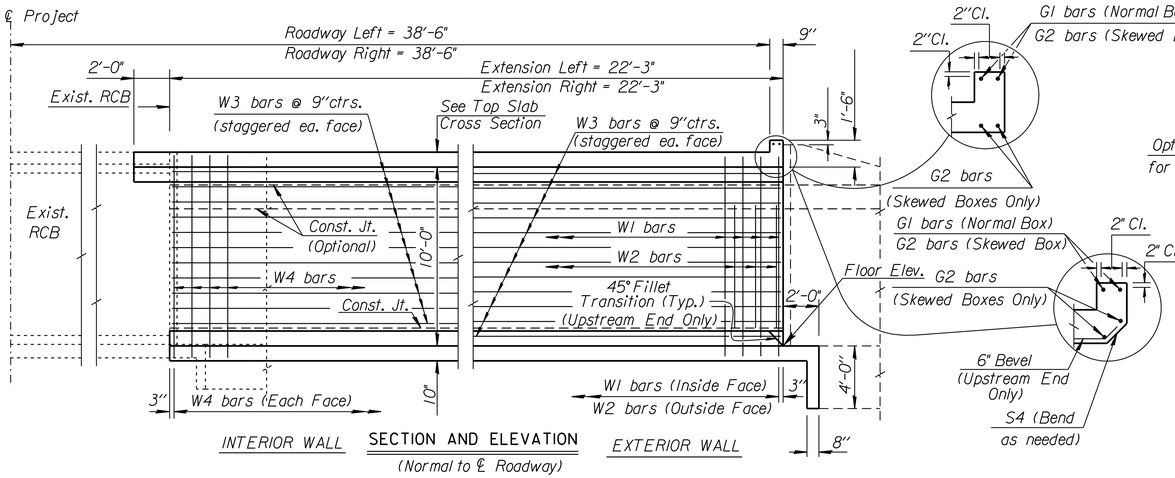
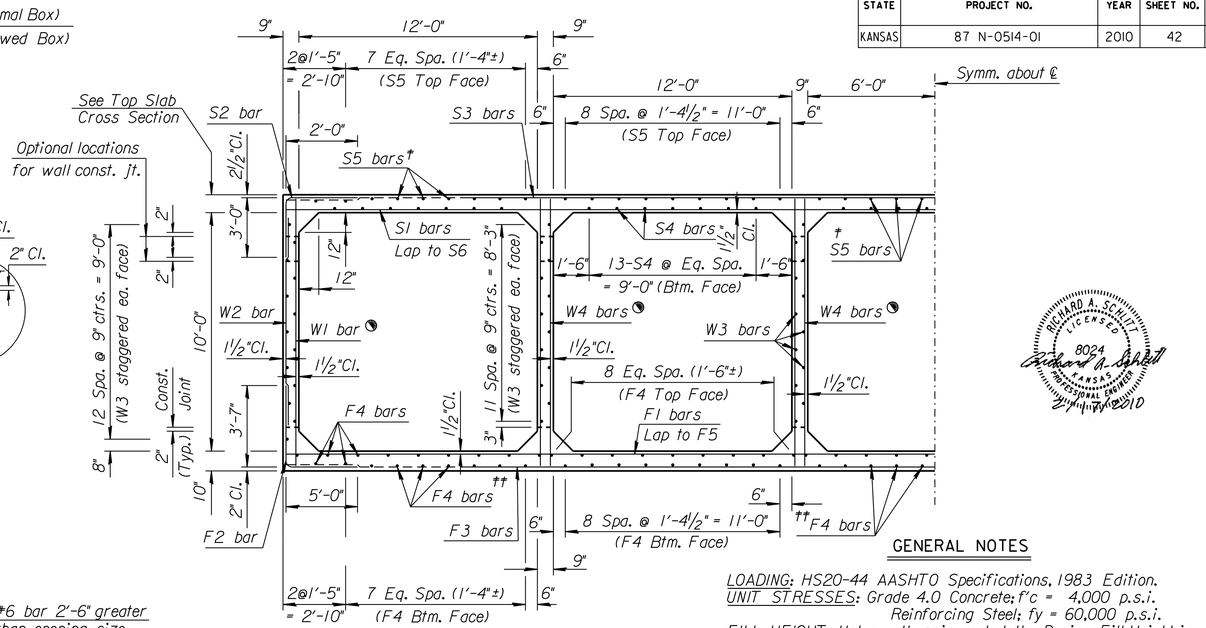
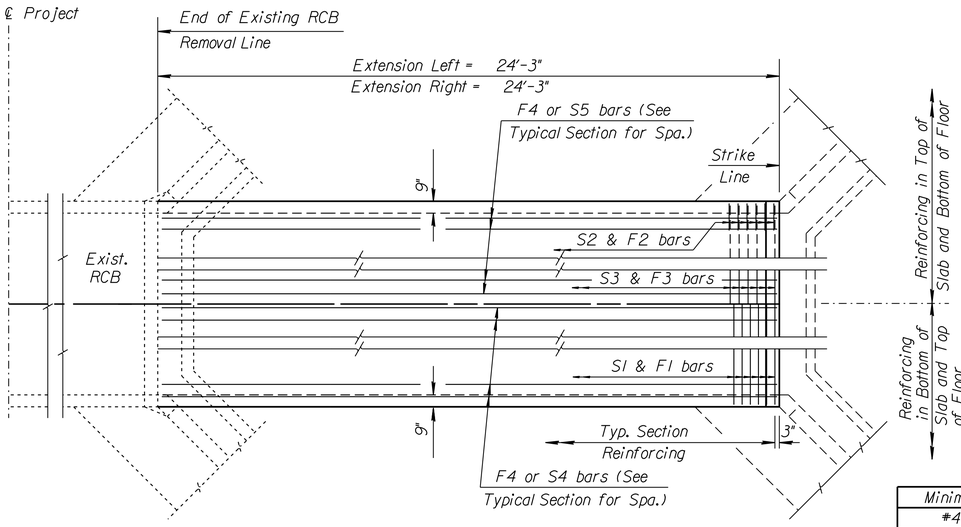
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 N-0514-01	2010	42	148

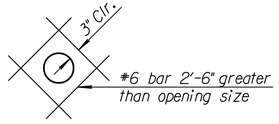




TYPICAL SECTION

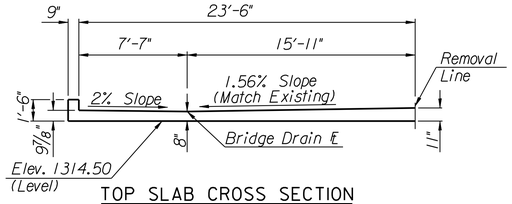


PLAN



PIPE DETAILS

Note: See Sheet No. 31 For Placement Details



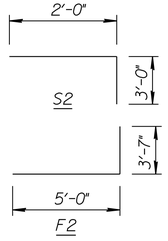
TOP SLAB CROSS SECTION

◔ See RCB Auxillary Details for Optional Splice.
† Place when S3 bar extends to exterior walls.

†† Place when F3 bar extends to exterior walls.

See Standard No. RD 080 for additional details.

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



BENDING DIAGRAM

All Dimensions are out to out of bars.

◔ includes any apron or soil saver welded wire fabric
** For information only. See Sh. No. 41 for bid quantities

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

△ Epoxy Coated Bars
✱ See Bending Diagram

△F5			
Size	Spa.	No.	Length
4	6"	47	27'-3"
4	6"	47	27'-3"

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 (AE) Concrete shall be used throughout. Bevel all exposed edges with a ¾inch 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.

⧖ For design purposes ONLY. Do NOT use for Construction — CULVERT SUMMARY — ✱ Epoxy Coated Reinforcing Steel

	Floor Elev.	Crown Gr. Elev.	⧖ Design Fill Ht.	Skew	Wings	Scour Apron	Soil Saver	Concrete ✱✱ Non-AE Concrete: Barrel (Cu.Yds.)	Wings (Cu.Yds.)	✱✱Apron (Cu.Yds.)	Rails (Cu.Yds.)	Total (Cu.Yds.)	Reinf. Steel (Gr. 60): Barrel (Lbs.)✱	Wings (Lbs.)✱	Apron (Lbs.)	Rails (Lbs.)✱	Total (Lbs.)
Ext.Lt.	1304.50	1315.63	0	0	FLARED	YES	YES	151.9	48.3	40.9	6.8	247.9	27673	5976	545	2841	37035
Ext.Rt.	1304.50				FLARED			151.9	39.1	34.8	6.9	232.7	27673	5244	406	2827	36150

BAR SCHEDULE

	△ F1				△ F2 ✱				△ F3				△ F4			△ S1				△ S2 ✱				△ S3				△ S4			△ S5		
	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	No.	Length
Ext.Lt.	4	6"	47	40'-0"	6	6½"	84	8'-7"	7	6½"	90	33'-2"	4	90	23'-11"	6	6"	47	41'-2"	5	6½"	84	5'-0"	6	6½"	90	33'-2"	4	65	23'-11"	4	45	23'-11"
Ext.Rt.	4	6"	47	40'-0"	6	6½"	84	8'-7"	7	6½"	90	33'-2"	4	90	23'-11"	6	6"	47	41'-2"	5	6½"	84	5'-0"	6	6½"	90	33'-2"	4	65	23'-11"	4	45	23'-11"

	△ K1				△ K2				△ W1				△ W2				△ W3				△ W4				△ G1			△ G2			△ S6			
	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	No.	Length	Size	Spa.	No.	Length
Ext.Lt.	N/A	N/A	N/A		N/A	N/A	N/A		5	1'-0"	46	11'-2"	4	6½"	84	7'-10"	4	74	21'-11"	6	1'-0"	184	11'-2"	6	4	34'-9"	N/A	N/A	N/A	6	6"	47	28'-4"
Ext.Rt.	N/A	N/A	N/A		N/A	N/A	N/A		5	1'-0"	46	11'-2"	4	6½"	84	7'-10"	4	74	21'-11"	6	1'-0"	184	11'-2"	6	4	34'-9"	N/A	N/A	N/A	6	6"	47	28'-4"

** SUMMARY OF QUANTITIES

Concrete (Grade 4.0)	75.7 C.Y.
Concrete (Grade 4.0)(AE)	404.9 C.Y.
Reinforcing Steel (Gr. 60) ◔	1682 Lbs.
Reinforcing Steel (Gr.60)(Epoxy Coated)	72234 Lbs.
Class III Excavation	82 C.Y.
Foundation Stabilization	78 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls) (Set)	1 C.Y.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
127TH ST. STA. 5+86.19
5 - 12 ft x 10 ft RFB
24.3 ft EXT. RT.
24.3 ft EXT. LT.
~~BR 3.12.10 F~~ Sedgwick Co.

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

Sh. No. 42

Plotted By: rjm
Plot Location: $KDOTGRP$
File: i:\2008\087TBOffice Check\087T8-042-5-12x10-RFB_Details.dgn
Plot Date: 2/17/2010