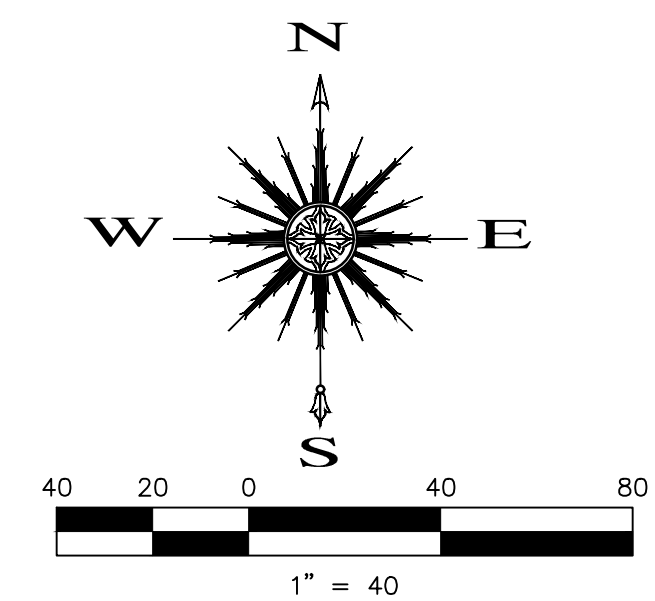


CONTRACTOR TO REGRADE A PORTION OF EXISTING POND TO PROVIDE REQUIRED STORAGE VOLUME AND TO KEEP THE LIMITS OF THE DETENTION POND WITHIN THE OPEN SPACE AREA

100 YR WSEL 565.79
EXISTING DETENTION POND LOCATION
 REQUIRED STORAGE VOLUME = 74,202 CF
 PROVIDED STORAGE VOLUME = 193,501 CF
 NORMAL POOL WSEL = 564.00
 100 YR WSEL = 565.79
 TOP OF POND = 568.00

Phase 1
 Detention / Drainage, Access
 Utility Easement
 Maintained by HOA



CAUTION EXISTING UTILITIES !!!
 EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE THE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BENCHMARK:
 "X" ON TOP OF CURB WEST NOSE OF MEDIAN AT ENTRANCE TO FONTANNA RANCH WIMBERLEY LN.
ELEV. 570.06

Revision	Date	Description

FONTANNA RANCH, LTD.
 6750 HILLCREST PLAZA DR., S. 255 • DALLAS, TX 75220 • 972-386-3333

Fontanna Ranch Ph. 3

F.C. CUNY CORPORATION
 #2 Horizon Court • Ste. 500 • Heath, Texas 75032
 Phone: 469-402-7700
 Fax: 469-402-0700
 Texas Registered Engineering Firm F-7449

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER R. CUNY, P.E. 65642

9-11-2018
 F.C. CUNY CORPORATION
 F-7449

100 YR DETENTION CALCULATIONS

Existing Conditions			Onsite Proposed Conditions		
Area	27.24	acres	Area	27.24	acres
Time (Tc)	20	minutes	Time (Tc)	10	minutes
C value	0.35		C value	0.50	
I-100yr	8.3	in/hr	I-100yr	9.8	in/hr
ALLOWABLE RELEASE RATE	Q100 yr	79.13 cfs	Q100 yr	133.48 cfs	

Developed Runoff per Storm Event				
Time (min.)	I-100 yr	C value	Area (ac)	Runoff (cfs)
10	9.80	0.50	27.24	133.48
15	9.00	0.50	27.24	122.58
20	8.30	0.50	27.24	113.05
30	6.90	0.50	27.24	93.98
40	5.80	0.50	27.24	79.00
50	5.00	0.50	27.24	68.10
60	4.50	0.50	27.24	61.29
70	4.00	0.50	27.24	54.48
80	3.70	0.50	27.24	50.39
90	3.50	0.50	27.24	47.67
100	3.40	0.50	27.24	46.31
110	3.20	0.50	27.24	43.58

Inflow per Storm Event			
Storm Duration	Runoff	Inflow (ft ³ /s)	Storage (ft ³)
10	133.48	80,086	32,003
15	122.58	79,349	30,973
20	113.05	74,436	29,173
30	93.98	61,290	24,202
40	79.00	50,390	20,202
50	68.10	43,580	17,112
60	61.29	39,610	15,466
70	54.48	35,640	14,238
80	50.39	32,670	13,010
90	47.67	30,700	12,021
100	46.31	29,730	11,512
110	43.58	28,760	11,003

Outflow per Storm Event			
Storm Duration	Time	Release	Outflow (ft ³ /s)
10	20	79.13	47,479
15	25	79.13	59,349
20	30	79.13	71,219
30	40	79.13	94,959
40	50	79.13	118,698
50	60	79.13	142,438
60	70	79.13	166,178
70	80	79.13	189,917
80	90	79.13	213,657
90	100	79.13	237,397
100	110	79.13	261,136
110	120	79.13	284,876

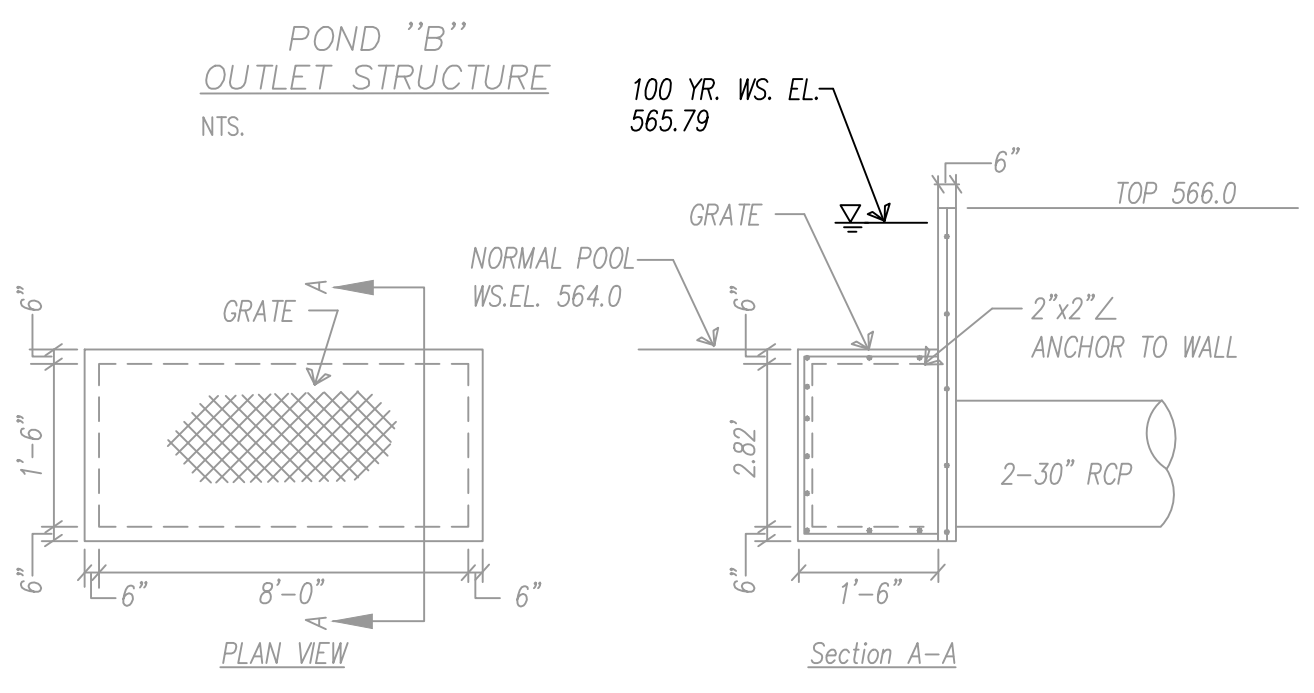
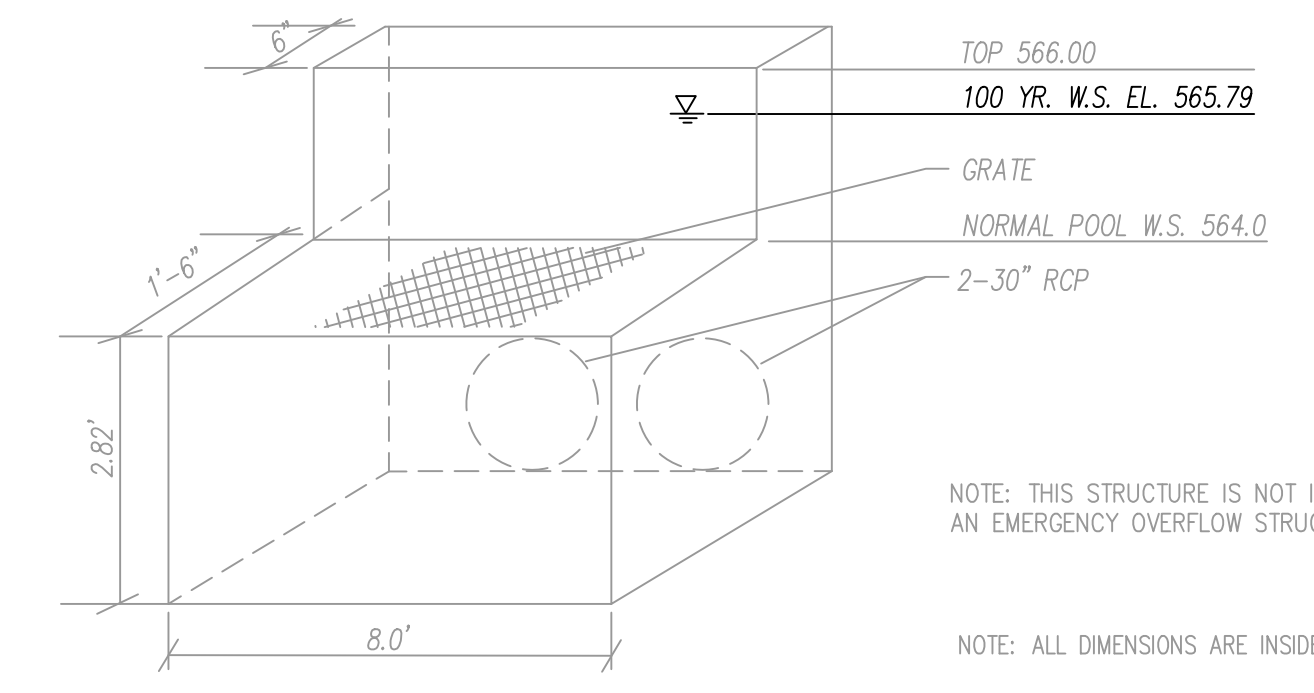
Detention Volume			
Storm Event	Inflow	Outflow	Storage (ft ³)
10	80,086	47,479	32,606
15	110,322	59,349	50,973
20	135,655	71,219	64,436
30	169,160	94,959	74,202
40	189,590	118,698	70,892
50	204,300	142,438	61,862
60	220,544	166,178	54,466
70	228,816	189,917	38,899
80	241,891	213,657	28,234
90	257,418	237,397	20,021
100	277,848	261,136	16,712
110	287,654	284,876	2,778

Detention Volume Required (ft³)
74,202

Proposed Pond Volume			
Elevation	Area	Volume	Total Volume
564	31732	0	0
565	44305	38019	38019
565.79	47385.21	36218	74237
566	48205	10037	84275
567	54019	51112	135387
568	62209	58114	193501

Broadcrest Weir Equation	
Q = C _d L ^{3/2} H ^{3/2}	
Q =	79.03 cfs
C _d =	3.00
H =	1.79 ft
L =	11.00 ft

NOTE: WEIR CALCULATION FOR THE EXISTING OUTLET STRUCTURE SHOWS THAT THE RELEASE IS LESS THAN THE ALLOWABLE Q SHOWN ABOVE.



POND "B" OUTLET STRUCTURE
 NTS.
 NOTE: THIS STRUCTURE IS NOT INTENDED TO BE AN EMERGENCY OVERFLOW STRUCTURE.
 NOTE: ALL DIMENSIONS ARE INSIDE DIMENSIONS
 NOTE: ALL REINF. SHALL BE #3 BARS ON 12" O.C.E.W.

EXISTING RETENTION/DETENTION POND "B" OUTLET STRUCTURE

Drawn By:	Checked By:
FC CUNY	FC CUNY
Date:	Project No.:
4-1	
Sheet Title:	
Detention Pond Plan	
Scale:	Sheet No.:
h : 1" = 40'	10 of 18