

PIPE ARCH  Span Riser (in.)	1 ½ : 1 Slope				2 : 1 Slope			
	EC-3 Type B	Depth (T) (18")	Depth (T) (24")	Depth (T) (36")	EC-3 Type B	Depth (T) (18")	Depth (T) (24")	Depth (T) (36")
		Class A1	Class I	Class II		Class A1	Class I	Class II
	Sq. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Sq. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.
17 x 13	1.68	0.84	1.12	1.68	1.59	0.79	1.06	1.59
21 x 15	2.40	1.20	1.60	2.40	2.28	1.14	1.52	2.28
24 x 18	3.30	1.65	2.20	3.30	3.13	1.57	2.09	3.13
28 x 20	4.29	2.14	2.86	4.29	4.06	2.03	2.71	4.06
35 x 24	6.40	3.20	4.27	6.40	6.07	3.04	4.05	6.07
42 x 29	9.30	4.65	6.20	9.30	8.83	4.42	5.89	8.83
49 x 33	12.40	6.20	8.27	12.40	11.77	5.89	7.85	11.77
57 x 38	24.33	12.11	16.15	24.33	23.03	11.51	15.35	23.03

**TABLE D-14 CULVERT OUTLET PROTECTION WITH ST'D. EW-9 PIPE ARCHES**

PIPE ARCH  Span Riser (in.)	Increments For Each Additional Pipe			
	EC-3 Type B	Depth (T) (18") Class A1	Depth (T) (24") Class I	Depth (T) (36") Class II
	Conc. Sq. Yds.	Conc. Cu. Yds.	Conc. Cu. Yds.	Conc. Cu. Yds.
17 x 13	0.78	0.39	0.52	0.78
21 x 15	1.05	0.52	0.70	1.05
24 x 18	1.38	0.69	0.92	1.38
28 x 20	1.71	0.85	1.14	1.71
35 x 24	2.37	1.18	1.58	2.37
42 x 29	3.49	1.75	2.33	3.49
49 x 33	4.65	2.32	3.10	4.65
57 x 38	11.33	5.66	7.55	11.33

**TABLE D-15 CULVERT OUTLET PROTECTION WITH ST'D. EW-10 PIPE ARCHES**

Quantities To Be Used Only For Computations of Dry Rip Rap For Outlet Protection.\*

\* Rev. 7/10