







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 SBR-1-13 REVISED 7/20/18 7/18/14 SICD-1-96 REVISED SICD-2-14 REVISED 7/18/14 VPF-1-90 REVISED 7/20/18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS

SS800 DATED 4/17/20

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 THE ODOT BRIDGE DESIGN MANUAL, 2019.

DESIGN LOADING

DESIGN LOADING: HL-93

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 YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL 21/2" CONCRETE COVER

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.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

PROTECTION OF STEEL SUPPORT SYSTEMS:

BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS:

THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (PRESTRESSED BOX BEAM, I-BEAM, STEEL BEAM STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

EXISTING WELDED ATTACHMENTS:

REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE APPLIED CYCLIC STRESSES.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN (CONTINUED)

SUBSTRUCTURE CONCRETE REMOVAL:

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT. THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. INSTALL DOWEL BARS. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

MEASUREMENT & PAYMENT:

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

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 2.2 KIPS.

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

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF

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

VANDAL PROTECTION FENCING

INSTALL FENCING FOR EACH CONSTRUCTION PHASE PRIOR TO OPENING THAT PHASE TO VEHICULAR TRAFFIC.

SEQUENCE OF CONSTRUCTION

- 1. CONTRACTOR SHALL REMOVE EXISTING RIGHT (NORTHBOUND) BRIDGE DECK AND APPROACH SLABS.
- 2. MODIFICATIONS TO PIER CAPS AND ABUTMENTS SHALL BE PFRFORMED.
- 3. PROPOSED DECK, APPROACH SLABS, AND RAILING SHALL BE CONSTRUCTED.
- 4. OPEN BRIDGE TO TRAFFIC AND REPEAT STEPS 1 3 FOR LEFT (SOUTHBOUND) BRIDGE.
- 5. PAINT EXISTING STRUCTURAL STEEL FOR BOTH BRIDGES.

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ESTIMATED QUANTITIES
BRIDGE NO. MAD-142-1341 L&R
OVER INTERSTATE 70

3/36
86
119

				DESCRIPTION		PIERS						Ί		1			
	ITEM	TOTAL			ABUTMENTS LEFT RIGHT				LEFT RIGHT						SUPER.		SEE SHEET
	EXT.				REAR		REAR		1	2	3	1	2	3	LEET	RIGHT	NO.
	11001				NEAN	FWD.	NEAN	F W D.			3	<u>'</u>		3	LEFI	RIGHT	0.770
202 202	11201 22900	421	LUMP SQUARE YARD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN APPROACH SLAB REMOVED	107	106	104	104							+		2/36
202	22900	421	SQUARE TARD	AFFROACH SLAD REMOVED	107	100	104	104							+	+	+
503	11100		LUMP	COFFERDAMS AND EXCAVATION BRACING											+	+	+
503	21300		LUMP	UNCLASSIFIED EXCAVATION											+	+	
																	1
509	10001	240,800	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	1,700	1,700	1,700	1,700	1,300	1,300	1,300	1,300	1,300	1,300	113,100	113,100	2/36
510	10000	944	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	86	86	86	86	100	100	100	100	100	100			
	77504		5.00	OFFICE AUTEONAL PROPERTY OF THE PROPERTY OF TH													+
511	33501	4	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	/	/	/	/							+		22/36
511	34412	66	CUBIC YARD	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE	_		-								33	33	+
511	34446	606	CUBIC YARD	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK	-										303	303	+
511	34450	202	CUBIC YARD	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			 								101	101	+
511	42510	24	CUBIC YARD	CLASS QCI CONCRETE, PIER CAP					4	4	4	4	4	4			†
511	50210	78	CUBIC YARD	CLASS QC1 CONCRETE, SUBSTRUCTURE	19	20	20	19		<u> </u>		<u> </u>	<u> </u>				1
<i>512</i>	10050	2,043	SQUARE YARD	SEALING OF CONCRETE SURFACES (NON-EPOXY)	15	15	15	15	92	90	91	93	91	92	717	717	
																	_
513	20000	4,160	EACH	WELDED STUD SHEAR CONNECTORS											2,080	2,080	
<i></i>	00050	07.000	COLLABE FOOT	CUREAGE PREPARATION OF EVICTING CTRUSTURAL CITE											17.071	17.071	+
514 514	00050	27,862 27,862		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT											13,931	13,931 13,931	
514 514	00056	27,862		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT									+		13,931 13,931	13,931	+
514	00066	27,862		FIELD PAINTING OF STRUCTURAL STEEL, INTERMEDIATE COAT											13,931	13,931	+
514	00504	46	MAN HOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL											23	23	+
011	00007	,,,	<i></i>	STATES THE TENEN SELVENO ON ENECTING OTHER CHEEL											1 20		
516	10010	148	FOOT	ARMORLESS PREFORMED JOINT SEAL											74	74	1
516	13600	48	SQUARE FOOT	1" PREFORMED EXPANSION JOINT FILLER											24	24	1
<i>516</i>	13900	174		2" PREFORMED EXPANSION JOINT FILLER	49	50	38	37									
<i>516</i>	25000	686	SQUARE FOOT	NYLON REINFORCED NEOPRENE SHEETING	22	22									321	321	
<i>516</i>	44100	20	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE											10	10	
				(NEOPRENE) (8½" × 12" × 2.660" WITH 9½" X 13" X 1½" LOAD PLATE) ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE													+
<i>516</i>	44100	20	EACH	(NEOPRENE) (10" x 18" x 2.941" WITH 11" X 19" X 1½" LOAD PLATE)											10	10	
				ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE									1		+	+	+
516	44200	10	EACH	(NEOPRENE) (111/2" \times 18" \times 3.082" WITH 121/2" \times 19" \times 2" LOAD PLATE)											5	5	
															1	1	1
<i>516</i>	47001		LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN													2/36
518	21200	48	CUBIC YARD	POROUS BACKFILL WITH GEOTEXTILE FABRIC	12	12	12	12									
F:0	11101	000	COUADE FOOT	DATOURNO CONCRETE CIDUOTURE AC REP. 21 444			<u> </u>										10.77
519	11101	200	SQUAKE FOOT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	_		1		2	00					+		2/36
526	25000	410	SOUNDE VADO	REINFORCED CONCRETE APPROACH SLABS (T = 15")											205	205	
526 526	90030	148	FOOT	TYPE C INSTALLATION	-										74	74	+
020	30030	170	, , , , ,	THE GINGIALLATION											+ '7	+ '7	+
601	20010	289	CUBIC YARD	CRUSHED AGGREGATE SLOPE PROTECTION	76	67	71	75							†	+	1
							İ						1				1
607	39900	760	FOOT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC											380	380	T