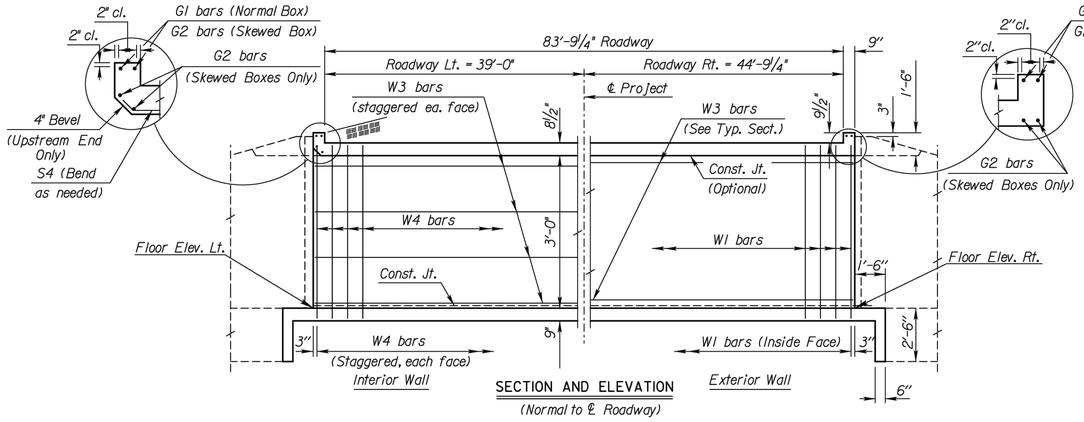
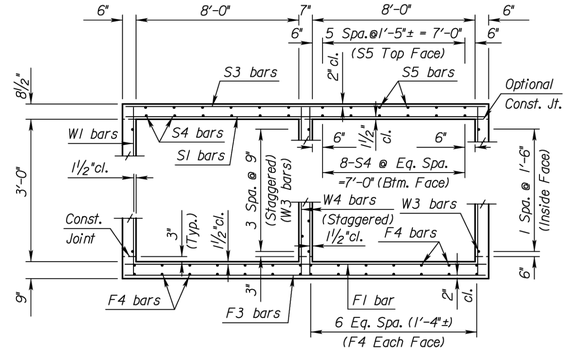
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS				



SECTION AND ELEVATION
(Normal to ℄ Roadway)

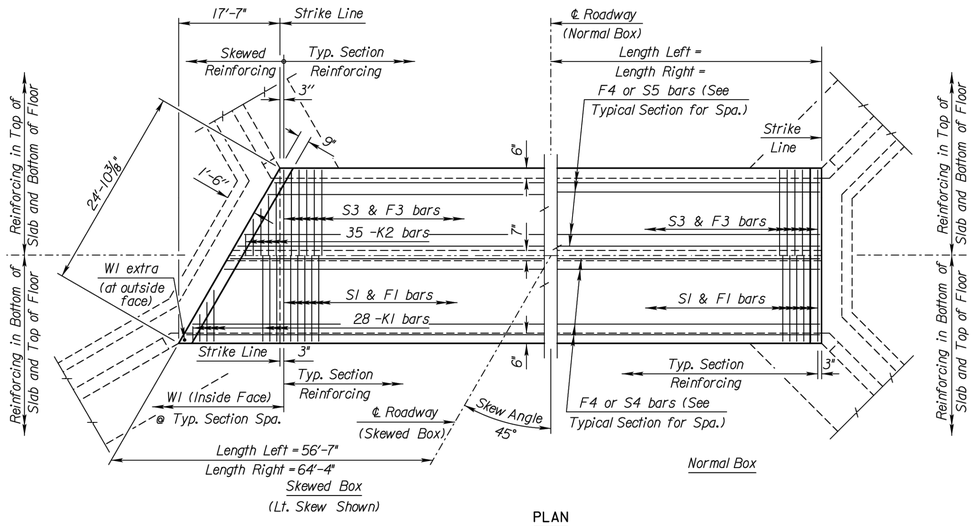


TYPICAL SECTION

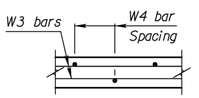
PAYMENT: THE BID ITEM "2-8'X3' BOX CULVERT CROSSING & WINGWALL" SHALL INCLUDE ALL MATERIALS AND INCIDENTALS FOR THE CONSTRUCTION OF THE BOX CULVERT CROSSING WEST STREET (SWS LINE 8). QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

GENERAL NOTES

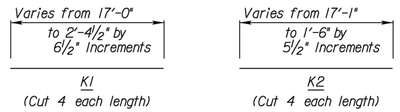
DESIGN SPECIFICATION: AASHTO LRFD Spec., 2007 Ed., 2009 Int.
DESIGN LOADING: HL93
UNIT STRESSES: Grade 4.0 Concrete f'c = 4,000 p.s.i.
Reinforcing Steel fy = 60,000 p.s.i.
FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.
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.



PLAN



PLAN OF INTERIOR WALL



BENDING DIAGRAM
All Dimensions are out to out of 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 Rt	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.)	LRFR Rating Factors: HL-93 Loading: Inventory	LRFR Rating Factors: HL-93 Loading: Operating
1277.01	1276.68	1282.73	2	45	None	Flared	No	No	137.18	2.92	140.10	28792	321	29113	1.22	1.56

△ Epoxy Coated Bars
✱ See Bending Diagram

BAR SCHEDULE

△ F1 Size	Spa.	No.	Length	△ F3 Size	Spa.	No.	Length	△ F4 Size	Spa.	No.	Length	△ S1 Size	Spa.	No.	Length	△ S3 Size	Spa.	No.	Length	△ S4 Size	Spa.	No.	Length	△ S5 Size	Spa.	No.	Length
6	6½"	191	17'-3"	N/A	N/A	N/A	N/A	5	5½"	225	17'-3"	4	112	31'-3"	6	6½"	191	17'-3"	N/A	N/A	N/A	N/A	5	5½"	225	17'-3"	5	48	41'-5"	4	48	31'-3"

△ K1 Size	Spa.	No.	Length	△ K2 Size	Spa.	No.	Length	△ W1 Size	Spa.	No.	Length	△ W2 Size	Spa.	No.	Length	△ W3 Size	Spa.	No.	Length	△ W4 Size	Spa.	No.	Length	△ G1 Size	No.	Length	△ G2 Size	No.	Length	Size	Spa.	No.	Length
6	6½"	112	✱	5	5½"	140	✱	4	9"	326	4'-1"	N/A	N/A	N/A	N/A	4	32	31'-3"	4	9"	162	4'-1"	N/A	N/A	N/A	7	8	24'-5"				

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

SUMMARY OF QUANTITIES

Concrete (Grade 4.0)	83.3 C.Y.
Concrete (Grade 4.0)(AE)	56.8 C.Y.
Bridge Backwall Protection System	259 S.Y.
Reinforcing Steel (Gr. 60)	320 Lbs.
Reinforcing Steel (Gr. 60)(Epoxy Coated)	28790 Lbs.
Class III Excavation	18 C.Y.
Foundation Stabilization	51 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls)	11 C.Y.

NO.	DATE	REVISIONS	BY	APP'D
1				

KANSAS DEPARTMENT OF TRANSPORTATION
~~Br. No. XXX-87-XXX(000)~~ STA. 145+29.42
DOUBLE 8 ft × 3 ft RCB
(45°SKEW RT.)
~~BR-2.8(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.

VERSION/ID

SYSTEM PART	VERSION/ID
CADD VBA	12/5/2000
DATABASE	5/4/2020
RCB PROGRAM	1.42
KBOX MODEL ID	504
CELL LIBRARY	12/8/2023

06

Plotted By: darris
File: 2024-3-14_210254-001_2-8x3.dgn
Plot Date: 14-MAR-2024 11:04
Plot Location:

SAVED 10/10/2024 3:20:15 PM BY LUKE.PETER
PLOTTED 10/10/2024 3:20:32 PM BY LUKE PETER
U:\WICHITA-CIVIL\2021\210254001\PECDRAWINGS\210254-001-CB103.DWG

PEC
PROFESSIONAL ENGINEERING CONSULTANTS
303 SOUTH TOPEKA
WICHITA, KS 67202
316-262-2691 www.pec1.com

CITY OF WICHITA

LUKE PETER LICENSED 27413 10/11/2024 KANSAS PROFESSIONAL ENGINEER

WEST STREET IMPROVEMENTS
FROM MACARTHUR ROAD TO
47TH ST. SOUTH

CITY OF WICHITA

Issue:	
JOB NO.	210254-001
DATE	OCTOBER 2024
PM	TPA
DESIGNED BY	LGP
DRAWN BY	CP
CHECKED BY	KMS

RCB PLAN AND DETAILS

CB103
92 OF 206