

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15	REVISED	1-20-2023
AS-2-15	REVISED	1-20-2023
ICD-2-18	REVISED	1-19-2024
PCB-91	REVISED	7-17-2020
PSID-1-13	REVISED	1-20-2023
SBR-1-20	REVISED	7-21-2023

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

800	DATED	7-19-2024
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DESIGN SPECIFICATIONS:

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

DESIGN LOADING:

HL-93 AND 0.06 KSF FWS

OPERATIONAL IMPORTANCE:

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN DATA:

CONCRETE, CLASS QC2 - COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)
CONCRETE, CLASS QC1 - COMPRESSIVE STRENGTH 4000 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615, OR A996 GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

PRESTRESSED CONCRETE BRIDGE MEMBERS:

CONCRETE FOR I-BEAMS:

COMPRESSIVE STRENGTH (FINAL) = 7000 P.S.I.

COMPRESSIVE STRENGTH (RELEASE) = 5000 P.S.I.

PRESTRESSING STRAND:

PRESTRESSING STRAND - ASTM A416, UNCOATED, SEVEN WIRE STRAND, GRADE 270, ULTIMATE STRENGTH = 270 K.S.I.

AREA OF STRANDS = 0.217 SQ. IN.

INITIAL STRESS = 202.5 K.S.I. (LOW RELAXATION STRANDS)

STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

STEEL SHEET PILES - ASTM A572 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

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

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED 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 AND 105.02.

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.

BRIDGE SCOUR:

SCOUR ELEVATIONS: THE DESIGN FLOOD AND CHECK FLOOD SCOUR ELEVATIONS ARE PROVIDED BELOW:

	REAR ABUTMENT	FORWARD ABUTMENT
DESIGN FLOOD (2% AEP)	1108.80	1104.82
CHECK FLOOD (1% AEP)	1108.80	1103.14

ENVIRONMENTAL COMMITMENT:

CONTRACTOR TO CONTACT GEauga COUNTY BOARD OF COMMISSIONERS WHEN PROJECT IS COMPLETE AND WAS PERFORMED ACCORDING TO THE SUBMITTED DOCUMENTATION AND GEauga COUNTY FLOOD REGULATIONS. CONTACT INFORMATION: DANIEL SPADA, CHIEF BUILDING OFFICIAL, AT 440-279-1780 OR DSPADA@CO.GEAUGA.OH.US.

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

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED UPON RECEIVING PERMISSION FROM THE ENGINEER. REMOVE EXISTING WEARING SURFACE, RAILING, AND DECK JOINTS. REMOVE AND DISPOSE OF ALL EXISTING REINFORCED CONCRETE DECKING. REMOVE EXISTING ABUTMENT AND WINGWALLS TO 1 FOOT BELOW FINISH GROUND AND REMOVE EXISTING PILES DOWN TO THE STREAM BOTTOM. REMOVE, CLEAR AND CLEAN UP ALL DEBRIS WHICH FELL DURING REMOVAL OPERATIONS. THE USE OF EXPLOSIVES AND/OR HEADACHE BALLS IS PROHIBITED. THE USE OF HOE RAM TYPE EQUIPMENT IS PROHIBITED DURING PHASE 1 CONSTRUCTION FOR REMOVALS WITHIN THREE FEET OF PORTIONS OF THE EXISTING STRUCTURE TO TEMPORARILY REMAIN UNLESS A FULL-DEPTH SAW CUT IS MADE PRIOR TO COMMENCING THE USE OF PNEUMATIC HAMMERS OR OTHER HEAVY EQUIPMENT. THE CONTRACTOR SHALL SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05. SUBMIT A DEMOLITION PLAN DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER AT LEAST 14 DAYS BEFORE STARTING THE DEMOLITION WORK.

THE CONTRACTOR MUST REVIEW THE STRUCTURE WHEN PREPARING HIS BID. THE CONTRACTOR WILL REVIEW THE CONDITION OF THE STRUCTURE TO DETERMINE WHAT DEBRIS WILL FALL FROM THE STRUCTURE DURING REMOVAL. THE CONTRACTOR WILL DETERMINE THE CORRESPONDING COST TO CLEAN UP ANY AND ALL DEBRIS WHICH FALLS FROM THE STRUCTURE DURING REMOVAL OPERATIONS. THE COST TO CLEAR AND CLEAN UP ALL DEBRIS DURING REMOVAL SHALL BE INCLUDED WITH THE BID FOR THIS ITEM OF WORK. NO ADDITIONAL COST WILL BE RECOGNIZED TO CLEAN DEBRIS RESULTING FROM THE STRUCTURE REMOVAL OPERATION.

ALL COSTS ASSOCIATED WITH EXISTING WEARING SURFACE REMOVAL INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT.

ITEM 518- 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN:

ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET OF THE DRAINAGE PIPES. THE STEEL BOLTS OR RODS FOR THE ANIMAL GUARDS SHALL BE GALVANIZED PER CMS 711.02. THE ANIMAL GUARDS AND CRUSHED AGGREGATE SLOPE PROTECTIONS, 601.06, AT END OF DRAINAGE PIPE (12" DEEP) ARE INCIDENTAL TO ITEM 518, 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 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 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 INCHES.

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 INCHES.

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

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING. THE DEPARTMENT WILL NOT MAKE ADDITIONAL PAYMENT FOR PROVIDING AN ALTERNATE DESIGN.

ITEM 507- PREBORED HOLES, AS PER PLAN:

PREBORED HOLES SHALL EXTEND AT LEAST 5-FT INTO BEDROCK AT EACH PILE. THE DIAMETER OF THE PREBORED HOLE SHALL BE A MINIMUM 2-IN LARGER THAN THE DIAGONAL DIMENSION OF THE PILE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AN OPEN HOLE.

THE PREBORED HOLES SHALL BE CLEAN AND FREE OF ALL DELETERIOUS MATERIALS PRIOR TO BACKFILLING OPERATIONS. BACKFILL THE VOID BETWEEN THE PILE AND THE PREBORED HOLE WITH CLASS QC MISC. CONCRETE UP TO THE TOP OF ROCK ELEVATION. ABOVE THE TOP OF ROCK, BACKFILL THE VOID TO THE BOTTOM OF FOOTING ELEVATION WITH GRANULAR MATERIAL CONFORMING TO 703.11, STRUCTURAL BACKFILL TYPE 2, EXCEPT 100 PERCENT OF THE MATERIAL SHALL PASS THROUGH A ¾-IN SIEVE. PAYMENT FOR THE PREBORED HOLES INCLUDES THE BACKFILL MATERIAL.

ITEM 507- STEEL PILES HP10X42, FURNISHED, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL PILES INTO PREBORED HOLES. PLACE EACH PILE VERTICALLY WITHIN THE HOLE SO IT IS NOT INCLINED MORE THAN ONE INCH BETWEEN THE TOP AND BOTTOM. SUPPORT THE PILE SO THAT IT DOES NOT MOVE DURING PLACEMENT OF BACKFILL MATERIAL.

THE TOTAL FACTORED LOAD IS 176-KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENTS.

THE ABUTMENT PILES WERE DESIGNED TO ACCOMMODATE 4.72-FT (REAR) AND 11.90-FT (FORWARD) OF SCOUR.

REAR AND FORWARD ABUTMENT PILES:
HP10X42 PILES 35-FT LONG, ORDER LENGTH

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE IN ACCORDANCE WITH THE DETAILS OF STANDARD DRAWING ICD-2-18, EXCEPT THE STEEL LAMINATE THICKNESS SHALL BE 0.1046" (12 GAGE) IN ACCORDANCE WITH BDM 306.4.2.1.

EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: GIRDER NUMBER, SUBSTRUCTURE UNIT, AND FORWARD STATION DIRECTION. THE MARK SHALL BE PLACED SO THAT IT WILL BE VISIBLE ONCE THE BEARING ASSEMBLY HAS BEEN INSTALLED.

THE TOTAL HEIGHT OF THE BEARING ASSEMBLY AT THE CENTERLINE OF BEARING SHALL BE 10" FOR ALL BEAM LINES. THE TOP OF THE HP10x42 SHALL BE CUT ON A SLOPE OF +3.10% FOR ALL BEARINGS AT THE REAR ABUTMENT AND +0.85% FOR ALL BEARINGS AT THE FORWARD ABUTMENT.

BASIS OF PAYMENT: THE UNIT PRICE BID INCLUDES ALL MATERIALS, LABOR, GALVANIZING, SHOP COATING, TESTING, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS INCLUDING STEEL LOAD PLATES, HP SHAPES, UPPER PLATES, AND EMBEDDED STEEL SOLE PLATES. PAYMENT WILL BE INCLUDED WITH ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (UPPER LOAD PLATE 1'-10" X 11" X ¾", LOWER LOAD PLATE 1'-7" X 11" X 1½", NEOPRENE 1'-6" X 10" X 1⅞").

ABBREVIATIONS:

ABUTS.	- ABUTMENTS
ADT	- AVERAGE DAILY TRAFFIC
ADTT	- AVERAGE DAILY TRUCK TRAFFIC
ASTM	- AMERICAN SOCIETY OF TESTING AND MATERIALS
BOT.	- BOTTOM
BRG./BRGS.	- BEARINGS
¢	- CENTERLINE
C/C	- CENTER TO CENTER
CF	- CUBIC FOOT
C.I.P.	- CAST-IN-PLACE
CLR.	- CLEARANCE
CONST.	- CONSTRUCTION
C.J.	- CONSTRUCTION JOINT
CY	- CUBIC YARD
DIA.	- DIAMETER
DWG.	- DRAWING
E.F.	- EACH FACE
E.O.P.	- EDGE OF PAVEMENT
E.O.S.	- EDGE OF SHOULDER
EL.	- ELEVATION
EQ.	- EQUAL
EX.	- EXISTING
EXP.	- EXPANSION
EXT.	- EXTENSION
F.F.	- FAR FACE
F/F	- FACE TO FACE
F.A.	- FORWARD ABUTMENT
FT/FT	- FOOT PER FOOT
FWD.	- FORWARD
GEN.	- GENERAL
INV.	- INVERT
I.R.	- INTERSTATE ROUTE
LT.	- LEFT
MAX.	- MAXIMUM
MID.	- MIDDLE
MIN.	- MINIMUM
MISC.	- MISCELLANEOUS
N.F.	- NEAR FACE
NO./#	- NUMBER
N.P.C.P.P.	- NON-PERFORATED CORRUGATED PLASTIC PIPE
N.T.S	- NOT TO SCALE
O/O	- OUT TO OUT
PCJ	- PHASED CONSTRUCTION JOINT
P.C.P.P.	- PERFORATED CORRUGATED PLASTIC PIPE
P.E.J.F.	- PERFORMED EXPANSION JOINT FILLER
P/G	- PROFILE GRADE
PROP.	- PROPOSED
PVI	- POINT OF VERTICAL INTERSECTION
R.A.	- REAR ABUTMENT
R.F.	- REAR FACE
REINF.	- REINFORCING
RT.	- RIGHT
R/W	- RIGHT OF WAY
SF	- SQUARE FOOT
S.O.	- SERIES OF
SPA.	- SPACES OR SPACING
S.R.	- STATE ROUTE
STA.	- STATION
STD.	- STANDARD
STM.	- STORM
SY	- SQUARE YARD
T.B.D.	- TO BE DETERMINED
T.R.	- TOWNSHIP ROUTE
T/T	- TOE TO TOE
TYP.	- TYPICAL

SFN	2800757
DESIGN AGENCY	
DESIGNER	CHECKER
JLU	RHC
REVIEWER	
ACB	01/24/24
PROJECT ID	111000
SUBSET	TOTAL
2	19
SHEET	TOTAL
P.27	52

