

STEEL END SECTIONS FOR ROUND PIPE CULVERT							
PIPE DIAMETER (In)	METAL THICK (MIN.) (In/Gage)	DIMENSIONS (Inches)					
		A	H	W	OVERALL WIDTH	L	
						Slope=4	Slope=6
18	0.064/16	8	6	24	40	32	47
24	0.064/16	8	6	30	46	55	83
30	0.109/12	12	9	36	60	79	118
36	0.109/12	12	9	42	66	102	154
42	0.109/12	16	12	48	80	126	189
48	0.109/12	16	12	54	86	150	224
54	0.109/12	16	12	60	92	173	260
60	0.109/12	16	12	66	98	197	295


STEEL END SECTIONS FOR ARCH PIPE CULVERT									
PIPE SIZE (Inches)			METAL THICK (MIN.) (In/Gage)	DIMENSIONS (Inches)					
EQUIVALENT ROUND DIAMETER	*** SPAN	*** RISE		A	H	W	OVERALL WIDTH	L	
								Slope=4	Slope=6
18	21	15	0.064/16	8	6	27	43	20	30
24	28	20	0.064/16	8	6	33	49	40	60
30	35	24	0.109/12	12	9	40	64	55	83
36	41	29	0.109/12	12	9	47	71	75	112
42	48	32	0.109/12	16	12	54	86	90	136
48	56	37	0.109/12	16	12	62	94	110	165
54 **	63	42	0.109/12	16	12	69	101	130	195
60 **	70	46	0.109/12	16	12	76	107	146	218
72 **	82	56	0.109/12	16	12	88	120	185	278

** REQUIRES 2 CROSS DRAINAGE BARS.

*** SEE GENERAL NOTE 5

GENERAL NOTES FOR ALL DETAILS:

- FOR ROUND PIPES WITH DIAMETERS 24" OR LESS USE TYPE #1 CONNECTOR. ALL ARCH PIPES EQUIVALENT ROUND DIAMETER, AND ROUND PIPES OVER 24" DIAMETER USE TYPE #2 CONNECTOR.
- TOE PLATE EXTENSIONS ARE TO BE THE SAME MIN. THICKNESS AS END SECTION. DIMENSIONS SHALL BE OVERALL WIDTH LESS 6" BY 8" HIGH.
- CROSS DRAINAGE AND SAFETY BARS SHALL BE 3" DIA. SCHEDULE 40 ALUMINIZED STEEL PIPE.
- SLOTTED HOLES FOR SAFETY BAR ATTACHMENT SHALL BE PROVIDED FOR ALL END SECTIONS.
- CROSS-SECTIONAL DIMENSIONS OF ATTACHING PIPE MAY VARY WITH DIFFERENT MATERIALS.
- OPEN ENDS OF PIPES NORMALLY REQUIRE A SITE SPECIFIC DESIGN, AND MAY REQUIRE SPECIAL TREATMENT (SLOPE ENDS, CULVERT EMBANKMENT PROTECTION, PAVED END SLOPES, SAFETY END SECTIONS, OR OTHER MEASURES). SEE SPECIAL DETAILS OR STANDARD DRAWINGS AS CALLED FOR ON PLANS.

SPECIFICATION 305	CATEGORY CODE ITEMS
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT
	APPROVAL • SHA REVISIONS
	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
	APPROVAL 10-7-14
	APPROVAL 9-29-14
	REVISED
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SAFETY END SECTION FOR METAL PIPE

STANDARD NO.

MD-372.01