

**Rockwall, Texas**

Detention Computations for Pond A-2 WBC-20000, SWBC ROCKWALL PH. II

		(A-2)		(A17)		(A19)			
		Undeveloped		Developed		Bypass			
Area	A(ac)=	1.106		0.736		0.177			
Runoff Coefficient	C=	0.350		0.750		0.750			
Time of Concentration	Tc(min)=	20.0		10.0		10.0			
		STORM	I	Qundev	I	Qin	Qbypass	Required Qout	REQUIRED
YEAR	IN/HR	CFS	IN/HR	CFS	CFS	CFS	CFS	AC-FT	CF
5	4.90	1.9	6.10	3.4	0.8	1.1	0.0717	3124.08	
10	5.90	2.3	7.10	3.9	0.9	1.3	0.0776	3381.54	
25	6.60	2.6	8.30	4.6	1.1	1.5	0.0985	4290.57	
50	7.50	2.9	9.00	5.0	1.2	1.7	0.1082	4711.14	
100	8.30	3.2	9.80	5.4	1.3	1.9	0.1137	4951.27	
		Computed		PROVIDED		PROVIDED			
		Qout	AC-FT	CF					
		1.1	0.0720	3137.58					
		1.1	0.0887	3864.96					
		1.3	0.1062	4624.32					
		1.5	0.1225	5336.64					
		1.8	0.1199	5221.80					

**SWBC ROCKWALL PH. II**

Required Detention Computations, Pond A-2

		Undeveloped		Developed		Bypass	
Area	A=	1.106 AC		0.736 AC		0.177	
Runoff Coefficient	C=	0.35		0.75		0.75	
Time of Concentration	Tc=	20.0 MIN		10.0 MIN		10.0	
Rainfall Intensity	I100=	8.30 IN/HR		9.80 IN/HR		9.80	
Peak Rate of Runoff	Q100=	3.2 CFS		5.4 CFS		1.3	
Allowable Outflow	Q100=			1.9 CFS			
Tc	I100	Q100	Inflow	Outflow	Storage	Required	
MIN	IN/HR	CFS	CF	CF	CF AC-FT	AC-FT	
5	10.70	5.9	1,772	860	912 0.021		
10	9.80	5.4	3,246	1,147	2,099 0.048		
15	9.00	5.0	4,471	1,434	3,037 0.070		
20	8.30	4.6	5,498	1,721	3,777 0.087		
30	6.90	3.8	6,856	2,294	4,561 0.105		
40	5.80	3.2	7,684	2,868	4,816 0.111		
50	5.00	2.8	8,280	3,442	4,838 0.111		
60	4.50	2.5	8,942	4,015	4,927 0.113		
70	4.00	2.2	9,274	4,589	4,685 0.108		
80	3.70	2.0	9,804	5,162	4,641 0.107		
90	3.50	1.9	10,433	5,736	4,697 0.108		
100	3.40	1.9	11,261	6,310	4,951 0.114	0.114	
110	3.20	1.8	11,658	6,883	4,775 0.110		

**SWBC ROCKWALL PH. II**

Required Detention Computations, Pond A-2

		Undeveloped		Developed		Bypass	
Area	A=	1.106 AC		0.736 AC		0.177	
Runoff Coefficient	C=	0.35		0.75		0.75	
Time of Concentration	Tc=	20.0 MIN		10.0 MIN		10.0	
Rainfall Intensity	I50=	7.50 IN/HR		9.00 IN/HR		9.00	
Peak Rate of Runoff	Q50=	2.9 CFS		5.0 CFS		1.2	
Allowable Outflow	Q50=			1.7 CFS			
Tc	I50	Q50	Inflow	Outflow	Storage	Required	
MIN	IN/HR	CFS	CF	CF	CF AC-FT	AC-FT	
5	10.00	5.5	1,656	769	887 0.020		
10	9.00	5.0	2,981	1,025	1,956 0.045		
15	8.10	4.5	4,024	1,281	2,743 0.063		
20	7.50	4.1	4,968	1,538	3,430 0.079		
30	6.10	3.4	6,061	2,050	4,011 0.092		
40	5.20	2.9	6,889	2,563	4,326 0.099		
50	4.50	2.5	7,452	3,075	4,377 0.100		
60	3.90	2.2	7,750	3,588	4,162 0.096		
70	3.70	2.0	8,578	4,100	4,478 0.103		
80	3.50	1.9	9,274	4,613	4,661 0.107		
90	3.30	1.8	9,837	5,126	4,711 0.108	0.108	
100	3.00	1.7	9,936	5,638	4,298 0.099		

**SWBC ROCKWALL PH. II**

Required Detention Computations, Pond A-2

		Undeveloped		Developed		Bypass	
Area	A=	1.106 AC		0.736 AC		0.177	
Runoff Coefficient	C=	0.35		0.75		0.75	
Time of Concentration	Tc=	20.0 MIN		10.0 MIN		10.0	
Rainfall Intensity	I25=	6.60 IN/HR		8.30 IN/HR		8.30	
Peak Rate of Runoff	Q25=	2.6 CFS		4.6 CFS		1.1	
Allowable Outflow	Q25=			1.5 CFS			
Tc	I25	Q25	Inflow	Outflow	Storage	Required	
MIN	IN/HR	CFS	CF	CF	CF AC-FT	AC-FT	
5	9.30	5.1	1,540	654	886 0.020		
10	8.30	4.6	2,749	872	1,877 0.043		
15	7.50	4.1	3,726	1,090	2,636 0.061		
20	6.60	3.6	4,372	1,308	3,064 0.070		
30	5.50	3.0	5,465	1,744	3,721 0.085		
40	4.60	2.5	6,094	2,180	3,915 0.090		
50	4.00	2.2	6,624	2,615	4,009 0.092		
60	3.50	1.9	6,955	3,051	3,904 0.090		
70	3.30	1.8	7,651	3,487	4,163 0.096		
80	3.10	1.7	8,214	3,923	4,291 0.098	0.098	
90	2.90	1.6	8,644	4,359	4,285 0.098		
100	2.70	1.5	8,942	4,795	4,147 0.095		
110	2.50	1.4	9,108	5,231	3,877 0.089		

**SWBC ROCKWALL PH. II**

Required Detention Computations, Pond A-2

		Undeveloped		Developed		Bypass	
Area	A=	1.106 AC		0.736 AC		0.177	
Runoff Coefficient	C=	0.35		0.75		0.75	
Time of Concentration	Tc=	20.0 MIN		10.0 MIN		10.0	
Rainfall Intensity	I10=	5.90 IN/HR		7.10 IN/HR		7.10	
Peak Rate of Runoff	Q10=	2.3 CFS		3.9 CFS		0.9	
Allowable Outflow	Q10=			1.3 CFS			
Tc	I10	Q10	Inflow	Outflow	Storage	Required	
MIN	IN/HR	CFS	CF	CF	CF AC-FT	AC-FT	
5	8.30	4.6	1,374	604	771 0.018		
10	7.10	3.9	2,352	805	1,547 0.036		
15	6.50	3.6	3,229	1,006	2,223 0.051		
20	5.90	3.3	3,908	1,207	2,701 0.062		
30	4.80	2.6	4,769	1,610	3,160 0.073		
40	4.00	2.2	5,299	2,012	3,287 0.075		
50	3.50	1.9	5,796	2,414	3,382 0.078	0.078	
60	3.00	1.7	5,962	2,817	3,145 0.072		
70	2.80	1.5	6,492	3,219	3,272 0.075		
80	2.60	1.4	6,889	3,622	3,267 0.075		
90	2.40	1.3	7,154	4,024	3,130 0.072		
100	2.20	1.2	7,286	4,427	2,860 0.066		
110	2.00	1.1	7,286	4,829	2,457 0.056		
120	1.80	1.0	7,154	5,231	1,923 0.044		

**SWBC ROCKWALL PH. II**

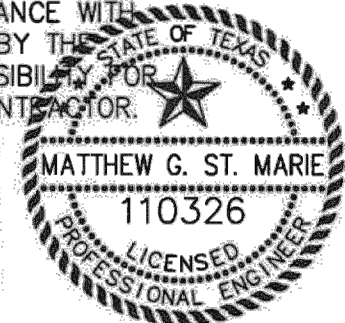
Required Detention Computations, Pond A-2

		Undeveloped		Developed		Bypass	
Area	A=	1.106 AC		0.736 AC		0.177	
Runoff Coefficient	C=	0.35		0.75		0.75	
Time of Concentration	Tc=	20.0 MIN		10.0 MIN		10.0	
Rainfall Intensity	I5=	4.90 IN/HR		6.10 IN/HR		6.10	
Peak Rate of Runoff	Q5=	1.9 CFS		3.4 CFS		0.8	
Allowable Outflow	Q5=			1.1 CFS			
Tc	I5	Q5	Inflow	Outflow	Storage	Required	
MIN	IN/HR	CFS	CF	CF	CF AC-FT	AC-FT	
5	7.00	3.9	1,159	495	664 0.015		
10	6.10	3.4	2,020	660	1,360 0.031		
15	5.50	3.0	2,732	825	1,907 0.044		
20	4.90	2.7	3,246	990	2,256 0.052		
30	4.10	2.3	4,074	1,320	2,754 0.063		
40	3.40	1.9	4,504	1,650	2,854 0.066		
50	2.80	1.5	4,637	1,980	2,657 0.061		
60	2.60	1.4	5,167	2,310	2,857 0.066		
70	2.40	1.3	5,564	2,640	2,924 0.067		
80	2.30	1.3	6,094	2,970	3,124 0.072	0.072	
90	2.10	1.2	6,260	3,300	2,960 0.068		
100	1.90	1.0	6,293	3,630	2,663 0.061		

**AS-BUILT RECORD DRAWING**

THE INFORMATION ON THESE PLANS HAS BEEN REVISED TO REFLECT CHANGES TO PUBLIC IMPROVEMENTS MADE DURING CONSTRUCTION. UNLESS OTHERWISE NOTED, THE CONSTRUCTION OF THE PUBLIC IMPROVEMENTS IS IN GENERAL CONFORMANCE WITH THESE PLANS, BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR AND FIELD VERIFICATIONS. THE RESPONSIBILITY FOR ACCURACY AND COMPLETENESS BELONGS TO THE CONTRACTOR.

*Matthew G. St. Marie*  
 THE JOHN R. MCADAMS COMPANY, INC.  
 Date: 09/25/2023



MCADAMS  
 TBPE: 19762

Drawn By:	CMK
Date:	12/30/2020
Scale:	N/A
Revisions:	
02/11/2021	
03/11/2021	
05/07/2021	
07/12/2021	

09/25/2023 - AS-BUILT

OWNER/DEVELOPER  
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 DALLAS, TEXAS 75225  
 Ph. (214) 987-0700  
 Contact: Spencer Byington

WBC20000

C3.15

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**MCADAMS**

SWBC ROCKWALL PHASE II  
 Lot 1, Block A  
 SWBC ROCKWALL - ADDITION, PHASE II  
 21.275 Acres  
 in the  
 J.M. ALLEN SURVEY ABSTRACT NO. NO. 2  
 CITY OF ROCKWALL,  
 ROCKWALL COUNTY, TEXAS

**DETENTION POND A-2  
 DETENTION CALCULATIONS**

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 Plot: 9/25/2023 11:10 AM, by Matthew G. St. Marie, Sheet: 8/25/2023 1:38 PM, 14 of 14