





## 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 WITHOUT 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 TRAFFIC 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

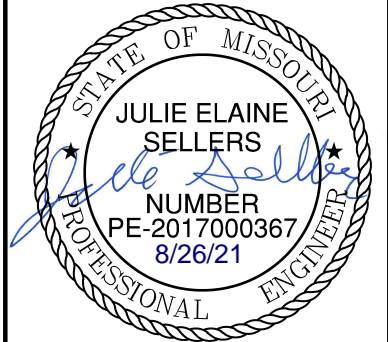
1. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION WITH UTILITY OWNER.
2. ALL PIPE LENGTHS ARE CALCULATED LINEARLY FROM CENTER OF FITTING OR WALL OF VAULT.
3. COORDINATES ARE PROVIDED ALONG PIPE CENTERLINE. ADDITIONAL COORDINATES PROVIDED ARE PER LOCAL CODES AND 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
	6" C900 PLASTIC PIPE	L.F.	465.59	
	8" C900 PLASTIC PIPE	L.F.	329.70	
	8" X 6" TEE	EA.	1	
	STRAIGHT SET HYDRANT ASSEMBLY	EA.	1	
	FIRE HYDRANT ASSEMBLY (INCLUDING TEE)	EA.	1	
	6" GATE VALVES	EA.	1	
	8" GATE VALVES	EA.	1	
	6" HORIZONTAL BENDS	EA.	6	
	8" SOLID SLEEVE	EA.	1	
	8" PVC PLUG	EA.	1	

GENERAL NOTES				REV. NO.	DATE	REVISIONS DESCRIPTION	BY
WATER MAIN EXTENSION PLANS				1	08/11/2021	REVISED PER CITY COMMENTS	
OSAGE 3RD PLAT							
LEE'S SUMMIT, MO				2021	REVISIONS		

**olsson**

Olsson - Civil Engineering  
Missouri Certificate of Authority #001592  
1301 Burlington Street  
North Kansas City, MO 64116  
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**RELEASED FOR  
CONSTRUCTION**  
As Noted on Plans Review

Development Services Department  
Lee's Summit, Missouri

11/01/2021

drawn by: MJD  
checked by: JES  
designed by: MJD  
QA/QC by: JES  
project no.: D19-2339  
drawing no.: C\_TTL01\_D192339  
date: 6/24/2021

SHEET  
C302



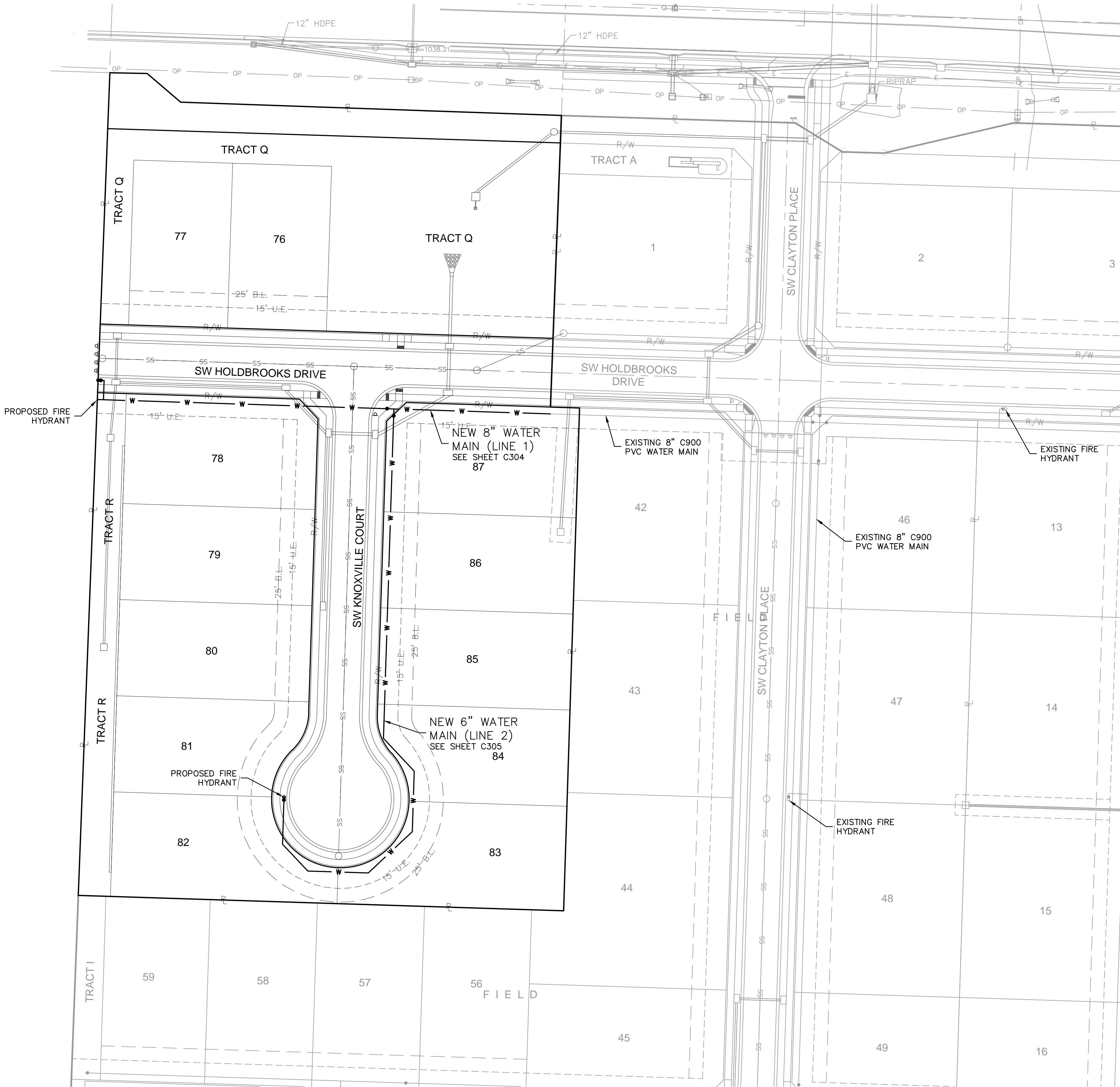
DWG: F:\2019\2001-2500\019-2339-d\10-design\AutoCAD\final plans\Sheets\CNCV\Water Plans\C\_GEN01\_D192339.dwg USER: aabidgoliev  
DATE: Aug 17, 2021 1:59pm XREFS: C\_PBASE\_D192339 C\_PENDY\_D192339 C\_PUTIL\_D192339

GENERAL NOTES

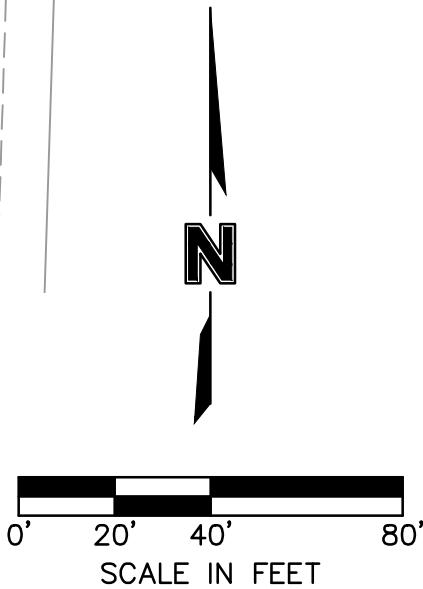
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE STANDARDS AND SPECIFICATIONS FOR WATER MAIN EXTENSIONS OF THE LEE'S SUMMIT, MISSOURI WATER SERVICES DEPARTMENT. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION 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

- P — PROPERTY LINE
- W — W — PROPOSED WATER MAIN
- (H) — FIRE HYDRANTS ASSEMBLY
- (S) — STRAIGHT SET HYDRANT ASSEMBLY
- (D) — STRADDLE BLOCK
- (V) — GATE VALVE



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Development Services Department  
Lee's Summit, Missouri  
11/01/2021



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STATE OF MISSOURI  
JULIE ELAINE  
SELLERS  
Professional Engineer  
NUMBER  
PE-2017000367  
8/26/21

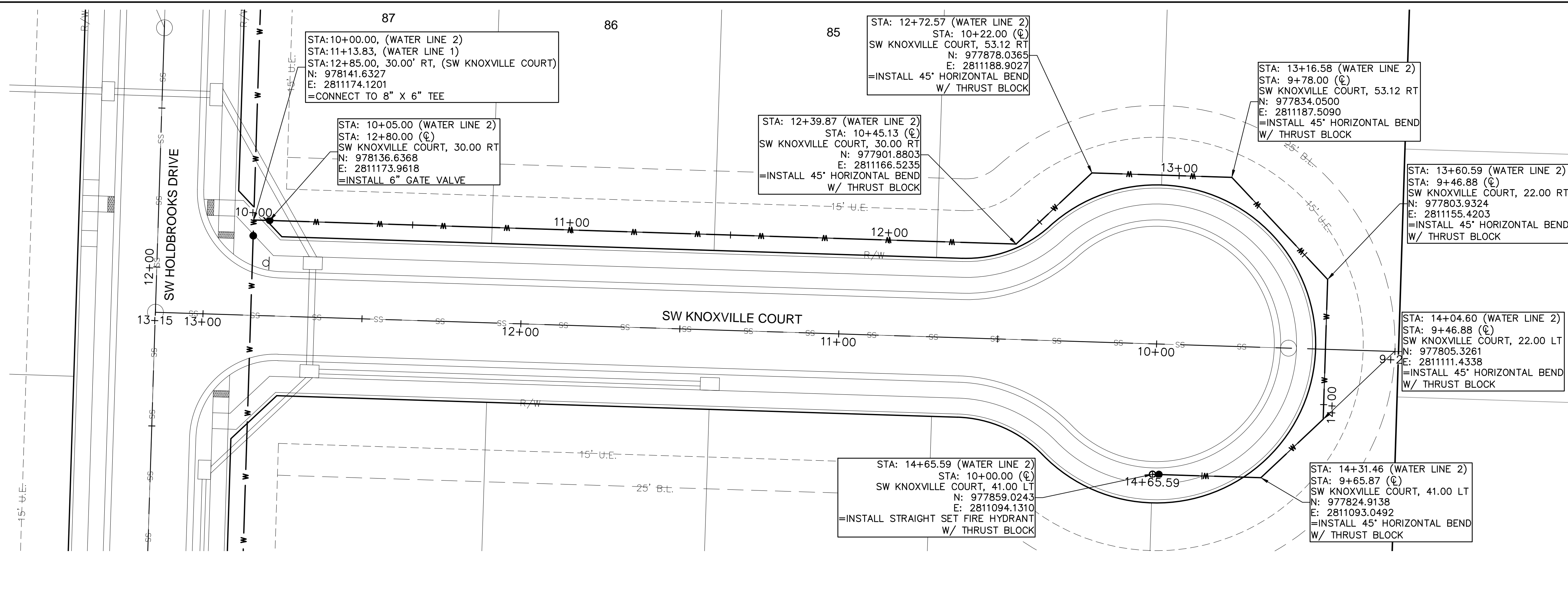
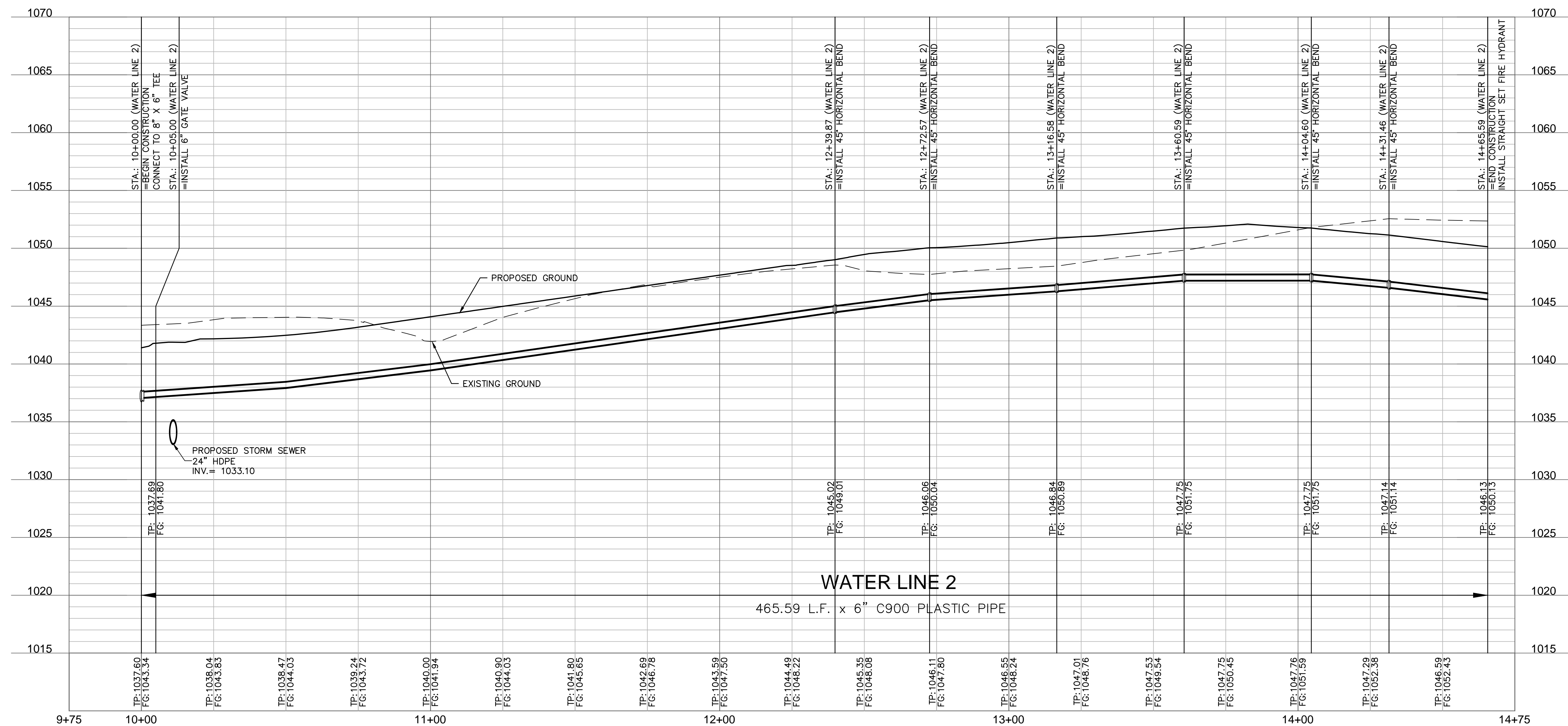
BY  
REV. NO. 1  
DATE 08/11/2021  
REVISIONS DESCRIPTION  
REVISED PER CITY COMMENTS  
REVISIONS  
2021

GENERAL LAYOUT  
WATER MAIN EXTENSION PLANS  
OSAGE 3RD PLAT  
LEE'S SUMMIT, MO  
SHEET  
C303

drawn by: MJD  
checked by: JES  
designed by: MJD  
QA/QC by: JES  
project no.: D19-2339  
drawing no.: C\_GEN01\_D192339  
date: 8/24/2021







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Development Services Department  
Lee's Summit, Missouri

11/01/2021

DWG: F:\2019\2001-2500\019-2339-d\40-design\AutoCAD\final plans\Sheets\GNCV\Water Plans\C\_WAT01\_D192339.dwg USER: abbdigiliev  
DATE: Aug 17, 2021 1:56pm XREFS: C\_PTBK\_D192339 C\_PBASE\_D192339 C\_XBASE\_D192339 C\_PBNDY\_D192339 C\_PUTIL\_D192339 C\_PWATR\_D192339

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

OSAGE 3RD PLAT

LEE'S SUMMIT. MO

2021

## REVISIONS

DATE	REVISIONS DESCRIPTION	BY
08/11/2021	REVISED PER CITY COMMENTS	

STATE OF MISSOURI  
JULIE ELAINE SELLERS  
NUMBER  
PE-2017000367  
8/26/21  
PROFESSIONAL ENGINEER

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Missouri Certificate of Authority #001592  
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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	6.0	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	60.1	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 JOISTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

## LEE'S SUMMIT

### MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 230-SE GREEN STREET | LEE'S SUMMIT, MO 64083

## 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	128.9	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:**

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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.

24" MIN.

24" MIN.

24" MIN. OP  
EQUAL TO  
TRENCH WIDTH

5" MIN.

TRENCH WIDTH

3" CLEAR

POUR CONCRETE AGAINST UNDISTURBED EARTH

MJ RETAINER GLAND

MJ VALVE

PIPE SIZE	"O" MIN.
6"	4"
12"	15"

TOP VIEW

WATER MAIN

POUR CONCRETE AGAINST UNDISTURBED EARTH

#4 @ 12" O.C. EACH WAY EACH FACE

SECTION A

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

**LEE'S SUMMIT**  
MISSOURI  
PUBLIC WORKS ENGINEERING DIVISION | 1220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

**STRADDLE BLOCK**

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

Diagram illustrating the cross-section of a trench check. The diagram shows a trapezoidal trench with a circular flowable fill at the bottom. The top surface is labeled "FINISHED GRADE". The upper sides of the trench are labeled "REGULAR BACKFILL". The lower sides of the trench are labeled "TRENCH AS REQUIRED BY OSHA". The bottom of the trench is labeled "FLOWABLE FILL". A vertical dimension line on the left indicates a depth of "12\"". A vertical dimension line on the right indicates a depth of "12\" MIN.". The diagram is labeled "NOT TO SCALE".

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'.

LS

**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.

	DATE: 02/13
	DRAWN BY: JN
	CHECKED BY: DL
	FILE: WAT-7
	REV: 1/14
	REV:

**HYDRANT INSTALLATION — STRAIGHT SET**

**Technical Drawing: Hydrant with 90 Degree Bend**

**Labels:**

- 0" FROM BACK OF CURB
- BACK OF CURB
- GROUND SURFACE
- THRUST BLOCK (SEE NOTE 1)
- MECHANICAL JOINT (TYP.)
- VALVE LID & COVER
- VARIES
- 20" MAX 12" MAX
- KEEP WEEPHOLE FREE OF CONCRETE AND FOREIGN MATERIAL
- 24"x24"x4" SOLID CONCRETE PAD
- UNDISTURBED EARTH
- VALVE BOX & BASE
- 6" GATE VALVE
- UNDISTURBED EARTH
- 24" MIN
- PROVIDE MIN. 1/2" CU. YD. OF 3/4" GRANULAR FILL PER AWWA C600 SECTION 4.2.7.2.4
- MJ RESTRAINT FITTINGS (SEE NOTES 1 & 2)
- THRUST BLOCKS

**NOTES:**

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**LS**

**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: JH
Checked By: DL
FILE: WAT-8
Rev: 1/14
Rev:

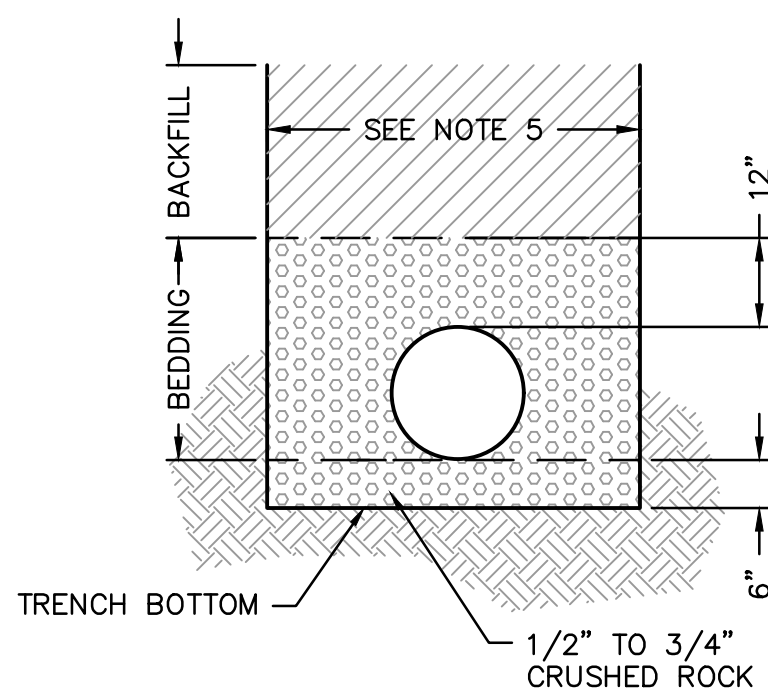
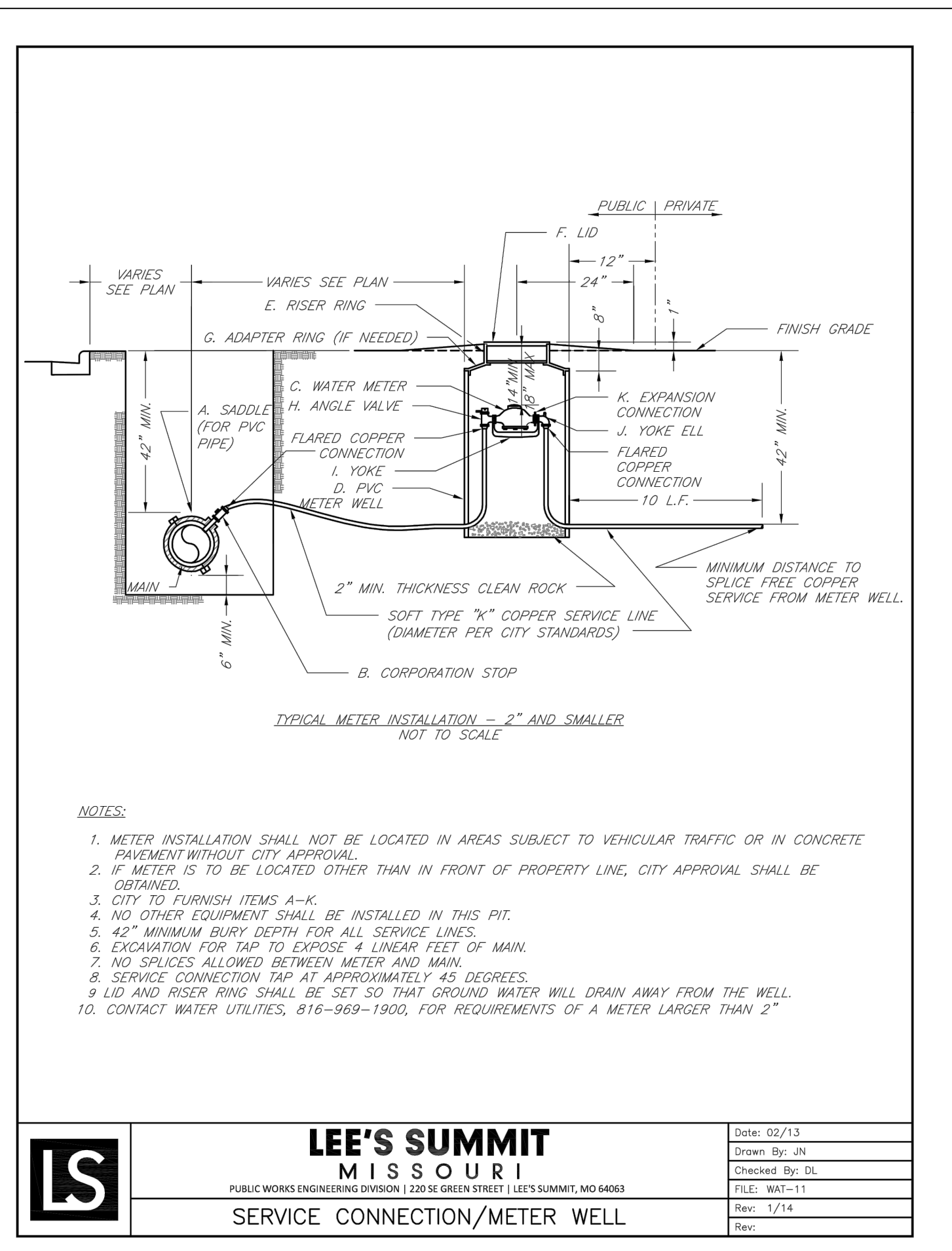
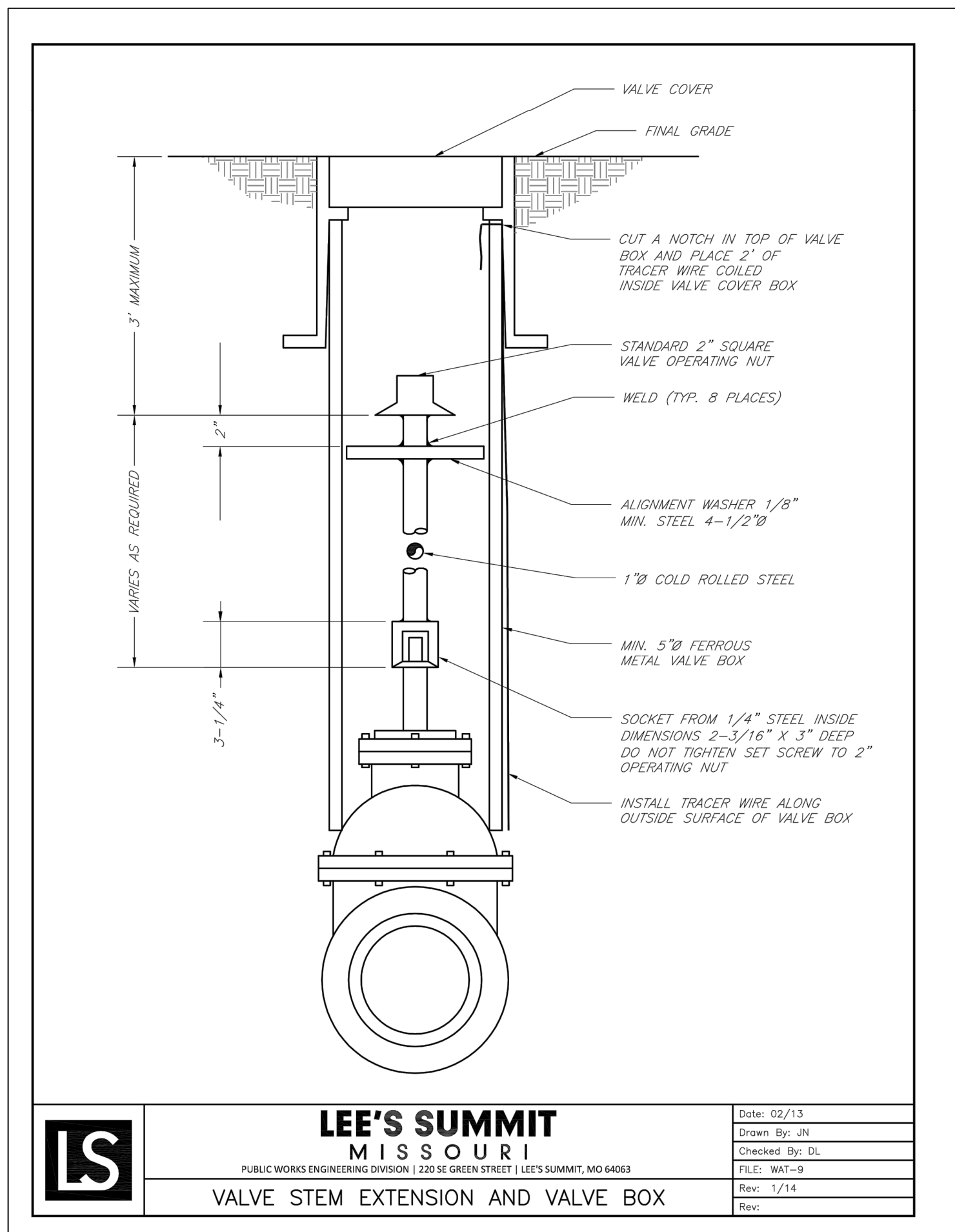
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As Noted on Plans Review

**Development Services Department  
Lee's Summit, Missouri**

**11/01/2021**

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		DETAIL SHEET		REV. NO.		DATE		REVISIONS DESCRIPTION		BY	
		WATER MAIN EXTENSION PLANS		1		08/11/2021		REVISED PER CITY COMMENTS			
OSAGE 3RD PLAT											
LEE'S SUMMIT, MO		2021						REVISIONS			
SHEET C306											





## 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 AGGREGATE MATERIAL SHALL BE PER SECTION 6900 AND 2102 OF THE CITY DESIGN AND CONSTRUCTION MANUAL. BEDDING AGGREGATE SHALL BE PLACED FROM A LEVEL 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL 12 INCHES ABOVE THE TOP OF THE PIPE AS SHOWN ABOVE.
3. BACKFILL MATERIAL AND PLACEMENT SHALL BE PER SECTION 6900 AND 2102 OF THE CITY DESIGN AND CONSTRUCTION MANUAL.
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

**RELEASED FOR  
CONSTRUCTION**  
As Noted on Plans Review  
  
Development Services Department  
Lee's Summit, Missouri  
  
11/01/2021

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  
C307

DETAIL SHEET  
WATER MAIN EXTENSION PLANS

OSAGE 3RD PLAT

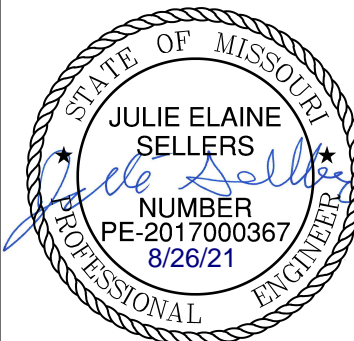
LEE'S SUMMIT: MO

2021

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08/11/2021	REVISED PER CITY COMMENTS	

REVISIONS DESCRIPTION	REVISED PER CITY COMMENTS
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## REVISIONS



Olsson - Civil Engineering  
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