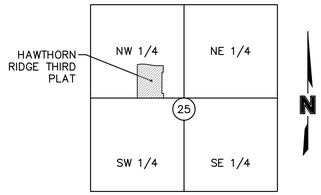
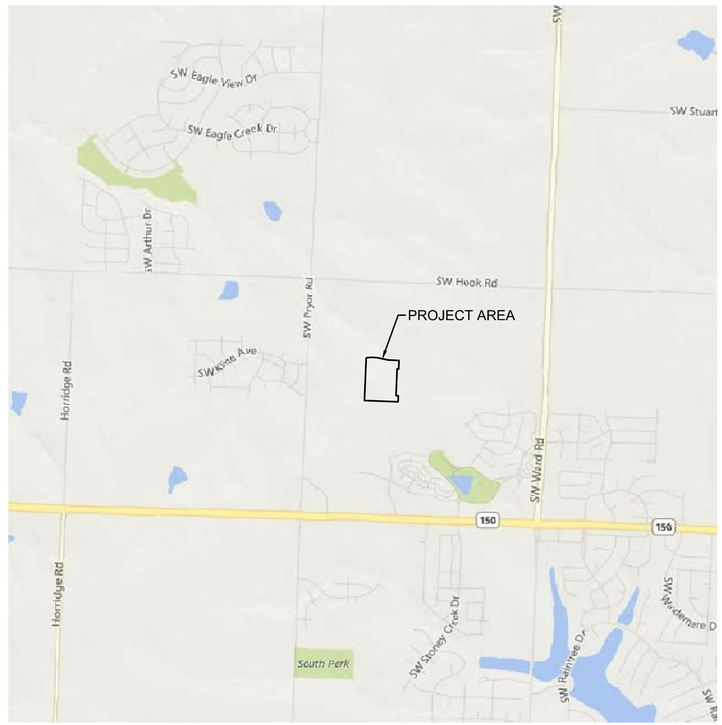
HAWTHORN RIDGE
THIRD PLAT
SANITARY SEWER PLANS

NW 1/4 SECTION 25, TOWNSHIP 47 N, RANGE 32 W
IN LEE'S SUMMIT, JACKSON COUNTY, MO



LOCATION MAP
Sec. 25, Twp. 47 N., Rge. 32 W.
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER CLAYTON PROPERTIES GROUP, INC. D.B.A. SUMMIT HOMES 120 SE 30TH STREET CONTACT: VINCENT WALKER LEE'S SUMMIT, MO 64082 PHONE: 816.246.6700 EMAIL: VINCENT@SUMMITHOMESKC.COM	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: KCP&L PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: BROCK M. WORTHLEY PHONE: 816.361.1177 EMAIL: BWORTHLEY@OLSSON.COM	
SURVEYOR OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	



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☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

CALL BEFORE YOU DIG 1-800-DIG-RITE MISSOURI ONE CALL SYSTEM

PROPERTY DESCRIPTION:

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, AND A PORTION OF TRACT E, OF HAWTHORN RIDGE 1ST PLAT, A SUBDIVISION OF LAND RECORDED AS DOCUMENT 2019E0020897 IN BOOK 182 AT PAGE 83, IN THE OFFICE OF RECORDER OF DEEDS FOR JACKSON COUNTY, MISSOURI ALL BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID NORTHWEST QUARTER OF SECTION 25; THENCE SOUTH 87°46'49" EAST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER, 2,653.29 FEET TO THE SOUTHEAST CORNER OF SAID NORTHWEST QUARTER, (CENTER OF SECTION) AND THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE ON SAID SOUTH LINE OF SAID NORTHWEST QUARTER, NORTH 87°46'49" WEST, 577.00 FEET; THENCE LEAVING SAID SOUTH LINE, NORTH 02°13'11" EAST, 135.00 FEET; THENCE NORTH 87°46'49" WEST, 50.79 FEET; THENCE NORTH 02°18'36" EAST, 596.57 FEET; THENCE SOUTH 87°41'24" EAST, 37.00 FEET; THENCE NORTH 02°18'36" EAST, 192.00 FEET; THENCE NORTH 87°41'24" WEST, 75.58 FEET; THENCE NORTH 02°18'36" EAST, 39.05 FEET; THENCE NORTH 33°13'50" WEST, 218.11 FEET TO THE SOUTHWESTERLY CORNER OF LOT 21 OF SAID HAWTHORN RIDGE 1ST PLAT; THENCE ON THE SOUTHERLY LINE OF SAID HAWTHORN RIDGE 1ST PLAT THE FOLLOWING 9 CALLS, NORTH 54°57'38" EAST, 130.00 FEET; THENCE SOUTH 35°02'22" EAST, 58.00 FEET; THENCE NORTH 54°57'38" EAST, 175.90 FEET; THENCE SOUTH 65°30'07" EAST, 95.33 FEET; THENCE SOUTH 87°41'24" EAST, 121.73 FEET; THENCE NORTH 02°18'36" EAST, 78.00 FEET; THENCE SOUTH 87°41'24" EAST, 175.00 FEET; THENCE NORTH 02°18'36" EAST, 72.00 FEET; THENCE SOUTH 87°41'24" EAST, 130.00 FEET TO THE SOUTHEASTERLY CORNER OF LOT 28 OF SAID HAWTHORN RIDGE 1ST PLAT AND A POINT ON THE EAST LINE OF SAID NORTHWEST QUARTER; THENCE ON SAID EAST LINE, SOUTH 02°18'36" WEST, 1,392.58 FEET TO THE POINT OF BEGINNING. CONTAINING 827,409 SQUARE FEET OR 19.00 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'

OLSSON HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

Brock Worthley 12/15/2020

BROCK M. WORTHLEY, P.E.
CIVIL ENGINEER
MO# PE-2019000237

DATE

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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
12/15/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	11/20/2020	REVISED PER CITY COMMENTS	
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REVISIONS

TITLE SHEET
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by: OLS
checked by: BMW
approved by: BMW
QA/QC by: JES
project no.: A19-1605
drawing no.: C_TTL01_A191605
date: 10/02/2020

SHEET
C200

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_TTL01_A191605.dwg USER: bworthley
DATE: Dec 14, 2020 5:39pm XREFS: C_PBNDY_A191605 C_PTBLK_A191605

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PLANS IN THEIR POSSESSION ARE THE MOST CURRENT VERSION ISSUED, ARE FULLY COORDINATED WITH ALL SUBCONTRACTORS, AND PRESENT ON SITE AT ALL TIMES. CURRENT PLANS PREPARED BY OLSSON MAY BE OBTAINED AT THE DIRECTION OF OLSSON'S CLIENT. DIRECT REQUESTS TO OLSSON MAY REQUIRE ADDITIONAL AUTHORIZATIONS, AGREEMENTS, AND/OR FEES. PLEASE CONTACT THE ENGINEER FOR INFORMATION.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS UNLESS WRITTEN APPROVAL FROM ENGINEER, OWNER, AND DEVELOPER.

3. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.

4. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES AND ITEMS OF WORK.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN IN THE PLANS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES, AND FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.

7. THE CONTRACTOR SHALL NOT ENGAGE IN ACTIVITIES THAT MAY ENCROACH ON WATERS OF THE U.S., INCLUDING WETLANDS, UNTIL ANY NECESSARY PERMITS MAY BE OBTAINED. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS DESCRIBED IN THE PERMIT.

8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, THE SAFETY OF ALL PERSONS INCLUDING VISITORS AND THE GENERAL PUBLIC, AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY THROUGHOUT THE PROJECT AND NOT BE LIMITED BY WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.

9. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL UTILITY COMPANIES AND OBTAIN ANY RELEVANT INFORMATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BOUNDARY CORNERS AND SECTION CORNERS. ANY BOUNDARY CORNER AND/OR SECTION CORNER DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.

11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJACENT PROPERTIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE DURING CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES.

12. PRIOR TO MOVING OFF THE JOB THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER TO PERFORM A FINAL WALK-THROUGH OF THE CONSTRUCTION SITE.

REFERENCES

1. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY;
   A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.
   B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.
   C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
   D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES.
   E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI

4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THEIR OWN INVESTIGATIONS AND MAKING THEIR OWN ASSUMPTIONS REGARDING SITE SURFACE AND SUBSURFACE CONDITIONS. THIS INCLUDES THE LOCATION AND CONSISTENCY OF ANY EXISTING ROCK LAYERS UNDERLYING THE PROJECT SITE. CONTACT THE ENGINEER REGARDING ANY DISCREPANCIES THAT MAY AFFECT THE ABILITY TO CONSTRUCT FROM THESE PLANS AS DESIGNED.

3. EXISTING CONDITIONS WERE DETERMINED THROUGH A VARIETY OF METHODS THAT MAY INCLUDE SURVEY, AERIAL IMAGERY, AVAILABLE RECORDS, GIS DATA, ETC. SUBSURFACE CONDITIONS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES AND OTHER SITE IMPROVEMENTS PRESENT ON SITE. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS WHEN CONFLICTS AND DISCREPANCIES ARE FOUND.

CONSTRUCTION

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY AS SHOWN IN THESE PLANS. IF PLANS ARE NOT PROVIDED, CONTRACTOR SHALL COORDINATE AND PROVIDE CONTROLS TO THE SATISFACTION OF THE RIGHT-OF-WAY OWNER.

2. THE CONTRACTOR SHALL PROTECT ALL TREES OVER 3" CALIPER FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE ON THESE PLANS.

3. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.

4. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS ARE TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. NOT ALL ADJUSTMENTS ARE INDICATED IN THE PLANS.

5. THE CONTRACTOR SHALL STREET SWEEP OR OTHERWISE CLEAN ALL ACCESS ROUTES TO THE SITE AT CONCLUSION OF THE PROJECT.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING A MINIMUM OF 7 DAYS PRIOR TO THE REQUESTED DATE OF APPROVAL. ENGINEER SHALL REVIEW SHOP DRAWINGS OR SAMPLES CONFORMANCE WITH THE DESIGN FOR THIS PROJECT AS DESCRIBED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS. THE ENGINEER'S REVIEW SHALL NOT EXTEND TO MEANS OR METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VARIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS UNLESS CONTRACTOR HAS NOTIFIED ENGINEER OF EACH SUCH VARIATION AT THE TIME OF SUBMISSION, AND OBTAINED ENGINEER'S WRITTEN APPROVAL OF EACH SUCH VARIATION. PRIOR TO SUBMITTING EACH SHOP DRAWING OR SAMPLE, CONTRACTOR SHALL HAVE REVIEWED AND VERIFIED:
   A. ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION WITH RESPECT THERETO;
   B. ALL MATERIALS WITH RESPECT TO INTENDED USE, FABRICATION, SHIPPING, HANDLING, STORAGE, ASSEMBLY AND INSTALLATION PERTAINING TO THE PERFORMANCE OF THE WORK;
   C. ALL INFORMATION RELATIVE TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO;
   D. CONTRACTOR SHALL ALSO HAVE REVIEWED AND COORDINATED EACH SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES, AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.
   E. ALL SUBMITTED SHOP DRAWINGS SHALL BEAR A STAMP OR SPECIFIC WRITTEN INDICATION AND SIGNATURE THAT CONTRACTOR HAS FULLY COMPLETED THE ABOVE TASKS.

2. SHOP DRAWINGS AS DESCRIBED ABOVE ARE REQUIRED FOR, BUT NOT LIMITED TO, THE FOLLOWING:
   A. ALL SANITARY SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
   B. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

SANITARY SEWER GENERAL NOTES

1. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION WITH CITY OF LEE'S SUMMIT, MISSOURI.

2. ALL PIPE LENGTHS ARE CALCULATED LINEARLY FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
4. ALL STRUCTURE DIMENSIONS ARE TO INSIDE FACE OF STRUCTURE.

5. COORDINATES ARE PROVIDED AT THE CENTER OF STRUCTURE. ADDITIONAL COORDINATES PROVIDED ARE PER LOCAL CODES AND ORDINANCES OR AS AN AID WHEN ORIENTING THE LID DURING INSTALLATION.

6. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF SANITARY SEWER.

7. SANITARY SEWER TRENCHES SHALL BE CONSTRUCTED SUCH THAT UNDISTURBED EXISTING SOIL OR FILL COMPACTED TO 95% PROCTOR DENSITY IS AT A DEPTH THAT IS 18" ABOVE TOP OF PROPOSED PIPE.

8. MANHOLE INVERT CHANNELS SHALL BE SMOOTH, CIRCULAR, AND CONFORMING TO ½ THE ADJACENT PIPE SECTION (INVERT TO CENTER). CHANGES IN DIRECTION OF FLOW SHALL BE MADE WITH A SMOOTH CURVE AND MAINTAIN SHAPE THROUGHOUT. CHANGES IN GRADE OF ADJACENT PIPES SHALL BE TRANSITIONED SMOOTHLY AND EVENLY THROUGH THE MANHOLE.

9. PIPE PENETRATIONS SHALL BE USE GASKETS TO ENSURE WATERTIGHT SEALS.

10. TRACING TAPE SHALL BE INSTALLED ALONG ALL NON-METALLIC SURFACES OR AS DIRECTED BY LOCAL CODES AND ORDINANCES.

11. SEWER LINE INSPECTIONS AND TESTING MUST BE SCHEDULED A MINIMUM OF TWO FULL BUSINESS DAYS IN ADVANCE. CONTRACTOR SHALL FURNISH ALL TESTING EQUIPMENT. TESTING SHALL INCLUDE
    A. MANDREL TEST OF ALL GRAVITY SEWERS. IF THE MANDREL TEST FAILS ON ANY SECTION OF PIPE, THAT SECTION SHALL BE UNCOVERED AND REPLACED.
    B. AIR PRESSURE TEST OF ALL GRAVITY SEWERS.
    C. VACUUM TEST OF ALL MANHOLES.

12. REFER TO SHEET C208 FOR SANITARY DESIGN & SEWER LATERAL INFORMATION.

13. ALL SERVICE LINE CONNECTIONS SHALL BE MADE WITH AN 8"X4" PVC WYE, 4"PVC 45° BEND, AND THE APPROPRIATE LENGTH OF 4" PVC LATERAL (UNLESS OTHERWISE SHOWN) AND CAP. SEE DETAIL SHEET C209.

14. MSFE- INDICATES LOWEST FLOOR SERVICEABLE BY PROPOSED SANITARY SEWER.

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

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

17. REFER TO CURRENT CITY SPECIFICATIONS FOR MINIMUM PIPE SLOPES.

18. CONTRACTOR MAY BE REQUIRED TO RECONSTRUCT PIPE AND STRUCTURE IF MINIMUM INVERT DROP OR PIPE SLOPE REQUIREMENTS ARE NOT MET.

19. SANITARY STRUCTURES SHALL BE PER CURRENT CITY DETAILS. IF CITY DOES NOT HAVE PUBLISHED DETAILS STRUCTURES SHALL BE PER CURRENT APWA SPECIFICATIONS.

20. GRAVITY SANITARY SEWER AND WATER LINES SHALL BE SEPARATED BY A MINIMUM OF 10' HORIZONTALLY WHEN PARALLEL AND 2' VERTICALLY WHEN CROSSING. WATER LINES SHALL CROSS ABOVE SANITARY SEWERS.

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
	STREET			
1	8" SANITARY PVC (SDR-26)	L.F.	1819.19	
2	MANHOLES, STD. 4' DIA.	EA.	9	
3	CONNECTION TO EXISTING MANHOLE	EA.	2	
4	TRACER WIRE	L.F.	2070.78	
5	TRACER WIRE BOX	EA.	42	
6	SERVICE WYE	EA.	42	
7	4" LATERAL PIPE	L.F.	2070.78	

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.

CONTROL POINT TABLE

Point Number	Northing	Easting	Point Elevation	Raw Description
90009	981383.7330'	2813865.4520'	1064.23'	CP 60D
90012	981431.6120'	2813832.1000'	1062.71'	CP 60D
90033	981440.4750'	2814063.8700'	1047.98'	CP 60D
90044	981710.8560'	2814198.8050'	1027.00'	CP 60D
90052	981859.5430'	2814200.2150'	1017.51'	CP 60D
90056	981975.4580'	2814144.8570'	1011.69'	CP 60D
90080	981971.2190'	2814027.5570'	1016.72'	CP 60D

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 (NAVD83). THE DEVELOPER IS ADVISED TO USE CONTROL POINT INFORMATION FOR HORIZONTAL CONTROL.

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STATE OF MISSOURI
BROCK M. NORTHLEY
NUMBER PE-2019000237
12/15/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

GENERAL NOTES
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by: OLS
checked by: BMW
approved by: BMW
QA/QC by: JES
project no.: A19-1605
drawing no.: C_TTL01_A191605
date: 10/02/2020

SHEET
C201

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_TTL01_A191605.dwg USER: bworthley
DATE: Dec 14, 2020 5:39pm XREFS: C_PBNDY_A191605 C_PTBLK_A191605

Structure Table		
STRUCTURE ID	NORTHING	EASTING
HR2 M.H. 1-6	981182.4294	2814429.6720
HR2 M.H. 2-1	981787.9574	2814426.8908
M.H. 1-1	981804.7581	2814171.2943
M.H. 1-2	981816.5279	2813945.5634
M.H. 1-3	981817.1486	2813857.2635
M.H. 2-1	981683.0783	2813936.8173
M.H. 2-2	981374.4799	2813922.4440
M.H. 3-1	981187.7875	2814283.9028
M.H. 3-2	981187.2256	2814033.8404
M.H. 3-3	981277.3041	2813943.3417
M.H. 4-1	981469.9842	2814294.8413

N

0' 25' 50' 100'
SCALE IN FEET

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GENERAL LAYOUT
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

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SHEET
C202

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_GEN01_A191605.dwg USER: bworthley
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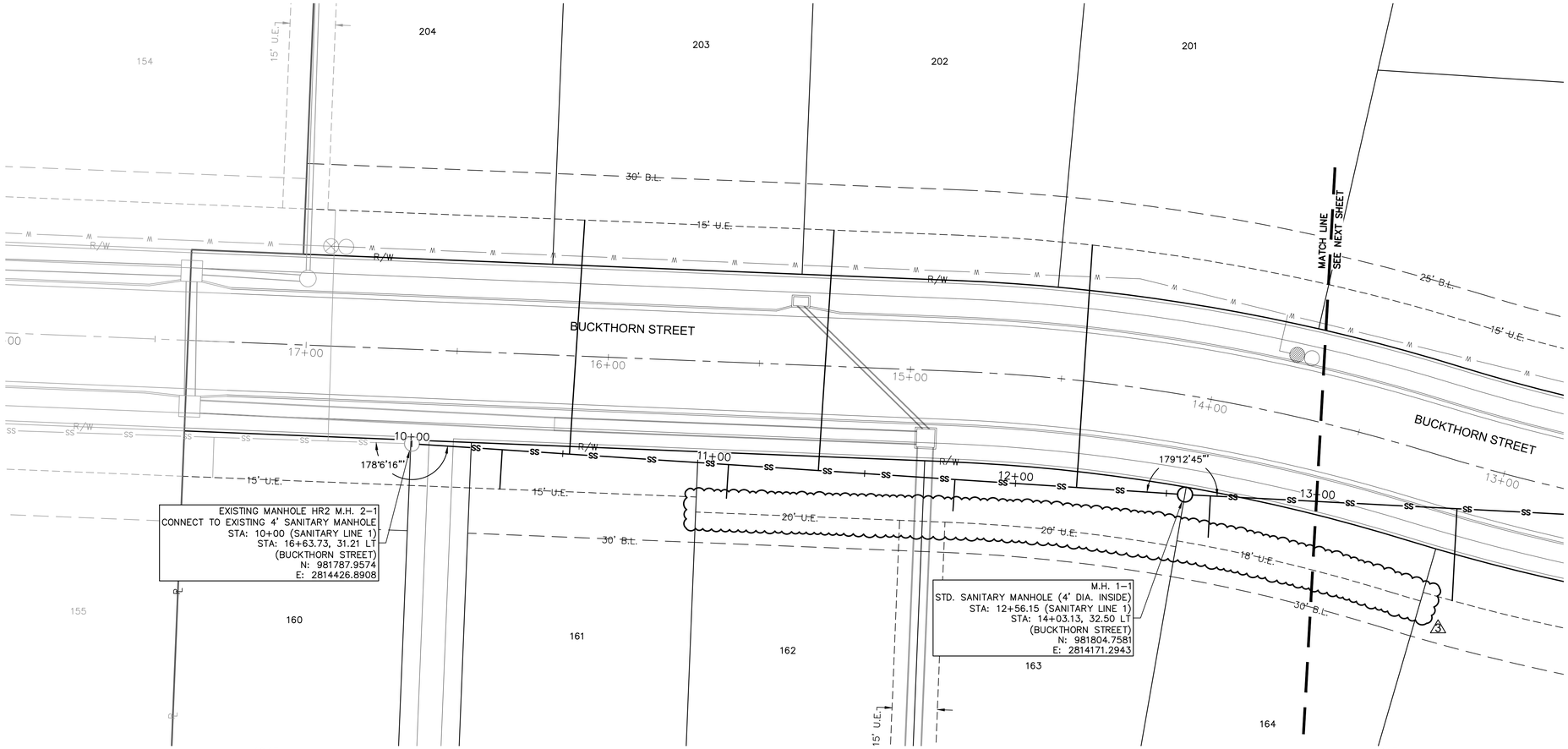
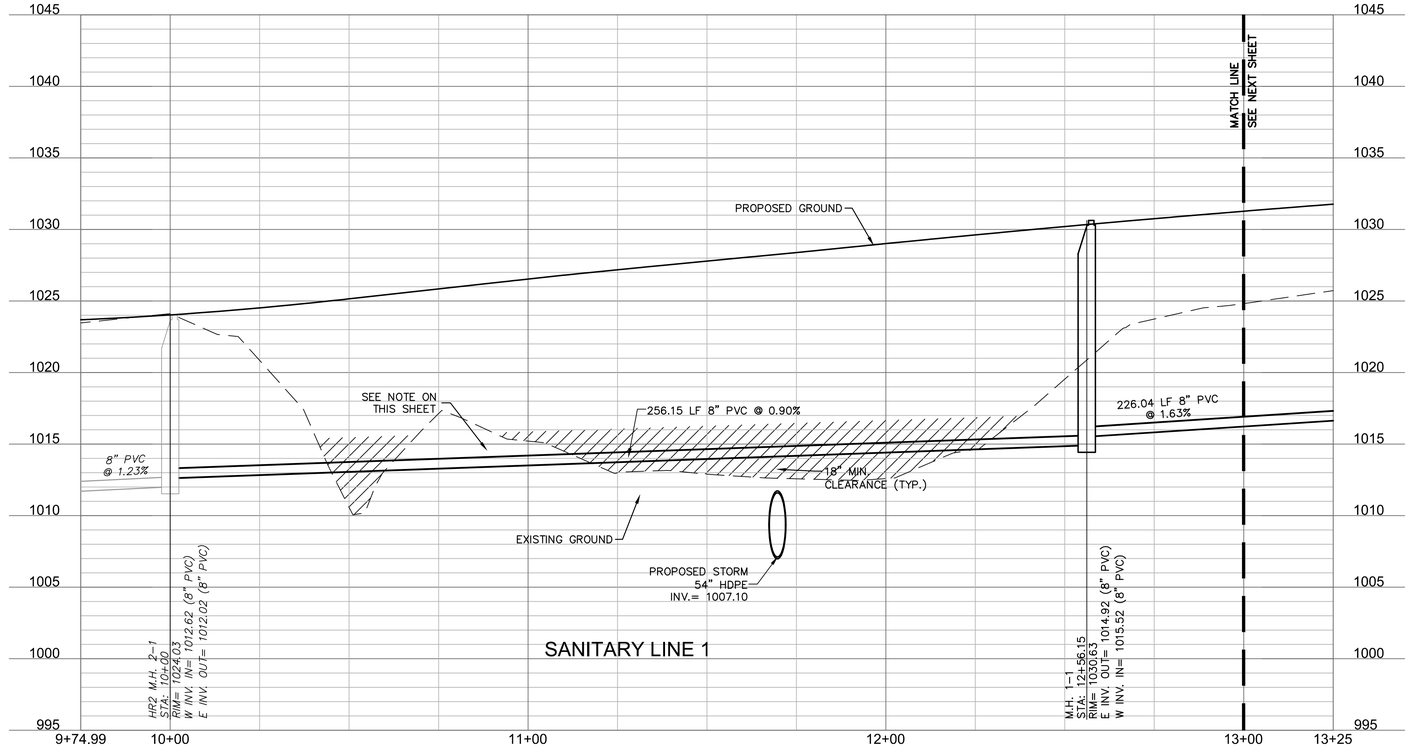


NOTE:
CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



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REVISIONS

SANITARY PLAN AND PROFILE (LINE 1)
SANITARY SEWER PLANS

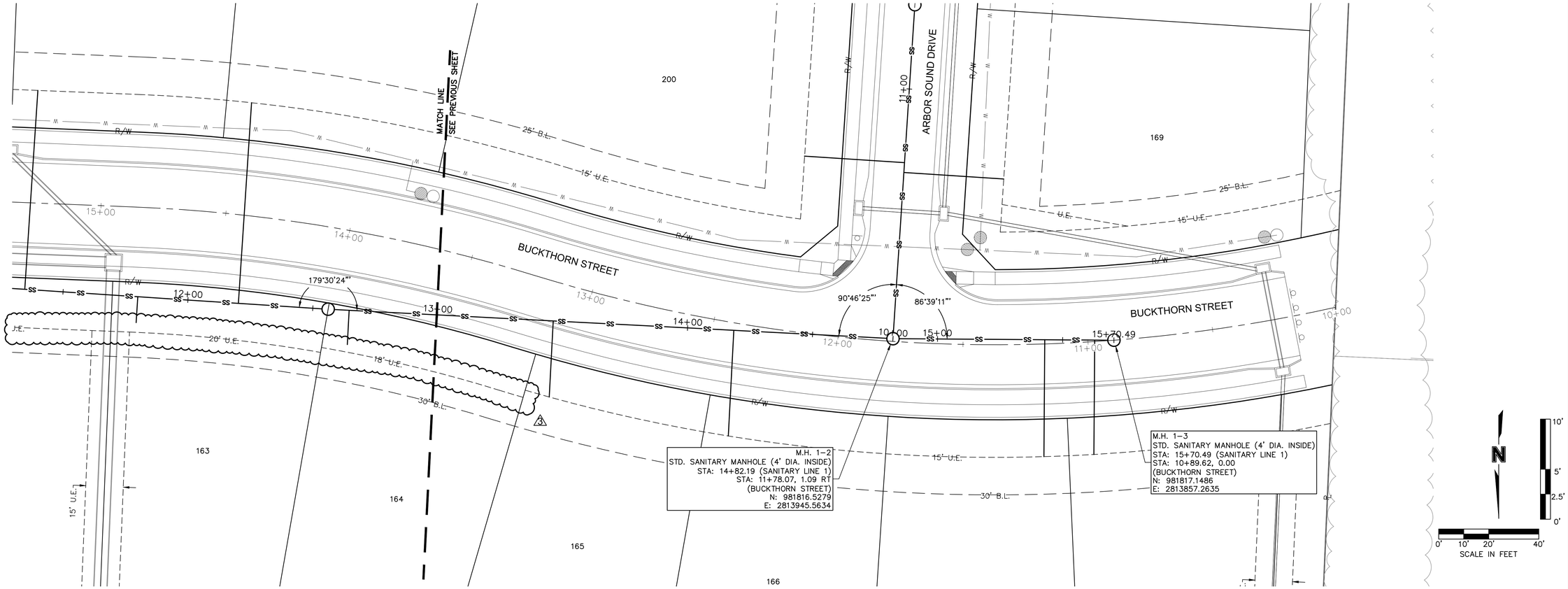
HAWTHORN RIDGE
THIRD PLAT

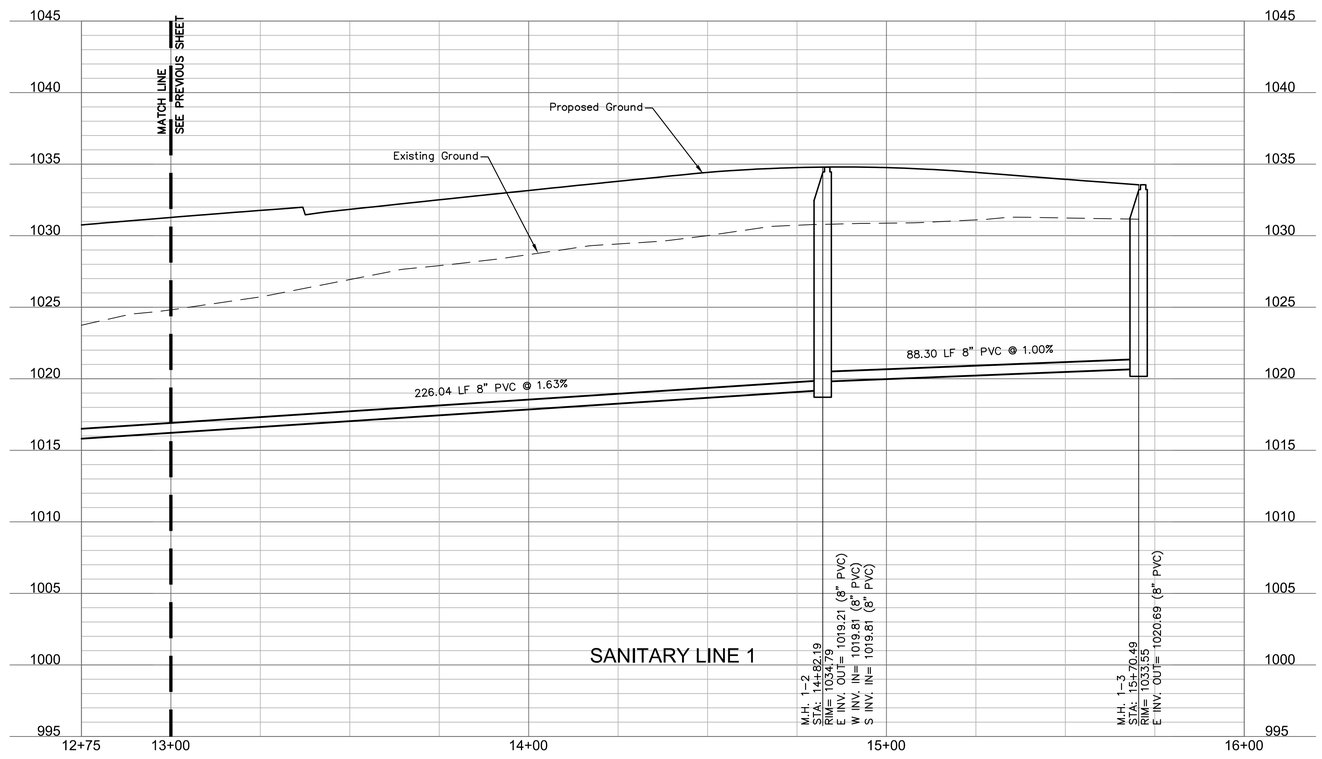
LEE'S SUMMIT, MO

2020

drawn by:	OLS
checked by:	BMW
approved by:	BMW
QA/QC by:	JES
project no.:	A19-1605
drawing no.:	C_SAN01_A191605
date:	10/02/2020

SHEET
C203





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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
12/15/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
3	12/15/2020	REVISED PER CITY COMMENTS	

REVISIONS

SANITARY PLAN AND PROFILE (LINE 1 CONT)
SANITARY SEWER PLANS

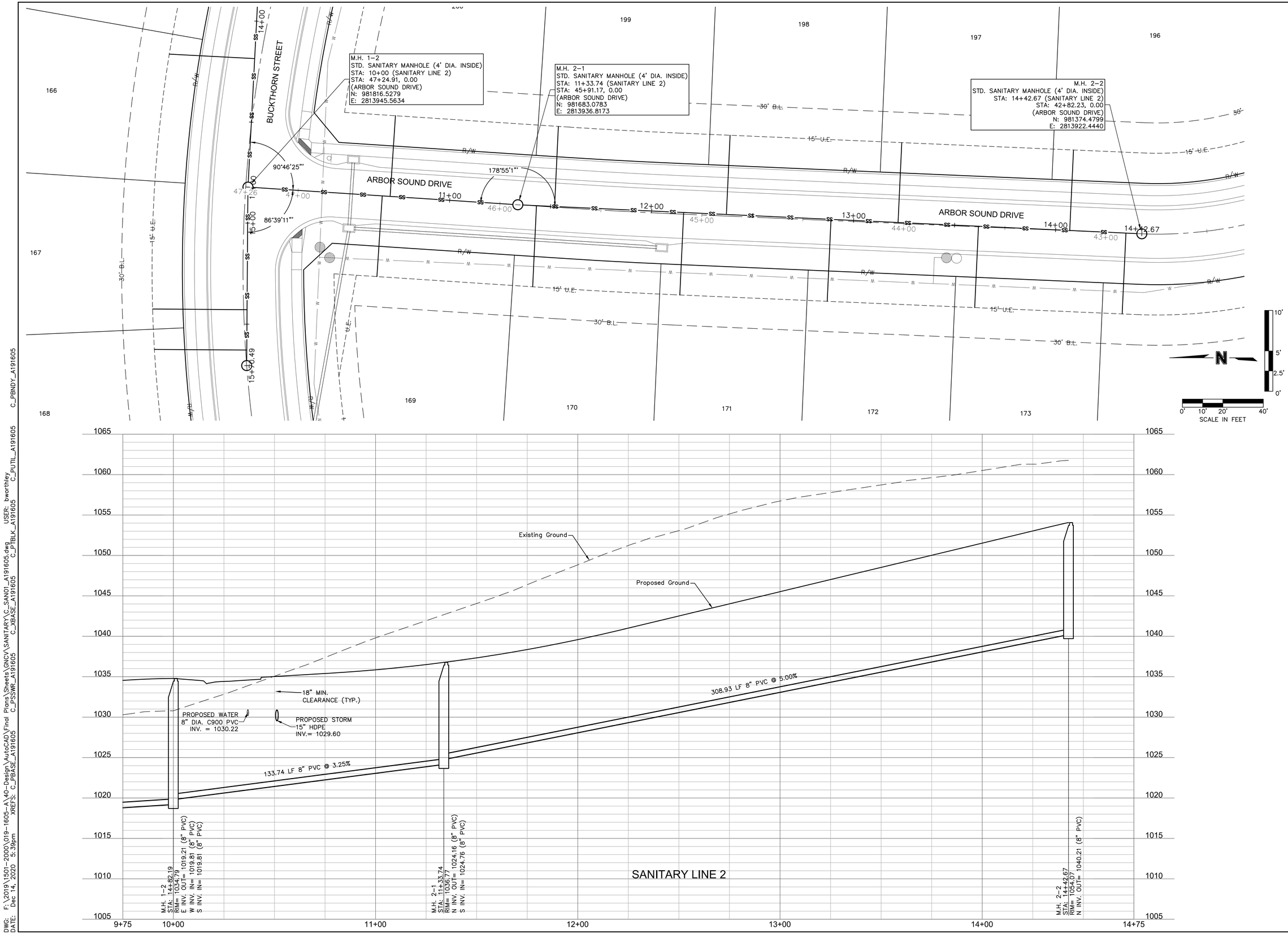
HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by:	OLS
checked by:	BMW
approved by:	BMW
QA/QC by:	JES
project no.:	A19-1605
drawing no.:	C_SAN01_A191605
date:	10/02/2020

SHEET
C204



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STATE OF MISSOURI
BROCK M. NORTHLEY
NUMBER PE-2019000237
12/15/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY PLAN AND PROFILE (LINE 2)
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by:	OLS
checked by:	BMW
approved by:	BMW
QA/QC by:	JES
project no.:	A19-1605
drawing no.:	C_SAN01_A191605
date:	10/02/2020

SHEET
C205

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_SAN01_A191605.dwg USER: bworthley
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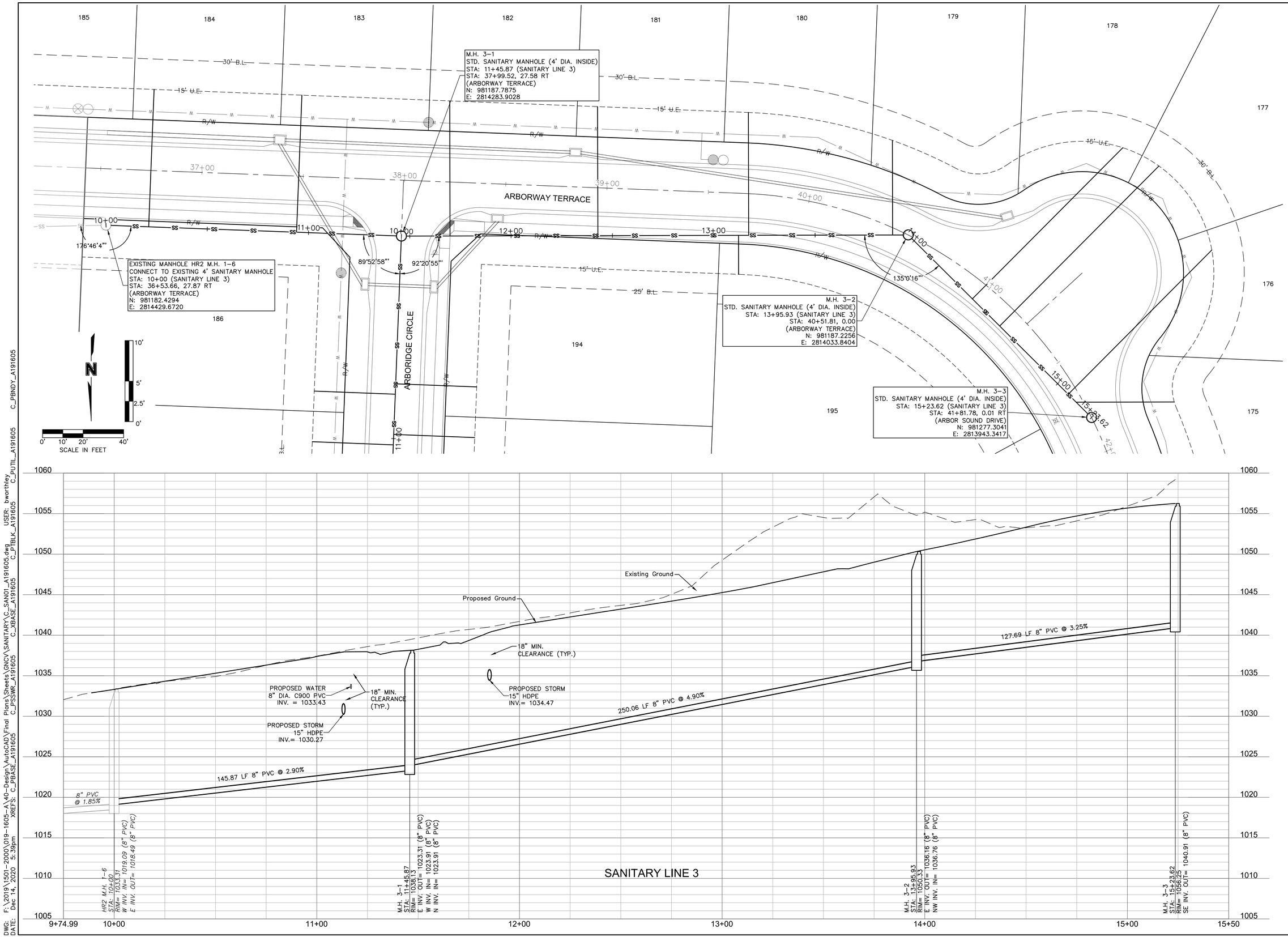

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BROCK M. NORTHLEY
NUMBER
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REVISIONS

SANITARY PLAN AND PROFILE (LINE 3)
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

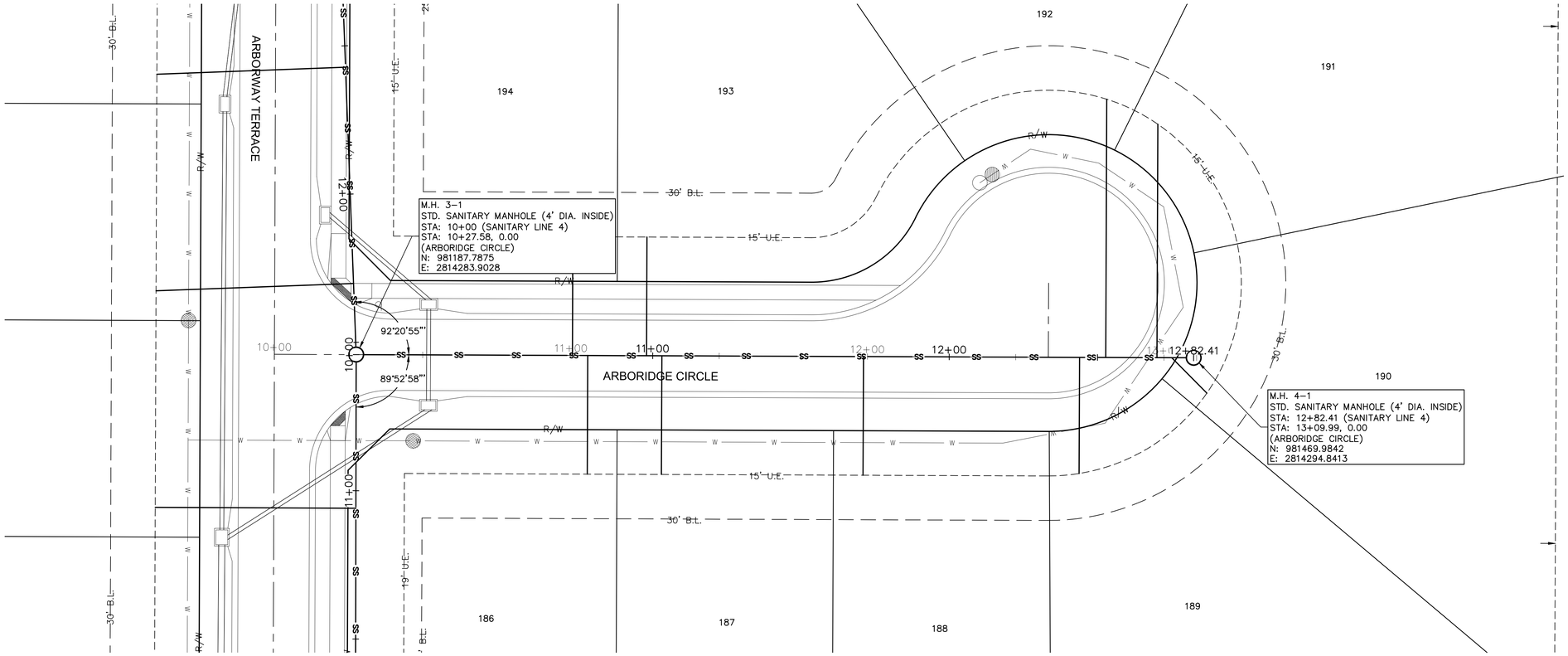
LEE'S SUMMIT, MO

2020

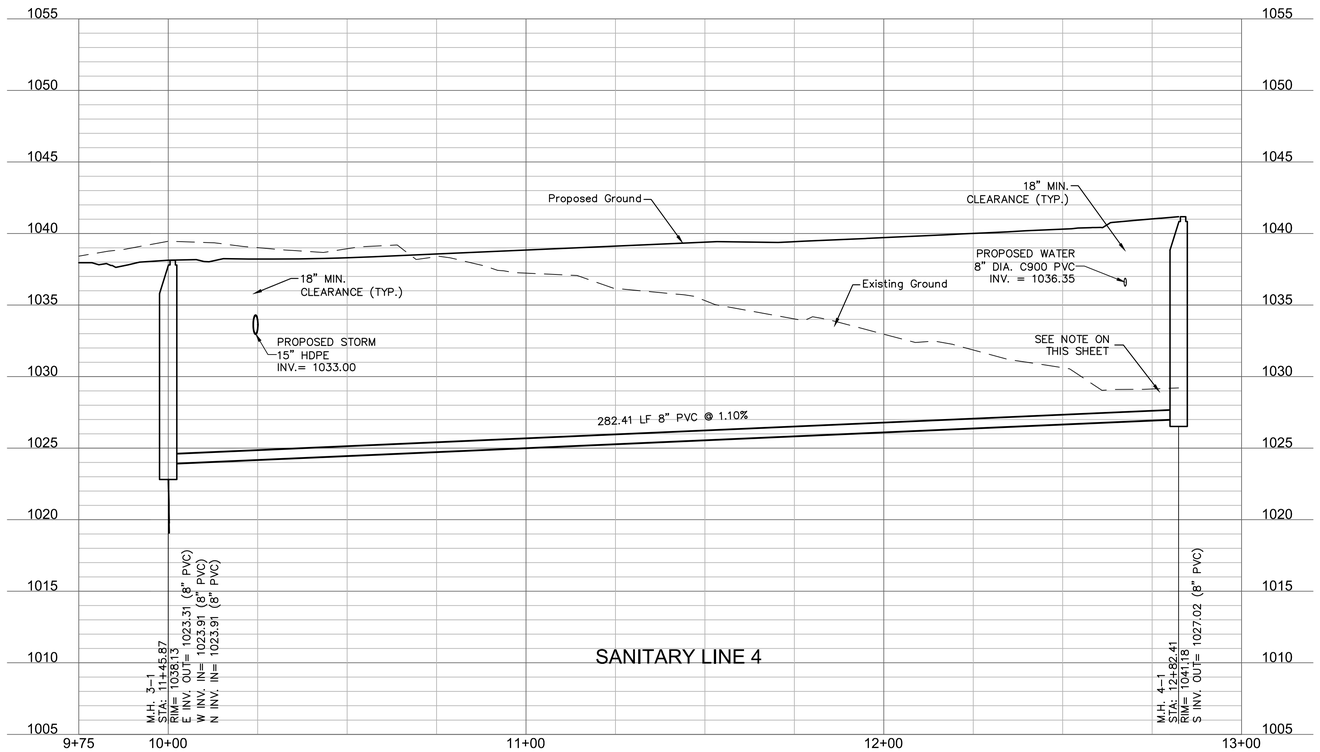
drawn by: OLS
checked by: BMW
approved by: BMW
QA/QC by: JES
project no.: A19-1605
drawing no.: C_SAN01_A191605
date: 10/02/2020

SHEET
C206

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_SAN01_A191605.dwg USER: bworthley
DATE: Dec 14, 2020 5:39pm XREFS: C_PBASE_A191605 C_PSSWR_A191605 C_XBASE_A191605 C_PTBLK_A191605 C_PUTIL_A191605 C_PBNDY_A191605



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: Dec 14, 2020 5:39pm XREFS: C_PBASE_A191605 C_PSSWR_A191605 C_XBASE_A191605 C_PTBLK_A191605 C_PUTIL_A191605 C_PBNDY_A191605

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STATE OF MISSOURI
BROCK M. NORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
12/15/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	11/23/2020	REVISED PER CITY COMMENTS	

REVISIONS

SANITARY PLAN AND PROFILE (LINE 4)
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by:	OLS
checked by:	BMW
approved by:	BMW
QA/QC by:	JES
project no.:	A19-1605
drawing no.:	C_SAN01_A191605
date:	10/02/2020

SHEET
C207

Sanitary Sewer Laterals

Lot Number	Lateral Station	Lateral Length (ft)	Riser (ft)	Flowline at Main (ft)	Flowline at End of Lateral (ft)	Minimum Servicable Floor Elevation (ft)
*160	9+34.53	13.29	0.0	1011.2	1012.5	1015.28
161	10+29.98	13.04	0.0	1012.9	1014.2	1016.95
162	11+04.95	11.14	1.0	1013.6	1015.8	1018.57
163	11+79.94	10.39	2.0	1014.2	1017.4	1020.21
164	12+64.56	13.70	3.0	1015.7	1019.9	1022.67
165	13+46.23	30.43	3.0	1017.0	1021.5	1024.34
166	14+18.51	42.27	3.0	1018.2	1023.0	1025.76
167	15+42.83	46.72	1.0	1020.4	1023.3	1026.13
168	15+62.81	45.70	0.0	1020.6	1022.5	1025.33
169	10+66.57	40.00	1.0	1022.0	1024.8	1027.55
170	11+42.98	40.18	0.0	1025.2	1027.0	1029.83
171	12+15.86	40.84	0.0	1028.9	1030.7	1033.48
172	12+88.82	40.57	1.0	1032.5	1035.3	1038.11
173	13+61.82	40.30	2.0	1036.2	1039.9	1042.73
174	14+34.82	40.03	2.0	1039.8	1043.6	1046.37
175	15+12.90	48.38	3.0	1040.6	1045.5	1048.27
176	15+07.37	100.44	0.0	1040.4	1043.4	1046.19
177	14+59.63	111.41	0.0	1038.8	1042.1	1044.86
178	14+40.61	105.22	0.0	1038.2	1041.3	1044.12
179	13+88.24	46.68	2.0	1035.8	1039.7	1042.48
180	13+17.22	60.67	1.0	1032.3	1035.5	1038.30
181	12+42.81	63.66	2.0	1028.7	1032.9	1035.69
182	11+69.87	66.65	2.0	1025.1	1029.4	1032.18
183	10+94.22	67.68	2.0	1021.8	1026.1	1028.94
184	10+21.25	67.83	2.0	1019.7	1024.0	1026.82
*185	9+52.21	70.78	1.0	1017.5	1020.9	1023.74
186	10+78.08	40.00	1.0	1024.8	1027.5	1030.35
187	11+03.08	40.00	1.0	1025.0	1027.8	1030.62
188	11+71.08	40.00	1.0	1025.8	1028.6	1031.37
189	12+43.95	39.14	1.0	1026.6	1029.4	1032.16
190	12+75.04	16.82	1.0	1026.9	1029.3	1032.05
191	12+70.04	78.70	0.0	1026.9	1029.5	1032.25
192	12+52.79	87.05	0.0	1026.7	1029.4	1032.23
193	10+97.92	40.00	1.0	1025.0	1027.8	1030.57
194	10+72.92	40.00	1.0	1024.7	1027.5	1030.29
195	13+12.22	19.26	7.0	1032.1	1040.3	1043.11
196	14+07.01	39.87	4.0	1038.4	1044.1	1046.94
197	13+22.01	39.55	2.0	1034.2	1037.9	1040.72
198	12+37.01	39.24	1.0	1029.9	1032.7	1035.49
199	11+51.98	39.66	0.0	1025.7	1027.5	1030.27
200	10+70.49	40.05	1.0	1022.1	1024.9	1027.68
201	12+20.23	80.34	1.0	1014.6	1018.2	1020.99
202	11+34.67	79.64	0.0	1013.8	1016.4	1019.22
203	10+52.19	77.55	0.0	1013.1	1015.6	1018.44
*204	9+72.23	76.42	0.0	1011.7	1014.2	1017.01

*Sanitary sewer lateral installed during 2nd Plat construction.
Information shown reflects design information, not as-built

Sanitary Sewer Design Information

Upstream Manhole	Downstream Pipe Slope (%)	Downstream Pipe Diameter (in)	Proposed Cumulative Area (Ac.)	Future Cumulative Area (Ac.)	Peak Base Flow (gpd)	Peak Infiltration Flow (gpd)	Peak Inflow (cfs)	Total Peak Flow (cfs)	Downstream Pipe Mannings N	Downstream Pipe Capacity (cfs)	Downstream Pipe Full Flow Velocity (fps)
HR2 MH 2-1	1.23%	8	8.10	0.00	12157.33	4052.445	0.238	0.263	0.013	1.34	3.84
MH 1-1	0.90%	8	7.36	0.00	11038.98	3679.660	0.218	0.241	0.013	1.15	3.28
MH 1-2	1.63%	8	5.19	0.00	7788.22	2596.074	0.158	0.175	0.013	1.54	4.43
MH 1-3	1.00%	8	0.60	0.00	902.62	300.872	0.021	0.023	0.013	1.21	3.46
MH 2-1	3.25%	8	3.70	0.00	5547.04	1849.013	0.116	0.127	0.013	2.18	6.24
MH 2-2	5.00%	8	2.68	0.00	4012.64	1337.546	0.086	0.094	0.013	2.70	7.74
HR2 MH 1-6	1.85%	8	7.81	0.00	11714.33	3904.775	0.230	0.254	0.013	1.64	4.71
MH 3-1	2.90%	8	7.13	0.00	10699.86	3566.621	0.212	0.234	0.013	2.06	5.90
MH 3-2	4.90%	8	3.13	0.00	4692.05	1564.015	0.099	0.109	0.013	2.67	7.66
MH 3-3	3.25%	8	1.51	0.00	2261.02	753.673	0.050	0.055	0.013	2.18	6.24
MH 4-1	1.10%	8	3.47	0.00	5203.41	1734.470	0.109	0.120	0.013	1.27	3.63

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STATE OF MISSOURI
BROCK M. NORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
12/15/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY DESIGN TABLES
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by: OLS
checked by: BMW
approved by: BMW
QA/QC by: JES
project no.: A19-1605
drawing no.: C_TAB01_A191605
date: 10/02/2020

SHEET
C208

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_TAB01_A191605.dwg USER: bworthley
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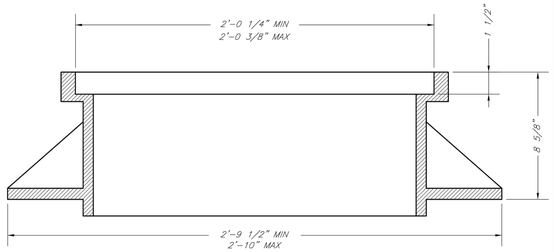
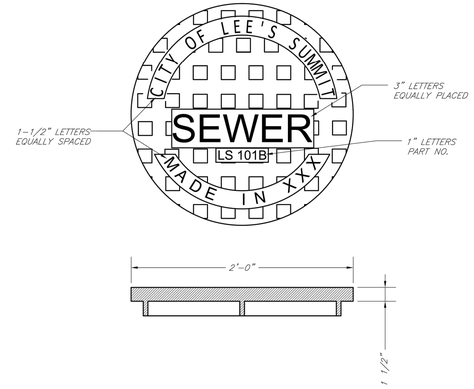


STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB
MATCHING COVER: LS101B

CITY OF LEE'S SUMMIT, MO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

STANDARD 24" MANHOLE FRAME

Date: 09/16/04	
Drawn By: JN	
Checked By:	
FILE: SANITARY SEWER-1	
Rev: 01/04/07	
Rev: 1/13	

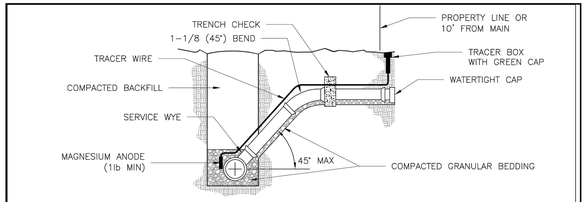


STANDARD 24" MANHOLE COVER
LEE'S SUMMIT PART NO: LS101B
MINIMUM WEIGHT = 160 LB
MATCHING FRAME: LS101A
NOTE: PICK HOLES NOT SHOWN

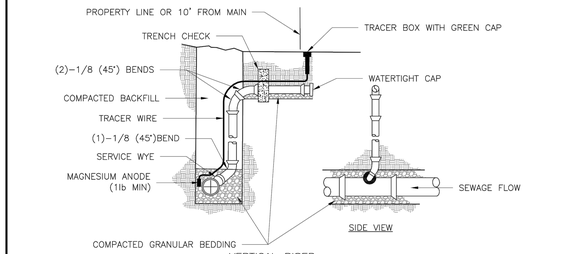
CITY OF LEE'S SUMMIT, MO
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

STANDARD 24" MANHOLE COVER

Date: 09/16/04	
Drawn By: JN	
Checked By:	
FILE: SANITARY SEWER-2	
Rev: 04/05/07	
Rev: 12/12	



STANDARD INSTALLATION
NOT TO SCALE



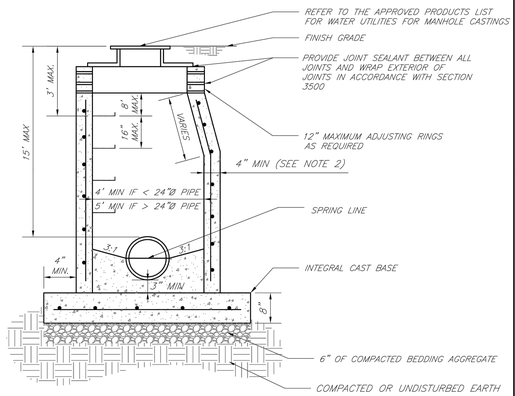
VERTICAL RISER
NOT TO SCALE

NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. ALL NEW CONSTRUCTION OFF SEWER STUBS SHALL BE TEMPORARILY MARKED WITH A MARKING STAKE, 36" ABOVE GROUND AND PAINTED GREEN.
3. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
4. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
5. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
6. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
7. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
8. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
9. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

BUILDING SEWER STUB AND RISER

Date: 04/17	
Drawn By: MJF	
Checked By: DL	
SAN-1	

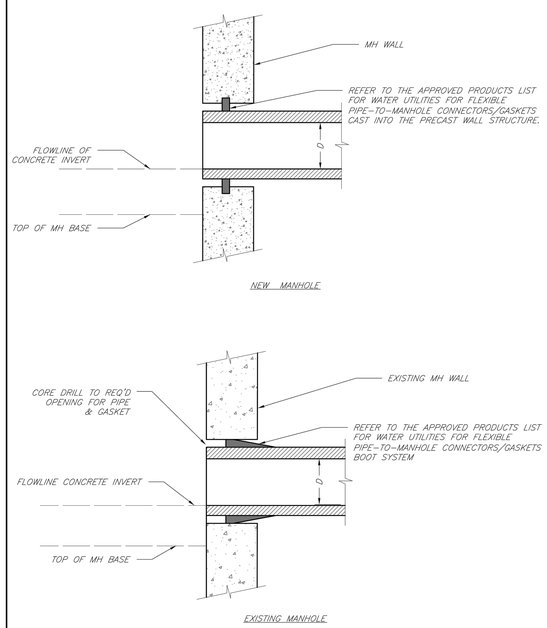


NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH ($1/12$) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 15'.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD PRECAST MANHOLE – SANITARY SEWER

Date: 02/13	
Drawn By: JN	
Checked By: DL	
FILE: SAN-2	
Rev: 1/14	
Rev:	



LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

MANHOLE WALL CONNECTIONS

Date: 02/13	
Drawn By: JN	
Checked By: DL	
FILE: SAN-5	
Rev: 1/14	
Rev:	

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STATE OF MISSOURI
BROCK M. NORTHLEY
NUMBER PE-2019000237
PROFESSIONAL ENGINEER
12/15/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SANITARY DETAILS
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by:	OLS
checked by:	BMW
approved by:	BMW
QA/QC by:	JES
project no.:	A19-1605
drawing no.:	C_DTL01_A191605
date:	10/02/2020

SHEET
C209

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\SANITARY\C_DTL01_A191605.dwg USER: bworthley
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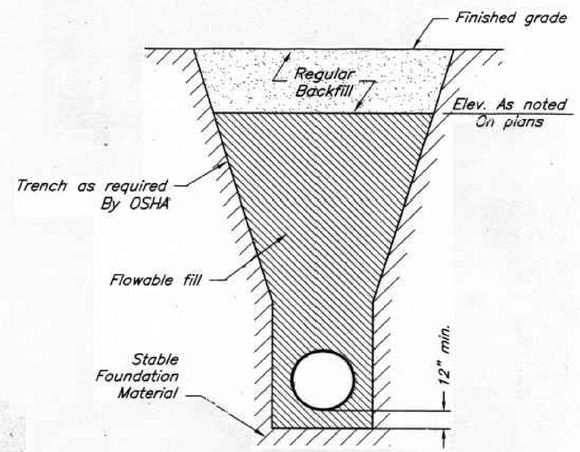


NOTES

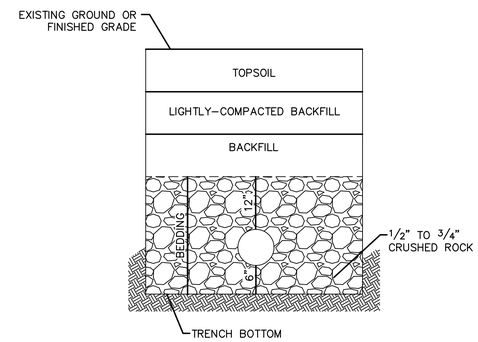
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT STANDARD SPECIFICATIONS.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
3. TOP OF FLOWABLE BACKFILL SHALL BE A MINIMUM OF 2 FEET BELOW FINISHED GRADE.

Subject to revision without notice.

CITY OF LEE'S SUMMIT, MISSOURI

Date: 09/16/04
Rev:
Rev:
Rev:

TRENCH CHECK



UNDERGROUND PIPE INSTALLATION FOR SANITARY SEWER

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 MATERIAL SHALL BE PER SECTION 6900 AND 2102 OF THE CITY DESIGN AND CONSTRUCTION MANUAL. BEDDING AGGREGATE SHALL BE PLACED FROM A LEVEL 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL 12 INCHES ABOVE THE TOP OF THE PIPE.
3. BACKFILL MATERIAL AND PLACEMENT SHALL BE PER SECTION 6900 AND 2102 OF THE CITY DESIGN AND CONSTRUCTION MANUAL.
4. TRENCHING SHALL BE IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
5. MINIMUM AND MAXIMUM TRENCH WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

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STATE OF MISSOURI
BROCK M. NORTHLEY
NUMBER
PE-2019000237
12/15/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
2	12/10/2020	REVISED PER CITY COMMENTS	

REVISIONS

SANITARY DETAILS
SANITARY SEWER PLANS

HAWTHORN RIDGE
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by: OLS
checked by: BMW
approved by: BMW
QA/QC by: JES
project no.: A19-1605
drawing no.: C_DTL01_A191605
date: 10/02/2020

SHEET
C210

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DATE: Dec 14, 2020 5:42pm XREFS: C_PTBLK_A191605