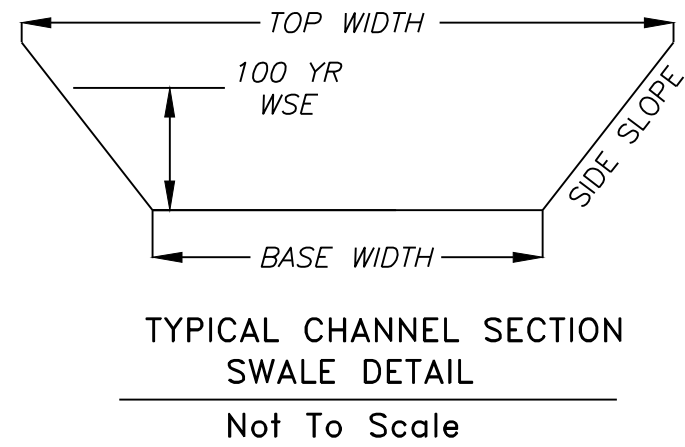
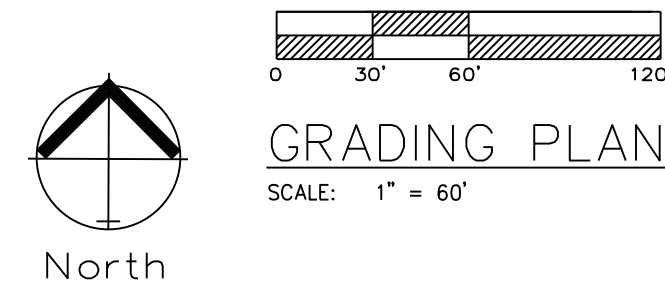




NOTE: Swale sections extend the entire length between upstream and downstream structures with the exception of a transition at each structure.

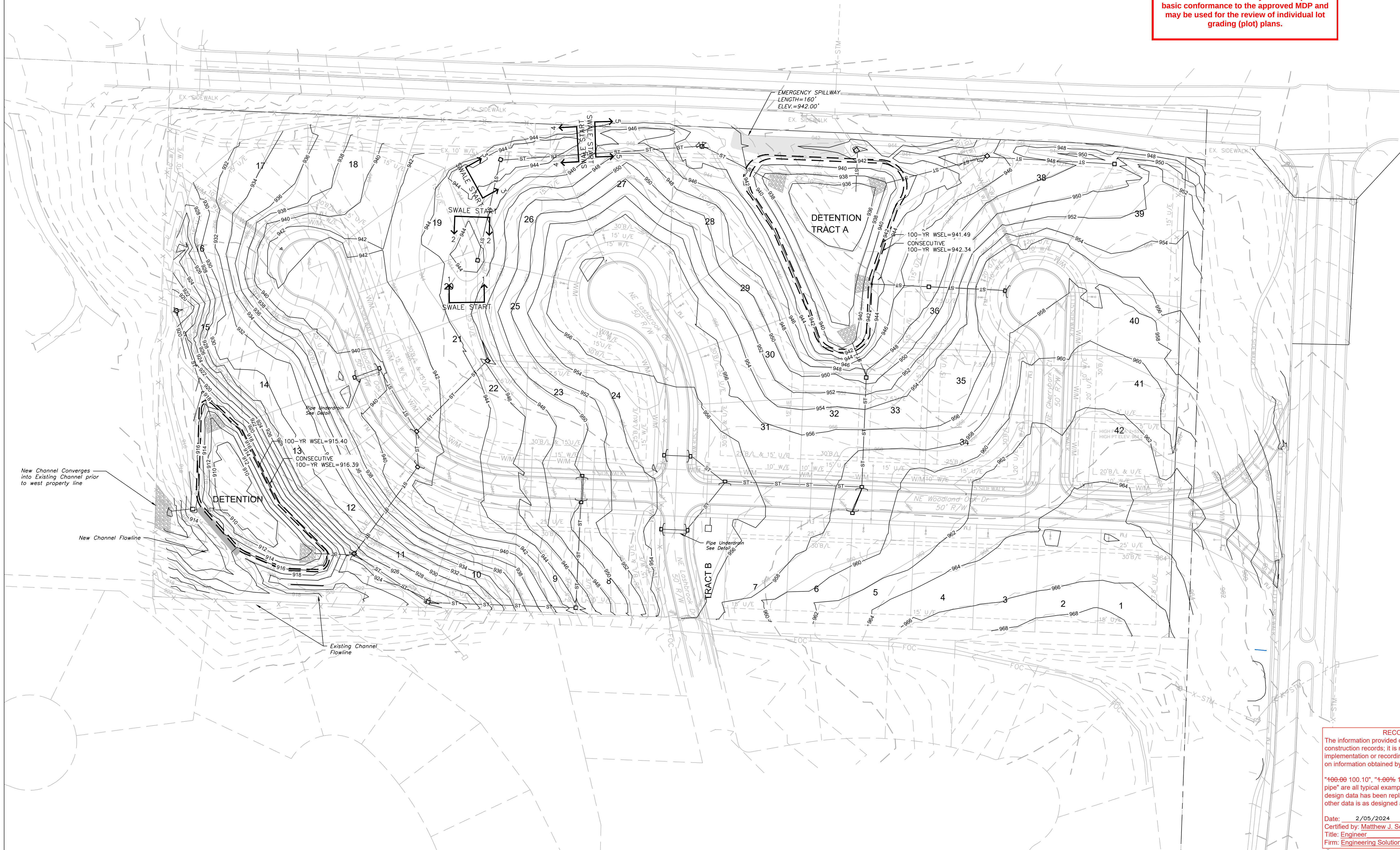
100 YEAR OVERFLOW SWALE SECTIONS										
Section	100 Yr. Runoff (c.f.s.)	Bed Slope (%)	Base Width (ft)	Side Slope (1:V)	100 Yr WSE (ft)	Sectional Area	Velocity 100Yr. (f.p.s.)	Hydraulic Radius (ft)	Shear Stress (p.s.f.)	
1-1	1.42	2.32	5	6	0.14	0.82	1.73	0.12	0.18	
2-2	1.42	2.19	5	6	0.14	0.82	1.73	0.12	0.17	
3-3	0.96	2.00	5	6	0.12	0.69	1.39	0.11	0.13	
4-4	2.87	2.00	5	6	0.22	1.39	2.06	0.18	0.23	
5-5	1.25	2.00	5	6	0.14	0.82	1.52	0.12	0.15	

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



Accepted Master Drainage Plan

This as-graded Master Drainage Plan (MDP) has been reviewed for accuracy. It is accepted for basic conformance to the approved MDP and may be used for the review of individual lot grading (plot) plans.



MASTER DRAINAGE PLAN SHEET 1 OF 3

GRADING PLAN - SWPPP

Construction Plans for:

WOODLAND OAKS

Lots 1 thru 42

Lee's Summit, Jackson County, Missouri

Project:

WOODLAND OAKS

LSMO

Issue Date:

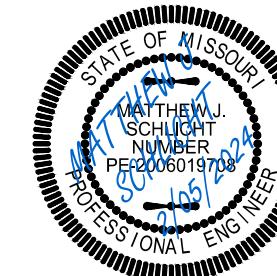
January 18, 2024

Part of the Southeast 1/4

Section 27, Township 48 North, Range 31 West

Lee's Summit, Jackson County, Missouri

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



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

REVISIONS

1/18/2024 As-Built
2/05/2024 As-Built

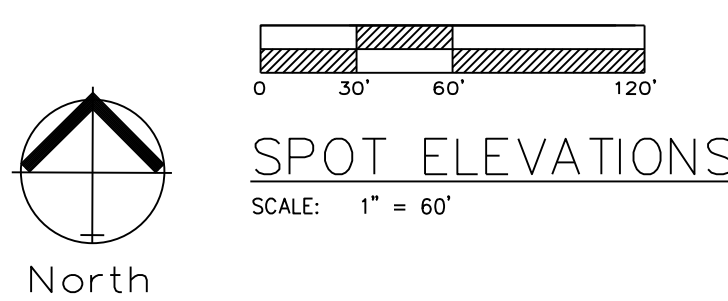
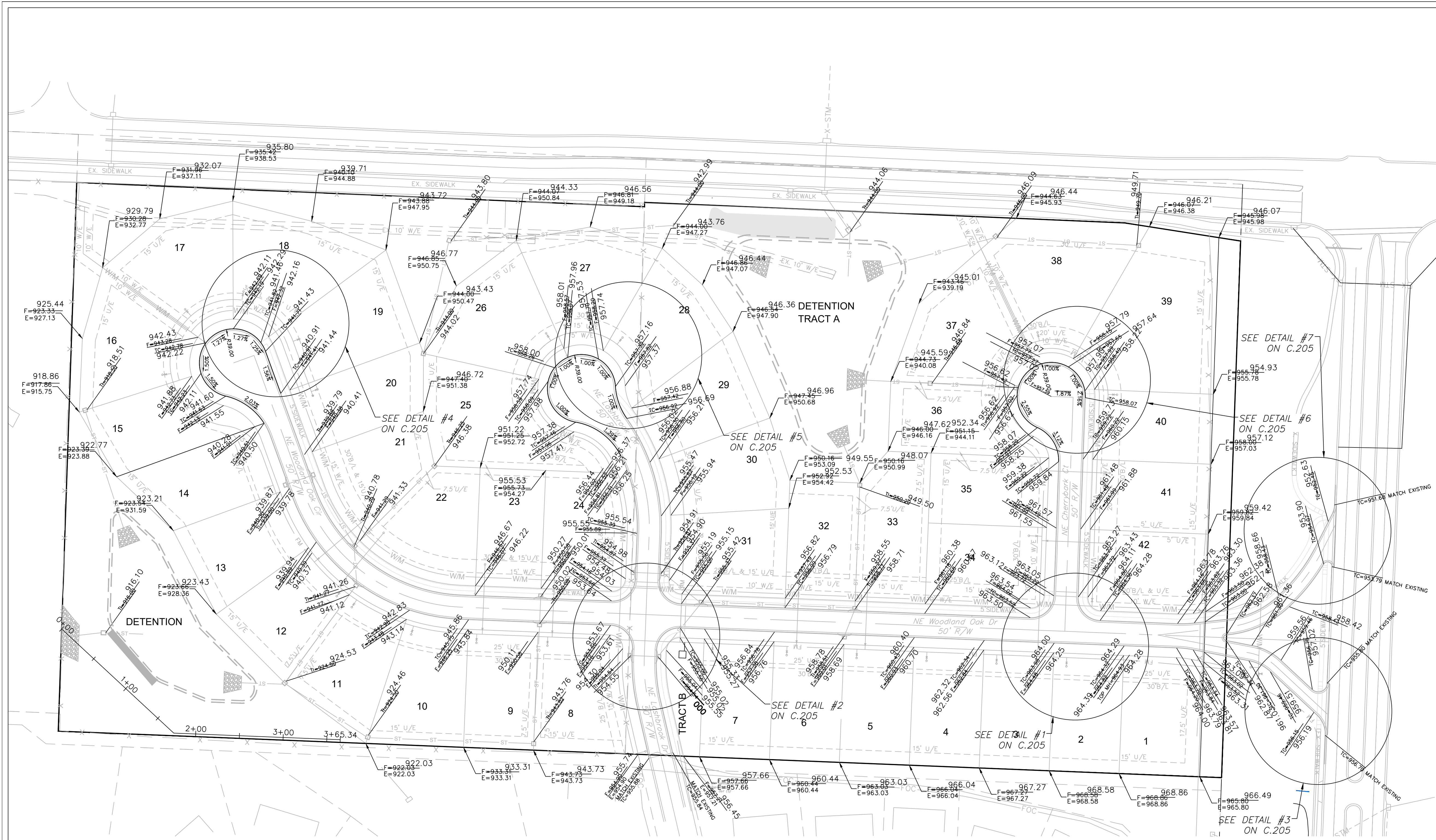
C. 200

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.

"100-60 100.10", "4-09% 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: 2/05/2024
Certified by: Matthew J. Schlicht
Title: Engineer
Firm: Engineering Solutions



Lot Number	Basement Type	MBOE
1	Standard	
2	Standard	
3	Standard	
4	Standard	
5	Standard	
6	Standard	
7	Standard	
8	Walkout	945.58
9	Walkout	945.58
10	Walkout	925.86
11	Walkout	925.65
12	Walkout	925.65
13	Walkout	917.4
14	Walkout	917.4
15	Walkout	919.77
16	Daylight	919.77
17	Standard	
18	Standard	
19	Standard	945.15
20	Standard	945.14
21	Standard	947.42
22	Standard	947.42
23	Standard	
24	Standard	
25	Walkout	945.14
26	Walkout	945.15
27	Walkout	945.12
28	Walkout	943.49
29	Walkout	943.49
30	Daylight	943.49
31	Standard	
32	Walkout	943.49
33	Walkout	943.49
34	Daylight	
35	Daylight	
36	Walkout	943.49
37	Walkout	943.49
38	Daylight	947.17
39	Daylight	950.93
40	Daylight	
41	Daylight	
42	Standard	

**Accepted
Master Drainage Plan**

This as-graded Master Drainage Plan (MDP) has been reviewed for accuracy. It is accepted for basic conformance to the approved MDP and may be used for the review of individual lot grading (plot) plans.

RECORD DRAWING

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*100-00 100.10", "4-00% 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: 1/18/2024
Certified by: Matthew J. Schlicht
Title: Engineer
Firm: Engineering Solutions

ENGINEERING
ENGINEERING & SURVEYING
SOLUTIONS

50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
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Professional Registration
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Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering S254
Nebraska
Engineering CA2821

Part of the Southeast 1
Section 27, Township 48 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project:
WOODLAND OAKS
LSMO
Issue Date:
January 18, 2024

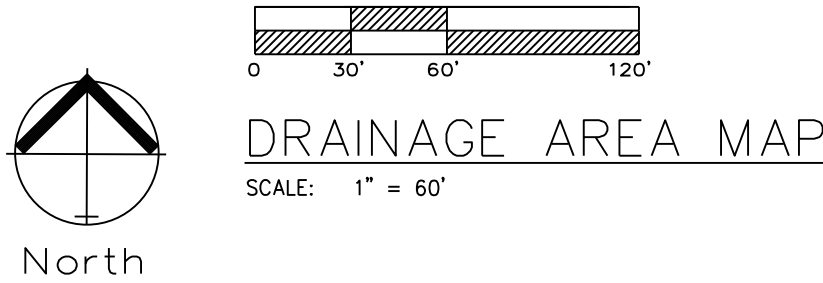
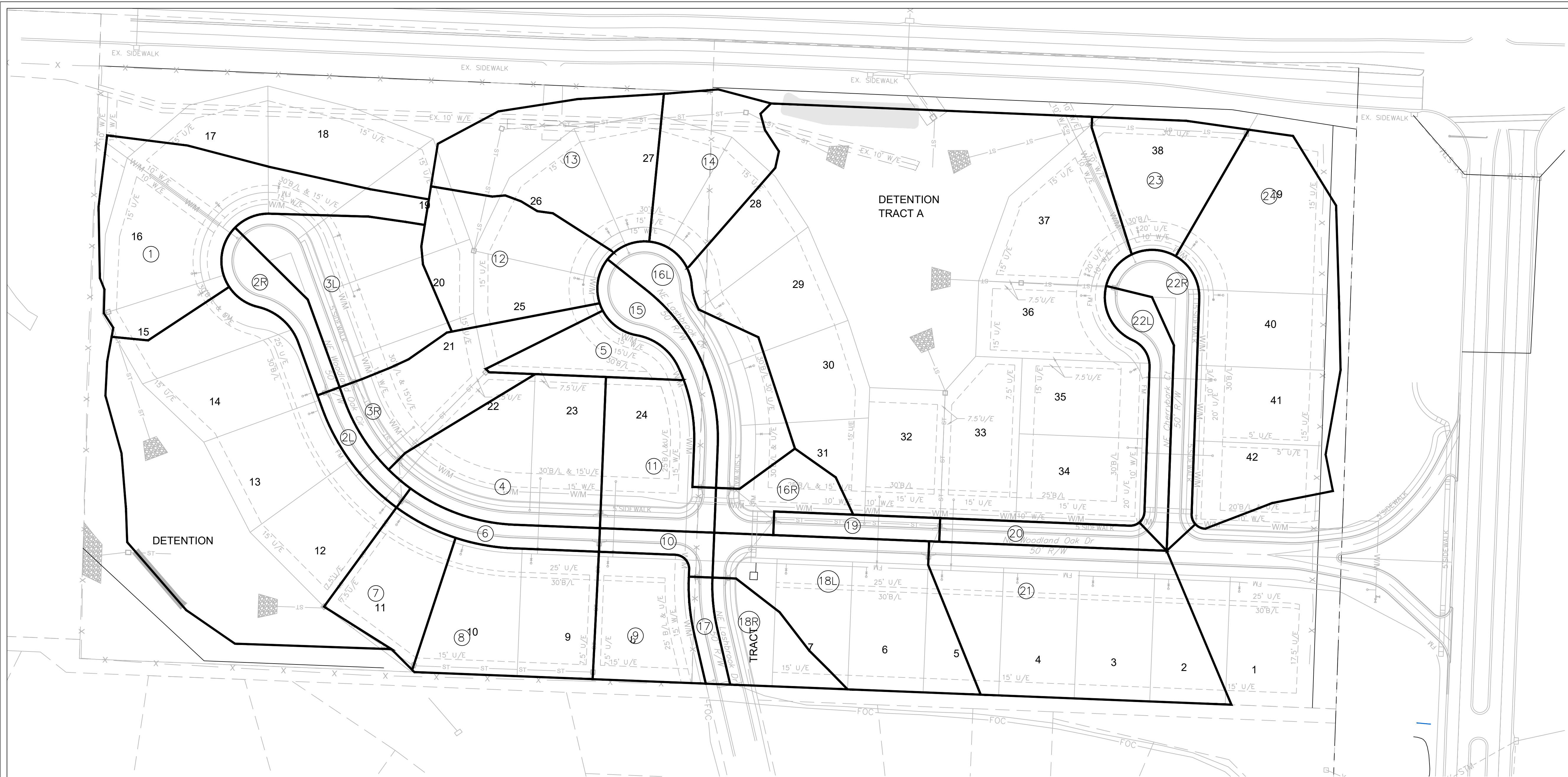
MASTER DRAINAGE PLAN SHEET 2 OF 3
SPOT ELEVATIONS
Construction Plans for:
WOODLAND OAKS
Lots 1 thru 42
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER
PROFESSIONAL ENGINEER
18335

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

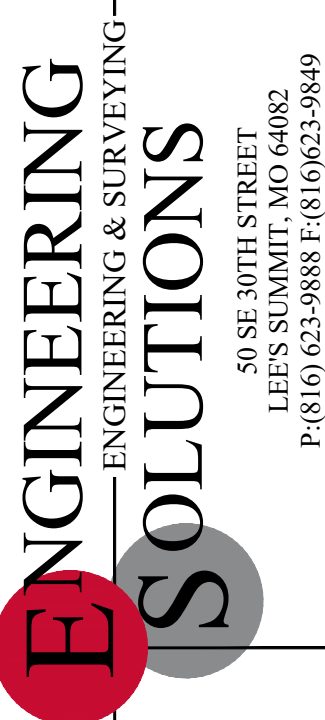
REVISIONS
1/18/2024 As-Built

C. 201



Accepted
Master Drainage Plan

This as-graded Master Drainage Plan (MDP) has been reviewed for accuracy. It is accepted for basic conformance to the approved MDP and may be used for the review of individual lot grading (plot) plans.

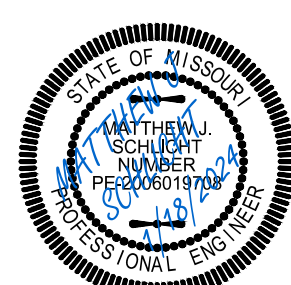


Professional Registration
Missouri
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Surveying 2005008319-D
Kansas
Engineering E-1685
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Part of the Southeast 1/4
Section 27, Township 48 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project:
WOODLAND OAKS
LSMO
Issue Date:
January 18, 2024

MASTER DRAINAGE PLAN SHEET 3 OF 3
DRAINAGE AREA MAP
Construction Plans for:
WOODLAND OAKS
Lots 1 thru 42
Lee's Summit, Jackson County, Missouri



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

REVISIONS
1/18/2024 As-Built

C. 202

APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : WOODLAND OAKS (COLBERN & BLACKWELL)																											
yellow areas are self computing overwrite if necessary					Surface types: Asphalt/ConcBus/Com Dirt Grass/Park Lake MultFam SnglFam Undev Other SURFACE CODES A B D G L M S U Z "C" Values 0.90 0.87 0.60 0.30 0.90 0.66 0.51 0.3							TC COMPUTATION															
TOTAL WATERSHED					Overwrite Length - DnElev or Slope if necessary SURFACE CODE "C" VALUE OVR LND UP ELEV DN SLOPE % OVERLAND FLOW - 100' MAX CODE P U CHANNEL FLOW - FIRST REACH CHANNEL UP DN SLOPE VELOCITY LENGTH ELEV ELEV % F/S												Cal Overland Flow T(I)	Used Min 5 T(I)	Cal Channel One T(T)	Cal Channel Two T(T)	Total T@ 10	Intensity 10 I	Intensity 100 I	CFS 10 Q	K 1.25 CFS 100 Q	AREA ID	
PROP.	AREA ID	TOTAL ACRES	WTRSHD LENGTH	UP ELEV	DN ELEV	SURFACE CODE	"C" VALUE	OVR LND LENGTH	UP ELEV	DN ELEV	SLOPE %	CODE U	CHANNEL LENGTH	UP ELEV	DN ELEV	SLOPE %	VELOCITY F/S	T(I)	T(I)	T(T)	T(T)	T@ 10	10 I	100 I	10 Q	100 Q	PROP.
1	1	0.77	495.00	944.00	918.00	S	0.51	100.0	944.0	940.60	3.4	U	395.0	940.6	918.0	5.72	3.9	7.1	7.1	1.7	0.0	8.8	6.3	9.0	2.49	4.40	1
2L	2L	0.09	175.50	942.00	939.80	S	0.51	11.5	942.0	941.75	2.2	P	164.0	941.8	939.8	1.19	2.2	2.8	5.0	1.2	0.0	6.2	7.0	9.8	0.34	0.60	2L
2R	2R	0.14	196.00	941.90	939.80	S	0.51	11.5	941.9	941.65	2.2	P	184.5	941.7	939.8	1.00	2.0	2.8	5.0	1.5	0.0	6.5	6.9	9.7	0.50	0.87	2R
3L	3L	0.48	250.00	945.00	939.80	S	0.51	100.0	945.0	941.00	4.0	P	150.0	941.0	939.8	0.80	1.8	6.7	6.7	1.4	0.0	8.1	6.5	9.2	1.58	2.79	3L
3R	3R	0.51	279.00	951.00	939.80	S	0.51	100.0	951.0	943.00	8.0	P	179.0	943.0	939.8	1.79	2.7	5.3	5.3	1.1	0.0	6.4	6.9	9.8	1.82	3.20	3R
4	4	0.60	274.00	956.00	941.48	S	0.51	100.0	956.0	947.70	8.3	U	174.0	947.7	941.5	3.57	3.1	5.2	5.2	1.0	0.0	6.2	7.0	9.8	2.16	3.79	4
5	5	0.19	206.00	955.80	946.00	S	0.51	100.0	955.8	953.80	2.0	U	106.0	953.8	946.0	7.36	4.4	8.4	8.4	0.4	0.0	8.8	6.3	8.9	0.60	1.05	5
6	6	0.12	226.50	950.00	942.00	S	0.51	11.5	950.0	949.75	2.2	P	215.0	949.8	942.0	3.60	3.9	2.8	5.0	0.9	0.0	5.9	7.1	10.0	0.45	0.79	6
7	7	0.28	190.00	943.00	924.00	S	0.51	100.0	943.0	931.00	12.0	U	90.0	931.0	924.0	7.78	4.5	4.6	5.0	0.3	0.0	5.3	7.3	10.2	1.03	1.81	7
8	8	0.54	285.00	950.00	924.00	S	0.51	100.0	950.0	945.00	5.0	U	185.0	945.0	924.0	11.35	5.4	6.2	6.2	0.6	0.0	6.8	6.8	9.6	1.89	3.32	8
9	9	0.32	165.00	954.00	944.00	S	0.51	100.0	954.0	951.00	3.0	U	65.0	951.0	944.0	10.77	5.3	7.4	7.4	0.2	0.0	7.6	6.6	9.4	1.09	1.91	9
10	10	0.08	140.50	955.00	950.00	S	0.51	11.5	955.0	954.75	2.2	P	129.0	954.8	950.0	3.68	3.9	2.8	5.0	0.6	0.0	5.6	7.2	10.1	0.31	0.54	10
11	11	0.37	187.00	955.80	950.00	S	0.51	100.0	955.8	951.30	4.5	P	87.0	951.3	950.0	1.49	2.5	6.4	6.4	0.6	0.0	7.0	6.8	9.5	1.29	2.27	11
12	12	0.45	214.00	957.00	943.00	S	0.51	100.0	957.0	951.00	6.0	U	114.0	951.0	943.0	7.02	4.3	5.8	5.8	0.4	0.0	6.3	7.0	9.8	1.61	2.84	12
13	13	0.61	223.00	957.00	943.00	S	0.51	100.0	957.0	951.00	6.0	U	123.0	951.0	943.0	6.50	4.1	5.8	5.8	0.5	0.0	6.3	7.0	9.8	2.18	3.83	13
14	14	0.40	170.00	957.00	943.00	S	0.51	100.0	957.0	951.00	6.0	U	70.0	951.0	943.0	11.43	5.5	5.8	5.8	0.2	0.0	6.1	7.0	9.9	1.42	2.50	14
15	15	0.19	292.50	957.00	954.00	S	0.51	11.5	957.0	956.77	2.0	P	281.0	956.8	954.0	0.99	2.0	2.9	5.0	2.3	0.0	7.3	6.7	9.4	0.66	1.16	15
16L	16L	0.37	292.50	957.00	954.00	S	0.51	11.5	957.0	956.77	2.0	P	281.0	956.8	954.0	0.99	2.0	2.9	5.0	2.3	0.0	7.3	6.7	9.4	1.27	2.24	16L
16R	16R	0.17	140.00	957.00	954.00	S	0.51	100.0	957.0	954.60	2.4	P	40.0	954.6	954.0	1.50	2.5	7.9	7.9	0.3	0.0	8.2	6.5	9.1	0.56	0.99	16R
17	17	0.07	121.50	954.50	953.00	S	0.51	11.5	954.5	954.25	2.2	P	110.0	954.3	953.0	1.14	2.2	2.8	5.0	0.8	0.0	5.8	7.1	10.0	0.24	0.42	17
18L	18L	0.21	172.00	960.40	953.00	S	0.51	100.0	960.4	956.40	4.0	U	72.0	956.4	953.0	4.72	3.5	6.7	6.7	0.3	0.0	7.0	6.8	9.5	0.72	1.27	18L
18R	18R	0.70	383.00	965.25	953.00	S	0.51	100.0	965.3	960.00	5.3	P	283.0	960.0	953.0	2.47	3.2	6.1	6.1	1.5	0.0	7.6	6.6	9.3	2.36	4.16	18R
19	19	0.10	185.50	958.25	954.80	S	0.51	11.5	958.3	958.00	2.2	P	174.0	958.0	954.8	1.84	2.8	2.8	5.0	1.1	0.0	6.1	7.0	9.9	0.36	0.64	19
20	20	0.13	229.50	962.00	958.40	S	0.51	11.5	962.0	961.75	2.2	P	218.0	961.8	958.4	1.54	2.5	2.8	5.0	1.4	0.0	6.4	6.9	9.8	0.46	0.82	20
21	21	0.97	414.00	968.65	958.10	S	0.51	100.0	968.7	965.00	3.6	P	314.0	965.0	958.1	2.20	3.0	6.9	6.9	1.7	0.0	8.6	6.4	9.0	3.15	5.55	21
22L	22L	0.19	286.50	962.00	956.90	S	0.51	11.5	962.0	961.75	2.2	P	275.0	961.8	956.9	1.76	2.7	2.8	5.0	1.7	0.0	6.7	6.9	9.7	0.65	1.15	22L
22R	22R	0.25	371.50	962.00	956.90	S	0.51	11.5	962.0	961.75	2.2	P	360.0	961.8	956.9	1.35	2.4	2.8	5.0	2.5	0.0	7.5	6.6	9.4	0.83	1.47	22R
23	23	0.35	242.00	957.00	945.00	S	0.51	100.0	957.0	950.00	7.0	U	142.0	950.0	945.0	3.52	3.0	5.6	5.6	0.8	0.0	6.3	7.0	9.8	1.25	2.21	23
24	24	1.26	396.00	961.25	949.50	S	0.51	100.0	961.3	958.90	2.4	U	296.0	958.9	949.5	3.18	2.9	8.0	8.0	1.7	0.0	9.7	6.1	8.7	3.96	7.00	24

RECORD DRAWING
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Date: 1/18/2024
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Title: Engineer
Firm: Engineering Solutions