

APRON AND HEADWALL BAR LIST					
MARK	SIZE	FORM	12' SPAN		
			NO.	LENGTH	LENGTH VARIATION
ABD1	#4	STR.	28	4'-3"	
ABD2	#4	BNT.	4	5'-0"	
AD	#4	STR.	4	44'-5"	
AL1	#4	STR.	28	39'-7"	
AL2	#4	STR.	88	20'-4" AVG.	2'-3" TO 38'-5"
AT1	#4	STR.	4	58'-3"	
AT2	#4	STR.	39	35'-8" AVG.	13'-8" TO 57'-8"
AT3	#5	STR.	39	35'-8" AVG.	13'-8" TO 57'-8"
CH	#4	STR.	4	13'-8"	
CL1	#4	BNT.	16	4'-4"	
CL2	#4	BNT.	16	4'-4"	

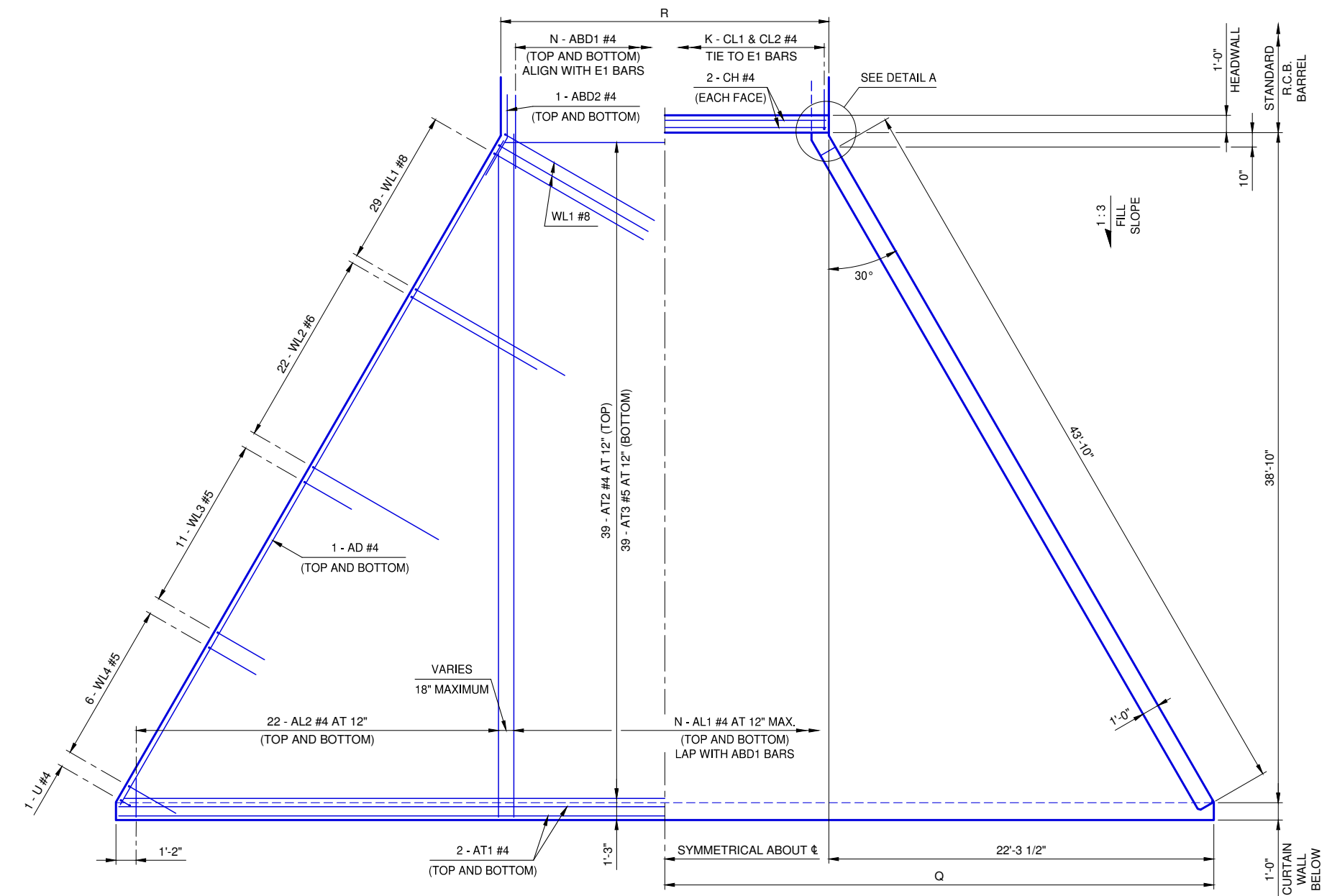
① 4 SETS OF 22 BARS

NOTE:
 QUANTITIES ARE FOR ONE END SECTION WHICH INCLUDES ONE HEADWALL, ONE APRON AND TWO WINGWALLS. PIPE RAILING IS BASED ON PLAN DIMENSION AT CENTERLINE OF RAILING.

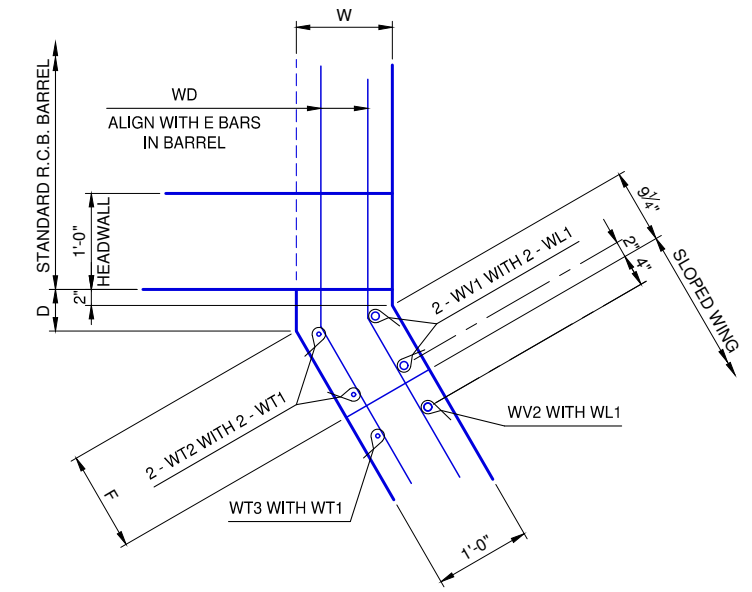
QUANTITIES			
ITEM	UNIT	12' SPAN	
CLASS AA CONCRETE	C.Y.	90.8	
REINFORCING STEEL	LB.	12,770	
PIPE RAILING	L.F.	103	

APRON VARIABLES				
SPAN	DIMENSIONS		NO. OF BARS	
	R	Q	K	N
12'	14'-0"	29'-3 1/2"	16	14

WINGWALL DIMENSIONS				
SPAN	W	D	F	
12'	12"	5 3/16"	1'-0 7/16"	



APRON PLAN



DETAIL A

REVISION NO.
DATE

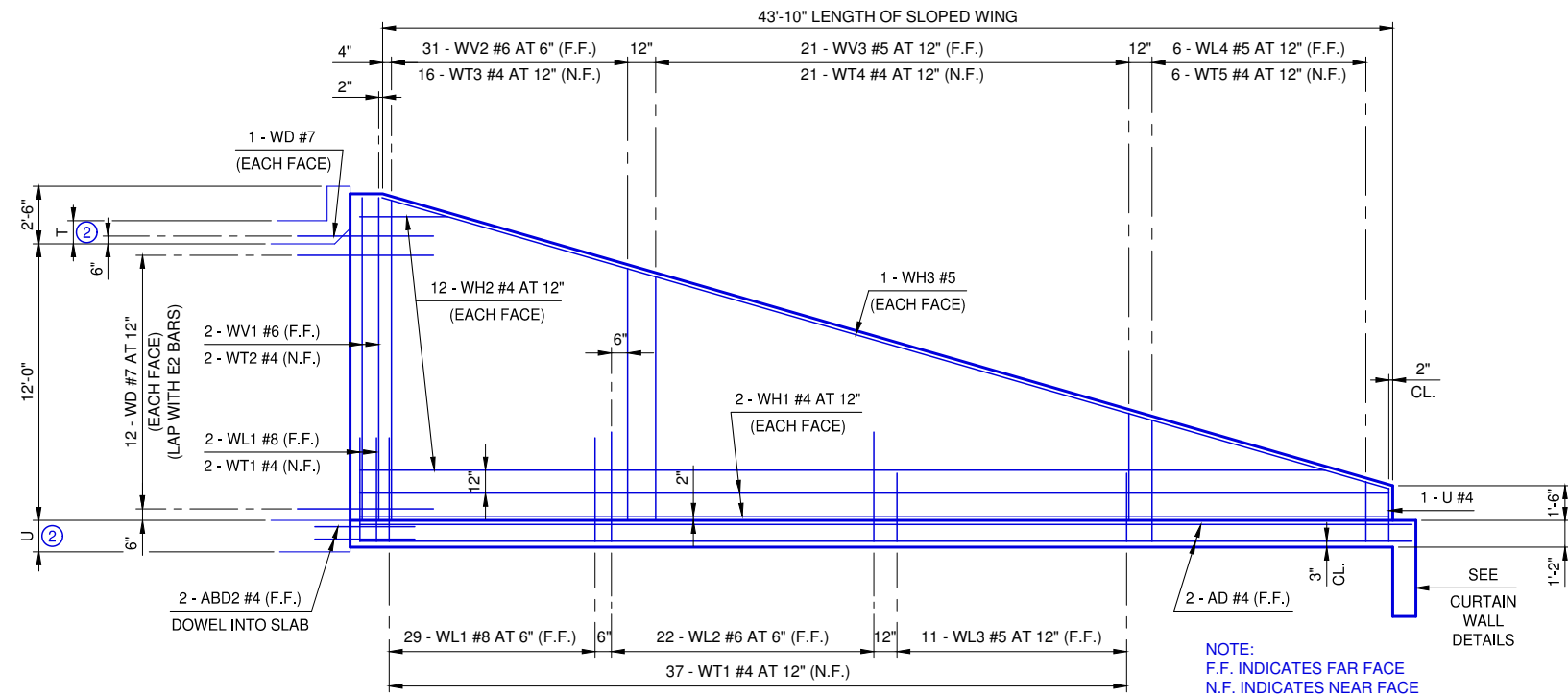
The City of
Oklahoma City
 Public Works Department
 Engineering Division

APPROVED BY: DATE: 6/22/2023
 ERIC J. WENGER, P.E.
 CITY ENGINEER

THESE STANDARD DRAWINGS AND ASSOCIATED CALCULATIONS HAVE BEEN PREPARED BY CEC CORPORATION UNDER CONTRACT WITH THE CITY OF OKLAHOMA CITY.

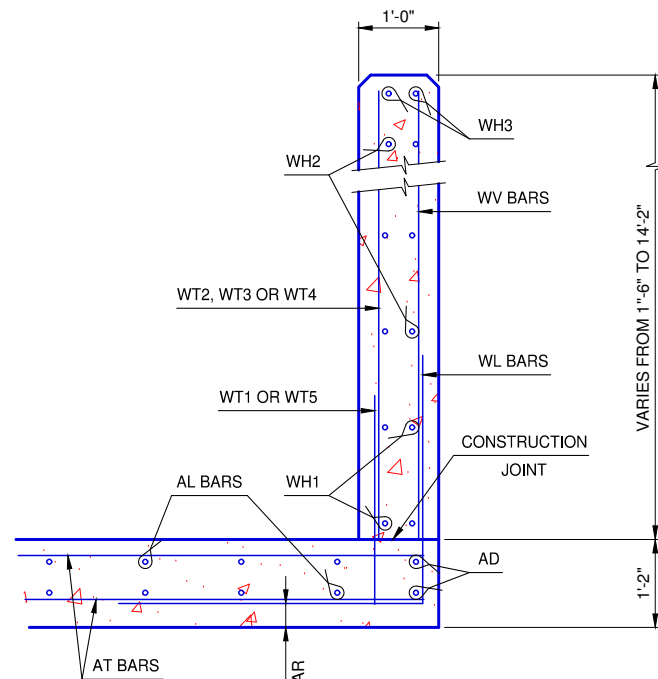
R.C.B. CULVERTS - END SECTION DETAILS
SINGLE CELL - 12' HEIGHT - 0° SKEW
 SHEET NO. 1 OF 2

Drawing Number
 RCB-034

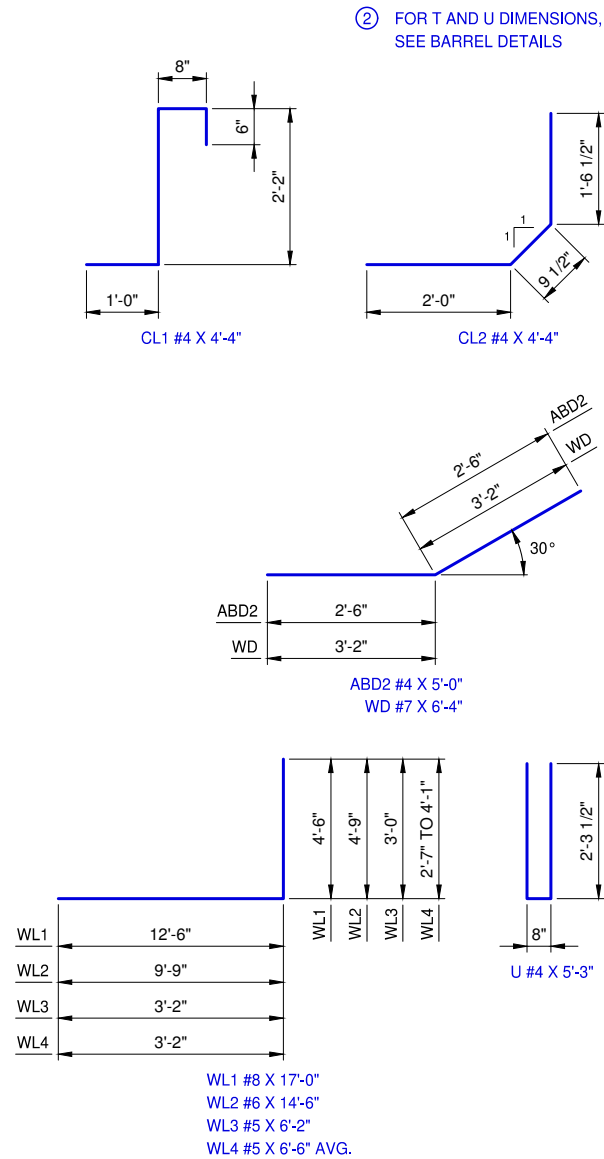


WINGWALL ELEVATION

SEE STD. RCB-015 PipeRailing FOR DETAILS OF RAIL REQUIRED ON TOP OF HEADWALL AND WINGS



TYPICAL SECTION THRU WING



ADJUSTMENT IN NUMBER OF BARREL BARS IN END SECTION

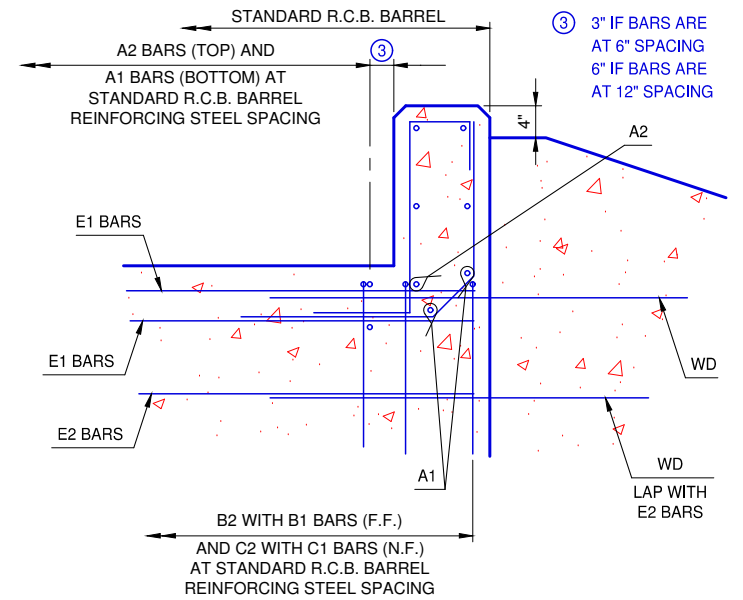
SPAN	BAR MARKS					
	A1	A2	B1	B2	C1	C2
12'					+2	+2

NOTE: TO CONSTRUCT ONE END SECTION AS SHOWN, THE NUMBER OF BARS SHOWN NEED TO BE ADDED TO OR SUBTRACTED FROM THE TOTAL WEIGHT OF REINFORCING FOR THE BARREL. THIS WEIGHT ADJUSTMENT IS INCLUDED IN THE END SECTION QUANTITY. SEE BARREL DETAILS FOR BAR LENGTHS, SIZES AND BENDS.

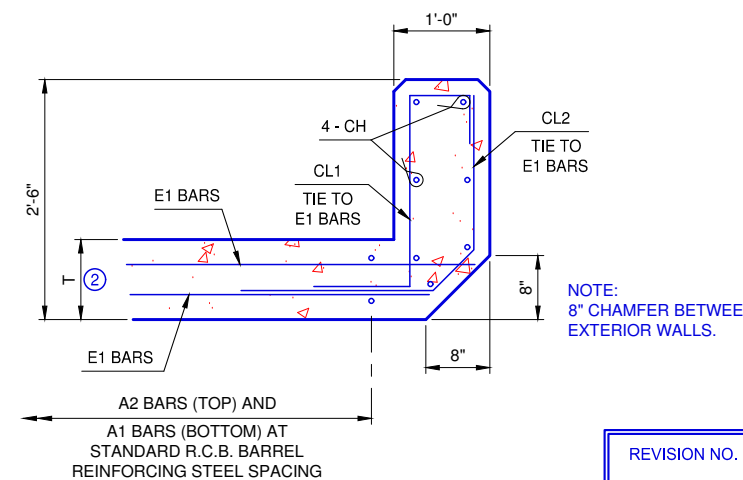
WINGWALL BAR LIST
ONE WINGWALL SHOWN, TWO REQUIRED

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
WD	#7	26	BNT.	6'-4"	
WH1	#4	4	STR.	44'-8"	
WH2	#4	24	STR.	22'-9" AVG.	3'-9" TO 41'-9"
WH3	#5	2	STR.	45'-5"	
WL1	#8	31	BNT.	17'-0"	
WL2	#6	22	BNT.	14'-6"	
WL3	#5	11	BNT.	6'-2"	
WL4	#5	6	BNT.	6'-6" AVG.	5'-9" TO 7'-3"
WT1	#4	39	STR.	2'-7"	
WT2	#4	2	STR.	14'-0"	
WT3	#4	16	STR.	11'-8" AVG.	9'-6" TO 13'-10"
WT4	#4	21	STR.	6'-4" AVG.	3'-5" TO 9'-3"
WT5	#4	6	STR.	3'-4" AVG.	2'-7" TO 4'-1"
WV1	#6	2	STR.	14'-0"	
WV2	#6	31	STR.	11'-8" AVG.	9'-6" TO 13'-10"
WV3	#5	21	STR.	6'-4" AVG.	3'-5" TO 9'-3"
U	#4	1	BNT.	5'-3"	

① 2 SETS OF 12 BARS



HEADWALL DETAIL AT EXTERIOR WALL



HEADWALL DETAIL AT MIDSPAN

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R.C.B. CULVERTS - END SECTION DETAILS
SINGLE CELL - 12' HEIGHT - 0° SKEW

SHEET NO. 2 OF 2

Drawing Number
RCB-035