	TC-41.20	10/18/13	800-2016	7/15/16	WATERWAY	
BP-4.1	7/19/13	DS-1-92	7/18/03	TC-42.20	10/18/13	832	1/17/14	PERMIT CONDITIONS	1/21/16
		GSD-1-96	7/19/02	TC-61.30	7/18/14				
DM-1.1	1/15/16	ICD-1-82	7/19/02						
DM-4.3	1/15/16	TST-1-99	7/15/16						
DM-4.4	1/15/16								
		MT-101.60	7/19/13						
MGS-1.1	7/19/13	MT-105.10	7/19/13						
MGS-2.1	7/19/13								
MGS-3.1	7/18/14								
MGS-4.1	7/19/13								
MGS-4.2	7/19/13								
MGS-4.3	1/18/13								

PROJECT DESCRIPTION

THE PROJECT INCLUDES THE REMOVAL AND REPLACEMENT OF THE FOLLOWING STRUCTURES: MUS-C071-W6.99, MUS-C0301-S0.01, AND MUS-C038-S4.81. ALSO INCLUDED IN THE PROJECT IS MINIMAL APPROACH WORK AND GUARDRAIL REPLACEMENT.  
(FOR MUS-C031-W2.92 - SEE PART 1)

EARTH DISTURBED AREAS (CR-71)

PROJECT EARTH DISTURBED AREA: 0.4 ACRES  
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.2 ACRES  
 NOTICE OF INTENT EARTH DISTURBED AREA: N/A - NOI NOT REQ'D

EARTH DISTURBED AREAS (CR-301)

PROJECT EARTH DISTURBED AREA: 0.5 ACRES  
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.2 ACRES  
 NOTICE OF INTENT EARTH DISTURBED AREA: N/A - NOI NOT REQ'D

EARTH DISTURBED AREAS (CR-38)

PROJECT EARTH DISTURBED AREA: 0.5 ACRES  
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.2 ACRES  
 NOTICE OF INTENT EARTH DISTURBED AREA: N/A - NOI NOT REQ'D

2016 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE ROAD AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEETS 6-8.

REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	--/--/--	RECORD DRAWING PLANS (AS-BUILT)

**FINAL PLANS  
SUBMISSION  
09 / 01 / 16**

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DISTRICT DEPUTY DIRECTOR

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E140(337)

PID NO. 97515

CONSTRUCTION PROJECT NO. 458072

RAILROAD INVOLVEMENT NONE

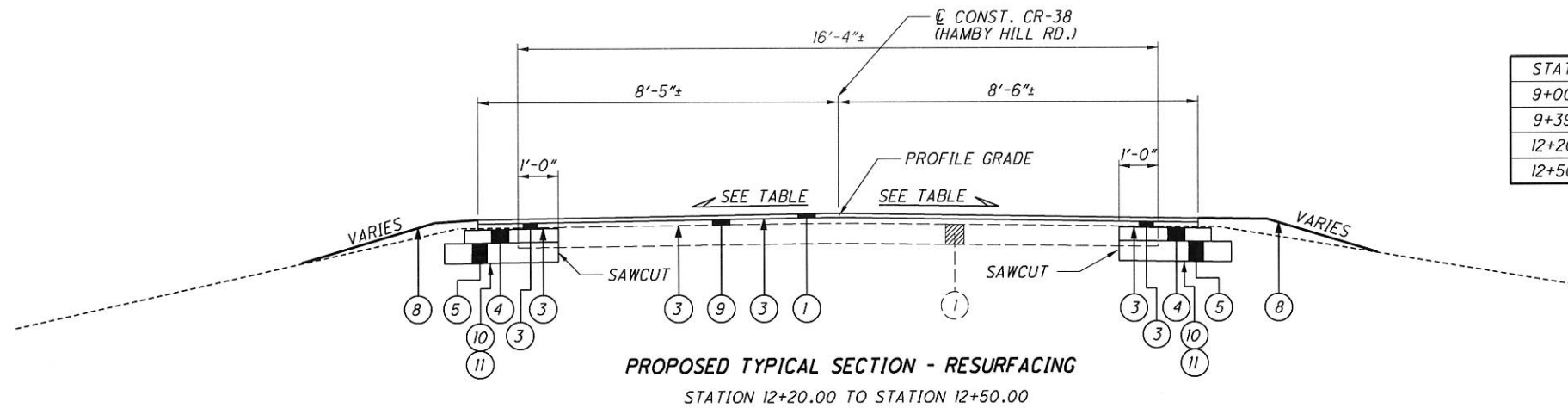
MUS-CR31/71/  
301/38

1/77

PALMER ENGINEERING  
 460 WHITE POND DR. SUITE 300  
 AKRON, OHIO 44320  
 (330) 443-2200  
 www.palmereng.com  
 palmer@palmereng.com  
 palmer.net

Engineering Documents\Ohio\DOT\DS\MUS\97515\_MUS\_DB\Design\Roadway\Sheets\97515-GT001.dgn Sheet 9/1/2016 12:24:13 PM trent-s

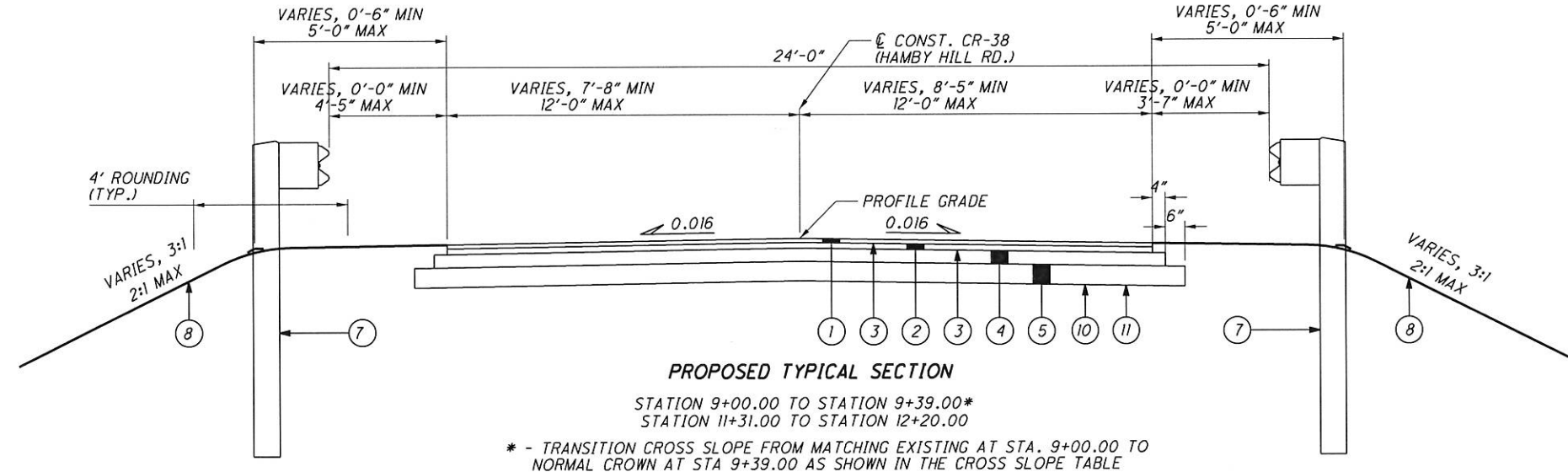
PALMER ENGINEERING  
 440 WHITE POND LK. SUITE 200  
 AKRON, OHIO 44320  
 TEL: 330.933.8800  
 FAX: 330.933.8801  
 WWW.PALMERENGINEERING.COM  
 pw:\PE\WINPW2.pwin,private.palmernet.com;Palmer Engineering\Documents\Ohio\ODOT\DS\MUS\97515\_MUS\_DB\Design\Roadway\Sheets\97515\_GY301.dgn Sheet 9/1/2016 12:20:14 PM scott-w



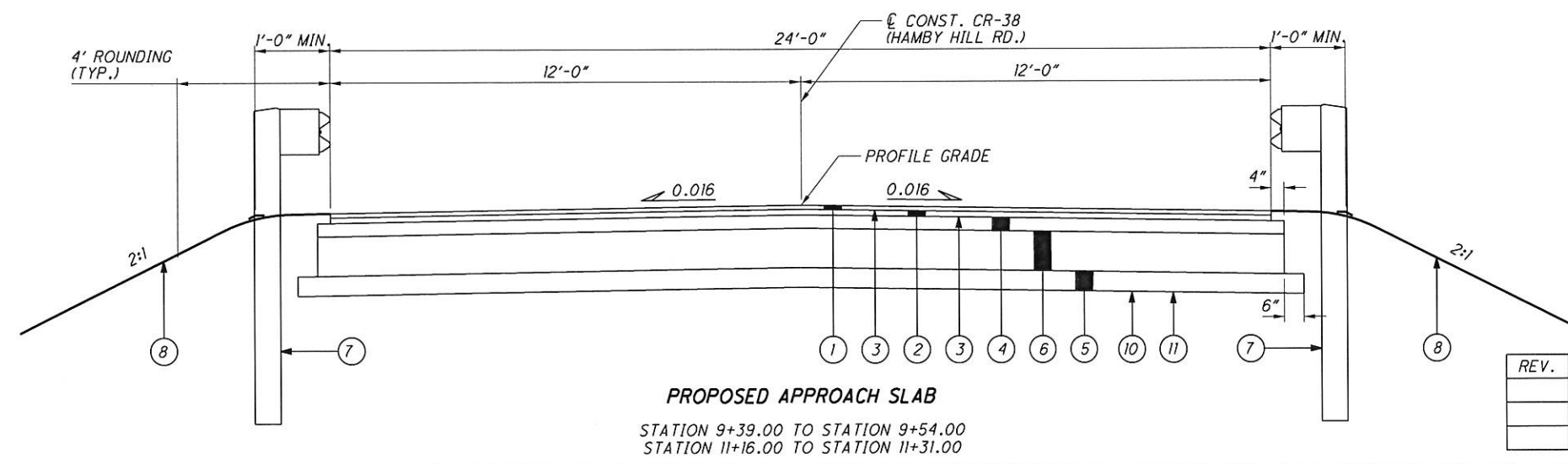
**CROSS SLOPE TABLE**

STATION	LEFT	RIGHT
9+00.00	0.0415±	0.006±
9+39.00	0.016	0.016
12+20.00	0.016	0.016
12+50.00	0.036±	0.091±

TRANSITION CROSS SLOPE (between 9+00.00 and 9+39.00, and between 12+20.00 and 12+50.00)  
 TRANSITION CROSS SLOPE (between 9+39.00 and 12+20.00)



\* - TRANSITION CROSS SLOPE FROM MATCHING EXISTING AT STA. 9+00.00 TO NORMAL CROWN AT STA 9+39.00 AS SHOWN IN THE CROSS SLOPE TABLE



REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	--/--/--	RECORD DRAWING PLANS (AS-BUILT)

**PROPOSED ITEM LEGEND**

- ① ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448), P6 64-22
- ② ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448), P6 64-22
- ③ ITEM 407 - TACK COAT
- ④ ITEM 301 - 4" ASPHALT CONCRETE BASE, P6 64-22

- ⑤ ITEM 304 - 6" AGGREGATE BASE
- ⑥ ITEM 526 - 12" REINFORCED CONCRETE APPROACH SLAB
- ⑦ ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS
- ⑧ ITEM 659 - SEEDING AND MULCHING

- ⑨ ITEM 441 - VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448), P6 64-22
- ⑩ ITEM 204 - SUBGRADE COMPACTION
- ⑪ ITEM 204 - PROOF ROLLING

**EXISTING ITEM LEGEND**

- ① 12"± ASPHALT CONCRETE
- ② GUARDRAIL, TYPE 5

TYPICAL SECTIONS - CR 38 (HAMBY HILL RD.)

MUS-CR31/71/301/38

PALMER ENGINEERING  
 1000 W. 10TH AVE. AKRON, OHIO 44320  
 (330) 481-5262  
 www.palmereng.com  
 9/17/2016 12:20:16 PM scott-w

**UTILITIES**

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

**CR-71 (COOPER MILL ROAD)**  
 AMERICAN ELECTRIC POWER CO.  
 PAUL PAXTON  
 850 TECH CENTER DRIVE  
 GAHANNA, OH 43230  
 PHONE: (614) 883-6838

**CR-38 (HAMBY HILL ROAD)**  
 CENTURY LINK TELEPHONE  
 CASPER SCHMIDT  
 701 HARCOURT ROAD  
 MOUNT VERNON, OH 43050  
 PHONE: (740) 393-6864

AT&T OHIO  
 BARRETT TAMASOVICH  
 ENGINEERS DEPARTMENT  
 160 N. 6TH STREET, RM 106  
 ZANESVILLE, OH 43701  
 PHONE: (740) 454-3552

THE FRONTIER POWER COMPANY  
 ROB TOLON  
 770 SOUTH SECOND STREET  
 COSHOCTON, OH 43812  
 PHONE: (740) 622-6755

NATION GAS AND OIL  
 GREG WILSON  
 120 O'NEIL DRIVE  
 HEBRON, OH 43025  
 PHONE: (740) 348-1254

NATION GAS AND OIL  
 GREG WILSON  
 120 O'NEIL DRIVE  
 HEBRON, OH 43025  
 PHONE: (740) 348-1254

MAYSVILLE REGIONAL WATER DIST.  
 BETH SHOOK  
 6255 MAYSVILLE PIKE  
 ZANESVILLE, OH 43701  
 PHONE: (740) 849-2428

RILEY ENTERPRISES  
 RISE BARLOW  
 2080 WESLEY CHAPEL ROAD  
 ZANESVILLE, OH 43701  
 PHONE: (740) 849-3091

**CR-301 (MOORE ROAD)**  
 AMERICAN ELECTRIC POWER CO.  
 PAUL PAXTON  
 850 TECH CENTER DRIVE  
 GAHANNA, OH 43230  
 PHONE: (614) 883-6831

CENTURY LINK  
 CASPER SCHMIDT  
 175 ASHLAND ROAD  
 MANSFIELD, OH 44907  
 PHONE: (740) 393-6864

MCI / WORLD COM  
 AL GUEST  
 120 RAVINE STREET  
 AKRON, OH 44303  
 PHONE: (330) 253-8267

NATION GAS AND OIL  
 GREG WILSON  
 120 O'NEIL DRIVE  
 HEBRON, OH 43025  
 PHONE: (740) 348-1254

TIME WARNER CABLE  
 RAY MAURER  
 3760 INTERCHANGE DRIVE  
 COLUMBUS, OH 43204  
 PHONE: (614) 481-5262

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

**ITEM 614 - MAINTAINING TRAFFIC**

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

W20-H13-60

ROAD WILL BE  
CLOSED MMM DD  
FOR 60 DAYS  
INFO: 888-819-8501

MMM = MONTH (3 LTR)  
 DD = DATE (1 OR 2 DIGIT)

SEE THE MAINTENANCE OF TRAFFIC PLANS ON SHEET 4 FOR DETOUR ROUTE AND OTHER SPECIFICATIONS.

**ENVIRONMENTAL**

THE PROJECT MUST BE CONSTRUCTED WITHIN THE ENVIRONMENTAL STUDY AREA SHOWN ON THE PLAN AND PROFILE DRAWINGS.

THE UNDERSIDE OF EACH BRIDGE SHALL BE INSPECTED FOR THE PRESENCE OF BATS PRIOR TO DEMOLITION. THE DISTRICT 5 ENVIRONMENTAL SECTION, CHRIS YODER (740) 323-5193, MUST BE NOTIFIED OF THE RESULTS.

NO IN-STREAM WORK SHALL OCCUR IN THOMPSON RUN OR WAKATOMIKA CREEK BETWEEN APRIL 15TH AND JUNE 30TH.

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. 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. TREE STUMPS LESS THAN 13 FEET IN HEIGHT MAY BE REMOVED AT ANY TIME.

**ACCESS TO ADJACENT PROPERTIES**

ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

**CLEARING AND GRUBBING**

REMOVE TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS PER ITEM 201, CLEARING AND GRUBBING. STRICTLY ADHERE TO THE ALLOWABLE TIMEFRAMES FOR TREE REMOVAL AS SPECIFIED IN THE ENVIRONMENTAL NOTE ABOVE.

**ROUNDING**

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

**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.

**SEEDING AND MULCHING**

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.

**BENCHING OF FOUNDATION SLOPES**

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

**SURVEYING PARAMETERS**

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

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD88  
 GEOID: 12A

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAD83 (2011)  
 ELLIPSOID: GRS80  
 MAP PROJECTION: LAMBERT CONFORMAL CONIC  
 COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH ZONE  
 COMBINED SCALE FACTOR: N/A

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	.../.../...	RECORD DRAWING PLANS (AS-BUILT)

CALCULATED  
 DPF  
 CHECKED  
 MAM  
  
 GENERAL NOTES  
  
 MUS-CR31/71/  
 301/38  
 5  
 77







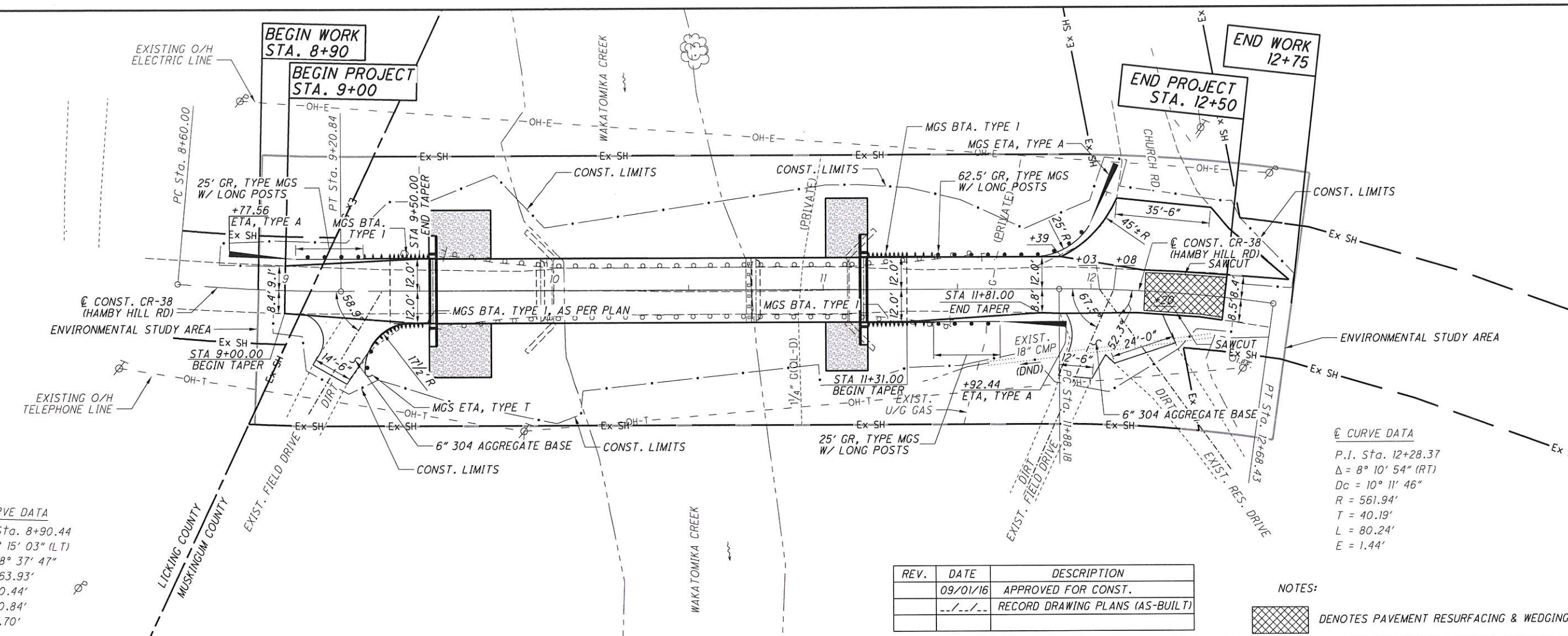
0 10 20  
HORIZONTAL SCALE IN FEET

CALCULATED CML  
CHECKED DPF

PLAN AND PROFILE  
CR-38 (HAMBY HILL RD.)

MUS-CR31/71/  
301/38

26  
77

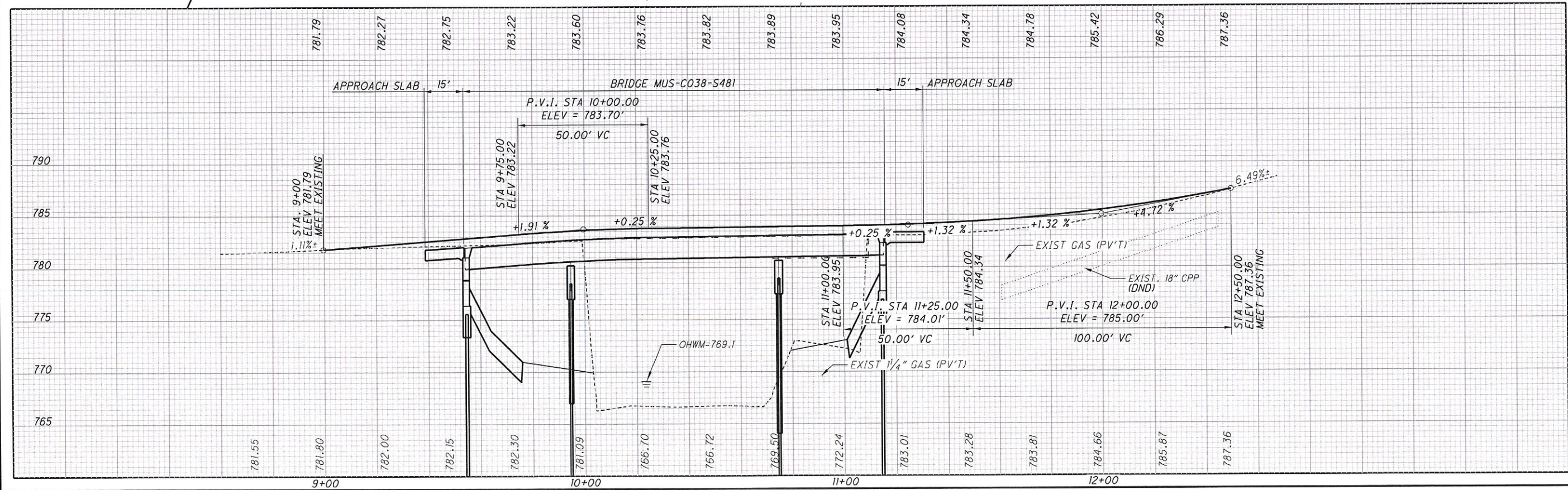


Ⓢ CURVE DATA  
P.I. Sta. 8+90.44  
Δ = 5° 15' 03" (LT)  
Dc = 8° 37' 47"  
R = 663.93'  
T = 30.44'  
L = 60.84'  
E = 0.70'

Ⓢ CURVE DATA  
P.I. Sta. 12+28.37  
Δ = 8° 10' 54" (RT)  
Dc = 10° 11' 46"  
R = 561.94'  
T = 40.19'  
L = 80.24'  
E = 1.44'

REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	--/--	RECORD DRAWING PLANS (AS-BUILT)

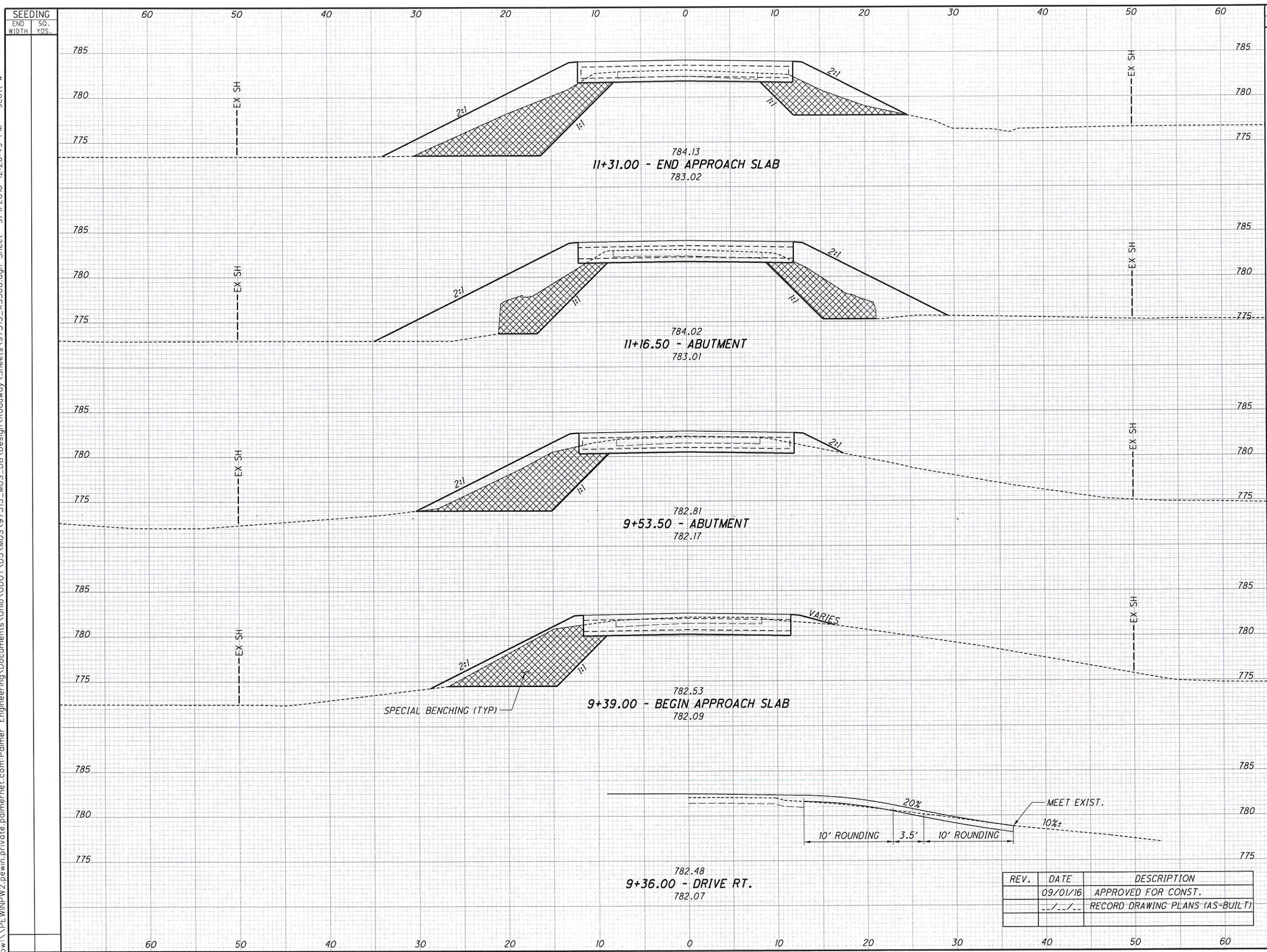
NOTES:  
 DENOTES PAVEMENT RESURFACING & WEDGING



PALMER ENGINEERING  
 100 W. MAIN ST. SUITE 200  
 AKRON, OHIO 44320  
 TEL: 330.937.1111  
 FAX: 330.937.1112  
 P:\MUS\97515\MUS-C0038-S481\SFN-ROUTE-NAME\PLAN-SHEETS\MUS-CO38S481P&P.dgn



PALMER ENGINEERING  
 160 W. WOOD ST. SUITE 100  
 AKRON, OHIO 44320  
 (330) 485-1100  
 www.palmer-engineering.com  
 PALMER ENGINEERING, INC. IS AN EQUAL OPPORTUNITY EMPLOYER  
 pw:\PE\WINP\W2.pwin,private,palmer.net.com:Palmer Engineering\Documents\Ohio\000T\05\MUS\97515\MUS\_DB\Design\Roadway\Sheets\97515\_XS300.dgn Sheet 9/1/2016 12:20:49 PM scott-w



SEEDING END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED DPF	CHECKED TES
		CUT	FILL	CUT	FILL		

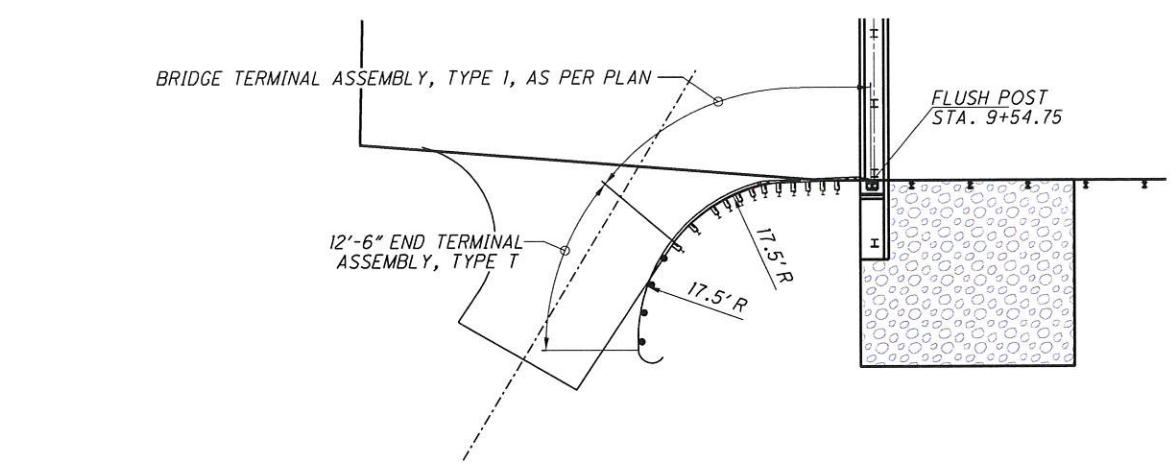
**CROSS SECTIONS CR-38 (HAMBY HILL RD.)**  
**STA. 0+936.00 TO STA. 11+31.00**

**MUS-CR31/71/**  
**301/38**

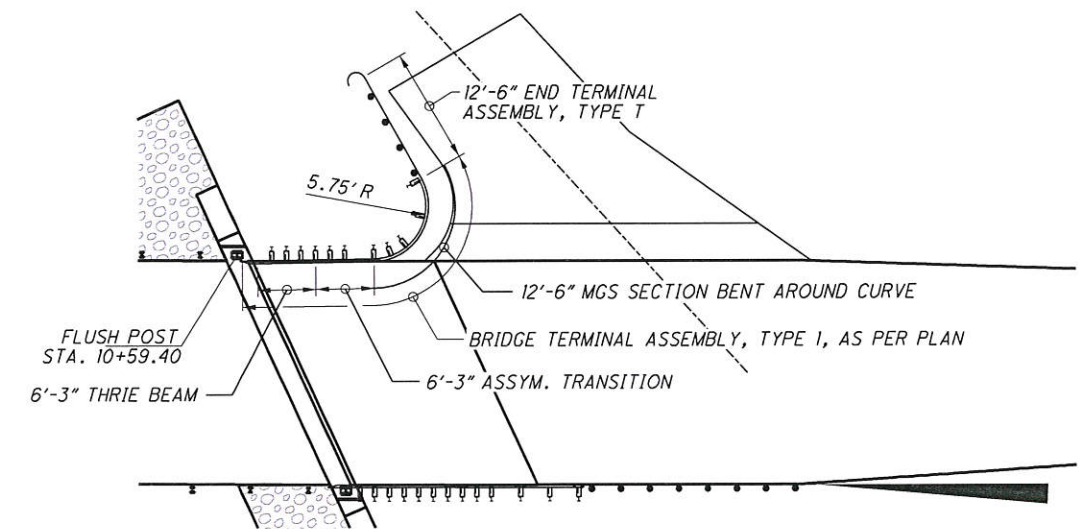
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	09/01/16	APPROVED FOR CONST.
	--/--	RECORD DRAWING PLANS (AS-BUILT)



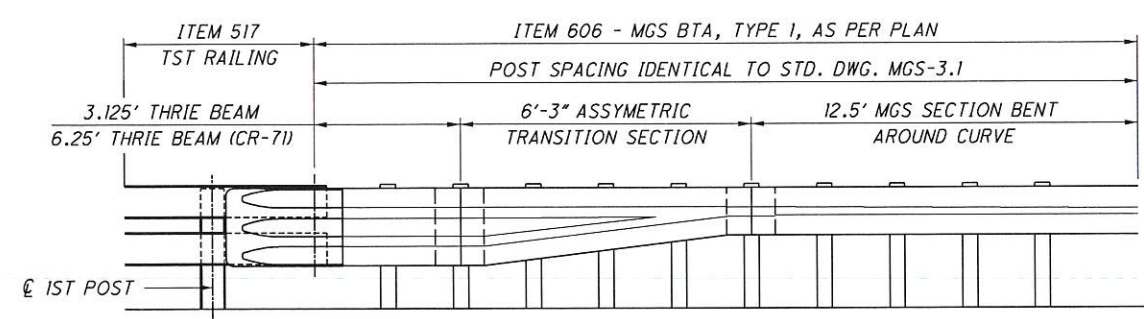




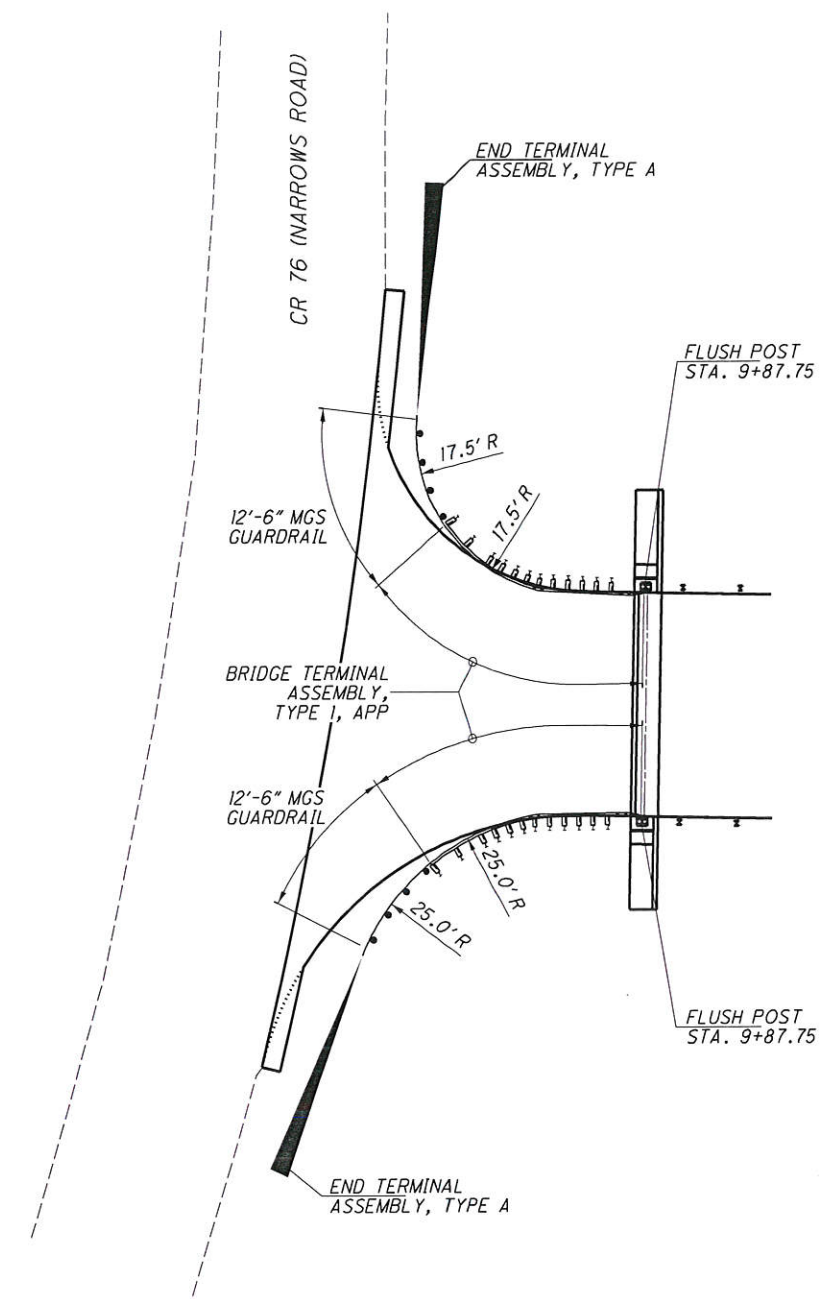
MUS-CR38



MUS-CR71



ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN



MUS-CR301

REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	--/--/--	RECORD DRAWING PLANS (AS-BUILT)

PALMER ENGINEERING 460 WHITE POND DR. SUITE 300 AKRON, OHIO 44320  
 MUS-C038-S4.81  
 CR 38 (HAMBY HILL RD.) OVER WAKATOMIKA CREEK  
 SHEET 9/11/2016 12:22:28 PM scott

REV.	DATE	DESCRIPTION
09/01/16		APPROVED FOR CONST.
---	---	RECORD DRAWING PLANS (AS-BUILT)

BENCHMARK DATA			
BM #1 STA. 11+20.49	ELEV. 781.26	OFFSET 55.74'	RT.
BM #2 STA. 12+41.00	ELEV. 786.18	OFFSET 12.63'	RT.
BM #3 STA. 11+63.92	ELEV. 782.86	OFFSET 10.89'	RT.
BM #4 STA. 9+15.33	ELEV. 781.64	OFFSET 11.55'	RT.

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

**DESIGN TRAFFIC:**  
 2015 ADT = 146      2015 ADTT = 5  
 2035 ADT = 160      2035 ADTT = 5  
 DIRECTIONAL DISTRIBUTION = 0.55

**LEGEND**  
 ◆ BORING LOCATION  
 R.A. = REAR ABUTMENT  
 F.A. = FORWARD ABUTMENT  
 [Pattern] LIMITS OF ROCK CHANNEL PROTECTION, TYPE C W/ FILTER FABRIC (2'-0" THICK)

**HYDRAULIC DATA**  
 DRAINAGE AREA = 89.5 SQ. MILES  
 Q (10) = 6270 CFS      V (10) = 5.6 FT/S  
 Q (100) = 10600 CFS      V (100) = 5.7 FT/S  
 STRUCTURE CLEARS THE 10 YEAR DESIGN HW BY 0.03 FEET.

**EXISTING STRUCTURE**

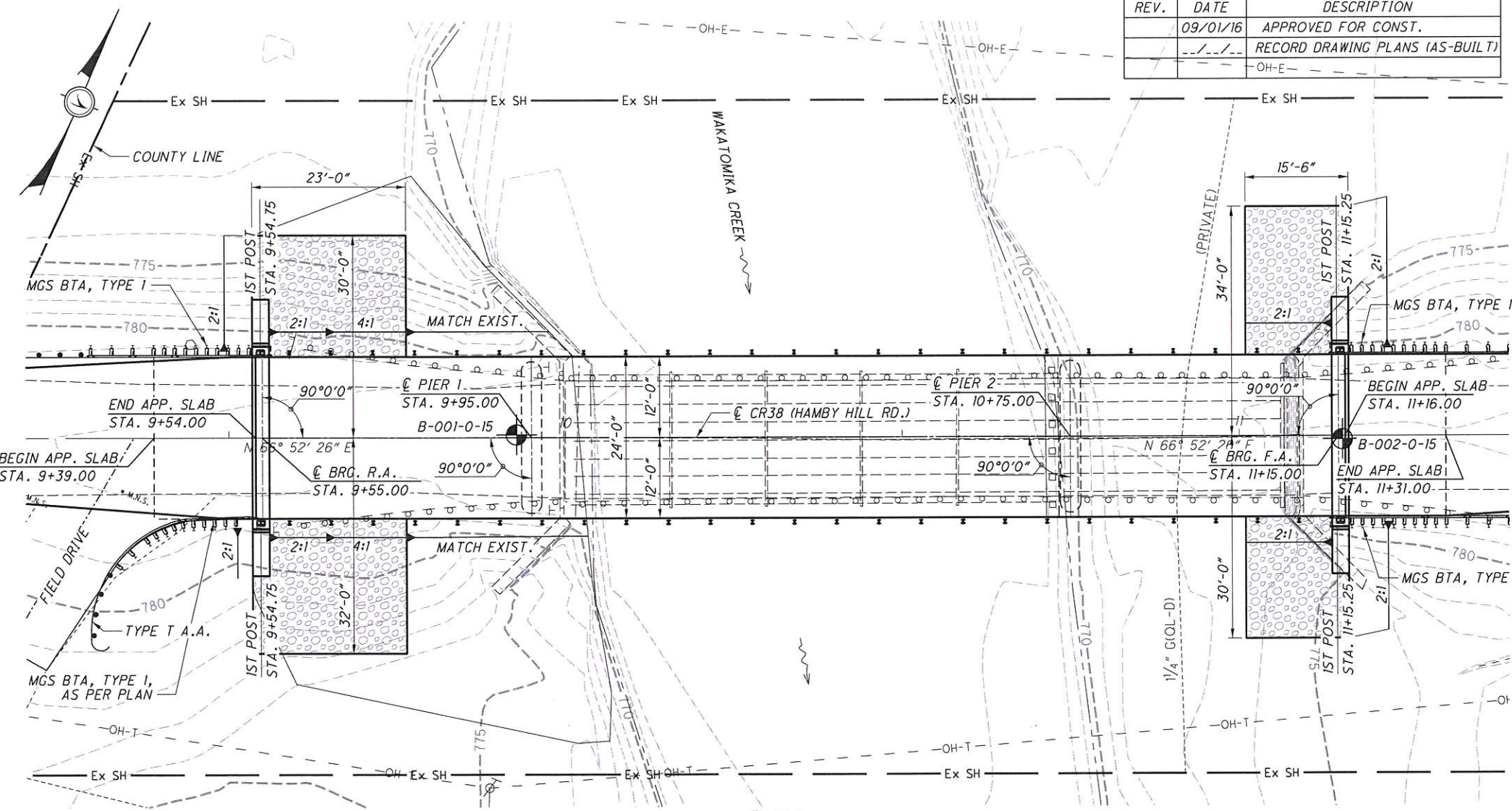
TYPE: STEEL TRUSS AND ROLLED STEEL BEAMS WITH CORRUGATED METAL DECK AND ASPHALT WEARING SURFACE ON CONCRETE ABUTMENTS AND A STEEL CAPPED PILE PIER

SPANS: 71'-0" ± - 35'-0" 3/8" ± (C/C BEARINGS)  
 ROADWAY: 17'-6" F/F W-BEAM RAILING  
 LOADING: H 20  
 SKEW: 0°  
 APPROACH SLABS: NONE  
 ALIGNMENT: TANGENT  
 CROWN: NORMAL  
 STRUCTURAL FILE NUMBER: 6043143  
 DATE BUILT: 1951, MAJOR REHAB 1998  
 DISPOSITION: TO BE REPLACED

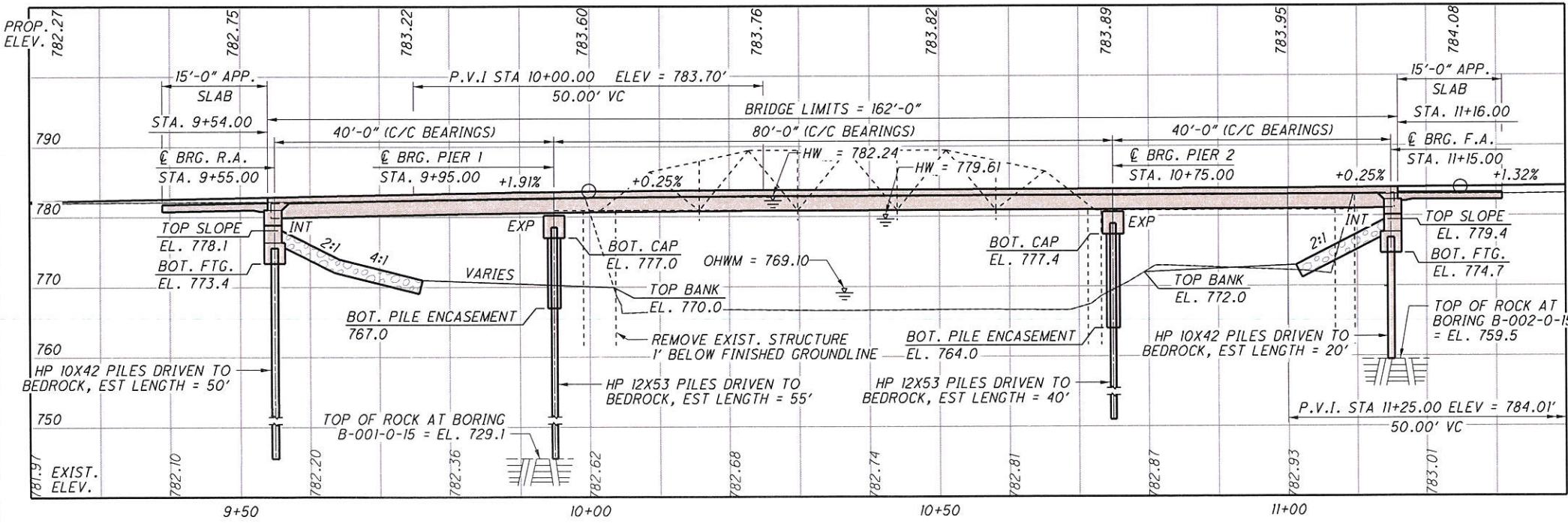
**PROPOSED STRUCTURE**

TYPE: GALVANIZED ROLLED STEEL BEAMS WITH COMPOSITE CONCRETE DECK ON CONCRETE INTEGRAL ABUTMENTS AND CAPPED PILE PIERS

SPANS: 40'-0" - 80'-0" - 40'-0" (C/C BEARINGS)  
 ROADWAY: 24'-0" F/F TST RAILING  
 LOADING: HL93 AND 60 PSF FWS  
 SKEW: 0°  
 APPROACH SLABS: 15' LONG (MODIFIED AS-I-15 - BURIED)  
 ALIGNMENT: TANGENT  
 CROWN: 0.016 FT/FT  
 COORDINATES: LATITUDE 40° 09' 54.32"  
 LONGITUDE 82° 11' 12.11"



PLAN



PROFILE ALONG C CR38 (HAMBY HILL RD.)

DESIGN AGENCY: PALMER ENGINEERING  
 DATE: 08/05/16  
 REVIEWED: MLJ  
 DRAWN: TES  
 DESIGNED: TES  
 CHECKED: JPR  
 MUSKINGUM COUNTY  
 STA. 9+54.00  
 STA. 11+16.00  
 SITE PLAN  
 BRIDGE NO. MUS-C038-S481  
 CR 38 (HAMBY HILL RD.) OVER WAKATOMIKA CREEK  
 MUS-C038-S4.81  
 PID No. 97515  
 1/16  
 62/77







ESTIMATED QUANTITIES

CALC:	TES	DATE:	8/22/2016	CHECKED:	JPR	DATE:	8/23/2016			
REAR ABUT.	FWD. ABUT.	PIERS	SUPER	GENERAL	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
					202	11002	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
				212	202	23500	212	SY	WEARING COURSE REMOVED	
					503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
75	75				503	21100	150	CY	UNCLASSIFIED EXCAVATION	
330	150				507	00100	480	FT	STEEL PILES HPI0X42, FURNISHED	
300	120				507	00150	420	FT	STEEL PILES HPI0X42, DRIVEN	
		525			507	00200	525	FT	STEEL PILES HPI2X53, FURNISHED	
		475			507	00250	475	FT	STEEL PILES HPI2X53, DRIVEN	
		120			SPECIAL	50771200	120	FT	PILE ENCASEMENT	
2,516	2,516	1,609	28,564		509	10000	35,205	LB	EPOXY COATED REINFORCING STEEL	
			145		511	34445	145	CY	CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN	2/16
		16			511	42510	16	CY	CLASS QC1 CONCRETE, PIER CAP	
26	26				511	43510	52	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	
15	15	42	18		512	10050	90	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
			101,744		513	10261	101,744	LB	STRUCTURAL STEEL MEMBERS, LEVEL 3, AS PER PLAN (GALVANIZED)	2/16
			2,472		513	20000	2,472	EACH	WELDED STUD SHEAR CONNECTORS	
27	27				516	13200	54	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
41	41				516	13600	82	SF	1" PREFORMED EXPANSION JOINT FILLER	
39	39				516	14014	78	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
24	24				516	31010	48	FT	2" DEEP JOINT SEALER	
		8			516	44000	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (16"x12"x1.924")	
			330		517	70000	330	FT	RAILING (TWIN STEEL TUBE)	
24	24				518	21200	48	CY	POROUS BACKFILL WITH FILTER FABRIC	
			394		SPECIAL	51822300	394	FT	STEEL DRIP STRIP	
41	41				518	40000	82	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
50	60				518	40010	110	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
40	40				526	10000	80	SY	REINFORCED CONCRETE APPROACH SLABS (T=12")	
99	66				601	32200	165	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
14	14				SPECIAL	69012050	28	SY	REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS	15/16

REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	--/--/--	RECORD DRAWING PLANS (AS-BUILT)

DESIGN AGENCY: PALMER ENGINEERING  
 460 WHITE POND DRIVE, SUITE 300  
 AKRON, OHIO 44320  
 (330) 475-1110  
 www.palmer-engineering.com

ESTIMATED QUANTITIES  
 BRIDGE NO. MUS-C038-S481  
 CR 38 (HAMBY HILL RD.) OVER WAKATOMIKA CREEK

MUS - C038 - S4.81  
 PID No. 97515

DESIGNED: TES  
 CHECKED: JPR

DRAWN: TES  
 REVISED:

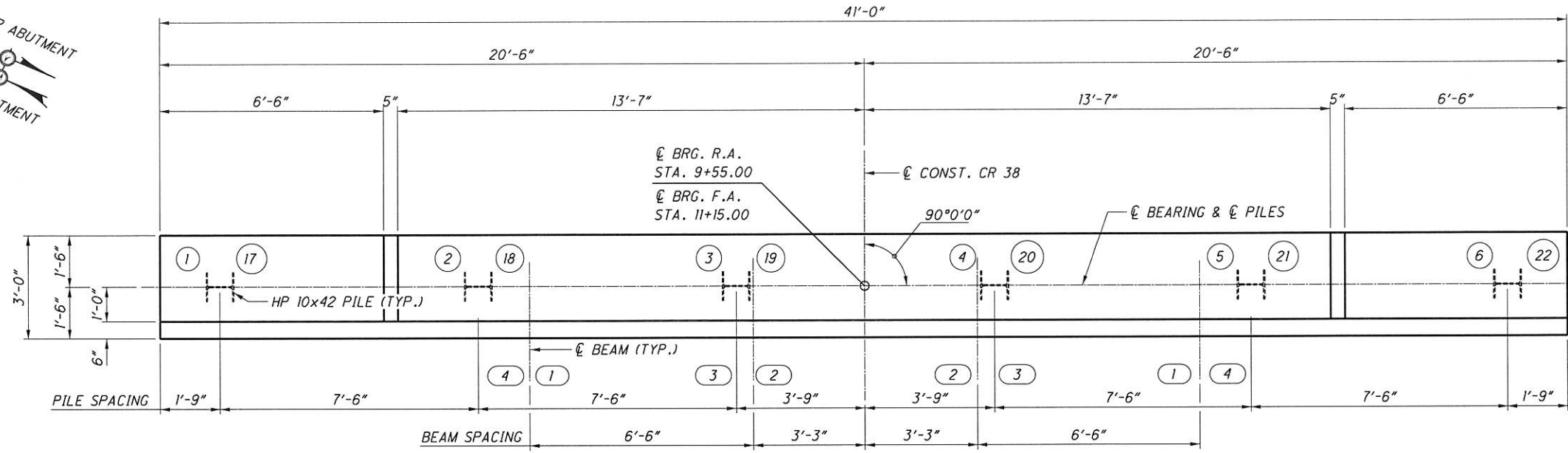
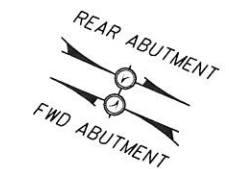
REVIEWED: MLJ  
 STRUCTURE FILE NUMBER: 6043151

DATE: 08/26/16

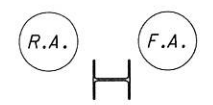
5 / 16

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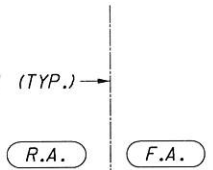
PALMER ENGINEERING  
 440 WHITE POND DRIVE, SUITE 300  
 AKRON, OHIO 44320  
 TEL: 330.933.8800 FAX: 330.933.8801  
 WWW.PALMERENGINEERING.COM  
 PROJECT: MUS-C038-S4.81  
 SHEET: CR 38 (HAMBY HILL RD.) OVER WAKATOMIKA CREEK  
 DATE: 08/26/16  
 DRAWN: SDW  
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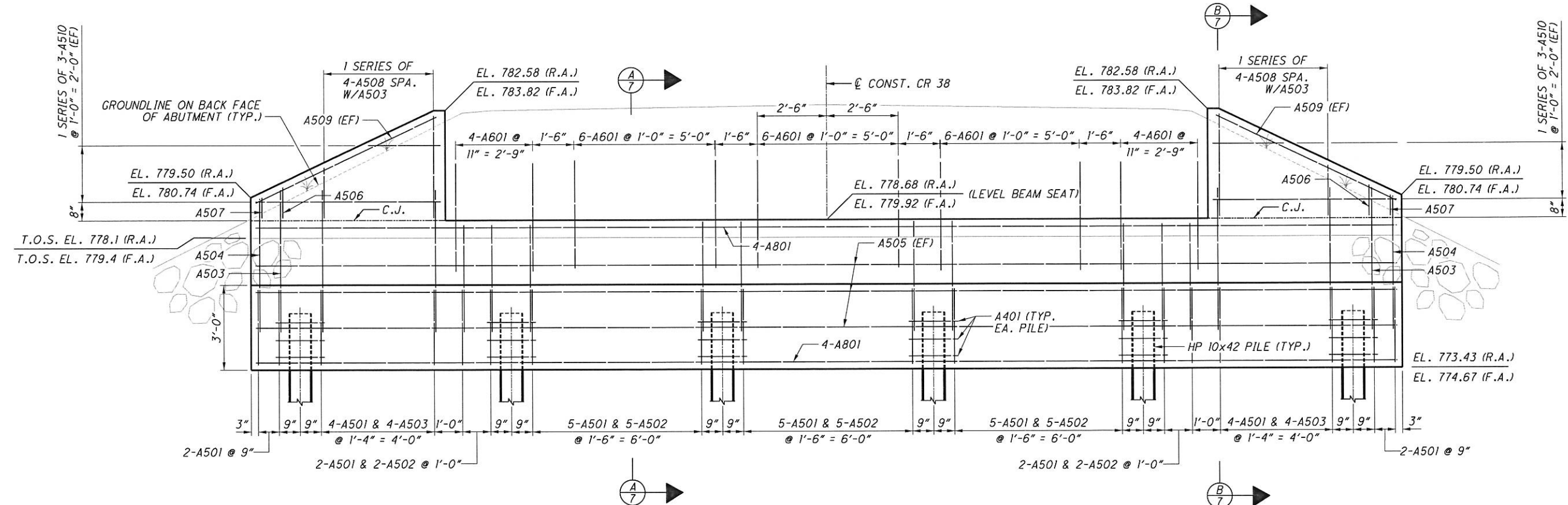
**PILE LEGEND**



**BEAM LEGEND**



**PLAN**



**ELEVATION**

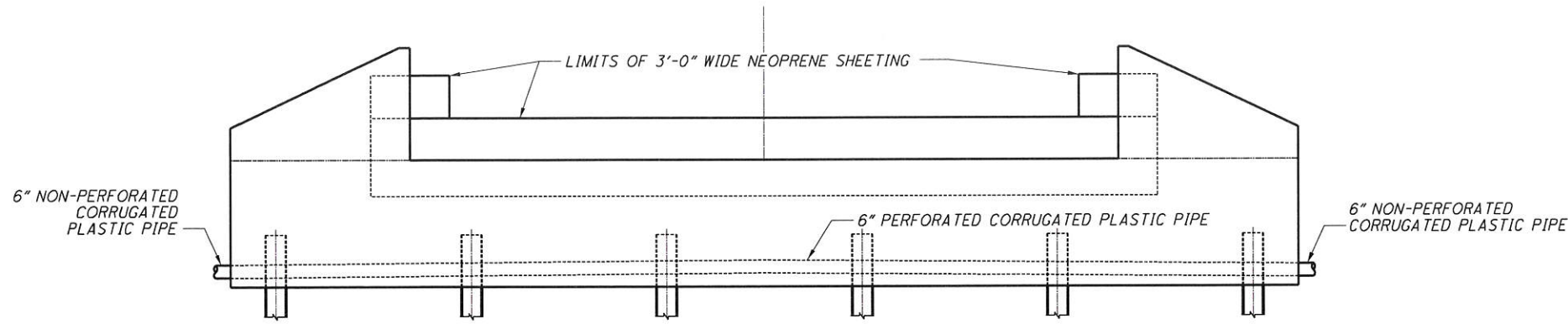
**NOTES**

- SEE SHEET [7/16] FOR ADDITIONAL WATERPROOFING AND DRAINAGE DETAILS.
- SEE SHEET [8/16] FOR ABUTMENT DIAPHRAGM DETAILS.

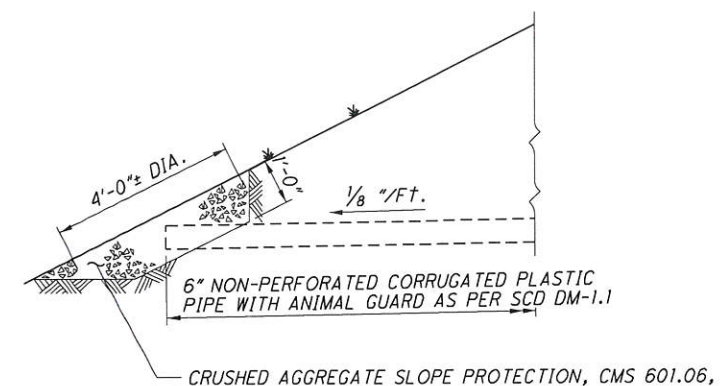
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**MUS-C038-S4.81**  
 BRIDGE NO. MUS-C038-S481  
 CR 38 (HAMBY HILL RD.) OVER WAKATOMIKA CREEK  
 PID No. 97515  
 6 / 16  
 67 / 77

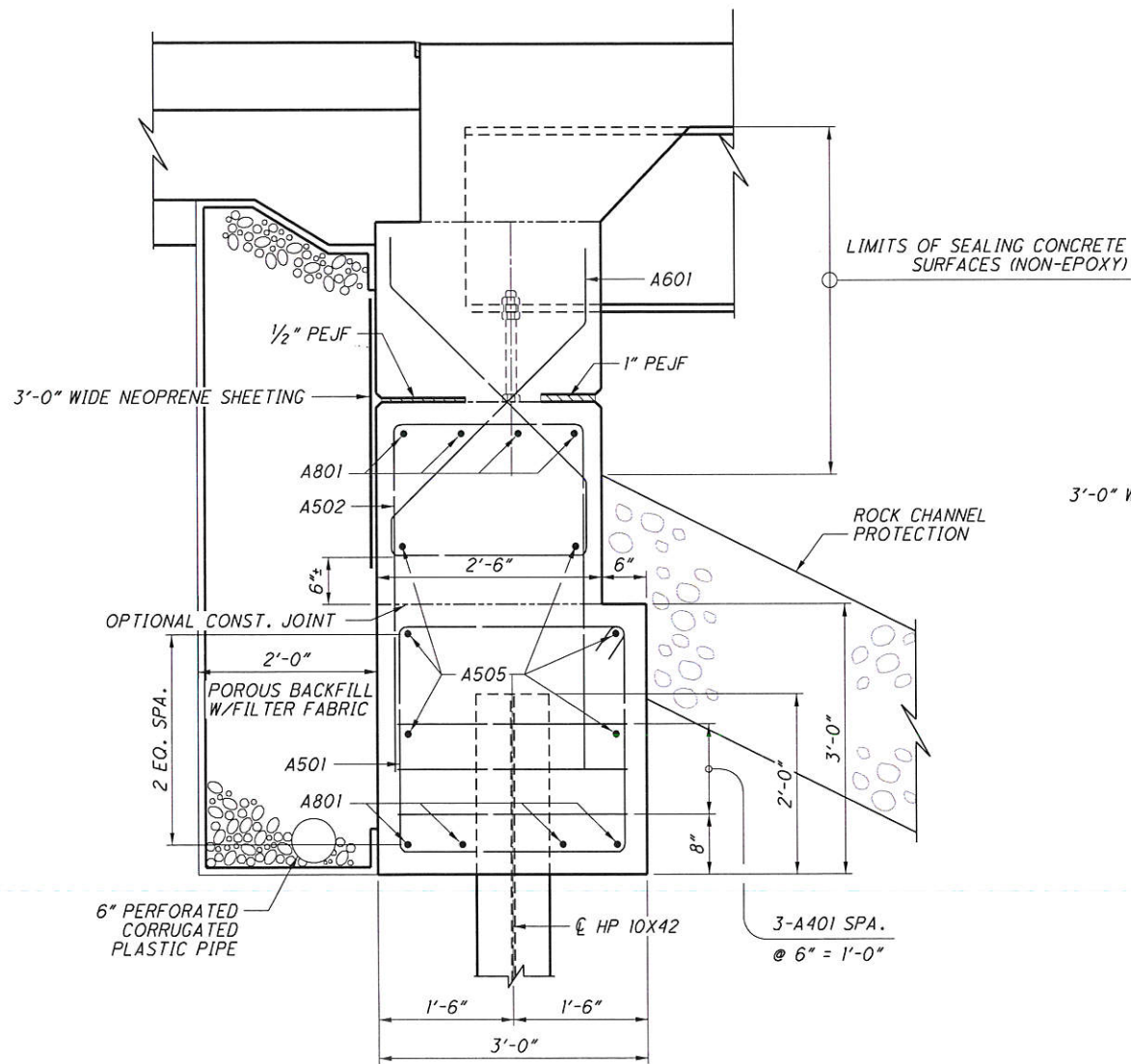
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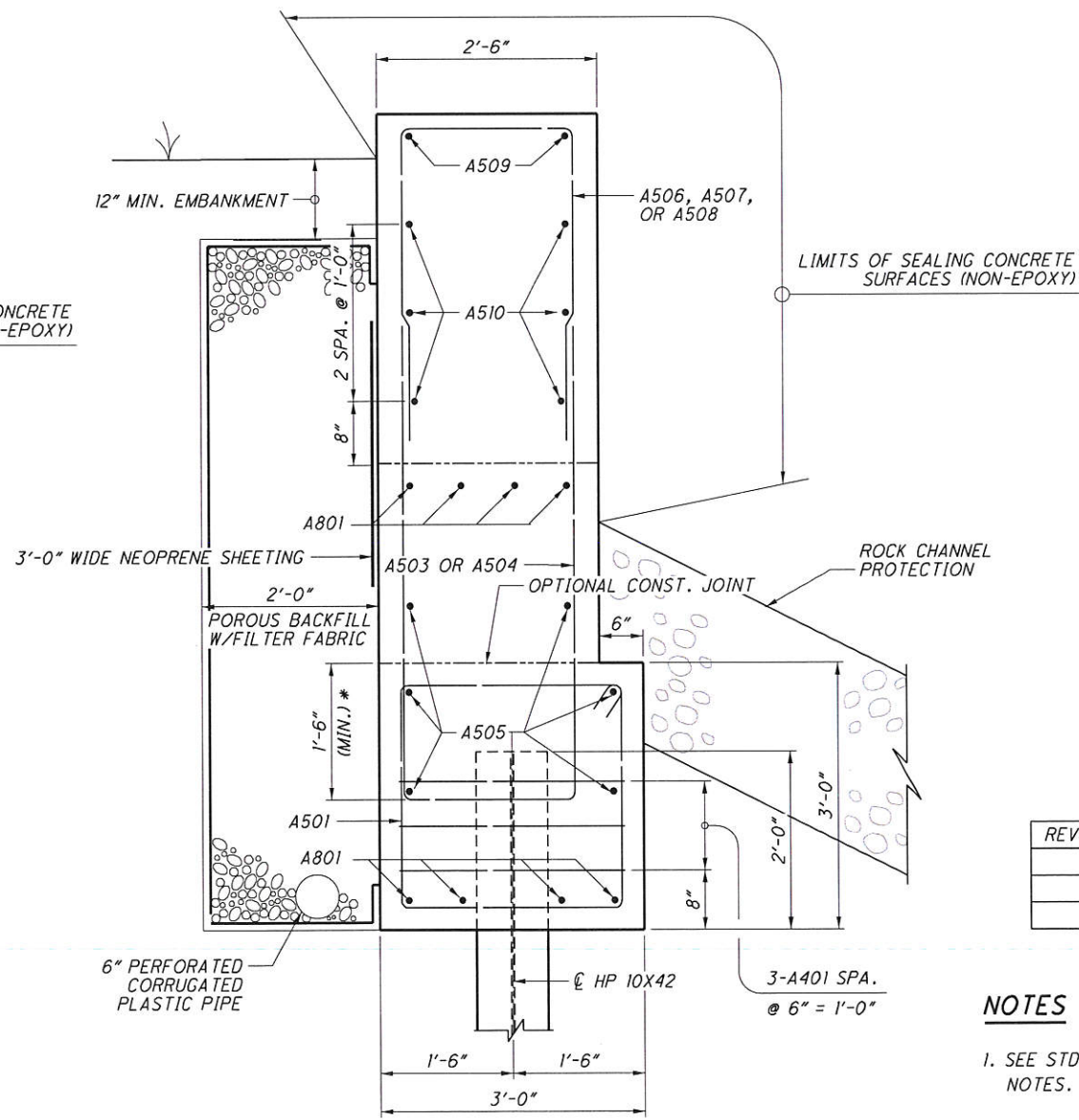
**ELEVATION**  
DRAINAGE DETAILS AND  
NEOPRENE SHEETING DETAILS



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



**A**  
**6** ABUTMENT SECTION



**B**  
**6** WINGWALL SECTION

\* DIMENSION MAY BE INCREASED TO PROVIDE 2" OF CLEAR COVER

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**NOTES**

- SEE STD. DWG. ICD-1-82 FOR ADDITIONAL DETAILS AND NOTES.
- SEE SHEET **8/16** FOR DIAPHRAGM DETAILS.

DESIGN AGENCY  
PALMER ENGINEERING  
INCORPORATED  
ENGINEERING, AKRON, OHIO 44320  
STATE LICENSE NO. 94031148  
CIVIL ENGINEER

DATE  
08/05/16  
REVIEWED  
MLJ  
STRUCTURE FILE NUMBER  
6043151

DRAWN  
SDW  
REVISED

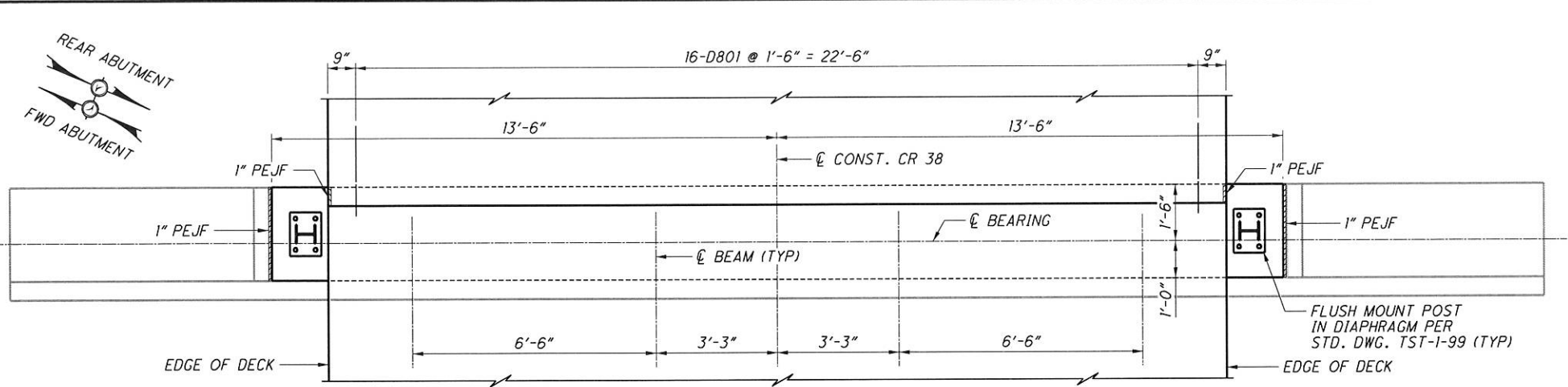
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TES  
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**ABUTMENT DETAILS**  
BRIDGE NO. MUS-C038-S481  
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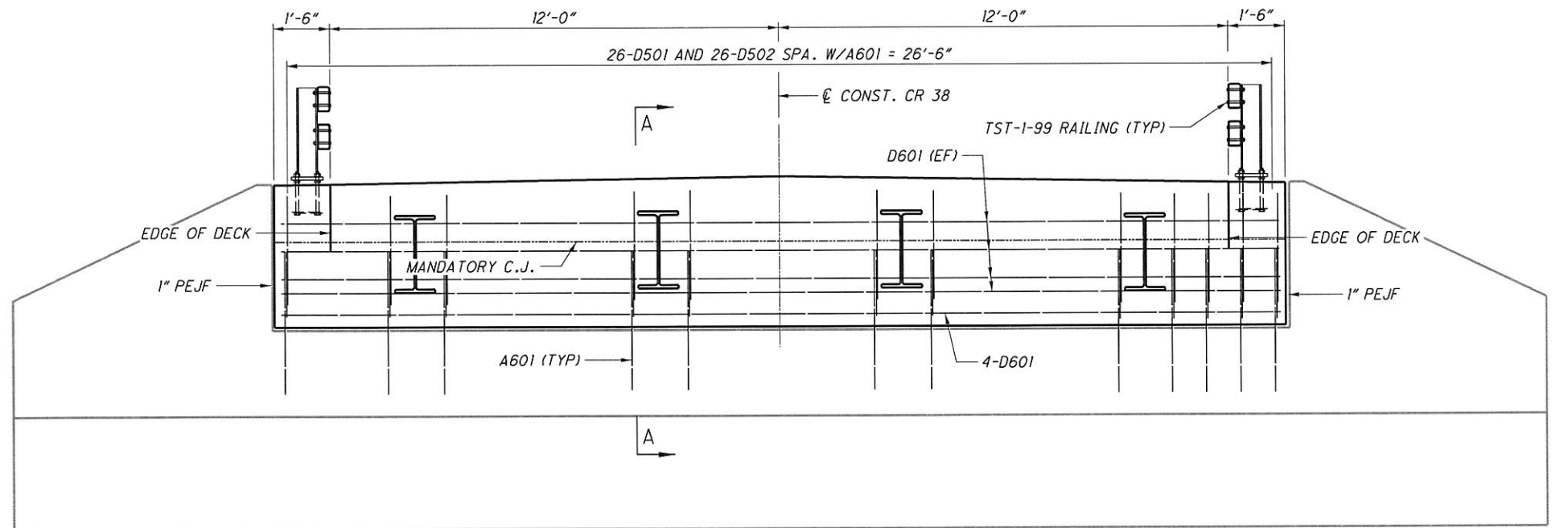
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PID No. 97515

7 / 16

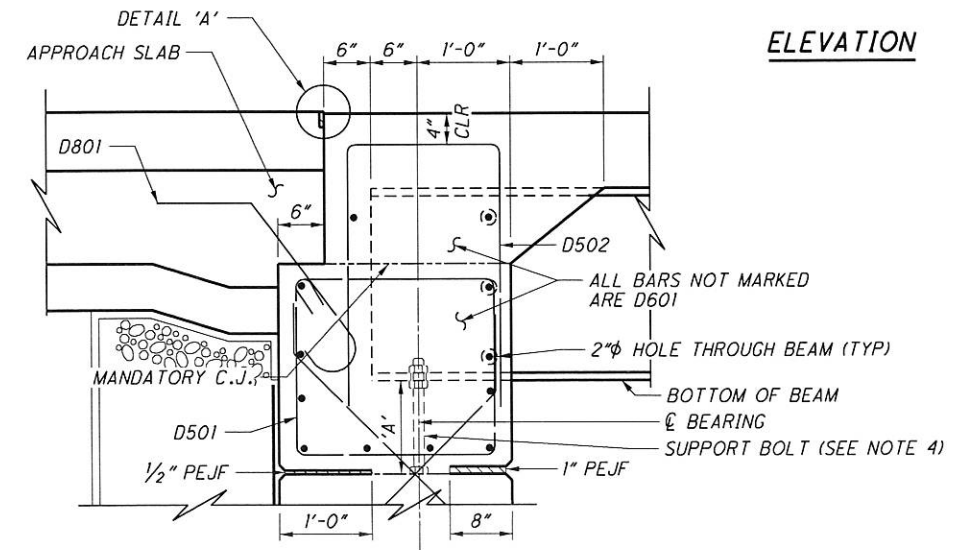
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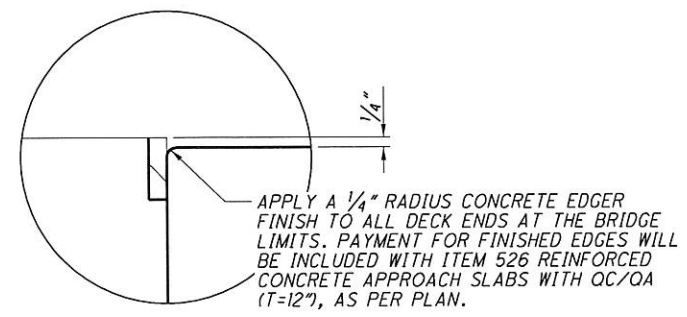
**PLAN**  
 REAR ABUTMENT SHOWN  
 FWD ABUTMENT SIMILAR



**ELEVATION**



**SECTION A-A**



**DETAIL 'A'**

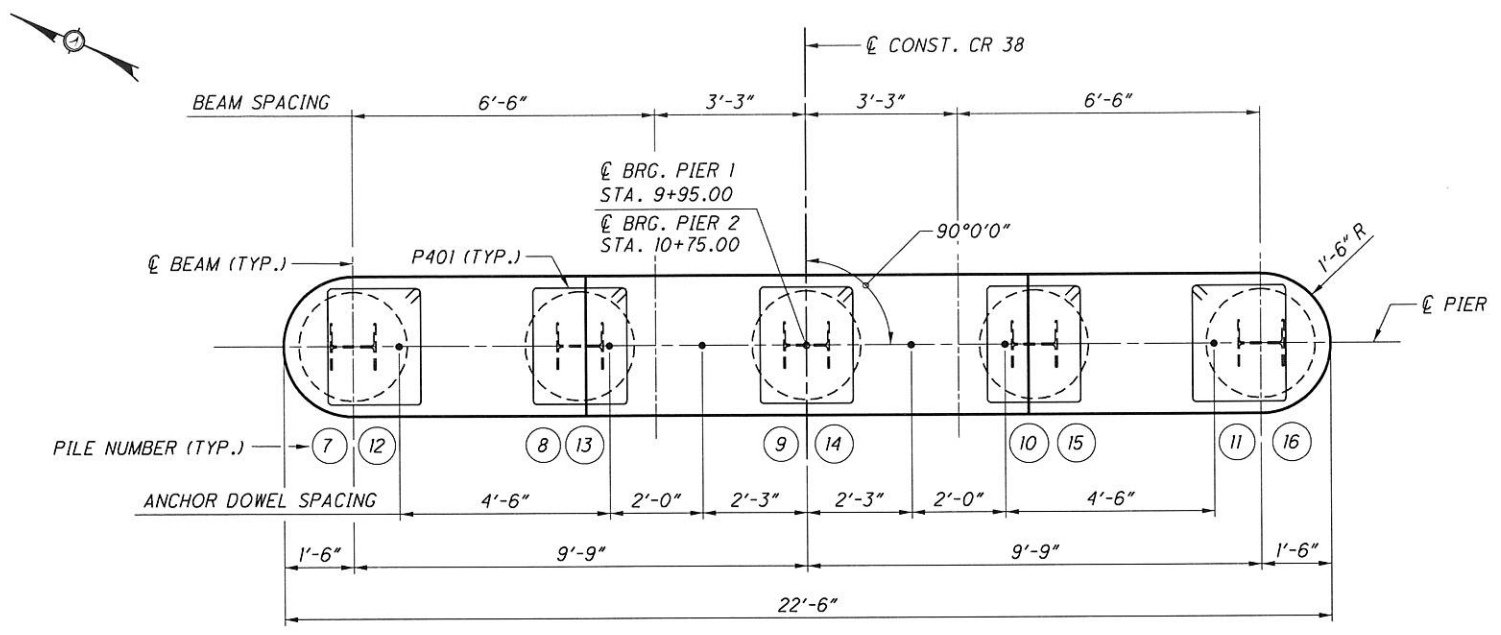
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SUPPORT BOLT DIM. 'A'		
BEAM	REAR ABUT.	FWD. ABUT.
1	1'-0"	1'-0"
2	1'-1/4"	1'-1/4"
3	1'-1/4"	1'-1/4"
4	1'-0"	1'-0"

**NOTES**

- SEE SHEET [6/16] AND [7/16] FOR ABUTMENT DETAILS.
- SEE STD. DWG. ICD-1-82 FOR ADDITIONAL DETAILS AND NOTES.
- ABUTMENT DIAPHRAGM CONCRETE: PLACE THE DIAPHRAGM CONCRETE UP TO THE LEVEL OF THE MANDATORY CONSTRUCTION JOINT ENCASING THE STRUCTURAL MEMBER ENDS AT LEAST 48 HOURS BEFORE PLACEMENT OF THE DECK CONCRETE. PLACING OF THIS DIAPHRAGM CONCRETE WITH THE DECK CONCRETE IS NOT PERMITTED DUE TO UPLIFT FORCES DURING THE DECK POUR.
- FURNISH SUPPORT BOLTS OF SUFFICIENT LENGTH TO PROVIDE THE DIMENSION 'A' SHOWN IN THE TABLE ABOVE.
- SEE SHEET [15/16] FOR ADDITIONAL APPROACH SLAB DETAILS.

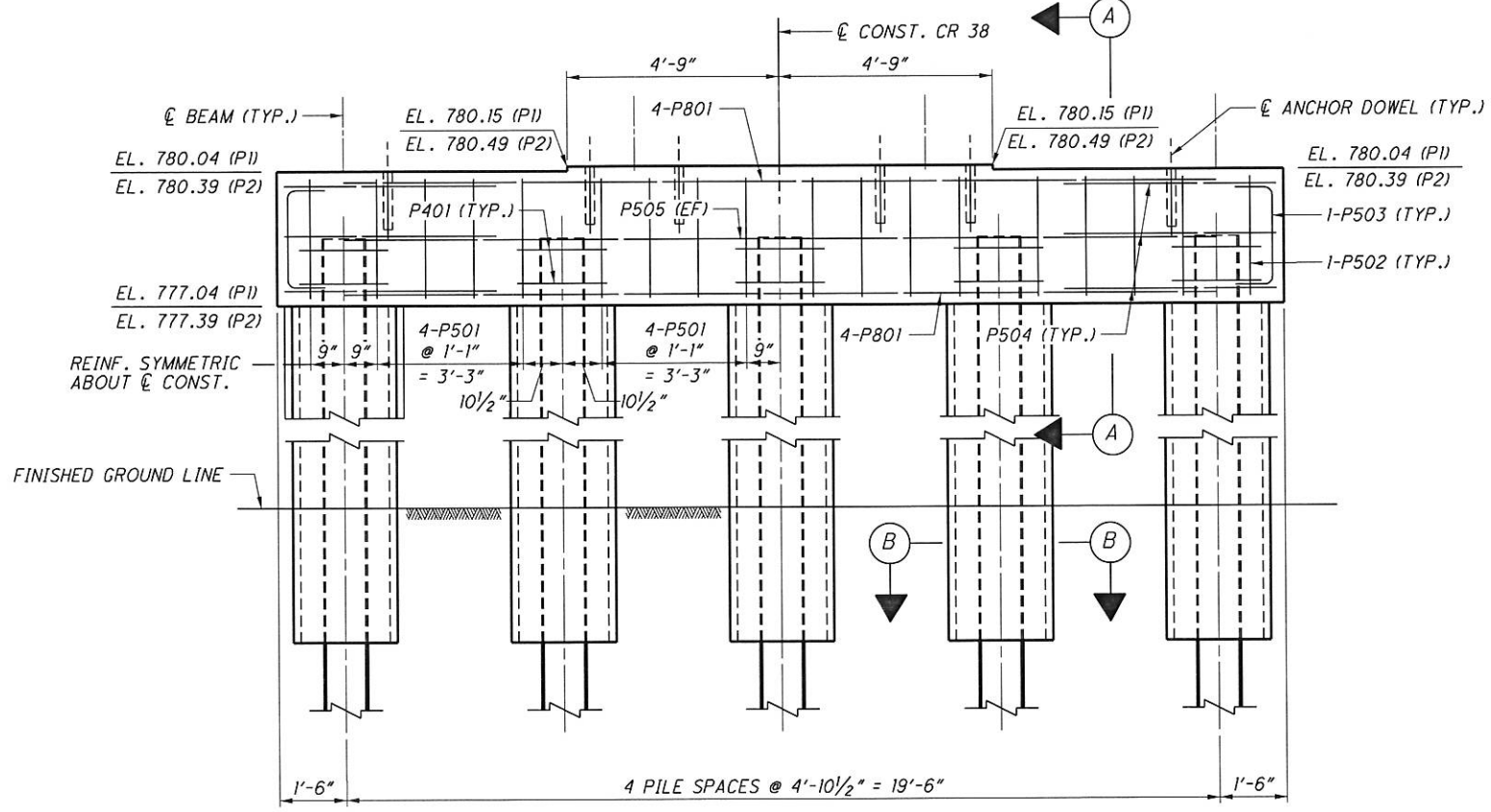
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 460 WHITE PINE DRIVE UNIT 300  
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 8 / 16  
 69  
 77



**PILE LEGEND**

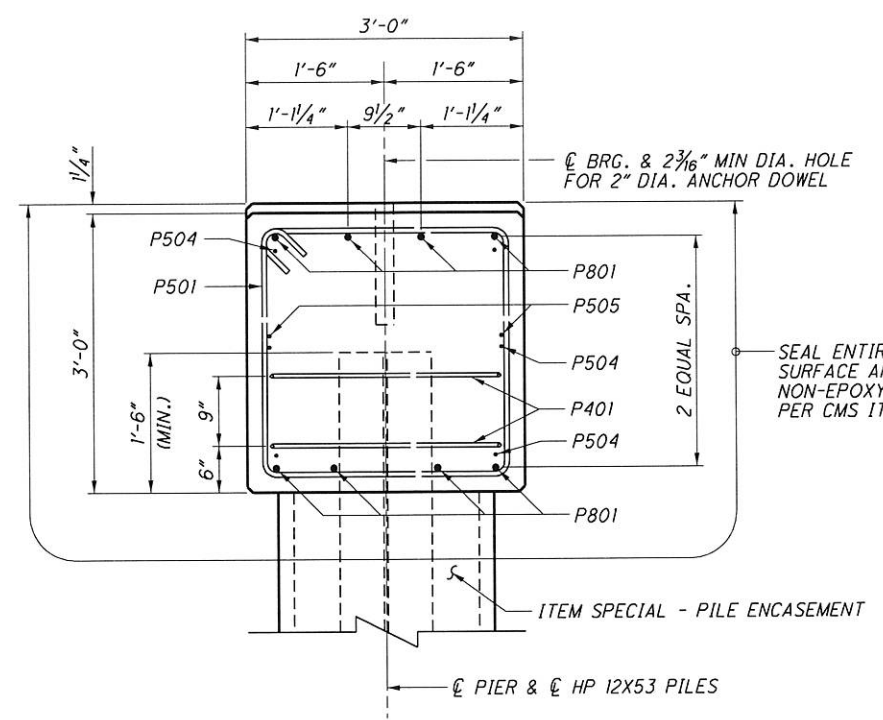
PIER 1 PILE # → (7) (12) ← PIER 2 PILE #

**PLAN**

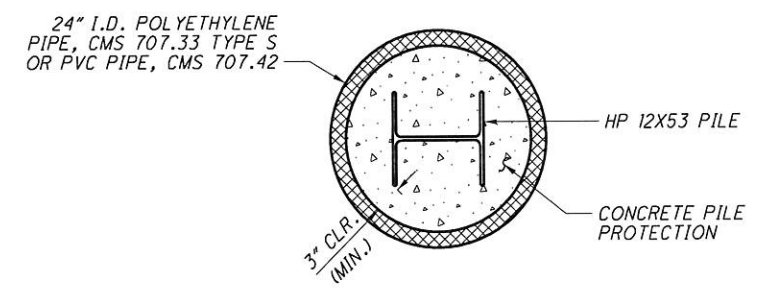


**ELEVATION**

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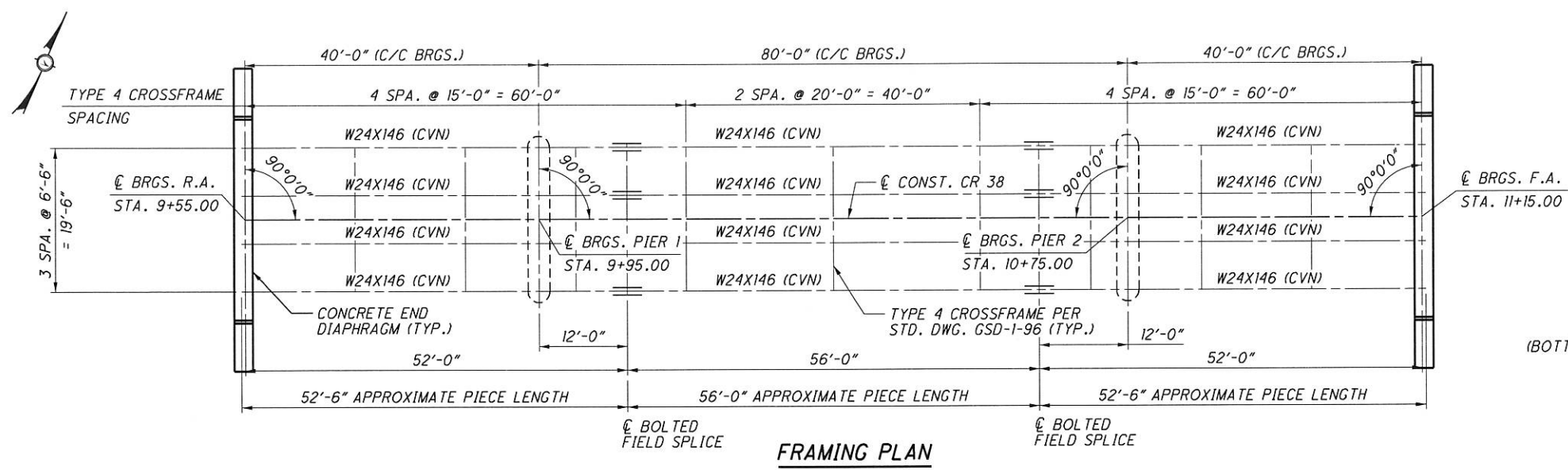
**SECTION A-A**



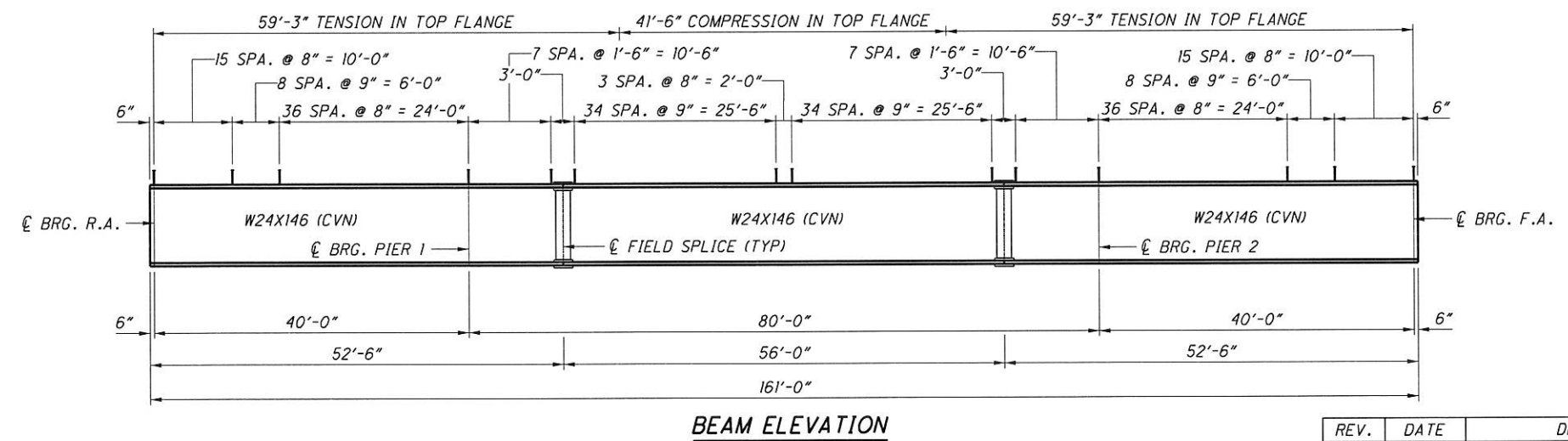
**SECTION B-B**

**NOTES**

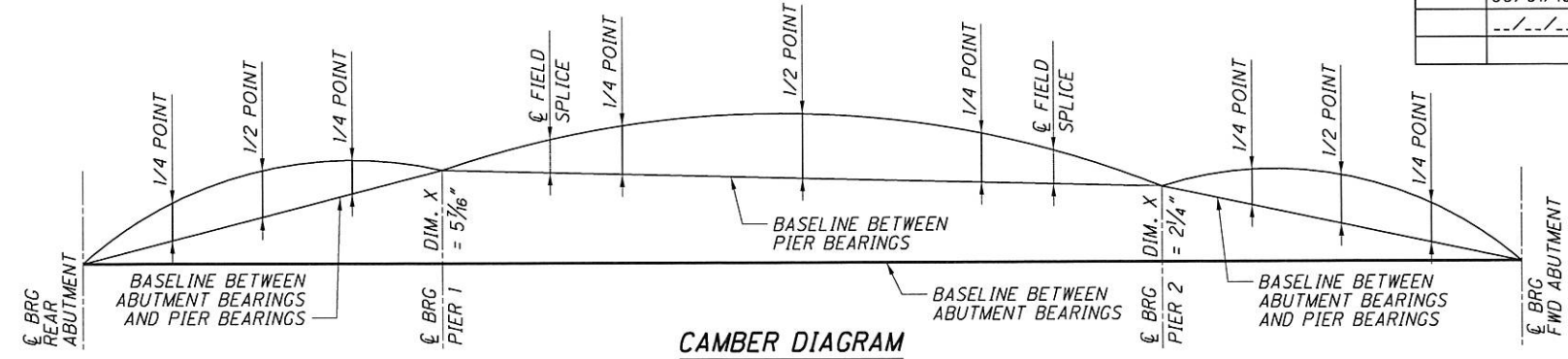
- SEE SHEET [14/16] FOR ANCHOR DOWEL AND BEARING DETAILS.
- SEE SITE PLAN (SHEET [17/16]) FOR BOTTOM OF PILE ENCASEMENT AND ESTIMATED PILE TIP ELEVATIONS.
- BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR DOWEL HOLES OR THE PRE-SETTING OF ANCHOR DOWELS.



**FRAMING PLAN**

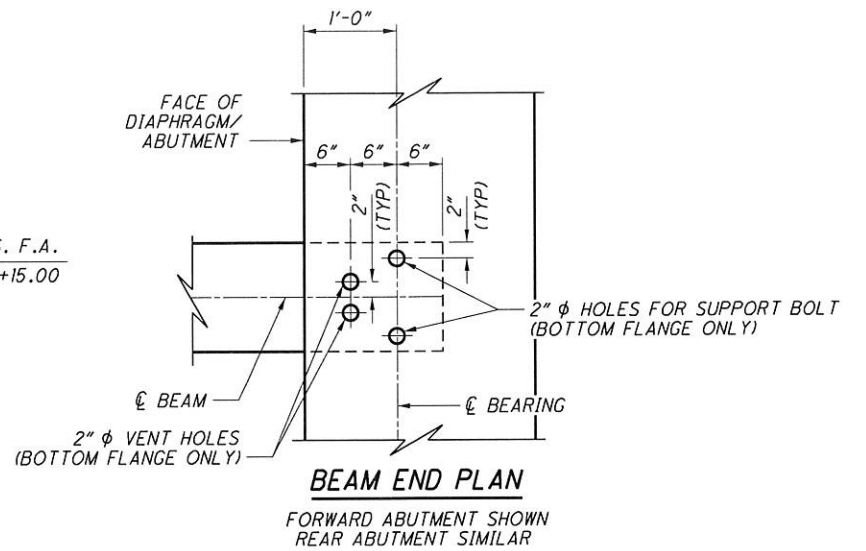


**BEAM ELEVATION**



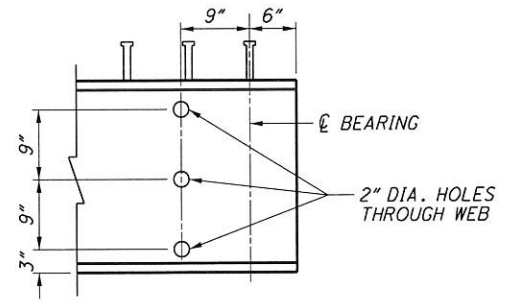
**CAMBER DIAGRAM**

	STRUCTURAL STEEL DEFLECTION AND CAMBER TABLE (INCHES)														
	CL BRG. REAR ABUT.	SPAN 1			SPAN 2					SPAN 3					CL BRG. FWD. ABUT.
		1/4 POINT	1/2 POINT	1/4 POINT	CL BRG. PIER 1	FIELD SPLICE	1/4 POINT	1/2 POINT	1/4 POINT	FIELD SPLICE	CL BRG. PIER 2	1/4 POINT	1/2 POINT	1/4 POINT	
DEFLECTION DUE TO WEIGHT OF STEEL	0	0	0	0	0	1/8	3/16	3/8	1/4	1/8	0	0	0	0	0
DEFLECTION DUE TO REMAINING DEAD LOAD	0	- 1/16	- 1/8	- 3/16	0	11/16	1 1/4	2	1 1/4	3/4	0	- 3/16	- 1/8	- 1/16	0
VERTICAL CURVE ADJUSTMENT	0	1/2	3/4	1/2	0	13/16	1 1/16	7/8	3/8	1/4	0	- 3/16	- 1/4	- 1/4	0
REQUIRED SHOP CHAMBER	0	7/16	5/8	5/16	0	1 5/8	2 1/2	3 1/4	1 7/8	1 1/8	0	- 3/8	- 3/8	- 5/16	0

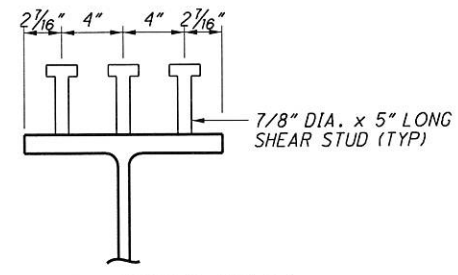


**BEAM END PLAN**

FORWARD ABUTMENT SHOWN  
REAR ABUTMENT SIMILAR



**BEAM END ELEVATION**

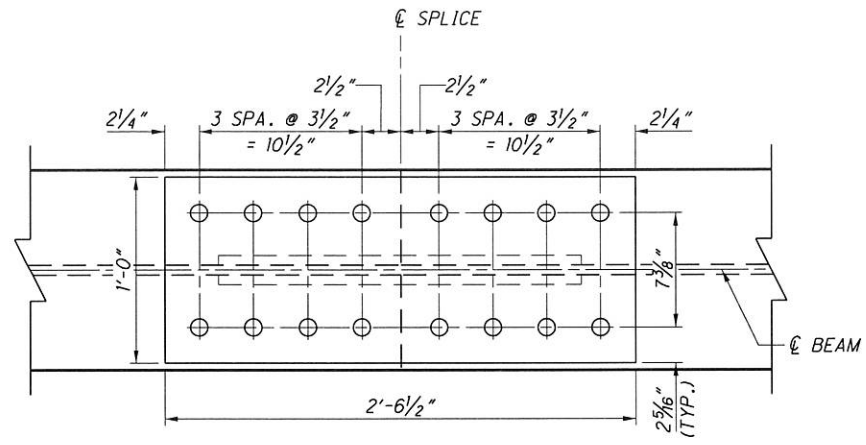


**SHEAR CONNECTOR DETAIL**

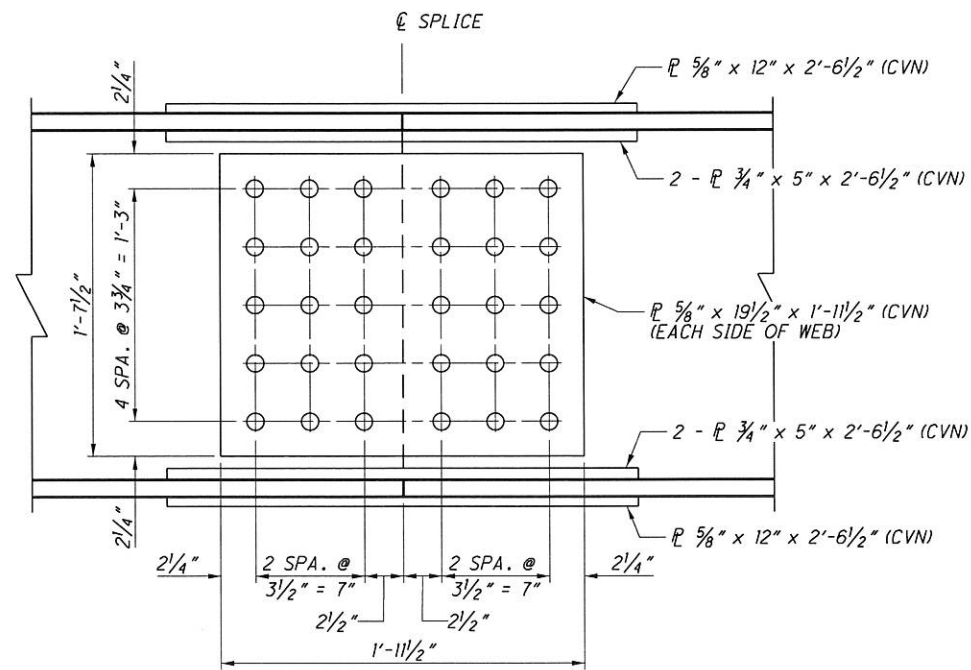
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**NOTES**

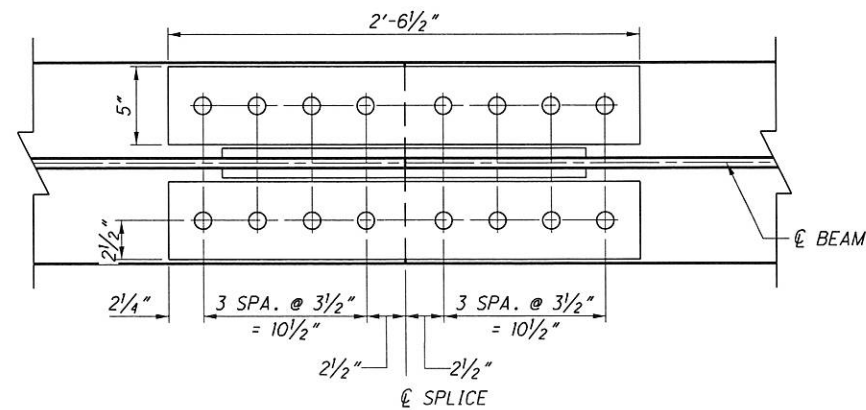
- STRUCTURAL STEEL: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
- WELDED STUD SHEAR CONNECTORS SHALL CONFORM TO AASHTO M-169 AND ITEM 513.
- ALL STRUCTURAL STEEL, BOLTS, FASTENERS, AND PLATES SHALL BE HOT DIPPED GALVANIZED.
- WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.



**OUTSIDE FLANGE PLATE**



**WEB PLATES**



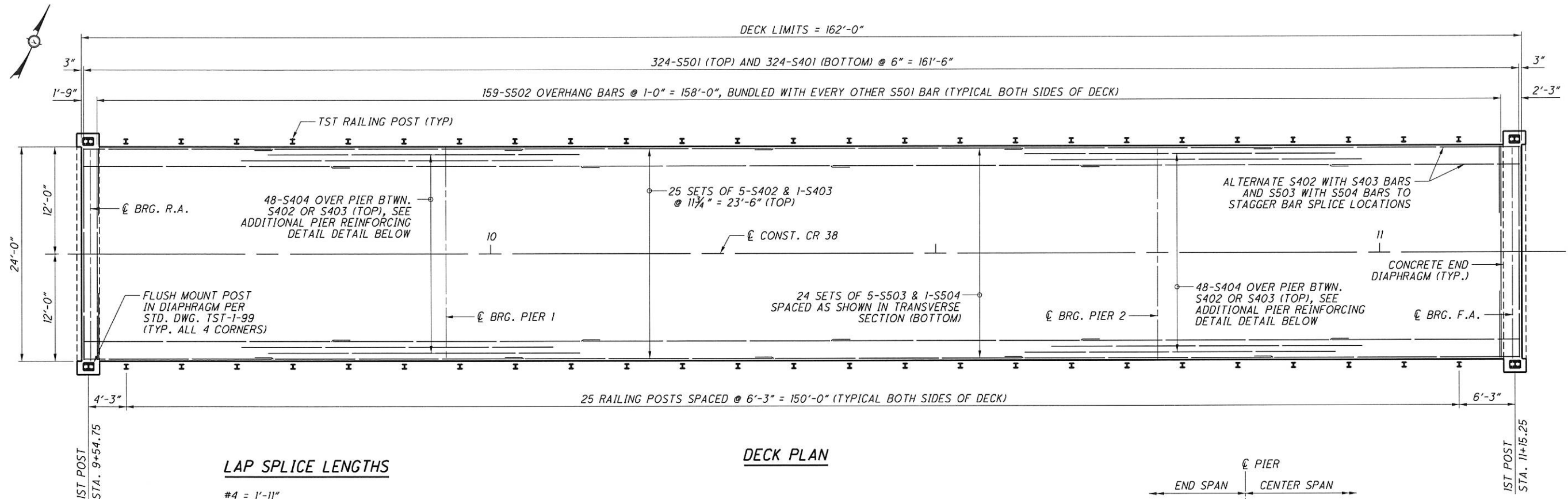
**INSIDE FLANGE PLATES**

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**NOTES**

1. ALL FASTENERS SHALL BE 1/8" ASTM A325 (GALVANIZED) HIGH STRENGTH BOLTS. BOLT THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANES. PROVIDE 1/4" DIA. HOLES FOR BOLTS TO ACCOUNT FOR GALVANIZED COATING.
2. STRUCTURAL STEEL: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01
3. ALL STRUCTURAL STEEL, BOLTS, FASTENERS, AND PLATES SHALL BE HOT DIPPED GALVANIZED.

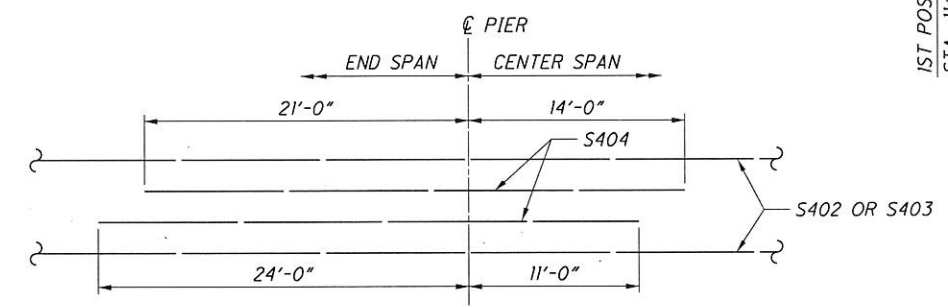
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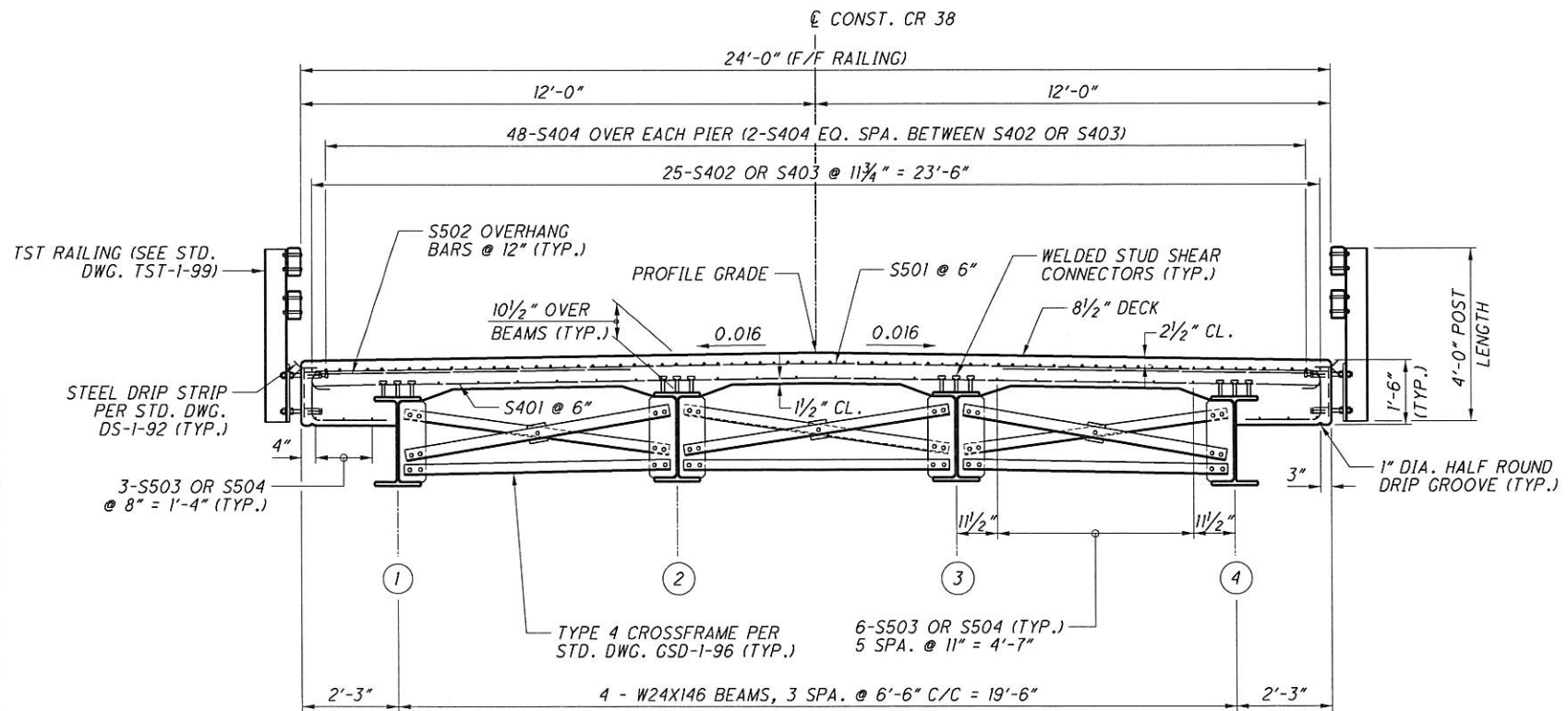
**LAP SPLICE LENGTHS**

- #4 = 1'-11"
- #5 = 2'-5"

**DECK PLAN**



**ADDITIONAL PIER REINFORCING DETAIL**



**TYPICAL SECTION**

**NOTES**

1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.  
  
THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE TOP OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS.
2. SEE SHEET 8/16 FOR ADDITIONAL CONCRETE END DIAPHRAGM REINFORCING DETAILS.
3. ABUTMENT DIAPHRAGM CONCRETE: PLACE THE DIAPHRAGM CONCRETE ENCASEING THE STRUCTURAL MEMBER ENDS AT LEAST 48 HOURS BEFORE PLACEMENT OF THE DECK CONCRETE. PLACEMENT OF THE DIAPHRAGM CONCRETE WITH THE DECK CONCRETE IS NOT PERMITTED DUE TO UPLIFT FORCES DURING THE DECK POUR.

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	09/01/16	APPROVED FOR CONST.
	--/--	RECORD DRAWING PLANS (AS-BUILT)

DESIGN AGENCY: PALMER ENGINEERING  
 400 WHITE POND DRIVE SUITE 300  
 COLUMBIANA, OHIO 44320  
 (330) 325-1100 FAX (330) 325-1110

DESIGNED BY: TES  
 CHECKED BY: JPR

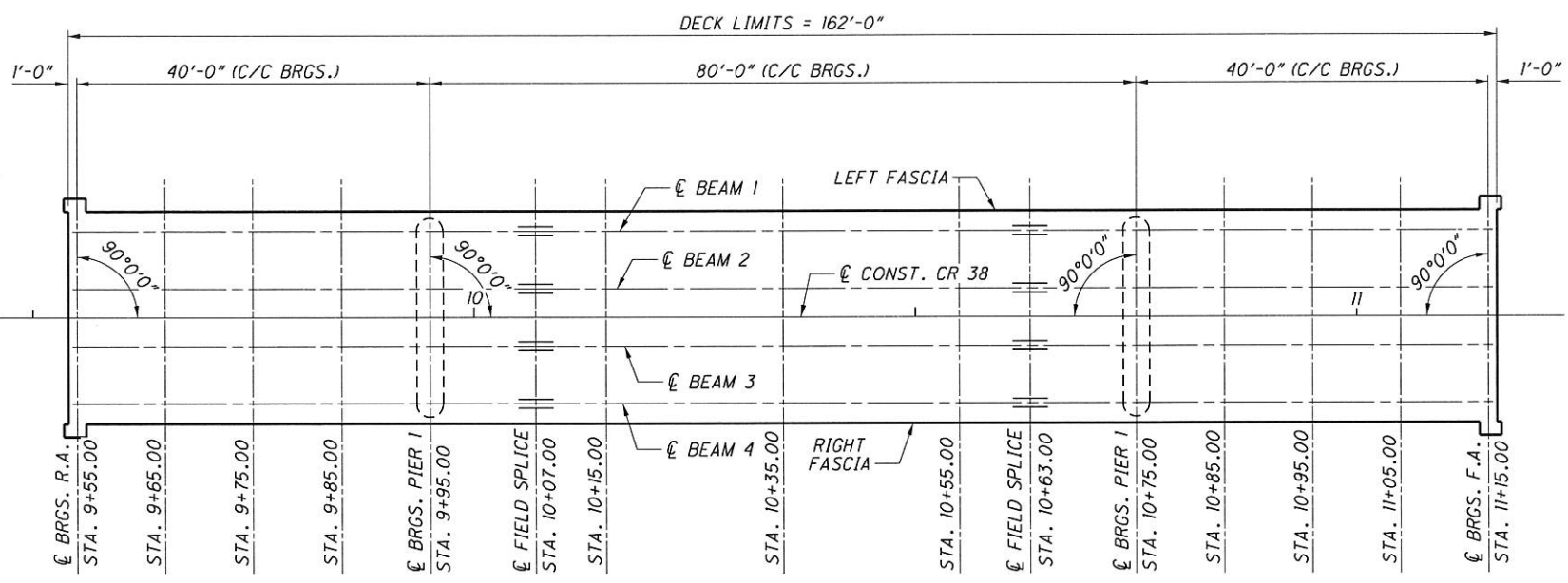
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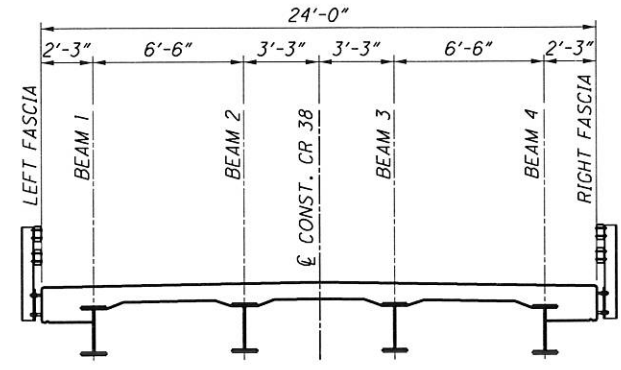
MUS-C038-S4.81  
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12 / 16

73  
77



DECK SCHEMATIC



TRANSVERSE SECTION SCHEMATIC

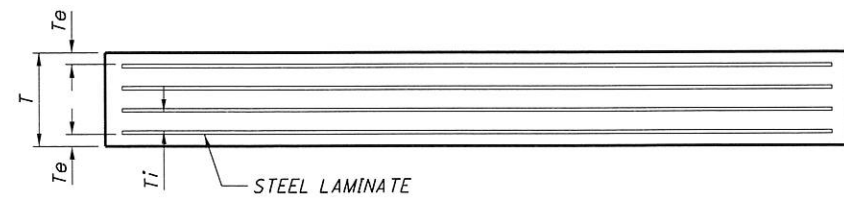
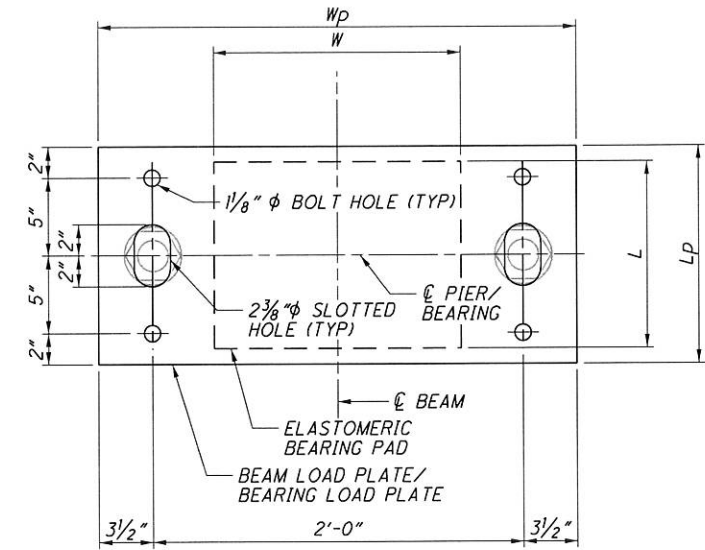
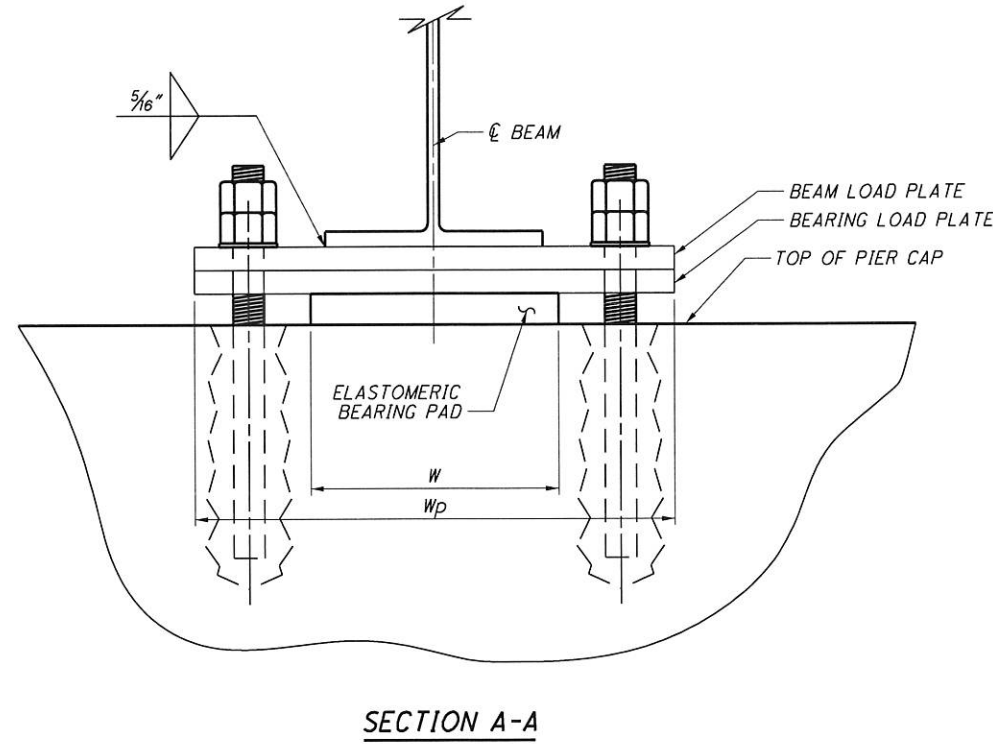
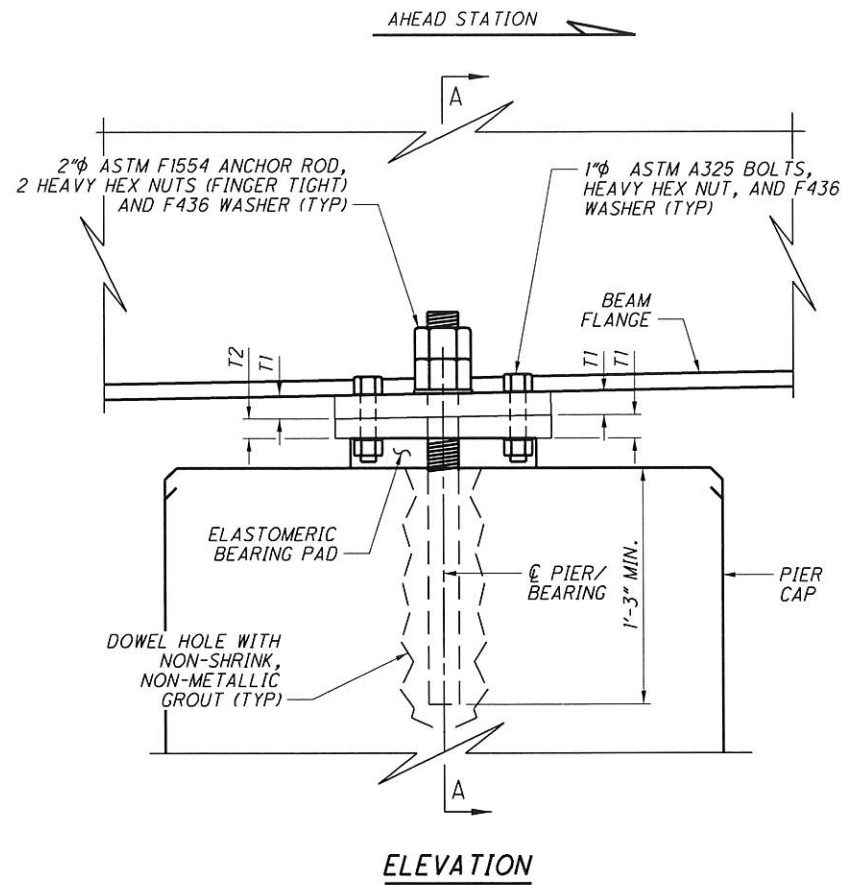
DECK ELEVATIONS TABLE

SPAN NO.	LOCATION	STATION	LEFT FASCIA		GIRDER 1		GIRDER 2		C-L CONST. CR 38		GIRDER 3		GIRDER 4		RIGHT FASCIA	
			FINAL DECK ELEVATION	SCREED ELEVATION	FINAL DECK ELEVATION	TOP OF HAUNCH ELEVATION	FINAL DECK ELEVATION	TOP OF HAUNCH ELEVATION	FINAL DECK ELEVATION	SCREED ELEVATION	FINAL DECK ELEVATION	TOP OF HAUNCH ELEVATION	FINAL DECK ELEVATION	TOP OF HAUNCH ELEVATION	FINAL DECK ELEVATION	SCREED ELEVATION
SPAN 1	C-L BRG. REAR ABUT.	9+55.00	782.58	782.58	782.62	781.91	782.72	782.01	782.77	782.77	782.72	782.01	782.62	781.91	782.58	782.58
	1/4 POINT	9+65.00	782.82	782.82	782.86	782.15	782.96	782.25	783.01	783.01	782.96	782.25	782.86	782.15	782.82	782.82
	MIDSPAN	9+75.00	783.03	783.02	783.07	782.35	783.17	782.45	783.22	783.21	783.17	782.45	783.07	782.35	783.03	783.02
	1/4 POINT	9+85.00	783.20	783.19	783.24	782.52	783.34	782.62	783.40	783.38	783.34	782.62	783.24	782.52	783.20	783.19
SPAN 2	C-L BRG. PIER 1	9+95.00	783.35	783.35	783.38	782.67	783.49	782.78	783.54	783.54	783.49	782.78	783.38	782.67	783.35	783.35
	FIELD SPLICE 1	10+07.00	783.47	783.53	783.51	782.86	783.61	782.96	783.66	783.72	783.61	782.96	783.51	782.86	783.47	783.53
	1/4 POINT	10+15.00	783.53	783.63	783.56	782.96	783.67	783.06	783.72	783.82	783.67	783.06	783.56	782.96	783.53	783.63
	MIDSPAN	10+35.00	783.60	783.77	783.63	783.10	783.74	783.19	783.79	783.95	783.74	783.19	783.63	783.10	783.60	783.77
SPAN 3	1/4 POINT	10+55.00	783.65	783.76	783.68	783.08	783.79	783.18	783.84	783.94	783.79	783.18	783.68	783.08	783.65	783.76
	FIELD SPLICE 2	10+63.00	783.67	783.73	783.70	783.06	783.81	783.16	783.92	783.81	783.16	783.06	783.70	783.06	783.67	783.73
	C-L BRG. PIER 2	10+75.00	783.70	783.70	783.73	783.02	783.84	783.13	783.89	783.89	783.84	783.13	783.73	783.02	783.70	783.70
	1/4 POINT	10+85.00	783.72	783.71	783.76	783.03	783.86	783.14	783.91	783.90	783.86	783.14	783.76	783.03	783.72	783.71
SPAN 3	MIDSPAN	10+95.00	783.75	783.73	783.78	783.06	783.89	783.17	783.94	783.93	783.89	783.17	783.78	783.06	783.75	783.73
	1/4 POINT	11+05.00	783.77	783.77	783.81	783.09	783.91	783.20	783.96	783.96	783.91	783.20	783.81	783.09	783.77	783.77
	C-L BRG. FWD. ABUT.	11+15.00	783.82	783.82	783.85	783.14	783.96	783.25	784.01	784.01	783.96	783.25	783.85	783.14	783.82	783.82

NOTES

- SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
- TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
- FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

REV.	DATE	DESCRIPTION
	09/01/16	APPROVED FOR CONST.
	--/--/--	RECORD DRAWING PLANS (AS-BUILT)



**ELASTOMERIC BEARING PAD ELEVATION**

LOCATION	UNFACTORED LOAD (KIPS)			ELASTOMERIC BEARING DIMENSIONS (IN)					NO. OF $t_i$	NO. OF STEEL LAMINATES (14 GAUGE)	NUMBER REQUIRED	STEEL LOAD PLATE DIMENSIONS (IN)			
	DL	LL*	MAXIMUM DESIGN LOAD	WIDTH W	LENGTH L	THICKNESS T	$t_i$	$t_e$				$L_p$	$W_p$	$T_1$	$T_2$
PIER 1	105.4	74.5	179.9	16	12	1.924	0.375	0.25	3	4	4	14	31	1.50	1.375
PIER 2	105.4	74.5	179.9	16	12	1.924	0.375	0.25	3	4	4	14	31	1.50	1.50

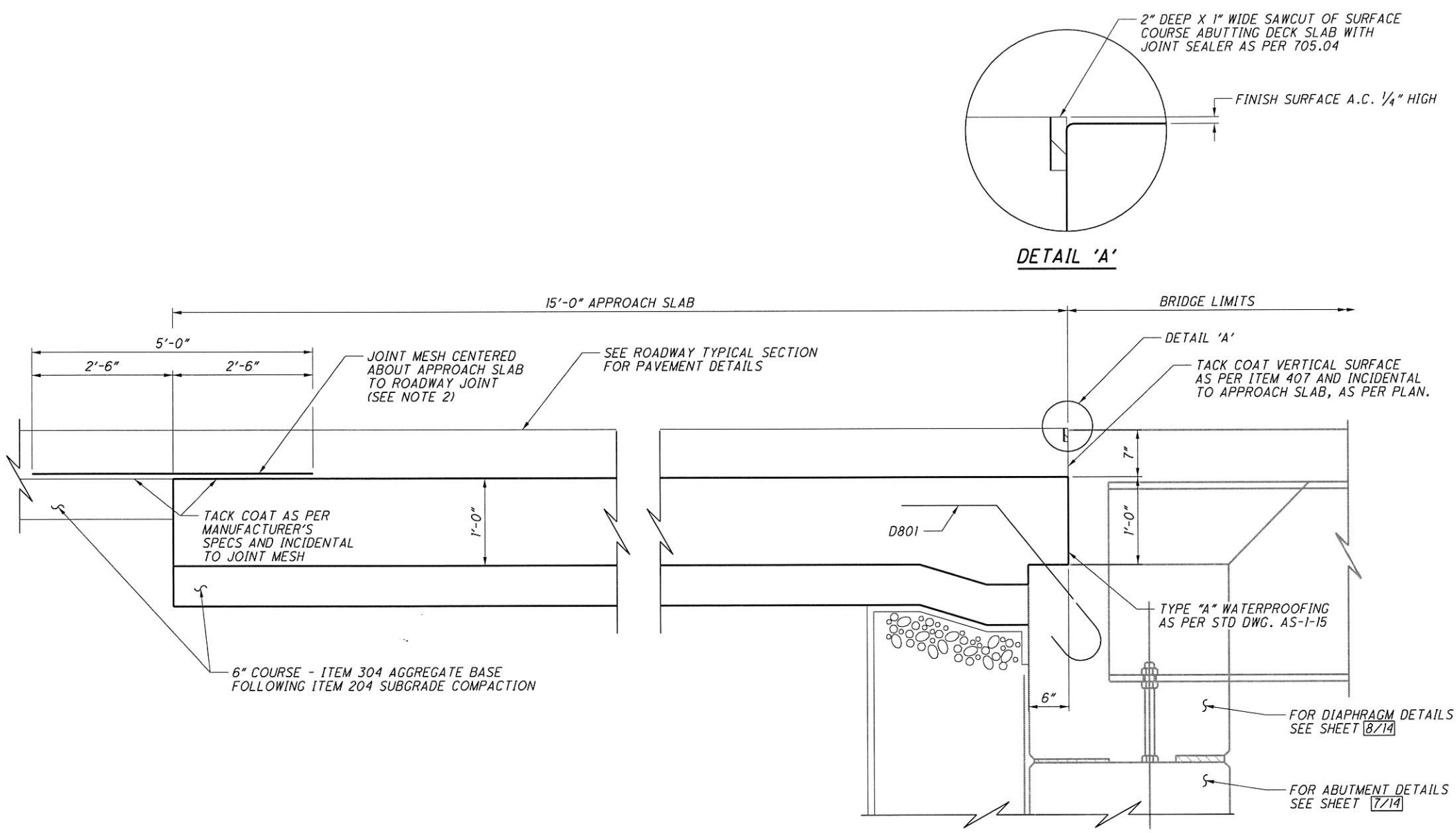
REV.	DATE	DESCRIPTION
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**BEARING DATA**

\* EXCLUDING IMPACT

**NOTES**

- 1) THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- 2) ALL LOAD PLATES, ANCHOR RODS, BOLTS AND FASTENING HARDWARE SHALL BE HOT-DIPPED GALVANIZED.
- 3) THE BEARING LOAD PLATE SHALL BE VULCANIZED TO THE ELASTOMERIC BEARING PAD DURING THE MOULDING PROCESS.
- 4) INSTALL ANCHOR RODS AT LOCATIONS SHOWN ON SHEET 9/16.
- 5) AT THE DISCRETION OF THE CONTRACTOR, ANCHOR RODS MAY BE CAST WITH THE PIER CAP. MINIMUM EMBEDMENT DEPTHS SHOWN SHALL APPLY.



**APPROACH SLAB SECTION**

REAR APPROACH SLAB SHOWN  
FORWARD APPROACH SIMILAR

APPROACH SLAB ELEVATIONS				
		LEFT EDGE	C-L CONST.	RIGHT EDGE
BEGIN REAR	STA.	9+39.00	9+39.00	9+39.00
APPROACH SLAB	ELEV.	781.54	781.74	781.54
END REAR APPROACH	STA.	9+54.00	9+54.00	9+54.00
SLAB	ELEV.	781.97	782.16	781.97
BEGIN FORWARD	STA.	11+16.00	11+16.00	11+16.00
APPROACH SLAB	ELEV.	783.24	783.43	783.24
END FORWARD	STA.	11+31.00	11+31.00	11+31.00
APPROACH SLAB	ELEV.	783.35	783.54	783.35

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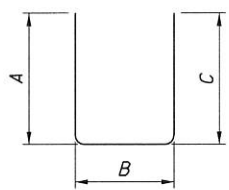
**NOTES**

- FOR ADDITIONAL APPROACH SLAB DETAILS AND REINFORCING, SEE ODOT STANDARD DRAWING AS-1-15.
- ITEM SPECIAL - REINFORCED MESH FOR TRANSVERSE AND/OR LONGITUDINAL JOINTS AND CRACKS  
THIS ITEM SHALL BE USED TO REINFORCE TRANSVERSE JOINTS. PLACE REINFORCING MESH ON PROPOSED SURFACE (AS SHOWN IN DETAIL A), 5'-0" WIDE, ALONG LENGTHS SHOWN IN THE PLAN CENTERED OVER JOINT CREATED. THE ENTIRE APPROACH SLAB AT THESE LOCATIONS SHALL BE OVERLAYED WITH 9" ASPHALT CONCRETE AFTER PLACEMENT OF THE REINFORCING MESH. THIS WORK SHALL BE PERFORMED ONLY AT THE LOCATIONS SHOWN IN THE APPROACH SLAB SECTION. REINFORCING MATERIAL SHALL BE GLASGRID CG200 OR EQUIVALENT AND SHALL BE PLACED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND THIS NOTE.

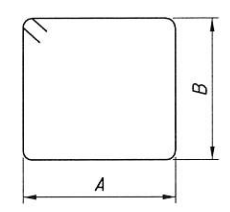
	DESIGN AGENCY: PALMER ENGINEERING 400 WHITE POND DRIVE SUITE 300 AKRON, OHIO 44320 TEL: 330.934.4444 FAX: 330.934.4444 WWW.PALMERENGINEERING.COM	DATE: 08/05/16 REVIEWED: MLJ DRAWN: SDW DESIGNED: JPR CHECKED: TES
	BRIDGE NO. MUS-C038-S481 CR 38 (HAMBY HILL RD.) OVER WAKATOMIKA CREEK	STRUCTURE FILE NUMBER: 6043151
<b>MUS-C038-S4.81</b>	PID No. 97515	APPROACH SLAB DETAILS
15 / 16	76 77	

REINFORCING STEEL LIST

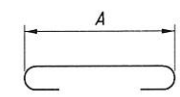
MARK	NUMBER			LENGTH	WEIGHT (LBS.)	TYPE	DIMENSIONS					
	REAR	FWD.	TOTAL				A	B	C	D	E	R
<b>ABUTMENTS</b>												
A401	18	18	36	9' - 3"	220	3	2' - 7"	1' - 9"				
A501	31	31	62	11' - 1"	714	3	2' - 8"	2' - 7"				
A502	19	19	38	9' - 2"	360	2	3' - 7"	2' - 2"	3' - 7"			
A503	10	10	20	13' - 5"	280	2	5' - 9"	2' - 2"	5' - 9"			
A504	2	2	4	10' - 9"	45	2	4' - 5"	2' - 2"	4' - 5"			
A505	6	6	12	40' - 8"	509	STR						
A506	2	2	4	4' - 1"	17	2	1' - 1"	2' - 2"	1' - 1"			
A507	2	2	4	3' - 3"	14	2	8"	2' - 2"	8"			
	2	2	4	5' - 5"			1' - 9"	2' - 2"	1' - 9"			
A508	SERIES	SERIES	SERIES	to	121	2	to	to	to			7 3/8"
	4	4	4	9' - 1"			3' - 7"	2' - 2"	3' - 7"			
A509	4	4	8	7' - 2"	60	STR						
	4	4	8	2' - 7"			2' - 7"					
A510	SERIES	SERIES	SERIES	to	115	STR	to					2' - 0"
	3	3	3	6' - 7"			6' - 7"					
A601	26	26	52	10' - 9"	840	26	2' - 2"	5"	2' - 7"	10"	1' - 9"	
A801	8	8	16	40' - 8"	1737	STR						
ABUTMENTS SUBTOTAL					5,032							
<b>DIAPHRAGMS</b>												
D501	26	26	52	8' - 8"	472	3	2' - 2"	1' - 11"				
D502	26	26	52	7' - 3"	393	2	2' - 11"	1' - 8"	2' - 11"			
D601	12	12	24	26' - 8"	961	STR						
D801	16	16	32	4' - 6"	388	18	2' - 3"	1' - 0"	1' - 0"			
DIAPHRAGMS SUBTOTAL					2,214							
<b>PIER</b>												
	PIER 1	PIER 2										
P401	10	10	20	9' - 6"	127	3	2' - 0"	2' - 6"				
P501	16	16	32	11' - 2"	374	3	2' - 8"	2' - 8"				
P502	2	2	4	10' - 0"	42	3	2' - 8"	2' - 1"				
P503	2	2	4	4' - 0"	17	2	10"	2' - 7"	10"			
P504	6	6	12	10' - 9"	135	24	2' - 6"	3' - 5"			1' - 3"	
P505	2	2	4	19' - 6"	81	STR						
P801	8	8	16	19' - 6"	833	STR						
PIER SUBTOTAL					1,609							
<b>SUPERSTRUCTURE</b>												
S401			324	23' - 8"	5122	STR						
S402			125	30' - 0"	2505	STR						
S403			25	21' - 6"	359	STR						
S404			96	35' - 0"	2244	STR						
S501			324	24' - 10"	8392	17	23' - 8"					
S502			318	10' - 2"	3372	2	7' - 5"	1' - 1"	1' - 11"			
S503			120	30' - 0"	3755	STR						
S504			24	24' - 0"	601	STR						
SUPERSTRUCTURE SUBTOTAL					26,350							
TOTAL					35,205							



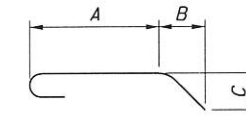
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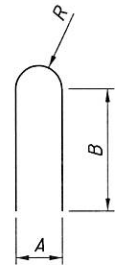
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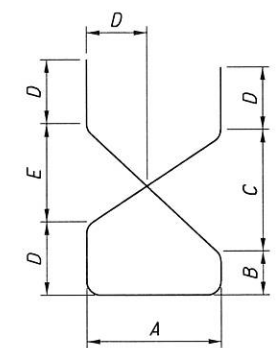
TYPE-17



TYPE-18



TYPE-24



TYPE-26

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DESIGN AGENCY: PALMER ENGINEERING  
 460 WHITE POND DRIVE SUITE 300  
 AKRON, OHIO 44320  
 330.444.1111  
 www.palmer-engineering.com

**MUS-C038-S4.81**  
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