GENERAL BRIDGE NOTES

REVISIONS		
	DESCRIPTION	DATE
1	REVISED NOTE	6/21/16

SPECIFICATIONS:
All construction and materials shall be in accordance with the 2009 Oklahoma Standard Specifications for Highway Construction and Special Provisions. (See Proposal for Special Provisions).

CONCRETE:
Concrete for drilled shafts, approach slabs, deck slab and Traffic rails shall be Class AA, f'c = 4,000 psi minimum strength at 28 days. Concrete for abutments and piers shall be Class A, f'c = 3,000 psi minimum strength at 28 days.
Equip concrete vibrators with a sheath designed to prevent Damage to epoxy coatings when vibrating concrete containing Epoxy coated reinforcing steel.

PIER AND ABUTMENT CHAMFER REQUIREMENT:
All exposed concrete edges (excluding pedestal edges which shall have ¾" chamfer) shall have 1½" chamfer unless otherwise noted. All chamfer strips shall be sized lumber.

REINFORCING STEEL:
All reinforcing steel shall have 2" clearance unless otherwise shown or noted. All reinforcing steel shall be AASHTO M31 (ASTM A615) Grade 60.

STAY-IN-PLACE FORMS:
Stay-in-Place Steel Deck Forms may be used if the minimum Deck Slab thickness of 8" is obtained by measuring from the top of the Deck Slab to the top flange of the steel corrugation. No additional concrete weight of the Deck Slab is permitted. Additional steel of the Deck Forms shall not exceed 5 P.S.F. Preformed styrofoam or any other filler material must be bonded to the steel stay-in-place forms.
Stay-in-Place Prestressed Concrete Deck Forms may be used if the following conditions are met:

(1) Shop drawings and structural calculations for the forms are submitted to the Bridge Engineer for approval.

(2) A new structural design, structural calculations, and a new reinforcing schedule for the Deck Slab is submitted to the Bridge Engineer for approval.

(3) Shop drawings, new Deck Slab reinforcing schedule, structural designs, and calculations shall be prepared by and sealed by a Professional Engineer registered in the State of Oklahoma.

All cost associated with the use of Stay-in-Place Forms including all materials, labor, equipment, incidentals, and professional services shall be at the Contractor's expense. For additional information concerning the use of Stay-In-Place Forms, See Section 502 of the 2009 Standard Specifications.

PENETRATING WATER REPELLENT SURFACE TREATMENT:
A penetrating water repellent surface treatment shall be applied to the following concrete surfaces of the bridge:

a) Edges and underside cantilever portion of the deck slab.
b) The outer face and bottom of the exterior P.C. Beams.
c) The roadway face, top and inside of the post openings of the traffic rails.
d) The front face of the abutment backwall, the top and pedestals and exposed face and sides of the bridge seat and 1'-3" of the side of the wingwalls.
e) Top and sides of Pier Cap and Pedestals, also the ends and bottom of the outside cantilever of Pier Caps.
f) The roadway face and top of Traffic Rails on Approach Slabs.

BRIDGE DECK CONSTRUCTION METHODS:
Any steel used by the Contractor to facilitate deck construction, such as Insert Weld Anchors, Ty-Bar Clips, Form Hangers or other appurtenances, that remain in place in the bridge deck, must be epoxy coated or galvanized. Epoxy coat in accordance with AASHTO M284 or galvanize in accordance with AASHTO M111.

DECK HAUNCHES:
Plan quantity for Class AA Concrete includes an amount for the haunches over the beams. The Contractor shall take survey shots and measurements as necessary to calculate the actual haunch thickness at tenth points along the length of the haunch and submit those results to the Engineer for approval.

SEALING BRIDGE DECK CONSTRUCTION JOINTS:
The approach slab/deck slab construction joints shall be sawed and sealed. The constructions joints over fixed Piers 2 and 4 shall be sealed using High Molecular Weight Methacrylate in accordance with Section 523 of the 2009 Standard Specifications.

SHEETING AND SHORING:
Sheeting and Shoring shall be the responsibility of the Contractor and shall be designed by a Registered Professional Engineer in the State of Oklahoma. Design calculations and drawings shall be submitted to ODOT Bridge division for approval, prior to construction. The limits of the sheeting and shoring are to be determined by the Contractor. See Section 502.04.D of the 2009 Standard Specifications. All cost of sheeting and shoring to be included in other items of work.

ABUTMENT PILING CAPACITY:
The factored reaction for each pile is 99.7 Tons at Abutment No. 1 and 65.3 Tons at Abutment No. 2.
The following formula (Gates Equation) shall be used to determine the axial load resistance of the driven foundation piles:

Axial Load Resistance = ϕ [(0.875 $\sqrt{E}$ LOG_{10}(10N))-50] (TONS)
Where:
- ϕ = Resistance Factor of 0.4
- E = Energy produced by the hammer per blow in foot-pounds. For gravity and single acting diesel hammers, the value is based on the actual ram stroke observed in the field and measured in feet multiplied by the ram weight in pounds.
- N = Average number of hammer blows per inch of pile penetration for the last 10 to 20 blows delivered to the pile head.

The above formula is only applicable when:
- The pile driving hammer has a free fall (Gravity & Single Acting Hammers only)
- The head of the pile is not broomed, crushed or otherwise damaged.
- The penetration is quick and uniform.
- There is no appreciable rebound of the hammer and a follower is not used.

The number of blows per inch of pile penetration may be measured either during initial driving or by re-driving with a warm hammer operated at full energy after a pile set period, as determined by the Engineer.
If water jets are used in connection with the driving, determine the axial load resistance by the formula shown only after the jets have been withdrawn.

PILE DRIVING EQUIPMENT:
Use a pile driving hammer of the size and type capable of consistently delivering the effective dynamic energy sufficient to drive the piles to the required tip elevation and to achieve the axial load resistance without exceeding the limitations set on the allowable driving stress in accordance with Section 514.03.A(2).

RIPRAP:
A 24" thick layer of Type I-A Plain Riprap with a 6" thick layer Type I-A Filter Blanket shall be placed at the abutments as shown in the plans in accordance with Section 601 and other applicable sections of the 2009 Standard Specification for Highway Construction. The Filter Blanket shall be placed in one layer. The Riprap and Filter Blanket shall be placed in such a way as to not impede the flow of the channel and in a manner approved by the Engineer. The Contractor shall take care to insure that the Riprap and Filter Blanket are not placed over the location of any existing utility lines or beyond the limits of the right-of-way. The contractor is responsible for locating and preserving the integrity of existing and new utilities and rights-of-way.

404 AND DEQ PERMITS:
If the contractor elects to build a road(s) within the limits of the channel in order to perform work, the contractor will be responsible for effective erosion and sediment control in accordance with the Corps of Engineers 404 permit which is included in the contract. If the area of disturbance is one or more acres and is not already covered by a DEQ permit, The contractor will be required to obtain a DEQ storm water construction permit which will include an application (notice of intent) to DEQ prior to earth disturbing activities, a storm water pollution prevention plan and the installation and maintenance of erosion and sediment controls. In addition, the contractor will be responsible for permanent stabilization measures after removal of the work road(s). All costs associated with the contractors' work road including a DEQ permit, erosion and sediment controls and permanent stabilization, etc. Will be the responsibility of the contractor.

VERIFICATION OF EXISTING CONDITIONS:
Bidders shall fully inform themselves of the nature of the work and conditions under which it will be performed. The Contractor shall adopt methods consistent with good construction practice and shall take all necessary precautions to prevent damage to the new bridge structures or attachments. Any damage to the new bridge structures or roadway due to the Contractor's negligence shall be repaired at the Contractors expense, to the satisfaction of the Engineer. Construction plans for the existing bridge structure may be obtained from the Reproduction Branch of the Oklahoma Department of Transportation.
Originally Constructed as: N.R.H.326 SEC D-BR

TEMPORARY WORK ROAD:
Work roads shall be constructed to the Size and Specification as shown in the "Typical Section Thru Work Road" on the General Plan & Elevation sheets. Temporary Work Road to be Removed at End of Construction. Channel and stream banks to be returned to normal flow and condition after the completion of all construction activities.

UTILITIES:
(CAUTION) The location of all utilities as shown are approximate due to relocation planned or presently under construction. All utilities that would interfere with construction of new bridge should be relocated by the utility owners prior to start of construction. There are some utilities that will be relocated and not shown on these plans. The Contractor shall verify that the utilities have been relocated prior to starting construction. The Contractor shall be responsible for any damage to all utilities.
No payment will be made for removal of abandoned utility pipe lines that interfere with construction. All cost to be included in other items.

1 USGS STREAM GAGE STATION:
There is a stream gage station on the south bank of the Kiamichi River attached to the main bridge. If it is not removed prior to construction, please notify Mr. Jason Lewis at (405) 810-4400 or Mr. Jason Masoner at (405) 481-5027 with the USGS Oklahoma Water Science Center before construction begins. It will be the responsibility of the USGS to remove and relocate the Gage Station.

PUSHMATAHA COUNTY

Design	ML	6-12
Drawn	DAC	6-12
Checked	SD	8-12
Approved		
Squad	POE	

BRIDGE "A" U.S. 271 OVER KIAMICHI RIVER

SUMMARY OF PAY QUANTITIES AND GENERAL NOTES (BRIDGE)

State Job No. 26346(04) Sheet No. 10

JUN 21, 2016 - 11:03:04
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