

DATE PLOTTED: 4/4/2018 3:21 PM ; LAST SAVE DATE: 4/4/2018 3:20 PM

H:\projects\2004\0407842 - Whispering Woods Phase 1\dwg\04078 - Sanitary Sewer Plans.dwg

CONSTRUCTION QUANTITIES		
ITEM	QUANTITY	UNIT
SANITARY SEWERS		
5' DIA. MANHOLE	3	EA.
4' DIA. MANHOLE	12	EA.
5' DIA. OUTSIDE DROP MANHOLE	1	EA.
4' DIA. OUTSIDE DROP MANHOLE	1	EA.
24" PVC (SDR-26)	778	L.F.
8" PVC (SDR-26)	2542	L.F.
6" PVC (SDR-26)	125	L.F.
4" SERVICE LINES	817	L.F.
CONNECT TO EXISTING	2	EA.
REMOVE EXISTING 8" PVC	56	L.F.
REMOVE EXISTING 6" PVC	105	L.F.
REMOVE EXISTING 4' DIAM. MH	2	EA.
ABANDON EXISTING LINE IN PLACE	1	L.S.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL QUANTITIES SHOWN ON THIS TABLE. LENGTH OF SERVICE LATERALS IS CALCULATED TO RIGHT-OF-WAY ONLY.

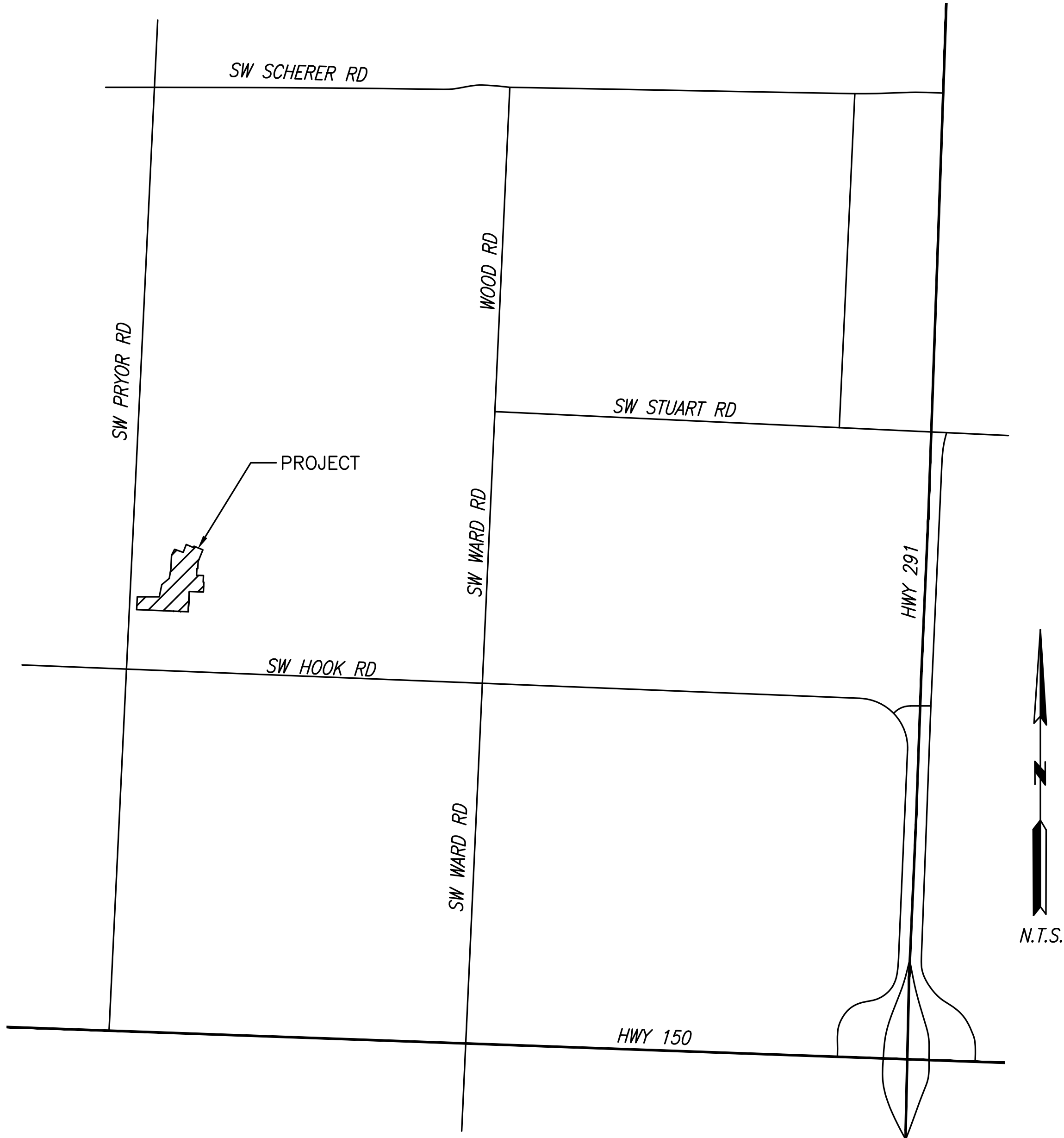
UTILITY CONTACTS

SOUTHWESTERN BELL TELEPHONE	(816) 871-9900
MISSOURI ONE-CALL SYSTEM	(800) DIG-RITE
KPL GAS SERVICE COMPANY	(816) 221-2200
KANSAS CITY POWER & LIGHT	(816) 471-0060
PUBLIC WORKS	(816) 969-1800
AMERICAN CABLEVISION	(816) 231-1444
WATER POLLUTION CONTROL DEPT	(816) 513-0303
CITY PLANNING & DEVELOPMENT	(816) 969-1600
FIRE DEPARTMENT	(816) 969-1300

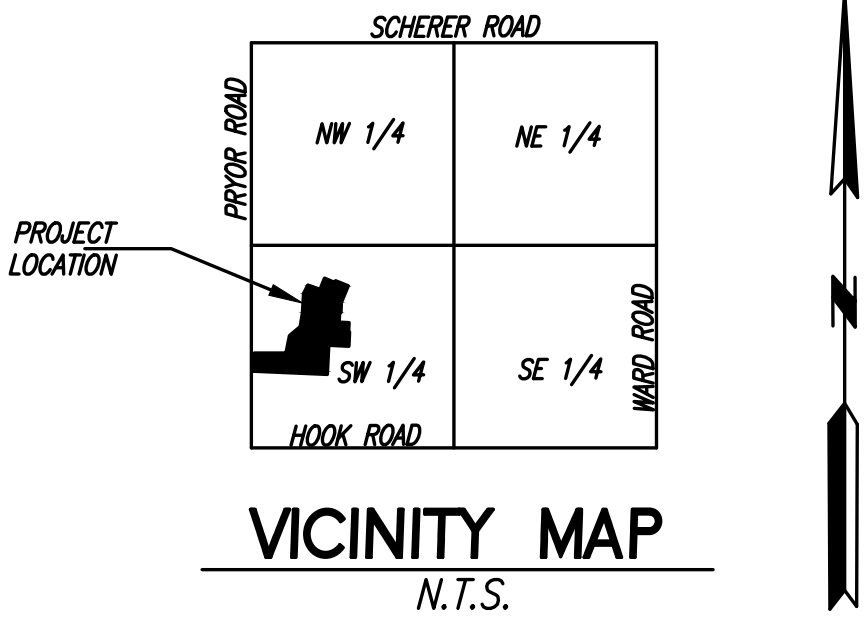
WHISPERING WOODS
1st PLAT
LOTS 1 THRU 33

A SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
SW 1/4, SEC 24, TWP 47-N, RANGE 32W
PUBLIC IMPROVEMENTS

ON-SITE PUBLIC
SANITARY SEWER



LOCATION MAP



VICINITY MAP

LEGAL DESCRIPTION

WHISPERING WOODS LOTS 1 THRU 33, TRACTS A, B, C & D
PART OF THE SW 1/4 SECTION 24, T 47 N, R 32 W OF THE 5TH P.M.
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

PROJECT BENCH MARK

ELEV. 1006.89 (NAVD 1988 DATUM)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
GRS ALUMINUM DISK STAMPED "JA-47" LOCATED
NEAR THE INTERSECTION OF HWY 150 WITH
REGGATA DRIVE AND HWY 291

INDEX OF SHEETS	
NO.	TITLE
1	COVER
2	NOTES
3	STUB CHARTS
4	GENERAL LAYOUT
5	PLAN & PROFILE
6	PLAN & PROFILE
7	PLAN & PROFILE
8	PLAN & PROFILE
9	DETAILS
10	DETAILS

APPROVED

CITY ENGINEER

DATE

DEVELOPER:

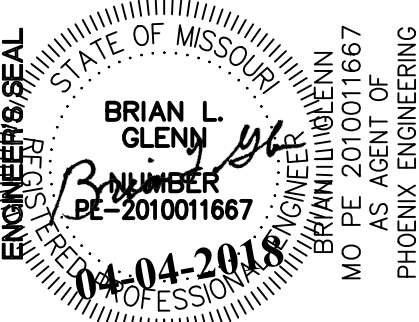
WHISPERING WOODS LAND, L.L.C.
803 P.C.A. ROAD
WARRENSBURG, MO 64093
AGENT: RICK FRYE
PHONE: 816-564-2230
FAX: 660-429-1801

WHISPERING WOODS - 1ST PLAT
LOTS 1 THRU 33
LEE'S SUMMIT, JACKSON COUNTY, MO
SANITARY SEWER PLANS
COVER

DESIGNED	BLG
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SCALE	
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DATE	
09-01-2017	
JOB NO.	04078
SHEET	

1 of 10

PHOENIX ENGINEERING
& SURVEYING, LLC
3855 S. NORTHERN BLVD.
INDEPENDENCE, MO 64052
(816) 743-9000 FAX (816) 743-9700
ENGINEERING CERTIFICATE NO: MO E-2000151302-D
SURVEYING CERTIFICATE NO: MO LS-2000151303-D
KS: E-853
KS: LS-138



REVISION
Δ REVISED 2-15-18: "ON-SITE" ADDED TO TITLE

THE SEALS AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ENGINEERING OR SURVEYING PROJECT.

PROJECT NOTES

1. Grading Contractor shall be responsible for the control of erosion and siltation during all phases of construction.
2. Prior to Ordering Precast Structures: Shop drawings shall be submitted to the design engineer for approval. Upon approval these shall be submitted to the City of Lee's Summit for review.
3. Manhole top elevations designated as "Field Verify" (F.V.) are located outside the street right-of-way or in areas of undetermined grading. Contractors ordering precast manholes shall be responsible for adjustment required in the field at no additional cost to the owner. The contractor shall field verify the top elevations prior to ordering precast manholes.
4. All water lines, sanitary sewer lines, and storm water drainage crossings shall be in place or a casing pipe provided for future installation prior to base and surface asphalt courses.
5. Sidewalks are shown for informational purposes only unless otherwise noted. However, the contractor shall be responsible for handicap ramp construction in curbs.
6. Refer to grading and erosion control sheets in Street and Storm Plans.

LEE'S SUMMIT NOTES

1. Contractor shall refer to the current version of the City of Lee's Summit Design and Construction (D&C) Manual.
2. All workmanship and materials shall be subject to the inspection and approval of the Engineering Department of Lee's Summit, Missouri.
3. Lineal foot measurements shown on these plans are horizontal measurements, not slope measurements. All payments shall be made on horizontal measurements.
4. No Geological Investigation was performed on this project.
5. The Utility locations shown on these plans are taken from Utility Company records and are approximate only. They do not constitute actual field locations. The Contractor shall verify the location and depth of all utilities prior to construction.
6. Clearing and Grubbing operations and disposal of all debris therefrom shall be performed by the contractor in strict accordance with all state and local codes and ordinances.
7. All waste material shall be disposed of at a location to be selected by the owner or his authorized representative, such location to be on the site.
8. The Contractor shall control the erosion and siltation during all phases of construction, he shall keep the streets clean of mud and debris and follow the erosion control plan prepared by the design engineer.
9. All manholes, catch basins, utility valves and meter pits to be adjusted or rebuilt to grade as required.
10. Subgrade soil for all concrete structures, regardless of the type or location, shall be firm, dense and thoroughly compacted and consolidated; shall be free from muck and mud; and shall be sufficiently stable to remain firm and intact under the feet of the workman or machinery engaged in subgrade, laying reinforcing steel, and depositing concrete thereon. In all cases where subsoil is mucky or works into mud or muck during such operation, a seal course of either concrete or rock shall be placed below subgrade to provide a firm base for working and for placing the floor slab.
11. A minimum horizontal distance of ten (10') shall be maintained between parallel water and sanitary sewer lines. At any point where sanitary sewer lines cross water main, the sanitary sewer shall be constructed of cast iron pipe or pipe encased in concrete for a distance of ten feet (10') in each direction from the crossing unless the water is a minimum of eighteen inches (18") above the top of the sanitary sewer line.
12. Contractor shall provide testing and inspection per SECTION 3500 - SANITARY SEWERS CITY OF LEE'S SUMMIT, MISSOURI STANDARD SPECIFICATIONS.
13. Development plans are approved initially for one (1) year, after which they automatically become void and must be updated and approved by the City Engineer before any construction will be permitted.
14. All sanitary sewer stubs shall be surveyed and staked on site before the construction of sanitary service stubs.

15. The City of Lee's Summit plan review is only for general conformance with the City of Lee's Summit Design Criteria and the City Code. The City is not responsible for the accuracy and adequacy of the design, or dimensions and elevations which shall be confirmed and correlated at the job site. The City of Lee's Summit through approval of this document assumes no responsibility other than as stated above for the completeness and/or accuracy of this document.
16. The Contractor shall have one (1) signed copy of the plans (approved by the City of Lee's Summit) and one (1) copy of the appropriate Construction Standards and Specifications at the job site at all times.
17. Construction of the improvements shown or implied by this set of drawings shall not be initiated or any part thereof undertaken until the City Engineer is notified of such intent and all required and properly executed bonds and permit fees are received and approved by the City Engineer.
18. All stub lines shall be laid on 2.00% minimum grade unless approved otherwise.
19. Contractor shall not be allowed to work on Saturdays, Sundays, or Holidays without prior approval of the City Engineer.
20. Relocation of any water line, sewer line or service line thereof required for the construction of this project shall be the responsibility of the contractor and shall be at his expense.
21. The Contractor shall install and properly maintain a mechanical plug at all connection points with existing lines until such time that the new line is tested and approved.
22. The Contractor shall construct manholes placing eccentric cone section in such a manner that manhole covers are adjacent to the proposed sidewalks. In locations where manholes are not near proposed sidewalks the manhole covers shall generally be placed on the upstream side of the manholes whenever possible.
23. Stub lines, locations, and minimum basement floor elevations are located in the table labeled "Table of Service Locations".
24. Construction permits will not be issued until the City of Lee's Summit receives a sewer extension permit from MDNR.
25. Connections to existing manholes shall be core drilled and connected with a watertight Fernco Gasket or approved equal. The gasket is to be installed according to the manufacturer's recommendations.
26. All areas where utilities are to be installed in fill shall be compacted to 95% to 18 inches above the line then excavated for construction of the line.
27. The Contractor will be responsible for testing of manholes and pipes to the City of Lee's Summit Design & Construction Manual requirements.
28. The ends of all Sanitary Sewer stubs shall be surveyed and marked before construction.
29. All utility street crossings shall be backfilled with flowable fill, or AB-3. If contractor chooses to use other suitable materials, extensive soil testing requirements will be required.
30. Trench checks shall be used for all sanitary sewer stubs.

WHISPERING WOODS - 1ST PLAT
LOTS 1 THRU 33
LEE'S SUMMIT, JACKSON COUNTY, MO
SANITARY SEWER PLANS
NOTES

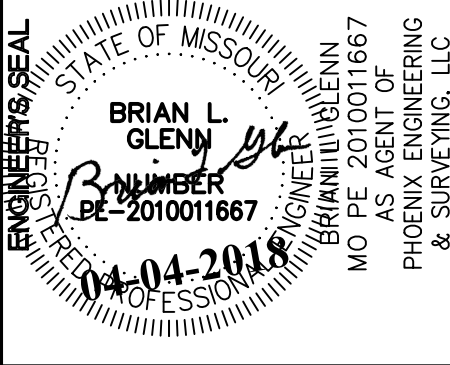
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2 of 10

PHOENIX ENGINEERING
& SURVEYING, LLC

3853 S. NORTHERN BLVD.
INDEPENDENCE, MO 64052
(816) 743-9000 FAX (816) 743-9700
ENGINEERING CERTIFICATE NO: MO E-2000151302-D
SURVEYING CERTIFICATE NO: MO LS-2000151303-D

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REVISION

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TABLE OF SERVICE LOCATIONS							
Whispering Woods							
LOT NO	SANITARY LINE	SERVICE STUB STATION	CONNECTION TYPE	DIST. FROM D.S. M.H.	STUB LENGTH	STUB END F/L	MINIMUM BASM'T FLOOR ELEVATION
1	H	0+69.62	"Y"	69.62	10	946.75	950.12
2	H	1+50.34	"Y"	150.34	10	950.52	953.88
3	H	2+32.65	"Y"	232.65	10	954.36	957.73
4	H	3+33.11	"Y"	333.11	10	959.05	962.41
5	H	3+56.18	"Y"	356.18	10	960.13	964.09
6	A	1+31.98	0	65	10	953.59	956.29
7	A	1+36.97	0	70	10	953.68	956.38
8	A	2+61.99	0	195	10	955.78	959.07
9	A	2+66.99	0	200	10	955.86	958.89
10	Existing	7+69.54	"Y"	180	10	951.00	953.50
11	B	0+90.00	"Y"	90	10	957.97	960.67
12	C	0+40.00	"Y"	40	10	962.97	965.99
13	C	1+20.00	"Y"	120	10	963.96	966.98
14	C	2+00.00	"Y"	200	10	964.95	967.97
15	C	2+80.00	"Y"	280	10	965.94	968.96
16	C	3+71.02	"Y"	40	10	967.47	970.49
17	C	4+51.02	"Y"	120	10	968.27	971.29
18	E	0+00.00	"Y"	40	59	963.92	966.84
19	E	0+00.00	"Y"	50	10	964.02	968.30
20	E	0+00.00	"Y"	10	55	963.60	967.89
21	C	4+61.02	"Y"	130	62	968.37	972.55
22	D	1+53.38	"Y"	50	10	974.11	976.81
23	D	1+43.38	"Y"	40	65	973.97	978.21
24	D	0+95.00	"Y"	95	65	972.43	976.66
25	B	2+71.79	"Y"	130	10	963.21	966.33
26	B	3+53.57	"Y"	50	10	966.44	969.56
27	B	4+43.57	"Y"	140	10	969.03	972.15
28	B	5+23.57	"Y"	220	10	971.34	974.46
29	B	5+43.57	"Y"	240	58	971.91	975.99
30	B	4+63.57	"Y"	160	58	969.61	973.69
31	B	3+63.57	"Y"	60	58	966.73	970.81
32	B	2+91.79	"Y"	150	58	963.71	967.80
33	B	2+21.79	"Y"	80	49	961.96	965.89

1

2

3

WHISPERING WOODS - 1ST PLAT
LOTS 1 THRU 33
LEE'S SUMMIT, JACKSON COUNTY, MO
SANITARY SEWER PLANS
STUB CHARTS

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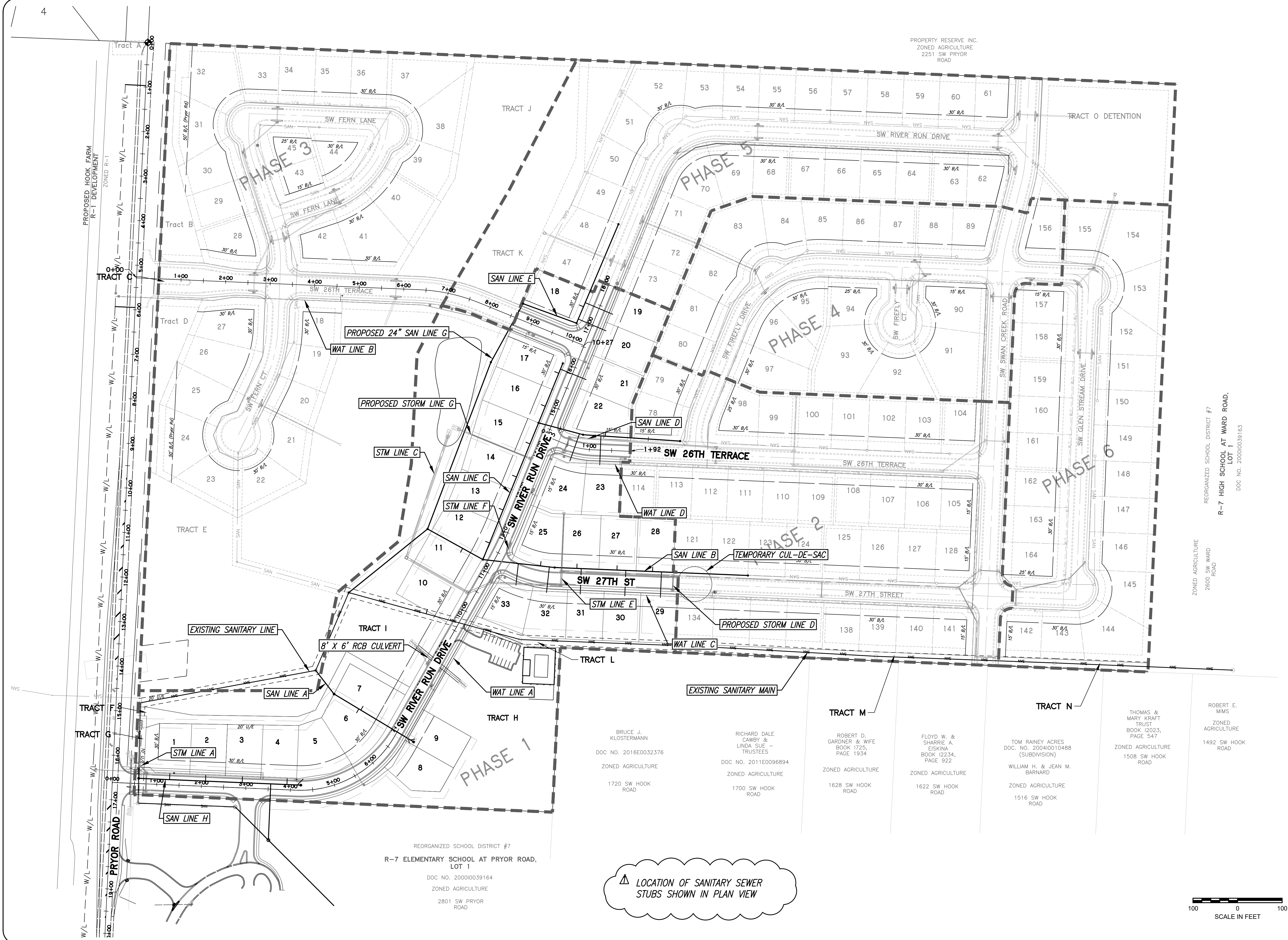
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ENGINEERING CERTIFICATE NO: MO E-2000151302-D KS: E-853
SURVEYING CERTIFICATE NO: MO LS-2000151303-D KS: LS-138



REVISION
1 REVISED ON 02-26-18: UPDATED TABLE
2 REVISED ON 03-23-18: UPDATED TABLE
3 REVISED ON 04-04-18: UPDATED TABLE (SERVICE FOR LOT 5)

THE SEALS AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ENGINEERING OR SURVEYING PROJECT.



△ LOCATION OF SANITARY SEWER STUBS SHOWN IN PLAN VIEW

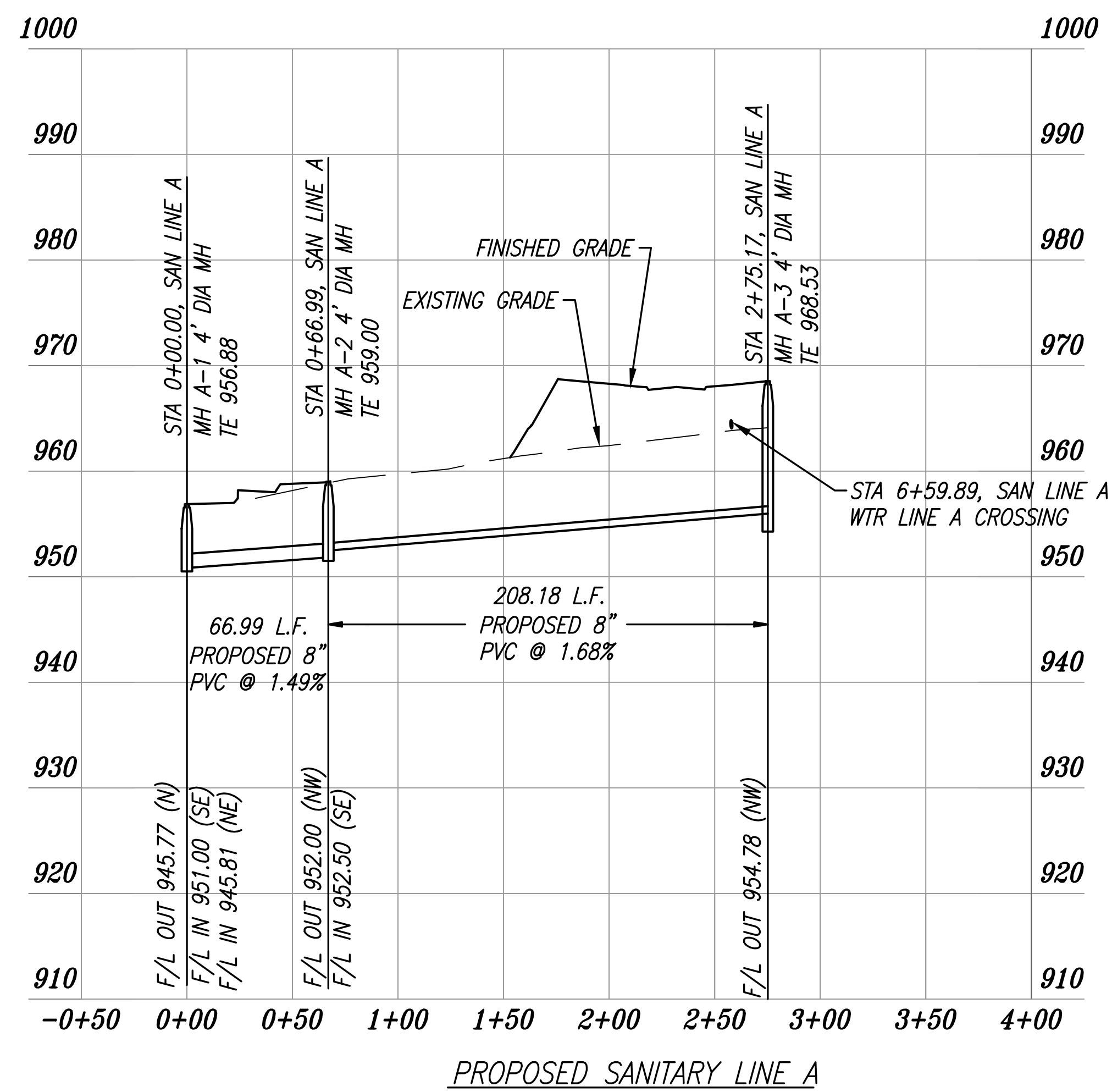
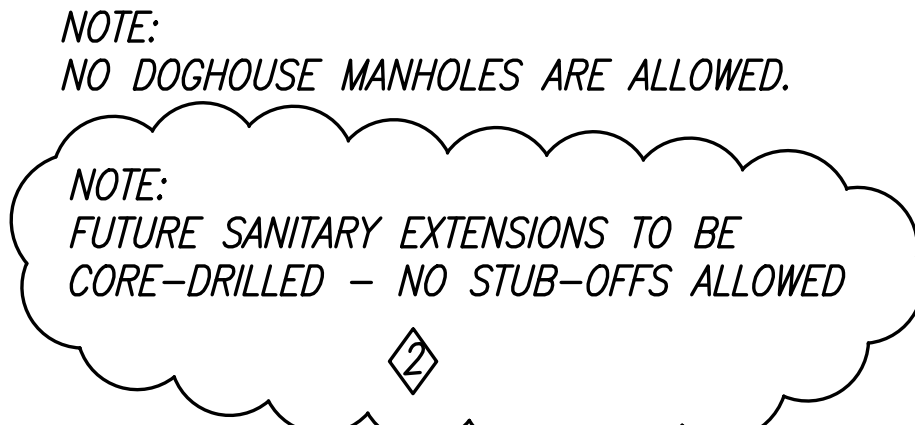
**WHISPERING WOODS - 1ST PLAT
LOTS 1 THRU 33
LEE'S SUMMIT, JACKSON COUNTY, MO
SANITARY SEWER PLANS
GENERAL LAYOUT**

PHOENIX ENGINEERING
& SURVEYING, LLC

ENGINEER'S SEAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
BRIAN L. GLENN
PE-2010011667
04-04-2018
PROFESSIONAL ENGINEER

Δ REVISED ON 02-15-18: SANITARY SEWER STUBS
SHOWN

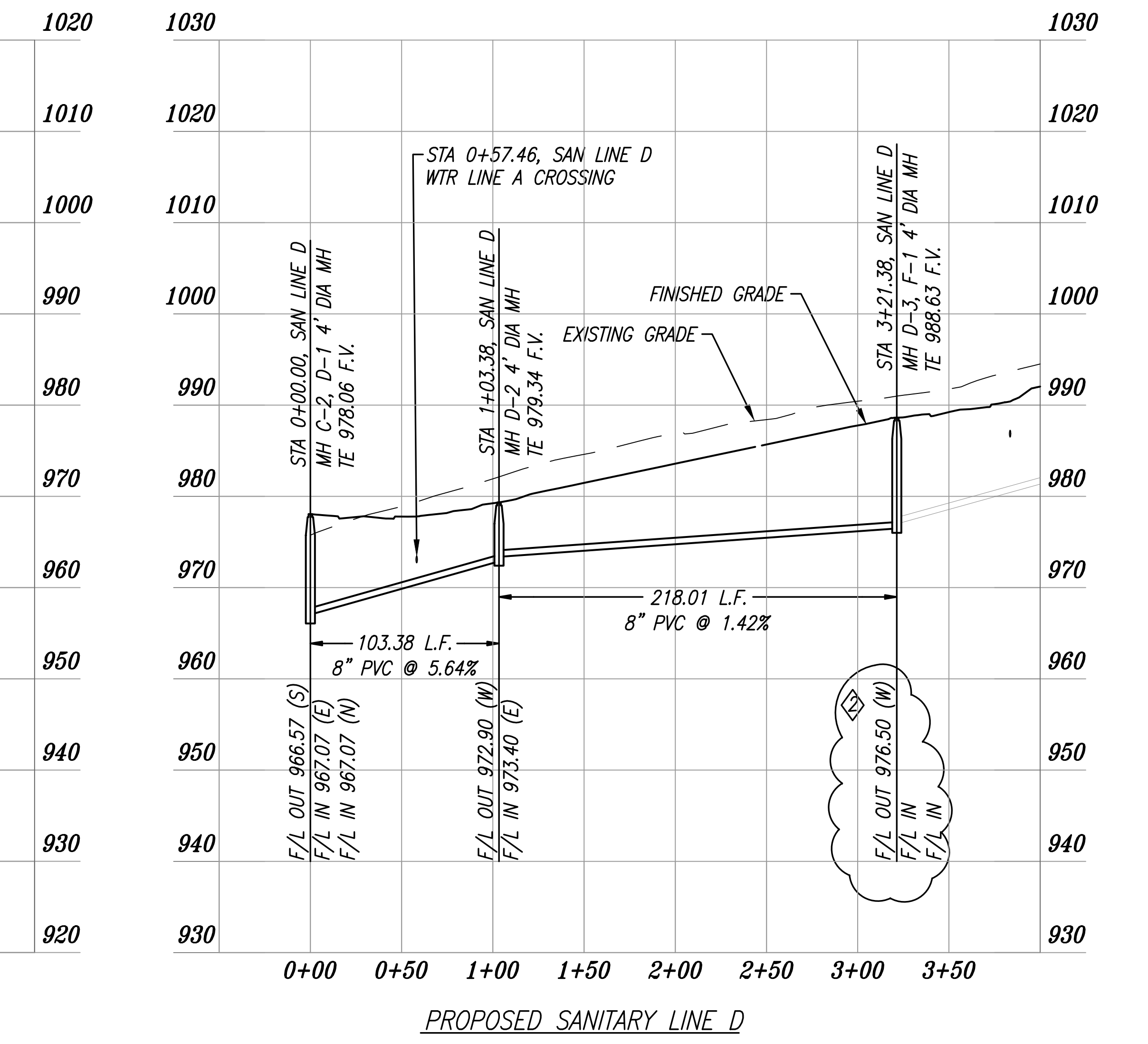
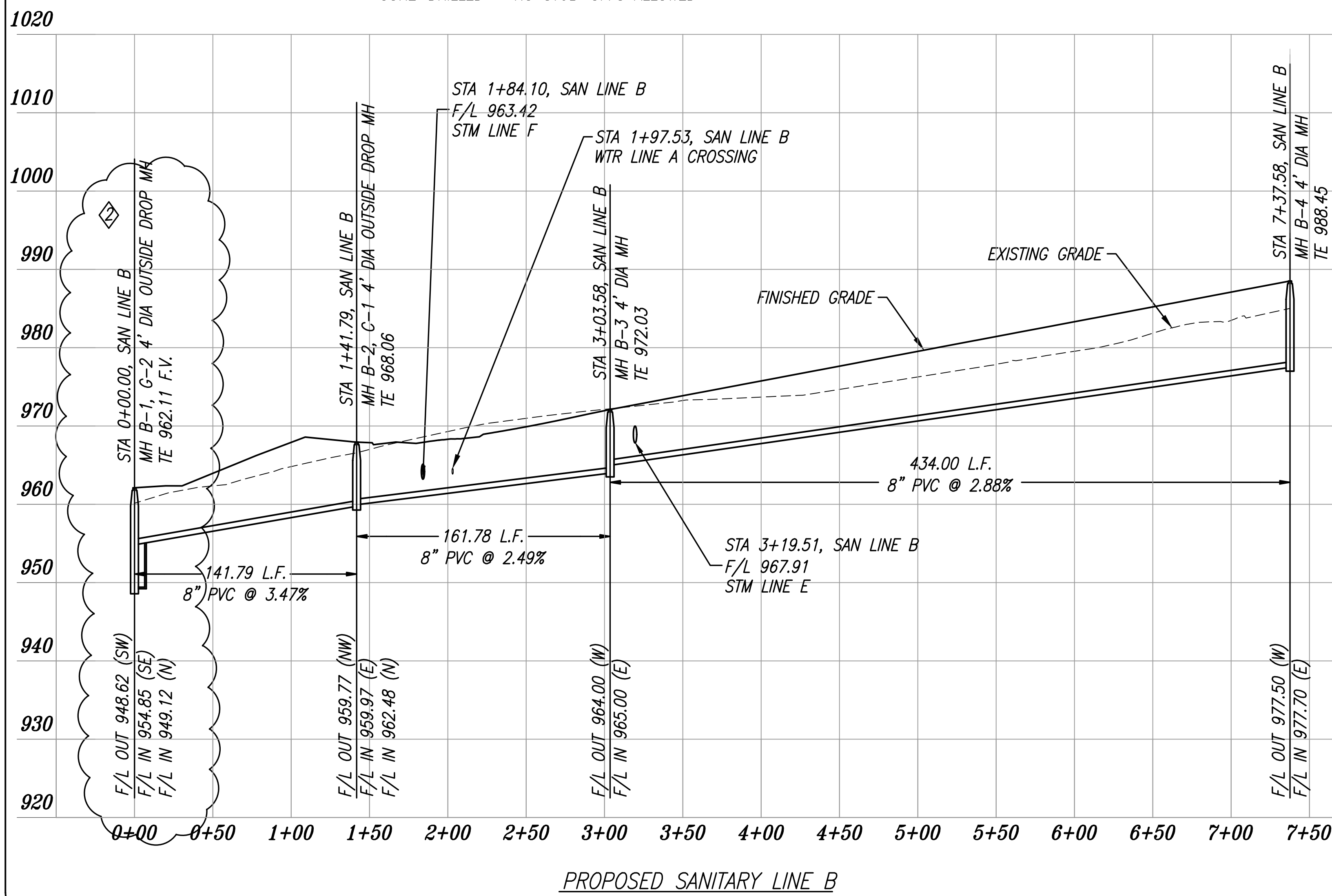
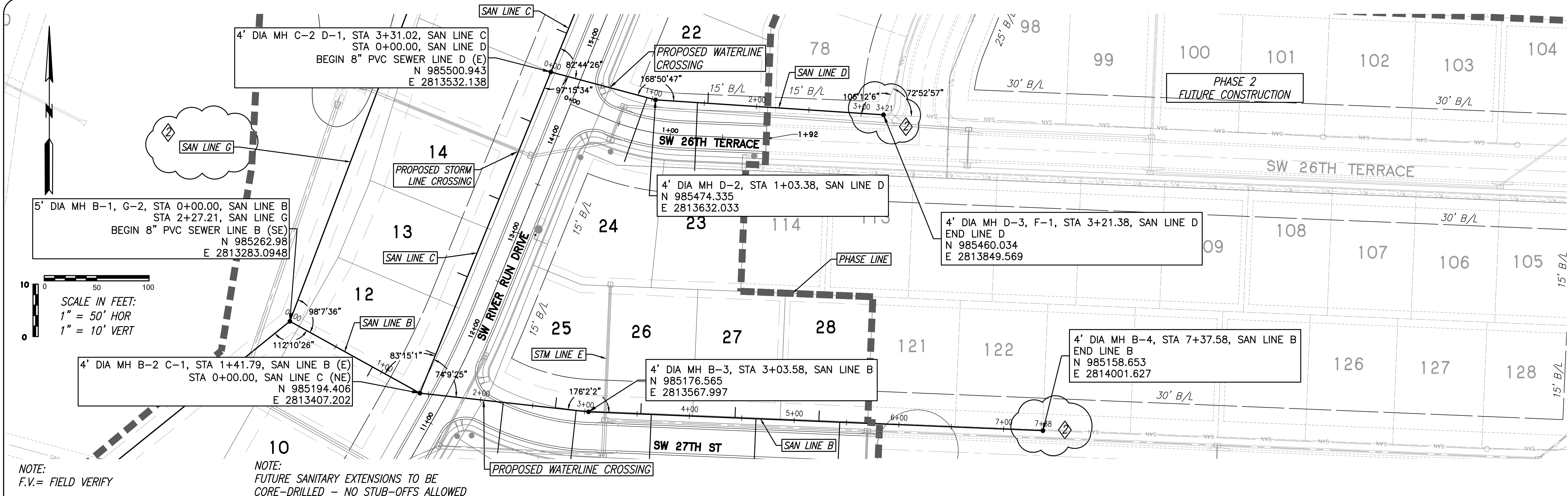
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5 of 10	DESIGNED B.L.G. DRAWN J.R.T. SCALE NOTED DATE 09-01-2017 JOB NO. 04078 SHEET	WHISPERING WOODS - 1ST PLAT LOTS 1 THRU 33 LEE'S SUMMIT, JACKSON COUNTY, MO SANITARY SEWER PLANS PLAN & PROFILE	PHOENIX ENGINEERING & SURVEYING, LLC 3955 S. NORTHERN BLVD. INDEPENDENCE, MO 64052 (816) 743-9000 FAX (816) 743-9700 ENGINEERING CERTIFICATE NO. MO E-2000151302-D SURVEYING CERTIFICATE NO. MO LS-2000151303-D KS: E-853 KS: LS-138	ENGINEER'S SEAL STATE OF MISSOURI BRIAN L. GLENN 3955 S. NORTHERN BLVD. INDEPENDENCE, MO 64052 PE-2010011667 09-27-2016	REVISION △ REVISED ON 02-15-18. EASEMENT ADDED; MH TOP RAISED DUE TO CHANGE IN GRADE TO PROVIDE FOR 12" DRAINAGE; 2" DRAINAGE SHOWN IN PLAN NEW; ADDED LABELS; ADDED DETECTION ANCHORS & CROSSING CALCULUS ◇ REVISED ON 02-26-18. ADDED BOLLIED LID; ADJUSTED INVERT FOR COVER REQUIREMENT; ADDITIONAL ELEVATION INFO. REVISED GRADE IN REAR OF LOTS 3 REVISED ON 03-23-18. ADDED REMANUAL DETAILS FOR EXISTING SANITARY LINE; RELOCATED SAN LINE UNDER THE STREET (PREVIOUSLY SAN LINE A); ADDED PROFILE SHOWING NEW SANITARY DESIGN ④ REVISED ON 04-04-18. ADDED NOTE REFERING TO MH CONSTRUCTION FOR SAN LINE H; ADDED NOTE REFERING TO PROCEDURE NEEDED TO ABANDON LINE IN PLACE; ADDED NOTE TO REMOVE EXISTING CITY MH & 8" PVC PIPE CONNECTING TO SAN LINE H ⑤ THE SETTING CITY MH & 8" PVC PIPE TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ENGINEERING OR SURVEYING PROJECT.
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REVISION

△ REVISED ON 02-15-18: SANITARY STUBS SHOWN IN PLAN VIEW; ADDED LABELS; ADDED DEFLECTION ANGLES & CROSSING CALLOUTS

◇ REVISED ON 02-26-18: REMOVED MH STUBS; ADDED OUTSIDE DROP MH AT MH B-1

ENGINEER/SEAL

STATE OF MISSOURI

BRIAN L. GLENN

REGISTERED PROFESSIONAL ENGINEER

NO. 2010011667

DATE 04-04-2018

PHOENIX ENGINEERING & SURVEYING, LLC

3855 S. NORTHERN BLVD.
INDEPENDENCE, MO 64062
(816) 743-9000 FAX (816) 743-9700
ENGINEERING CERTIFICATE NO. MO E-2000151302-D
SURVEYING CERTIFICATE NO. MO LS-2000151303-D
KS: E-853
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DESIGNED

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WHISPERING WOODS - 1ST PLAT

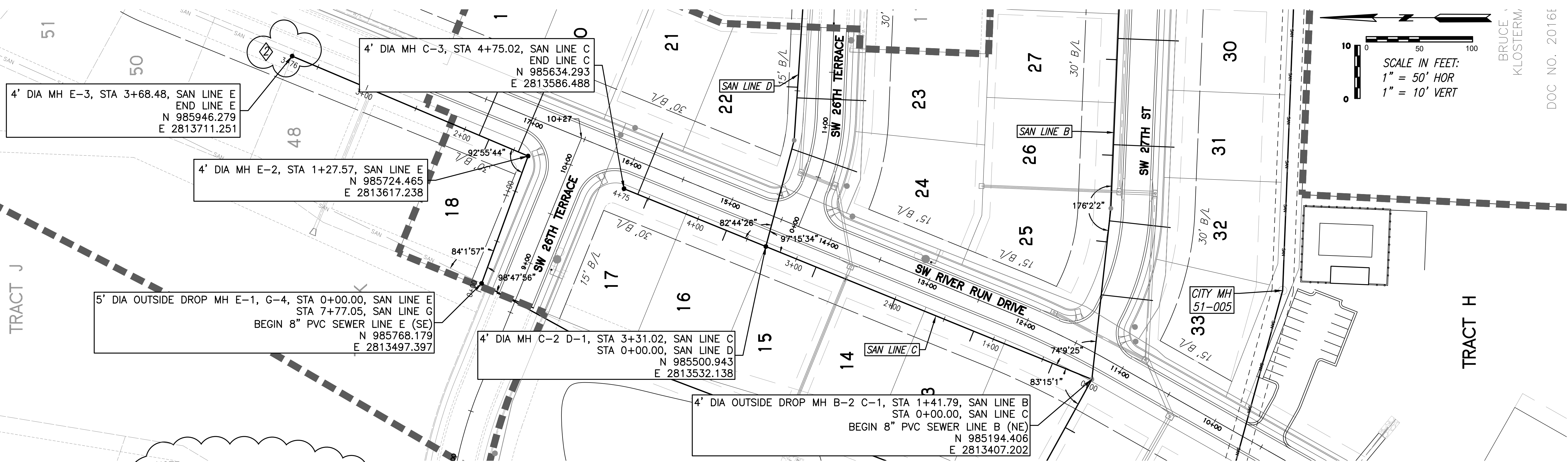
LOTS 1 THRU 33

LEE'S SUMMIT, JACKSON COUNTY, MO

SANITARY SEWER PLANS

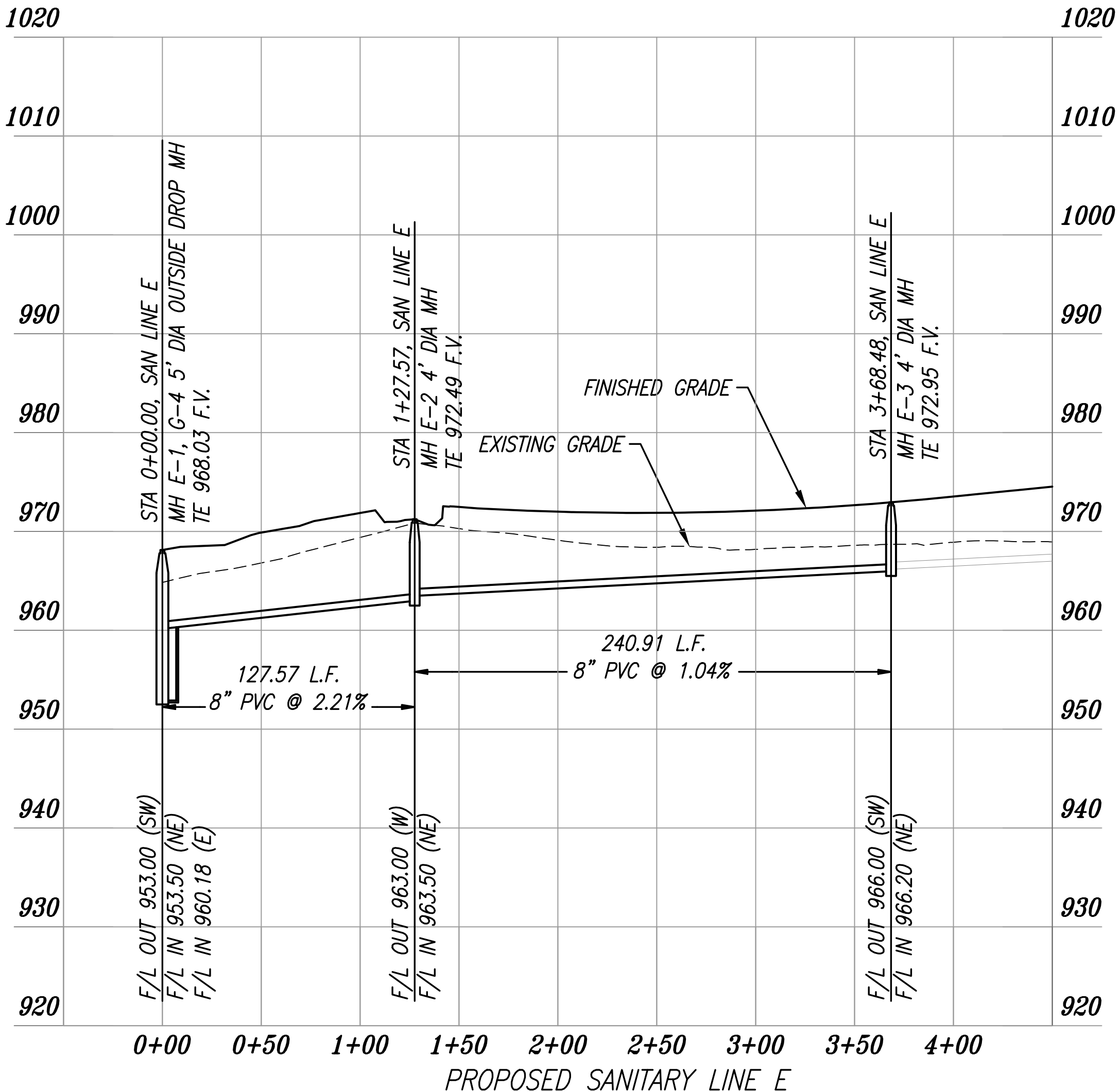
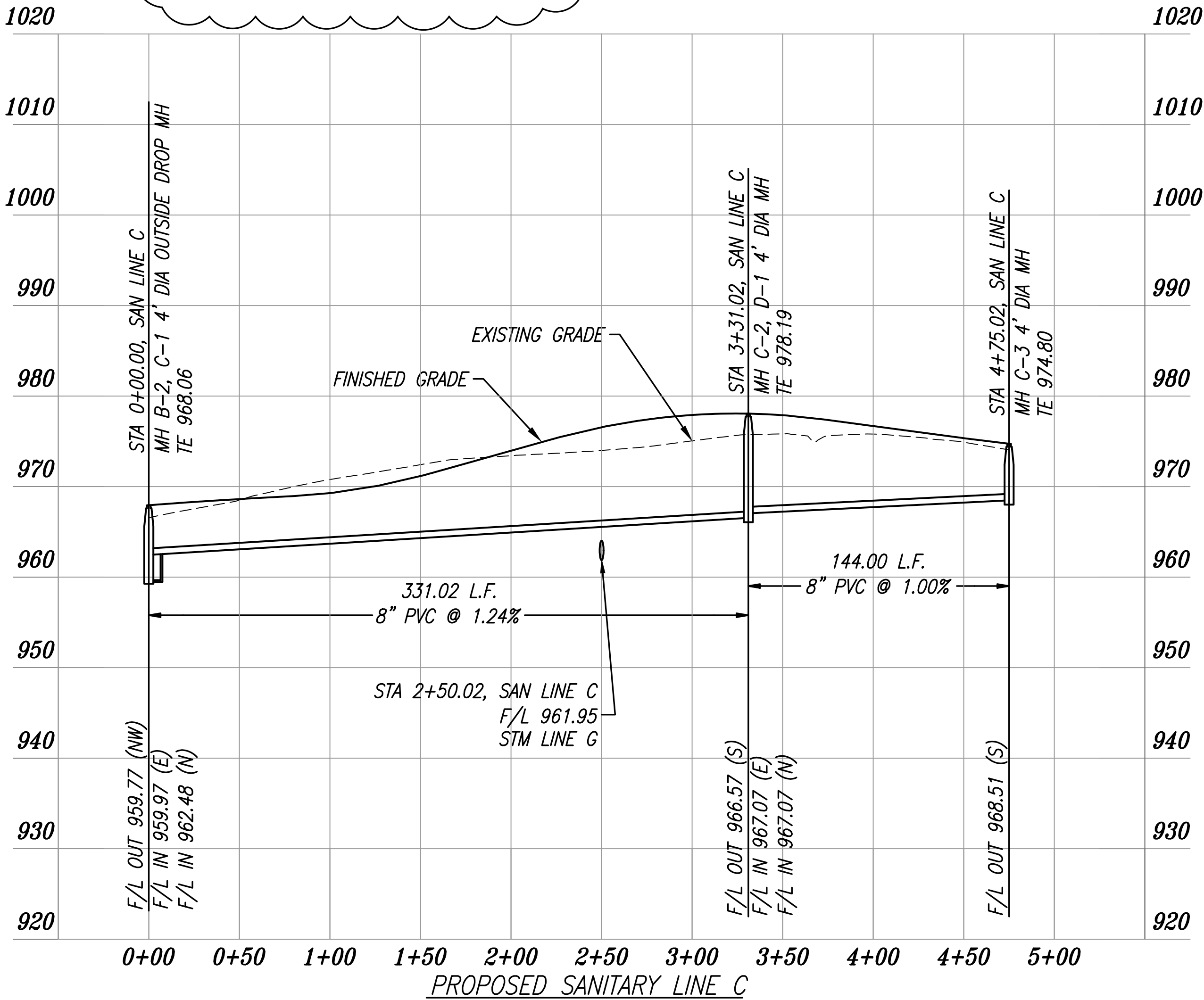
PLAN & PROFILE

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NOTE:
F.V.= FIELD VERIFY

NOTE:
FUTURE SANITARY EXTENSIONS TO BE
CORE-DRILLED - NO STUB-OFFS ALLOWED



REVISION

Δ REVISED ON 02-15-18: SANITARY STUBS SHOWN IN
PLAN VIEW; ADDED LABELS; ADDED DEFLECTION
ANGLES & CROSSING CALLOUTS

✕ REVISED ON 02-26-18: ADDED NOTE; MH
STUBS REMOVED

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ENGINEER'S SEAL

STATE OF MISSOURI

BRIAN L. GLENN

REGISTERED PROFESSIONAL ENGINEER

NO. 2010011667

DATE: 02-27-2018

PHOENIX ENGINEERING & SURVEYING, LLC

MO PE 2010011667
AS AGENT OF
PHOENIX ENGINEERING
& SURVEYING, LLC

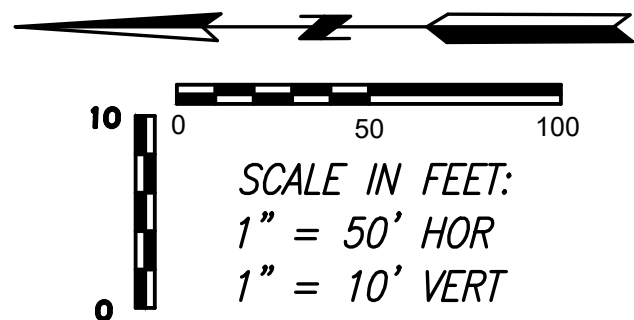
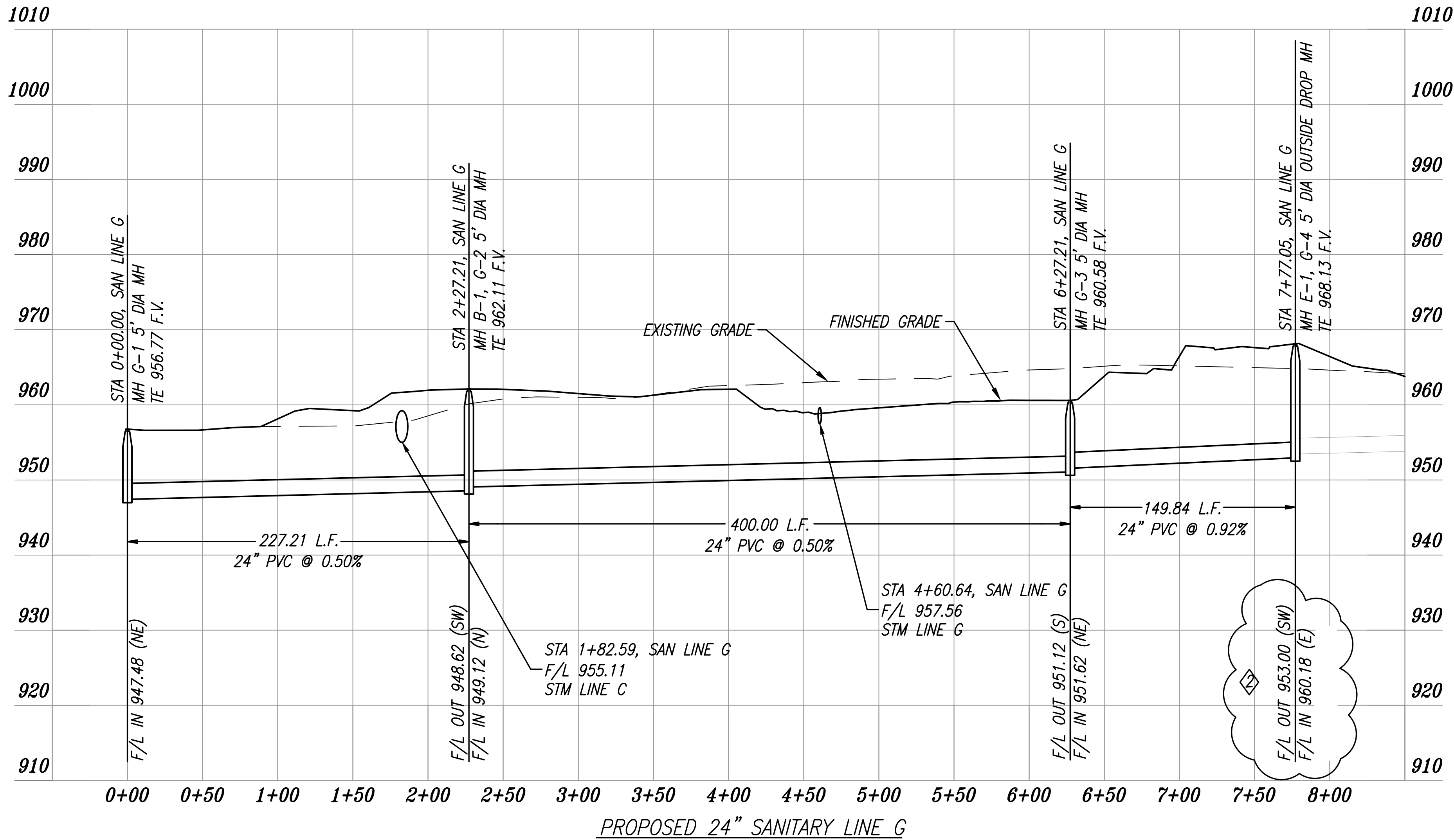
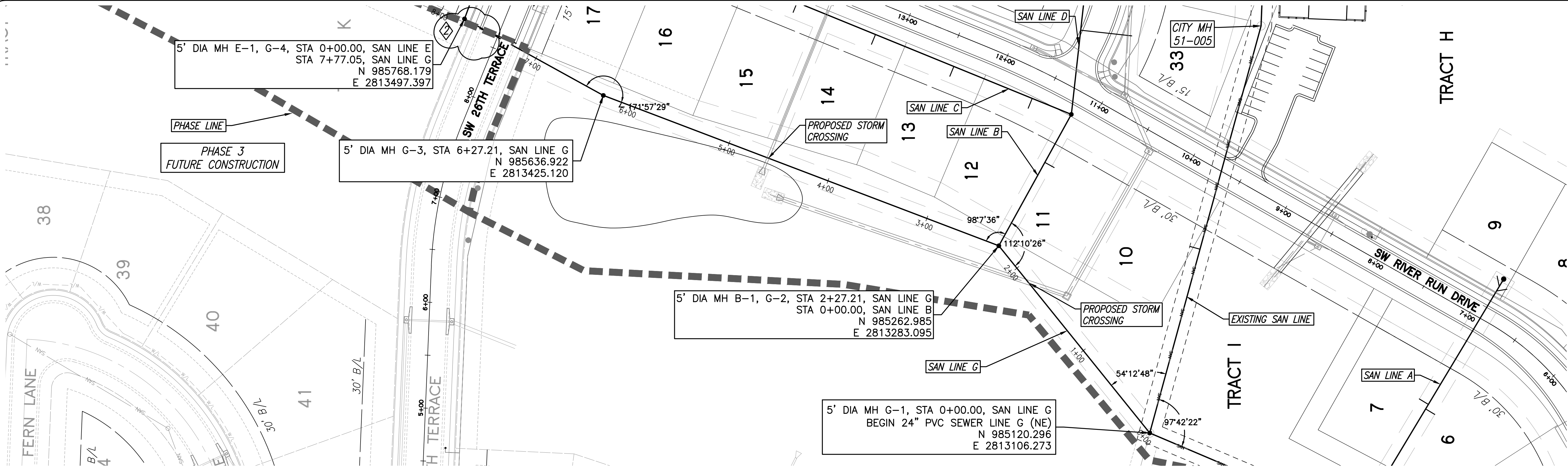
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WHISPERING WOODS - 1ST PLAT
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LEE'S SUMMIT, JACKSON COUNTY, MO
SANITARY SEWER PLANS
PLAN & PROFILE

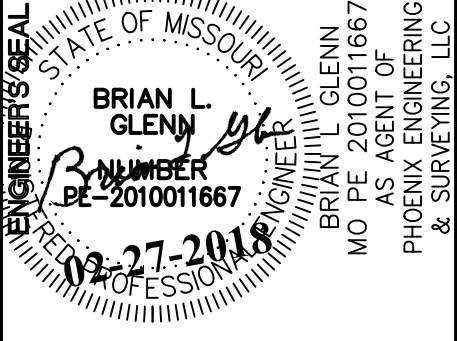
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NOTE:
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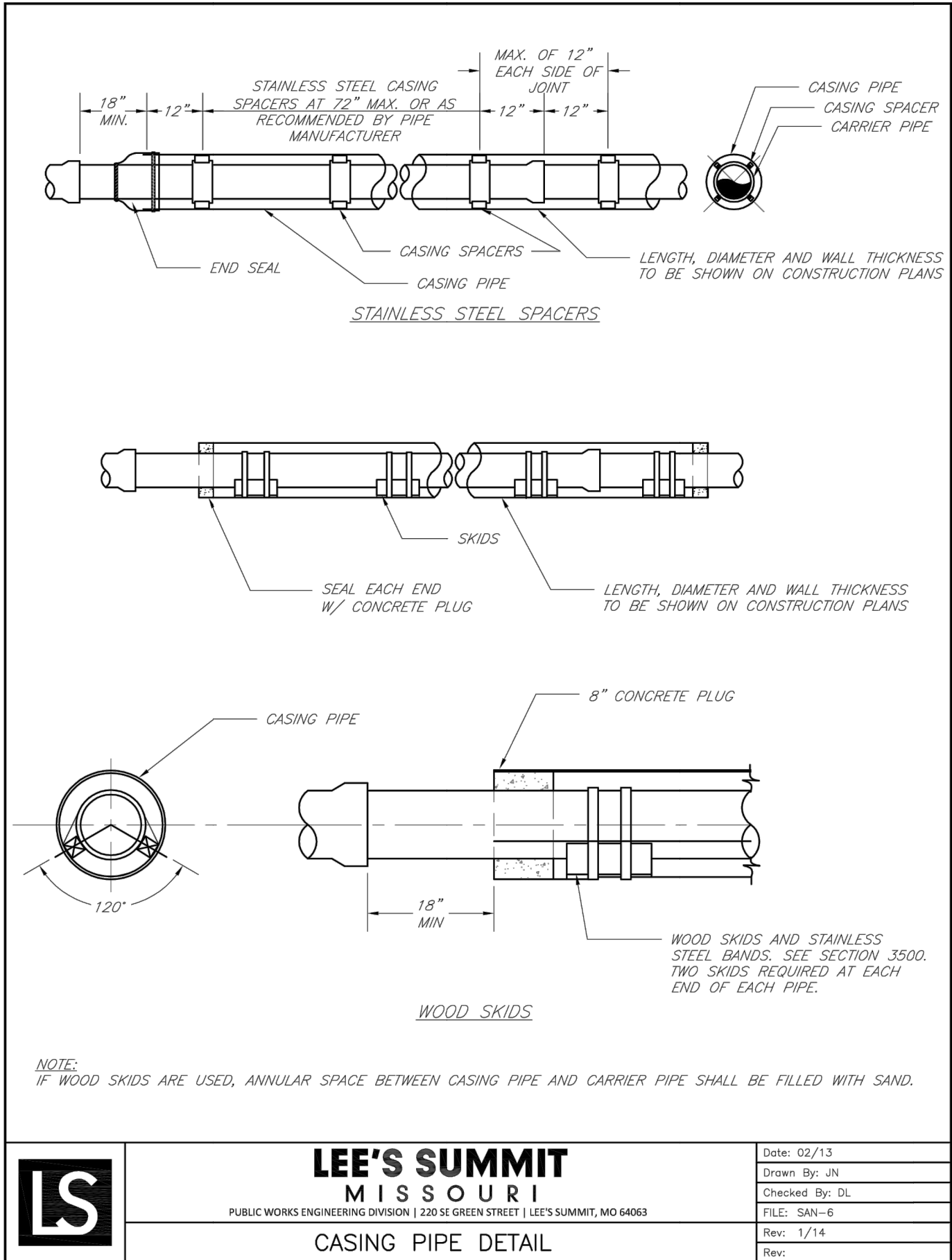
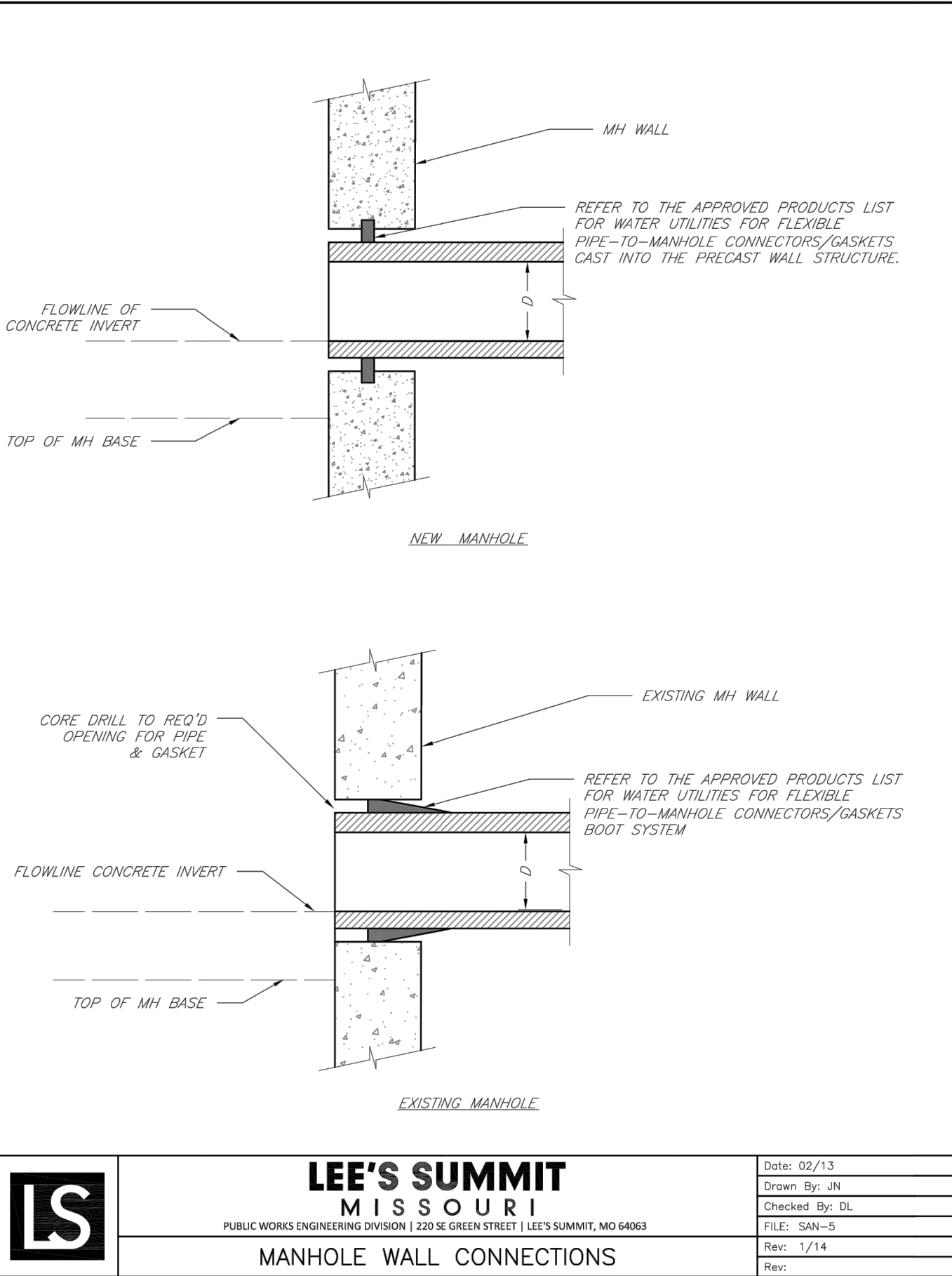
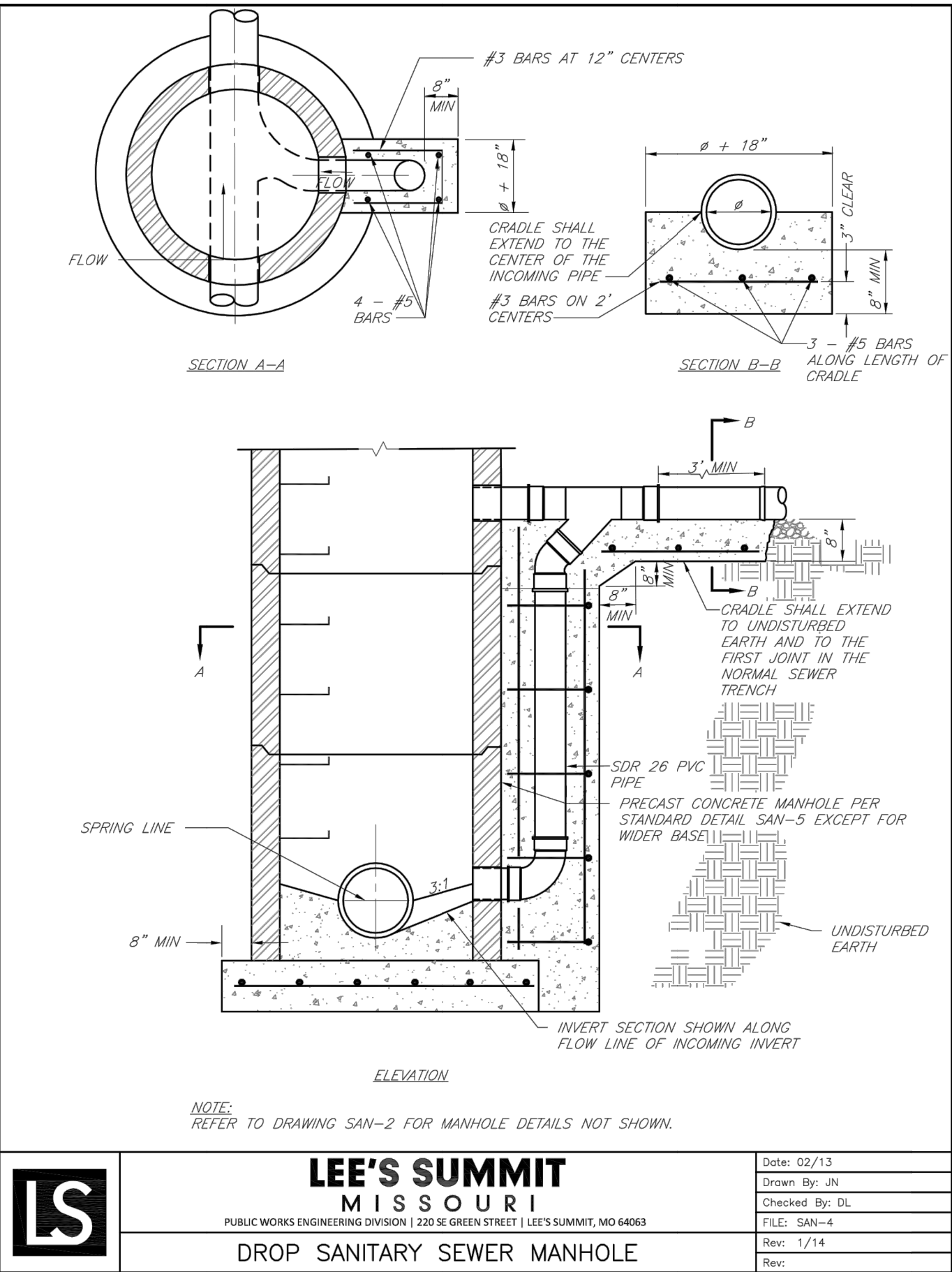
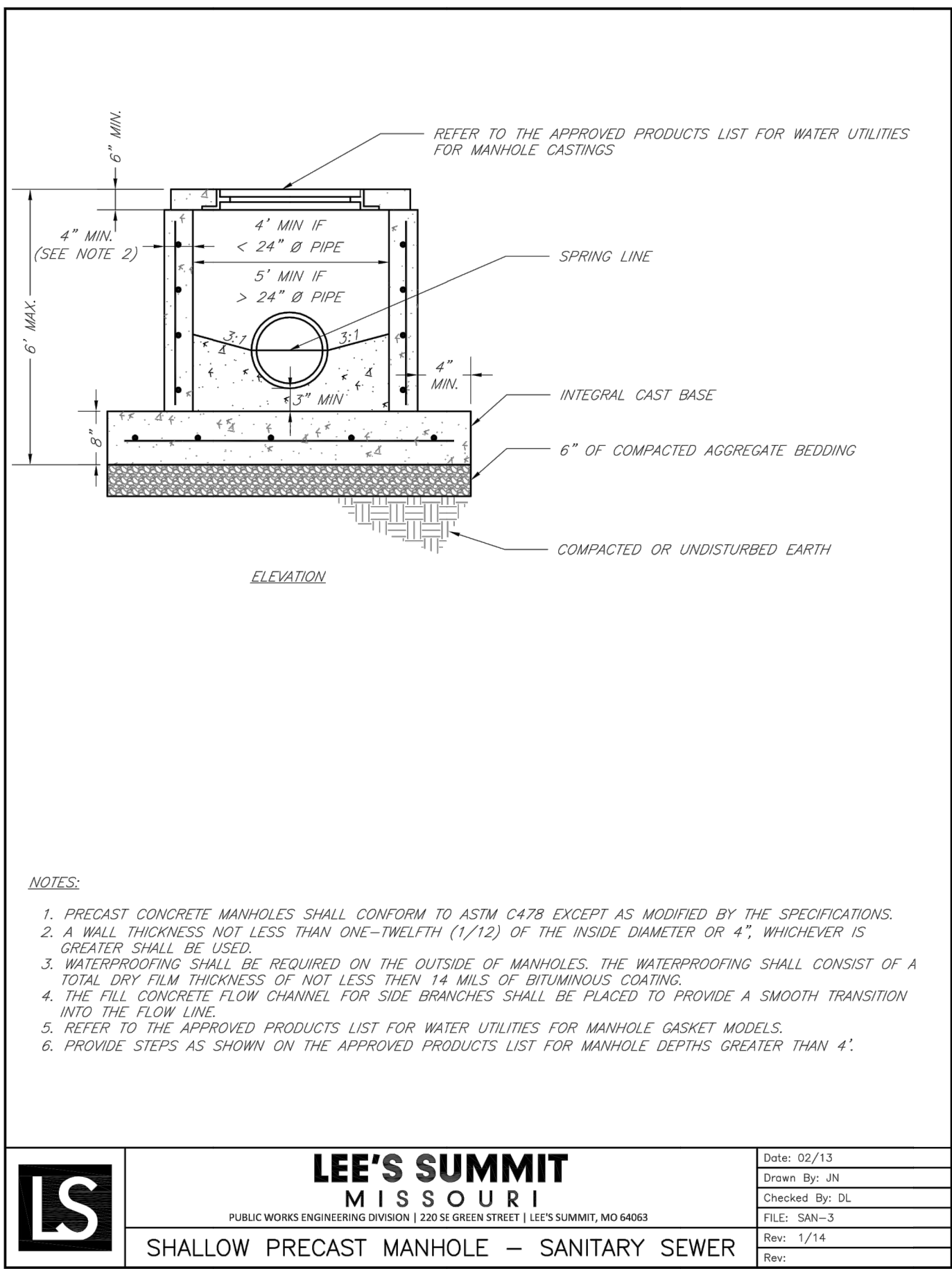
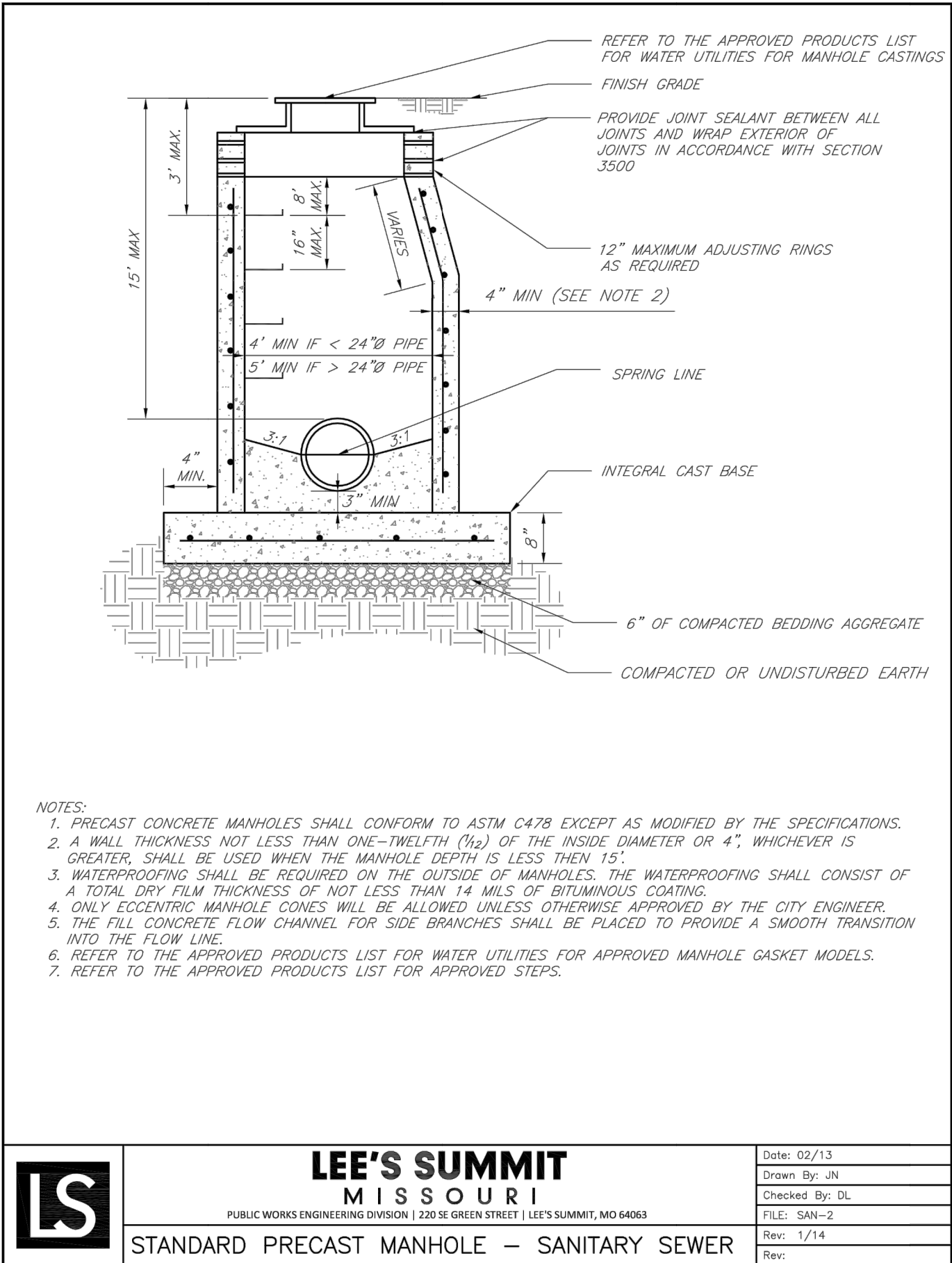
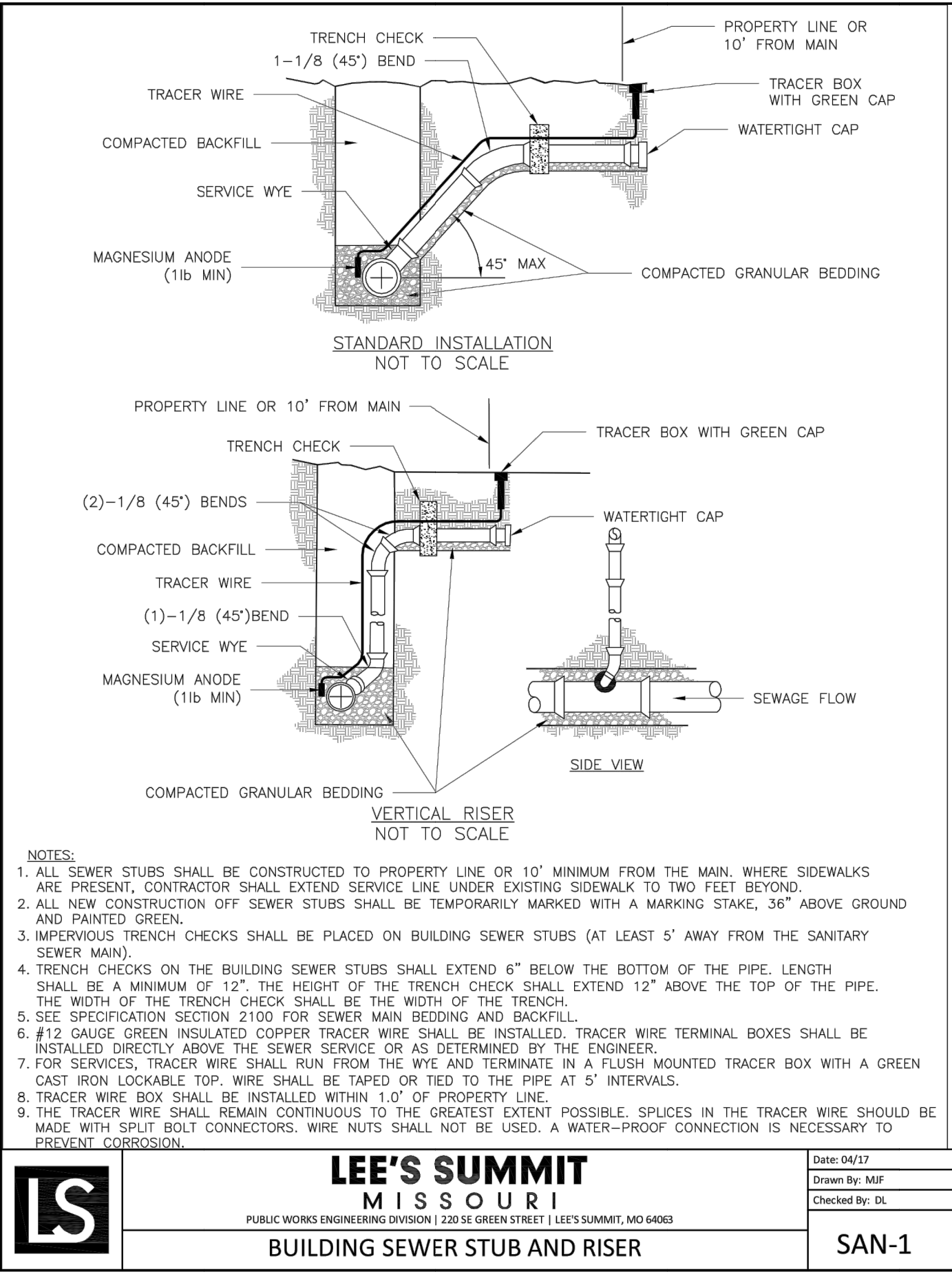
REVISION
Δ REVISED ON 02-15-18: SANITARY STUBS SHOWN IN
PLAN VIEW; ADDED LABELS; ADDED DEFLECTION
ANGLES & CROSSING CALLOUTS
◇ REVISED ON 02-26-18: MH STUBS REMOVED



**PHOENIX ENGINEERING
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SURVEYING CERTIFICATE NO.: MO LS-2000151303-D
KS: E-853
KS: LS-138

**WHISPERING WOODS - 1ST PLAT
LOTS 1 THRU 33
LEE'S SUMMIT, JACKSON COUNTY, MO
SANITARY SEWER PLANS
PLAN & PROFILE**

DESIGNED	BLG
DRAWN	JRT
SCALE	
NOTED	
DATE	09-01-2017
JOB NO.	04078
SHEET	10



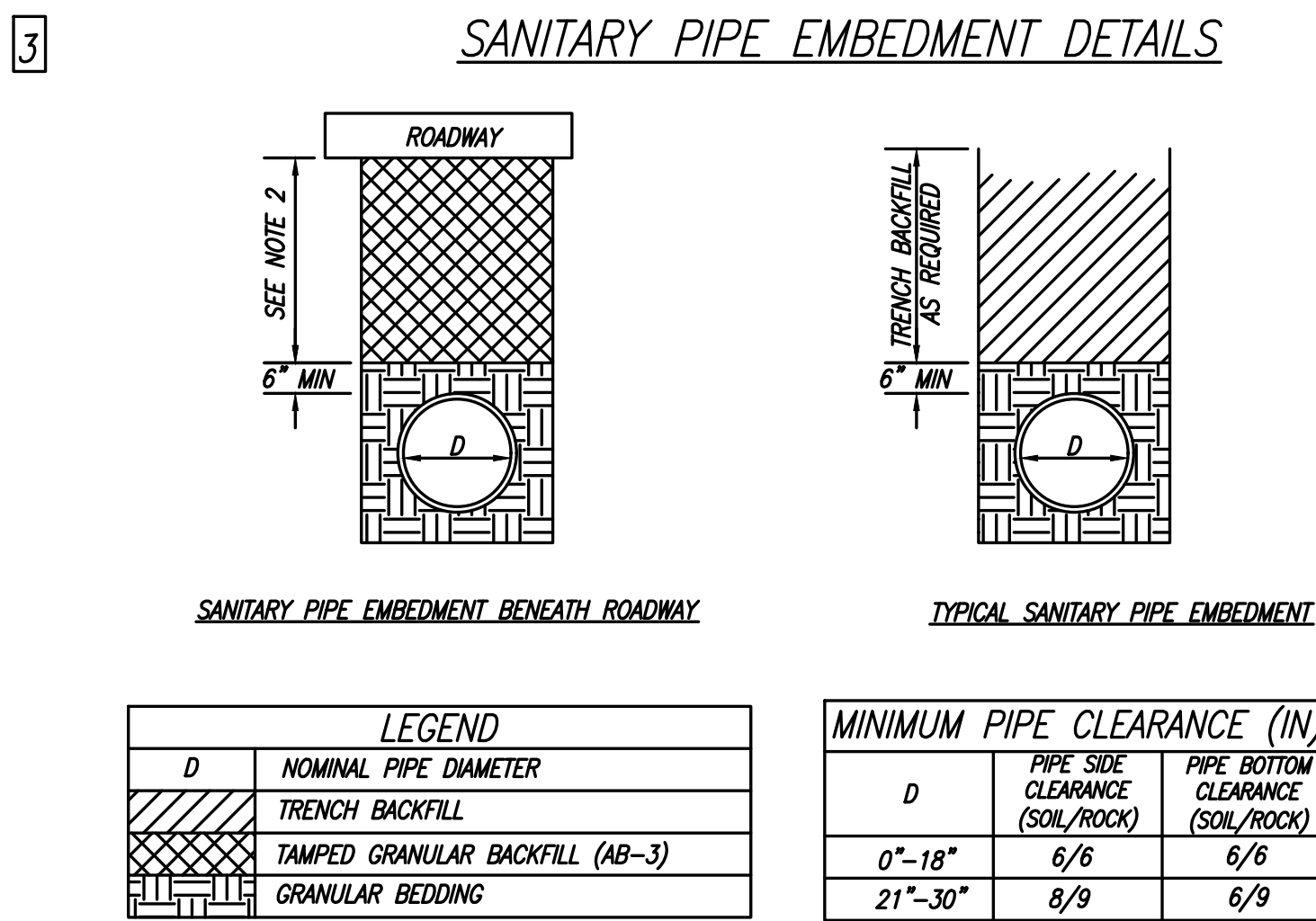
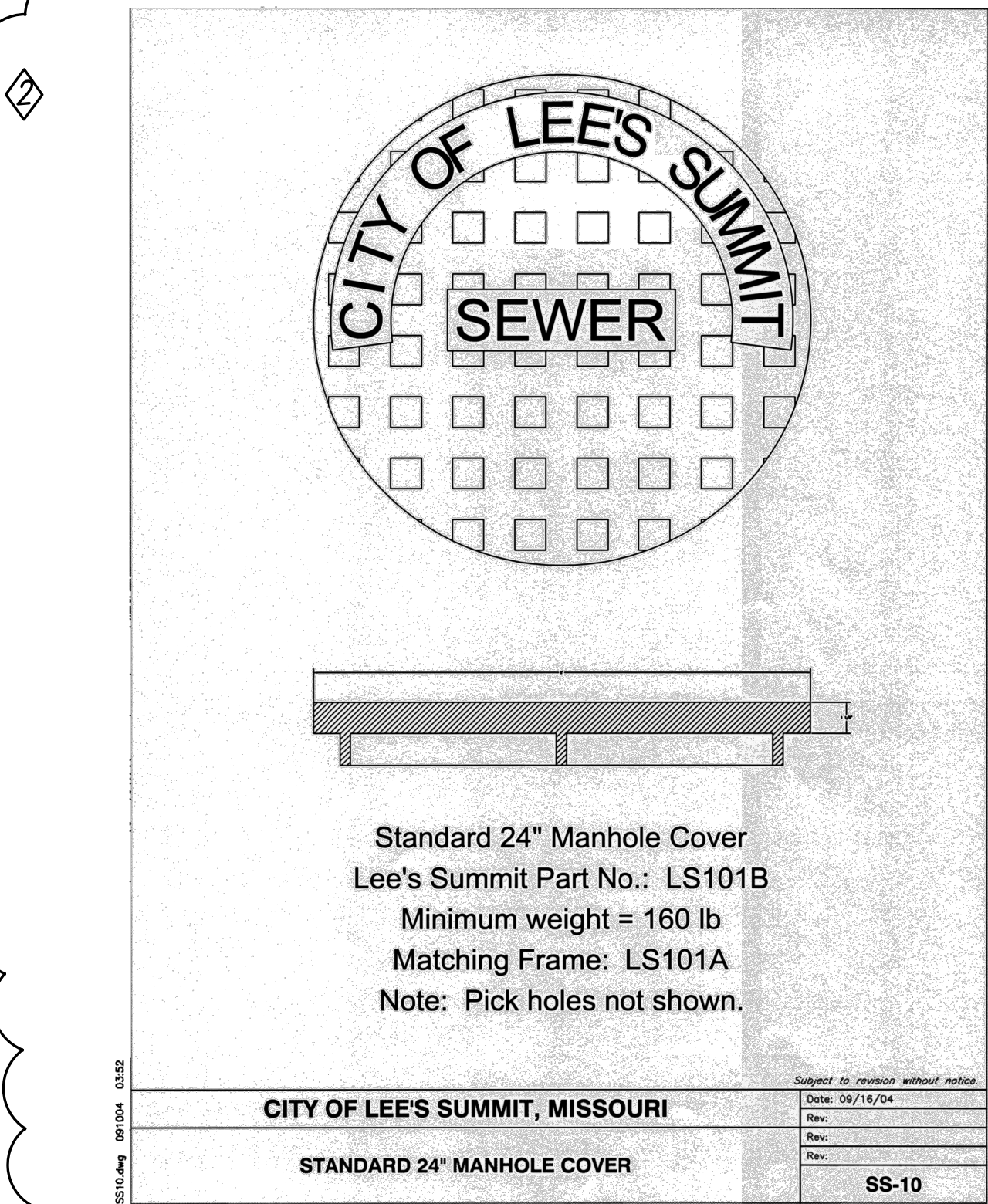
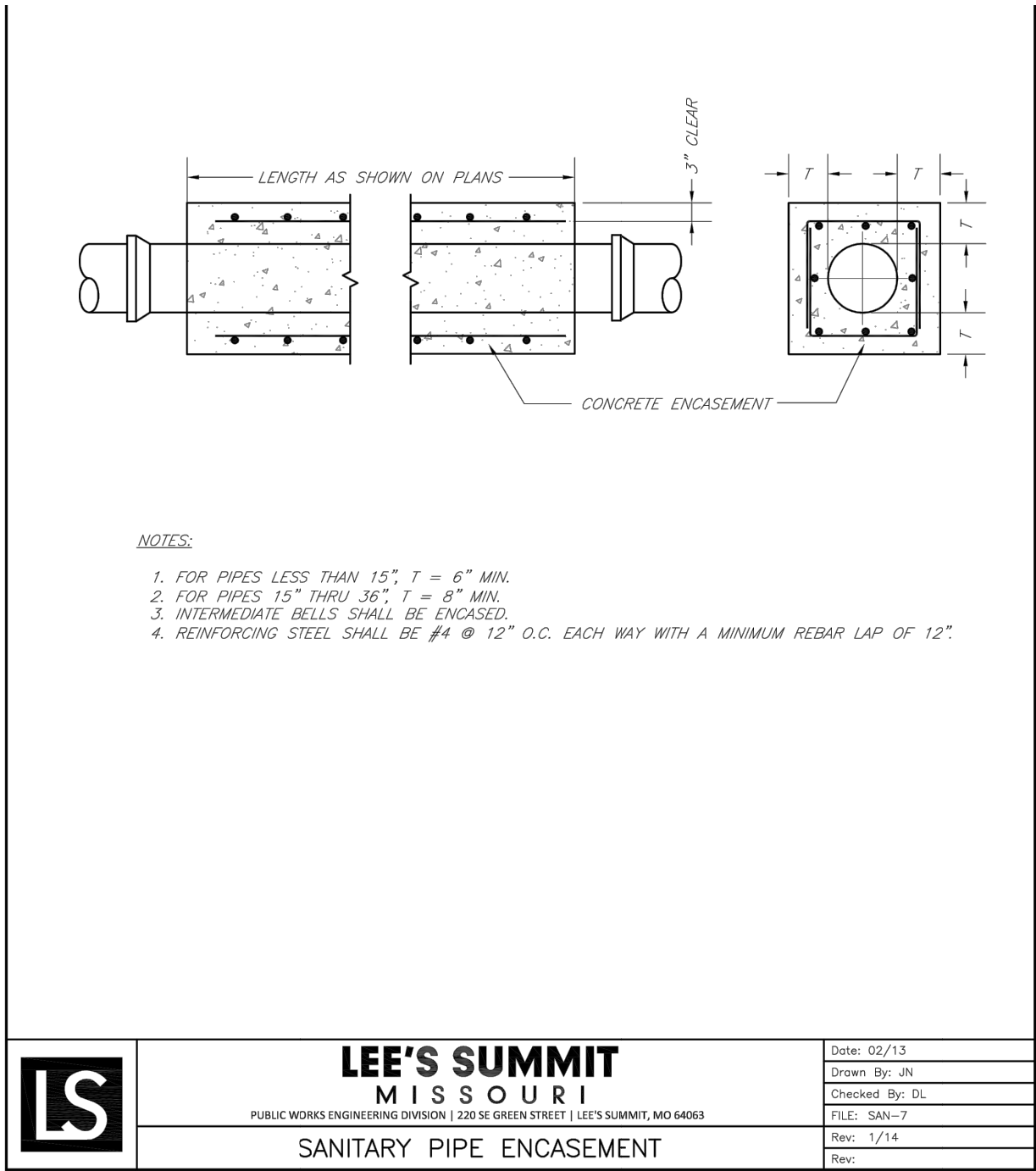
REVISION

STATE OF MISSOURI
BRIAN L. GLENN
REGISTERED PROFESSIONAL ENGINEER
NO. 2010011667
MO PE 2010011667
AS AGENT OF
PHOENIX ENGINEERING & SURVEYING, LLC

PHOENIX ENGINEERING & SURVEYING, LLC
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WHISPERING WOODS - 1ST PLAT
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- NOTES:
1. GRANULAR BEDDING SHALL BE 1/2" CLEAN ROCK WITH A MAXIMUM PARTICLE SIZE 3/4 INCH ROCK, PASSING #200 SIEVE ≤35% (PI ≤10 AND LL ≤40). MATERIAL TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL OR VIBRATING.
 2. TAMPED GRANULAR BACKFILL (AB-3) SHALL BE GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE 1 - 1/2 INCH ROCK, PASSING #40 SIEVE (PI ≤8) 15 TO 50% AND #200 SIEVE ≤35%. THIS MATERIAL SHALL BE USED FOR ALL EXISTING AND PROPOSED STREET CROSSINGS FOR MAIN AND LATERAL CONSTRUCTION
 3. TRENCH BACKFILL SHALL BE FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 95% MAXIMUM DENSITY.
 4. NARROW TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES 24 INCHES OR LESS IN WIDTH AND SHALL BE FLOWABLE BACKFILL (CLSM).
 5. STANDARD TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES BETWEEN 24 TO 48 INCHES WIDE SHALL BE EITHER FLOWABLE BACKFILL (CLSM) OR DENSE, WELL-GRADED AGGREGATE BASE MATERIAL. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS FOR KDOT AB-3 OR MODOT TYPES 1 OR 5.
 6. WIDE TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES GREATER THAN 48 INCHES WIDE SHALL BE EITHER MATERIALS SPECIFIED FOR STANDARD TRENCH OR SUITABLE MATERIAL AS SPECIFIED FOR "EARTH EMBANKMENT" IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.H

REVISION

REVISED ON 02-26-18: DETAILS
ADDED/MODIFIED

REVISED ON 03-23-18: DETAILS
ADDED/MODIFIED

STATE OF MISSOURI
BRIAN L. GLENN
PE-2010011667
03-27-2018
PHOENIX ENGINEERING & SURVEYING, LLC

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WHISPERING WOODS - 1ST PLAT
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10 of 10