

SUMMARY OF QUANTITIES															
Item	Excavation	Concrete		Reinforcing Steel	Structural Steel			Drilled Shafts (60"Ø)	Drilled Shafts (30"Ø)	Abutment Strip Drain	Bridge Backwall Prot. System	Sonic Test Drilled Shaft *	Welded Stud Shear Connectors 7/8"Ø	Bridge Drainage System	Bridge Handrail (Metal)
		Grade 4.0 (AE)(SA)	Grade 4.0 (AE)		Epoxy Coated Grade 60	AASHTO M270 Grade 50W T3	ASTM A709 Grade 50W								
Location	Class I	Cu. Yds.	Cu. Yds.	Lbs.	Lbs.	Lbs.	Lbs.	L.F.	L.F.	Sq. Yds.	Sq. Yds.	Each	Each	Lbs.	L.F.
Abutment No. 1	162	**	101.6	15,940	--	--	--	--	436.5	173	182	9	--	--	--
Pier No. 1	--	--	169.3	18,320	--	--	3,200	232.4	--	--	--	4	--	--	--
Pier No. 2	--	--	169.3	18,320	--	--	3,200	232.4	--	--	--	4	--	--	--
Abutment No. 2	162	**	101.6	15,940	--	--	--	--	436.5	173	182	9	--	--	--
Substr. Total	324	--	541.8	68,520	--	--	--	--	--	--	--	26	--	--	--
Superstr. Total	--	907.5	--	353,780	1,154,740	104,040	--	--	--	--	--	--	11,952	5,680	1,024
Total	324	907.5	541.8	422,300	1,154,740	104,040	6,400	464.8	873.0	346	364	26	11,952	5,680	1,024

**Quantities are included in the Superstructure Total Quantity.

* All Drilled Shafts shall be sonic tested.

GENERAL NOTES

EMBANKMENT: Complete the embankment at the abutments as shown on the Bridge Excavation sheet prior to construction of the abutment drilled shafts.

BACKFILL COMPACTION: Compact backfill at the abutments.

CORRAL RAIL: Build the corral rail after the falsework is released.

ABUTMENT STRIP DRAIN: See the General Notes on the "Abutment Strip Drain" sheet.

BRIDGE BACKWALL PROTECTION SYSTEM: Apply a Bridge Backwall Protection System to the approach side of the abutments and the wings in accordance with KDOT Specifications and the manufacturer's recommendations. Cover the abutments and wings to the limits shown on the details, not including the top of the pavement rest. Prior to backfilling, repair any damage done to the system at no extra cost to the

REMOVAL OF EXISTING STRUCTURE: Removal of existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. All materials removed from the existing structure shall become the property of the Contractor. See Demolition Plan for details of removal of existing dam, over flow wier and control vault.

DEMOLITION PLANS: This is a Category A Demolition. Submit detailed Demolition Plans to the Field Engineer per KDOT Specifications. No Demolition work will begin without approved Demolition Plans. A Licensed Professional Engineer is not required.

EXISTING STRUCTURE: See Demolition sheet for additional requirements in the plan set. Engineer has available sets of existing structure plans if required.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 60) or A82, and are included in the bid item "Reinforcing Steel (Gr. 60)".

Where non coated bars come in contact with epoxy coated bars, they need not be coated.

CONCRETE: Superstructure concrete is bid as Concrete (Grade 4.0)(AE)(SA). Substructure concrete is bid as Concrete (Grade 4.0)(AE). Bevel all exposed edges of all concrete with a 3/4" triangular molding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

CONCRETE PLACING: Place and hand vibrate all concrete for the abutments above the construction joint to the bottom of deck elevation just prior to the normal paving train operations. Do this work in a manner to avoid cold joints in either the slab or in the abutment.

BRIDGE APPROACHES: The concrete approach pavement, gutters, flume inlets, and slope drains are included in the Bridge Contract. The Bridge Contractor shall construct these items as shown in these plans or as directed by the Engineer.

DRILLED SHAFTS: Construct the drilled shafts using the cased method. A permanent casing is required. All excavation, concrete, reinforcing steel, pipes for Sonic Testing, casings, labor, and incidentals necessary to complete the shaft as shown on the details and as directed by KDOT Specifications shall be included in the bid item "Drilled Shafts (60") and (30)". Use Grade 4.0 Concrete in the drilled shaft. In no case shall the bottom of the drilled shaft be placed higher than the elevation shown.

If the location of the top of the shaft is such that the casing cannot be overtopped to remove concrete impurities, provide extra casing length to over-pour the concrete in the shaft and chip back to the plan elevation of the top of the shaft.

DRILLED SHAFT BACKFILL: Backfilling the annular space between the temporary casing and the permanent casing, as defined in the KDOT Specifications, is not required at this location.

SONIC TESTING: Equip all drilled shafts with piping to allow sonic testing to be done. Install pipes at locations shown on the plans. The Engineer has the option to require sonic, non-destructive, integrity testing at locations he designates (e.g. wet pours). Sonic testing shall be paid for at the unit price set for "Sonic Test" (Drilled Shaft). If the sonic testing indicates defective concrete in the shaft, the Engineer will measure the first sonic test for payment, and the Contractor is responsible for subsequent sonic testing of that shaft. Report test results directly to the Engineer. No work will be done above the top of drilled shaft without the approval of the Engineer.

PERMANENT CASING: See KDOT Specifications.

SUBSTRUCTURE CONCRETE STAIN PROTECTION AND SANDBLASTING: Protect the exposed surface of the piers and the front face of the abutments (by covering with polyethylene sheeting or other approved method) prior to erecting the structural steel and until after the deck slab has been placed. After the bridge is completed and prior to acceptance; sandblast the piers and front face of the abutment to a uniform appearance by removing all laitance, staining, any visible form lines, etc. This work will be subsidiary to structural steel.

ERECTION ELEVATION CHECKS: After the abutment and pier concrete has cured and before setting any structural steel, present verification to the Engineer that the elevations at the bearings match plan elevation (+ 1/4"). Present verification to the Engineer that the elevations at all field splice locations match the elevations (1/2") in the plans before any connection is fully tightened.

ERECTION PLANS: This is a Category C Structure. Submit detailed Erection Plans to the City of Wichita at least 4 weeks before beginning the erection process. Portions of the submitted details shall bear the seal of a licensed Professional Engineer. Identify, on the Erection Plans, the Erection Supervisor required by KDOT Specifications. The Erection Supervisor will attend the required pre-erection meeting before these operations begin as described in KDOT Specifications. No structural erection work will begin without approved erection plans.

FALSEWORK PLANS: A licensed Professional Engineer shall design the falsework details. Details shall bear the seal of a licensed Professional Engineer. Submit 3 sets of details in compliance with KDOT Specifications to the Field Engineer for review.

FALSEWORK PLANS AND SHOP DRAWINGS: Use the U.S. Customary system of units on falsework plans and shop drawing details.

SHOP DETAILS: Reference blocking diagrams on the shop details to a level line running the entire length of the girder.

FALSEWORK INSPECTION: This project has falsework plan requirements which are considered "Category 2" by KDOT specifications. If falsework deficiencies or variations from the approved and sealed plans are found, the falsework design Engineer of Record will provide written approval of the changes. If for the convenience of the Contractor the falsework becomes "Category 1" by the use of non-typical supports; then the inspection and review requirement of "Category 1" will be fully enforced, but at no cost to the State. "Category 2" falsework inspection is not paid for directly, but is subsidiary to other bid items.

FILLET: Camber the steel girders for the total dead load deflection and the vertical curvature, if necessary. The ordinates shown for concrete dead load deflection represent the amount of camber that should be in the girders after they are erected and bolted but prior to placing the floor forms. After the structural steel is completely erected and the falsework bents are removed, measure the camber in the field by taking a profile of each girder. Correct any variation between the actual camber and the concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the girders so that the finished floor is constructed to the theoretical grade. The minimum depth of the slab over the girder shall be 8 inches.

The theoretical amount of concrete required for the fillets is 20 C.Y. This amount of concrete is not included in the Summary of Quantities. The additional concrete required to construct the fillets will be subsidiary.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0361-01	2011	50	169

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DESIGN DATA

DESIGN SPECIFICATIONS:

AASHTO Specifications, 2007 Edition and latest Interim Specifications. Load and Resistance Factor Design

DESIGN LOADING:

HL-93

Design Dead Load includes an allowance of 15 psf for a future wearing surface.

UNIT STRESSES:

Concrete (Grade 4.0)(AE): f'c = 4 ksi
 Concrete (Grade 4.0)(AE)(SA): f'c = 4 ksi
 Reinforcing Steel (Grade 60): fy = 60 ksi
 Structural Steel (AASHTO M270 Gr. 50W T3): Fy = 50 ksi
 Structural Steel (ASTM A709 Gr. 50W): Fy = 50 ksi

LRFD DESIGN DRILLED SHAFT LOAD:

Design Loading	Strength 1	Service 1	Phi
Abutment 1 & 2	132	88	End Bearing 0.55 Side Friction 0.55
Pier No. 1 & 2	781	525	End Bearing 0.55 Side Friction 0.55

CONTRACTOR ANALYSIS: The Contractor shall provide an analysis of constructibility as provided and listed in Section 6, I-Section Flexural Members, AASHTO LRFD Bridge Design Specifications, 4th Edition with 2009 Interim. The analysis will be prepared by a Kansas Licensed Professional Engineer and presented to the Owners Engineer prior to fabrication.

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**LINCOLN STREET BRIDGE AND
DAM IMPROVEMENTS OVER
ARKANSAS RIVER**

GENERAL NOTES AND QUANTITIES

SHEET TITLE
472-84883
PROJECT NUMBER

JAG
DESIGN BY
DPG
DRAWN BY
KJS
CHECKED BY

ISSUED
1/24/2011
REVISED

SHEET NO.
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