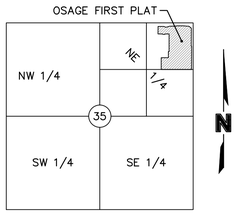
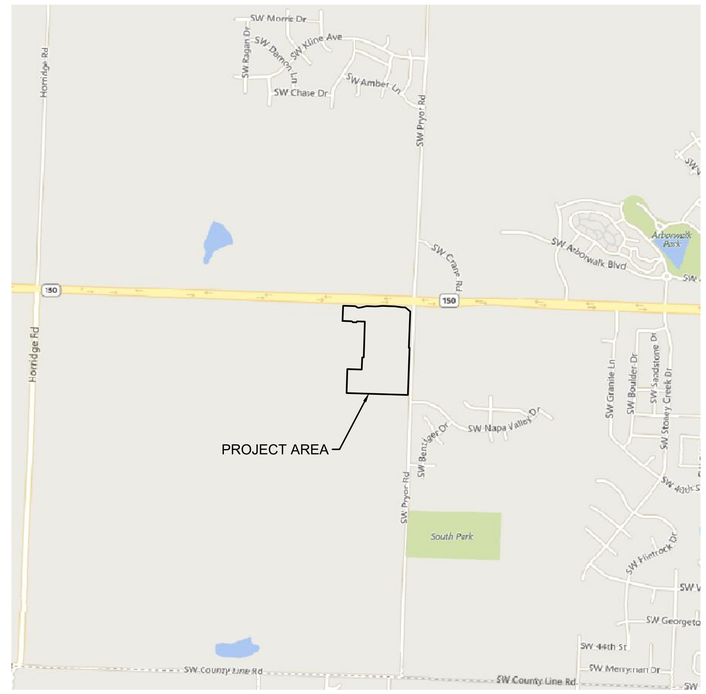
OSAGE
FIRST PLAT
WATER MAIN EXTENSION PLANS

NE 1/4 SECTION 35, TOWNSHIP 47 N, RANGE 32 W.
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



LOCATION MAP
SEC. 35, TWP. 47N., RGE. 32W.
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER CLAYTON PROPERTIES GROUP, INC. D.B.A. SUMMIT HOMES 120 SE 30TH STREET CONTACT: VINCENT WALKER LEE'S SUMMIT, MO 64082 PHONE: 816.246.6700 EMAIL: VINCENT@SUMMITHOMESKC.COM	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: BROCK WORTHLEY PHONE: 816.361.1177 EMAIL: BWORTHLEY@OLSSON.COM	
SURVEYOR OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	



Sheet List	
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☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

PROPERTY DESCRIPTION:

A tract of land in the Northeast Quarter of the Northeast Quarter of Section 35, Township 47 North, Range 32 West of the 5th Principal Meridian, and including part of Lots 1, 2 and 3 SALVAGGIO'S RANCH, a subdivision of land, recorded as Instrument Number I1210418 in Book I53 at Page 73 in Jackson County Recorder of Deeds Office, all in Lee's Summit, Jackson County, Missouri being bounded and described by Jason S. Roudebush, P.L.S. 2002014092 as follows: Commencing at the Northeast corner of said Northeast Quarter; thence South 02°08'00" West, on the East line of said Northeast Quarter, 658.78 feet to the Southeast corner of the North half of the Northeast Quarter of said Northeast Quarter; thence North 88°08'29" West, on the South line of said North half, 50.00 feet to the Southeast corner of said Lot 3, said point also being on the existing Westerly right-of-way line of SW Pryor Road, as now established, and also being the Point of Beginning of the tract of land to be herein described; thence South 88°08'29" East, on said North line and said existing Westerly right-of-way line, 10.00 feet to the existing Westerly right-of-way line of said SW Pryor Road as established by Document 1963I814460 in Book I634 at Page 487 being on a line on that is 40.00 West of and parallel with the East line of said Northeast Quarter of said Northeast Quarter; thence South 02°08'00" West, on said existing Westerly right-of-way line and said parallel line, 658.80 feet to a point on the South line of the said Northeast Quarter of said Northeast Quarter; thence North 88°09'45" West, on said South line, 857.08 feet; thence leaving said South line, North 01°48'53" East, 335.30 feet; thence South 88°11'07" East, 202.50 feet; thence North 01°48'53" East, 170.00 feet; thence South 88°11'07" East, 21.62 feet; thence North 01°48'53" East, 500.00 feet; thence North 88°11'07" West, 106.00 feet; thence South 46°48'53" West, 19.80 feet; thence North 88°11'07" West, 50.00 feet; thence North 43°11'07" West, 19.80 feet; thence North 88°11'07" West, 127.17 feet to a point on the West line of the East half of the Northwest Quarter of said Northeast Quarter; thence North 02°09'46" East, on said West line, 212.32 feet to a point on the existing Southerly right-of-way line of Missouri State Highway No. 150, as established by Document Number 2009E0064160, being 80.00 feet right of Centerline Station 316+29.79 (Station 316+29.51 Deed); thence leaving said West line, South 88°11'07" East, along said existing Southerly right-of-way line, 170.21 feet to a point that is 80+00.00 right of Centerline Station 318+00.00 thence South 58°26'25" East, along said Southerly right of way line, 40.31 feet to a point that is 100.00 feet right of centerline Station 318+35.00; thence South 88°11'07" East, along said Southerly right of way line, 30.00 feet to a point that is 100.00 feet right of centerline Station 318+65.00; thence North 76°55'17" East, along said Southerly right of way line, 97.27 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0006361, being 75.00 feet right of centerline Station 319+59.00; thence South 88°11'07" East, along said Southerly right of way line, 126.00 feet to a point that is 75.00 feet right of centerline Station 320+85.00; thence North 85°28'29" East, along said Southerly right of way line, 90.55 feet to a point that is 65.00 feet right of centerline Station 321+75.00; thence South 88°11'07" East, along said Southerly right of way line and along the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0006351, 175.00 feet to a point that is 65.00 feet right of centerline Station 323+50.00; thence South 82°44'41" East, along said Southerly right of way line, 105.48 feet to a point that is 75.00 feet right of centerline Station 324+55.00; thence South 88°11'07" East, along said Southerly right of way line, 45.00 feet to a point that is 75.00 feet right of centerline Station 325+00.00; thence South 49°40'27" East, along said Southerly right of way line, 88.33 feet to a point that is 130.00 feet right of centerline Station 325+69.12 (Station 325+69.30 Deed), said point also being on the East line of said Lot 2, SALVAGGIO'S RANCH and on the West right of way of said SW Pryor Road as now established; thence South 02°08'00" West, along said East lot line and said West right of way line, 509.17 feet to the Point of Beginning. Containing 917,234 square feet or 21.06 acres, more or less.

BENCHMARK

BENCHMARK NO. 1
CHISELED PLUS ON THE EAST FLANGED BOLT OF THE FIRE HYDRANT ON THE WEST SIDE OF SW PRYOR ROAD ON ADJOINING PROPERTY SOUTH OF THE SOUTHWEST CORNER OF SUBJECT PROPERTY.
ELEVATION = 1014.830

BENCHMARK NO. 2
RAILROAD SPIKE IN THE NORTH FACE OF POWER POLE LOCATED ON THE SOUTH SIDE MISSOURI STATE HIGHWAY 150 AT THE WEST SIDE OF THE DRIVEWAY TO 2025 MISSOURI STATE HIGHWAY 150, LEE'S SUMMIT, MO.
ELEVATION = 1031.313

OLSSON HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

Brock Worthley 7/2/2020

BROCK M. WORTHLEY, P.E.
CIVIL ENGINEER
MO# PE-2019000237

DATE

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/15/2020	REVISED PER CITY COMMENTS	
2	7/2/2020	REVISED PER CITY AND MODOT COMMENTS	

TITLE SHEET
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	AA
checked by:	SS
designed by:	AA
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	
date:	3/17/2020

SHEET
C301

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\WATER\C_TTL01_A192339.dwg USER: bworthley
DATE: Jul 01, 2020 6:31pm XREFS: C_PBNDY_A192339 C_PTBLK02_A192339

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PLANS IN THEIR POSSESSION ARE THE MOST CURRENT VERSION ISSUED, ARE FULLY COORDINATED WITH ALL SUBCONTRACTORS, AND PRESENT ON SITE AT ALL TIMES. CURRENT PLANS PREPARED BY OLSSON MAY BE OBTAINED AT THE DIRECTION OF OLSSON'S CLIENT. DIRECT REQUESTS TO OLSSON MAY REQUIRE ADDITIONAL AUTHORIZATIONS, AGREEMENTS, AND/OR FEES. PLEASE CONTACT THE ENGINEER FOR INFORMATION.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS UNLESS WRITTEN APPROVAL FROM ENGINEER, OWNER, AND DEVELOPER.

3. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.

4. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES AND ITEMS OF WORK.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN IN THE PLANS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES, AND FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.

7. THE CONTRACTOR SHALL NOT ENGAGE IN ACTIVITIES THAT MAY ENCROACH ON WATERS OF THE U.S., INCLUDING WETLANDS, UNTIL ANY NECESSARY PERMITS MAY BE OBTAINED. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS DESCRIBED IN THE PERMIT.

8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, THE SAFETY OF ALL PERSONS INCLUDING VISITORS AND THE GENERAL PUBLIC, AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY THROUGHOUT THE PROJECT AND NOT BE LIMITED BY WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.

9. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL UTILITY COMPANIES AND OBTAIN ANY RELEVANT INFORMATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BOUNDARY CORNERS AND SECTION CORNERS. ANY BOUNDARY CORNER AND/OR SECTION CORNER DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.

11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJACENT PROPERTIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE DURING CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES.

12. PRIOR TO MOVING OFF THE JOB THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER TO PERFORM A FINAL WALK-THROUGH OF THE CONSTRUCTION SITE.

REFERENCES

1. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY;
   A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.
   B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.
   C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
   D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES.
   E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI

4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THEIR OWN INVESTIGATIONS AND MAKING THEIR OWN ASSUMPTIONS REGARDING SITE SURFACE AND SUBSURFACE CONDITIONS. THIS INCLUDES THE LOCATION AND CONSISTENCY OF ANY EXISTING ROCK LAYERS UNDERLYING THE PROJECT SITE. CONTACT THE ENGINEER REGARDING ANY DISCREPANCIES THAT MAY AFFECT THE ABILITY TO CONSTRUCT FROM THESE PLANS AS DESIGNED.

3. EXISTING CONDITIONS WERE DETERMINED THROUGH A VARIETY OF METHODS THAT MAY INCLUDE SURVEY, AERIAL IMAGERY, AVAILABLE RECORDS, GIS DATA, ETC. SUBSURFACE CONDITIONS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES AND OTHER SITE IMPROVEMENTS PRESENT ON SITE. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS WHEN CONFLICTS AND DISCREPANCIES ARE FOUND.

CONSTRUCTION

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY AS SHOWN IN THESE PLANS. IF PLANS ARE NOT PROVIDED, CONTRACTOR SHALL COORDINATE AND PROVIDE CONTROLS TO THE SATISFACTION OF THE RIGHT-OF-WAY OWNER.

2. THE CONTRACTOR SHALL PROTECT ALL TREES OVER 3" CALIPER FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE ON THESE PLANS.

3. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.

4. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS ARE TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. NOT ALL ADJUSTMENTS ARE INDICATED IN THE PLANS.

5. THE CONTRACTOR SHALL STREET SWEEP OR OTHERWISE CLEAN ALL ACCESS ROUTES TO THE SITE AT CONCLUSION OF THE PROJECT.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING A MINIMUM OF 7 DAYS PRIOR TO THE REQUESTED DATE OF APPROVAL. ENGINEER SHALL REVIEW SHOP DRAWINGS OR SAMPLES CONFORMANCE WITH THE DESIGN FOR THIS PROJECT AS DESCRIBED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS. THE ENGINEER'S REVIEW SHALL NOT EXTEND TO MEANS OR METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VARIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS UNLESS CONTRACTOR HAS NOTIFIED ENGINEER OF EACH SUCH VARIATION AT THE TIME OF SUBMISSION, AND OBTAINED ENGINEER'S WRITTEN APPROVAL OF EACH SUCH VARIATION. PRIOR TO SUBMITTING EACH SHOP DRAWING OR SAMPLE, CONTRACTOR SHALL HAVE REVIEWED AND VERIFIED:
   A. ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION WITH RESPECT THERETO;
   B. ALL MATERIALS WITH RESPECT TO INTENDED USE, FABRICATION, SHIPPING, HANDLING, STORAGE, ASSEMBLY AND INSTALLATION PERTAINING TO THE PERFORMANCE OF THE WORK;
   C. ALL INFORMATION RELATIVE TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO;
   D. CONTRACTOR SHALL ALSO HAVE REVIEWED AND COORDINATED EACH SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES, AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.
   E. ALL SUBMITTED SHOP DRAWINGS SHALL BEAR A STAMP OR SPECIFIC WRITTEN INDICATION AND SIGNATURE THAT CONTRACTOR HAS FULLY COMPLETED THE ABOVE TASKS.

2. SHOP DRAWINGS AS DESCRIBED ABOVE ARE REQUIRED FOR, BUT NOT LIMITED TO, THE FOLLOWING:
   A. ALL SANITARY SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
   B. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

WATER PLAN NOTES

1. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION WITH UTILITY OWNER.

2. ALL PIPE LENGTHS ARE CALCULATED LINEARLY FROM CENTER OF FITTING OR WALL OF VAULT.

3. COORDINATES ARE PROVIDED ALONG PIPE CENTERLINE. ADDITIONAL COORDINATES PROVIDED ARE PER LOCAL CODES AND ORDINANCES OR AS AN AID WHEN ORIENTING INSTALLATIONS.

4. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF WATER.

5. WATER PIPE TRENCHES SHALL BE CONSTRUCTED SUCH THAT UNDISTURBED EXISTING SOIL OR FILL COMPACTED TO 95% PROCTOR DENSITY IS AT A DEPTH THAT IS 18" ABOVE TOP OF PROPOSED PIPE.

6. ALL PRIVATE WATER LINES SHALL BE A MINIMUM OF 48 INCHES AND MAXIMUM OF 60 INCHES BELOW THE FINISHED GRADE ELEVATIONS SHOWN HEREIN UNLESS OTHERWISE NOTED.

7. IF AN AS-BUILT OF A WATER LINE IS REQUIRED OR EXPECTED THE CONTRACTOR SHALL NOT BACKFILL THE TRENCH UNTIL AN AS-BUILT SURVEY IS CONDUCTED.

8. DISINFECTION AND PRESSURE TESTING OF WATER LINES SHALL BE PERFORMED AND PAID FOR BY THE CONTRACTOR AND AS REQUIRED BY THE UTILITY OWNER.

9. ALL EXISTING FIRE HYDRANTS ON SITE OR IN THE RIGHT-OF-WAY BETWEEN PROPERTY AND ROADWAY SHALL BE REPAINTED PER LOCAL CODES AND ORDINANCES.

10. TRACING TAPE SHALL BE INSTALLED ALONG ALL NON-METALLIC SURFACES OR AS DIRECTED BY LOCAL CODES AND ORDINANCES.

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	8" C900 PLASTIC PIPE	L.F.	3892.54 (2)	
2	8" CLASS 52 DIP WITH ZINC COATING (2)	L.F.	40.00	
3	8" X 8" CROSS	EA.	2	
4	8" X 8" TEE	EA.	4	
5	8" X 12" TEE	EA.	2	
6	STRAIGHT SET HYDRANT ASSEMBLY	EA.	5	
7	FIRE HYDRANT ASSEMBLY (INCLUDING TEE)	EA.	7	
8	8" GATE VALVES	EA.	16	
9	12" GATE VALVES	EA.	4	
10	12" SOLID SLEEVES	EA.	4	
11	8" BENDS	EA.	9 (2)	
12	8" PVC PLUG	EA.	1	
13	STEEL ENCASEMENT	L.F.	80.00	

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Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177 www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/15/2020	QUANTITIES UPDATED	
2	7/2/2020	QUANTITIES UPDATED	

REVISIONS

GENERAL NOTES
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_TTL01_A192339
date: 3/17/2020

SHEET
C302

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\WATER\C_TTL01_A192339.dwg USER: bworthley
DATE: Jul 01, 2020 6:31pm XREFS: C_PBNDY_A192339 C_PTBLK02_A192339

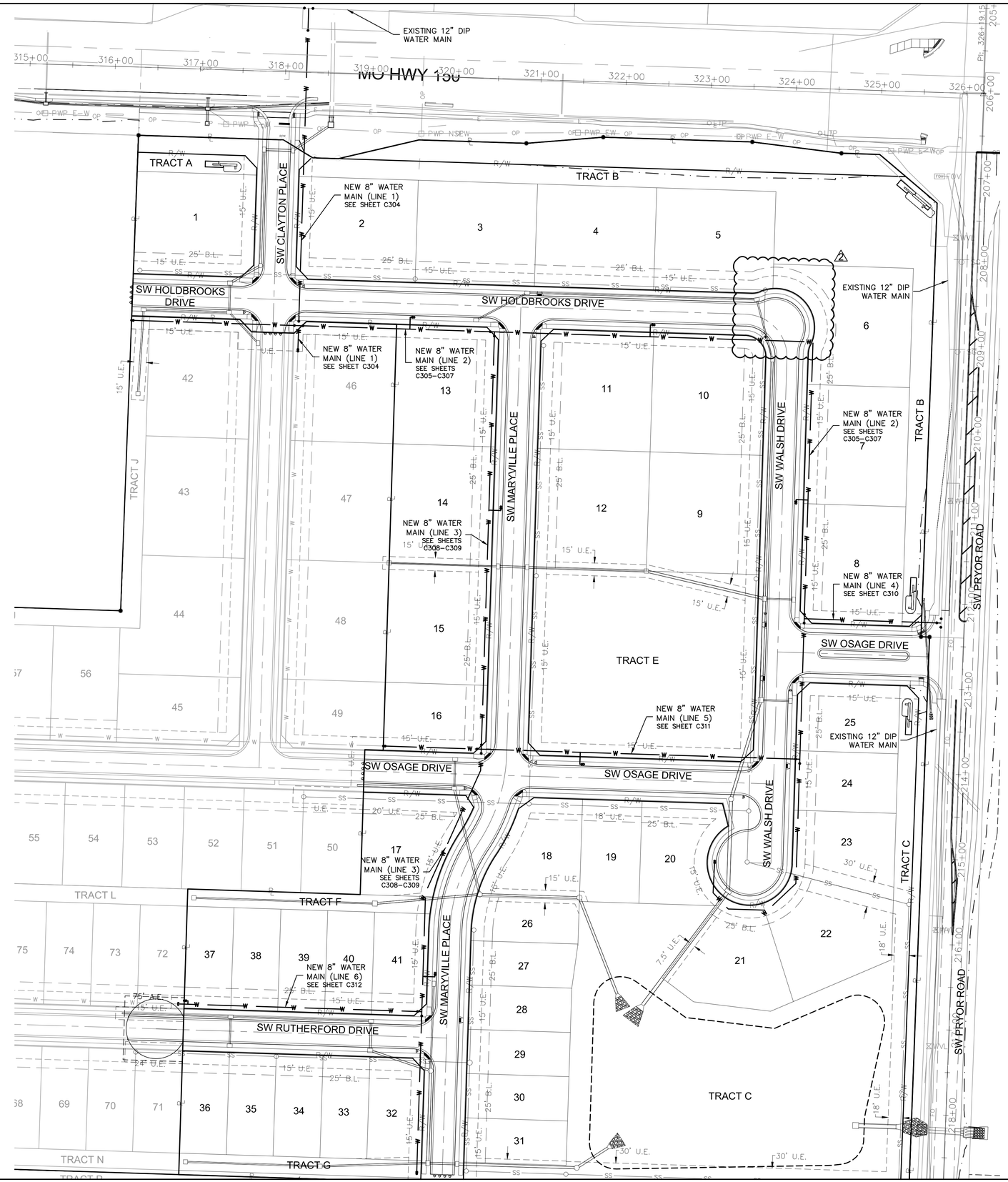
GENERAL NOTES

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

- PROPERTY LINE
- PROPOSED WATER MAIN
- FIRE HYDRANTS ASSEMBLY
- STRAIGHT SET HYDRANT ASSEMBLY
- STRADDLE BLOCK
- GATE VALVE



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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
7/2/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/14/2020	WATER LINE 1 MOVED	
2	7/2/2020	WATER LINE 2 ALIGNMENT REVISED	

REVISIONS

GENERAL LAYOUT
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	AA
checked by:	SS
designed by:	AA
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_GEN01_A192339
date:	3/17/2020

SHEET
C303

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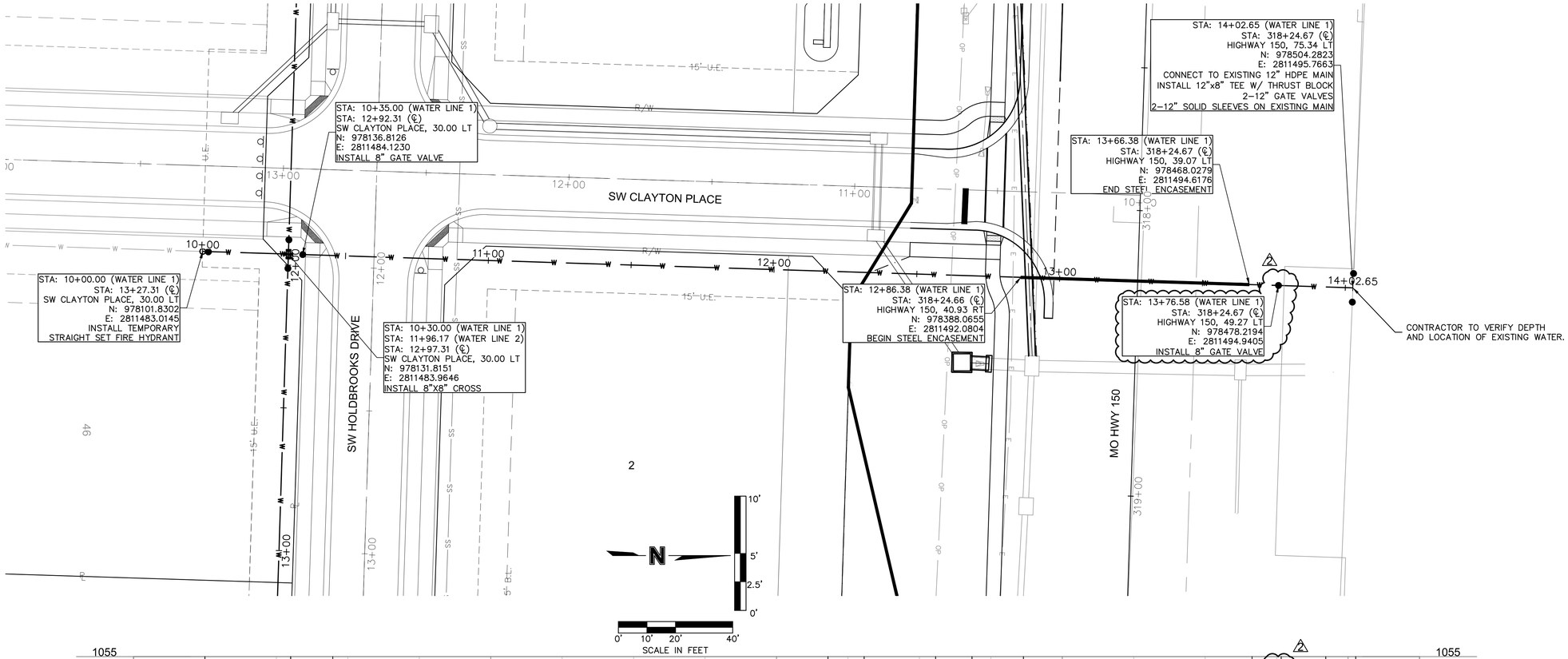

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DATE: Jul 01, 2020 6:33pm XREFS: C_FBASE_A192339 C_PBASE_A192339 C_PBNDY_A192339 C_XBASE_A192339 C_PWATR01_A192339 C_PTBLK02_A192339 T_PBASE_A192339

olsson
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Missouri Certificate of Authority #: 001592
1301 Burlington Street, Suite 100
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TEL 816.361.1177 www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/15/2020	WATER LINE 1 PLAN & PROFILE REVISED	
2	7/2/2020	GATE VALVE MOVED INTO MODOT RIGHT OF WAY	

REVISIONS

WATER PLAN & PROFILE (LINE 1)
WATER MAIN EXTENSION PLANS

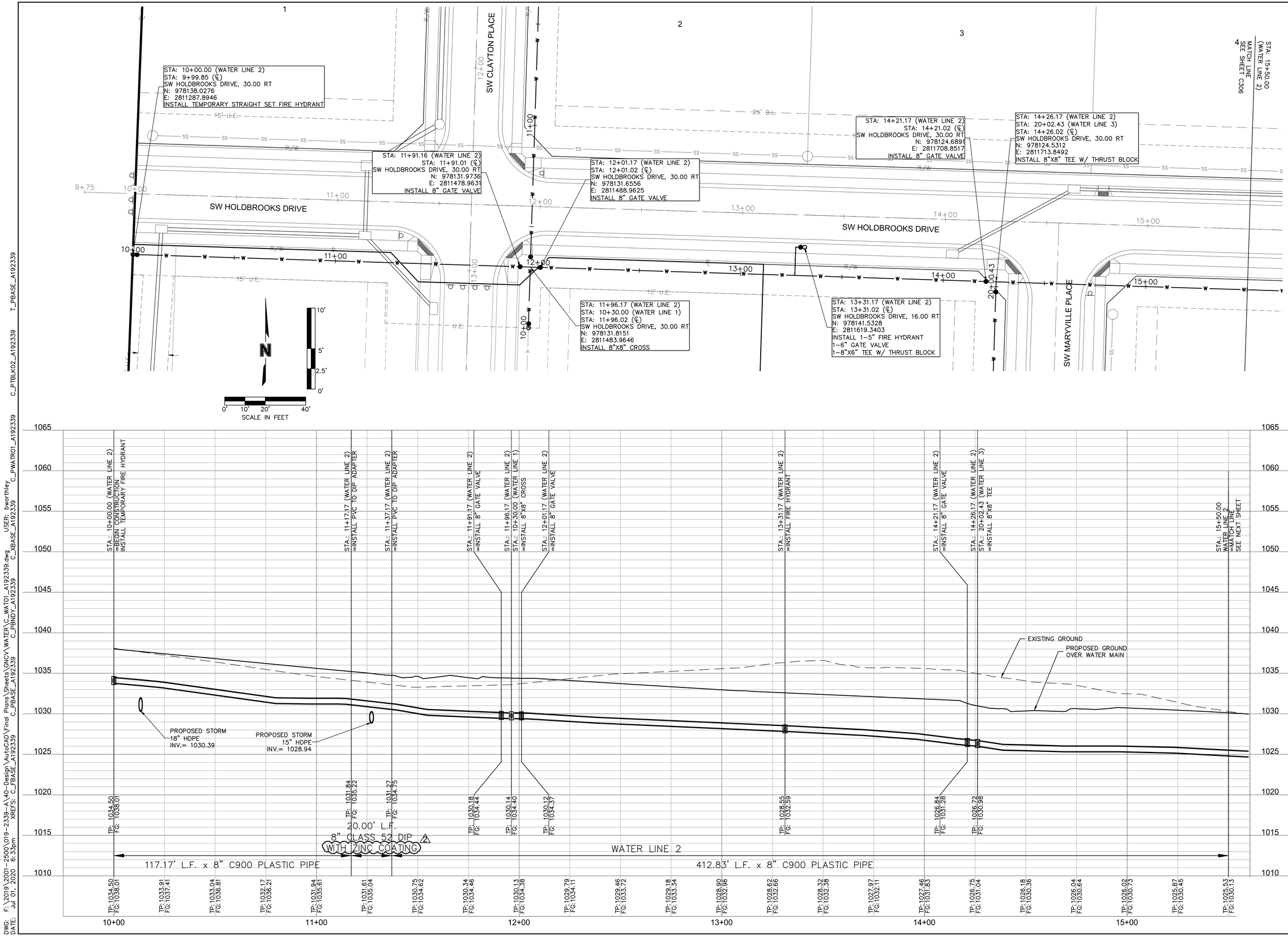
OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	AA
checked by:	SS
designed by:	AA
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_WAT01_A192339
date:	3/17/2020

SHEET
C304



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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
7/2/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/15/2020	VERTICAL BENDS REMOVED	
2	7/2/2020	"WITH ZINC COATING" ADDED TO DIP DESCRIPTION	
		PIPE INSULATION REMOVED	

REVISIONS

WATER PLAN & PROFILE (LINE 2)
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_WAT01_A192339
date: 3/17/2020

SHEET
C305

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\WATER\C_WAT01_A192339.dwg USER: bworthley
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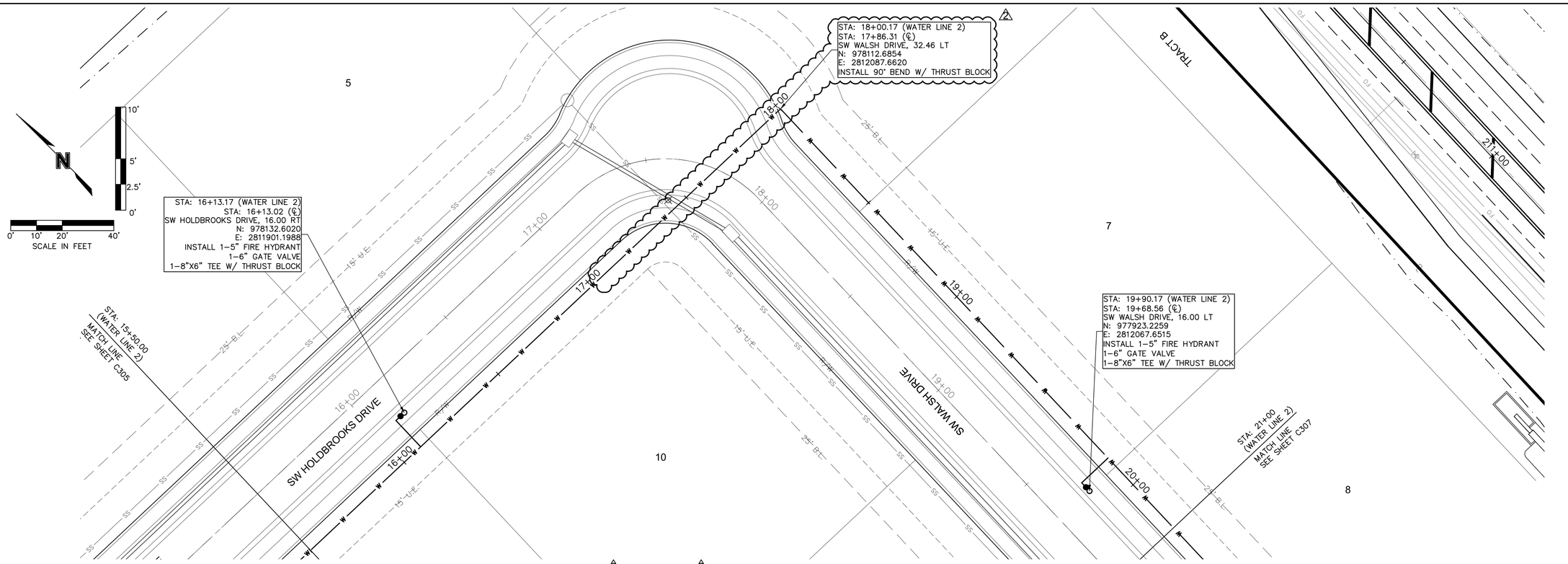

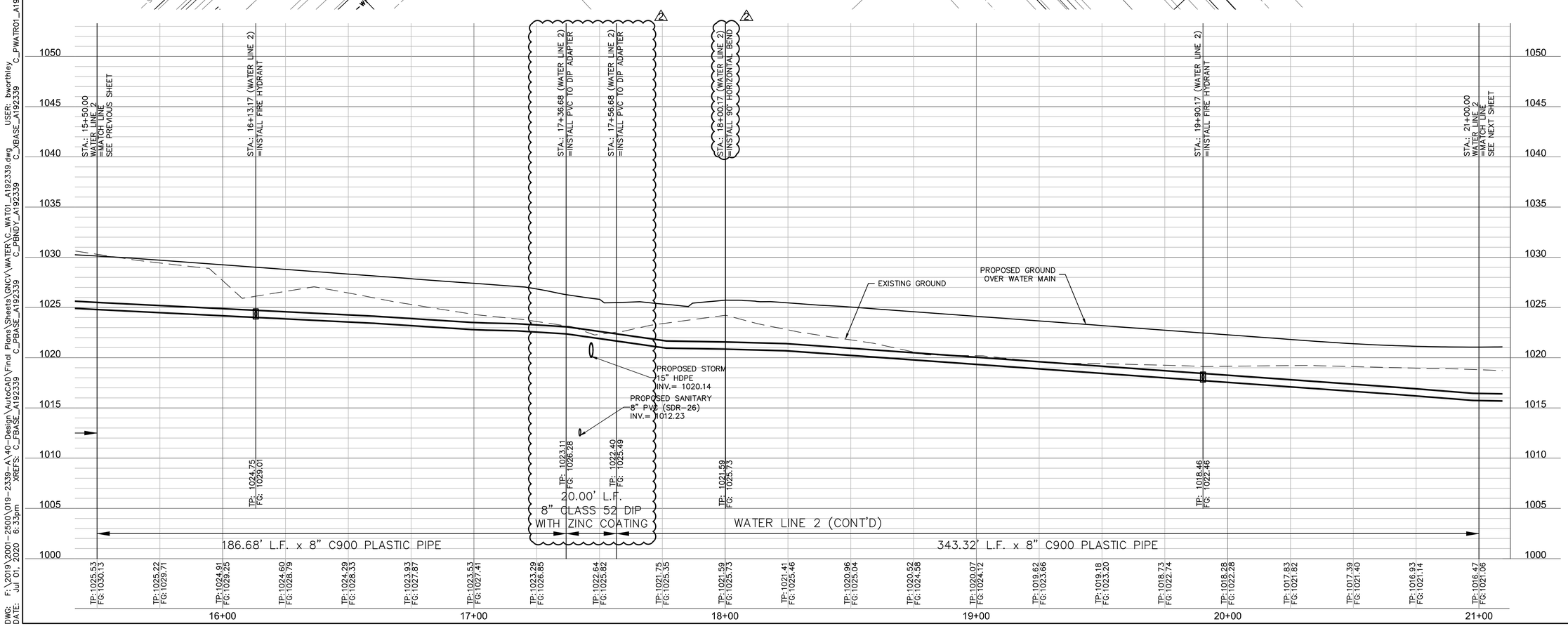

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North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
7/2/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/15/2020	WATER ALIGNMENT REVISED AND VERTICAL BENDS REMOVED	
2	7/2/2020	WITH ZINC COATING ADDED TO DIP DESCRIPTION	
		WATER LINE ALIGNMENT REVISED AND INSULATION REMOVED	

REVISIONS

WATER PLAN & PROFILE (LINE 2 CONT'D)
WATER MAIN EXTENSION PLANS

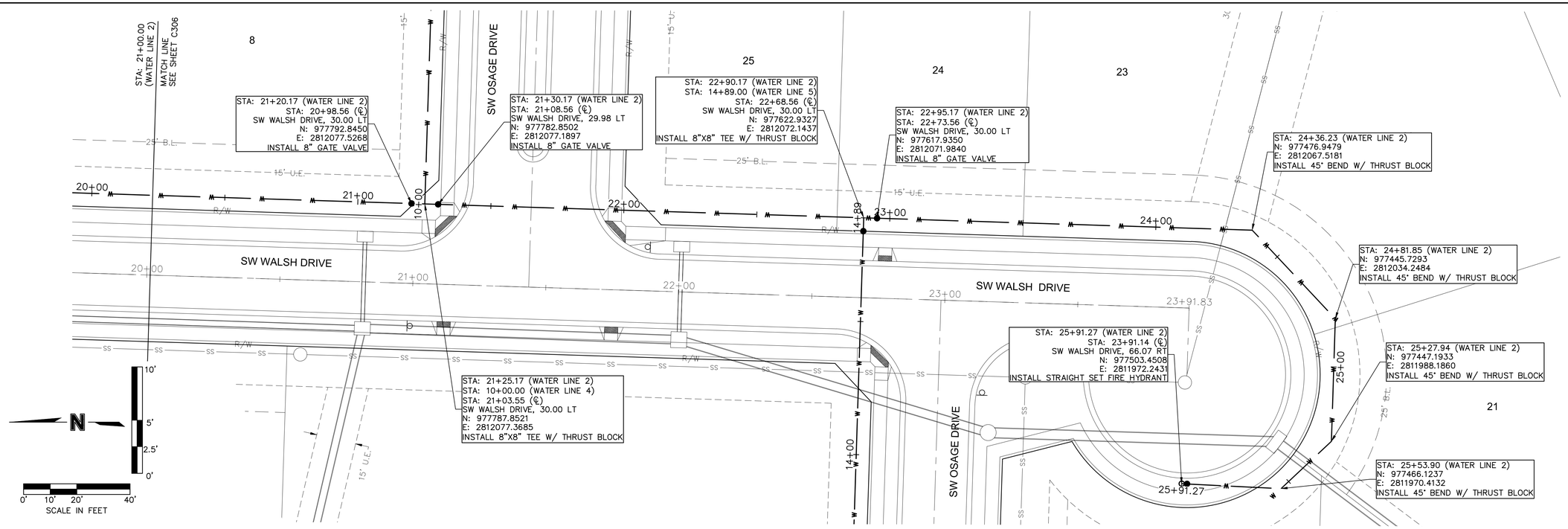
OSAGE
FIRST PLAT

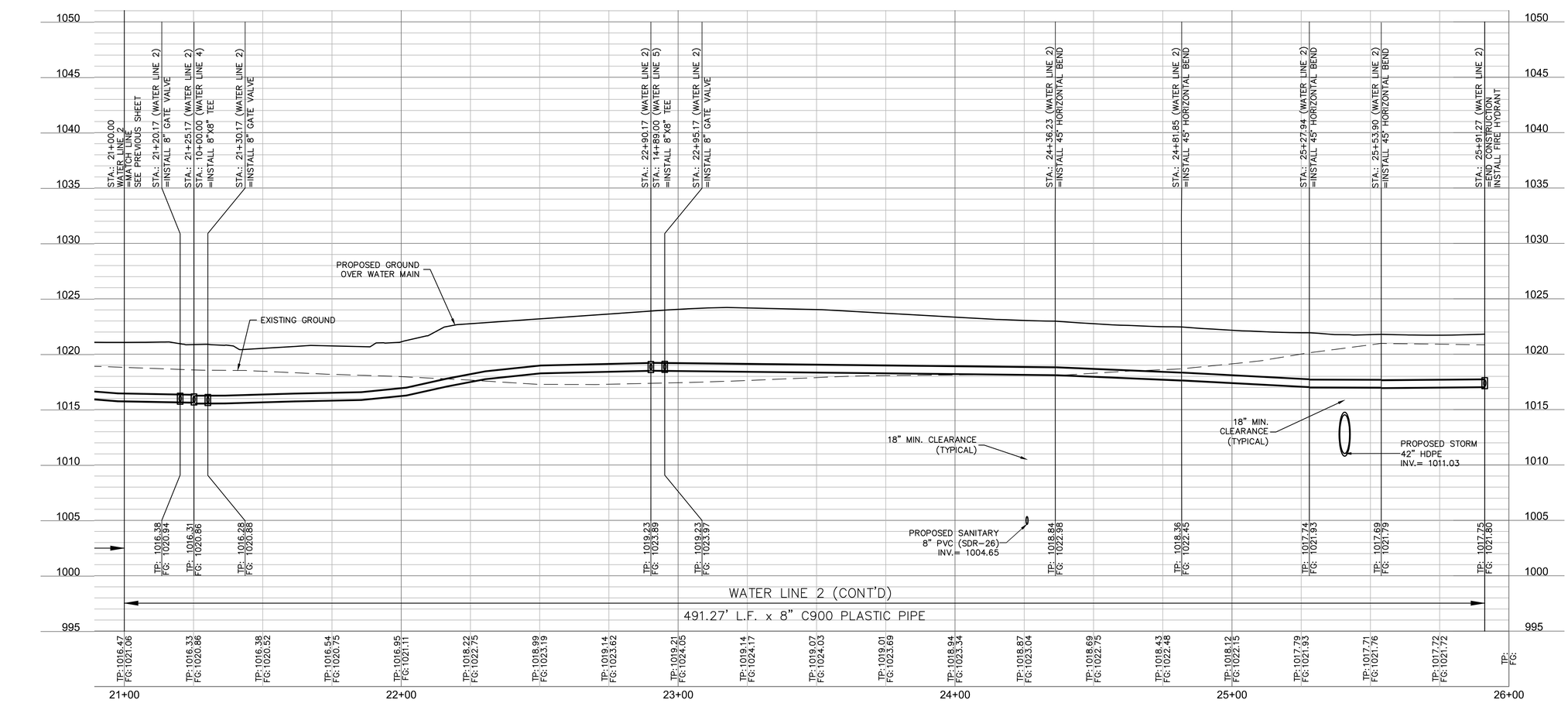
LEE'S SUMMIT, MISSOURI

2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_WAT01_A192339
date: 3/17/2020

SHEET
C306





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BROCK M. WORTHLEY
NUMBER PE-2019000237
7/2/2020
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REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

WATER PLAN & PROFILE (LINE 2 CONT'D)
WATER MAIN EXTENSION PLANS

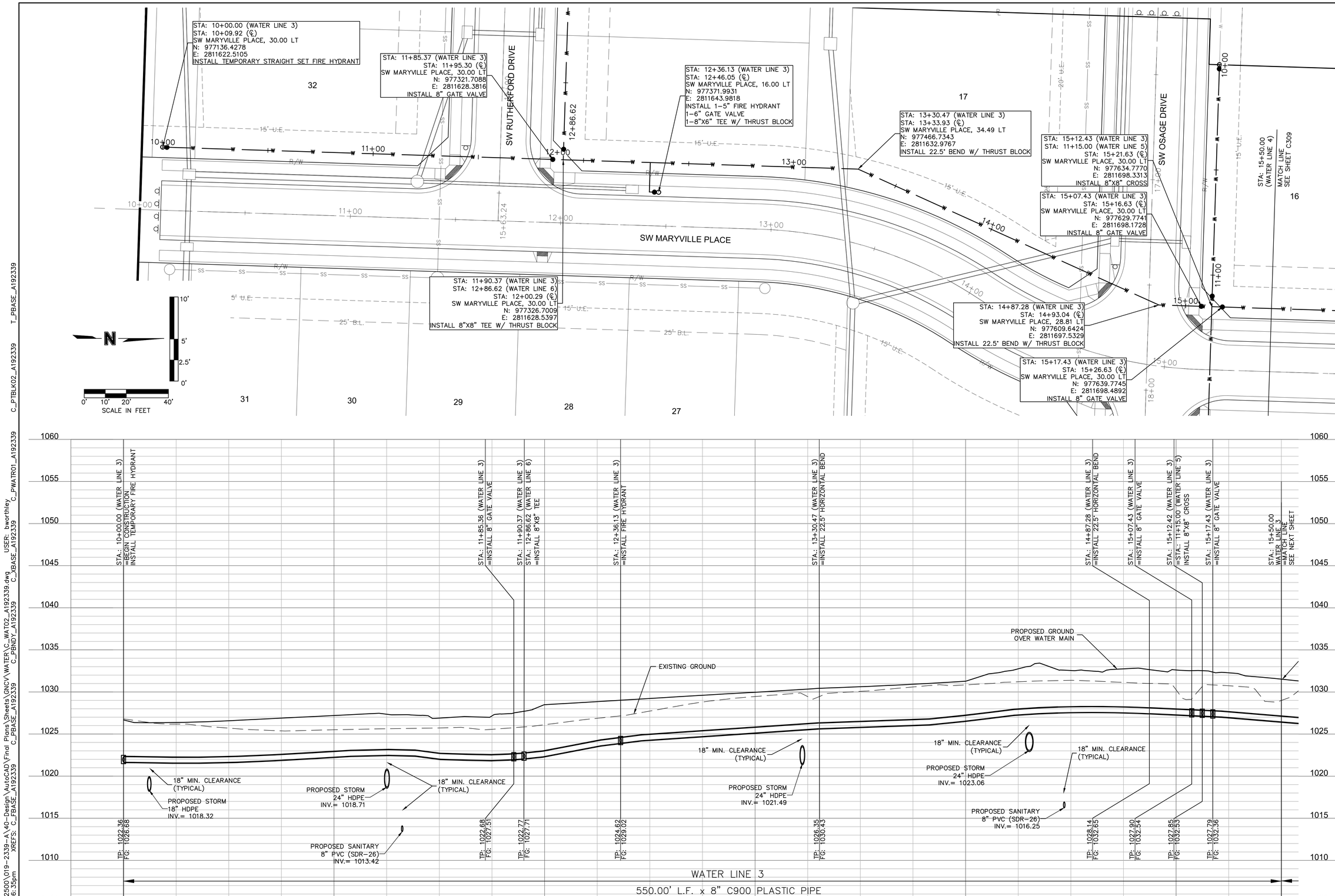
OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_WAT01_A192339
date: 3/17/2020

SHEET
C307



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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
7/2/2020
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

WATER PLAN & PROFILE (LINE 3)
WATER MAIN EXTENSION PLANS

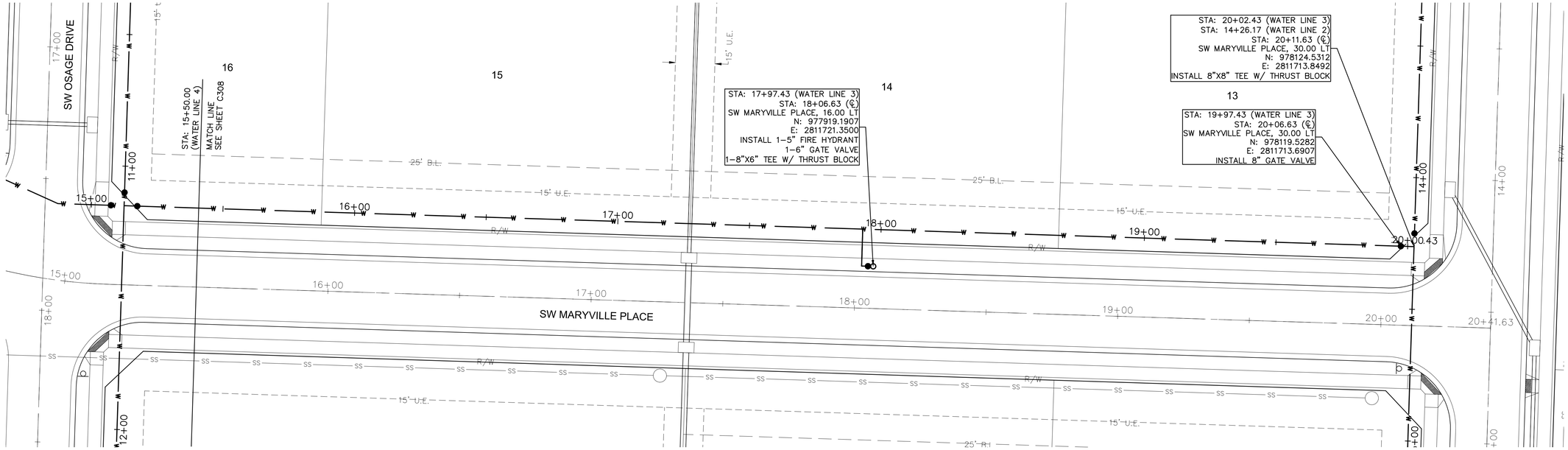
OSAGE
FIRST PLAT

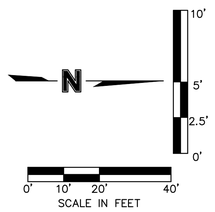
LEE'S SUMMIT, MISSOURI

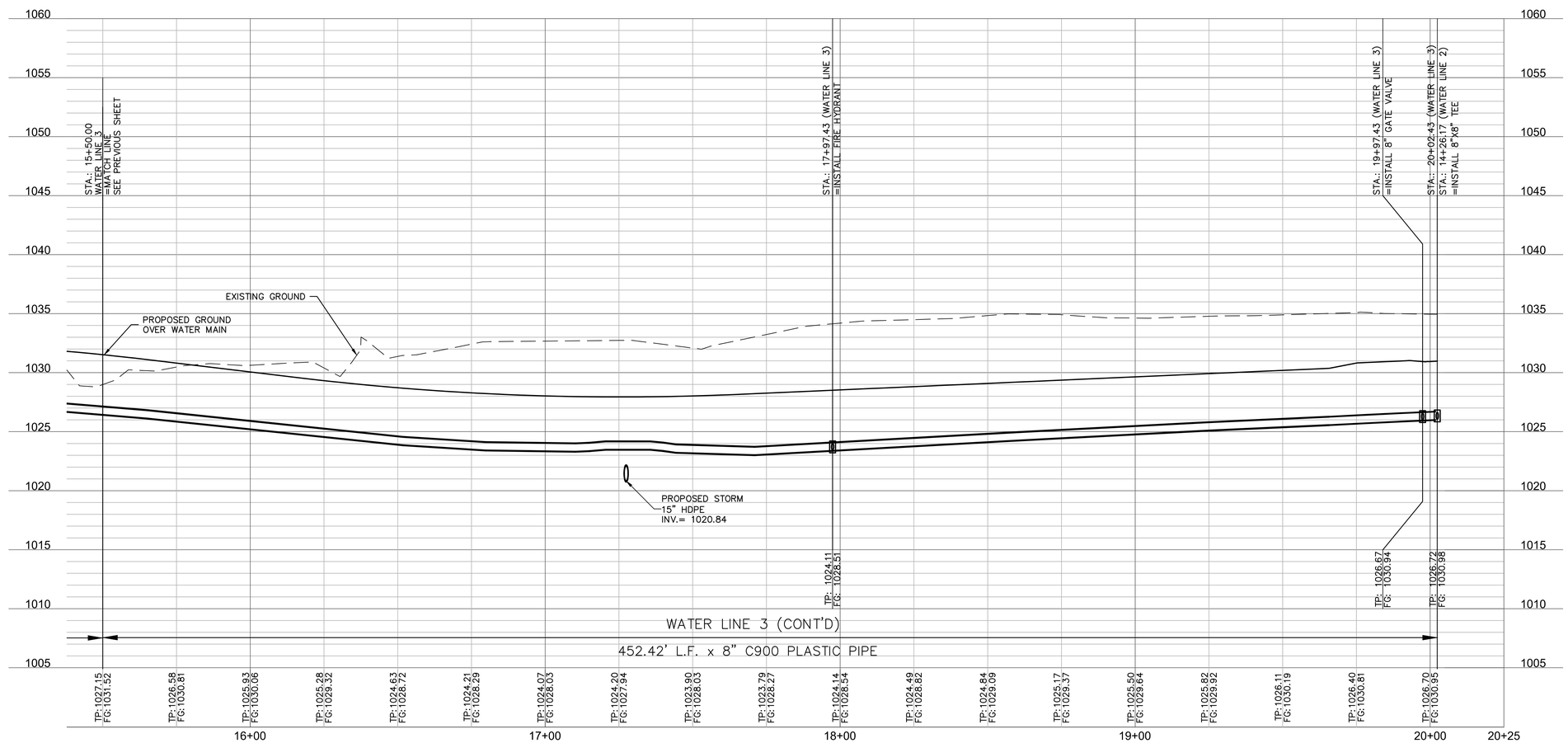
2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_WAT02_A192339
date: 3/17/2020

SHEET
C308







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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

WATER PLAN & PROFILE (LINE 3 CONT'D)
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_WAT02_A192339
date: 3/17/2020

SHEET
C309

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\WATER\C_WAT02_A192339.dwg USER: bworthley
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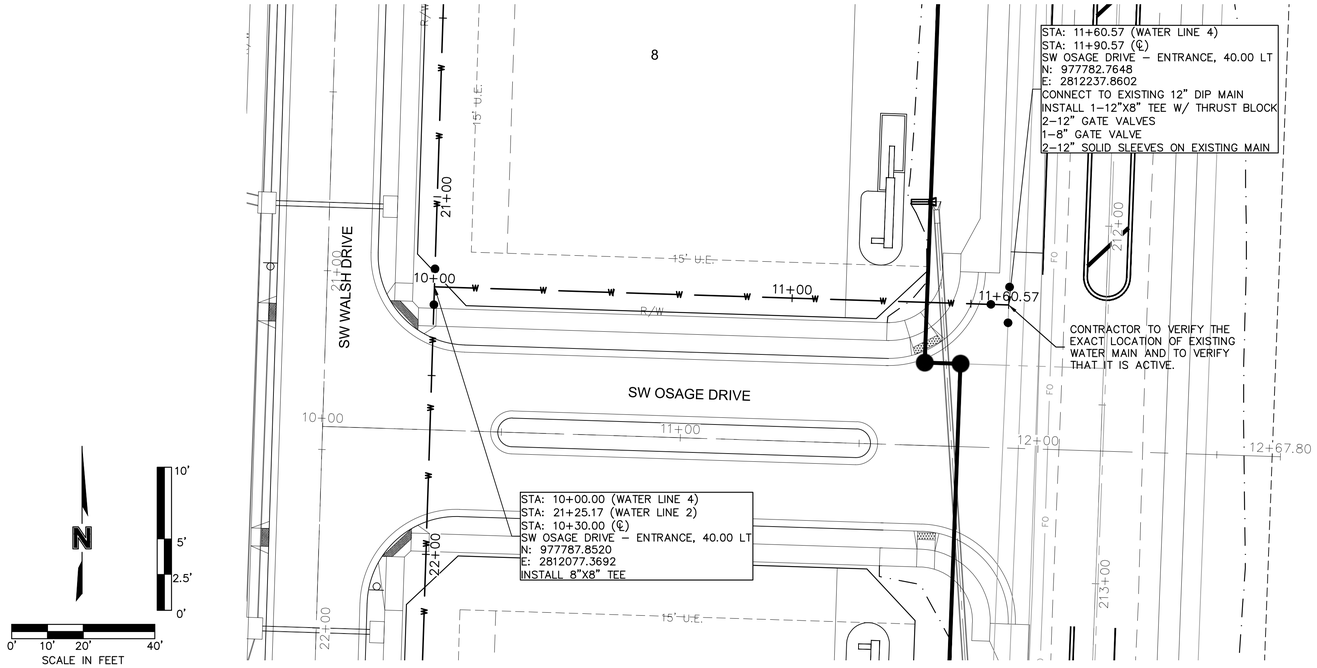

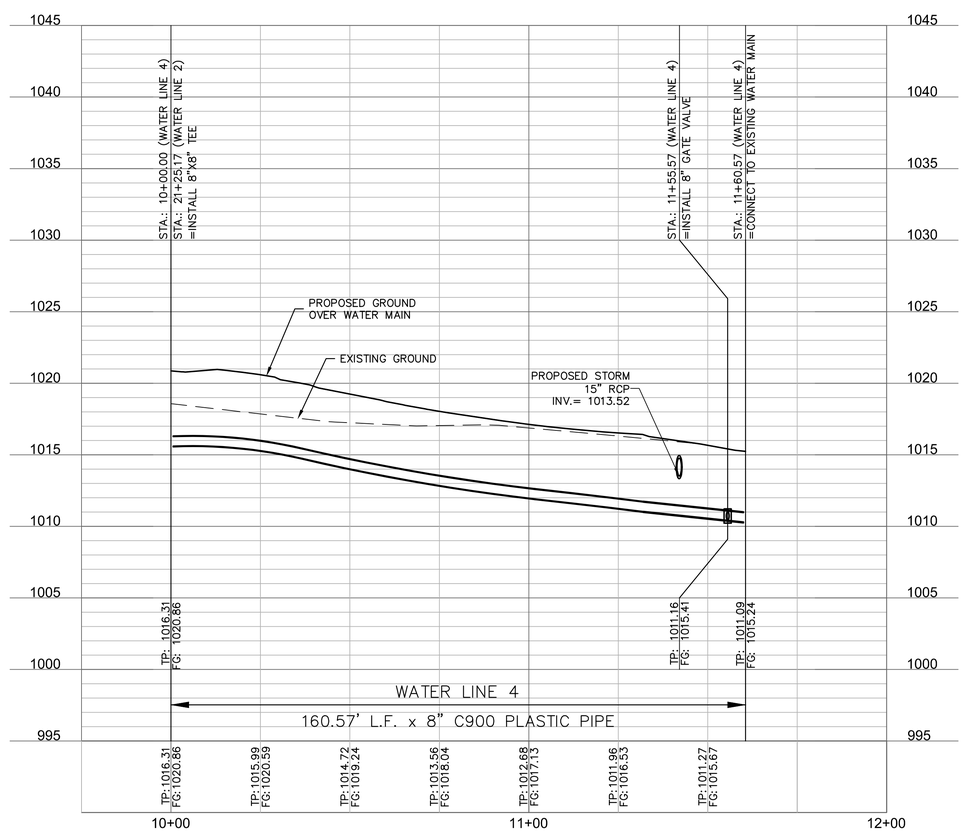

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C_PTBLK02_A192339 T_PBASE_A192339

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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

WATER PLAN & PROFILE (LINE 4)
WATER MAIN EXTENSION PLANS

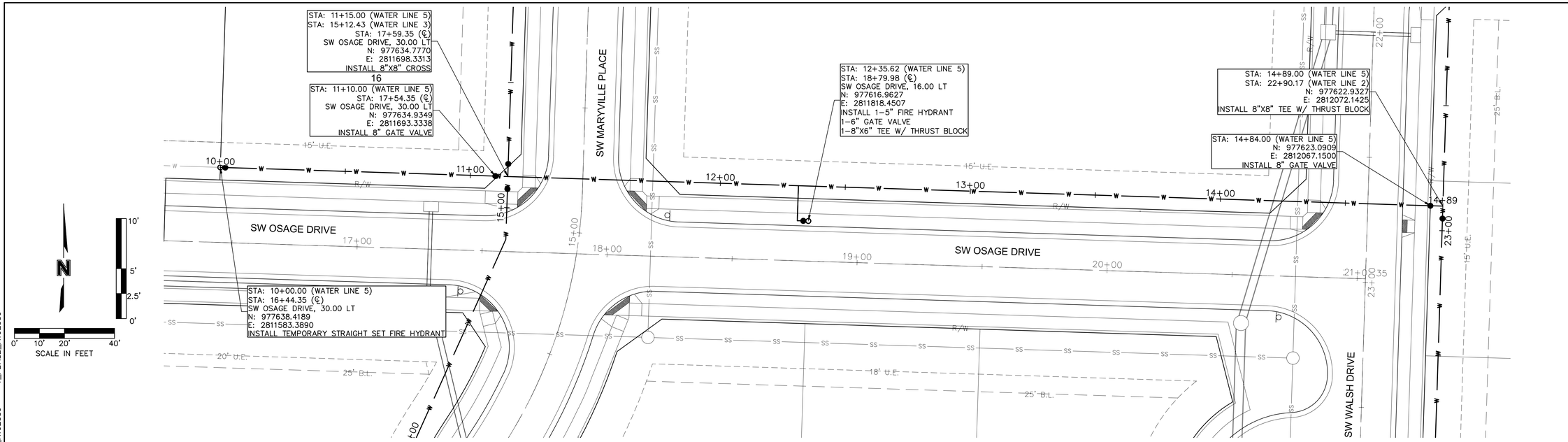
OSAGE
FIRST PLAT

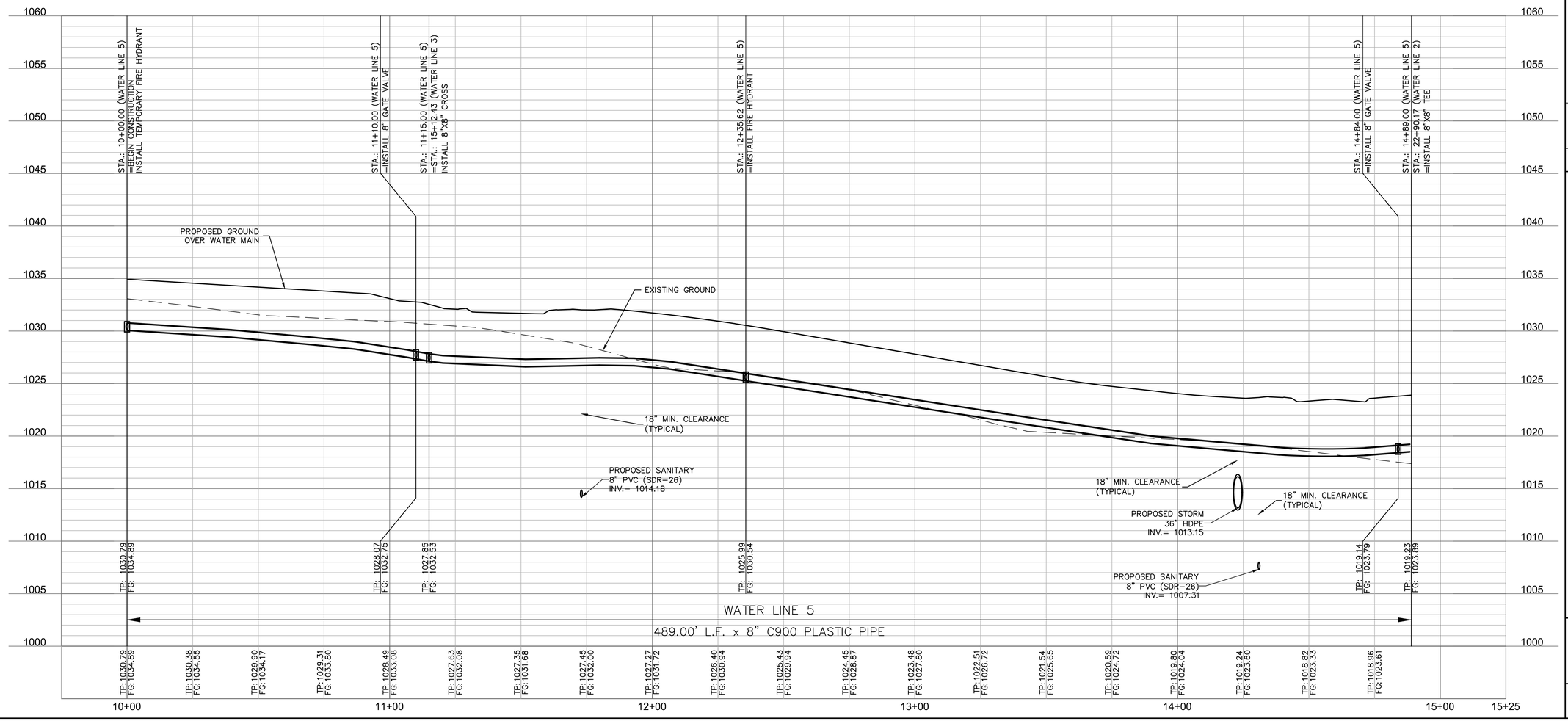
LEE'S SUMMIT, MISSOURI

2020

drawn by:	AA
checked by:	SS
designed by:	AA
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_WAT02_A192339
date:	3/17/2020

SHEET
C310





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DATE: Jul 01, 2020 6:35pm XREFS: C_FBASE_A192339 C_PBNDY_A192339 C_XBASE_A192339 C_PWATR01_A192339 C_PTBLK02_A192339 T_PBASE_A192339

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BROCK M. WORTHLEY
NUMBER PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

WATER PLAN & PROFILE (LINE 5)
WATER MAIN EXTENSION PLANS

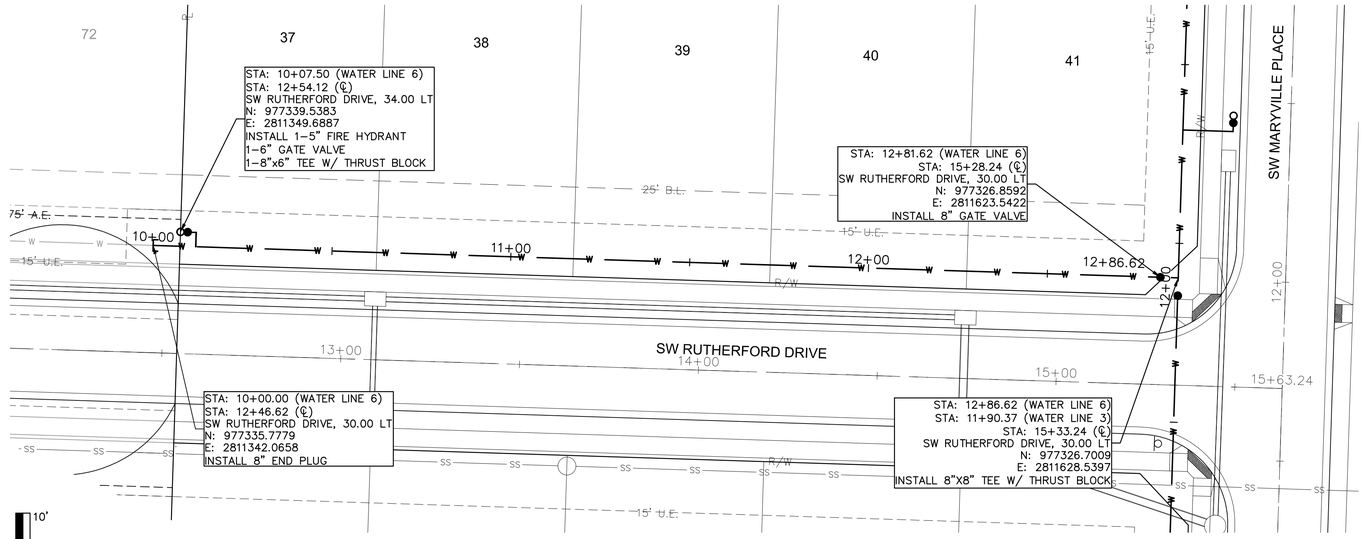
OSAGE
FIRST PLAT

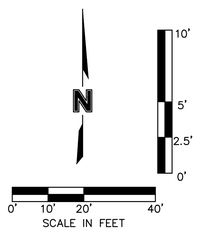
LEE'S SUMMIT, MISSOURI

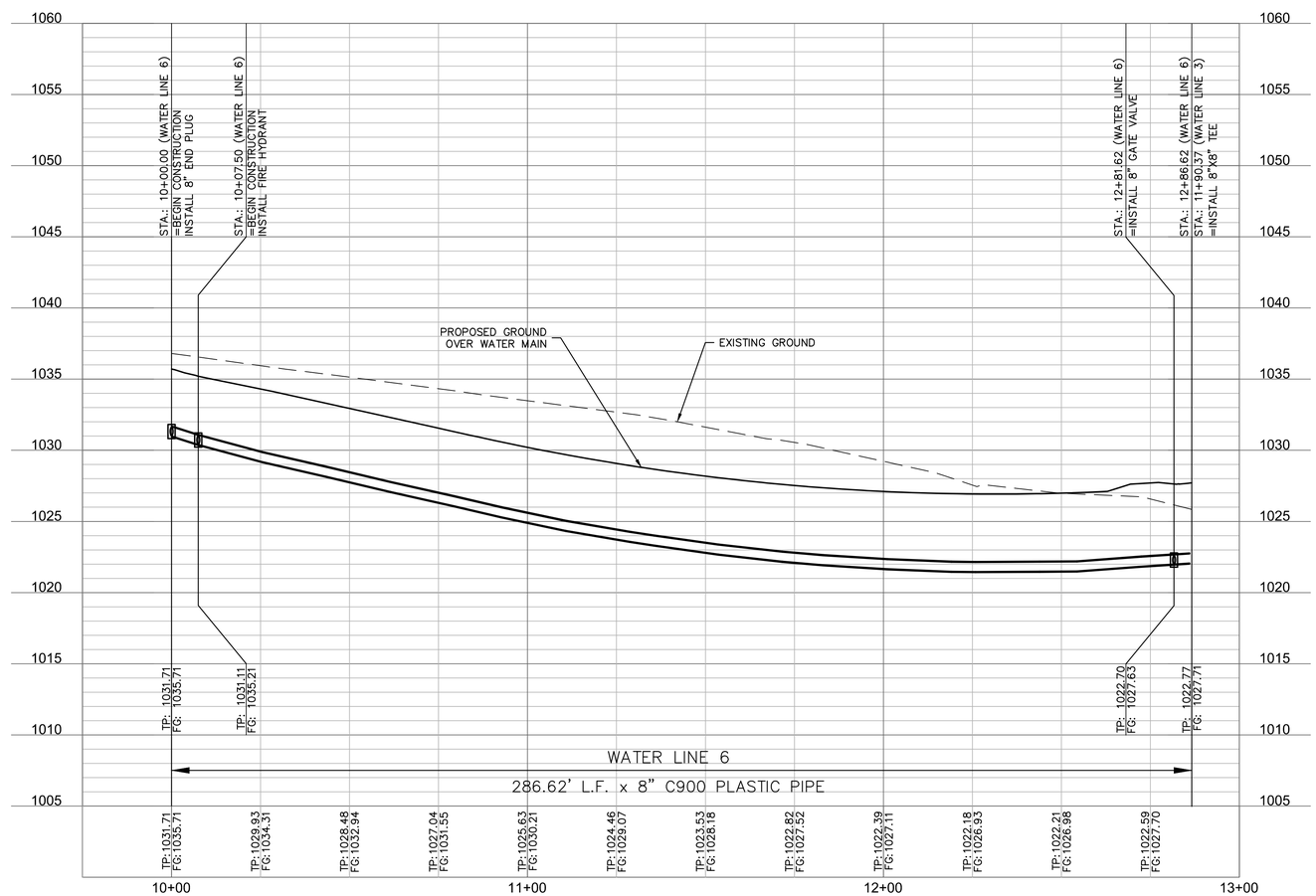
2020

drawn by:	AA
checked by:	SS
designed by:	AA
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_WAT02_A192339
date:	3/17/2020

SHEET
C311







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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER
PE-2019000237
PROFESSIONAL ENGINEER
3/12/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

WATER PLAN & PROFILE (LINES 6 & 7)
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

drawn by:	AA
checked by:	BS
designed by:	AA
QA/QC by:	JES
project no.:	A19-2339
drawing no.:	C_WAT02_A192339
date:	3/17/2020

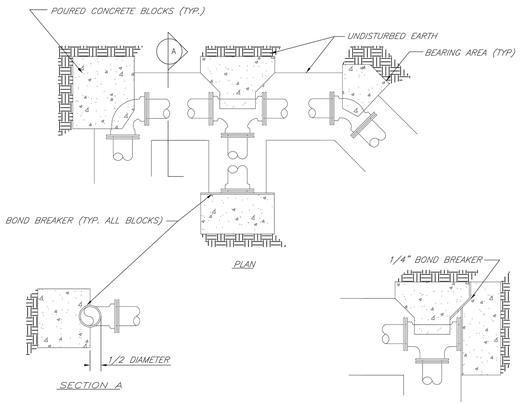
SHEET
C312

DWG: F:\2019\2001-2500\019-2339-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\WATER\C_WAT02_A192339.dwg USER: bworthley
DATE: Jul 01, 2020 6:35pm XREFS: C_FBASE_A192339 C_PBASE_A192339 C_PBNDY_A192339 C_XBASE_A192339 C_PWATR01_A192339 C_PTBLK02_A192339 T_PBASE_A192339

REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

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	18.9	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.



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

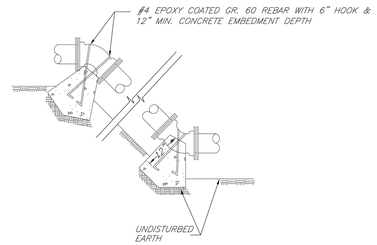
HORIZONTAL THRUST BLOCKS

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)	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	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	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

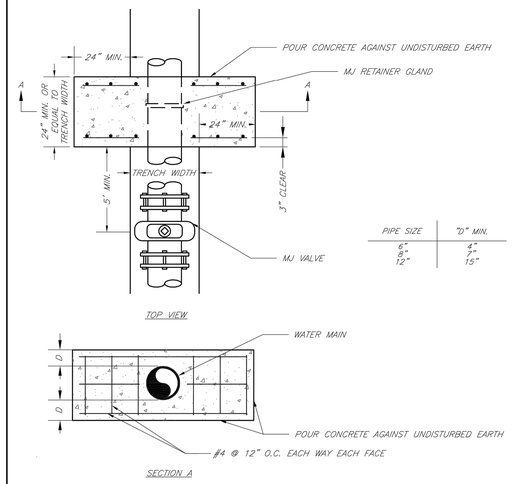
NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



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:



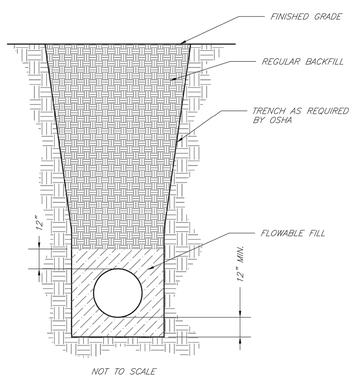
PIPE SIZE	"D" MIN.
6"	4"
8"	7"
12"	15"

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

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:

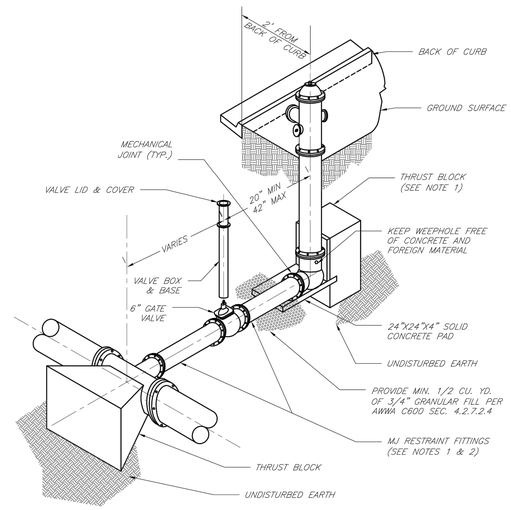


NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.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

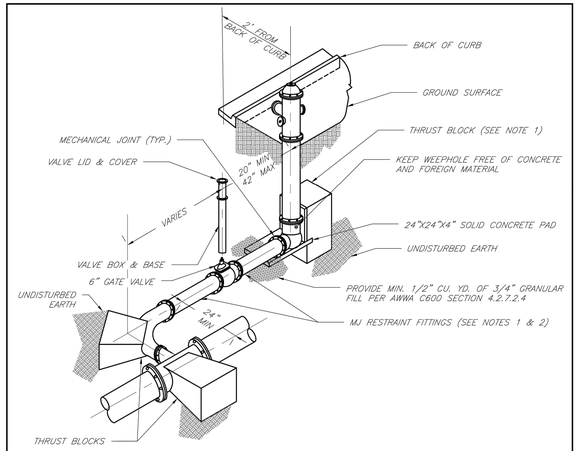


NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM 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
Rev:



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.

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MISSOURI
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HYDRANT WITH 90 DEGREE BEND

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

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1301 Burlington Street, Suite A
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STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

DETAILS SHEET
WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

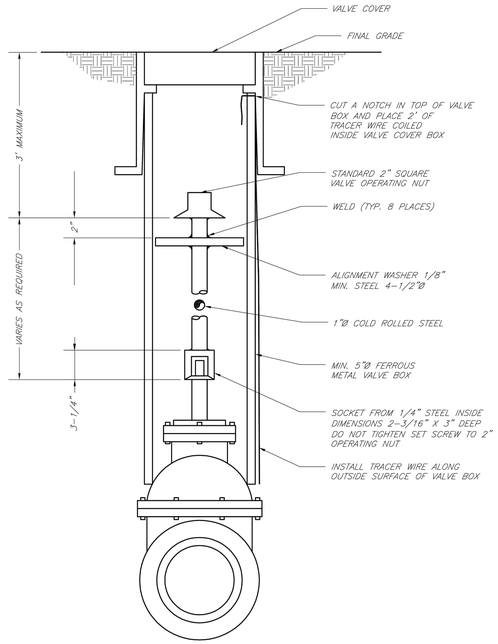
LEE'S SUMMIT, MISSOURI

2020

drawn by: AA
checked by: SS
designed by: AA
QA/QC by: JES
project no.: A19-2339
drawing no.: C_DET01_A192339
date: 3/17/2020

SHEET
C313

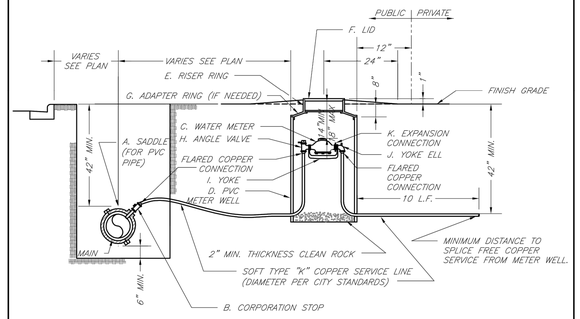
DWG: F:\2019\2001–2500\019–2339–A\40–Design\AutoCAD\Final Plans\Sheets\GNCV\WATER\C_DET01_A192339.dwg USER: bworthley
DATE: Jul 01, 2020 6:36pm XREFS: C_PTBLK02_A192339



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:	



TYPICAL METER INSTALLATION – 2" AND SMALLER
NOT TO SCALE

NOTES:

1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9 LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816–969–1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

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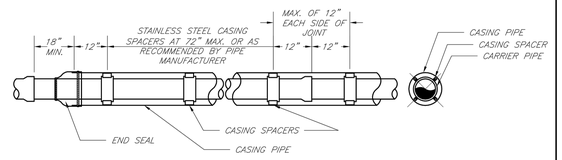
SERVICE CONNECTION/METER WELL

Date: 02/13	
Drawn By: JN	
Checked By: DL	
FILE: WAT-11	
Rev: 1/14	
Rev:	



NOT TO SCALE

NOTES:
1. REFER TO SPECIFICATION SECTION 3900 FOR ADDITIONAL INFORMATION.
2. LENGTH, DIAMETER, AND WALL THICKNESS TO BE SHOWN ON CONSTRUCTION PLANS.

LEE'S SUMMIT
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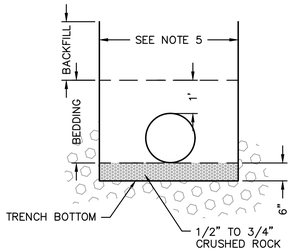
WATER CASING PIPE DETAIL

Date: 02/13	
Drawn By: JN	
Checked By: DL	
FILE: WAT-5	
Rev: 1/14	
Rev:	



TYPICAL TRENCH SECTION

NOTES:

1. BELL HOLES SHALL BE DUG SO THAT NO PART OF THE BELL SHALL BE IN CONTACT WITH THE TRENCH BOTTOM.
2. BEDDING:
   A. BEDDING FOR PIPE LESS THAN 12" IN DIAMETER SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES; COMPACTED TO 95 % OF PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. BEDDING SHALL BE COMPACTED IN 6" LIFTS.
   B. BEDDING MATERIAL FOR PIPE 12" IN DIAMETER AND GREATER SHALL BE 1/2" TO 3/4" CRUSHED ROCK. SIX (6) INCHES OF BEDDING SHALL BE PROVIDED BENEATH THE PIPE.
3. BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE OF DEBRIS AND STONES, COMPACTED TO 90% PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. FOR BACK–FILL UNDER PAVEMENT (EXISTING OR PROPOSED), SEE SD–9 AND SD–11.
4. TRENCHING SHALL BE IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
5. MINIMUM AND MAXIMUM TRENCH WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

UNDERGROUND PIPE INSTALLATION FOR WATER PIPING
NOT TO SCALE

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #: 001592
1301 Burlington Street, Suite 100
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
BROCK M. WORTHLEY
NUMBER PE-2019000237
PROFESSIONAL ENGINEER
7/2/2020

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	6/15/2020	PIPE ENCASEMENT DETAILS ADDED	

REVISIONS

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WATER MAIN EXTENSION PLANS

OSAGE
FIRST PLAT

LEE'S SUMMIT, MISSOURI

2020

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