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CONST. NO. 79011-3266-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-1(283)	2015	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

GENERAL NOTES:

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (JANUARY 1, 2015 EDITION).

LOADING: HL-93 LIVE LOADING; SEISMIC CATEGORY "C" WITH A_S = 0.400, S_{DS} = 0.839, S_{D1} = 0.359, (1000 YEAR RETURN PERIOD). DEAD LOAD INCLUDES 35 LB/SQ. FT. FOR FUTURE WEARING SURFACE.

DESIGN SPECIFICATIONS: AASHTO LRFD SEVENTH EDITION, 2014, AND THE 2011 AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN, EDITION 2 (WITH INTERIMS.)

CONCRETE: TO BE CLASS "A" f'_c = 3000 PSI EXCEPT AS NOTED OTHERWISE.

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH METHOD 3 IN ARTICLE 604.22 OF THE STANDARD SPECIFICATIONS.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO MAIN STRUCTURAL MEMBERS OR REINFORCING STEEL. SEE STANDARD DRAWINGS STD-4-1 THRU 4 AND ARTICLE 604.05 OF THE STANDARD SPECIFICATIONS.

BEARING DEVICES SHALL BE IN ACCORDANCE WITH THE DETAILS AND DIMENSIONS SHOWN ON DRAWING NO. U-56-127.

REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE. SEE SECTION 604 AND 907 OF THE STANDARD SPECIFICATIONS.

FRICTION PILES: TO BE PRECAST CONCRETE PILES (SIZE 1). AFTER EXCAVATION TO THE PROPOSED FOOTING ELEVATIONS, A TEST PILE SHALL BE DRIVEN AT EACH SUBSTRUCTURE AT THE LOCATION DESIGNATED ON DRAWING NUMBER U-56-140. A LOAD TEST WILL THEN BE APPLIED TO THE TEST PILE IN ABUT. NO. 1. FROM THE RESULTS OF THE LOAD TEST, THE ENGINEER OF STRUCTURES WILL DETERMINE THE REQUIRED LENGTH OF THE PRODUCTION PILES AND MINIMUM REQUIRED BEARING. FOR PILE DESIGN LOADS AND CUT-OFF ELEVATIONS, SEE TABLE ON DRAWING NUMBER U-56-107.

THE CONTRACTOR SHALL INSTALL PILING SUCH THAT ALL THE FOLLOWING REQUIREMENTS ARE MET. THE TIP ELEVATION FOR ALL TEST PILES AND PRODUCTION PILES SHALL BE EQUAL TO OR BELOW THE MINIMUM PILE TIP ELEVATION SHOWN ON THE PLANS. IN ADDITION, TEST PILES TO BE LOAD TESTED SHALL BE INSTALLED TO AT LEAST THE SPECIFIED BEARING SHOWN ON THE PLANS OR FULL LENGTH; ALL OTHER TEST PILES SHALL BE INSTALLED TO AT LEAST 1.5 TIMES THE SPECIFIED BEARING SHOWN ON THE PLANS OR FULL LENGTH. ALL PRODUCTION PILES SHALL BE INSTALLED FULL LENGTH UNLESS EXCESSIVELY HARD DRIVING WHICH MIGHT DAMAGE THE PILES IS ENCOUNTERED. IF THE PRODUCTION PILES DO NOT ACHIEVE THE MINIMUM REQUIRED BEARING, THE ENGINEER OF STRUCTURES WILL DETERMINE IF ADDITIONAL PILES ARE REQUIRED.

IN THE EVENT THAT DRIVING THE TEST PILE TO AT LEAST THE MINIMUM TIP ELEVATION OR DRIVING THE PRODUCTION PILE FULL LENGTH MIGHT DAMAGE THE PILE BECAUSE OF EXCESSIVELY HARD DRIVING, THE CONTRACTOR SHALL USE OTHER METHODS APPROVED BY THE ENGINEER FOR INSTALLING THE PILES SUCH AS JETTING OR PRE-DRILLING HOLES. HOWEVER, ALL PILES MUST BE DRIVEN BY HAMMER FOR THE LAST FEW FEET OF PENETRATION. NO MEASUREMENT FOR PAYMENT WILL BE MADE FOR PRE-DRILLING HOLES OR FOR JETTING PILING TO OBTAIN THE REQUIRED PILE PENETRATION.

THE PILE LOAD TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE SPECIFICATIONS. THE PILE LOAD TEST APPARATUS FOR APPLYING LOADS AND MEASURING MOVEMENT SHALL MEET THE REQUIREMENTS OF ASTM D1143, STANDARD METHOD OF TESTING PILES UNDER STATIC AXIAL COMPRESSIVE LOAD. WHEN INSUFFICIENT CLEARANCE IS AVAILABLE WITHIN AN EXCAVATION, THE CLEARANCE REQUIREMENTS IN ARTICLE 4.1.1 MAY BE REDUCED, BUT ONLY WITH PRIOR APPROVAL OF THE ENGINEER.

ALTERNATE PILES: THE CONTRACTOR MAY USE PILING OF A DIFFERENT MATERIAL OR CONFIGURATION FROM THAT SHOWN ON THE PLANS PROVIDED THE SUBSTITUTION MEETS MINIMUM DESIGN STANDARDS AND SPECIFICATIONS, AND IS APPROVED BY THE ENGINEER.

FOUNDATION PREPARATION: SEE SECTION 204 OF THE STANDARD SPECIFICATIONS. IF COFFERDAMS ARE REQUIRED, THEY SHALL BE IN ACCORDANCE WITH SECTION 204.09 OF THE STANDARD SPECIFICATIONS.

BRIDGE RAIL SYSTEM: BUILD BRIDGE RAILINGS ACCORDING TO STANDARD DRAWING STD-1-1SS. THE RAILING SHALL BE FORMED AND CAST PLUMB, NOT PERPENDICULAR TO THE SLAB. THE DIMENSIONS AT THE TRAFFIC FACE SHALL BE KEPT CONSTANT, WITH VARIATION DUE TO CROSS SLOPE ACCOMMODATED AT THE REAR FACE.

NOTE: THE CONTRACTOR SHALL PROVIDE 100% CONVENTIONAL FALL PROTECTION FOR WORKERS INSTALLING DECKING ABOVE 15 FEET.

SPECIAL NOTE FOR UTILITIES: IT IS INTENDED THAT THE COST OF MATERIALS AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF UTILITIES SHALL NOT BE PAID FOR AS A BRIDGE ITEM. THE CONTRACTOR SHALL COOPERATE WITH OTHERS IN THE INSTALLATION OF UTILITIES WITH NO ADDITIONAL COMPENSATION ALLOWED THE CONTRACTOR AS A RESULT.

SHOP DRAWINGS: SEE SECTION 105.02 OF THE STANDARD SPECIFICATIONS.

CONCRETE SEALER: CONCRETE SEALER SHALL BE APPLIED TO SUBSTRUCTURES COINCIDING WITH EXPANSION JOINT LOCATIONS BEFORE PLACEMENT OF BEARING DEVICES AND APPLYING TEXTURE COATING. CONCRETE SEALER SHALL BE APPLIED TO THE FRONT VERTICAL FACE OF THE ABUTMENT BACKWALL, THE FRONT AND TOP OF THE ABUTMENT BEAM, AND ANY OTHER FACES THAT ARE DEEMED NECESSARY BY THE ENGINEER.

CONCRETE SHALL BE CLEAN AND DRY BEFORE APPLYING THE CONCRETE SEAL, AND THE THICKNESS OF THE SEAL SHALL BE AS RECOMMENDED BY THE SEALANT MANUFACTURER. ACCEPTABLE CONCRETE SEALERS ARE INCLUDED IN THE QUALIFIED PRODUCTS LIST FOR NON-PENETRATING CONCRETE SEALS MAINTAINED BY THE DIVISION OF MATERIALS AND TESTS. THE SEALER SHALL BE CLEAR OR SIMILAR TO THE COLOR OF EXISTING CONCRETE SURFACES TO BE SEALED. THE COST OF THE SEALER, COMPLETE AND IN PLACE, SHALL BE INCLUDED IN THE UNIT PRICE OF THE EXPANSION DEVICE AT EACH SUBSTRUCTURE.

WELDING: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES ON DRAWING NO. U-56-111.

PAINT: INORGANIC ZINC WITH URETHANE FINISH BROWN TOP COAT CONFORMING TO FEDERAL STANDARD 595C, (SPEC. NO. 30059).

RADIOGRAPHIC, ULTRASONIC, AND MAGNETIC INSPECTION: SEE SECTION 602 OF THE STANDARD SPECIFICATIONS AND NOTES ON DRAWING NO. U-56-111.

STEEL STRUCTURES: SEE TENNESSEE STANDARD SPECIFICATIONS SECTION 602 AND NOTES ON DRAWING NO. U-56-111.

PROTECTION OF SUBSTRUCTURES: SINCE THIS BRIDGE UTILIZES WEATHERING STEEL, THE CONTRACTOR MUST TAKE SPECIAL PRECAUTIONS TO PREVENT STAINING OF BENTS AND ABUTMENTS. PRIOR TO THE ERECTION OF ANY STEEL, THE TOPS AND SIDES OF THE COMPLETED SUBSTRUCTURES SHALL BE PROTECTED FROM STAINING BY WRAPPING WITH TRANSLUCENT, REINFORCED, HIGH DENSITY, TWO-PLY, CROSS-LAMINATED POLYETHYLENE. IN LIEU OF THIS PROTECTION, THE CONTRACTOR MAY ELECT TO THOROUGHLY CLEAN THE CONCRETE OF RUST STAINING BY SANDBLASTING OR OTHER APPROVED METHODS, PRIOR TO APPLYING A TEXTURE-COATED FINISH. NO SEALANT-TYPE MATERIALS SHALL BE APPLIED WHICH ARE INCOMPATIBLE WITH THE TEXTURE COATED FINISH UNLESS THEY CAN BE THOROUGHLY REMOVED PRIOR TO APPLYING THE FINISH. TEXTURE COATING OF THE SUBSTRUCTURE SHOULD BE DELAYED UNTIL AFTER THE DECK IS COMPLETED. AFTER A SUBSTRUCTURE HAS RECEIVED ITS FINAL FINISH, THE TOP AND SIDES SHALL BE PROTECTED FROM STAINING BY WRAPPING WITH REINFORCED POLYETHYLENE, WHICH, IF BEING REUSED SHALL BE IN GOOD CONDITION AND FREE FROM HOLES AND TEARS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THE SUBSTRUCTURES FROM STAINING FOR THE DURATION OF THE CONTRACT. ANY CORRECTIVE TEXTURE COATING SHALL BE AT HIS EXPENSE. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS.

BLAST CLEANING: THE FASCIA GIRDERS AND ALL FAYING SURFACES OF FIELD SPLICES OF ALL GIRDERS SHALL BE BLAST-CLEANED IN ACCORDANCE WITH THE STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS "NO. 6 COMMERCIAL BLAST CLEANING" SSPC-SP 6. PRIOR TO BOLTING, ANY LOOSE RUST ON THE FAYING SURFACES SHALL BE REMOVED.

UTILITIES: WHERE UNDERGROUND UTILITIES MAY BE ENCOUNTERED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THESE UTILITIES FROM ANY DAMAGE. WHERE RELOCATION OR READJUSTMENT OF THE UTILITY MAY BE REQUIRED, IT SHALL BE DONE BY THE OWNER OF THE SAME.

FINAL APPEARANCE: PRIOR TO FINAL ACCEPTANCE, ALL STRUCTURAL STEEL SHALL BE FREE OF GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPATTER AND SIMILAR SOILAGE. DEPENDING ON THE LOCATION, WITH RESPECT TO VIEW, AND SEVERITY OF THE FORE-GOING SOILAGE, THE STRUCTURAL STEEL SHALL BE CLEANED UNDER THE PROVISIONS OF ONE OF THE FOLLOWING STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS; "NO. 1 SOLVENT CLEANING" SSPC-SP 1, "NO. 2 HAND CLEANING" SSPC-SP 2, "NO. 3 POWER TOOL CLEANING" SSPC-SP 3 OR "NO. 7 BRUSH-OFF BLAST CLEANING" SSPC-SP 7.

WEATHERING BOLTS: ALL BOLTS SHALL BE ASTM A-325, TYPE 3. ALL BOLTS, NUTS AND WASHERS SHALL HAVE THE SAME WEATHERING CHARACTERISTICS AS THE STRUCTURAL STEEL USED. IN LIEU OF USING DIRECT TENSION INDICATORS (DTI'S), ALL BOLTS SHALL BE INSTALLED BY EITHER TURN-OF-NUT TIGHTENING OR CALIBRATED WRENCH TIGHTENING IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, CURRENT EDITION.

WEATHERING STEEL: ALL WEATHERING STEEL SHALL HAVE ATMOSPHERIC CORROSION RESISTANCE EQUAL TO OR BETTER THAN TWO TIMES THAT OF CARBON STRUCTURAL STEEL WITH COPPER.

PAINTING GIRDERS BELOW EXPANSION JOINTS: WEATHERING STEEL GIRDERS BELOW EXPANSION JOINTS AT ABUTMENT NOS. 1 AND 2 SHALL BE PAINTED FOR A MINIMUM DISTANCE OF $1\frac{1}{2}$ TIMES THE DEPTH (1.5D) OF THE GIRDER ON EITHER SIDE OF THE JOINT. THE COLOR OF THE TOP COAT SHALL BE BROWN, FEDERAL STANDARD COLOR 595C, COLOR NO. 30059.

RIP-RAP: MACHINED RIP-RAP SHALL BE CLASS "B" IN ACCORDANCE WITH SECTION 709 OF THE STANDARD SPECIFICATIONS AND SHALL BE MEASURED AND PAID FOR UNDER ROADWAY ITEM NO. 709-05.08.

VALUE ENGINEERING ALTERNATE BRIDGE DESIGN CRITERIA: ALTERNATE BRIDGE DESIGN PROPOSALS MAY NOT DIMINISH THE FUNCTIONAL OR STRUCTURAL EQUIVALENCY OF THE BRIDGE AND MUST MEET OR EXCEED BOTH THE SERVICE LEVEL AND ULTIMATE CAPACITIES OF THE CONTRACT PLANS STRUCTURE. ADDITIONALLY, THE WATERWAY OPENING AND FLOOD CLEARANCES MAY NOT BE REDUCED.

REQUIREMENTS AND RESTRICTIONS FOR PHASE CONSTRUCTION

1. THE LOCATION OF LONGITUDINAL CONSTRUCTION JOINTS SHALL NOT BE CHANGED TO ACCOMMODATE REMAIN-IN-PLACE DECK FORMS.
2. TWO 12'-0" TRAFFIC LANES SHALL BE MAINTAINED AT ALL TIMES.
3. NO SHEET PILES OR BEARING PILES MAY BE DRIVEN FROM THE EXISTING OR PROPOSED STRUCTURE.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.21 OF THE TENNESSEE STANDARD SPECIFICATIONS. A CLASS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEM NO. 604-04.01.

DESIGNED BY ADAM PRICE DATE 06-14
DRAWN BY CHRIS STAPLER DATE 02-15
SUPERVISED BY C.M.D./J.W.F. DATE 02-15
CHECKED BY ADAM PRICE DATE 04-15

CORRECT ____ ENGINEER OF STRUCTURES

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES
STATE ROUTE 1
OVER
LOOSAHATCHIE RIVER
STATION 1197+55.00
SHELBY COUNTY
2015

U-56-106