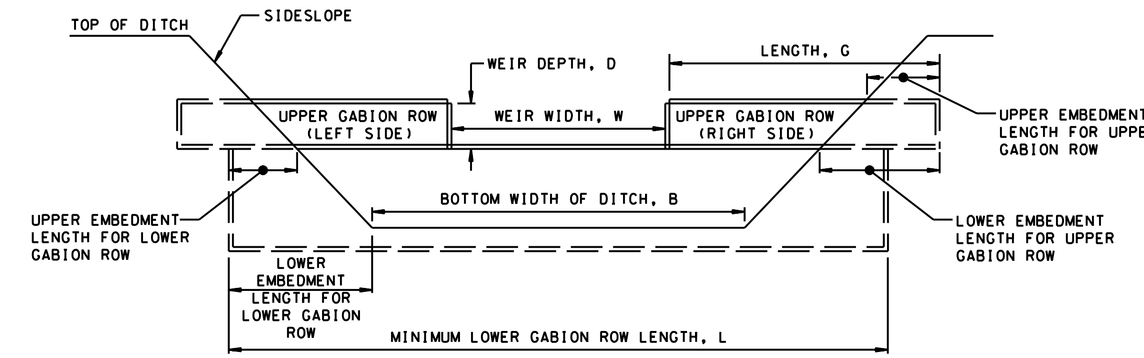
LENGTH AND EMBEDMENT FOR UPPER GABION ROW

BOTTOM WIDTH OF DITCH, B IN METERS	UPPER GABION ROW, 300 mm GABION HEIGHT									UPPER GABION ROW, 450 mm GABION HEIGHT									BOTTOM WIDTH OF DITCH, B IN METERS
	✻ MINIMUM LENGTH OF GABIONS, G (ONE PER SIDE) (UPPER ROW), IN METERS			LOWER EMBEDMENT LENGTH FOR UPPER GABIONS, IN METERS			UPPER EMBEDMENT LENGTH FOR UPPER GABIONS, IN METERS			✻ MINIMUM LENGTH OF GABIONS, G (ONE PER SIDE) (UPPER ROW), IN METERS			LOWER EMBEDMENT LENGTH FOR UPPER GABIONS, IN METERS			UPPER EMBEDMENT LENGTH FOR UPPER GABIONS, IN METERS			
	SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			
	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	
0.915	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	0.915
1.219	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	1.219
1.524	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	1.524
1.829	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	1.829
2.134	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	2.134
2.438	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	2.438
2.743	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	2.743
3.048	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	3.048
3.658	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	3.658
4.572	0.915	1.829	1.829	0.640	1.372	1.372	0.030	0.457	0.152	1.829	2.743	2.743	1.006	1.646	1.920	0.091	0.274	0.091	4.572



DEFINITION OF TERMS FOR
GABION CHECK DAM IN TRAPEZOIDAL DITCH

LENGTH AND EMBEDMENT FOR LOWER GABION ROW

BOTTOM WIDTH OF DITCH, B IN METERS	LOWER GABION ROW, 300 mm GABION HEIGHT									LOWER GABION ROW, 450 mm GABION HEIGHT									LOWER GABION ROW, 900 mm GABION HEIGHT									BOTTOM WIDTH OF DITCH, B IN METERS
	✻ MINIMUM LENGTH OF GABIONS, L (LOWER ROW), IN METERS			LOWER EMBEDMENT LENGTH, IN METERS			✻✻ UPPER EMBEDMENT LENGTH, IN METERS			✻ MINIMUM LENGTH OF GABIONS, L (LOWER ROW), IN METERS			LOWER EMBEDMENT LENGTH, IN METERS			✻✻ UPPER EMBEDMENT LENGTH, IN METERS			✻ MINIMUM LENGTH OF GABIONS, L (LOWER ROW), IN METERS			LOWER EMBEDMENT LENGTH, IN METERS			✻✻ UPPER EMBEDMENT LENGTH, IN METERS			
	SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			
	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	
0.915	2.743	2.743	3.658	0.915	0.915	1.372	0.457	0.229	0.457	2.743	3.658	4.572	0.915	1.372	1.829	0.152	0.229	0.305	4.572	6.401	8.230	1.829	2.743	3.658	0.152	0.229	0.305	0.915
1.219	2.743	2.743	3.658	0.762	0.762	1.219	0.305	0.076	0.305	3.658	4.572	4.572	1.219	1.676	1.676	0.457	0.533	0.152	5.486	6.401	8.230	2.134	2.591	3.505	0.457	0.076	0.152	1.219
1.524	2.743	3.658	3.658	0.610	1.067	1.067	0.152	0.381	0.152	3.658	4.572	5.486	1.067	1.524	1.981	0.305	0.381	0.457	5.486	7.315	9.144	1.981	2.896	3.810	0.305	0.381	0.457	1.524
1.829	3.658	3.658	4.572	0.915	0.915	1.372	0.457	0.229	0.457	3.658	4.572	5.486	0.915	1.372	1.829	0.152	0.229	0.305	5.486	7.315	9.144	1.829	2.743	3.658	0.152	0.229	0.305	1.829
2.134	3.658	4.572	4.572	0.762	1.219	1.219	0.305	0.533	0.305	4.572	4.572	5.486	1.219	1.219	1.676	0.457	0.076	0.152	6.401	7.315	9.144	2.134	2.591	3.505	0.457	0.076	0.152	2.134
2.438	3.658	4.572	4.572	0.610	1.067	1.067	0.152	0.381	0.152	4.572	5.486	6.401	1.067	1.524	1.981	0.305	0.381	0.457	6.401	8.230	10.058	1.981	2.896	3.810	0.305	0.381	0.457	2.438
2.743	4.572	4.572	5.486	0.915	0.915	1.372	0.457	0.229	0.457	4.572	5.486	6.401	0.915	1.372	1.829	0.152	0.229	0.305	6.401	8.230	10.058	1.829	2.743	3.658	0.152	0.229	0.305	2.743
3.048	4.572	4.572	5.486	0.762	0.762	1.219	0.305	0.076	0.305	5.486	5.486	6.401	1.219	1.219	1.676	0.457	0.076	0.152	7.315	8.230	10.058	2.134	2.591	3.505	0.457	0.076	0.152	3.048
3.658	5.486	5.486	6.401	0.915	0.915	1.372	0.457	0.229	0.457	5.486	6.401	7.315	0.915	1.372	1.829	0.152	0.229	0.305	7.315	9.144	10.973	1.829	2.743	3.658	0.152	0.229	0.305	3.658
4.572	6.401	6.401	7.315	0.915	0.915	1.372	0.457	0.229	0.457	6.401	7.315	8.230	0.915	1.372	1.829	0.152	0.229	0.305	8.230	10.058	11.887	1.829	2.743	3.658	0.152	0.229	0.305	4.572
	✻ USING 300 MILLIMETERS GABION HEIGHT ✻✻ ASSUMING 75 MILLIMETERS EMBEDMENT DEPTH AT BASE OF GABION									✻ USING 450 MILLIMETERS GABION HEIGHT ✻✻ ASSUMING 75 MILLIMETERS EMBEDMENT DEPTH AT BASE OF GABION									✻ USING 900 MILLIMETERS GABION HEIGHT ✻✻ ASSUMING 75 MILLIMETERS EMBEDMENT DEPTH AT BASE OF GABION									

WEIR PROPERTIES FOR VARIOUS GABION CHECK DAM DESIGNS

BOTTOM WIDTH OF DITCH, B IN METERS	UPPER GABION ROW, 300 mm GABION HEIGHT																		UPPER GABION ROW, 450 mm GABION HEIGHT												BOTTOM WIDTH OF DITCH, B IN METERS
	300 MILLIMETERS LOWER GABION ROW						450 MILLIMETERS LOWER GABION ROW						900 MILLIMETERS LOWER GABION ROW						450 MILLIMETERS LOWER GABION ROW						900 MILLIMETERS LOWER GABION ROW						
	RECTANGULAR WEIR WIDTH, W IN METERS			WEIR FLOW FOR D = 300 MILLIMETERS DEPTH (CMS)			RECTANGULAR WEIR WIDTH, W IN METERS			WEIR FLOW FOR D = 300 MILLIMETERS DEPTH (CMS)			RECTANGULAR WEIR WIDTH, W IN METERS			WEIR FLOW FOR D = 300 MILLIMETERS DEPTH (CMS)			RECTANGULAR WEIR WIDTH, W IN METERS			WEIR FLOW FOR D = 450 MILLIMETERS DEPTH (CMS)			RECTANGULAR WEIR WIDTH, W IN METERS			WEIR FLOW FOR D = 450 MILLIMETERS DEPTH (CMS)			
	SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			SIDESLOPE			
	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	2:1	3:1	4:1	
0.915	1.280	1.372	1.829	0.377	0.405	0.547	1.890	2.286	3.048	0.566	0.688	0.924	3.719	5.029	6.706	1.132	1.537	2.056	0.792	1.006	2.316	0.398	0.520	1.265	2.621	3.749	5.974	1.438	2.079	3.343	0.915
1.219	1.585	1.676	2.134	0.471	0.500	0.641	2.195	2.591	3.353	0.660	0.783	1.018	4.023	5.334	7.010	1.226	1.631	2.149	1.097	1.311	2.621	0.572	0.693	1.438	2.926	4.054	6.279	1.611	2.252	3.517	1.219
1.524	1.890	1.981	2.438	0.566	0.594	0.735	2.499	2.896	3.658	0.754	0.877	1.113	4.328	5.639	7.315	1.320	1.726	2.246	1.402	1.615	2.926	0.745	0.866	1.611	3.231	4.359	6.584	1.784	2.425	3.690	1.524
1.829	2.195	2.286	2.743	0.660	0.688	0.830	2.804	3.200	3.962	0.849	0.971	1.207	4.633	5.944	7.620	1.414	1.820	2.339	1.707	1.920	3.231	0.918	1.040	1.784	3.536	4.663	6.888	1.958	2.598	3.863	1.829
2.134	2.499	2.591	3.048	0.754	0.783	0.924	3.109	3.505	4.267	0.943	1.066	1.301	4.938	6.248	7.925	1.509	1.914	2.432	2.012	2.225	3.536	1.091	1.213	1.958	3.840	4.968	7.193	2.131	2.772	4.036	2.134
2.438	2.804	2.896	3.353	0.849	0.877	1.018	3.414	3.810	4.572	1.037	1.160	1.395	5.253	6.553	8.230	1.603	2.009	2.526	2.316	2.530	3.840	1.265	1.386	2.131	4.145	5.273	7.498	2.304	2.945	4.210	2.438
2.743	3.109	3.200	3.658	0.943	0.971	1.113	3.719	4.115	4.877	1.132	1.254	1.490	5.547	6.858	8.534	1.697	2.103	2.622	2.621	2.835	4.145	1.438	1.559	2.304	4.450	5.577	7.802	2.477	3.118	4.383	2.743
3.048	3.414	3.505	3.962	1.037	1.066	1.207	4.023	4.420	5.182	1.226	1.348	1.584	5.852	7.162	8.839	1.792	2.197	2.716	2.926	3.139	4.450	1.611	1.732	2.477	4.755	5.883	8.108	2.650	3.291	4.556	3.048
3.658	4.023	4.115	4.572	1.226	1.254	1.395	4.633	5.029	5.791	1.414	1.537	1.773	6.462	7.772	9.449	1.980	2.386	2.917	3.536	3.749	5.059	1.958	2.079	2.824	5.364	6.492	8.717	2.997	3.638	4.902	3.658
4.572	4.938	5.029	5.486	1.509	1.537	1.678	5.547	5.944	6.706	1.697	1.820	2.056	7.376	8.687	10.363	2.263	2.669	3.200	4.450	4.663	5.974	2.477	2.598	3.343	6.279	7.407	9.632	3.517	4.157	5.422	4.572

ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GABION CHECK DAM DESIGN TABLES

7-29-04 ECM-STR-56

3/16/2005 $$$$DGNSPEC$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$