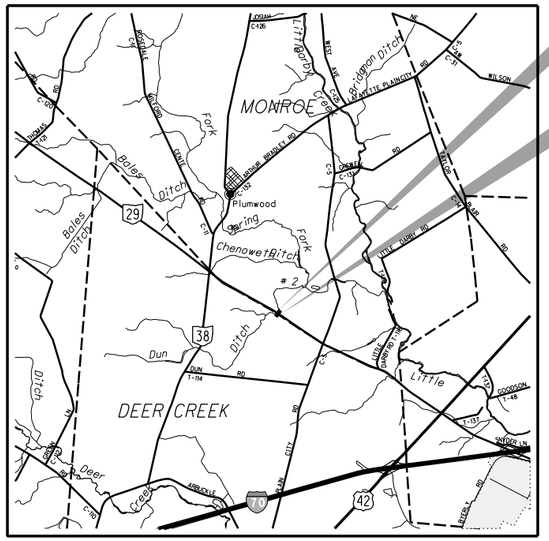

BEGIN PROJECT
STA. 369+50
S.L.M. = 7.00

END PROJECT
STA. 372+50
S.L.M. = 7.05

LOCATION MAP

LATITUDE: 39° 59′ 07″ N LONGITUDE: 83° 24′ 13″ W

SCALE IN MILES
0 1 2 3 4

N

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

DESIGN DESIGNATION

CURRENT ADT (2021)	3500
DESIGN YEAR ADT (2041)	3500
DESIGN HOURLY VOLUME (2041)	420
DIRECTIONAL DISTRIBUTION	70%
TRUCKS (24 HOUR B&C)	9%
DESIGN SPEED	60 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION: 05 MAJOR COLLECTOR (RURAL)	
NHS PROJECT	NO

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:
KOHLI & KALIHER ASSOCIATES, INC.
ENGINEERS AND SURVEYORS
2244 Baton Rouge Ave., Lima, Ohio 45805 419-227-1135

ENGINEER'S SEAL:

STATE OF OHIO
MARK A. DROLL
E-59311
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Mark A. Droll
DATE: 07-17-2020

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MAD-29-7.02

DEER CREEK AND MONROE TOWNSHIPS
MADISON COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

REPLACEMENT OF A STRUCTURALLY DEFICIENT BRIDGE OVER DUN DITCH NO. 2 WITH RECONSTRUCTION OF THE APPROACH ROADWAY.

TOTAL PROJECT LENGTH = 300 FT
TOTAL WORK LENGTH = 440 FT

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 0.70 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.26 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A (NOI NOT REQUIRED)

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.

PLAN CERTIFIED AS TO COMPLETENESS AND QUALITY

Mark A. Droll	07-17-2020
SIGNATURE	DATE
KOHLI & KALIHER ASSOCIATES, INC.	PROJECT MANAGER
FIRM	TITLE

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1 1-17-20		DM-1.1 7-17-20		AS-1-15 7-17-15			WATERWAY
	MGS-1.1 1-19-18		TC-41.20 10-18-13			800 7-17-20	PERMIT
BP-3.2 1-18-19		DM-1.2 1-18-13		AS-2-15 1-18-19			CONDITIONS
	MGS-2.1 1-19-18		TC-42.20 10-18-13			832 10-19-18	6-14-19
		DM-4.4 1-15-16		DS-1-92 7-18-07			
	MGS-3.1 1-19-18		TC-52.20 7-20-18			845 4-20-18	
		MT-97.10 4-19-19		GSD-1-19 1-18-19			
			TC-61.30 7-19-19			846 4-17-15	
		MT-101.60 1-17-20		ICD-1-82 7-19-02			
			TC-65.10 1-17-14				
		MT-105.10 1-17-20		TST-1-99 7-20-18			

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEETS 7-8.

APPROVED _____
DATE 8-3-2020 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E161 (389)
PID NO. 98177
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
MAD-29-7.02
1 / 33

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SHEET NUM.												PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		4		5		6		11		12		22	01/STR/BR					
																	STRUCTURE OVER 20 FOOT SPAN (4900228)	
												LS	LS	202	11003	LS	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	20
												244	244	202	22900	244	SY	APPROACH SLAB REMOVED	
												619	619	202	23500	619	SY	WEARING COURSE REMOVED	
												LS	LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
												LS	LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
												LS	LS	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
												950	950	507	00600	950	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	
												1,050	1,050	507	00651	1,050	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	22
												36,616	36,616	509	10000	36,616	LB	EPOXY COATED REINFORCING STEEL	
												117	117	511	21520	117	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE	
												111	111	511	43510	111	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	
												137	137	512	10050	137	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
												1,620	1,620	513	20001	1,620	EACH	WELDED STUD SHEAR CONNECTORS, AS PER PLAN	20
												89	89	516	13200	89	SF	1/2" PREFORMED EXPANSION JOINT FILLER	
												113	113	516	13600	113	SF	1" PREFORMED EXPANSION JOINT FILLER	
												126	126	516	14014	126	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
												10	10	516	43201	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), AS PER PLAN (11"x11"x2")	30
												133	133	517	70000	133	FT	RAILING (TWIN STEEL TUBE)	
												LS	LS	518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
												145	145	SPECIAL	51822300	145	FT	STEEL DRIP STRIP	26
												148	148	518	40000	148	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
												48	48	518	40010	48	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
												2	2	523	20001	2	EACH	DYNAMIC LOAD TESTING, AS PER PLAN	22
												2	2	523	20501	2	EACH	RESTRIKE, AS PER PLAN	22
												222	222	526	25001	222	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	20
												88	88	526	90010	88	FT	TYPE A INSTALLATION	
												37	37	846	00110	37	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM	
																		STRUCTURE OVER 20 FOOT SPAN (4900228) OPTION A: GALVANIZED STEEL	
												63,122	63,122	513	10221	63,122	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN	20-21
																		STRUCTURE OVER 20 FOOT SPAN (4900228) OPTION B: METALLIZED STEEL	
												63,122	63,122	513	10220	63,122	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1	
												3,719	3,719	845	60000	3,719	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
												5	5	845	61000	5	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
												3,719	3,719	845	62000	3,719	SF	FIELD METALLIZING OF EXISTING STRUCTURAL STEEL	
																		MAINTENANCE OF TRAFFIC	
				35									35	407	20000	35	GAL	NON-TRACKING TACK COAT	
				20									20	441	50000	20	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
						12							12	614	11110	12	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	6
				LS									LS	614	12420	LS		DETOUR SIGNING	
				25									25	614	13000	25	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
				0.06									0.06	614	21550	0.06	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
				0.11									0.11	614	22360	0.11	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	
				1									1	616	10000	1	MGAL	WATER	
				50									50	617	10100	50	CY	COMPACTED AGGREGATE	
				2									2	617	25000	2	MGAL	WATER	
				0.02									0.02	642	00104	0.02	MILE	EDGE LINE, 6", TYPE 1	
				0.01									0.01	642	00300	0.01	MILE	CENTER LINE, TYPE 1	
																		INCIDENTALS	
				LS									LS	614	11000	LS		MAINTAINING TRAFFIC	
													3	619	16010	3	MNTH	FIELD OFFICE, TYPE B	
													LS	623	10001	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	4
													LS	624	10000	LS		MOBILIZATION	

CALCULATED DJK
CHECKED MAD

GENERAL SUMMARY

MAD-29-7.02

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15	REVISED	7-17-15
AS-2-15	REVISED	1-18-19
DS-1-92	REVISED	7-18-03
GSD-1-19	DATED	1-18-19
ICD-1-82	REVISED	7-19-02
TST-1-99	REVISED	7-20-18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:

846	DATED	4-17-15

DESIGN SPECIFICATIONS:

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

DESIGN DATA:

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND WITH THE ODOT BRIDGE DESIGN MANUAL, 2019.

DESIGN LOADING: HL-93 AND FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SF

CONCRETE CLASS QC1: COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

CONCRETE CLASS QC2: COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

REINFORCING STEEL: MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL: ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (GALVANIZED)

DECK PROTECTION METHOD: EPOXY COATED REINFORCING STEEL, 2 1/2" CONCRETE COVER, SEALING OF CONCRETE SURFACES (NON-EPOXY), STAINLESS STEEL DRIP STRIP

ITEM 513 - WELDED STUD SHEAR CONNECTORS, AS PER PLAN:

THE STEEL SUPERSTRUCTURE OF THIS BRIDGE MAY BE GALVANIZED. STUD SHEAR CONNECTORS MAY BE INSTALLED IN THE SHOP OR MAY BE INSTALLED IN THE FIELD. PREFERENCE SHALL BE GIVEN TO INSTALLING STUDS IN THE SHOP. STUDS SHALL BE 6" LONG x 7/8" DIAMETER.

IF STUDS ARE SHOP INSTALLED, WELD THE STUD SHEAR CONNECTORS TO THE TOP OF EACH BEAM IN ACCORDANCE WITH CMS 513.22 AND THEN GALVANIZE EACH BEAM ALONG WITH ITS ATTACHED STUDS. ONCE STUDS ARE WELDED TO BEAMS, THEY BECOME A TRIPPING HAZARD FOR WORKERS. PROVIDE FALL PROTECTION ACCORDING TO OSHA STANDARDS FOR ALL WORKERS WHO NEED TO WALK ALONG THE TOP OF A BEAM.

IF STUDS ARE FIELD INSTALLED, FOLLOW CMS 513.22 AND REMOVE THE GALVANIZED COATING BY GRINDING AT EACH STUD LOCATION PRIOR TO WELDING THE STUD TO THE TOP OF BEAM.

ALL RELEVANT PORTIONS OF CMS 513 SHALL APPLY TO THIS ITEM. PAYMENT FOR THE ABOVE WORK (EXCEPT FOR GALVANIZING) SHALL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 513 - WELDED STUD SHEAR CONNECTORS, AS PER PLAN AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO INSTALL ALL STUD SHEAR CONNECTORS AND TO PROVIDE FALL PROTECTION ACCORDING TO OSHA STANDARDS.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.38 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48".

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

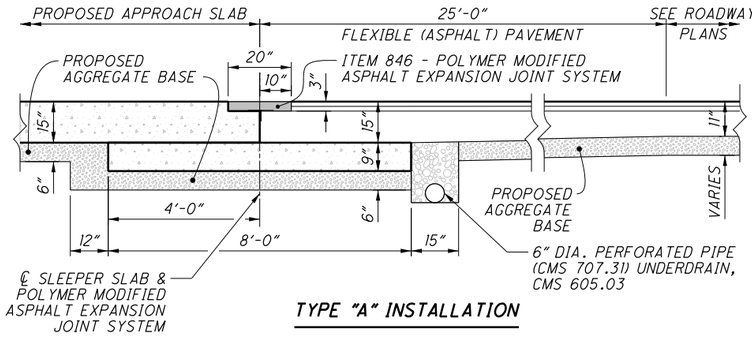
ABBREVIATIONS:

ABUT. - ABUTMENT
C/C - CENTER TO CENTER
CLR. - CLEARANCE
CONC. - CONCRETE
CONST. - CONSTRUCTION
CPP - CORRUGATED PLASTIC PIPE
DIA. - DIAMETER
EA. - EACH
ELEV. - ELEVATION
EQ. - EQUAL
EX. - EXISTING
FF - FAR FACE
F/F - FACE TO FACE
FWD. - FORWARD
MED. - MEDIUM
MIN. - MINIMUM
NF - NEAR FACE
PEJF - PREFORMED EXPANSION JOINT FILLER
PERF. - PERFORATED
SP - SPACE
SPS - SPACES
STD. DWG. - STANDARD DRAWING
TYP. - TYPICAL

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

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN:

A POLYMER MODIFIED ASHPALT EXPANSION JOINT SYSTEM SHALL BE INSTALLED AT THE ROADWAY END OF EACH APPROACH SLAB. A NOTCH SHALL BE FORMED INTO THE APPROACH SLAB TO ACCOMMODATE THE JOINT AS SHOWN IN THE TYPE "A" INSTALLATION DETAIL BELOW AND WILL REQUIRE MODIFICATION TO THE REINFORCING STEEL. ALL COSTS ASSOCIATED WITH MODIFYING THE APPROACH SLABS TO ACCOMMODATE THE POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD FOR ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN.



TYPE "A" INSTALLATION

ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

REMOVE THE ENTIRE EXISTING REAR AND FORWARD ABUTMENTS. REMOVE ALL EXISTING PILES AT EACH ABUTMENT TO ELEVATION 990.00 AND AT EACH PIER TO ELEVATION 984.00.

ALL OTHER REQUIREMENTS OF CMS 202.03 SHALL BE FOLLOWED.

BID OPTIONS FOR STRUCTURAL STEEL MEMBERS, LEVEL 1:

THE STRUCTURAL STEEL AND ATTACHED BEARING SUPPORTS, INTERMEDIATE DIAPHRAGMS, AND CONNECTION PLATES COMPRISE A BID OPTION.

OPTION A CONSISTS OF PROVIDING GALVANIZED STEEL AND SHALL BE BID ACCORDING TO THE PLAN NOTE "ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN".

OPTION B CONSISTS OF PROVIDING METALLIZED STEEL AND SHALL BE BID AS PER SUPPLEMENTAL SPECIFICATION 845.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN:

THE STRUCTURAL STEEL BEAMS AND ATTACHED BEARING SUPPORTS, INTERMEDIATE DIAPHRAGMS, AND CONNECTION PLATES SHALL BE GALVANIZED AS PER CMS 711.02. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AND FURNISHED AS PER STD. DWG. GSD-1-19, CMS 513.20, CMS 711.02, CMS 711.09, AND SUPPLEMENT 1080.

1.0 DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF CONSTRUCTION AND MATERIAL SPECIFICATION 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 CONSTRUCTION AND MATERIAL SPECIFICATION 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 AND ADDITIONAL LAYDOWNS REQUIRED TO ASSURE THE FABRICATED STEEL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION. SECTIONS 513.27 AND 513.28 SHALL NOT APPLY.

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

SHEAR STUDS SHALL BE INSTALLED AS PER SECTION C&MS 513.22.

THE BEARING SUPPORTS CONSISTING OF THE HP10x42 SECTION AND THE STEEL LOAD PLATE SHALL BE WELDED TO THE W36x170 BEAMS PRIOR TO GALVANIZING. THE WEIGHT OF THE HP10x42 SECTIONS AND LOAD PLATES SHALL BE INCLUDED WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN FOR PAYMENT.

THE LAMINATED ELASTOMERIC BEARING PADS SHALL NOT BE BONDED TO THE STEEL LOAD PLATES.

2.0 PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER C&MS 513.07, BOTH THE FABRICATOR'S QUALITY CONTROL SPECIALIST, (QCS) AND GALVANIZER'S QCS 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.

3.0 QUALITY CONTROL

3.1 QUALITY CONTROL SPECIALIST

THE GALVANIZER'S QCS (QUALITY CONTROL SPECIALIST) REQUIRED UNDER C&MS 514, IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN C&MS 514.05

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 QCS AND THE DEPARTMENT'S QA REPRESENTATIVE. THE NEXT OPERATIONAL STEP MUST NOT PROCEED UNLESS THE QCP HAS BEEN ACCEPTED OR QA INSPECTION WAIVED BY THE DEPARTMENT'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 DEPARTMENT TO FINAL ACCEPTANCE.

QUALITY CONTROL POINTS	
QUALITY CONTROL POINT (QCP)	**PURPOSE**
A. SOLVENT CLEANING	REMOVE ASPHALTIC CEMENT, OIL, GREASE, SALT, DIRT, ETC.
B. GRINDING EDGES	REMOVE SHARP CORNERS PER AWS.
C. ABRASIVE BLASTING	BLAST SURFACES, INCLUDING REPAIR FINS, TEARS, SLIVERS OR SHARP EDGES.
D. GALVANIZING	CHECK COATING THICKNESS
E. FAYING SURFACE CLEANING	CHECK FAYING SURFACE ROUGHNESS. CHECK BOLT HOLE CLEARANCE. CHECK FOR OTHER FIELD CONNECTIONS UNIFORM COATING THICKNESS.
F. SECOND LAY DOWN	CHECK SWEEP AND CAMBER TOLERANCES OF EACH STRUCTURAL MEMBER.
G. FIELD REPAIR OF DAMAGED AREAS	CHECK FOR DAMAGE AREAS AFTER ERECTION OF STRUCTURE. PERFORM DAMAGE REPAIRS.
H. FINAL REVIEW	CLEAN STRUCTURE AS PER QCP#1. VISUALLY INSPECT SYSTEM FOR ACCEPTANCE.

A. SOLVENT CLEANING (QCP #1)

THE STEEL MUST BE SOLVENT CLEANED WERE 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 GALVANIZER'S QCS SHALL INSPECT AND DOCUMENT THAT THE CLEANING CONFORMS TO SSPC-SP1 AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

B. GRINDING EDGES (QCP #2)

ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES MUST HAVE A 1/16-IN. RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1.5-IN. MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT EFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE GALVANIZER'S QCS MUST VISUALLY INSPECT AND DOCUMENT THAT THE GRINDING CONFORMS TO THIS SPECIFICATION AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

C. 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 GALVANIZER'S QCS 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 513 FABRICATOR.

THE GALVANIZER'S QCS 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.

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DESIGN AGENCY
KOHLI & KALLHER ASSOCIATES, INC.
ENGINEERS AND SURVEYORS
2244 Baton Rouge Ave. Lima, Ohio 45805 419-227-1135

DESIGNED	DRAWN	REVIEWED	DATE
RTH	RTH	SAS	12-3-2019
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MAD		4900228	

GENERAL NOTES
BRIDGE NO. MAD-29-0702
OVER DUN DITCH NO. 2

MAD-29-7.02
PID No. 98177

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

THE ULTIMATE BEARING VALUE IS 240 KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENT PILES.

ABUTMENT PILES:
- 14-INCH DIAMETER PILES: 55 FEET LONG, ORDER LENGTH (REAR)
- 14-INCH DIAMETER PILES: 50 FEET LONG, ORDER LENGTH (FORWARD)
- 2 DYNAMIC LOAD TESTING ITEMS, AS PER PLAN

ITEM 507 - 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN:

PROVIDE PLAIN CYLINDRICAL CASINGS OF ASTM A252, GRADE 3 (45 KSI) STEEL WITH A MINIMUM PILE WALL THICKNESS OF 0.469 INCH FOR THE PILES.

PILES DRIVEN TO INITIAL DRIVE LENGTH WITH PILE/SOIL SETUP:

THE ULTIMATE BEARING VALUE (UBV) IS 240 KIPS PER PILE FOR THE 14-INCH DIAMETER CAST-IN-PLACE REINFORCED CONCRETE REAR AND FORWARD ABUTMENT PILES. PART OF THE UBV WILL BE ACHIEVED THROUGH PILE/SOIL SETUP, WHICH IS A TIME DEPENDENT INCREASE IN RESISTANCE THAT OCCURS IN SOME SOILS.

NOTIFY THE ENGINEER AT LEAST 5 DAYS BEFORE DRIVING PILES SO THAT THE ENGINEER CAN NOTIFY THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF GEOTECHNICAL ENGINEERING.

PILES DRIVEN TO INITIAL DRIVE LENGTH WITH PILE/SOIL SETUP (CONTINUED):

DRIVE THE FIRST TWO PILES IN EACH SUBSTRUCTURE TO AN END OF INITIAL DRIVE LENGTH EQUAL TO THE ORDER LENGTH MINUS 3 FEET (52 FEET FOR THE REAR ABUTMENT PILES AND 47 FEET FOR THE FORWARD ABUTMENT PILES). PERFORM DYNAMIC LOAD TESTING ON BOTH PILES IN EACH SUBSTRUCTURE UNIT WHILE DRIVING (TWO DYNAMIC LOAD TESTING PAY ITEMS). ENSURE THAT ALL OF THESE PILES ARE AT LEAST 30 FEET APART. AFTER THE INITIAL DRIVE, CEASE ALL DRIVING OPERATIONS AT THE SUBSTRUCTURE FOR A PERIOD OF 7 DAYS. INCLUDE THE WAITING PERIOD AS A SEPARATE ACTIVITY IN THE PROGRESS SCHEDULE. AFTER THE WAITING PERIOD, PERFORM PILE RESTRIKES ON BOTH PILES IN EACH SUBSTRUCTURE UNIT (TWO RESTRIKE PAY ITEMS).

SUBMIT ALL TEST RESULTS TO THE ENGINEER. IF THE RESTRIKE TEST RESULTS INDICATE THAT BOTH PILES IN A SUBSTRUCTURE UNIT ACHIEVED THE REQUIRED UBV, USE THE INITIAL DRIVE DYNAMIC LOAD TESTING AND END OF INITIAL DRIVE (EOID) RESISTANCE TO ESTABLISH DRIVING CRITERIA FOR INSTALLATION OF THE REMAINING PILES IN THE SUBSTRUCTURE. IF THE INITIAL DRIVE DYNAMIC LOAD TEST RESULTS INDICATE THAT BOTH PILES IN A SUBSTRUCTURE UNIT ACHIEVED THE REQUIRED UBV, USE THE INITIAL DRIVE DYNAMIC LOAD TESTING AND UBV TO ESTABLISH DRIVING CRITERIA FOR INSTALLATION OF THE REMAINING PILES IN THE SUBSRTUCTURE, AND NON-PERFORM THE WAITING PERIOD AND RESTRIKE TESTING FOR THE SUBSTRUCTURE UNIT. ESTABLISH DRIVING CRITERIA FOR INSTALLATION OF THE REMAINING PILES ACCORDING TO C&MS 507.05 AND 523.04.

PILES DRIVEN TO INITIAL DRIVE LENGTH WITH PILE/SOIL SETUP (CONTINUED):

IF THE RESTRIKE TEST RESULTS INDICATE THAT EITHER OF THE TWO PILES DID NOT ACHIEVE THE REQUIRED UBV, IMMEDIATELY NOTIFY THE ENGINEER SO THAT THE ENGINEER CAN NOTIFY THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF GEOTECHNICAL ENGINEERING. THE ENGINEER WILL REVIEW THE TEST RESULTS AND ESTABLISH DRIVING CRITERIA FOR THE PILING IN THE SUBSTRUCTURE WITH THE ASSISTANCE OF THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF GEOTECHNICAL ENGINEERING.

DRIVE ALL PILES IN THE SUBSTRUCTURE TO THE ESTABLISHED DRIVING CRITERIA. THE DEPARTMENT WILL PAY FOR SPLICING OF THE PILES BEYOND THE ESTIMATED LENGTH PROVIDED IN THE PLANS UNDER C&MS 109.05 WITH A NEGOTIATED PRICE PER SPLICE.

THIS PLAN NOTE INCLUDES A QUANTITY OF ONE EACH ITEM 523 - DYNAMIC LOAD TESTING, AS PER PLAN AND A QUANTITY OF ONE EACH ITEM 523 - RESTRIKE, AS PER PLAN PER EACH SUBSTRUCTURE UNIT.

ESTIMATED QUANTITIES					QUANTITIES CALCULATED BY: MAD DATE: 2/5/2020 QUANTITIES CHECKED BY: DJK DATE: 2/6/2020			SEE SHEET NO.
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENT	SUPERSTRUCTURE	GENERAL	
202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN			LS	2/15
202	22900	244	SY	APPROACH SLAB REMOVED			244	
202	23500	619	SY	WEARING COURSE REMOVED			619	
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING			LS	
503	21300	LS		UNCLASSIFIED EXCAVATION	LS			
505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	LS			
507	00600	950	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	950			
507	00651	1,050	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	1,050			4/15
509	10000	36,616	LB	EPOXY COATED REINFORCING STEEL	10,239	26,377		
511	21520	117	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE		117		
511	43510	111	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	111			
512	10050	137	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	68	69		
513	20001	1,620	EACH	WELDED STUD SHEAR CONNECTORS, AS PER PLAN		1,620		2/15
516	13200	89	SF	1/2" PREMORMED EXPANSION JOINT FILLER		89		
516	13600	113	SF	1" PREFORMED EXPANSION JOINT FILLER		113		
516	14014	126	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	126			
516	43201	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), AS PER PLAN (11"x11"x2")		10		12/15
517	70000	133	FT	RAILING (TWIN STEEL TUBE)		133		
518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	LS			
SPECIAL	51822300	145	FT	STEEL DRIP STRIP		145		8/15
518	40000	148	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	148			
518	40010	48	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	48			
523	20001	2	EACH	DYNAMIC LOAD TESTING, AS PER PLAN	2			4/15
523	20501	2	EACH	RESTRIKE, AS PER PLAN	2			4/15
526	25001	222	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN			222	2/15
526	90010	88	FT	TYPE A INSTALLATION			88	
846	00110	37	CF	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM			37	
STRUCTURE OVER 20 FOOT SPAN (4900228) OPTION A: GALVANIZED STEEL								
513	10221	63,122	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN		63,122		2-3/15
STRUCTURE OVER 20 FOOT SPAN (4900228) OPTION B: METALLIZED STEEL								
513	10220	63,122	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1		63,122		
845	60000	3,719	SF	SURFACE PREPARATION OF EXISTING STRUCTRUAL STEEL		3,719		
845	61000	5	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL		5		
845	62000	3,719	SF	FIELD METALLIZING OF EXISTING STRUCTURAL STEEL		3,719		

NOTE: ITEM 60132205 ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC, AS PER PLAN IS PAID FOR UNDER EROSION CONTROL QUANTITIES. SEE GENERAL SUMMARY SHEET 9/33

DESIGN AGENCY
KOHLI & KALIHER ASSOCIATES, INC.
ENGINEERS AND SURVEYORS
2244 Baton Rouge Ave. Lima, Ohio 45805 419-227-1135

DESIGNED	DRAWN	REVIEWED	DATE
DJK	DJK	SAS	12-3-2019
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MAD		4900228	

GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. MAD-29-0702
OVER DUN DITCH NO. 2

MAD-29-7.02
PID No. 98177

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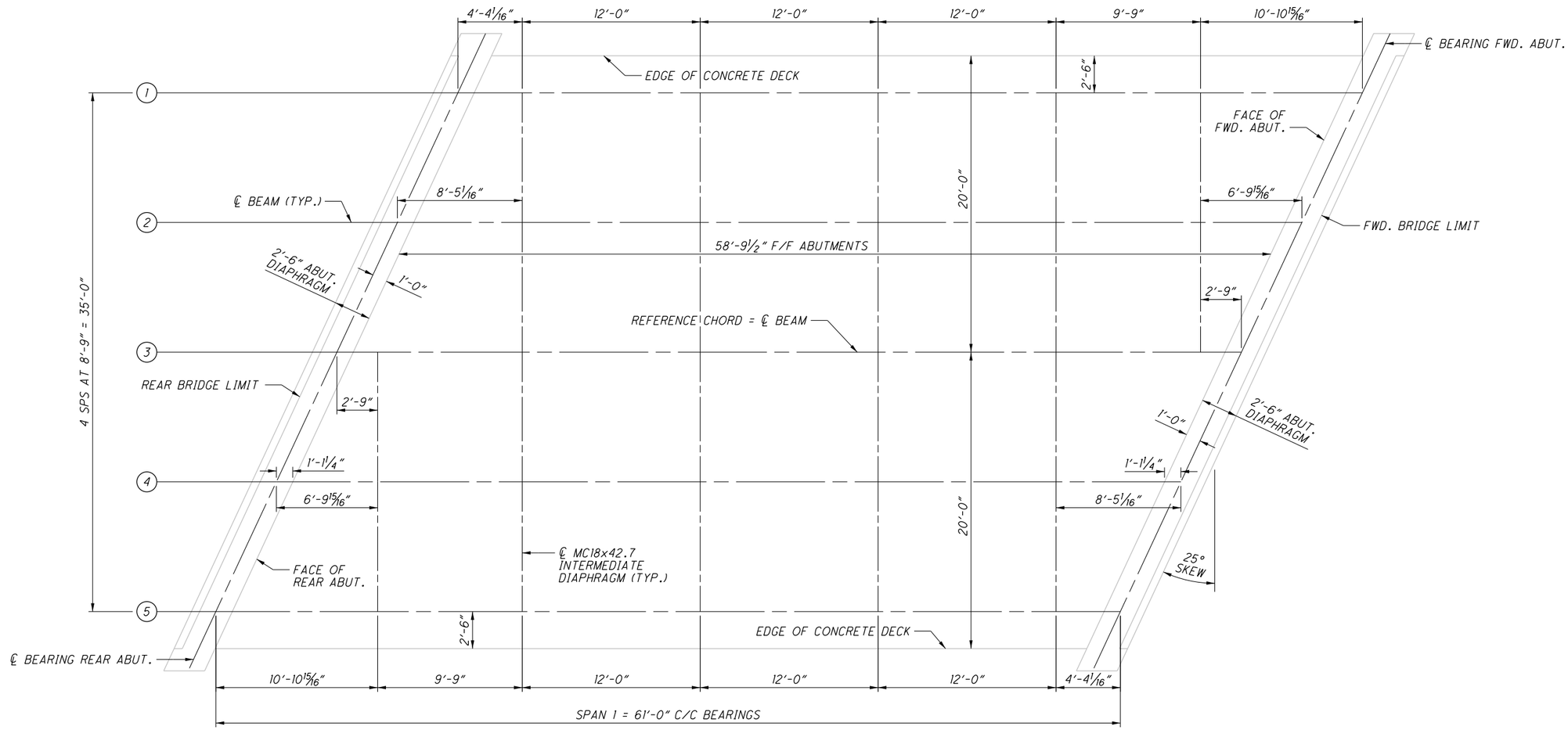
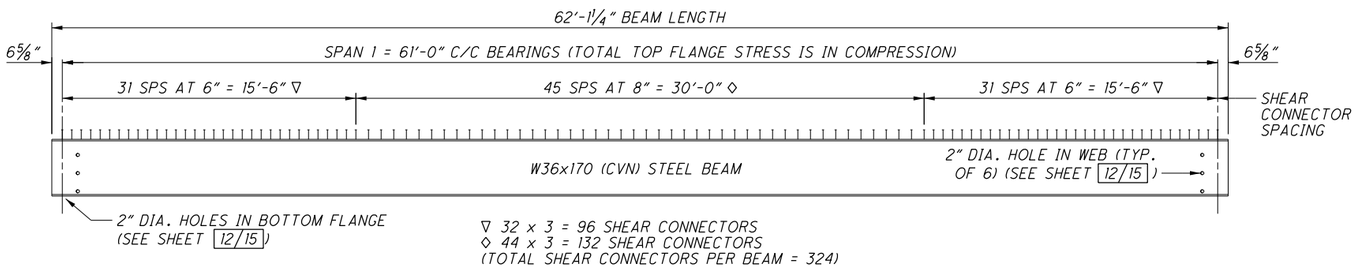


STEEL FRAMING PLAN



▽ 32 x 3 = 96 SHEAR CONNECTORS
◇ 44 x 3 = 132 SHEAR CONNECTORS
(TOTAL SHEAR CONNECTORS PER BEAM = 324)

TYPICAL BEAM ELEVATION

NOTES:

ABUTMENT DIAPHRAGM CONCRETE: PLACE THE DIAPHRAGM CONCRETE ENCASING THE STRUCTURAL MEMBER ENDS AT LEAST 48 HOURS BEFORE PLACEMENT OF THE DECK CONCRETE. LOCATE A HORIZONTAL CONSTRUCTION JOINT IN THE DIAPHRAGM AS SHOWN ON THE ABUTMENT SECTION ON PLAN SHEET 7/15 AND PLACE REMAINING DIAPHRAGM CONCRETE WITH THE DECK.

CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN C&MS 7H.01.

INTERMEDIATE DIAPHRAGMS SHALL BE MC18x42.7 CHANNELS AS PER THE DIAPHRAGM DESIGN TABLE FOR A 2'-6" OVERHANG ON SHEET 2 OF 4 OF STD. DWG. GSD-1-19. ALL HARDWARE SHALL BE GALVANIZED.

DO NOT WELD ANYTHING, INCLUDING ATTACHMENT OF SUPPORTS FOR A CONCRETE DECK FINISHING MACHINE, TO ANY AREAS OF THE GALVANIZED BEAMS. THIS WOULD CAUSE UNACCEPTABLE DAMAGE TO THE GALVANIZED COATING. NO QUALITY TOUCH-UP SYSTEM IS AVAILABLE TO HANDLE THE REPAIRS REQUIRED.

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RTH	RTH	SAS	12-3-2019
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MAD		4900228	

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAD-29-0702
OVER DUN DITCH NO. 2

MAD-29-7.02
PID No. 98177

11 / 15

29
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