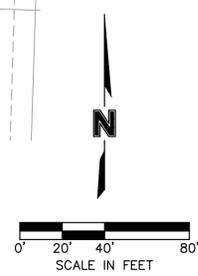
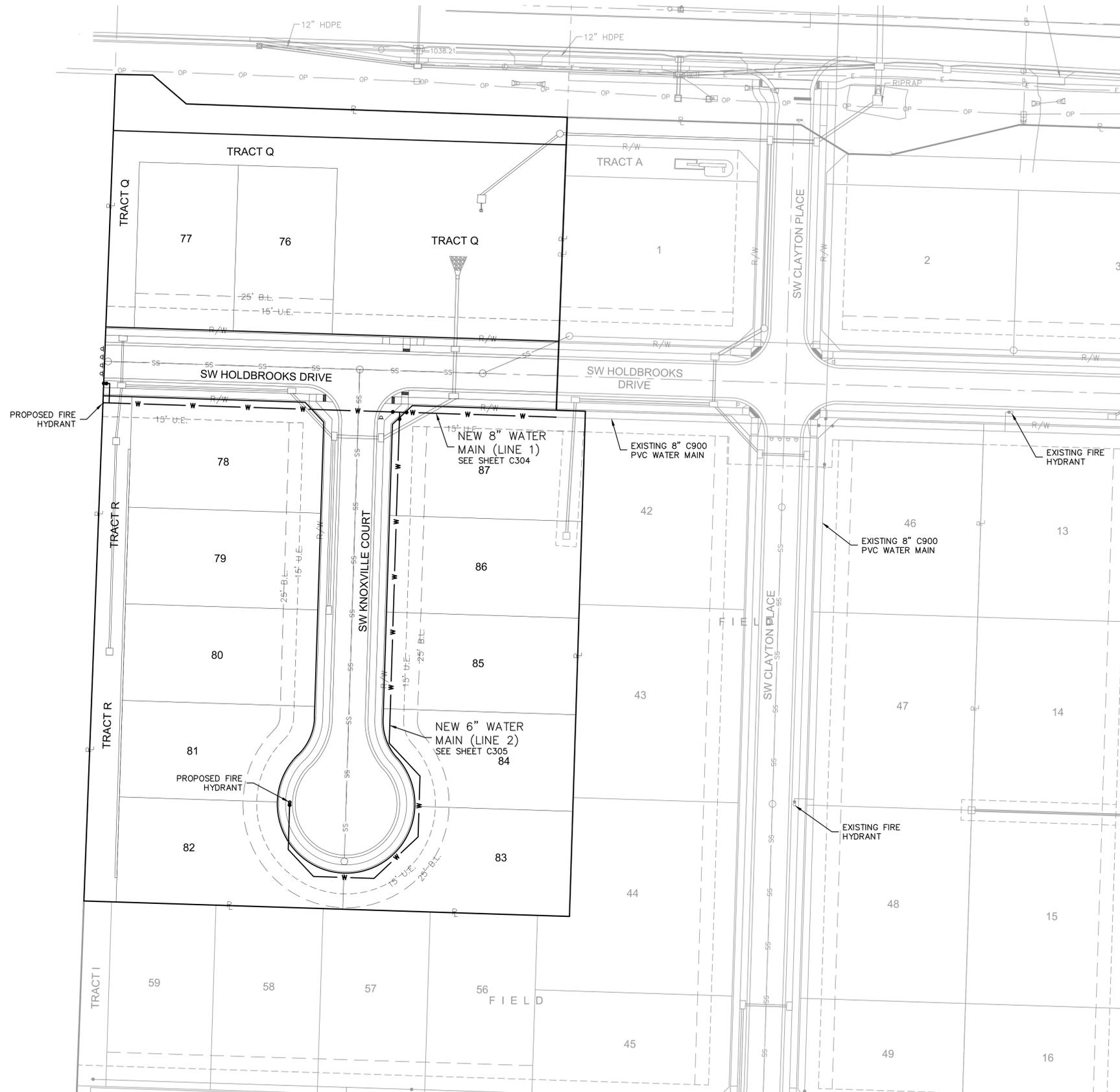
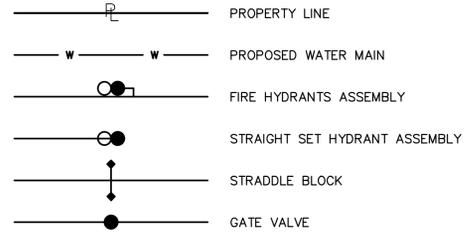


GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE STANDARDS AND SPECIFICATIONS FOR WATER MAIN EXTENSIONS OF THE LEE'S SUMMIT, MISSOURI WATER SERVICES DEPARTMENT. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
2. AREAS WITH LESS THAN 4 FEET OF DEPTH FROM EXISTING GRADE TO PROPOSED TOP OF PIPE SHALL BE FILLED TO AN ELEVATION OF 4 FEET ABOVE THE PROPOSED TOP OF PIPE, COMPACTED 95% OF STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D698 PRIOR TO TRENCHING FOR PIPE INSTALLATION.

GENERAL LAYOUT LEGEND



DWG: F:\2019\2001-2500\019-2339-010-Design\AutoCAD\Find Plans\CNCV\Water Plans\C_GEN01_D192339.dwg USER: bwrathley
 DATE: Jul 08, 2021 4:37pm AREFS: C_PTBK_D192339 C_XBASE_D192339 C_PBASE_D192339 C_PBNDRY_D192339 C_PUTIL_D192339

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JULIE ELAINE SELLERS
NUMBER
PE 201700367
7/12/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

GENERAL LAYOUT
WATER MAIN EXTENSION PLANS
OSAGE 3RD PLAT

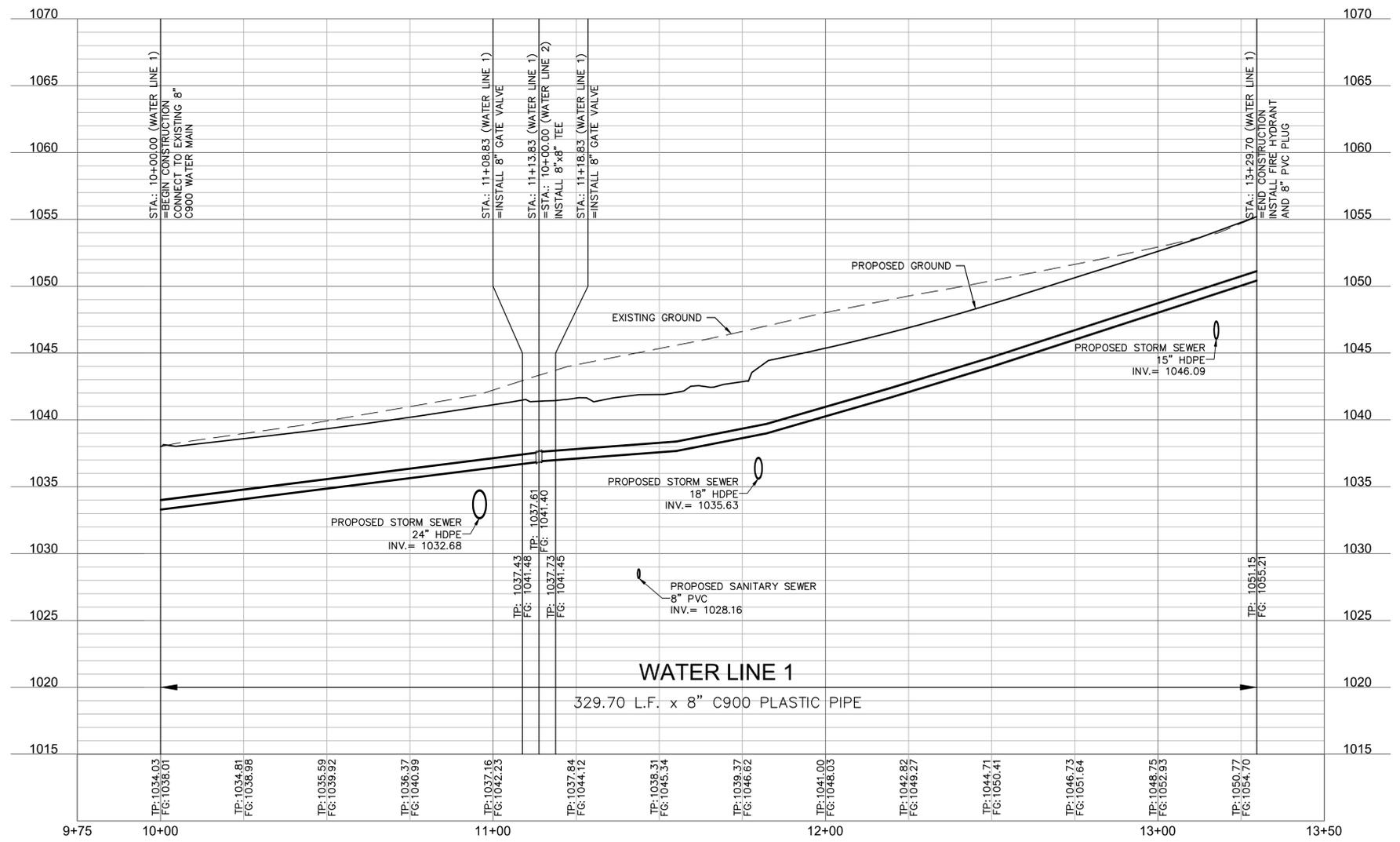
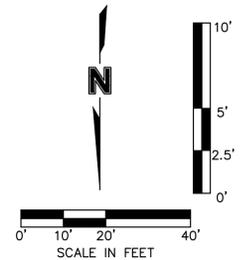
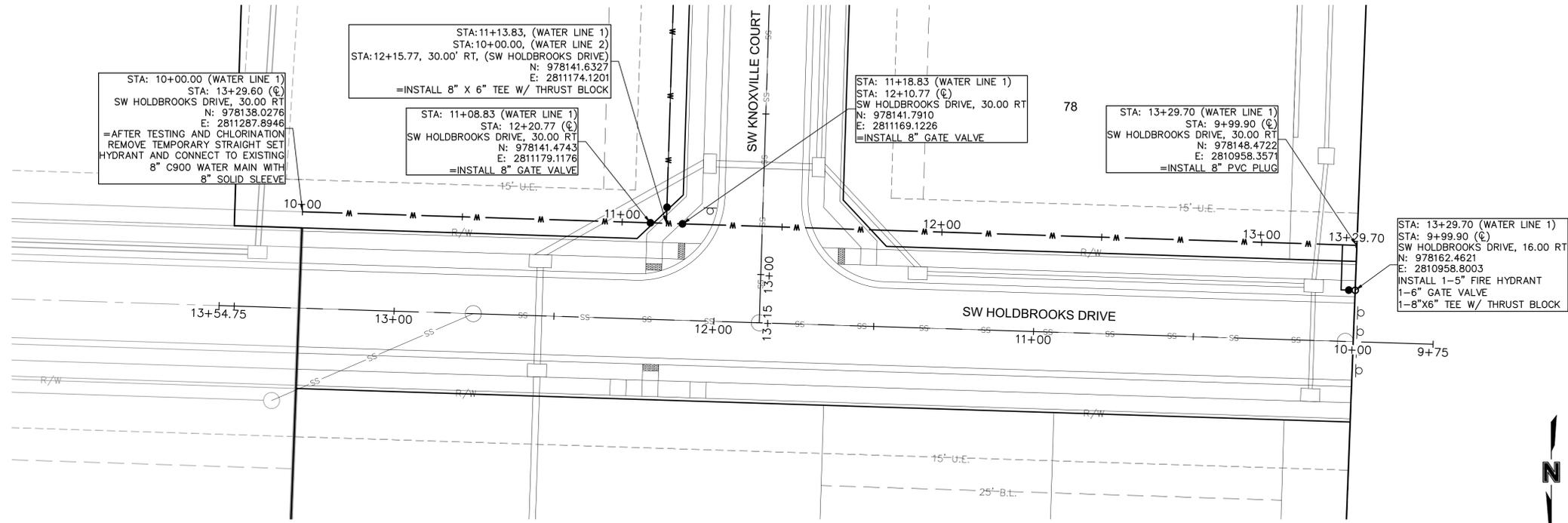
LEE'S SUMMIT, MO

2021

drawn by: MJD
checked by: JES
designed by: MJD
QA/QC by: JES
project no.: D19-2339
drawing no.: C_GEN01_D192339
date: 6/24/2021

SHEET
C303

DWG: F:\2019\2001-2500\019-2339-01\40-Design\AutoCAD\Find Plans\Sheets\CNCV\Water Plans\C_WAT01_D192339.dwg USER: tworthley
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WATER MAIN PLAN & PROFILE (LINE 1)
 WATER MAIN EXTENSION PLANS
 OSAGE 3RD PLAT

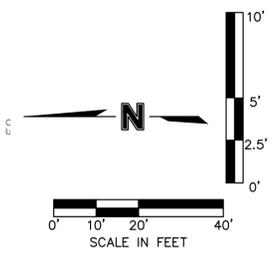
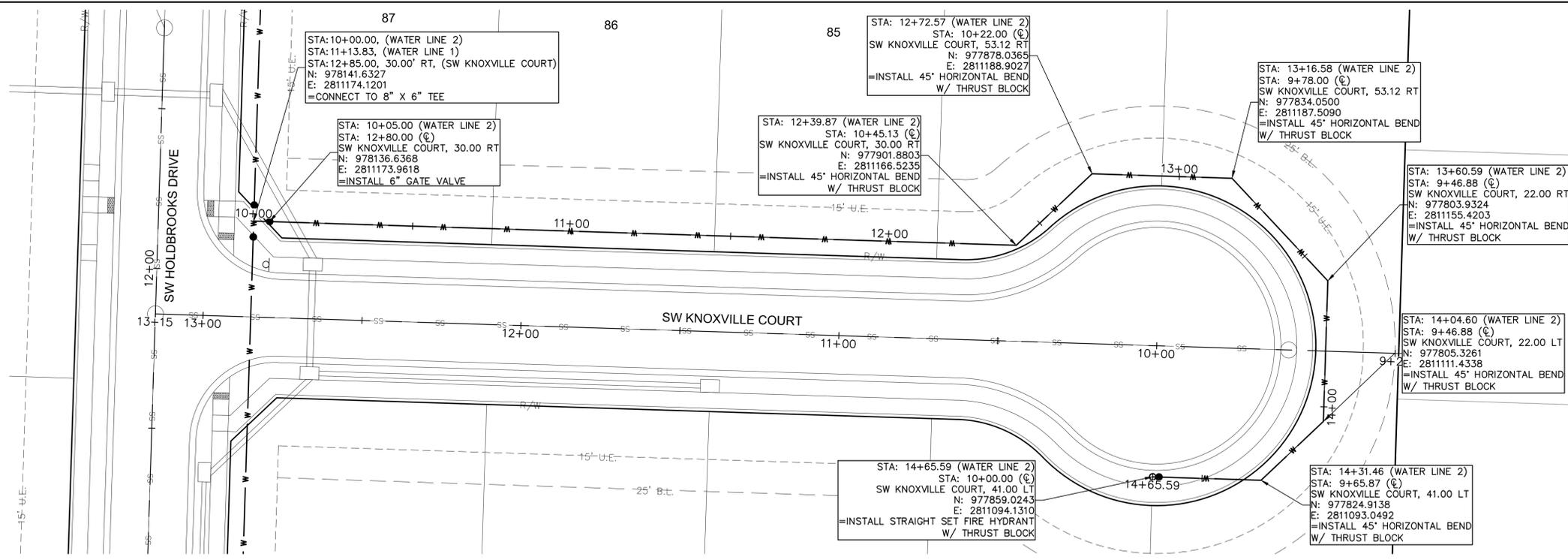
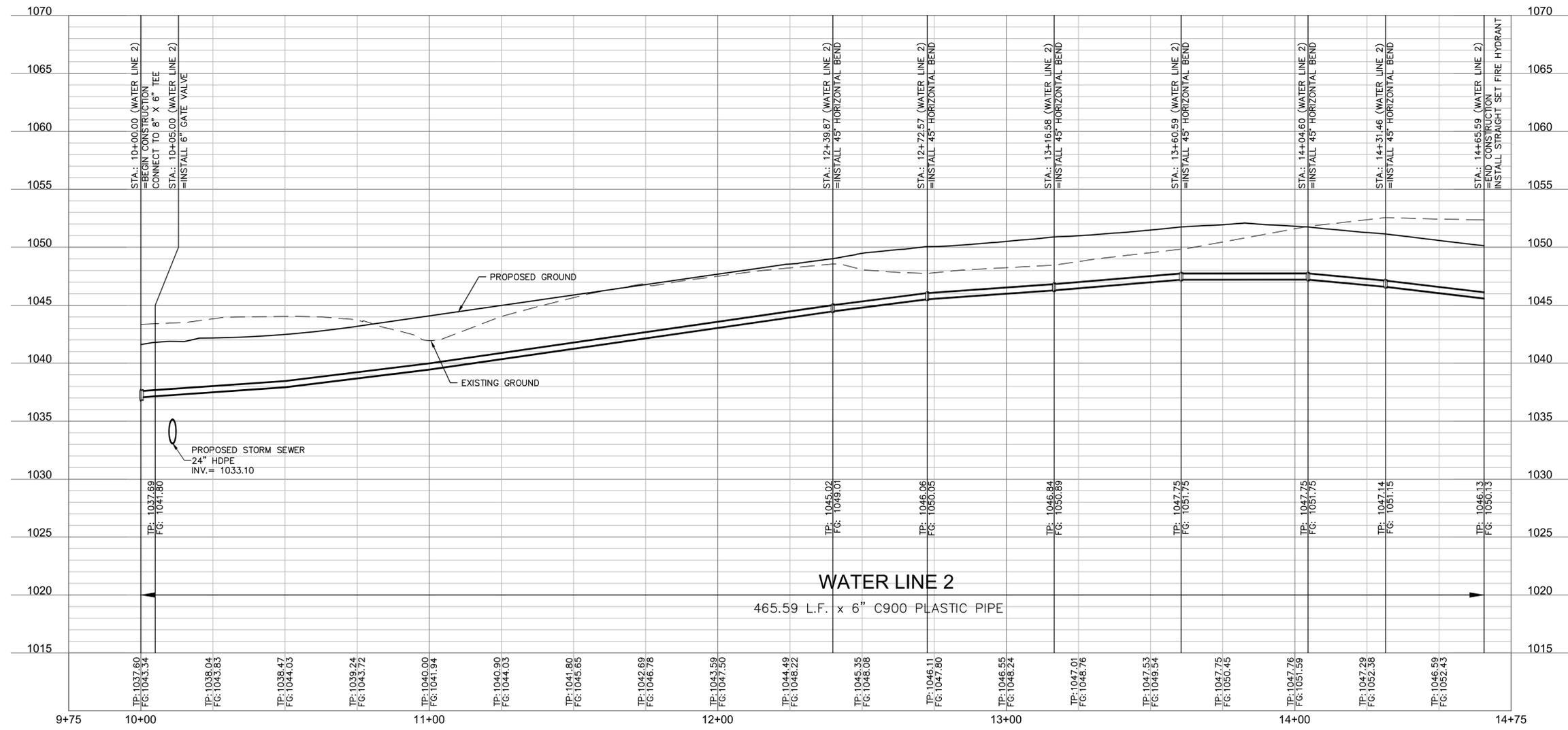
2021

drawn by: MJD
 checked by: JES
 designed by: MJD
 QA/QC by: JES
 project no.: D19-2339
 drawing no.: C_WAT01_D192339
 date: 6/24/2021

LEE'S SUMMIT, MO

SHEET
 C304

DWG: F:\2019\2001-2500\019-2339-01-10-Design\AutoCAD\Drawings\Water Plans\C_WAT01_D192339.dwg USER: tworthley
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
 PE 201700367
 7/12/21
 PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

WATER MAIN PLAN & PROFILE (LINE 2)
 WATER MAIN EXTENSION PLANS
 OSAGE 3RD PLAT

2021

LEE'S SUMMIT, MO

drawn by: MJD	checked by: JES	designed by: MJD
QA/QC by: MJD	project no.: D19-2339	drawing no.: C_WAT01_D192339
date: 6/24/2021		

SHEET C305

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)					
NOM. DIA. (INCHES)	TEE, PLUG	BEND	BEND	BEND	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	26.2	14.4	7.4	4.0
14	25.7	36.5	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	58.2	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.

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

NOTES:
 1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
 2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
 3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
 4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

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

Date: 02/13
 Drawn By: JN
 Checked By: DL
 FILE: WAT-6
 Rev: 1/14

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)					
NOM. DIA. (INCHES)	TEE, PLUG	BEND	BEND	BEND	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	292.0	154.6	78.8	39.6
14	REST. JT.	REST. JT.	215.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	172.3	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.

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

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
HYDRANT INSTALLATION - STRAIGHT SET

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

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

PIPE SIZE	7\"/>
6"	4"
8"	7"
12"	15"

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

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.
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 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
HYDRANT WITH 90 DEGREE BEND

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

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REV. NO.	DATE	REVISIONS DESCRIPTION

DETAIL SHEET
 WATER MAIN EXTENSION PLANS
 OSAGE 3RD PLAT

2021

LEE'S SUMMIT, MO

drawn by: MJD
 checked by: JES
 designed by: MJD
 QA/QC by: JES
 project no.: D19-2339
 drawing no.: C_DTL01_D192339
 date: 6/24/2021

SHEET
 C306

