OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	OKLA.	29775(04)			
REVISIONS					
DESCRIPTION				DATE	

GENERAL NOTES FOR BRIDGE "A" (CONTINUED)

DECK HAUNCHES:
Plan quantity for Class AA Concrete includes 6.40 cubic yards for the haunches over the beams. The haunch heights will be calculated by the Contractor for approval by the Engineer to provide for dead load deflection and beam camber. No payment will be made for differences between plan quantity and the actual quantity of haunch concrete.

STAY-IN-PLACE FORMS:
Stay-in-place deck forms may not be used.

ENGINEERED FALSEWORK
For the design and construction of temporary structures, comply with Section 502 of the 2009 Standard Specifications for Highway Construction and the requirements noted below.

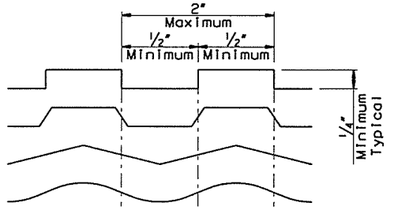
The contractor is responsible for all layout and design of the temporary structures. The contractor shall prepare preliminary and final submittals for working drawings and calculations. The preliminary submittal shall show the type of system to be used and preliminary member sizes. Once the preliminary submittal is approved, the contractor shall prepare the final working drawings and calculations as specified in Section 502.04 of the Standard Specifications. The temporary support working drawings shall include descriptions and values of all loads, including construction equipment loads, descriptions of equipment to be used, complete details and calculations for jacking and supporting the existing structure, descriptions of the displacement monitoring system, and the top of blocking elevation. The final submittal package, including the design calculations and working drawings, shall be signed and sealed by a professional engineer licensed in the State of Oklahoma.

Design temporary supports for the replacement of pier caps, replacement/repairs to columns, and bearing replacement, as shown in the plans. Design temporary supports in accordance with the AASHTO Guide Design Specifications for Bridge Temporary Works. Design temporary foundations for a maximum total settlement equal to the lesser of 0.1 percent of the adjacent span length in feet or 1 inch, and for a maximum differential settlement of 0.5 inches within an individual foundation. Use a minimum of a two-year time period for settlement calculations.

All costs associated with the construction of the temporary support structures including design, elevation control surveys, removal, equipment, labor, materials, and other incidentals shall be included in the price bid of "ENGINEERED FALSEWORK".

INTENTIONALLY ROUGHENED SURFACE EXAMPLES:
The indicated surfaces shall be intentionally roughened to a minimum height of ¼" over a maximum pitch of 2" measured longitudinally along the length of the surface. The crest and trough associated with the height shall not be less than ½" and shall extend the full width of new pedestals at Abutment Nos. 1 & 2.

Roughened surface may be obtained by a special trowel as shown in the examples, by cleaning the concrete surface with a stiff wire brush (or blasting) to the extent that aggregate is exposed to a height of ¼", or by another approved method. The method used shall be submitted for approval by the Engineer. Repair any damage to reinforcement epoxy coating before placement of deck concrete.



BRIDGE DECK FORMWORK BRACING:
The Contractor is to use formwork bracing as shown on Sheet No. 36 . Bracing and tension ties shall not be spaced at intervals greater than 4 feet. All cantilever forming brackets shall be adjusted during placement of the floor concrete in order to maintain proper grades of overhang. If the Contractor uses shims to adjust the forming brackets, he must provide the Engineer a method to predict crush and settlement of the shims.

The bars shall be placed perpendicular to the beams. The tie bars shall have a minimum of 1 inch cover and shall be no higher than the top layer of reinforcing steel. No welding to the top flange of the beams or the shear connectors will be permitted. The steel ty-bar clip connection devices shall be epoxy coated. After assembly, all exposed threads shall be coated with epoxy paint.

The Contractor shall submit to the Engineer for approval, working drawings for the formwork bracing systems. Drawings of the proposed formwork bracing shall be approved by the Bridge Engineer before any concrete is placed.

The bridge deck formwork bracing will not be measured for payment. All cost of the Bridge deck formwork bracing including the cost of ty-bar clip connection devices, epoxy coated all-threaded tension ties, wood struts, epoxy coatings or paint, professional services, materials, labor, equipment and incidentals shall be included in the unit price bid per Cubic Yard of "CLASS AA CONCRETE".

SEALED EXPANSION JOINT:
The Sealed Expansion Joints located on Sheet No. 13 shall be constructed as shown on the plans and in accordance with Standards EJ-SK-03E & EJ-DTL-01E & in a manner approved by the Engineer except that Bars W1 & W2 on Standard EJ-DTL-01E shall be modified to fit within the limits of the slab with appropriate clearances.

All cost necessary to complete the work as specified or as shown in the plans including the cost of materials, labor, equipment and incidentals shall be included in the price bid per Linear Foot of "SEALED EXPANSION JOINT".

SAWED AND SEALED JOINTS:
New Longitudinal Construction Joints and the new Sawed & Sealed Construction Joints at the Abutments in the Bridge Deck shall be sealed with Rapid Cure Joint Sealant in accordance with Subsection 701.08.G and as shown on the plans.

All costs including materials, labor, equipment and incidentals necessary to complete the work as shown in the plans shall be included in the price bid per Cubic Yard of "CLASS AA CONCRETE".

SPECIAL CONCRETE FINISH
The Special Concrete Finish shall be a liquid applied urethane coating such as CIM 1000 as manufactured by CIM Industries, Inc., IM-129 as manufactured by Custom Linings, or an approved equal. Product information for CIM 1000 can be obtained from Laster Castor Corp. of Tulsa, Oklahoma, phone number 918-234-7777. Product information for IM129 can be obtained from Custom Linings, phone number 719-395-4414.

The Special Concrete Finish shall be applied to the following concrete surfaces of the bridge:

(a) Front, sides and exposed areas of the Abutment Seats and Backwalls.
(b) Top, sides and ends of Pier Caps.
(c) Inside faces of Approach Slab No. 1 within the opening of the new inlet as shown on Sheet No. 41.

The equipment and methods of applying the urethane coating shall be in accordance with the product coating profile and instruction guides for application to concrete. Precautionary measures shall be in accordance with the Material Safety Data Sheets as provided by the manufacturer.

The coating shall be 60 mils dry thickness and 68 mils wet thickness. In addition to applying the coating to the concrete substructure units as shown in the plans, the coating shall return up the vertical surfaces of the pier and abutment bearing pads to provide a water tight seal with the concrete pedestals. Surface preparations and product mixing shall be per the manufacturer's recommendations and all new concrete shall have a minimum strength of 3000 psi at the time of application. Primer shall be applied to the concrete surfaces prior to applying the coating. All concrete work shall be completed prior to the application of the Special Concrete Finish.

Water repellent will not be required on surfaces that are coated with Special Concrete Finish.

Payment will be made at the Contract unit price bid per Square Yard of "SPECIAL CONCRETE FINISH", which price shall be full compensation for all materials, labor, tools, equipment and incidentals necessary to complete the work as specified.

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 bridge deck.
(b) Roadway face, top, and outside of the new 42" F-Shaped Parapets.
(c) Front, sides and exposed areas of the Abutment Seat, Backwall and Wingwalls not covered with Special Concrete Finish.
(d) Top, bottom, sides and ends of the Pier Cap not covered with Special Concrete Finish.

All costs associated with the use of Penetrating Water Repellent Surface Treatment including the cost of materials, labor, equipment and incidentals shall be included in the price bid per Square Yard of "WATER REPELLENT (VISUALLY INSPECTED)".

MECHANICAL SPLICES:
Mechanical Splices shall be used to connect the transverse reinforcing steel in the superstructure and approach slabs as specified or as shown in the plans. The Mechanical Splices shall satisfy the requirements of Section 511.04.C of the Standard Specifications and shall be installed in accordance with the Manufacturer's Specifications.

All cost of installing the Mechanical Splices including the cost of materials, labor, equipment and incidentals shall be included in the price bid per Each of "MECHANICAL SPLICES".

The lengths of reinforcing steel bars with Mechanical Splices shown in the Phase I Construction bar lists include the length of the Mechanical Splice. The lengths of reinforcing steel bars to be engaged into Mechanical Splices shown in the Phase I Construction bar lists do not include any additional length for engagement into the Mechanical Splices. The actual Mechanical Splice engagement lengths shall be determined by the Mechanical Splice manufacturer, and the lengths of the reinforcing steel bars to be engaged into Mechanical Splices shall be adjusted accordingly. The cost to adjust the length of any reinforcing steel shown in the plans to accommodate the Mechanical Splices will not be measured for payment and shall be included in the price bid per Each of "MECHANICAL SPLICES".

ANCHORAGE INTO EXISTING CONCRETE (ANCHOR BOLTS):
The Contractor shall have the option of the methods by which the new anchor bolts shown in the plans are to be anchored into the concrete of the existing bridge. Anchorage into the concrete of the existing bridge shall be accomplished by one of the following methods:

1. Self-Mixing injection type anchorage systems such as "Hilti Fastening Systems", "Unitex Pro-Proxy 300 Fast" or an approved equal. Anchorages shall be installed in accordance with the Manufacturer's specifications for the system used.
2. Encapsulated non-expanding chemical type anchorage systems such as "Rawlplug Company Chem-Stud", "Hilti Encapsulated" or an approved equal. Anchorages shall be installed in accordance with the manufacturer's specifications for the system used.

Drilling into the existing concrete to install the anchorage shall be accomplished without cutting existing concrete reinforcing steel bars. Prior to drilling, the Contractor shall locate and mark the existing concrete reinforcing steel bars with nondestructive tools, equipment and methods approved by the Engineer. If existing reinforcing steel bars are encountered during drilling, the drilling shall cease and the hole shall be grouted. The hole shall then be relocated to clear the existing reinforcing steel bars. Any adjustment in the locations of the new anchor bolts from the plan locations shown shall be the minimum amount necessary to avoid cutting the existing concrete reinforcing steel bars and shall be approved by the Engineer.

All cost to anchor the new anchor bolts into the existing bridge as specified or as shown in the plans including the cost of locating existing concrete reinforcing steel bars, drilling, repairing flawed drill holes, anchoring into the existing concrete, materials, labor, equipment and incidentals shall be included in other items of work.

FIXED BEARING ASSEMBLIES:
Provide and install Fixed Bearing Assemblies of the size, shape and location as specified or as shown in the plans. See Sheet Nos. 37 & 38 for the total estimated amount of Structural Steel per each of Fixed Bearing Assembly.

All cost of providing and installing the Fixed Bearing Assemblies as specified or as shown in the plans including the cost of steel reinforced elastomeric bearing pads, anchor plates, contact plates, anchor bolts, nuts, washers, materials, labor, equipment and incidentals shall be included in the price bid per Each of "STAINLESS STEEL FIXED BEARING ASSEMBLY".

EXPANSION BEARING ASSEMBLIES:
Provide and install Expansion Bearing Assemblies of the size, shape and location as specified or as shown in the plans. See Sheet Nos. 37 & 38 for the total estimated amount of Structural Steel per each of Expansion Bearing Assembly.

All cost of providing and installing the Expansion Bearing Assemblies as specified or as shown in the plans including the cost of steel reinforced elastomeric bearing pads, anchor plates, contact plates, anchor bolts, nuts, washers, materials, labor, equipment and incidentals shall be included in the price bid per Each of "STAINLESS STEEL EXPANSION BEARING ASSEMBLY".

CONCRETE DECK FINISHING:
Overhanging slab forms will be required to be of sufficient strength to support the weight of the concrete, forms, finishing machine and other construction loads. Prior to finishing operations, a proposal stipulating the type of finishing machine and the finishing procedure will be submitted to the Engineer. This proposal shall set forth any areas in which a mechanical finisher cannot be used and the methods for finishing these areas. Concrete shall not be placed until this proposal is approved by the Engineer.

APPROACH SLAB:
Class AA concrete shall be used in the Approach Slabs with epoxy coated reinforcing. The quantity given is based on the actual Square Yards of the Approach Slabs. All costs of concrete, reinforcing steel, longitudinal construction joint sealant, sawed and sealed construction joint between new deck and approach slab, sawing of joints, excavation, labor, equipment, and incidentals necessary to complete the work as specified shall be included in the price bid per Square Yard of "APPROACH SLAB".

CONCRETE SLOPE WALL:
Item "Slope Wall (4")" shall be used to repair interior panel sections of existing Slope Walls along the front slopes at Abutment Nos. 1 & 2. See Sheet No. 13 for additional information.

All costs of the "SLOPE WALL (4")" installation including Class A Concrete, reinforcing steel, lap splices, backer rod, rapid cure joint sealant, preformed joint filler, polystyrene, excavation, labor, equipment and other incidentals shall be included in the price bid per Square Yard of "SLOPE WALL (4")".

I-44 OVER I-244 NB BRIDGE "A"	TULSA COUNTY	DESIGN JTR 5/16	
		DETAIL JTR 5/16	
SUMMARY OF PAY QUANTITIES AND NOTES (BRIDGE) (SHEET 2 OF 3)		CHECK BRT 5/16	GARVER
STATE OF OKLAHOMA	DEPARTMENT OF TRANSPORTATION		
	JOB PIECE NO. 29775(04)	SHEET NO. 4	