CALCULATIONS SHEET
HYDRAULIC CALCULATIONS FOR STORM DRAINS
STORM DRAIN HYDRAULIC CALCULATIONS TABLE - PROPOSED CONDITIONS

STORM LINE	FROM	TO	PIPE LENGTH	DRAINAGE AREA			Runoff "C"	Runoff "Cf"	Runoff "C*Cf"	Incr. C*Cf*A	Total C*Cf*A	Tc			I100	Q100	QTOT	QTOT To Inlet	Inlet Capture	Inlet Bypass	QTOT In System	Pipe Size	K Conveyance Coefficie	Pipe Slope	Sf	"Q"	HGL		HEAD LOSS CALCULATIONS							Design HGL	Top of Struct	Invert Elev.		Depth	COMMENTS
				Incremental		Total Area						Inlet	Travel	Total												Cap	U/S	D/S	V1 (in)	V2 (out)	V12/2G	V22/2G	Struct. Type	Kj	KjV12/2G	Hk			TO	FROM		
NETWORK	1	2	feet	No.	Area	6	7	8	9	10	11	min.	min.	min.	in/hr	cfs	cfs	cfs	cfs	cfs	cfs	in.	23	%	ft/ft	cfs	Elev.	Elev.	ft/sec	ft/sec	ft.	ft.	33	34	35	36	ft.	Elev.	ft.	ft.	ft.	ft	42
ST-1	7+64.22	6+97.90	66.32	B1 + OS1a	0.52	0.52	0.54	1.00	0.54	0.28	0.28	10.0	0.19	10.19	9.80	2.7	2.7	2.7	2.7	0.0	2.7	18	124.139	1.00	0.0005	12.4	570.00	569.39	5.96	5.96	0.55	0.55	INLET BE(	1.25	0.69	0.69	570.69	574.62	569.56	568.90	0.44	
	6+97.90	6+30.43	67.47	B2 + OS1b	0.60	1.12	0.52	1.00	0.52	0.31	0.59	10.0	0.00	10.19	9.80	3.0	5.7	3.0	0.0	5.7	18	124.139	2.20	0.0021	18.4	567.92	566.95	0.00	9.72	0.00	1.47	INLET	0.50	0.00	1.47	569.39	576.02	567.39	565.91	0.53	
	6+30.43	4+55.00	175.43			1.12			0.00	0.00	0.59	10.0	0.30	10.49	9.80	0.0	5.7	0.0		0.0	5.7	18	124.139	2.20	0.0021	18.4	566.44	563.45	9.72	9.72	1.47	1.47	BEND 45	0.35	0.51	0.51	566.95	N/A	565.91	562.05	0.53	
	4+55.00	3+70.91	84.09	B3	0.10	1.22	0.75	1.00	0.75	0.08	0.67	10.0	0.14	10.63	9.80	0.8	6.5	0.8	0.8	0.0	6.5	18	124.139	2.20	0.0027	18.4	562.62	561.43	9.72	10.06	1.47	1.57	WYE 45	0.50	0.74	0.83	563.45	567.32	562.05	560.20	0.57	ST-1E
	3+70.91	3+18.80	52.11	B4	0.66	1.88	0.75	1.00	0.75	0.50	1.17	10.0	0.09	10.72	9.80	4.9	11.4	4.9	4.9	0.0	11.4	27	309.706	0.60	0.0014	24.0	561.33	561.26	10.06	5.96	1.57	0.55	MH 90 LA	0.55	0.86	0.10	561.43	N/A	559.20	558.89	1.09	ST-1D
ST-1 (PH1)	3+18.80	2+94.80	24.00			1.88			0.00	0.00	1.17	10.0	0.07	10.79	9.80	0.0	11.4	0.0		0.0	11.4	27	309.706	0.60	0.0014	24.0	561.26	561.23	5.96	5.96	0.55	0.55	SIZE CHN(	0.00	0.00	0.00	561.26	N/A	559.03	558.89	1.09	
	2+94.80	2+06.79	88.01	B5	0.64	2.52	0.75	1.00	0.75	0.48	1.65	10.0	0.25	11.04	9.80	4.7	16.1	4.7	4.7	0.0	16.1	27	309.706	0.60	0.0027	24.0	560.77	560.48	5.96	6.47	0.55	0.65	WYE 60	0.35	0.19	0.46	561.23	N/A	559.42	558.89	1.35	Ex. ST-1C
ST-1D	0+31.11	0+00.00	31.11	B4	0.66	0.66	0.75	1.00	0.75	0.50	0.50	10.0	0.08	10.08	9.80	4.9	4.9	4.9	4.9	0.0	4.9	18	124.139	1.00	0.0016	12.4	563.50	563.45	6.87	6.87	0.73	0.73	INLET BE(	1.25	0.91	0.91	564.41	567.19	562.26	561.95	0.58	
ST-1E	0+09.53	0+00.00	9.53	B3	0.44	0.44	0.75	1.25	0.94	0.41	0.41	10.0	0.02	10.02	9.80	4.0	4.0	4.0	3.8	0.2	3.8	18	124.139	2.00	0.0010	17.6	687.51	687.32	7.03	7.03	0.77	0.77	INLET BE(	1.25	0.96	0.96	688.47	N/A	686.99	686.80	0.52	
ST-2	5+95.22	3+54.52	240.70	B6	0.41	0.41	0.75	1.00	0.75	0.31	0.31	10.0	0.56	10.56	9.80	3.0	3.0	3.0	3.0	0.0	3.0	18	124.139	1.50	0.0006	15.2	562.75	561.39	7.16	7.16	0.80	0.80	INLET BE(	1.25	1.00	1.00	563.75	567.92	562.32	558.71	0.43	
ST-2 (PH I)	3+54.52	3+19.63	34.89	B7	0.59	1.00	0.75	1.00	0.75	0.44	0.75	10.0	0.00	10.56	9.80	4.3	7.3	4.3	4.3	0.0	7.3	3x2	487.898	0.30	0.0002	26.7	561.18	561.17	0.00	3.72	0.00	0.21	INLET LA1	0.25	0.00	0.21	561.39	564.01	558.21	558.11	0.66	
ST-3	0+16.78	0+07.00	9.78	A10	0.27	0.27	0.75	1.00	0.75	0.20	0.20	10.0	0.02	10.02	9.80	2.0	2.0	2.0	2.0	0.0	2.0	18	124.139	2.00	0.0003	17.6	562.97	562.97	7.06	7.06	0.77	0.77	INLET BE(	1.25	0.96	0.96	563.93	566.16	561.54	561.34	0.33	
	0+07.00	0+00.00	7.00			0.27			0.00	0.00	0.20	10.0	0.02	10.04	9.80	0.0	0.0	0.0		0.0	2.0	18	124.139	2.00	0.0000	17.6	562.70	562.70	7.06	7.06	0.77	0.77	BEND 45	0.35	0.27	0.27	562.97	N/A	561.34	561.20	0.33	
ST-4	1+67.57	1+50.09	17.48	A9	0.23	0.23	0.75	1.00	0.75	0.17	0.17	10.0	0.07	10.07	9.80	1.7	1.7	1.7	1.7	0.0	1.7	18	124.139	0.50	0.0002	8.8	562.93	562.93	4.12	4.12	0.26	0.26	INLET BE(	1.25	0.33	0.33	563.26	566.41	562.05	561.96	0.43	
	1+50.09	0+31.05	119.04			0.23			0.00	0.00	0.17	10.0	0.48	10.55	9.80	0.0	1.7	0.0		0.0	1.7	18	124.139	0.50	0.0002	8.8	562.83	562.81	4.12	4.12	0.26	0.26	BEND 45	0.35	0.09	0.10	562.93	N/A	561.96	561.36	0.43	
	0+31.05	0+00.00	31.05			0.23			0.00	0.00	0.17	10.0	0.13	10.68	9.80	0.0	1.7	0.0		0.0	1.7	18	124.139	0.50	0.0002	8.8	562.71	562.70	4.12	4.12	0.26	0.26	BEND 30	0.20	0.05	0.10	562.81	N/A	561.36	561.20	0.43	
ST-5	0+08.33	0+00.00	8.33	A8	0.41	0.41	0.75	1.00	0.75	0.31	0.31	10.0	0.02	10.02	9.80	3.0	3.0	3.0	3.0	0.0	3.0	18	124.139	2.30	0.0006	18.8	562.70	562.70	8.39	8.39	1.09	1.09	INLET BE(	1.25	1.36	1.36	564.06	565.76	561.39	561.20	0.39	
ST-6	0+08.33	0+00.00	8.33	A7	0.19	0.19	0.75	1.00	0.75	0.14	0.14	10.0	0.02	10.02	9.80	1.4	1.4	1.4	1.4	0.0	1.4	18	124.139	4.00	0.0001	24.8	562.70	562.70	8.13	8.13	1.03	1.03	INLET BE(	1.25	1.29	1.29	563.99	566.22	561.53	561.20	0.23	
ST-7	0+16.50	0+00.00	16.50	A6	0.41	0.41	0.75	1.00	0.75	0.31	0.31	10.0	0.02	10.02	9.80	3.0	3.0	3.0	3.0	0.0	3.0	18	124.139	5.00	0.0006	27.8	562.71	562.70	11.02	11.02	1.89	1.89	INLET BE(	1.25	2.36	2.36	565.07	567.69	562.03	561.20	0.32	
ST-8	0+16.50	0+00.00	16.50	A5	0.45	0.45	0.75	1.00	0.75	0.34	0.34	10.0	0.02	10.02	9.80	3.3	3.3	3.3	3.3	0.0	3.3	18	124.139	5.00	0.0007	27.8	562.71	562.70	11.32	11.32	1.99	1.99	INLET BE(	1.25	2.49	2.49	565.20	567.96	562.03	561.20	0.33	
ST-9	0+79.94	0+00.00	79.94	A4	1.57	1.57	0.75	1.00	0.75	1.18	1.18	10.0	0.15	10.15	9.80	11.6	11.6	11.6	11.6	0.0	11.6	18	124.139	1.00	0.0087	12.4	563.40	562.70	8.62	8.62	1.15	1.15	INLET BE(	1.25	1.44	1.44	564.84	566.19	562.00	561.20	1.03	
ST-10	2+62.74	2+51.74	11.00	A2	0.36	0.36	0.75	1.00	0.75	0.27	0.27	10.0	0.02	10.02	9.80	2.6	2.6	2.6	2.6	0.0	2.6	18	124.139	2.50	0.0004	19.6	568.22	568.22	8.31	8.31	1.07	1.07	INLET BE(	1.25	1.34	1.34	569.56	573.02	567.77	567.49	0.36	
	2+51.74	1+42.96	108.78			0.36			0.00	0.00	0.27	10.0	0.22	10.24	9.80	0.0	2.6	0.0		0.0	2.6	18	124.139	2.50	0.0004	19.6	567.85	566.79	8.31	8.31	1.07	1.07	BEND 45	0.35	0.37	0.37	568.22	N/A	567.49	564.77	0.36	
	1+42.96	0+00.00	142.96	A3	0.56	0.92	0.75	1.00	0.75	0.42	0.69	10.0	0.29	10.53	9.80	4.1	6.7	4.1	4.1	0.0	6.7	18	124.139	2.50	0.0029	19.6	565.35	562.70	8.31	10.80	1.07	1.81	WYE 60	0.35	0.37	1.44	566.79	N/A	564.77	561.20	0.58	ST-10A
ST-10A	0+12.02	0+00.00	12.02	A3	0.56	0.56	0.75	1.00	0.75	0.42	0.42	10.0	0.02	10.02	9.80	4.1	4.1	4.1	4.1	0.0	4.1	18	124.139	5.00	0.0011	27.8	566.80	566.79	12.04	12.04	2.25	2.25	INLET BE(	1.25	2.81	2.81	569.61	572.65	565.37	564.77	0.37	
ST-11	2+66.90	2+62.68	4.22	A12	0.61	0.61	0.75	1.00	0.75	0.46	0.46	10.0	0.01	10.01	9.80	4.5	4.5	4.5	4.5	0.0	4.5	18	124.139	0.70	0.0013	10.4	558.85	558.84	5.00	6.06	0.39	0.57	INLET BE(	1.25	0.49	0.10	558.95	561.05	555.78	555.75	0.65	
	2+62.68	2+51.53	11.15			0.61			0.00	0.00	0.46	10.0	0.03	10.04	9.80	0.0	4.5	0.0		0.0	4.5	18	124.139	0.70	0.0013	10.4	558.55	558.54	6.06	6.06	0.57	0.57	BEND 60	0.50	0.29	0.29	558.84	N/A	555.75	555.67	0.65	
	2+51.53	1+96.44	55.09			0.61			0.00	0.00	0.46	10.0	0.15	10.19	9.80	0.0	4.5	0.0		0.0	4.5	18	124.139	0.70	0.0013	10.4	558.44	558.37	6.06	6.06	0.57	0.57	MH 90 BE	0.00	0.00	0.10	558.54	560.95	555.67	555.28	0.65	
	1+96.44	1+10.18	86.26	A13	0.23	0.84	0.75	1.00	0.75	0.17	0.63	10.0	0.24	10.43	9.80	1.7	6.2	1.7	1.7	0.0	6.2	18	124.139	0.70	0.0025	10.4	557.90	557.68	6.06	6.58	0.57	0.67	WYE 60	0.35	0.20	0.47	558.37	N/A	555.28	554.68	0.78	
	1+10.18	0+91.51	18.67			0.84			0.00	0.00	0.63	10.0	0.05	10.48	9.80	0.0	6.2	0.0		0.0	6.2	18	124.139	0.70	0.0025	10.4	557.55	557.50	6.58	6.58	0.67	0.67	BEND 30	0.20	0.13	0.13	557.68	N/A	554.68	554.55	0.78	
	0+91.51	0+36.87	54.64	A14 + A15	0.54	1.38	0.75	1.00	0.75	0.41	1.04	10.0	0.14	10.62	9.80	4.0	10.2	4.0	4.0	0.0	10.2	24	267.356	0.70	0.0015	22.4	556.81	556.73	6.58	7.45	0.67	0.86	INLET LA1	0.25	0.17	0.69	557.50	560.56	554.55	554.17	0.89	
	0+36.87	0+00.00	36.87			1.38			0.00	0.00	1.04	10.0	0.08	10.70	9.80	0.0	10.2	0.0		0.0	10.2	24	267.356	0.70	0.0015	22.4	556.56	556.50	7.45	7.45	0.86	0.86	BEND 30	0.20	0.17	0.17	556.73	N/A	554.17	553.91	0.89	
	0+34.07	0+00.00	34.07			0.10			0.00	0.00	0.17	10.0	0.11	10.32	9.80	0.0	0.8	0.0		0.0	0.8	18	124.139	2.00	0.0000	17.6	557.50	557.50	5.24	5.24	0.43	0.43	BEND 45	0.35	0.15	0.15	557.65	N/A	556.37	555.69	0.20	
ST-11A	1+00.00	0+34.07	65.93	A14	0.10	7.93	0.75	1.00	0.75	0.08	4.88	10.0	0.21	10.21	9.80	0.8	0.8	0.8	0.8	0.0	0.8	18	124.139	2.00	0.0000	17.6	557.89	557.83	5.24	5.24	0.43	0.43	INLET BE(	1.25	0.54	0.54	558.43	562.04	557.69	556.37	0.20	
	0+34.07	0+00.00	34.07			7.93			0.00	0.00	4.88	10.0	0.11	10.32	9.80	0.0	0.8	0.0		0.0	0.8	18	124.139	2.00	0.0000	17.6	557.68	557.68	5.24	5.24	0.43	0.43	BEND 45	0.35	0.15	0.15	557.83	N/A	556.37	555.69	0.20	
ST-11B	0+10.83	0+00.00	10.83	A13	0.23	0.23	0.75	1.00	0.75	0.17	0.17	10.0	0.03	10.03	9.80	1.7	1.7	1.7	1.7	0.0	3.0	18	124.139	1.00	0.0002	12.4	558.54	558.54	6.70	6.70	0.70	0.70	INLET BE(	1.25	0.88	0.88	559.42	560.99	555.89	555.78	0.30	
ST-12	0+87.97	0+61.57	26.40	A17	0.73	11.55	0.75	1.00	0.75	0.55	8.63	10.0	0.08	10.08	9.80	5.4	5.4	5.4	5.4	0.0	5.4	18	124.139	0.50	0.0019	8.8	559.94	559.89	5.62	5.62	0.49	0.49	INLET BE(	1.25	0.61	0.61	560.55	561.04	557.44	557.31	0.80	
	0+61.57	0+16.00	45.57			11.55			0.00	0.00	8.63	10.0	0.14	10.22	9.80	0.0	5.4	0.0		0.0	5.4	18	124.139	0.50	0.0019	8.8	559.72	559.63	5.62	5.62	0.49	0.49	BEND 45	0.35	0.17	0.17	559.89	N/A	557.31	557.08	0.80	
	0+16.00	0+00.00	16.00			11.55			0.00	0.00	8.63	10.0	0.05	10.27	9.80	0.0	5.4	0.0		0.0	5.4	18	124.139	0.50	0.0019	8.8	559.53	559.50	5.62	5.62	0.49	0.49	BEND 30	0.20	0.10	0.10	559.63	N/A	557.08	557.00	0.80	

ROCKWALL APARTMENTS PHASE II INLET CALCULATIONS

Inlet ID (Drainage Area)	Design Q (cfs)	W (ft)	y_{max} (ft)	$L_{required}$ (ft)	$L_{provided}$ (ft)	y_{actual}
Inlet A2	2.7	2.0	0.5	-	5.0	0.26
Inlet A3	4.1	2.0	0.5	1.4	5.0	0.35
Inlet A3	6.1	2.0	0.5	3.9	5.0	0.46
Inlet A4	11.2	3.0	0.5	8.3	10.0	0.46
Inlet A5	3.3	2.0	0.5	0.5	5.0	0.30
Inlet A6	3.0	2.0	0.5	0.1	5.0	0.29
Inlet A7	1.4	2.0	0.5	-	5.0	0.17
Inlet A8	3.1	2.0	0.5	0.2	5.0	0.29
Inlet A9	1.7	2.0	0.5	-	5.0	0.19
Inlet A10	2.0	2.0	0.5	-	5.0	0.22
Inlet A12	4.5	2.0	0.5	-	5.0	0.37
Inlet A13	1.7	2.0	0.5	-	5.0	0.19
Inlet A14	0.7	2.0	0.5	-	5.0	0.11
Inlet A15	3.3	2.0	0.5	0.4	5.0	0.30
Inlet A17	5.4	2.0	0.5	3.1	5.0	0.42
Inlet B1	1.8	2.0	0.5	-	5.0	0.20
Inlet B2	1.8	2.0	0.5	-	5.0	0.20
Inlet B4	4.4	2.0	0.5	1.8	10.0	0.27
Inlet B6	3.0	2.0	0.5	0.1	5.0	0.28
Existing Inlet B5	4.7	2.0	0.5	2.2	16.0	0.22
Existing Inlet B7	4.4	2.0	0.5	1.8	16.0	0.21

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

OWNER/DEVELOPER
SWBC ROCKWALL LP
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DALLAS, TEXAS 75225
Ph. (214) 987-0700
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McADAMS

SWBC ROCKWALL PHASE II

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

HYDRAULIC CALCULATIONS

MATTHEW G. ST. MARIE 110326 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS

MCADAMS
TBPE: 19762

Drawn By:	MGSM
Date:	12/30/2020
Scale:	N.T.S.
Revisions:	
02/11/2021	
03/11/2021	
05/07/2021	
07/12/2021	
A	09/25/2023 – AS-BUILTS

WBC20000

C3.26

File: M:\Projects\WBC_20000\04-Production\As-Built\Sheets\WBC20000-AsB-SHE
Plotted: 9/26/2023 11:16 AM, by Matthew St. Marie; Saved: 9/25/2023 12:27 PM, by stmarie