

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

NONE

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

843 DATED 10-18-2019
 847 DATED 01-15-2021

DESIGN SPECIFICATIONS:

THE MODIFICATIONS TO THIS STRUCTURE CONFORM TO THE 9th EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

OPERATIONAL IMPORTANCE:

A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF ALL PROPOSED COMPONENTS OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE AND TOP OF BACKWALL)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

EXISTING DIMENSIONS:

ALL EXISTING DIMENSIONS ARE ±.

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 CMS 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 WHICH HAVE BEEN VERIFIED IN THE FIELD.

CONSTRUCTION PLANS FOR THE EXISTING STRUCTURE ARE ON FILE AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO 44125, AND ARE AVAILABLE FOR REFERENCE.

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

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT 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.

ITEM 509 - CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. IF DOWELS ARE NECESSARY FOR REPLACEMENT, PERFORM PER ITEM 510 AND INCLUDE WITH ITEM 509 FOR PAYMENT.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED IN THE PROPOSED WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN:

PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL WITH AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

ALL WORK AND EQUIPMENT REQUIRED FOR LOCATING EXISTING BARS SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 510, DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.

ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION:

THIS ITEM SHALL BE USED AS A CONTINGENCY ON THE RAILINGS, AS DETERMINED BY THE ENGINEER.

ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE WORK SHALL BE INCLUDED WITH ITEM 512, CONCRETE REPAIR BY EPOXY INJECTION.



ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK:
 SAW CUTTING OF THE CONCRETE DECK IS PROHIBITED.

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING ANY EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

A MICRO-SILICA MODIFIED CONCRETE MIX, AS SPECIFIED BELOW, SHALL BE USED AS A STARTING CONCRETE MIX DESIGN:

CONCRETE TABLE/QUANTITIES PER CUBIC YARD AGGREGATES (SSD)								
AGGREGATE TYPE	FINE AGGREGATE (LB)	#8 COARSE AGGREGATE (LB)	AGGREGATE TOTAL (LB)	CEMENT CONTENT (LB)	MICRO-SILICA (LB)	WATER TO CEMENT RATIO	AIR CONTENT ±2%	**FIBER (1 1/2" POLYPROPYLENE) (LB)
GRAVEL	1410	1430	2840	600	50	0.40	8	1
LIMESTONE	1410	1450	2860	600	50	0.40	8	1
SLAG	1300	1350	2650	600	50	0.40	8	1

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

** FIBER MESH SHALL BE 100% VIRGIN POLYPROPYLENE IN A FIBRILLATED-NETWORK FORM AND SHALL BE 1 1/2" IN LENGTH. (FIBER MESH WEIGHTS NOT INCLUDED IN MIX DESIGN)

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD):

MATERIAL	BULK SPECIFIC GRAVITY (SSD)
NATURAL SAND AND GRAVEL	2.62
LIMESTONE SAND	2.68
LIMESTONE	2.65
SLAG	2.30
MICRO-SILICA SOLIDS	2.20
PORTLAND CEMENT	3.15

THE WEIGHTS IN THE CONCRETE TABLE SHALL BE CORRECTED FOR ANY MATERIALS DIFFERING BY MORE THAN ±0.02 FROM THE BULK SPECIFIC GRAVITY LISTED ABOVE.

THIS ITEM SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER. ALL EQUIPMENT, LABOR, MATERIALS, AND INCIDENTALS, INCLUDING REMOVAL OF ANY ASPHALT PATCHES, REQUIRED TO PERFORM THE ABOVE DESCRIBED WORK SHALL BE INCLUDED FOR PAYMENT UNDER ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK.

ITEM 518 - STRUCTURE DRAINAGE, MISC.: CLEANING OUT SCUPPERS AND BRIDGE DRAINAGE SYSTEMS:

THIS ITEM CONSISTS OF REMOVING ALL DIRT, DEBRIS, AND OTHER OBSTRUCTIONS FROM THE SCUPPERS, DRAIN PIPES, DOWNSPOUTS, AND PIPE OUTLETS. THE DRAINAGE SYSTEM SHALL BE CLEANED USING METHODS THAT DO NOT DAMAGE THE COMPONENTS OF THE SYSTEM INCLUDING THE SUPPORTING ATTACHMENTS. ANY COMPONENTS DAMAGED DURING THE CLEANING PROCEDURE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. AFTER CLEANING, THE ENTIRE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER TO MAKE CERTAIN THE WATER FLOWS FREELY TO ITS OUTLET. ALL MATERIAL REMOVED FROM THE DRAINAGE SYSTEM SHALL BE PROPERLY DISPOSED OF.

ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO CLEAN OUT THE SCUPPERS AND DRAINAGE SYSTEMS, INCLUDING PROVIDING ACCESS TO INSPECT THE ENTIRE DRAINAGE SYSTEM BEFORE AND AFTER CLEANING, SHALL BE INCLUDED WITH ITEM 518, STRUCTURE DRAINAGE, MISC.: CLEANING OUT SCUPPERS AND BRIDGE DRAINAGE SYSTEMS.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN:
 THIS ITEM SHALL BE USED AS A CONTINGENCY ON THE RAILINGS WHERE THE DEPTH OF DETERIORATION IS MORE SUITED FOR THIS REPAIR RATHER THAN TROWELABLE MORTAR.

AS PART OF THIS WORK, CONTRACTOR MAY BE REQUIRED TO REMOVE AND REINSTALL FENCE POSTS IF NECESSARY TO PERFORM THE REPAIR.

ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE WORK SHALL BE INCLUDED WITH ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN.

ITEM 514 - FIELD PAINTING, MISC.: EXISTING VPF BASE PLATES

THIS ITEM CONSISTS OF CLEANING AND REPAINTING THE EXISTING VANDAL PROTECTION FENCE BASE PLATES ON TOP OF THE EXISTING BRIDGE RAILINGS WITH A TWO-COAT PAINT SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF C&MS 514, AS MODIFIED HEREIN.

REMOVE ALL EXISTING PAINT AND SURFACE CORROSION BY SANDBLASTING, WIRE BRUSH, OR OTHER METHOD ACCEPTABLE TO THE ENGINEER. APPLY A SPRAY-ON OR BRUSH-ON PRIME COAT COMPATIBLE WITH GALVANIZED STEEL SURFACES. APPLY A SPRAY-ON OR BRUSH-ON FINISH COAT COMPATIBLE WITH THE PRIME COAT. THE COLOR OF THE FINISH COAT SHALL BE BLACK, FEDERAL COLOR STANDARD NO. 17038.

INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN THE UNIT PRICE BID FOR ITEM 514, FIELD PAINTING, MISC.: EXISTING VPF BASE PLATES.

SFN	1802402
DESIGN AGENCY	
DESIGNER	CMR
CHECKER	DWW
REVIEWER	JMS
PROJECT ID	113823
SUBSET	2
TOTAL	6
SHEET	125
TOTAL	137