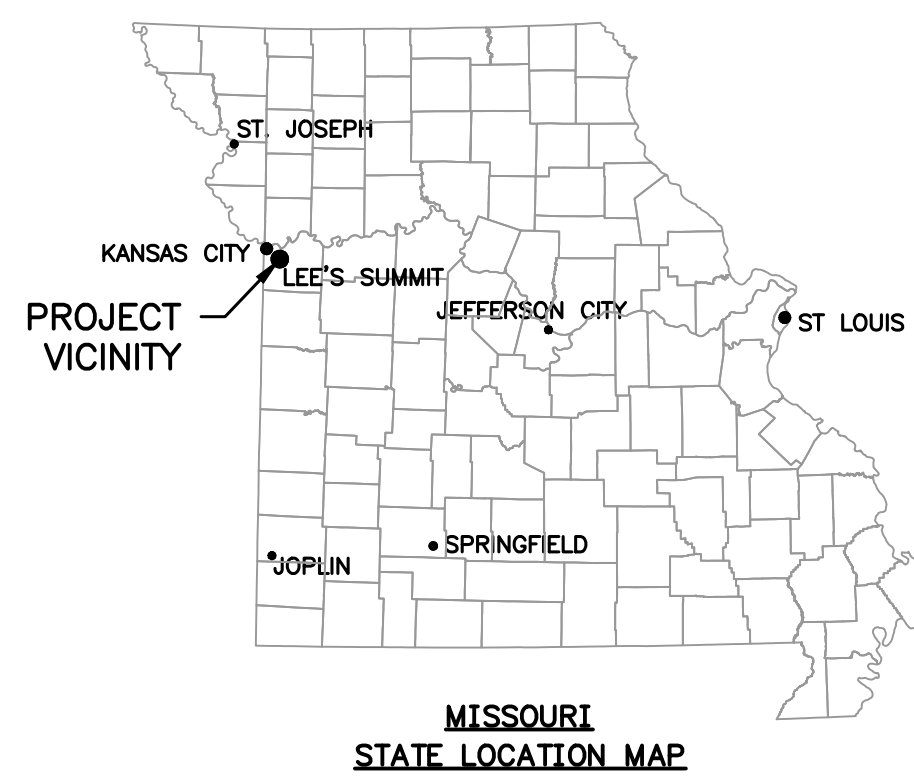


SUMMIT VIEW FARMS 4TH PLAT  
LOTS 75-120 AND TRACT D

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.

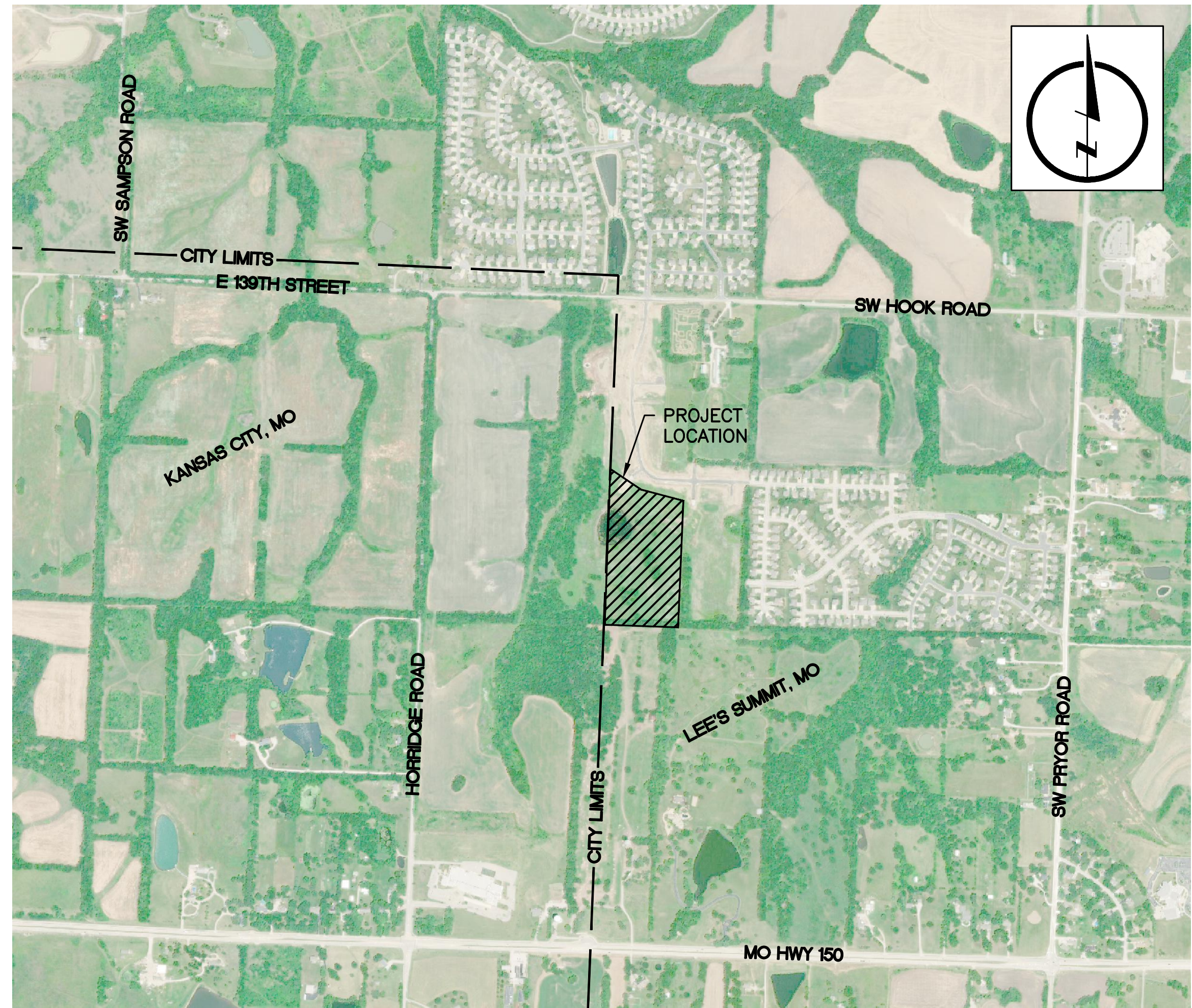
UTILITIES		
ELECTRIC:	EVERGY	(816) 471-5275
GAS:	SPIRE ENERGY	(816) 756-5252
TELEPHONE:	AT&T	(816) 325-5607
CABLE:	SPECTRUM	(816) 358-8833
	GOOGLE	(415) 736-9962
WATER:	LEE'S SUMMIT WATER UTILITIES	(816) 969-1900

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

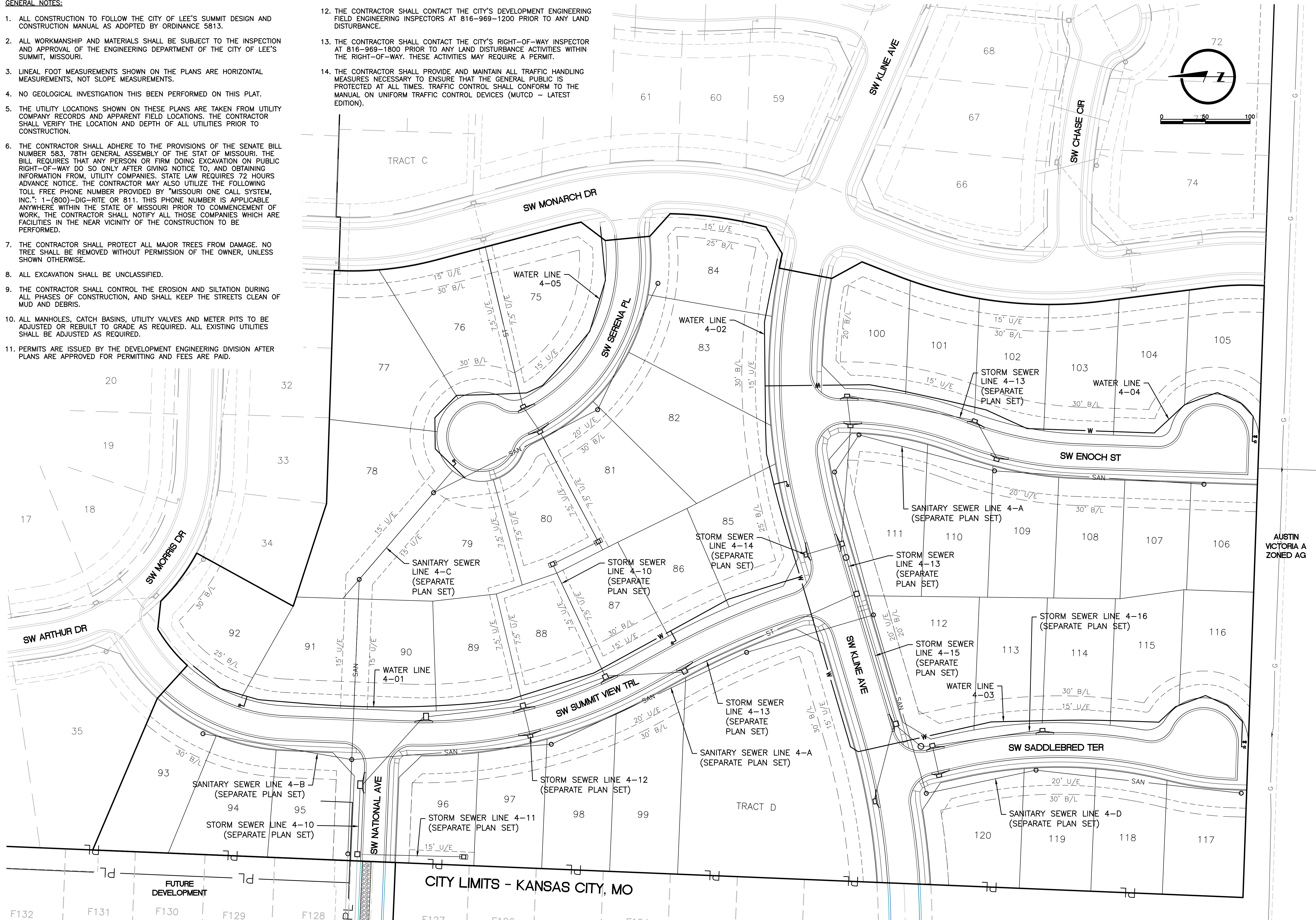
DATE: 01-06-2022





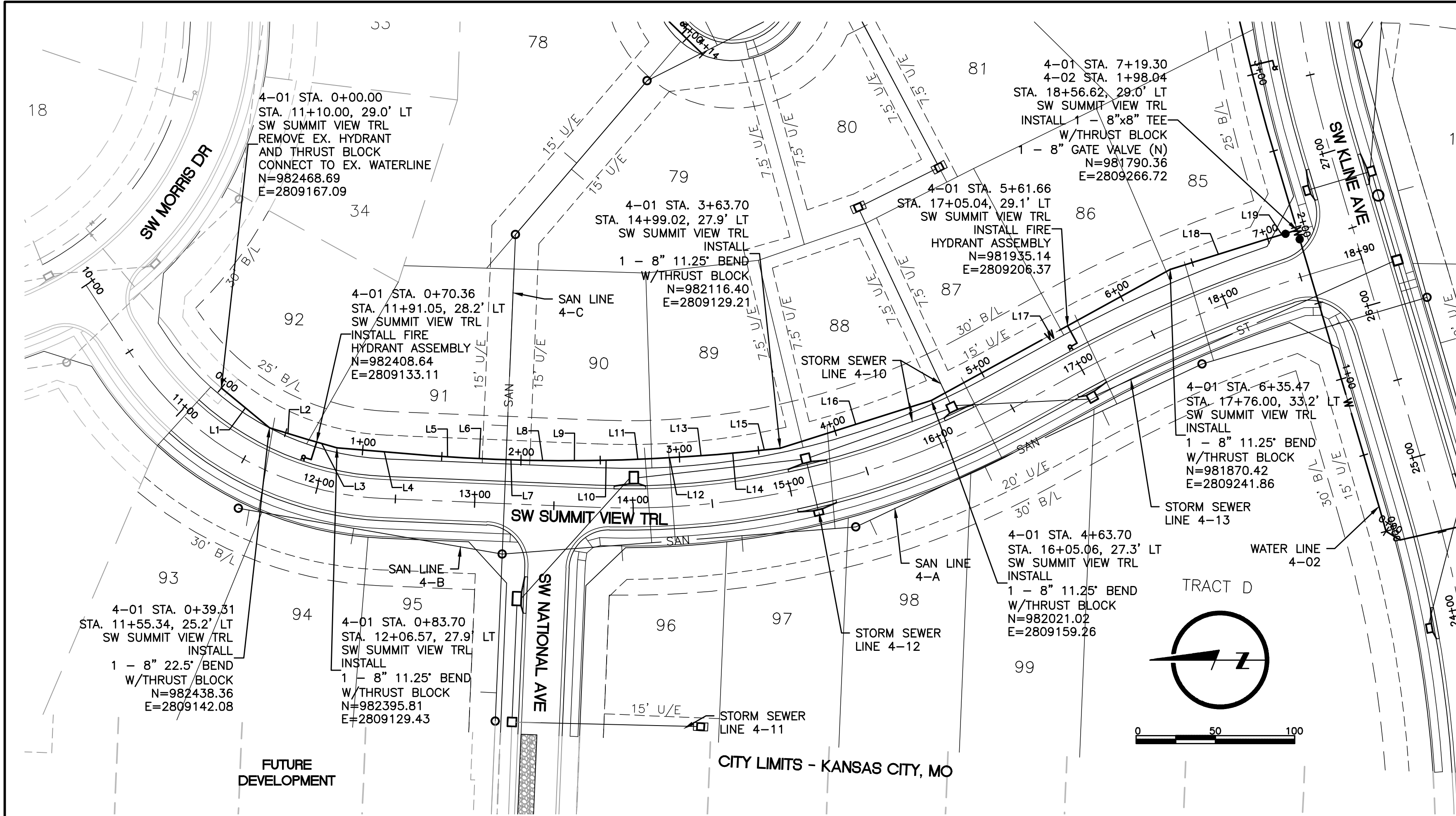
1. ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
3. LINEAL FOOT MEASUREMENTS SHOWN ON 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).





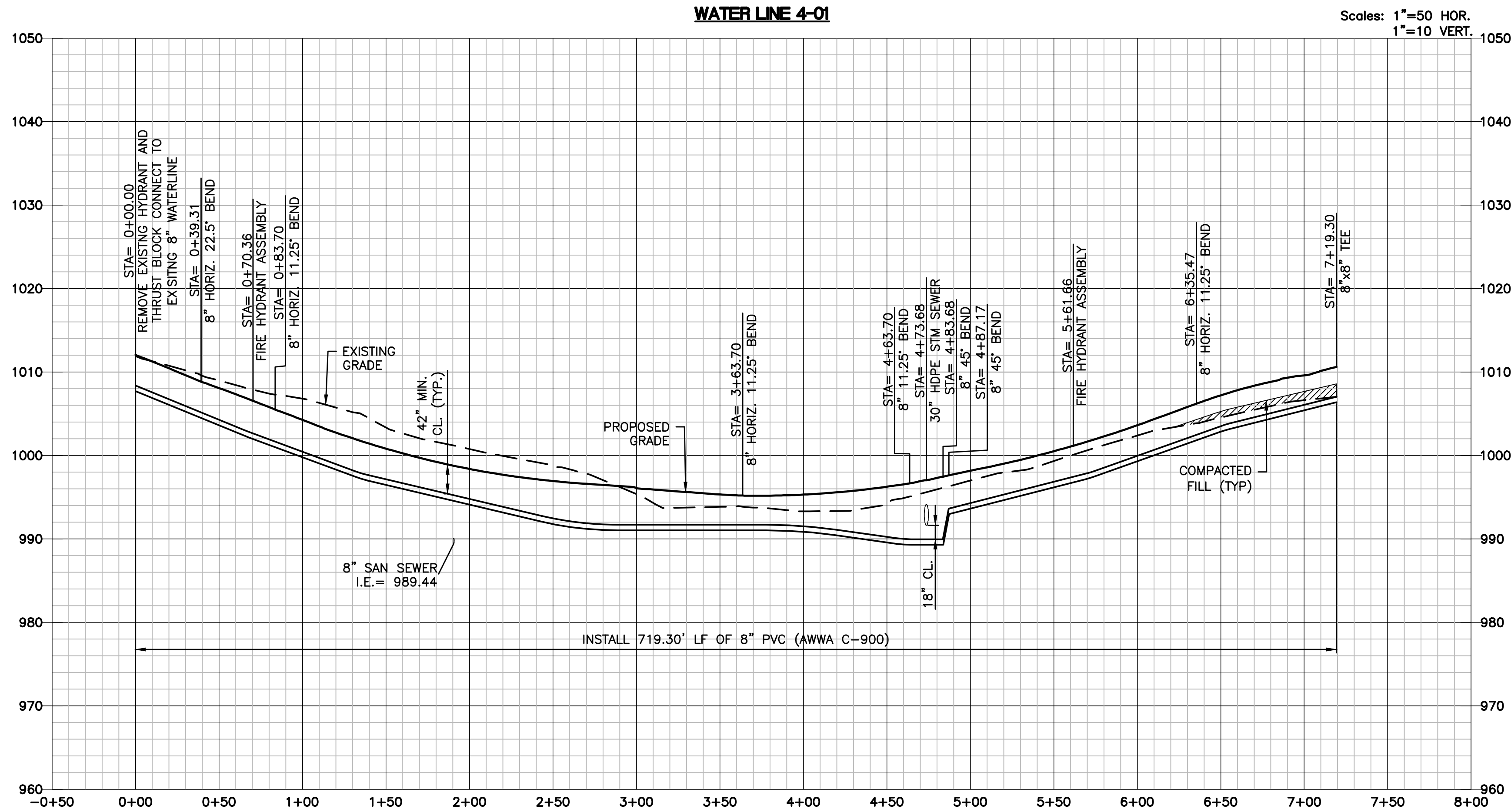
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#### WATER MAIN NOTES:

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: 01-06-2022

CERTIFIED BY: MARK DANIEL MCGHEE, JR.

TITLE: SENIOR PROJECT MANAGER

FIRM: LAMP RYNEARSON

LAMP RYNEARSON

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

STATE OF MISSOURI  
MARK DANIEL MCGHEE, JR.  
REGISTERED PROFESSIONAL ENGINEER  
PE-2006019568

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

WATER LINE PLANS

WATER LINE PLAN AND PROFILE

WATER LINE 4-01

SUMMIT VIEW FARMS 4TH PLAT

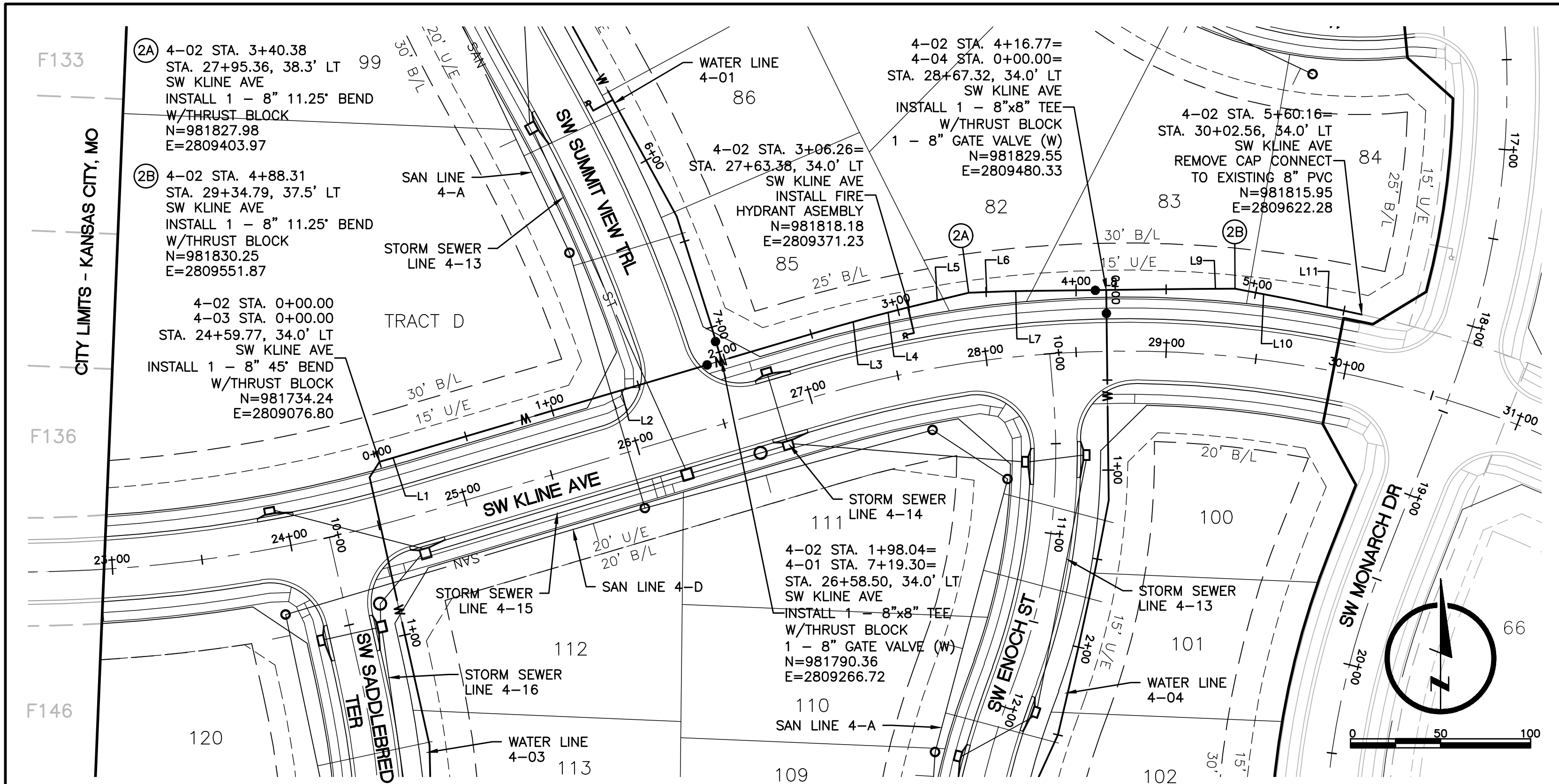
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DESIGNER / DRAFTER  
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PROJECT NUMBER  
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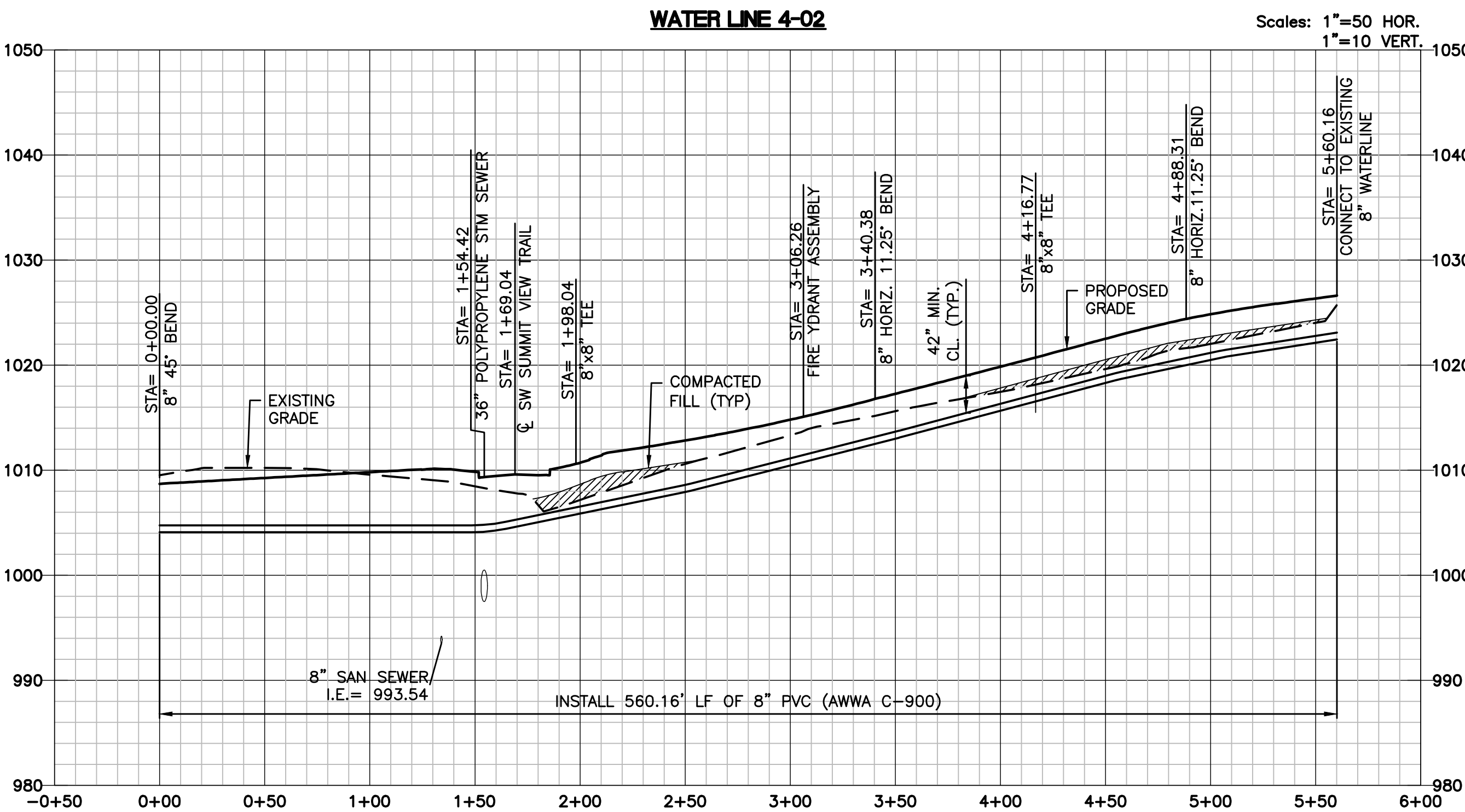
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ALIGNMENT TABLE 4-02				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L1	15.65	N74° 04' 36.55"E	N=981734.24/E=2809076.80	N=981738.54/E=2809091.85
L2	248.64	N73° 29' 29.49"E	N=981738.54/E=2809091.85	N=981809.19/E=2809330.24
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

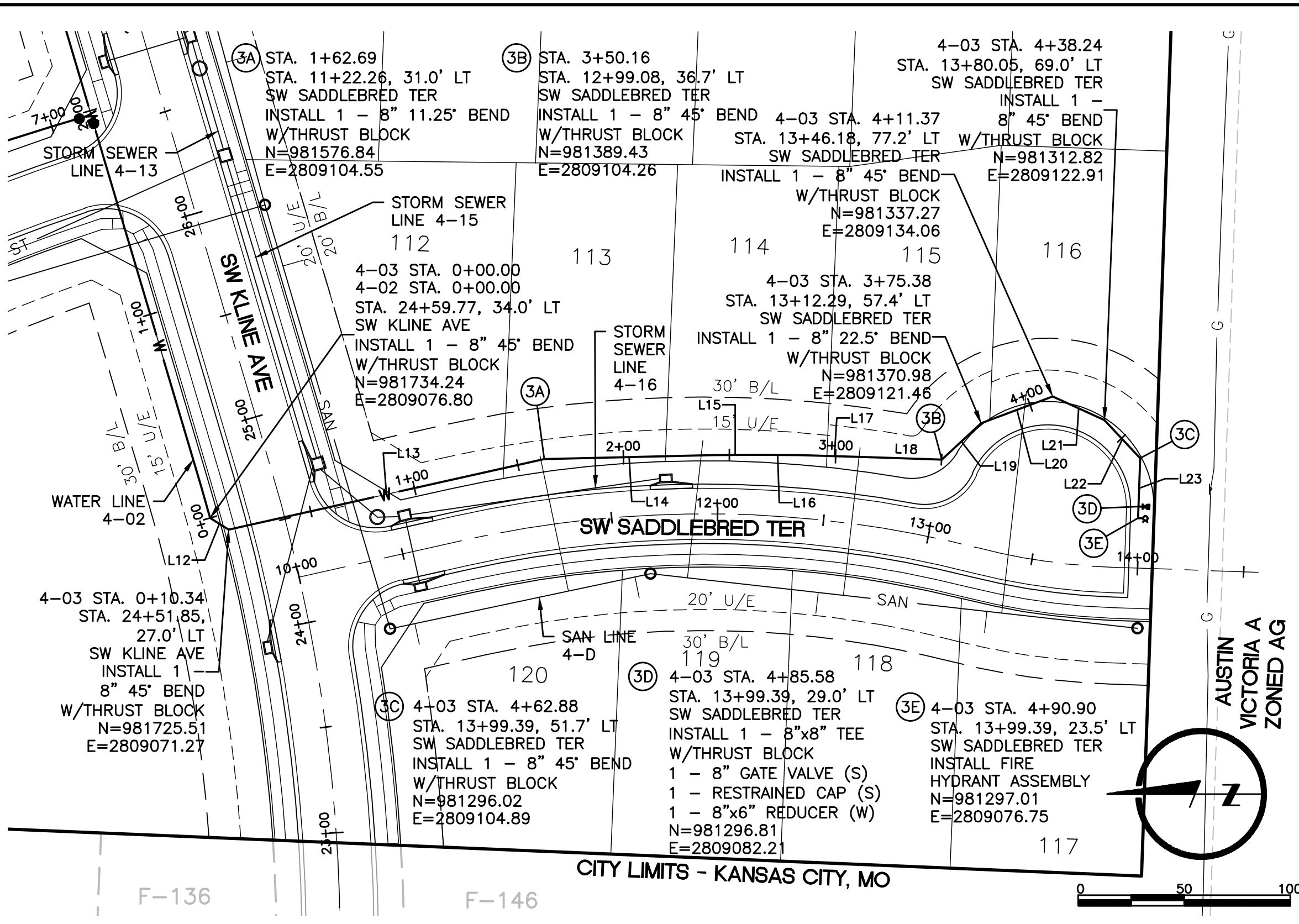
ALIGNMENT TABLE 4-02				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L9	21.77	N89° 40' 49.31"E	N=981830.13/E=2809530.10	N=981830.25/E=2809551.87
L10	32.39	S79° 04' 10.69"E	N=981830.25/E=2809551.87	N=981824.11/E=2809583.67
L11	39.47	S78° 04' 10.69"E	N=981824.11/E=2809583.67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

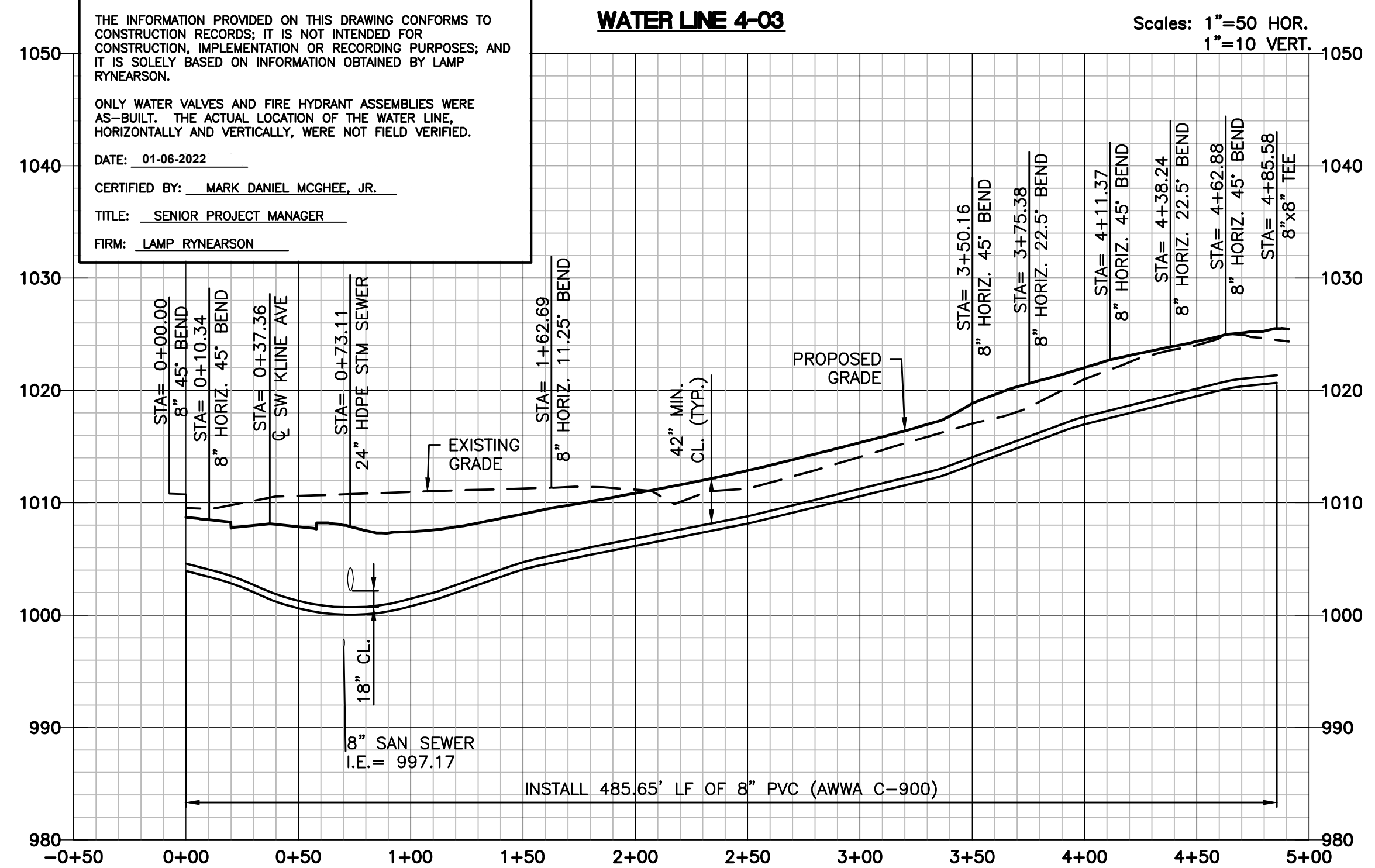


#### WATER MAIN NOTES:

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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.
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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

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

LAMP RYNEARSON

SUMMIT VIEW FARMS 4TH PLAT

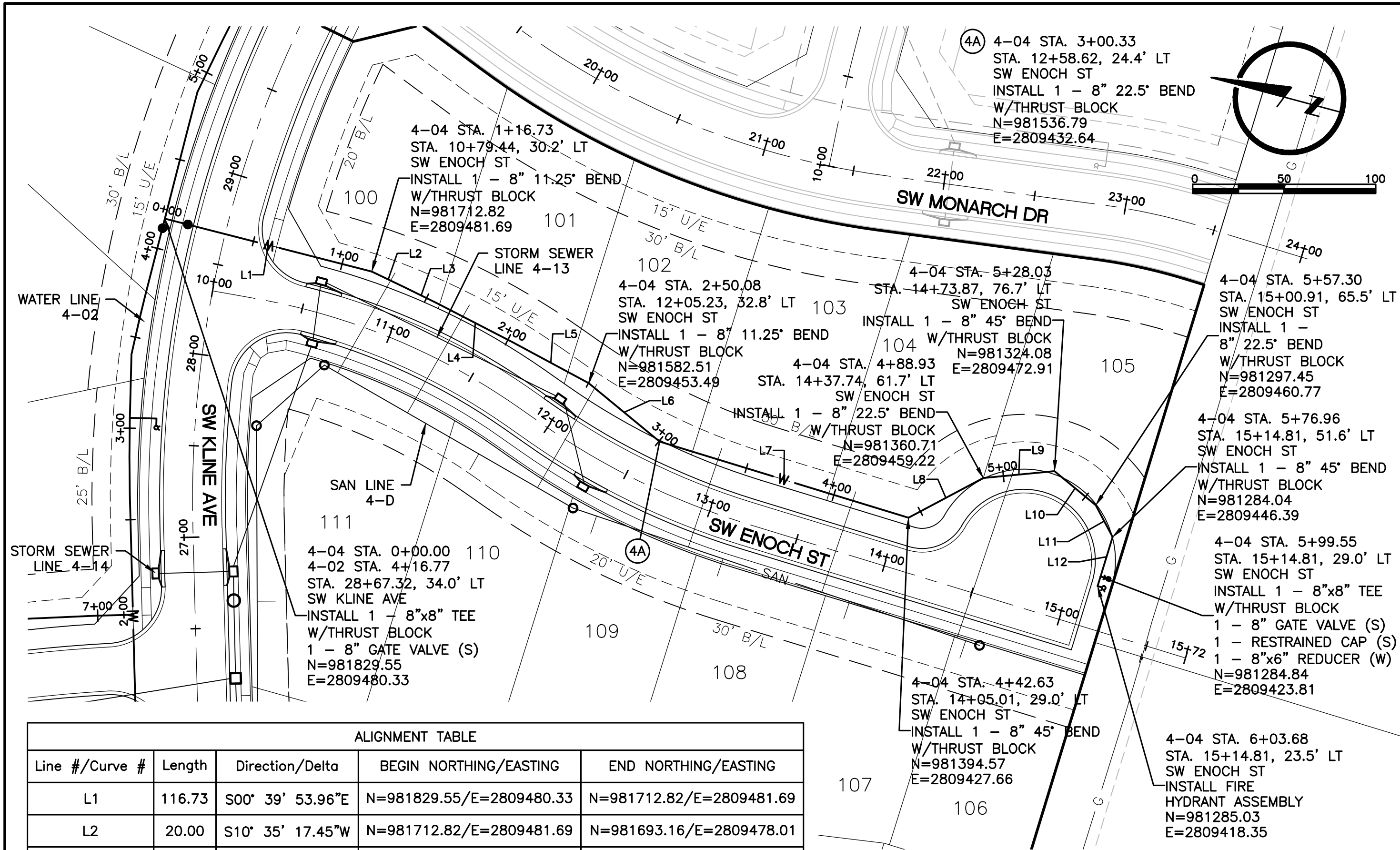
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DESIGNER / DRAFTER  
AJM  
DATE  
11/20/2019  
PROJECT NUMBER  
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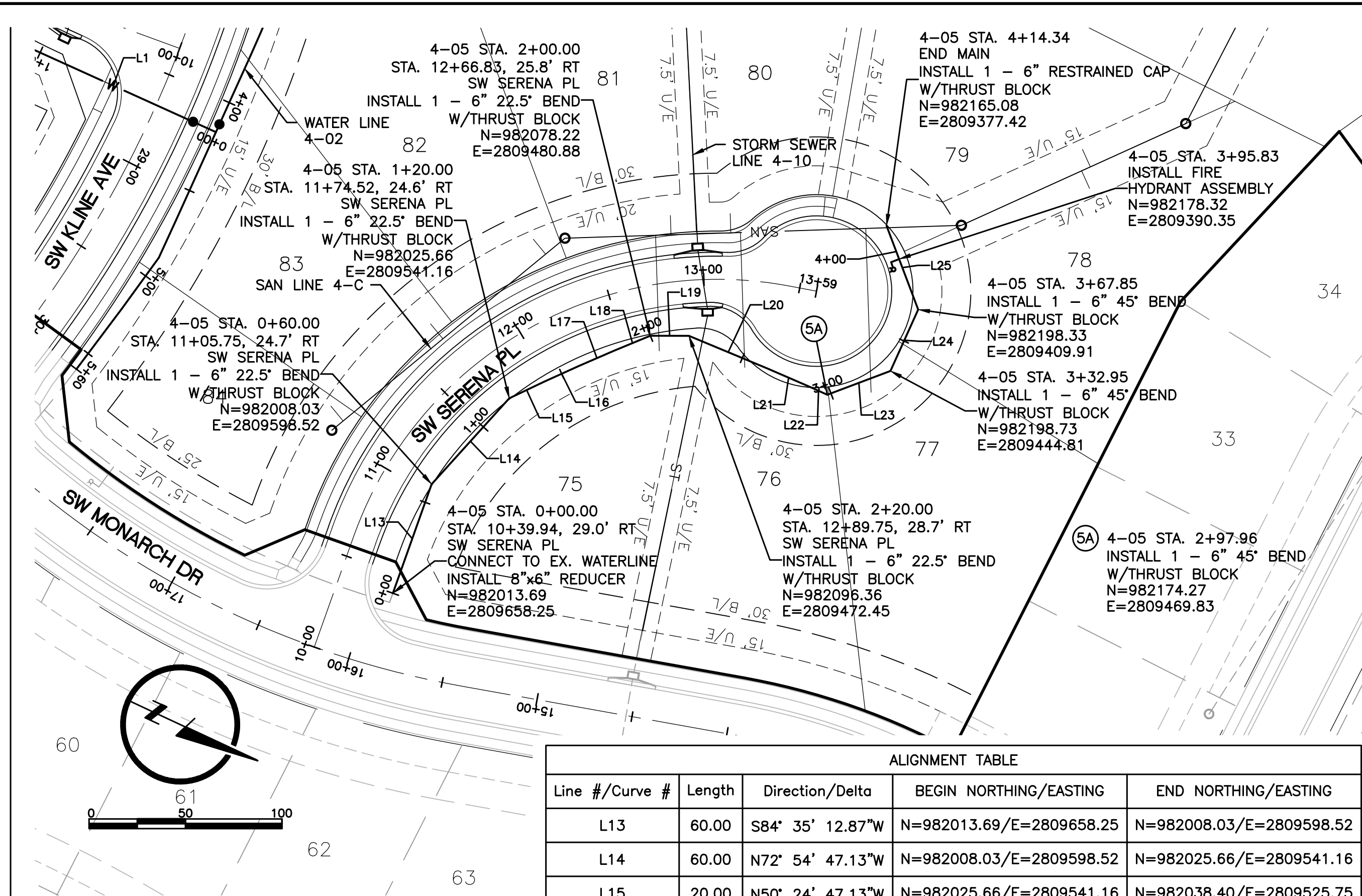
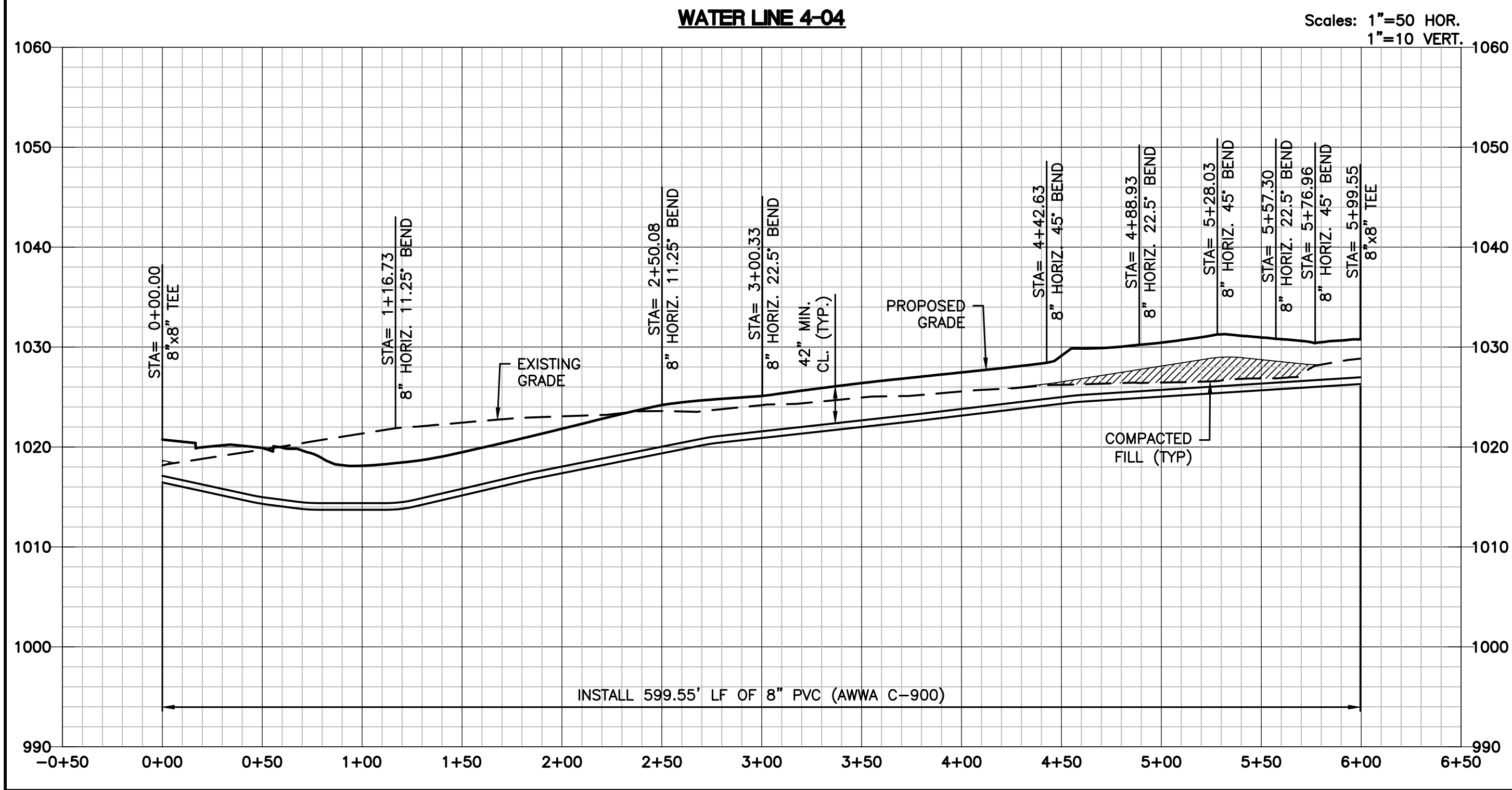
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ALIGNMENT TABLE				
Line #/Curve #	Length	Direction/Delta	BEGIN NORTHING/EASTING	END NORTHING/EASTING
L1	116.73	S00° 39' 53.96"E	N=981829.55/E=2809480.33	N=981712.82/E=2809481.69
L2	20.00	S10° 35' 17.45"W	N=981712.82/E=2809481.69	N=981693.16/E=2809478.01
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.

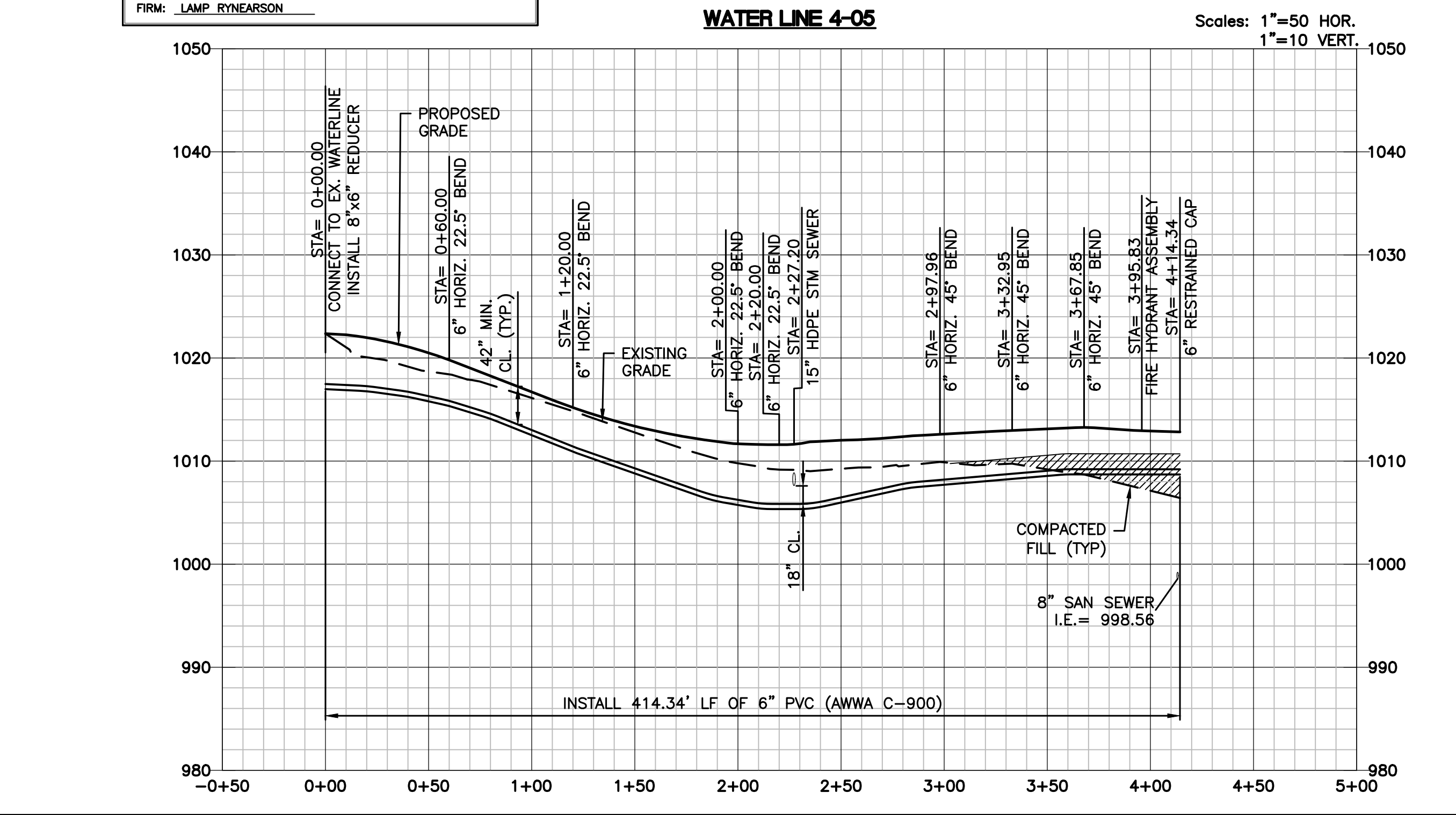
ONLY WATER VALVES AND FIRE HYDRANT ASSEMBLIES WERE AS-BUILT. THE ACTUAL LOCATION OF THE WATER LINE HORIZONTALLY AND VERTICALLY, WERE NOT FIELD VERIFIED.

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  
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Kansas City, MO 64114  
816.361.0440  
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**LAMP RYNEARSON**

SUMMIT VIEW FARMS 4TH PLAT  
LEE'S SUMMIT, MISSOURI

WATER LINE PLANS  
WATER LINE PLAN AND PROFILE  
WATER LINE 4-04 AND 4-05  
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-DET.dwg 12/29/2021 3:33:31 PM JAME MCNEIRET LAMP RYNEARSON

NOM. DIA. (INCHES)	180 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

HORIZONTAL THRUST BLOCKS

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

NOM. DIA. (INCHES)	180 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:  
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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

VERTICAL THRUST BLOCKS

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

LS

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

VALVE STEM EXTENSION AND VALVE BOX

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

STRADDLE BLOCK

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

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

**GENERAL NOTES:**

- 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".
- WATER MAIN INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
- 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.
- TRENCH DEWATERING: SEE SECTION 2100.
- TRENCH SLOPE: SEE SECTION 2100.
- TRENCH SHIELDS: SEE SECTION 2100.
- COMPACTED FILL: SEE SECTION 2100.
- PIPE EMBEDMENT: SEE SECTION 2100. MINIMUM THICKNESS BENEATH PIPE SHALL BE 6 INCHES PER PIPE CLEARANCES TABLE.
- BEDDING INSTALLATION: SEE SECTION 2100.
- BACKFILL: SEE SECTION 2100.

**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
HYDRANT WITH 90 DEGREE BEND

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.

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

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.

MARK 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

9001 State Line Rd., Ste. 200  
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LAMP RYNEARSON

SUMMIT VIEW FARMS 4TH PLAT

LEE'S SUMMIT, MISSOURI

WATER LINE PLANS

WATER LINE DETAILS

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

SHEET

06 of 06