



**TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES  
PIPE CULVERT ENDWALLS WITH U - TYPE WINGS**

Opening		DIMENSIONS					QUANTITIES IN ONE ENDWALL						
D	Area Sq.Ft.	Wall		Footing			Total Cu. Yds. Concrete, Class I						Steel Tie Bars
		G	H	K	F	J	Conc. Pipe		C.M. Pipe		C.I. Pipe		
							Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	
12"	0.8	3'-8"	2'-0"	1'-0"	1'-3"	2'-2"	0.48	0.55	0.49	0.57	0.49	0.57	none
15"	1.2	3'-11"	2'-3"	1'-5"	1'-3"	2'-7"	0.59	0.67	0.62	0.70	0.61	0.70	none
18"	1.8	4'-2"	2'-6"	1'-9"	1'-3"	2'-11"	0.70	0.79	0.74	0.82	0.74	0.82	none
24"	3.1	4'-8"	3'-0"	2'-6"	1'-6"	3'-8"	1.01	1.11	1.06	1.16	1.06	1.16	2 - 3/8" x 2'-0"
30"	4.9	5'-2"	3'-6"	3'-3"	1'-6"	4'-5"	1.33	1.44	1.41	1.51	1.40	1.51	2 - 3/8" x 2'-0"
36"	7.1	5'-8"	4'-0"	4'-0"	1'-9"	5'-2"	1.73	1.85	1.84	1.96	1.82	1.94	2 - 3/8" x 2'-6"
42"	9.6	6'-2"	4'-6"	4'-9"	2'-0"	5'-11"	2.19	2.32	2.32	2.45			2 - 3/8" x 2'-6"
48"	12.6	6'-8"	5'-0"	5'-6"	2'-0"	6'-8"	2.64	2.78	2.81	2.95			2 - 3/8" x 3'-0"

**TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES  
PIPE CULVERT ENDWALLS WITH 45° WINGS**

Opening		DIMENSIONS					QUANTITIES IN ONE ENDWALL						
D	Area Sq.Ft.	Wall				Footing	Concrete, Class I						Steel Tie Bars
		H	G	L	M	F	Total Cu. Yds.						
							Conc. Pipe	C.M. Pipe	C.I. Pipe				
18"	1.8	2'-6"	3'-10"	1'-2"	1'-7"	1'-3"	0.74	0.77	0.77			none	
24"	3.1	3'-0"	4'-4"	1'-5"	2'-1"	1'-4"	1.01	1.06	1.06			2 - 3/8" x 2'-0"	
30"	4.9	3'-6"	4'-10"	1'-9"	2'-5"	1'-6"	1.32	1.40	1.39			2 - 3/8" x 2'-0"	
36"	7.1	4'-0"	5'-4"	2'-0"	2'-11"	1'-8"	1.72	1.83	1.82			2 - 3/8" x 3'-0"	
42"	9.6	4'-6"	5'-10"	2'-3"	3'-6"	2'-0"	2.34	2.47				2 - 3/8" x 3'-0"	
48"	12.6	5'-0"	6'-4"	2'-6"	4'-0"	2'-0"	2.74	2.90				2 - 3/8" x 3'-0"	
15"	1.2	2'-3"	3'-7"	1'-0"	1'-3"	1'-3"	0.56	0.59	0.59			none	

**GENERAL NOTES**

1. Winged concrete endwalls are intended for use outside the clear zone.
2. Chamfer all exposed edges 3/4"
3. Concrete meeting the requirements of ASTM C-478 (4000 psi) may be used in lieu of Class I concrete in precast units manufactured in plants which are under the Standard Operating Procedures for the inspection of precast drainage products.
4. Endwall to be paid for under the contract unit price for Class I Concrete (Endwalls), CY. Cost of steel tie bars to be included in the contract unit price for Class I Concrete.
5. Sodding to be in accordance with Index No. 281, and paid for under the contract unit price for Sodding, SY.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

**WINGED CONCRETE ENDWALLS  
SINGLE ROUND PIPE**

Names	Date	Approved By
Designed By		<i>[Signature]</i>
Drawn By	TJK 12/31	State Drainage Engineer
Checked By	GEF 03/32	Revision 00
		Sheet No. 1 of 1
		Index No. 266