

# MAIN ORCHARD

Lots 1 Thru 6

## SANITARY SEWER CONSTRUCTION PLANS

Part of the NE 1/4 Section 6, Township 47 North, Range 31 West  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

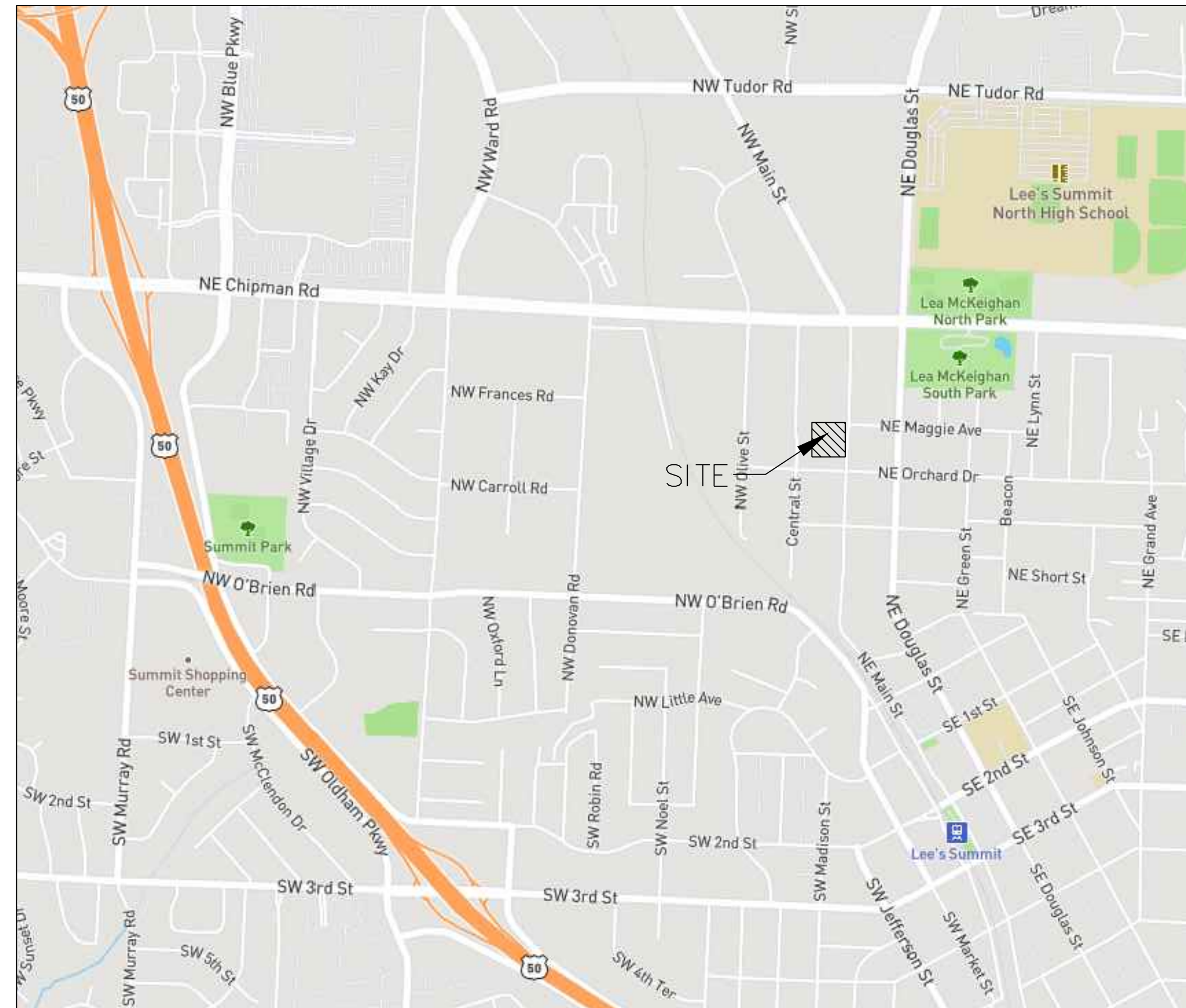
**CONSTRUCTION AND DESIGN NOTES:**

**SANITARY SEWERS:**

1. SANITARY SEWER PIPE SHALL BE POLY VINYL CHLORIDE (PVC), SDR-26, UNLESS NOTED OTHERWISE IN THESE PLANS.
2. HOUSE SEWER LATERALS SHALL BE 4 INCH PVC, SDR-26. LATERALS SHALL BE CONSTRUCTED USING A TOP ORIENTED "WYE" AT THE SEWER STATION SHOWN IN THESE PLANS. LATERALS SHALL BE LAID AT A GRADE OF 2.0% FROM THE SEWER MAIN TO THE STREET RIGHT-OF-WAY LINE OR EASEMENT LINE AS REPRESENTED BY THE LATERAL LENGTH SHOWN IN THESE PLANS. THE ELEVATION SHOWN FOR THE END OF THE LATERAL IN THESE PLANS IS APPROXIMATE. THE ACTUAL ELEVATION SHALL BE DETERMINED BY THE FLOW LINE ELEVATION OF THE SEWER MAIN, THE FITTINGS AND GRADE OF THE SEWER LATERAL.
3. THE CONTRACTOR SHALL MAINTAIN A LOG OF THE "AS BUILT" STATION AND LENGTH OF EACH HOUSE LATERAL AND SHALL PROVIDE ENGINEERING SOLUTIONS, L.L.C. WITH A COPY OF SAID LOG UPON COMPLETION OF SEWER CONSTRUCTION.
4. ALL MANHOLES INSTALLED IN THE STREET RIGHT-OF-WAY SHALL BE FINISHED 1/2" PER FOOT ABOVE THE NEAREST ADJACENT BACK OF CURB
5. A STAKE SHALL BE PLACED AT THE END OF EACH WYE CONNECTION WITH THE END ELEVATION WRITTEN ON THE STAKE
6. FILL AREAS SHALL HAVE 3 FEET OF COMPACTED FILL IN PLACE PRIOR TO TRENCHING
7. A TRENCH CHECK CONSISTING OF FLOWABLE FILL MUST BE INSTALLED ON EVERY PRIVATE LATERAL.

**GENERAL NOTE:**

- 1 - ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813
- 2 - TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION.



**UTILITY COMPANIES:**

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

KCP&L ~ 969-1196  
SPIRE ~ 969-2200  
SOUTHWESTERN BELL TELEPHONE ~ 761-5011  
COMCAST CABLE ~ 795-1100  
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800  
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200  
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900  
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

**LEGEND:**

- B/L - BUILDING SET-BACK
- C/A - COMMON AREA
- D/E - DRAINAGE EASEMENT
- FND. - FOUND
- L/E - LANDSCAPE EASEMENT
- L.N.A. - LIMITS OF NO ACCESS
- R/W - RIGHT OF WAY
- SAN - SANITARY SEWER LINE
- S/W - SIDEWALK
- U/E - UTILITY EASEMENT
- W - WATER LINE
- ST - STORM SEWER LINE

**ENGINEER'S CERTIFICATION:**

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.

**CITY OF LEE'S SUMMIT, MISSOURI**

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

BY: \_\_\_\_\_  
CITY ENGINEER

**Record Drawing**

"AS-BUILT"

900.10  
~~900.00~~ Indicates data replaced with "As-Built" information. All other data is as designed and has not been field verified.

**INDEX OF SHEETS:**

- C.400 - COVER SHEET
- C.401 - SANITARY SEWER GENERAL LAYOUT
- C.402 - SANITARY SEWER PLAN & PROFILE
- C.403 - SANITARY SEWER DETAILS



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

Project: 510 NW MAIN ST  
LS, MO  
Issue Date: December 11, 2019

MAIN ORCHARD  
Section 6, Township 47 North, Range 31 West  
Lee's Summit, Jackson County, Missouri

Cover Sheet  
Construction Plans for:  
MAIN ORCHARD  
Section 6, Township 47 North, Range 31 West  
Lee's Summit, Jackson County, Missouri

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

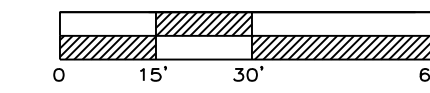
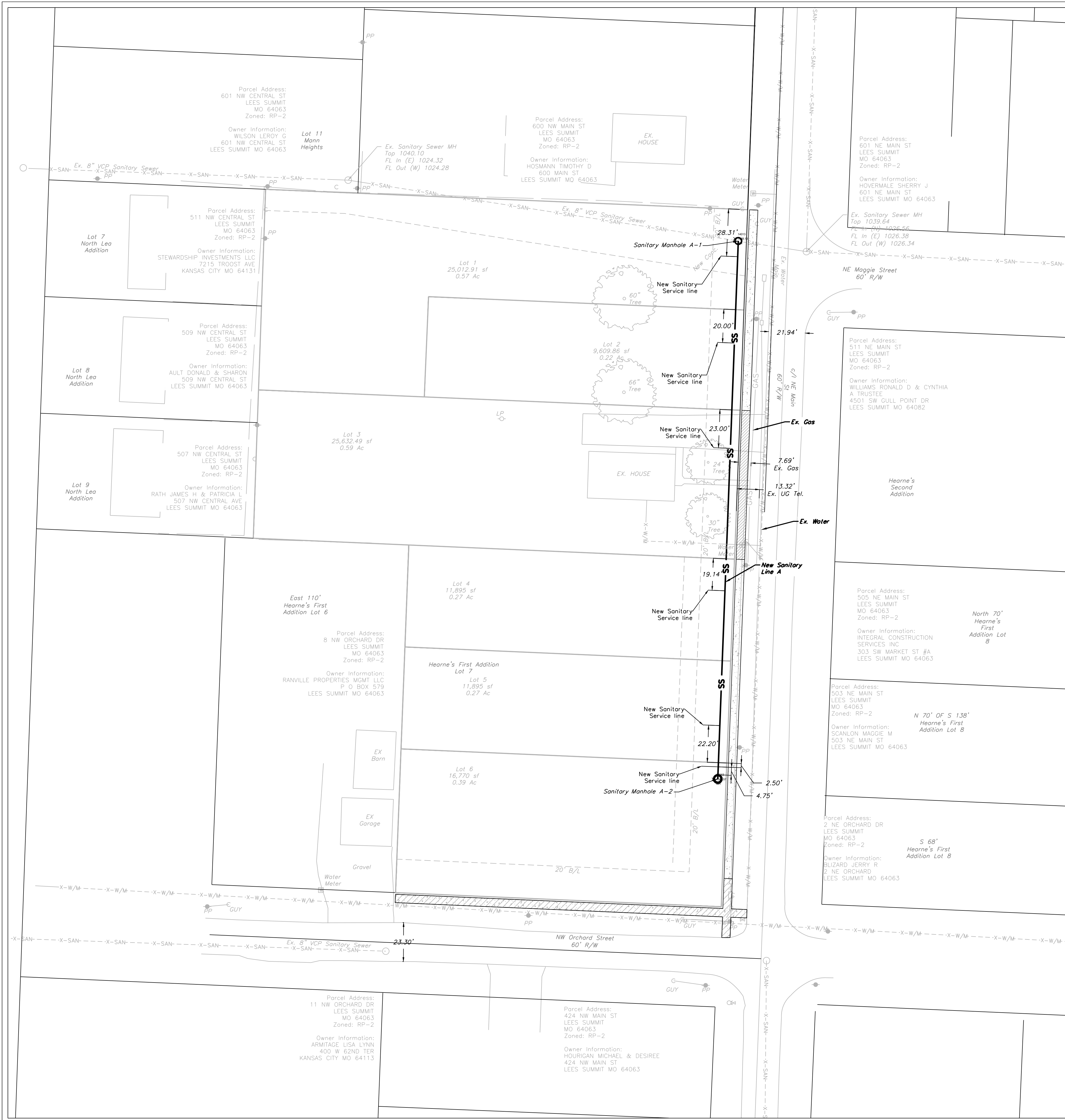
REVISIONS

12-27-19 City Comments

1-13-20 Revised

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\_\_\_\_\_

C.400



SANITARY SEWER GENERAL LAYOUT  
SCALE: 1" = 30'

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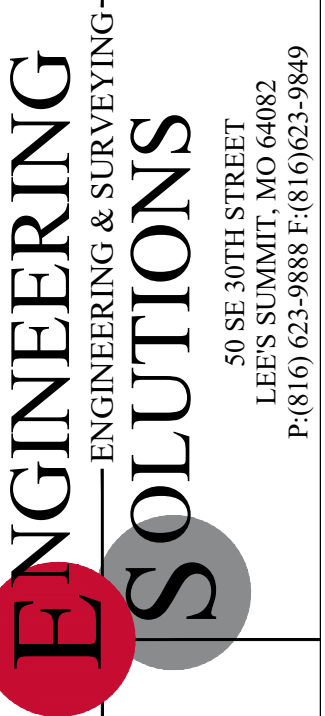
**LEGEND:**

Existing Underground Power	—UGP— UGP—
Existing Conc. Curb & Gutter	====
Existing Fence	—X—X—X—
Existing Gas Main	—G—G—G—
Existing Water Main	—X-W/M— X-W/M—
Existing Storm Sewer	—X-STM— X-STM—
Existing Sanitary Sewer	—X-SAN— X-SAN—
Existing Underground Telephone	—UGT— UGT—
Existing Overhead Power	—OHE—
Existing Fiber Optic Cable	—FOC—
Proposed Storm Sewer	—ST— ST— ST—
Proposed Sanitary Sewer	—SS— SS— SS—
Proposed Water	—W— W— W—

Record Drawing

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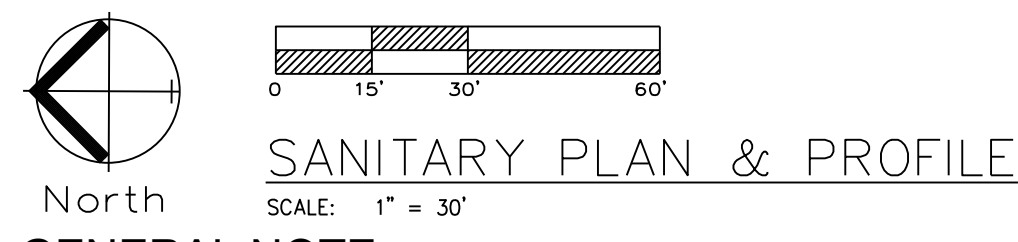
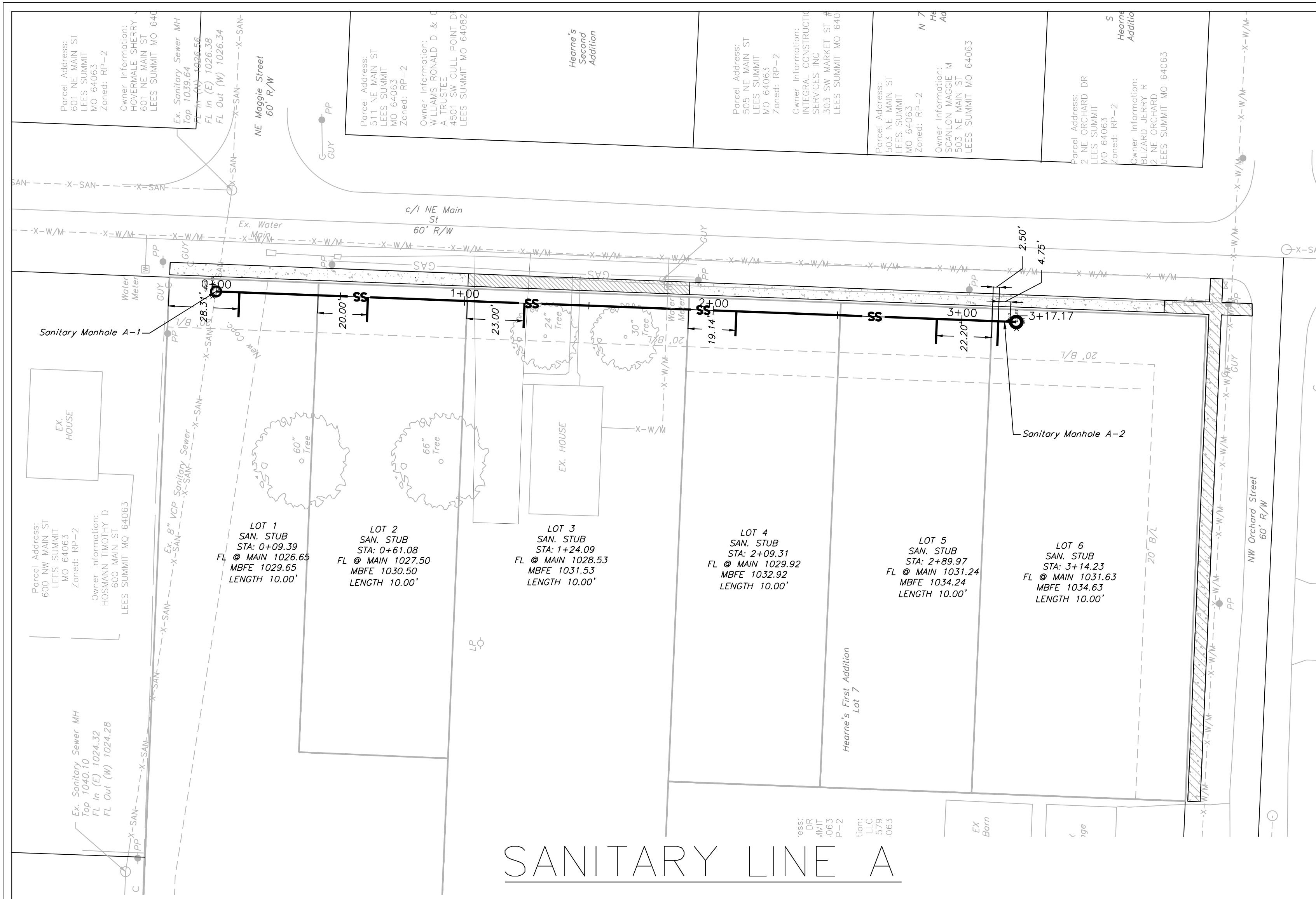
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Surveying 2005008319-D  
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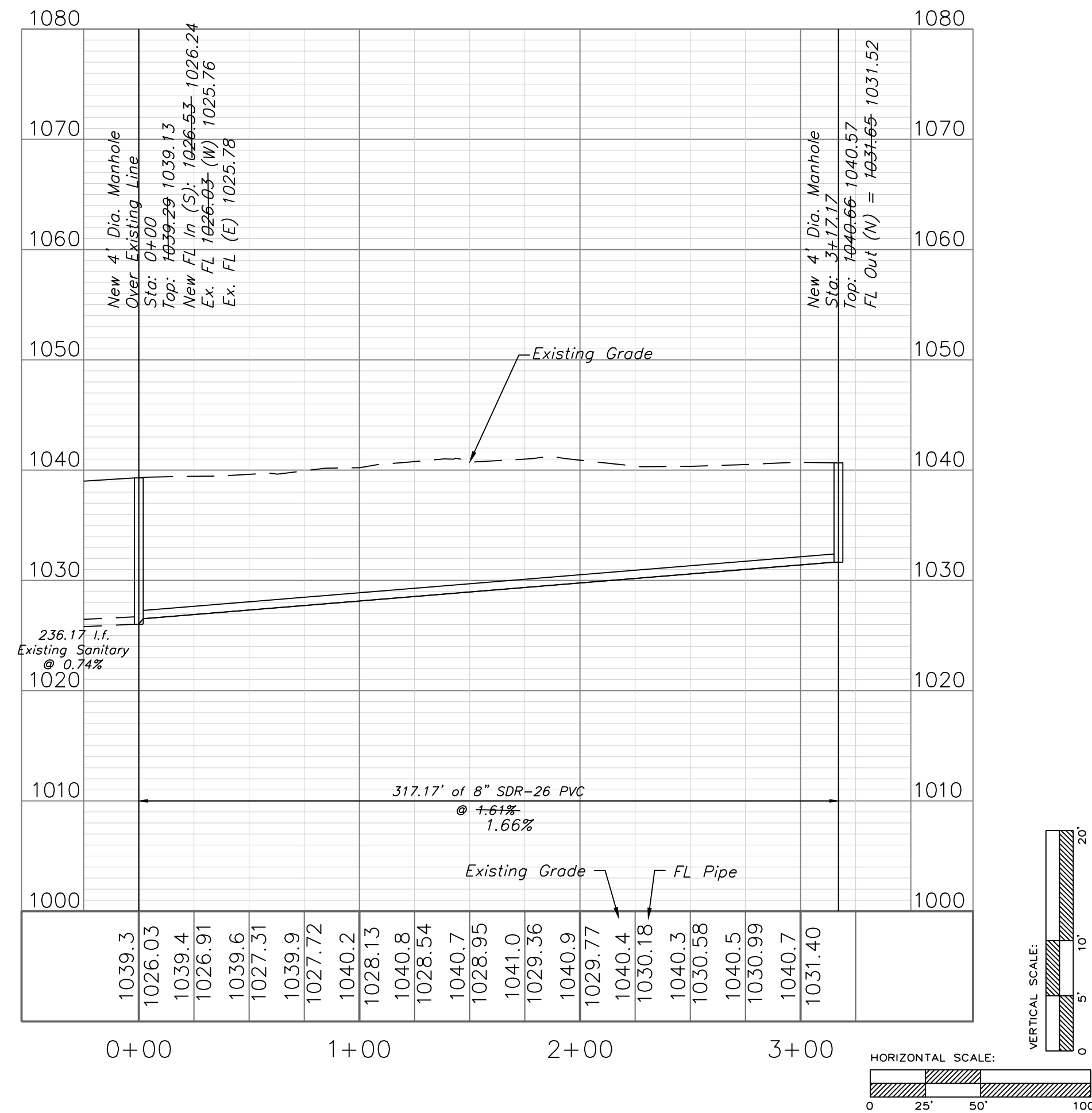
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12-27-19 City Comments  
1-13-20 Revised



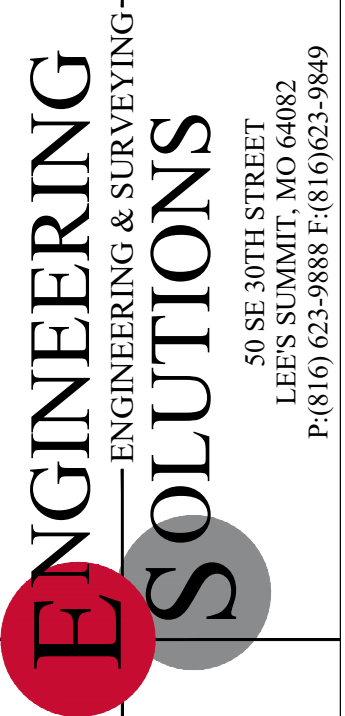
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# SANITARY LINE A



**Record Drawing**

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 Surveying 2005008319-D  
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 Engineering E-1695  
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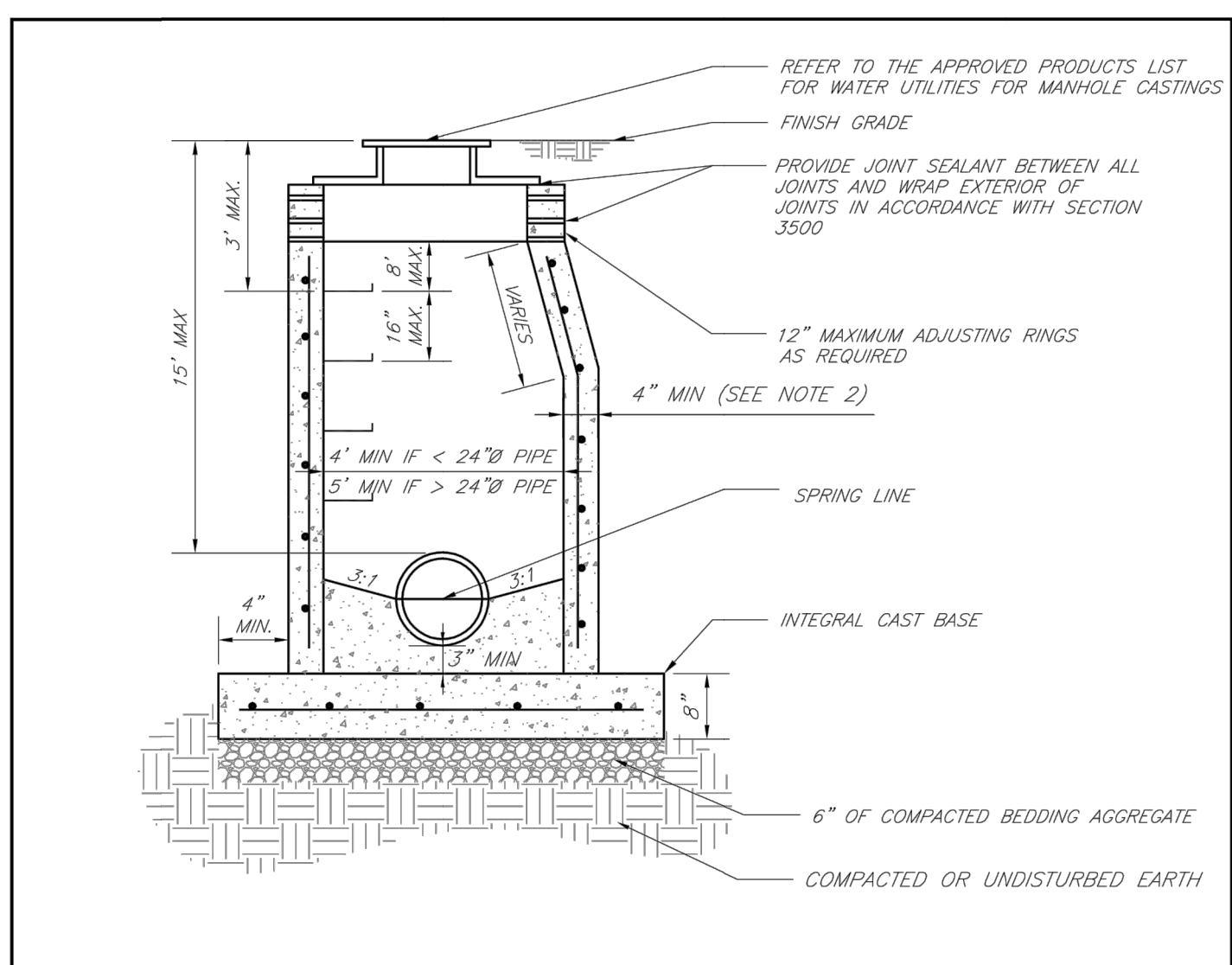
Sanitary Plan and Profile  
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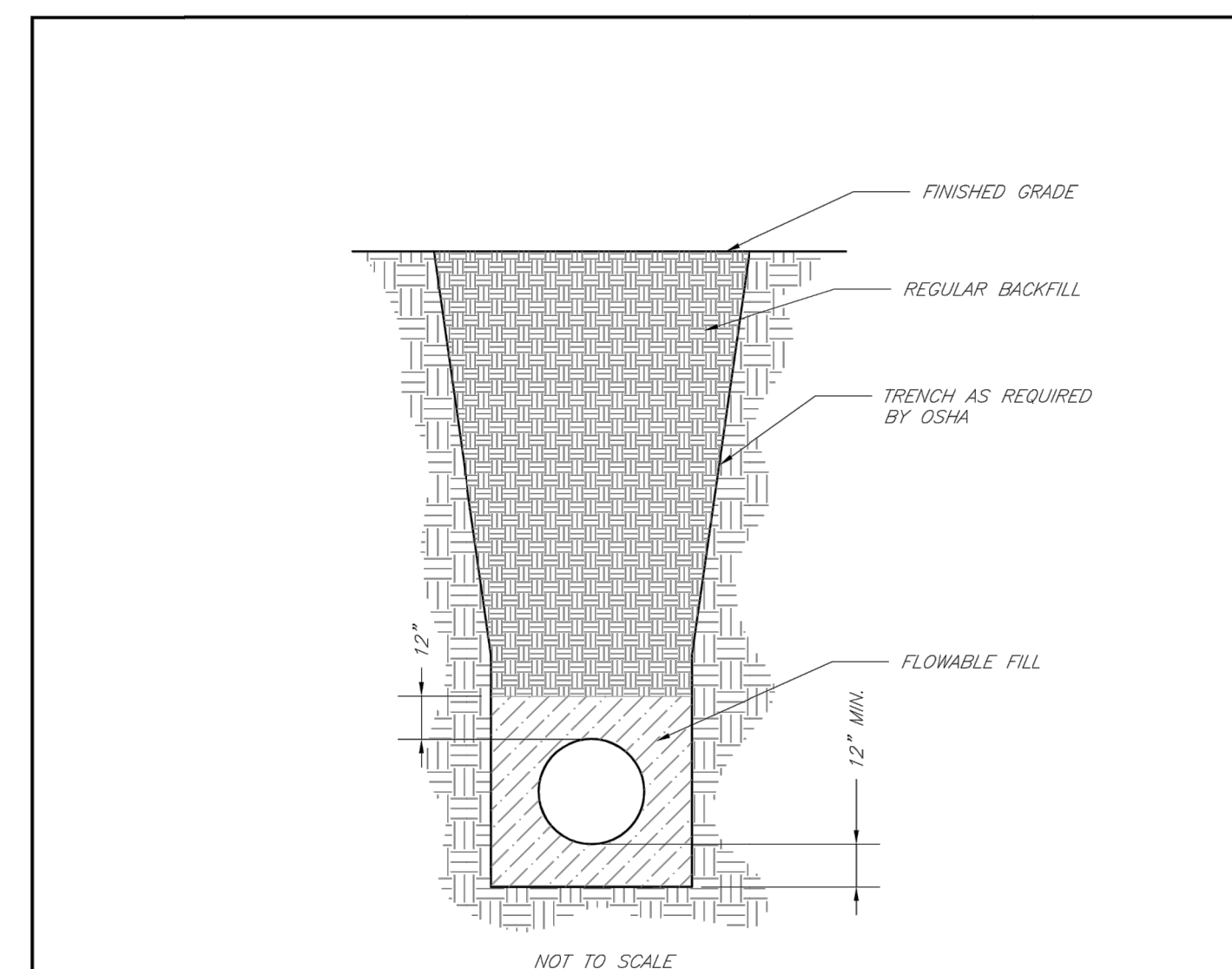
REVISIONS  
 12-27-19 City Comments  
 1-13-20 Revised



- 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 ( $\frac{1}{12}$ ) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THAN 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**

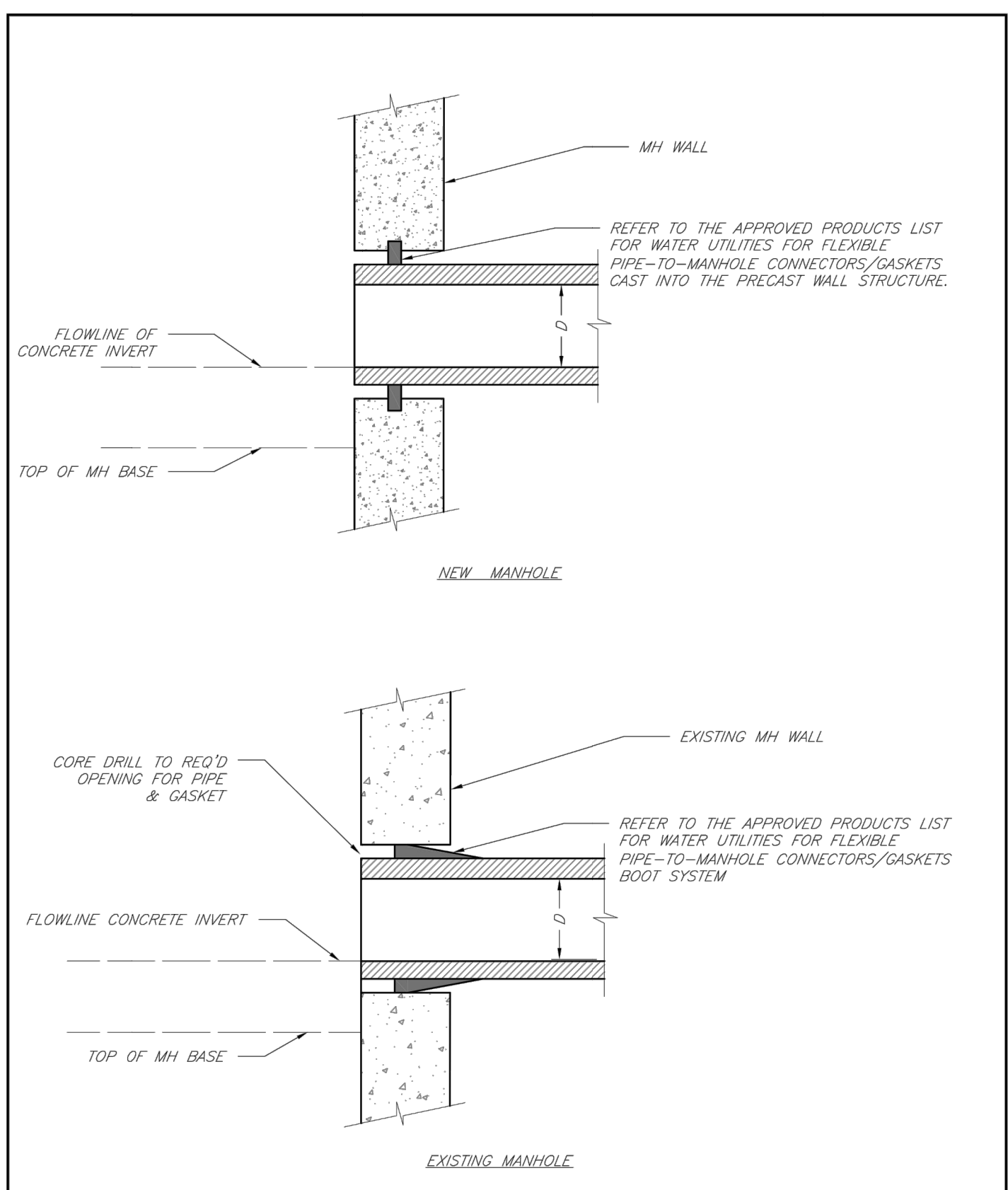
Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 File: SAN-2  
 Rev: 1/14



- NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
  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 EXTEND 12" ABOVE THE TOP OF THE PIPE.
  4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12'.

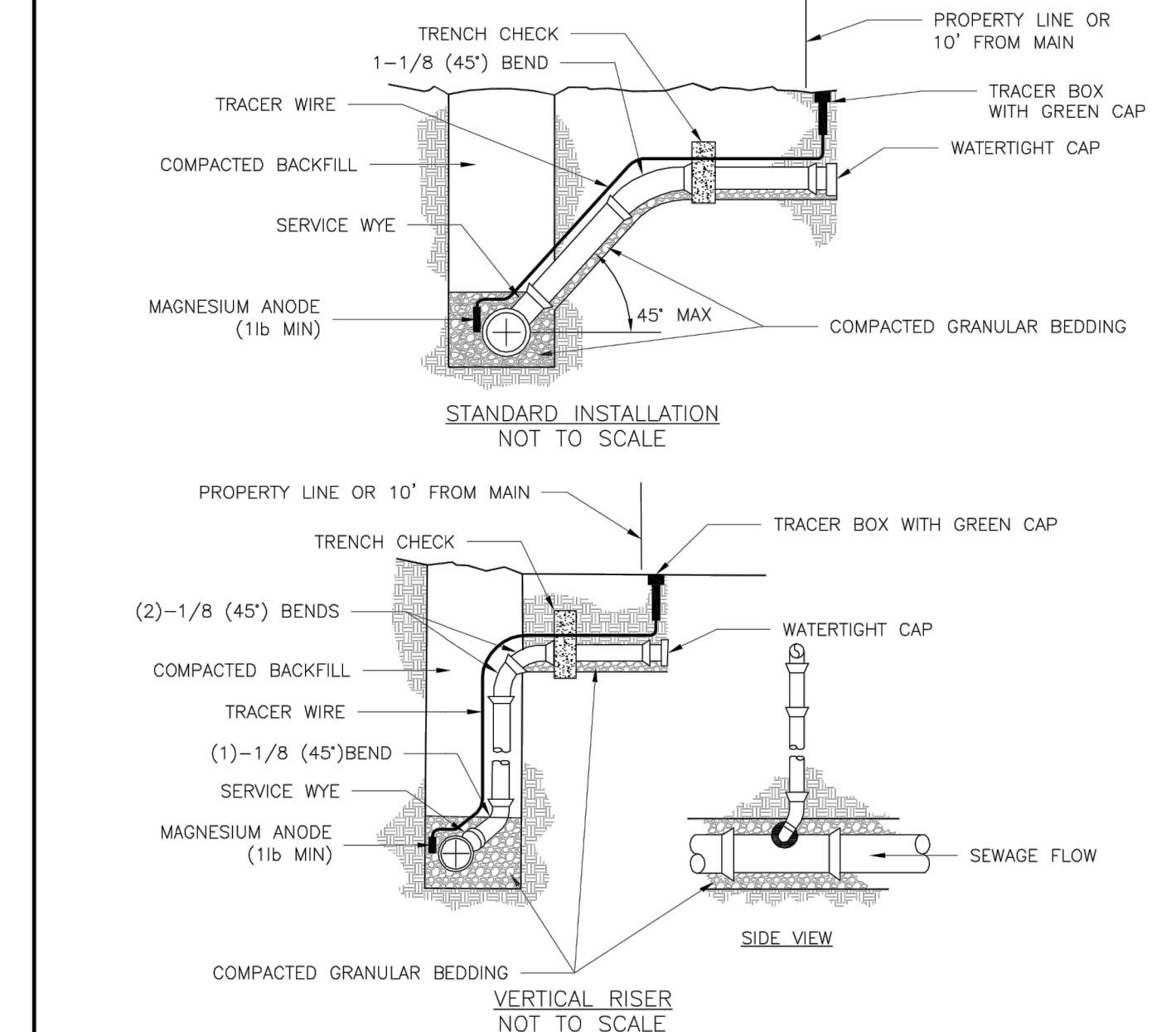
**LEE'S SUMMIT MISSOURI**  
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
**TRENCH CHECK**

Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 File: SAN-6  
 Rev: 1/14



**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

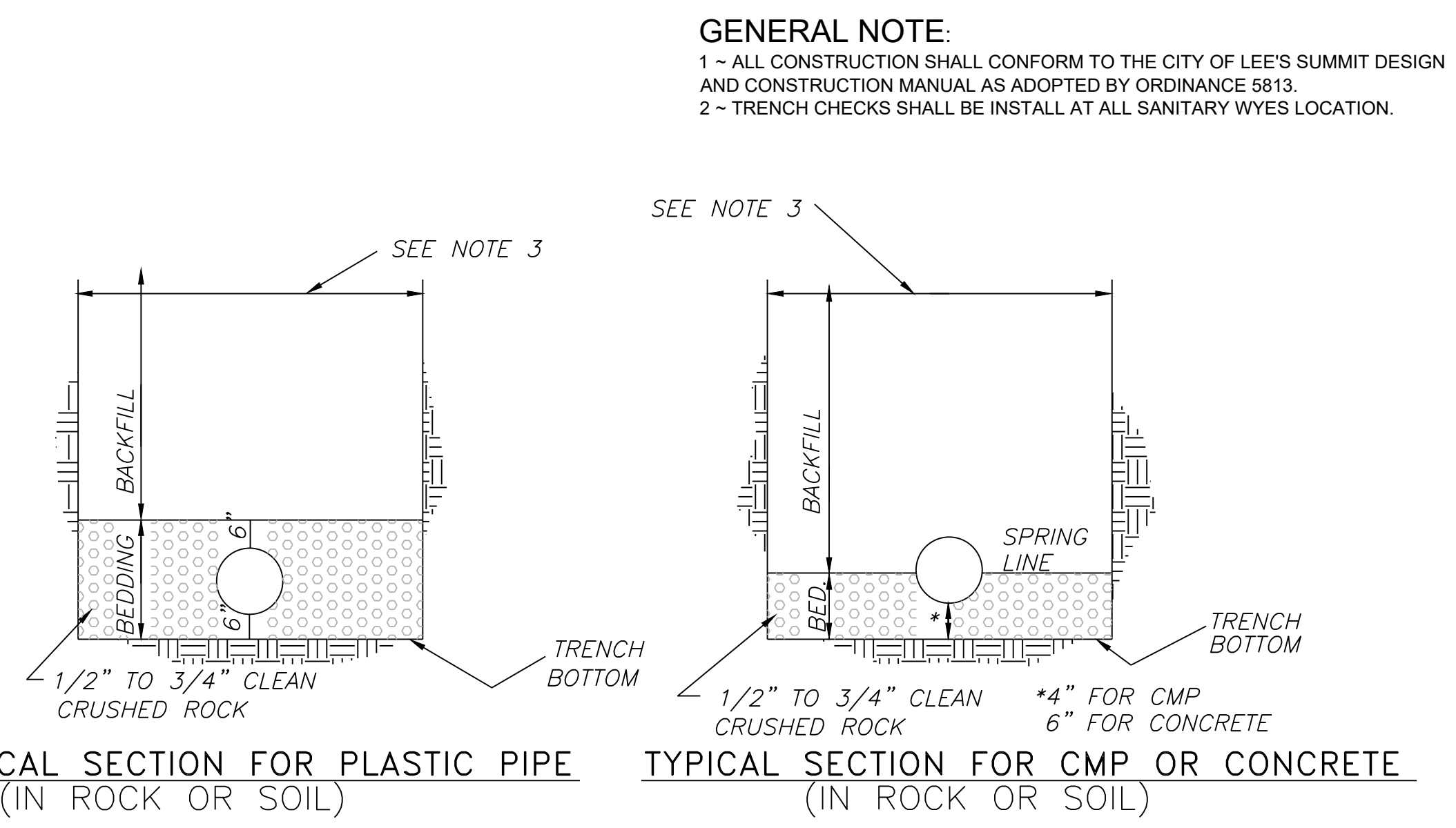


- NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
  2. ALL NEW CONSTRUCTION OFF SEWER STUBS SHALL BE TEMPORARILY MARKED WITH A MARKING STAKE, 36" 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: 04/27  
 Drawn By: MF  
 Checked By: DL  
**SAN-1**

**Record Drawing**



- NOTES:
1. BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED), SEE SD-9 AND SD-11.
  2. TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, BUT ONLY IN AREAS WHERE THE INCREASED TRENCH WIDTH WILL NOT INTERFERE WITH SURFACE FEATURES. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
  3. MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURE'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

**UNDERGROUND PIPE INSTALLATION**

**"AS-BUILT"**

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

Professional Registration  
 Missouri  
 Engineering 2005002186-D  
 Surveying 2005008319-D  
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