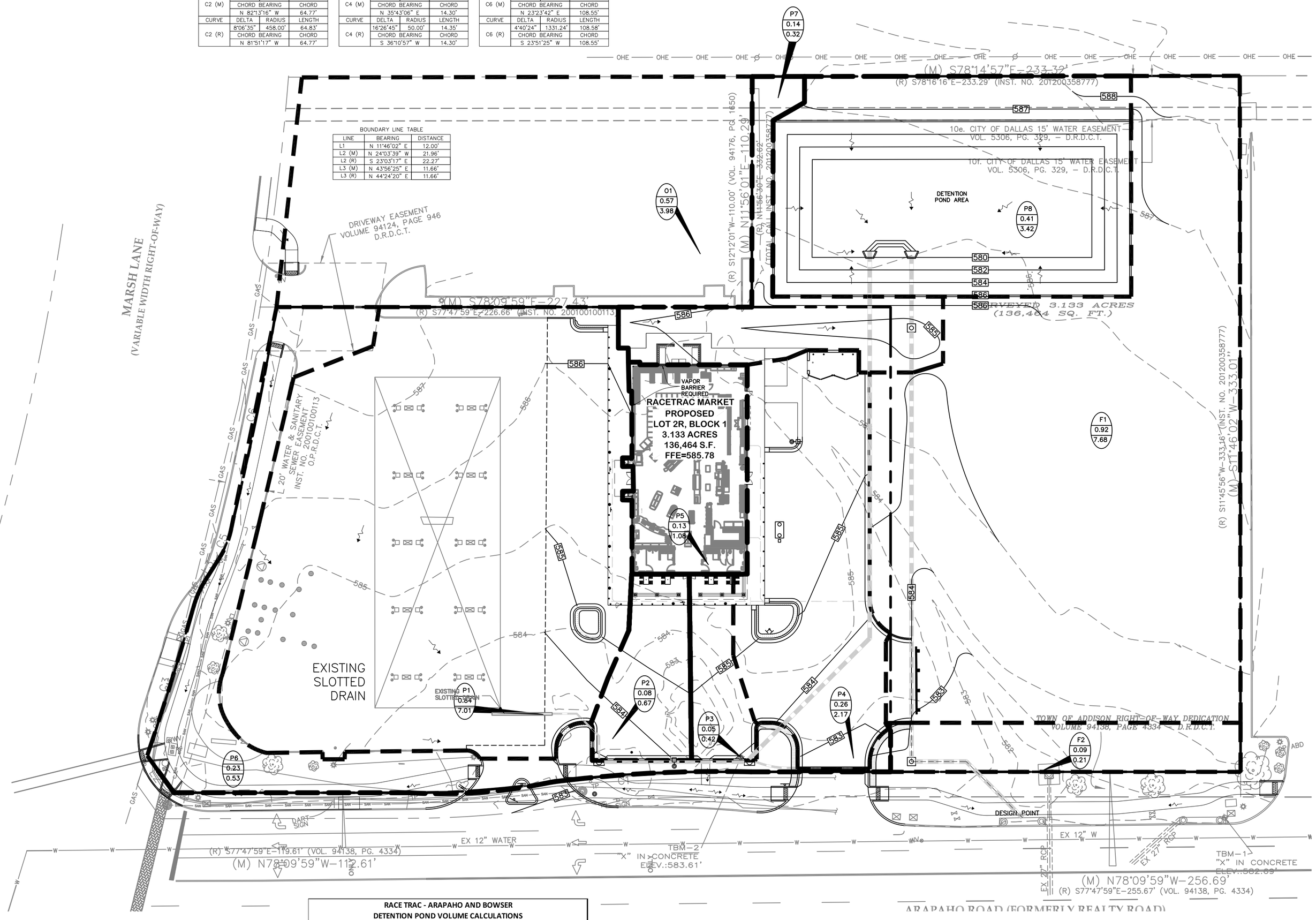
BOUNDARY CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1 (M)	8°06'35"	542.00'	76.72'
	CHORD BEARING		CHORD
	N 82°13'16" W		76.65'
CURVE	DELTA	RADIUS	LENGTH
C1 (R)	8°06'35"	542.00'	76.72'
	CHORD BEARING		CHORD
	N 81°51'17" W		76.65'
CURVE	DELTA	RADIUS	LENGTH
C2 (M)	8°06'35"	458.00'	64.83'
	CHORD BEARING		CHORD
	N 82°13'16" W		64.77'
CURVE	DELTA	RADIUS	LENGTH
C2 (R)	8°06'35"	458.00'	64.83'
	CHORD BEARING		CHORD
	N 81°51'17" W		64.77'

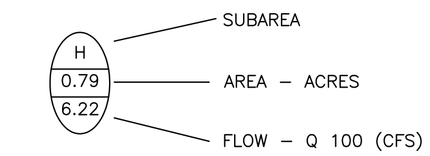
BOUNDARY CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C3 (M)	31°27'27"	1323.24'	74.07'
	CHORD BEARING		CHORD
	N 29°06'06" E		74.06'
CURVE	DELTA	RADIUS	LENGTH
C3 (R) (TOTAL)	9°53'36"	1323.24'	228.48'
	CHORD BEARING		CHORD
	N 26°31'25" E		228.20'
CURVE	DELTA	RADIUS	LENGTH
C4 (M)	16°24'38"	50.00'	14.35'
	CHORD BEARING		CHORD
	N 35°43'06" E		14.30'
CURVE	DELTA	RADIUS	LENGTH
C4 (R)	16°26'45"	50.00'	14.35'
	CHORD BEARING		CHORD
	S 36°10'57" W		14.30'

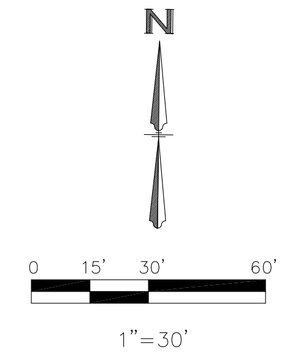
BOUNDARY CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C5 (M)	18°12'31"	50.00'	15.89'
	CHORD BEARING		CHORD
	N. 34°50'09" E		15.82'
CURVE	DELTA	RADIUS	LENGTH
C5 (R)	18°12'43"	50.00'	15.89'
	CHORD BEARING		CHORD
	S. 35°17'58" W		15.83'
CURVE	DELTA	RADIUS	LENGTH
C6 (M)	4°40'24"	1331.24'	108.58'
	CHORD BEARING		CHORD
	N 23°23'42" E		108.55'
CURVE	DELTA	RADIUS	LENGTH
C6 (R)	4°40'24"	1331.24'	108.58'
	CHORD BEARING		CHORD
	S 23°51'25" W		108.55'

BOUNDARY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 11°46'09" E	12.00'
L2 (M)	N 24°03'39" W	21.96'
L2 (R)	S 23°03'17" E	22.27'
L3 (M)	N 43°56'25" E	11.66'
L3 (R)	N 44°24'20" E	11.66'



DRAINAGE LEGEND:





MODIFIED RATIONAL METHOD
100 YEAR STORM EVENT
CONVENIENCE STORE - MARSH AND ARAPAHO - ADDISON TX

	10	20	30	40	50	60	70	80	90
2									
10									
25									
100	9.27	7.05	5.77	4.99	4.50	3.86	3.65	3.25	3.00

Maximum Release Rate: **6.89 cfs**

Post Developed Conditions

Area Draining Into Pond 2.69

Tc	10
I 100	9.27
A	2.69
C	0.9
Q 100	22.44
Total Q	**22.44**

	Intensity	Q 100	Offsite	Total
10 minutes	9.27	22.44	0	22.44
20 minutes	7.05	17.07	0	17.07
30 minutes	5.77	13.97	0	13.97
40 minutes	4.99	12.08	0	12.08
50 minutes	4.5	10.89	0	10.89
60 minutes	3.86	9.35	0	9.35
70 minutes	3.65	8.84	0	8.84
80 minutes	3.25	7.87	0	7.87
90 minutes	3	7.26	0	7.26

10 minute Storm

INFLOW	13465.60	CF
OUTFLOW	4134.00	CF
STORAGE	**9331.60**	**CF**

20 minute Storm

INFLOW	20481.66	CF
OUTFLOW	6201.00	CF
STORAGE	**14280.66**	**CF**

30 minute Storm

INFLOW	25144.51	CF
OUTFLOW	8268.00	CF
STORAGE	**16876.51**	**CF**

40 minute Storm

INFLOW	28993.90	CF
OUTFLOW	10335.00	CF
STORAGE	**18658.90**	**CF**

50 minute Storm

INFLOW	32683.50	CF
OUTFLOW	12402.00	CF
STORAGE	**20281.50**	**CF**

60 minute Storm

INFLOW	33642.22	CF
OUTFLOW	14469.00	CF
STORAGE	**19173.22**	**CF**

70 minute Storm

INFLOW	37113.93	CF	
OUTFLOW	16536.00	CF	
STORAGE	**20577.93**	**CF**	Volume Needed

80 minute Storm

INFLOW	37767.60	CF
OUTFLOW	18603.00	CF
STORAGE	**19164.60**	**CF**

ORIFICE DESIGN:

BOTTOM OF POND ELEV=578.86
WSEL OF 100 YR STORM EVENT IS 582.45
HEAD OF 3.59'
Cd=0.62

$Q=(Cd)(A)(2gh)^{0.5}$

SOLVING FOR AREA (A), AS Q ALLOWABLE IS 6.89 CFS

AREA OF OPENING = 0.731 SF
OR AN ORIFICE OF 11.6" ø

RACE TRAC - ARAPAHO AND BOWSER WATER SURFACE ELEVATION		
STORM DURATION (YR)	STORAGE VOLUME (CF)	POND DEPTH (FT)
100	20,577.93	582.45

RACE TRAC - ARAPAHO AND BOWSER DETENTION POND VOLUME CALCULATIONS 3:1 SIDE SLOPE - DRY BOTTOM			
POND DEPTH (FT)	STORAGE VOLUME (CF)	VOLUME BETWEEN STEPS (CF)	VOLUME BETWEEN STEPS (AC-FT)
578.86	-	-	-
579.00	0.10	0.10	0.00
579.50	297.30	297.20	0.01
580.00	1,811.80	1,514.50	0.03
580.50	5,034.20	3,222.40	0.07
581.00	8,587.00	3,552.80	0.08
581.50	12,434.00	3,847.00	0.09
582.00	16,577.30	4,143.30	0.10
582.50	21,028.00	4,450.70	0.10
583.00	25,795.50	4,767.50	0.11
583.50	30,888.40	5,092.90	0.12
584.00	36,314.30	5,425.90	0.12
584.50	42,086.30	5,772.00	0.13
585.00	48,213.30	6,127.00	0.14
585.50	54,732.00	6,518.70	0.15
586.00	61,656.30	6,924.30	0.16
586.25	65,204.10	3,547.80	0.08
VOLUME DETAINED IN POND		**1.50**	**ac-ft**

ULTIMATE DEVELOPMENT DRAINAGE SUMMARY
100 YR STORM

DRAINAGE AREA	AREA (AC)	Tc (MIN)	C-VALUE	I (100 yr) (in/hr)	Q (100 yr) (cfs)	REMARKS
P1	0,84	10	0.90	9,27	7,01	EXISTING SITE INTO SLOTTED DRAIN
P2	0,08	10	0.90	9,27	0.67	5' CURB INLET
P3	0,05	10	0.90	9,27	0,42	5' CURB INLET
P4	0,26	10	0.90	9,27	2,17	SHEET FLOW INTO SLOTTED DRAIN
P5	0,13	10	0.90	9,27	1,08	BLDG ROOF DRAINAGE TO POND
P8	0,41	10	0.90	9,27	3,42	POND AREA INTO POND
F1	0,92	10	0.90	9,27	7,68	FUTURE COLLECTION AND DISCHARGE
TOTAL	2,69				22,45	TOTAL INFLOW INTO POND
P6	0,23	10	0.25	9,27	0,53	SITE BYPASS POND
P7	0,14	10	0.25	9,27	0,32	SITE BYPASS POND
F2	0,09	10	0.25	9,27	0,21	FUTURE BY PASS POND
TOTAL	0,46				1,06	TOTAL SITE FLOWS - BYPASS POND
01	0,57	10*	0.80*	8.74*	3,98*	OFF-SITE DRAINAGE - (BYPASS)
					27,49	TOTAL

NOTE: (*) = IN PRE-DEVELOPED

Q ALLOWABLE DISCHARGE FROM THE POND = PRE-DEVELOPED FLOWS – FLOWS THAT BYPASS THE POND. THE POND IS DESIGNED FOR THE ENTIRE 3.133 ACRES.

PRE-DEVELOPED FLOWS FOR THE SITE IS 7.95 CFS – SEE PRE DEV DRAINAGE MAP BY-PASS AMOUNT IS FROM SUBAREAS P6, P7 AND F2, WHICH EQUALS 1.06 CFS. THEREFORE, THE ALLOWABLE DISCHARGE FROM THE POND IS 6.89 CFS.

TOTAL FLOW INTO THE POND IS 22.45 CFS, SO DETENTION WILL BE FOR THE DIFFERENCE IN THESE VOLUMES USING MODIFIED RATIONAL METHOD.

AS-BUILTS

Travis J. Bousquet, PE — May 22, '20 — Date

NO.	DATE
8	05/22/20
As-Builts to City	
7	04/16/20
Modification to sidewalk along Arapaho	
6	11/07/19
Additional Spot elevations to GC	
5	08/23/2019
REVISED PLANS TO TOWN	
4	04/05/2019
TOWN SUBMITTAL	
3	08/30/2018
TOWN SUBMITTAL	
2	08/28/2018
TOWN SUBMITTAL	
1	02/12/2018
TOWN SUBMITTAL	

THESE PLANS ARE SUBJECT TO FEDERAL COPYRIGHT LAWS; ANY USE OF SAME WITHOUT THE EXPRESSED WRITTEN PERMISSION OF RACETRAC PETROLEUM, INC. IS PROHIBITED.

JONES|CARTER
Texas Board of Professional Engineers Registration No. F-439
4400 Maronite Pkwy Suite 220 Fort Worth, TX 76137 • 682.268.2200

STATE OF TEXAS — THOMAS J. BOUSQUET — 86084 — LICENSED PROFESSIONAL ENGINEER — 05/22/20

RaceTrac
RACETRAC PETROLEUM, INC.
3225 CUMBERLAND BOULEVARD
SUITE 100 ATLANTA, GA 30339
(770) 431-7600

POST DEVELOPED D.A.M.

RACETRAC

Beltline/Marsh Business Park
Lot 2, Block 1
3.133 Ac. - Zoned: Light Retail
Addison, Texas

DATE	May 22, '20
SCALE	1"=30'
DRAWN-BY	TJB
DRAWING NAME:	
C-2.3	**-**
SHEET NO.	VERSION