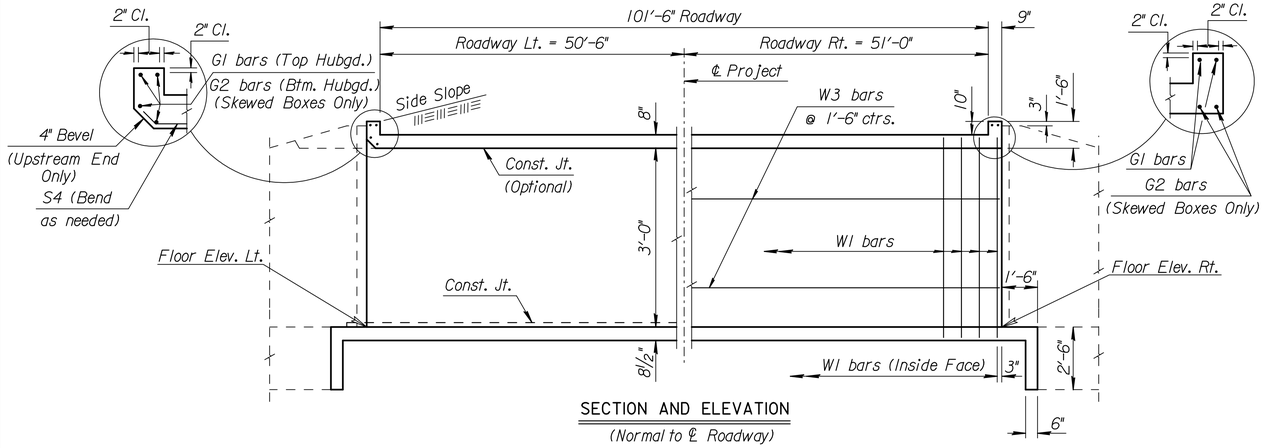
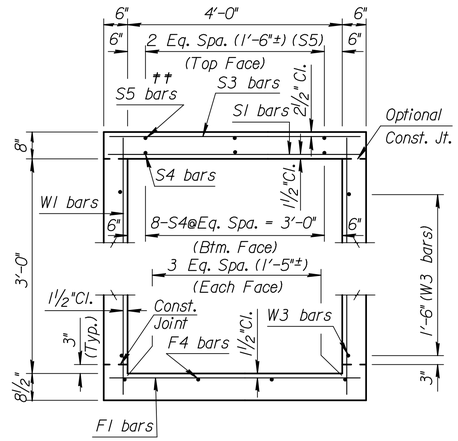
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-84636	2008	107	282



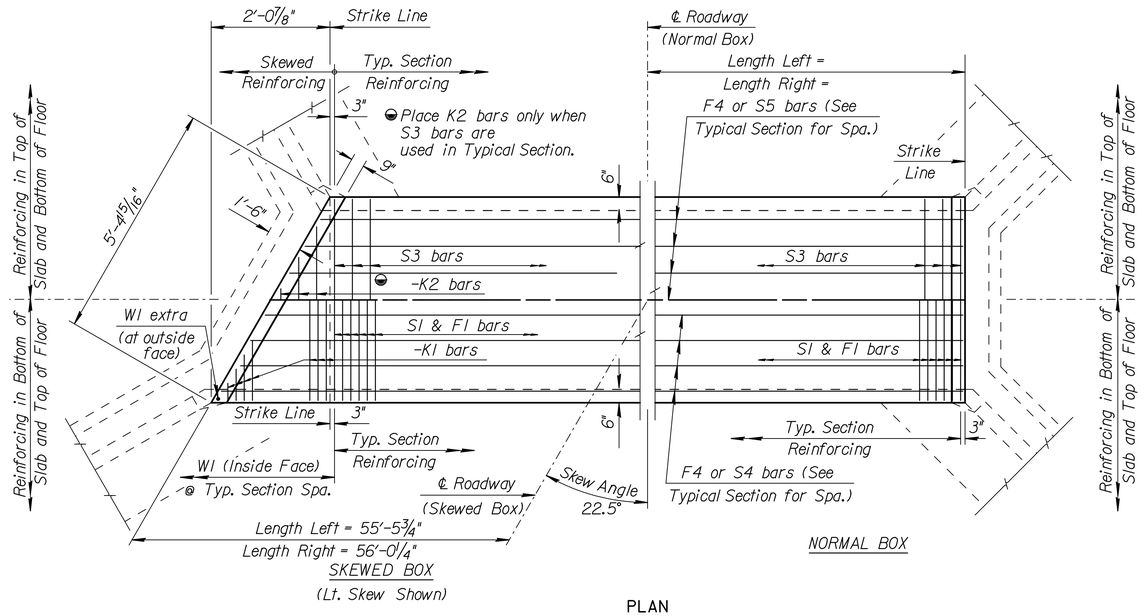
SECTION AND ELEVATION
(Normal to ℄ Roadway)



TYPICAL SECTION

Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 12".

†† Omit S5 bars when S3 bars are omitted



PLAN

Details are shown for complete cast-in-place construction. Only pre-cast barrel sections will be accepted at this location. See BR031 for pre-cast and cast-in-place limit requirements. See payment note this sheet.

BENDING DIAGRAM
All Dimensions are out to out of bars.

GENERAL NOTES

LOADING: HS20-44 AASHTO Specifications, 1983 Edition.
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 ¾ 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): Special backfill procedures may be required at the direction of the Engineer. See 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.
PAYMENT: The 4 ft x 3 ft RCB shall bid per Linear Foot and shall include all labor, material, excavation, concrete, reinforcing steel, seal course, and all other incidentals necessary to complete the work. Quantities shown are for information only.

⧖ For design purposes ONLY. Do NOT use for Construction

CULVERT SUMMARY

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.)
1363.40	1363.20	1369.86	0	22.5	FLARED	FLARED	NO	NO	41.02	8.16	49.18	5142	696	5836

BAR SCHEDULE

F1 Size	F1 Spa.	F1 No.	F1 Length	K2 Size	K2 Spa.	K2 No.	K2 Length	W1 Size	W1 Spa.	W1 No.	W1 Length	F4 Size	F4 No.	F4 Length	S1 Size	S1 Spa.	S1 No.	S1 Length	W3 Size	W3 Spa.	W3 No.	W3 Length	S3 Size	S3 Spa.	S3 No.	S3 Length	S4 Size	S4 No.	S4 Length	S5 Size	S5 No.	S5 Length
5	5"	263	4'-8"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	12	38'-0"	5	5"	263	4'-8"	N/A	N/A	N/A	N/A	4	1'-6"	74	4'-8"	4	24	38'-0"	4	9	38'-0"

K1 Size	K1 Spa.	K1 No.	K1 Length	G1 Size	G1 No.	G1 Length	G2 Size	G2 No.	G2 Length	G2 Size	G2 Spa.	G2 No.	G2 Length
5	5"	16	*	5	4	5'-0"	5	4	5'-0"	N/A	N/A	N/A	N/A

* See Bending Diagram

Minimum Splice Lengths	
#4	1'-4"
#5	1'-8"
#6	2'-0"

* SUMMARY OF QUANTITIES

Concrete (Grade 4.0)	49.2 C.Y.
Concrete (Grade 4.0)(AE)	0.0 C.Y.
Reinforcing Steel (Gr. 60)	5840 Lbs.
Reinforcing Steel (Epoxy Coated)	0 Lbs.
Class III Excavation	—— C.Y.
Foundation Stabilization	23 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls) (Set)	1 C.Y.

* For Information Only

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
Sta. 248+01.23

SINGLE 4 ft x 3 ft RCB
(Skew 22.5°Lt.)

BR 1.4.3 P — Sedgwick Co.

FHWA APPROVAL	6-5-91	APP'D	KENNETH F. HURST
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

Plotted By: unfitted
Plot Location: $KDOTGRP$
File: I:\2001\01\16\RCB\01616-RCB-Sta 248+01_23\KDOT V8i.dgn
Plot Date: 8/29/2008