

WATER MAIN PLANS FOR WHISPERING WOODS 3RD PLAT CITY OF LEE'S SUMMIT JACKSON COUNTY, MISSOURI

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri
11/19/2025

REVISIONS PER CITY COMMENTS	5/22/25	MT
REVISIONS PER CITY COMMENTS	3/28/25	MT
REVISIONS PER CITY COMMENTS	1/21/25	MT
MARK	DATE	BY
Engineer: SD	Checked By: SD	Scale: 1"= N/A
Technician: JS	Date: 3-18-21	Field Bk:
Snyder & Associates Engineers & Planners, Inc.		Pg: 1
Missouri State Certificate of Authority #2000006544		Sheet 1



SHAWN DUKE - ENGINEER
MO PE#2013006489

LEGAL DESCRIPTION

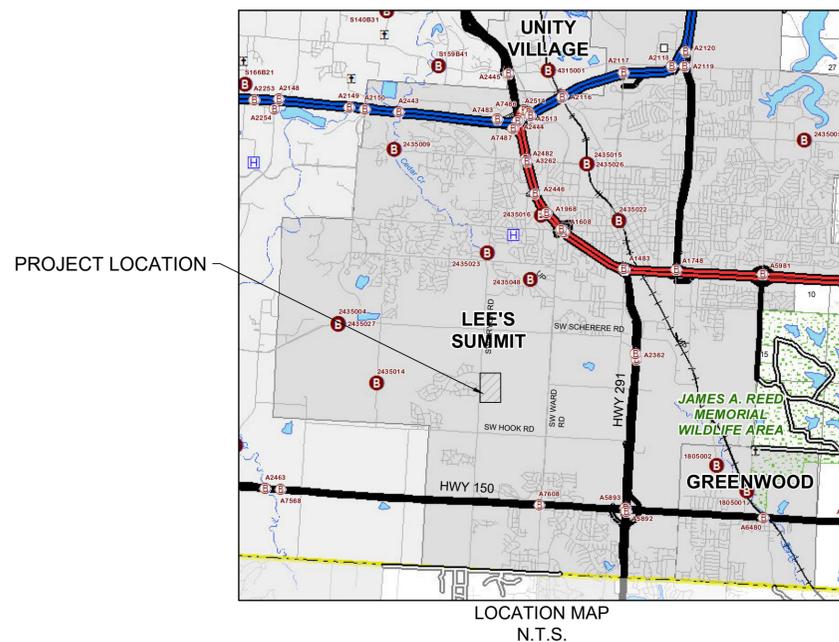
ALL THAT PART OF THE SOUTHWEST QUARTER OF SECTION 24, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE FIFTH PRINCIPAL MERIDIAN IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID SOUTHWEST QUARTER; THENCE SOUTH 87 DEGREES 40 MINUTES 43 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 50.00 FEET TO THE EAST RIGHT OF WAY LINE OF SOUTHWEST PRYOR ROAD ALSO BEING THE POINT OF BEGINNING OF THE TRACT OF LAND HEREIN TO BE DESCRIBED; THENCE CONTINUING SOUTH 87 DEGREES 40 MINUTES 43 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 784.91 FEET; THENCE SOUTH 04 DEGREES 23 MINUTES 24 SECONDS EAST, A DISTANCE OF 474.64 FEET TO THE NORTHWEST CORNER OF LOT 18, WHISPERING WOODS FIRST PLAT, A SUBDIVISION OF LAND IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI; THENCE SOUTH 22 DEGREES 10 MINUTES 28 SECONDS WEST ALONG THE WEST LINE OF SAID LOT 18 AND ITS SOUTHWESTERLY PROLONGATION, A DISTANCE OF 149.00 FEET TO THE NORTH LINE OF TRACT A, OF SAID WHISPERING WOODS FIRST PLAT; THENCE NORTH 67 DEGREES 49 MINUTES 32 SECONDS WEST ALONG THE NORTH LINE OF SAID TRACT A, A DISTANCE OF 89.36 FEET; THENCE NORTHWESTERLY ALONG A CURVE TO THE LEFT BEING TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 370.00 FEET, AN ARC LENGTH OF 75.53 FEET TO THE NORTHWEST CORNER OF SAID TRACT A, THENCE SOUTH 27 DEGREES 01 MINUTES 10 SECONDS WEST, ALONG THE WEST LINE OF SAID TRACT A, A DISTANCE OF 121.71 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 03 DEGREES 00 MINUTES 53 SECONDS WEST, A DISTANCE OF 246.06 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 09 DEGREES 24 MINUTES 42 SECONDS WEST, A DISTANCE OF 177.20 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 50 DEGREES 12 MINUTES 48 SECONDS WEST, A DISTANCE OF 178.11 FEET; THENCE CONTINUING ALONG SAID WEST LINE SOUTH 11 DEGREES 36 MINUTES 15 SECONDS WEST, A DISTANCE OF 224.87 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, ALONG THE NORTH LINE OF SAID TRACT A, A DISTANCE OF 399.87 FEET TO THE EAST RIGHT OF WAY LINE OF SOUTHWEST PRYOR ROAD; THENCE NORTH 02 DEGREES 45 MINUTES 31 SECONDS EAST, ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 596.60 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 07 DEGREES 19 MINUTES 57 SECONDS EAST, A DISTANCE OF 69.01 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 02 DEGREES 45 MINUTES 31 SECONDS EAST, A DISTANCE OF 187.45 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 57 DEGREES 50 MINUTES 40 SECONDS EAST, A DISTANCE OF 54.00 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 03 DEGREES 01 MINUTES 16 SECONDS EAST, A DISTANCE OF 80.00 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 57 DEGREES 06 MINUTES 44 SECONDS WEST, A DISTANCE OF 57.98 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY NORTH 02 DEGREES 45 MINUTES 31 SECONDS EAST, A DISTANCE OF 460.17 FEET TO THE POINT OF BEGINNING.

SAID TRACT CONTAINS 925,197.36 SQUARE FEET OR 21.24 ACRES MORE OR LESS.

PROJECT BENCHMARK

ELEV. 950.79 FT (NAVD 1988 DATUM)

MISSOURI DEPARTMENT OF NATURAL RESOURCES GRS ALUMINUM DISK STAMPED "JA-50" LOCATED NEAR THE INTERSECTION OF SW SCHERER PKWY & SW SAMPSON RD.

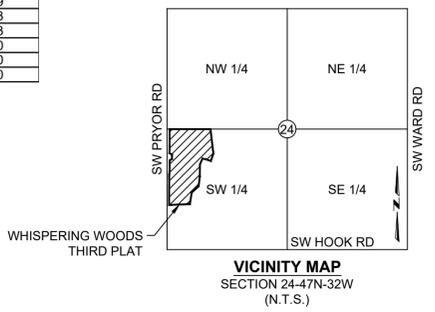


INDEX TO SHEETS

- 1 TITLE SHEET
- 2 GENERAL NOTES
- 3 GENERAL LAYOUT
- 4-6 WATER MAIN PLAN & PROFILE
- 7-8 DETAILS

UTILITY SERVICE NUMBERS

SPECTRUM	886-874-2389
EVERGY	816-220-5213
SPIRE GAS	816-399-9633
LEE'S SUMMIT PUBLIC WORKS	816-969-1800
CITY PLANNING & DEVELOPMENT	816-969-1600
FIRE DEPARTMENT	816-969-1300



SUMMARY OF QUANTITIES

ITEM	UNIT	PLAN	AS-BUILT
8" C900 PVC	LF	1745	
8" Gate Valve	EA	5	
6" Gate Valve	EA	3	
8"X8"X8" TEE	EA	1	
8" Cross	EA	1	
8"X8"X6" TEE	EA	3	
6" 90° Bend	EA	3	
Fire Hydrant Assembly	EA	3	
8" 45° Bend	EA	8	
8" 22.5° Bend	EA	6	
8" 11.25° Bend	EA	3	
8" Sleeve	EA	2	
Connect to Existing	EA	2	
Utility Marker Tape	LF	1745	
Tracer Wire	LF	1745	
As Built Drawings	EA	1	

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.

APPROVED:

City Engineer

Date

PRSUBD20243308

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 3RD PLAT
WATER MAIN PLANS
TITLE SHEET

LEE'S SUMMIT, MO
802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222
SNYDER & ASSOCIATES
ENGINEERS & PLANNERS, INC.
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Project No: 1200485.11

Sheet 1

PROJECT NOTES:

1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL APPLICABLE STANDARDS AND SPECIFICATIONS OF THE CURRENT VERSION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY 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 THEREIN. 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 OF TEN FEET (10') SHALL BE MAINTAINED BETWEEN PARALLEL WATER AND SANITARY SEWER LINES. AT ANY POINT WHERE SANITARY SEWER LINES CROSS THE WATER MAIN, THE SANITARY SEWER SHALL BE ENCASED IN CONCRETE FOR A DISTANCE OF TEN FEET (10') IN EACH DIRECTION FROM THE CROSSING UNLESS THE WATER MAIN IS A MINIMUM OF EIGHTEEN INCHES (18') ABOVE THE TOP OF THE SANITARY SEWER LINE.
12. CONTRACTOR SHALL PROVIDE TESTING AND INSPECTION PER SECTION 3900-WATER MAINS CITY OF LEE'S SUMMIT, MISSOURI STANDARD SPECIFICATIONS.
13. DUCTILE IRON PIPE SHALL WRAPPED WITH POLYWRAP.
14. CONTRACTOR IS RESPONSIBLE FOR ALL TESTING RELATED TO THE WATER MAIN INSTALLATION AND ACCEPTANCE PER CITY SPECIFICATIONS.
15. ALL UTILITY STREET CROSSINGS SHALL BE BACKFILLED WITH FLOWABLE FILL, OR AB-3.
16. MINIMUM DEPTH OF COVER OVER WATERLINE SHALL BE 42 INCHES MAXIMUM DEPTH OF COVER SHALL BE SEVEN FEET (7').
17. SITE TOPOGRAPHY TAKEN FROM SURVEY COMPLETED BY RL BUFORD AND ASSOCIATES. CONTRACTOR TO VERIFY EXISTING CONDITIONS OF THE SITE THAT MAY NOT BE REPRESENTATIVE OF CONSTRUCTION PLANS.

EROSION CONTROL NOTES:

A MISSOURI STATE OPERATING PERMIT FOR STORM WATER DISCHARGE IS REQUIRED IF CONSTRUCTION ACTIVITY DISTURBS ONE ACRE OR MORE IN ACCORDANCE WITH THE MISSOURI DEPARTMENT OF NATURAL RESOURCES' REGULATION (10 CSR 20-6.200). COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED IN THIS INSTANCE. A CONSTRUCTION PERMIT FOR LAND DISTURBANCE WILL BE SECURED FROM THE MISSOURI DEPARTMENT OF NATURAL RESOURCES AND PROVIDED TO THE CONTRACTOR.

SLOPES ARE TO BE LEFT IN A ROUGHENED CONDITION DURING GRADING.

CURB INLET SEDIMENTATION FILTERS ARE TO BE INSTALLED AROUND CURB INLETS WHERE SEDIMENTATION IS A CONCERN. (SEE SWPP FOR DETAILS)

INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY FOLLOWING INSTALLATION OF STORM INLETS & REMAIN IN PLACE UNTIL GROUND COVER HAS BEEN ESTABLISHED.

EROSION CONTROL MEASURES SHALL BE CONSTRUCTED PRIOR TO BEGINNING GRADING OPERATIONS WHERE POSSIBLE. ALL REMAINING EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IMMEDIATELY FOLLOWING GRADING OPERATIONS.

THE SITE IS TO BE SEEDED AND MULCHED AND TEMPORARY EROSION CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL GROUND COVER HAS BEEN ESTABLISHED.

SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS INCLUDING THE DETENTION BASIN.

ROCK LINING IS TO BE INSTALLED AT AREAS OF CONCENTRATED FLOW (I.E. CULVERT OUTLETS).

ROCK LINING SHALL BE TYPE 2 ROCK DITCH LINER ACCORDING TO MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SEC. 609.60. ALL NECESSARY STEPS SHALL BE TAKEN TO PREVENT SEDIMENT AND SOIL EROSION FROM BEING TRANSPORTED ONTO ADJACENT PROPERTY AND INTO STREAMS, LAKES, PONDS, OR OTHER AREAS.

CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. ANY REQUIRED REPAIRS SHOULD BE MADE IMMEDIATELY.

ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED IF UNFORESEEN EROSION PROBLEMS ARISE OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED.

A. EROSION PROTECTION

1. CODE COMPLIANCE: THE CONTRACTOR SHALL COMPLY WITH SOIL EROSION CONTROL REQUIREMENTS OF THE MISSOURI CODE, THE MISSOURI DEPARTMENT OF NATURAL RESOURCES NPDES PERMIT, AND LOCAL ORDINANCE. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASUREMENTS TO PROTECT AGAINST EROSION AND DUST POLLUTION ON THIS PROJECT SITE AND ALL OFF-SITE BORROW OR DEPOSIT AREAS DURING PERFORMANCE OR AS A RESULT OF PERFORMANCE.

2. DAMAGE CLAIMS: THE CONTRACTOR WILL HOLD THE OWNER, ARCHITECT AND ENGINEER HARMLESS FROM ANY AND ALL CLAIMS OF ANY TYPE WHATSOEVER RESULTING FROM DAMAGES TO ADJOINING PUBLIC OR PRIVATE PROPERTY, INCLUDING REASONABLE ATTORNEY FEES INCURRED TO OWNER. FURTHER, IF THE CONTRACTOR FAILS TO TAKE NECESSARY STEPS TO PROMPTLY REMOVE EARTH SEDIMENTATION OR DEBRIS WHICH COMES ONTO ADJOINING PUBLIC OR PRIVATE PROPERTY, THE OWNER MAY, BUT NEED NOT, REMOVE SUCH ITEMS AND DEDUCT THE COST THEREOF FROM AMOUNTS DUE TO THE CONTRACTOR.

3. ALL AREAS DISTURBED BY CONSTRUCTION ON THIS PROJECT WILL BE SUBJECT TO CURRENT REGULATORY REQUIREMENTS AND THESE STANDARDS.

B. STORM WATER DISCHARGE PERMIT:

1. THIS PROJECT REQUIRES A LAND DISTURBANCE PERMIT FROM THE MISSOURI DEPARTMENT OF NATURAL RESOURCES, AS REQUIRED BY THE ENVIRONMENTAL PROTECTION COMMISSION (EPC). THE OWNER SHALL OBTAIN THE PERMIT. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE AND FULFILLING ALL REQUIREMENTS OF THE PERMIT INCLUDING THE STORM WATER POLLUTION PREVENTION PLAN.

2. ALL DOCUMENTS RELATED TO THE STORM WATER DISCHARGE PERMIT SHALL BE KEPT ON SITE AT ALL TIMES AND MUST BE PRESENTED TO THE MISSOURI DNR UPON REQUEST WHICH INCLUDE THE NOTICE OF INTENT, PROOF OF PUBLICATION, POLLUTION PREVENTION PLAN, PROJECT INSPECTION DIARY, AND OTHER ITEMS. FAILURE TO COMPLY WITH THE DISCHARGE REQUIREMENTS IS IN VIOLATION OF THE CLEAN WATER ACT AND THE CODE OF MISSOURI.

3. UPON FINAL STABILIZATION OF THE DISTURBED AREA, A "NOTICE OF DISCONTINUATION" MUST BE FILED BY THE OWNER WITH THE MISSOURI DNR. ALL PLANS, INSPECTION REPORTS, AND OTHER DOCUMENTS MUST BE RETAINED FOR A PERIOD OF THREE YEARS AFTER PROJECT COMPLETION. THE CONTRACTOR SHALL RETAIN RECORD COPY AND PROVIDE ORIGINAL DOCUMENTS TO THE OWNER UPON ISSUANCE OF THE NOTICE OF DISCONTINUATION.

POLLUTION PREVENTION PLAN:

1. SITE DESCRIPTION: THIS PROJECT IS FOR THE CONSTRUCTION OF ROUGH GRADING FOR COMMERCIAL DEVELOPMENT. THE ENTIRE PROJECT COVERS APPROXIMATELY 1.70 ACRES. THE ESTIMATED AVERAGE RUNOFF COEFFICIENT WILL BE 0.80 RUNOFF FROM THIS PROJECT SITE AND WILL BE ROUTED THROUGH THE EXISTING CITY STORM SEWER.

2. POTENTIAL SOURCES OF POLLUTION FOR THIS PROJECT RELATE TO SILTS, SEDIMENT, AND OTHER MATERIALS WHICH MAY BE TRANSPORTED FROM THE CONSTRUCTION SITE AS THE RESULT OF A STORM EVENT.

3. RESPONSIBILITY: THIS POLLUTION PREVENTION PLAN ILLUSTRATES GENERAL MEASURES TO BE TAKEN FOR COMPLIANCE WITH THE PERMIT. ALL MITIGATION MEASURES REQUIRED, AS A RESULT OF ACTIVITIES, ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL ACTIONS NECESSARY FOR INSTALLATION OF CONTROL MEASURES FOR COMPLIANCE WITH PERMIT REQUIREMENTS.

4. CONTROLS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE AND FULFILLING ALL THE REQUIREMENTS OF THE GENERAL PERMIT INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

- a. THE CONTRACTOR SHALL PROTECT ADJOINING PROPERTY INCLUDING PUBLIC UTILITIES, SANITARY AND STORM DRAINAGE SYSTEMS, AND STREETS FROM ANY DAMAGE RESULTING FROM MOVEMENT OF EARTH OR OTHER DEBRIS FROM PROJECT SITE. REPAIR ANY DAMAGE IMMEDIATELY AT NO ADDITIONAL COST.
- b. THE CONTRACTOR SHALL PREVENT ACCUMULATION OF EARTH, SILTATION, OR DEBRIS ON ADJOINING PUBLIC OR PRIVATE PROPERTY FROM PROJECT SITE. REMOVE ANY ACCUMULATION OF EARTH OR DEBRIS IMMEDIATELY AND TAKE REMEDIAL ACTIONS FOR PREVENTION.
- c. PRIOR TO SITE CLEARING AND GRADING OPERATIONS, CONTRACTOR SHALL INSTALL SILT FENCE ALONG THE PERIMETER OF THE PROJECT DOWNSTREAM OF DISTURBING ACTIVITIES AS REQUIRED AND AS SHOWN ON THE PLANS.
- d. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION.

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Engineer: SD	Checked By: SD	Scale: 1"= N/A	
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WHISPERING WOODS 3RD PLAT WATER MAIN PLANS

GENERAL NOTES

LEE'S SUMMIT, MO

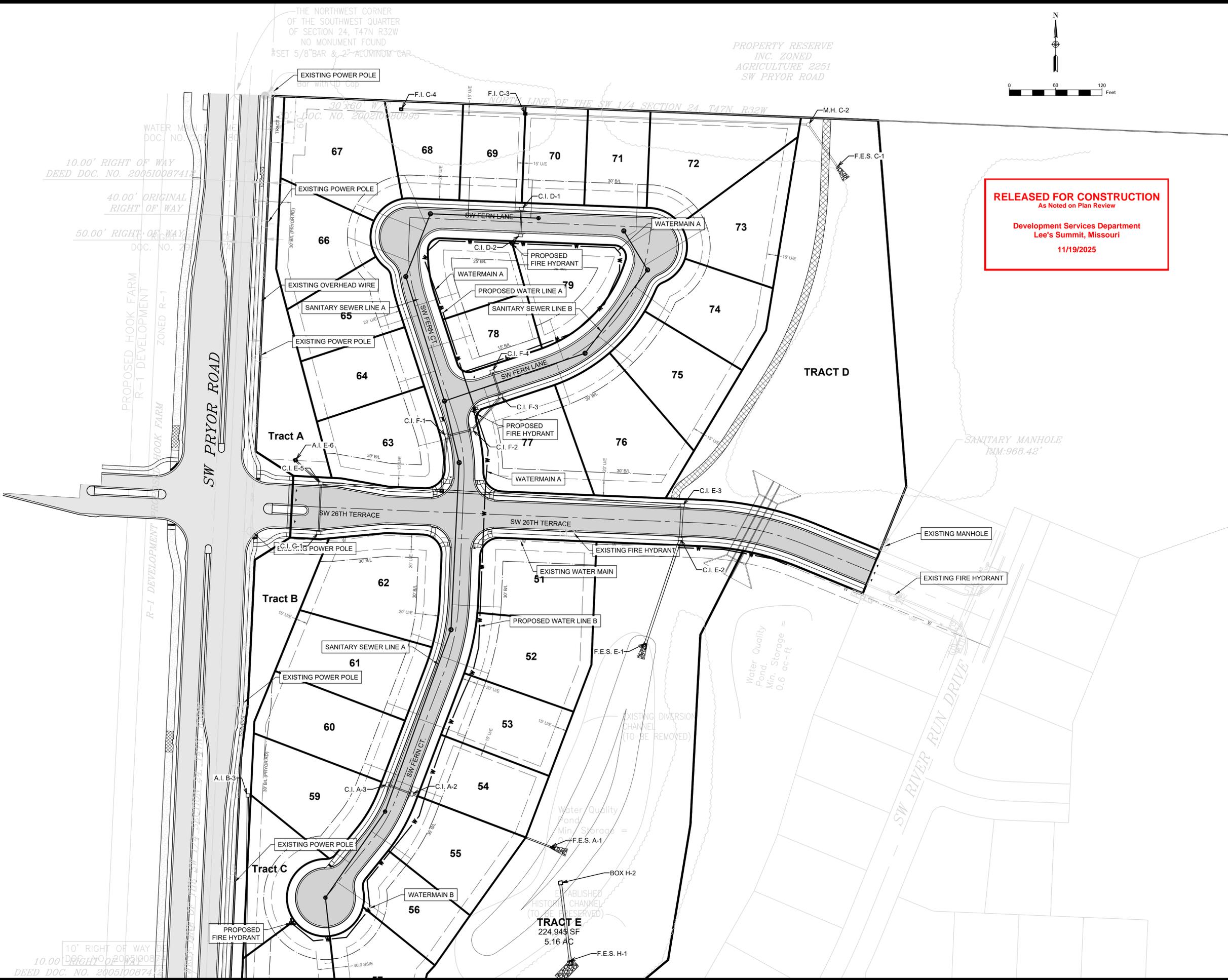
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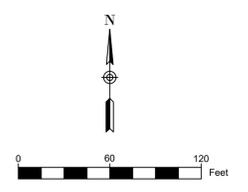


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Sheet 2



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Missouri State Certificate of Authority #2006006544			3

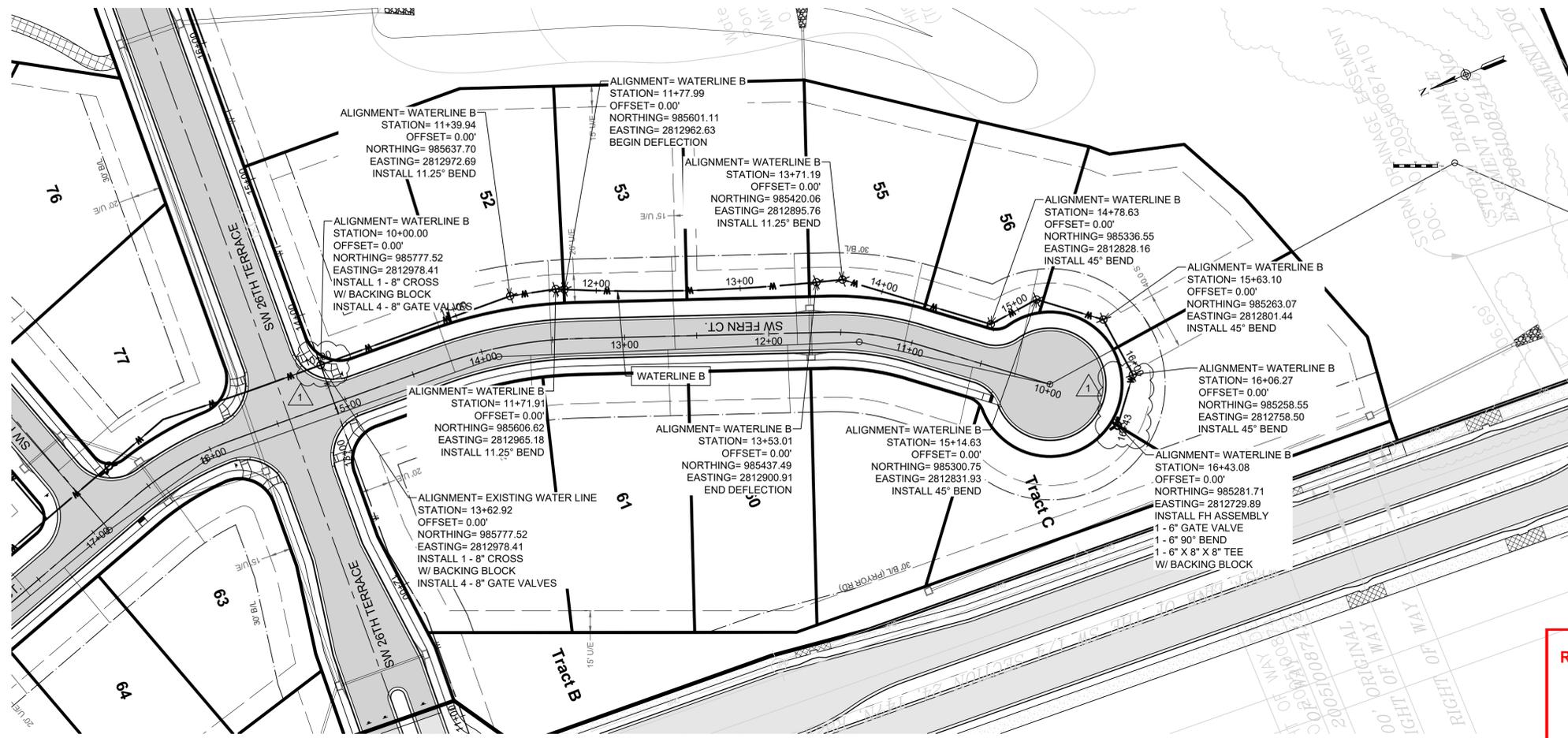


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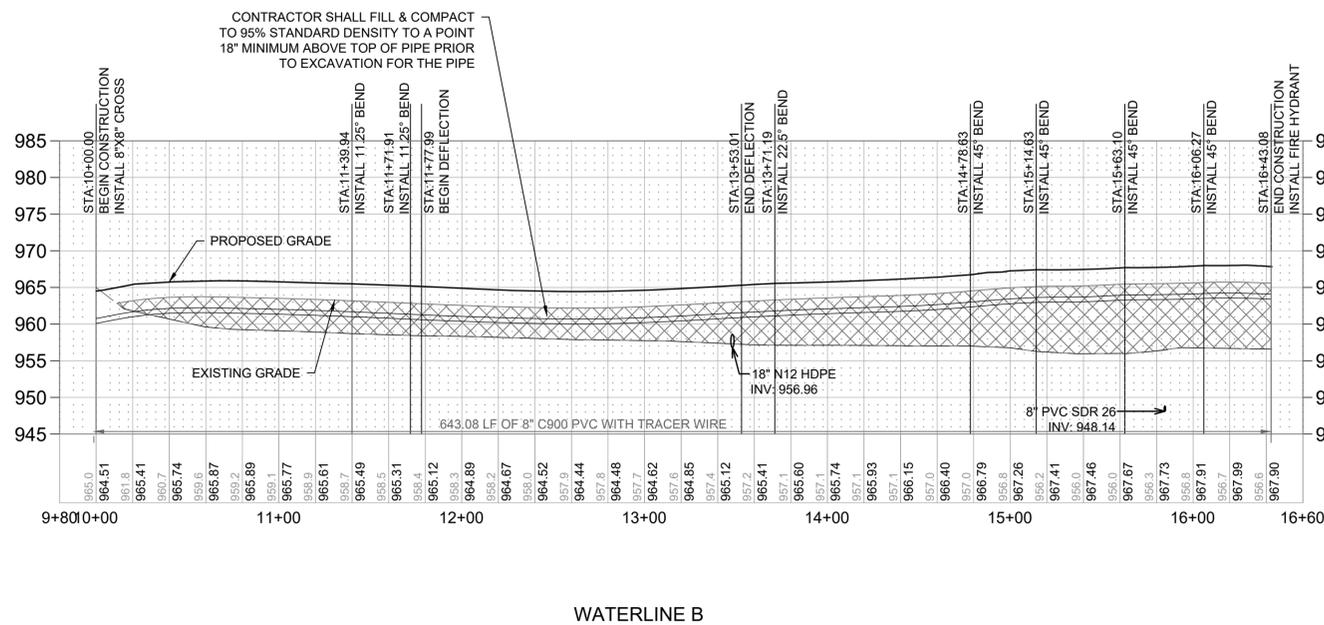
WHISPERING WOODS 3RD PLAT
 WATER MAIN PLANS
 GENERAL LAYOUT
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Sheet 3



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WHISPERING WOODS 3RD PLAT
 WATER MAIN PLANS

WATER MAIN PLAN & PROFILE WATERLINE B LEE'S SUMMIT, MO

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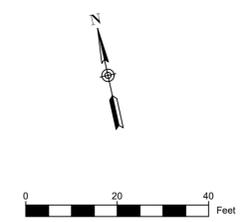
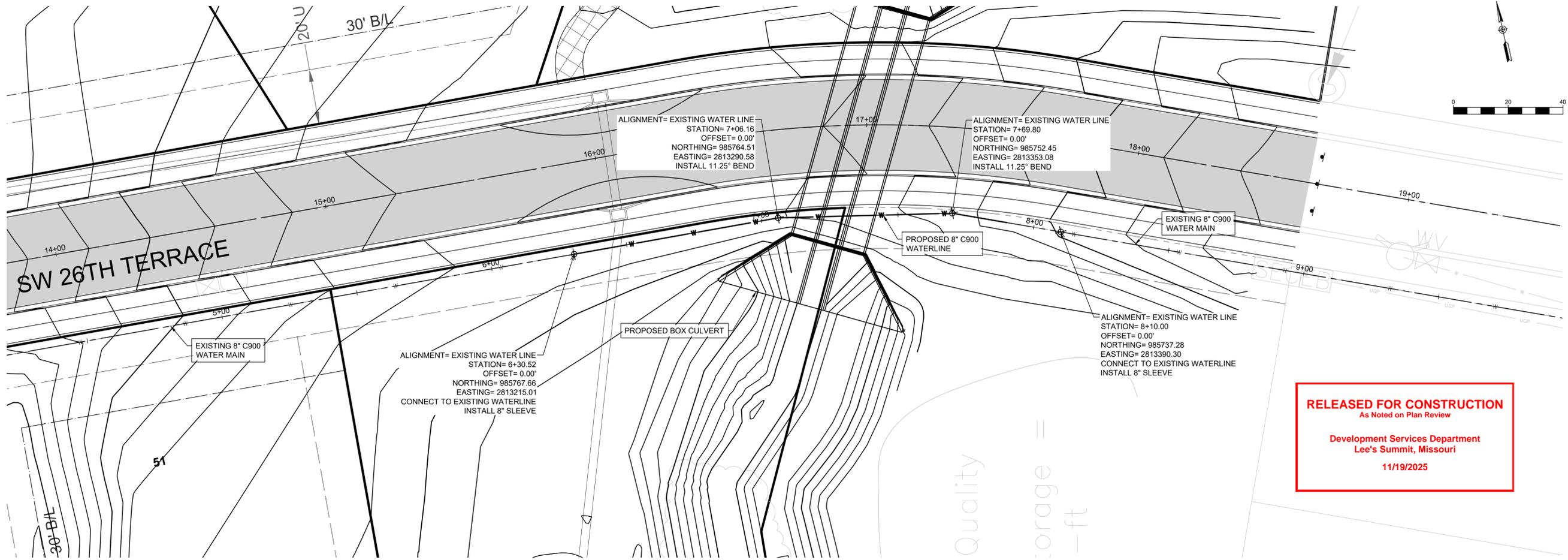
Sheet 5

MARK	REVISION	DATE	BY
1	REVISIONS PER CITY COMMENTS	1/21/25	MT

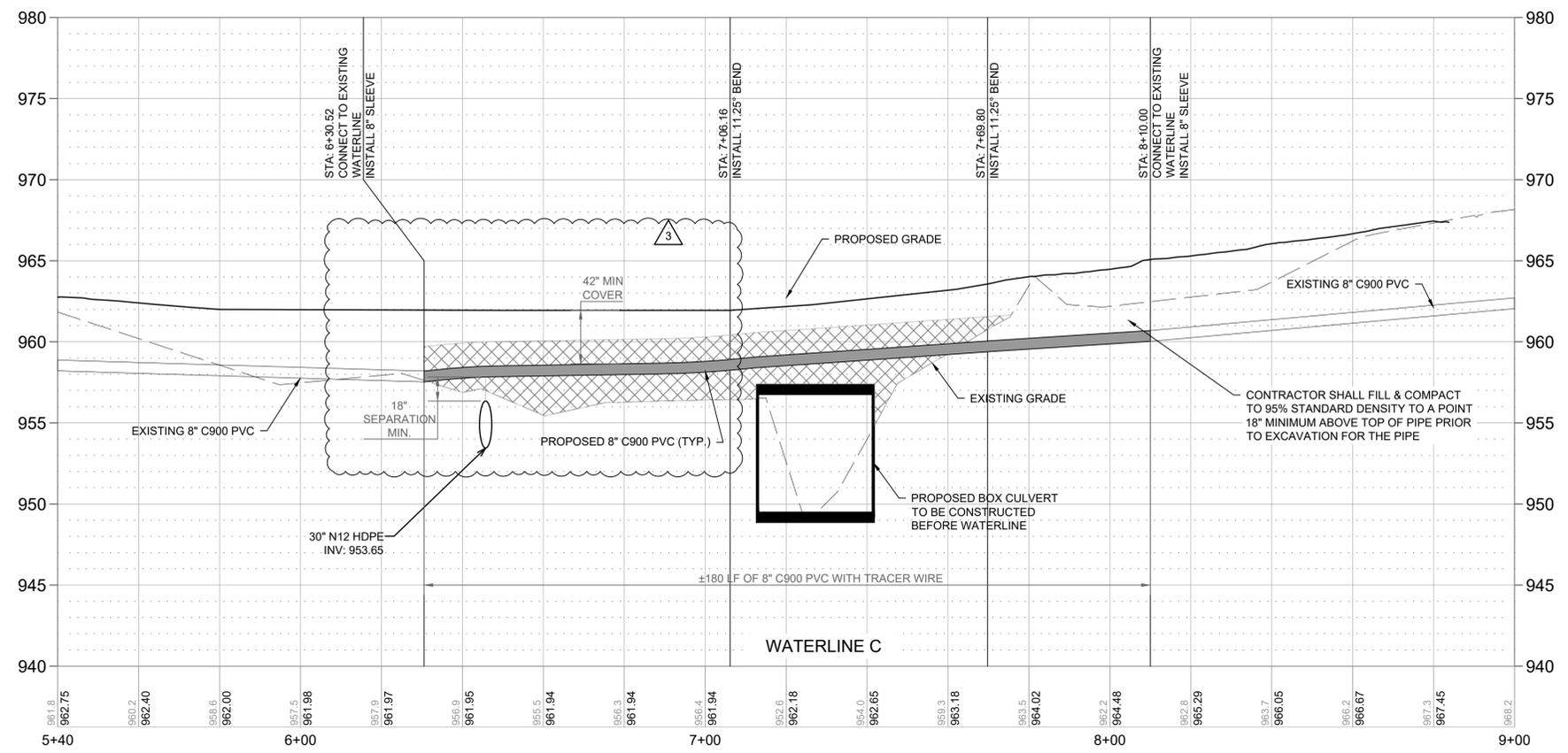
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Technician: JS	Date: 3-18-21	Field Bk:	Pg:

SHAWN DUKE - ENGINEER
 MO PE#2013006489

WHISPERING WOODS 3RD PLAT
WATER MAIN PLANS
 WATER MAIN PLAN & PROFILE WATERLINE A
 LEE'S SUMMIT, MO
SNYDER & ASSOCIATES
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 802 FRANCIS STREET
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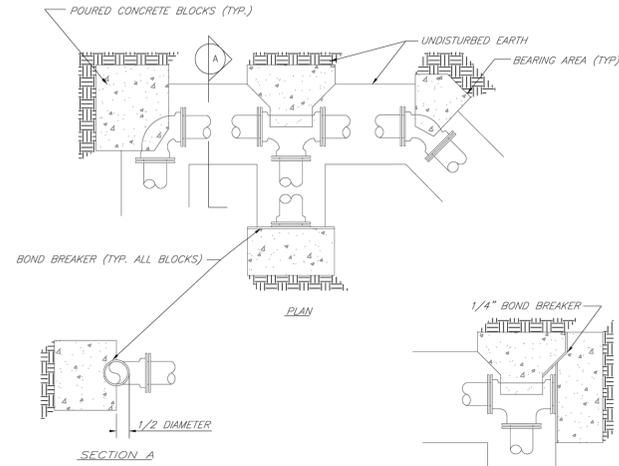
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Sheet 6

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)

NOM. DIA. (INCHES)	TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.6	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	61.1	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

- NOTES:
 1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MECA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



LEE'S SUMMIT MISSOURI

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

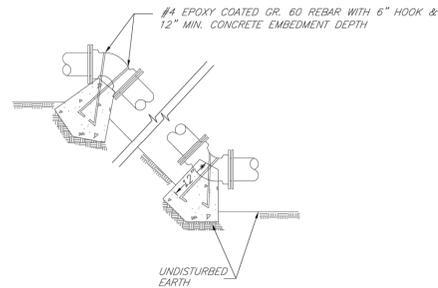
HORIZONTAL THRUST BLOCKS

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

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)

NOM. DIA. (INCHES)	TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	102.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4

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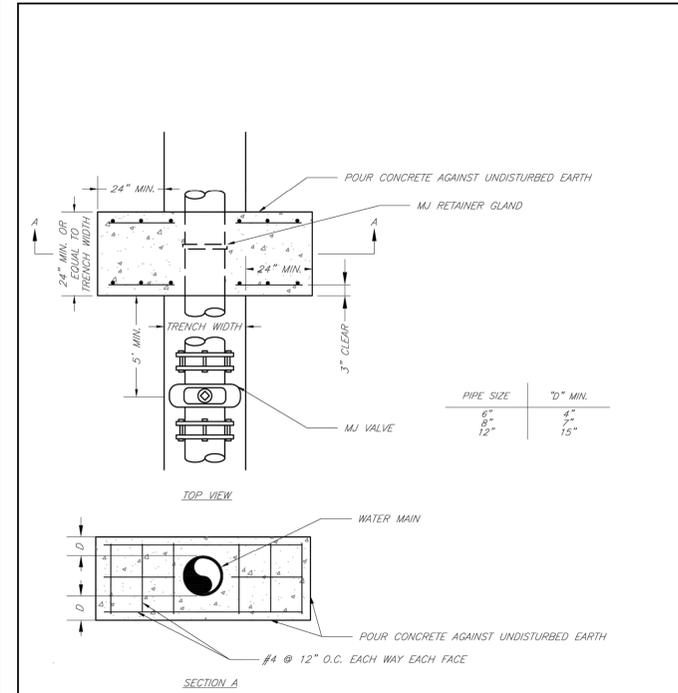


LEE'S SUMMIT MISSOURI

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

VERTICAL THRUST BLOCKS

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



LEE'S SUMMIT MISSOURI

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

STRADDLE BLOCK

Date:	02/13
Drawn By:	JN
Checked By:	DL
File:	WAT-3
Rev:	1/14
Rev:	

RELEASED FOR CONSTRUCTION
 As Noted on Plan Review

 Development Services Department
 Lee's Summit, Missouri

 11/19/2025



SHAWN DUKE - ENGINEER
 MO PE#2013006489

WHISPERING WOODS 3RD PLAT
 WATER MAIN PLANS
 DETAILS

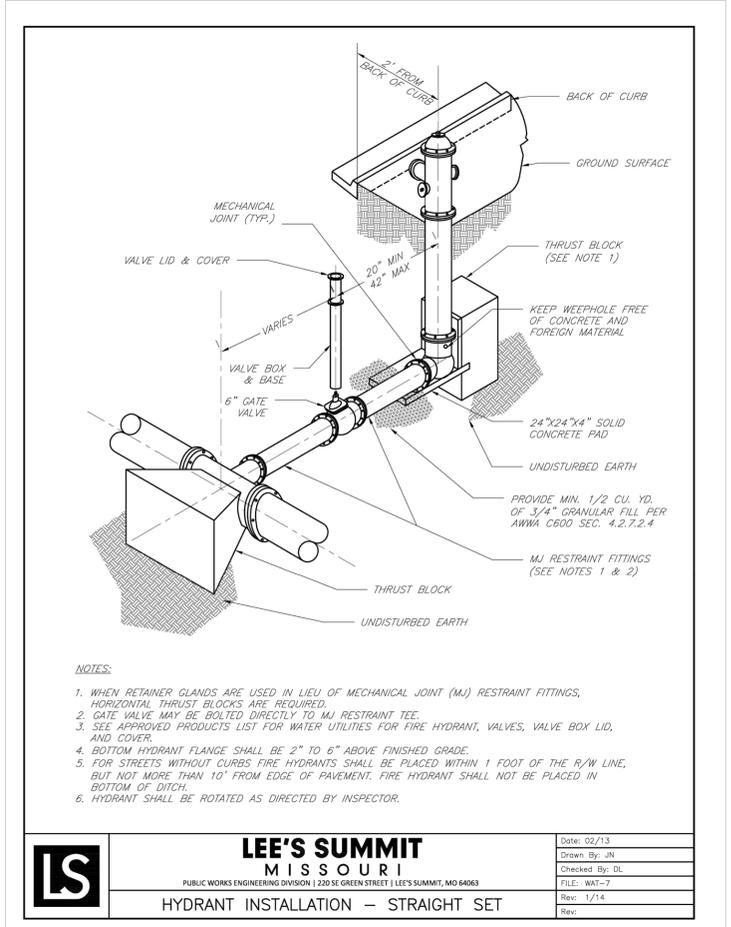
LEE'S SUMMIT, MO
 802 FRANCIS STREET
 ST. JOSEPH, MO 64501
 816-364-5222
 www.snyder-associates.com



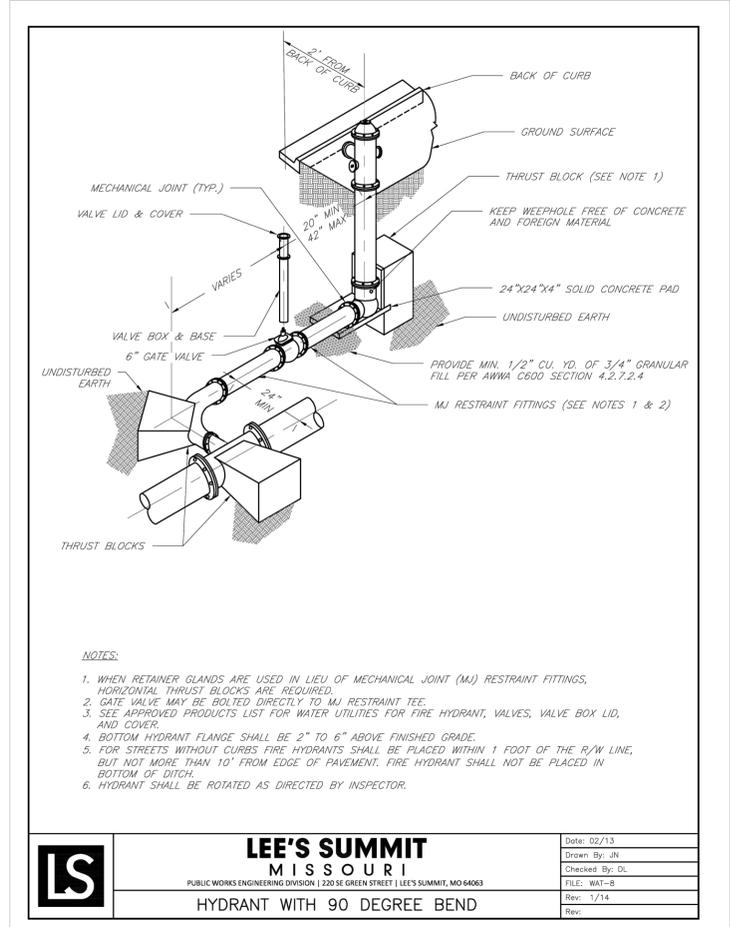
Project No: 1200485.11

Sheet 7

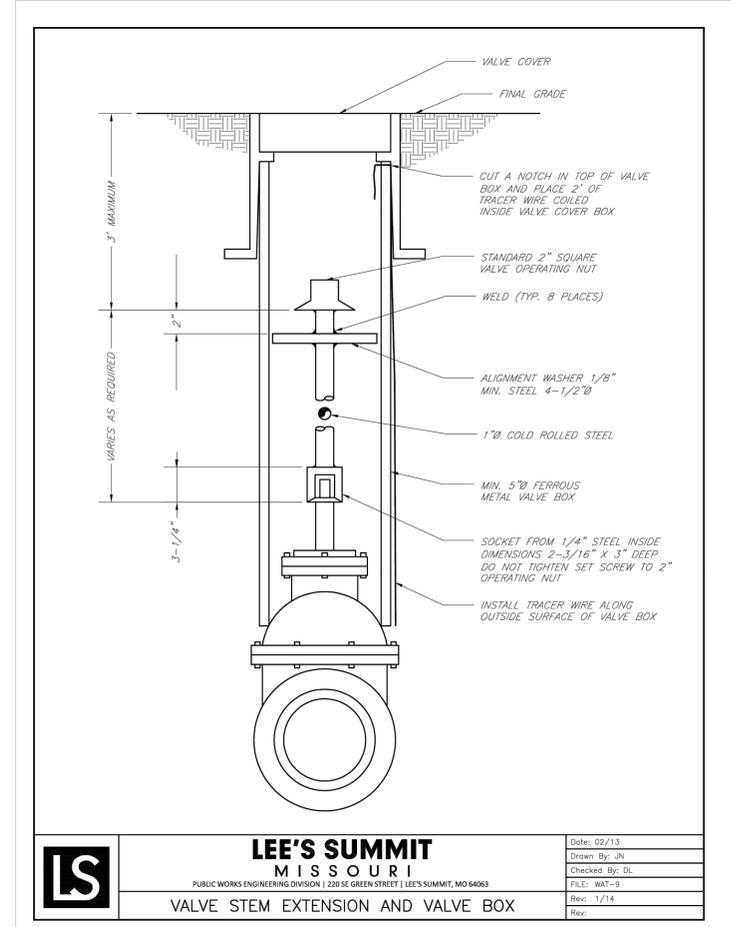
MARK	REVISION	DATE	BY
Engineer: SD	Checked By: SD	Scale: 1"= N/A	
Technician: JS	Date: 3-18-21	Field Bk:	
			Sheet 7
			Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #000006544



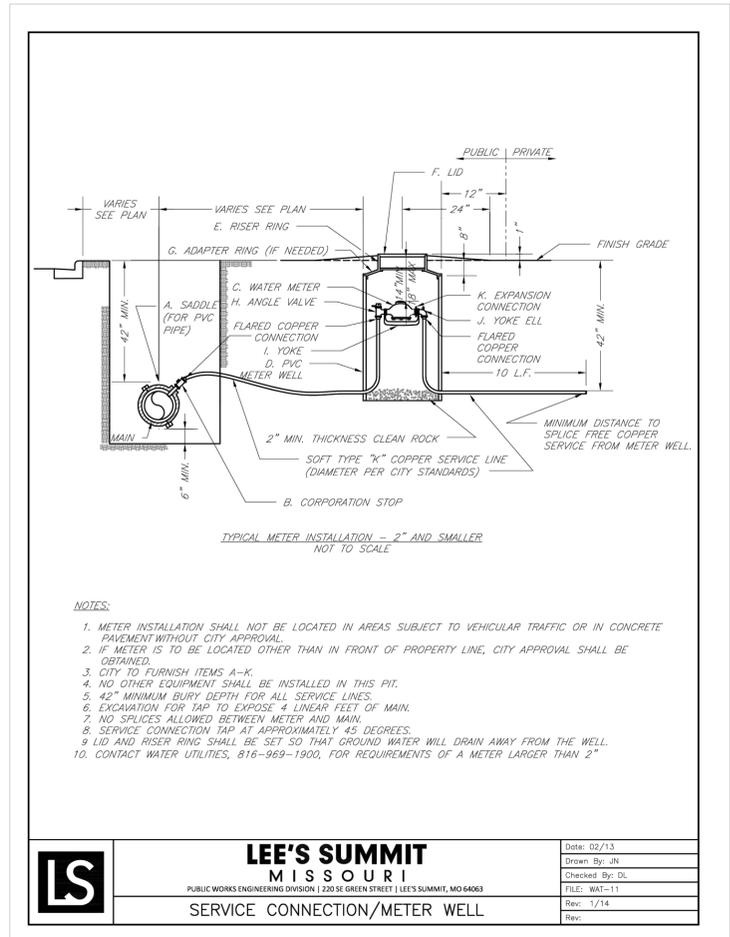
LS	LEE'S SUMMIT MISSOURI	Date: 02/13
	PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Drawn By: JN
	HYDRANT INSTALLATION - STRAIGHT SET	Checked By: DL
		FILE: WAT-7
		Rev: 1/14



LS	LEE'S SUMMIT MISSOURI	Date: 02/13
	PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Drawn By: JN
	HYDRANT WITH 90 DEGREE BEND	Checked By: DL
		FILE: WAT-8
		Rev: 1/14



LS	LEE'S SUMMIT MISSOURI	Date: 02/13
	PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Drawn By: JN
	VALVE STEM EXTENSION AND VALVE BOX	Checked By: DL
		FILE: WAT-9
		Rev: 1/14



LS	LEE'S SUMMIT MISSOURI	Date: 02/13
	PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Drawn By: JN
	SERVICE CONNECTION/METER WELL	Checked By: DL
		FILE: WAT-11
		Rev: 1/14

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Development Services Department
Lee's Summit, Missouri

11/19/2025

MARK	REVISION	DATE	BY
Engineer: SD	Checked By: SD	Scale: 1"= N/A	
Technician: JS	Date: 3-18-21	Field Bk:	



SHAWN DUKE - ENGINEER
MO PE#2013006489

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Project No: 1200485.11
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