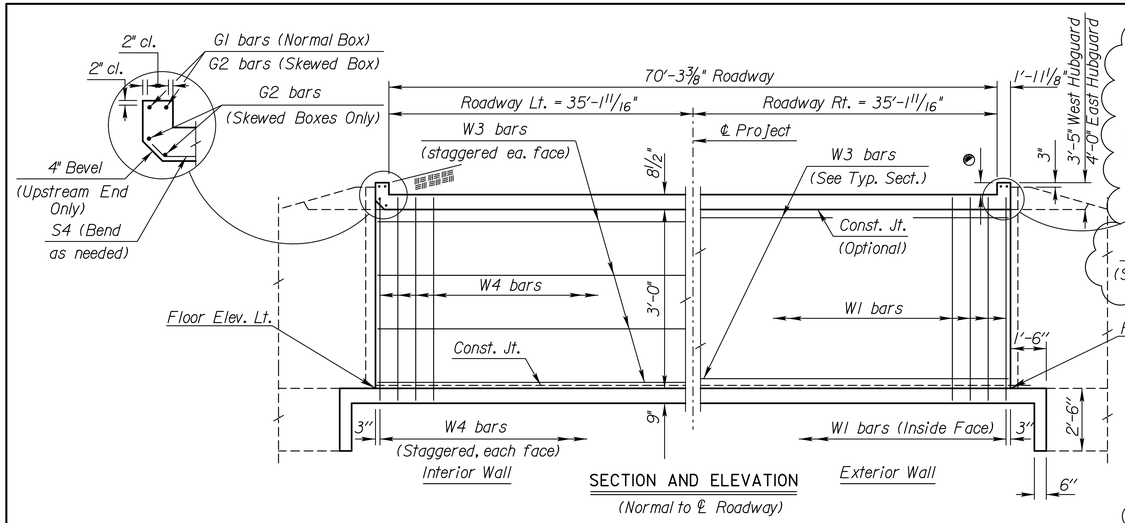
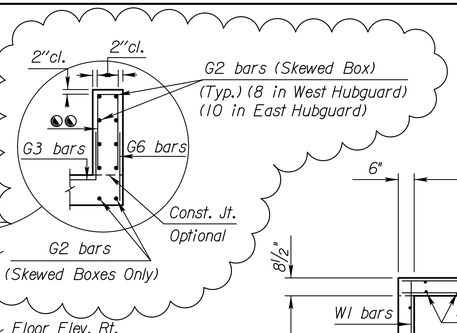
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	15120-001	2015	29	36

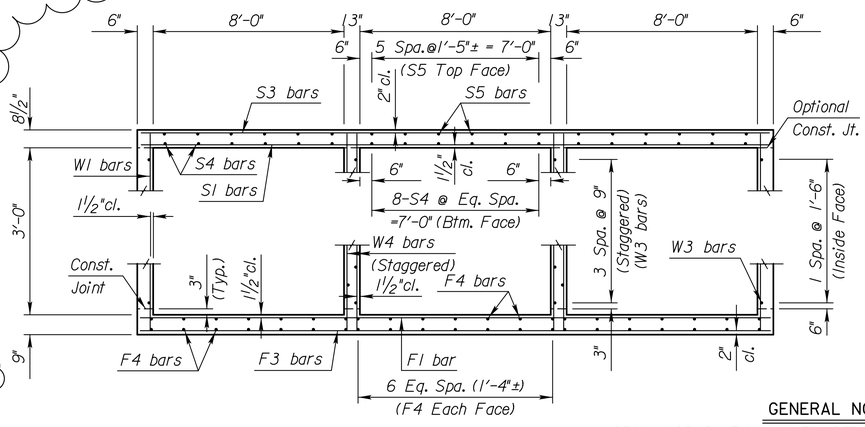
06	SYSTEM PART	VERSION/ID
	CADD VBA	12/6/2000
	DATABASE	10/6/2003
	RCB PROGRAM	7.LIT
	KBOX MODEL ID	63
	CELL LIBRARY	10/6/2003

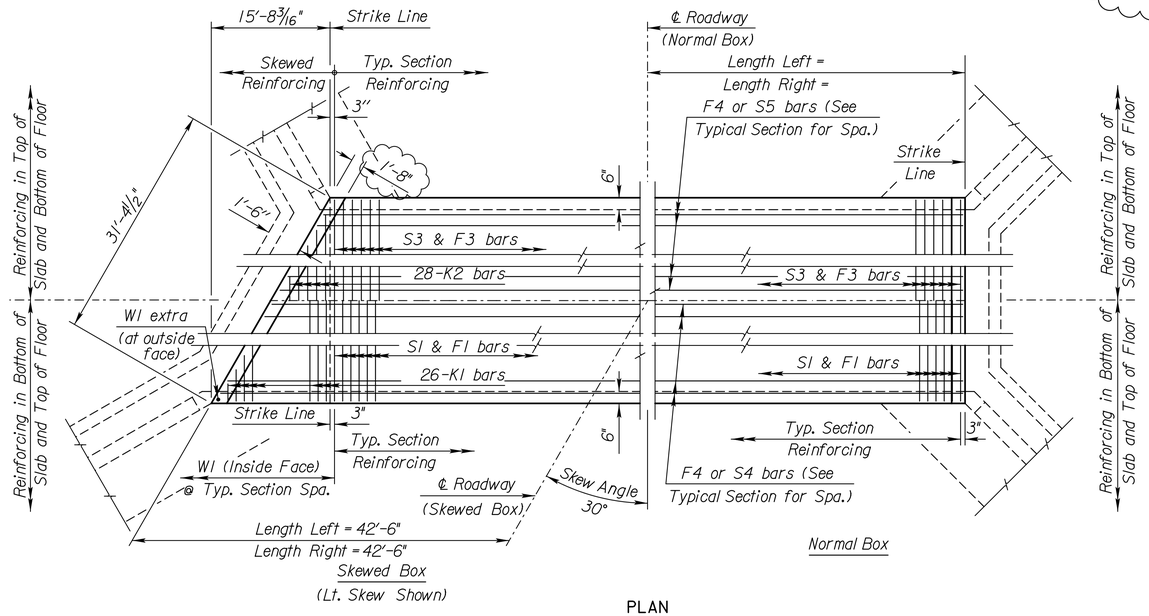
Plotted By: mlb
Plot Location:
File: U:\Wichita-Civil\2015\15120000\Trans\Bridge\DGN_Project\029_3-8x3Box1.dgn
Plot Date: 17-NOV-2015 16:44



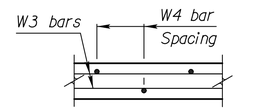
SECTION AND ELEVATION
(Normal to ℄ Roadway)







PLAN



PLAN OF INTERIOR WALL

Varies from 26'-2" to 2'-8 1/2" by 11 1/2" Increments

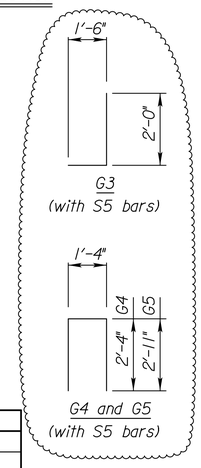
K1
(Cut 4 each length)

Varies from 26'-3" to 2'-0 by 10 1/2" Increments

K2
(Cut 4 each length)

BENDING DIAGRAM

All Dimensions are out to out of bars.



TYPICAL SECTION

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

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 includes the surfacing.

CONCRETE: Use concrete conforming to Grade 4.0 Concrete. Bevel all exposed edges with a ¾" triangular molding. Where Grade 4.0(AE) is specified, place this concrete in the top slab above the Construction Joint.

REINFORCING: Use reinforcing steel conforming to ASTM A615, Grade 60. All dimensions relative to reinforcing steel are to the centerline of the 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: The Engineer may require a seal course. The seal course shall be unreinforced Concrete(Commercial Grade) with 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 they are required by the plans. Payment for additional quantities that result from including a seal course and/or a floating apron, as a change in the 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: Construct the wingwalls and that portion of the RCB outside the Strike Line level. Construct the wingwall footings with the culvert floor. See the wingwall detail sheets.

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

SUMMARY OF QUANTITIES	
Concrete (Grade 4.0)	97.5 C.Y.
Concrete (Grade 4.0)(AE)	73.4 C.Y.
Bridge Backwall Protection System	236 S.Y.
Reinforcing Steel (Gr. 60)	2420 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	30120 Lbs.
Class III Excavation	C.Y.
Foundation Stabilization	48 C.Y.
Rock for Seal Course (Set)	52 C.Y.
Granular Backfill (Wingwalls)	48 C.Y.

† Post Column Bars
△ Epoxy Coated Bars
✳ See Bending Diagram

⧗ For design purposes ONLY. Do NOT use for Construction — CULVERT SUMMARY — ◔ includes any welded wire fabric

Floor Elev. Lt.	Floor Elev. Rt.	Crown Gr. Elev.	⧗ Design Fill Ht.	Skew Rt	Left Wings	Right Wings	Scour Apron	Soil Saver	Concrete Barrel (Cu.Yds.)	Concrete Wings (Cu.Yds.)	Concrete Columns (Cu.Yds.)	Concrete Total (Cu.Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	Reinf. Steel (Gr. 60) ◔ Wings (Lbs.)	Reinf. Steel (Gr. 60) Columns (Lbs.)	Reinf. Steel (Gr. 60) Total (Lbs.)	LRFR RATING FACTORS HL-93 Loading Inventory	HL-93 Loading Operating
1350.00	1349.00	1355.55	2	30	Flared	Flared	No	No	170.83	24.16	1.19	196.18	29566	2414	546	32526	1.45	1.85

BAR SCHEDULE

△ F1 Size	Spa.	No.	Length	△ F3 Size	Spa.	No.	Length	△ F4 Size	No.	Length	△ S1 Size	Spa.	No.	Length	△ S3 Size	Spa.	No.	Length	△ S4 Size	No.	Length	△ S5 Size	No.	Length	† △ L1 Size	No.	Length	† △ L2 Size	No.	Length	† △ L3 Size	No.	Length	✳ △ G3 Size	No.	Length	✳ △ G4 Size	No.	Length
6	6½"	128	26'-11"	5	6"	139	26'-11"	4	84	39'-0"	6	6½"	128	26'-11"	5	6"	139	26'-11"	5	48	39'-3"	4	36	39'-0"	3	40	3'-6"	6	8	10'-5"	6	8	10'-8"	5	36	3'-6"	5	18	6'-0"

△ 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	△ G2 Size	No.	Length	† △ L4 Size	No.	Length	† △ L5 Size	No.	Length	✳ △ G5 Size	No.	Length	△ G6 Size	No.	Length
6	6½"	104	✳	5	6"	116	✳	4	9"	230	4'-1"	N/A	N/A	N/A	N/A	4	24	39'-0"	4	9"	228	4'-1"	6	18	31'-0"	6	8	9'-10"	6	8	10'-1"	5	18	7'-2"	4	36	2'-4"

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. N/A-87-N/A(000) Sta. 10+00.00
TRIPLE 8 ft x 3 ft RCB(10°ROT.RT.)
(30°SKEW RT.)

BR 3.8.3 P — Sedgwick Co.

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

11/18/2015
CHARLES W. FINKEL
23458
REGISTERED PROFESSIONAL ENGINEER
KANSAS