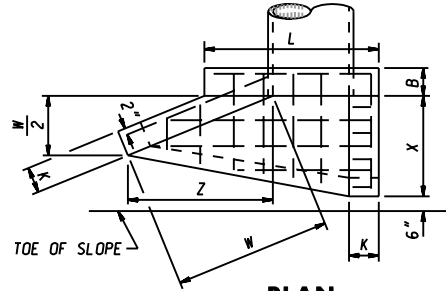


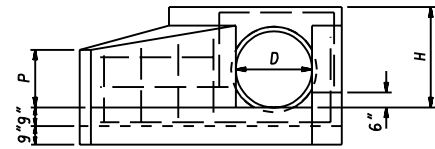
ISOMETRIC VIEW



PLAN

QUANTITIES FOR ESTIMATING PURPOSES ONLY

SLOPE: 1 1/2:1											
OPENING		DIMENSIONS							QUANTITIES		
PIPE DIA. D	AREA SQ. FT.	ENDWALL			WINGS				1-ENDWALL 2-WINGS		
		L	B	H	W	X	Z	K	P	CONC. CU. YDS.	STEEL LBS.
12"	0.79	3'-3"	9"	1'-8"	1'-11"	1'-3"	1'-8"	9"	1'-0"	0.47	33
15"	1.23	3'-6"	9"	2'-0"	2'-5"	1'-8"	2'-1"	9"	1'-2"	0.61	50
18"	1.78	3'-9"	9"	2'-3"	2'-8"	2'-1"	2'-4"	9"	1'-4"	0.75	53
21"	2.40	4'-0"	9"	2'-7"	3'-2"	2'-6"	2'-9"	9"	1'-6"	1.10	71
24"	3.14	5'-0"	12"	2'-11"	3'-5"	2'-11"	2'-11"	12"	1'-9"	1.44	89
27"	3.98	5'-3"	12"	3'-3"	3'-10"	3'-3"	3'-4"	12"	1'-11"	1.69	101
30"	4.91	5'-6"	12"	3'-6"	4'-2"	3'-8"	3'-7"	12"	2'-1"	1.93	112
33"	5.94	5'-9"	12"	3'-9"	4'-6"	4'-3"	3'-11"	12"	2'-3"	2.22	133
36"	7.07	6'-0"	12"	4'-0"	4'-10"	4'-6"	4'-2"	12"	2'-4"	2.51	154
42"	9.62	6'-6"	12"	4'-7"	5'-7"	5'-4"	4'-10"	12"	2'-8"	3.20	189
48"	12.57	7'-0"	12"	5'-1"	6'-3"	6'-2"	5'-5"	12"	2'-11"	3.92	216



ELEVATION

GENERAL NOTES

- SPECIFICATIONS: LATEST S.H.A.
- CONCRETE SHALL BE MIX NO.2
- REINFORCING: DEFORMED STEEL BARS
- ENDWALLS: NO.6 BARS 12" C/C
- WINGWALLS: VERTICAL NO.6 BARS 12" C/C.
- 18" BEND ON ONE END
- HORIZONTAL NO.4 BARS 12" C/C
- 6" HOOK ON ONE END
- FLOOR: NO.4 BARS 12" C/C. 2 WAYS
- CHAMFER: ALL EXPOSED EDGES 1"x1" OR AS DIRECTED.

SLOPE: 2:1											
OPENING		DIMENSIONS							QUANTITIES		
PIPE DIA. D	AREA SQ. FT.	ENDWALL			WINGS				1-ENDWALL 2-WINGS		
		L	B	H	W	X	Z	K	P	CONC. CU. YDS.	STEEL LBS.
12"	0.79	3'-3"	9"	1'-7"	2'-1"	1'-10"	1'-10"	9"	1'-0"	0.53	37
15"	1.23	3'-6"	9"	1'-11"	2'-7"	2'-5"	2'-3"	9"	1'-3"	0.70	55
18"	1.78	3'-9"	9"	2'-2"	2'-11"	2'-11"	2'-6"	9"	1'-5"	0.82	68
21"	2.40	4'-0"	9"	2'-6"	3'-3"	3'-6"	2'-10"	9"	1'-7"	1.23	80
24"	3.14	5'-0"	12"	2'-9"	3'-7"	4'-0"	3'-1"	12"	1'-10"	1.63	92
27"	3.98	5'-3"	12"	3'-0"	4'-0"	4'-6"	3'-6"	12"	2'-0"	1.94	109
30"	4.91	5'-6"	12"	3'-4"	4'-5"	5'-1"	3'-10"	12"	2'-2"	2.24	125
33"	5.94	5'-9"	12"	3'-7"	4'-10"	5'-7"	4'-2"	12"	2'-4"	2.56	146
36"	7.07	6'-0"	12"	3'-10"	5'-2"	6'-2"	4'-6"	12"	2'-6"	2.88	166
42"	9.62	6'-6"	12"	4'-5"	6'-0"	7'-3"	5'-2"	12"	2'-10"	3.74	221
48"	12.57	7'-0"	12"	4'-11"	6'-9"	8'-4"	5'-10"	12"	3'-2"	4.61	262

SLOPE: 4:1											
OPENING		DIMENSIONS							QUANTITIES		
PIPE DIA. D	AREA SQ. FT.	ENDWALL			WINGS				1-ENDWALL 2-WINGS		
		L	B	H	W	X	Z	K	P	CONC. CU. YDS.	STEEL LBS.
12"	0.79	3'-3"	9"	1'-5"	2'-4"	4'-2"	2'-0"	9"	1'-2"	0.76	61
15"	1.23	3'-6"	9"	1'-9"	2'-11"	5'-3"	2'-6"	9"	1'-5"	1.03	81
18"	1.78	3'-9"	9"	2'-0"	3'-1"	6'-4"	2'-11"	9"	1'-7"	1.33	98
21"	2.40	4'-0"	9"	2'-3"	3'-7"	7'-5"	3'-1"	9"	1'-9"	1.89	130
24"	3.14	5'-0"	12"	2'-6"	4'-0"	8'-6"	3'-6"	12"	2'-0"	2.45	161
27"	3.98	5'-3"	12"	2'-9"	4'-6"	9'-7"	3'-11"	12"	2'-2"	2.95	193
30"	4.91	5'-6"	12"	3'-1"	5'-0"	10'-8"	4'-4"	12"	2'-5"	3.44	225
33"	5.94	5'-9"	12"	3'-4"	5'-6"	11'-9"	4'-9"	12"	2'-7"	4.02	236
36"	7.07	6'-0"	12"	3'-7"	5'-11"	12'-0"	5'-2"	12"	2'-10"	4.59	246
42"	9.62	6'-6"	12"	4'-2"	7'-0"	15'-0"	6'-1"	12"	3'-4"	5.98	367
48"	12.57	7'-0"	12"	4'-8"	7'-11"	17'-2"	6'-10"	12"	3'-9"	7.46	499

SPECIFICATION 305 CATEGORY CODE ITEMS

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



APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 8-28-86	APPROVAL 12-12-86
REVISED 10-1-01	REVISED
REVISED	REVISED
REVISED	REVISED

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

**SPECIAL TYPE F ENDWALL
METAL OR CONCRETE ROUND PIPE**

STANDARD NO. MD 358.02