

DRAINAGE AREA TABLE - EXISTING CONDITIONS							
DRAINAGE AREA	AREA (acres)	C	CA	Tc (min)	i 100 (in/hr)	Q 100 (cfs)	COMMENTS
A	0.13	0.90	0.12	10	8.74	1.0	Offsite - exist. pavement
B	0.06	0.30	0.02	15	7.56	0.1	Onsite - turf
C	0.19	0.30	0.06	15	7.56	0.4	Onsite - turf
D(u)	0.06	0.30	0.02	15	7.56	0.1	Onsite - turf
D(l)	0.08	0.90	0.07	10	8.74	0.6	Offsite - exist. pavement
E	0.46	0.30	0.14	15	7.56	1.0	Onsite - turf
F	0.46	0.30	0.14	15	7.56	1.0	Onsite - turf
G	0.10	0.90	0.09	10	8.74	0.8	Offsite - exist. pavement
H	0.45	0.90	0.41	10	8.74	3.5	Offsite - exist. pavement & turf
I	1.55	0.30	0.47	15	7.56	3.5	Onsite - turf
J	0.15	0.30	0.05	15	7.56	0.3	Onsite - turf
K	0.38	0.90	0.34	10	8.74	3.0	Onsite - exist. pavement
L	0.57	0.90	0.51	10	8.74	4.5	Offsite - exist. pavement
M	0.55	0.90	0.50	10	8.74	4.3	Offsite - exist. pavement
N	0.12	0.90	0.11	10	8.74	0.9	Offsite - exist. pavement
O	0.23	0.90	0.21	10	8.74	1.8	Offsite - improved
P1	0.08	0.90	0.07	10	8.74	0.6	Offsite - exist. pavement & turf
P2(l)	0.18	0.90	0.16	10	8.74	1.4	Onsite - exist. pavement
P2(u)	0.06	0.30	0.02	15	7.56	0.1	Onsite - turf
Q	0.70	0.90	0.63	10	8.74	5.5	Offsite - exist. pavement
TOTAL	6.56					34.9	

DRAINAGE AREA TABLE - DEVELOPED CONDITIONS							
DRAINAGE AREA	AREA (acres)	C	CA	Tc (min)	i 100 (in/hr)	Q 100 (cfs)	COMMENTS
A	0.13	0.90	0.12	10	8.74	1.0	Offsite - improved to Street
B	0.06	0.90	0.05	10	8.74	0.5	Onsite - improved to street
C	0.19	0.90	0.17	10	8.74	1.5	Onsite - turf to street
D	0.14	0.90	0.13	10	8.74	1.1	Offsite - to Street
E	0.46	0.90	0.41	10	8.74	3.6	Roof Drg. - surface flow to detention
F	0.46	0.90	0.41	10	8.74	3.6	Roof Drg. - pipe to detention
G	0.10	0.90	0.09	10	8.74	0.8	Offsite - improved
H	0.45	0.90	0.41	10	8.74	3.5	Offsite - taxiway access
I	1.55	0.90	1.40	10	8.74	12.2	Onsite - ramp area
J	0.15	0.90	0.14	10	8.74	1.2	Roof Drg. - pipe to detention
K	0.38	0.90	0.34	10	8.74	3.0	Onsite - existing pavement
L	0.57	0.90	0.51	10	8.74	4.5	Offsite - improved
M	0.55	0.90	0.50	10	8.74	4.3	Offsite - improved
N	0.12	0.90	0.11	10	8.74	0.9	Offsite - improved
O	0.23	0.90	0.21	10	8.74	1.8	Offsite - improved
P	0.32	0.90	0.29	10	8.74	2.5	Onsite - part improved
Q	0.70	0.90	0.63	10	8.74	5.5	Offsite - improved
TOTAL	6.56					51.6	

DETENTION CALCULATIONS - MILLION AIR, PHASE 2							
AREA	ACRES	C	Tc	I	CA	Q	NOTES
B	0.06	0.3	15	7.56	0.02	0.1	
C	0.19	0.3	15	7.56	0.06	0.4	
Du	0.06	0.3	15	7.56	0.02	0.1	
E	0.46	0.3	15	7.56	0.14	1.0	
F	0.46	0.3	15	7.56	0.14	1.0	
I	1.55	0.3	15	7.56	0.47	3.5	
J	0.15	0.3	15	7.56	0.05	0.3	
Qu	0.02	0.3	15	7.56	0.01	0.0	
P2u	0.06	0.3	15	7.56	0.02	0.1	
TOTAL	3.01				6.8		PRESENT CONDITIONS
TOTAL							28.0 FUTURE CONDITIONS
TOTAL							3.1 TOTAL UNDETAINED
TOTAL							4.3 TOTAL PASS THROUGH
TOTAL							8.1 ALLOWABLE DISCHARGE

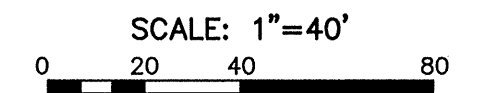
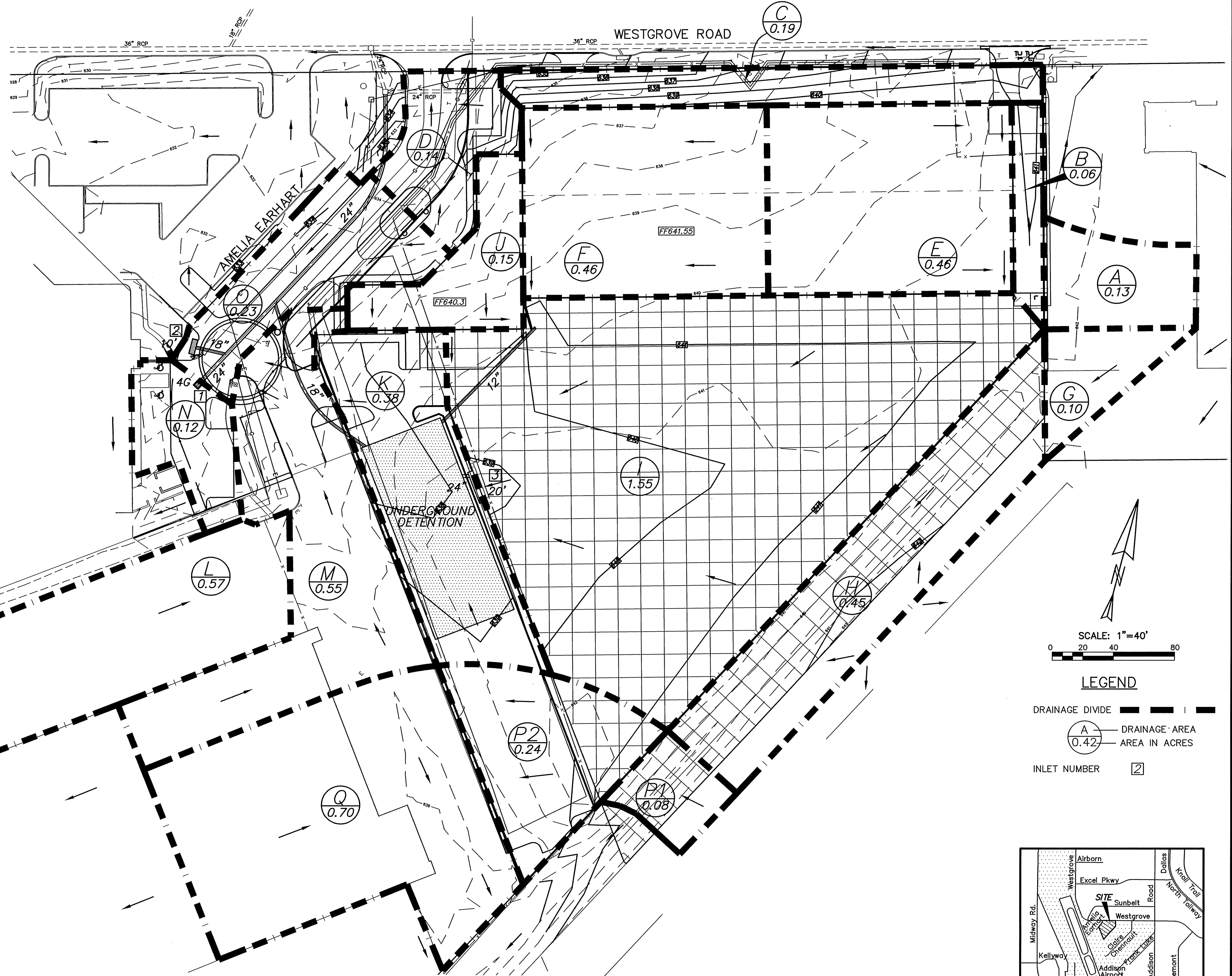
DETENTION VOLUME CALCULATIONS					
TIME (MIN)	TENSITY (IN/HR)	CA	INFLOW	OUTFLOW	STORAGE
10	8.74	2.85	14981	4851	10110
20	7	2.85	23965	7277	16688
30	5.79	2.85	29529	9702	19826
40	5.02	2.85	34373	12126	22245
50	4.4	2.85	37690	14553	23106
60	3.91	2.85	40159	16979	23180
70	3.62	2.85	43377	19405	23972
80	3.35	2.85	45876	21830	24046
90	3.1	2.85	47759	24256	23504
100	2.9	2.85	49842	26681	22961
110	2.7	2.85	50840	29107	21734
120	2.5	2.85	51354	31532	19822

OUTLET ORIFICE CALCULATION		
Q	Q=AC(2gh) <sup>1/2</sup>	
	8.1 Allowable Pond Discharge	
A (ft <sup>2</sup> )	1.15	
C	0.6	
g	32.2	
h	2.15 (NOTE)	
Pipe Rad. (ft)	0.60	
Pipe Dia. (in)	14.5	

NOTE: 635.80 (WS in detention)-633.65 (HG in pipe)

INLET DESIGN CALCULATIONS												
INLET NO.	DESIGN STORM FREQ (yr)	AREA RUNOFF				CARRY OVER		SELECTED INLET				REMARKS
		TIME OF CONCEN (min)	INTENSITY (in/hr)	RUNOFF (in/hr)	AREA (acres)	UPSTREAM	TOTAL	LENGTH (ft)	TYPE	CARRY OVER DOWNSTREAM		
1	100	10	8.74	0.90	1.85	14.6	0.0	14.6	30	-	4 GRATE	4.3
2	100	10	8.74	0.90	0.00	0.0	4.3	4.3	SAG	10'	CURB	0.0
3	100	10	8.74	0.90	2.57	20.2	0.0	20.2	SAG	20'	CURB	0.0

STORM SEWER CALCULATIONS																										
RUNOFF COLLECTION POINT	DISTANCE BETWEEN POINTS (FT)	DRAINAGE AREA NO.	DRG. AREA AC.	RUNOFF COEFF. "C"	CA	TIME UPSTREAM MIN.	DESIGN FREQ. YEARS	INTENSITY IN/HR	INCR. STORM WATER RUNOFF CFS	TOTAL STORM WATER RUNOFF CFS	SLOPE OF HYDRAULIC GRADIENT "S"	SELECT PIPE SIZE IN	VELOCITY BETWEEN POINTS FPS	HGL IN	HEAD LOSS CALCULATIONS					DESIGN INVERT ELEV.	REMARKS					
FROM STA.	TO STA.								"Q"	"Q"				U/S Elev.	D/S Elev.	V1 (ft/sec)	V2 (ft/sec)	V1 <sup>2</sup> /2G	V2 <sup>2</sup> /2G	Kj	KjV1 <sup>2</sup> /2G	Hj	HGL IN	OUT		
2+32.93	2+09.66	23.2	SEE INLET DESIGN CALCULATIONS - FROM INLET 1	3.17	0.90	2.85	100	8.74	10.3	10.3	0.0021	24"	3.3	633.15	633.10	N/A	3.3	0.00	0.17	1.25	0.00	0.21	633.36	630.30	630.05	
2+09.66	1+63.15	46.5	SEE INLET DESIGN CALCULATIONS - FROM INLET 2						4.3	14.6	0.0042	24"	4.6	632.90	632.70	3.3	4.6	0.17	0.33	0.75	0.13	0.20	633.10	629.96	629.71	
1+63.15	0+00	163.0	ALLOWED RELEASE FROM DETENTION						8.1	22.7	0.0101	24"	7.2	632.15	630.50	4.6	7.2	0.33	0.80	0.75	0.25	0.56	632.70	628.50	628.30	CONNECT TO EXIST INLET
LINE B - DETENTION RELEASE	1+15.8	0+00	E,F,G,H,I,J	3.17	0.90	2.85	100	8.74	24.9	8.1*	0.0060	18"	4.6	633.32	632.63	N/A	4.6	0.00	0.33	0.75	0.00	0.33	633.65	629.96	629.71	END AT DETENTION
LINE C - ROOF DRAINS	0+84.13	0+75.91	F	0.46	0.90	0.41	100	8.74	3.6	3.6	0.0102	12"	4.6	637.59	637.50	N/A	6.1	0.00	0.58	0.75	0.00	0.58	638.17	635.18	635.05	PARTIAL FLOW
	0+75.91	0+00	I	0.15	0.90	0.14	100	8.74	1.2	4.8	0.0181	12"	6.1	637.17	635.80	4.6	6.1	0.33	0.58	0.75	0.25	0.33	637.50	632.00	631.37	BEGIN AT DETENTION
LAT A-1		20.4	SEE INLET DESIGN CALCULATIONS - FROM INLET 2						4.3	4.3	0.0017	18"	2.4	632.93	632.90	4.60	2.4	0.33	0.09	1.25	0.41	0.11	633.05	630.30	630.05	



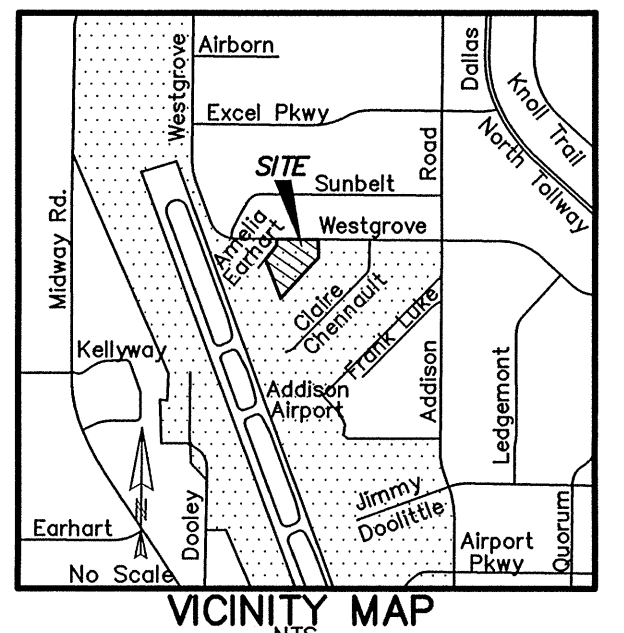
**LEGEND**

— — — — — DRAINAGE DIVIDE

(A) DRAINAGE AREA

(0.42) AREA IN ACRES

☐ INLET NUMBER



RECORD DRAWING

DATE: *October 26, 2012*

Based on information furnished from the Contractor and to the best of the design engineer's knowledge, the constructed work is substantially in accordance with this plan.

PREPARED BY

**KADLECK & ASSOCIATES**

ENGINEERING PLANNING SURVEYING

2000 N. CENTRAL EXPY. SUITE 113

(972) 881-0771 PLANO, TX 75074

TX Reg. No. F-6460 TBPLS Reg. No. 100555-00

NOTE: EXISTING FEATURES AND TOPOGRAPHIC INFORMATION SHOWN WAS FURNISHED BY OWNER FROM SURVEY PREPARED BY: BRAD SPARR

DATED: \_\_\_\_\_

SEE SHEETS 13 & 14 FOR DETAILS AND NOTES			
<b>DRAINAGE AREA MAP</b>			
<b>MILLION AIR - PHASE TWO</b>			
<b>LEASE PARCEL No. 70-WESTGROVE RD.</b>			
<b>ADDISON MUNICIPAL AIRPORT</b>			
<b>TOWN OF ADDISON, TEXAS</b>			
DESIGN	DRAWN	DATE	SCALE
K&A	K&A	SEPT.2010	1"=40'
			PROJECT No. 10544