

OWNER/ DEVELOPER:

THE LOOKOUT DEVELOPMENT GROUP CONTACT: MIKE SIEFERT, P.E. PRESIDENT 1001 CRYSTAL FALLS PARKWAY LEANDER, TEXAS 78641 TEL: (512) 690-4322

SCS METHOD HYDROLOGY

ANALYSIS	DRAINAGE AREA	TIME OF	PEAK DISCHARGE (CFS)										
POINT	(AC)	CONCENTRATION (MIN)	2 YR	5 YR	10 YR	25 YR	50 YR	100 YR					
29	143.56	27.30	338.10	423.70	494.50	595.90	675.80	755.80					
71	146.72	30.54	283.92	404.81	504.13	645.23	756.24	867.55					
94	552.70	50.93	599.69	940.62	1237.39	1669.11	2019.13	2371.93					
96	560.92	51.92	605.35	948.80	1247.42	1681.69	2033.97	2389.47					
109	131.63	31.26	193.05	296.57	387.21	517.37	621.15	725.47					
110	184.22	33.02	262.93	405.43	528.05	702.73	843.30	982.91					
111	202.09	34.58	284.45	439.13	571.63	760.78	912.71	1063.97					
112	212.70	36.33	288.52	448.44	585.03	780.57	937.65	1094.50					
113	235.07	38.85	308.78	475.00	621.09	830.90	999.60	1168.75					

	PT. #		AREA OF ACCUMULATION (Ac.)		С	Тс	15	I10	125	I100	Q5	Q10	Q25	Q100]
	2	13.86 3.78	=A1 =A2	13.86 3.78	0.64 0.64	18.71 18.25	5.04 5.11	5.79 5.87	6.77 6.86	8.34 8.45	44.71 12.36	51.36 14.20	60.05 16.60	73.98 20.44	
	3 4	0 13.41	=A1:A3 =A4	17.64 13.41	0.64 0.64	19.22 22.14	4.97 4.60	5.71 5.28	6.68 6.18	8.22 7.62	56.11 39.48	64.46 45.32	75.41 53.04	92.80 65.40	
	5	13.47 0	=A5 =A4:A6	13.47 26.88	0.64 0.64	23.17 24.86	4.48 4.30	5.14 4.94	6.02 5.79	7.43 7.14	38.62 73.97	44.31 84.98	51.90 99.61	64.05 122.83	ŀ
\bigwedge	7	4.23 0	=A7 =A4:A8	4.23 31.11	0.64 0.64	20.56 26.07	4.79 4.19	5.50 4.81	6.44	7.93	12.97 83.42	14.89 95.77	17.43 112.10	21.47 138.38	ŀ
	9	10.09	=Ä9	10.09	0.64	21.61	4.66	5.35	5.63	6.95 7.72	30.09	34.55	40.42	49.85	\sim
(10 11	4.28 0.00	=A10 =A9:A11	4.28 14.37	0.64 0.64	17.40 21.94	5.24 4.62	6.02 5.31	7.03 6.21	8.66 7.66	14.35 42.49	16.49 48.84	19.26 57.11	23.72 70.45	
>	12 13	3.77 1.30	=A12 =A13	3.77 1.30	0.64 0.64	22.40 18.39	4.57 5.09	5.24 5.84	6.14 6.83	7.57 8.42	11.03 4.23	12.64 4.86	14.81 5.68	18.26 7.01	
>	14 15	11.97 0	=A13:A14 =A9:A15	13.27 31.41	0.64 0.64	23.63 23.94	4.43 4.40	5.09 5.05	5.96 5.91	7.35 7.30	37.62 88.45	43.23 101.52	50.62 118.81	62.42 146.75	
>	16 17	0 4.03	=A4:A16 =A17	62.52 4.03	0.64 0.64	27.61 20.87	4.05 4.75	4.65 5.46	5.45 6.38	6.73 7.87	162.05 12.25	186.06 14.08	218.07 16.46	269.29 20.30	
7	18	1.19	=A18	119	0.64	19.60	4.92	5.65	6.61	8.14	3.75	4.30	5.03	6.20	
	19 20	16.47 0	=Ā19 =A18:A20	16.47 17.66	0.64 0.64	22.26	4.58 4.56	5.26 5.24	6.16 6.13	7.60 7.56	48.28 51.54	55.44 59.22	64.93 69.28	80.11 85.45	
	21 22	1.12 11.09	=A4:A21 =A22	85.33 11.09	0.64 0.63	28.62 20.63	3.96 4.78	4.55 5.49	5.33 6.43	6.59 7.92	216.26 33.40	248.48 38.36	291.08 44.92	359.89 55.33	
	23 24	10.15 6.65	=A22:A23 =A22:A24	21.24 27.89	0.64 0.62	22.10 23.91	4.60 4.40	5.28 5.05	6.19 5.92	7.63 7.30	62.53 76.08	71.77 87.32	84.14 102.37	103.72 126.23	
	25	13.22	=A25	13.22	0.58	20.47	4.80	5.52	6.45	7.95	36.80	42.33	49.46	60.96	
	26 27	49.23 1.08	=A22:A26 =A22:A27	90.34 91.42	0.58 0.58	25.70 26.60	4.22 4.14	4.85 4.75	5.68 5.57	7.01 6.87	221.12 219.52	254.13 251.86	297.62 295.34	367.30 364.27	
*	28 29	2.07 50.07	=A22:A28 =A22:A29	93.49 143.56	0.58 0.59	28.23 31.86	3.99 3.71	4.58 4.26	5.38 5.00	6.64 6.18	216.35 314.24	248.35 360.82	291.73 423.50	360.05 523.45	-
	30 31	1.86 13.17	=A30 =A30:A31	1.86 15.03	0.62 0.62	15.33 21.76	5.59 4.64	6.42 5.33	7.50 6.24	9.23 7.69	6.45 43.24	7.40 49.67	8.65 58.15	10.64 71.66	
	32	1.87 0	=A32 =A30:A33	1.87 16.9	0.62	21.01	4.73 4.64	5.44 5.33	6.36	7.84 7.69	5.48 48.62	6.31 55.85	7.37 65.38	9.09 80.58	
	34	13.28	=A34	13.28	0.64	21.76	4.64	5.33	6.24	7.69	39.44	45.30	53.04	65.36	
	35 36	13.7	=A30:A35 =A36	30.18 13.7	0.64 0.62	24.43 23.43	4.35 4.45	4.99 5.11	5.85 5.99	7.21 7.38	84.02 37.80	96.38 43.40	112.99 50.88	139.26 62.69	
	37 38	10.4 7.09	=A37 =A30:A38	10.4 61.37	0.62 0.62	21.30 25.88	4.70 4.20	5.39 4.83	6.31 5.66	7.78 6.98	30.31 159.81	34.75 183.78	40.69 215.36	50.17 265.58	
	39 40	11.81 16.05	=A39 =A40	11.81 16.05	0.62 0.62	20.53	4.79 4.84	5.51 5.56	6.44 6.50	7.94 8.01	35.07 48.16	40.35 55.33	47.15 64.68	58.14 79.71	
	41	0	=A39:A41	27.86	0.62	22.31	4.58	5.26	6.15	7.59	79.11	90.86	106.23	131.10	
	42	15.57 14.67	=A42 =A43	15.57 14.67	0.62 0.62	25.05 20.30	4.28 4.82	4.92 5.54	5.76 6.48	7.11 7.99	41.32 43.84	47.49 50.39	55.60 58.94	68.64 72.67	
	44 45	0 17.21	=A42:A44 =A45	30.24 17.21	0.62 0.62	26.04 26.19	4.19 4.17	4.81 4.79	5.64 5.62	6.96 6.93	78.56 44.49	90.18 51.11	105.74 59.97	130.49 73.94	
	46 47	2.38 10.47	=A46 =A47	2.38 10.47	0.62 0.62	22.10 23.84	4.60 4.41	5.28 5.06	6.19 5.93	7.63 7.31	6.79 28.63	7.79 32.85	9.13 38.49	11.26 47.45	
	48	2.38	=A48 =A49	2.38	0.62	18.59	5.06	5.81	6.79	8.37 7.94	7.47	8.57	10.02	12.35	
	49 50	10.02	=A50	15.52 10.02	0.62 0.62	20.51 22.34	4.80 4.57	5.51 5.25	6.45 6.15	7.58	46.19 28.39	53.02 32.62	62.06 38.21	76.40 47.09	
	51 52	9.14 4.79	=A51 =A52	9.14 4.79	0.55 0.58	21.64 21.89	4.66 4.63	5.35 5.31	6.26 6.22	7.72 7.67	23.43 12.86	26.89 14.75	31.47 17.28	38.81 21.31	
	53 54	0 1.92	=A51:A53 =A54	13.93 1.92	0.56 0.59	22.12 18.23	4.60 5.11	5.28 5.87	6.18 6.87	7.62 8.46	35.88 5.79	41.19 6.65	48.21 7.78	59.44 9.58	
	55 56	22.09 0	=A55 =A54:A56	22.09 24.01	0.57 0.57	21.37 21.58	4.69 4.66	5.39 5.36	6.30 6.27	7.77 7.73	59.05 63.78	67.87 73.36	79.33 85.81	97.83 105.79	
	57	0	=A51:A57	37.94	0.57	23.56	4.44	5.10	5.97	7.36	96.02	110.29	129.11	159.17	
	58 59	14.4 0	=A58 =A51:A59	14.4 52.34	0.64 0.59	19.96 25.18	4.87 4.27	5.59 4.90	6.54 5.75	8.06 7.09	44.88 131.86	51.52 151.31	60.27 177.56	74.28 218.94	
	60 61	1.69 0	=A60 =A51:A61	1.69 54.03	0.64 0.59	16.75 28.69	5.34 3.96	6.14 4.54	7.17 5.33	8.83 6.58	5.78 126.24	6.64 144.72	7.76 169.91	9.55 209.76	l
	62 63	14.7 12.03	=A62 =A63	14.7 12.03	0.64 0.64	18.66 15.13	5.05 5.63	5.80 6.46	6.78 7.55	8.35 9.28	47.51 43.35	54.57 49.74	63.79 58.13	78.56 71.45	
	64	13.51	=A64 =A65	13.51	0.64	18.86	5.02	5.77	6.74	8.30	43.40 9.59	49.89	58.28	71.77	
	65 66	0	=A64:A66	16.18	0.64 0.64	15.20 19.08	5.61 4.99	6.45 5.73	7.53 6.70	9.26 8.26	51.67	11.02 59.34	12.87 69.38	15.82 85.53	
	67 68	0	=A63:A67 =A62:A68	28.21 42.91	0.64 0.64	19.18 19.50	4.97 4.93	5.71 5.66	6.68 6.62	8.23 8.16	89.73 135.39	103.09 155.44	120.60 181.80	148.59 224.09	
	69 70	0 18.34	=A51:A69 =A70	96.94 18.34	0.61	29.62 19.23	3.88 4.97	4.45 5.71	5.22 6.67	6.45 8.22	229.44 58.34	263.14 67.02	308.68 78.29	381.41 96.48	
*	71 72	0 4.69	=A51:A71 =A72	115.28 4.69	0.62 0.64	3 0.54 18.06	3.81 5.14	4.37 5.90	5.13 6.90	6.34 8.49	272.31 15.43	312.34 17.71	366.66 20.71	453.14 25.48	
	73	11.3	=A73	11.3	0.64	18.63	5.05	5.80	6.79	8.36	36.52	41.95	49.11	60.46	
	74 75	11.64 7.18	=A74 =A75	11.64 7.18	0.64 0.64	16.42 17.11	5.40 5.28	6.20 6.07	7.25 7.09	8.92 8.73	40.23 24.26	46.19 27.89	54.01 32.58	66.45 40.12	1
	76 77	9.08 0	=A76 =A75:A77	9.08 16.26	0.64 0.64	15.51 17.47	5.56 5.23	6.38	7.46 7.02	9.17 8.64	32.31 54.43	37.08 62.54	43.35 73.05	53.29 89.91	
	78 79	19.82 3.21	=A78 =A79	19.82 3.21	0.64	16.35 23.92	5.41 4.40	6.22 5.05	7.26 5.92	8.94 7.30	68.62 8.76	78.90 10.05	92.09 11.78	113.40 14.53	
	80	4.46	=A80	4.46	0.62	22.02	4.61	5.29	6.20	7.64	12.75	14.63	17.14	21.13	
	81 82	11.41	=A81 =A82	11.41 15	0.62	21.86	4.63	5.32	6.22 5.94	7.67 7.33	32.75 41.11	37.63 47.15	44.00 55.24	54.26 68.17	
	83 84	0 18.13	=A81:A83 =A84	26.41 18.13	0.62 0.62	23.79 23.42	4.41 4.45	5.07 5.11	5.94 5.99	7.32 7.39	72.21 50.02	83.02 57.44	97.26 67.33	119.86 83.07	
	85 86	0 13	=A81:A85 =A86	44.54 13	0.62 0.62	24.02 23.23	4.39 4.47	5.04 5.14	5.90 6.02	7.28 7.42	121.23 36.03	139.18 41.43	162.93 48.52	201.04 59.81	
	87 88	6.13 0	=A87 =A86:A88	6.13 19.13	0.62	23.09	4.49 4.46	5.16 5.12	6.04 5.99	7.44 7.39	17.06 52.90	19.61 60.73	22.96 71.04	28.28 87.65	1
	89	15 11.34	=A89 =A90	15	0.62	23.13	4.48	5.15	6.03	7.44	41.66	47.90	56.08	69.19	1
	90 91	8.36	=A91	11.34 8.36	0.57 0.62	23.16 22.64	4.48 4.54	5.15 5.21	6.03 6.10	7.43 7.53	28.96 23.53	33.29 27.00	38.98 31.62	48.03 39.03	
	92 93	19.62 8.16	=A92 =A93	19.62 8.16	0.54 0.58	23.68 24.74	4.43 4.32	5.08 4.96	5.95 5.80	7.34 7.16	46.93 20.45	53.82 23.47	63.04 27.45	77.77 33.89	
*	94 95	525.1 8.23	=A92:A94 =A95	552.88 8.23	0.62 0.62	5 0.93 20.28	2.75 4.83	3.16 5.54	3.72 6.48	4.60 7.99	942.66 24.65	1083.20 28.27	1275.16 33.06	1576.81 40.77	
*	96 97	0 9.15	=A92:A96 =A97	561.11 9.15	0.62	25.01 26.13	4.29	4.92 4.80	5.77 5.62	7.12 6.94	1492.44 23.71	4744 /4	2007.31	2476.96	
	98	11.19	=A98	11.19	0.62	20.51	4.18	5.51	6.45	7.95	33.30	38.23	31.88 44.75	39.37 55.16	
	99 100	11.14 13.17	=A99 =A100	11.14 13.17	0.62 0.62	25.11 24.71	4.28 4.32	4.91 4.96	5.76 5.81	7.10 7.17	29.56 35.27	33.91 40.50	39.78 47.44	49.04 58.55	
	101 102	18.15 0.75	=A101 =A102	18.15 0.75	0.62 0.62	24.71 17.13	4.32 5.28	4.96 6.07	5.81 7.09	7.17 8.73	48.61 2.46	55.81 2.82	65.38 3.30	80.68 4.06	1
	103	17.41	=A102:A103	18.16	0.62	19.37	4.95	5.68	6.65	8.19	55.73	63.95	74.87	92.21	1
	104 105	15.34 8.38	=A104 =A105	15.34 8.38	0.62	21.51	4.67	5.37 5.24	6.28	7.74	44.42 23.74	51.07 27.22	59.73 31.90	73.61	
	106 107	0 5.37	=A104:A106 =A107	23.72 5.37	0.62 0.62	22.41 24.64	4.57 4.33	5.24 4.97	6.14 5.82	7.57 7.18	67.21 14.42	77.06 16.55	90.30 19.38	111.33 23.91	
*	108 109	1.77 131.67	=A108 =A108:A109	1.77 133.44	0.56 0.62	18.84 17.98	5.02 5.15	5.77 5.91	6.75 6.91	8.31 8.51	4.98 426.07	5.72 488.95	6.69 571.68	8.24 704.06	<u> </u>
* *	110 111	52.61 17.87	=A108:A110 =A108:A111	186.05 203.92	0.59	2 4.56 23.25	4.33 4.47	4.98 5.13	5.83 6.01	7.19 7.42	475.30	546.65	639.96	789.24 892.72	<u> </u>
*	112	10.62	=A108:A112	214.54	0.59	23.42	4.45	5.11	5.99	7.39	563.27	646.82	758.21	935.42	Ł
*	113 114	22.38 7.65	=A108:A113 =A114	236.92 7.65	0.58 0.64	2 3.67 16.43	4.43 5.40	5.08 6.20	5.95 7.24	7.34 8.92	608.74 26.44	698.06 30.36	817.61 35.45	1008.62 43.67	
	115 DENOTE	21.56 S DRAINAGE	=A114:A115 E AREA ANALYZED USING THE	29.21	0.64	16.55	5.38	6.18	7.22	8.88 AND	100.58	115.53	134.97	166.01	1

* - DENOTES DRAINAGE AREA ANALYZED USING THE SCS HYDROLOGY METHOD DUE TO DRAINAGE AREA SIZE AND

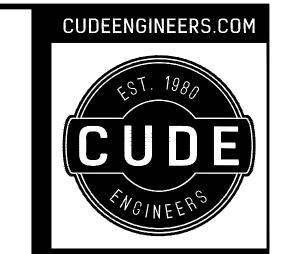
CALCULATIONS FOR DRAINAGE STRUCTURES ASSOCIATED WITH THESE DRAINAGE AREAS SHOULD BE DERIVED FROM

DETENTION CONSIDERATIONS. ALL HYDRAULIC

THE SCS METHOD HYDROLOGY CHART FOUND BELOW.

Calcula	tion Summai	y for Ti	me o	f Concen	trations															
	Sheet Flow Tc Compuations								Shal	low Conc	. Tc Com	ouations			nel Flo		Overall			
Drainage Point	Drainage Area (Ac.)	Length	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	Length	Paved (Y or N)	Upstream Elev.	Downstream Elev	Slope	Time of Concentration	Length	Velocity (fps)	Time of Concentration	Time of Concentration (min)	Lag Time (0.6 x Tc) (min)	Time of Concentration (hrs)	Lag Time (0.6 x Tc) (hrs)
1 2	13.86 3.78 0.00	300.0 300.0	N N	1502.5 1482.8	1484.7 1466.0	5.93% 5.60%	16 16 16	600.0 395.2	N N	1484.7 1466.0	1448.3 1450.0	6.07% 4.05%	2.51	73.02 78.32	6	0.20	18.71	11.23 10.95	0.312	0.18
3 4 5	13.41 13.47	300.0 300.0 300.0	N N N	1502.5 1481.5 1494.3	1484.7 1471.0 1485.6	5.93% 3.50% 2.90%	16 18 18	600.0 408.9 600.0	Z Z Z	1484.7 1471.0 1485.6	1448.3 1447.1 1467.8	5.85% 2.97%	2.51 1.74 3.61	255.62 862.9 562.6	6 6	0.71 2.40 1.56	19.22 22.14 23.17	11.53 13.28 13.90	0.320 0.369 0.386	0.192 0.222 0.232
6 7 8	0.00 4.23 0.00	300.0 300.0 300.0	N N N	1494.3 1450.5 1494.3	1485.6 1442.8 1485.6	2.90% 2.57% 2.90%	18 19 18	600.0 194.4 600.0	Z Z Z	1485.6 1442.8 148 <u>5</u> .6	1467.8 1438.0 14 <u>6</u> 7.8	2.97% 2.47% 2.97%	3.61 1.28 3.61	1169.5 99.5 1605	6 6	3.25 0.28 4.46	24.86 20.56 26.07	14.92 12.33 15.64	0.414 0.343 0.434	0.249 0.200 0.26
9 10	10.09 4.28 0.00	300.0 300.0	N N	1476.0 1471.2	1462.9 1454.6	4.37% 5.53%	18 16	42.8	N	1454.6	1453.1	#DIV/0! 3.50%	0.24	1298.4 418.2	6	3.61 1.16	21.61 17.40	12.96 10.44	0.360 0.290	0.210
11 12 13	3.77 1.30	300.0 300.0 300.0	N N N	1476.0 1454.2 1458.3	1462.9 1446.6 1448.7	4.37% 2.53% 3.20%	18 19 18	510.1	N N	1446.6 1448.7	1433.5 1448.0	#DIV/0! 2.57% 2.30%	3.29	1418.7 41.06 65.5	6 6	3.94 0.11 0.18	21.94 22.40 18.39	13.16 13.44 11.04	0.366 0.373 0.307	0.219 0.224 0.184
14 15 16	0.00 0.00	300.0 300.0 300.0	N N	1462.9 1462.9 1494.3	1453.6 1453.6 1485.6	3.10% 3.10% 2.90%	18 18 18	600.0 600.0	ZZZ	1453.6 1453.6 1485.6	1440.8 1440.8 1467.8	2.13% 2.13% 2.97%	4.25 4.25 3.61	497.6 608.6 2159.2	6 6	1.38 1.69 6.00	23.63 23.94 27.61	14.18 14.36 16.56	0.394 0.399 0.460	0.23 0.23 0.27
17	4.03	300.0 300.0	N N	1444.8 1434.1	1437.0 1425.6	2.60% 2.83%	19	125.0	Z	1437.0 1425.6	1432.9 1418.9	3.28%	0.71	419.1	6	1.16 0.47	20.87	12.52 11.76	0.348 0.327	0.209
19 20 21	16.47 0.00 1.12	300.0 300.0 300.0	N N N	1480.0 1480.0 1494.3	1468.4 1468.4 1485.6	3.87% 3.87% 2.90%	18 18 18	600.0 600.0	N N N	1468.4 1468.4 1485.6	1425.5 1425.5 1467.8	7.15% 7.15% 2.97%	2.31 2.31 3.61	701.3 779.5 2521.9	6 6	1.95 2.17 7.01	22.26 22.48 28.62	13.35 13.49 17.17	0.371 0.375 0.477	0.22
22 23 24	11.09 10.15 6.65	300.0 300.0 300.0	N N N	1540.0 1537.8 1509.1	1526.0 1525.5 1495.8	4.67% 4.10% 4.43%	17 18 18	600.0 600.0 600.0	Z Z Z	1526.0 1525.5 1495.8	1495.8 1495.8 1480.0	5.03% 4.95% 2.63%	2.75 2.77 3.82	316.1 479.9 751	6 6	0.88 1.33 2.09	20.63 22.10 23.91	12.38 13.26 14.34	0.344 0.368 0.398	0.20 0.22 0.23
25 26	13.22 49.23	300.0 300.0	N N	1554.0 1540.0	1532.7 1526.0	7.10% 4.67%	16 17	600.0 600.0	N N	1532.7 1526.0	1488.1 1495.8	7.43% 5.03%	2.28 2.75	788.6 2141.6	6	2.19 5.95	20.47 25.70	12.28 15.42	0.341 0.428	0.20
27 28 29	1.08 2.07 50.07	300.0 300.0 300.0	N N	1540.0 1540.0 1540.0	1526.0 1526.0 1526.0	4.67% 4.67% 4.67%	17 17 17	600.0 600.0	Z Z Z	1526.0 1526.0 1526.0	1495.8 1495.8 1495.8	5.03% 5.03% 5.03%	2.75 2.75 2.75	2465 3053.2 4360.8	6 6	6.85 8.48 12.11	26.60 28.23 31.86	15.96 16.94 19.12	0.443 0.471 0.531	0.260 0.282 0.319
30 31 32	1.86 13.17 1.87	123.6 300.0 300.0	N N	1477.5 1474.9 1448.7	1475.4 1460.9 1441.0	1.70% 4.67% 2.57%	15 17 19	539.1 231.9	N N	1460.9 1441.0	1442.0 1435.0	#DIV/0! 3.51% 2.59%	2.96 1.49	118.7 646.7 186.9	6 6	0.33 1.80 0.52	15.33 21.76 21.01	9.20 13.05 12.61	0.255 0.363 0.350	0.15 0.21 0.21
33 34	0.00 13.28	300.0 300.0	N N	1474.9 1480.2	1460.9 1467.0	4.67% 4.40%	17 18	539.1 600.0	N N	1460.9 1467.0	1442.0 1430.4	3.51% 6.10%	2.96 2.5	646.7 453.1	6	1.80 1.26	21.76 21.76	13.05 13.06	0.363 0.363	0.218
35 36 37	0.00 13.70 10.40	300.0 300.0 300.0	N N N	1474.9 1442.0 1478.4	1460.9 1433.1 1461.9	4.67% 2.97% 5.50%	17 18 17	539.1 600.0 600.0	Z Z Z	1460.9 1433.1 1461.9	1442.0 1417.2 1425.2	3.51% 2.65% 6.12%	2.96 3.81 2.5	1610 584.4 648.66	6 6	1.62 1.80	24.43 23.43 21.30	14.66 14.06 12.78	0.407 0.391 0.355	0.24 0.23 0.21
38 39 40	0.00 11.81 16.05	300.0 300.0 300.0	N N	1474.9 1476.0 1473.9	1460.9 1464.6 1457.0	4.67% 3.80% 5.63%	17 18 16	539.1 470.7 516.2	Z Z Z	1460.9 1464.6 1457.0	1442.0 1440.2 1433.6	3.51% 5.18% 4.53%	2.96 2.13 2.49	2130.3 143.1 610.6	6 6	5.92 0.40 1.70	25.88 20.53 20.19	15.53 12.32 12.11	0.431 0.342 0.336	0.20
41 42	0.00 15.57	300.0 300.0	N N	1476.0 1481.1	1464.6 1473.1	3.80% 2.67%	18 19	470.7 600.0	N N	1464.6 1473.1	1440.2 1444.0	5.18% 4.85%	2.13 2.79	785.6 1173.8	6	2.18 3.26	22.31 25.05	13.39 15.03	0.372 0.418	0.22
43 44 45	0.00 17.21	300.0 300.0 300.0	N N	1450.0 1481.1 1482.0	1430.9 1473.1 1472.8	6.37% 2.67% 3.07%	16 19 18	559.1 600.0 428.3	Z Z Z	1430.9 1473.1 1472.8	1408.0 1444.0 1447.8	4.10% 4.85% 5.84%	2.86 2.79 1.83	519 1530.9 2289.8	6 6	1.44 4.25 6.36	20.30 26.04 26.19	12.18 15.63 15.71	0.338 0.434 0.437	0.203 0.260 0.263
46 47 48	2.38 10.47 2.38	300.0 300.0 300.0	N N	1444.0 1432.9 1425.6	1439.5 1426.7 1410.4	1.50% 2.07% 5.07%	20 20 17	218.7 44.6 344.2	N N N	1439.5 1426.7 1410.4	1436.2 1425.9 1389.1	1.51% 1.79% 6.19%	1.84 0.34 1.42	92.6 1260.4 62.4	6 6	0.26 3.50 0.17	22.10 23.84 18.59	13.26 14.30 11.16	0.368 0.397 0.310	0.22 0.23 0.18
49 50	15.52 10.02	300.0 300.0	N N	1468.4 1421.4	1447.7 1406.3	6.90% 5.03%	16 17	600.0 423.7	N N	1447.7 1406.3	1420.5 1393.2	4.53% 3.09%	2.9 2.49	579.6 1027.4	6	1.61	20.51 22.34	12.31 13.41	0.342 0.372	0.20
51 52 53	9.14 4.79 0.00	300.0 300.0 300.0	N N N	1488.0 1488.0 1488.0	1480.2 1479.8 1479.8	2.60% 2.73% 2.73%	19 19 19	588.0 600.0 600.0	N N N	1480.0 1479.8 1479.8	1449.0 1444.0 1444.0	5.27% 5.97% 5.97%	2.64 2.53 2.53	128.2 210.7	6	0.36 0.59	21.64 21.89 22.12	12.98 13.13 13.27	0.361 0.365 0.369	0.210 0.219 0.22
54 55 56	1.92 22.09 0.00	300.0 300.0 300.0	N N N	1469.8 1508.0 1508.0	1454.2 1498.7 1498.7	5.20% 3.10% 3.10%	17 18 18	225.1 600.0 600.0	N N N	1454.2 1498.7 1498.7	1443.0 1459.9 1459.9	4.98% 6.47% 6.47%	1.04 2.42 2.42	66.6 342.5 417.44	6 6	0.19 0.95 1.16	18.23 21.37 21.58	10.94 12.82 12.95	0.304 0.356 0.360	0.182 0.214 0.216
57 58	0.00 14.40	300.0 300.0	N N	1488.0 1481.2	1479.8 1464.7	2.73% 5.50%	19 17	600.0	N N	1479.8 1464.7	1444.0 1431.8	5.97% 5.48%	2.53 2.64	730.89 173.52	6 9	2.03 0.32	23.56 19.96	14.14 11.98	0.393 0.333	0.23
59 60 61	0.00 1.69 0.00	300.0 242.0 300.0	N N	1488.0 1449.0 1488.0	1479.8 1439.5 1479.8	2.73% 3.93% 2.73%	19 16 19	600.0	N N	1479.8 1479.8	1444.0	5.97% #DIV/0! 5.97%	2.53	1313.6 498.1 2576.9	6 11 6	3.65 0.75 7.16	25.18 16.75 28.69	15.11 10.05 17.21	0.420 0.279 0.478	0.25 0.16 0.28
62 63 64	14.70 12.03 13.51	300.0 300.0 300.0	N N	1522.1 1509.6 1529.8	1501.4 1470.1 1509.1	6.90% 13.17% 6.90%	16 14 16	600.0 265.9 600.0	ZZZ	1501.4 1470.1 1509.1	1454.6 1450.0 1441.1	7.80% 7.56% 11.33%	2.21 1 1.84	348 109.5 920.1	13 14 15	0.45 0.13 1.02	18.66 15.13 18.86	9.08 11.32	0.311 0.252 0.314	0.18 0.15 0.18
65 66	2.67 0.00	300.0 300.0	N N	1509.4 1529.8	1469.7 1509.1	13.23% 6.90%	14 16	307.9 600.0	N N	1469.7 1509.1	1444.3 1441.1	8.25% 11.33%	1.1 1.84	96 1112.7	16 15	0.10 1.24	15.20 19.08	9.12 11.45	0.253 0.318	0.15
67 68 69	0.00 0.00 0.00	300.0 300.0 300.0	N N	1529.8 1529.8 1488.0	1509.1 1509.1 1479.8	6.90% 6.90% 2.73%	16 16 19	600.0 600.0	N N N	1509.1 1509.1 1479.8	1441.1 1441.1 1444.0	11.33% 11.33% 5.97%	1.84 1.84 2.53	1209.1 1495.2 2913.6	15 15 6	1.34 1.66 8.09	19.18 19.50 29.62	11.51 11.70 17.77	0.320 0.325 0.494	0.193 0.193 0.296
70 71 72	18.34 0.00 4.69	300.0 300.0 300.0	N N	1446.9 1488.0 1433.2	1428.3 1479.8 1418.2	6.20% 2.73% 5.00%	16 19 17	600.0 600.0 163.6	Z Z Z	1428.3 1479.8 1418.2	1401.9 1444.0 1409.8	4.40% 5.97% 5.13%	2.94 2.53 0.74	362.3 3244.2 447.5	21 6 23	0.29 9.01 0.32	19.23 30.54 18.06	11.54 18.33 10.84	0.320 0.509 0.301	0.192 0.303 0.183
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75 76 77	7.18 9.08 0.00	300.0 300.0 300.0	N N N	1529.8 1520.9 1529.8	1503.8 1476.8 1503.8	8.67% 14.70% 8.67%	15 13 15	526.3 600.0 526.3	N N N	1503.8 1476.8 1503.8	1443.7 1411.1 1443.7	11.42% 10.95% 11.42%	1.61 1.87 1.61	775.1 1034.9 1336.1	26 27 26	0.50 0.64 0.86	17.11 15.51 17.47	9.31 10.48	0.285 0.258 0.291	0.17 0.15 0.17
78 79 80	19.82 3.21 4.46	300.0 300.0 300.0	N N	1529.8 1380.3 1373.4	1493.8 1376.0 1369.8	12.00% 1.43% 1.20%	14 20 20	600.0 287.9 170.0	Z Z Z	1493.8 1376.0 1369.8	1422.7 1374.2 1368.1	11.85% 0.63% 1.00%	1.8 3.81 1.77	948.3 201.5 467.7	29 30 31	0.55 0.11 0.25	16.35 23.92 22.02	9.81 14.35 13.21	0.272 0.399 0.367	0.163 0.239 0.220
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83 84 85	0.00 18.13 0.00	300.0 300.0 300.0	N N N	1435.3 1431.2 1435.3	1429.0 1425.6 1429.0	2.10% 1.87% 2.10%	20 20 20	528.6 600.0 528.6	N N N	1429.0 1425.6 1429.0	1415.4 1402.6 1415.4	2.57% 3.83% 2.57%	3.41 3.15 3.41	745.7 574.6 1214.9	33 35 33	0.38 0.27 0.61	23.79 23.42 24.02	14.27 14.05 14.41	0.396 0.390 0.400	0.234 0.234
86 87 88	13.00 6.13 0.00	300.0 300.0 300.0	N N	1434.0 1434.0 1434.0	1428.1 1427.7 1428.1	1.97% 2.10% 1.97%	20 20 20	600.0 600.0	Z Z Z	1428.1 1427.7 1428.1	1401.8 1399.8 1401.8	4.38% 4.65% 4.38%	2.95 2.86 2.95	621.8 522.3 958	37 38 37	0.28 0.23 0.43	23.23 23.09 23.38	13.94 13.85 14.03	0.387 0.385 0.390	0.23 0.23 0.23
89 90	15.00 11.34	300.0 300.0	N N	1434.5 1426.0	1429.8 1418.0	1.57% 2.67%	20 19	600.0	N N	1429.8 1418.0	1400.5 1404.0	4.88% 2.33%	2.78 4.05	848.5 271.2	40 41	0.35 0.11	23.13 23.16	13.88 13.90	0.386 0.386	0.23
91 92 93	8.36 19.62 8.16	300.0 300.0 300.0	N N	1403.5 1427.4 1426.0	1400.9 1420.6 1425.2	0.87% 2.27% 0.27%	20 19 20	263.7 600.0 595.9	N N N	1400.9 1420.6 1425.2	1398.0 1408.8 1414.6	1.10% 1.97% 1.78%	2.61 4.45 4.59	84.6 593.1 400.2	42 43 44	0.03 0.23 0.15	22.64 23.68 24.74	13.59 14.21 14.84	0.377 0.395 0.412	0.22 0.23 0.24
94 95 96	525.10 8.23 0.00	300.0 300.0 300.0	N N N	1415.6 1426.0	1408.1 1425.2	0.00% 2.50% 0.27%	20 19 20	181.2 595.9	N N	1408.1 1425.2	1403.2 1414.6	#DIV/0! 2.70% 1.78%	1.14 4.59	392.8 1103	46 44	0.14 0.42	50.93 20.28 25.01	30.56 12.17 15.00	0.849 0.338 0.417	0.509 0.203 0.250
97 98	9.15 11.19	300.0 300.0	N N	1401.0 1420.8	1397.6 1405.9	1.13% 4.97%	20 17	600.0 600.0	N N	1397.6 1405.9	1391.1 1386.9	1.08% 3.17%	5.99 3.47	396.9 103.9	48 49	0.14 0.04	26.13 20.51	15.68 12.30	0.435 0.342	0.26
99 100 101	11.14 13.17 18.15	300.0 300.0 300.0	N N N	1386.0 1386.7 1387.9	1379.3 1379.6 1381.1	2.23% 2.37% 2.27%	20 19 19	600.0 600.0	Z Z Z	1379.3 1379.6 1381.1	1370.3 1371.8 1372.4	1.50% 1.30% 1.45%	5.08 5.45 5.17	83.9 792.2 1692.1	51 51 52	0.03 0.26 0.54	25.11 24.71 24.71	15.06 14.83 14.83	0.418 0.412 0.412	0.25 0.24 0.24
102 103 104	0.75 17.41 15.34	32.7 300.0 300.0	N N	1410.1 1409.4 1410.1	1409.9 1398.9 1400.4	0.61% 3.50% 3.23%	17 18 18	183.8 472.2	ZZ	1398.9 1400.4	1392.5 1390.4	#DIV/0! 3.48% 2.12%	1.01	398.5 1181.8 490.1	53 54 55	0.13 0.36 0.15	17.13 19.37 21.51	10.28 11.62 12.91	0.285 0.323 0.358	0.17 0.19 0.21
105 106	8.38 0.00	300.0 300.0	N N	1399.2 1399.2	1389.2 1389.2	3.33% 3.33%	18 18	600.0	N N	1389.2 1389.2	1377.0 1377.0	2.03% 2.03%	4.38 4.38	110.3 110.3	56 56	0.03	22.41 22.41	13.45 13.45	0.374 0.374	0.22
107 108 109	5.37 1.77 131.67	300.0 300.0 300.0	N N N	1382.2 1417.6 1536.0	1377.8 1406.0 1506.0	1.47% 3.87% 10.00%	20 18 15	528.0 148.8 600.0	N N N	1377.8 1406.0 1506.0	1370.2 1400.7 1452.0	1.44% 3.56% 9.00%	4.57 0.81 2.06	231.7 120.8 3307.6	58 59 60	0.07 0.03 0.92	24.64 18.84 17.98	14.78 11.31 10.79	0.411 0.314 0.300	0.240 0.188 0.180
110 111	52.61 17.87 10.62	300.0 300.0	N N	1451.4 1448.0	1448.2 1442.9	1.07% 1.70%	20 20	600.0 600.0	N N	1448.2 1442.9	1433.9 1416.7	2.38% 4.37%	4.01 2.95	2021.7 1129.6	61 62	0.55 0.30	24.56 23.25	14.74 13.95	0.409 0.388	0.24
112 113 114	22.38 7.65	300.0 300.0 300.0	N N N	1448.0 1448.0 1487.7	1442.9 1442.9 1465.0	1.70% 1.70% 7.57%	20 20 15	600.0 600.0 345.7	N N	1442.9 1442.9 1465.0	1416.7 1416.7 1442.5	4.37% 4.37% 6.51%	2.95 2.95 1.39	1758.3 2688.9 142.6	62 62 65	0.47 0.72 0.04	23.42 23.67 16.43	14.05 14.20 9.86	0.390 0.395 0.274	0.23 0.23 0.16

REPRODUCTION OF THE ORIGINAL SIGNED AND SEALED PLAN AND/OR ELECTRONIC MEDIA MAY HAVE BEEN INADVERTENTLY ALTERED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SCALE OF THE DOCUMENT AND CONTACTING CUDE ENGINEERS TO VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION.



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GRADING PLAN GEORGE'S RANCH UNIT 1

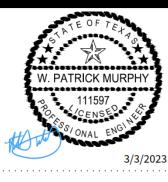
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2 of 55