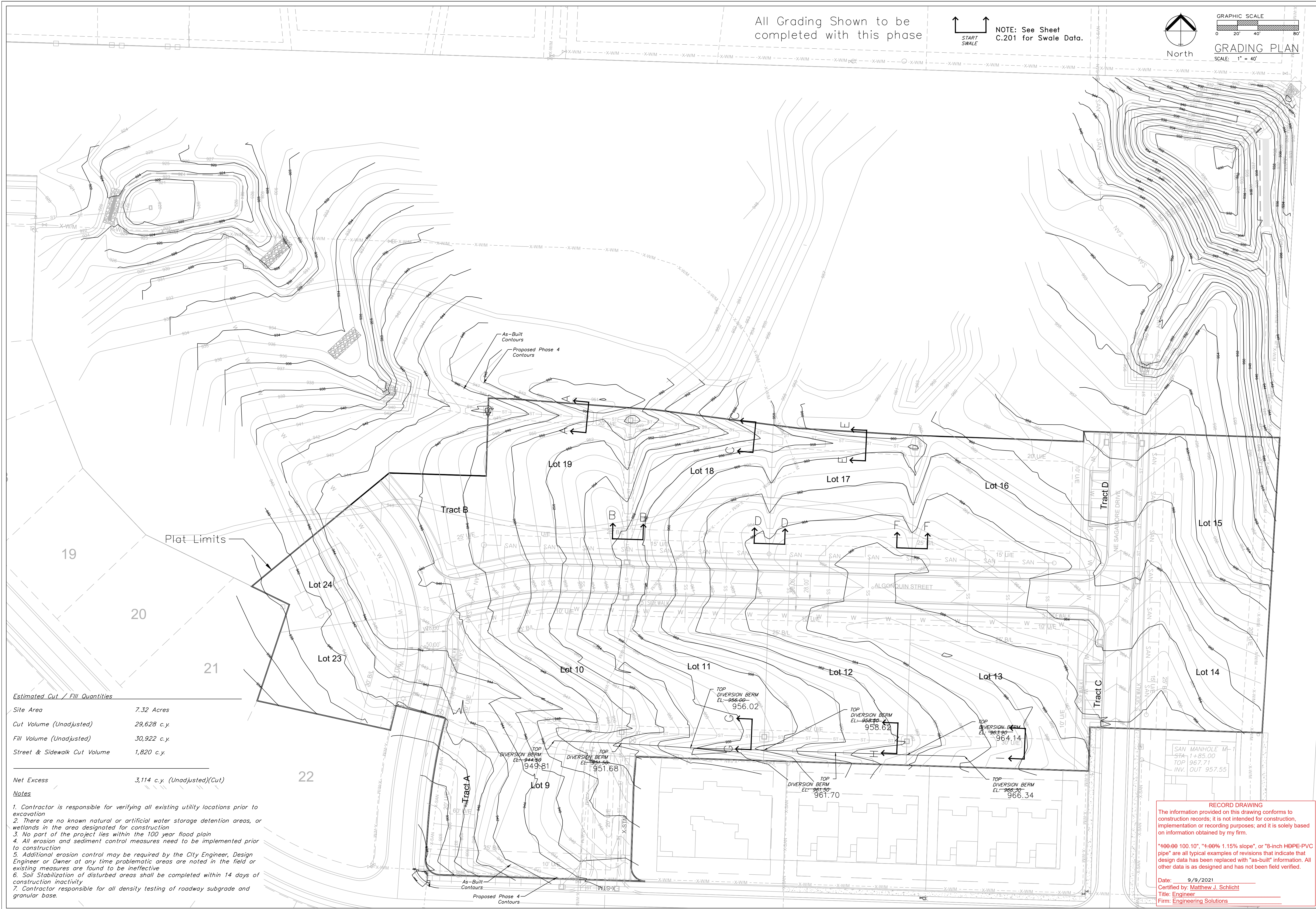




ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

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

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

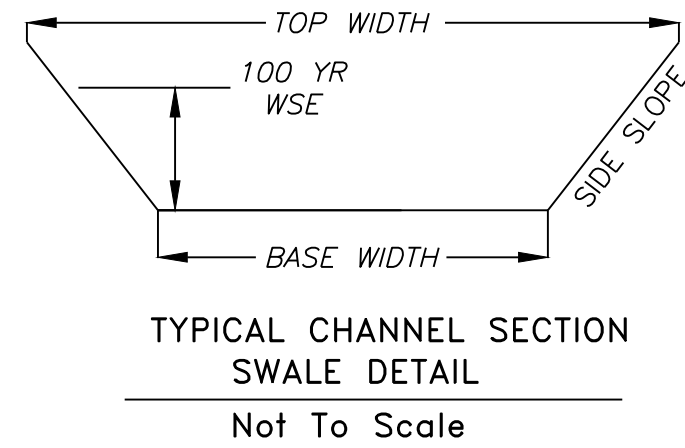
Master Drainage Plan 1 of 3:
Grading Plan
Construction Plans for:
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

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

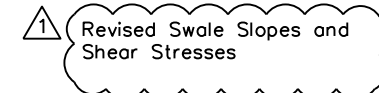
REVISIONS

6/25/2021	As-Built
8/18/2021	As-Built
8/31/2021	As-Built
9/9/2021	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 (%)	As-Built 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.)	As-Built Shear Stress
A-A	1.35	6.67	6.67	4	5	0.11	0.50	2.70	0.10	0.42	0.42
B-B	2.37	6.67	6.77	6	5	0.13	0.86	2.74	0.12	0.49	0.50
C-C	3.60	6.67	6.70	4	5	0.20	1.00	3.60	0.17	0.69	0.69
D-D	2.50	6.67	7.07	6	5	0.13	0.86	2.89	0.12	0.49	0.52
E-E	3.60	2.72	2.79	6	5	0.21	1.48	2.43	0.18	0.34	0.32
F-F	1.03	6.67	7.56	6	5	0.08	0.51	2.01	0.08	0.34	0.35
G-G	3.00	6.00	5.56	5	3	0.18	1.00	3.01	0.16	0.51	0.56
H-H	3.73	4.16	5.67	5	3	0.21	1.27	2.94	0.18	0.46	0.41
I-I	3.37	4.00	4.69	5	3	0.20	1.12	3.01	0.18	0.45	0.52

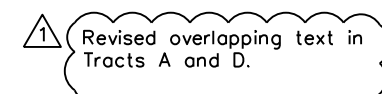
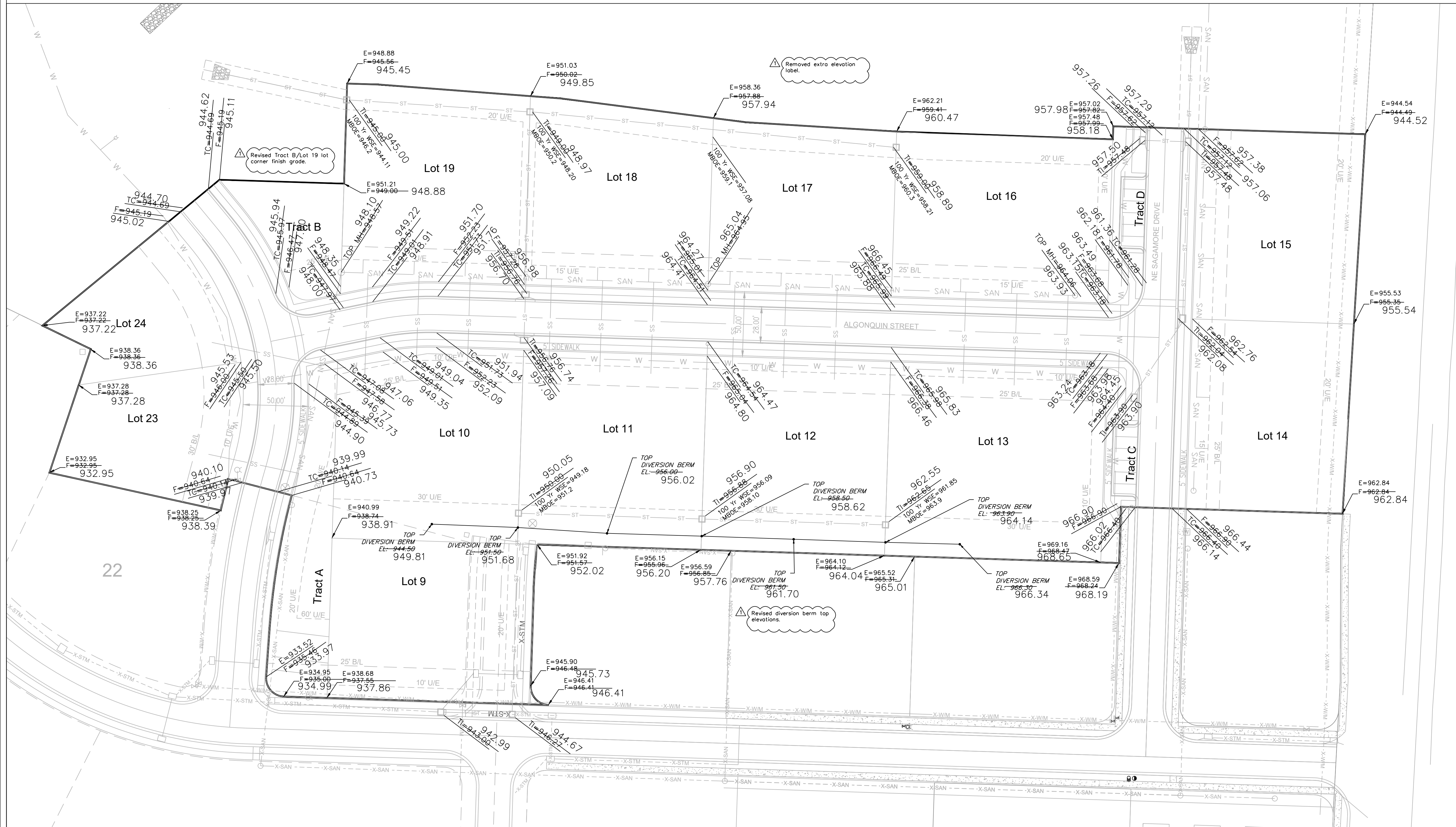
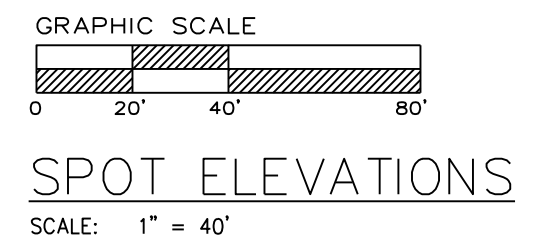
NOTE: Swale should be lined with "Straw with Net" turf reinforcement (Curlex Blanket or Eqv.) . Per Table 5607-1 in APWA Manual

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

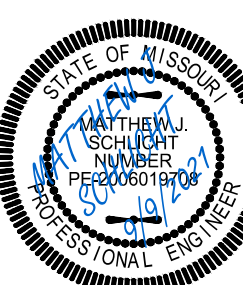
Note:

AS GRADED PLOT PLAN REQUIRED FOR EACH LOT.



RECORD DRAWING
The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by my firm.
"100-09 100.10", "4-06% 1.15% slope", or "8-inch HDPE-PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.
Date: 9/9/2021
Certified by: Matthew J. Schlicht
Title: Engineer
Firm: Engineering Solutions

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



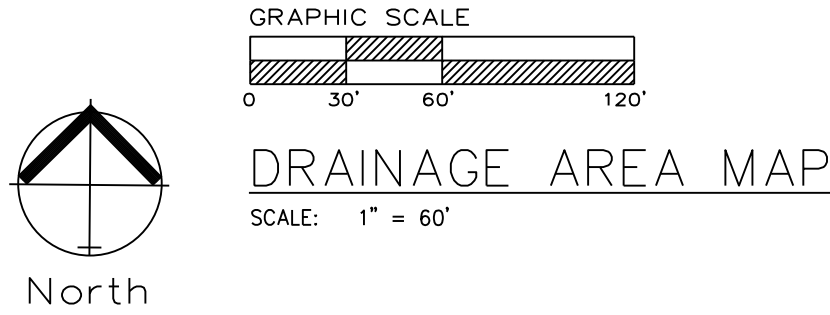
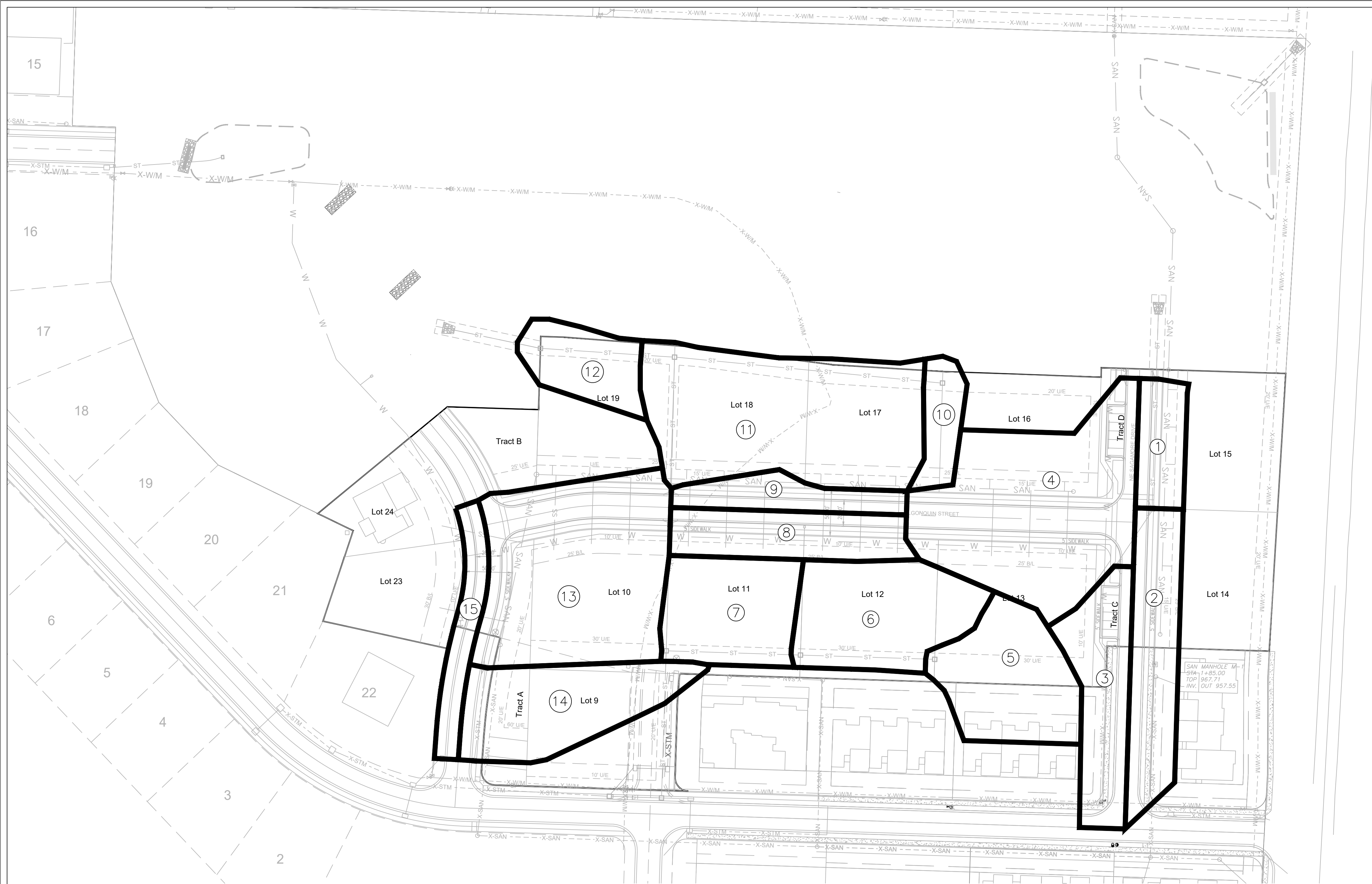
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335
REVISIONS
6/25/2021 As-Built
8/18/2021 As-Built
8/31/2021 As-Built
9/9/2021 As-Built

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

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

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

ENGINEERING
ENGINEERING & SURVEYING
SOLUTIONS
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849



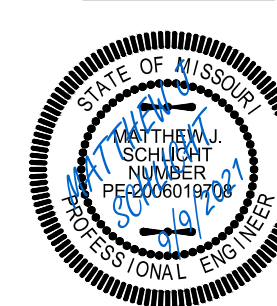
ENGINEERING
ENGINEERING & SURVEYING
SOLUTIONS
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1685
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

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

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

Master Drainage Map 3 of 3:
Drainage Area Map
Construction Plans for:
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
8/31/2021	As-Built
9/9/2021	As-Built

APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : VILLAS OF CHAPEL RIDGE 2ND PLAT																			
AREA ID		TOTAL SQ. FT.		TOTAL WTRSHD ACRES		UP ELEV		DN ELEV		SURFACE "C" CODE		OVERLAND LENGTH		UP ELEV		DN ELEV		SLOPE %	
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	
	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	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	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	
	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	
	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	
	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	
	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	
	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	
	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	
	11	38079.28	0.87	354.14	966.50	948.00	M	0.66	100.0	966.5	960.50	6.0	U	254.1	960.5	948.0	4.92	3.6	
	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	
	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	
	14	18586.66	0.43	304.64	955.00	932.80	M	0.66	100.0	955.0	946.60	8.4	U	204.6	946.6	932.8	6.74	4.2	
	15	6741.28	0.15	280.50	946.50	932.50	M	0.66	11.5	946.5	946.20	2.6	P	289.0	946.2	932.5	5.09	4.6	

RECORD DRAWING
The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by my firm.
Date: 9/9/2021
Certified by: Matthew J. Schlicht
Title: Engineer
Firm: Engineering Solutions