Portion of
Block 1
Belt Line/Marsh Business Park
Volume 81060, Page 170
D.R.D.C.T.

Remainder of
A. Lee Pfluger Children's Trust
Volume 95134, Page 2868
D.R.D.C.T.

20' 0 20' 40'
Scale 1" = 20'

LEGEND

EXISTING — PROPOSED

PROPERTY LINE

DRAINAGE BOUNDARY

FLOW DIRECTION

EXIST IRRIGATION CONTROL VALVES

CALCULATION FOR C

IMPERVIOUS AREA (AI)= 0.960 ACRE
PERVIOUS AREA (AP)= 0.412 ACRE
TOTAL AREA (A) = 1.372 ACRE

C=(AP)*0.35+(AI)*1.00)/1.372 = 0.81

Drainage Area	Design Storm (yr)	Area (Acre)	Runoff Coefficient 'C'	Time to Concentration (Tc)	Storm Intensity (iph)	Runoff (cfs)	Comments
A	100	0.11	0.81	10	8.74	0.78	Drains East to proposed storm drain
B	100	1.01	0.81	10	8.74	7.15	Drains to Proposed Detention Basin
C	100	0.24	0.81	10	8.74	1.70	Sheet Flow to Public ROW
OFFSITE	100	0.57	0.80	10	8.74	4.02	Drains to proposed storm drain

DRAINAGE AREA MAP & CALCULATIONS

Detention Basin Calculations

Existing Conditions
CPRE=0.35
Tc=10 MIN
I100=8.74
AREA=1.4 ACRE
QEXIST=4.28 CFS

Proposed Conditions
CPROP=0.81
Tc=10 MIN
I100=8.74
AREA 'A'=0.1 ACRE
AREA 'B'=1.0 ACRE
AREA 'C'=0.2 ACRE

QA=0.78 CFS
QB=7.15 CFS
QC=1.70 CFS
QPROP=9.63 CFS

Allowable Flow from Basin
QALLOW=QPROP–QA–QC
QALLOW=4.28–0.78–1.7= 1.8 CFS

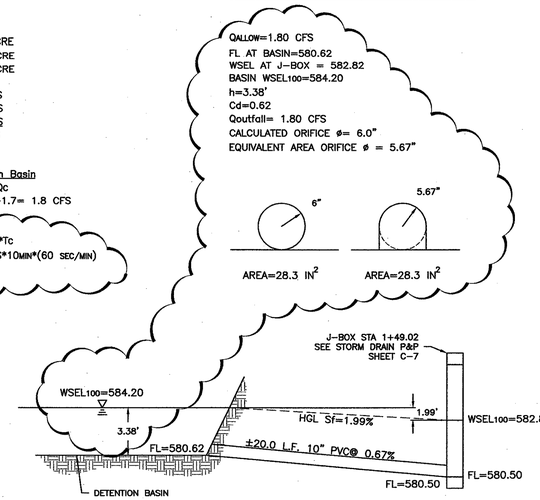
Detention Volume
VOL=(QPRE–QALLOW)*Tc
VOL=(9.63–4.3)CFS*10MIN*(60 SEC/MIN)
VOL=3,210 FT³

Basin Inlet Calculation

18" RCP @ 0.5%
QCAP=7.43 CFS
n=0.013
Q100=7.15 CFS
V=4.8 FPS

Basin Outlet Calculation

QALLOW=1.80 CFS
FL AT BASIN=580.62
WSEL AT J–BOX = 582.82
BASIN WSEL100=584.20
h=3.38'
Cd=0.62
Qoutfall= 1.80 CFS
CALCULATED ORIFICE ø= 6.0"
EQUIVALENT AREA ORIFICE ø = 5.67"



RACETRAC SERVICE STATION
3420 sq.ft.
FF=586.81
48 SQ. FT. LOGO SIGN

AREA A
AREA = 0.11 ACRE
Q100 = 0.78 CFS
DRAINS EAST TO ADJACENT PROPERTY

AREA B
AREA = 1.01 ACRE
Q100 = 7.15 CFS CFS
DRAINS TO PROPOSED DETENTION BASIN

AREA C
AREA = 0.24 ACRE
Q100 = 1.70 CFS
DRAINS TO PUBLIC ROW

OFFSITE AREA
AREA = 0.57 ACRE
Q100 = 4.02 CFS CFS
DRAINS TO PROPOSED STORM DRAIN

Pfluger Addition
Volume 94176, Page 1650
D.R.D.C.T.

SURI Management Corp.
Volume 98015, Page 496
D.R.D.C.T.

Driveway Easement
Volume 94124, Page 946
D.R.D.C.T.

Found 5/8 inch iron rod bent

Found 5/8 inch iron rod plastic cap S20°27'49"W 0.19'

12' Right–of–Way Dedication to the Town of Addison Volume 94138, Page 4334 D.R.D.C.T.

S12°12'01"W 222.67'

S77°47'59"E 234.77'

R=1323.24' L=111°11'

Set Cotton Spindle

Found 5/8 inch iron rod

8.0' STREET DEDICATION

20' Water & Sanitary Sewer Easement Volulme 94138, Page 4340 D.R.D.C.T.

MARSH LANE
(CONCRETE PAVEMENT)

ARAPAHO ROAD
(CONCRETE PAVEMENT)

N22°57'16"W 14.15'

SSMH TOP=583.67 IN W=577.42 IN S=577.42 OUT N=577.22

SSMH TOP=584.49 FL =577.89

SSMH TOP=584.06 IN W=579.51 OUT N=579.41

TURN SIGN

FIRE HYDRANT

YIELD SIGN

TRAFFIC SIGNAL

WATER VALVES

BRICK

CONC WALK

TBM 585.15

BENCHMARK:

Square cut on the centerline of a curb inlet at the northeast corner of the intersection of Beltway Drive and Marsh Lane. Benchmark provide by the City of Addison, Texas.
Elev: 585.21

TBM

Square cut on the top of a concrete curb at the median nose located on the North side of the intersection of Realty Drive and Marsh Lane.
N: –92.45
E: –714.89
Elev: 585.15

RIDGE
VALLEY
C–3
C–4
C–5
C–6
2,000 GAL. PREMIUM
12,000 GAL. PLUS
20,000 GAL. REGULAR

1 AS–BUILT DRAWINGS

THESE DOCUMENTS REFLECT AS–BUILT CONDITIONS PER INFORMATION SUBMITTED BY THE OWNER, CONTRACTOR AND/OR INSPECTING ENTITY.

1-31-04

Konstantine Bakintas, PE

STATE OF TEXAS
KONSTANTINE BAKINTAS
67022
REGISTERED PROFESSIONAL ENGINEER

DRAWING FILE: E:\2002.000.000\2002.015.000\dwg\DRAINAGE ANALYSIS.DWG

RaceTrac Petroleum, Inc.
300 Technology Ct.
Smyrna, GA 30082
Contact: Julie Diamond
(770) 431–7600 x1129

Baird, Hampton & Brown, Inc.
Engineering & Surveying
309 W. 7th St., Ste. 500 Ft. Worth, TX 76102 tel(817)338–1277 fax(817)338–4045 E–Mail:mail@bhbinc.com

NO.	REVISIONS	DATE
6	REVISE PRIVATE STORM DRAINAGE	08/12/03
5	ADD 60' CANOPY PER CLIENT	07/17/03
5	CLARIFY OFFSITE DRAINAGE	03/20/03
4	REALTY DRIVE CHANGED TO ARAPAHO ROAD	02/03/03

DESIGNED: DAH | DRAWN: DAH | CHECKED: KB | DATE: 08/15/00

DRAINAGE ANALYSIS

RaceTrac Service Station #646
On-Site Improvements
Marsh Ln. & Arapaho Rd.
Addison, Texas

BHB PROJECT NO:
2002.015.000

SHEET NO:
C-1 of 9C