

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

DS-1-92	REVISED	07/15/2022
EXJ-2-81	REVISED	07/15/2022
PCB-91	REVISED	07/17/2020
TST-2-21	REVISED	01/17/2025

REFER TO THE FOLLOWING SPECIFICATIONS:

800	DATED	01/17/2025
848	DATED	07/19/2024

DESIGN SPECIFICATIONS:

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

DESIGN LOADING:

VEHICULAR LIVE LOAD: S-15-46

DESIGN DATA:

CONCRETE, QC/QA CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
 CONCRETE, CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
 REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI (EPOXY COATED AND GALVANIZED)
 STRUCTURAL STEEL - ASTM A709, GRADE 50, GALVANIZED, MINIMUM YIELD STRENGTH 50 KSI

MAINTENANCE OF TRAFFIC:

FOR MAINTENANCE PLANS, SEE ROADWAY SHEETS.

UTILITIES:

FOR UTILITY NOTES, SEE ROADWAY SHEETS.

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, 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 CMS 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.

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.

ITEM 509 - GALVANIZED STEEL REINFORCEMENT, AS PER PLAN:

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE STEEL REINFORCEMENT DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO C&MS 711.02.

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 CONCRETE REINFORCEMENT BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING STEEL REINFORCEMENT BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW CONCRETE REINFORCEMENT OF THE SAME SIZE, COATING, AND MATERIAL AT NO COST TO THE DEPARTMENT.

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

INSTALL ADHESIVE ANCHORS/DOWELS ACCORDING TO THE MANUFACTURE'S INSTALLATION INSTRUCTIONS PUBLISHED IN THE ICC-ES REPORTS LISTED BELOW.

THE HOLES FOR THE ADHESIVE ANCHORS SHALL BE DRILLED WITH A HAMMER DRILL AND CARBIDE BIT PRIOR TO THE INSTALLATION OF THE ANCHORS, CLEAN AND DRY THE HOLES IN A MANNER CONSISTENT WITH THE MANUFACTURE'S REQUIREMENTS FOR DRY CONCRETE.

[HTTPS://ICC-ES.ORG/EVALUATION-REPORT-PROGRAM/REPORTS-DIRECTORY/](https://icc-es.org/evaluation-report-program/reports-directory/)

SELECT FROM ONE OF THE FOLLOWING APPROVED PRODUCTS:

ADHESIVE ANCHOR/DOWEL SYSTEM OPTION 1 – ICC-ES ESR 4868
 ADHESIVE ANCHOR/DOWEL SYSTEM OPTION 2 – ICC-ES ESR 3298



ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN:

THIS WORK CONSISTS OF REPLACING THE EXISTING ELASTOMERIC COMPRESSION SEAL AS SHOWN IN THE PLANS.

FURNISH PLATES TO BE FIELD WELDED TO THE EXISTING JOINT ARMOR, A 4" ELASTOMERIC COMPRESSION SEAL, AND ½" Ø RETAINERS. THE MATERIAL, TESTING, AND INSTALLATION OF THE SEAL SHALL CONFORM TO THE ODOT STANDARD BRIDGE DRAWING EXJ-2-81.

THE DEPARTMENT WILL MEASURE THIS ITEM IN FEET BY LENGTH OF STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL COMPLETED IN PLACE.

PAYMENT FOR THIS ITEM INCLUDES, BUT IS NOT LIMITED TO: THE LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION OF EXPANSION JOINT, THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS. SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH C&MS 501.05. IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH C&MS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS. THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

ITEM 516 - REFURBISH BEARING DEVICE, AS PER PLAN:

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, REPLACEMENT OF ANY DAMAGED SHEET LEAD WITH PREFORMED BEARING PADS (C&MS 711.21), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60° F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISH BEARING DEVICE, AS PER PLAN.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN:

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

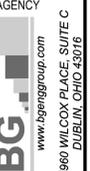
ABBREVIATIONS:

ABUT. - ABUTMENT	N.F. - NEAR FACE
ADT - AVERAGE DAILY TRAFFIC	NO. - NUMBER
ADTT - AVERAGE DAILY TRUCK TRAFFIC	N.P.C.P.P. - NON-PERFORATED CORRUGATED PLASTIC PIPE
APPR. - APPROACH	OHWM - ORDINARY HIGH WATER MARK
B - BOTTOM	O/O - OUT TO OUT
BM - BENCHMARK	P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE
BOT. OR BTM. - BOTTOM	P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
BRGS. - BEARINGS	PG - PROFILE GRADE
℄ - CENTERLINE	PROP. - PROPOSED
C/C - CENTER TO CENTER	PSF - POUNDS PER SQUARE FOOT
C.J. - CONSTRUCTION JOINT	P.V.I. - POINT OF VERTICAL INTERSECTION
CLR. - CLEAR	Q - FLOW RATE
CMS - CONSTRUCTION AND MATERIAL SPECIFICATIONS	R - RADIUS
CONC. - CONCRETE	R.A. - REAR ABUTMENT
CONSTR. - CONSTRUCTION	RCP - ROCK CHANNEL PROTECTION
DIA. - DIAMETER	REQD. - REQUIRED
DIM. - DIMENSION	RT. - RIGHT
DWG. - DRAWING	R/W - RIGHT OF WAY
E.F. - EACH FACE	SER. - SERIES
EL. OR ELEV. - ELEVATION	SHLDR - SHOULDER
E/P - EDGE OF PAVEMENT	SPA. - SPACE OR SPACES
EQ. - EQUAL	STA. - STATION
EST. - ESTIMATED	STD. - STANDARD
EX. - EXISTING	STR - STRAIGHT
F.A. - FORWARD ABUTMENT	T - TOP
F/F - FACE TO FACE	T&B - TOP & BOTTOM
F.F. - FAR FACE	TBR - TO BE REMOVED
FT. - FOOT OR FEET	TEMP. - TEMPORARY
FWD. - FORWARD	T.O.S. OR T/S - TOP OF SLOPE
HW - HIGH WATER	T/T - TOE TO TOE
IN. - INCH	TYP. - TYPICAL
INT. - INTEGRAL	U.N.O. - UNLESS NOTED OTHERWISE
JT. - JOINT	VAR. - VARIES
LT. - LEFT	V - VELOCITY
MAX. - MAXIMUM	
MIN. - MINIMUM	
MISC. - MISCELLANEOUS	

PROPOSED WORK

1. REMOVE DECK EDGE AND RAILING AND REPLACE WITH NEW DECK EDGE AND TST-2-21 RAILING.
2. USE HYDRODEMOLITION TO REMOVE 1" OF EXISTING DECK AND CONSTRUCT 1¾" SUPERPLASTICIZED DENSE OVERLAY.
3. VARIABLE MILL 1½" AT BEGINNING APPROACH SLAB TO ¾" END APPROACH SLAB AND RESURFACE WITH 1½" THICKNESS OF ITEM 441- ASPHALT CONCRETE SURFACE COURSE
4. REFURBISH EXISTING ABUTMENT BEARINGS.
5. REPLACE COMPRESSION SEALS.
6. REPAIR PIERS AT WATERLINE AND ADD ROCK CHANNEL PROTECTION.

SFN	2102730
DESIGNER	CHECKER
GLA	RG
REVIEWER	
GTB	10-30-24
PROJECT ID	107754
SUBSET	TOTAL
2	13
SHEET	TOTAL
P.85	P.136



ESTIMATED QUANTITIES						CALCULATED BY GLA DATE 10/16/2024		CHECKED BY SB DATE 10/23/2024		
ITEM	ITEM EXT.	TOTAL	PART. 01/STR	UNITS	DESCRIPTION	STRUCTURE FILE NUMBER 2102730				
						ABUTS.	PIERS	SUPER.	GENERAL	SHT. REF.
202	11203	LUMP	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2, 4, 5
202	23500	94	94	SY	WEARING COURSE REMOVED				94	
503	11100	LUMP	LUMP		COFFERDAMS AND EXCAVATION BRACING				LUMP	
509	10000	20537	20537	LB	EPOXY COATED STEEL REINFORCEMENT			20537		
509	20001	100	100	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN			100		2
509	26001	303	303	LB	GALVANIZED STEEL REINFORCEMENT, AS PER PLAN		303			2
510	10001	120	120	EA	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN (9" DOWELS)		120			2
511	34444	119	119	CY	CLASS QC2 CONCRETE, BRIDGE DECK			119		
511	40510	3	3	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS		3			
512	10050	161	161	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)		18	143		
512	10600	6	6	FT	CONCRETE REPAIR BY EPOXY INJECTION	6				
516	10501	66	66	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			66		2
516	45305	8	8	EA	REFURBISH BEARING DEVICE, AS PER PLAN			8		2
516	47001	LUMP	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		2
517	70100	562	562	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)			562		
518	22300	684	684	FT	SPECIAL - STEEL DRIP STRIP			684		
519	11101	436	436	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN		436			2
848	10200	860	860	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION (1 3/4" THICK)			860		
848	20000	680	680	SY	SURFACE PREPARATION USING HYDRODEMOLITION (1" NOMINAL THICKNESS)			680		
848	30200	6	6	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY			6		
848	50000	102	102	SY	HAND CHIPPING			102		
848	50100	LUMP	LUMP		TEST SLAB			LUMP		
848	50201	4	4	CY	FULL DEPTH REPAIR, AS PER PLAN			4		12

NOTE: ROCK CHANNEL PROTECTION AND PORTABLE BARRIER QUANTITIES CARRIED WITH ROADWAY QUANTITIES.

ESTIMATED QUANTITIES
 BRIDGE NO. DEL-00229-00.930
 S.R. 229 OVER OLENTANGY RIVER

SFN 2102730	
DESIGN AGENCY BG GROUP www.bgggroup.com 5960 WILCOX PLACE, SUITE C DUBLIN, OHIO 43016	
DESIGNER GLA	CHECKER RG
REVIEWER GTB 10-30-24	
PROJECT ID 107754	
SUBSET 3	TOTAL 13
SHEET P.86	TOTAL P.136