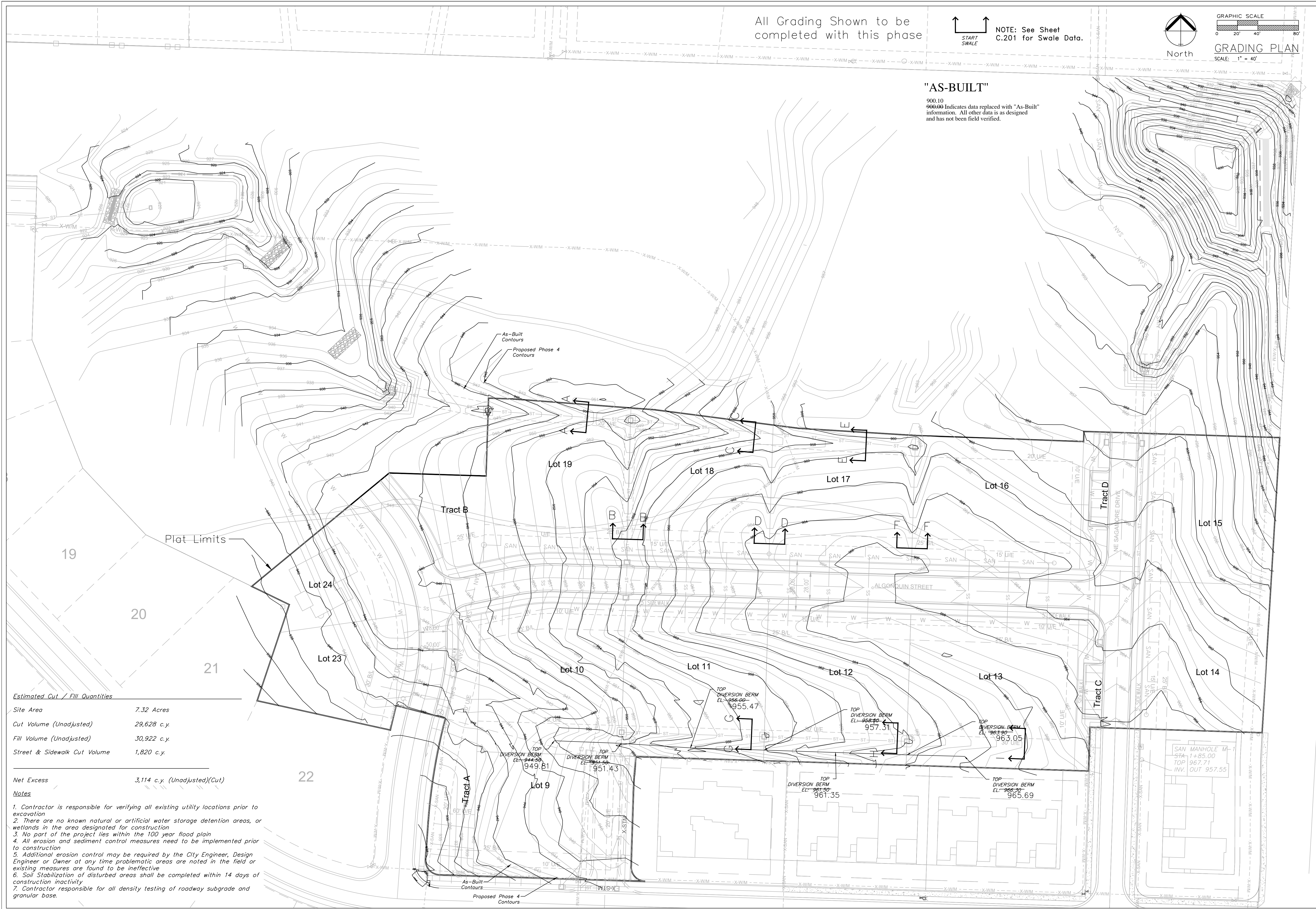




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Project: VILLAS OF CHAPEL RIDGE L3MO
Issue Date: April 10, 2020

Master Drainage Plan 1 of 3:
Grading Plan
Construction Plans for:
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

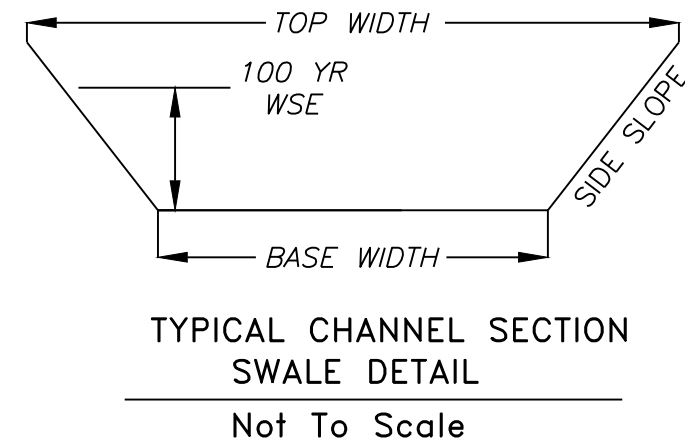
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

6/25/2021	As-Built
8/18/2021	As-Built

C. 200



NOTE: Swale sections extend the entire length between upstream and downstream structures with the exception of a transition at each structure.

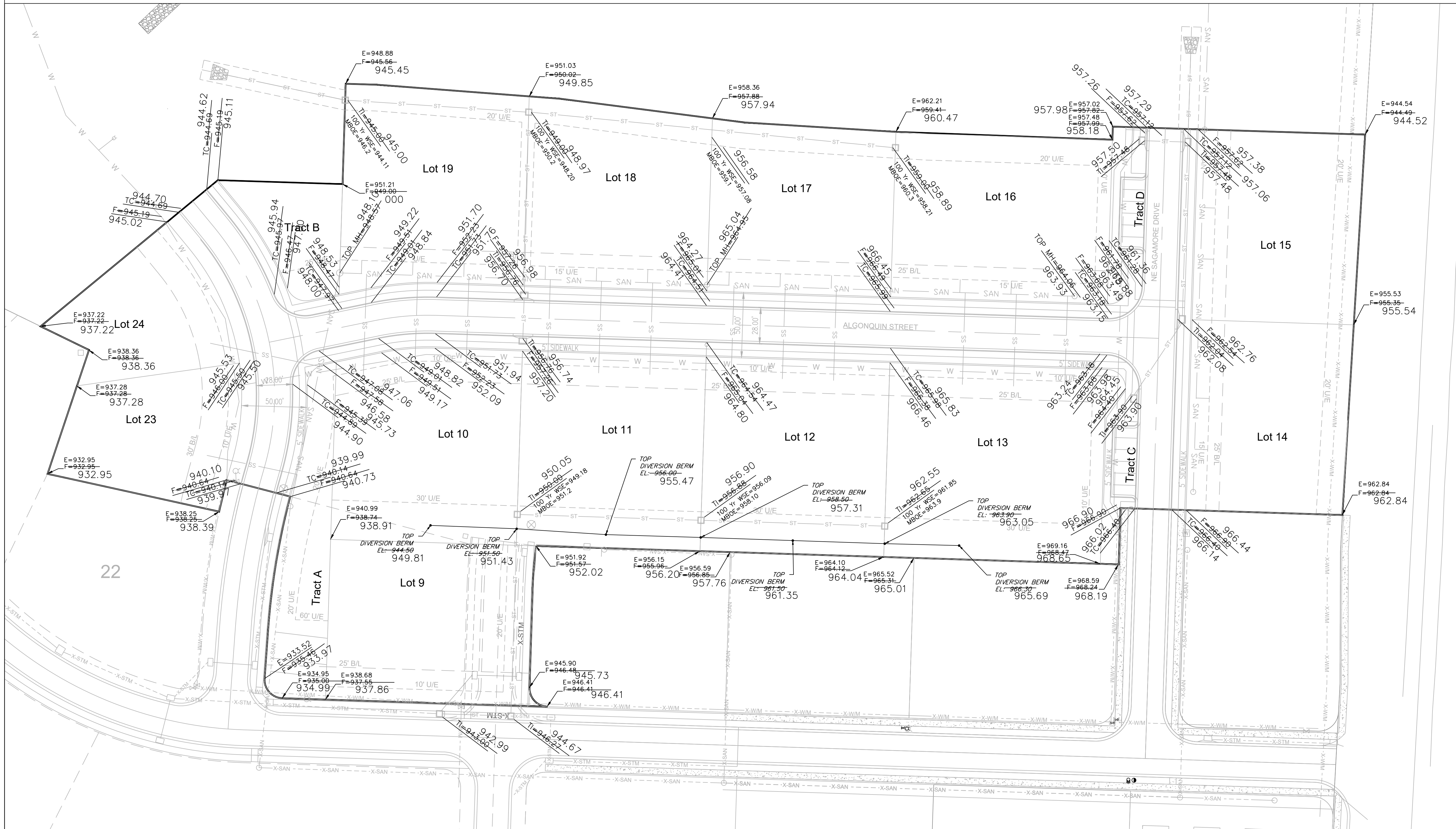
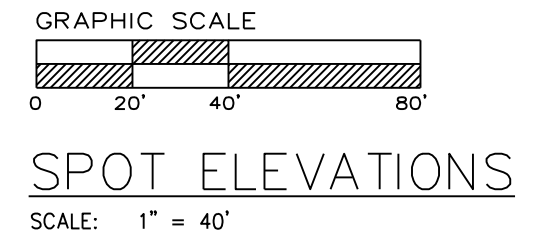
100 YEAR OVERFLOW SWALE SECTIONS									
Section	100 Yr. Runoff (c.f.s.)	Bed Slope (%)	Base Width (ft)	Side Slope (1:V)	100 Yr WSE (ft)	Sectional Area	Velocity 100Yr. (f.p.s.)	Hydraulic Radius (ft)	Shear Stress (p.s.f.)
A-A	1.35	6.67	4	5	0.11	0.50	2.70	0.10	0.42
B-B	2.37	6.67	6	5	0.13	0.86	2.74	0.12	0.49
C-C	3.60	6.67	4	5	0.20	1.00	3.60	0.17	0.69
D-D	2.50	6.67	6	5	0.13	0.86	2.89	0.12	0.49
E-E	3.60	2.72	6	5	0.21	1.48	2.43	0.18	0.31
F-F	1.03	6.67	6	5	0.08	0.51	2.01	0.08	0.31
G-G	3.00	5.00	5	3	0.18	1.00	3.01	0.16	0.51
H-H	3.73	4.16	5	5	0.21	1.27	2.94	0.18	0.46
I-I	3.37	4.00	5	3	0.20	1.12	3.01	0.18	0.45

NOTE: Swale should be lined with "Straw with Net" turf reinforcement (Curlex Blanket or Eqv.) . Per Table 5607-1 in APWA Manual

Townhomes Lot Number	Basement Type	MBOE Lt.	MBOE Rt.
9	Full	940.8	951.0
10	Daylight	951.2	940.8
11	Daylight	958.1	951.2
12	Daylight	963.9	958.1
13	Full	966.0	963.9
14	Daylight	957.4	964.9
15	Walkout	946.5	957.4
16	Walkout	960.3	960.0
17	Walkout	959.1	960.3
18	Walkout	950.2	959.1
19	Daylight	946.2	950.2
Estates 23	Walkout	935.0	939.3
24	Walkout	939.3	939.2

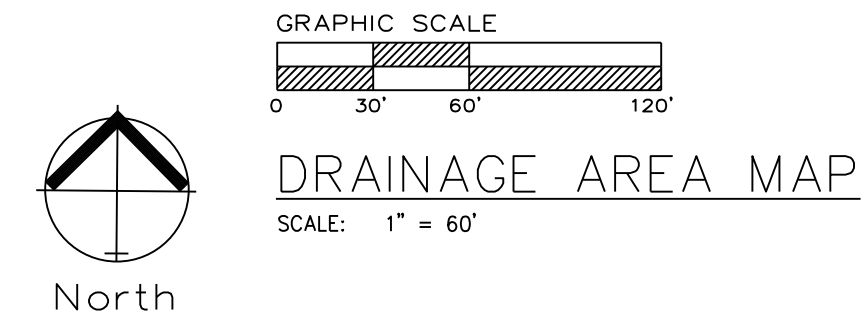
Note:

AS GRADED PLOT PLAN REQUIRED FOR EACH LOT.



"AS-BUILT"

900.10
900.00 Indicates data replaced with "As-Built" information. All other data is as designed and has not been field verified.



APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : VILLAS OF CHAPEL RIDGE 2ND PLAT																																				
		Surface types:					Asph/ConcBus/Com		Grass/Park		Lake		MultFam		SnglFam		Undev		Other																	
		yellow areas are self computing overwrite if necessary					SURFACE CODES		A		B		Dirt		G		L		M		S		U		Z											
							"C" Values		0.90		0.87		0.60		0.30		0.90		0.66		0.51		0.3													
		TOTAL WATERSHED					Overwrite Length - DN Elev or Slope if necessary		SURFACE CODE		P=Paved/Unpaved		Slope or Elevations if necessary							TC COMPUTATION																
							OVERLAND FLOW - 100' MAX		SURFACE CODE		P=Flow - FIRST REACH									Cal Overland Flow (T)					Used Min 5 Max 15 T(I)		Cal Channel One T(T)		Cal Channel Two T(T)		Total T@ 10		AREA ID			
							"C" VALUE		OVLN LENGTH		UP		DN		SLOPE							CHANNEL LENGTH					UP		DN		SLOPE		VELOCITY F/S			
POST							SURFACE		OVLN LENGTH		UP		DN		SLOPE							CHANNEL LENGTH					UP		DN		SLOPE		VELOCITY F/S		POST	
1		6734.45	0.15	171.71	962.75	956.48	M	0.66	36.7	962.8	962.00	2.0	P	135.0	962.0	956.5	4.09	4.1	3.8	5.0	0.5	0.0	5.5	1												
2		15497.29	0.36	321.00	969.90	961.04	M	0.66	36.0	969.9	969.15	2.1	P	285.0	969.2	961.0	2.85	3.4	3.7	5.0	1.4	0.0	6.4	2												
3		14565.88	0.33	115.82	968.20	962.90	M	0.66	60.5	968.2	966.00	3.6	P	55.4	966.0	962.9	5.60	4.8	4.0	5.0	0.2	0.0	5.2	3												
4		38022.54	0.87	290.56	968.20	956.48	M	0.66	100.0	968.2	963.50	4.7	P	190.6	963.5	956.5	3.68	3.9	4.7	5.0	0.8	0.0	5.8	4												
5		17621.66	0.40	168.61	970.50	961.65	M	0.66	100.0	970.5	967.15	3.4	U	68.6	967.2	961.7	8.02	4.6	5.3	5.0	0.3	0.0	5.5	5												
6		19480.08	0.45	219.25	968.00	955.58	M	0.66	100.0	968.0	962.00	6.0	U	119.3	962.0	955.6	5.38	3.7	4.4	5.0	0.5	0.0	5.5	6												
7		15534.05	0.36	183.86	964.00	949.00	M	0.66	100.0	964.0	955.00	9.0	U	83.9	955.0	949.0	7.15	4.3	3.8	5.0	0.3	0.0	5.3	7												
8		12379.23	0.28	279.25	967.30	955.76	M	0.66	33.5	967.3	966.50	2.4	P	245.7	966.5	955.8	4.37	4.2	3.4	5.0	1.0	0.0	6.0	8												
9		7326.23	0.17	257.20	966.50	955.76	M	0.66	11.5	966.5	966.20	2.6	P	245.7	966.2	955.8	4.25	4.2	2.0	5.0	1.0	0.0	6.0	9												
10		5324.92	0.12	125.42	966.50	958.00	M	0.66	47.2	966.5	963.80	5.7	U	78.3	963.8	958.0	7.41	4.4	3.0	5.0	0.3	0.0	5.3	10												
11		38079.28	0.87	354.14	966.50	948.00	M	0.66	100.0	966.5	960.50	6.0	U	254.4	960.5	948.0	4.92	3.6	4.4	5.0	1.2	0.0	6.2	11												
12		9008.94	0.21	139.74	955.00	944.00	M	0.66	100.0	955.0	946.50	8.5	U	39.7	946.5	944.0	6.29	4.0	3.9	5.0	0.2	0.0	5.2	12												
13		36460.35	0.84	346.50	957.50	939.00	M	0.66	36.5	957.5	956.50	2.7	P	310.0	956.5	939.0	5.65	4.8	3.4	5.0	1.1	0.0	6.1	13												
14		18586.66	0.43	304.64	955.00	932.80	M	0.66	100.0	955.0	946.80	8.4	U	204.6	946.6	932.8	6.74	4.2	3.9	5.0	0.8	0.0	5.8	14												
15		6741.28	0.15	280.50	946.50	932.50	M	0.66	11.5	946.5	946.20	2.6	P	268.0	946.2	932.5	5.09	4.6	2.0	5.0	1.0	0.0	6.0	15												