

**COMMON GENERAL NOTES - BRIDGES "A" & "B"**

**SPECIFICATIONS:**

Comply with the requirements of the 2009 Oklahoma Standard Specifications for Highway Construction, except as modified by the Plans and Special Provisions.

**SUGGESTED SEQUENCE OF CONSTRUCTION:**

A suggested sequence of construction has been included in the plans for Traffic Phasing. Any changes to the suggested sequence of construction must be submitted to the Engineer for approval. No work shall begin until the Engineer has approved the changes to the suggested sequence of construction.

**VERIFICATION OF EXISTING CONDITIONS:**

All dimensions of the existing components shown on the plans are approximate. The Contractor shall verify all data necessary to connect the new material and shall be solely responsible for the accuracy thereof.

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 existing bridge or attachments. Any damage to the existing bridge structure or roadway due to the Contractor's negligence shall be repaired at the Contractor's expense, to the satisfaction of the Engineer.

Contractor shall be aware of existing conditions and potential hazards during construction. Contractor shall take precautions to maintain the integrity of any existing utilities and structures. Any damage to these items during construction shall be repaired and/or replaced at the Contractor's expense to the Engineer's satisfaction.

**PLANS:**

The original project plans are available from:  
 Reproduction Branch  
 Oklahoma Department of Transportation  
 200 N.E. 21st Street  
 Oklahoma City, Oklahoma 73105

The bridge was constructed under the following Project No.  
 Bridges "A" & "B" F.A.P. No. U-32(21)

**SURVEYING AND CONSTRUCTION STAKING:**

The Contractor will be required to conduct all surveying and construction staking necessary for the completion of the project as directed by the Engineer. The surveying and construction staking required for completion of the project may include, but is not limited to, the following:

1. Establishing horizontal control including the staking of centerline bridge and approach roadway and assigning stationing as directed by the Engineer.
2. Establishing vertical control including the setting of benchmarks.
3. Measuring the elevations along the existing bridge deck slab at centerline, edges of driving lanes and edges of shoulders.
4. Measuring the elevations along the existing approach roadway at centerline, edges of driving lanes and edges of shoulders.
5. Measuring and setting construction stakes as necessary for conducting the grading and surfacing work on the approach roadway.

All survey data, proposed adjustments in the new finish grades from original and forming data shall be provided to the Engineer for approval before constructing the new concrete overlay, new approach slabs and new approach roadway pavement.

All cost of the surveying and construction staking necessary for completion of the project as directed by the Engineer including the cost of materials, labor, equipment, and incidentals shall be included in the price bid per Lump Sum of "CONSTRUCTION STAKING LEVEL II".

**ESTABLISHMENT OF VERTICAL GEOMETRY:**

The new bridge deck surfaces are approximately 4" higher in elevation than the existing due to the addition of a new concrete overlay. The finished bridge deck surface elevations shall account for this increase while matching the existing profile geometry. If the actual finish surface elevations differ from what is shown in the plans, the Contractor shall notify the Engineer prior to concrete overlay placement for adjustment to maintain acceptable approach transitions.

In order to record the vertical geometry of the existing deck, the Contractor shall field survey the existing deck prior to starting the hydrodemolition process. As a minimum, the Contractor shall profile the existing deck elevations at the following locations:

1. Along the face of the existing raised curb at maximum intervals of 10'-0".
2. Along the edge of each striped traffic lane at maximum intervals of 10'-0".
3. Along the Profile Grade of the bridge at maximum intervals of 10'-0".

The Contractor shall record these elevations and increase each as required to accommodate the increase in the bridge deck surface. The adjusted elevations shall be submitted for review prior to forming the new concrete overlay.

**HORIZONTAL GEOMETRY & VERTICAL CURVE DATA:**

The information shown on the "GENERAL PLAN AND ELEVATION" drawings regarding vertical profile shown accounts for the required raise in profile grade of 4" above the "as-surveyed" information. This information is included for informational purposes only. The Contractor shall field verify the proposed vertical geometry. The reconstruction of the bridge decks are intended to match the profile of the existing bridge decks with the modification in the bridge deck surfaces as described.

**REMOVAL OF BRIDGE ITEMS:**

The pay item "REMOVAL OF BRIDGE ITEMS" shall include the removal and disposal of all items to be removed from the existing bridges as specified or shown in the plans including the following:

1. Portions of the abutments as shown on the plans.
2. Approach slabs.
3. Any approach roadway pavement necessary for the installation of the new approach slabs.
4. Material excavated for the installation of the new approach slabs.

When removing the portions of the existing abutments as shown in the plans, the Contractor shall take every precaution necessary to prevent damaging the remaining components of the existing bridge or any new construction attached to the bridge. Only hand tools or hand operated power tools will be allowed to make the removals. No vehicle mounted tools or equipment will be allowed to make removals. Before making any removals with impact tools, all concrete components shall be uniformly saw cut along the removal lines or cut lines shown on the plans. Any damages caused by the Contractor to the existing abutments shall be repaired or completely replaced at the Contractor's expense to the satisfaction of the Engineer. The Engineer will determine if the damaged components can be satisfactorily repaired or if the components shall be completely replaced.

Before making any removals, the Contractor shall submit to the Engineer a plan for removing each item or portions of items to be removed from the existing bridge. The Contractor shall not make any removals until the plan has been approved by the Engineer. The plan shall include a list of all the equipment that will be used to make the removals, a description of how the equipment will be used to make the removals and a sequential list of steps that will be followed by the Contractor to make removals.

All costs necessary to complete the work as specified or as shown in the plans including the cost of safety platforms, sawing, cutting, demolition, cleaning and straightening reinforcing steel, containment and removal of debris, materials, labor, equipment and incidentals shall be included in the price bid per Lump Sum of "REMOVAL OF BRIDGE ITEMS".

**SUPERSTRUCTURE AND SUBSTRUCTURE REPAIR:**

For cosmetic repairs of the existing Deck Slab, Abutments, Piers and any other concrete structure associated with the bridges, shall be repaired with Pneumatically Placed Mortar in a manner approved by the Engineer and in accordance with Section 521 of the Standard Specifications for Highway Construction. The removal of loose concrete shall be done using hand tools only, no power tools will be allowed. Power tools will be allowed only if hand tools prove to be incapable of removing all unsound concrete and if their use is approved by the Engineer. Any damage done to the existing reinforcing steel during the removal process shall be repaired at the Contractor's expense to the satisfaction of the Engineer. Any deteriorated reinforcing steel with a section loss greater than 25%, as determined by the Engineer, shall be reported to the Bridge Engineer for remedial action. Prior to mortar application, blast clean the concrete surface and reinforcing steel free of debris and corrosion. Apply Pneumatically Placed Mortar to replace deteriorated concrete. Build up mortar to match the original lines and grades of the member being repaired. All mortar repairs shall be sealed with a water repellent substance.

The Contractor may propose and use as an alternate one of the following repair methods:

1. Cast-in-place concrete
2. Pre-placed aggregate concrete
3. Formed and pumped concrete and mortar
4. Troweling and dry-packing of repair mortar

The actual location and extent of the repairs shall be determined in the field by the Engineer. The repairs shall only be made in the areas selected by the Engineer. Payment will be made only for the actual repairs performed.

If the Contractor elects to use a method other than Pneumatically Placed Mortar, they shall submit to the Engineer, for their approval, a proposed work plan. The work plan should include surface preparation methods, patching material, bonding agents, material placing methods, compatibility with Corrosion Inhibitors and finishing methods. The Contractor shall repair a test area to verify the effectiveness of their proposed repair methods prior to commencement of the work on the entire structure. Faulty repairs shall be replaced by the Contractor at no expense to the State. The cost for all patching methods will be included in the price bid per Square Yard of "PNEUMATICALLY PLACED MORTAR".

**REPAIR OF CRACKS IN SUPERSTRUCTURE & SUBSTRUCTURE:**

The existing Deck Slab, Abutments and Piers contain cracks that shall be repaired. The cracks shall be repaired by cleaning and injecting with epoxy. The crack repairs shall be performed in accordance with Section 520 of the Standard Specifications. The actual location and extents of the crack repairs shall be determined in the field by the Engineer. Payment will only be made for the actual crack repairs performed.

All cost to complete the crack repairs 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 "PREPARATION OF CRACKS, ABOVE WATER" and the price bid per Gallon of "EPOXY RESIN, ABOVE WATER".

**REINFORCING:**

All reinforcing steel shall have 2" clearance unless shown or noted otherwise. All reinforcing steel shall be deformed bars, cold bent with no welds. Bar bend dimensions are out to out, unless noted otherwise. All reinforcing steel to be Grade 60.

Field welding of crossing reinforcing bars shall not be permitted. Tack welding of reinforcing bars shall be prohibited in all cases.

All longitudinal top reinforcing in the bridge slab shall be supported on approved continuous metal high chairs spaced at 4'-0" maximum on centers and the bottom layer of reinforcing steel shall be supported on approved metal slab bolsters spaced at 4'-0" maximum on centers.

**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 II 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".

**CLASS C BRIDGE DECK REPAIR:**

The quantity for "CLASS C BRIDGE DECK REPAIR" is for estimating purposes only. Actual areas to be repaired using Class C Bridge Deck Repair shall be determined by the Engineer during the construction process.

Payment only for actual repairs performed will be allowed. Payment will not be made for repairs not made. The repair shall be in accordance with Section 513 of the Standard Specifications.

All costs of the repair including material, labor, equipment, and incidentals necessary to complete the work shall be included in the price bid per Square Yard of "CLASS C BRIDGE DECK REPAIR".

**(PL) REPAIR BRIDGE ITEMS:**

For severe deterioration of unsound concrete in the superstructure, abutments, & piers of the existing bridge shall be repaired as described here. Prior to repairing an area, ensure that all unsound concrete has been removed from the area and the newly exposed surface has been prepared in accordance with Section 521.04.C of the Standard Specifications. Repair any deteriorated reinforcing steel bars with section loss greater than 25%, and apply corrosion inhibitor to the repair areas in accordance with Special Provision 535-1.

The removed concrete shall be replaced with one of the following materials as specified in Section 701 of the Standard Specifications:

1. High Density Concrete (HDC)
2. Latex Modified Concrete (LMC)
3. Very Early Strength Type I Concrete (VES I)
4. Very Early Strength Type III Concrete (VES III)
5. Rapid Setting Latex Modified Concrete (RSLMC)

The concrete temperature shall not exceed 85°F. Cold weather practices shall be implemented under any of the following conditions:

The air temperature was less than 55°F within 24 hours before placement of concrete, or the substrate temperature is less than 55°F during placement of concrete, or the air temperature will be less than 55°F within 6 hours after placement of concrete.

Cold weather practices shall be as follows:

Maintain a concrete mix temperature of 75°F during placement, and ensure the air temperature is rising during placement, and complete placement during the warmest part of the day.

Air temperatures shall be greater than 45°F when placing early strength concrete.

Alternatively, the removed concrete may be replaced with one of the following commercially available shotcrete products used in accordance with the Manufacturer's recommendations and as approved by the Engineer:

6. QUIKRETE SHOTCRETE MS with polypropylene fibers
7. SIKACEM 103F
8. SIKACEM 133
9. SIKACRETE 211 SCC PLUS
10. BASF MASTEREMACO S 210SP
11. BASF MASTEREMACO S 211SP
12. PROSPEC SHOTCRETE 300V
13. EUCOSHOT F

The new concrete shall be placed to the original neat lines of the structural component under repair and finished to provide a surface texture matching that of the adjacent existing concrete.

All costs to complete the repairs including all costs of removals, cleaning, surface preparation, corrosion inhibitor, new concrete, proportioning, mixing, formwork, placing concrete, finishing concrete, material, labor, equipment and incidentals shall be included in the unit price bid per Square Yard of "(PL) REPAIR BRIDGE ITEMS".

FED. ROAD DIST. NO.	STATE	JOB PIECE NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	OKLA.	28878(04)			

DESCRIPTION	REVISIONS	DATE

US-64/SH-51 WB & EB OVER SHERIDAN RD. BRIDGES "A" & "B"		TULSA COUNTY	DESIGN	JCS	6/15
SUMMARY OF PAY QUANTITIES AND NOTES (BRIDGE) (SHEET 1 OF 2)			DETAIL	S.J.L.	12/16
			CHECK	BRT	12/16
			<b>GARVER</b>		
STATE OF OKLAHOMA	DEPARTMENT OF TRANSPORTATION				
	JOB PIECE NO. 28878(04)				SHEET NO. 3