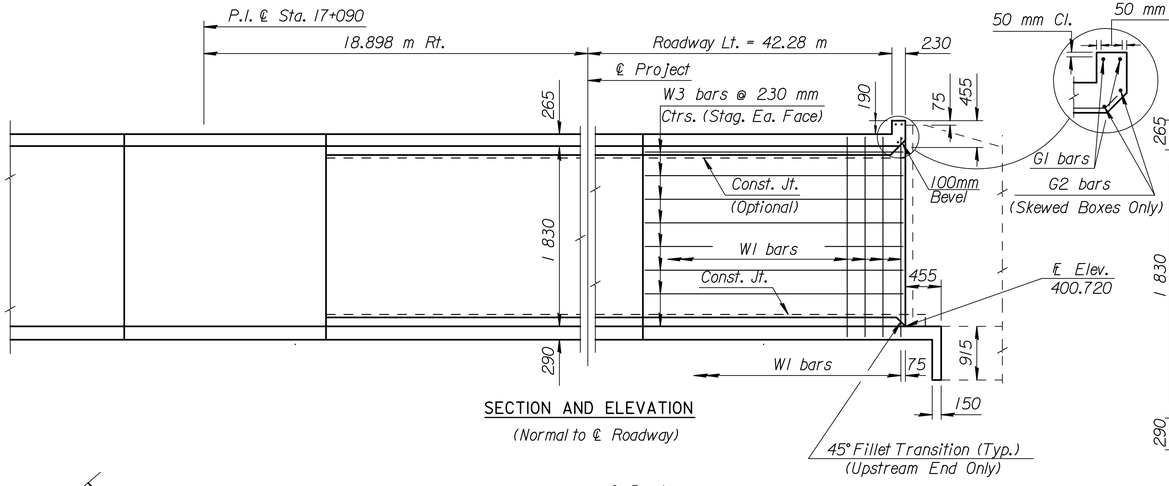
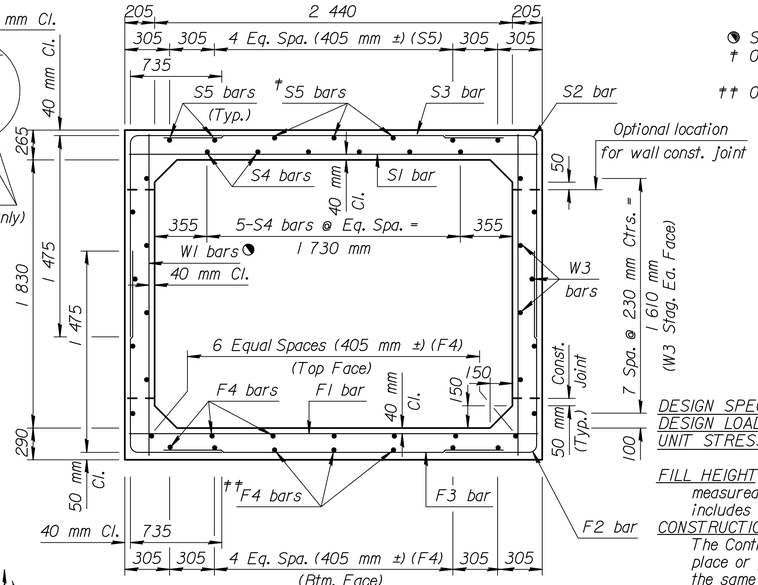
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	54-87 K-6657-01	2002	401	1122



SECTION AND ELEVATION

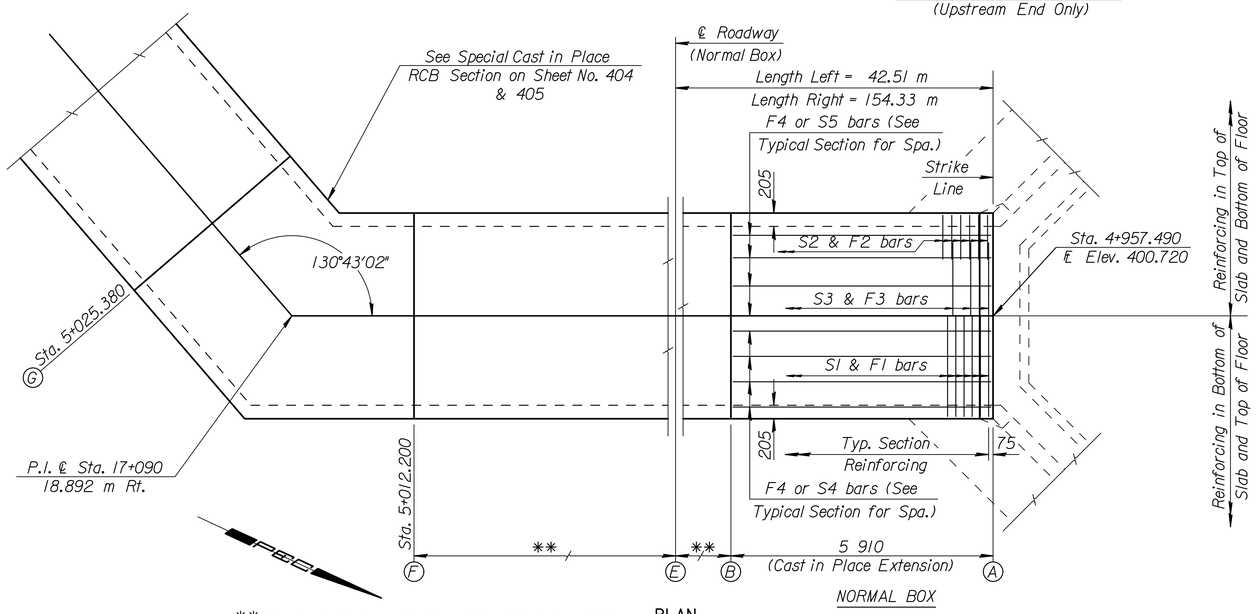
(Normal to ℄ Roadway)



TYPICAL SECTION

◔ See RCB Auxillary Details for Optional Splice.
† Omit when S3 bar is omitted

†† Omit when F3 bars are omitted.

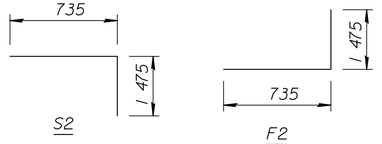


**Standard 12.2 m Sections (See Sheet No. 403)

PLAN

NORMAL BOX

PIPE OPENING DETAIL



BENDING DIAGRAM

All Dimensions are out to out of bars. **RECORD DRAWING**

GENERAL NOTES

DESIGN SPECIFICATION: AASHTO Specifications, 1983 Edition
DESIGN LOADING: MS18+44
UNIT STRESSES: Class AAA Concrete f'c = 28 MPa
Reinforcing Steel fy = 420 MPa

FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and includes the surfacing.

CONSTRUCTION: R.C.B.'s shown are for cast-in-place construction. The Contractor has the option of constructing either cast-in-place or precast R.C.B.'s. Payment for the structure will be the same regardless of which option is used for construction. See Sheet No. 432 for Precast Concrete Box Culvert Details.

CONCRETE: Use concrete conforming to Class AAA Concrete. Bevel all exposed edges with a 20 mm triangular molding. Where Class AAA(AE) is specified, place this concrete in the top slab above the Construction Joint.

REINFORCING: Use reinforcing steel conforming to ASTM A615M, Grade 420. 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 Class AAA 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 75 mm 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 Engineer may require Foundation Stabilization. The Engineer shall determine the depth of Foundation Stabilization. Foundation Stabilization shall be paid for at the unit price set for Foundation Stabilization. See the "Auxiliary Details" sheet.

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): The Engineer may require special backfill procedures. 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.

⊗ Includes all quantities from Sta. 4+957.490 to 5+159.580 including wingwalls.

CULVERT SUMMARY

Flow Line Elev. Lt. (m)	Flow Line Elev. Rt. (m)	Crown Grade Elevation (m)	Design Fill Ht. (m)	Skew N/A	Left Wings	Right Wings	Scour Apron	Soil Saver	Granular Backfill	Concrete			Reinf. Steel (Gr. 420)		
										Barrel (m^3)	Wings (m^3)	Total (m^3)	Barrel (kg)	Wings (kg)	Total (kg)
400.72	398.674	409.720	9.145	0	FLARED	STRAIGHT	NO	NO	NO	14.2	7.0	21.2	1410	311	1721

✱See Bending Diagram

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
20	140	42	2 745	20	230	52	2 210					12	11	5 810	20	140	42	2 745	20	230	52	2 210					12	6	5 810	12	4	5 810

K1				K2				W1								W3								G1				X1							
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
			*				*	12	280	42	2 285					12	16	5 810					15	2	2 750		12	8	1000					

Minimum Splice Lengths	
#12	405
#15	510
#20	610

SUMMARY OF QUANTITIES ⊗		
Class AAA Concrete	430.7	m^3
Class AAA Concrete (AE)	0.0	m^3
Reinforcing Steel (Gr. 420)	34 217	kg
Reinforcing Steel (Epoxy Coated)	N/A	kg
Class III Excavation	--	m^3
Foundation Stabilization (Set)	1	m^3
Concrete for Seal Course (Set)	1	m^3
Granular Backfill (Wingwalls) (Set)	--	m^3

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 17+090.000

2.440 m x 1.830 m RFB

5 910 EXTENSION (LEFT)

~~BR 1.8.6 F SI~~ Sedgwick

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

ORIG. FROM BR.NO. PROJ. CO.

	DESIGN	CHECK	DATE	DATE	DATE	DATE	DATE
DESIGN							
DETAIL							
QUANTITIES							
TRACED							
RETRACED							

Plotted By: rdas Scale 1:1000
I:/1997/97362/As-Builts/dgn's/Vol 2/Sh 401-KDOT_Std-17090a.dgn Last Rev: 8-28-07 By: gdr