

Elevation-Area-Storage Volume

Elev.	Vol yd3	Cum yd3	Volume ft3	Storm Year	Acres-ft
556.40	0.00	0.00	0.00		0
556.50	0.03	0.03	0.81		0
556.60	0.11	0.14	3.78		0
556.70	0.32	0.36	9.72		0
556.80	0.38	0.72	19.44		0
556.90	0.53	1.25	33.75		0
557.00	0.74	1.99	53.73		0.001
557.10	1.22	3.21	86.67		0.001
557.20	1.98	5.19	140.13		0.003
557.30	2.90	8.09	218.43		0.005
557.40	3.81	11.90	321.30		0.007
557.50	4.82	16.42	443.34		0.01
557.60	5.14	21.56	582.12		0.013
557.70	5.76	27.32	737.64		0.016
557.80	6.35	33.67	909.09		0.02
557.90	6.96	40.63	1097.01		0.025
558.00	7.51	48.14	1298.78		0.029
558.10	8.01	56.15	1516.05		0.034
558.20	8.52	64.67	1748.09		0.04
558.30	9.04	73.71	1990.17		0.045
558.40	9.56	83.27	2248.29		0.051
558.50	10.10	93.37	2520.99		0.057
558.60	10.66	104.03	2808.81		0.064
558.70	11.23	115.26	3112.02		0.071
558.80	11.80	127.06	3430.62		0.078
558.90	12.41	139.47	3765.69		0.086
559.00	13.01	152.48	4116.96		0.094
559.10	13.64	166.12	4485.24		0.102
559.20	14.28	180.40	4870.80	5-yr (5,047=559.24)	0.111
559.30	14.93	195.33	5273.91	10-yr (5,557=559.37)	0.121
559.40	15.59	210.92	5694.84		0.13
559.50	16.28	227.20	6134.40		0.14
559.60	16.96	244.16	6592.32		0.151
559.70	17.67	261.83	7069.41	25-yr (7,152=559.72)	0.162
559.80	18.40	280.23	7566.21	50-yr (7,966=559.88)	0.173
559.90	19.12	299.35	8082.45		0.185
560.00	19.88	319.23	8619.21	100-yr (8,786=560.03)	0.197
560.10	20.62	339.85	9175.95		0.21

OUTLET STRUCTURE #3

(N.T.S. - DIMENSIONS SHOWN RELECT AS-BUILT CONDITION)

CONTRACTOR TO RAISE TOP OF OUTLET STRUCTURE AND GRATE TO ELEVATION SHOWN; NEW CONCRETE TO MATCH SPECIFICATION OF EXISTING OUTLET STRUCTURE, WITH ADDITION OF 12"-LONG #4 DOWEL BARS VERTICALLY EMBEDDED 8" INTO EXISTING CONCRETE, AT 12" ON CENTER AND EPOXIED IN PLACE

CONTRACTOR TO RAISE BERM ELEVATION TO ATTAIN 1-FT FREEBOARD
Revised Berm Elev. = 561.03

Revised TOP Elev. = 560.50

100-yr Elev. = 560.03

TOP Elev. = 560.00

50-yr Elev. = 559.88

25-yr Elev. = 559.72

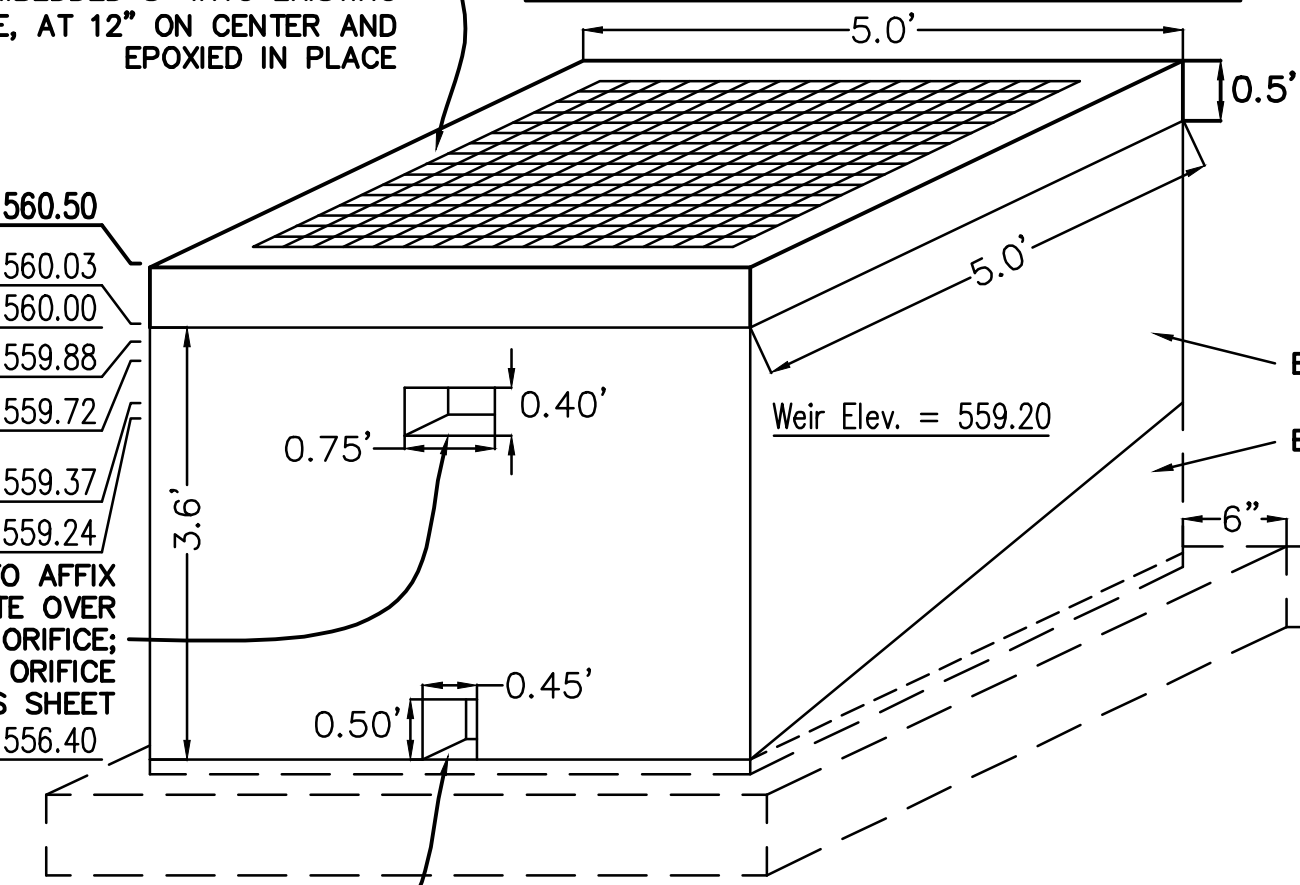
10-yr Elev. = 559.37

5-yr Elev. = 559.24

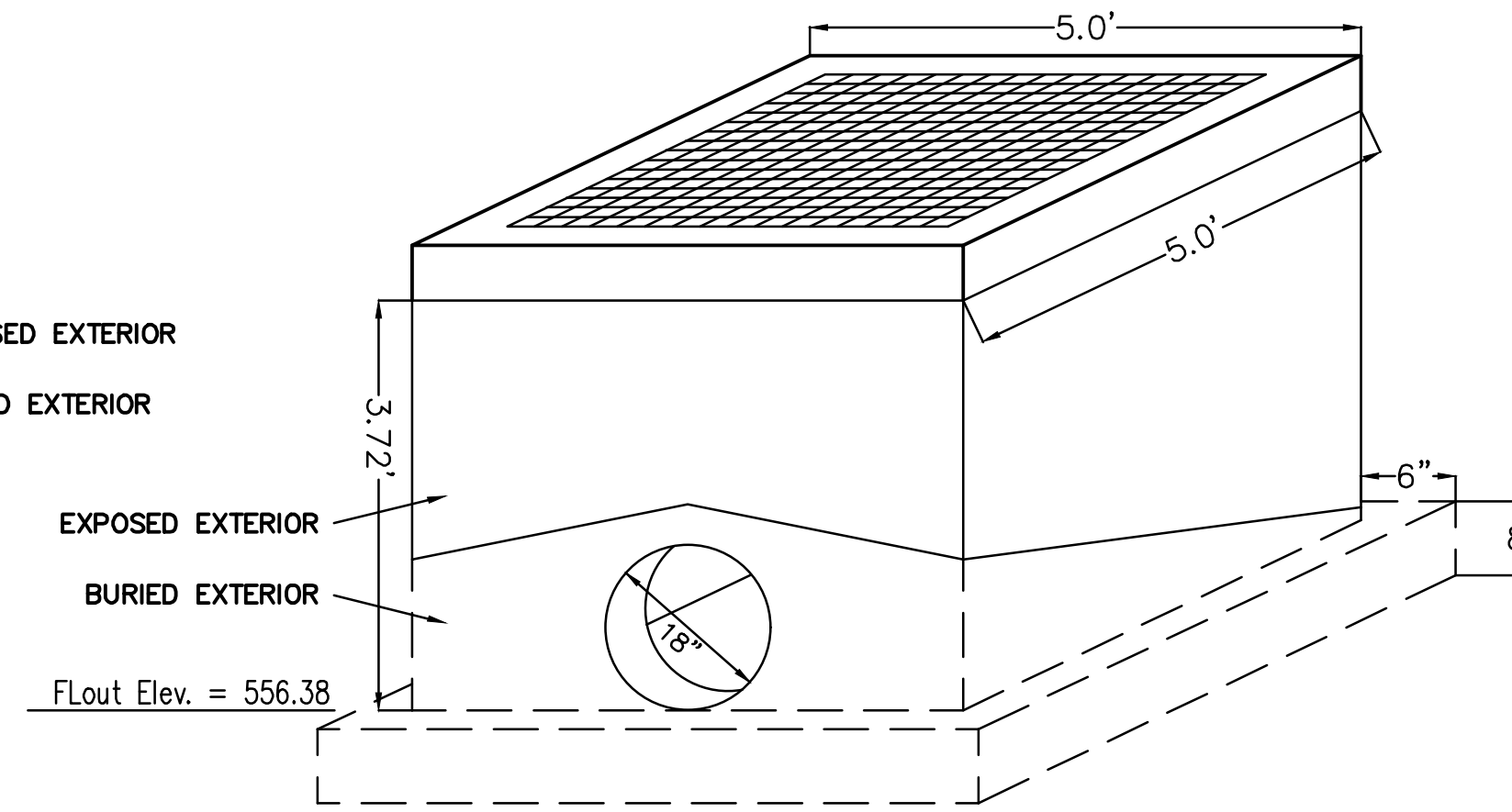
CONTRACTOR TO AFFIX RESTRICTION PLATE OVER UPPER OUTLET ORIFICE; REFER TO UPPER ORIFICE DETAIL ON THIS SHEET

FL Elev. = 556.40

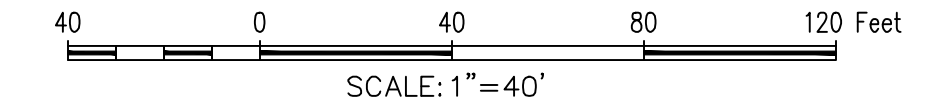
CONTRACTOR TO AFFIX RESTRICTION PLATE OVER LOWER OUTLET ORIFICE; REFER TO LOWER ORIFICE DETAIL ON THIS SHEET



FRONT



BACK



THE "X" CUT ON CURB INLET ALONG NORTHSIDE OF DISCOVERY BLVD. APPROXIMATELY 85' WEST OF THE SOUTHWEST CORNER OF SUBJECT PROPERTY LINE. ELEV.= 564.92

BM: CITY OF ROCKWALL CONTROL MONUMENT "N1495". CALLED ELEV.= 566.71. MEASURED ELEV. = 566.83

NOTE: Detention Outlet Structure to be 6" thick, 3600 psi concrete with #4 bars @ 12" O.C.E.W. for all faces.

Top of structure to be fitted with grate.

Bottom to be 8" thick.

Contractor to grout the bottom of the Outlet Structure, from the Flow Line into box from the Detention Pond to the Flow Line out of the box into the connected RCP

GRADING NOTE: Fill for raising the top of berm elevation shall not be taken from within the Detention Pond limits

NOTE: Restriction Plate to be 1/2" thick galvanized steel, sized to dimensions as shown and affixed over formed orifices with epoxied-in-place 1/2" dia. galvanized steel bolts



STEEL BOLT (TYPICAL)

STEEL BOLT (TYPICAL)

SWBC ROCKWALL PHASE II POND A-3 OUTLET STRUCTURE - AS-BUILT VERIFICATION

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	1.80	4.10	559.24	556.40	2.84	5,047	0.80	0.85
10	1.90	4.80	559.37	556.40	2.97	5,557	1.10	0.87
25	2.20	5.60	559.72	556.40	3.32	7,152	1.20	0.92
50	2.50	6.10	559.88	556.40	3.48	7,966	1.40	1.28
100	2.70	6.60	560.03	556.40	3.63	8,786	1.50	1.35

C = Orifice Coefficient
A = Area
r = Orifice Radius
hu = Upstream Head
hd = Downstream Head
hc = Centroid Head
ha = Upstream Head over Centroid
hz = Downstream Head over Centroid
hn = Net Head over Centroid
Cw = Weir Coefficient
L = Crest Length
H = Weir Head

C = 0.61
A = L * H
r, low = 0.125 ft r, hi = 0.2
A, low = 0.113 ft² A, hi = 0.1
Qorif = C * A * (2gh)^{0.5}

Cw = 3.33
L = 0.25
Qweir = Cw * L * H^{1.5}

5-YR Storm
hu = 2.84 hd = 0.45
hc = 0.13
ha = 2.72
hz = 0.33
hn = 2.39
H = 0.04

Qorif = 0.85
Qweir = 0.007
Qtotal = 0.858 ≤ 0.90

10-YR Storm
hu = 2.97 hd = 0.50
hc = 0.13
ha = 2.85
hz = 0.38
hn = 2.47
H = 0.17

Qorif = 0.866
Qweir = 0.058
Qtotal = 0.924 ≤ 1.10

25-YR Storm
low hi
hu = 3.32 hu = 0.52
hd = 0.53 hd = 0.00
hc = 0.13 hc = 0.20
ha = 3.20 ha = 0.32
hz = 0.40 hz = 0.00
hn = 2.79 hn = 0.32

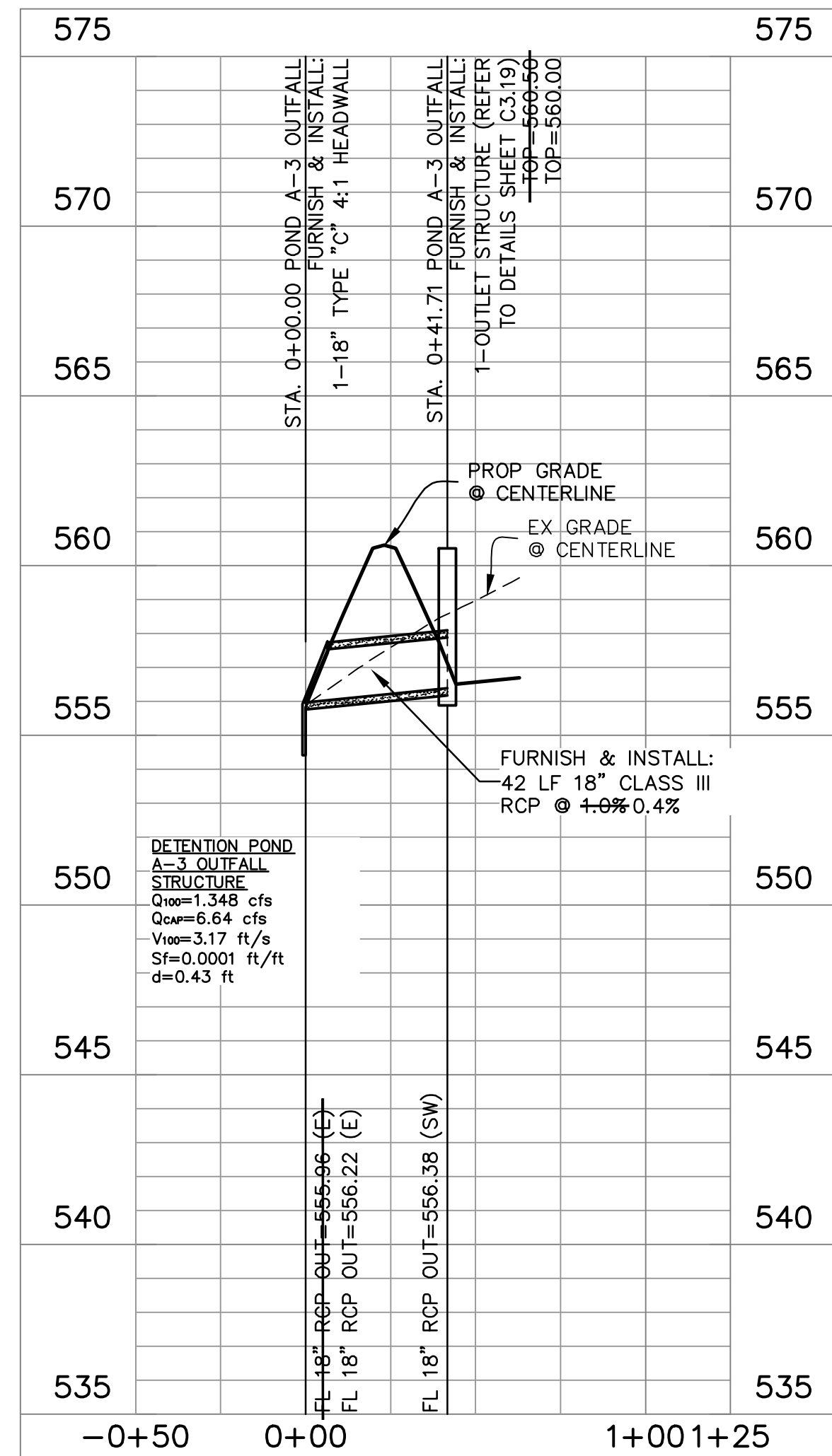
Qorif, low = 0.920
Qorif, hi = 0.277
Qtotal = 1.197 ≤ 1.20

50-YR Storm
low hi
hu = 3.48 hu = 0.68
hd = 0.58 hd = 0.00
hc = 0.13 hc = 0.20
ha = 3.36 ha = 0.48
hz = 0.46 hz = 0.00
hn = 2.90 hn = 0.48

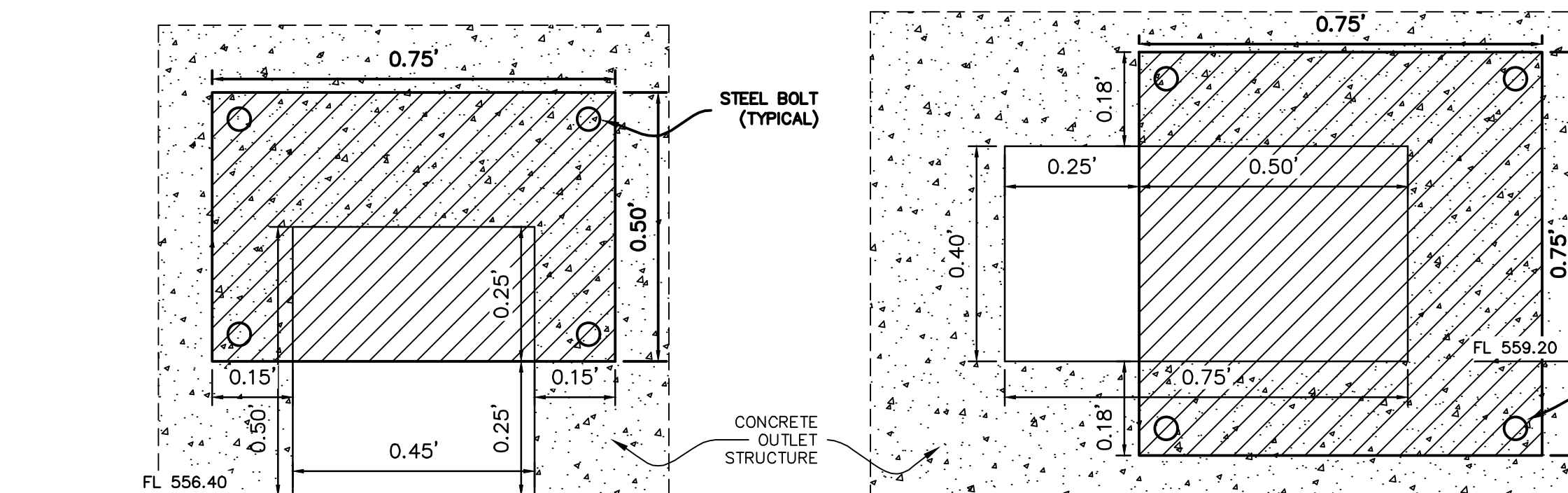
Qorif, low = 0.938
Qorif, hi = 0.339
Qtotal = 1.277 ≤ 1.40

100-YR Storm
low hi
hu = 3.63 hu = 0.83
hd = 0.60 hd = 0.00
hc = 0.13 hc = 0.20
ha = 3.51 ha = 0.63
hz = 0.48 hz = 0.00
hn = 3.03 hn = 0.63

Qorif, low = 0.959
Qorif, hi = 0.389
Qtotal = 1.348 ≤ 1.50



STORM SEWER POND A-3 OUTFALL



LOWER

UPPER

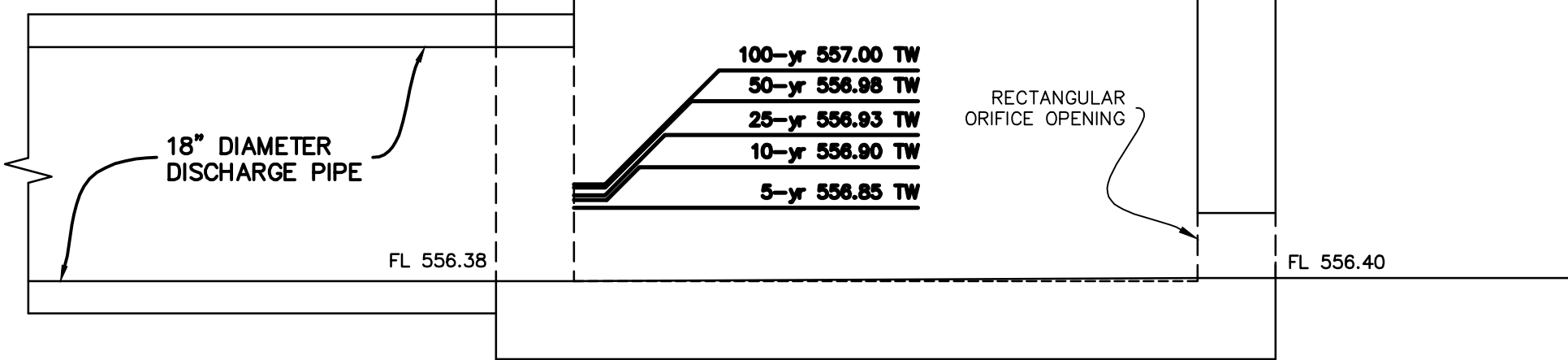
EMERGENCY OUTFLOW CALCULATION

OUTLET GRATE ACTING AS WEIR

$$Q = C_w * L * H^{3/2}$$

$$(6.6) = (3.33) * (4 * 4) * (1.5)^{3/2}$$

$$H = 0.25' \text{ ABOVE GRATE}$$

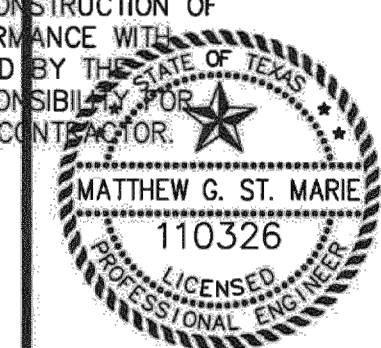


OUTLET STRUCTURE PROFILE
N.T.S.

AS-BUILT RECORD DRAWING

THE INFORMATION ON THESE PLANS HAS BEEN REVIEWED 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: H 1" = 40'; V 1" = 4'
Revisions:
02/11/2021
03/11/2021
05/07/2021
07/12/2021
09/25/2023 - AS-BUILT

WBC20000

C3.19

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

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www.mcadams.com

SWBC ROCKWALL PHASE II
Lot 1, Block A
SWBC ROCKWALL ADDITION, PHASE II
21275 Acres
in the
J.M. ALLEN SURVEY ABSTRACT NO. NO. 2
CITY OF ROCKWALL,
ROCKWALL COUNTY, TEXAS

DETENTION POND A-3 OUTFALL CALCULATIONS