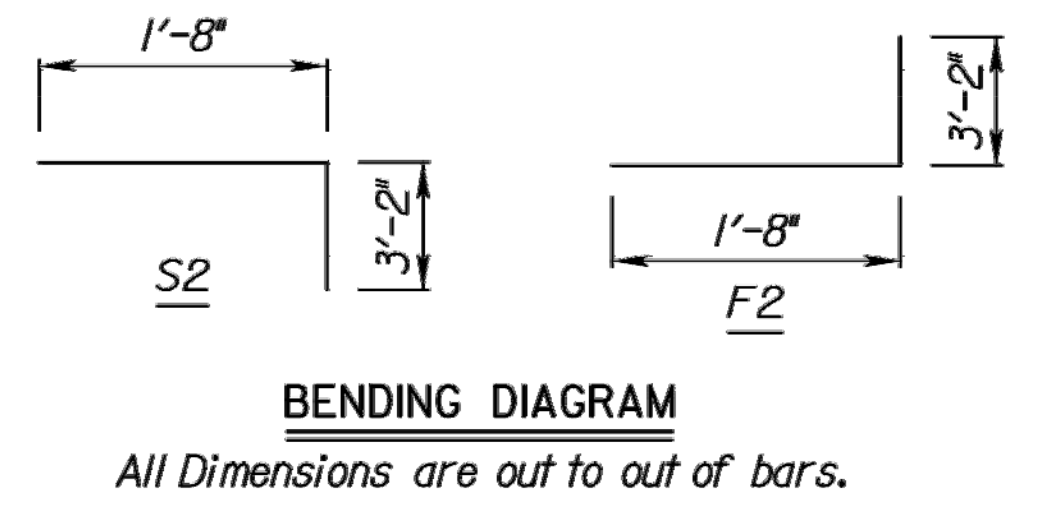
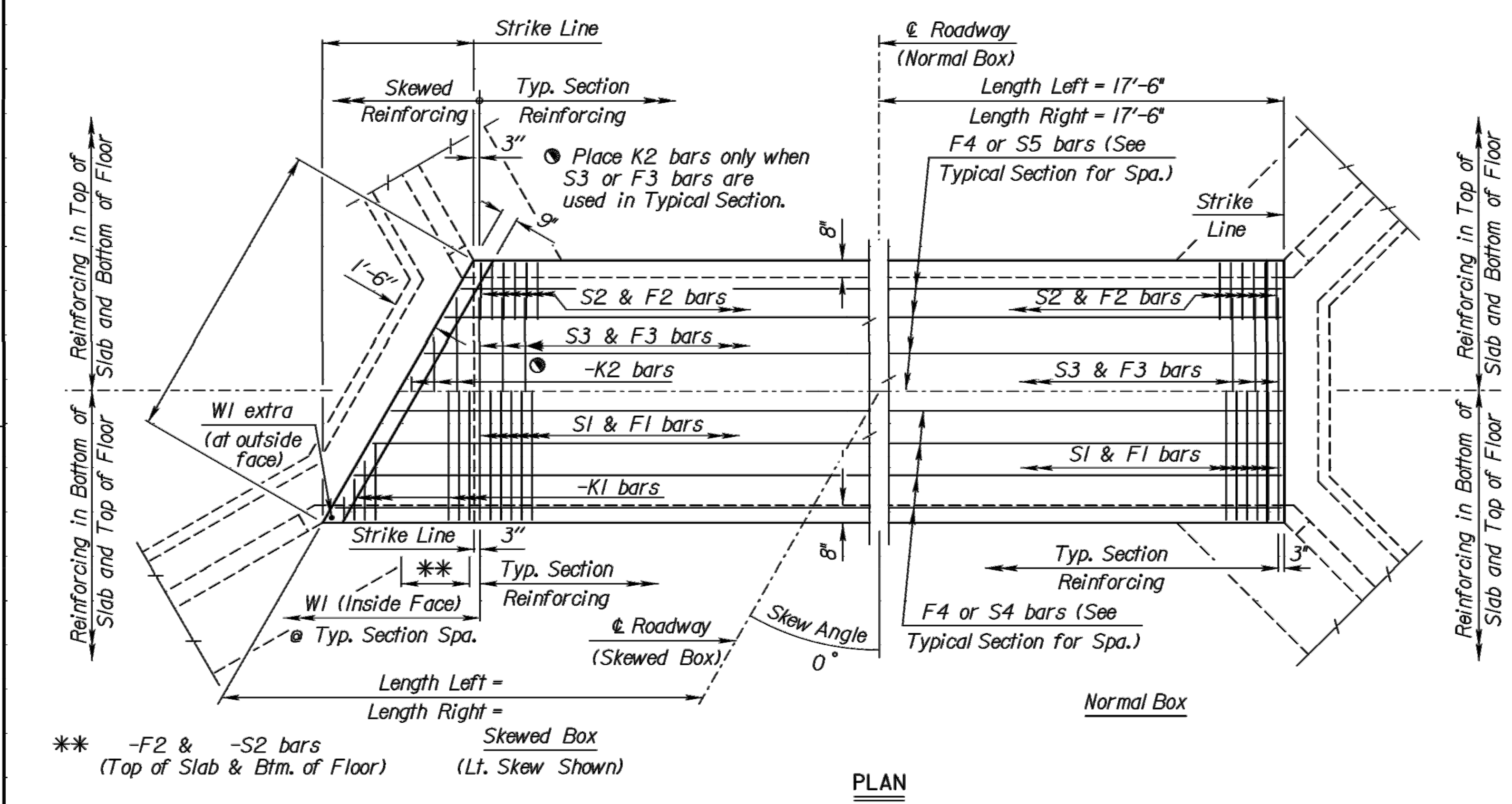
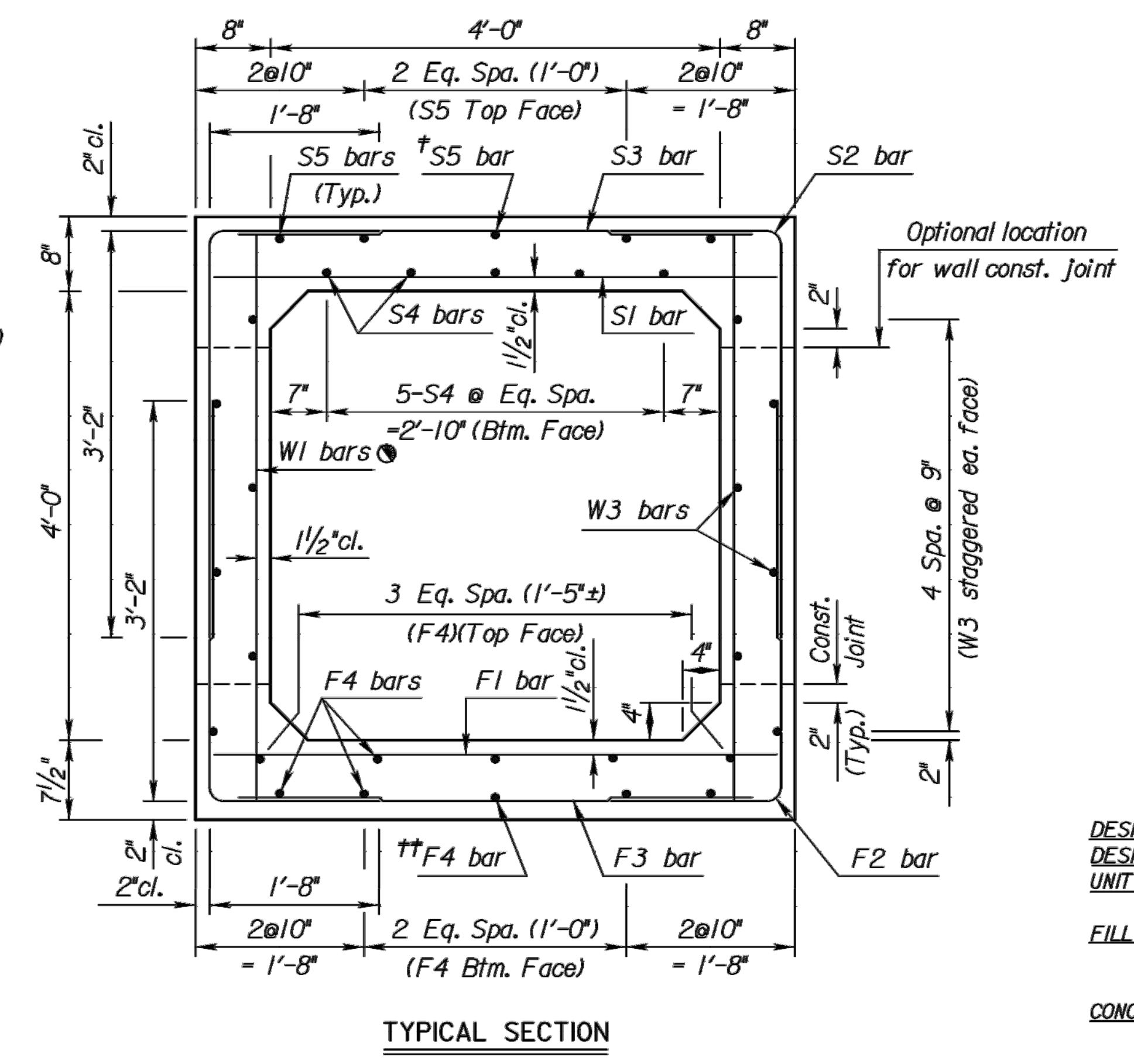
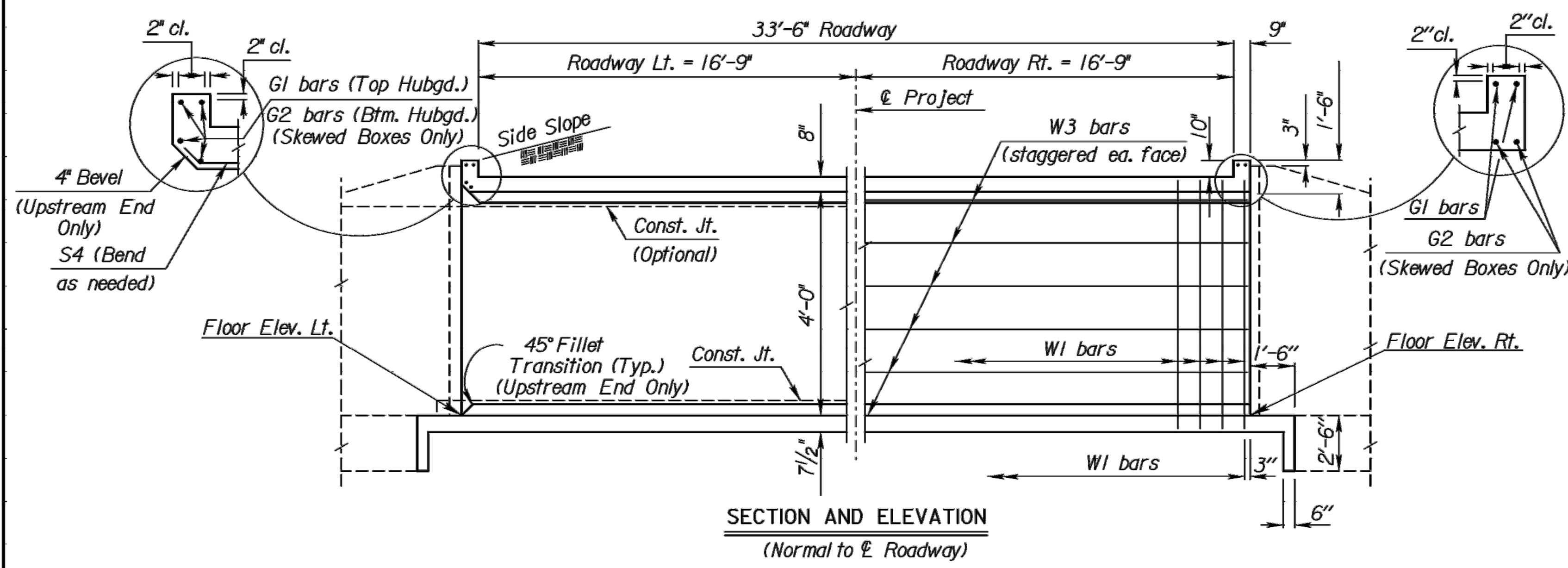


STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	87 TE-0451-01	2018	52	222

VERSION/ID	SYSTEM PART
12/15/2010	CADD VBA
1/20/2008	DATABASE
1/21	RCB PROGRAM
10/16/2013	RCB MODEL ID
	CELL LIBRARY

06



- See RCB Auxiliary Details for Optional Splice.
- † Omit when S3 bar is omitted
- †† Omit when F3 bars are omitted.

**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;  $f_y = 60,000$  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 mounding. 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 under-run 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.

#4	1'-5"
#5	1'-9"

Floor Elev. Lt.	Floor Elev. Rt.	Crown Gr. Elev.	Design Fill Ht.	Skew	Left Wings	Right Wings	Scour Apron	Soil Saver	Concrete			Reinf. Steel (Gr. 60)			LRFR RATING FACTORS	
									Barrel (Cu.Yds.)	Wings (Cu.Yds.)	Total (Cu.Yds.)	Barrel (Lbs.)	Wings (Lbs.)	Total (Lbs.)	Inventory	Operating
1350.60	1350.30	1359.30	0	0	Flared	Flared	No	No	16.37	8.81	25.17	2416	1122	3538	2.69	3.49

Δ F1		Δ F2 *				Δ F3				Δ F4				Δ S1				Δ S2 *				Δ S3				Δ S4				Δ S5						
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length					
4	5"	84	5'-0"	4	9"	94	4'-10"	N/A	N/A	N/A	N/A	4	8	34'-8"	5	5"	84	5'-0"	4	9"	94	4'-10"	4	9"	94	4'-10"	4	1'-6"	24	5'-0"	5	5	34'-8"	4	5	34'-8"
Δ K1		Δ K2				Δ W1				Δ W2				Δ W3				Δ W4				Δ G1				Δ G2										
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	10"	84	4'-11"	N/A	N/A	N/A	N/A	4	10	34'-8"	N/A	N/A	N/A	N/A	5	4	5'-0"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Concrete (Grade 4.0)	19.3 C.Y.
Concrete (Grade 4.0(AE))	5.9 C.Y.
Bridge Backwall Protection System	27 S.Y.
Reinforcing Steel (Gr. 60)	1120 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	2420 Lbs.
Class III Excavation	C.Y.
Foundation Stabilization	10 C.Y.
Concrete for Seal Course (Set)	2.0 C.Y.
Granular Backfill (Wingwalls)	24 C.Y.

NO.	DATE	REVISIONS	BY	APP'D
<b>KANSAS DEPARTMENT OF TRANSPORTATION</b> Sta. 166+81.33 <b>SINGLE 4 ft x 4 ft RFB</b>				
BR I.4.4 F		Sedgwick Co.		
DESIGNED	DETAILED	QUANTITIES	CADD	APP'D
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.	

Plotted By: Judith  
 File: 2018-9-6-472-85360\_1-4x4A.dgn  
 Plot Date: 07-SEP-2018 13:15