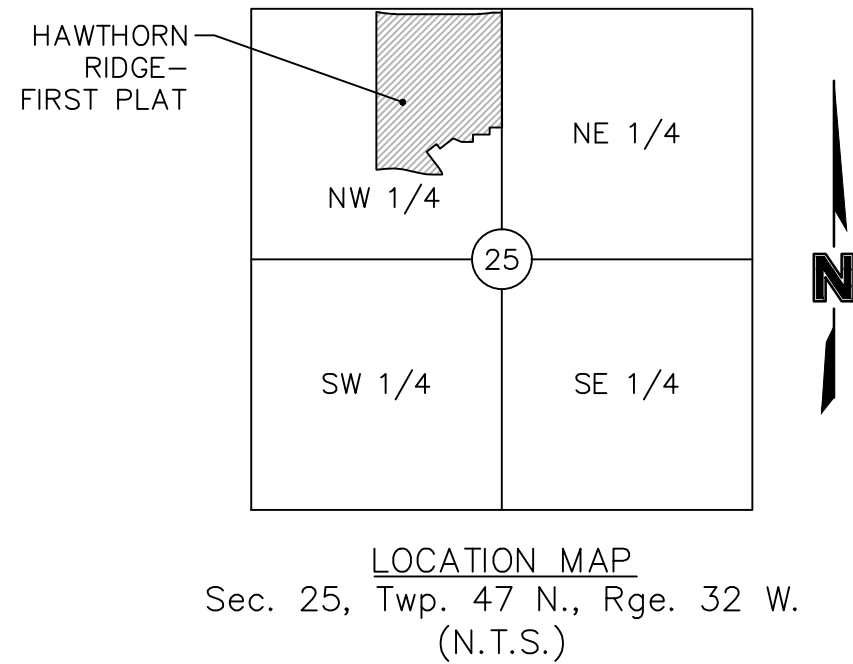


SECTION 25, TOWNSHIP 47 N., RANGE 32 W.
IN LEE'S SUMMIT, JACKSON, MO



☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

DEVELOPMENT TEAM CONTACT INFORMATION		
CIVIL ENGINEER		
	MELISSA G DEGONIA, P.E. OLSSON ASSOCIATES	1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 TEL: 816.587.4320 FAX: 816.587.1393 MDEGONIA@OLSSONASSOCIATES.COM
OWNER/DEVELOPER		
	DAVID PRICE CMH PARKS, INC. D/B/A SUMMIT CUSTOM HOMES	120 SE 30TH ST LEE'S SUMMIT, MO 64082 TEL: 816.246.6700 DAVID@SUMMITCUSTOMHOMESKC.COM

UTILITY SERVICE NUMBERS	
LEE'S SUMMIT PUBLIC WORKS	816-969-1800
LEE'S SUMMIT WATER & SEWER DEPARTMENT	816-696-1940
MISSOURI GAS ENERGY	816-756-5252
AT&T	800-286-8313
KCP&L	816-471-5275
TIME WARNER CABLE	816-358-5360
GOOGLE FIBER	877-454-6959

INDEX OF SHEETS	
COVER SHEET	C201
GENERAL NOTES	C202
GENERAL LAYOUT	C203
SANITARY SEWER PLAN & PROFILE	C204
SANITARY SEWER PLAN & PROFILE	C205
SANITARY SEWER PLAN & PROFILE	C206
SANITARY SEWER PLAN & PROFILE	C207
SANITARY SEWER PLAN & PROFILE	C208
SANITARY SEWER PLAN & PROFILE	C209
SANITARY SEWER PLAN & PROFILE	C210
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DETAIL SHEET	C212
DETAIL SHEET (2)	C213
SANITARY SEWER TABLES	C214

Olsson Associates has been retained to provide as-built drawings for this project.

Melin & Agre

Melissa G DeGonia, P.E.
Civil Engineer

03/04/2019

Date _____

The Policy of the "Plan Preparation Criteria and Procedure" and Policy Document No. 880544 "As-Built Drawings for Sewer Built by Permit" stipulate the following regarding "as-built" drawings: 1. Drawings are to be provided within thirty (30) days after the date the "Request for As-Built's" letter is issued by the City to the contractor. 2. Drawings must be accepted by the City before any service connections will be allowed. 3. Drawings are part of the permit obligations making them the responsibility of the permittee. 4. The cost of preparing "as-built" drawings shall be included in the performance bond.

Record Drawing

AS BUILT
DATE: 12/11/2018

STATE OF MISSOURI
MELISSA G. DEGONIA
Melissa G. Degonia
NUMBER
PE-2011000892
03/04/2019
PROFESSIONAL ENGINEER

[illegible]

REVISIONS

2018

LEE'S SUMMIT, MO

drawn by: D.A.H.O
checked by: M.G.D.
designed by: P.M.D
QA/QC by: K.S.J
project no.: 017-0188
date: 03.03.2017

SHEET
C201

USER: dhernandez



Record Drawing

NOT AS BUILT

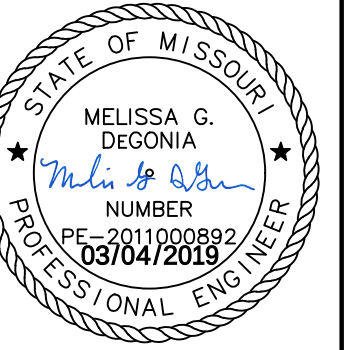


C203 GENERAL LAYOUT

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

2018

[illegible]

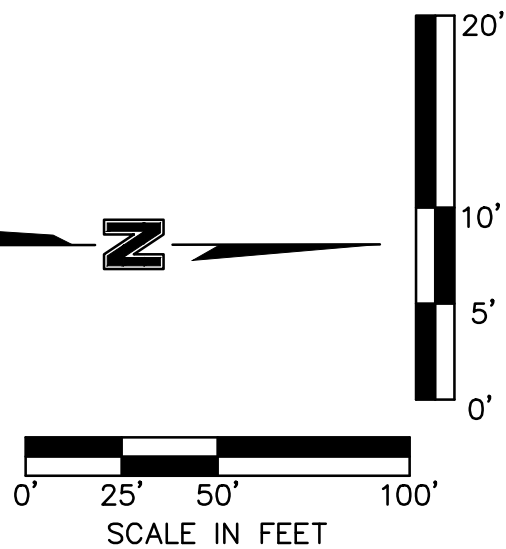
OLSSON[®]
ASSOCIATES
on Associates - Civil Engineering
Certificate of Authority #001592

1301 Burlington, Suite 100
North Kansas City, MO 64116
TEL 816.587.4320
FAX 816.587.1393

www.olssonassociates.com

NOTES:
ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4"PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.
REFER TO SHEET C214 FOR SANITARY DESIGN AND LATERAL INSTALLATION DETAILS.
MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.
SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.
TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE LATERALS.

AS BUILT
DATE: 12/11/2018



Record Drawing

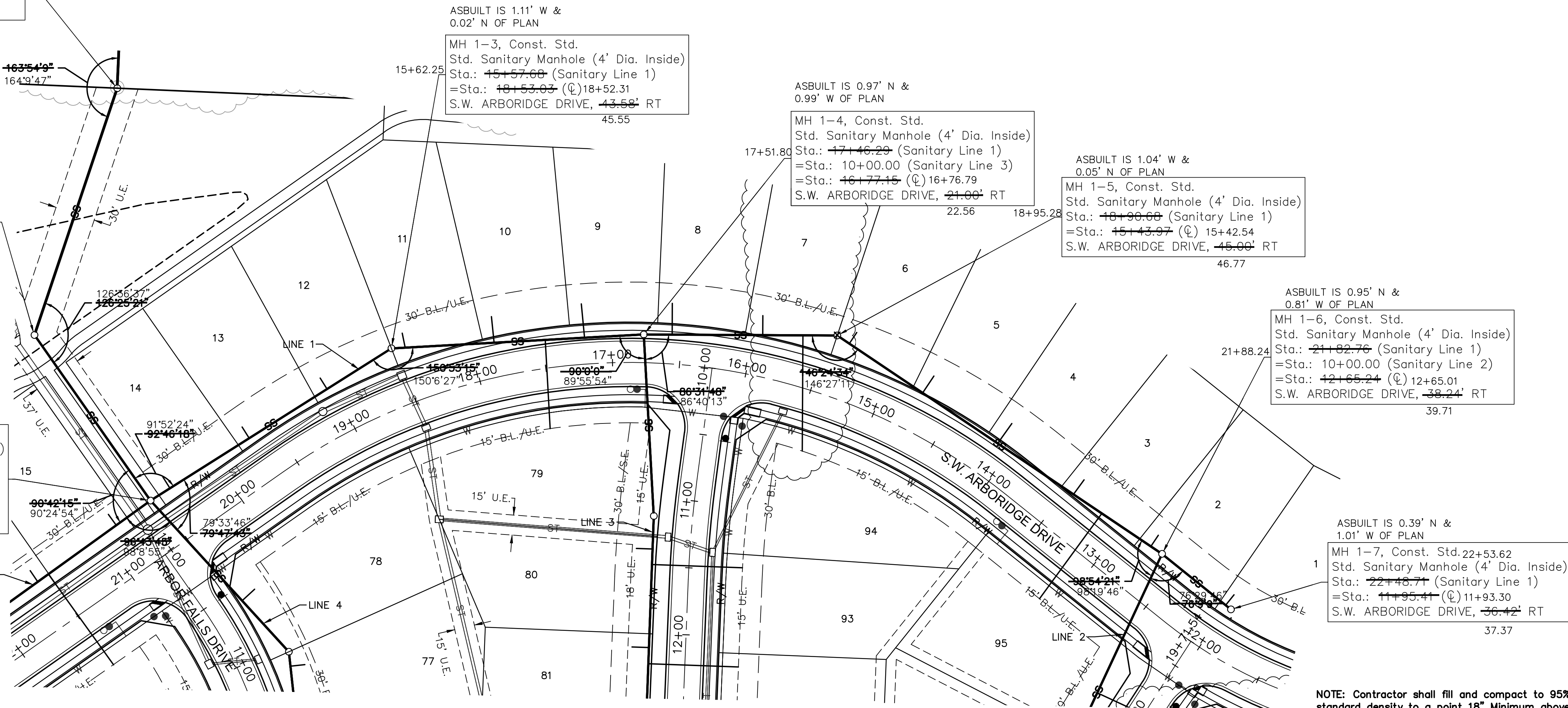
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Sta.: 10+00.00 (Sanitary Line 1)
N: 082.614.8550 N: 982614.1630
E: 2,813.803.4475 E: 2813802.7790
ASBUILT IS 0.69' S & 0.67' W OF PLAN

ASBUILT IS 0.85' S & 0.04' W OF PLAN

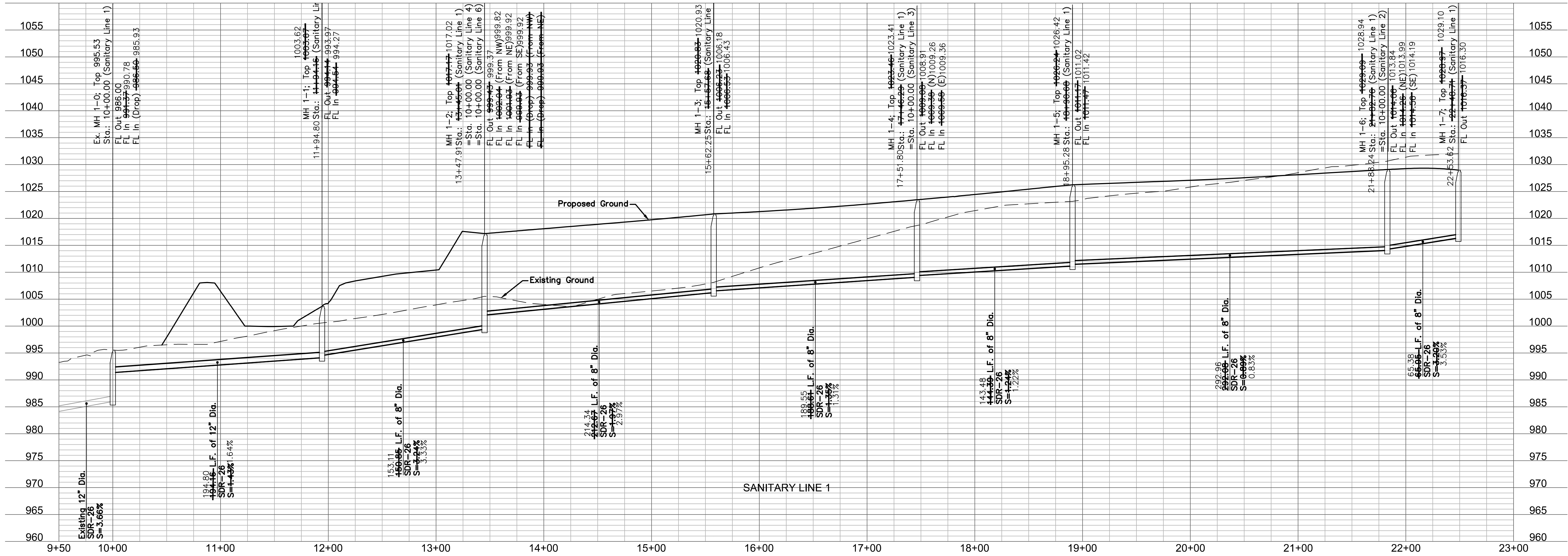
MH 1-1, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: 11+94.80 (Sanitary Line 1)
=Sta.: 20+56.03 (Q) 20+55.97
S.W. ARBORIDGE DRIVE, 490.47' RT
191.08

ASBUILT IS 2.07' E & 0.07' N OF PLAN

MH 1-2, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: 13+47.91 (Sanitary Line 1)
=Sta.: 10+00.00 (Sanitary Line 4)
=Sta.: 10+00.00 (Sanitary Line 6)
=Sta.: 20+56.03 (Q) 20+56.44
S.W. ARBORIDGE DRIVE, 39.32' RT
37.97



NOTE: Contractor shall fill and compact to 95% standard density to a point 18" Minimum above the top of pipe prior to excavation for the pipe.



OLSSON ASSOCIATES

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North Kansas City, MO 64116
TEL 816.897.4320
FAX 816.897.1393
www.olssonassociates.com

STATE OF MISSOURI

MELISSA G. DECONIA
Professional Engineer
No. 001700882
Exp. 03/04/2018

BY: MGD MGD

REVISIONS DESCRIPTION

NO. REV. DATE

1 04.12.2017 Grading note Added and Sanitary lines Revised

3 01.08.2018 Revised lateral locations

C204 SANITARY SEWER PLAN & PROFILE

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

drawn by: D.A.H.Q.

checked by: M.G.D.

designed by: P.M.L.B.

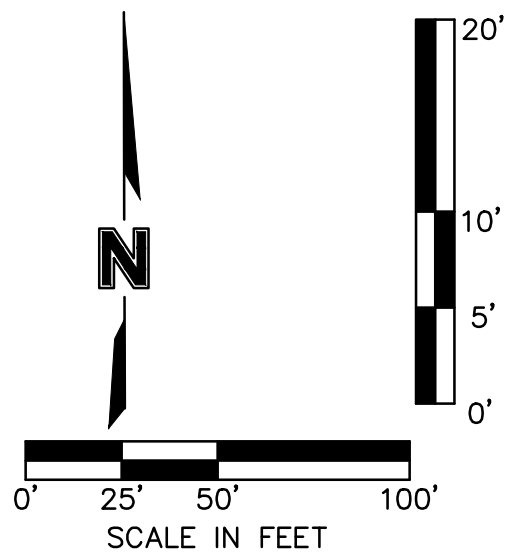
QA/QC by: K.S.J.

date: 03.03.2017

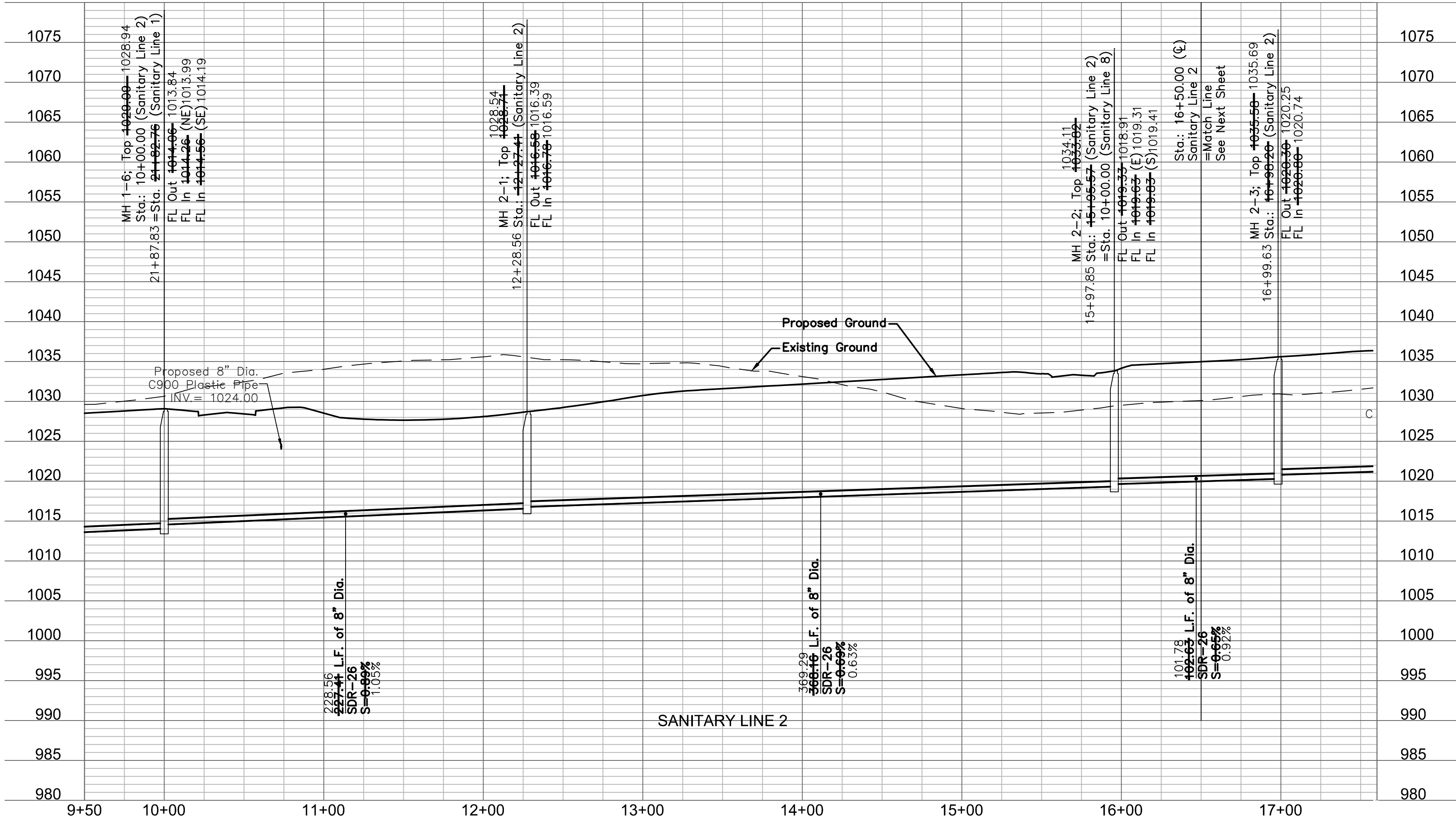
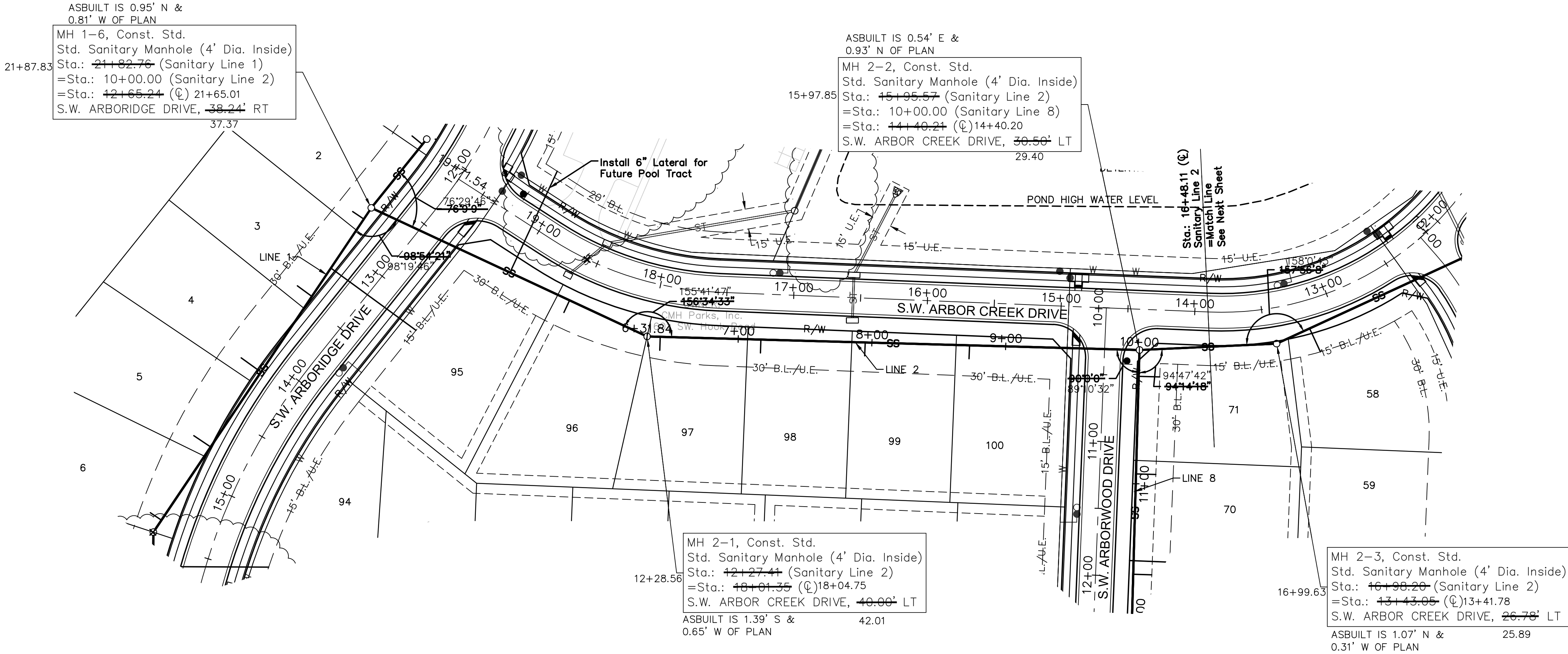
SHEET C204

2018

NOTES:
ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4" PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.
REFER TO SHEET C214 FOR SANITARY DESIGN AND LATERAL INSTALLATION DETAILS.
MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.
SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.
TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE LATERALS.



AS BUILT
DATE: 12/11/2018



Record Drawing

OLSSON[®]
ASSOCIATES

Olsson Associates - Civil Engineering
Professional Engineer
License # 00100892
North Kansas City, MO 64116
TEL 816.897.4320
FAX 816.897.1393
www.olssonassociates.com

STATE OF MISSOURI
MELISSA G. DEGENIA
Professional Engineer
License # 00100892
03/04/2018

NO. REV. 3

DATE 01.02.2018

REVISIONS DESCRIPTION
Revised lateral locations

BY MGD

SANITARY SEWER PLAN & PROFILE

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

2018

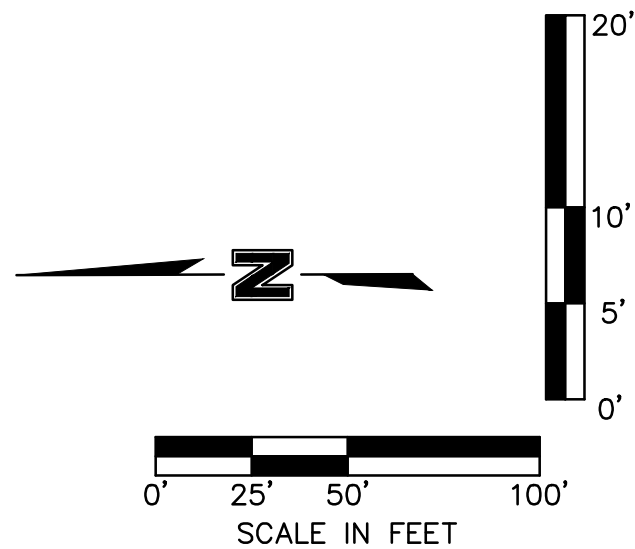
REVISIONS

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: P.M.L.B.
QA/QC by: K.S.J.
project no.: 017-0188
date: 03.03.2017

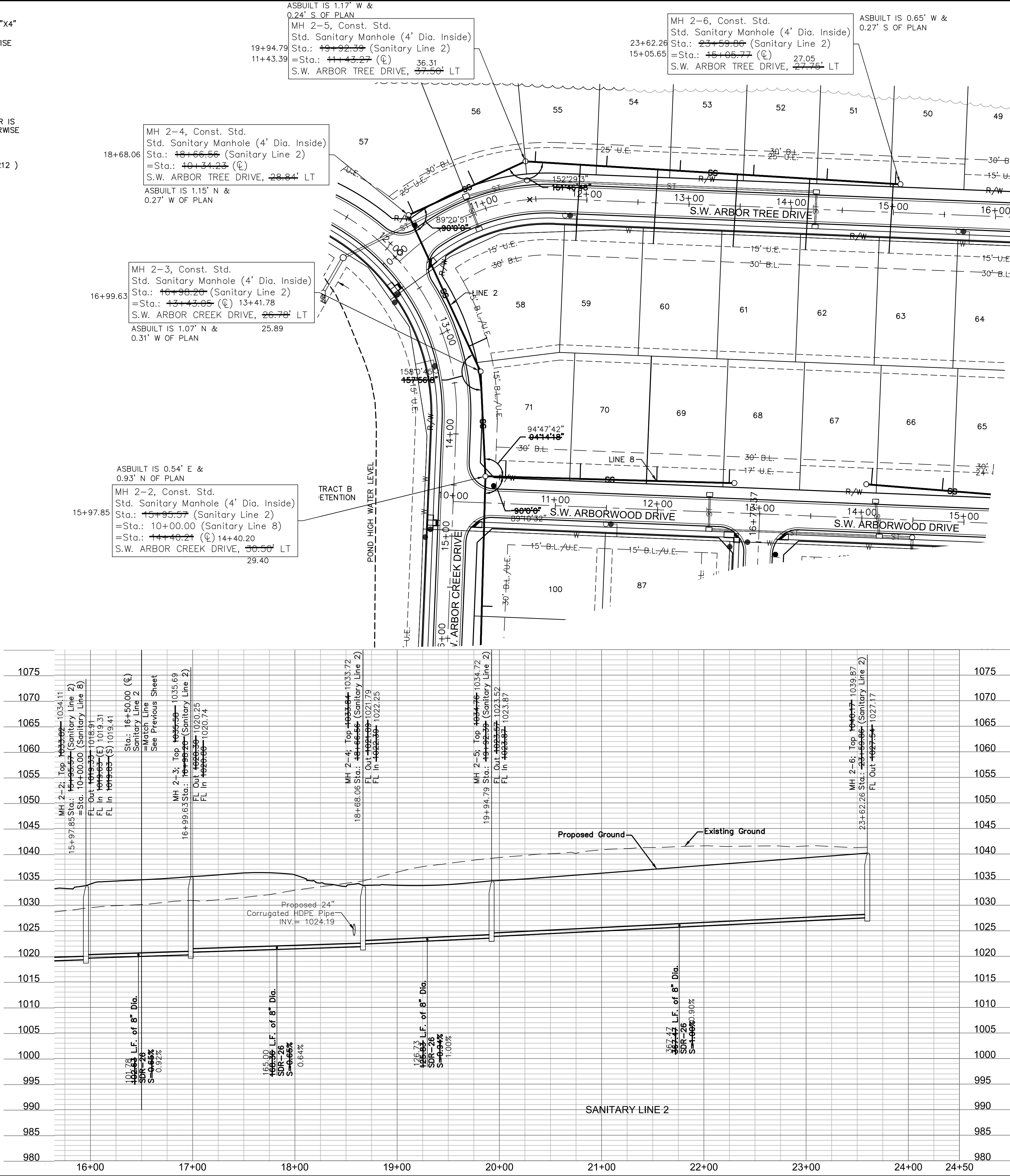
SHEET
C205

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DATE: Feb 19, 2019 6:27pm
USER: dhernandez

NOTES:
ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4" PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.
REFER TO SHEET C214 FOR SANITARY DESIGN AND LATERAL INSTALLATION DETAILS.
MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.
SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.
TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE LATERALS.



AS BUILT
DATE: 12/11/2018



Record Drawing

OLSSON ASSOCIATES

Olsson Associates - Civil Engineering
1300 E. 12th Avenue, Suite 100
North Kansas City, MO 64116
TEL 816.897.4320
FAX 816.897.1393
www.olssonassociates.com

STATE OF MISSOURI
MELISSA G. DEGENIA
Professional Engineer
NUMBER
0304/2018

NO.	REV.	DATE	REVISIONS DESCRIPTION
3		01.02.2018	Revised lateral locations

REVISIONS

SANITARY SEWER PLAN & PROFILE

HAWTHORN RIDGE
1ST PLAT

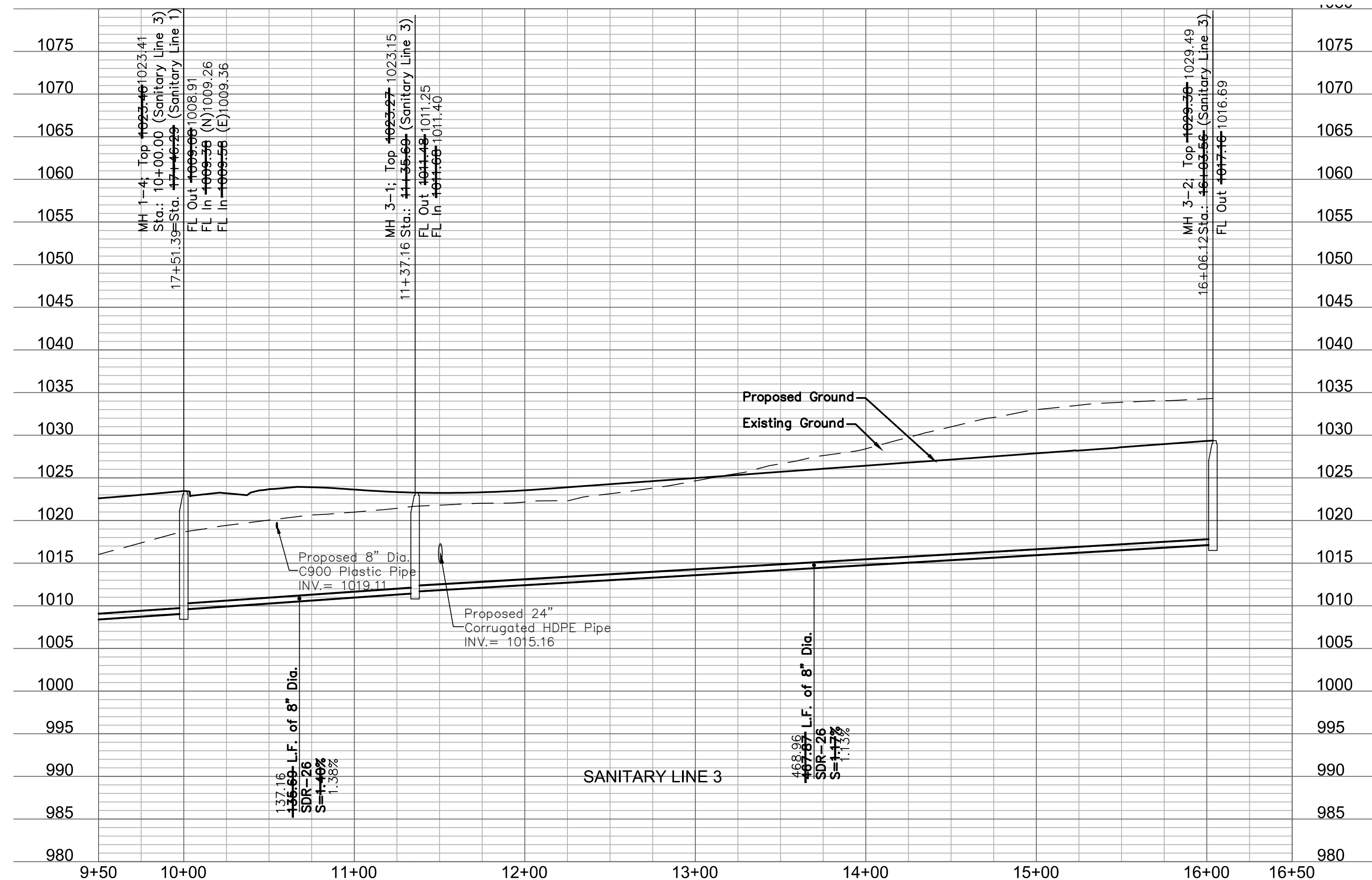
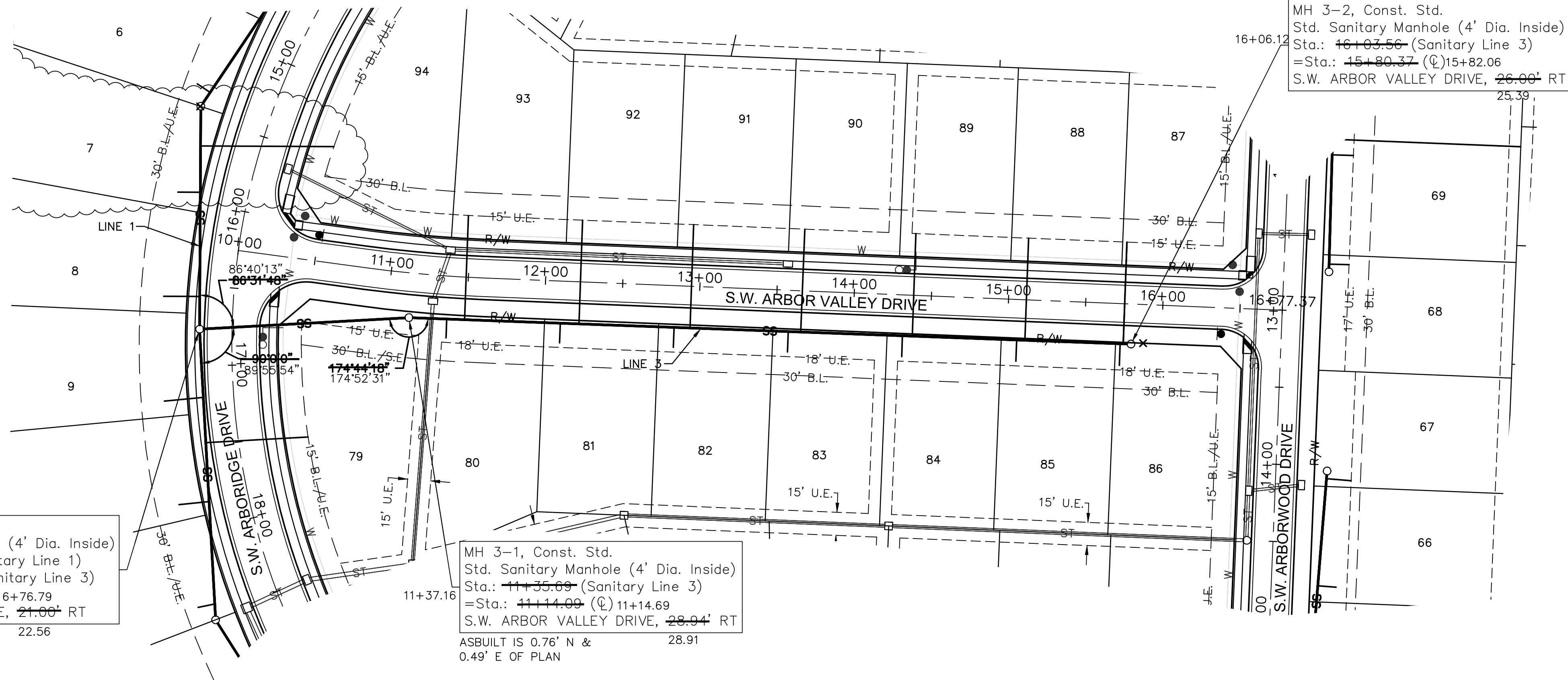
LEE'S SUMMIT, MO

2018

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: P.M.L.B.
QA/QC by: K.S.J.
project no.: 017-0188
date: 03.03.2017

SHEET
C206

TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH
STANDARDS LEE'S SUMMIT TRENCH CHECK DETAIL (SHEET C212)
ON ALL PRIVATE SANITARY SEWER SERVICE LATERALS.



Record Drawing

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Quality Associates, Civil Engineering
Professional Engineer
MS Certificate of Authority F001592
1301 Burlington, Suite 100
North Kansas City, MO 64116
TEL 816.987.4320
FAX 816.987.1393
www.olsassociates.com



	NO REV.	DATE	REVISIONS DESCRIPTION	BY
	1.	04.12.2017	Sanitary lines Revised	MGD
	3	01.08.2018	Revised lateral locations	MGD
REVISIONS				

SANITARY SEWER PLAN & PROFILE

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: P.M.D.
QA/QC by: K.S.J.
project no.: 017-0188
date: 03.03.2017

SHEET
C207

USER: dhernandez

DWG: F:\2017\0001-0500\017-0188\40-Design\AutoCAD\Final Plans\ASBUILT\CONV\01_Sanitary_36\24\C_SAN04_017-0188.dwg
DATE: Mar 04, 2019 8:30am

NOTES:
ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4" PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.

REFER TO SHEET C214 FOR SANITARY DESIGN AND LATERAL INSTALLATION DETAILS.

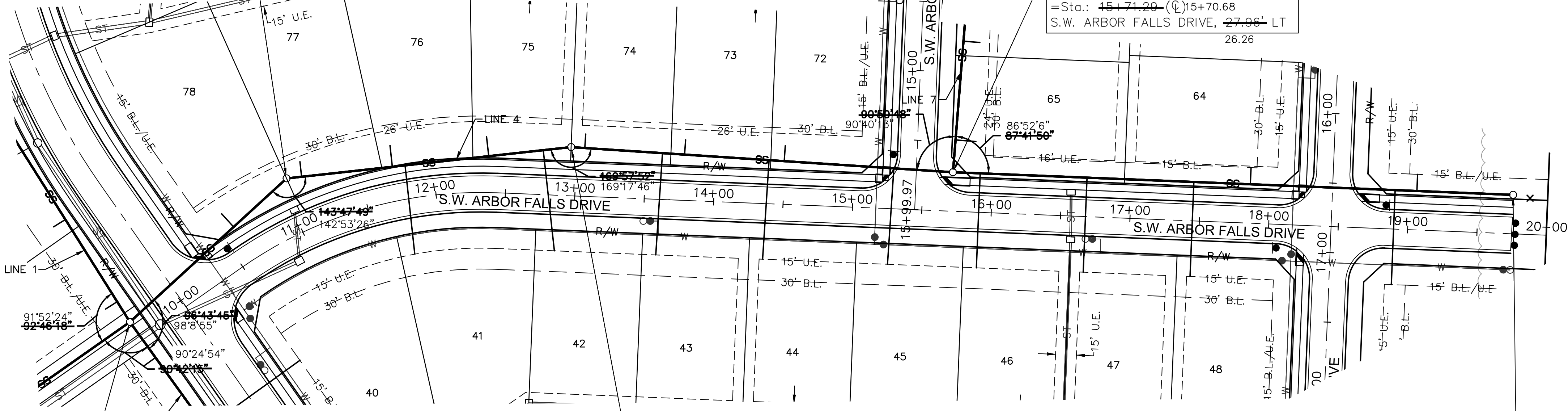
MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.

SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.

TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE LATERALS.

MH 4-1, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~11+52.89~~ (Sanitary Line 4)
=Sta.: ~~11+05.10~~ (C)11+07.44
S.W. ARBOR FALLS DRIVE, ~~40.00~~ LT

ASBUILT IS 1.01' N &
0.66' W OF PLAN



ASBUILT IS 2.07' E &
0.07' N OF PLAN

MH 1-2, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~13+45.01~~ (Sanitary Line 1)
=Sta.: 10+00.00 (Sanitary Line 4)
=Sta.: 10+00.00 (Sanitary Line 6)
=Sta.: ~~20+56.03~~ (C)20+56.44
S.W. ARBORIDGE DRIVE, ~~30.30~~ RT

MH 4-2, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~13+58.94~~ (Sanitary Line 4)
=Sta.: ~~12+05.92~~ (C)12+96.24
S.W. ARBOR FALLS DRIVE, ~~34.99~~ LT

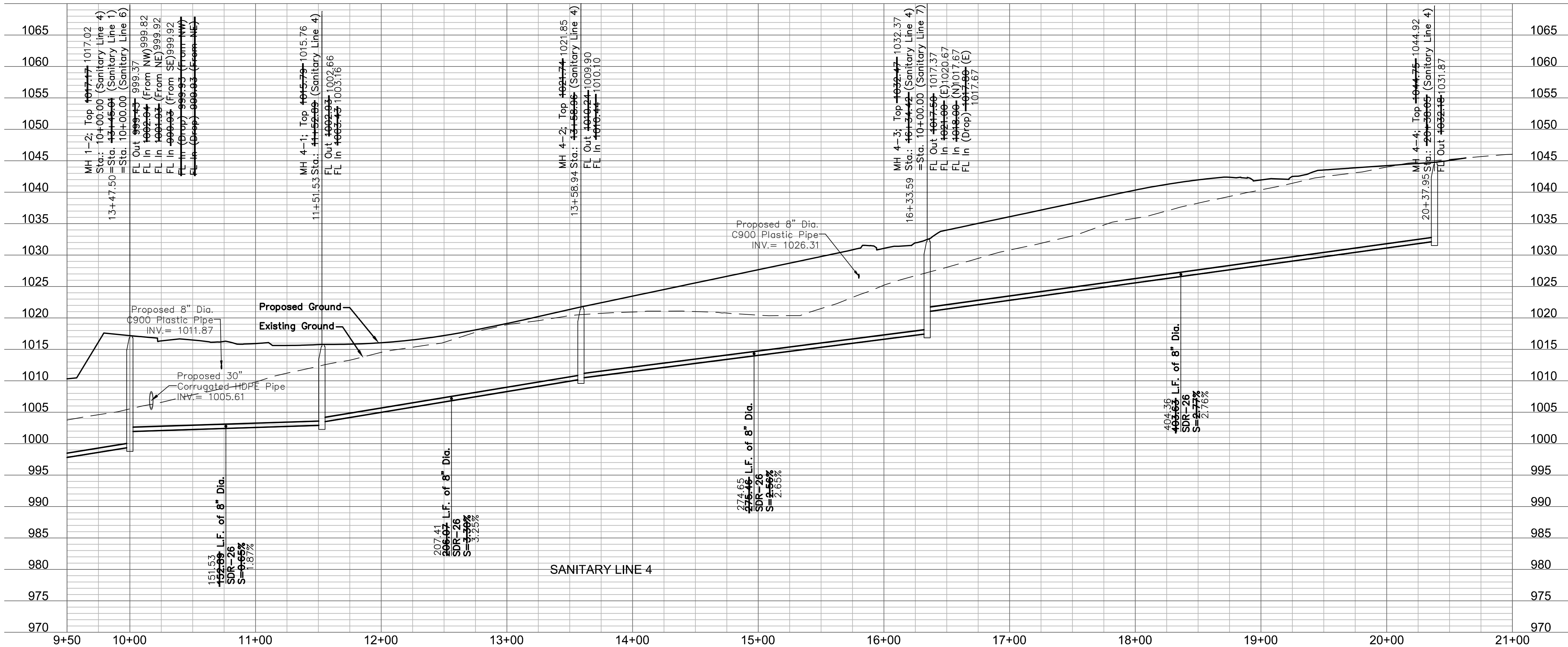
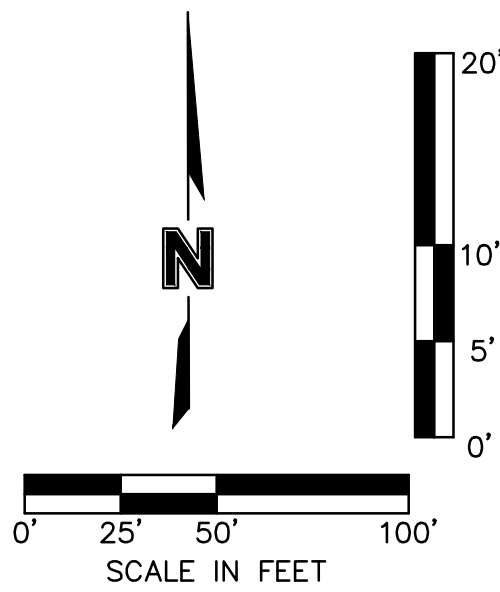
ASBUILT IS 1.35' N &
0.64' E OF PLAN

MH 4-4, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~20+38.05~~ (Sanitary Line 4)
=Sta.: ~~19+74.92~~ (C)19+75.33
S.W. ARBOR FALLS DRIVE, ~~27.93~~ LT

ASBUILT IS 1.17' N &
0.46' E OF PLAN

AS BUILT

DATE: 12/11/2018



Record Drawing

OLSSON ASSOCIATES

Olsson Associates - Civil Engineering
1301 E. 15th Avenue, Suite 100
North Kansas City, MO 64116
TEL 816.897.4320
FAX 816.897.1393
www.olssonassociates.com

STATE OF MISSOURI
MELISSA G. DEGENIA
NUMBER
03/04/2018
PROFESSIONAL ENGINEER

BY: MGD

REVISIONS DESCRIPTION

NO. REV. DATE

1. 04.12.2017 Sanitary Lines Revised

4. 06.26.2018 Manhole Location Revised

REVISIONS

SANITARY SEWER PLAN & PROFILE

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

2018

drawn by: D.A.H.Q.

checked by: M.G.D.

designed by: P.M.L.B.

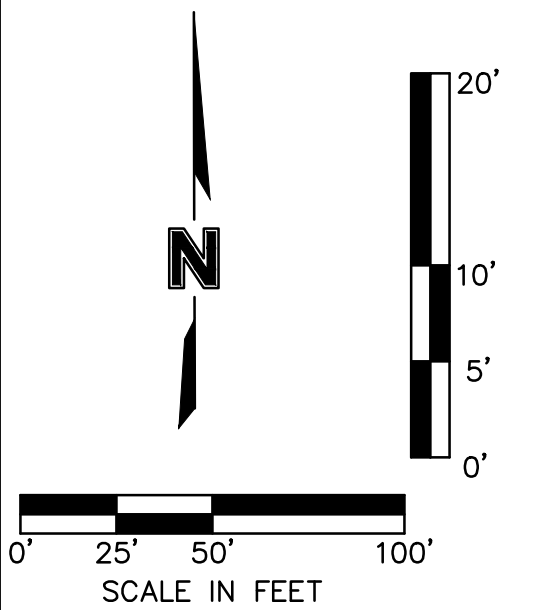
QA/QC by: K.S.J.

project no.: 017-0188

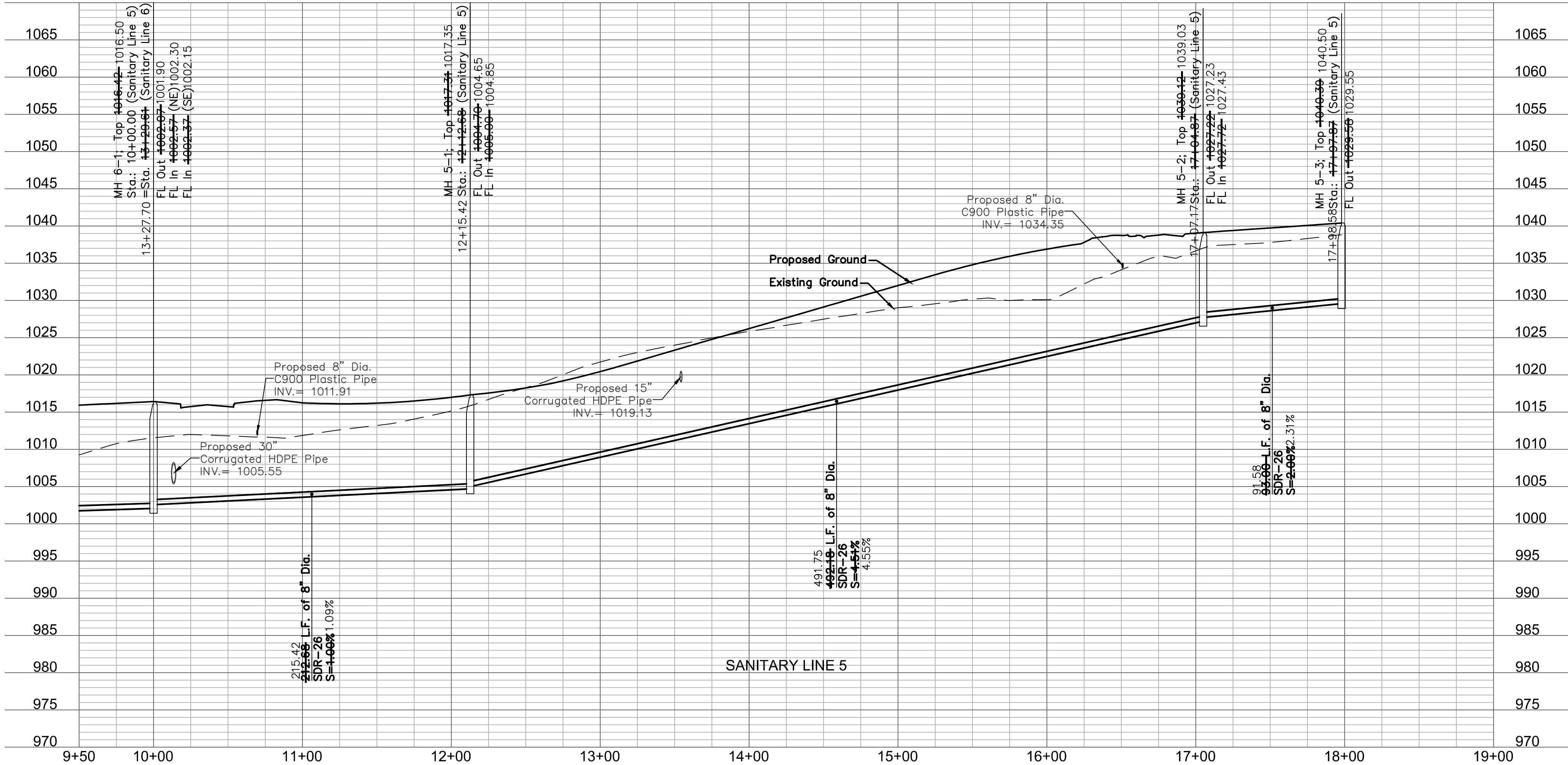
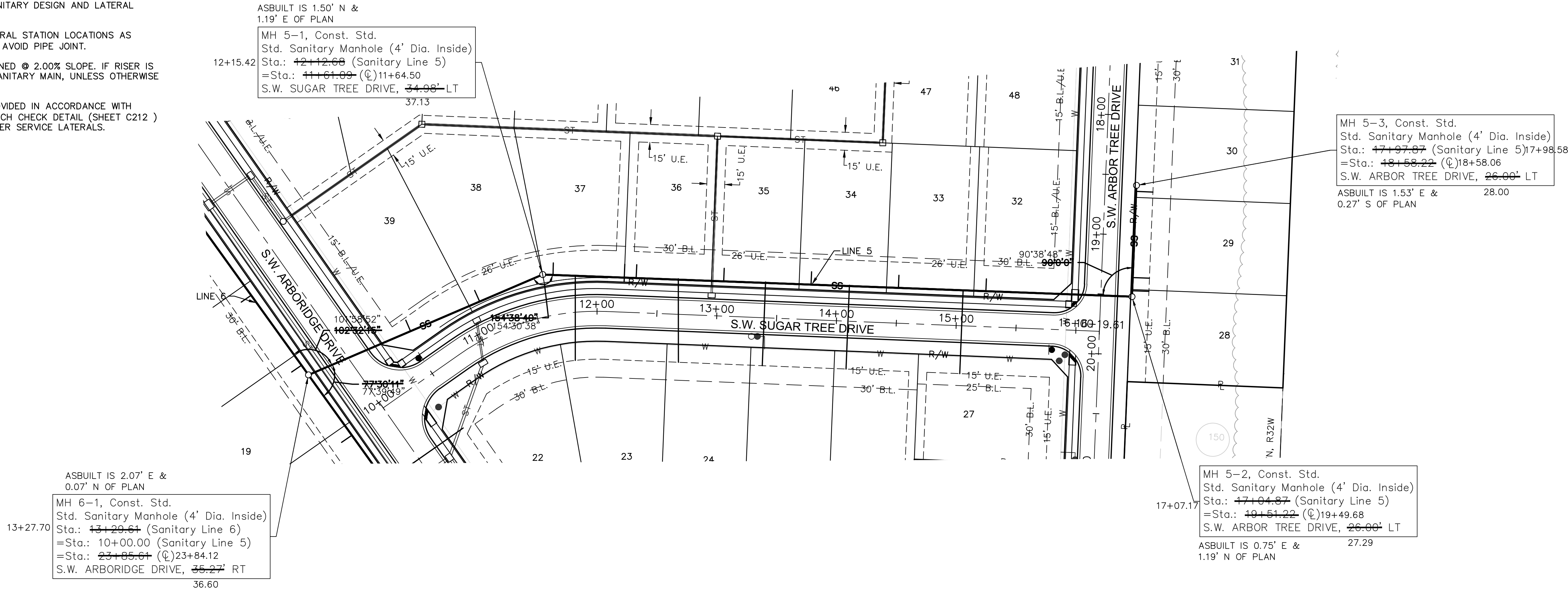
date: 03.03.2017

SHEET
C208

NOTES:
ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4" PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.
REFER TO SHEET C214 FOR SANITARY DESIGN AND LATERAL INSTALLATION DETAILS.
MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.
SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.
TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE LATERALS.



AS BUILT
DATE: 12/11/2018



Record Drawing

OLSSON[®]
ASSOCIATES

Olsson Associates - Civil Engineering
1300 E. 12th Avenue, Suite 100
North Kansas City, MO 64116
TEL 816.897.4320
FAX 816.897.1393
www.olssonassociates.com

STATE OF MISSOURI
MELISSA G. DEGENIA
Professional Engineer
No. 001106882
Exp. 03/04/2018

BY: MGD
MGD
MGD

NO. REV. DATE
1. 04.12.2017
3. 01.08.2018

REVISIONS DESCRIPTION
Sanitary Lines Revised
Revised slopes and lateral locations

SANITARY SEWER PLAN & PROFILE
HAWTHORN RIDGE
1ST PLAT
LEE'S SUMMIT, MO
2018

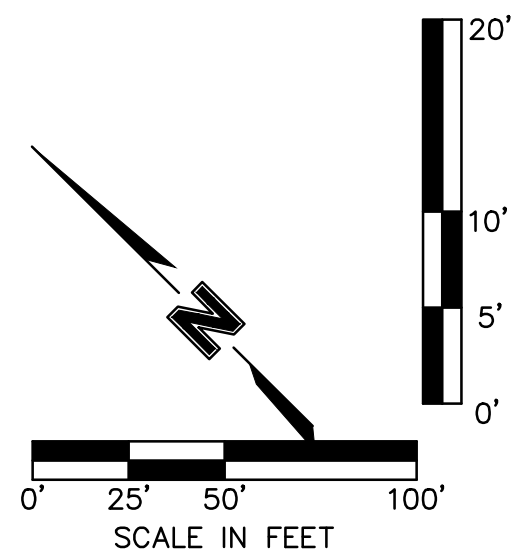
drawn by: D.A.H.O.
checked by: M.G.D.
designed by: P.M.L.B.
QA/QC by: K.S.J.
project no.: 017-0188
date: 03.03.2017

SHEET
C209

ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4" PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.

MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0 TO AVOID PIPE JOINT.

TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT
TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE
LATERALS.



NOTE: Contractor shall fill and compact to 95% standard density to a point 18" Minimum above the top of pipe prior to excavation for the pipe



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DATE: Feb 19, 2019 6:33pm

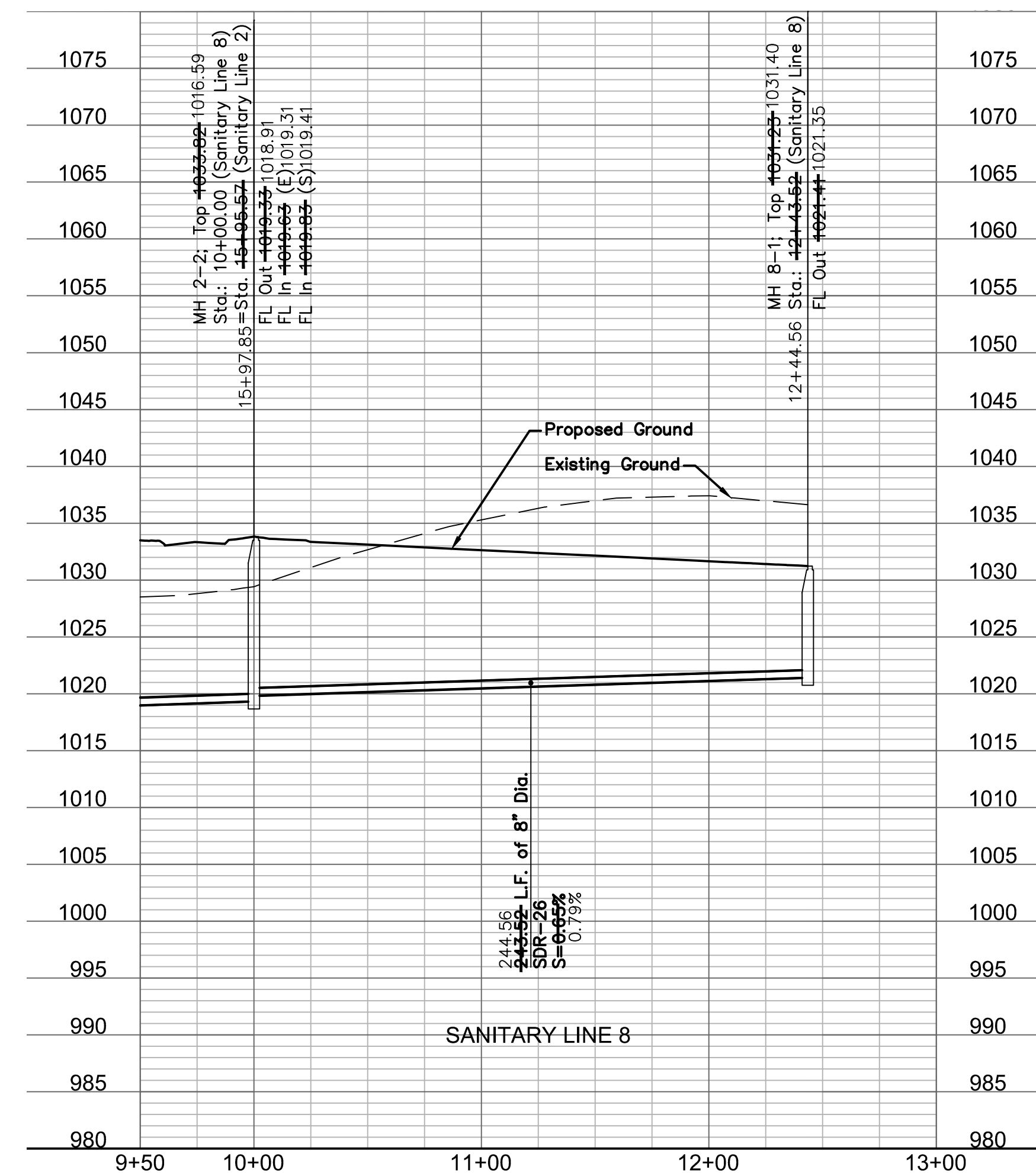
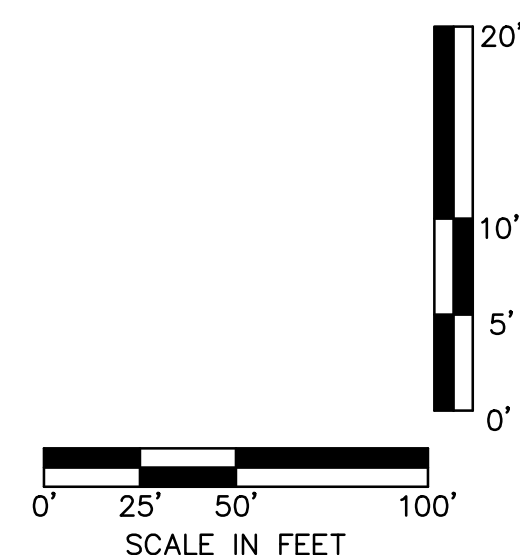
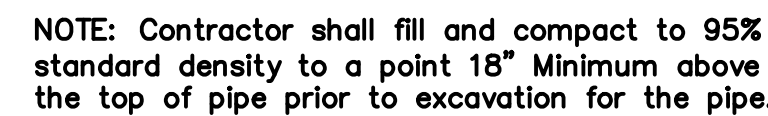
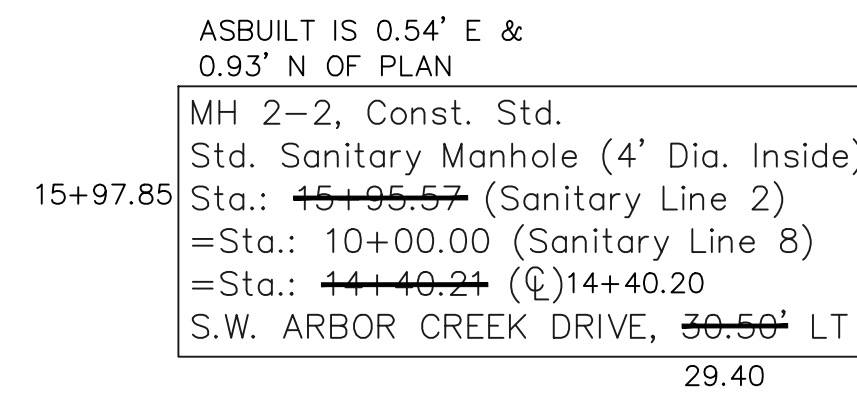
SHEET
C210

ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"X4" PVC WYE, 4"PVC 45° BEND, OR AN 8"X4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.

MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.

SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.

TRENCH CHECKS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARDS LEE'S SUMMIT
TRENCH CHECK DETAIL (SHEET C212) ON ALL PRIVATE SANITARY SEWER SERVICE
LATERALS.



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DATE: Mar 04, 2019 8:31am
USER: dhernandez

STATE OF MISSOURI
MELISSA G. DEGONIA
NUMBER
PE-2011000892
03/04/2019
PROFESSIONAL ENGINEER

--	--	--	--	--

TION

ESCRIBAN

DISCUSSION

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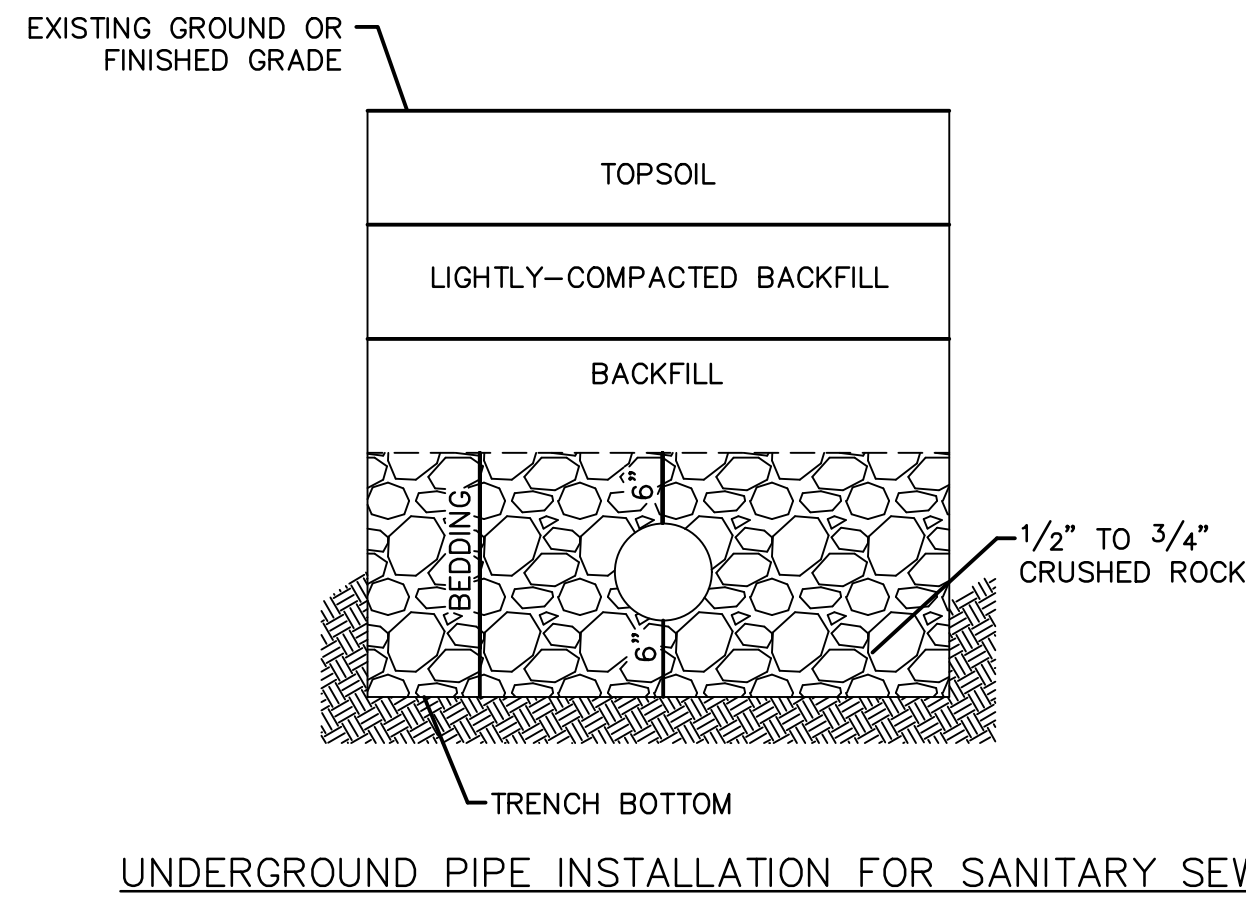
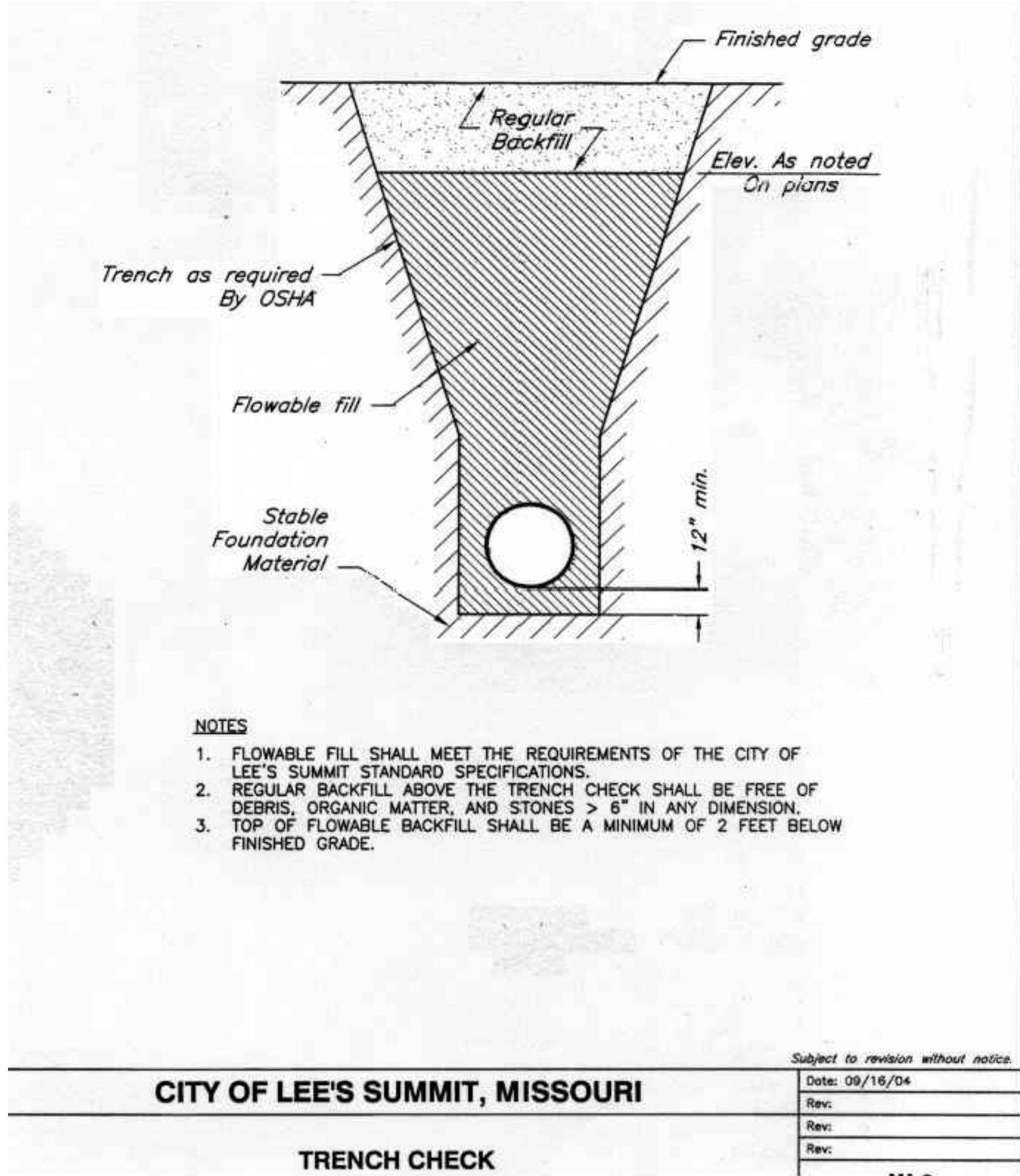
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drawn by
checked
designed

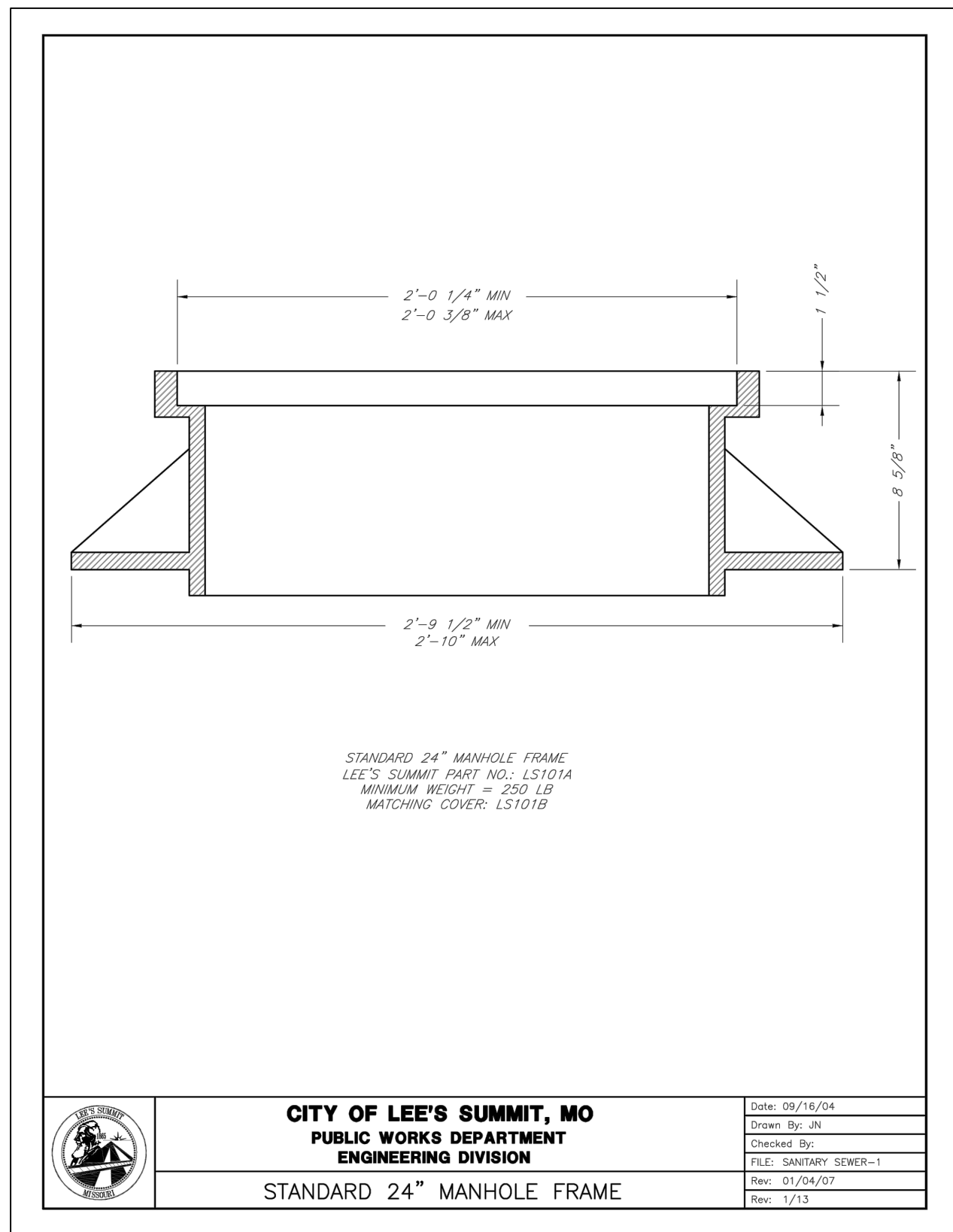
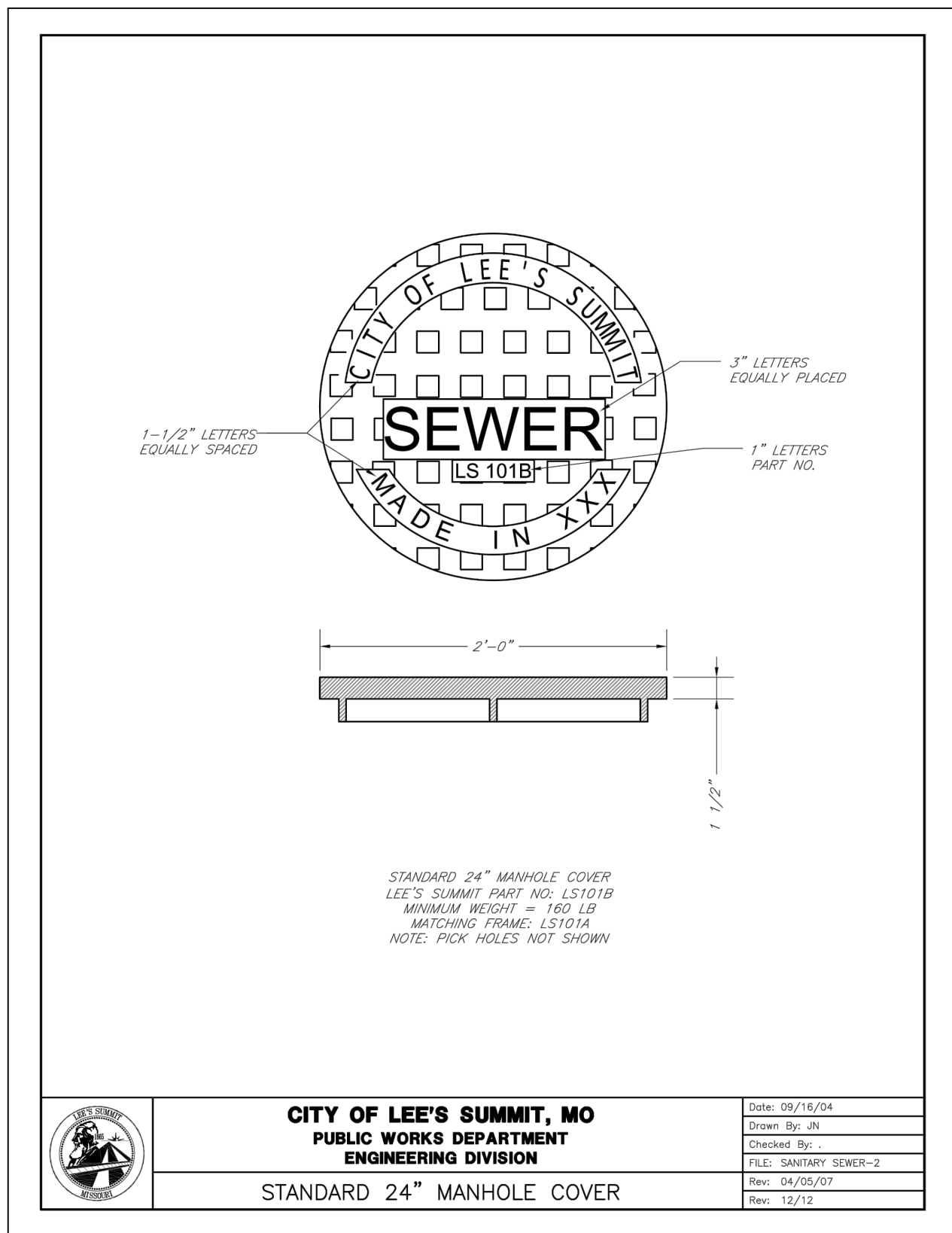
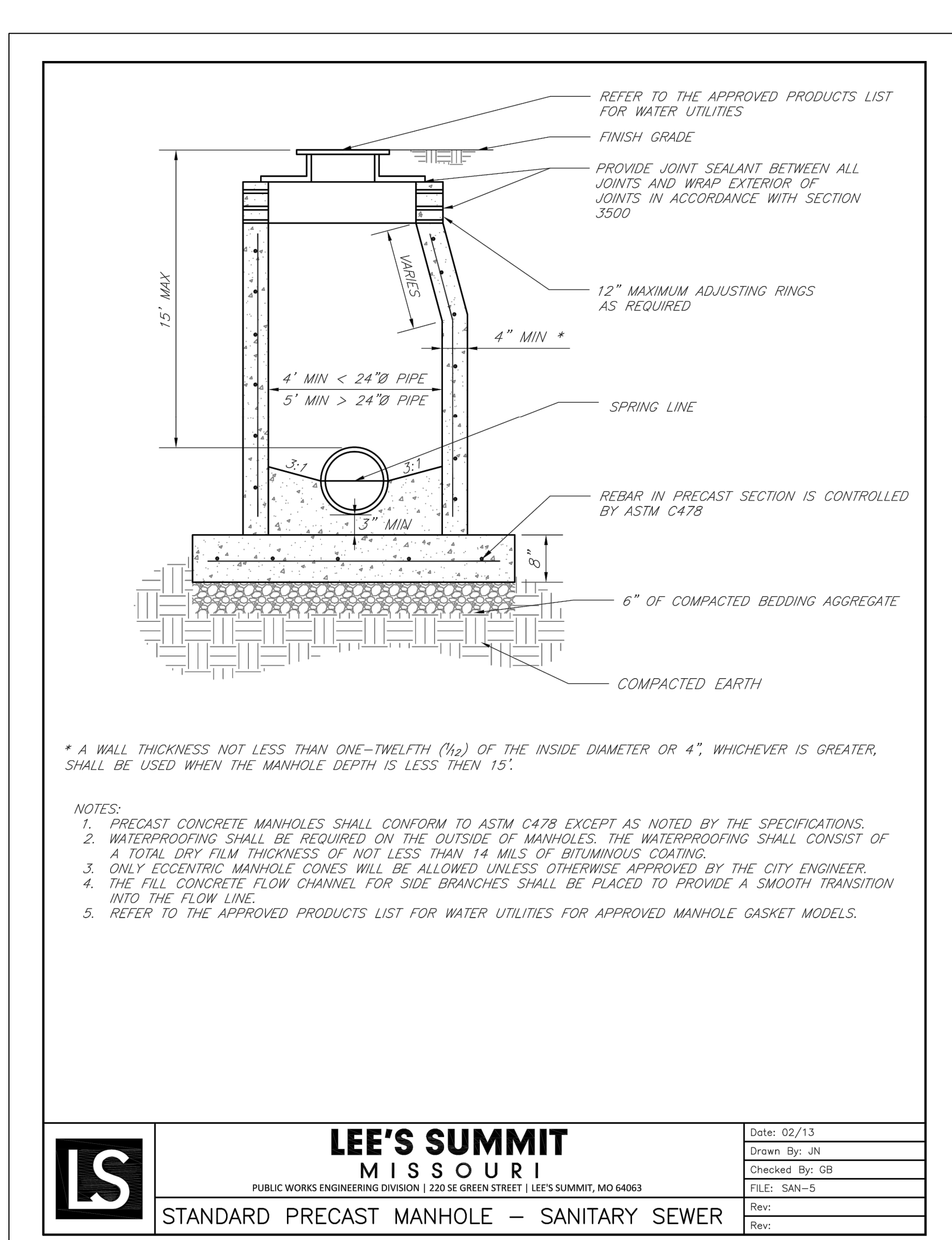
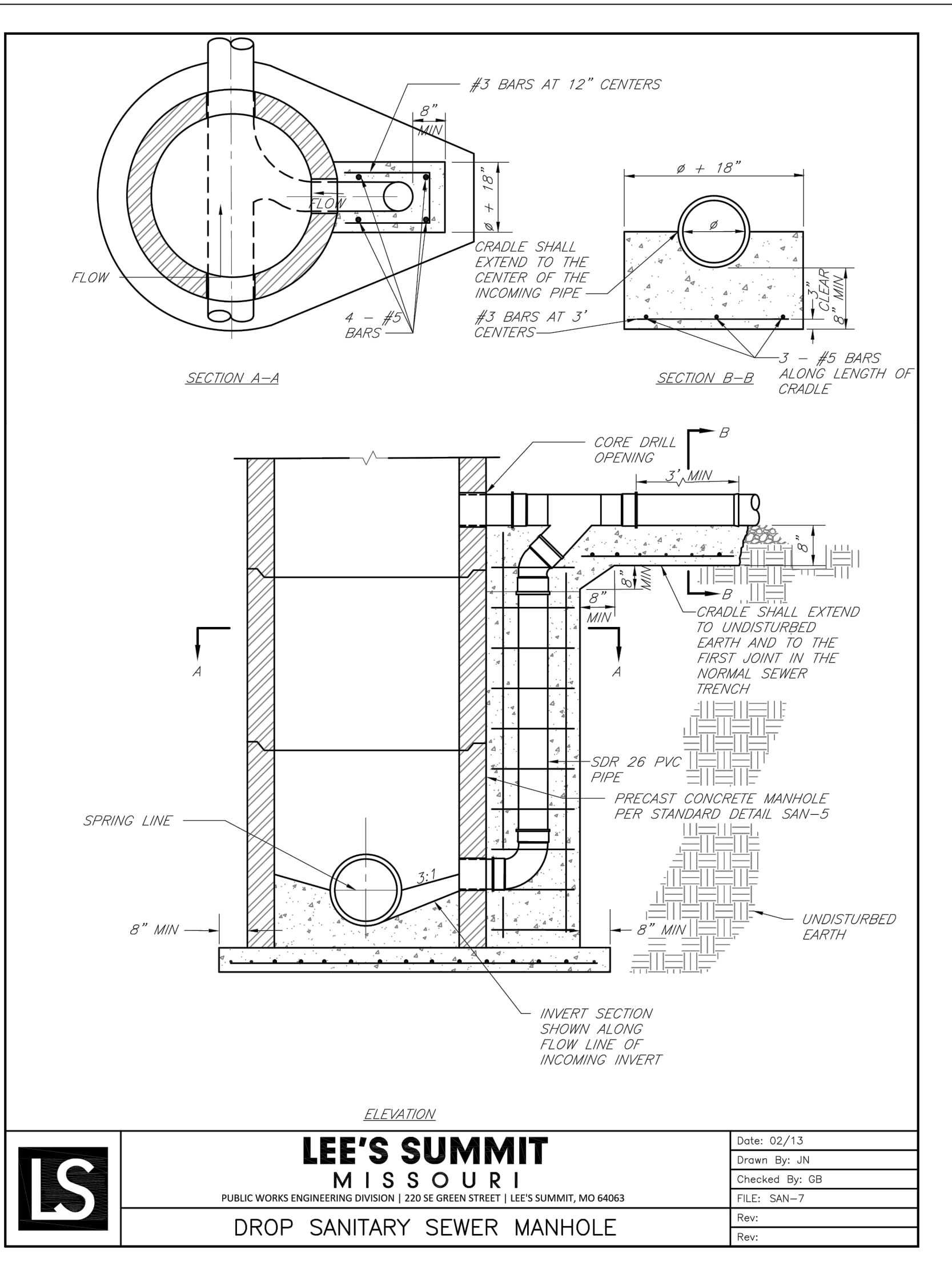
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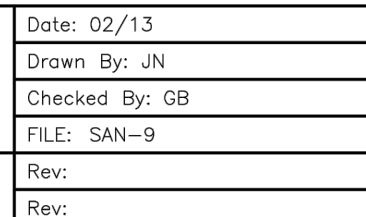


- NOTES:**
1. A MINIMUM OF 36 INCHES OF COVER SHALL BE OVER THE TOP OF THE PIPE. THIS MINIMUM OF COVER SHALL BE FROM THE TOP OF PIPE TO THE FINISHED GRADE.
 2. BEDDING AGGREGATE SHALL BE PLACED FROM A LEVEL 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL 6 INCHES ABOVE THE TOP OF THE PIPE.
 3. TRENCH BACKFILL IN PAVED AREAS WITHIN STREET OR ALLEY RIGHT OF WAYS
 - a. NARROW TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES 24 INCHES OR LESS IN WIDTH AND SHALL BE TYPE A FLOWABLE FILL.
 - b. STANDARD TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES BETWEEN 24 TO 48 INCHES WIDE SHALL BE EITHER TYPE A FLOWABLE FILL OR DENSE, WELL GRADED AGGREGATE BASE MATERIAL. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS FOR KDOT AB-3; MODOT TYPES 1 OR 5; OR APWA 2202.2.
 - c. WIDE TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES GREATER THAN 48 INCHES WIDE SHALL BE SUITABLE MATERIAL AS SPECIFIED FOR EARTH EMBANKMENT IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.C.
 4. SUITABLE BACKFILL MATERIAL OUTSIDE OF PAVED AREAS WITHIN RIGHT OF WAY, AND ALL AREAS OUTSIDE RIGHT OF WAY, MAY BE SUITABLE MATERIAL AS SPECIFIED FOR EARTH EMBANKMENT IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.C. SUITABLE BACKFILL MATERIAL MAY ALSO BE OTHER TRENCH BACKFILL MATERIAL (FLOWABLE FILL OR AGGREGATE BASE) DEPENDING ON SITE CONDITIONS, TRENCH WIDTHS OR AT THE DIRECTION OF THE CITY'S ON SITE INSPECTOR.

Record Drawing



NOT AS BUILT



Date: 12/13
Drawn By: SC
Checked By: DL
FILE: SAN-1
Rev: 10/15
Rev: 12/15

SHEET
C213

Sanitary Sewer Laterals					
Lot Number	Lateral Station	Lateral Length	Riser	Flowline at End of Lateral	Minimum Servicable Floor Elevation
		(ft)	(ft)	(ft)	(ft)
1	22+43.71	10.00	0.0	1017.4	1020.21
2	21+72.69	10.00	2.0	1017.1	1019.93
3	21+03.57	13.44	2.0	1016.6	1019.39
4	20+34.91	18.23	2.0	1016.1	1018.87
5	19+67.45	15.14	2.0	1015.4	1018.21
6	19+01.54	10.00	2.0	1014.7	1017.53
7	18+35.05	14.52	2.0	1013.7	1016.53
8	17+67.49	23.31	2.0	1013.1	1015.87
9	17+01.19	25.37	2.0	1011.9	1014.74
10	16+34.39	19.54	2.0	1010.9	1013.72
11	15+66.47	10.87	2.0	1009.8	1012.63
12	15+00.87	10.00	2.0	1008.3	1011.07
13	14+32.12	10.09	2.0	1006.9	1009.77
14	13+62.21	10.00	2.0	1005.5	1008.34
15	10+31.51	10.00	3.0	1004.3	1007.07
16	11+03.49	10.00	2.0	1003.8	1006.56
17	11+75.55	10.00	2.0	1004.2	1007.03
18	12+47.55	10.00	2.0	1004.7	1007.50
19	13+19.66	10.00	2.0	1005.5	1008.27
20	13+91.65	10.45	2.0	1005.9	1008.74
21	14+63.53	11.28	2.0	1006.4	1009.22
22	14+40.89	78.99	0.0	1005.7	1008.47
23	12+41.46	79.79	1.0	1009.7	1012.50
24	13+27.06	69.79	1.0	1013.5	1016.34
25	13+98.67	70.00	2.0	1017.8	1020.57
26	14+68.87	70.00	1.0	1019.9	1022.75
27	15+63.87	70.00	2.0	1025.2	1028.01
28	17+09.87	14.00	0.0	1029.1	1031.90
29	17+20.87	14.00	0.0	1029.3	1032.12
30	17+92.87	14.00	0.0	1030.8	1033.56
31	19+53.05	68.00	0.0	1032.2	1034.99
32	15+82.87	10.00	3.0	1025.9	1028.65
33	15+09.87	10.00	3.0	1022.6	1025.36
34	14+36.87	10.00	2.0	1018.3	1021.08
35	13+63.87	10.00	1.0	1014.0	1016.81
36	12+90.95	10.61	2.0	1011.7	1014.51
37	12+21.32	10.00	1.0	1007.6	1010.37
38	11+55.31	10.16	0.0	1005.3	1008.13
39	10+92.67	10.00	0.0	1004.7	1007.50
40	10+93.90	83.33	1.0	1004.2	1006.99
41	12+38.66	64.18	0.0	1008.5	1011.35
42	13+38.81	72.81	0.0	1012.0	1014.83
43	14+24.85	73.35	0.0	1014.6	1017.40
44	15+01.82	71.39	1.0	1017.5	1020.31
45	15+91.77	69.11	2.0	1020.7	1023.55
46	16+54.05	68.00	0.0	1023.9	1026.70
47	17+31.05	68.00	1.0	1027.0	1029.82
48	18+08.05	68.00	2.0	1030.1	1032.93
49	19+63.05	12.00	0.0	1031.3	1034.14
50	23+54.86	12.25	1.0	1029.7	1032.52
51	22+57.88	10.75	0.0	1028.0	1030.84
52	22+15.89	10.00	0.0	1027.3	1030.10
53	21+43.91	10.00	0.0	1026.6	1029.38
54	20+71.92	10.00	0.0	1025.9	1028.66
55	20+01.92	10.00	0.0	1025.2	1027.97
56	19+37.62	14.79	0.0	1024.4	1027.15
57	18+71.56	12.33	0.0	1023.7	1026.48
58	17+25.37	19.27	0.0	1022.5	1025.25
59	20+46.34	74.30	0.0	1026.9	1029.69
60	21+22.15	72.72	0.0	1027.6	1030.42
61	22+00.24	71.09	0.0	1028.4	1031.17
62	22+71.06	69.51	0.0	1029.0	1031.84
63	23+52.86	67.89	0.0	1029.8	1032.63
64	18+48.74	12.00	3.0	1031.1	1033.92
65	10+23.36	13.80	0.0	1019.4	1022.23
66	10+84.55	13.85	0.0	1019.8	1022.63
67	11+64.14	16.05	0.0	1020.4	1023.19
68	12+38.52	12.94	0.0	1022.6	1023.44
69	11+67.67	13.85	0.0	1022.2	1024.99
70	10+62.67	14.81	0.0	1021.7	1024.53
71	10+19.68	15.75	0.0	1021.3	1024.07
72	15+12.77	11.12	2.0	1017.6	1020.36
73	14+40.86	10.59	1.0	1014.7	1017.53
74	13+68.87	10.08	1.0	1012.9	1015.68
75	12+99.30	14.21	0.0	1009.6	1012.35
76	12+29.48	15.35	0.0	1007.3	1010.07
77	11+63.74	10.85	0.0	1005.0	1007.81
78	11+01.23	12.34	0.0	1003.8	1006.64
79	16+72.65	66.28	1.0	1011.4	1014.19
80	11+60.38	12.15	0.0	1013.2	1016.01
81	12+33.82	12.69	0.0	1014.1	1016.88
82	13+07.52	12.95	0.0	1015.0	1017.75
83	13+81.52	13.21	0.0	1015.8	1018.62
84	14+55.51	13.47	0.0	1016.7	1019.50
85	15+29.51	13.74	0.0	1017.6	1020.37
86	15+96.56	14.00	0.0	1018.4	1021.16
87	15+98.56	66.02	0.0	1019.4	1022.22
88	15+34.80	66.24	0.0	1018.7	1021.48
89	14+61.80	66.50	0.0	1017.8	1020.63
90	13+89.79	66.76	0.0	1017.0	1019.79
91	13+17.80	67.01	0.0	1016.2	1018.95
92	12+45.80	67.27	0.0	1015.3	1018.12
93	11+71.73	67.54	0.0	1014.3	1017.14
94	18+65.05	86.31	0.0	1013.6	1016.38
95	21+25.75	82.59	1.0	1017.2	1019.99
96	11+63.53	10.00	0.0	1017.2	1020.01
97	12+37.22	10.00	0.0	1018.0	1020.85
98	13+12.48	10.00	1.0	1019.5	1022.35
99	13+90.46	10.00	2.0	1021.1	1023.87
100	14+68.46	10.00	2.0	1021.6	1024.41
TRACT C	11+14.15	88.20	0.0	1018.3	1024.34

Record Drawing

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Sanitary Sewer Design Information											
Upstream Manhole	Downstream Pipe Slope	Downstream Pipe Diameter	Proposed Cumulative Area	Future Cumulative Area	Peak Base Flow	Peak Infiltration	Peak Inflow	Total Peak Flow	Downstream Pipe Mannings N	Downstream Pipe Capacity	Downstream Pipe Full Flow Velocity
	(%)	(in)	(Ac.)	(Ac.)	(gpd)	(gpd)	(cfs)	(cfs)		(cfs)	(fps)
Ex. MH 1-0	3.67%	12	46.09	2.55	72960	24320	1.13	1.28	0.013	6.83	8.70
MH 1-1	1.43%	12	46.09	2.55	72960	24320	1.13	1.28	0.013	4.26	5.42
MH 1-2	3.24%	8	15.64	2.55	27285	9095	0.49	0.55	0.013	2.18	6.23
MH 1-3	1.97%	8	13.51	2.55	24090	8030	0.44	0.49	0.013	1.70	4.86
MH 1-4	1.35%	8	12.99	2.55	23310	7770	0.43	0.47	0.013	1.41	4.03
MH 1-5	1.24%	8	9.13	2.55	17520	5840	0.31	0.34	0.013	1.35	3.85
MH 1-6	0.89%	8	8.67	2.55	16830	5610	0.30	0.33	0.013	1.14	3.26
MH 1-7	3.20%	8	0.97	2.55	5280	1760	0.12	0.13	0.013	2.16	6.19
MH 2-1	0.89%	8	7.19	0.00	10785	3595	0.21	0.24	0.013	1.14	3.26
MH 2-2	0.69%	8	6.89	0.00	10335	3445	0.21	0.23	0.013	1.01	2.88
MH 2-3	0.65%	8	4.94	0.00	7410	2470	0.15	0.17	0.013	0.98	2.80
MH 2-4	0.65%	8	4.05	0.00	6075	2025	0.13	0.14	0.013	0.97	2.79
MH 2-5	0.94%	8	3.76	0.00	5640	1880	0.12	0.13	0.013	1.17	3.35
MH 2-6	1.00%	8	3.12	0.00	4680	1560	0.10	0.11	0.013	1.21	3.46
MH 3-1	1.40%	8	3.64	0.00	5460	1820	0.11	0.13	0.013	1.43	4.10
MH 3-2	1.17%	8	0.56	0.00	840	280	0.02	0.02	0.013	1.31	3.75
MH 4-1	0.65%	8	5.65	0.00	8475	2825	0.17	0.19	0.013	0.98	2.80
MH 4-2	3.30%	8	5.02	0.00	7530	2510	0.15	0.17	0.013	2.20	6.29
MH 4-3	2.56%	8	4.17	0.00	6255	2085	0.13	0.14	0.013	1.93	5.54
MH 4-4	2.77%	8	2.36	0.00	3540	1180	0.08	0.08	0.013	2.01	5.76
MH 5-1	1.00%	8	4.16	0.00	6240	2080	0.13	0.14	0.013	1.21	3.46
MH 5-2	4.51%	8	3.07	0.00	4605	1535	0.10	0.11	0.013	2.57	7.36
MH 5-3	2.00%	8	1.99	0.00	2985	995	0.06	0.07	0.013	1.71	4.90
MH 6-1	0.65%	8	24.80	0.00	37200	12400	0.64	0.72	0.013	0.97	2.79
MH 6-2	0.65%	8	20.00	0.00	30000	10000	0.53	0.59	0.013	0.97	2.79
MH 6-3	0.91%	8	20.00	0.00	30000	10000	0.53	0.59	0.013	1.15	3.31
MH 6-4	0.65%	8	20.00	0.00	30000	10000	0.53	0.59	0.013	0.98	2.79
MH 6-5	0.65%	8	10.00	0.00	15000	5000	0.29	0.32	0.013	0.97	2.79
MH 6-6	0.72%	8	10.00	0.00	15000	5000	0.29	0.32	0.013	1.03	2.94
MH 7-1	0.65%	8	1.00	0.00	1500	500	0.03	0.04	0.013	0.97	2.79
MH 8-1	0.65%	8	1.00	0.00	1500	500	0.03	0.04	0.013	0.97	2.79

C214 SANITARY SEWER TABLES HAWTHORN RIDGE 1ST PLAT		NO. REV. DATE 1 04.19.2017 2 11.20.2017 3 01.09.2018 4 08.27.2018		REVISIONS DESCRIPTION 1 Revised calculations 2 Revised calculations 3 Revised calculations 4 Revised calculations		BY	
LEE'S SUMMIT, MO		2018		REVISIONS		18	

drawn by: _____ D.A.H.Q

checked by: _____ M.G.D

designed by: _____ P.M.D

QA/QC by: _____ K.S.I

project no.: 017-0188

date: 03.03.2017

SHEET

C214