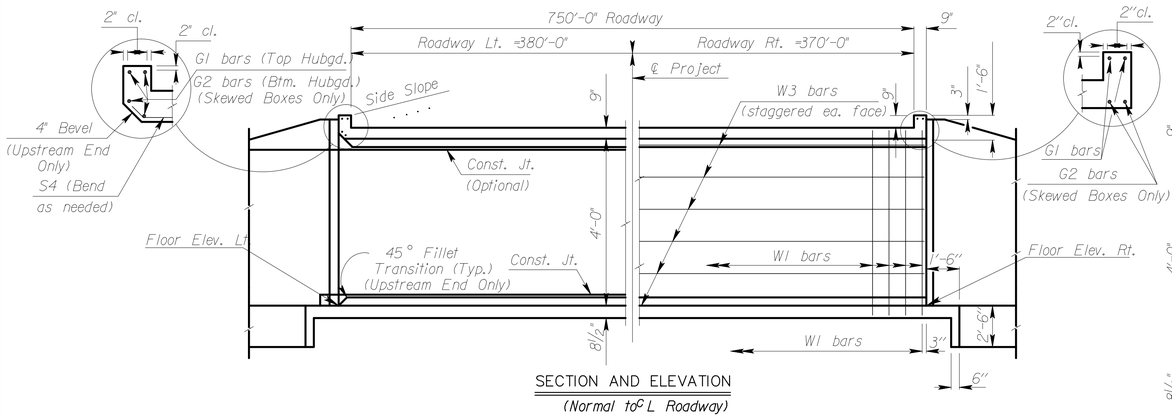
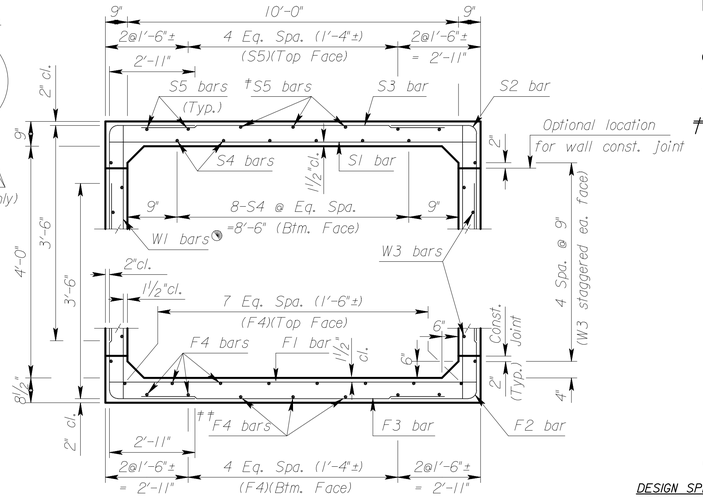
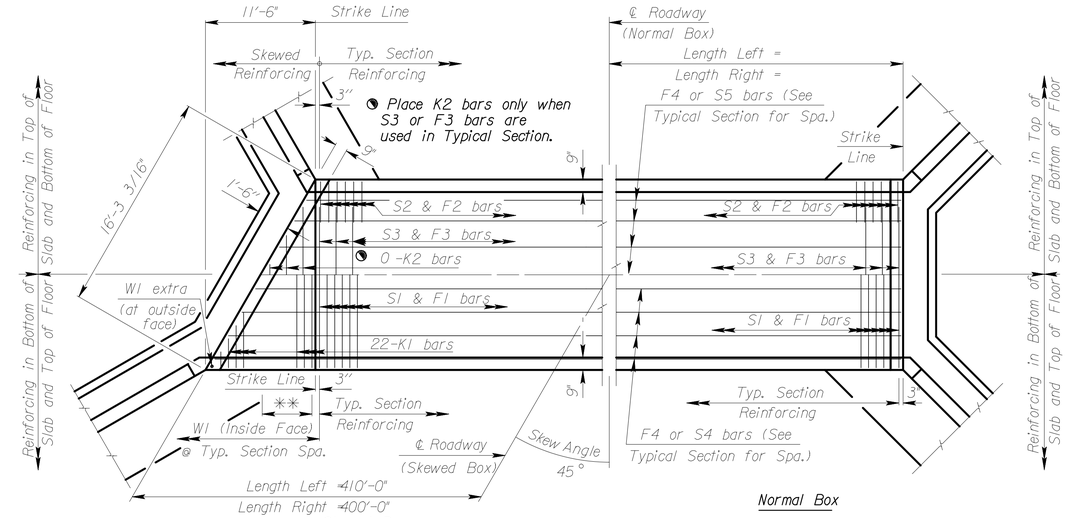
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	1858	2014	14	43



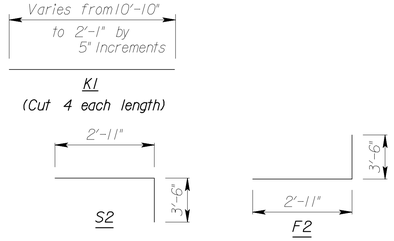
SECTION AND ELEVATION
(Normal to ℄ L Roadway)



TYPICAL SECTION



PLAN



BENDING DIAGRAM
All Dimensions are out to out of bars.

◔ See RCB Auxiliary Details for Optional Splice.

† Omit when S3 bar is omitted

†† Omit when F3 bars are omitted.

Note: Use only cast-in-place construction at this location.

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.

DESIGN LOADING: HL93

UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i. Reinforcing Steel; fy = 60,000 p.s.i.

FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.

CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a 3/4 inch triangular moulding. Where Grade 4.0 Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.

REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.

EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Grade 4.0 Concrete. Excavation for RCB Bridges shall be paid for as Class III Excavation.

SEAL COURSE: A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.

FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans. Payment for additional quantities that result from including seal course and/or floating apron, as a change in original plans, shall be made at the Unit Price bid for the various items involved.

GRANULAR BACKFILL (WINGWALLS): See the "Auxiliary Details" sheet.

STRIKE LINE: Wingwalls and that portion of the RCB outside the Strike Line shall be constructed level. Footing for wingwalls shall be constructed with the culvert floor. See wingwall detail sheet.

BRIDGE BACKWALL PROTECTION SYSTEM: For structures with this bid item in the Summary of Quantities. See the "Auxiliary Details" sheet.

Minimum Splice Lengths	
#4	1'-5"
#5	1'-9"

△ Epoxy Coated Bars
* See Bending Diagram

CULVERT SUMMARY

‡ For design purposes ONLY. Do NOT use for Construction ◔ includes any welded wire fabric

Floor Elev. Lt.	Floor Elev. Rt.	Crown Gr. Elev.	‡Design Fill Ht.	Skew Lt	Left Wings	Right Wings	Scour Apron	Soil Saver	Concrete Barrel (Cu.Yds.)	Concrete Wings (Cu.Yds.)	Concrete Total (Cu.Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	Reinf. Steel (Gr. 60) ◔Wings (Lbs.)	Reinf. Steel (Gr. 60) Total (Lbs.)	LRFR RATING FACTORS HL-93 Loading Inventory	HL-93 Loading Operating
1261.69	1259.50	1269.10	2	45	Straight	Flared	No	No	698.76	13.86	712.62	109935	1360	111294	1.12	1.45

BAR SCHEDULE

△F1 Size	Spa.	No.	Length	△F2 * Size	Spa.	No.	Length	△F3 Size	Spa.	No.	Length	△F4 Size	No.	Length	△S1 Size	Spa.	No.	Length	△S2 * Size	Spa.	No.	Length	△S3 Size	Spa.	No.	Length	△S4 Size	No.	Length	△S5 Size	No.	Length
5	5"	1916	11'-0"	5	7"	2766	6'-5"	N/A	N/A	N/A	N/A	4	252	39'-11"	5	5"	1916	11'-0"	5	7"	2766	6'-5"	N/A	N/A	N/A	N/A	5	112	59'-6"	4	84	39'-11"

△K1 Size	Spa.	No.	Length	△K2 Size	Spa.	No.	Length	△W1 Size	Spa.	No.	Length	△W2 Size	Spa.	No.	Length	△W3 Size	No.	Length	△W4 Size	Spa.	No.	Length	△G1 Size	No.	Length	△G2 Size	No.	Length	Size	Spa.	No.	Length
5	5"	88	*	N/A	N/A	N/A		4	10"	1946	5'-1"	N/A	N/A	N/A	N/A	4	210	39'-11"	N/A	N/A	N/A	N/A	5	4	15'-10"	8	4	15'-10"				

SUMMARY OF QUANTITIES	
Concrete (Grade 4.0)	415.7 C.Y.
Concrete (Grade 4.0)(AE)	296.9 C.Y.
Bridge Backwall Protection System	1212 S.Y.
Reinforcing Steel (Gr. 60)	1360 Lbs.
Reinforcing Steel (Gr.60)(Epoxy Coated)	109930 Lbs.
Class III Excavation	C.Y.
Foundation Stabilization	241 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls)	18 C.Y.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Serial No.(000) Sta. 10+00.00
SINGLE 10 ft x 4 ft RFB
(45° SKEW LT.)

BR 1.10.4 F Sedgwick Co.

FHWA APPROVAL	10-20-10	APP'D	Terry L. Fleck
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

SOUTHFORK COMMERCIAL ADDITION
PAVING & DRAINAGE IMPROVEMENTS
10'X 4' RCB DETAIL
CITY OF WICHITA, KANSAS
GARY JANZEN, P.E. – CITY ENGINEER
PROJECT NO. 468-84826 OCA NO. (751507)
PROJECT NO. 472-85050 OCA NO. (766279)

No.	Date	By	Approved	Revision

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

FINAL

Engineer: T. AUSTIN
Designer: M. TUCKER
Poe Job No.: 1858
Date: JANUARY 2014