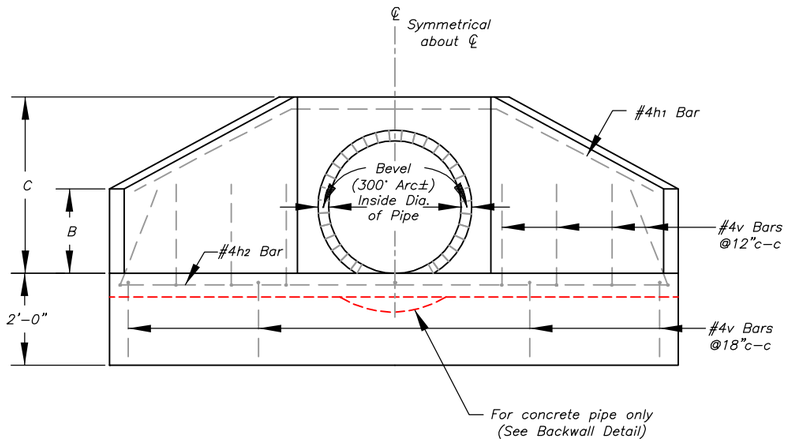
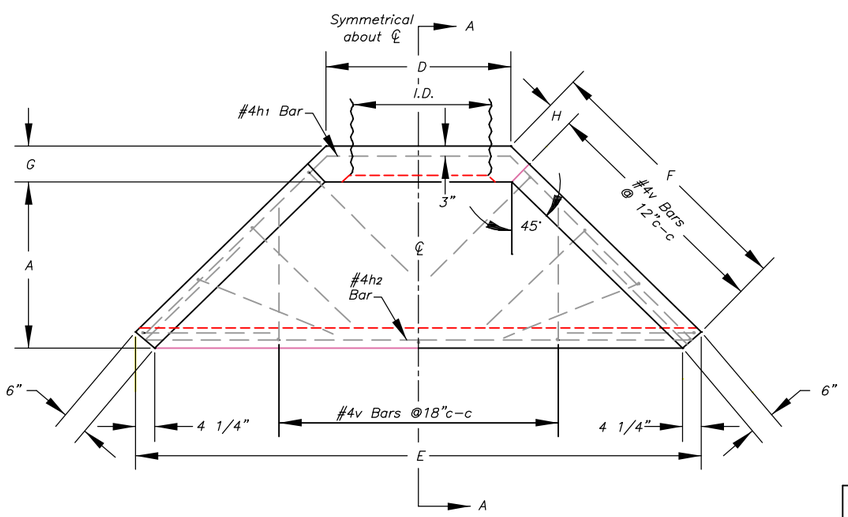


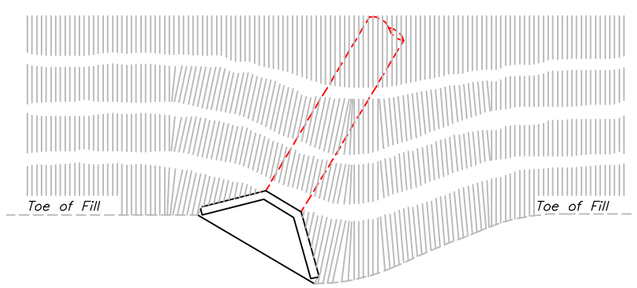
ELEVATION VIEW

NO SCALE



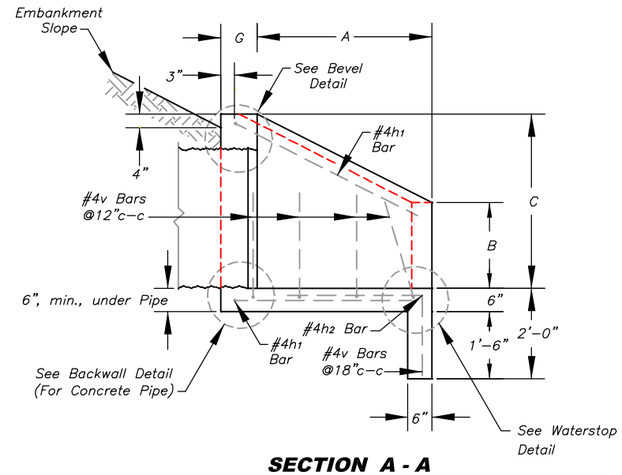
PLAN VIEW

NO SCALE



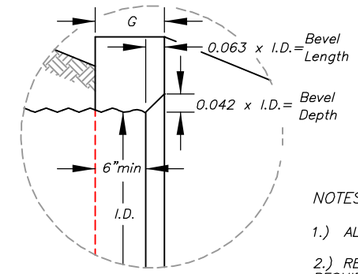
CONSTRUCTION DETAIL - SKEWED PIPE

NO SCALE



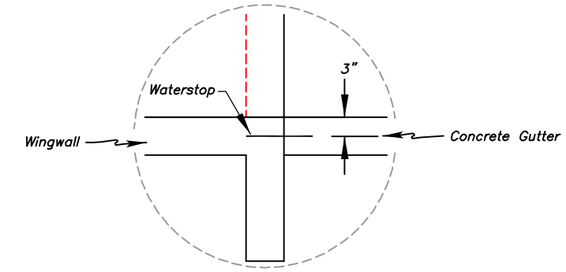
SECTION A - A

NO SCALE



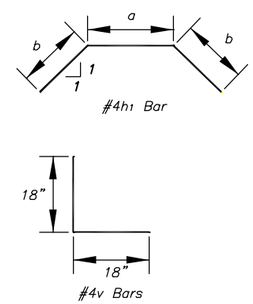
BEVEL DETAIL

NO SCALE



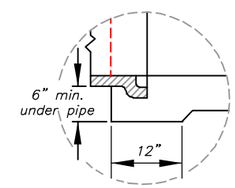
WATERSTOP DETAIL

NO SCALE



DETAIL OF BENT BARS

NO SCALE



BACKWALL DETAIL

(For Concrete Pipe)

NOTES:

1.) ALL CONCRETE SHALL BE CLASS B CONCRETE.

2.) REINFORCING STEEL SHALL BE NEW BILLET STEEL AND SHALL CONFORM TO THE REQUIREMENTS OF 709.1 OF THE WVDOH SPECIFICATIONS.

3.) THE COVERING FOR REINFORCING STEEL SHALL BE 2" MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF THE BAR, UNLESS OTHERWISE NOTED ON THE PLANS. REINFORCEMENT IN MEMBERS WHERE CONCRETE IS DEPOSITED ON THE GROUND SHALL HAVE 3" OF CONCRETE FROM THE FACE OF THE BAR TO THE GROUND CONTACT SURFACE.

4.) ALL EXPOSED EDGES SHALL HAVE A 3/4" X 45° CHAMFER. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LINE.

5.) WHEN WINGWALLS ARE PLACED ON THE INLET END OF CORRUGATED METAL OR STRUCTURAL PLATE PIPE, A BEVEL SHALL BE USED AT THE INLET OPENING. THE END OF THE PIPE SHALL BE SET IN FROM THE FACE OF THE WALL AS SHOWN ON THE "BEVEL DETAIL", AND THE BEVEL CONSTRUCTED FROM THE END OF THE PIPE TO THE FACE OF THE WALL.

6.) WHEN WINGWALLS ARE PLACED ON THE INLET END OF CONCRETE PIPE, THE "BELL" OR "GROOVE" OF THE PIPE SHALL BE PLACED IN THE WALL, AND THE IN–SIDE OF THE "BELL" OR "GROOVE" SHALL BE FILLED WITH CONCRETE UP TO THE FLOW LINE.

7.) BEVELS ARE NOT REQUIRED ON OUTLET WINGWALLS OR ON INLET WINGWALLS FOR CONCRETE PIPE.

8.) KEYED OR DOWELED TYPE CONSTRUCTION JOINTS, ACCEPTABLE TO THE ENGINEER, MAY BE USED DURING CONSTRUCTION.

9.) IF EMBANKMENT SLOPE ABOVE WINGWALLS IS FLATTER THAN 2:1, PROVIDE WINGS FOR 2:1 SLOPE AND WARP EMBANKMENT TO 2:1 SLOPE AT WINGWALL.

10.) THE PAY QUANTITY FOR WINGWALLS, CONSTRUCTED IN ACCORDANCE WITH THE DETAILS HEREIN, WILL BE THE CUBIC YARDS OF CLASS B CONCRETE SPECIFIED ON THIS SHEET. COST OF ALL REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS B CONCRETE.

11.) WATERSTOP MEETING THE REQUIREMENTS OF 708.10 SHALL BE PLACED AS SHOWN WHEN CONCRETE GUTTER IS TO ABUT THE WINGWALL.

Inside Dia. of Pipe	Slope of Fill	DIMENSIONS								REINFORCEMENT							QUANTITIES		
		A	B	C	D	E	F	G	H	Mark	Size	No. of Bars	LENGTH a	LENGTH b	LENGTH Total	Type	CONC (R.C.P.) C.Y.	CONC (C.M.P.) C.Y.	STEEL LBS.
15"	2:1	*2'–0"	0'–10"	1'–11"	2'–0"	6'–7 1/2"	3'–3 1/4"	*0'–8"	*0'–5 3/8"	h_1	#4	2	1'–10"	3'–2 1/2"	8'–3"	BENT	0.61	0.62	41.2
		†2'–2"						†0'–6"	†0'–2 1/2"	h_2	#4	1			6'–1"	ST.			
		BEVEL: DEPTH = 3/4" LENGTH = 1"								v	#4	13			3'–0"	BENT			
18"	2:1	*2'–0"	1'–1"	2'–2"	2'–3"	6'–10 1/2"	3'–3 1/4"	*0'–8"	*0'–5 3/8"	h_1	#4	2	2'–1"	3'–2 1/2"	8'–6"	BENT	0.67	0.68	41.8
		†2'–2"						†0'–6"	†0'–2 1/2"	h_2	#4	1			6'–4"	ST.			
		BEVEL: DEPTH = 3/4" LENGTH = 1 1/4"								v	#4	13			3'–0"	BENT			
24"	2:1	*2'–8"	1'–4"	2'–9"	2'–11"	8'–10 1/2"	4'–2 1/2"	*0'–8"	*0'–5 3/8"	h_1	#4	2	2'–9"	4'–1 1/2"	11'–0"	BENT	1.01	1.02	52.4
		†2'–10"						†0'–6"	†0'–2 1/2"	h_2	#4	1			8'–4"	ST.			
		BEVEL: DEPTH = 1" LENGTH = 1 1/2"								v	#4	16			3'–0"	BENT			
30"	2:1	*3'–1"	1'–7"	3'–3"	3'–5"	10'–4 1/2"	4'–11"	*0'–9"	*0'–6 3/4"	h_1	#4	2	3'–3"	4'–10 1/2"	13'–0"	BENT	1.32	1.37	58.1
		†3'–4"						†0'–6"	†0'–2 1/2"	h_2	#4	1			9'–10"	ST.			
		BEVEL: DEPTH = 1 1/4" LENGTH = 2"								v	#4	17			3'–0"	BENT			
36"	2:1	*3'–9"	1'–10"	3'–10"	4'–1"	12'–4 1/2"	5'–10 1/2"	*0'–9"	*0'–6 3/4"	h_1	#4	2	3'–11"	5'–9 1/2"	15'–6"	BENT	1.79	1.86	70.8
		†4'–0"						†0'–6"	†0'–2 1/2"	h_2	#4	1			11'–10"	ST.			
		BEVEL:DEPTH=1 1/2" LENGTH=2 1/4"								v	#4	21			3'–0"	BENT			

* DIMENSIONS FOR INLET WINGWALLS ON CORRUGATED METAL PIPE (TO ACCOMMODATE THE BEVEL).

† DIMENSIONS FOR INLET WINGWALLS ON CONCRETE PIPE AND ALL OUTLET WINGWALLS.

DETAIL XX
CONCRETE WINGWALL
(Sheet 1 of 4)

NO SCALE