

PIPE SIZE D	DIMENSIONS - SLOPE 1 1/2:1												LAG BOLTS FOR WING WALLS	
	L	X	L ₁	L ₂	W	L ₃	L ₄	Z	H	A	B	P	SPACING C/C	NO. REQ. EA. WALL
12"	4'-2"	1'-5"			1'-11"	-	-	1'-8"	2'-9"	10"	2"	2'-1"	1'-7"	2
15"	4'-9"	1'-10"	-	-	2'-5"	-	-	2'-1"	3'-0"	1'-1"	4"	2'-2"	1'-10"	2
18"	5'-0"	2'-3"	-	-	2'-8"	-	-	2'-4"	3'-4"	1'-5"	5"	2'-5"	2'-2"	2
21"	5'-3"	2'-8"	-	-	2'-10"	-	-	2'-7"	3'-7"	1'-8"	6"	2'-7"	2'-5"	2
24"	5'-7"	3'-1"	-	-	3'-5"	-	-	2'-11"	3'-10"	1'-11"	8"	2'-8"	1'-4"	3
27"	5'-10"	3'-5"	-	-	3'-11"	-	-	3'-5"	4'-1"	2'-2"	10"	2'-9"	1'-5 1/2"	3
30"	6'-2"	3'-10"	1'-3"	4'-0"	4'-2"	1'-5"	3'-0"	3'-7"	4'-5"	2'-6"	11"	3'-0"	1'-7 1/2"	3
33"	6'-5"	4'-4"	1'-9"	4'-0"	4'-7"	1'-10"	3'-0"	3'-11"	4'-8"	2'-9"	1'-0"	3'-2"	1'-9"	3
36"	6'-8"	4'-8"	2'-1"	4'-0"	4'-10"	2'-1"	3'-0"	4'-2"	4'-11"	3'-0"	1'-2"	3'-3"	1'-10 1/2"	3
42"	7'-4"	5'-6"	2'-11"	4'-0"	5'-7"	2'-10"	3'-0"	4'-10"	5'-6"	3'-7"	1'-5"	3'-7"	2'-2"	3
48"	8'-0"	6'-4"	3'-9"	4'-0"	6'-3"	3'-6"	3'-0"	5'-5"	6'-0"	4'-1"	1'-8"	3'-10"	2'-5"	3

PIPE SIZE D	DIMENSIONS - SLOPE 2:1												LAG BOLTS FOR WING WALLS	
	L	X	L ₁	L ₂	W	L ₃	L ₄	Z	H	A	B	P	SPACING C/C	NO. REQ. EA. WALL
12"	3'-3"	2'-0"	-	-	2'-1"	-	-	1'-10"	2'-9"	10"	1"	2'-2"	1'-7"	2
15"	3'-6"	2'-7"	-	-	2'-7"	-	-	2'-3"	3'-0"	1'-1"	3"	2'-3"	1'-10"	2
18"	3'-9"	3'-1"	-	-	2'-11"	-	-	2'-6"	3'-4"	1'-5"	4"	2'-6"	2'-2"	2
21"	4'-0"	3'-7"	-	-	3'-3"	-	-	2'-10"	3'-7"	1'-8"	5"	2'-8"	2'-5"	2
24"	5'-0"	4'-2"	1'-7"	4'-0"	3'-7"	-	-	3'-1"	3'-10"	1'-11"	6"	2'-10"	1'-4"	3
27"	5'-3"	4'-8"	2'-1"	4'-0"	4'-1"	1'-4"	3'-0"	3'-6"	4'-1"	2'-2"	8"	2'-11"	1'-5 1/2"	3
30"	5'-6"	5'-3"	2'-8"	4'-0"	4'-5"	1'-8"	3'-0"	3'-10"	4'-5"	2'-6"	9"	3'-2"	1'-7 1/2"	3
33"	5'-9"	5'-9"	3'-2"	4'-0"	4'-10"	2'-1"	3'-0"	4'-2"	4'-8"	2'-9"	11"	3'-3"	1'-9"	3
36"	6'-0"	6'-4"	3'-9"	4'-0"	5'-2"	2'-5"	3'-0"	4'-6"	4'-11"	3'-0"	1'-0"	3'-5"	1'-10 1/2"	3
42"	6'-6"	7'-5"	4'-10"	4'-0"	6'-0"	3'-3"	3'-0"	5'-2"	5'-6"	3'-7"	1'-3"	3'-9"	2'-2"	3
48"	7'-0"	8'-6"	5'-11"	4'-0"	6'-9"	4'-0"	3'-0"	5'-10"	6'-0"	4'-1"	1'-6"	4'-0"	2'-5"	3

PIPE SIZE D	DIMENSIONS - SLOPE 4:1												LAG BOLTS FOR WING WALLS	
	L	X	L ₁	L ₂	W	L ₃	L ₄	Z	H	A	B	P	SPACING C/C	NO. REQ. EA. WALL
12"	3'-3"	4'-4"	1'-9"	4'-0"	2'-4"	-	-	2'-0"	2'-9"	10"	1"	2'-2"	1'-7"	2
15"	3'-6"	5'-5"	2'-10"	4'-0"	2'-11"	-	-	2'-6"	3'-0"	1'-1"	2 1/2"	2'-5 1/2"	1'-10"	2
18"	3'-9"	6'-6"	3'-11"	4'-0"	3'-4"	-	-	2'-11"	3'-4"	1'-5"	3"	2'-7"	2'-2"	2
21"	4'-4"	7'-7"	5'-0"	4'-0"	3'-7"	-	-	3'-1"	3'-7"	1'-8"	4"	2'-9"	2'-5"	2
24"	5'-0"	8'-8"	6'-1"	4'-0"	4'-0"	1'-3"	3'-0"	3'-6"	3'-10"	1'-11"	4 1/2"	2'-11 1/2"	1'-4"	3
27"	5'-3"	9'-4"	6'-9"	4'-0"	4'-7"	1'-10"	3'-0"	3'-6"	4'-1"	2'-2"	6"	3'-1"	1'-5 1/2"	3
30"	5'-6"	10'-0"	7'-5"	4'-0"	5'-0"	2'-3"	3'-0"	4'-4"	4'-5"	2'-6"	7"	3'-4"	1'-7 1/2"	3
33"	5'-9"	11'-6"	8'-11"	4'-0"	5'-6"	2'-9"	3'-0"	4'-9"	4'-8"	2'-9"	8"	3'-6"	1'-9"	3
36"	6'-0"	13'-0"	10'-5"	4'-0"	5'-11"	3'-2"	3'-0"	5'-2"	4'-11"	3'-0"	9"	3'-8"	1'-10 1/2"	3
42"	6'-6"	15'-2"	12'-7"	4'-0"	7'-0"	4'-3"	3'-0"	6'-1"	5'-6"	3'-7"	1'-0"	4'-0"	2'-2"	3
48"	7'-0"	17'-4"	14'-9"	4'-0"	7'-11"	5'-2"	3'-0"	6'-10"	6'-0"	4'-1"	1'-2"	4'-4"	2'-5"	3

SPECIFICATION CATEGORY CODE ITEMS

APPROVED *Kirk G. McCall*
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Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST TYPE F ENDWALL DIMENSIONS
METAL OR CONCRETE ROUND PIPE

STANDARD NO. MD 358.05