

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
550	0	552.02	20,829	554.02	48,987
550.02	23	552.04	21,109	554.04	49,244
550.04	66	552.06	21,389	554.06	49,499
550.06	121	552.08	21,670	554.08	49,753
550.08	185	552.1	21,951	554.1	50,006
550.1	259	552.12	22,232	554.12	50,257 25-yr (50,404-554.13)
550.12	340	552.14	22,514	554.14	50,508
550.14	428	552.16	22,797	554.16	50,757
550.16	522	552.18	23,080	554.18	51,005
550.18	622	552.2	23,364	554.2	51,252
550.2	728	552.22	23,648	554.22	51,497
550.22	839	552.24	23,932	554.24	51,741
550.24	955	552.26	24,217	554.26	51,984
550.26	1,076	552.28	24,502	554.28	52,225
550.28	1,201	552.3	24,787	554.3	52,465
550.3	1,330	552.32	25,073	554.32	52,704
550.32	1,464	552.34	25,360	554.34	52,941
550.34	1,601	552.36	25,646	554.36	53,176
550.36	1,743	552.38	25,933	554.38	53,410
550.38	1,888	552.4	26,220	554.4	53,643
550.4	2,037	552.42	26,507	554.42	53,874
550.42	2,189	552.44	26,795	554.44	54,103
550.44	2,344	552.46	27,083	554.46	54,331
550.46	2,503	552.48	27,371	554.48	54,557
550.48	2,665	552.5	27,659	554.5	54,781
550.5	2,830	552.52	27,948	554.52	55,003
550.52	2,998	552.54	28,236	554.54	55,224
550.54	3,169	552.56	28,525	554.56	55,443
550.56	3,343	552.58	28,814	554.58	55,660
550.58	3,519	552.6	29,103	554.6	55,875
550.6	3,698	552.62	29,393	554.62	56,089 50-yr (56,148-554.63)
550.62	3,880	552.64	29,682	554.64	56,300
550.64	4,065	552.66	29,971	554.66	56,509
550.66	4,252	552.68	30,261	554.68	56,717
550.68	4,441	552.7	30,550	554.7	56,922
550.7	4,633	552.72	30,840	554.72	57,125
550.72	4,827	552.74	31,129	554.74	57,326
550.74	5,024	552.76	31,419	554.76	57,525
550.76	5,222	552.78	31,709	554.78	57,721
550.78	5,423	552.8	31,998	554.8	57,916
550.8	5,626	552.82	32,288	554.82	58,107
550.82	5,832	552.84	32,577	554.84	58,297
550.84	6,039	552.86	32,867	554.86	58,484
550.86	6,248	552.88	33,156	554.88	58,668
550.88	6,460	552.9	33,445	554.9	58,850
550.9	6,673	552.92	33,734	554.92	59,029
550.92	6,888	552.94	34,023	554.94	59,206
550.94	7,105	552.96	34,312	554.96	59,380
550.96	7,324	552.98	34,601	554.98	59,551
550.98	7,545	553	34,889	555	59,719
551	7,768	553.02	35,178	555.02	59,884
551.02	7,992	553.04	35,466	555.04	60,046
551.04	8,218	553.06	35,753	555.06	60,204
551.06	8,445	553.08	36,041	555.08	60,360
551.08	8,675	553.1	36,328 5-yr (36,438-553.10)	555.1	60,512
551.1	8,906	553.12	36,616	555.12	60,661
551.12	9,138	553.14	36,902	555.14	60,806
551.14	9,372	553.16	37,189	555.16	60,947
551.16	9,608	553.18	37,475	555.18	61,085
551.18	9,845	553.2	37,761	555.2	61,218 100-yr (61,285-555.23)
551.2	10,083	553.22	38,046	555.22	61,348
551.22	10,323	553.24	38,332	555.24	61,473
551.24	10,564	553.26	38,616	555.26	61,593
551.26	10,807	553.28	38,901 10-yr (39,112-553.27)	555.28	61,709
551.28	11,051	553.3	39,185	555.3	61,820
551.3	11,297	553.32	39,468	555.32	61,926
551.32	11,543	553.34	39,751	555.34	62,026
551.34	11,791	553.36	40,034	555.36	62,121
551.36	12,041	553.38	40,316	555.38	62,209
551.38	12,291	553.4	40,598	555.4	62,290
551.4	12,543	553.42	40,879	555.42	62,363
551.42	12,796	553.44	41,159	555.44	62,428
551.44	13,050	553.46	41,440	555.46	62,483
551.46	13,305	553.48	41,719	555.48	62,525
551.48	13,561	553.5	41,998	555.5	62,548
551.5	13,819	553.52	42,276		
551.52	14,077	553.54	42,554		
551.54	14,337	553.56	42,831		
551.56	14,597	553.58	43,107		
551.58	14,859	553.6	43,383		
551.6	15,121	553.62	43,658		
551.62	15,385	553.64	43,933		
551.64	15,649	553.66	44,206		
551.66	15,915	553.68	44,479		
551.68	16,181	553.7	44,751		
551.7	16,448	553.72	45,023		
551.72	16,716	553.74	45,293		
551.74	16,985	553.76	45,563		
551.76	17,255	553.78	45,832		
551.78	17,526	553.8	46,100		
551.8	17,797	553.82	46,367		
551.82	18,069	553.84	46,634		
551.84	18,342	553.86	46,899		
551.86	18,616	553.88	47,164		
551.88	18,890	553.9	47,427		
551.9	19,165	553.92	47,690		
551.92	19,441	553.94	47,951		
551.94	19,717	553.96	48,212		
551.96	19,994	553.98	48,471		
551.98	20,272	554	48,730		
552	20,551				

Year	Ex. Q (cfs)	Ult. Q (cfs)	Pond. Elev. (ft.)	Outlet Elev. (ft.)	Height (ft.)	Storage (c.f.)	Qout allow (cfs)	Qout actual (c.f.)
5	7.20	30.90	553.10	550.00	3.10	36,438	7.20	6.18
10	8.90	36.00	553.27	550.00	3.27	39,112	8.90	6.90
25	9.70	42.10	554.13	550.00	4.13	50,404	9.70	9.54
50	11.40	45.60	554.63	550.00	4.63	56,148	11.40	11.06
100	12.80	49.70	555.23	550.00	5.23	61,285	12.80	12.55

C = Orifice Coefficient C = 0.61
 A = Area A = $\pi \cdot r^2$
 r = Orifice Radius r1 = 0.5 ft r2 = 0.5 ft
 hu = Upstream Head A1 = 0.785 ft² A2 = 0.785 ft²
 hd = Downstream Head Qorif,1 = C * A * (2gh)^{0.5}
 hc = Centroid Head
 ha = Upstream Head over Centroid
 hz = Downstream Head over Centroid
 hn = Net Head over Centroid

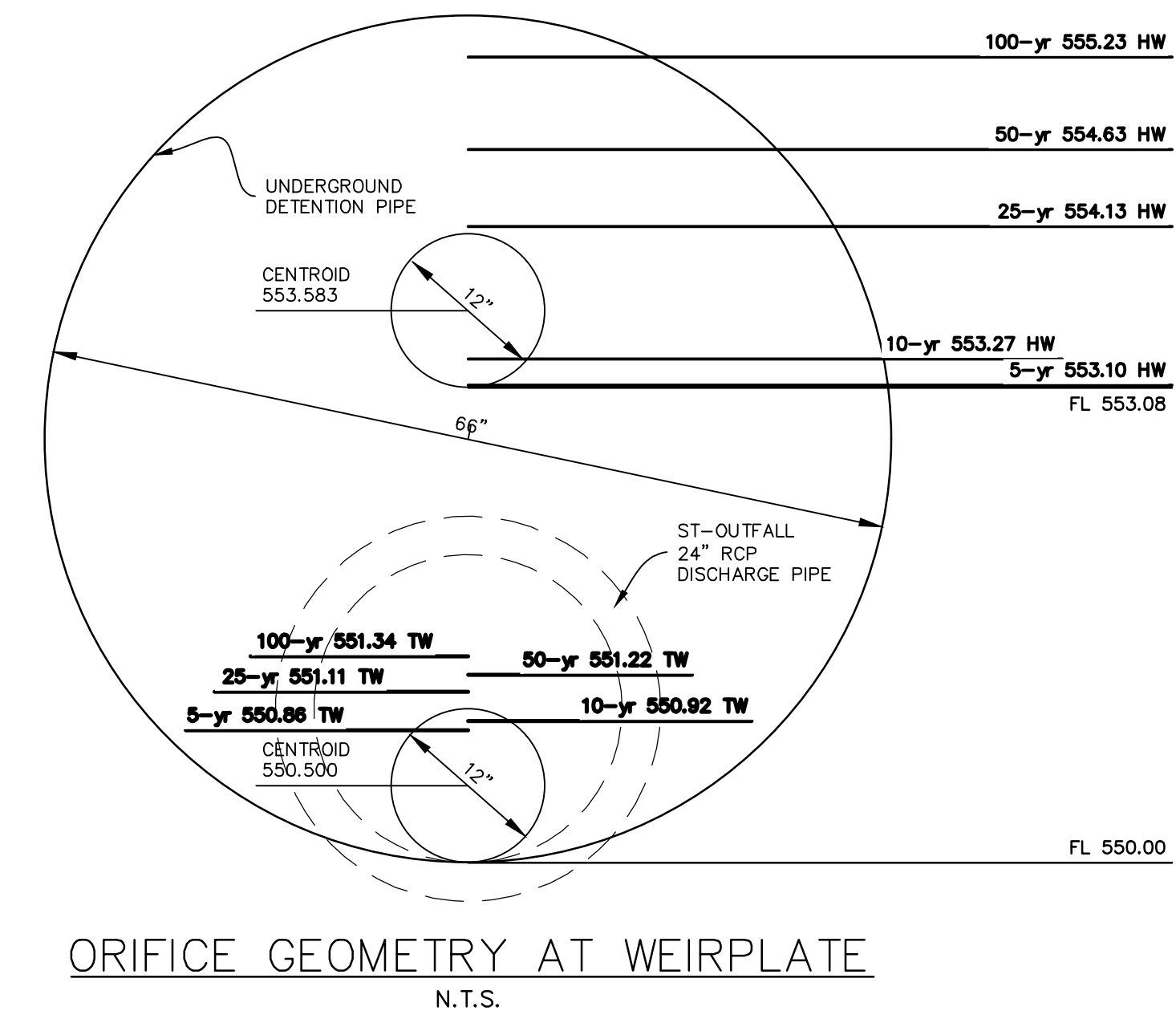
5-YR Storm
 hu = 3.10 hd = 0.86
 lower upper
 hc,1 = 0.50 hc,2 = 3.088 Qorif,1 = 5.754
 ha,1 = 2.60 ha,2 = 0.01 Qorif,2 = 0.424
 hz,1 = 0.36 hz,2 = -2.23 Qorif = 6.178 ≤ 7.20
 hn,1 = 2.24 hn,2 = 0.01

10-YR Storm
 hu = 3.27 hd = 0.92
 lower upper
 hc,1 = 0.50 hc,2 = 3.202 Qorif,1 = 5.894
 ha,1 = 2.77 ha,2 = 0.07 Qorif,2 = 1.008
 hz,1 = 0.42 hz,2 = -2.28 Qorif = 6.902 ≤ 8.90
 hn,1 = 2.35 hn,2 = 0.07

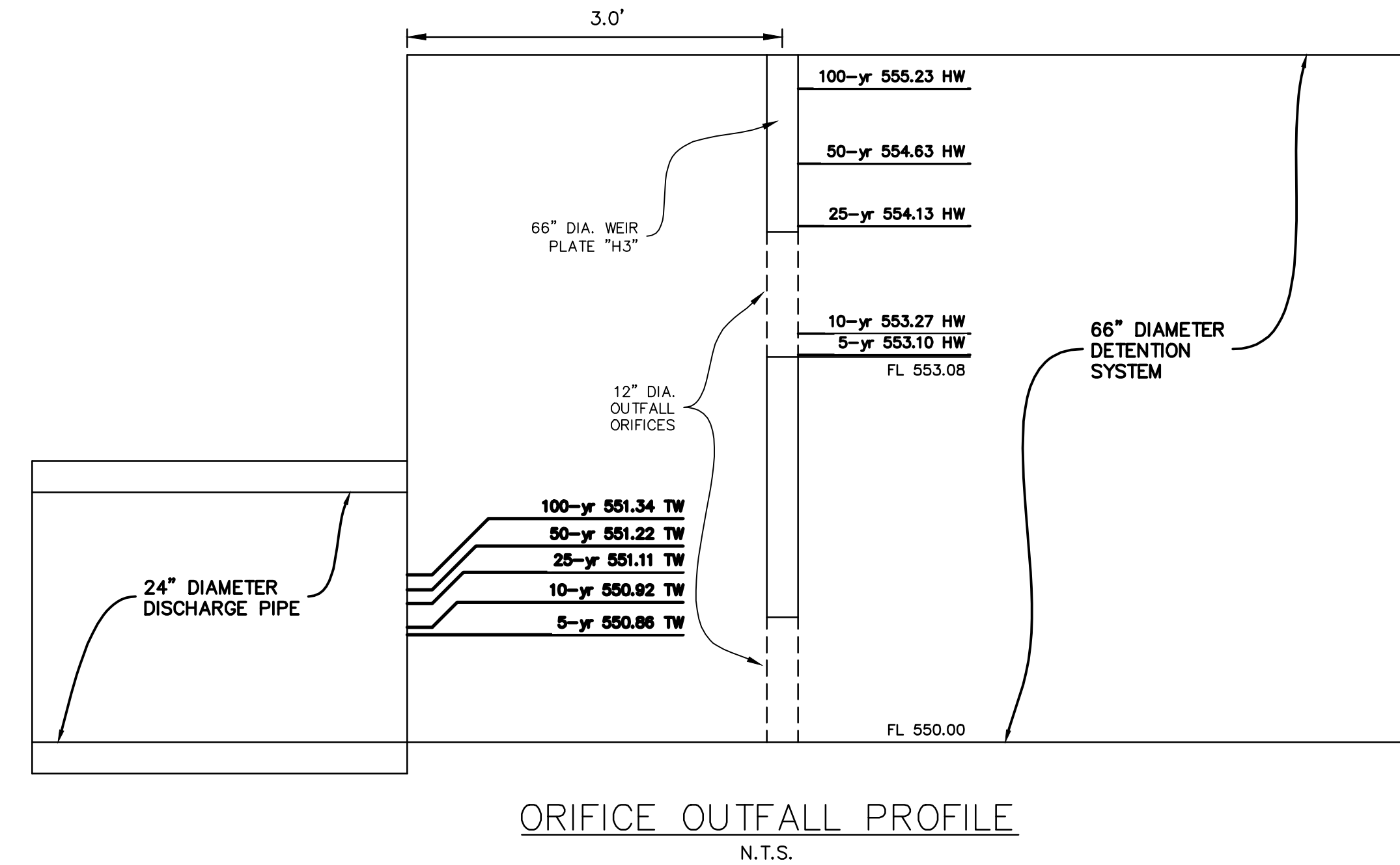
25-YR Storm
 hu = 4.13 hd = 1.11
 lower upper
 hc,1 = 0.50 hc,2 = 3.583 Qorif,1 = 6.681
 ha,1 = 3.63 ha,2 = 0.55 Qorif,2 = 2.86
 hz,1 = 0.61 hz,2 = -2.47 Qorif = 9.541 ≤ 9.70
 hn,1 = 3.02 hn,2 = 0.55

50-YR Storm
 hu = 4.63 hd = 1.22
 lower upper
 hc,1 = 0.50 hc,2 = 3.583 Qorif,1 = 7.1
 ha,1 = 4.13 ha,2 = 1.05 Qorif,2 = 3.957
 hz,1 = 0.72 hz,2 = -2.36 Qorif = 11.06 ≤ 11.40
 hn,1 = 3.41 hn,2 = 1.05

100-YR Storm
 hu = 5.23 hd = 1.34
 lower upper
 hc,1 = 0.50 hc,2 = 3.583 Qorif,1 = 7.583
 ha,1 = 4.73 ha,2 = 1.65 Qorif,2 = 4.963
 hz,1 = 0.84 hz,2 = -2.24 Qorif = 12.55 ≤ 12.80
 hn,1 = 3.89 hn,2 = 1.65



ORIFICE GEOMETRY AT WEIRPLATE
N.T.S.



ORIFICE OUTFALL PROFILE
N.T.S.

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.

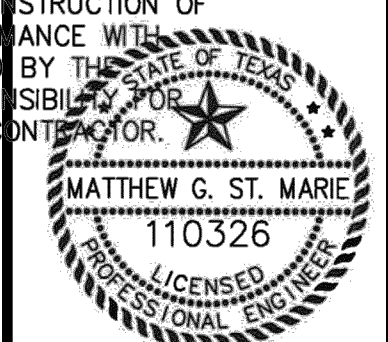
Date: 03/04/2021

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www.mcadamsco.com



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Lot 1, Block A
SWBC ROCKWALL ADDITION, PHASE I
21280 Acres
J.M. ALLEN SURVEY, ABSTRACT NO. 2
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

DETENTION POND A
OUTFALL CALCULATIONS



MCADAMS
TBPE: 19762

Drawn By: MD
Date: 12/19/2017
Scale: N/A
Revisions:
03/23/2018 AS-BUILT
05/16/2018 03/04/2021
07/16/2018
08/13/2018
10/12/2018
11/07/2018
12/14/2018
12/26/2018

17193

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5949 SHERRY LANE #760
DALLAS, TX 75226
Ph. (214) 987-8317
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