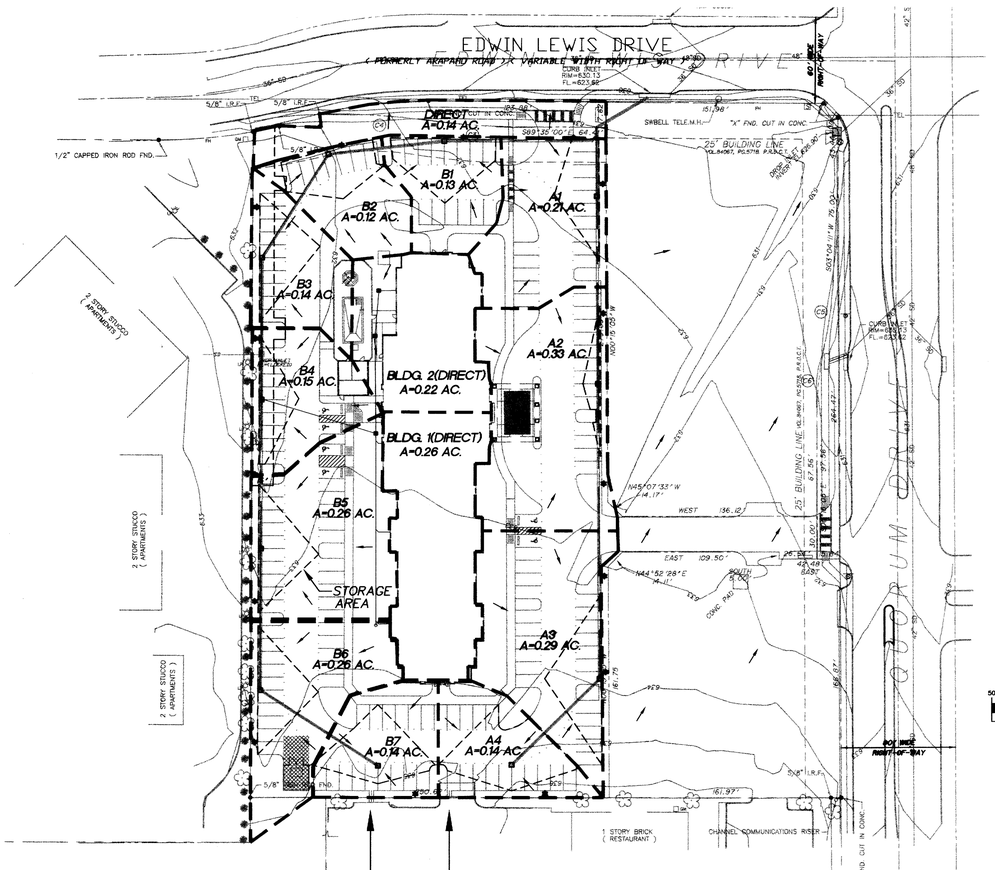


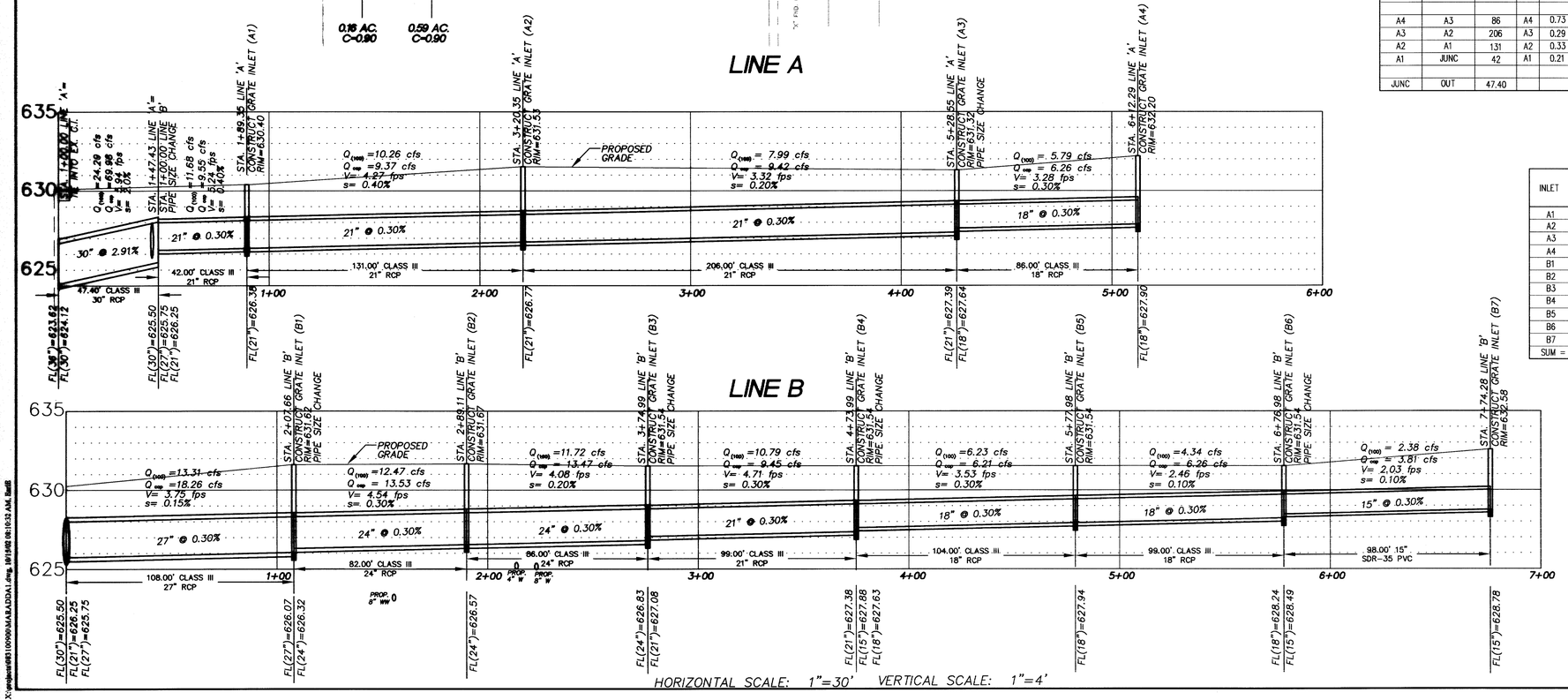
PROVIDED STORAGE VOLUME ON-SITE

AREA DESIGNATION	PROVIDED VOLUME (C.F.)
A1	427
A2	146
A3	592
A4	742
B1	550
B2	471
B3	473
B4	336
B5	473
B6	475
B7	600
SUM =	5,285

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



Detention Basin Design

Q=CIA

PEI#: 083100900
Project Name: Springhill Addison
By: JEM

Drainage Area (ac.):	2.91
Design Storm (yrs):	100

Proposed Conditions (25 YR.)	
C=	0.90
Tc(min.)=	10.0
I(in/hr)=	7.3
Q(cfs)=	19.09

Proposed Conditions (100 YR.)	
C=	0.90
Tc(min.)=	10.0
I(in/hr)=	8.7
Q(cfs)=	22.89

Storm Duration	I (in/hr)	Q (cfs)	Inflow (cu.ft.)	Outflow (cu.ft.)	Storage (cu.ft.)
5.0	10.5	27.5	8242.0	8591.6	-349.6
10.0	8.7	22.9	13734.0	11455.5	2278.5
15.0	7.5	19.7	17725.4	14319.4	3406.0
20.0	6.8	17.8	21371.0	17183.3	4187.8
30.0	5.8	15.1	27106.7	22911.0	4195.6
40.0	5.0	13.1	31428.0	28638.8	2789.2
50.0	4.5	11.7	34963.7	34366.5	597.1
60.0	3.9	10.2	36865.0	40094.3	-3229.2
120.0	2.6	6.9	49404.8	74460.8	-25056.0
180.0	1.9	5.0	54024.7	108827.3	-54802.6
240.0		0.0	0.0	143193.8	-143193.8

STORAGE AREA REQUIRED = 4,195.6 C.F.
STORAGE AREA PROVIDED = 5,285 C.F.

PATE ENGINEERS, INC. — Project: SPRINGHILL SUITES — NME #: 83100900 — Manning's "n" = 0.012

RUNOFF COLLECTION POINT (Inlet or Manhole)				INCREMENTAL DRAINAGE AREA														
Upstream Station	Downstream Station	Distance Between Collection Points (ft.)	Area No.	Drainage Area (acres)	Runoff Coeff. C	Incremental Area CA	Accumulated CA	Time at Upstream Station (min.)	Design Storm Freq. (years)	Intensity I (in./hr.)	Storm Water Runoff Q (cfs)	Slope of Hydraulic Gradient S (ft./ft.)	Storm Sewer Dia. (in.)	Velocity Between Points V (fps)	Coefficient of Headloss Manholes & Junctions (Kj)	Construct. Slope (ft./ft.)	Capacity (cfs)	Flow Time in Sewer (min.)	Hydraulic Gradient Elevations Upstream	Hydraulic Gradient Elevations Downstream
B7	B6	98	B7	0.30	0.9	0.27	0.27	10.0	100	8.74	2.38	0.001	15	2.03	1.25	0.003	3.81	0.81	629.86	629.76
B6	B5	99	B6	0.26	0.9	0.23	0.50	10.81	100	8.54	4.34	0.001	18	2.46	0.50	0.003	6.26	0.67	629.72	629.57
B5	B4	104	B5	0.26	0.9	0.23	0.74	11.48	100	8.38	6.23	0.003	18	3.53	0.50	0.003	6.21	0.49	629.48	629.16
B4	B3	99	B4	0.15	0.9	0.13	1.30	11.97	100	8.26	10.79	0.003	21	4.71	0.50	0.003	9.45	0.35	629.00	628.63
B3	B2	86	B3	0.14	0.9	0.13	1.42	12.32	100	8.17	11.72	0.002	24	4.08	0.50	0.003	13.47	0.35	628.50	628.34
B2	B1	82	B2	0.12	0.9	0.11	1.53	12.67	100	8.09	12.47	0.003	24	4.54	0.50	0.003	13.53	0.30	628.18	627.98
B1	JUNC	108	B1	0.13	0.9	0.12	1.65	12.97	100	8.02	13.31	0.0015	27	3.75	0.50	0.003	18.26	0.48	627.86	627.74
BLDG #2	YDI #3	100		0.22	0.9	0.20	0.20	10.0	100	8.74	1.74	0.005	10	3.20	1.25	0.005	1.68	0.52	631.49	630.94
BLDG #1	YDI #3	157		0.26	0.9	0.23	0.23	10.0	100	8.74	2.06	0.003	12	2.83	1.25	0.003	2.18	0.93	631.33	630.94
YDI #3	B4	86					0.43	10.93	100	8.51	3.71	0.021	15	3.82	0.50	0.025	11.01	0.37	630.78	629.16
A4	A3	86	A4	0.73	0.9	0.66	0.66	10.0	100	8.74	5.79	0.003	18	3.28	1.25	0.003	6.26	0.44	629.52	629.30
A3	A2	206	A3	0.29	0.9	0.26	0.92	10.44	100	8.63	7.99	0.003	21	3.32	0.50	0.003	9.42	1.03	629.21	628.77
A2	A1	131	A2	0.33	0.9	0.30	1.22	11.47	100	8.38	10.26	0.003	21	4.27	0.50	0.003	9.37	0.51	628.63	628.16
A1	JUNC	42	A1	0.21	0.9	0.19	1.40	11.98	100	8.26	11.68	0.004	21	5.24	0.50	0.003	9.55	0.13	627.95	627.74
JUNC	OUT	47.40					3.05	13.45	100	7.90	24.29	0.020	30	5.94	0.50	0.029	69.98	0.11	627.18	626.63

INLET CAPACITY CALCULATIONS

$Q=4.82Ay^{1/2}$ WHERE: Q=DISCHARGE IN cfs
A=AREA OF ORIFICE IN s.f.
y=HEAD ON GRATE IN ft.

INLET	Q (25 YR) cfs	y ft.	REQUIRED GRATE OPEN AREA (A) s.f.	GRATE INLET MODEL NO. (NEENAH FOUNDRY)	GRATE DIMENSIONS	PROVIDED GRATE OPEN AREA (A) s.f.	Q (25 YR) CAPACITY cfs
A1	1.39	0.5	0.41	R-4370-3	15-INCH DIA.	0.4	1.36
A2	2.18	0.5	0.64	R-4370-4	15-INCH DIA.	0.6	2.05
A3	1.92	0.5	0.56	R-4370-4	15-INCH DIA.	0.6	2.05
A4	4.83	0.5	1.42	R-4370-9	22-INCH DIA.	1.3	4.43
B1	0.86	0.5	0.25	R-4370-2	9.5-INCH DIA.	0.2	0.68
B2	0.79	0.5	0.23	R-4370-2	9.5-INCH DIA.	0.2	0.68
B3	1.19	0.5	0.35	R-4370-3	15-INCH DIA.	0.4	1.36
B4	1.19	0.5	0.35	R-4370-3	15-INCH DIA.	0.4	1.36
B5	1.72	0.5	0.50	R-4370-4	15-INCH DIA.	0.6	2.05
B6	1.72	0.5	0.50	R-4370-3	15-INCH DIA.	0.4	1.36
B7	1.98	0.5	0.58	R-4370-4	15-INCH DIA.	0.6	2.05
SUM =	19.77						19.43

RECORD DRAWING
THIS DRAWING REFLECTS FIELD REVISIONS AS PROVIDED BY THE CONTRACTOR

JAY E. MARSH 70773 REGISTERED PROFESSIONAL ENGINEER

NO.	BY	DATE	REVISION
1	EAE	10/11/02	RECORD DRAWING

BENCHMARK:
TOWN OF ADDISON, TEXAS, BENCHMARK NO. 3
60D NAIL IN POWER POLE AT SOUTHEAST CORNER OF JULIAN ST. AND BROADWAY ST.
ELEV. 632.50'

PATE ENGINEERS
8150 BROOKRIVER DRIVE
SUITE S-700
DALLAS, TEXAS, 75247
TEL (214) 357-2981
FAX (214) 357-2985
JOB NO. 083100900

DRAINAGE AREA MAP, CALCULATIONS & PROFILES

SPRINGHILL SUITES

TOWN OF ADDISON, TEXAS

DRAWN	DESIGN	DATE	NOTES	SCALE	FILE	NUMBER
JPS	JEM	05/03/01	AS	AS NOTED	MARADDA1	C4

X:\projects\083100900\MARADDA1.dwg, 10/15/02 08:10:32 AM, EastE