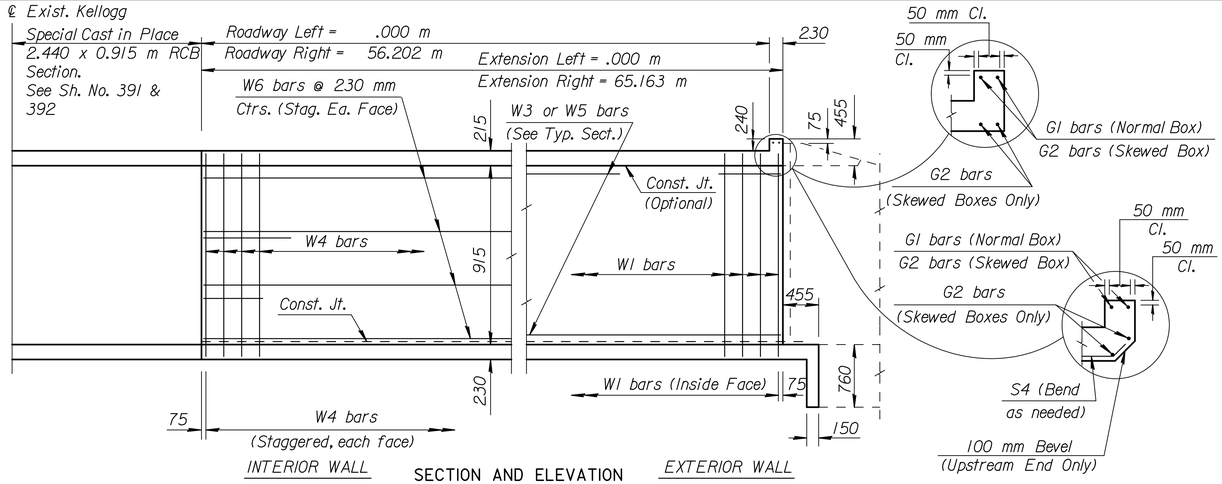
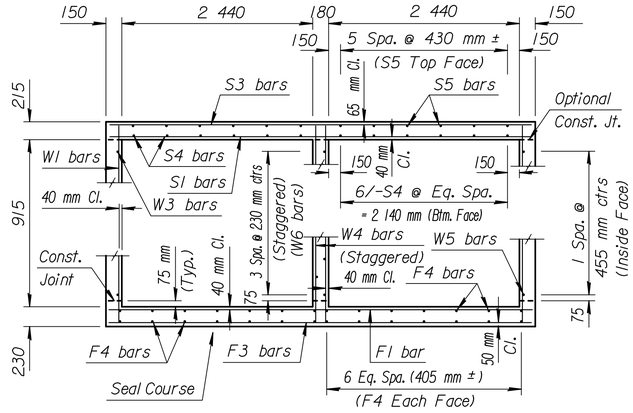
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	54-87 K-6657-01	2002	393	1122



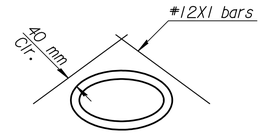
SECTION AND ELEVATION

(Normal to ℄ Roadway)



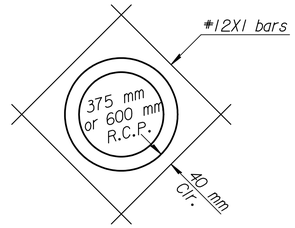
TYPICAL SECTION

See Standard No. RD 510 SI for additional details.



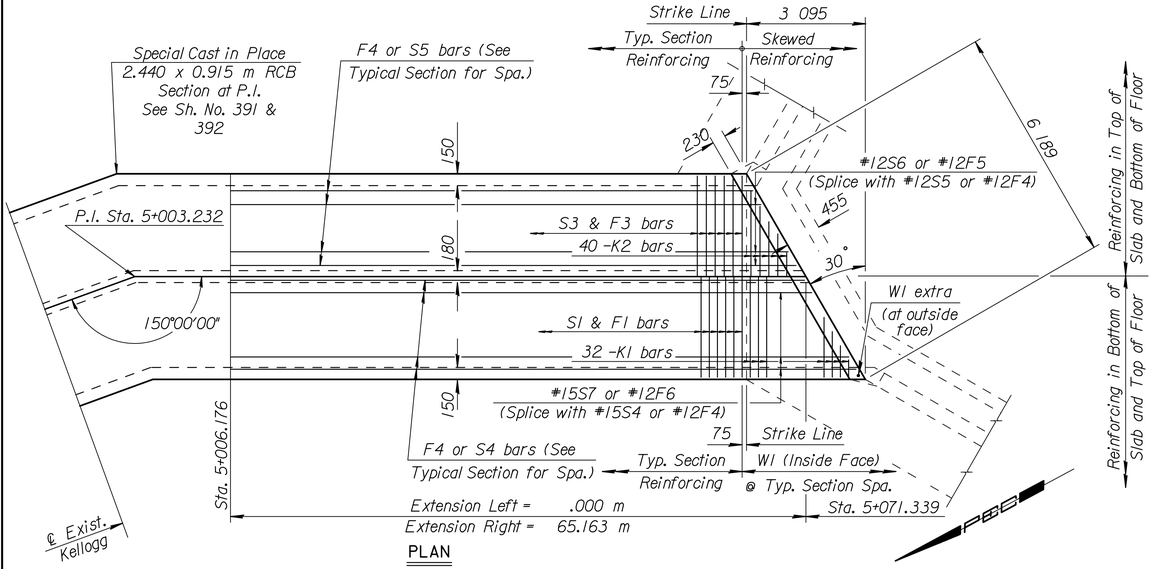
PIPE OPENING DETAIL

See Sheet No. 389 for location. (Pipes C & D)

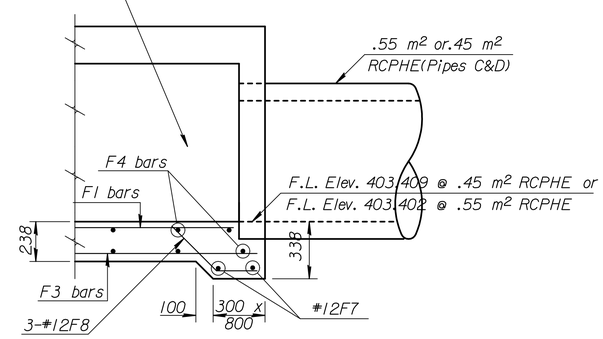


PIPE OPENING DETAIL

See Sheet No. 389 for location. (Pipes A,B & D)



PLAN



PIPE OPENING DETAIL(Pipes C & D)

See Sheet No. 389 for location)

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.

Varies from 5 105 mm to 830 mm by 285 mm Increments

K1 (Cut 2 each length)

Varies from 605 mm to 3 530 mm by 225 mm Increments — F5
Varies from 605 mm to 3 530 mm by 225 mm Increments — F6
Varies from 550 mm to 3 300 mm by 250 mm Increments — S6
Varies from 550 mm to 3 300 mm by 250 mm Increments — S7

F5, F6, S6, S7

Varies from 5 150 mm to 590 mm by 240 mm Increments

K2 (Cut 2 each length)

BENDING DIAGRAM

All Dimensions are out to out of bars.

CULVERT SUMMARY

	Flow Line Elev. (m)	Crown Gr. Elev. (m)	Design Fill Ht. (m)	Skew RT	Wings	Scour Apron	Soil Saver	Granular Backfill	Concrete: Barrel (m³)	Concrete: Wings & Soil Saver (m³)	Concrete: Total (m³)	Reinf. Steel (Gr. 420): Barrel (kg)	Reinf. Steel (Gr. 420): Wings, Apron, & Soil Saver (kg)	Reinf. Steel (Gr. 420): Total (kg)
Ext.Lt.	403.311	405.663	0.61	30	NONE	YES	YES	NO	0.0	00	00	0.0	00	00
Ext.Rt.	403.412				FLARED				184.4	6.3	190.7	23 067	233.6	23 300.6

BAR SCHEDULE

	F1 Size	F1 Spa.	F1 No.	F1 Length	F3 Size	F3 Spa.	F3 No.	F3 Length	F4 Size	F4 No.	F4 Length	F5 Size	F5 No.	F5 Length	F6 Size	F6 No.	F6 Length	S1 Size	S1 Spa.	S1 No.	S1 Length	S3 Size	S3 Spa.	S3 No.	S3 Length	S4 Size	S4 No.	S4 Length	S5 Size	S5 No.	S5 Length	S6 Size	S6 No.	S6 Length	S7 Size	S7 No.	S7 Length
Ext.Lt.																																				
Ext.Rt.	20	165	385	5 260	15	140	454	5 260	12	168	10 930	12	14	*	12	14	*	20	165	385	5 260	15	140	454	5 260	15	48	16 280	12	72	10 930	12	12	*	15	12	*

	K1 Size	K1 Spa.	K1 No.	K1 Length	K2 Size	K2 Spa.	K2 No.	K2 Length	W1 Size	W1 Spa.	W1 No.	W1 Length	W3 Size	W3 No.	W3 Length	W4 Size	W4 Spa.	W4 No.	W4 Length	W5 Size	W5 No.	W5 Length	W6 Size	W6 No.	W6 Length	F7 Size	F7 No.	F7 Length	G2 Size	G2 No.	G2 Length	F8 Size	F8 No.	F8 Length	X1 Size	X1 No.	X1 Length
Ext.Lt.				*				*																												
Ext.Rt.	20	165	32	*	15	140	40	*	12	230	569	1 250	12	12	10 930	12	230	284	1 250	12	12	11 440	12	24	11 180	12	4	1200	20	4	6 080	12	6	650	12	16	1000

* See Bending Diagram

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

RECORD DRAWING

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 54-87-(002) Sta. 14+443.483
2-2.440 m x 0.915 m RCB
65.2 m EXT. RT.(30°SKEW RT.)

~~BR 2.8.3 P 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	DATE	CHECK DATE
DETAIL	DATE	DATE
QUANTITIES	DATE	DATE
TRACING	DATE	DATE
RETRACED	DATE	DATE

Plotted By: will Scale 1:1000
I:/1997/97362/As-Builts/dgn's/Vol 2/Sh 393-K00T_Std-14443RT.dgn Last Rev: 8-28-07 By: gdr