

PIPE SIZE SxR	DIMENSIONS - SLOPE 2:1												LAG BOLTS FOR WING WALLS	
	L	X	L <sub>1</sub>	L <sub>2</sub>	W	L <sub>3</sub>	L <sub>4</sub>	Z	H	A	B	P	SPACING C/C	NO. REQ. EA. WALL
17" x 13"	3'-9"	2'-0"	-	-	2'-1"	-	-	1'-10"	2'-9"	10"	1"	2'-2"	1'-7"	2
21" x 15"	4'-2"	2'-0"	-	-	2'-1"	-	-	1'-10"	2'-9"	10"	1"	2'-2"	1'-7"	2
24" x 18"	4'-6"	3'-1"	-	-	2'-11"	-	-	2'-6"	3'-4"	10"	1"	2'-2"	2'-2"	2
28" x 20"	4'-9"	3'-1"	-	-	2'-11"	-	-	2'-6"	3'-4"	1'-5"	4"	2'-6"	2'-2"	2
35" x 24"	5'-7"	4'-2"	1'-7"	4'-0"	3'-7"	-	-	3'-1"	3'-10"	1'-11"	6"	2'-10"	1'-4"	3
42" x 29"	6'-2"	4'-2"	1'-7"	4'-0"	3'-7"	-	-	3'-1"	3'-10"	1'-11"	6"	2'-10"	1'-4"	3
49" x 33"	6'-8"	5'-3"	2'-8"	4'-0"	4'-5"	1'-8"	3'-0"	3'-10"	4'-5"	2'-6"	9"	3'-2"	1'-7½"	3
57" x 38"	7'-4"	6'-4"	3'-9"	4'-0"	5'-2"	2'-5"	3'-0"	4'-6"	4'-11"	3'-0"	1'-0"	3'-5"	1'-10½"	3

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17" x 13"	3'-9"	4'-4"	1'-9"	4'-0"	2'-4"	-	-	2'-0"	2'-9"	10"	1"	2'-2"	1'-7"	2
21" x 15"	4'-2"	5'-5"	2'-10"	4'-0"	2'-11"	-	-	2'-6"	3'-0"	1'-1"	2½"	2'-3½"	1'-10"	2
24" x 18"	4'-6"	6'-6"	3'-11"	4'-0"	3'-1"	-	-	2'-11"	3'-4"	1'-5"	3"	2'-7"	2'-2"	2
28" x 20"	4'-9"	6'-6"	3'-11"	4'-0"	3'-1"	-	-	2'-11"	3'-4"	1'-5"	3"	2'-7"	2'-2"	2
35" x 24"	5'-7"	8'-8"	6'-1"	4'-0"	4'-0"	1'-3"	3'-0"	3'-6"	3'-10"	1'-11"	4½"	2'-11½"	1'-4"	3
42" x 29"	6'-2"	10'-10"	8'-8"	4'-0"	5'-0"	2'-3"	3'-0"	4'-4"	4'-5"	2'-6"	7"	3'-4"	1'-4"	3
49" x 33"	6'-8"	10'-10"	8'-8"	4'-0"	5'-0"	2'-3"	3'-0"	4'-4"	4'-5"	2'-6"	7"	3'-4"	1'-7½"	3
57" x 38"	7'-4"	13'-0"	10'-5"	4'-0"	5'-11"	3'-2"	3'-0"	5'-2"	4'-11"	3'-0"	9"	3'-8"	1'-10½"	3

SPECIFICATION CATEGORY CODE ITEMS

APPROVED *Kirk G. McCall*  
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT



APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 6-23-92	APPROVAL 6-23-92
REVISED 10-1-01	REVISED
REVISED	REVISED
REVISED	REVISED

**Maryland Department of Transportation**  
**STATE HIGHWAY ADMINISTRATION**  
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

**PRECAST TYPE F ENDWALL DIMENSIONS**  
**METAL PIPE ARCH**

**STANDARD NO. MD 359.03**