

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

A-1-69	REVISED	7-19-02
AS-1-81	REVISED	7-19-02
GSD-1-96	REVISED	7-19-02
PCB-91	REVISED	7-19-02
SBR-1-99	REVISED	7-19-02
SICD-1-96	REVISED	7-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

840	DATED	1-19-07
885	DATED	11-04-05

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING

HS20, CASE I AND THE ALTERNATE MILITARY LOADING. FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT.

DESIGN DATA

CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CLASS HP CONCRETE - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL - ASTM A709 GRADE 50, MINIMUM YIELD STRENGTH 50,000 PSI

STRUCTURAL STEEL (EXISTING) - GRADE 33, MINIMUM YIELD STRENGTH 33,000 PSI

STRUCTURAL STEEL (TEMPORARY SHEETING) - ASTM A328, MINIMUM YIELD STRENGTH 39,000 PSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL, TOP & BOTTOM MAT 2-1/2" 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 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.

UTILITY LINES

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

PILE SPLICES

IN LIEU OF USING THE FULL PENETRATION BUTT WELDS SPECIFIED IN CMS 507.09 TO SPLICE STEEL H-PILES, THE CONTRACTOR MAY USE A MANUFACTURED H-PILE SPLICER. FURNISH SPLICERS FROM THE FOLLOWING MANUFACTURER:

ASSOCIATED PILE AND FITTING CORPORATION
262 RUTHERFORD BLVD.
CLIFTON, NEW JERSEY 07014

INSTALL AND WELD THE SPLICER TO THE PILE SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN ASSEMBLY PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED.

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

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (GIRDERS, CROSS FRAMES, BEARINGS, 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 CMS 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 DIRECTOR. OBTAIN THE DIRECTOR'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 (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 DIRECTOR. OBTAIN THE DIRECTOR'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 FLANGES.

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.

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, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 203 EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL WITHIN 100 FEET OF THE ABUTMENT BACKWALLS IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT. SEE ROADWAY PLANS FOR DETAILS AND PAYMENT.

ITEM 507 - STEEL PILES HP12X53, DRIVEN, AS PER PLAN

PRE-BORE HOLES FOR PILE PLACEMENT OF 13 PILES NEAREST THE EXISTING 15" φ CMP AS SHOWN ON SHEET [21/67]. AFTER DRIVING THE PILE, FILL THE VOID BETWEEN THE PILE AND THE PRE-BORED HOLE PER ODOT CMS 507.11. ALL COSTS FOR THE PREBORED HOLES SHALL BE INCLUDED WITH ITEM 507 STEEL PILES HP12X53, DRIVEN, AS PER PLAN.

PILES TO BEDROCK

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL. AFTER ALL PILES WITHIN A GIVEN SUBSTRUCTURE UNIT HAVE BEEN FULLY DRIVEN, ALL PILES SHALL BE RE-TAPPED PRIOR TO COMPLETING PILE DRIVING ACTIVITIES. PILE TIP ELEVATIONS AT REFUSAL SHALL BE NO HIGHER THAN ELEVATION 595.0, OTHERWISE CONTRACTOR SHALL CONTACT ENGINEER FOR ADDITIONAL RECOMMENDATIONS.

THE ULTIMATE BEARING VALUE IS 135 TONS PER PILE FOR THE HP12X53 ABUTMENT PILES. THE ADDITION OF 48 TONS OF ULTIMATE BEARING VALUE PER ABUTMENT PILE IS DUE TO THE POSSIBILITY OF DOWN DRAG FORCES INDUCED BY EMBANKMENT SETTLEMENT.

THE ULTIMATE BEARING VALUE IS 109 TONS PER PILE FOR THE HP12X53 PIER PILES.

ABUTMENT PILES:
1 DYNAMIC LOAD-TESTING ITEM
43 REAR ABUTMENT PILES 55 FEET LONG, ORDER LENGTH
41 FORWARD ABUTMENT PILES 50 FEET LONG, ORDER LENGTH
PIER PILES:
1 DYNAMIC LOAD-TESTING ITEM
60 PILES 40 FEET LONG, ORDER LENGTH

PILE DRIVING CONSTRAINTS

PRIOR TO DRIVING PILES, CONSTRUCT THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FT BEHIND EACH ABUTMENT. DO NOT BEGIN THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, 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.

REPLACE ALL EXISTING REINFORCING STEEL 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 EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL 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 709.00.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

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 THE 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.

ITEM 512. SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN

SEALING SHALL COVER ALL THE EXPOSED SURFACES OF ABUTMENTS FOR THE TOTAL WIDTH OF ABUTMENTS. SEALING SHALL COVER ALL THE EXPOSED SURFACES OF PIERS FOR THE TOTAL WIDTH OF PIERS, EXCEPT FOR THE TOP SURFACE OF THE PIER CAP.


ALL SEALING OF CONCRETE SURFACES SHALL BE EPOXY-URETHANE AND COLOR OF THE URETHANE TOP COAT SHALL BE FEDERAL COLOR NO. 595B-27722 (BUFF). (UNLESS NOTED OTHERWISE)

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 513, THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING CROSS-FRAME LOCATIONS PRIOR TO FABRICATION OF PROPOSED GIRDERS. ALL FIELD TOUCH-UPS OF THE SHOP APPLIED INORGANIC ZINC PRIME COAT SHALL BE CONSIDERED INCIDENTAL TO THE BID PRICE FOR STRUCTURAL STEEL. PAYMENT SHALL BE INCLUDED WITH ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 4, AS PER PLAN.

ITEM 513 - STRUCTURAL STEEL, MISC: GIRDER REPAIR, AS PER PLAN

A CONTINGENCY QUANTITY OF 15 FEET HAS BEEN INCLUDED IN THE PLANS FOR ANY ADDITIONAL REPAIRS AS APPROVED BY THE ENGINEER.

 DESIGN AGENCY PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC. 614 W. SUPERIOR AVE., SUITE 400 CLEVELAND, OHIO 44115	DATE	6-19-08
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GENERAL NOTES BRIDGE NO. LAK-2-0400 L&R STATE ROUTE 2 OVER VINE STREET		
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