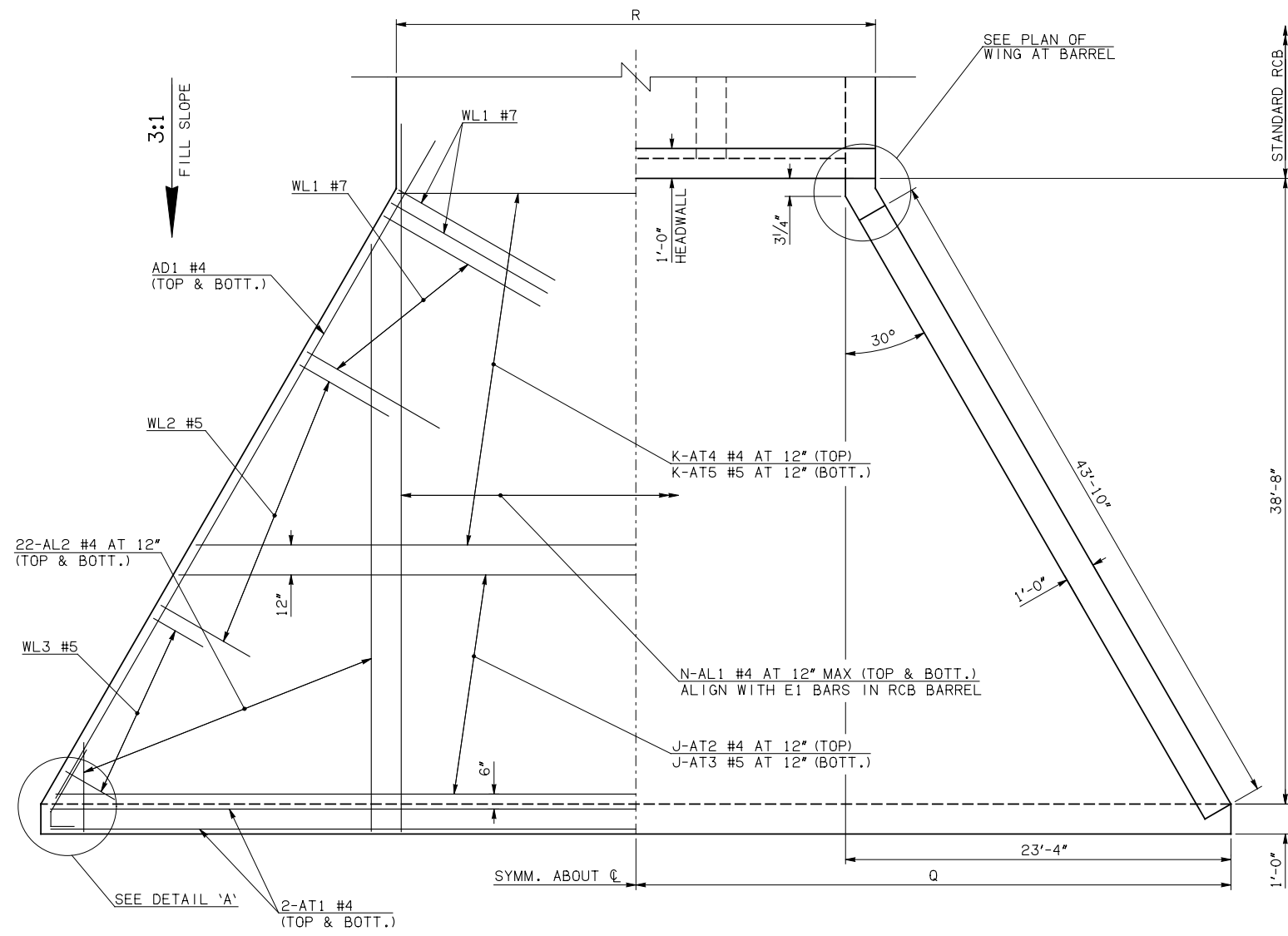


DESCRIPTION	REVISIONS	DATE

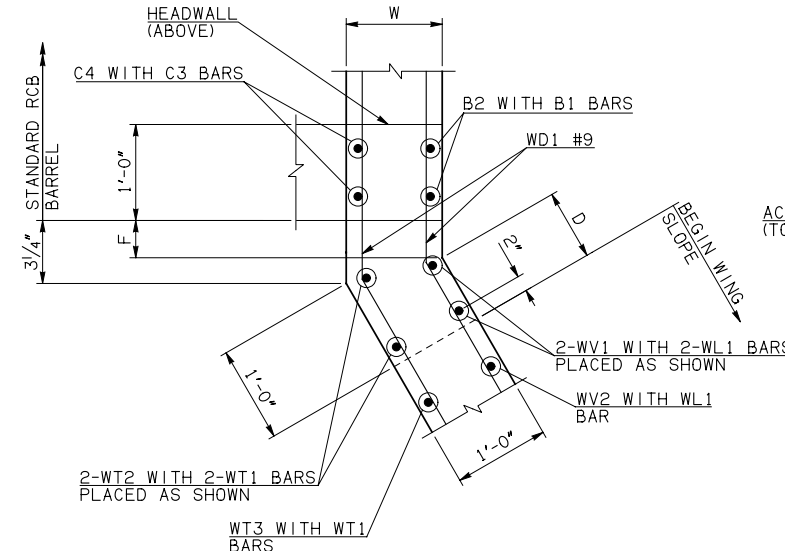


HALF APRON REINFORCING

HALF APRON PLAN

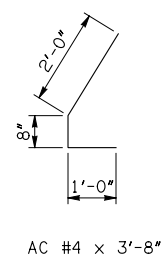
APRON DETAIL

WINGWALL DIMENSIONS			
SPAN	W	D	F
12'	12"	8 3/4"	0
14'	12"	8 3/4"	0
16'	13"	6 3/4"	1 3/4"
18'	14"	4 3/4"	3 1/2"
20'	15"	2 3/4"	5 1/4"

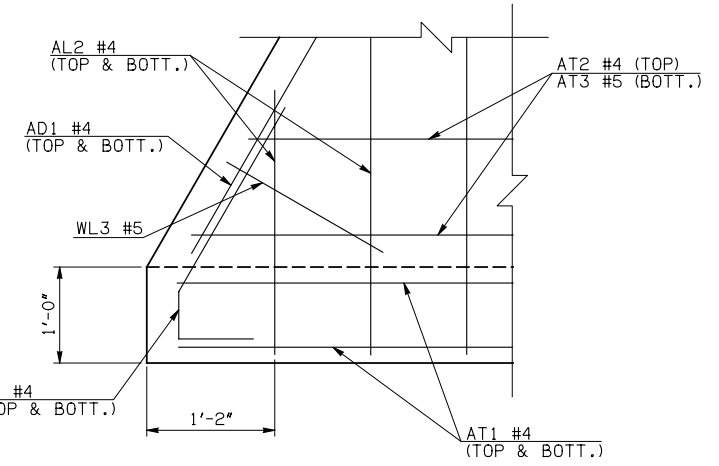


PLAN OF WING AT BARREL

APRON VARIABLES						
SPAN	DIM. R	DIM. Q	QTY. J	QTY. K	QTY. N	
12'	40'-0"	42'-4"	21	18	44	
14'	46'-0"	45'-4"	26	13	50	
16'	52'-2"	48'-4"	32	7	56	
18'	58'-4"	51'-4"	37	2	62	
20'	64'-6"	54'-4"	39	0	68	



AC #4 x 3'-8"



DETAIL 'A'

WINGWALL BAR LIST					
ONE WINGWALL SHOWN; TWO REQUIRED					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
WD1	#9	24	BNT	8'-4"	
WH1	#4	2	STR	44'-8"	
WH2	#4	24	STR	22'-10 1/2" AVG.	3'-10" TO 41'-11"
WH3	#5	2	STR	45'-5"	
WL1	#7	23	BNT	15'-5"	
WL2	#5	34	BNT	10'-9"	
WL3	#5	11	BNT	4'-9 1/2" AVG.	3'-4" TO 6'-3"
WT1	#4	35	STR	2'-10"	
WT2	#4	2	STR	13'-0"	
WT3	#4	11	STR	11'-5" AVG.	10'-0" TO 12'-10"
WT4	#4	22	STR	6'-7 1/2" AVG.	3'-7" TO 9'-8"
WT5	#4	11	STR	2'-9 1/2" AVG.	1'-4" TO 4'-3"
WV1	#5	2	STR	13'-0"	
WV2	#5	21	STR	11'-5" AVG.	10'-0" TO 12'-10"
WV3	#5	22	STR	6'-7 1/2" AVG.	3'-7" TO 9'-8"
U1	#4	1	BNT	3'-2"	

- ① 4-SETS OF 22-AL2 BARS REQUIRED
- ② 2-SETS OF 12-WH2 BARS REQUIRED
- ③ INCLUDES 2'-6" LAP

APRON AND HEADWALL BAR LIST

APRON AND HEADWALL BAR LIST																	
ONE APRON AND ONE HEADWALL SHOWN																	
MARK	SIZE	FORM	12' SPAN			14' SPAN			16' SPAN			18' SPAN			20' SPAN		
			QTY.	LENGTH	REMARKS	QTY.	LENGTH	REMARKS	QTY.	LENGTH	REMARKS	QTY.	LENGTH	REMARKS	QTY.	LENGTH	REMARKS
AC	#4	BNT	4	3'-8"		4	3'-8"		4	3'-8"		4	3'-8"		4	3'-8"	
AD1	#4	STR	4	46'-8"		4	46'-8"		4	46'-8"		4	46'-8"		4	46'-8"	
AL1	#4	STR	88	41'-5"		100	41'-5"		112	41'-5"		124	41'-5"		136	41'-5"	
AL2	#4	STR	88	20'-8" AVG.	2'-6" TO 38'-10"	88	20'-8" AVG.	2'-6" TO 38'-10"	88	20'-8" AVG.	2'-6" TO 38'-10"	88	20'-8" AVG.	2'-6" TO 38'-10"	88	20'-8" AVG.	2'-6" TO 38'-10"
AT1	#4	STR	4	86'-10" ③		4	92'-10" ③		4	98'-10" ③		4	104'-10" ③		4	110'-10" ③	
AT2	#4	STR	21	74'-9" AVG.	63'-2" TO 86'-4" ③	26	77'-10 1/2" AVG.	63'-5" TO 92'-4" ③	32	80'-5" AVG.	62'-6" TO 98'-4" ③	37	83'-6 1/2" AVG.	62'-9" TO 104'-4" ③	39	88'-4 1/2" AVG.	66'-5" TO 110'-4" ③
AT3	#5	STR	21	74'-9" AVG.	63'-2" TO 86'-4" ③	26	77'-10 1/2" AVG.	63'-5" TO 92'-4" ③	32	80'-5" AVG.	62'-6" TO 98'-4" ③	37	83'-6 1/2" AVG.	62'-9" TO 104'-4" ③	39	88'-4 1/2" AVG.	66'-5" TO 110'-4" ③
AT4	#4	STR	18	49'-9" AVG.	39'-11" TO 59'-7"	13	52'-10" AVG.	45'-11" TO 59'-9"	7	55'-4 1/2" AVG.	51'-11" TO 58'-10"	2	58'-6" AVG.	57'-11" TO 59'-1"	0		
AT5	#5	STR	18	49'-9" AVG.	39'-11" TO 59'-7"	13	52'-10" AVG.	45'-11" TO 59'-9"	7	55'-4 1/2" AVG.	51'-11" TO 58'-10"	2	58'-6" AVG.	57'-11" TO 59'-1"	0		
CH	#4	STR	4	39'-8"		4	45'-8"		4	51'-10"		4	58'-0"		4	66'-8" ③	
CL1	#4	BNT	44	4'-4"		50	4'-4"		56	4'-4"		62	4'-4"		68	4'-4"	
CL2	#4	BNT	44	4'-3"		50	4'-3"		56	4'-3"		62	4'-3"		68	4'-3"	

QUANTITIES

ITEM	UNIT	12' SPAN	14' SPAN	16' SPAN	18' SPAN	20' SPAN
CLASS AA CONCRETE	CY	132.00	142.20	152.70	163.10	173.20
REINFORCING STEEL	LB	14780.00	15620.00	16440.00	17260.00	18070.00

NOTE: QUANTITIES ABOVE ARE FOR ONE END SECTION, WHICH IS COMPRISED OF ONE HEADWALL, ONE APRON, AND TWO WINGWALLS. INCLUDED IN REINFORCING STEEL PAY ITEM QUANTITY IS THE WEIGHT OF ADDITIONAL RCB BARREL REINFORCING STEEL REQUIRED AS SHOWN.

APPROVED BY BRIDGE ENGINEER *Robert J. Muech* DATE 4/09/09

OKLAHOMA DEPT. OF TRANSPORTATION
BRIDGE STANDARD (ENGLISH)
RCB CULVERTS - END SECTION DETAILS
TRIPLE CELL - 11'-0" HEIGHT - 0°
SHEET NO. 1 OF 2

1999 SPECIFICATIONS RCB-E3-H11-0-1 OOE B-644E