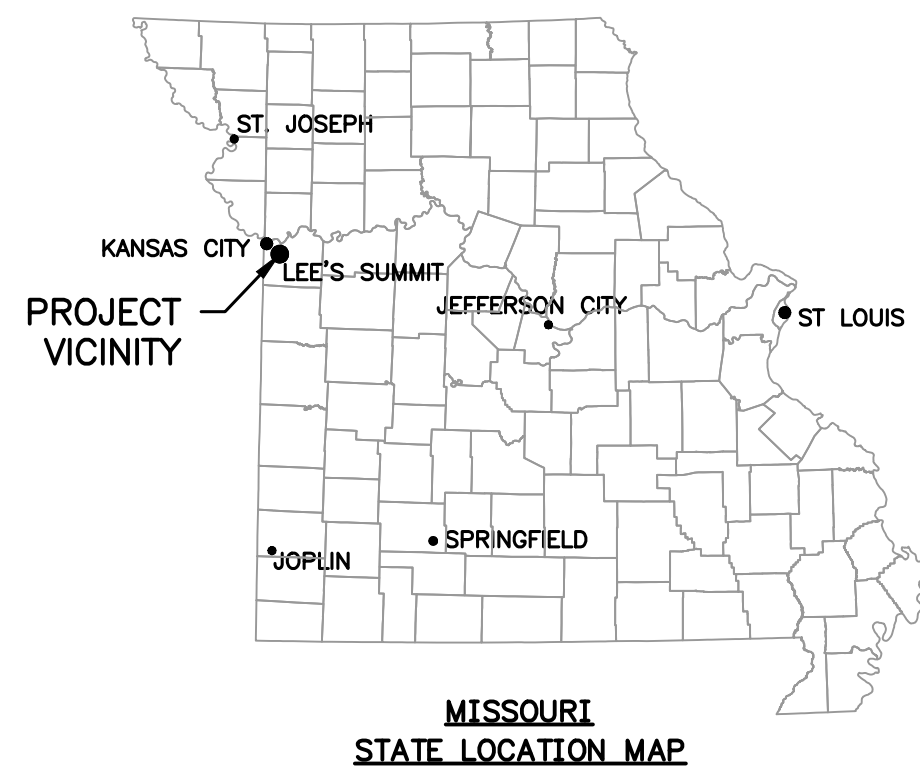


SUMMIT VIEW FARMS 4TH PLAT
LOTS 75-120 AND TRACT D

WATER LINE PLANS
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
SECTION 26, TOWNSHIP 47 N, RANGE 32W
LAMP RYNEARSON NO. 0318050.02



CALL OR CLICK 3 DAYS BEFORE YOU DIG!
MISSOURI ONE CALL SYSTEM
1-800-DIG-RITE OR 811
www.mo1call.com

ALL UTILITIES ARE SHOWN BASED ON THE INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL FACILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION. COORDINATE NECESSARY RELOCATIONS WITH UTILITY COMPANIES.

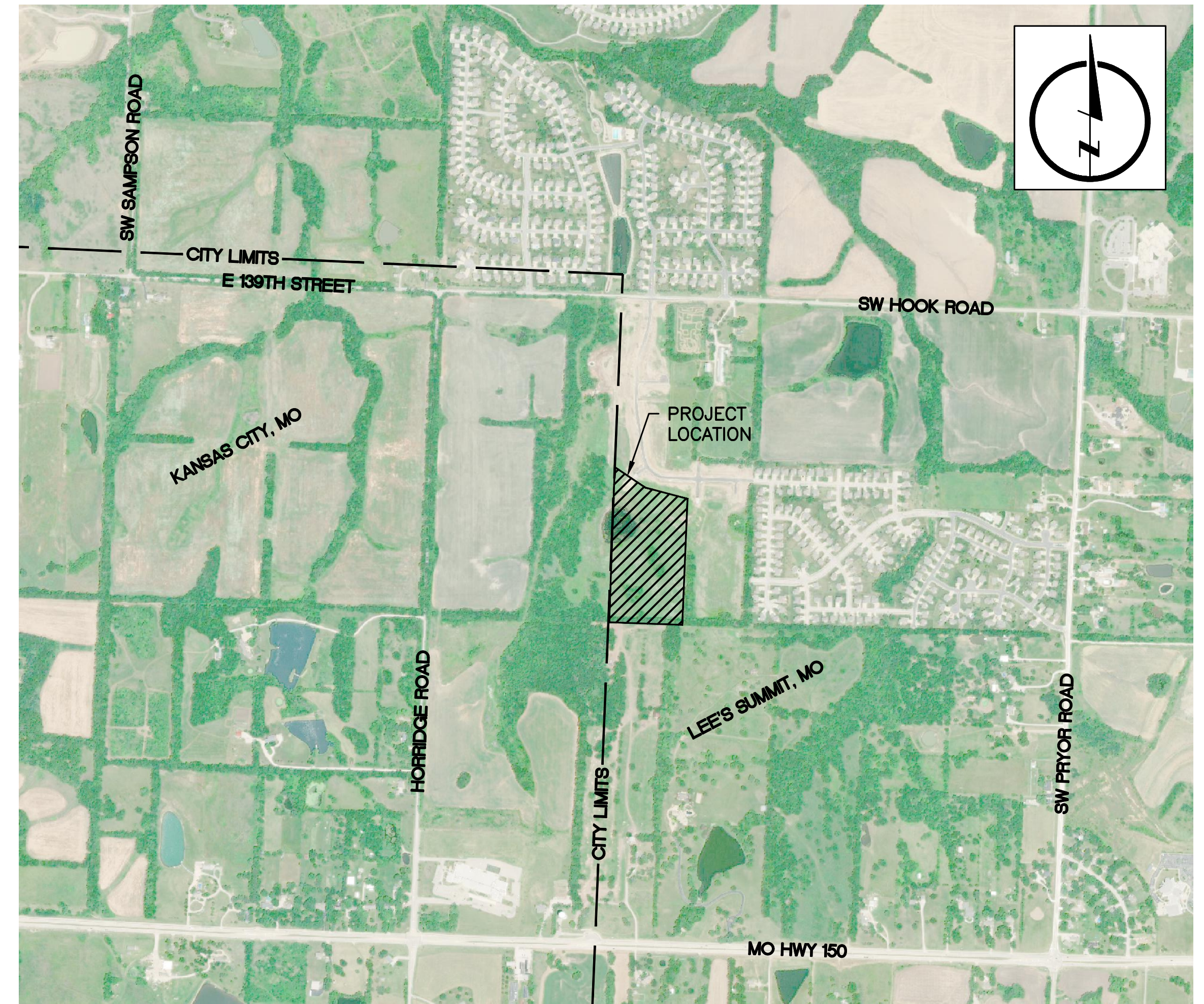
UTILITIES		
ELECTRIC:	EVERGY	(816) 471-5275
GAS:	SPIRE ENERGY	(816) 756-5252
TELEPHONE:	AT&T	(816) 325-5607
CABLE:	SPECTRUM	(816) 358-8833
	GOOGLE	(415) 736-9962
WATER:	LEE'S SUMMIT WATER UTILITIES	(816) 969-1900

OWNER CONTACT
BILL KENNEY
SUMMIT VIEW FARMS DEVELOPMENT GROUP, LLC
P.O. BOX 291
LEE'S SUMMIT, MO 64063
billkenney9@gmail.com
(816) 838-0552

CONSULTANT CONTACT
DAN MCGHEE
LAMP RYNEARSON
9001 STATE LINE ROAD, SUITE 200
KANSAS CITY, MO 64114
Dan.McGhee@lamprynearson.com
(816) 361-0440

LAMP
RYNEARSON

9001 State Line Rd., Ste. 200
Kansas City, MO 64114
816.361.0440
LampRynearson.com



LOCATION MAP

INDEX OF SHEETS

- | | |
|----|---|
| 01 | COVER SHEET |
| 02 | GENERAL LAYOUT PLAN SHEET |
| 03 | WATER LINE PLAN AND PROFILE LINE 4-01 SHEET |
| 04 | WATER LINE PLAN AND PROFILE LINES 4-02 AND 4-03 SHEET |
| 05 | WATER LINE PROFILE LINES 4-04 AND 4-05 SHEET |
| 06 | WATER DETAILS SHEET |

ESTIMATED SUMMARY OF QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT
1	6" WATER MAIN (PVC AWWA C900)	414	LF
2	8" WATER MAIN (PVC AWWA C900)	2,365	LF
3	8" X 8" TEE (DUCTILE IRON)	4	EA
4	6" 11.25, 22.5, OR 45 DEGREE BEND	7	EA
5	8" 11.25, 22.5, OR 45 DEGREE BEND	25	EA
6	THRUST BLOCKS	57	EA
7	8" GATE VALVE	6	EA
8	8"X6" REDUCER	3	EA
9	6" RESTRAINED CAP	1	EA
10	8" RESTRAINED CAP	2	EA
11	FIRE HYDRANT ASSEMBLY	6	EA

RECORD DRAWING

THE INFORMATION PROVIDED ON THIS DRAWING CONFORMS TO CONSTRUCTION RECORDS; IT IS NOT INTENDED FOR CONSTRUCTION, IMPLEMENTATION OR RECORDING PURPOSES; AND IT IS SOLELY BASED ON INFORMATION OBTAINED BY LAMP RYNEARSON.

ONLY WATER VALVES AND FIRE HYDRANT ASSEMBLIES WERE AS-BUILT. THE ACTUAL LOCATION OF THE WATER LINE, HORIZONTALLY AND VERTICALLY, WERE NOT FIELD VERIFIED.

DATE: 01-06-2022
CERTIFIED BY: MARK DANIEL MCGHEE JR.
TITLE: SENIOR PROJECT MANAGER
FIRM: LAMP RYNEARSON

APPROVED: 
MARK DANIEL MCGHEE JR., PE

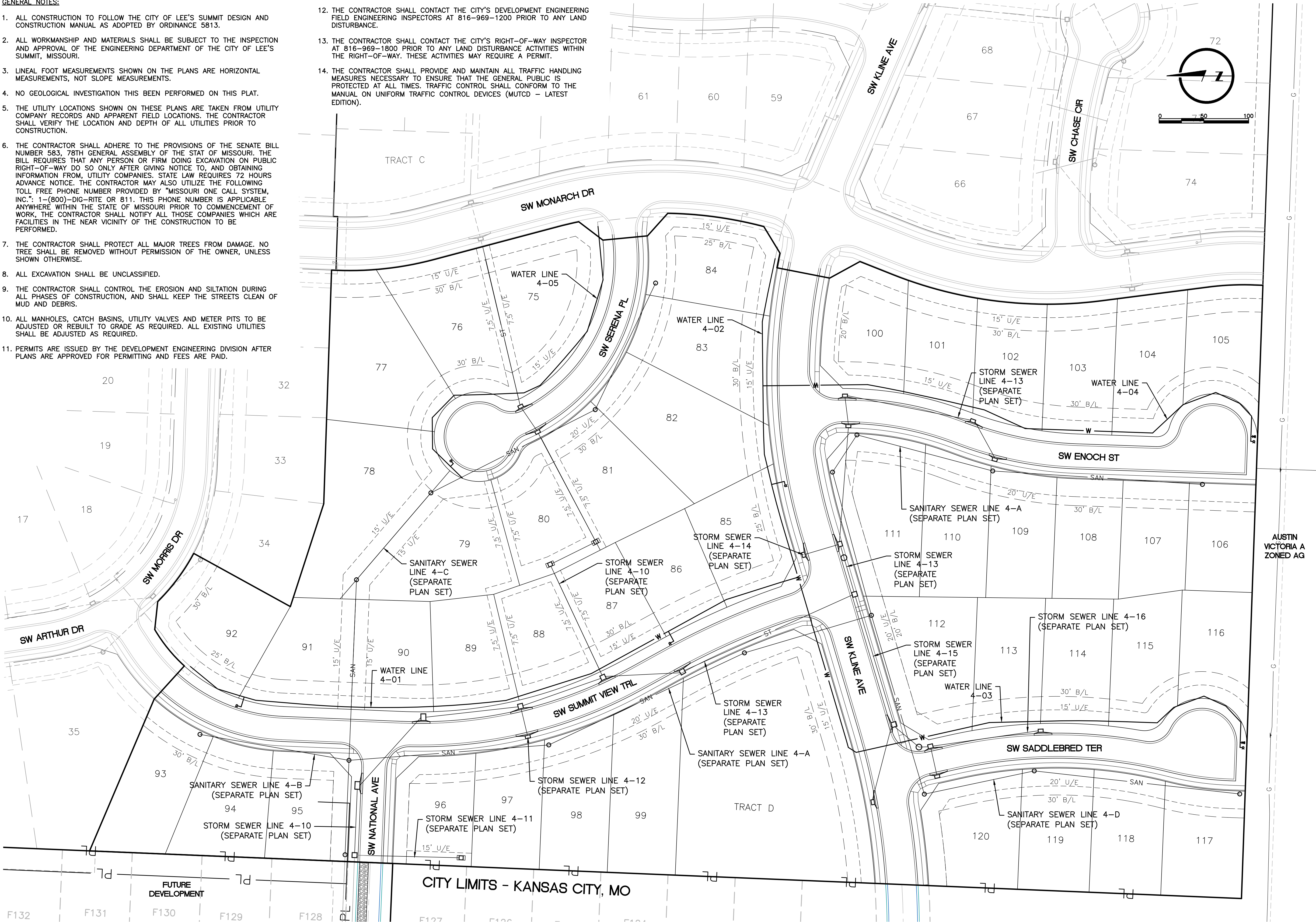
DATE: 01-06-2022



GENERAL NOTES:

1. ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
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 THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS.
4. NO GEOLOGICAL INVESTIGATION THIS BEEN PERFORMED ON THIS PLAT.
5. THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STAT OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT-OF-WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 72 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-(800)-DIG-RITE OR 811. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH ARE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
7. THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
8. ALL EXCAVATION SHALL BE UNCLASSIFIED.
9. THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
10. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. ALL EXISTING UTILITIES SHALL BE ADJUSTED AS REQUIRED.
11. PERMITS ARE ISSUED BY THE DEVELOPMENT ENGINEERING DIVISION AFTER PLANS ARE APPROVED FOR PERMITTING AND FEES ARE PAID.

12. THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT ENGINEERING FIELD ENGINEERING INSPECTORS AT 816-969-1200 PRIOR TO ANY LAND DISTURBANCE.
13. THE CONTRACTOR SHALL CONTACT THE CITY'S RIGHT-OF-WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT-OF-WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
14. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD - LATEST EDITION).



LAMP RYNEARSON
MO CERT. NO. 2013011903



MARK DANIEL MCGHEE, JR.
PE - 2008019568

REVISIONS	
01/07/2020	PER CITY COMMENTS
03/18/2020	ADDED DEFLECTIONS
04/03/2020	PER CITY COMMENTS
12/29/2021	ASBUILTS

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816.361.0440
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SUMMIT VIEW FARMS 4TH PLAT

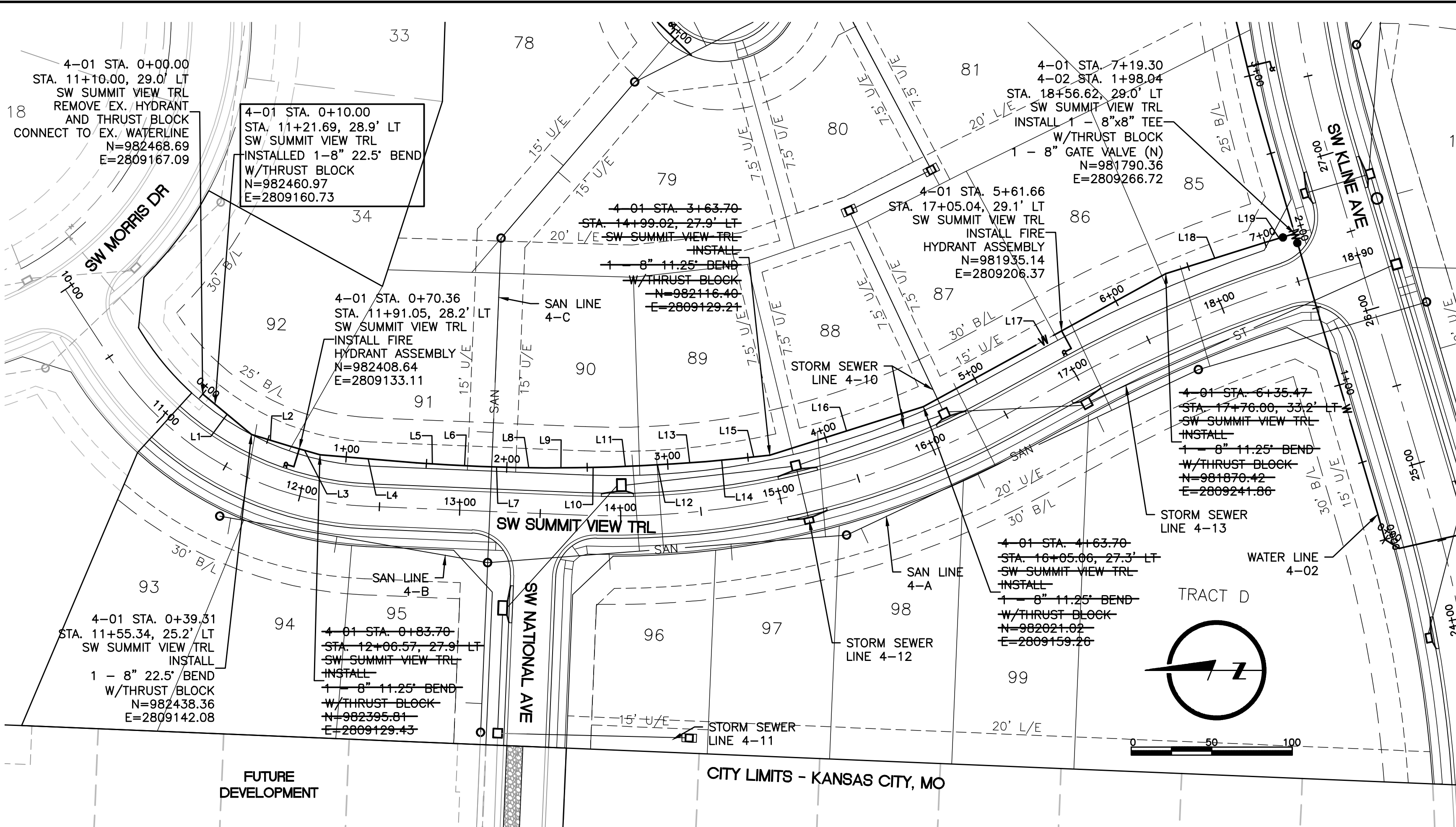
WATER LINE PLANS
GENERAL LAYOUT PLAN SHEET

DESIGNER / DRAFTER
AJM
DATE
11/20/2019
PROJECT NUMBER
0318050.02
BOOK AND PAGE

SHEET

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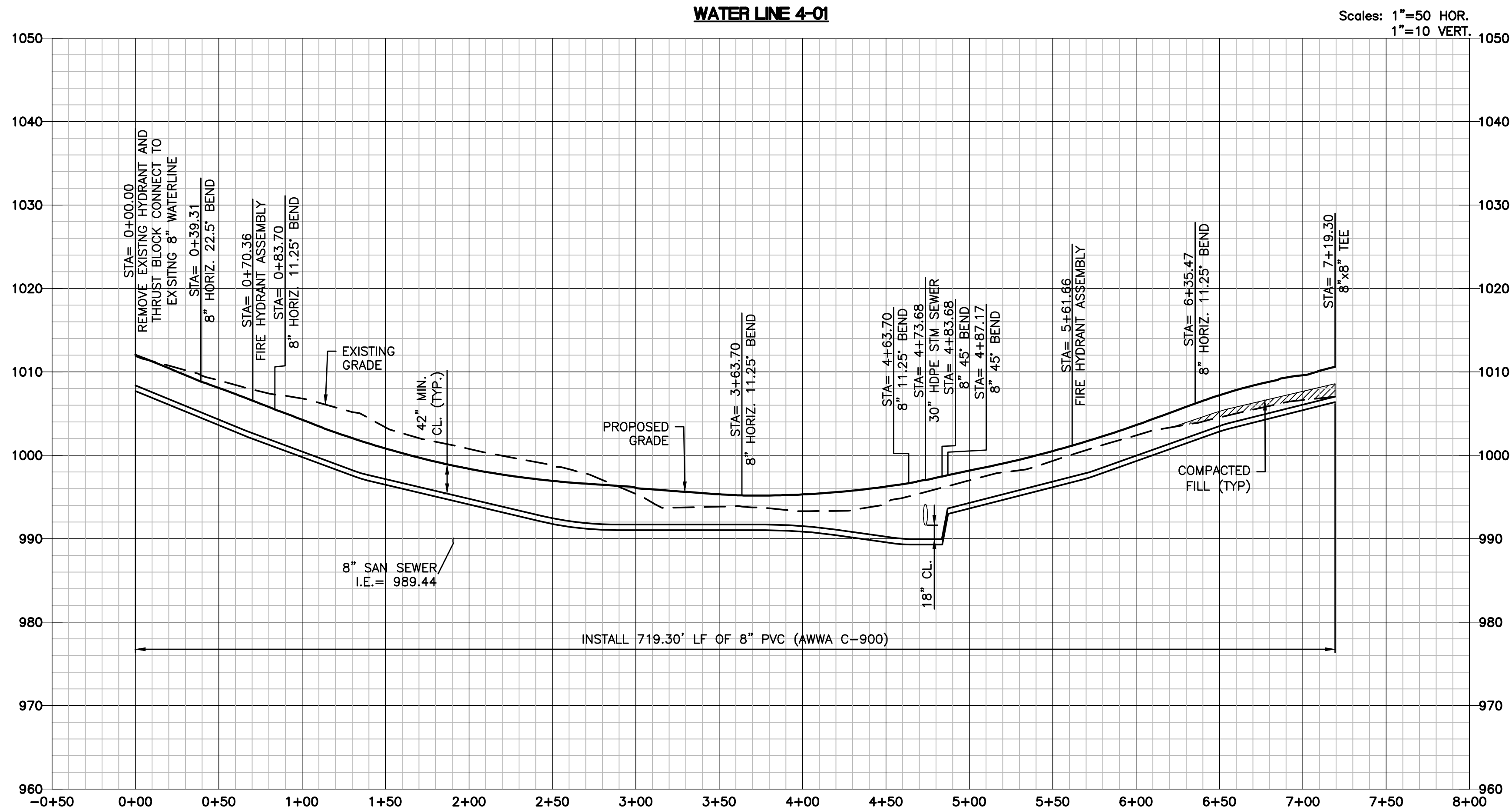
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WATER MAIN NOTES:

1. WATER MAINS AND SANITARY SEWER MAINS (INCLUDING STRUCTURES) SHALL HAVE AT LEAST 10'-FT OF HORIZONTAL SEPARATION FROM EDGE OF WATER PIPE TO EDGE OF SEWER PIPE OR SEWER STRUCTURE.
2. WATER MAINS AND SANITARY SEWERS SHALL HAVE AT LEAST 18-INCHES OF VERTICAL SEPARATION FROM EDGE OF PIPE TO EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE WATER MAIN JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER MAIN JOINTS.
3. CONCRETE THRUST BLOCKS SHALL BE INSTALLED AT ALL HORIZONTAL FITTING, VERTICAL FITTING, AND FIRE HYDRANT ASSEMBLY LOCATIONS IN ACCORDANCE WITH CITY STANDARD DETAILS WAT-1, WAT-2, AND WAT-8.
4. COMPACTED FILL SHALL BE PLACED TO A MINIMUM 18" ABOVE THE TOP OF PIPE PRIOR TO INSTALLATION.

ALIGNMENT TABLE 4-01					
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING	
L1	39.31	S39° 30' 33.58"W	N=982468.69/E=2809167.09	N=982438.36/E=2809142.08	
L2	24.40	S17° 00' 33.58"W	N=982438.36/E=2809142.08	N=982415.03/E=2809134.95	
L3	20.00	S16° 00' 33.58"W	N=982415.03/E=2809134.95	N=982395.81/E=2809129.43	
L4	60.00	S04° 45' 33.58"W	N=982395.81/E=2809129.43	N=982336.01/E=2809124.45	
L5	20.00	S03° 45' 33.58"W	N=982336.01/E=2809124.45	N=982316.06/E=2809123.14	
L6	20.00	S02° 45' 33.58"W	N=982316.06/E=2809123.14	N=982296.08/E=2809122.18	
L7	20.00	S01° 45' 33.58"W	N=982296.08/E=2809122.18	N=982276.09/E=2809121.57	
L8	20.00	S00° 45' 33.58"W	N=982276.09/E=2809121.57	N=982256.09/E=2809121.30	
L9	20.00	S00° 14' 26.42"E	N=982256.09/E=2809121.30	N=982236.09/E=2809121.38	
L10	20.00	S01° 14' 26.42"E	N=982236.09/E=2809121.38	N=982216.10/E=2809121.82	
L11	20.00	S02° 14' 26.42"E	N=982216.10/E=2809121.82	N=982196.11/E=2809122.60	
L12	20.00	S03° 14' 26.42"E	N=982196.11/E=2809122.60	N=982176.14/E=2809123.73	
L13	20.00	S04° 14' 26.42"E	N=982176.14/E=2809123.73	N=982156.20/E=2809125.21	
L14	20.00	S05° 14' 26.42"E	N=982156.20/E=2809125.21	N=982136.28/E=2809127.04	
L15	20.00	S06° 14' 26.42"E	N=982136.28/E=2809127.04	N=982116.40/E=2809129.21	
L16	100.00	S17° 29' 26.42"E	N=982116.40/E=2809129.21	N=982021.02/E=2809159.26	
L17	171.77	S28° 44' 26.42"E	N=982021.02/E=2809159.26	N=981870.42/E=2809241.86	
L18	63.83	S17° 29' 18.51"E	N=981870.42/E=2809241.86	N=981809.54/E=2809261.04	
L19	20.00	S16° 30' 30.51"E	N=981809.54/E=2809261.04	N=981790.36/E=2809266.72	



RECORD DRAWING

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DATE: 05-13-2022

CERTIFIED BY: MARK DANIEL MCGHEE, JR.

TITLE: SENIOR PROJECT MANAGER

FIRM: LAMP RYNEARSON



MARK DANIEL MCGHEE, JR.
PE - 2008019568

REVISIONS	
01/07/2020	PER CITY COMMENTS
03/18/2020	ADDED DEFLECTIONS
04/03/2020	PER CITY COMMENTS
05/13/2022	ASBUILTS

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SUMMIT VIEW FARMS 4TH PLAT

LEE'S SUMMIT, MISSOURI

WATER LINE PLANS

WATER LINE PLAN AND PROFILE
WATER LINE 4-01

DESIGNER / DRAFTER

AM

DATE

11/20/2019

PROJECT NUMBER

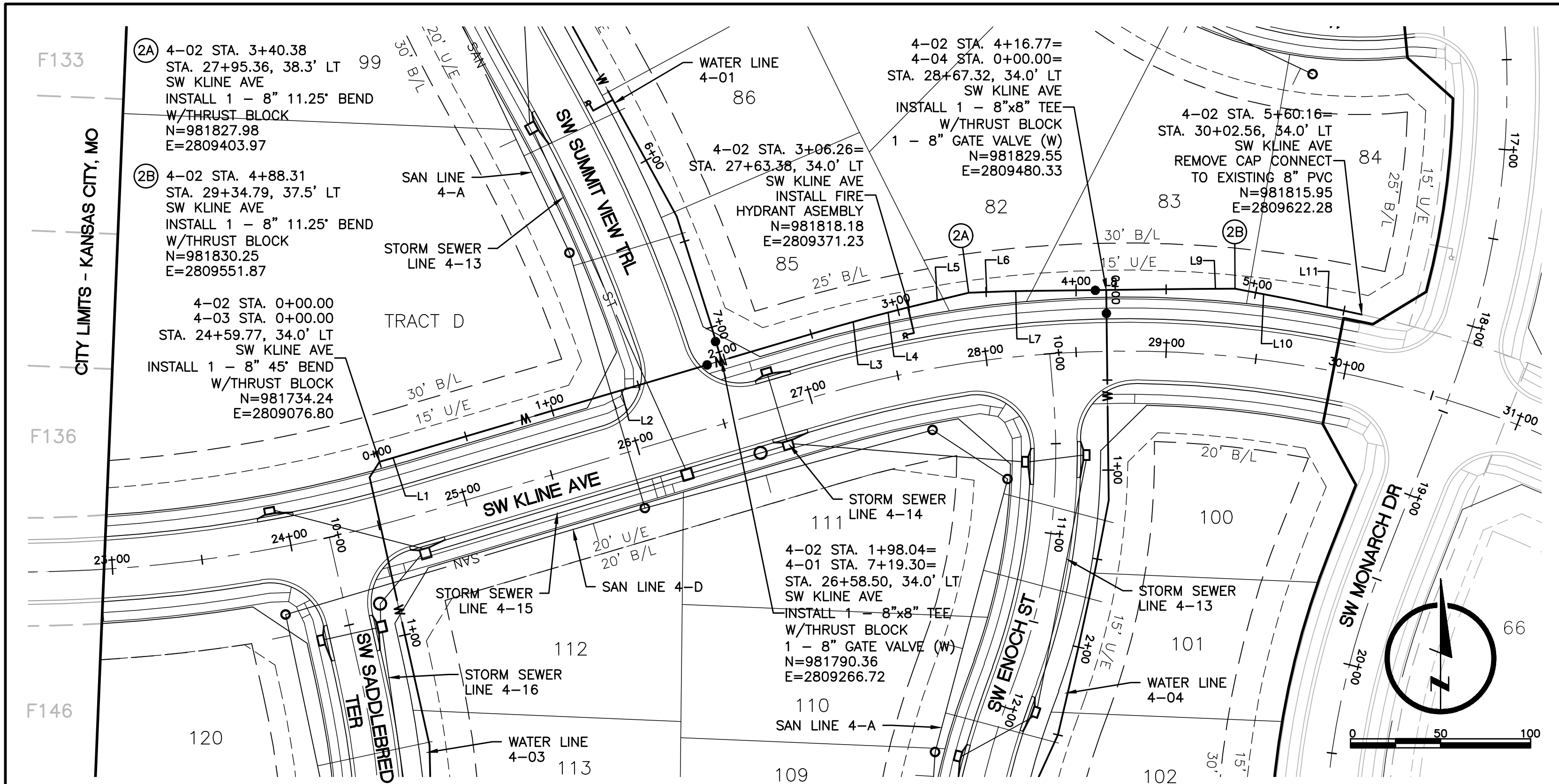
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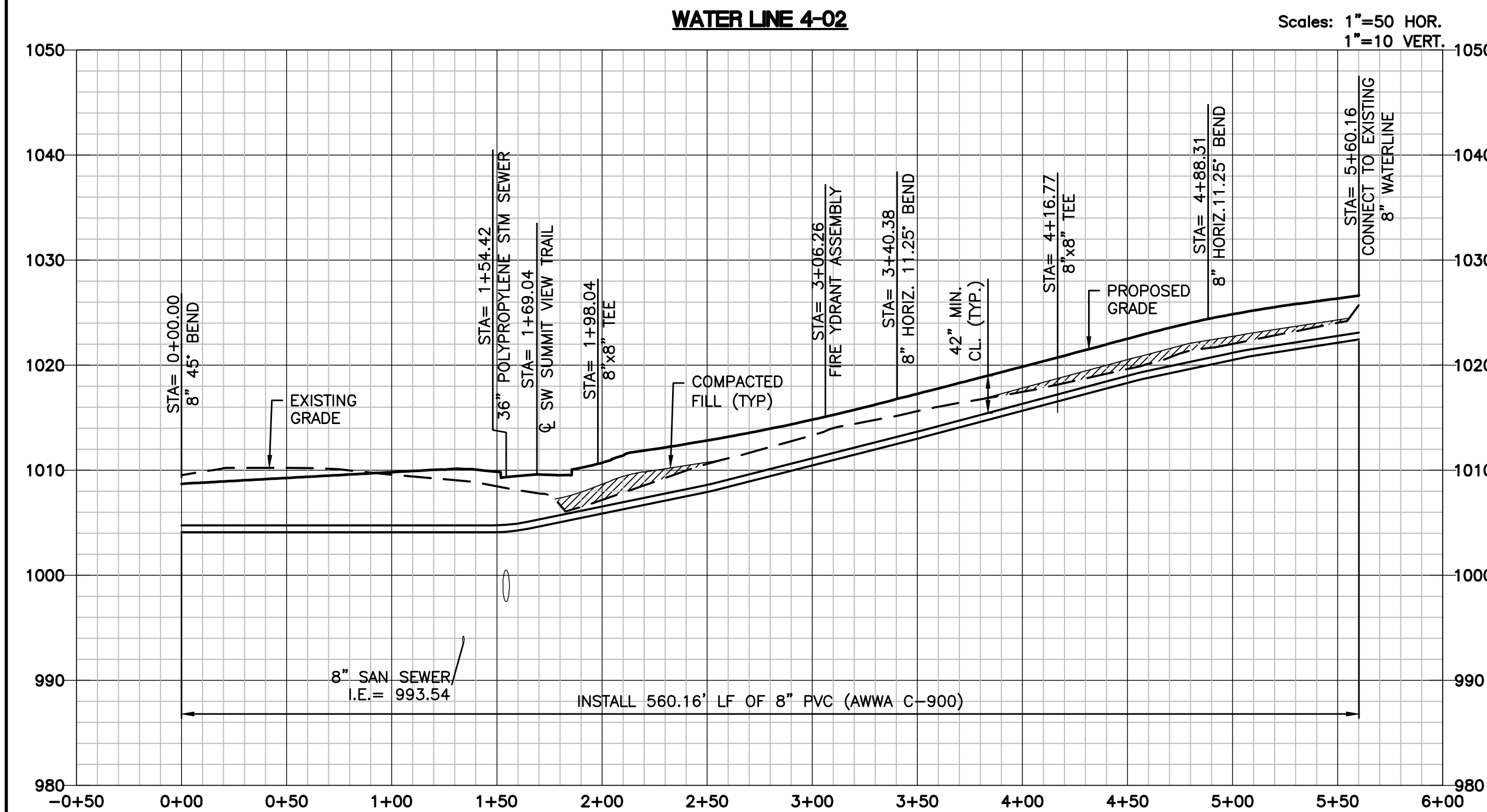
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ALIGNMENT TABLE 4-02				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L1	15.65	N74° 04' 36.55"E	N=981734.24/E=2809076.80	N=981738.54/E=2809091.85
L2	248.64	N73° 29' 29.49"E	N=981738.54/E=2809091.85	N=981809.19/E=2809330.24
L3	20.00	N74° 29' 29.49"E	N=981809.19/E=2809330.24	N=981814.54/E=2809349.51
L4	20.00	N75° 29' 29.49"E	N=981814.54/E=2809349.51	N=981819.55/E=2809368.88
L5	36.09	N76° 29' 29.49"E	N=981819.55/E=2809368.88	N=981827.98/E=2809403.97
L6	20.00	N87° 44' 29.49"E	N=981827.98/E=2809403.97	N=981828.77/E=2809423.95
L7	12.30	N88° 44' 29.49"E	N=981828.77/E=2809423.95	N=981829.04/E=2809436.24
L8	93.86	N89° 20' 06.04"E	N=981829.04/E=2809436.24	N=981830.13/E=2809530.10

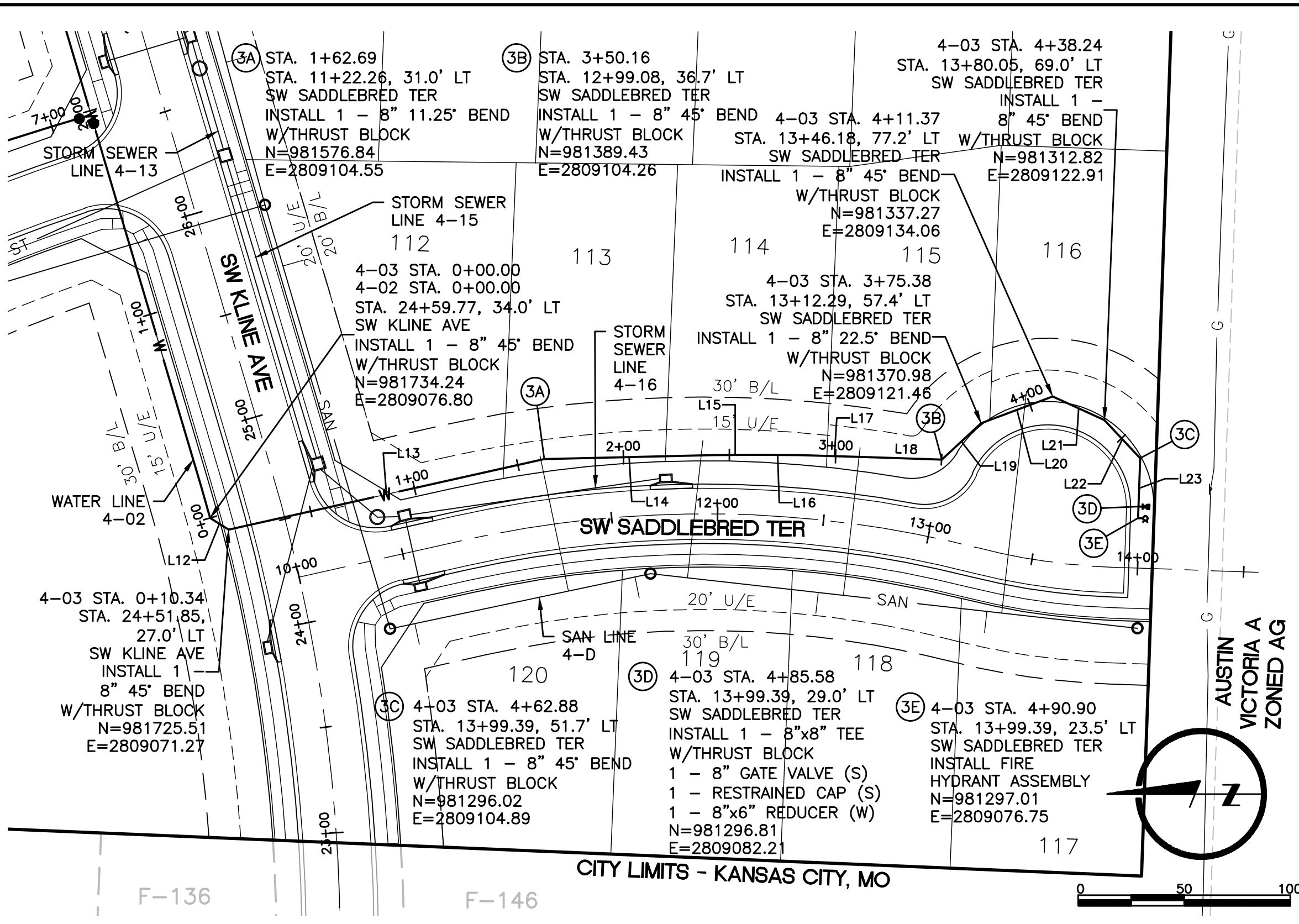
ALIGNMENT TABLE 4-02				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L9	21.77	N89° 40' 49.31"E	N=981830.13/E=2809530.10	N=981830.25/E=2809551.87
L10	32.39	S79° 04' 10.69"E	N=981830.25/E=2809551.87	N=981824.11/E=2809583.67
L11	39.47	S78° 04' 10.69"E	N=981824.11/E=2809583.67	N=981815.95/E=2809622.28

ALIGNMENT TABLE 4-03				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L12	10.34	S32° 22' 45.20"W	N=981734.24/E=2809076.80	N=981725.51/E=2809071.27
L13	152.35	S12° 37' 14.80"E	N=981725.51/E=2809071.27	N=981576.84/E=2809104.55
L14	80.00	S01° 22' 14.80"E	N=981576.84/E=2809104.55	N=981496.86/E=2809106.47

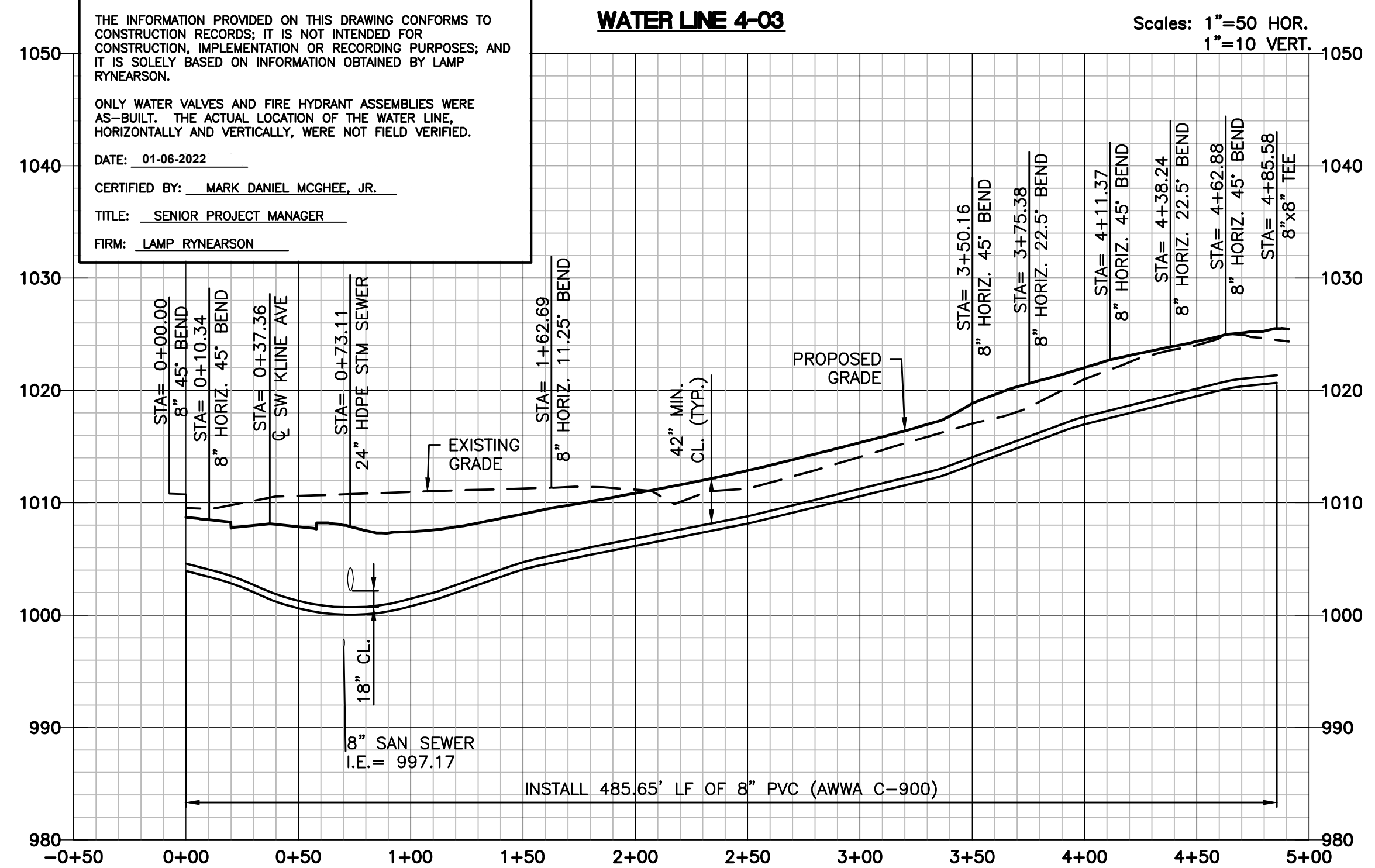


WATER MAIN NOTES:

1. WATER MAINS AND SANITARY SEWER MAINS (INCLUDING STRUCTURES) SHALL HAVE AT LEAST 10'-FT OF HORIZONTAL SEPARATION FROM EDGE OF WATER PIPE TO EDGE OF SEWER PIPE OR SEWER STRUCTURE.
2. WATER MAINS AND SANITARY SEWERS SHALL HAVE AT LEAST 18-INCHES OF VERTICAL SEPARATION FROM EDGE OF PIPE TO EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE WATER MAIN JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER MAIN JOINTS.
3. CONCRETE THRUST BLOCKS SHALL BE INSTALLED AT ALL HORIZONTAL FITTING, VERTICAL FITTING, AND FIRE HYDRANT ASSEMBLY LOCATIONS IN ACCORDANCE WITH CITY STANDARD DETAILS WAT-1, WAT-2, AND WAT-8.
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ALIGNMENT TABLE 4-03				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L15	20.00	S00° 22' 14.80"E	N=981496.86/E=2809106.47	N=981476.86/E=2809106.60
L16	20.00	S00° 37' 45.20"W	N=981476.86/E=2809106.60	N=981456.86/E=2809106.38
L17	33.60	S01° 37' 45.20"W	N=981456.86/E=2809106.38	N=981423.28/E=2809105.42
L18	33.87	S01° 57' 29.64"W	N=981423.28/E=2809105.42	N=981389.43/E=2809104.26
L19	25.22	S42° 59' 30.55"E	N=981389.43/E=2809104.26	N=981370.98/E=2809121.46
L20	35.99	S20° 29' 30.55"E	N=981370.98/E=2809121.46	N=981337.27/E=2809134.06
L21	26.87	S24° 30' 29.45"W	N=981337.27/E=2809134.06	N=981312.82/E=2809122.91
L22	24.64	S47° 00' 29.45"W	N=981312.82/E=2809122.91	N=981296.02/E=2809104.89
L23	28.16	N87° 59' 30.55"W	N=981296.02/E=2809104.89	N=981297.01/E=2809076.75



MARK RYNEARSON
MO CERT. NO. 201301903

MARK DANIEL MCGHEE, JR.
PE - 2080919568

REVISIONS

01/07/2020	PER CITY COMMENTS
03/18/2020	ADDED DEFLECTIONS
04/03/2020	PER CITY COMMENTS
10/02/2020	ADDED HDS UNITS
12/29/2021	ASBUILTS

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Kansas City, MO 64114
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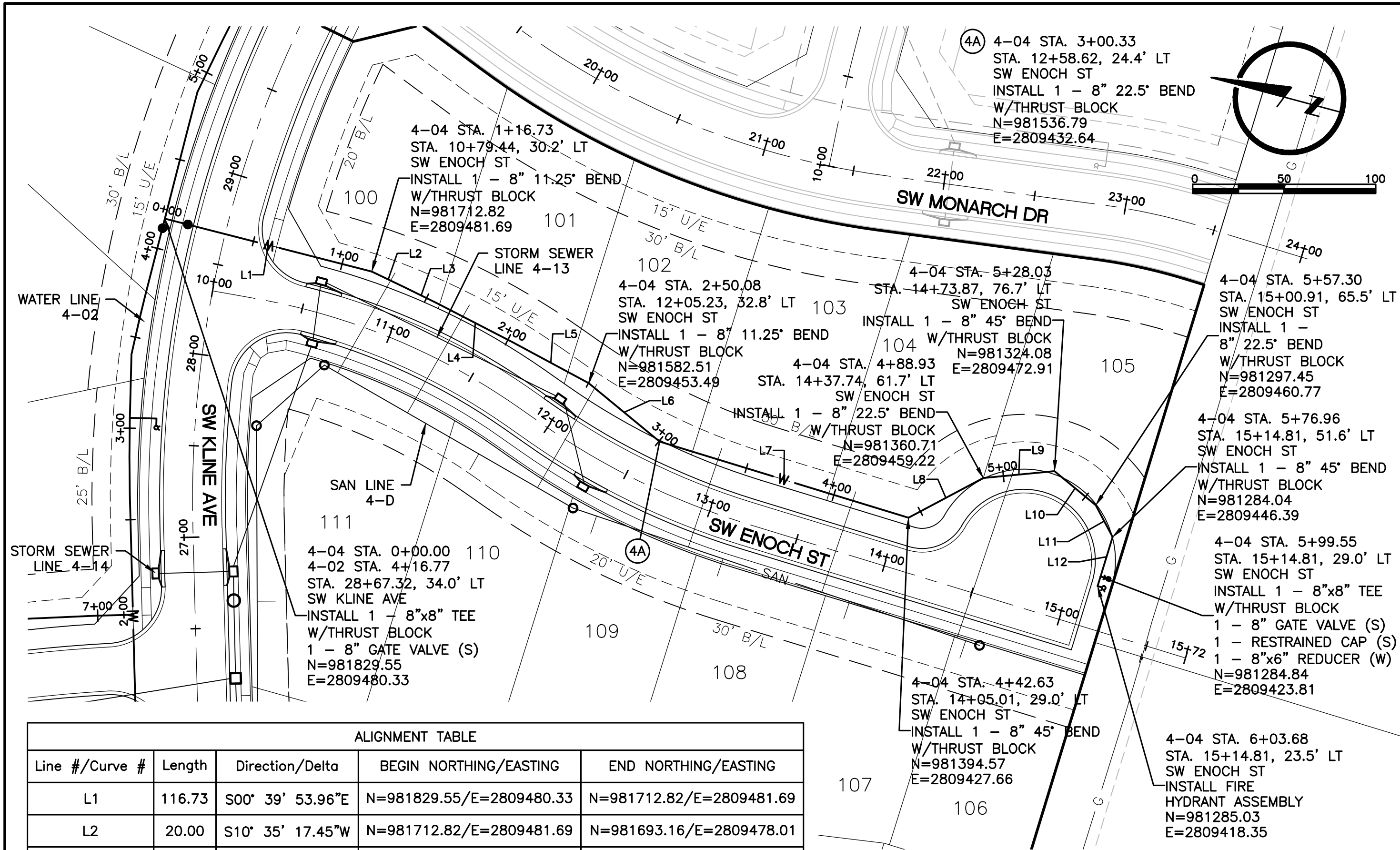
SUMMIT VIEW FARMS 4TH PLAT

LEE'S SUMMIT, MISSOURI

DESIGNER / DRAFTER
AJM
DATE
11/20/2019
PROJECT NUMBER
0318050.02
BOOK AND PAGE

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04 OF 06

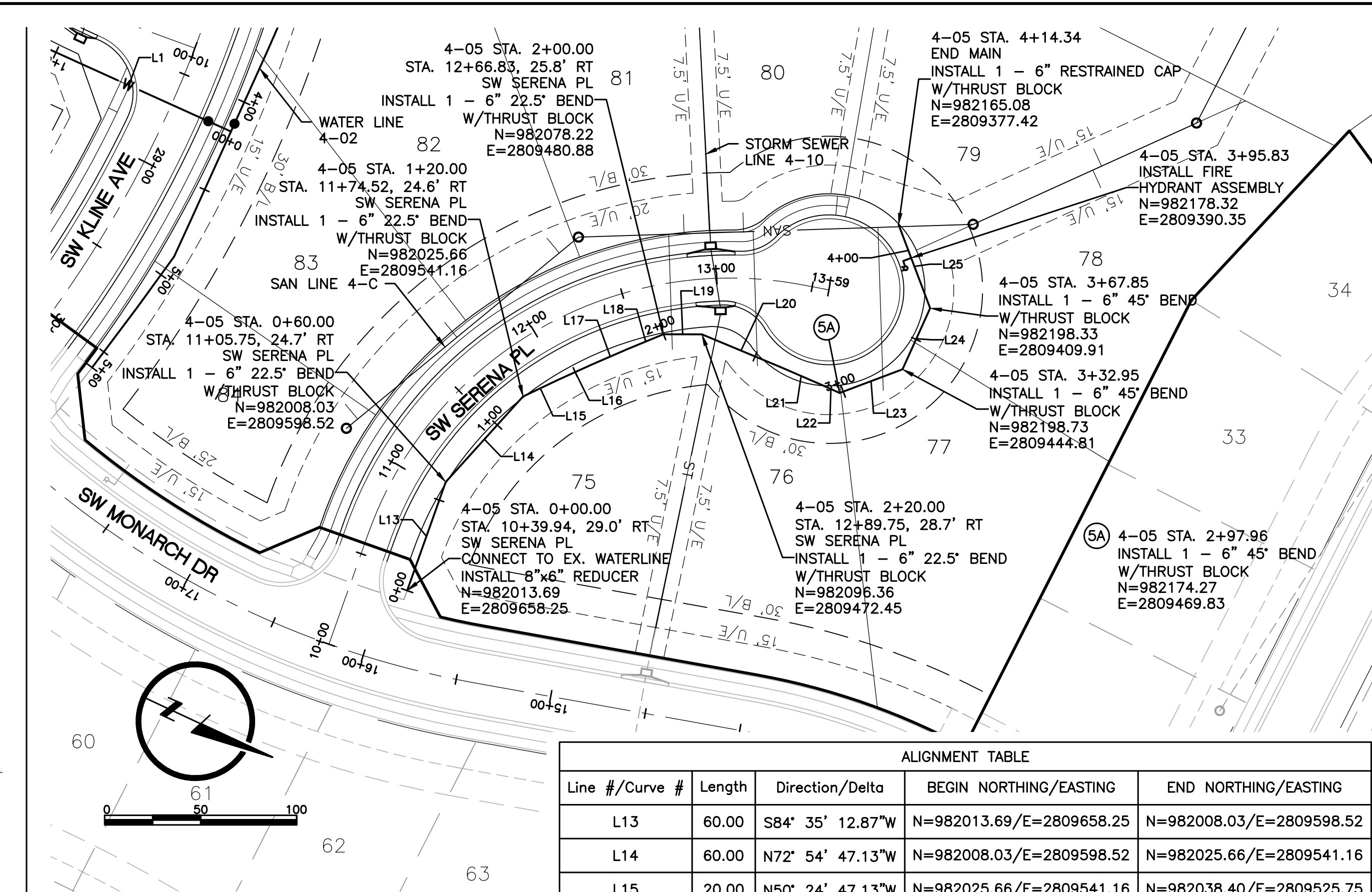
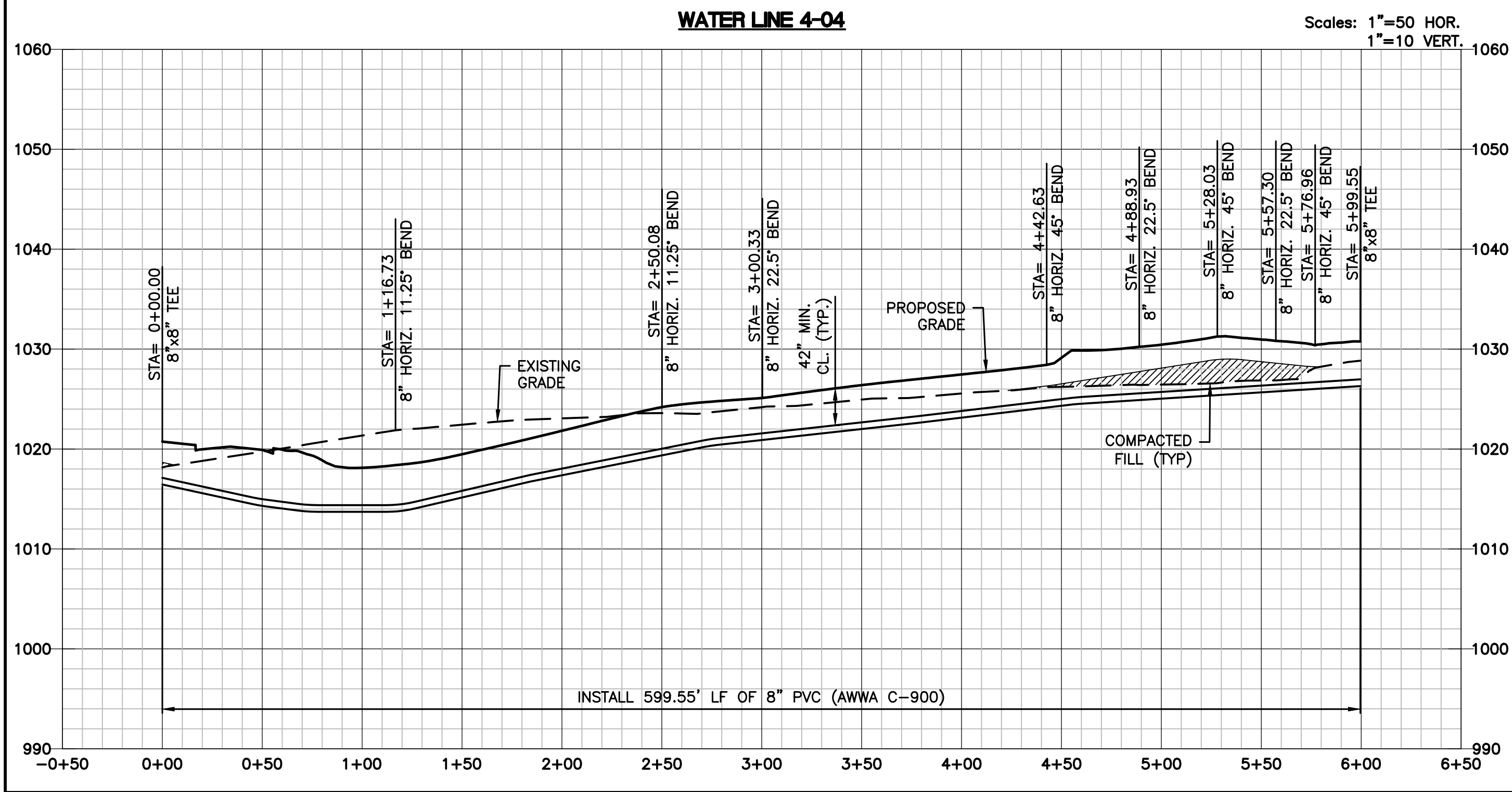
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ALIGNMENT TABLE				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L1	116.73	S00° 39' 53.96"E	N=981829.55/E=2809480.33	N=981712.82/E=2809481.69
L2	20.00	S10° 35' 17.45"W	N=981712.82/E=2809481.69	N=981693.16/E=2809478.01
L3	20.01	S11° 15' 29.45"W	N=981693.16/E=2809478.01	N=981673.54/E=2809474.11
L4	46.37	S12° 15' 29.45"W	N=981673.54/E=2809474.11	N=981628.23/E=2809464.26
L5	46.96	S13° 15' 29.45"W	N=981628.23/E=2809464.26	N=981582.51/E=2809453.49
L6	50.25	S24° 30' 29.45"W	N=981582.51/E=2809453.49	N=981536.79/E=2809432.64
L7	142.30	S02° 00' 29.45"W	N=981536.79/E=2809432.64	N=981394.57/E=2809427.66
L8	46.29	S42° 59' 30.55"E	N=981394.57/E=2809427.66	N=981360.71/E=2809459.22
L9	39.10	S20° 29' 30.55"E	N=981360.71/E=2809459.22	N=981324.08/E=2809472.91
L10	29.27	S24° 30' 29.45"W	N=981324.08/E=2809472.91	N=981297.45/E=2809460.77
L11	19.66	S47° 00' 29.45"W	N=981297.45/E=2809460.77	N=981284.04/E=2809446.39
L12	22.59	N87° 59' 30.55"W	N=981284.04/E=2809446.39	N=981284.84/E=2809423.81

WATER MAIN NOTES:

1. WATER MAINS AND SANITARY SEWER MAINS (INCLUDING STRUCTURES) SHALL HAVE AT LEAST 10'-FT OF HORIZONTAL SEPARATION FROM EDGE OF WATER PIPE TO EDGE OF SEWER PIPE OR SEWER STRUCTURE.
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ALIGNMENT TABLE				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L13	60.00	S84° 35' 12.87"W	N=982013.69/E=2809658.25	N=982008.03/E=2809598.52
L14	60.00	N72° 54' 47.13"W	N=982008.03/E=2809598.52	N=982025.66/E=2809541.16
L15	20.00	N50° 24' 47.13"W	N=982025.66/E=2809541.16	N=982038.40/E=2809525.75
L16	20.00	N49° 24' 47.13"W	N=982038.40/E=2809525.75	N=982051.41/E=2809510.56
L17	20.00	N48° 24' 47.13"W	N=982051.41/E=2809510.56	N=982064.69/E=2809495.60
L18	20.00	N47° 24' 47.13"W	N=982064.69/E=2809495.60	N=982078.22/E=2809480.88
L19	20.00	N24° 54' 47.13"W	N=982078.22/E=2809480.88	N=982096.36/E=2809472.45
L20	44.14	N02° 24' 47.13"W	N=982096.36/E=2809472.45	N=982140.47/E=2809470.59
L21	23.82	N01° 33' 16.58"W	N=982140.47/E=2809470.59	N=982164.28/E=2809469.95
L22	10.00	N00° 39' 40.37"W	N=982164.28/E=2809469.95	N=982174.27/E=2809469.83
L23	34.99	N45° 39' 40.37"W	N=982174.27/E=2809469.83	N=982198.73/E=2809444.81
L24	34.90	S89° 20' 19.63"W	N=982198.73/E=2809444.81	N=982198.33/E=2809409.91
L25	46.48	S44° 20' 19.63"W	N=982198.33/E=2809409.91	N=982165.08/E=2809377.42

4. COMPACTED FILL SHALL BE PLACED TO A MINIMUM 18" ABOVE THE TOP OF PIPE PRIOR TO INSTALLATION.

RECORD DRAWING

THE INFORMATION PROVIDED ON THIS DRAWING CONFORMS TO CONSTRUCTION RECORDS; IT IS NOT INTENDED FOR CONSTRUCTION, IMPLEMENTATION OR RECORDING PURPOSES; AND IT IS SOLELY BASED ON INFORMATION OBTAINED BY LAMP RYNEARSON.

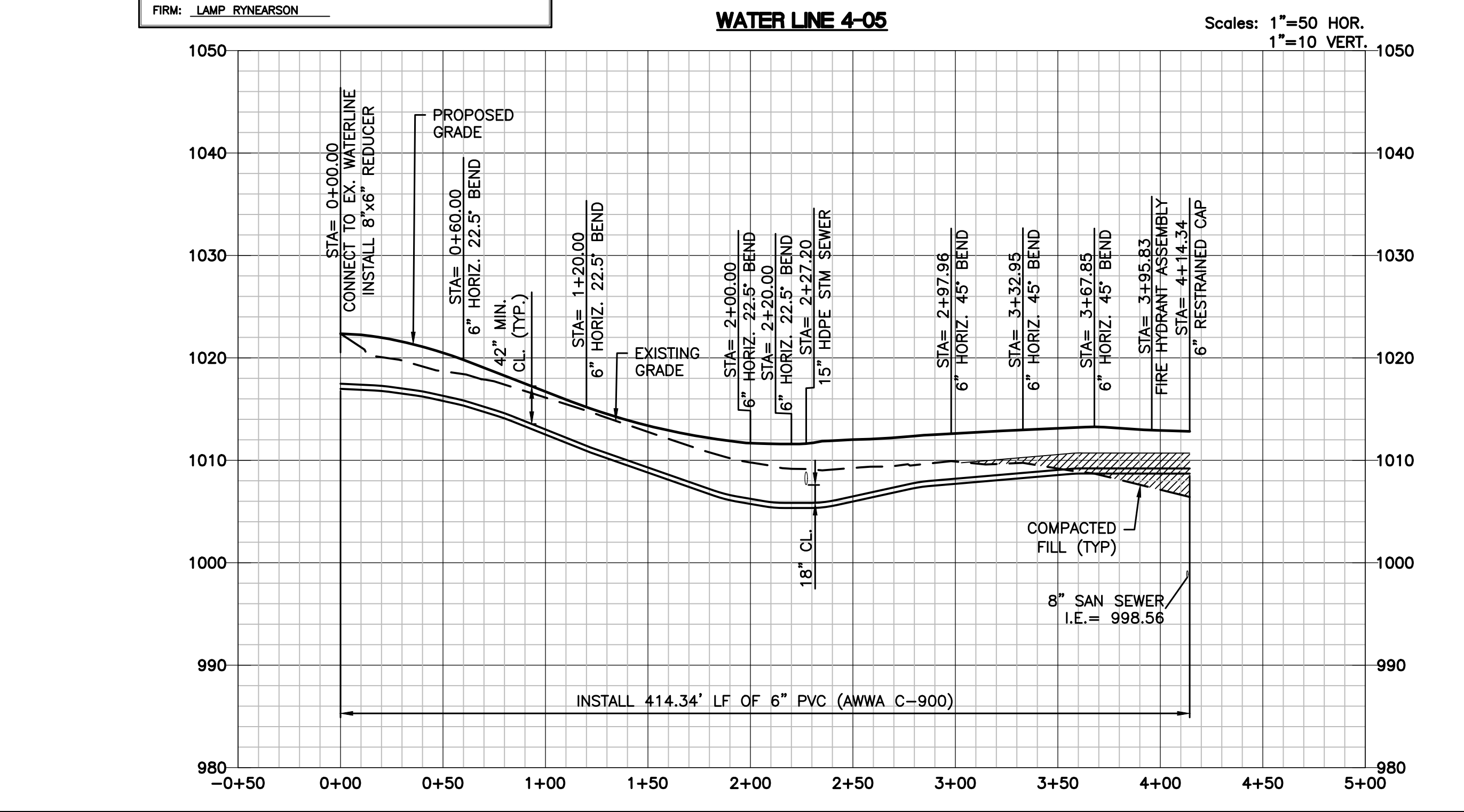
ONLY WATER VALVES AND FIRE HYDRANT ASSEMBLIES WERE AS-BUILT. THE ACTUAL LOCATION OF THE WATER LINE HORIZONTALLY AND VERTICALLY, WERE NOT FIELD VERIFIED.

DATE: 01-06-2022

CERTIFIED BY: MARK DANIEL MCGHEE, JR.

TITLE: SENIOR PROJECT MANAGER

FIRM: LAMP RYNEARSON



LAMP RYNEARSON
MO CERT. NO. 2013011903

MARK DANIEL MCGHEE, JR.
PE - 2006019568

REVISIONS
01/07/2020 PER CITY COMMENTS
03/18/2020 ADDED DEFLECTIONS
04/03/2020 PER CITY COMMENTS
12/29/2021 ASBUILTS

9001 State Line Rd., Ste. 200
Kansas City, MO 64114
816.361.0440
LampRynearson.com

SUMMIT VIEW FARMS 4TH PLAT

LEE'S SUMMIT, MISSOURI

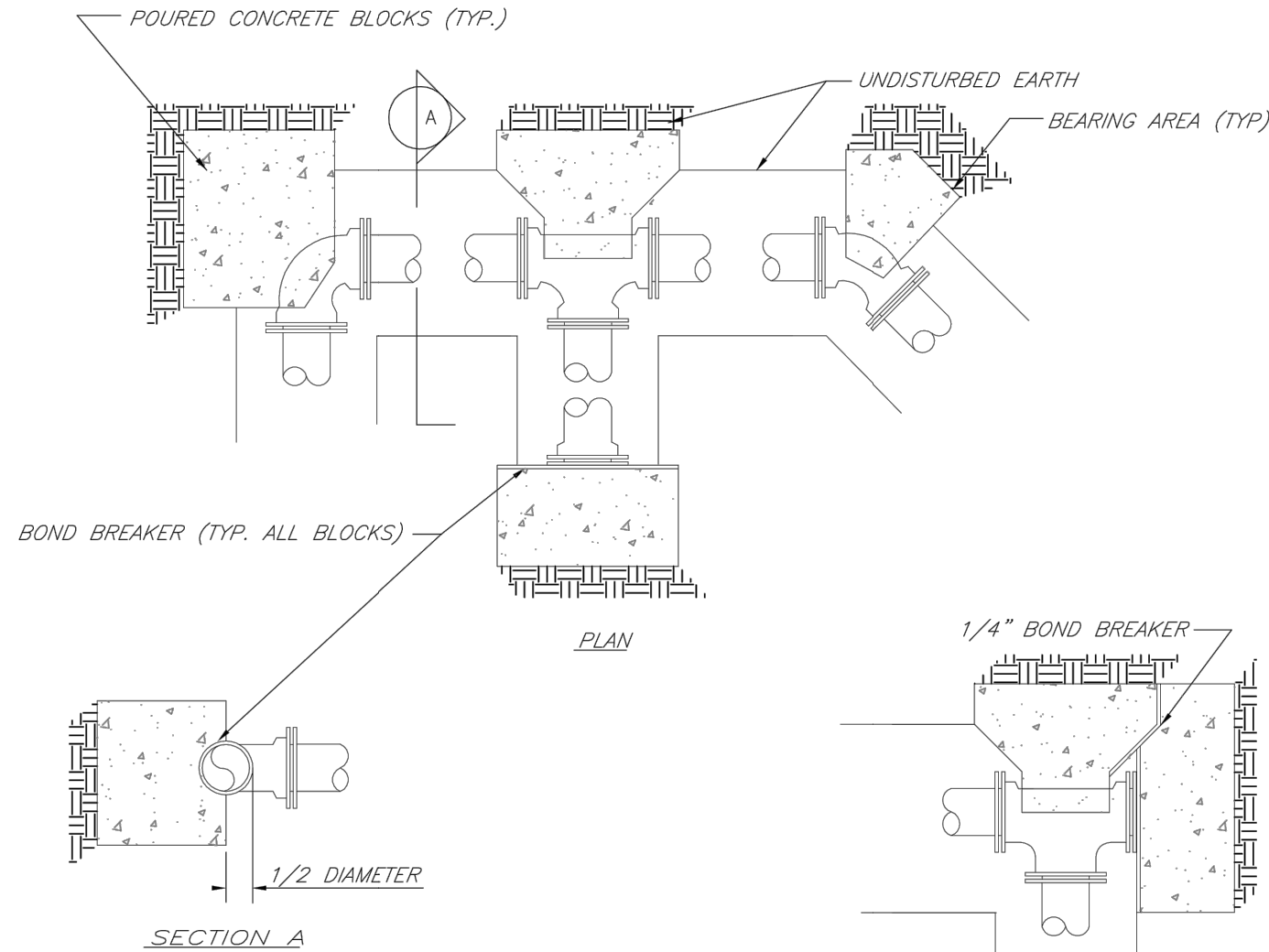
DESIGNER / DRAFTER
AJM
DATE
11/20/2019
PROJECT NUMBER
0318050.02
BOOK AND PAGE

SHEET
05 OF 06

LS:\Engineering\0318050 SYSDS Summit View Forms 3rd Print\BRAININGS.CONSTRUCTION DRAWINGS\4TH PLAN\ASBUILTS\WAT-PLANS\0318050.02-WAT-HSE.dwg 12/29/2021 3:33:31 PM JAME MCNEIRET LAMP RYNEARSON

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	

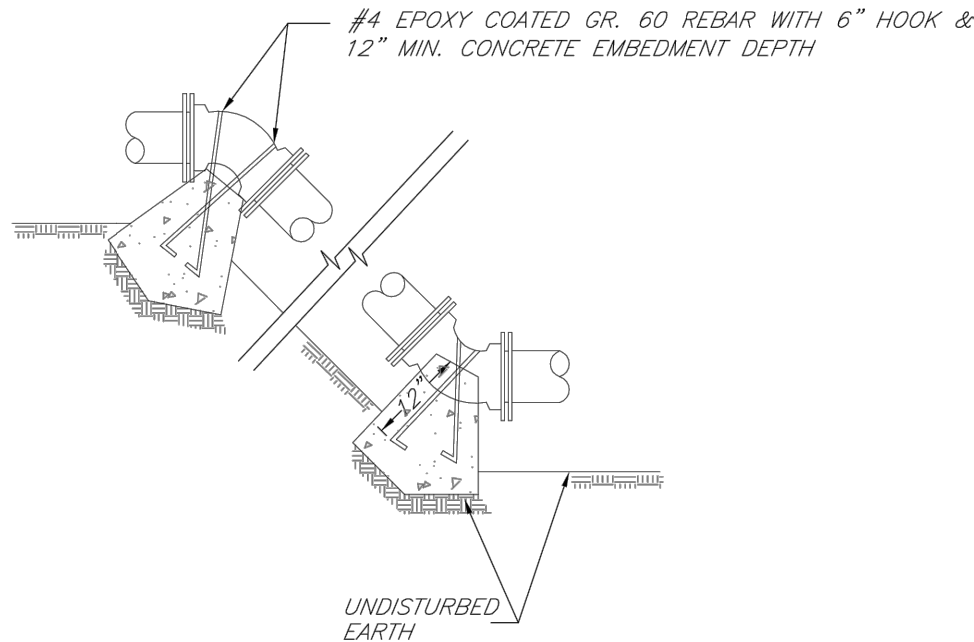
- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



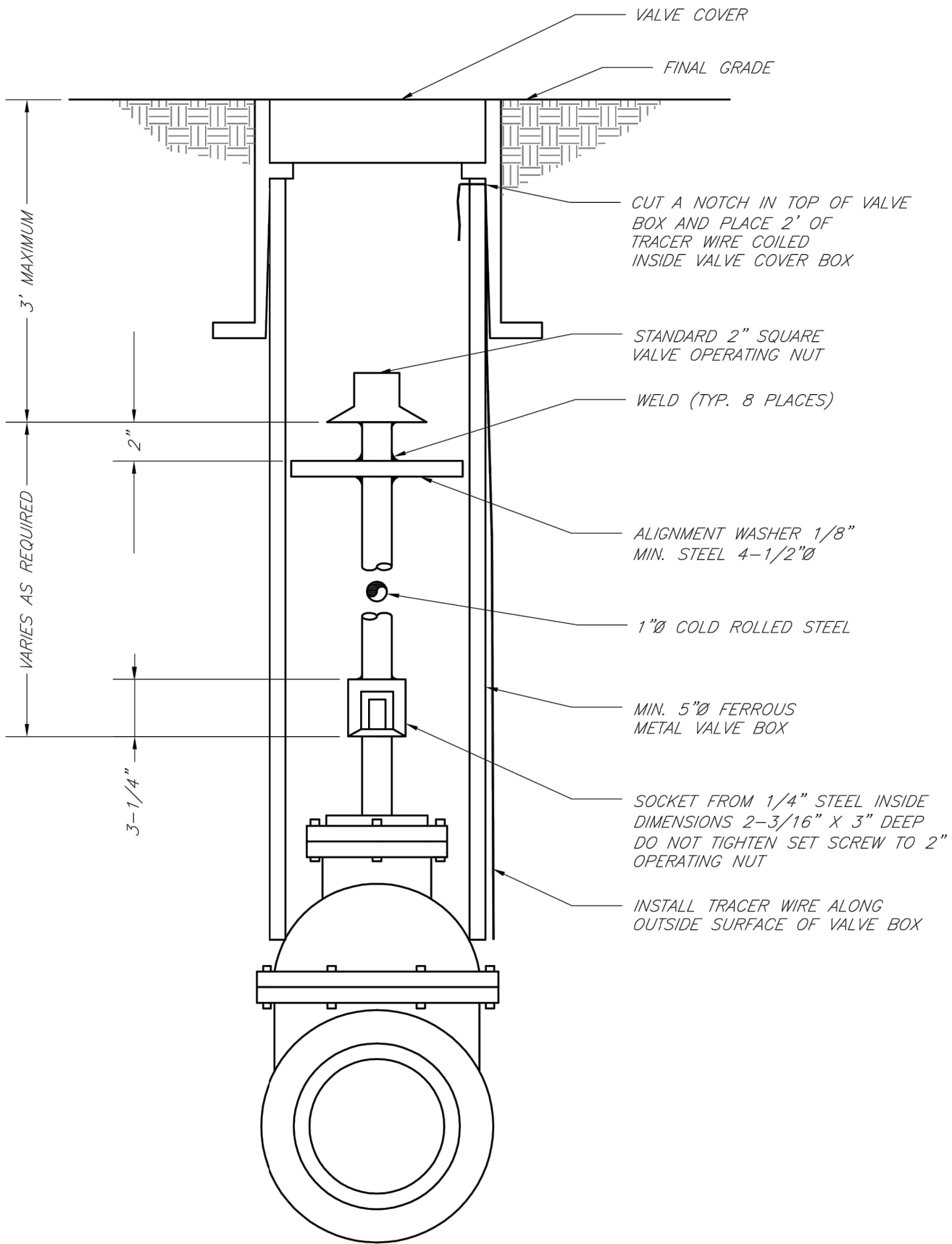
LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 02/13
		Drawn By: JN
		Checked By: DL
		FILE: WAT-1
	HORIZONTAL THRUST BLOCKS	Rev: 1/14
		Rev:

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	69.7	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	107.3	53.9	
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4	
18	REST. JT.	REST. JT.	REST. JT.	177.3	88.1	
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0	
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4	

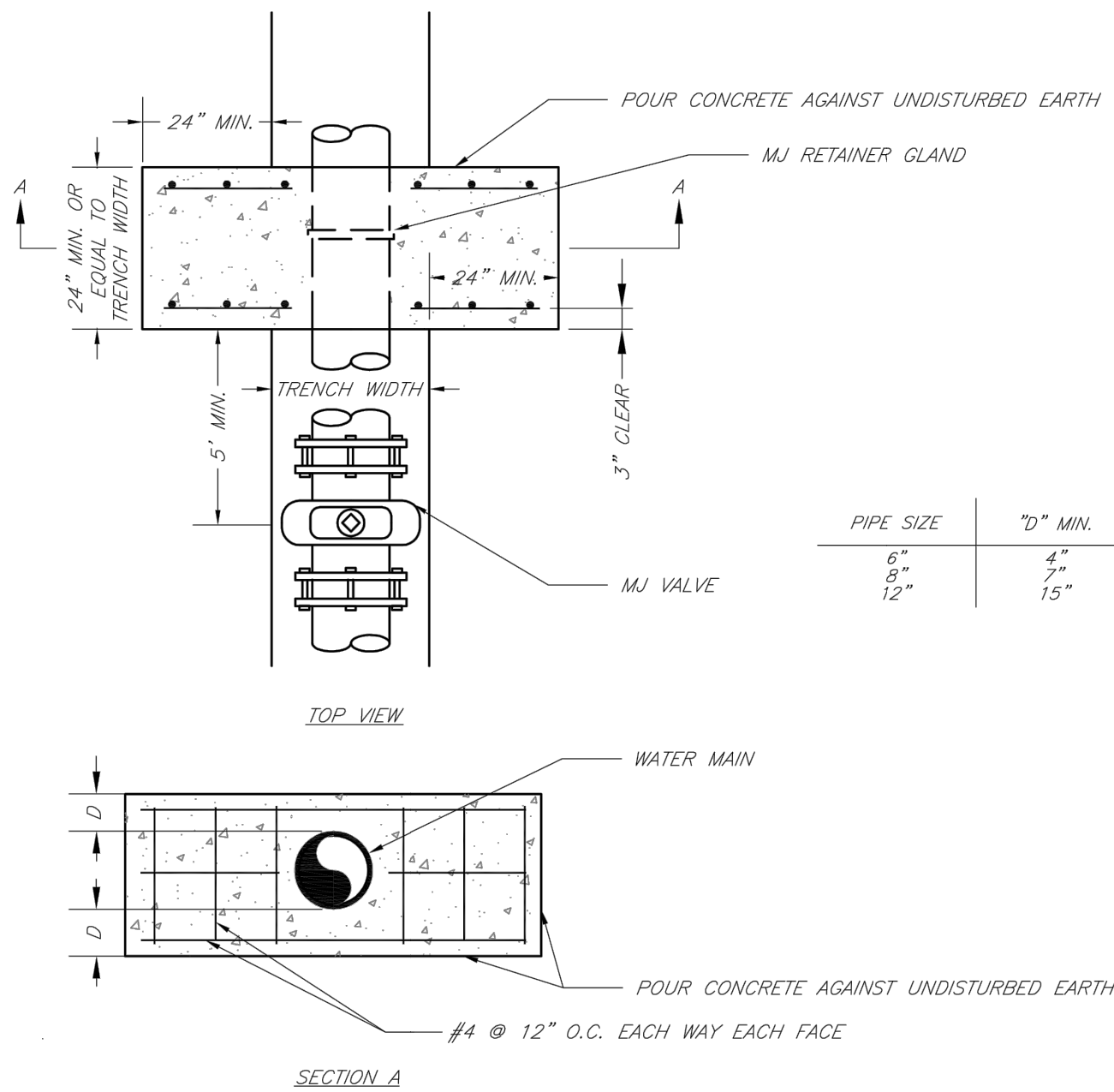
- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



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
	VERTICAL THRUST BLOCKS	Rev: 1/14
		Rev:

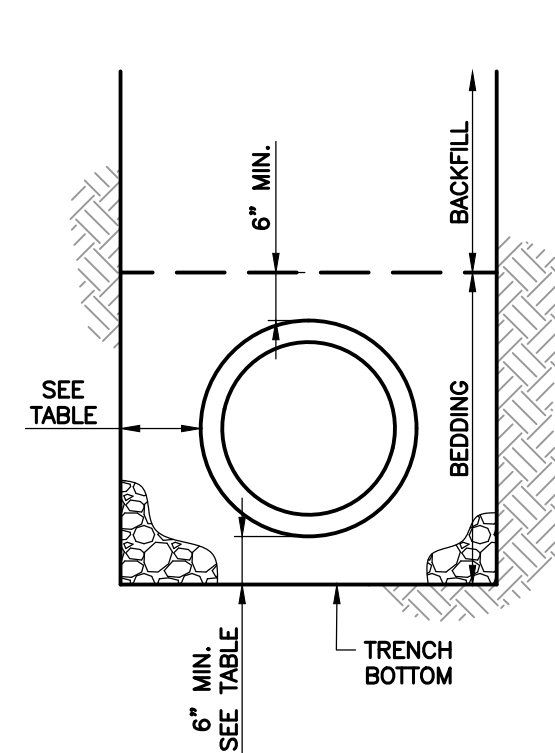


LS	LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	Date: 02/13
		Drawn By: JN
		Checked By: DL
		FILE: WAT-9
	VALVE STEM EXTENSION AND VALVE BOX	Rev: 1/14
		Rev:



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-3
	STRADDLE BLOCK	Rev: 1/14
		Rev:



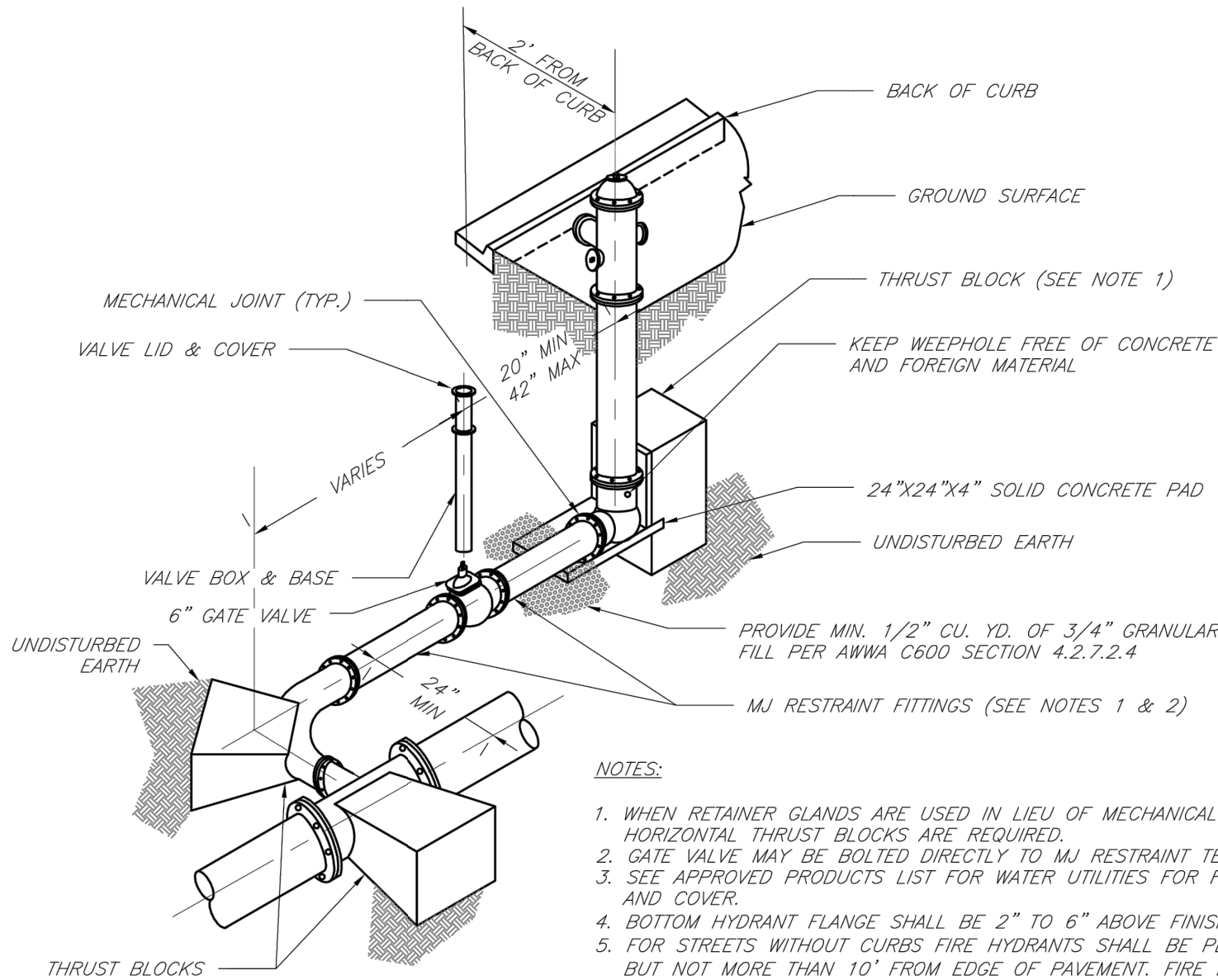
UNDERGROUND PIPE INSTALLATION
FOR WATER MAIN LINES
SCALE: NOT TO SCALE

GENERAL NOTES:

1. ALL WATERLINES SHALL HORIZONTALLY CLEAR STORM SEWER STRUCTURES BY 5' AND SANITARY SEWER STRUCTURES BY 10'. WATER MAINS SHALL VERTICALLY CLEAR STORM SEWER STRUCTURES AND SANITARY SEWER STRUCTURES BY 18".
2. WATER MAIN INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
3. MAXIMUM WIDTHS: MAXIMUM TRENCH WIDTHS SHALL BE GOVERNED BY EXISTING SOILS. TRENCH TYPE, BEDDING, AND LAYING CONDITIONS. MAXIMUM WIDTHS SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDATIONS.
4. TRENCH DEWATERING: SEE SECTION 2100.
5. TRENCH SLOPE: SEE SECTION 2100.
6. TRENCH SHIELDS: SEE SECTION 2100.
7. COMPACTED FILL: SEE SECTION 2100.
8. PIPE EMBEDMENT: SEE SECTION 2100. MINIMUM THICKNESS BENEATH PIPE SHALL BE 6 INCHES PER PIPE CLEARANCES TABLE.
9. BEDDING INSTALLATION: SEE SECTION 2100.
10. BACKFILL: SEE SECTION 2100.

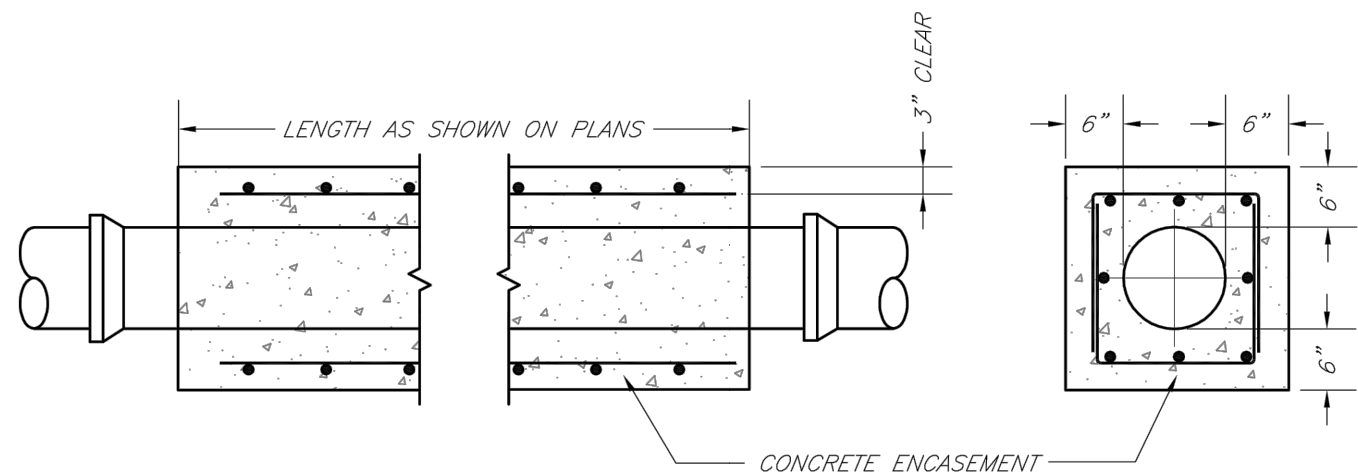
MINIMUM TRENCH WIDTHS AND PIPE CLEARANCES (IN)			
NOMINAL PIPE DIAMETER	SUGGESTED TRENCH WIDTH 1	PIPE SIDE CLEARANCE 2 (SOIL/ROCK)	PIPE BOTTOM CLEARANCE (SOIL/ROCK)
6	30	6/6	6/6
8	32	6/6	6/6
10	34	6/6	6/6
12	36	6/6	6/6

1 - MEASURED BELOW A HORIZONTAL PLANE 6" ABOVE THE TOP OF THE PIPELINE
2 - MEASURED FROM THE OUTSIDE FACE OF PIPE BARREL TO INSIDE FACE OF TRENCH



- 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-8
	HYDRANT WITH 90 DEGREE BEND	Rev: 1/14
		Rev:



- NOTES:
1. INTERMEDIATE BELLS SHALL BE ENCASED.
 2. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".
 3. THIS DETAIL IS FOR PIPES 12" AND SMALLER.

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-4
	WATER PIPE ENCASEMENT	Rev: 1/14
		Rev:

LAMP RYNEARSON
MO CERT. NO. 2013011903

MARK DANIEL MCSHEE JR.
PE - 2008019568

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SUMMIT VIEW FARMS 4TH PLAT

LEE'S SUMMIT, MISSOURI

WATER LINE PLANS

WATER LINE DETAILS

DESIGNER / DRAFTER
AJM
DATE
11/20/2019
PROJECT NUMBER
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SHEET
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