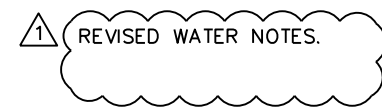


THE ESTATES OF CHAPEL RIDGE-2ND PLAT
LOTS 23 & 24 AND
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
WATER LINE CONSTRUCTION PLANS

Section 8, Township 48 North, Range 31 West
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



WATER:
1 ~ THE CONTRACTOR SHALL COORDINATE WITH THE DEVELOPMENT
ENGINEERING INSPECTOR PRIOR TO ANY CONNECTIONS TO THE PUBLIC
WATER SUPPLY.

2 ~ FIRE HYDRANTS SHALL BE OPTIC YELLOW WATEROUS "PACER" MODEL NO.
WB-67-250 WITH NON-RISING STEM OR CITY ENGINEER APPROVED EQUAL.
HYDRANTS SHALL HAVE A 5 1/4" VALVE WITH A 4 1/2" PUMPER NOZZLE AND 2 - 2
1/2" HOSE NOZZLES (LEFT HAND OPENING).

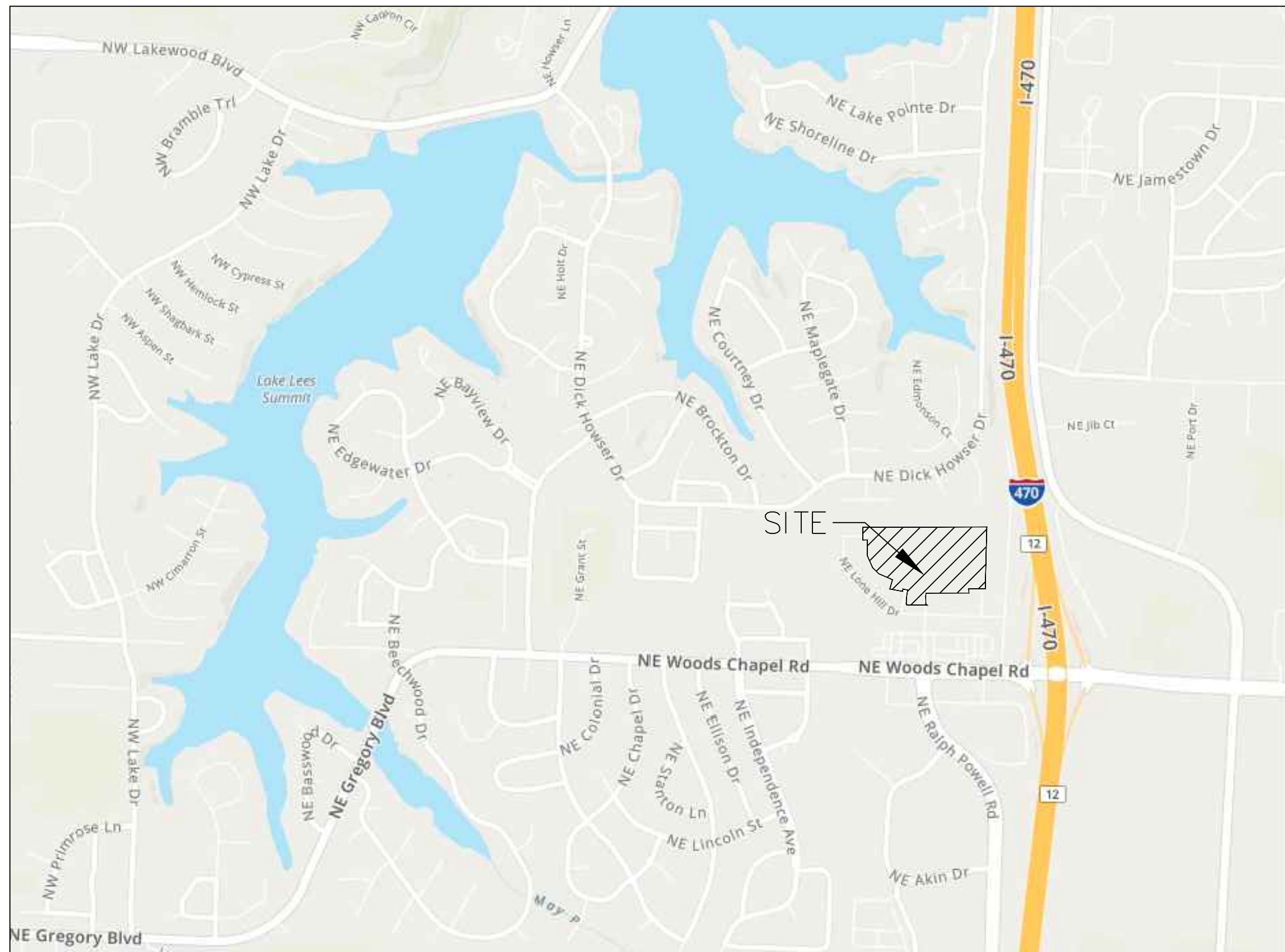
3 ~ GATE VALVES SHALL BE MUELLER NO. 2360 Series HUB END "O" RING SEAL
NON-RISING STEM. VALVES 12" OR LARGER SHALL BE BUTTERFLY VALVES
MANUFACTURED BY THE HENRY PRATT COMPANY OR CITY ENGINEER
APPROVED EQUAL. LEFT HAND OPENING. MINIMUM 200# TESTING AWWA.

4 ~ ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF
42 INCHES. STREET GRADING SHALL BE COMPLETED PRIOR TO BEGINNING
CONSTRUCTION OF WATER MAINS.

5 ~ ALL BENDS, TEES AND FIRE HYDRANTS SHALL BE INSTALLED WITH
SUITABLE CONCRETE THRUST BLOCKS POURED IN PLACE AGAINST
UNDISTURBED EARTH AND PER CITY OF LEES SUMMIT AND APWA
STANDARDS.

6 ~ THE MINIMUM SEPARATION BETWEEN THE PROPOSED WATER MAIN AND
SANITARY OR STORM SEWERS IS AS FOLLOWS:
A ~ SANITARY SEWERS: HORIZONTAL = 10 FEET - VERTICAL = 18 INCHES
B ~ STORM SEWERS: HORIZONTAL = 10 FEET - VERTICAL = 18 INCHES
THESE SEPARATIONS SHALL PREVAIL OVER ANY DATA SHOWN IN THESE
PLANS AND THE CONTRACTOR SHALL INSTALL BENDS OR OTHER FITTINGS AS
NECESSARY TO ACHIEVE THE REQUIRED SEPARATIONS.

7 ~ ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN
AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813

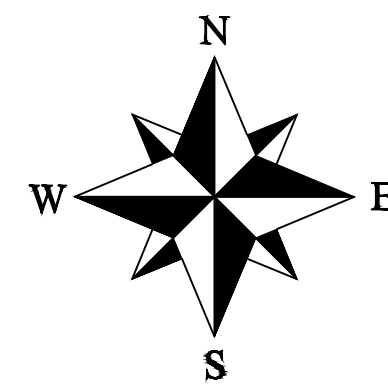
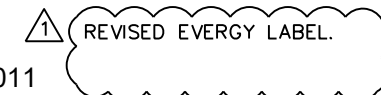


SITE LOCATION MAP

- INDEX OF SHEETS:
- C.500 ~ COVER SHEET
 - C.501 ~ WATER MAIN GENERAL LAYOUT
 - C.502 ~ WATER MAIN LINE PLAN & PROFILE
 - C.503 ~ WATER MAIN LINE PLAN & PROFILE
 - C.504 ~ DETAIL SHEET

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.
EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
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

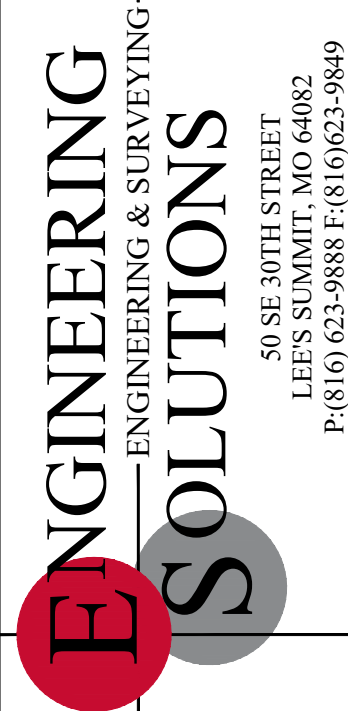
ENGINEER'S CERTIFICATION:

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

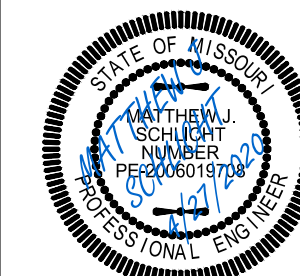


Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

THE ESTATES OF CHAPEL RIDGE-2ND PLAT
LOTS 23 & 24 AND
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

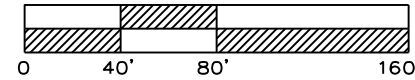
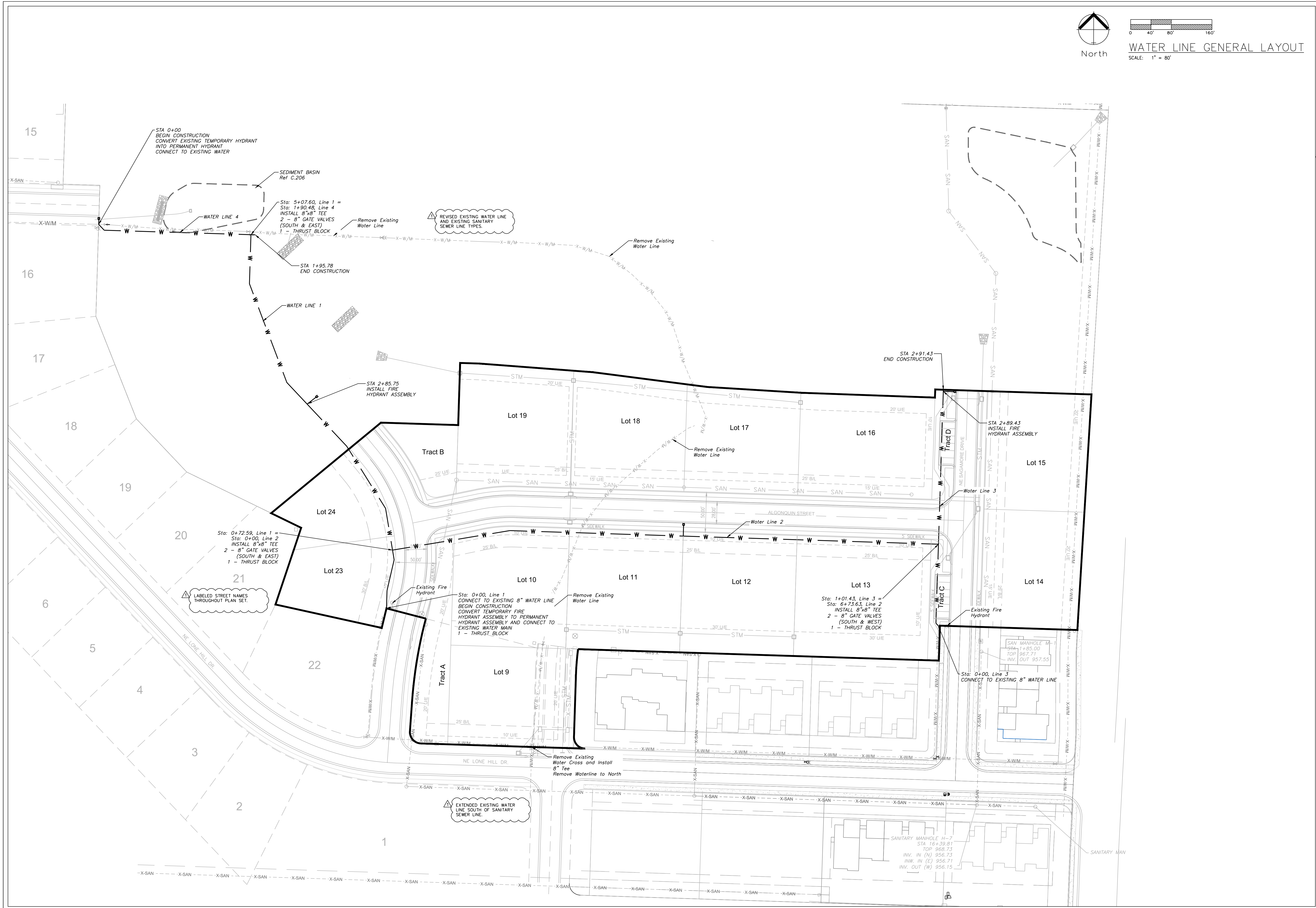
Project: VILLAGES OF CHAPEL RIDGE, L.S.M.O.
Issue Date: April 10, 2020

Water Main Cover Sheet
Construction Plans for:
THE ESTATES OF CHAPEL RIDGE-2ND PLAT
LOTS 23 & 24 AND
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri



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

REVISIONS
△ REV. 4/27/2020



WATER LINE GENERAL LAYOUT
SCALE: 1" = 80'

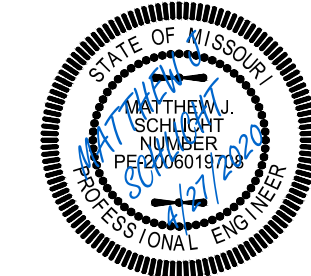


Professional Registration
Missouri
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Surveying 200500319-D
Kansas
Engineering E-1695
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Oklahoma
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LOTS 23 & 24 AND
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LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

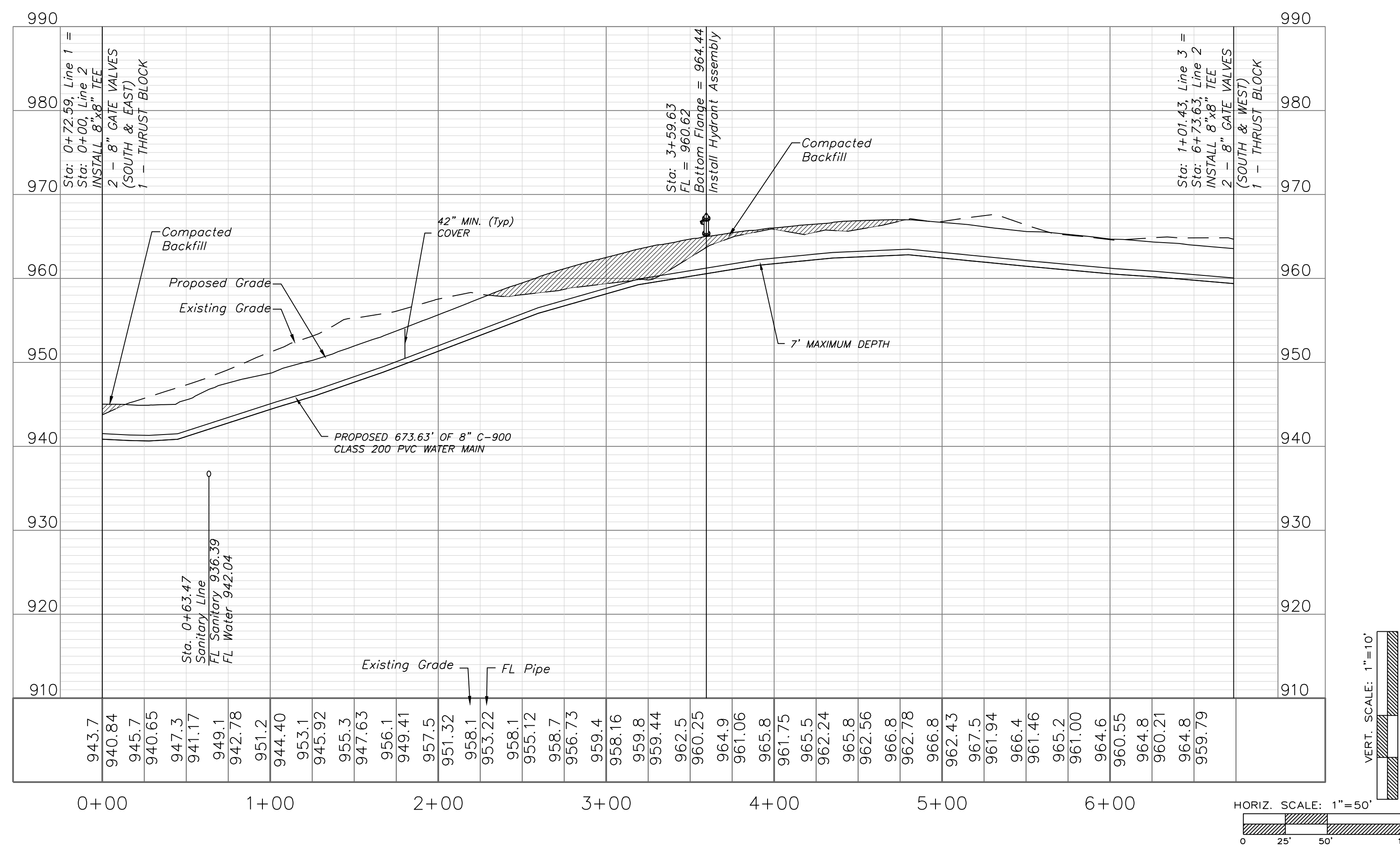
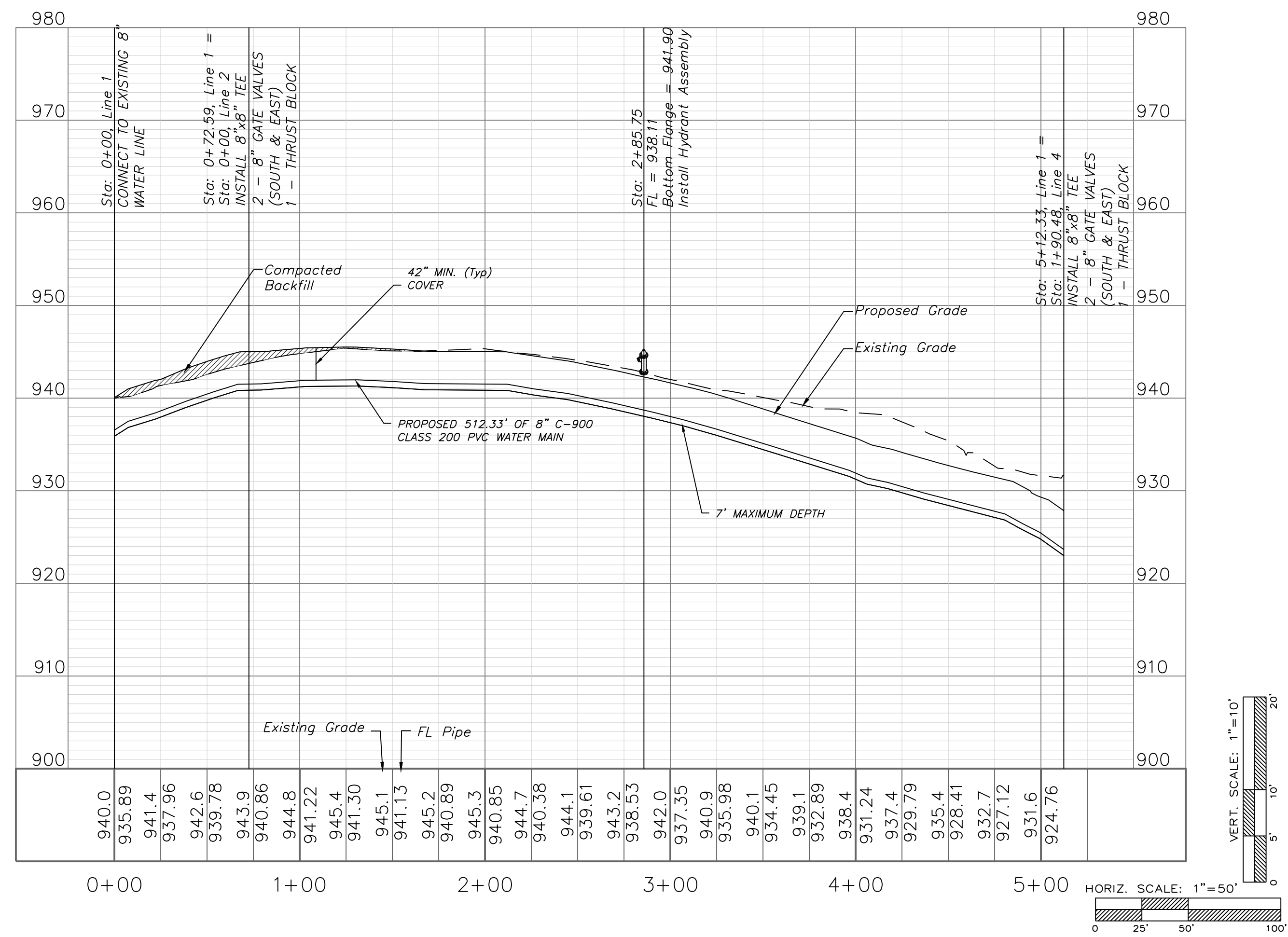
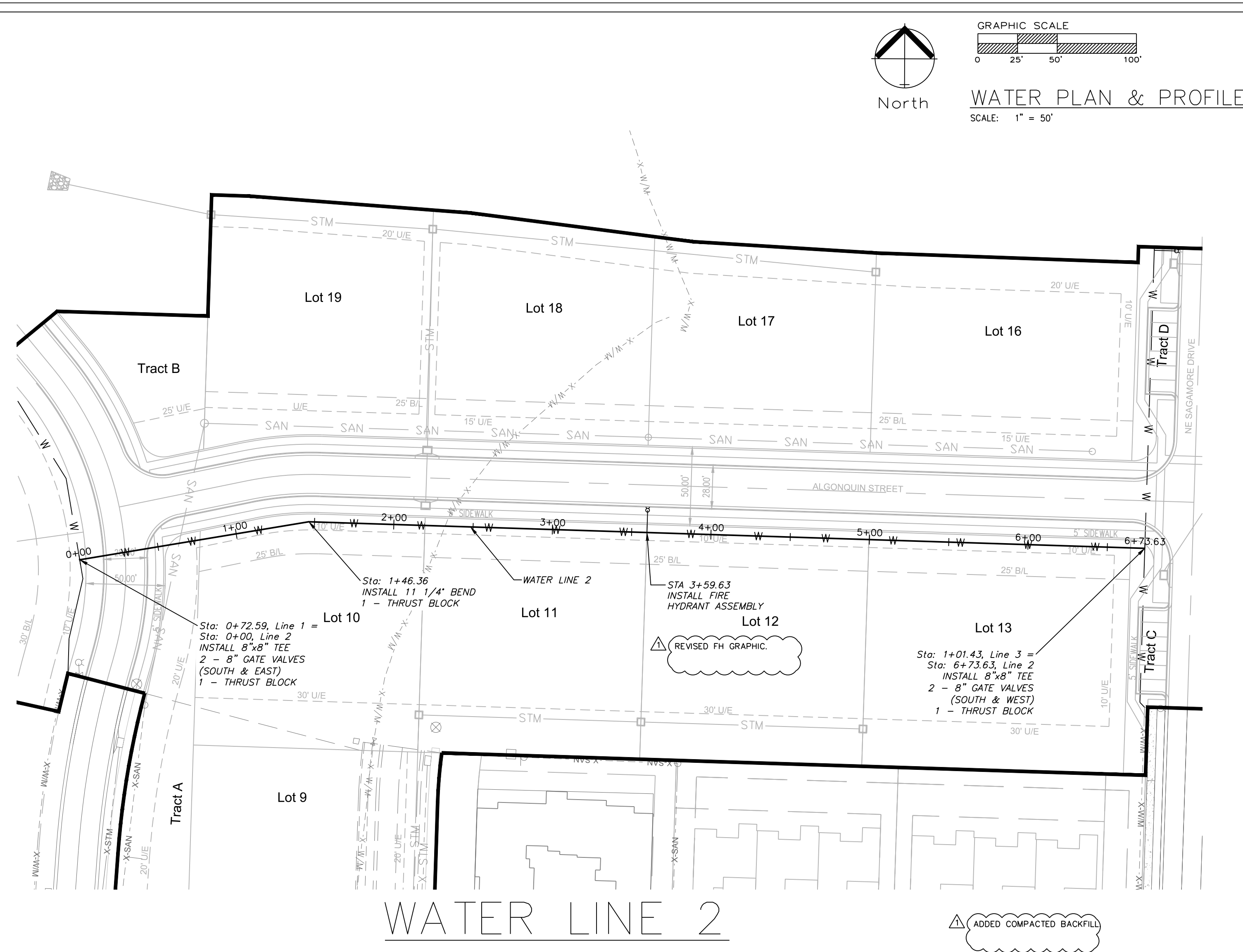
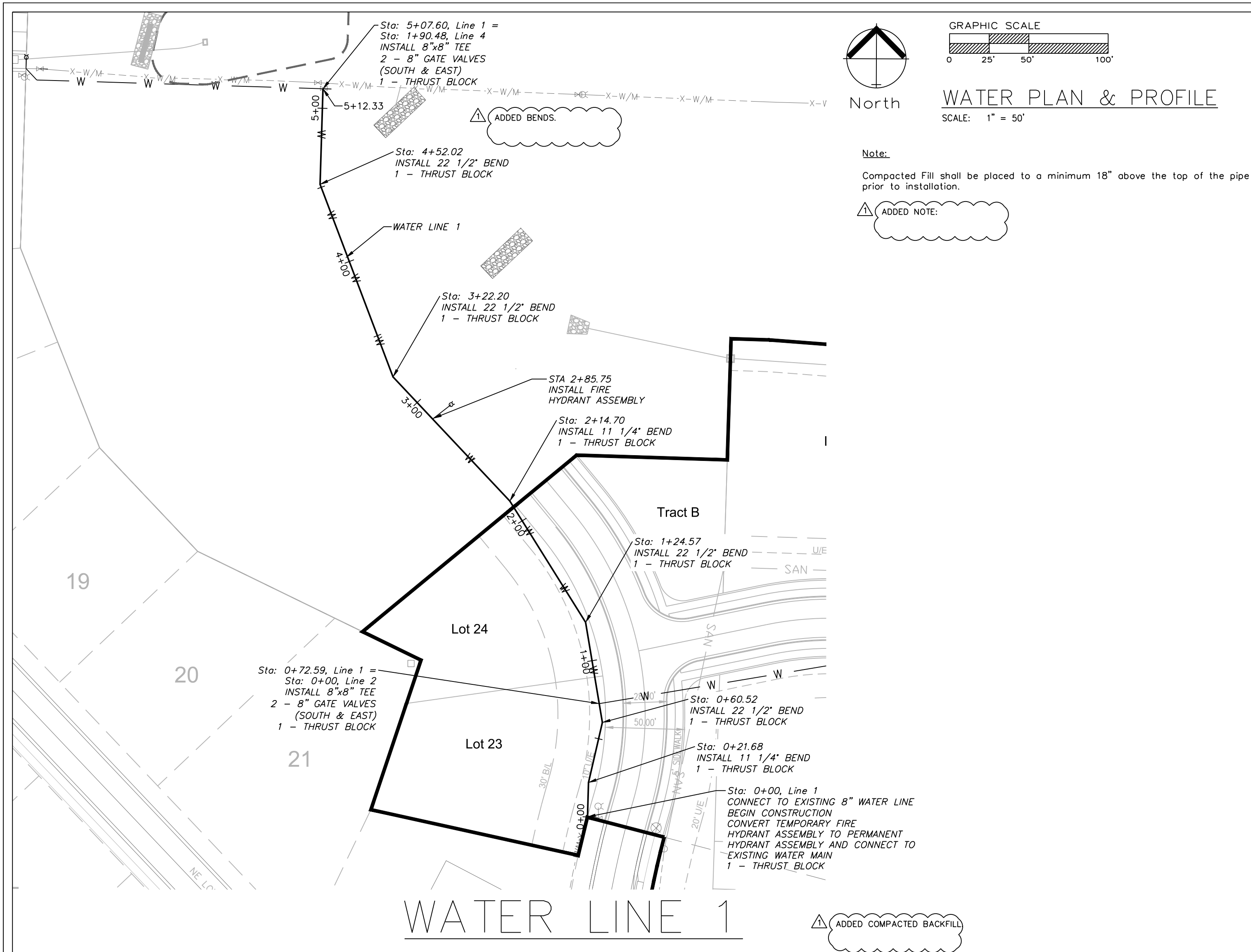
Project:
VILLAS OF CHAPEL
RIDGE, LSMO
Issue Date:
April 10, 2020

Water Line General Layout
Construction Plans for:
THE ESTATES OF CHAPEL RIDGE-2ND PLAT
LOTS 23 & 24 AND
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25228
NE PE E-1-114335

REVISIONS
REV. 4/27/2020



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
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6284
Nebraska
Engineering CA2821

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LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

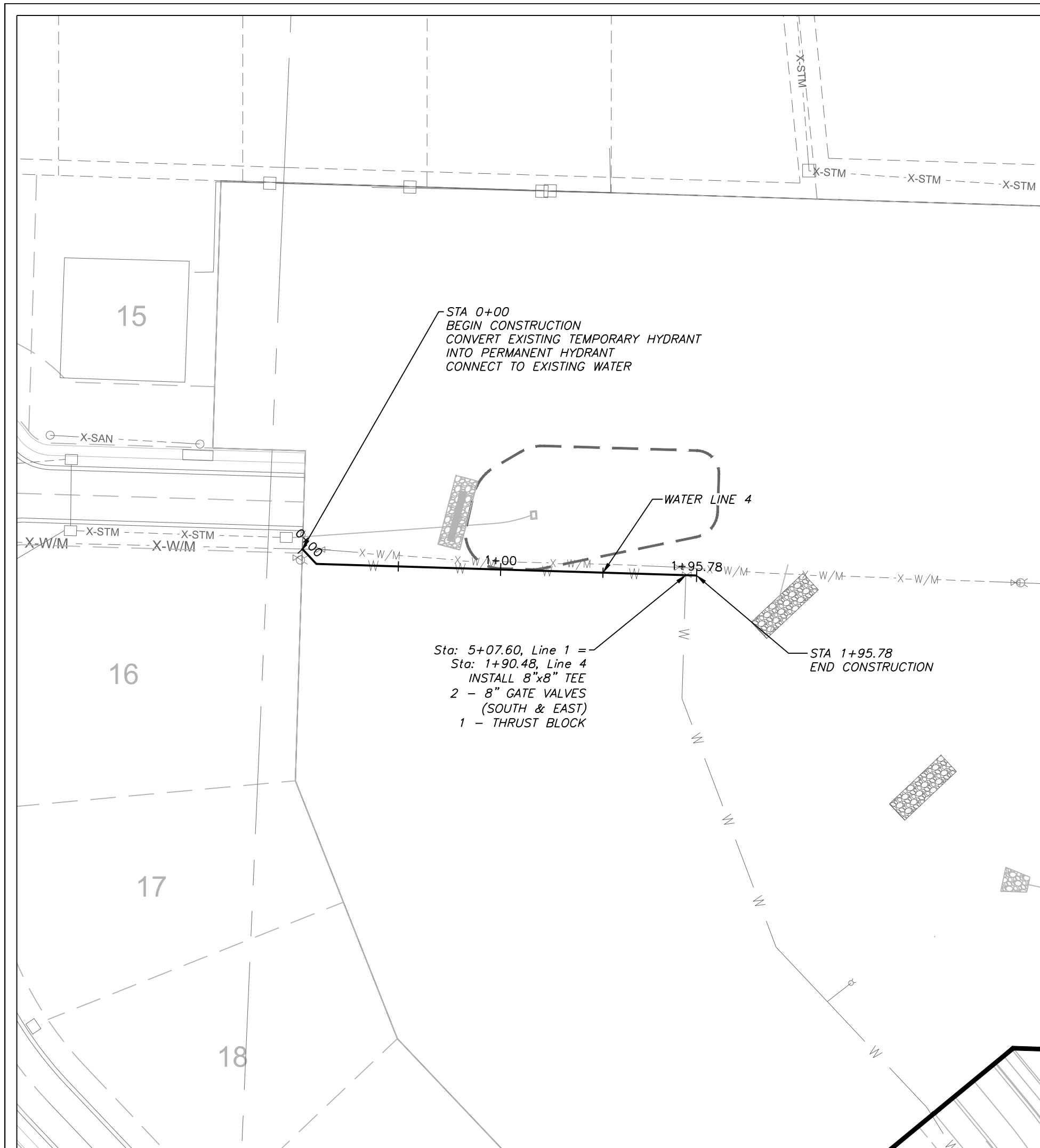
Project:
VILLAS OF CHAPEL
RIDGE-LSMO
Issue Date:
April 10, 2020

Water Main Plan and Profile, Line 2
Construction Plans for:
THE ESTATES OF CHAPEL RIDGE-2ND PLAT
LOTS 23 & 24 AND
THE TOWNHOMES OF CHAPEL RIDGE-2ND PLAT
LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

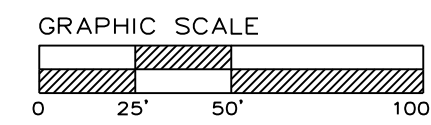
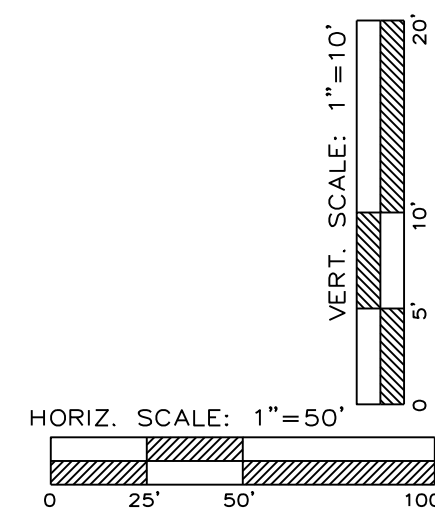
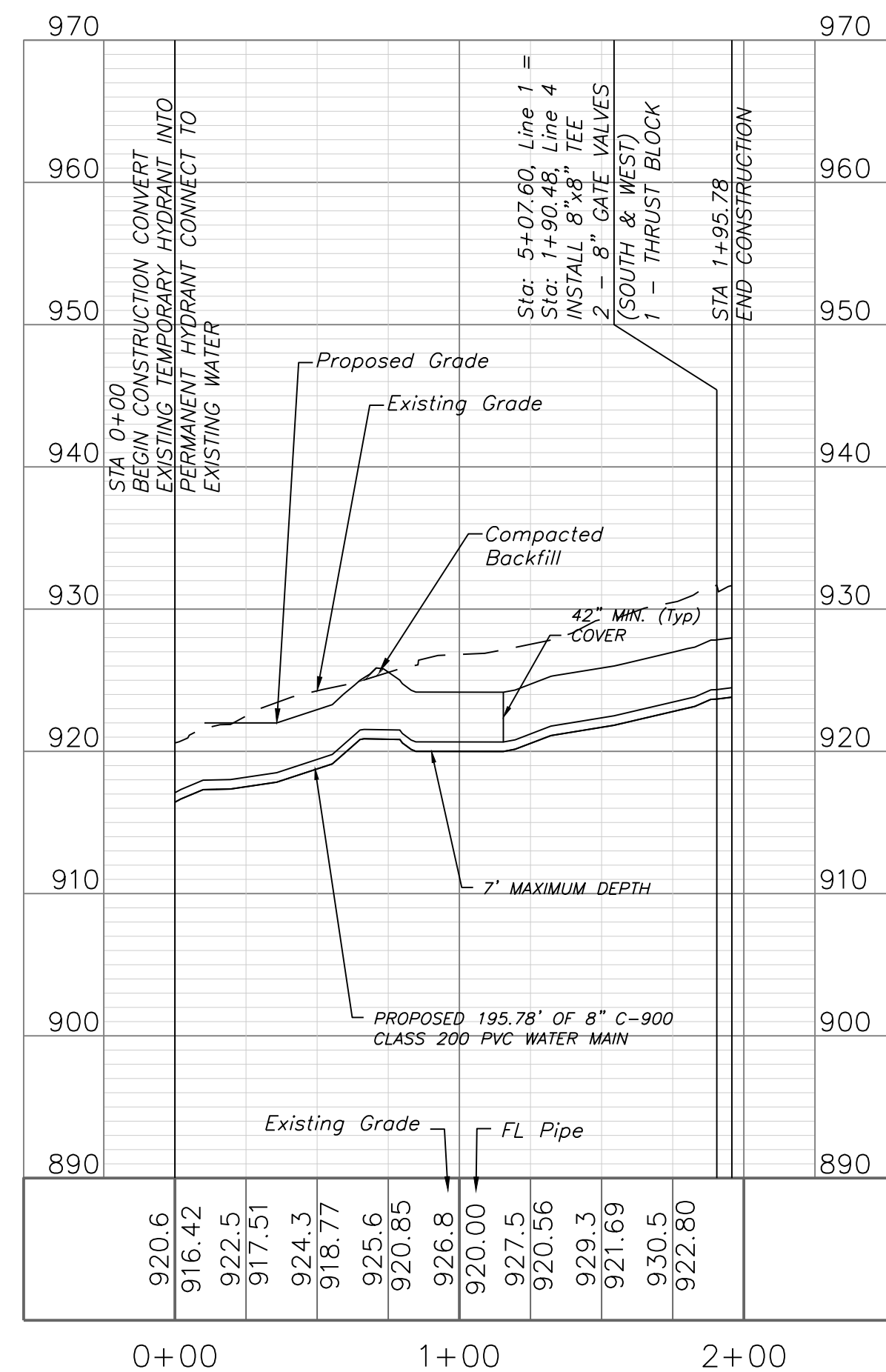
STATE OF MISSOURI
MATTHEW J. SCHLICHT
Professional Engineer
No. 0000019708
Exp. 12/31/2025
NE PE E-143355

REVISIONS
REV. 4/27/2020

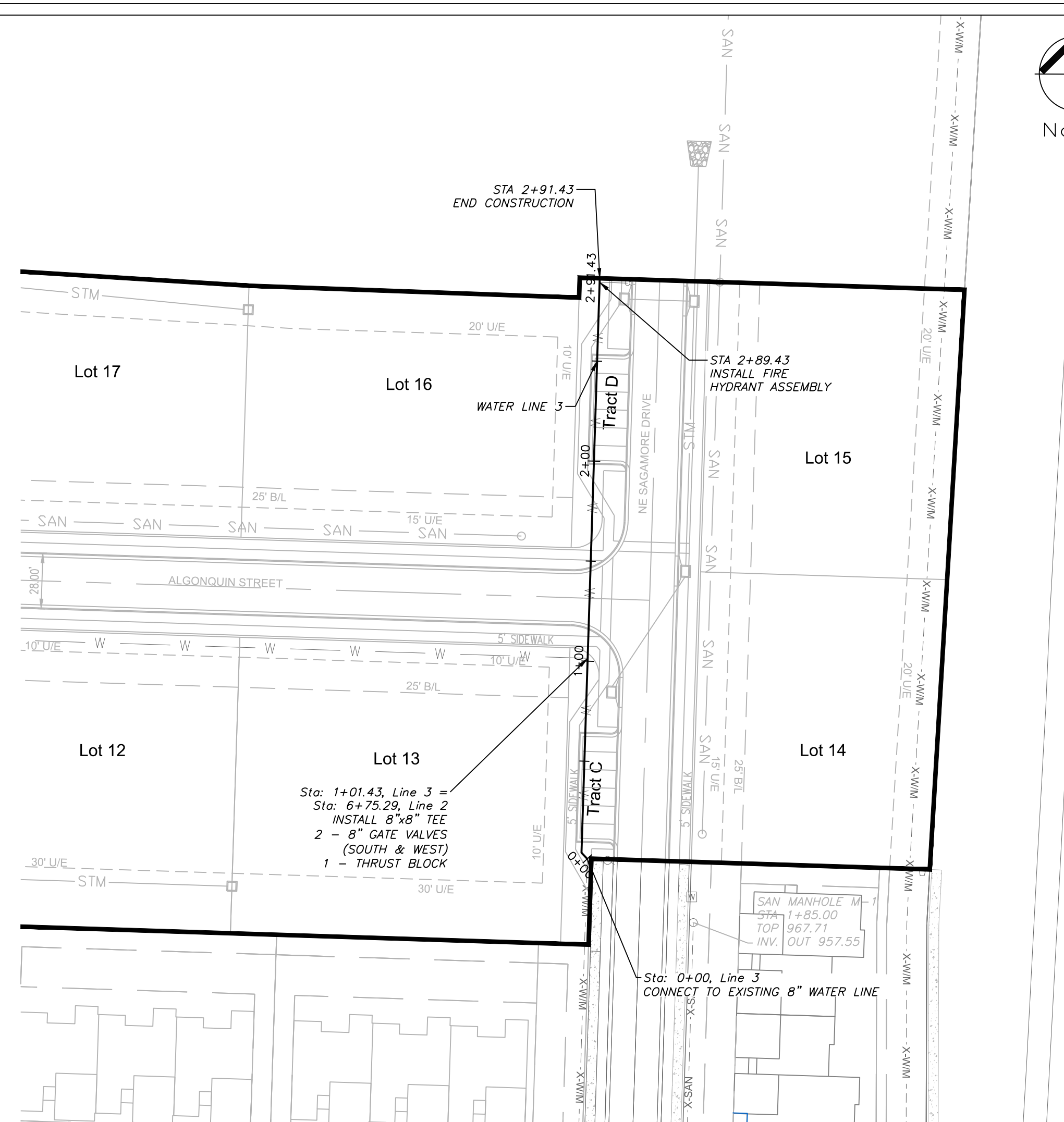
C.502



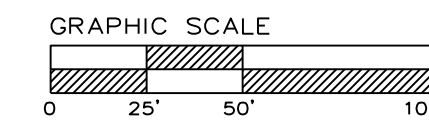
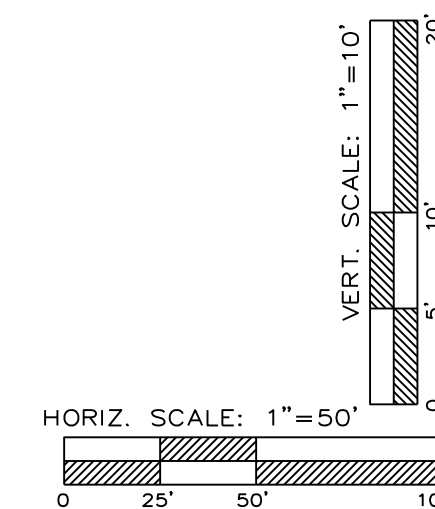
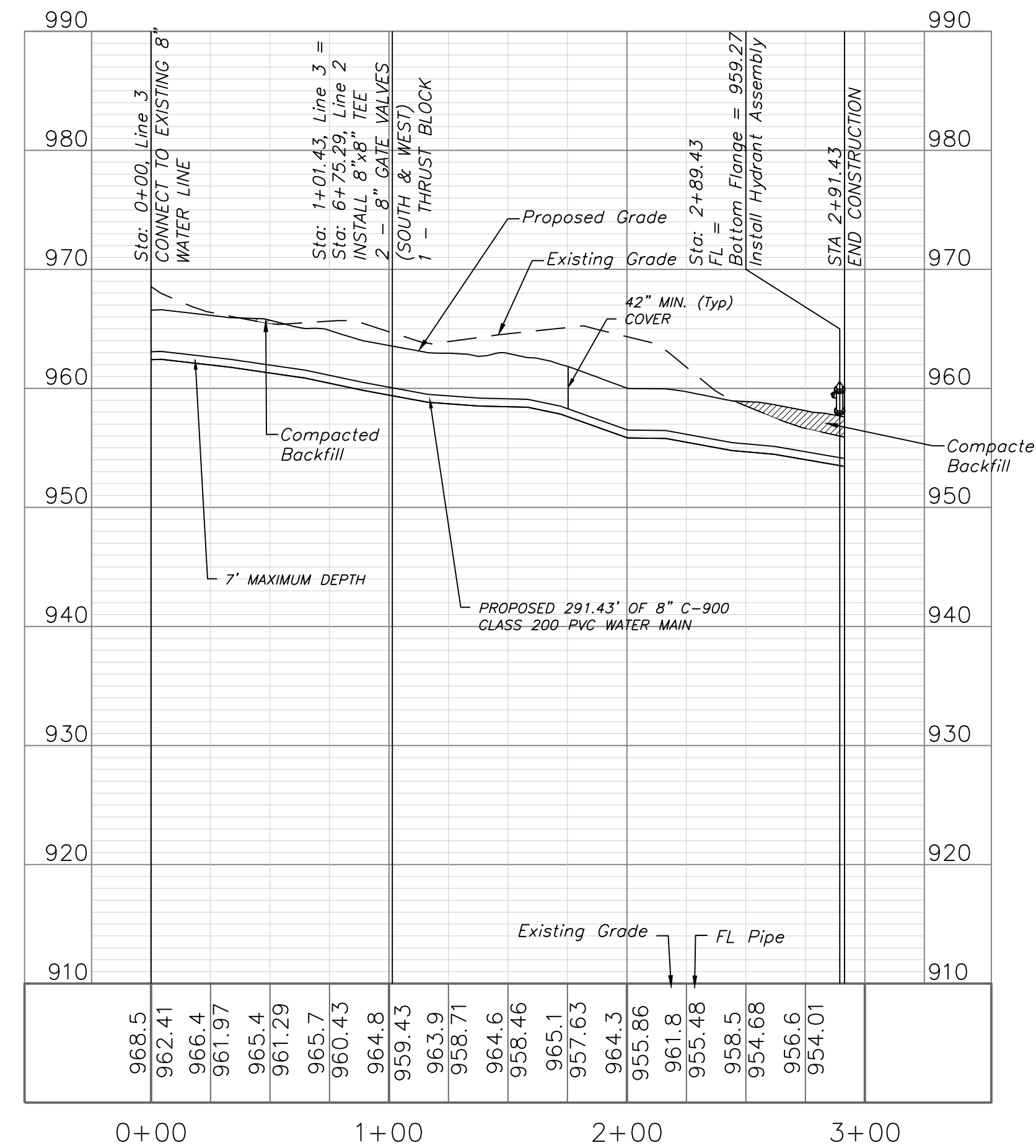
WATER LINE 4 (ADDED COMPACTED BACKFILL)



WATER PLAN & PROFILE
SCALE: 1" = 50'



WATER LINE 3 (ADDED COMPACTED BACKFILL)



WATER PLAN & PROFILE
SCALE: 1" = 50'

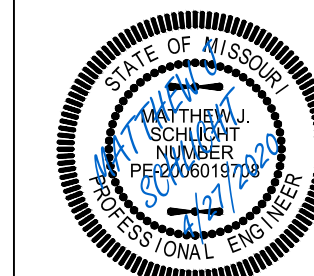
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THE ESTATES OF CHAPEL RIDGE-2ND PLAT
LOTS 23 & 24 AND
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LOTS 9-19 & TRACTS A-D
Lee's Summit, Jackson County, Missouri

Project: VILLAS OF CHAPEL RIDGE, LS MO
Issue Date: April 10, 2020

Water Main Plan and Profile, Line 2
Construction Plans for:
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Lee's Summit, Jackson County, Missouri

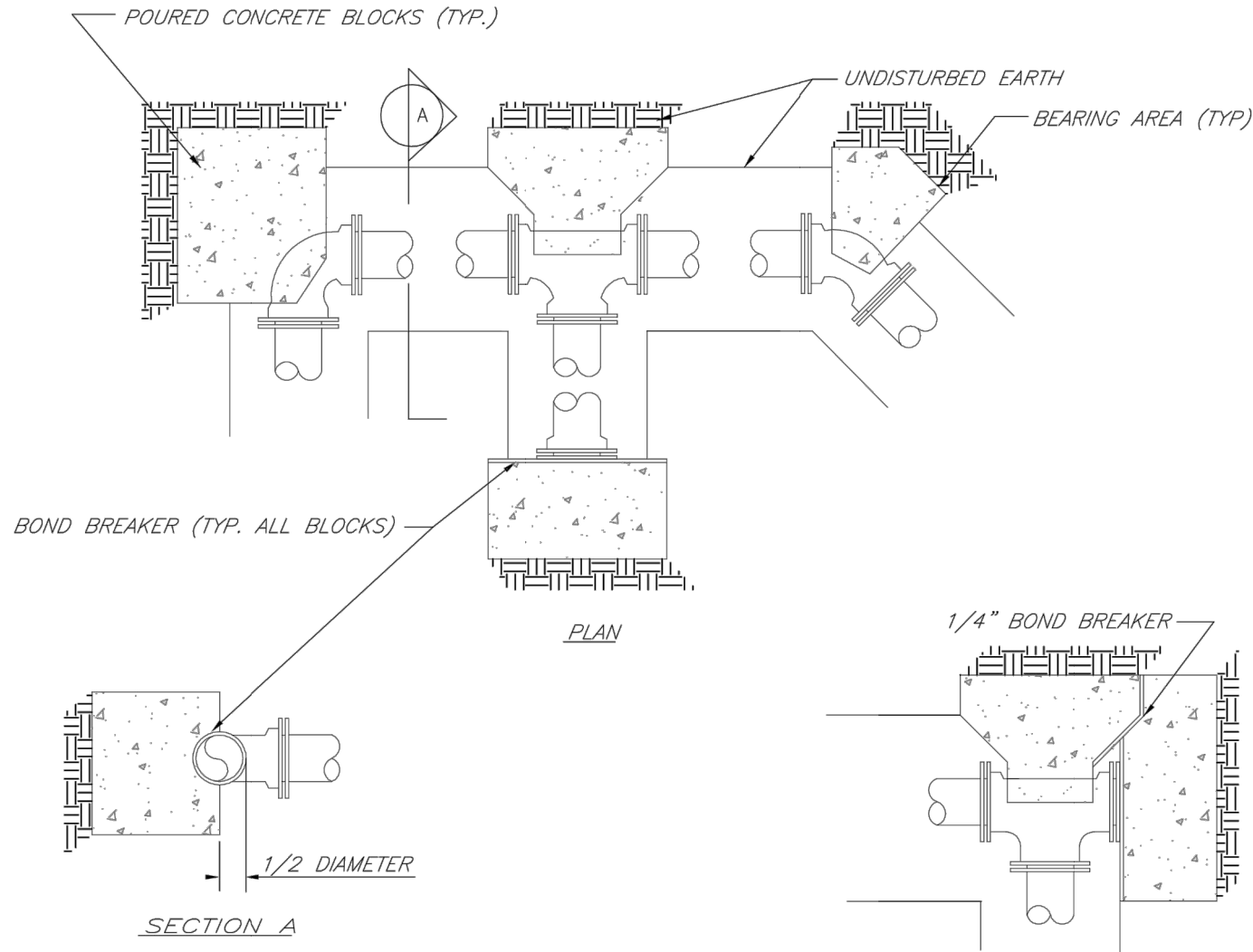


Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25228
NE PE E-114335

REVISIONS
REV. 4/27/2020

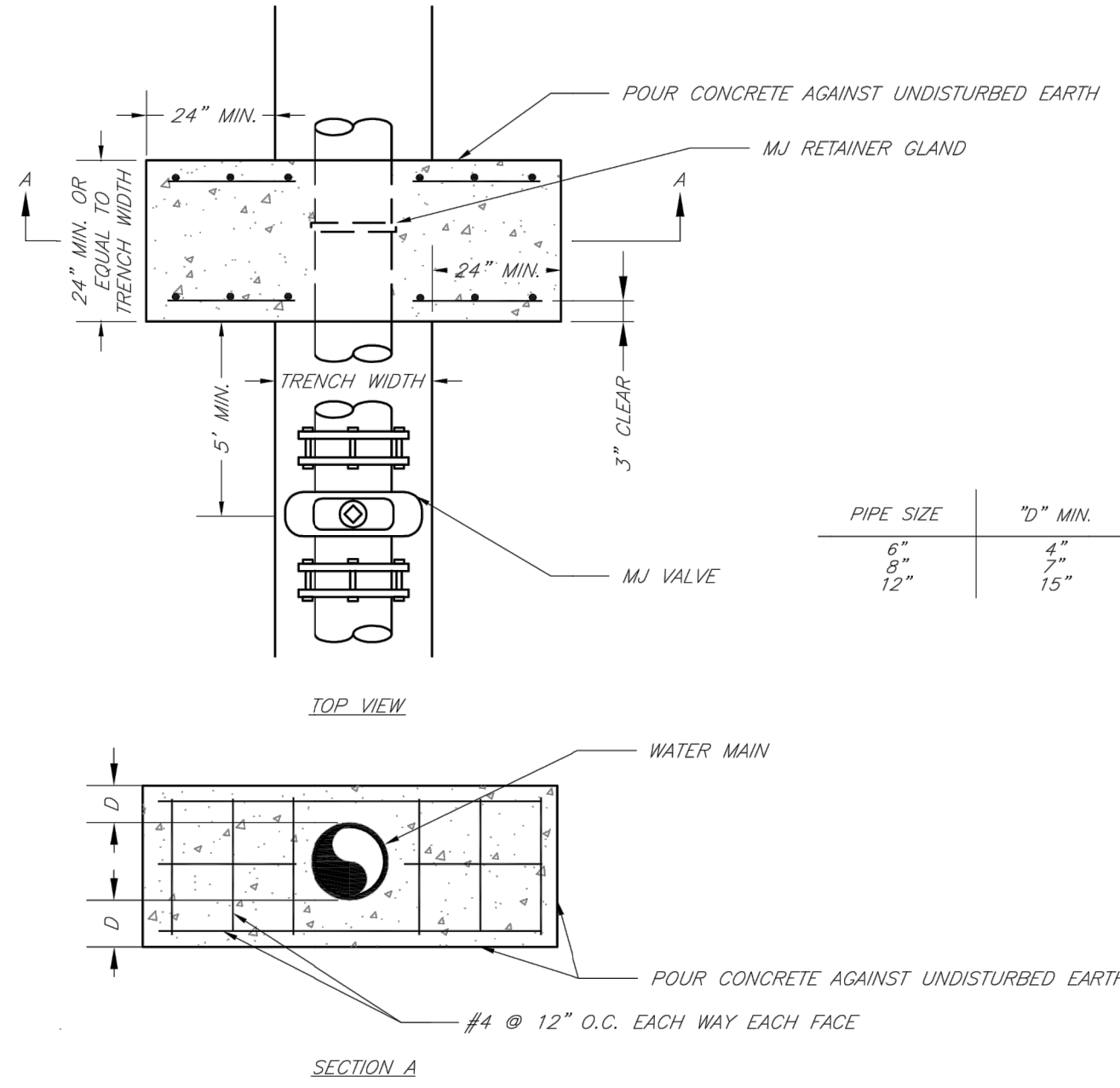
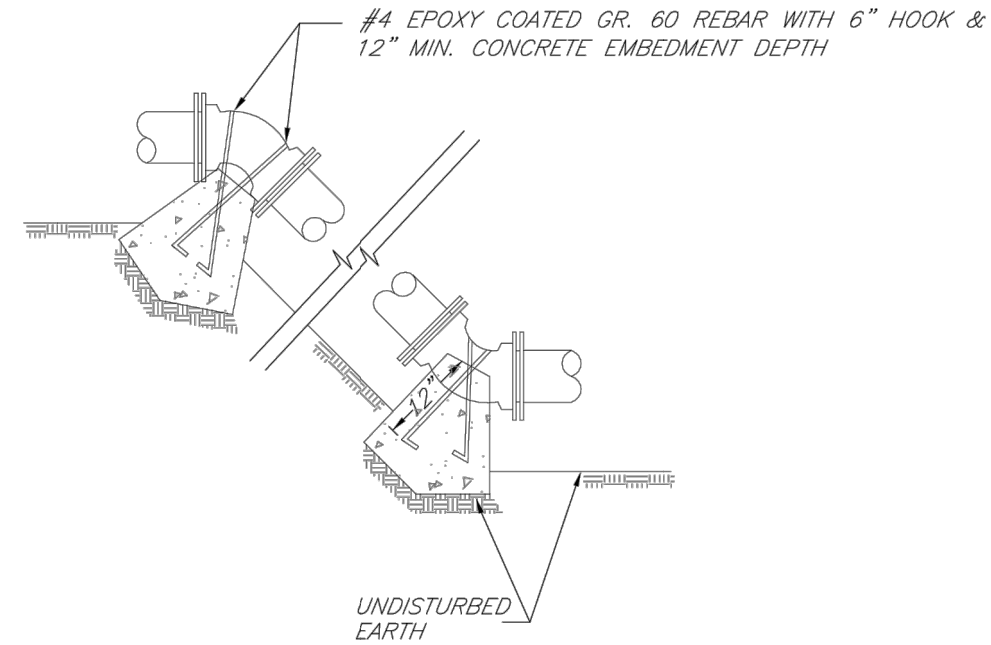
REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)							
NOM. DIA. (INCHES)	TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND		
6	4.7	6.7	4.0	4.0	4.0		
8	8.4	11.8	6.4	4.0	4.0		
10	13.1	18.5	10.0	5.1	4.0		
12	18.8	26.7	14.4	7.4	4.0		
14	25.7	36.3	19.6	10.0	5.0		
16	33.5	47.4	25.6	13.1	6.6		
18	42.4	REST. JT.	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. MEGA 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.



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.	134.6	76.8	39.6		
14	REST. JT.	REST. JT.	210.4	107.3	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		

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



- NOTE:
- THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

LS

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

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

HORIZONTAL THRUST BLOCKS

LS

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

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

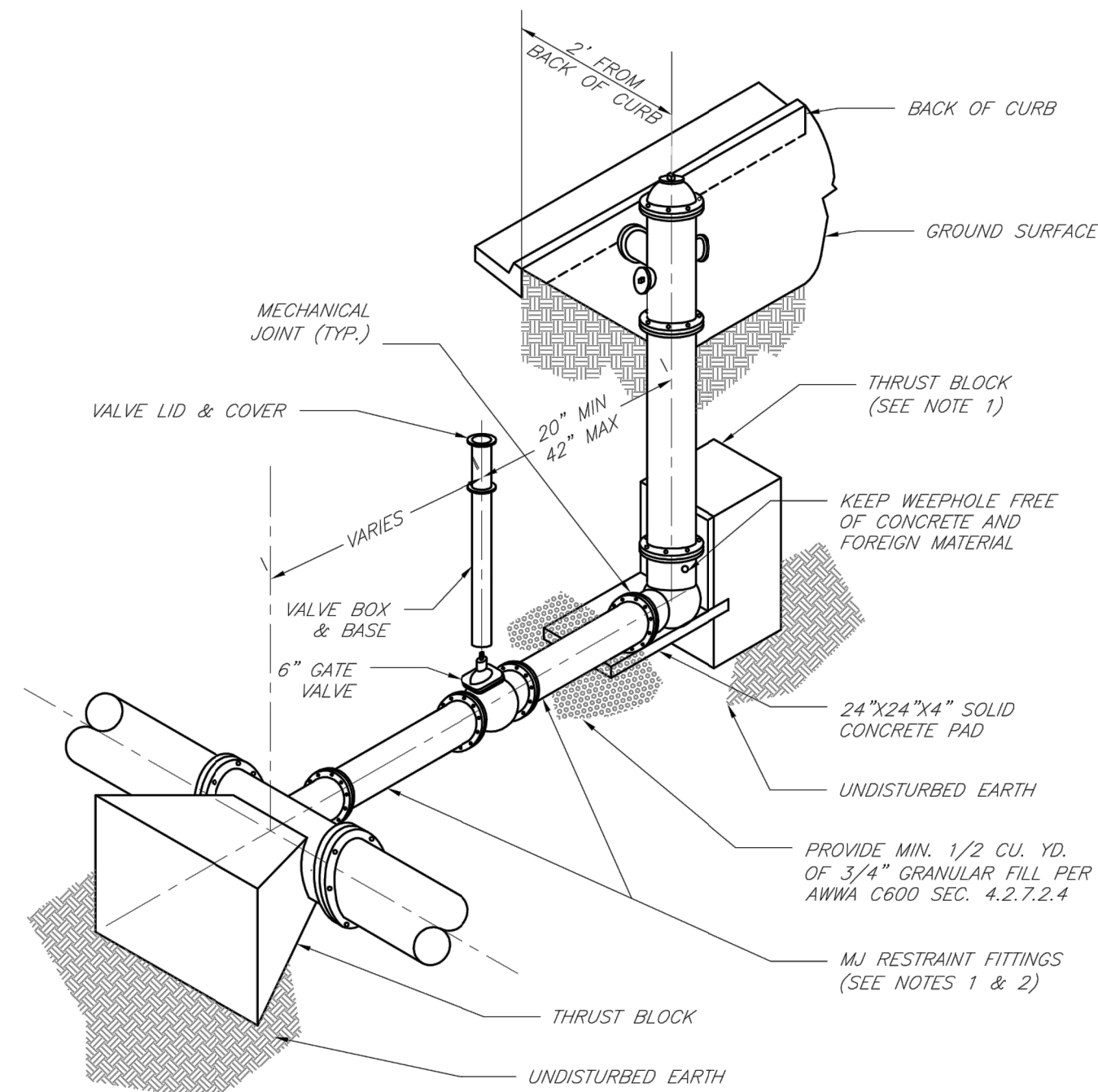
VERTICAL THRUST BLOCKS

LS

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

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

STRADDLE BLOCK



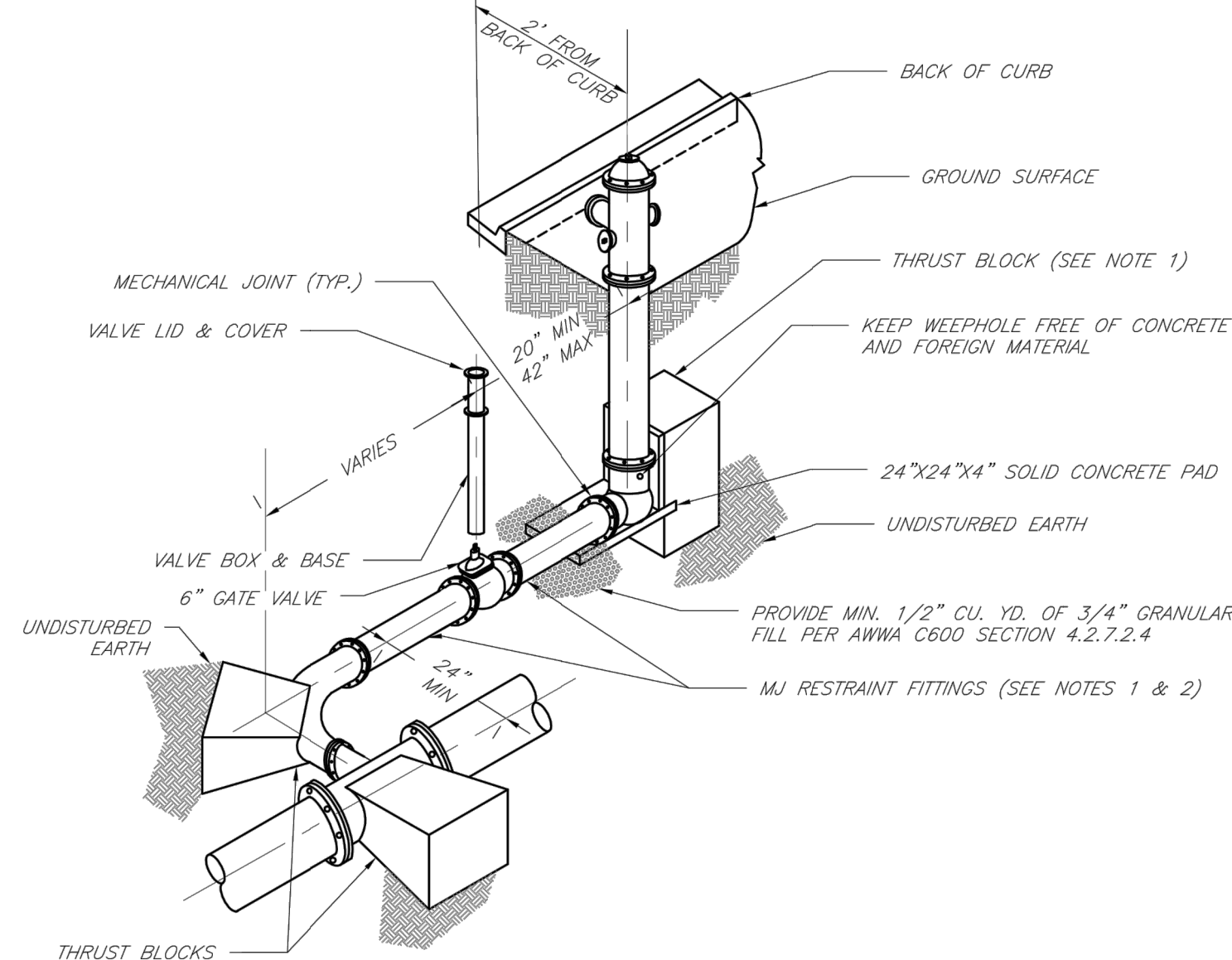
- NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
 2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
 3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
 4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
 5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
 6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LS

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

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-7
Rev: 1/14
Rev:

HYDRANT INSTALLATION - STRAIGHT SET



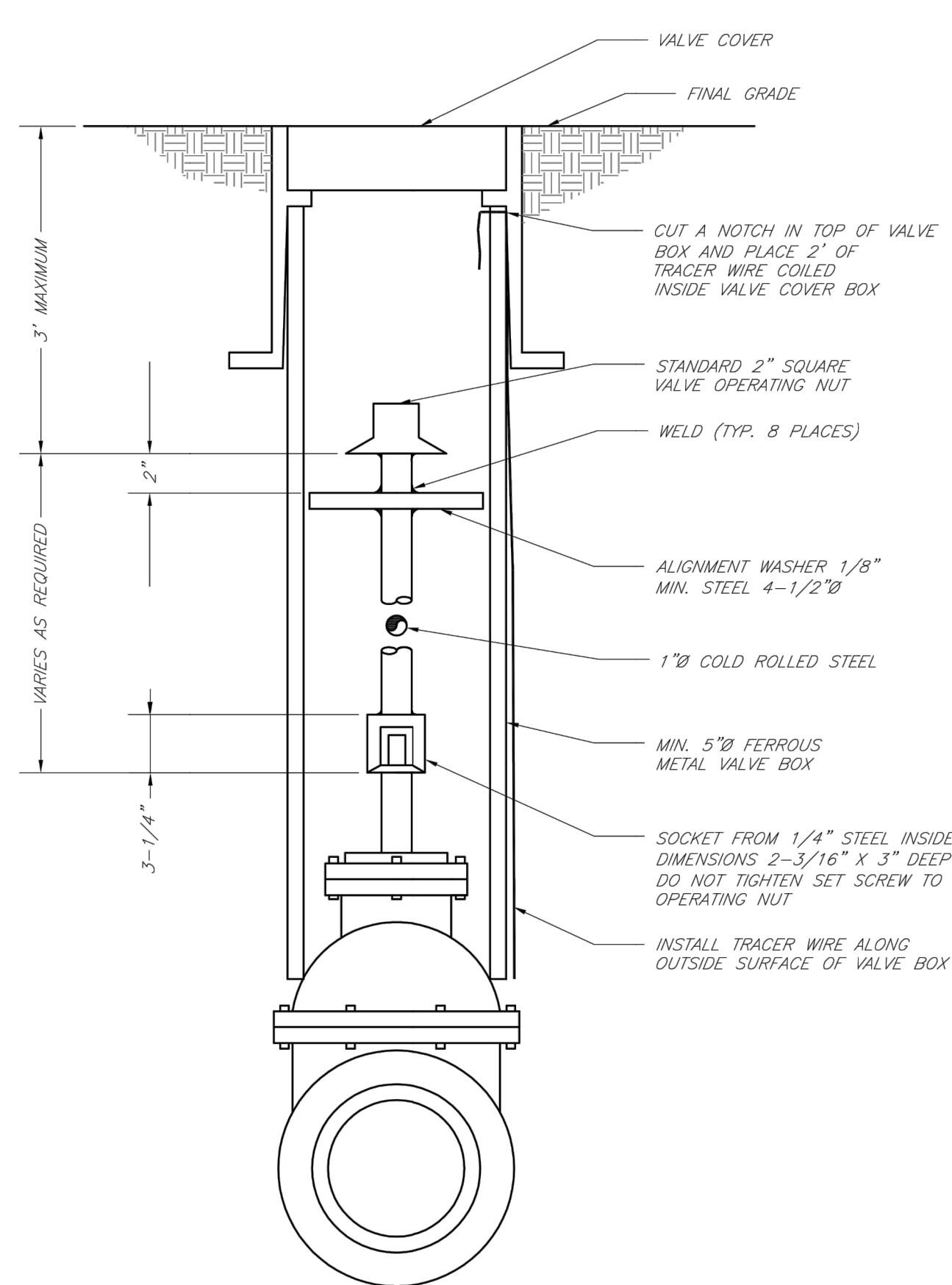
- NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
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LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-8
Rev: 1/14
Rev:

HYDRANT WITH 90 DEGREE BEND



LS

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

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-9
Rev: 1/14
Rev:

VALVE STEM EXTENSION AND VALVE BOX