

CULVERT SIZE DIAMETER (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.
12	1.09	0.55	0.73	1.09	1.03	0.52	0.69	1.03
15	1.71	0.85	1.14	1.71	1.62	0.81	1.08	1.62
18	2.47	1.24	1.65	2.47	2.34	1.17	1.56	2.34
24	4.39	2.20	2.93	4.39	4.17	2.08	2.78	4.17
30	6.88	3.44	4.59	6.88	6.54	3.27	4.36	6.54
36	16.76	8.38	11.17	16.76	15.93	7.97	10.62	15.93

**TABLE D-4 CULVERT OUTLET PROTECTION WITH ST'D. EW-1 ENDWALLS**

CULVERT SIZE DIAMETER (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.	C. M.	Conc.	C. M.	Conc.	C. M.	Conc.	C. M.
	Sq. Yds.	Sq. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.
12	0.52	0.45	0.26	0.22	0.35	0.30	0.52	0.45
15	0.81	0.70	0.40	0.35	0.54	0.47	0.81	0.70
18	1.18	1.03	0.59	0.51	0.79	0.69	1.18	1.03
24	2.07	1.83	1.03	0.91	1.38	1.22	2.07	1.83
30	3.25	2.88	1.63	1.44	2.17	1.92	3.25	2.88
36	6.74	5.53	3.37	3.43	4.49	4.13	6.74	5.33

**TABLE D-5 CULVERT OUTLET PROTECTION WITH ST'D. EW-6 ENDWALLS**

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

\* Rev. 7/10