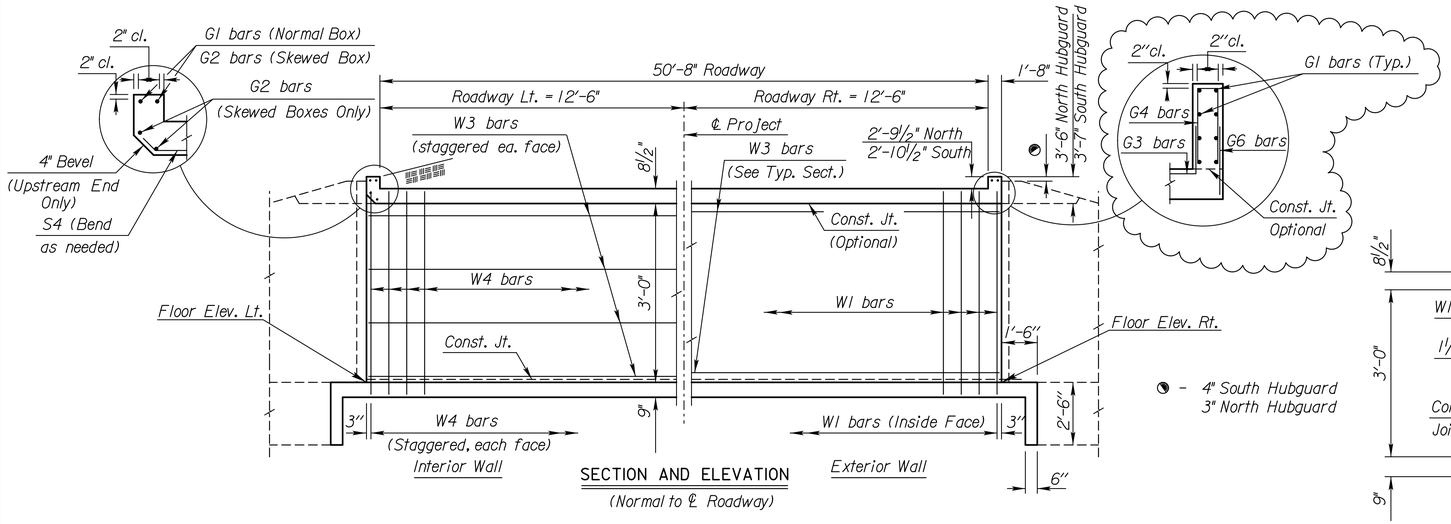
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	15120-002	2015	20	25

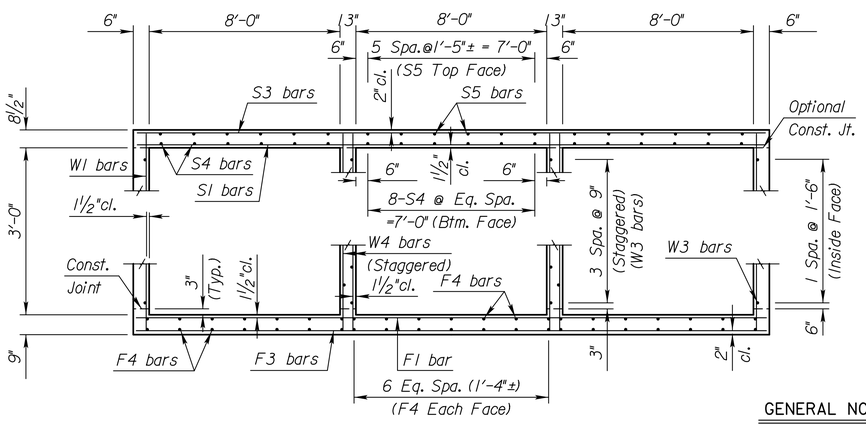
SYSTEM PART	VERSION/ID
CADD V8A	12/6/2000
DATABASE	10/6/2003
RCB PROGRAM	7.LIT
KBOX MODEL ID	63
CELL LIBRARY	10/6/2003

06

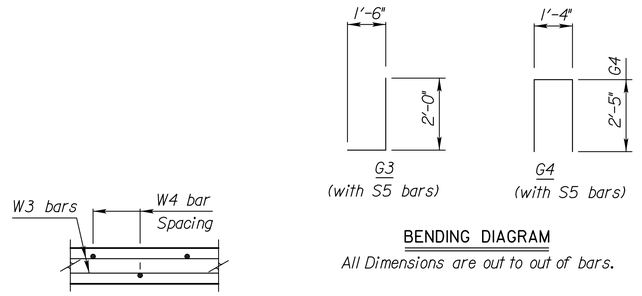
Plot Location:
File: U:\Wichita-Civil\2015\15120\002Trans\Bridge\DGN_Project\020_3-8x3A(Box).dgn
Plotted By: mlb
Plot Date: 18-NOV-2015 08:22



SECTION AND ELEVATION
(Normal to ℄ Roadway)

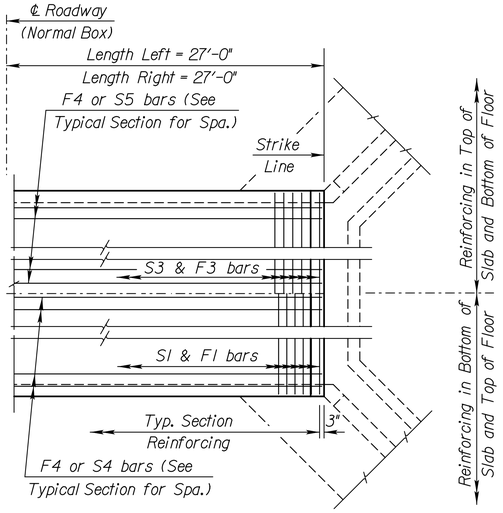


TYPICAL SECTION



BENDING DIAGRAM
All Dimensions are out to out of bars.

PLAN OF INTERIOR WALL



Normal Box

PLAN

✳ See Bending Diagram
† Pedestrian Rail Columns
△ Epoxy Coated Bars

⧗ 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	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
1349.00	1348.94	1355.12	2	0	Flared	Flared	No	No	111.71	18.15	1.19	131.05	19682	1960	444	22086	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	Spa.	No.	Length	△†L2 Size	No.	Length	△✳G3 Size	No.	Length
6	6½"	100	26'-11"	5	6"	108	26'-11"	4	84	27'-7"	6	6½"	100	26'-11"	5	6"	108	26'-11"	5	24	53'-9"	4	36	27'-7"	3	10"	40	3'-6"	6	16	8'-0"	5	36	3'-6"

△ W1 Size	Spa.	No.	Length	△ W2 Size	Spa.	No.	Length	△ W3 Size	No.	Length	△ W4 Size	Spa.	No.	Length	△ G1 Size	No.	Length	△†L2 Size	No.	Length	△†L3 Size	Spa.	No.	Length	△✳G4 Size	No.	Length	△ G6 Size	No.	Length
4	9"	146	4'-2"	N/A	N/A	N/A	N/A	4	24	27'-7"	4	9"	146	4'-2"	5	16	26'-11"	6	16	8'-0"	6	N/A	16	8'-3"	5	36	6'-2"	4	36	2'-4"

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

SUMMARY OF QUANTITIES

Concrete (Grade 4.0)	81.9 C.Y.
Concrete (Grade 4.0)(AE)	49.2 C.Y.
Bridge Backwall Protection System	158 S.Y.
Reinforcing Steel (Gr. 60)	1960 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	19690 Lbs.
Class III Excavation	C.Y.
Foundation Stabilization	37 C.Y.
Rock for Seal Course (Set)	33 C.Y.
Granular Backfill (Wingwalls)	24 C.Y.

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.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. N/A-87-N/A(000) Sta. 20+00.00
TRIPLE 8 ft x 3 ft RCB

~~BR-3.8.3-P~~ Sedgwick Co.

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

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