



NOTES:

1. "H" MAY BE REDUCED UNTIL "X" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET 101.02.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND ALL SKEWS (0° TO 45°).
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR.
6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. 3/4" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

EW-1

ENDWALL FOR CIRCULAR PIPE							
DIAMETER OF PIPE CULVERT							
	12"	15"	18"	21" OR 24"	27" OR 30"	33" OR 36"	
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"	
B	0'-11"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"	
C	1'-4"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"	
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"	
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	
H	2'-3"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"	
L	4'-0"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"	
a	0'-1/4"	0'-1 3/4"	0'-2"	0'-2 1/2"	0'-3 1/4"	0'-3 3/4"	
b	0'-1"	0'-1 1/4"	0'-1 1/2"	0'-2"	0'-2 1/2"	0'-3"	
CUBIC YARDS OF CONCRETE							
CONC. PIPE	0.241	0.492	0.697	1.319	2.067	2.947	
C.M. PIPE	0.257	0.521	0.739	1.398	2.198	3.145	

EW-1A

ENDWALL FOR ELLIPTICAL PIPE									
SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)									
	23"x14"	30"x19"	34"x22"	38"x24"	42"x27"	45"x29"	49"x32"	53"x34"	
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"	
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"	
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"	
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"	
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"	
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"	
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"	
a	0'-2 1/2"	0'-3 1/4"	0'-3 1/2"	0'-4"	0'-4 1/2"	0'-4 3/4"	0'-5"	0'-5 1/2"	
b	0'-2"	0'-2 1/2"	0'-2 3/4"	0'-3"	0'-3 1/2"	0'-3 3/4"	0'-4"	0'-4 1/2"	
CUBIC YARDS OF CONCRETE									
CONC. PIPE	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801	

SPECIFICATION REFERENCE
105
302

**STANDARD ENDWALL FOR PIPE CULVERTS
12"-36" CIRCULAR AND 23"x14"-53"x34" ELLIPTICAL PIPES**

VIRGINIA DEPARTMENT OF TRANSPORTATION