

SUMMARY OF QUANTITIES																
Item	Concrete			Reinforcing Steel	Structural Steel			Steel Piles	Cast Steel Pile Points	Falsework Inspection	Contractor Furnished PDA	Abutment Strip Drain	Bridge Backwall Prot. System	Welded Stud Shear Connectors	Bridge Handrail (Special)	Reinforced Concrete Riprap
	Class III	Grade 4.0 (AE)(SA)	Grade 4.0 (AE)	Epoxy Coated Grade 60	AASHTO M270 Grade 50W T3	ASTM A709 Grade 50W T3	ASTM A709 Grade 50W	*	Each	L.S.	Each	Sq. Yds.	Sq. Yds.	7/8"Ø Each	L.F.	S.Y.
Location	Cu. Yds.	Cu. Yds.	Cu. Yds.	Lbs.	Lbs.	Lbs.	Lbs.	L.F.	Each	L.S.	Each	Sq. Yds.	Sq. Yds.	Each	L.F.	S.Y.
Abutment No. 1	359.2	**	79.2	10,440	--	--	--	550	10	--	1	134	147	--	--	763.2
Pier No. 1	309.3	--	447.4	85,580	--	--	5,500	2,952	36	--	2	--	--	--	--	--
Pier No. 2	351.0	--	447.4	85,580	--	--	5,500	2,952	36	--	2	--	--	--	--	--
Abutment No. 2	359.2	**	79.2	10,440	--	--	--	550	10	--	1	134	147	--	--	665.5
Substr. Total	1,378.7	--	1,053.2	192,040	--	--	--	--	--	--	--	--	--	--	--	1428.7
Superstr. Total	--	1,193.8	--	369,440	973,108	1,242,772	174,811	--	--	--	--	--	--	18,270	959	--
Total	1,378.7	1,193.8	1,053.2	561,480	973,108	1,242,772	174,811	7,004	92	1	6	268	294	18,270	959	1428.7

**Quantities are included in the Superstructure Total Quantity.

CONTRACTOR CONSTRUCTION STAKING: Contractor Construction Staking for clear span bridges requires two independent surveys. See KDOT Specifications.

* Summary of Piling
 Abut. No. 1 10 @ 55'
 Pier No. 1 36 @ 82'
 Pier No. 2 36 @ 82'
 Abut. No. 2 10 @ 55'

* NOTE: Use only HP14x117 steel pile on this project

GENERAL NOTES

EXISTING STRUCTURE: Engineer has available sets of existing structure plans if required. The existing structure was repaired in 1997 by use of post-tensioning. The pier beams contain post-tension elements which have an axial load of about 300,000 pounds acting on them. The post-tensioned element must be removed with appropriate appreciation of the applied loading.

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

BRIDGE EXCAVATION: All excavation shall be Class III. See the Bridge Excavation sheet for the limits of pay excavation.

BACKFILL COMPACTION: Compact backfill at the abutments and piers.

PILING: Drive all piling to penetration shown. Driving shall stop when, in the opinion of the Engineer, additional driving may damage the piling. Drive all piling to the value shown in the "Design Pile Load" table.

As a minimum drive each pile to the load and penetration, but in no case shall the pile be driven to more than 110% of Pile Driving Formula Driving Load. A Pile hammer capable of delivering a minimum energy of 120,000 foot-pounds will be required to drive the pile section to the required resistance and depth. Prior to construction, the expected blow counts, pile stresses, and energy requirements for a specific contractor-provided pile hammer shall be computed by Wave Equation (GRLWEAP)."

CONTRACTOR FURNISHED PDA: Use the Pile Driving Analyzer quipment at the locations shown on the Construction Layout. Use Pile Driving Analyzer equipment and methods compliant with KDOT Special Provisions. The piling shall remain in place as permanent piling. Drive the piling to the resistance value of (Strength I divided by Phi). At any location where problems are experienced, pile damage suspected, or the Pile Driving Formula Load occurs significantly above the design tip elevation, the Engineer may request that the Pile Driving Analyzer (PDA) equipment be used.

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 City.

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.

COLUMN CONSTRUCTION: Cure the column footing as required by the KDOT Specifications before beginning the column construction (placing resteel or formwork). Do not place cast in place shear bolts, coil inserts or other devices used as falsework support in the column without the approval of the Engineer. Do not remove column formwork without the approval of the Engineer. Curing shall continue after the formwork is removed as required by the KDOT Specifications.

PIER BEAM CONSTRUCTION: Cure the columns as required by the KDOT Specifications before beginning the pier beam construction (placing resteel or formwork). Do not drill and grout bolts or other devices into the columns used for falsework support unless shown on the plans. Cure the columns as required by the KDOT Specifications before placing pier beam concrete. Do not remove falsework used to support the pier beam until the pier beam concrete has cured as required by the KDOT Specifications. Do not set girders or beams on the pier beam until after the falsework is removed or the pier beam concrete has 0.75f'c strength as tested.

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.

ANCHOR BOLTS: Place the reinforcing bars below the bearing devices to clear the anchor bolts.

PREFORMED ANCHOR BOLT HOLES: Preform holes using only corrugated polyethylene tubing (Type C) at the locations shown. When temperatures are expected to go below freezing, seal the preformed holes or fill them with a propylene glycol-based antifreeze to prevent expansion damage. The holes will be free of water, antifreeze or foreign materials at the time of grouting the anchor bolts. The polyethylene tubing may remain in-place. Trim the tubing flush with the top of concrete. This work shall be subsidiary to Concrete Grade 4.0 (AE).

FALSEWORK PLANS: A licensed Professional Engineer shall design the falsework details. Details shall bear the seal of a licensed Professional Engineer. See the Bridge Design Manual, Section 5.1 "Review and Approval of Falsework Plans", for a listing of items to be included on the falsework plan. Submit electronic plans conforming to 105.10(b) of the Standard Specification with 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.

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.

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.

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.

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.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0519-01	2012	74	212

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DESIGN DATA

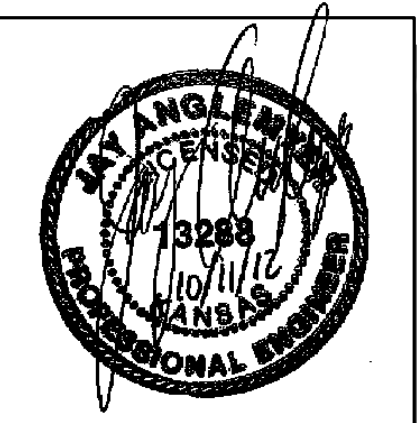
DESIGN SPECIFICATIONS: AASHTO Specifications, 2010 Edition and latest Interim Specifications. Load and Resistance Factor Design

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

DESIGN PILE LOAD (Tons/Pile)		
Location	Strength I	Service I
Abutment	73	49
Pier	245	245
Phi ø = 0.65		

LRFR RATING FACTORS			
Design Load	Rating Level	Inventory	Operating
	HL-93 Loading		1.4
2008 Manual for Bridge Evaluation			



BROADWAY BRIDGE AT 34TH STREET SOUTH

GENERAL NOTES AND QUANTITIES
 SHEET TITLE: 472-84830
 PROJECT NUMBER

DESIGN BY: JAG
 DRAWN BY: DPG
 CHECKED BY: KJS

ISSUED: October 9, 2012
 REVISED:

SHEET NO. 74 of 212

PLOTTED: Thursday, October 11, 2012 @ 10:46AM
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