

Elevation Storage (feet) (cubic-feet)		Elevation Storage (feet) (cubic-feet)		Elevation Storage (feet) (cubic-feet)	
556.70	0	558.72	21,554	560.72	51,895
556.72	24	558.74	21,846	560.74	52,186
556.74	67	558.76	22,140	560.76	52,476
556.76	123	558.78	22,434	560.78	52,764
556.78	190	558.80	22,728	560.80	53,053
556.80	265	558.82	23,024	560.82	53,340
556.82	348	558.84	23,320	560.84	53,626
556.84	438	558.86	23,616	560.86	53,912
556.86	534	558.88	23,913	560.88	54,197
556.88	637	558.90	24,211	560.90	54,481
556.90	745	558.92	24,509	560.92	54,764
556.92	859	558.94	24,808	560.94	55,046
556.94	978	558.96	25,108	560.96	55,327
556.96	1,101	558.98	25,408	560.98	55,607
556.98	1,229	559.00	25,708	561.00	55,886
557.00	1,362	559.02	26,009	561.02	56,164
557.02	1,499	559.04	26,311	561.04	56,442
557.04	1,640	559.06	26,612	561.06	56,718
557.06	1,785	559.08	26,915	561.08	56,993
557.08	1,934	559.10	27,218	561.10	57,267
557.10	2,086	559.12	27,521	561.12	57,540
557.12	2,242	559.14	27,824	561.14	57,812
557.14	2,402	559.16	28,128	561.16	58,082
557.16	2,565	559.18	28,433	561.18	58,352
557.18	2,731	559.20	28,738	561.20	58,620
557.20	2,900	559.22	29,043	561.22	58,888
557.22	3,073	559.24	29,348	561.24	59,154
557.24	3,248	559.26	29,654	561.26	59,418
557.26	3,427	559.28	29,960	561.28	59,682
557.28	3,608	559.30	30,266	561.30	59,944
557.30	3,792	559.32	30,573	561.32	60,205
557.32	3,979	559.34	30,880	561.34	60,465
557.34	4,169	559.36	31,187	561.36	60,723
557.36	4,361	559.38	31,494	561.38	60,980
557.38	4,556	559.40	31,802	561.40	61,235
557.40	4,753	559.42	32,110	561.42	61,490
557.42	4,953	559.44	32,418	561.44	61,742
557.44	5,155	559.46	32,726	561.46	61,993
557.46	5,360	559.48	33,034	561.48	62,243
557.48	5,566	559.50	33,343	561.50	62,491
557.50	5,776	559.52	33,651	561.52	62,738
557.52	5,987	559.54	33,960	561.54	62,983
557.54	6,200	559.56	34,269	561.56	63,226
557.56	6,416	559.58	34,578	561.58	63,468
557.58	6,634	559.60	34,887	561.60	63,708
557.60	6,854	559.62	35,196	561.62	63,947
557.62	7,076	559.64	35,505	561.64	64,184
557.64	7,299	559.66	35,814	561.66	64,419
557.66	7,525	559.68	36,124	561.68	64,652
557.68	7,753	559.70	36,433	561.70	64,883
557.70	7,983	559.72	36,742	561.72	65,113
557.72	8,214	559.74	37,051	561.74	65,341
557.74	8,447	559.76	37,361	561.76	65,566
557.76	8,682	559.78	37,670	561.78	65,790
557.78	8,919	559.80	37,979	561.80	66,012
557.80	9,157	559.82	38,288	561.82	66,232
557.82	9,398	559.84	38,597	561.84	66,450
557.84	9,639	559.86	38,906	561.86	66,665
557.86	9,883	559.88	39,214	561.88	66,879
557.88	10,128	559.90	39,523	561.90	67,090
557.90	10,375	559.92	39,832	561.92	67,299
557.92	10,623	559.94	40,140	561.94	67,506
557.94	10,872	559.96	40,448	561.96	67,711
557.96	11,124	559.98	40,756	561.98	67,913
557.98	11,376	560.00	41,064	562.00	68,113
558.00	11,630	560.02	41,372	562.02	68,310
558.02	11,886	560.04	41,679	562.04	68,505
558.04	12,143	560.06	41,986	562.06	68,697
558.06	12,401	560.08	42,293	562.08	68,887
558.08	12,661	560.10	42,600	562.10	69,074
558.10	12,922	560.12	42,906	562.12	69,258
558.12	13,184	560.14	43,212	562.14	69,439
558.14	13,447	560.16	43,518	562.16	69,618
558.16	13,712	560.18	43,823	562.18	69,793
558.18	13,978	560.20	44,128	562.20	69,966
558.20	14,245	560.22	44,433	562.22	70,135
558.22	14,514	560.24	44,737	562.24	70,301
558.24	14,783	560.26	45,041	562.26	70,464
558.26	15,054	560.28	45,345	562.28	70,624
558.28	15,326	560.30	45,648	562.30	70,780
558.30	15,599	560.32	45,951	562.32	70,932
558.32	15,873	560.34	46,253	562.34	71,081
558.34	16,148	560.36	46,555	562.36	71,226
558.36	16,424	560.38	46,857	562.38	71,367
558.38	16,701	560.40	47,158	562.40	71,504
558.40	16,980	560.42	47,458	562.42	71,636
558.42	17,259	560.44	47,758	562.44	71,765
558.44	17,539	560.46	48,058	562.46	71,888
558.46	17,820	560.48	48,356	562.48	72,007
558.48	18,102	560.50	48,655	562.50	72,121
558.50	18,385	560.52	48,953	562.52	72,229
558.52	18,669	560.54	49,250	562.54	72,331
558.54	18,954	560.56	49,546	562.56	72,428
558.56	19,239	560.58	49,842	562.58	72,518
558.58	19,526	560.60	50,138	562.60	72,601
558.60	19,813	560.62	50,432	562.62	72,676
558.62	20,101	560.64	50,726	562.64	72,742
558.64	20,390	560.66	51,020	562.66	72,799
558.66	20,680	560.68	51,312	562.68	72,842
558.68	20,970	560.70	51,604	562.70	72,866
558.70	21,262				

25-yr (58,027=561.16)

50-yr (62,592=561.51)

5-yr (40,367=559.95)

10-yr (45,071=560.26)

100-yr (72,704=562.63)

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	8.80	25.20	559.95	556.70	3.25	40,367	2.10	2.07
10	10.60	29.30	560.26	556.70	3.56	45,071	2.50	2.19
25	11.90	34.30	561.16	556.70	4.46	58,027	2.80	2.58
50	13.50	37.10	561.51	556.70	4.81	62,592	3.70	3.22
100	14.90	40.40	562.63	556.70	5.93	72,704	4.20	4.07

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

C = 0.61  
A =  $\pi \cdot r^2$   
r1 = 0.2917 ft  
r2 = 0.25 ft  
A1 = 0.267 ft<sup>2</sup>  
A2,max = 0.196 ft<sup>2</sup>  
Qorif =  $C \cdot A \cdot (2gh)^{0.5}$

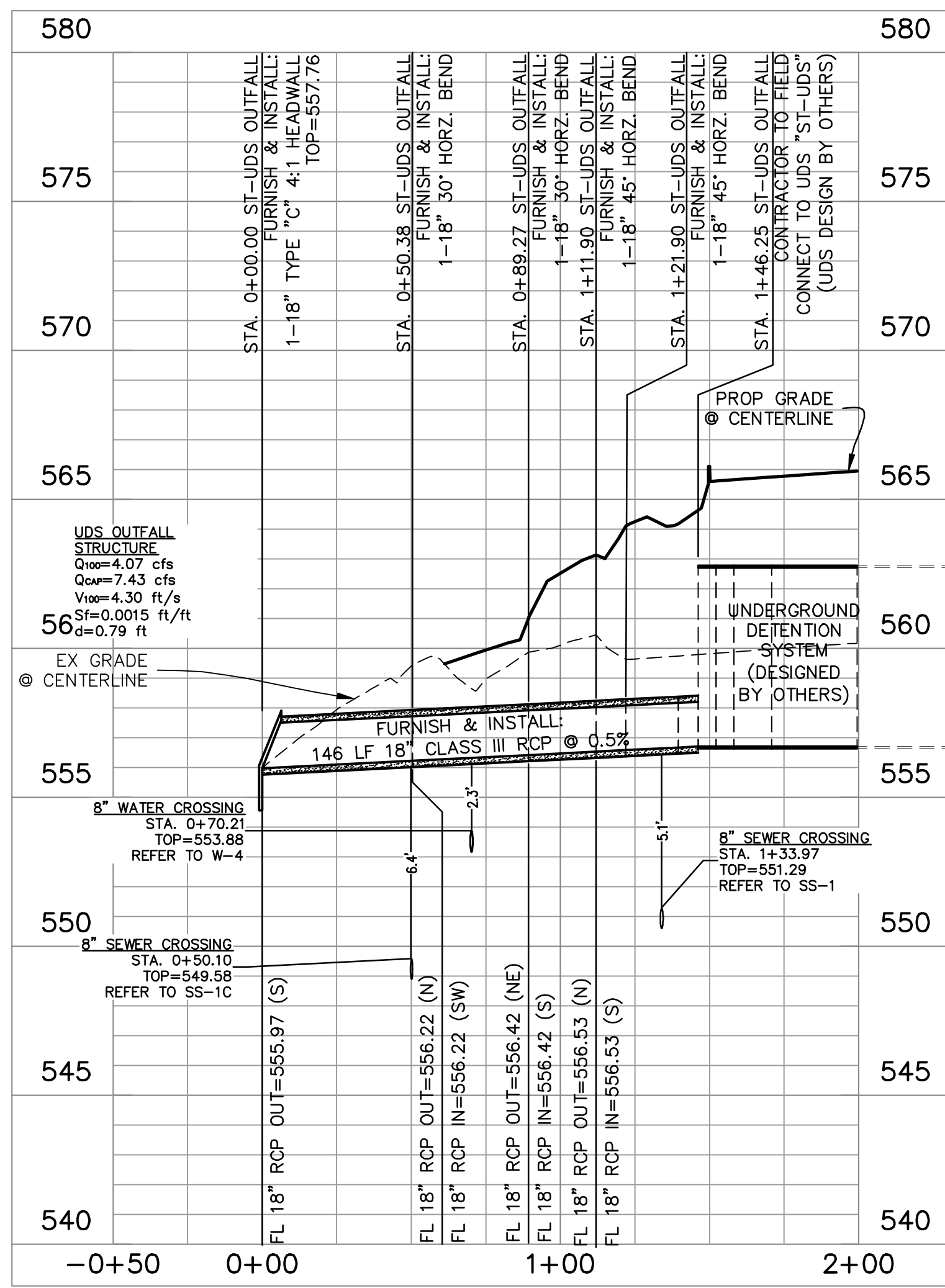
5-YR Storm  
hu = 3.25 hd = 0.75  
lower upper  
hc,1 = 0.29 hc,2 = 0.00  
ha,1 = 2.96 ha,2 = 0.00  
hz,1 = 0.46 hz,2 = 0.00  
hn,1 = 2.50 hn,2 = 0.00  
Qorif,1 = 2.069  
Qorif,2 = 0  
Qorif = 2.069 ≤ 2.10

10-YR Storm  
hu = 3.56 hd = 0.77  
lower upper  
hc,1 = 0.29 hc,2 = 0.00  
ha,1 = 3.27 ha,2 = 0.00  
hz,1 = 0.48 hz,2 = 0.00  
hn,1 = 2.79 hn,2 = 0.00  
Qorif,1 = 2.186  
Qorif,2 = 0  
Qorif = 2.186 ≤ 2.50

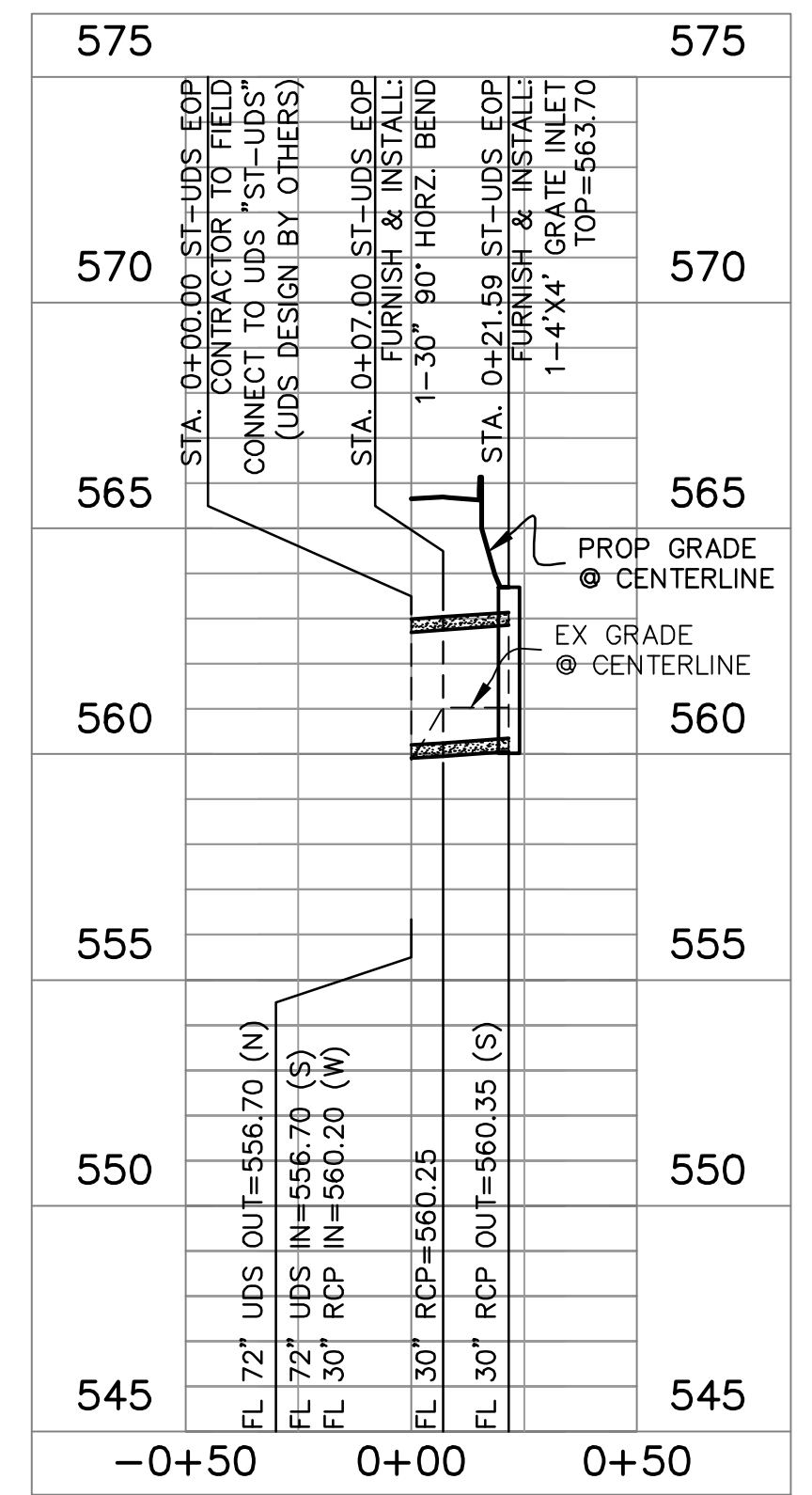
25-YR Storm  
hu = 4.46 hd = 0.85  
lower upper  
hc,1 = 0.29 hc,2 = 4.28  
ha,1 = 4.17 ha,2 = 0.18  
hz,1 = 0.56 hz,2 = -3.43  
hn,1 = 3.61 hn,2 = 0.18  
Qorif,1 = 2.486  
Qorif,2 = 0.093  
Qorif = 2.579 ≤ 2.80

50-YR Storm  
hu = 4.81 hd = 0.97  
lower upper  
hc,1 = 0.29 hc,2 = 4.35  
ha,1 = 4.52 ha,2 = 0.46  
hz,1 = 0.68 hz,2 = -3.38  
hn,1 = 3.84 hn,2 = 0.46  
Qorif,1 = 2.564  
Qorif,2 = 0.651  
Qorif = 3.215 ≤ 3.70

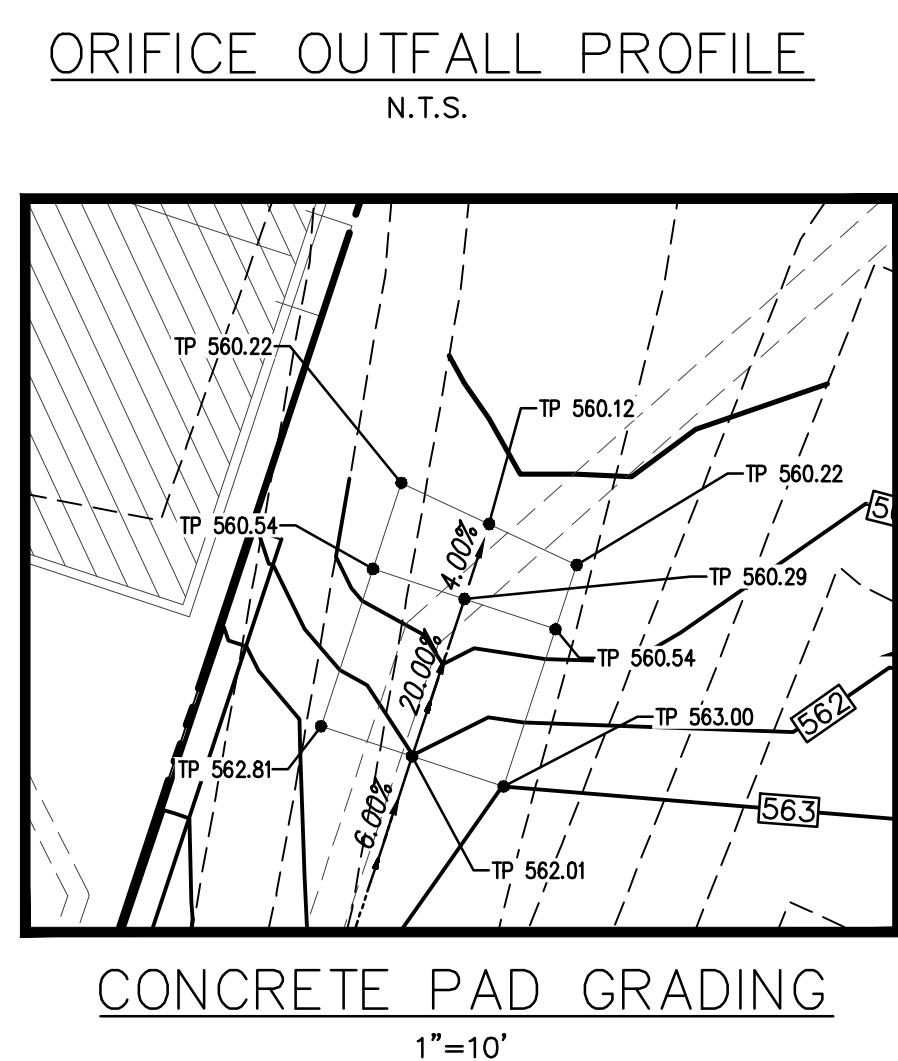
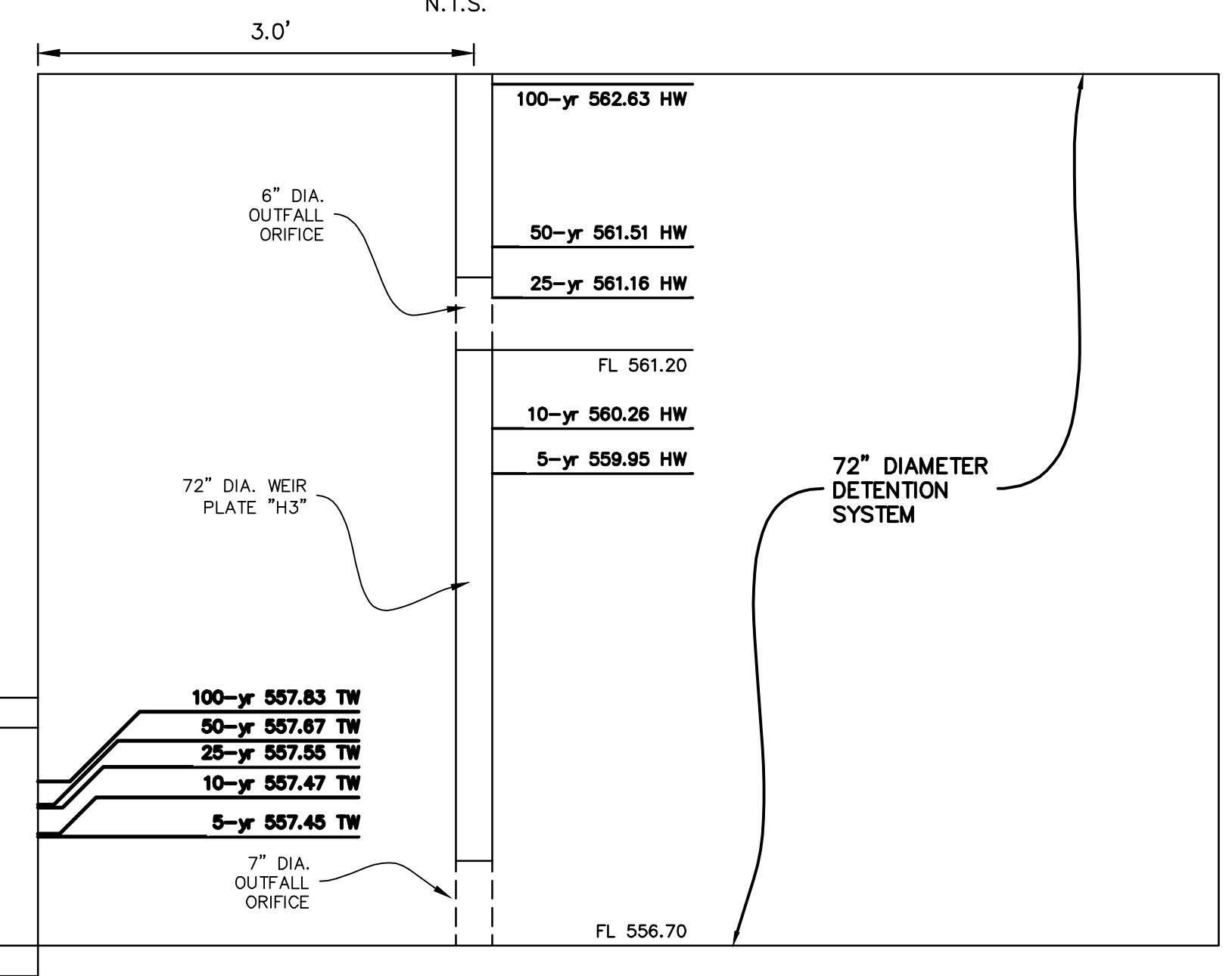
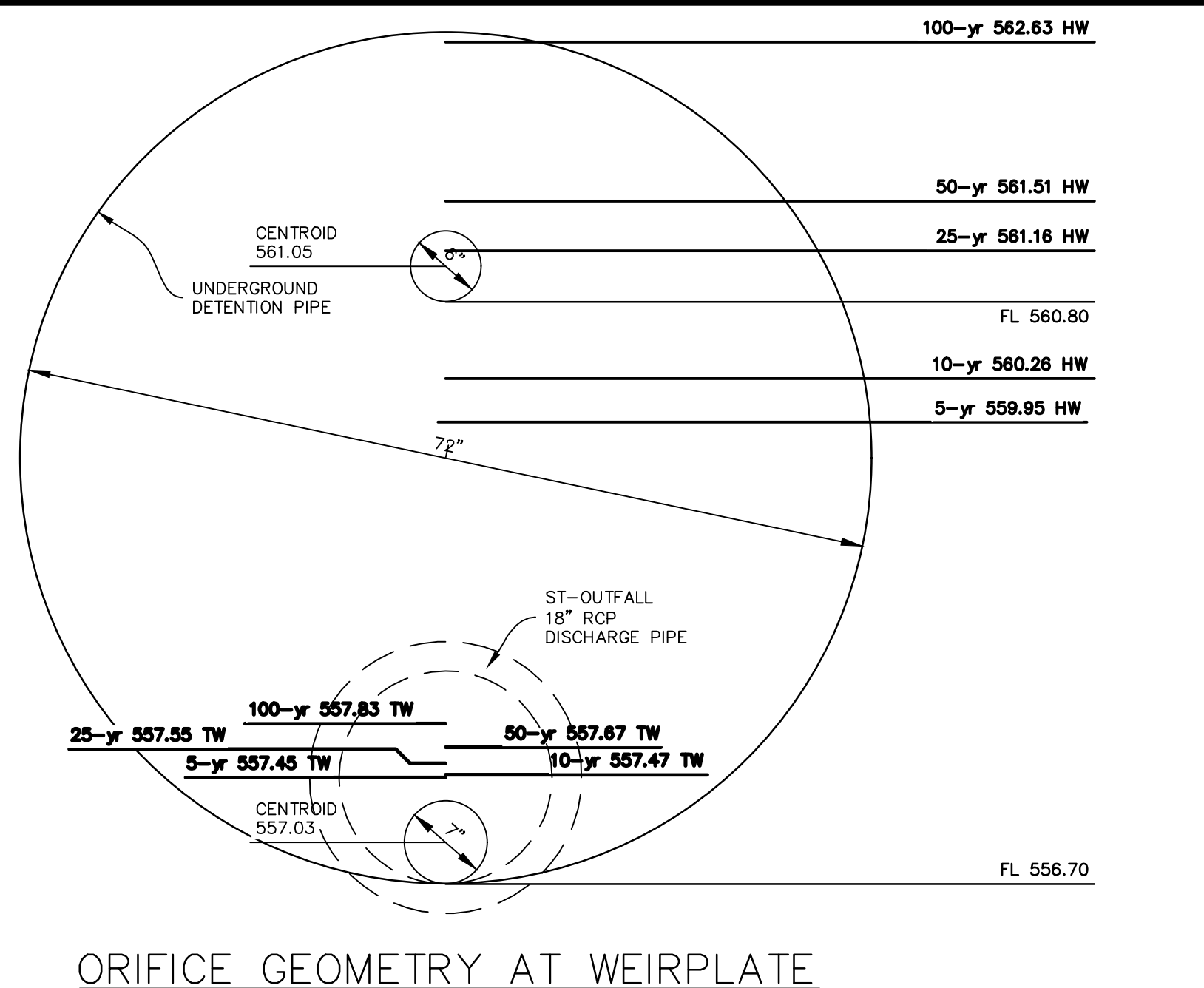
100-YR Storm  
hu = 5.93 hd = 1.13  
lower upper  
hc,1 = 0.29 hc,2 = 4.35  
ha,1 = 5.64 ha,2 = 1.58  
hz,1 = 0.84 hz,2 = -3.22  
hn,1 = 4.80 hn,2 = 1.58  
Qorif,1 = 2.867  
Qorif,2 = 1.206  
Qorif = 4.073 ≤ 4.20



STORM SEWER ST-UDS OUTFALL



STORM SEWER ST-UDS EOP



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

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UDS OUTFALL CALCULATIONS

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-BUILTS

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