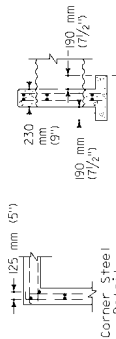
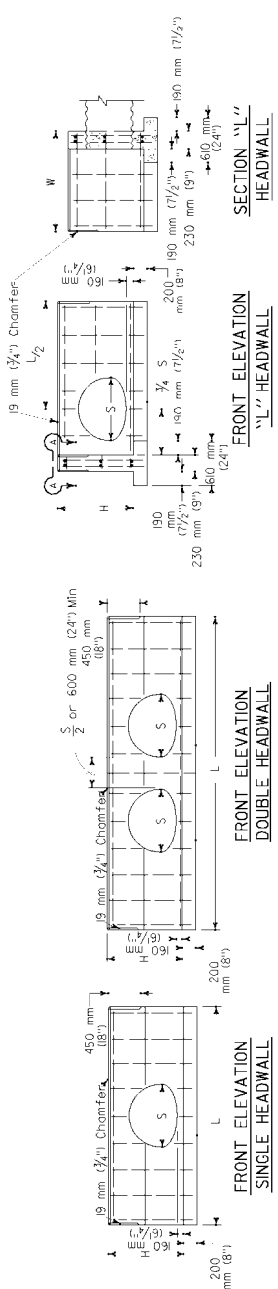


July 1, 2002
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 State of California
 Mechanical
 Seal of the State Board of Professional Engineers, Architects, and Surveyors



SECTION, SINGLE & DOUBLE HEADWALLS

CMP ARCH SIZE	SINGLE			DOUBLE		
	H	L	Steel	L	Steel	Conc
530 mm x 380 mm (21" x 15")	885 mm (35")	2000 mm (65') 20 kg (45 lb)	0.61 m ³ (10.80 CY)	3500 mm (10.0') 28 kg (66 lb)	0.91 m ³ (12.2 CY)	
610 mm x 460 mm (24" x 18")	960 mm (38")	2300 mm (75') 22 kg (50 lb)	0.74 m ³ (10.96 CY)	3500 mm (10.5') 32 kg (70 lb)	1.00 m ³ (14.5 CY)	
710 mm x 510 mm (28" x 20")	1010 mm (40")	2600 mm (85') 28 kg (60 lb)	0.85 m ³ (11.42 CY)	4000 mm (12.5') 40 kg (90 lb)	1.32 m ³ (17.6 CY)	
885 mm x 610 mm (35" x 24")	1110 mm (44")	3200 mm (102') 36 kg (85 lb)	1.11 m ³ (14.7 CY)	4700 mm (14.5') 54 kg (120 lb)	1.58 m ³ (21.6 CY)	
1060 mm x 740 mm (42" x 29")	1235 mm (49")	3800 mm (122') 50 kg (110 lb)	1.40 m ³ (18.16 CY)	5500 mm (16.6') 66 kg (145 lb)	1.95 m ³ (26.2 CY)	
1240 mm x 840 mm (49" x 33")	1335 mm (53")	4400 mm (144') 58 kg (130 lb)	1.70 m ³ (22.26 CY)	6400 mm (20.7') 78 kg (170 lb)	2.37 m ³ (32.3 CY)	
1440 mm x 970 mm (57" x 38")	1460 mm (58")	5200 mm (170') 70 kg (155 lb)	2.13 m ³ (28.8 CY)	7450 mm (24.5') 96 kg (210 lb)	2.97 m ³ (40.6 CY)	
1620 mm x 1100 mm (64" x 43")	1565 mm (62")	5800 mm (190') 80 kg (175 lb)	2.50 m ³ (33.3 CY)	8200 mm (27.0') 104 kg (230 lb)	3.36 m ³ (44.2 CY)	
1800 mm x 1200 mm (71" x 47")	1615 mm (63")	6400 mm (210') 88 kg (195 lb)	2.89 m ³ (38.8 CY)	9000 mm (29.0') 116 kg (255 lb)	3.88 m ³ (51.0 CY)	

STRAIGHT HEADWALLS

CMP ARCH SIZE	L/2	LENGTH OF W							
		1000 mm (40")	1450 mm (58")	1900 mm (76")	2350 mm (94")	2800 mm (112")	Conc		
530 mm x 380 mm (21" x 15")	1000 mm (39")	30 kg (65 lb)	0.89 m ³ (11.8 CY)	34 kg (75 lb)	1.04 m ³ (13.8 CY)	40 kg (90 lb)	1.18 m ³ (15.8 CY)	44 kg (100 lb)	1.33 m ³ (17.7 CY)
610 mm x 460 mm (24" x 18")	1500 mm (45")	32 kg (70 lb)	1.00 m ³ (13.2 CY)	36 kg (80 lb)	1.15 m ³ (15.3 CY)	42 kg (95 lb)	1.30 m ³ (17.4 CY)	50 kg (110 lb)	1.46 m ³ (19.4 CY)
710 mm x 510 mm (28" x 20")	2000 mm (60")	36 kg (80 lb)	1.09 m ³ (14.7 CY)	40 kg (90 lb)	1.23 m ³ (16.6 CY)	44 kg (100 lb)	1.44 m ³ (19.0 CY)	52 kg (115 lb)	1.57 m ³ (21.1 CY)
885 mm x 610 mm (35" x 24")	3000 mm (90")	50 kg (110 lb)	1.30 m ³ (17.4 CY)	54 kg (120 lb)	1.47 m ³ (19.3 CY)	62 kg (135 lb)	1.64 m ³ (22.0 CY)	70 kg (155 lb)	2.09 m ³ (28.3 CY)
1060 mm x 740 mm (42" x 29")	4000 mm (120")	58 kg (130 lb)	1.54 m ³ (20.6 CY)	64 kg (145 lb)	1.77 m ³ (23.7 CY)	78 kg (175 lb)	2.16 m ³ (28.9 CY)	82 kg (185 lb)	2.35 m ³ (31.5 CY)
1240 mm x 840 mm (49" x 33")	5000 mm (150")	72 kg (160 lb)	2.09 m ³ (28.1 CY)	78 kg (175 lb)	2.30 m ³ (30.7 CY)	84 kg (190 lb)	2.59 m ³ (35.3 CY)	92 kg (205 lb)	2.71 m ³ (36.1 CY)
1440 mm x 970 mm (57" x 38")	6000 mm (180")	90 kg (200 lb)	2.38 m ³ (32.1 CY)	96 kg (215 lb)	2.60 m ³ (34.8 CY)	104 kg (230 lb)	2.82 m ³ (37.7 CY)	112 kg (250 lb)	3.04 m ³ (40.6 CY)
1620 mm x 1100 mm (64" x 43")	7000 mm (210")	90 kg (200 lb)	2.44 m ³ (32.5 CY)	104 kg (230 lb)	2.85 m ³ (38.6 CY)	112 kg (250 lb)	3.12 m ³ (41.7 CY)	120 kg (270 lb)	3.35 m ³ (44.8 CY)

'L' HEADWALLS

CORRUGATED METAL PIPE ARCH CULVERT HEADWALLS

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION PIPE HEADWALLS

These "Standard Plans for Construction of Local Streets and Roads" contain units in two systems of measurement: International System of Units (SI or "Metric") and United States Customary System (USCS or "Imperial"). The units in each system are interchangeable. See the Forward at the beginning of this publication.

NO SCALE

D89A

THIS STANDARD PLAN D89A INCLUDES CHANGES THAT WERE INCORPORATED IN REVISED STANDARD PLAN RSP D89A DATED OCTOBER 26, 2000, AND ISSUED AS A PART OF ERRATUM NO. 99-1 FOR THE 1999 METRIC STANDARD PLANS.