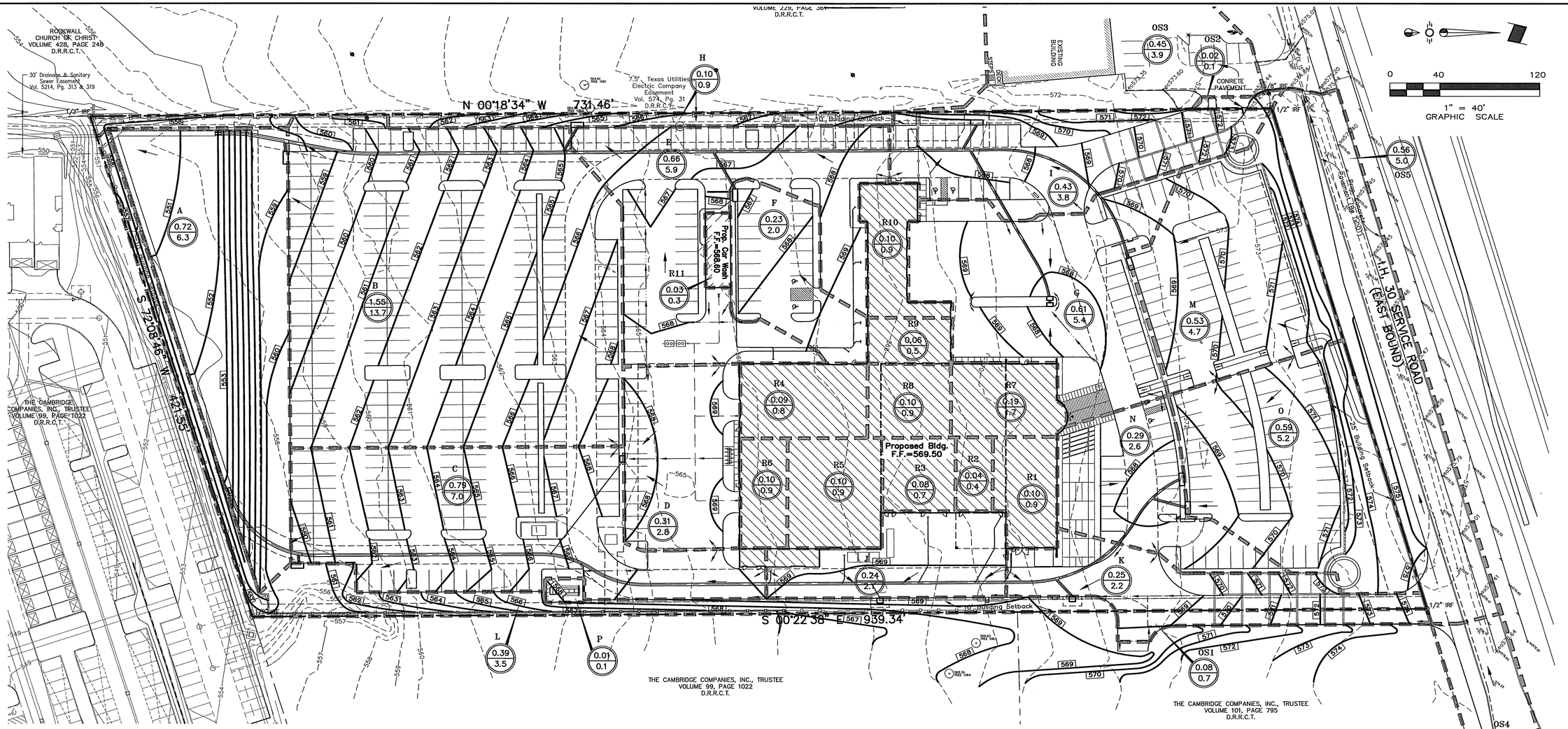

DRAINAGE SUMMARY

Drainage Area	Area (ac.)	C	t_c (min)	I_{100} (in/hr)	Q_{100} (cfs)	Remarks
A	0.72	0.90	10	9.80	6.3	To Detention Basin
B	1.55	0.90	10	9.80	13.7	To Prop. 10' Curb Inlet
C	0.80	0.90	10	9.80	7.1	To Prop. 10' Curb Inlet
D	0.31	0.90	10	9.80	2.8	To Prop. 5' Curb Inlet
E	0.66	0.90	10	9.80	5.9	To Prop. 10' Curb Inlet
F	0.23	0.90	10	9.80	2.0	To Prop. 10' Curb Inlet
G	0.61	0.90	10	9.80	5.4	To Two 5' Curb Inlets
H	0.10	0.90	10	9.80	0.9	Offsite
I	0.43	0.90	10	9.80	3.8	To Prop. 10' Curb Inlet
J	0.23	0.90	10	9.80	2.0	To Prop. 5' Curb Inlet
K	0.25	0.90	10	9.80	2.2	To Prop. 5' Curb Inlet
L	0.39	0.90	10	9.80	3.5	Offsite
M	0.53	0.90	10	9.80	4.7	To Prop 10' Curb Inlet
N	0.29	0.90	10	9.80	2.6	To Prop 10' Curb Inlet
O	0.59	0.90	10	9.80	5.2	To Prop 10' Curb Inlet
P	0.01	0.90	10	9.80	0.1	To Prop. Trench Drain
R1	0.10	0.90	10	9.80	0.9	To Roof Drain
R2	0.04	0.90	10	9.80	0.4	To Roof Drain
R3	0.08	0.90	10	9.80	0.7	To Roof Drain
R4	0.09	0.90	10	9.80	0.8	To Roof Drain
R5	0.10	0.90	10	9.80	0.9	To Roof Drain
R6	0.10	0.90	10	9.80	0.9	To Roof Drain
R7	0.19	0.90	10	9.80	1.7	To Roof Drain
R8	0.10	0.90	10	9.80	0.9	To Roof Drain
R9	0.06	0.90	10	9.80	0.5	To Roof Drain
R10	0.10	0.90	10	9.80	0.9	To Roof Drain
R11	0.03	0.90	10	9.80	0.3	To Roof Drain
OS1	0.08	0.90	10	9.80	0.7	To Prop 5' Curb Inlet
OS2	0.02	0.90	10	9.80	0.1	To Prop. 10' Curb Inlet
OS3	0.45	0.90	10	9.80	3.9	To Prop. 10' Curb Inlet
OS4	0.18	0.90	10	9.80	1.6	TxDOT ROW
OS5	0.56	0.90	10	9.80	5.0	TxDOT ROW

DETENTION CALCULATIONS (100-Yr)

Total Site Area = 8.69 Acres

Total Area to Detention Pond = 8.75 Acres (Areas A Thru O Except H&L + R1 Thru R11 + OS1 + OS2 + OS3)

Flow to Detention Pond = 0.90*9.8*8.74 = 77.1 cfs

Pass Thru Flow = 0.90*9.8*0.55 = 4.8 cfs (Areas OS1 + OS2 + OS3)

Total Undetained Area = 0.49 Acre (Areas H + L)

Undetained Flow = 0.90*9.8*0.49 = 4.3 cfs

Total Allowable Discharge From Site = 0.35*8.3*8.69 = 25.2 cfs

Allowable Release Rate From Detention Pond = $(Q_{Site\ (Allow)} - Q_{Undetained}) + Q_{Pass\ Thru\ Flow}$

$Q_{Pond\ (Allow)} = (25.2 - 4.3) + 4.8 = 20.9 + 4.8 = 25.7$

DETENTION VOLUMES

ELEV.	AREA (SQ. FT.)	AVG. AREA (SQ. FT.)	INCR. DEPTH (FT.)	INCR. VOL. (CUB. FT.)	CUM. VOL. (CUB. FT.)	
550	0					
551	3,326	1,663	1.0	1,663	1,663	
552	9,920	6,623	1.0	6,623	8,286	
553	13,006	11,463	1.0	11,463	19,749	
554	14,730	13,868	1.0	13,868	33,617	
555	16,260	15,495	1.0	15,495	49,112	
556	17,795	17,027	1.0	17,027	66,139	← 100-Yr. WSEL = 556.84
557	19,281	18,538	1.0	18,538	84,677	
558	20,739	20,010	1.0	20,010	104,687	

Storm Event	WSEL	Vol. Prov.	$Q_{Pond\ (Allow)}$	$Q_{Pond\ (Actual)}$
100-Yr.	556.84	81,724	25.7	25.8
25-Yr.	555.98	65,786	20.5	20.4
10-Yr.	555.35	54,994	17.9	16.8
5-Yr.	554.71	44,630	15.4	15.7

100 YEAR DETENTION BASIN CALCULATIONS

Runoff Coefficient - C= 0.90
Drainage Area - A= 8.20 acres
Time of Concentration - tc= 10 minutes
Maximum Outflow Rate - Q= 20.9 cfs

DURATION (minutes)	INTENSITY (inches/hr)	DEPTH (inches)	INFLOW VOLUME DISCHARGE Q=CIA	INFLOW VOLUME Cu. Ft.	OUTFLOW DURATION (minutes)	OUTFLOW VOLUME Cu. Ft.	STORAGE VOLUME Cu. Ft.
5	10.08	0.84	74.39	22,317	15	9,405	12,912
10	9.80	1.63	72.32	43,394	20	12,540	30,854
15	9.10	2.28	67.16	60,442	25	15,675	44,767
20	8.30	2.77	61.25	73,505	30	18,810	54,695
30	6.90	3.45	50.92	91,660	40	25,080	66,580
40	5.80	3.87	42.80	102,730	50	31,350	71,380
50	5.00	4.17	36.90	110,700	60	37,620	73,080
60	4.50	4.50	33.21	119,556	70	43,890	75,666
70	4.10	4.78	30.26	127,084	80	50,160	76,924
80	3.90	5.20	28.78	138,154	90	56,430	81,724
90	3.60	5.40	26.57	143,467	100	62,700	80,767
120	2.70	5.40	19.93	143,467	130	81,510	61,957
180	2.00	6.00	14.76	159,408	190	119,130	40,278
360	1.25	7.50	9.23	199,260	370	231,990	(32,730)
Required Storage Volume						81,724 cubic feet 1.88 acre-feet	

LEGEND

Q = C I A
C = 0.90
I_{100} = 9.8 in/hr
tc = 10 minutes

A — Drainage Area Number
X.XX — Acres
X.X — Q_{100} (cfs)

Drainage Divide Line

Direction Of Flow

RECORD DRAWINGS

NOTE:
To the best of our knowledge Spiars Engineering, Inc. hereby by states that this plan is a Record Drawing. The information provided is based on field surveying at the site and information provided by the contractor.

BENCHMARK:
FOUND "X" CUT IN A CONCRETE DRIVE WAY LOCATED SOUTH 07°04'40" WEST, A DISTANCE OF 35.19 FEET FROM THE NORTHEAST CORNER OF CONCRETE DRIVEWAY AND NORTH 04°59'13" EAST, A DISTANCE OF 130.54' FROM THE NORTH CORNER OF AN EXISTING BUILDING LOCATED AT THE SOUTH END OF CONCRETE DRIVEWAY.

BENCHMARK:
TOP OF RIM OF A SANITARY SEWER MANHOLE LOCATED SOUTH 01°25'39" WEST, A DISTANCE OF 1,705.71 FEET FROM THE FROM A FOUND "X" WHICH IS LOCATED IN A CONCRETE DRIVEWAY SOUTH 17°15'49" EAST, A DISTANCE OF 31.19 FEET FROM EDGE OF ASPHALT.

spiars ENGINEERING
765 Custer Road, Suite 100 • Plano, TX 75075 • (972) 422-0077 • TBPE No. F-2121

STATE OF TEXAS — KEVIN S. WEIR — 91219 — LICENSED PROFESSIONAL ENGINEER — 9/9/13

HONDA OF ROCKWALL ADDITION
LOT 1, BLOCK 1
ROCKWALL, TEXAS

DRAINAGE AREA MAP

Revisions	Date
1	
2	
3	
4	
5	
6	
7	
8	
9	
Issue Dates:	

Scale: 1" = 40'
Drawn By: AO
Checked by: KSW

Sheet C 6 of 12

SEI No. 11-112
11-112-DMAP