



**NOTES:**

1. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH 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 101.12.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND SKEW ANGLES TO 15°.
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.
10. QUANTITIES GIVEN ARE FOR ONE ENDWALL. PLEASE REFER TO STANDARD EW-1, SHEET 101.01 FOR ALL DIMENSIONS NOT GIVEN IN TABLES.

FOR CONCRETE PIPE							
D	S	G	L	CUBIC YARDS CONCRETE ONE DOUBLE ENDWALL	INCREASE FOR EACH ADDITIONAL PIPE	a	b
12"	1'-10"	2'-0"	5'-10"	0.329	0.088	0'-1 1/4"	0'-1"
15"	2'-3"	2'-6"	7'-3"	0.671	0.179	0'-1 3/4"	0'-1 1/4"
18"	2'-8"	3'-0"	8'-8"	0.941	0.244	0'-2"	0'-1 1/2"
21" OR 24"	3'-6"	4'-0"	11'-6"	1.763	0.444	0'-2 1/2"	0'-2"
27" OR 30"	4'-4"	5'-0"	14'-4"	2.730	0.663	0'-3 1/4"	0'-2 1/2"
33" OR 36"	5'-2"	6'-0"	17'-2"	3.854	0.907	0'-3 3/4"	0'-3"

FOR CORRUGATED METAL PIPE							
D	S	G	L	CUBIC YARDS CONCRETE ONE DOUBLE ENDWALL	INCREASE FOR EACH ADDITIONAL PIPE	a	b
12"	1'-7"	2'-0"	5'-7"	0.344	0.087	0'-1 1/4"	0'-1"
15"	1'- 11 1/2"	2'-6"	6'-11 1/2"	0.696	0.175	0'-1 3/4"	0'-1 1/4"
18"	2'-4"	3'-0"	8'-4"	0.980	0.241	0'-2"	0'-1 1/2"
24"	3'-1"	4'-0"	11'-1"	1.840	0.442	0'-2 1/2"	0'-2"
27" OR 30"	3'-10"	5'-0"	13'-10"	2.868	0.670	0'-3 1/4"	0'-2 1/2"
36"	4'-7"	6'-0"	16'-7"	4.076	0.931	0'-3 3/4"	0'-3"

SPECIFICATION REFERENCE
105 302

**STANDARD ENDWALL FOR MULTIPLE PIPE CULVERTS**  
 12" - 36" CIRCULAR PIPES  
 VIRGINIA DEPARTMENT OF TRANSPORTATION

<b>VDOT</b> ROAD AND BRIDGE STANDARDS	
REVISION DATE	SHEET 1 OF 1
	101.11