

STEEL END SECTION FOR ELLIPTICAL CONCRETE PIPE

Equiv. Dia	Ellipse Dimensions		Steel Minimum Thickness	Toe Plate Dimensions			L Dimensions		
	Span	Rise		A	H	W	Overall width	4H:1V Slope	6H:1V Slope
460	585	355	1.6	205	150	735	1145	405	610
610	760	485	1.6	205	150	915	1320	915	1370
685	865	560	2.0	305	230	1015	1625	1220	1830
760	965	610	2.0	305	230	1120	1725	1420	2135
840	1065	685	2.8	305	230	1220	1830	1725	2590
915	1145	740	2.8	405	305	1295	2110	1930	2895
1065	1345	865	2.8	405	305	1500	2310	2440	3660
1220	1525	965	2.8	405	305	1675	2490	2845	4265
1370	1730	1090	2.8	405	305	1880	2690	3355	5030
1525	1930	1220	2.8	405	305	2030	2845	3860	5790

STEEL END SECTION FOR CIRCULAR PIPE

Pipe Dia	Steel Minimum Thickness	Toe Plate Dimensions			L Dimensions		
		A	H	W	Overall width	4H:1V Slope	6H:1V Slope
300	1.6	200	150	450	850	n/a	700
400	1.6	200	150	550	950	800	1200
450	1.6	200	150	600	1000	1000	1500
500	1.6	200	150	650	1050	1200	1800
525	1.6	200	150	675	1075	1300	1950
600	1.6	200	150	750	1150	1600	2400
700	2.8	300	225	850	1450	1800	2700
750	2.8	300	225	900	1500	2000	3000
800	2.8	300	225	950	1550	2200	3300
900	2.8	300	225	1050	1650	2600	3900
1000	2.8	400	300	1150	1950	3000	4500
1050	2.8	400	300	1200	2000	3200	4800
1200	2.8	400	300	1350	2150	3800	5700
1350	2.8	400	300	1500	2300	4400	6600
1400	2.8	400	300	1550	2350	4600	6900

NOTES:

- A This OPSD shall be read in conjunction with OPSD 801.041, 801.042, and 801.043. Notes and tables shown on this standard apply to the noted standards.
- B Safety slope end treatment attach to pipes up to 600mm with Type 1 or 3 connector.
All other sizes attach with Type 2 or 4 connector.
- C Safety bars shall be fabricated from Schedule 40 galvanized steel pipe. Safety bars shall be galvanized after fabrication.
- D All surfaces shall be galvanized.

STEEL END SECTION FOR ARCHED STEEL PIPE

Equivalent Diameter	Ellipse Dimensions		Steel Minimum Thickness	Toe Plate Dimensions			L Dimensions		
	Span	Rise		A	H	W	Overall width	4H:1V Slope	6H:1V Slope
400-CSP	450	340	1.6	200	150	600	1000	560	840
450-Spiral Rib	500	390	1.6	200	150	650	1050	760	1140
500-CSP	560	420	1.6	200	150	710	1110	880	1320
525-Spiral Rib	580	465	1.6	200	150	730	1130	1060	1590
600-CSP	680	500	1.6	200	150	830	1230	1200	1800
600-Spiral Rib	660	530	1.6	200	150	810	1210	1320	1980
700-CSP	800	580	2.8	300	225	950	1550	1320	1980
750-Spiral Rib	830	660	2.8	300	225	980	1580	1640	2460
800-CSP	910	660	2.8	300	225	1060	1660	1640	2460
900-CSP	1030	740	2.8	300	225	1180	1780	1960	2940
900-Spiral Rib	1010	790	2.8	300	225	1160	1760	2160	3240
1000-CSP	1150	820	2.8	400	300	1300	2100	2280	3420
1050-Spiral Rib	1160	920	2.8	400	300	1310	2110	2680	4020
1200-CSP	1390	970	2.8	400	300	1540	2340	2880	4320
1200-Spiral Rib	1340	1050	2.8	400	300	1490	2290	3200	4800
1350-Spiral Rib	1485	1190	2.8	400	300	1635	2435	3760	5640
1400-CSP	1630	1120	2.8	400	300	1780	2580	3480	5220
1500-Spiral Rib	1670	1300	2.8	400	300	1820	2620	4200	6300
1600-CSP	1880	1260	2.8	400	300	2030	2830	4040	6060
1650-Spiral Rib	1815	1450	2.8	400	300	1965	2765	4800	7200
1800-CSP	2130	1400	2.8	400	300	2280	3080	4600	6900

- E Details of construction materials and workmanship not shown on this drawing shall be according to CSA G401.
- F End sections shall have slotted holes for safety bar attachment.
- G Cross drainage structures are perpendicular to the centreline of the road. Parallel drainage structures are parallel to centreline of the road.
- H All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

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CULVERT AND SEWER
SAFETY SLOPE END TREATMENT
NOTES AND TABLES



OPSD 801.040