

**MODIFIED RATIONAL METHOD FOR SIZING DETENTION BASINS**

EXISTING CONDITIONS		Q <sub>100</sub>
Area*	9.89 Acres	
Runoff Coefficient*	0.54	
Time of Concentration*	10.00 Min	
Rainfall Intensity	9.80 in/hr	
Allowable Flow	52.14 cfs	

DEVELOPED CONDITIONS-POND C		Q <sub>100</sub>
Area*	7.89 Acres	
Runoff Coefficient*	0.90	
Time of Concentration (Tcd)*	10.00 Min	
Rainfall Intensity	9.80 in/hr	
Developed Flows	69.59 cfs	

DEVELOPED CONDITIONS-BYPASS		Q <sub>100</sub>
Area	2.00 Acres	
Runoff Coefficient	0.90	
Time of Concentration (Tcd)	10.00 Min	
Rainfall Intensity	9.80 in/hr	
Developed Flows	17.64 cfs	

Dur (Min)	Intensity	Flow	(A*C*60)	(Qd)(Tcd+A)/2(60)	Storage
5.0	10.60	75.27	22,581	15,525	7,056
10.0	9.80	69.59	41,754	20,700	21,054
15.0	9.00	63.91	57,518	25,875	31,643
20.0	8.30	58.94	70,726	31,050	39,676
25.0	7.70	54.13	81,691	36,225	45,466
30.0	7.20	49.00	89,194	41,400	48,794
35.0	6.70	44.03	94,455	46,575	49,880
40.0	6.30	41.19	98,846	51,750	47,096
45.0	5.90	38.35	103,533	56,925	46,608
50.0	5.60	35.51	106,515	62,100	44,415
55.0	5.30	33.37	110,137	67,275	42,862
60.0	5.00	31.95	115,036	72,450	42,586

Volume required= 47,096 CF  
1.08 AC. FT.

**Provided Detention Pond Volume**

Elevation (FT)	Area (SF)	Incr. Vol. (CF)	Total Vol. (CF)
528.55	0	0	0
529	6474.37	1456.73	1456.73
530	10988.23	8721.30	10178.03
531	15800.1	13384.17	23562.20
532	18402.84	17101.47	40663.67
533	19255.9	18649.37	59513.04
534	0	0.00	59513.04

**DETERMINATION OF WSEL**

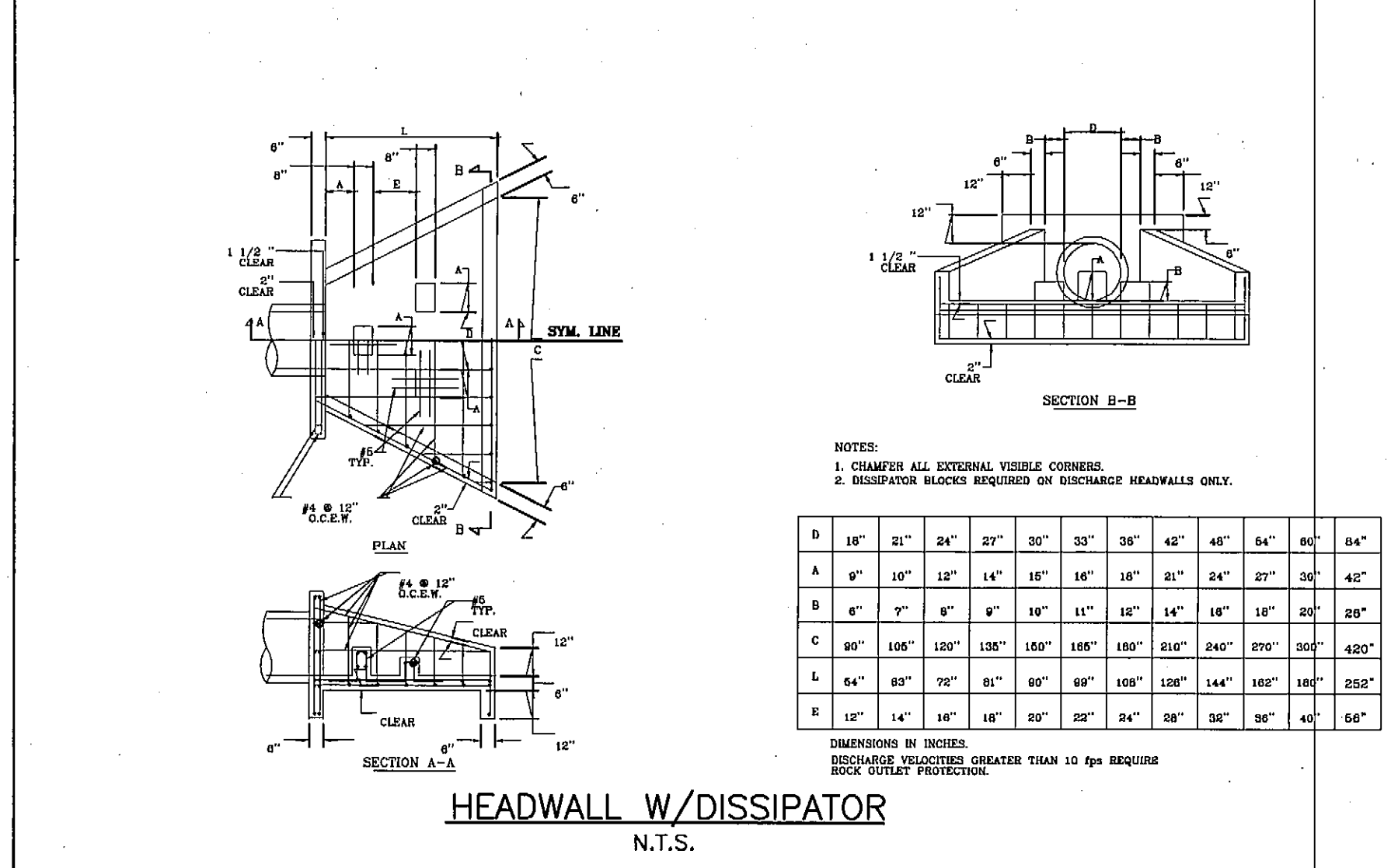
Elevation (FT)	Total Vol. (CF)	Vol. Req'd (CF)	WSEL (FT)	Note
528.55	0			
529	1456.7325			
530	10178.0325			
531	23562.19825			
		30145	531.38	10-Year
		35615	531.70	25-Year
532	40663.66825			
		41085	532.02	50-Year
		47098	532.34	100-Year
533	59513.03625			
534	59513.03625			

Orifice Coefficient = 0.6 Weir Coefficient = 3.3367  
Elevation of Centroid of Orifice 1 (FT) = 529.3 Area Or 1 (SF) = 3  
Crest Elevation of Weir = 532 Length Crest (FT) = 1

**DETERMINATION OF POST DEVELOPMENT DISCHARGE**

Elevation (FT)	Height above Centroid (FT)	Orifice 1 Discharge (CFS)	Weir Discharge (CFS)	Total Discharge (CFS)	Total Allowable Discharge Pond C (CFS)	Note
531.38	2.08	20.83	0.00	20.83	25.35	10-Year
531.7	2.4	22.38	0.00	22.38	28.52	25-Year
532.02	2.72	23.82	0.47	24.30	31.69	50-Year
532.34	3.04	25.19	1.86	27.13	34.5	100-Year



**DISCLAIMER**  
TO THE BEST OF OUR KNOWLEDGE, THE WALLACE GROUP, INC. HEREBY STATES THAT THIS PLAN IS AS-BUILT/RECORD DRAWINGS. THE INFORMATION PROVIDED IS BASED ON SURVEYING CONDUCTED AT THE SITE AND INFORMATION PROVIDED BY THE CONTRACTOR.

**LEGEND**  
LOCATION OF GABION WALLS  
CONTRACTOR SHALL SUBMIT ENGINEER STAMPED SHOP DRAWINGS DETAILING CONSTRUCTION OF GABION WALLS FOR REVIEWS AND APPROVAL.

		DESIGNED: <b>RDC</b> DRAWN: <b>FM</b> CHECKED: <b>RS</b>		"THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MATTHEW D. MORGAN, P.E. # 98828 ON THE DATE SHOWN ON THE DAYSTAMP. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT" DATE: 3/25/08 NAME: <i>Matthew D. Morgan</i>	<b>ENGINEERS ARCHITECTS</b>	<b>THE WALLACE GROUP INC.</b> <b>SURVEYORS PLANNERS</b>	<b>THE WOODMONT COMPANY</b> PLAZA AT ROCKWALL <b>DETENTION POND PLAN POND "C"</b>	SHEET 43 <b>C5.12</b> OF 56 SHEETS
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