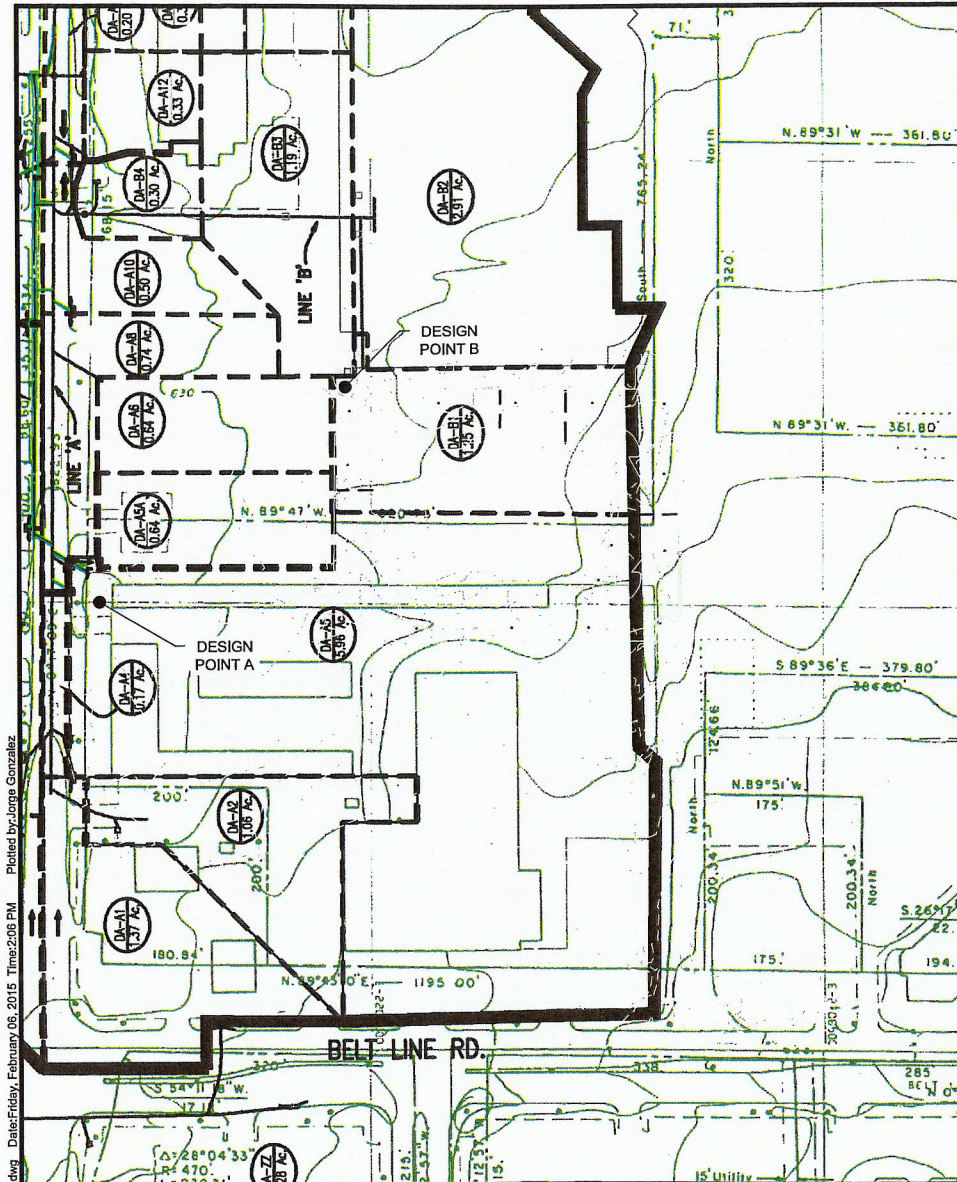
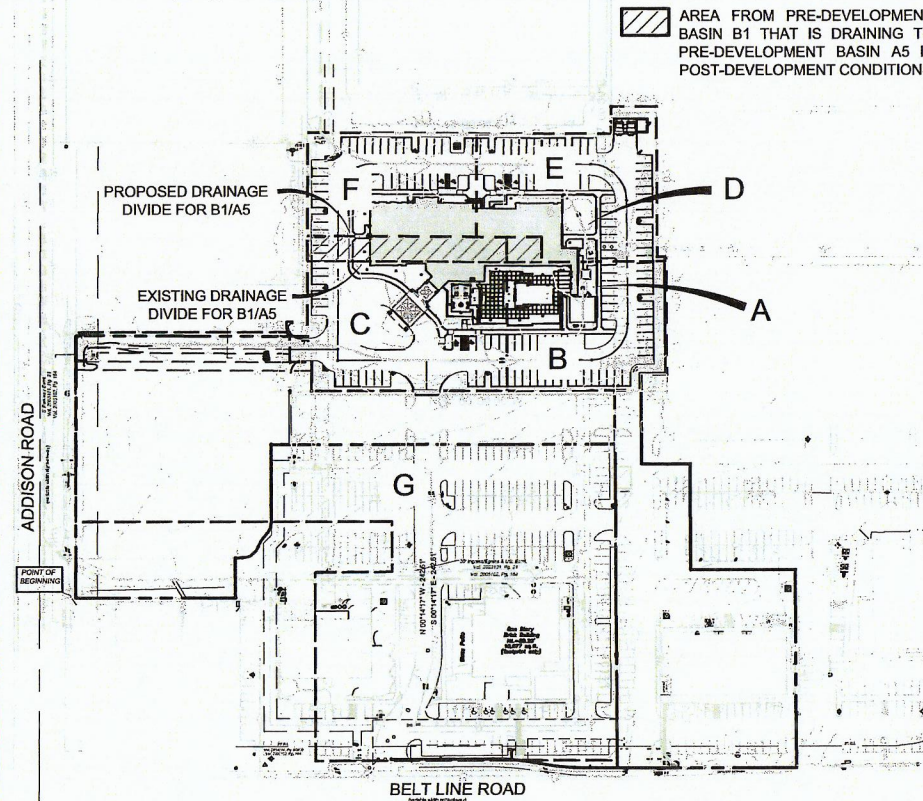


All responsibility for the adequacy of these plans remains with the Engineer who prepared them. In approving these plans, the Town of Addison makes no representation of adequacy of the work of the Design Engineer.



PRE-DEVELOPMENT & OFF-SITE DRAINAGE EXHIBIT



POST DEVELOPMENT & DRAINAGE EXHIBIT

DRAINAGE DESIGN SUMMARY

IN ORDER TO DETERMINE THE DRAINAGE CHARACTERISTICS OF THE PRE-DEVELOPMENT CONDITIONS FOR THIS SITE, PIBURN & CARSON REVIEWED EXISTING TOWN OF ADDISON DRAINAGE STUDIES AND REQUIREMENTS. THE SUBJECT PROJECT IS PART OF THE DRAINAGE BASIN STUDY FOR THE ADDISON ROAD PAVING PROJECT, DEVELOPED BY BIRKHOFF, HENDRICKS & CARTER, LLP, DATED 5/4/2010, LYING IN BASIN DA-B1, AND A PORTION OF DA-A5 OF THAT STUDY.

BASED ON MEETINGS WITH TOWN OF ADDISON STAFF FOR THE EARLIER PARKING LOT PROJECT, FOR THIS DEVELOPMENT SITE, APPROVED IN NOVEMBER 2013, IT WAS ESTABLISHED TO USE THE DRAINAGE AREA MAP FROM THE ADDISON ROAD STUDY, AND THAT DATA FOR DRAINAGE RUNOFF CALCULATIONS, AS THE BASIS FOR EXISTING CONDITIONS. THE EXISTING DRAINAGE SYSTEMS TO WHICH THIS SITE ULTIMATELY DRAIN WERE DESIGNED FOR FULLY DEVELOPED SITE CONDITIONS. THE PRIOR DRAINAGE STUDY UTILIZED AN I100 OF 8.74 AND A RUNOFF COEFFICIENT OF 0.90, WHICH IS WHERE THESE VALUES ORIGINATED.

THE PROJECT SITE LIES IN TWO DRAINAGE BASINS, DA-B1 AND A PORTION OF DA-A5. PLEASE REFER TO THE ADJACENT MAPS FOR SCHEMATIC OF THE DRAINAGE DIVIDES IN PRE- AND POST-DEVELOPMENT. IN THE POST DEVELOPMENT MAP, THE PRE-EXISTING DRAINAGE DIVIDE BETWEEN DA-A5 AND DA-B1 IS LABELLED; THE CROSS-HATCHED AREA SHOWN NO LONGER DRAINS TO DA-B1, BUT INSTEAD DRAINS TO DA-A5.

AT DESIGN POINT A, THERE IS AN EXISTING 16' CURB INLET. THIS RECEIVES 11.51 CFS FLOW FROM THE PROPOSED DEVELOPMENT, 40.05 CFS FROM OFF-SITE AREA G AND 5.03 CFS FROM OFF-SITE DA-A5A, TOTALING 56.58 CFS. THE DESIGN CAPACITY OF THIS RECEIVING SYSTEM IS 58.68 CFS.

AT DESIGN POINT B, THE EXISTING RECEIVING INLET HAS A CAPACITY OF 9.83 CFS. THE PROPOSED SYSTEM RELEASES 9.26 CFS, WHICH IS LESS THAN THE ALLOWABLE CAPACITY OF THE EXISTING INLET.

DRAINAGE AREA CALCULATIONS - PRE-DEVELOPMENT

DA NO.	AREA acre	RUNOFF COEFF.	Tc min.	I100 in/hr	Q100 cfs	REMARKS
EXISTING CONDITIONS						
A	0.06	0.90*	10	8.74*	0.47	SHEET FLOW TO S.W. PORTION OF PROPERTY
B	0.60	0.90*	10	8.74*	4.72	SHEET FLOW TO S.W. PORTION OF PROPERTY
C	0.97	0.90*	10	8.74*	7.63	SHEET FLOW TO S.W. PORTION OF PROPERTY
D	0.07	0.90*	10	8.74*	0.55	SHEET FLOW TO N.W. PORTION OF PROPERTY
E	0.64	0.90*	10	8.74*	5.03	SHEET FLOW TO N.W. PORTION OF PROPERTY
F	0.55	0.90*	10	8.74*	4.33	SHEET FLOW TO N.W. PORTION OF PROPERTY
G	4.80	0.90*	10	8.74*	37.76	(OFF-SITE) SHEET FLOW TO EXISTING 16' CURB INLET

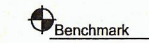
DRAINAGE AREA CALCULATIONS - POST-DEVELOPMENT

DA NO.	AREA acre	RUNOFF COEFF.	Tc min.	I100 in/hr	Q100 cfs	REMARKS
PROPOSED CONDITIONS						
A	0.06	0.90	10	9.27	0.50	DRAINS TO PROPOSED AREA DRAINS 1 & 2
B	0.60	0.90	10	9.27	5.01	DRAINS TO PROPOSED 4'x4' GRATE INLET 3
C	0.97	0.90	10	9.27	8.09	DRAINS TO PROPOSED COMBINATION THREE GRATE INLET 4
D	0.07	0.90	10	9.27	0.58	DRAINS TO PROPOSED AREA DRAINS 6 & 7
E	0.64	0.90	10	9.27	5.34	DRAINS TO PROPOSED 4'x4' GRATE INLET 8
F	0.55	0.90	10	9.27	4.59	DRAINS TO PROPOSED 10' CURB INLET 9
G	4.80	0.90	10	9.27	40.05	(OFF-SITE) AREA DRAINS TO PROPOSED WYE INLET 5

* RUNOFF COEFFICIENT (0.9) AND I100 (8.74 IN/HR) HAVE BEEN ACCOUNTED FOR AS PER PLANS OF ADDISON ROAD IMPROVEMENTS, TOWN OF ADDISON

HYDRAULIC COMPUTATIONS FOR STORM DRAINS																						
RUNOFF COLLECTION POINT (Inlet or Manhole)		Distance between Collection Points (feet)	INCREMENTAL DRAINAGE AREA				Accumulated "CA"	Time at Upstream Station (minutes)	Intensity "i" (in/hr)	Storm Water Runoff "Q" (cfs)	Slope of Hydraulic Gradient "Sf" (ft/ft)	Number of Boxes or Pipes	Width of Box (ft) or Pipe Diameter (inches)	Height of Box (ft)	Velocity in Sewer between Collection Points "V" (f.p.s.)	Velocity Head at Upstream Station (feet)	Flow Time in Sewer (minutes)	Time at Downstream Station (minutes)	Hydraulic Grade Line Elevation Downstream (elev)	Hydraulic Grade Line Elevation Upstream (elev)	Remarks	
UPSTREAM STATION	DOWNSTREAM STATION		Area No.	Drainage Area "A" (acres)	Runoff Coeff. "C"	Incremental "CA"																
PROPOSED STORM LINE A																						
6+56.10	4+93.58	162.52	A	0.06	0.90	0.054	0.054	10.00	9.27	0.50	0.0002	1	12		0.64	0.00	4.25	14.25				
4+93.58	2+59.06	234.52	B	0.60	0.90	0.540	0.594	14.25	8.15	4.84	0.0021	1	18		2.74	0.11	1.43	15.68				
2+59.06	0+00.00	259.06	C	0.97	0.90	0.873	1.467	15.68	7.84	11.51	0.0026	1	24		3.66	0.16	1.18	16.85	628.71			
			TOTAL	1.63						11.51												
																	40.05	Q released from Proposed Development				
																	5.03	Q from off-site Area G				
																	56.58	Total Q collected at the Existing 16' Curb Inlet and released into the Existing 33" RCP (Lateral "A-5") is less than the design capacity (58.68 cfs)				
																	58.68	Capacity of the Existing 33" RCP (Lateral "A-5")*				
PROPOSED STORM LINE B																						
3+93.92	2+64.10	129.82	D	0.07	0.90	0.063	0.063	10.00	9.27	0.58	0.0003	1	12		0.74	0	2.91	12.91	630.62		Partial Flow Begins at STA. 2+98.08	
2+64.10	0+24.72	239.38	E	0.64	0.90	0.576	0.639	12.91	8.47	5.41	0.0027	1	18		3.06	0.14	1.30	14.21	629.84	630.48		
0+24.72	0+00.00	24.72	F	0.55	0.90	0.495	1.134	14.21	8.16	9.26	0.0017	1	24		2.95	0	0.14	14.35	629.80	629.84		
			TOTAL	1.26						9.26												
																	9.83	Q from Pre-Development Area DA-B1**				

* SEE SHEETS 9 AND 14 FOR PROPOSED AND EXISTING PROFILES.
** SEE SHEET 8 FOR OFF-SITE DRAINAGE CALCULATIONS.



Town of Addison Control Point No. COA-5. 190 feet south from the intersection of Edwin Lewis Dr & Quorum Drive. Then 2 feet from the west edge of sidewalk, 50.5 feet from the west side of median in Quorum Dr & 76 feet from fire hydrant. NAVD 88 Elevation = 630.10'

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DRAINAGE AREA CALCULATIONS
HOME 2 SUITES by HILTON
SITE DEVELOPMENT
PUBLIC WORKS DEPARTMENT
TOWN OF ADDISON, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
RC	JRG	2/6/15	1"=20'	PC	-	-

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF PRICING AND INTERIM REVIEW UNDER THE AUTHORITY OF RICHARD CARSON, JR. P.E. NO. 40854 ON 2/6/15.

File name: \\HPD-HTGL\AF\Shared\Drawings\001\3110164-Home 2 Suites Addison\Design\Drawings\13164-C-DAM01.dwg Date: Friday, February 06, 2015 Time: 2:08 PM Plotted by: Jorge Gonzalez