STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	54–87 K–8258–01	2007	247	556

SUMMARY OF QUANTITIES FOR BRIDGE NO. 54–87–31.12(702)

	LOCATION	EXCAVATION CLASS III	CONCRETE (GRADE 31) (AE)	CONCRETE (GRADE 35) (SF) (AE) (SA)	REINF. STEEL (GRADE 420) EPOXY COATED	POST TENSIONING	DRILLED SHAFT 1070 mm	SONIC TEST	CORE HOLE (INVESTIGATIVE)	TIEBACKS	TFE/ELASTOMERIC BEARING DEVICE	ELASTOMERIC BEARING DEVICE	SILICA FUME OVERLAY (40 mm)	ABUTMENT STRIP DRAIN	BRIDGE BACKWALL PROTECTION SYSTEM	STRIP DRAIN	ELASTOMERIC COMPRESSION SEAL	CONCRETE MASONRY COATING	HANDRAIL (METAL) (620 mm)	HANDRAIL (METAL) (620 mm)	ELECTRICAL LIGHTING SYSTEM
		m^3	m^3	m^3	kg	Lump Sum	m	Each	m	Each	Each	Each	m^2	m^2	m^2	m^2	m	m^2	m	m	Lump Sum
EAST BOX	ABUTMENT NO. 1	399	135.6		11 140		144.1		26.7	32	14			92	102	157		228.3			
EAST BOX	ABUTMENT NO. 2	393	131.3		10 870		139.4		13.2	32		14		90	101	149		215.8			
EAST BOX	SUBSTRUCTURE TOTAL		266.9		22 010																
EAST BOX	SUPERSTRUCTURE TOTAL			995.7	119 050														49.84	44.5	
EAST BOX	EAST BOX TOTALS	792	266.9	995.7	141 060		283.8	3	39.8	64	14	14	1131	182	203	306		444.1	49.84	44.5	
WEST BOX	ABUTMENT NO. 1	398	133.2		11 030		144.4		12.9	32	14			92	102	152		218.2			
WEST BOX	ABUTMENT NO. 2	393	130.0		10 730		139.4		25.7	32		14		90	101	144		205.9			
WEST BOX	SUBSTRUCTURE TOTAL		263.2		21 760																
WEST BOX	SUPERSTRUCTURE TOTAL			995.8	119 050														49.84	44.5	
WEST BOX	WEST BOX TOTALS	791	263.2	995.8	140 810		283.8	3	38.6	64	14	14	1131	182	203	296		424.1	49.84	44.5	
	GRAND TOTALS	1583	530.1	1991.5	281 870	Lump Sum ◕	567.6	6	78.4	128 ◭	28	28	2262	364	406	602	46.1	868.2	99.68	89.0	Lump Sum

Delete this Bid Item for Alternate Handrail Option

Add these Bid Items for Alternate Handrail Option

◕ *Estimated weight of post–tensioned steel:*

East Box = 37 500 kg.
West Box = 37 500 kg.

The above estimated weight does not include tendon extensions for jack grips or the weight of ducts and anchorage assemblies.

◭ *Summary of Tiebacks:*
128 @ 445 kN

GENERAL NOTES

DESIGN SPECIFICATIONS:
AASHTO Standard Specifications for Highway Bridges, 1996 Edition with appropriate interim Specifications. (Load Factor Design).

CONSTRUCTION SPECIFICATIONS:
Kansas Department of Transportation Standard Specifications for State Road and Bridge Construction, 1990 and Special Provisions.

DESIGN LOADING:
Live Load –– MS18–44 with Kansas Overlaod Provision.
Sidewalk Live Load –– Includes an allowance of 0.72 kPa
Dead Load –– Includes an allowance of 0.72 kPa for a future wearing surface.
Thermal Gradient –– as specified by AASHTO Guide Specifications

UNIT STRESSES:

Concrete Grade 35 (SF) (AE) (SA)	f'c	=	35 MPa
Concrete Grade 31 (AE)	f'c	=	31 MPa
Concrete Grade 31	f'c	=	31 MPa
Reinforcing Steel (Grade 420)	fy	=	420 MPa
Post Tensioning Reinforcement:			
7 Wire, Low Relaxation Strands	f's	=	1860 MPa

CONCRETE:
All superstructure concrete is bid as Concrete (Grade 35)(SF)(AE) (SA). All substructure concrete is bid as Concrete (Grade 31)(AE). The Contractor may use Concrete (Grade 31) in the Drilled Shafts. Bevel all exposed edges of all concrete with a 20 mm triangular molding, except as otherwise noted on the Plans. All construction joints are optional with the Contractor, but if used, place only at the locations shown, or at locations approved by the Engineer.

REINFORCING STEEL:
All dimensions shown for placement of reinforcing steel are to the centerline of the bar, unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615M–96 Grade 420. Spiral bars may meet the requirements of either ASTM A615M–96 (Grade 300 or 400) or ASTM A82M, and are included in the bid item "Reinforcing Steel (Grade 420) Epoxy Coated".

POST TENSIONING:
For post tensioning notes see Special Provisions and "Prestressing Details and Notes" sheet.

PRESTRESSED CONCRETE BRIDGE STRUCTURE:
See Special Provisions. Stay–in–Place forms outside or inside of the concrete box girder will not be permitted. All formwork and debris must be removed from the inside of concrete box girder structure.

DIMENSIONS:
All dimensions shown on the Plans are horizontal dimensions unless otherwise noted.

BRIDGE EXCAVATION:
All bridge excavation shall be Class III Excavation. See "Construction Layout (Elevation View)" and "Bridge Excavation" sheets for limits of Pay Excavation.

EXCAVATION SUPPORT:
The temporary support of excavation, and the connection of the temporary support to the Abutment Drilled Shafts, shall become the responsibility of the Contractor. Timber lagging, shotcrete, or other approved temporary support methods shall be used between the Abutment Drilled Shafts as conditions require, or as directed by the Engineer. The temporary excavation support system shall be free–draining. The Contractor shall submit shop drawings for the temporary support system to the Engineer for review.

The excavation and installation of temporary excavation support system shall be performed in such a manner as to prevent any movement or caving of the excavation between the Abutment Drilled Shafts, and to limit the void space behind the temporary excavation support. Any movement or caving of the excavation between the Drilled Shafts shall be immediately backfilled with a granular material.

BACKFILL COMPACTION:
Backfill Compaction shall be required at both Abutments. See K.D.O.T. Specifications.

DRILLED SHAFTS:
Construct the Abutment Drilled Shafts using the cased method. A permanent casing is required. All concrete, reinforcing steel, excavation, pipes for sonic testing, casings, labor, and incidentals necessary to complete the shaft as shown on the details and as directed by the K.D.O.T. Specifications shall be included in the bid item "Drilled Shaft (1070 mm)". In no case shall the bottom of the shaft be placed higher than the elevation shown on the Plans.

SONIC TEST:
See K.D.O.T. Specifications.

CORE HOLE (INVESTIGATIVE):
See K.D.O.T. Specifications.

DESIGN DRILLED SHAFT PRESSURE: (Working Stress Design)

ALLOWABLE:	End Bearing	720	kPa
	Side Friction below El. 402.000	76.6	kPa
DESIGN: (Service Load I)			
	End Bearing	720	kPa
	Side Friction below El. 402.000	76.6	kPa

TIEBACKS:
Tiebacks shall be installed with an encapsulated double corrosion protection system. See Special Provisions.

BORING LOGS:
The Boring Logs are in the file of the the Consultant and are available for inspection by interested and/or qualified bidders.

CAMBER:
The forms shall be cambered to include the effects of the dead load deflections. See "Typical Web Elevations and Dead Load Deflections" sheet for details.

TEMPERATURE:
The Design Temperature for all dimensions shown on the Plans is 15 degrees Centigrade.

CONCRETE POURING SCHEDULE:
The Contractor shall submit a pouring schedule to the Engineer for approval prior to placing any concrete.

DECK PROTECTIVE SYSTEM:
All reinforcing steel in the Superstructure and Substructure of the Concrete Box Girder Bridge shall be epoxy coated. A minimum concrete cover to the top reinforcing steel layer shall be 75 mm. A 40 mm Silica Fume Overlay shall be placed on the subdeck of the box girder between gutterlines and as shown on the Plans. The overlay shall not be placed until after the post tensioning operations are completed

BRIDGE BACKWALL PROTECTION SYSTEM:
Apply a Bridge Backwall Protection System to the approach side of the Abutment Closure Pour in accordance with the K.D.O.T. Specifications and the manufacturer's recommendations. Cover the closure pour to the limits shown on the details, not including the top of the approach slab rest. Prior to backfilling repair any damage done to the system at no extra cost to the State.

FALSEWORK PLANS:
The falsework details shall be designed and bear the seal of a Licensed Professional Engineer. Seven sets of details in compliance with the K.D.O.T. Specifications shall be submitted to the Engineer for review.

EXPANSION, CONTRACTION AND CONSTRUCTION JOINTS:
Type B Expansion Joint Material shall conform to Section 1503 of the Standard Specifications. The P.V.C. Plastic Waterstop shall conform to Section 1506 of the Standard Specifications. Type B Expansion Joint Material, Plastic Waterstop and the 20 mm dia. Epoxy Coated Smooth Dowels shall be considered Subsidiary to the bid item "Concrete Class 31 (AE)".

CONCRETE MASONRY COATING:
Concrete Masonry Coating shall be applied to the exterior concrete surfaces of the abutment walls to the limits detailed on the plans. The color of the Concrete Masonry Coating shall match Color No. 30318 (Limestone Tan) of Federal Standard 595B unless an equal is approved by the Engineer. A non–petroleum based form release agent shall be used on formed surfaces to be coated. All labor, materials and incidentals required to perform this work shall be paid for as "Concrete Masonry Coating" in accordance with the Special Provisions.

A.T.&T. TELEPHONE CONDUIT: The existing 600 mm dia. A.T.&T. conduit containing fiber optic communication lines must remain in–service at all times during construction. As shown in the plans, the Rock Raod bridge shall be constructed around the conduit. The estimated weight of the conduit and the fiber optic lines is 2.6 kN/m. Plans and details to accommodate the conduit shall be developed and submitted by the Contractor to the Engineer and A.T.&T (Jason Edwards, 316–268–2601) for review prior to excavation near the conduit.

INDEX TO BRIDGE DRAWINGS

KANSAS DEPARTMENT OF TRANSPORTATION

BR. NO. 54–87–31.12(702) STA. 3+877.518

BRIDGE NOTES AND QUANTITIES

ROCK ROAD OVER KELLOGG AVENUE

Proj. No. 54–87 K–8258–01 SEDGWICK COUNTY

CFS
Cook, Flatt & Strobel
ENGINEERS, P.A.

DESIGNED	R.S.C.	SCALE	None
DETAILED	T.R.G.	DATE	
QUANTITIES	T.R.G.	SHEET	1 OF 41

ROCK/NOTES–QUANT 1:100