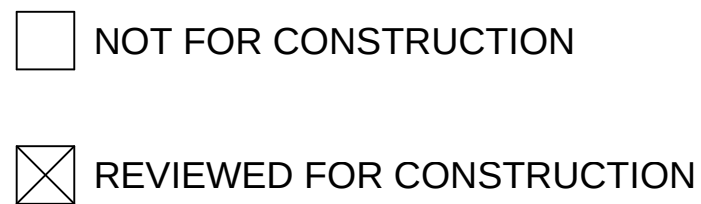
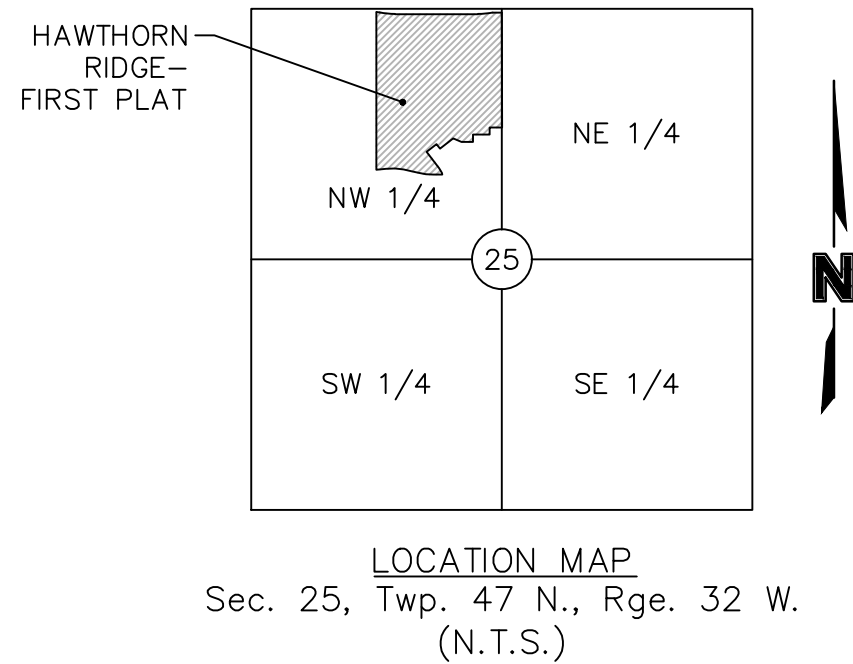


SECTION 25, TOWNSHIP 47 N., RANGE 32 W.
IN LEE'S SUMMIT, JACKSON, MO



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
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SANITARY SEWER TABLES	C214

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

Mulin to Agan

03/04/2019

Melissa G DeGonia, P.E.

Civil Engineer

MO# 2011000892

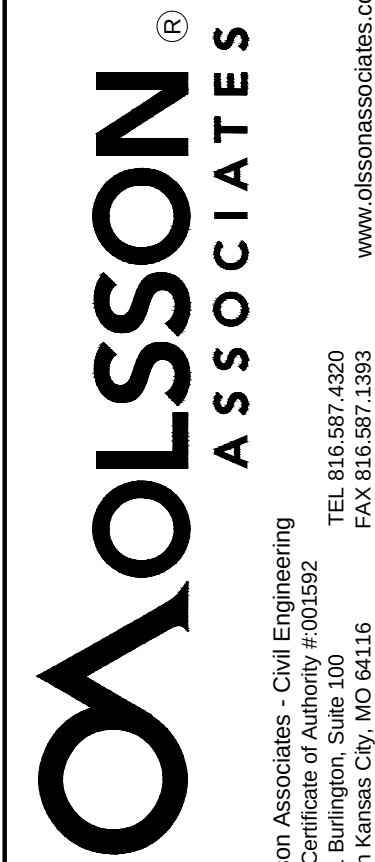
The Policy of the "Plan Preparation Criteria and Procedure" and Policy Document No. 880544 "As-Built Drawings for Sewer Built by Permit" stipulate the following regarding "as-built" drawings: 1. Drawings are to be provided within thirty (30) days after the date the "Request for As-Built's" letter is 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.

PROPERTY DESCRIPTION:

A tract of land in the NorthwestQuarter of Section 25, Township 47 North, Range 32 West of the 5th Principal Meridian in Lee's Summit, Jackson County, Missouri being bounded and described as follows: Commencing at the center of said Section 25; thence North 02°18'36" East, along the West line of said Northwest Quarter, 1,392.58 feet to the Point of Beginning of the tract of land to be herein described; thence North 87°41'24" West, 130.00 feet; thence South 02°18'36" West, 72.00 feet; thence North 87°41'24" West, 175.00 feet; thence South 02°18'36" West, 78.00 feet; thence North 87°41'24" West, 121.73 feet; thence North 65°30'07" West, 95.33 feet; thence South 54°57'38" West, 175.90 feet; thence North 35°02'22" West, 58.00 feet; thence South 54°57'38" West, 130.00 feet; thence South 35°02'22" East, 216.00 feet; thence South 26°05'21" East, 59.04 feet; thence South 11°06'36" East, 18.27 feet; thence North 87°41'24" West, 95.00 feet; thence North 85°13'24" West, 75.61 feet; thence North 77°26'18" West, 74.74 feet; thence North 73°51'15" West, 80.00 feet; thence North 75°24'39" West, 87.64 feet; thence North 81°26'34" West, 91.19 feet; thence North 87°51'30" West, 91.19 feet; thence South 86°06'14" West, 105.62 feet to a point on the West line of the East half said Northwest Quarter; thence North 02°27'15" East, along said West line, 1,681.30 feet to a point on the South right-of-way line of SW Hook Road, as now established; thence Easterly along said South right-of-way line, along a curve to the right, having an initial tangent bearing of South 02°28'37" East with a radius of 830.00 feet, a central angle of 04°08'23" and an arc distance of 43.39 feet; thence Easterly continuing along said South right-of-way line, along a curve to the right, having an initial tangent with the last described course with a radius of 830.00 feet, a central angle of 11°51'17" and an arc distance of 163.04 feet; thence South 87°35'31" East, continuing along said South right-of-way line, 873.16 feet; thence Easterly continuing along said South right-of-way line, along a curve to the left having an initial tangent bearing of South 87°35'30" East with a radius of 830.00 feet, a central angle of 10°48'20" and an arc distance of 156.53 feet; thence South 87°45'42" East, continuing along said South right-of-way line, 95.80 feet to a point on said East line; thence South 02°18'36" West, along said East line, 1,210.33 feet to the Point of Beginning. Containing 1,939,986 square feet or 44.54 acres, more or less.

BENCHMARK

RR SPIKE IN SOUTH FACE OF POWER POLE ON NORTH SIDE OF SW. HOOK ROAD, IMMEDIATELY WEST OF DRIVEWAY FOR HOUSE#1622. ELEVATION= 1024.63' NAVD 1988 DATUM

[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

AS BUILT

DATE: 12/11/2013

GENERAL NOTES:

1. LINEAR FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS (NOT SLOPE MEASUREMENTS) FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
2. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE CURRENT "CITY STANDARDS" AND SPECIFICATIONS OF THE CPD-DS-LDD, LEE'S SUMMIT, EXCEPT AS NOTED.
3. THE DEVELOPER SHALL PERFORM ALIGNMENT AND GRADE, INFILTRATION – EXFILTRATION, DEFLECTION, SOIL DENSITY, AND MANHOLE TESTS AS CALLED OUT IN SECTION 2500 OF THE CURRENT APWA (AMERICAN PUBLIC WORKS ASSOCIATION) STANDARDS AND SPECIFICATIONS. ANY SECTION OF SEWER FAILING ANY OF THE ABOVE MENTIONED TESTS SHALL BE RETESTED BY THE DEVELOPER AFTER REPLACEMENT OR REPAIR.
4. THE DEVELOPER MAY, AS AN ALTERNATE, SUBSTITUTE A.B.S. OR V.C.P. PIPE FOR P.V.C. PIPE. THE FOLLOWING PIPE DEFLECTION TEST SHALL BE IMPLEMENTED ON A.B.S. AND P.V.C. PIPE:
- THE DEVELOPER SHALL PERFORM DIAMETRICAL DEFLECTION TESTS ON FLEXIBLE AND SEMI-FLEXIBLE (I.E. POLY-VINYL-CHLORIDE AND ACRYLONITRILLE BUTADIENE STYRENE) PIPE WHEN USED AS A PUBLIC DIAMETER. ALL TESTS HALL BE CONDUCTED BETWEEN MANHOLES. SEWER TESTS SHALL BE CONDUCTED BETWEEN MANHOLES. SEWER TESTED SHALL BE 100% OF THE TOTAL SEWER INSTALLED. A MANDREL WITH A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE BEING INSTALLED SHALL BE USED.
5. THE DEVELOPER SHALL PERFORM DIAMETRICAL DEFLECTION TESTS ON FLEXIBLE AND SEMI-FLEXIBLE (I.E. POLY-VINYL-CHLORIDE AND ACRYLONITRILE BUTADIENE STYRENE) PIPE WHEN USED AS A PUBLIC SEWER PRIOR TO FINAL ACCEPTANCE. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE 5% OF THE INSIDE DIAMETER. ALL TESTS SHALL BE CONDUCTED BETWEEN MANHOLES. SEWER TESTED SHALL BE 100% OF THE TOTAL SEWER INSTALLED. A MANDREL WITH A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE BEING INSTALLED SHALL BE USED.
6. PRIOR TO ORDERING PRE-CAST STRUCTURES, SHOP DRAWINGS ARE TO BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. THE DESIGN ENGINEER SHALL INDICATE APPROVAL OF THE SHOP DRAWINGS.
7. DEVELOPER SHALL PROVIDE EARTHWORK AND MATERIAL TESTING TO COMPLY WITH THE STANDARD SPECIFICATIONS OF THE CPD-DS-LDD.
8. DURING CONSTRUCTION OF THE PROJECT, THE DEVELOPER SHALL KEEP ONE RECORD COPY OF ALL SPECIFICATIONS, DRAWINGS, ADDENDA, MODIFICATIONS, AND SHOP DRAWINGS AT THE SITE IN GOOD CONDITION. THESE DOCUMENTS SHALL BE ANNOTATED TO SHOW ALL CHANGES MADE DURING CONSTRUCTION. THE EXACT LOCATION OF ALL SEWER WYES, TEES, AND SERVICE LINES SHALL BE RECORD ON THESE DOCUMENTS. AT THE CONCLUSION OF CONSTRUCTION, THESE DOCUMENTS SHALL BE FORWARDED TO THE DESIGN ENGINEER FOR PREPARATION OF AS-BUILT DRAWINGS.
9. THE PROJECT BENCHMARKS AND ALL ELEVATIONS SHOWN ON THE PROFILES ARE N.G.V.D.
10. THE DEVELOPER IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE DEVELOPER MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT IS THE DEVELOPERS RESPONSIBILITY TO RELOCATE AND/OR ADJUST ALL EXISTING UTILITIES, CONFLICT WITH PROPOSED SITE IMPROVEMENTS.
11. THE DEVELOPER SHALL ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC." 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. THE NAMES AND TELEPHONE NUMBERS OF UTILITY COMPANIES, EVEN IF ONLY REMOTELY INVOLVED WITH THIS HIS PROJECT ARE LISTED UNDER "UTILITY CONTACTS" THIS SHEET.
12. THE DEVELOPER SHALL PROVIDE AND MAINTAIN ALL TRAFFIC CONTROL MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).
13. THE SITE PLAN IS BASED ON SURVEY BY OLSSON ASSOCIATES, COMPLETED 12-13-16. CONDITIONS ON SITE AT THE TIME OF CONSTRUCTION MAY VARY FROM THE SURVEYED CONDITIONS. DEVELOPER SHALL VERIFY EXISTING SITE CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
14. THE DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL PERMITS (EXCEPT LAND DISTURBANCE), BONDS, INSURANCE, ETC. AND PAYING ALL FEES. THE COST OF DEVELOPERS BONDS AND INSURANCE AS REQUIRED BY THE CITY OF LEE'S SUMMIT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER.
15. DEVELOPER SHALL COMPLY WITH ALL APPLICABLE REGULATIONS REQUIRED BY THE CITY AND THE STATE.
16. THE DEVELOPER MUST REMOVE AT HIS COST ANY BAD SUBSURFACE SOIL WHICH WOULD NOT BE ABLE TO SUPPORT ANY PROPOSED PUBLIC IMPROVEMENT. BACKFILL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SECTIONS 2100 AND 2201 ENTITLED "GRADING AND SITE PREPARATION" AND "SUBGRADE PREPARATION".
17. VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE DEVELOPER IS ADVISED TO USE BENCHMARK INFORMATION FOR VERTICAL CONTROL. HORIZONTAL CONTROL (CONTROL POINT INFORMATION) IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83). THE DEVELOPER IS ADVISED TO USE CONTROL POINT INFORMATION FOR HORIZONTAL CONTROL.

PLUMBING NOTES:

1. ALL LOTS HAVE BEEN SUPPLIED WITH WYES, TEES OR LATERALS. PLUMBER SHALL CONNECT HOUSE SERVICE TO MAIN AT LOCATIONS INDICATED.
2. ALL SERVICE LINES SHALL BE LAID AT 2% MINIMUM SLOPE, UNLESS OTHERWISE NOTED.
3. M.S.E. ELEVATION – INDICATES BASEMENT FLOOR ELEVATION OR LOWEST FLOOR ELEVATION SERVICEABLE BY PROPOSED SANITARY SEWER.

EXCAVATING NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO CONTROL DOWNSTREAM EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION.
2. THE DEVELOPER SHALL BE RESPONSIBLE FOR RECORDING ROCK ELEVATIONS AT 25 FOOT (MAXIMUM) INTERVALS WHERE ENCOUNTERED, AND FURNISHING THIS INFORMATION TO THE DESIGN ENGINEER FOR USE ON AS-BUILTS.
3. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES. EROSION CONTROL PLANS AND PROCEDURES SHALL BE IN PLACE PRIOR TO ANY EXCAVATION.
4. NO SUBSURFACE EXPLORATION FOR THE DETERMINATION OF AND/OR THE LOCATION OF EXISTING ROCK HAS BEEN MADE.
5. WHEN SEWER LINES CROSS A LOW POINT IN A CREEK, THE SEWER LINE MUST BE ENCASED ACCORDING TO LEE'S SUMMIT.
6. DEVELOPER IS RESPONSIBLE FOR KEEPING ALL PUBLIC ROADWAYS ADJACENT TO THE CONSTRUCTION SITE FREE OF DIRT AND DEBRIS RESULTING FROM ACTIVITIES RELATED TO THE CONSTRUCTION OF THIS PROJECT. INSPECTIONS AND CLEANUP TO OCCUR ON A DAILY BASIS.
7. DEVELOPER SHALL KEEP THE ENTIRE PROJECT SITE FREE OF DEBRIS AND TRASH AT ALL TIMES. DEVELOPER SHALL EXECUTE WORK USING METHODS THAT MINIMIZE EXCESSIVE NOISE OR DUST EMISSIONS. DEVELOPER SHALL PROVIDE METHODS, MEANS AND FACILITIES TO PREVENT CONTAMINATION OF SOIL OR WATER FROM DISCHARGE OF REGULATED MATERIALS (I.E. FUEL) USED DURING CONSTRUCTION.
8. THE DEVELOPER SHALL ERECT AND MAINTAIN ORANGE COLORED TEMPORARY CONSTRUCTION FENCE AROUND ALL AREAS INDICATED ON THE PLANS TO BE LEFT UNDISTURBED BOTH TEMPORARY AND PERMANENTLY. THE DEVELOPER WILL BE GIVEN NOTICE WHEN HE MAY ENTER THESE AREAS MARKED TEMPORARY BY THE OWNER ONCE PERMITS HAVE BEEN OBTAINED. THE FENCE MATERIAL SHALL BE 48" TALL, HIGH DENSITY POLYETHYLENE (HDPE) WITH NOMINAL MESH OPENING SIZE OF 1.25 INCHES X 1.25 INCHES.

ESTIMATE OF QUANTITIES				
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	8" SANITARY PVC (SDR-26)	L.F.	5,792.16	8,801.57
2	12" SANITARY PVC (SDR-26)	L.F	194.16	194.80
3	MANHOLES, STD. 4' DIA.	EA.	26	26
4	CONNECTION TO EXISTING M.H.	EA.	1	1
5	TRACER WIRE	L.F	3,149.97	*3,149.97
6	TRACER WIRE BOX	EA.	101	101
7	SERVICE WYE	EA.	101	101
8	4" LATERAL PIPE	L.F.	3,049.97	*3,049.97
9	6" LATERAL PIPE	L.F.	88.20	*88.20

*AS PROVIDED BY CONTRACTOR

Summary of Quantities as indicated above and any quantities as shown within the plans have been provided for permitting purposes only and are not intended for use in preparation of contract documents. Quantities intended for, but not limited to, the preparation of proposals and bid documents shall be independently evaluated by the estimating party based upon the contents of these plans.

AS-BUILT / SERVICE LINE NOTE

- 1.) Contractor shall place 2"x4" timber or metallic tape at end of each service line stub. Standard 8' length may be varied with 3' exposed when placed directly over the service line termination point. 2"x4" timber shall be marked appropriately to identify sewer service stub.
- 2.) Contractor shall be responsible for recording of Rock Elevations at 25' intervals where encountered. Contractor shall also be responsible for recording service line locations from the downstream or upstream manhole and service line lengths during construction operations. Contractor shall also record vertical elevations with a reference point. All information shall be provided to the engineer of record for preparation of As-Built plans.

CONTROL POINT TABLE				
Point Number	Northing	Easting	Point Elevation	Raw Description
800	983674.9350'	2813892.5500'	1016.38'	CP 800
801	983630.4880'	2815280.9210'	1019.74'	CP 801
802	981004.3220'	2812429.0660'	994.50'	CP 802
803	980493.4250'	2815984.1140'	1024.20'	CP 803
902	983638.8300'	2814391.8860'	1021.01'	CP 902

AS BUILT

ALL NOTES REFERENCED ON THIS PLAN SHEET MAY HAVE APPLICATIONS TO EVERY FACET OF THE CONSTRUCTION PLANS. THE NOTE HEADINGS OR TITLES ARE TO BE USED AS A GENERAL GUIDE TO APPLICABLE SITUATIONS.

OLSSON[®]

ASSOCIATES

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

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

C202 GENERAL NOTES

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

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
C202

NO. REV. DATE

1 04.12.2017
2 11.20.2017
3 01.08.2018
4 06.25.2018

REVISIONS DESCRIPTION

Revised quantities
Revised quantities
Revised quantities
Revised quantities

BY MGD MGD

REVISIONS

2018

DWG: F:\2017\0001-0500\017-0188\40-Design\AutoCAD\Final Plans\ASBUILTS\CONV 01_Sanitary_36x24\C_GEN02_017-0188.dwg USER: dhernandez

DATE: Feb 19, 2019 6:22pm



NOT AS BUILT



C203 GENERAL LAYOUT

HAWTHORN RIDGE
1ST PLAT

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

LEE'S SUMMIT, MO

SHEET
C203

STATE OF MISSOURI
MELISSA G. DEAGONIA
Professional Engineer
No. 000100882
03/04/2018

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North Kansas City, MO 64116
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REVISIONS

NO.	REV.	DATE	REVISIONS DESCRIPTION	BY
4		06.26.2018	Manhole location revised	MGD

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, ~~30.32~~ RT
 37.97

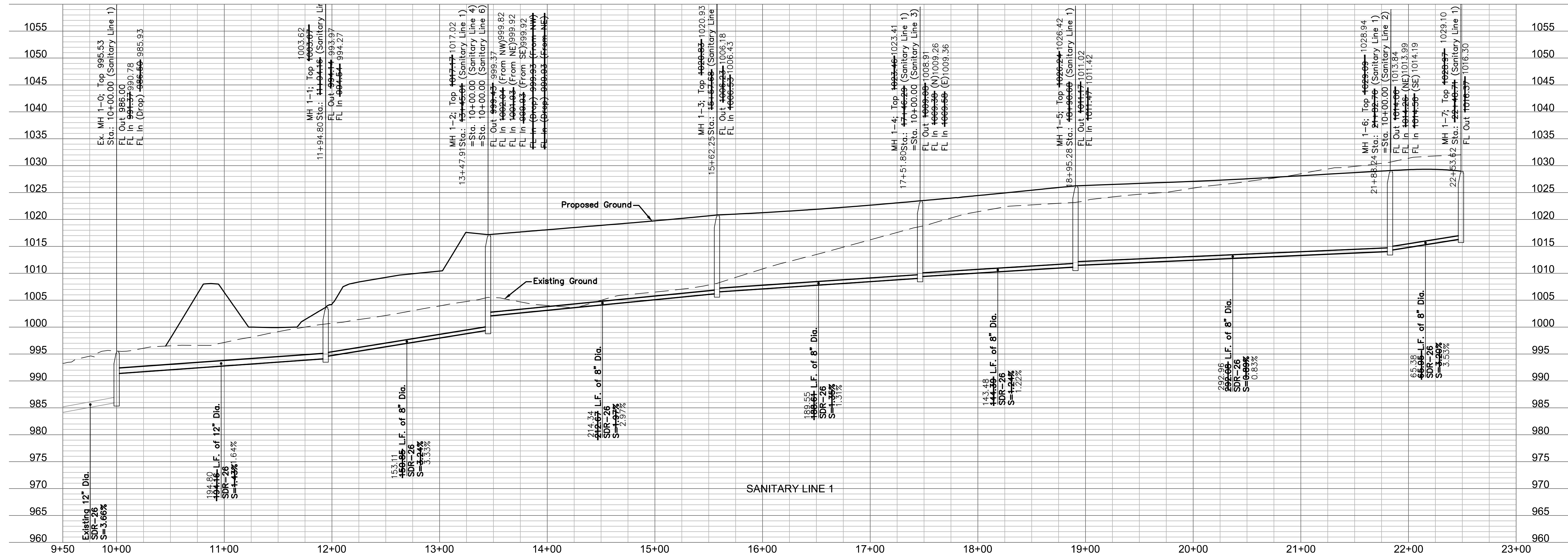
MH 1-6, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~21+82.76~~ (Sanitary Line 1)
=Sta.: 10+00.00 (Sanitary Line 2)
=Sta.: ~~12+65.24~~ (C) 12+65.01
S.W. ARBORIDGE DRIVE, ~~38.24'~~ RT
39.71

ASBUILT IS 0.39' N &
1.01' W OF PLAN

MH 1-7, Const. Std. 22+53.62
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: 22+48.71 (Sanitary Line 1)
=Sta.: 11+95.41 (L) 11+93.30
S.W. ARBORIDGE DRIVE, 36.42' RT

37.37

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.



C204 SANITARY SEWER PLAN & PROFILE	HAWTHORN RIDGE 1ST PLAT		2018
	LEE'S SUMMIT, MO		
drawn by: _____ D.A.H.Q. checked by: _____ M.G.D. designed by: _____ P.M.Q. QA/QC by: _____ K.S.J. project no.: _____ 017-0188 date: _____ 03.03.2017			
SHEET C204			

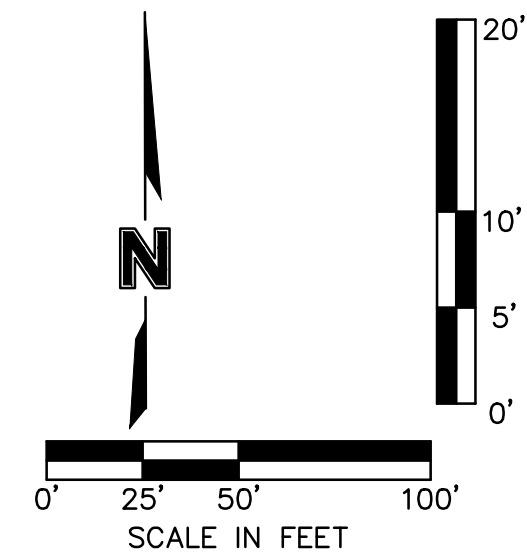
NOTES:
ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"x4" PVC WYE, 4" PVC 45° BEND, OR AN 8"x4" TEE, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP.

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.

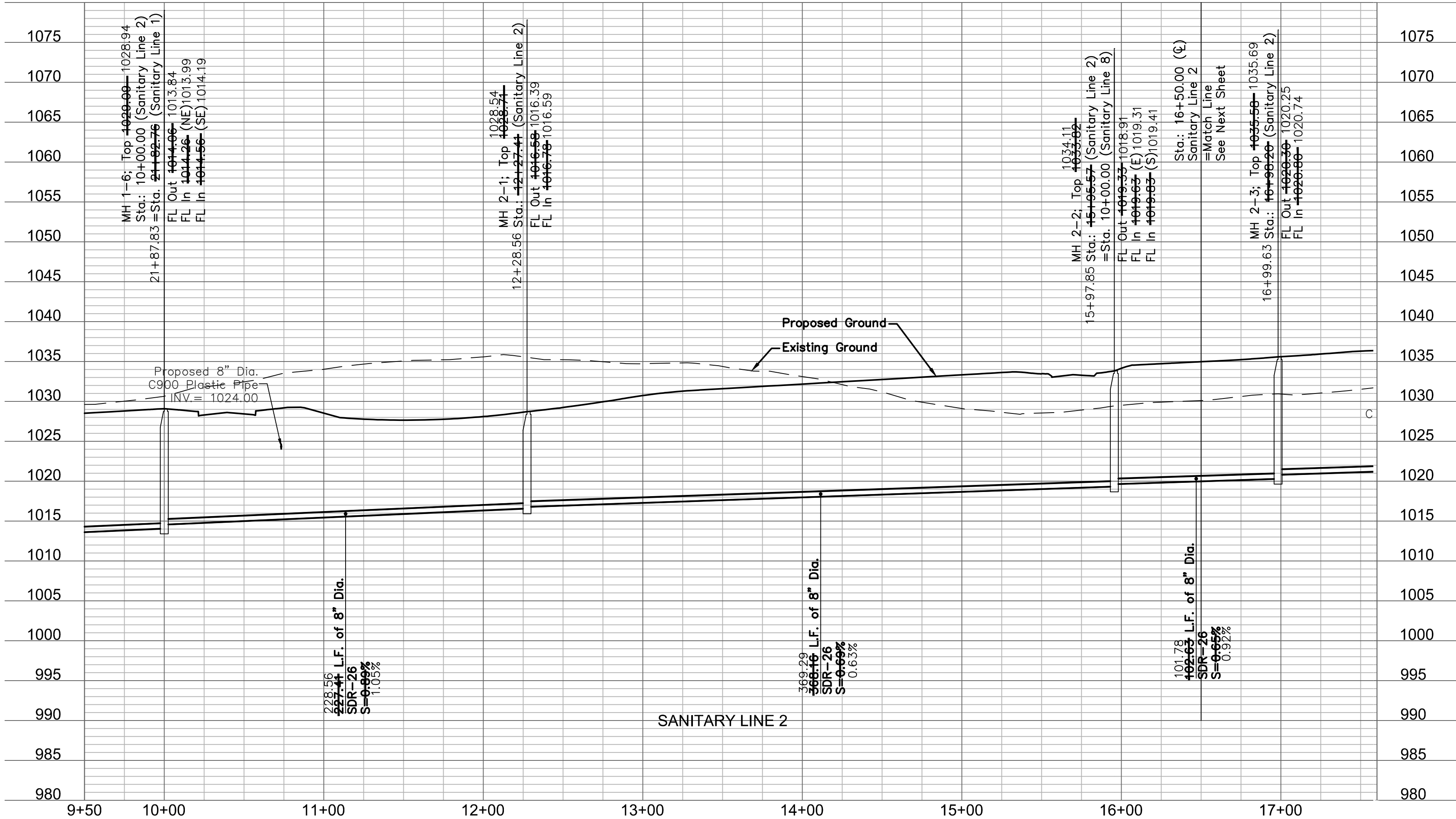
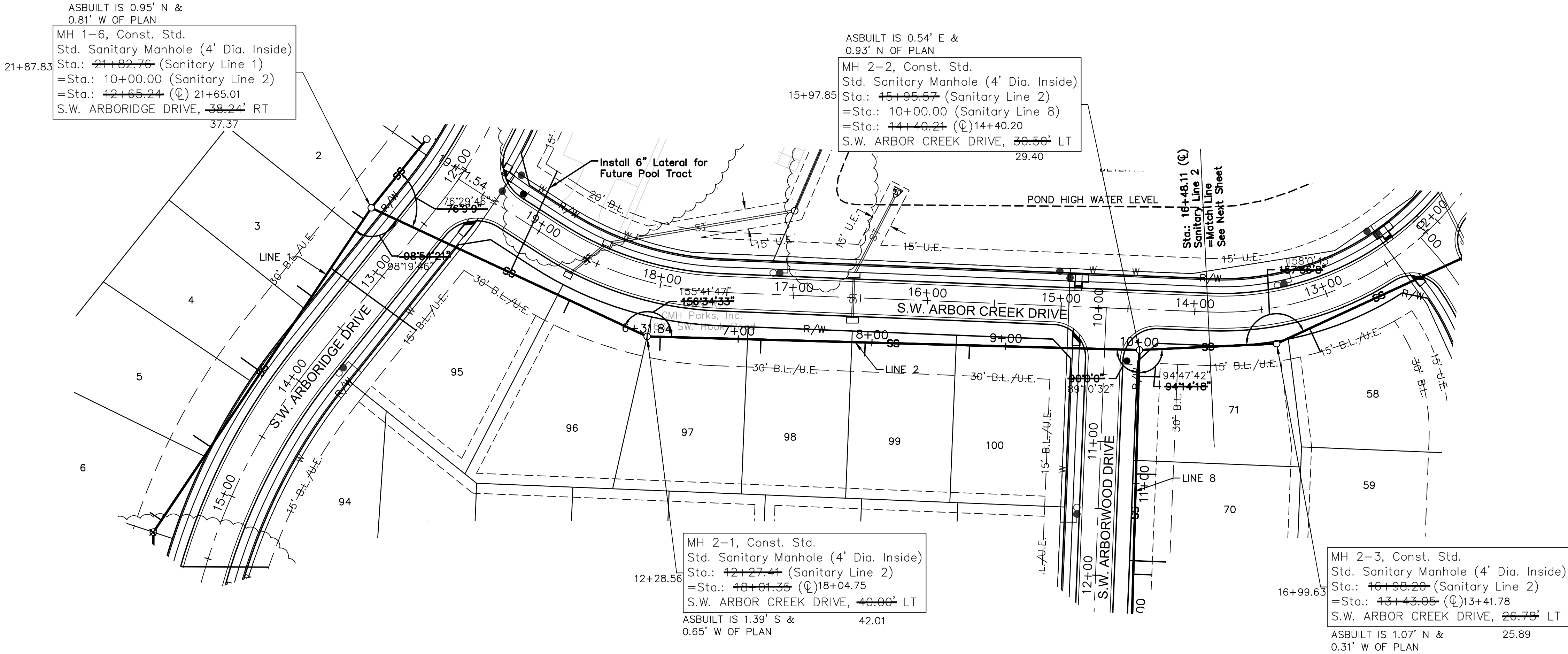
SANITARY LATERALS ARE DESIGNED @ 2.00% SLOPE. IF RISER IS INDICATED, IS TO BE AT THE SANITARY MAIN, UNLESS OTHERWISE NOTED.

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



OLSSON[®]
ASSOCIATES

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Professional Engineer
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K.S.B.
North Kansas City, MO 64116
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STATE OF MISSOURI
MELISSA G. DEGENIA
Professional Engineer
No. 000100892
K.S.B.
03/04/2018

NO. REV. 3

DATE 01.02.2018

REVISIONS DESCRIPTION
Revised lateral locations

SANITARY SEWER PLAN & PROFILE

HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

2018

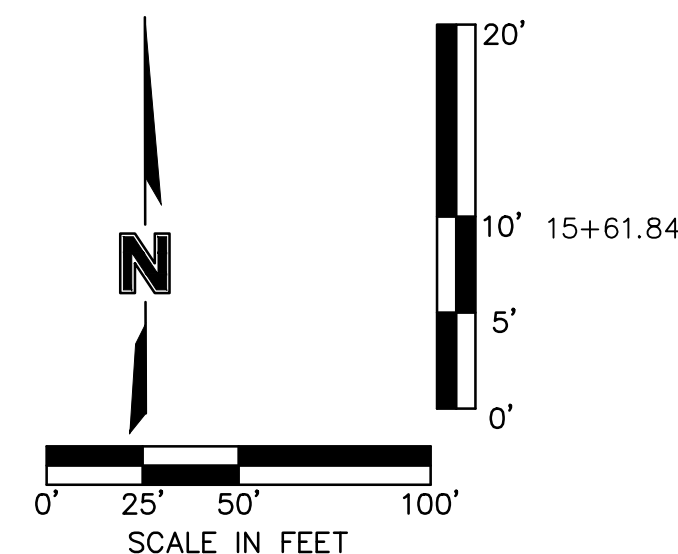
REVISIONS

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

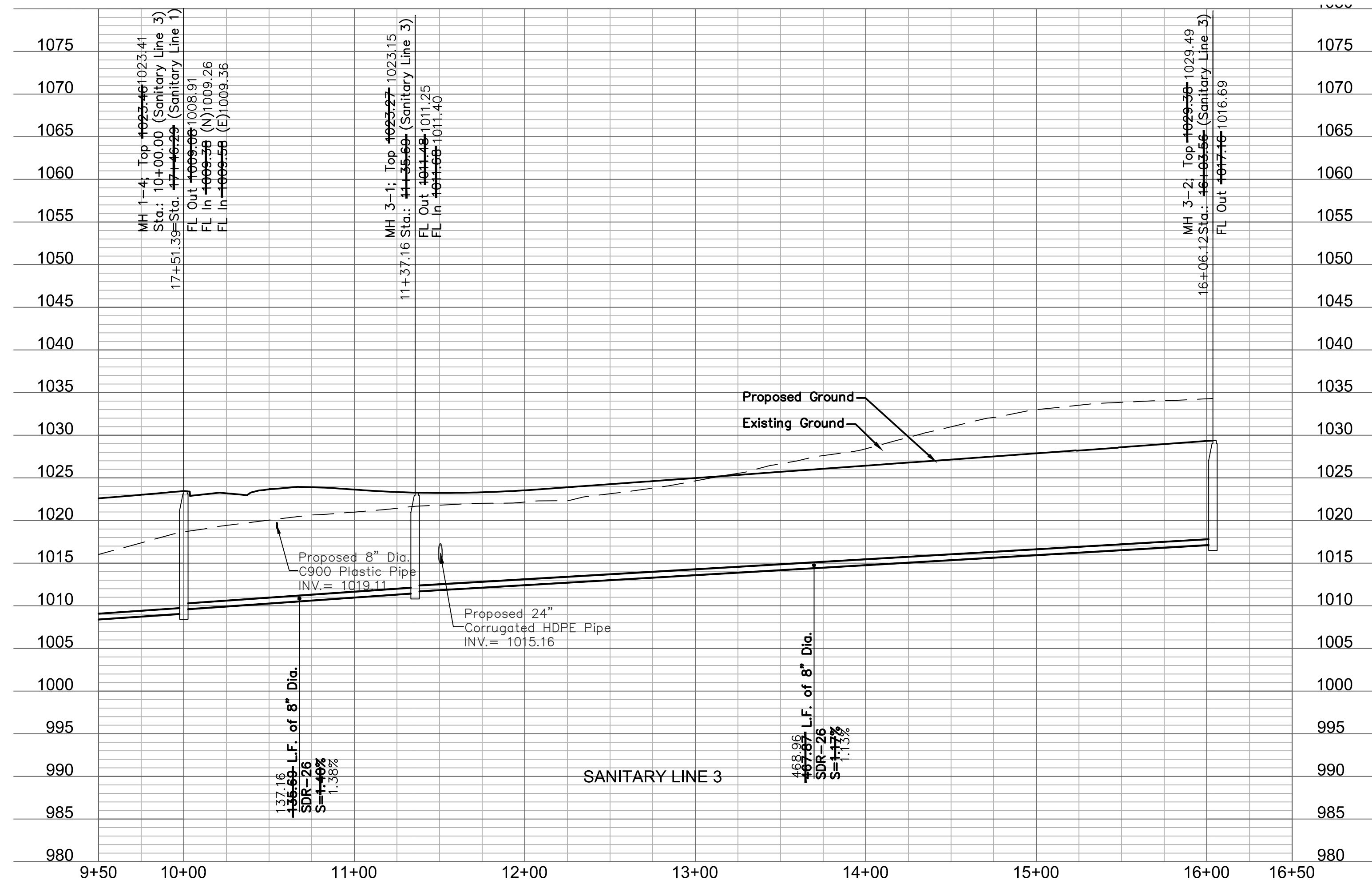
SHEET
C205

1301 Burlington, Suite 100
North Kansas City, MO 64116

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



DATE: 12/11/2018



DWG: F:\2017\0001-0500\017-0188\40-Design\AutoCAD\Final Plans\ASBUILTS\GNCV\01_Sanitary_36x24\C_SAN03_017-0188.dwg
DATE: Feb 19, 2019 6:28pm

SHEET
C207

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
41.56
ASBUILT IS 1.01' N &
0.66' W OF PLAN

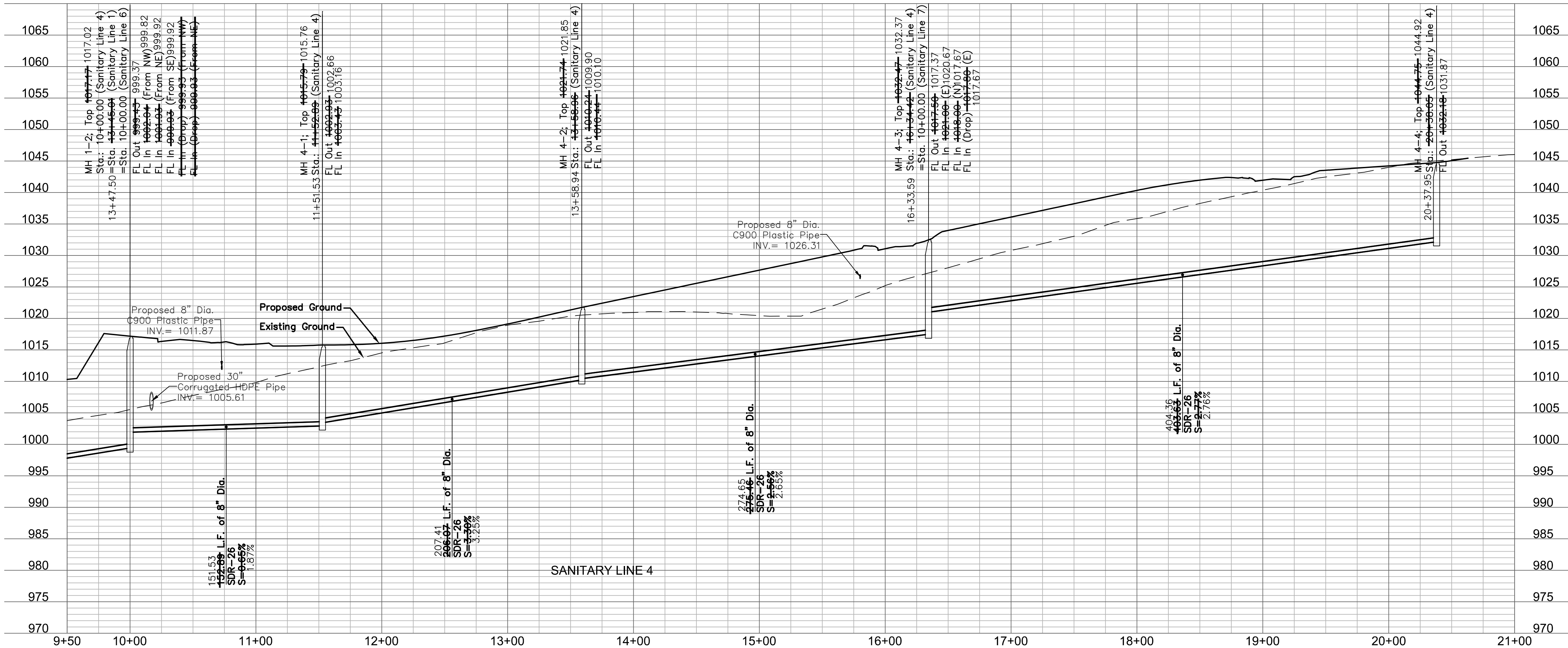
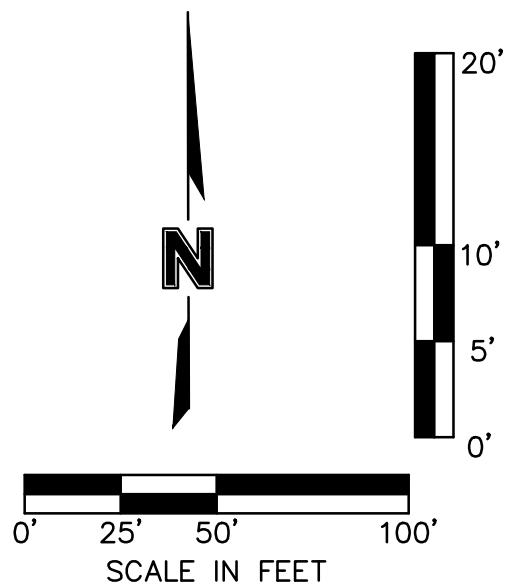
ASBUILT IS 1.55' S &
0.37' W OF PLAN
MH 4-3, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~16+34.42~~ (Sanitary Line 4)
=Sta.: 10+00.00 (Sanitary Line 7)
=Sta.: ~~15+74.20~~ (C)15+70.68
S.W. ARBOR FALLS DRIVE, ~~27.96~~ LT
26.26

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
36.31
ASBUILT IS 1.35' N &
0.64' E OF PLAN

MH 4-4, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~20+37.95~~ (Sanitary Line 4)
=Sta.: ~~19+74.92~~ (C)19+75.33
S.W. ARBOR FALLS DRIVE, ~~27.93~~ LT
29.12
ASBUILT IS 1.17' N &
0.46' E 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, ~~39.32~~ RT

AS BUILT
DATE: 12/11/2018



OLSSON ASSOCIATES

Olsson Associates - Civil Engineering
Professional Engineer
No. 001700882
Effective 03/04/2018
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. 001700882
Effective 03/04/2018

BY: MGD
NO. REV. DATE DESCRIPTION
1. 04.12.2017 Sanitary Lines Revised
4. 06.26.2018 Manhole Location Revised

REVISIONS

SANITARY SEWER PLAN & PROFILE
HAWTHORN RIDGE
1ST PLAT

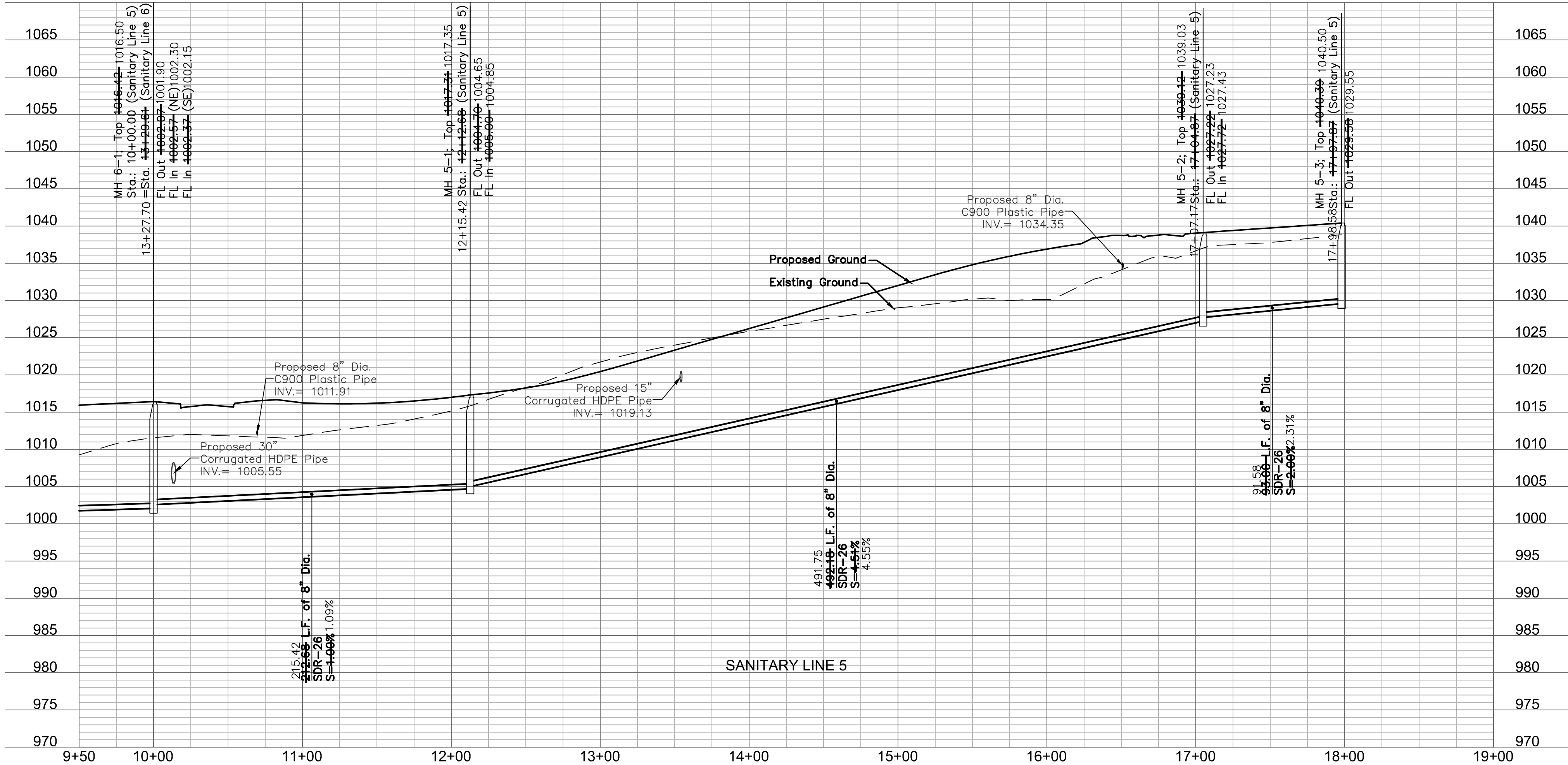
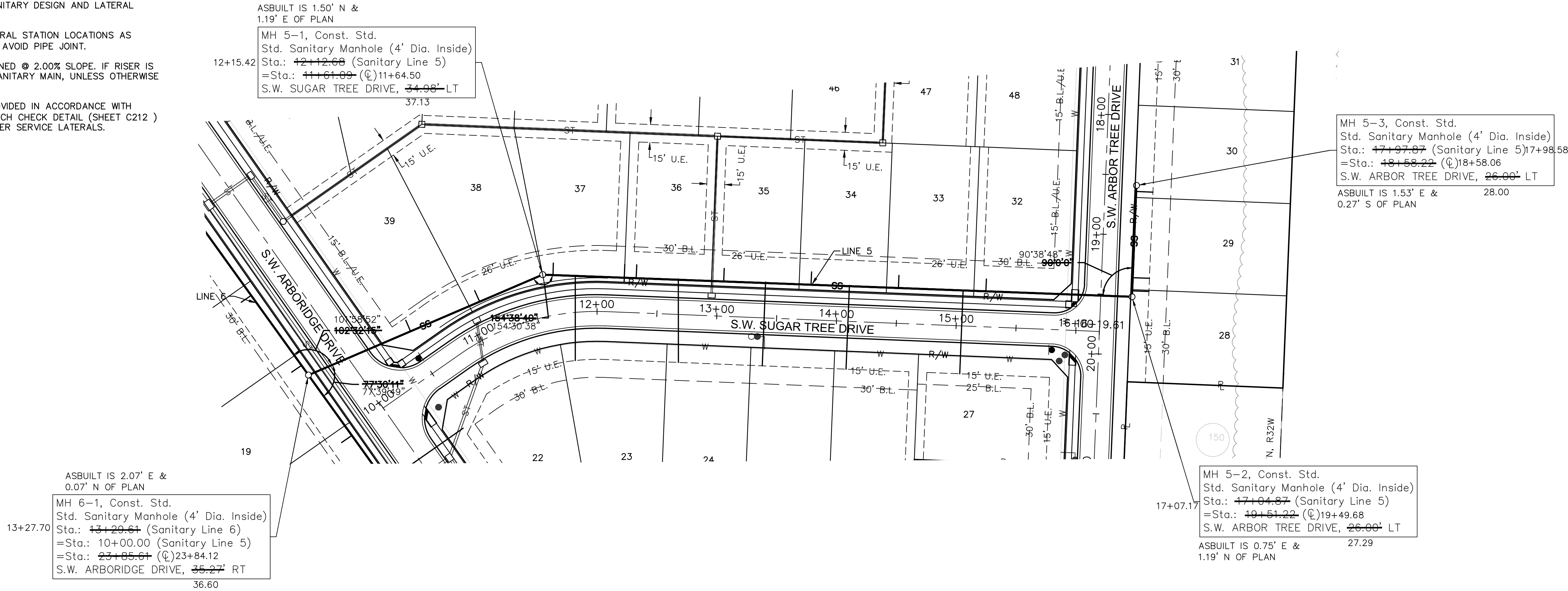
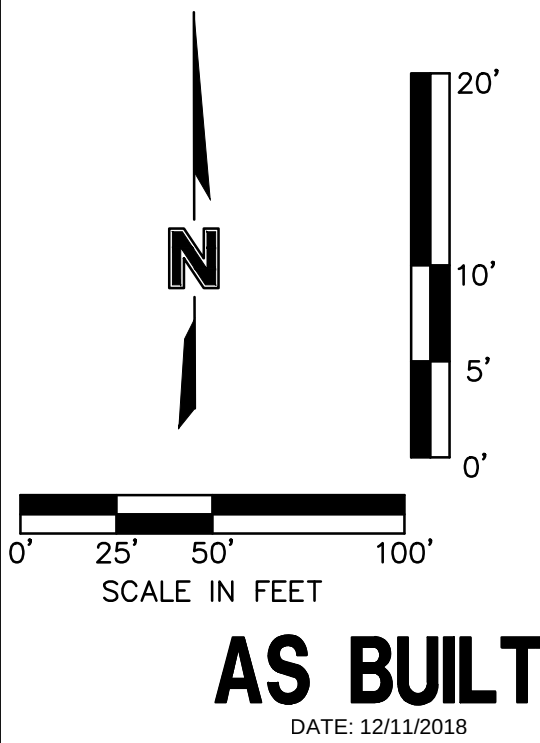
2018

LEE'S SUMMIT, MO

SHEET C208

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

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.



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ASSOCIATES

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STATE OF MISSOURI
MELISSA G. DECONIA
NUMBER
000100683
03/04/2018
PROFESSIONAL ENGINEER

NO.	REV.	DATE	REVISIONS DESCRIPTION
1		04.12.2017	Sanitary Lines Revised
3		01.08.2018	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

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.

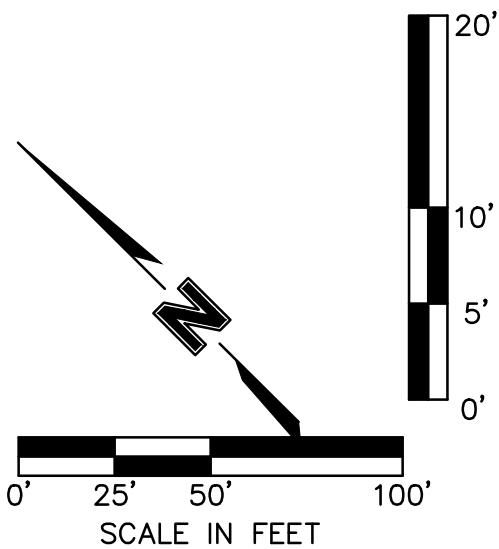
MAXIMUM DEVIATION FROM LATERAL STATION LOCATIONS AS CALLED OUT SHALL BE 2.0' TO AVOID PIPE JOINT.

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

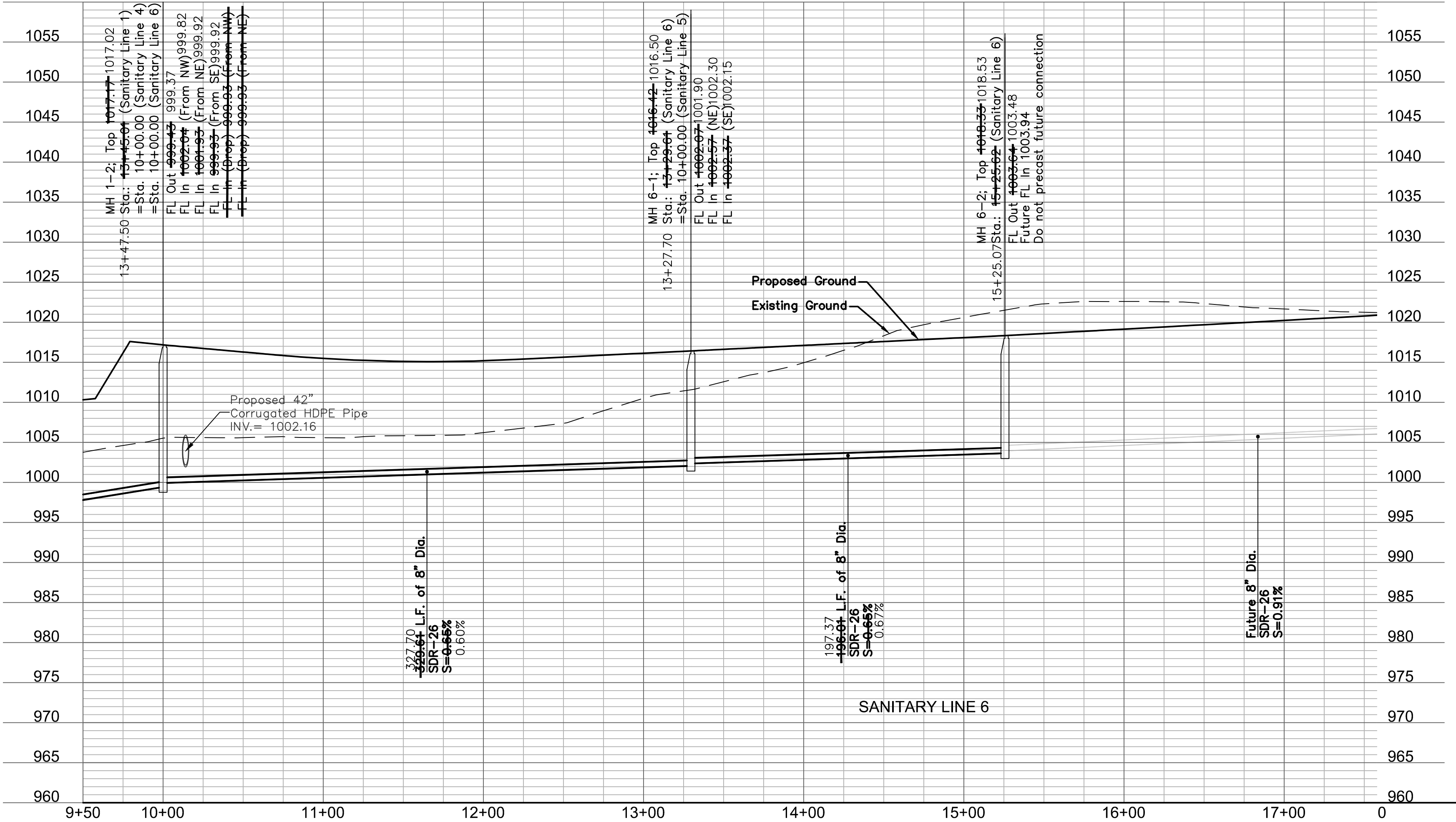


ASBUILT IS 2.07° E &
0.07° N OF PLAN
MH 1-2, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~13+45.01~~ (Sanitary Line 1)
=Sta.: 10+00.00 (Sanitary Line 4)
=Sta.: 10+00.00 (Sanitary Line 6)
=Sta.: ~~20+56.03~~ (℄)20+56.44
S.W. ARBORIDGE DRIVE, ~~39.32~~ RT
37.97

ASBUILT IS 2.07° E &
0.07° N OF PLAN
MH 6-1, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~13+29.61~~ (Sanitary Line 6)
=Sta.: 10+00.00 (Sanitary Line 5)
=Sta.: ~~23+05.61~~ (℄)23+84.12
S.W. ARBORIDGE DRIVE, ~~35.27~~ RT
36.60

ASBUILT IS 1.14° S &
0.58° W OF PLAN
MH 6-2, Const. Std.
Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~15+25.62~~ (Sanitary Line 6)
=Sta.: ~~25+01.62~~ (℄)25+81.56
S.W. ARBORIDGE DRIVE, ~~33.00~~ RT
34.84

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.



USER: dhernandez

DWG: F:\2017\0001-0500\017-0188\40-Design\AutoCAD\Final Plans\ASBUILT\CONV\01_Sanitary_36x24\C_SAN06_017-0188.dwg
DATE: Feb 19, 2019 6:33pm

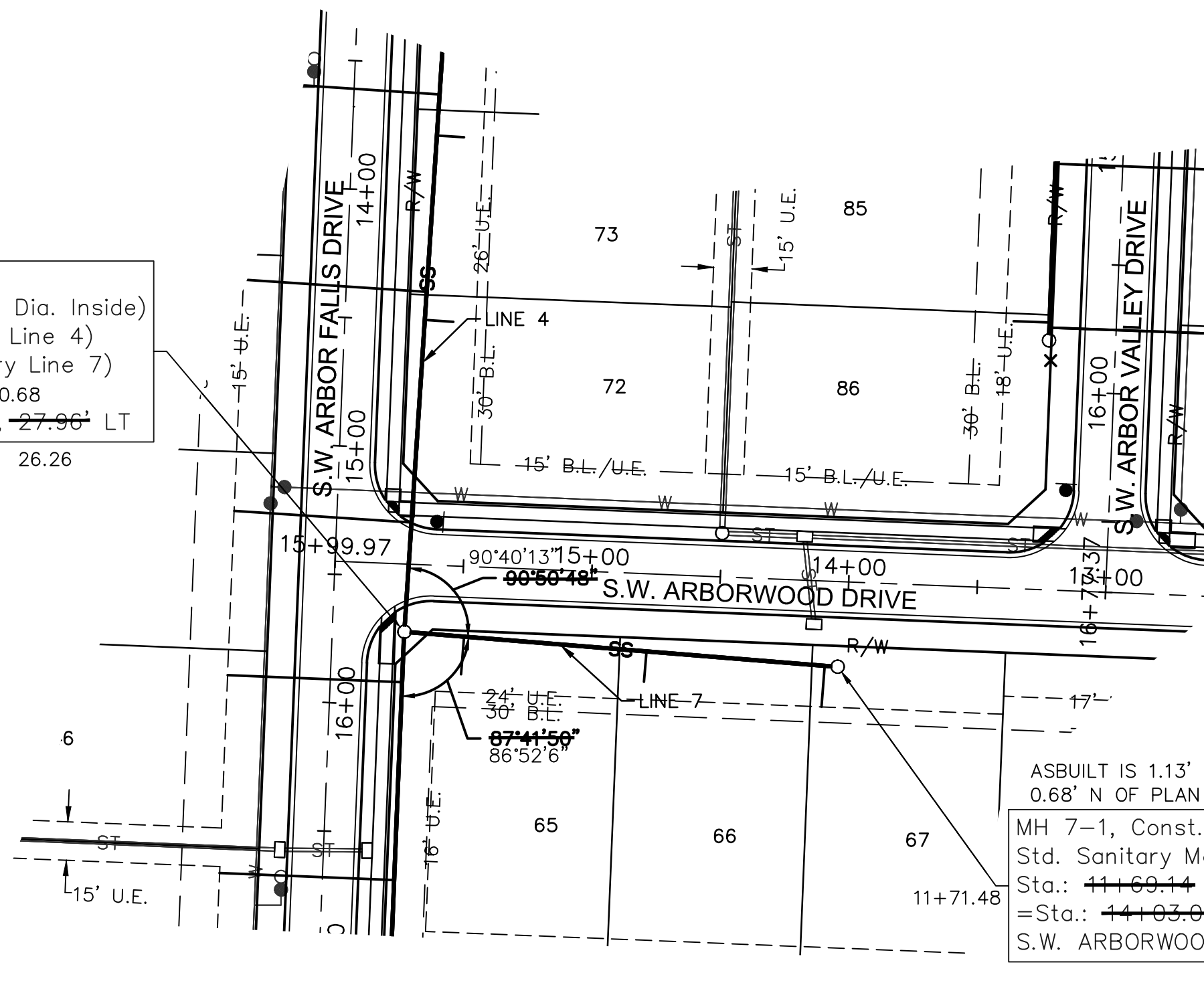
NO.	REV.	DATE	BY	REVISIONS DESCRIPTION	MGD	MGD
1		04.12.2017		Grading note Added and Sanitary lines Revised		
3		01.08.2018		Added notes about future connection		

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

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

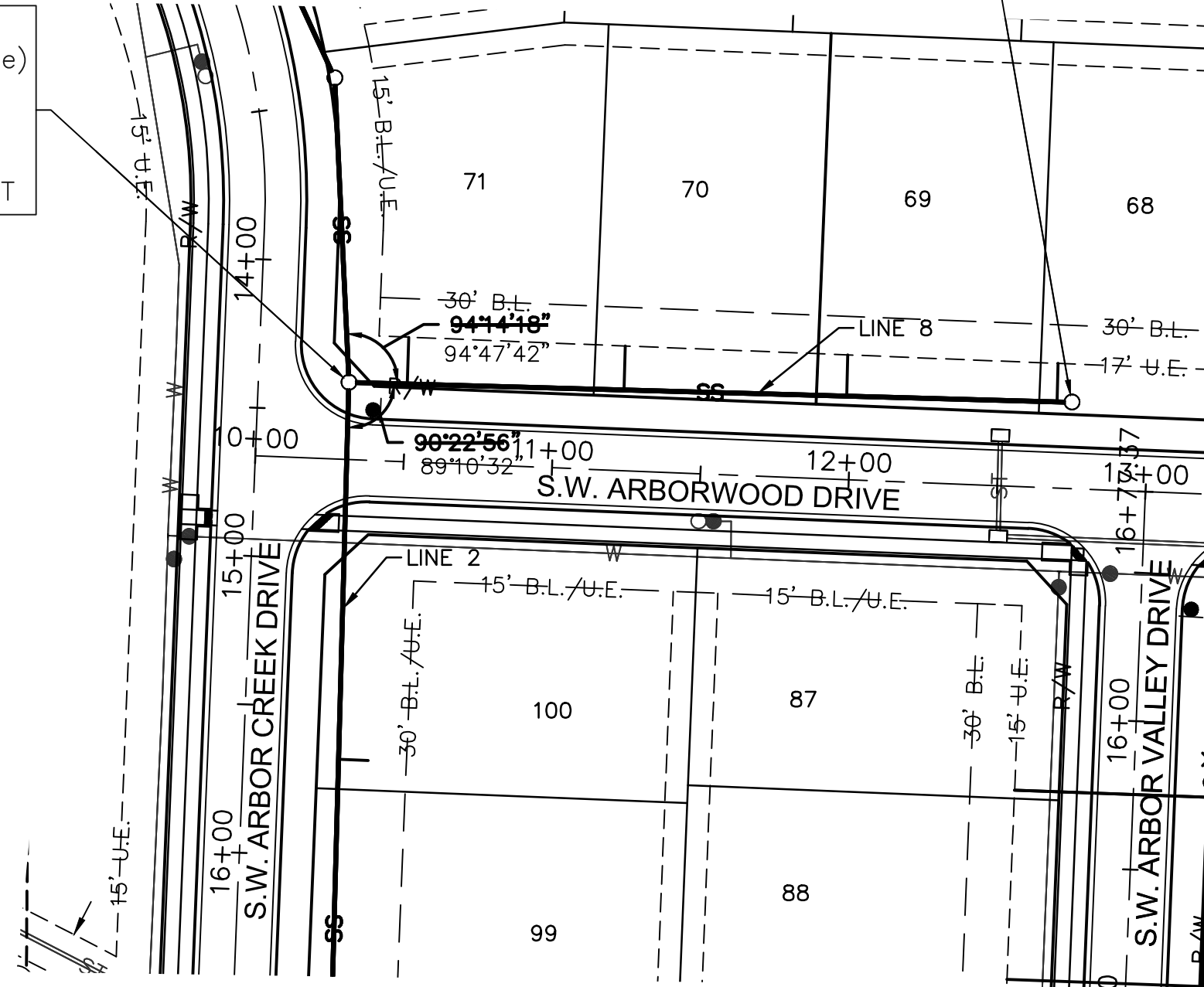


ASBUILT IS 0.54' E & 0.93' N OF PLAN
MH 2-2, Const. Std. Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~15+95.57~~ (Sanitary Line 2)
=Sta.: 10+00.00 (Sanitary Line 8)
=Sta.: ~~11+40.21~~ (L)14+40.20
S.W. ARBOR CREEK DRIVE, ~~30.50'~~ LT 29.40

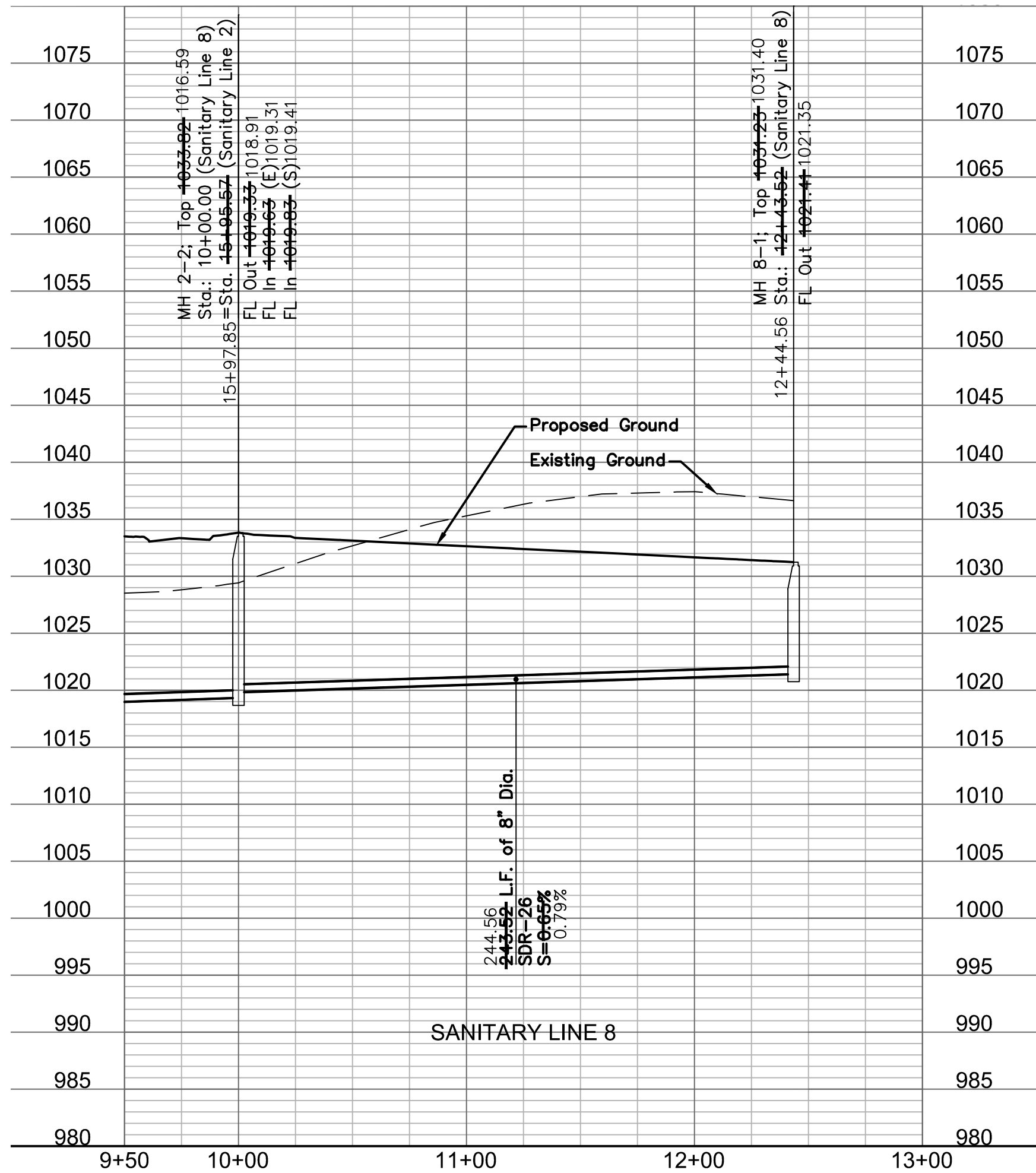
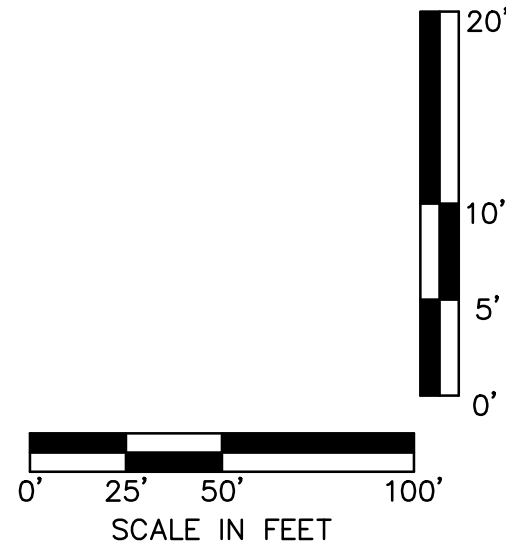
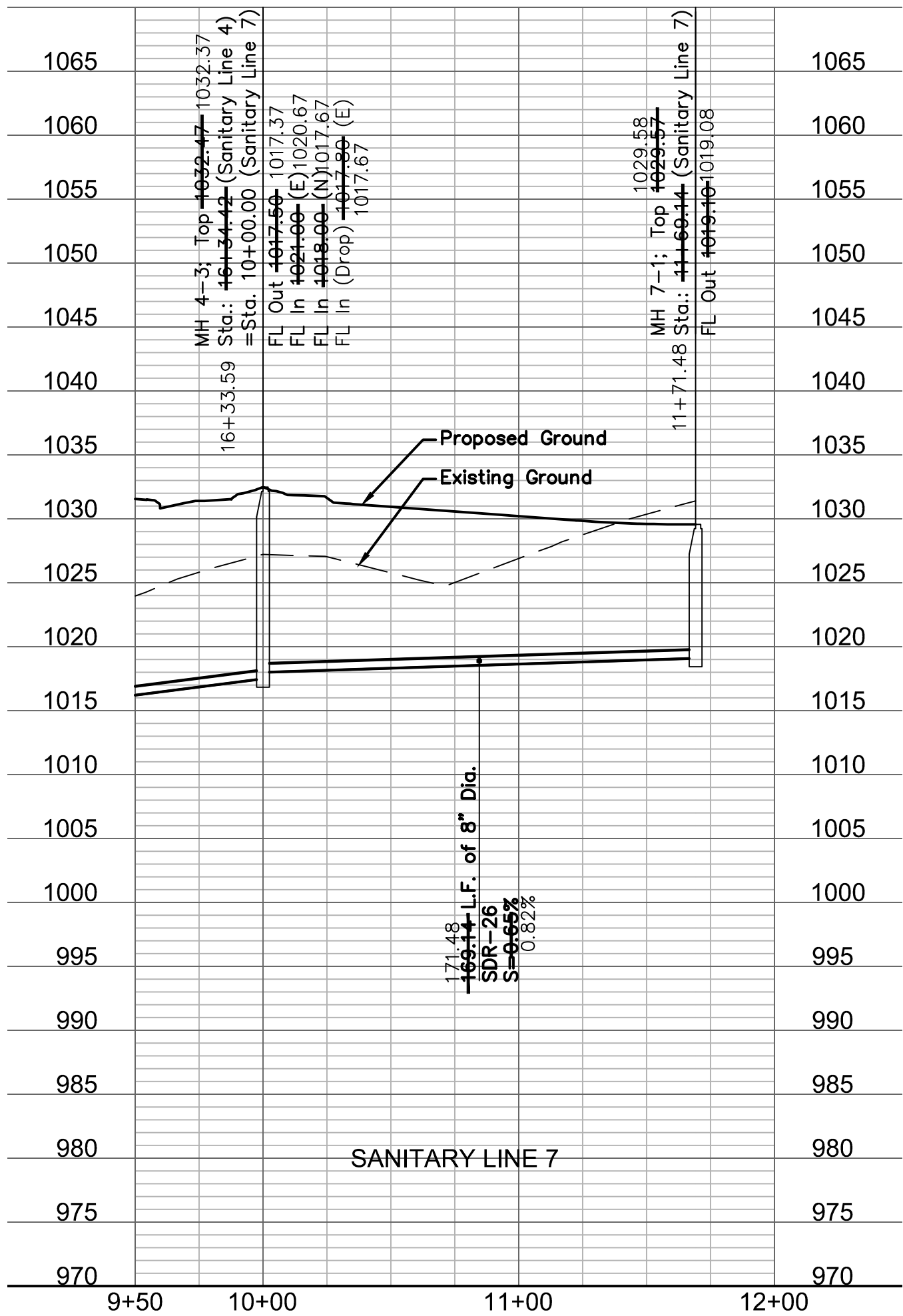
ASBUILT IS 1.45' W & 0.04' S OF PLAN
MH 8-1, Const. Std. Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~12+43.62~~ (Sanitary Line 8)
=Sta.: ~~12+74.00~~ (L)12+58.65
S.W. ARBORWOOD DRIVE, ~~29.12'~~ LT 27.24

ASBUILT IS 1.55' S & 0.37' W OF PLAN
MH 4-3, Const. Std. Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~16+34.42~~ (Sanitary Line 4)
=Sta.: 10+00.00 (Sanitary Line 7)
=Sta.: ~~15+71.29~~ (L)15+70.68
S.W. ARBOR FALLS DRIVE, ~~27.90'~~ LT 26.26

ASBUILT IS 1.13' E & 0.68' N OF PLAN
MH 7-1, Const. Std. Std. Sanitary Manhole (4' Dia. Inside)
Sta.: ~~11+69.14~~ (Sanitary Line 7)
=Sta.: ~~11+03.00~~ (L)13+86.87
S.W. ARBORWOOD DRIVE, ~~33.17'~~ LT 33.92



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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www.olssonassociates.com

STATE OF MISSOURI
MELISSA G. DEGENIA
Professional Engineer
NUMBER
0304000892
03/04/2018

BY
MGD
MGD

REVISIONS DESCRIPTION
Grading note Added and Sanitary lines Revised
Revised lateral locations

DATE
04.12.2017
01.08.2018

NO. REV.
1
3

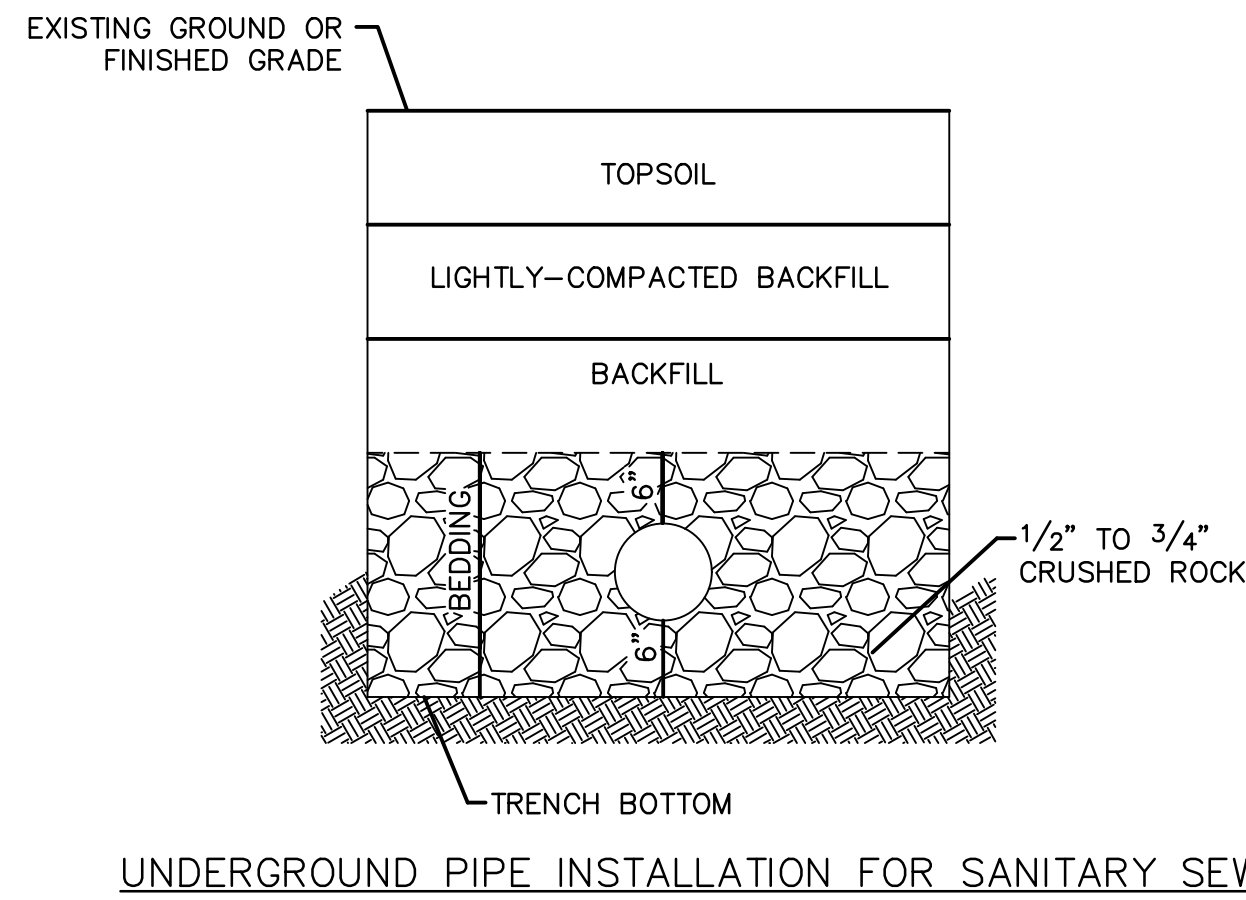
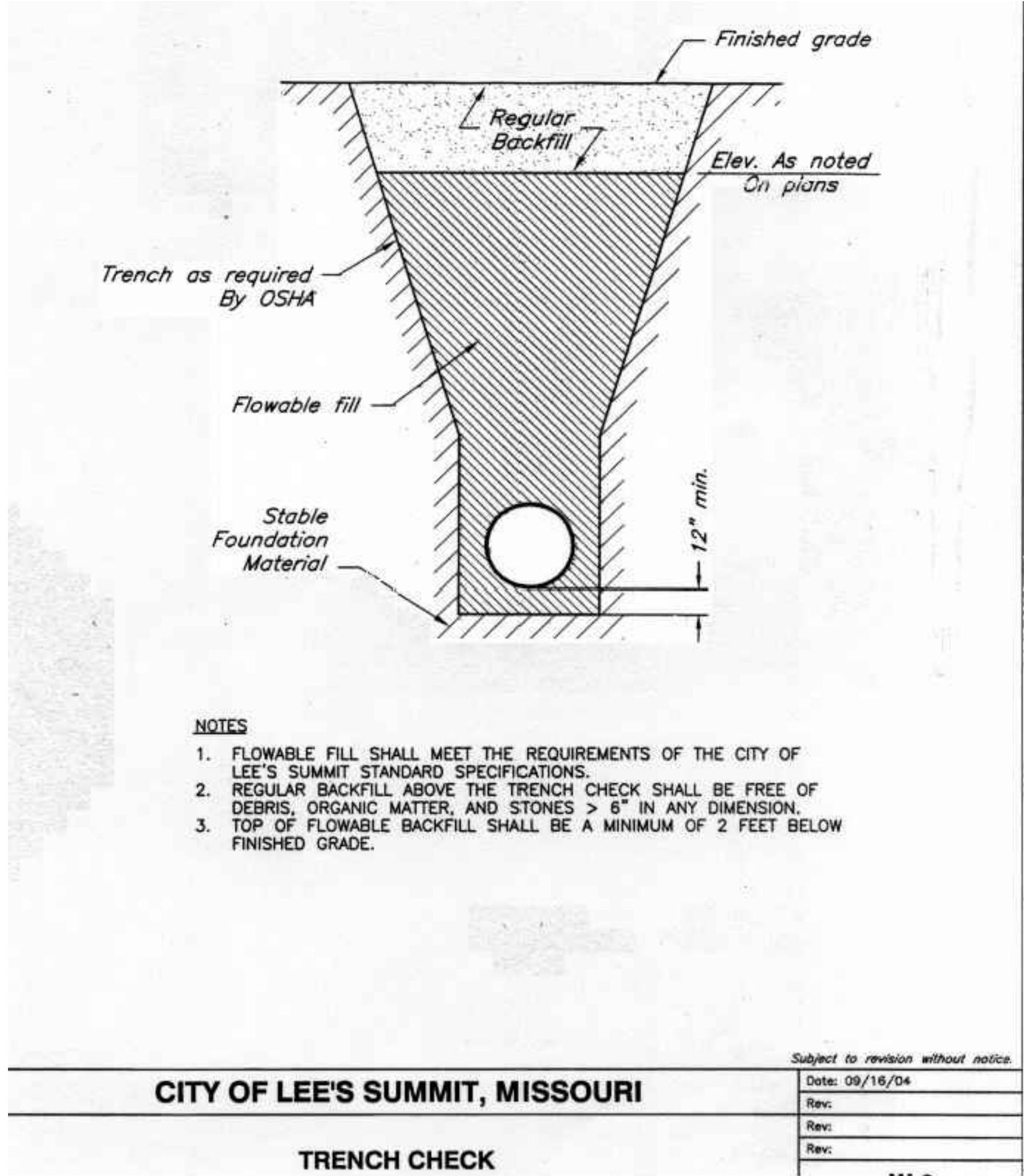
C211 SANITARY SEWER PLAN & PROFILE
HAWTHORN RIDGE
1ST PLAT

LEE'S SUMMIT, MO

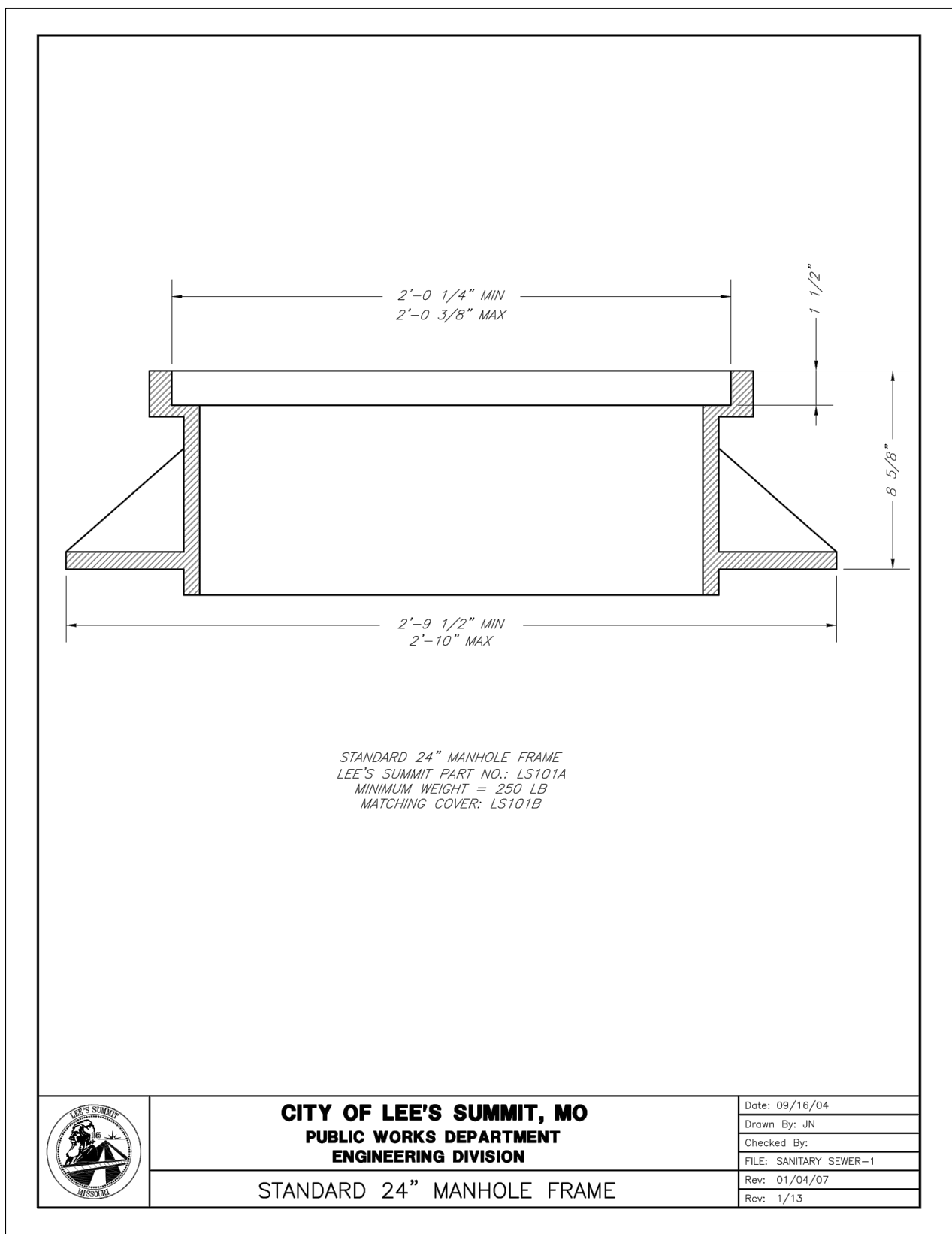
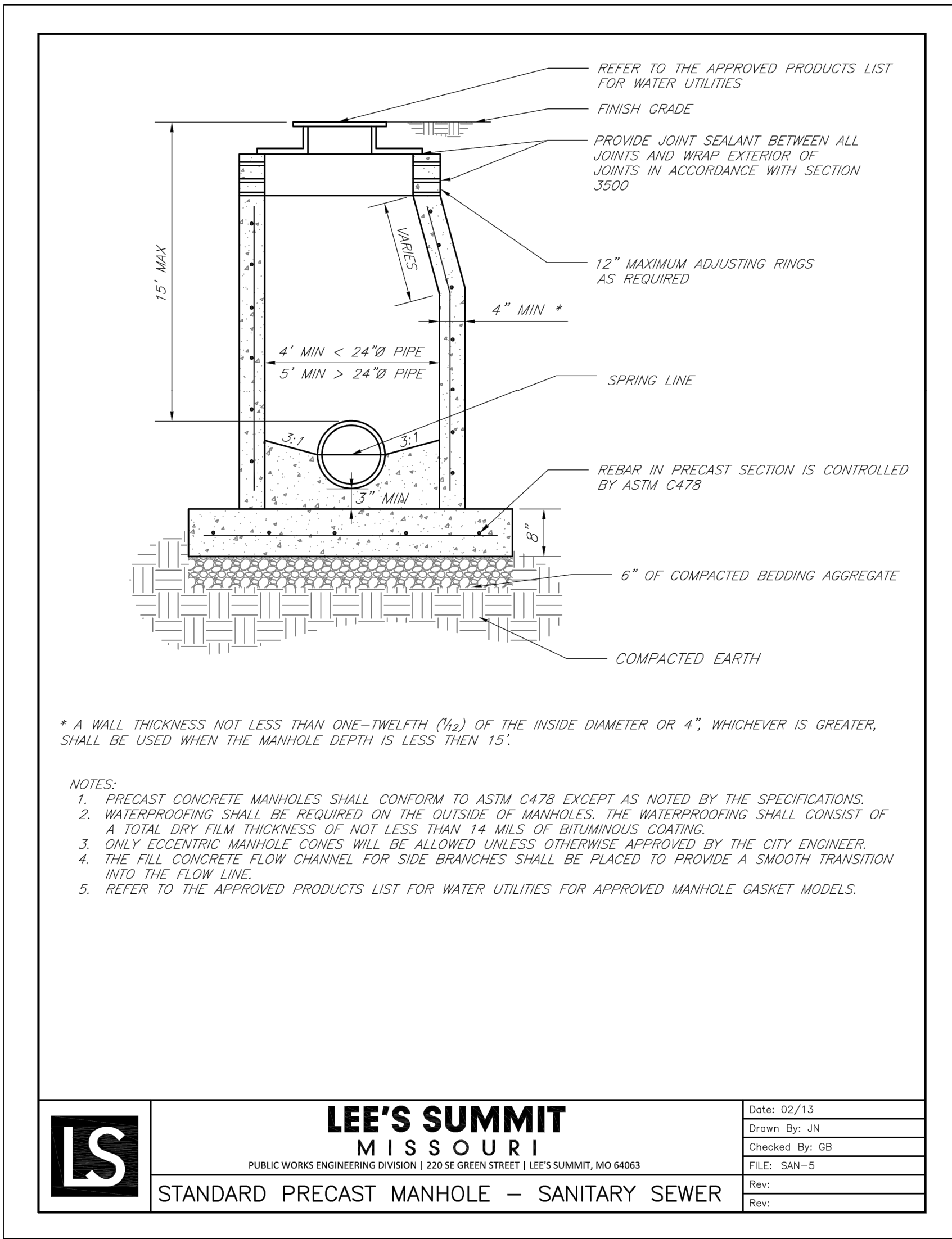
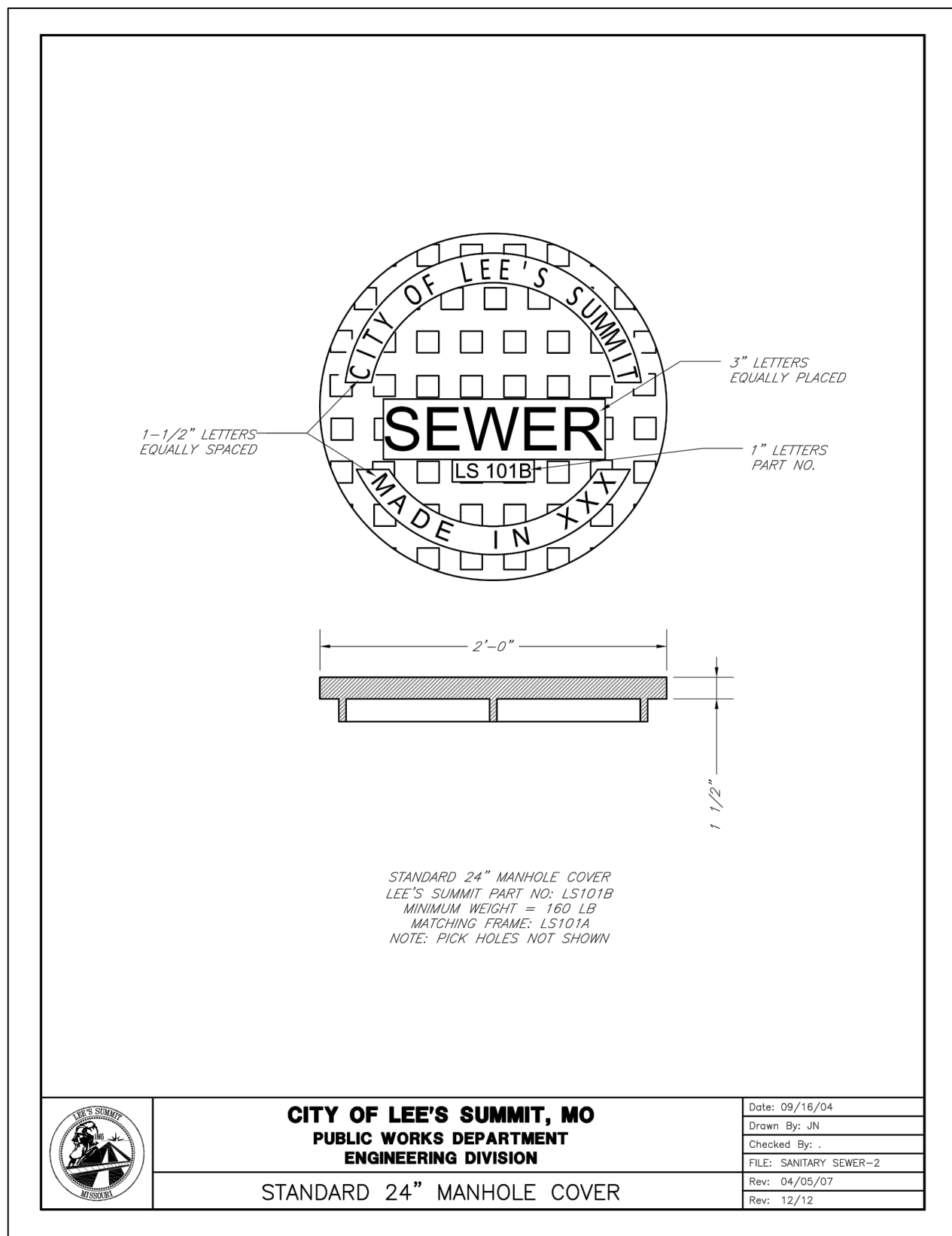
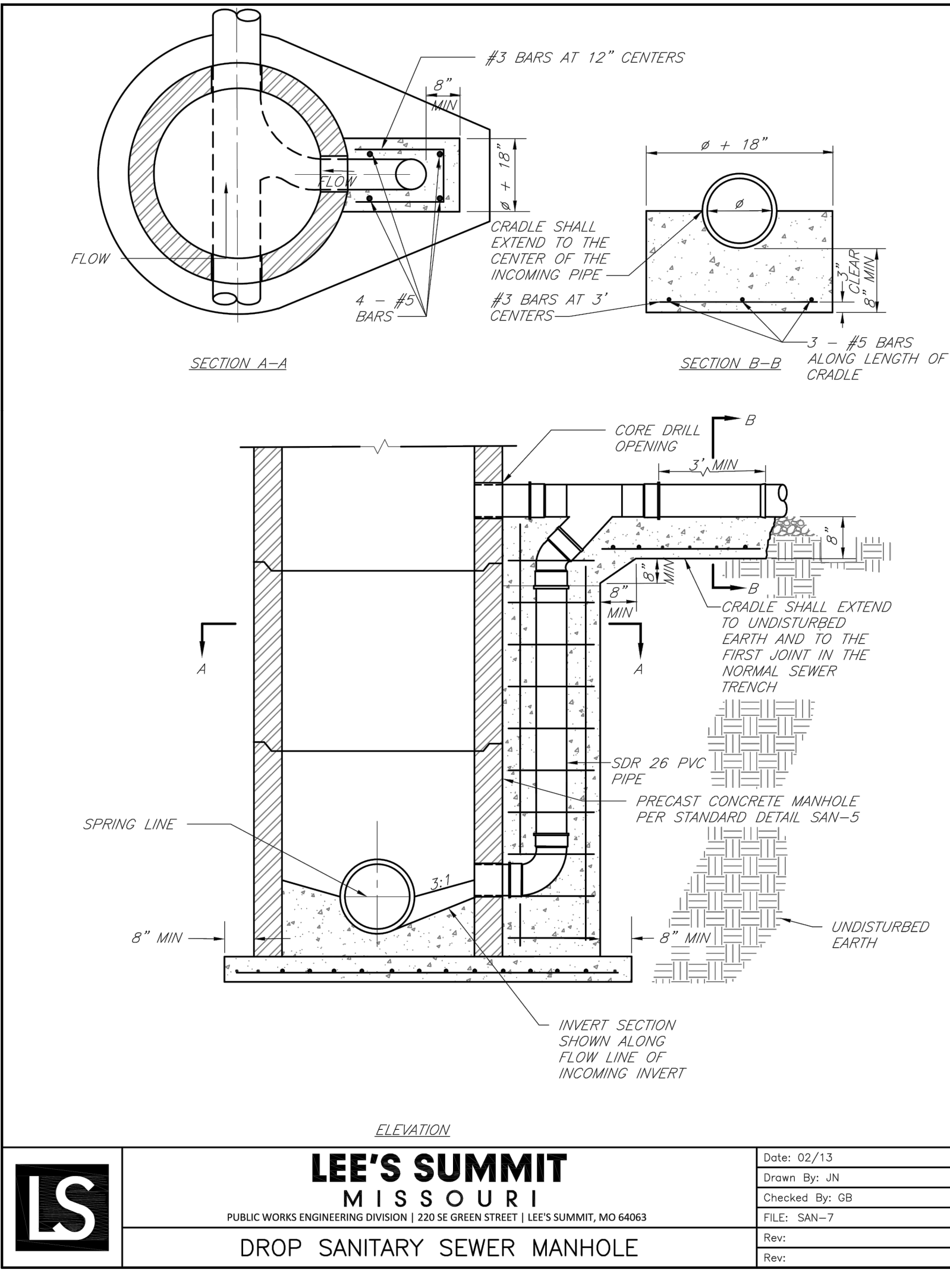
2018

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
C211



- 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.





EXISTING WALL CONNECTION

RevRev: 10/15

www.nelsonassociates.com

NOT AS BUILT

Sanitary Sewer Laterals					
Lot Number	Lateral Station	Lateral Length	Riser	Flowline at End of Lateral	Minimum Serviceable 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	19.84	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	1009.79
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	11.45	2.0	1005.9	1008.74
21	14+63.53	10.28	2.0	1006.4	1009.22
22	14+40.89	78.99	0.0	1005.7	1008.47
23	12+41.46	70.79	1.0	1009.7	1012.50
24	13+27.06	69.79	1.0	1013.5	1016.34
25	13+98.87	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+87.88	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	1025.44
69	11+67.87	13.85	0.0	1022.2	1024.99
70	10+92.87	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	1023.40

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

NOT AS BUILT

					
					
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		REVISIONS DESCRIPTION		BY	
NO.	REV.	DATE			
1	04.10.2017	Revised calculations			
2	11.20.2017	Revised calculations			
3	01.08.2018	Revised calculations			MGD
4	08.27.2018	Revised calculations			
			REVISIONS		
C214 SANITARY SEWER TABLES					
HAWTHORN RIDGE 1ST PLAT					
LEE'S SUMMIT, MO		2018			
drawn by: _____ D.A.H.G. 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 C214					