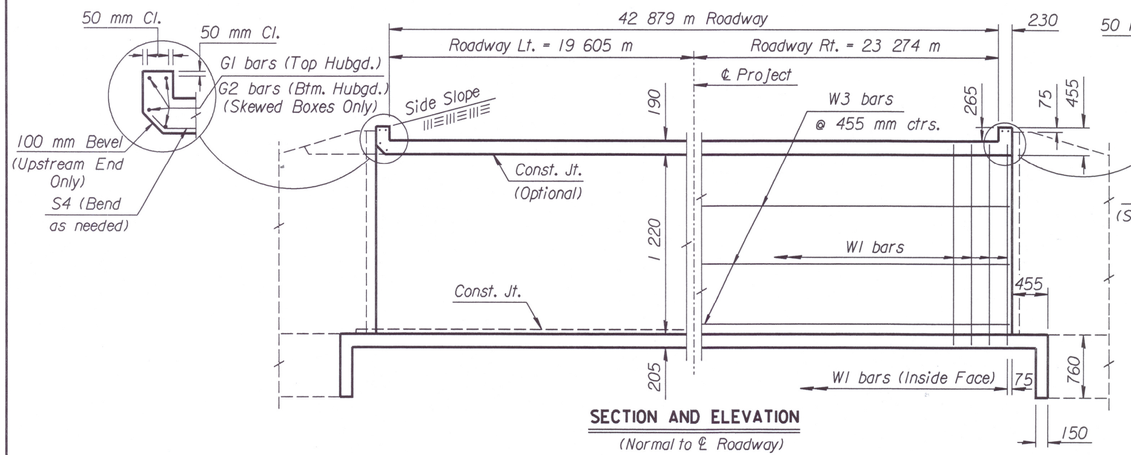
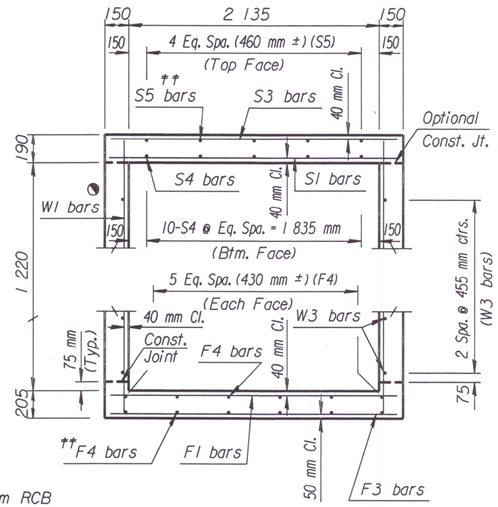
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	54-87 K-6657-01	2002	428	1122

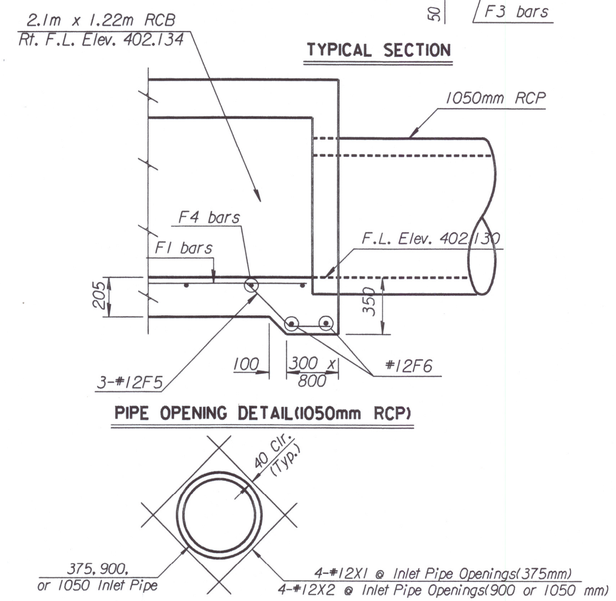


SECTION AND ELEVATION

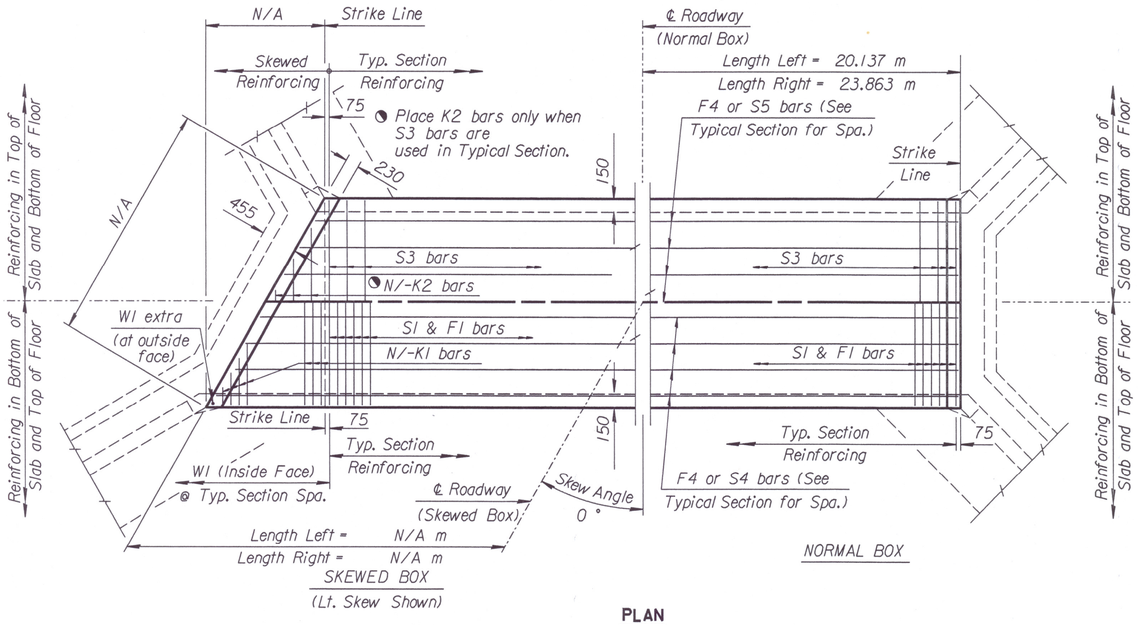
(Normal to ℄ Roadway)



TYPICAL SECTION



PIPE OPENING DETAIL(1050mm RCP)



PLAN

CULVERT SUMMARY

Flow Line Elev. Lt. (m)	Flow Line Elev. Rt. (m)	Crown Gr. Elev. (m)	Design Fill Ht. (m)	Skew	Left Wings	Right Wings	Scour Apron	Soil Saver	Granular Backfill	Concrete			Reinf. Steel (Gr. 420)		
										Barrel (m^3)	Wings, & Apron (m^3)	Total (m^3)	Barrel (kg)	Wings, & Apron (m^3)	Total (kg)
402.354	402.134	404.83	1.53	No	Flared	Flared	Yes	~~Yes~~ No	No	58.7	8.6	67.3	3336.2	347.0	3683.2

BAR SCHEDULE

F1								F3				F4				S1				F5				S3				S4				S5			
Size	Spa.	No.	Length					Size	Spa.	No.	Length	Size	No.	Length		Size	Spa.	No.	Length	Size	Spa.	No.	Length					Size	No.	Length		Size	No.	Length	
15	165	267	2 335									12	24	11 280		15	165	267	2 335	12	--	3	650					12	20	11 280					

K1				K2				W1				F6				W3				X1				G1			X2							
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					
								12	230	384	1 525	12	--	2	1200	12	24	11 280		12	--	4	700	15	4	2 340		12	8	1370					

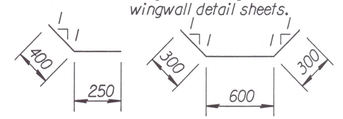
PIPE OPENING DETAILS

INLET PIPES INTO BOX

Station	Pipe Size (mm)	℄	Offset
5+314.064	375	402.251	11.329 m Rt.
5+309.986	900	402.412	11.800 m Lt.
5+312.431	1050	402.130	17.140 m Rt.

BENDING DIAGRAM F5

(All dimensions are out to out of bars.)



F6

SUMMARY OF QUANTITIES

Class AAA Concrete	67.3	m^3
Class AAA Concrete (AE)	--	m^3
Reinforcing Steel (Gr. 420)	3683	kg
Reinforcing Steel (Epoxy Coated)	--	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

◔ See RCB Auxillary Details for Optional Splice.
Note:
S3 bars omitted unless grade box or slab thickness is greater than or equal to 305 mm.

Note:
F3 bars omitted unless floor thickness is greater than or equal to 305 mm.

** Omit S5 bars when S3 bars are omitted and omit the bottom layer of F4 bars when F3 bars are omitted.

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.

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

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Sta. 5+311.000

2.1m x 1.22 m RCB (10° ROT. LT.)

BRI66 1.5

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

DSNR. FROM BR.NO.	PROJ.
DESIGN	CO. CHECK
DESIGN DATE	DATE
DETAIL DATE	DATE
QUANTITIES DATE	DATE
CHECKED DATE	DATE
RETRACED DATE	DATE

Plotted By: will Scale 1:1.000
i:/1997/97362/001/rcb/5311.dgn Last Rev. 10-10-2001