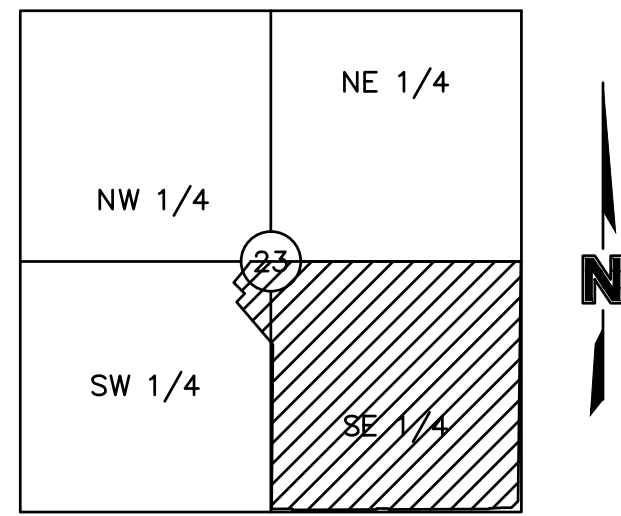


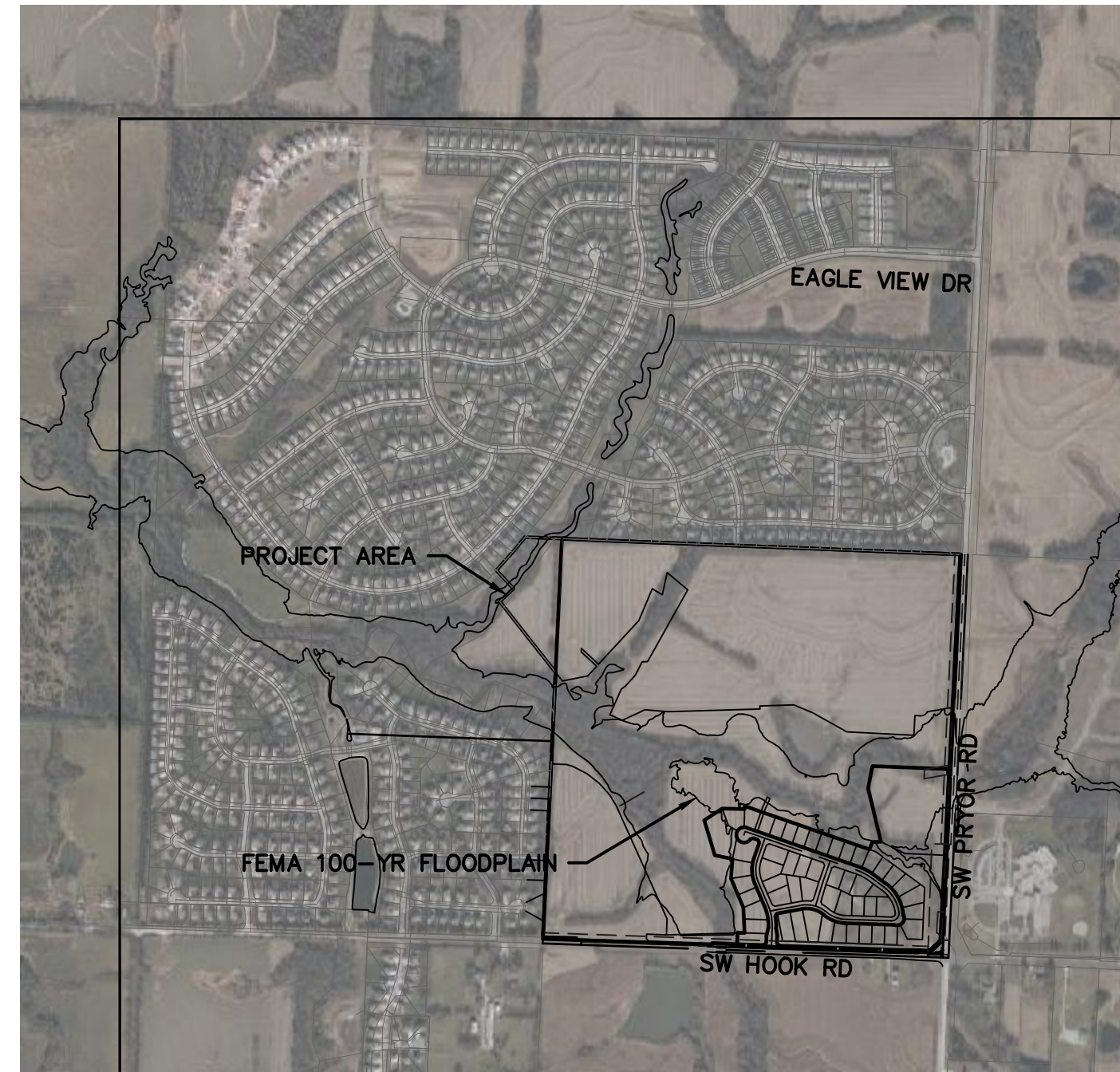
# THE RETREAT AT HOOK FARMS WATER MAIN EXTENSION PLANS

SECTION 23, TOWNSHIP 47N, RANGE 23W  
IN LEE'S SUMMIT, JACKSON COUNTY, MO



LOCATION MAP  
Sec. 23, Twp. 47 N., Rge. 23 W.  
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
<b>OWNER / DEVELOPER</b> HUNT MIDWEST REAL ESTATE DEVELOPMENT, INC. 8300 NE UNDERGROUND DRIVE KANSAS CITY, MO 64161 CONTACT: AARON SCHMIDT PHONE: 816.459.4285	<b>UTILITY SERVICE NUMBERS</b> NAME: DEVELOPMENT SERVICES PHONE: 816-969-1200  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
<b>ENGINEER</b> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: MEGAN WALTER, P.E. PHONE: 970.635.3737	NAME: GOOGLE FIBER PHONE: 877-454-6959
<b>SURVEYOR</b> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH, PLS PHONE: 816.361.1177	



Page Number	Sheet Number	Sheet Title
35	C300	COVER SHEET
36	C301	GENERAL LAYOUT
37	C302	WATER MAIN 1 PLAN & PROFILE
38	C303	WATER MAIN 2 PLAN & PROFILE
39	C304	WATER MAIN 3 PLAN & PROFILE
40	C305	WATER MAIN DETAILS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	8" C900 PLASTIC PIPE	L.F.	<del>3090</del>	3090*
4	8" X 8" TEE	EA.	<del>3</del>	3
5	12" X 8" TEE	EA.	<del>2</del>	2
6	STRAIGHT SET HYDRANT ASSEMBLY	EA.	<del>1</del>	1
7	FIRE HYDRANT ASSEMBLY (INCLUDING TEE)	EA.	<del>5</del>	5
8	8" GATE VALVES	EA.	<del>11</del>	11
9	12" BUTTERFLY VALVES	EA.	<del>4</del>	4
10	STRADDLE BLOCK	EA.	<del>1</del>	1*
11	8" HORIZONTAL BENDS	EA.	<del>15</del>	15*
12	8" VERTICAL BENDS	EA.	<del>1</del>	1*

\*AS PROVIDED BY CONTRACTOR

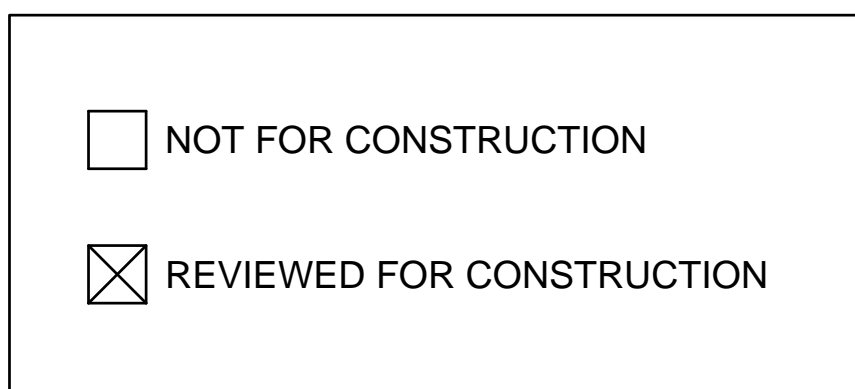
## PROPERTY DESCRIPTION:

(AS PROVIDED BY CHICAGO TITLE INSURANCE COMPANY, NOVEMBER 1, 2018)

ALL THAT PART OF THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 47, RANGE 32, IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, BEING BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 89 DEGREES 45 MINUTES 34 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 2613.19 FEET TO ITS INTERSECTION WITH THE WEST RIGHT-OF-WAY LINE OF PRYOR ROAD AS NOW ESTABLISHED; THENCE SOUTH 02 DEGREES 45 MINUTES 31 SECONDS WEST, ALONG SAID WEST RIGHT-OF-WAY LINE, 2520.50 FEET; THENCE SOUTH 47 DEGREES 23 MINUTES 30 SECONDS WEST, ALONG SAID WEST RIGHT-OF-WAY LINE, 135.21 FEET TO ITS INTERSECTION WITH THE NORTH RIGHT-OF-WAY LINE OF HOOK ROAD, AS NOW ESTABLISHED; THENCE NORTH 87 DEGREES 58 MINUTES 31 SECONDS WEST, ALONG SAID NORTH RIGHT-OF-WAY LINE, 2264.70 FEET; THENCE NORTH 02 DEGREES 43 MINUTES 25 SECONDS EAST, ALONG SAID NORTH RIGHT-OF-WAY LINE, 10.00 FEET; THENCE NORTH 87 DEGREES 58 MINUTES 31 SECONDS WEST, ALONG SAID NORTH RIGHT-OF-WAY LINE, 252.00 FEET TO A POINT ON THE WEST LINE OF SAID SOUTHEAST QUARTER; THENCE NORTH 02 DEGREES 43 MINUTES 25 SECONDS EAST ALONG SAID WEST LINE, 2615.22 FEET TO THE POINT OF BEGINNING.

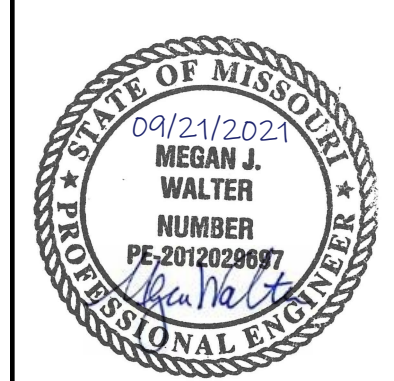
ALSO,

ALL THAT PART OF THE FOLLOWING DESCRIBED PROPERTY IN THE NORTHEAST ¼ OF THE SOUTHWEST ¼ OF SECTION 23, TOWNSHIP 47, RANGE 32, LYING NORTH OF EAGLE CREEK GREENWAY, A SUBDIVISION, ALL IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, TO-WIT: THE SOUTH ONE HALF OF THE NORTHEAST QUARTER AND THE SOUTH ONE-HALF OF THE NORTHWEST QUARTER AND ALL THAT PART OF THE SOUTHWEST QUARTER OF SECTION 23, TOWNSHIP 47, RANGE 32, IN LEE'S SUMMIT, JACKSON COUNTY MISSOURI, BEING DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF SAID NORTHWEST QUARTER, THENCE NORTH 2 DEGREES 36 MINUTES 10 SECONDS EAST, ALONG THE WEST LINE OF SAID NORTHWEST QUARTER 1330.50 FEET TO THE NORTHWEST CORNER OF THE SOUTH ONE-HALF OF SAID NORTHWEST QUARTER, THENCE SOUTH 87 DEGREES 40 MINUTES 35 SECONDS EAST, ALONG THE NORTH LINE OF SAID SOUTH ONE-HALF 2657.85 FEET TO THE NORTHEAST CORNER OF SAID SOUTH ONE-HALF, THENCE SOUTH 87 DEGREES 41 MINUTES 31 SECONDS EAST ALONG THE NORTH LINE OF THE SOUTH ONE-HALF OF SAID NORTHEAST QUARTER 2654.44 FEET TO THE NORTHEAST CORNER OF SAID SOUTH ONE-HALF; THENCE SOUTH 2 DEGREES 46 MINUTES 08 SECONDS WEST, ALONG THE EAST LINE OF SAID NORTHEAST QUARTER 1323.83 FEET TO THE SOUTHEAST CORNER OF SAID NORTHEAST QUARTER; THENCE NORTH 87 DEGREES 45 MINUTES 23 SECONDS WEST, ALONG THE SOUTH LINE OF SAID NORTHEAST QUARTER, 2653.42 FEET TO THE SOUTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE SOUTH 2 DEGREES 43 MINUTES 24 SECONDS WEST, (DEED-SOUTH 2 DEGREES 41 MINUTES 49 SECONDS WEST), ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER, 1138.42 FEET TO THE CENTERLINE OF MOUSE CREEK, AS NOW ESTABLISHED; THENCE NORTH 25 DEGREES 51 MINUTES 15 WEST (DEED-NORTH 25 DEGREES 52 MINUTES 53 WEST), ALONG SAID CENTERLINE, 73.83 FEET; THENCE NORTH 67 DEGREES 53 MINUTES 09 SECONDS WEST (DEED-NORTH 67 DEGREES 54 MINUTES 44 SECONDS WEST), ALONG SAID CENTERLINE, 379.20 FEET; THENCE SOUTH 39 DEGREES 00 MINUTES 27 SECONDS WEST (DEED-SOUTH 38 DEGREES 58 MINUTES 52 SECONDS WEST), ALONG SAID CENTERLINE, 187.72 FEET; THENCE NORTH 48 DEGREES 37 MINUTES 07 SECONDS WEST (DEED-NORTH 48 DEGREES 38 MINUTES 42 SECONDS WEST), ALONG SAID CENTERLINE, 131.31 FEET; THENCE NORTH 73 DEGREES 28 MINUTES 23 SECONDS WEST (DEED-NORTH 73 DEGREES 29 MINUTES 58 SECONDS WEST), ALONG SAID CENTERLINE, 279.90 FEET THENCE NORTH 26 DEGREES 34 MINUTES 47 SECONDS WEST (DEED-NORTH 26 DEGREES 36 MINUTES 22 SECONDS WEST), ALONG SAID CENTERLINE, 312.25 FEET; THENCE NORTH 62 DEGREES 29 MINUTES 46 SECONDS WEST (DEED-NORTH 62 DEGREES 31 MINUTES 21 SECONDS WEST), ALONG SAID CENTERLINE, 134.47 FEET; THENCE SOUTH 52 DEGREES 10 MINUTES 15 SECONDS WEST (DEED-SOUTH 52 DEGREES 08 MINUTES 40 SECONDS WEST), ALONG SAID CENTERLINE, 85.16 FEET; THENCE SOUTH 19 DEGREES 37 MINUTES 09 SECONDS WEST (DEED-SOUTH 19 DEGREES 35 MINUTES 34 SECONDS WEST), ALONG SAID CENTERLINE, 142.83 FEET; THENCE SOUTH 79 DEGREES 21 MINUTES 39 SECONDS WEST (DEED-SOUTH 79 DEGREES 20 MINUTES 04 SECONDS WEST), ALONG SAID CENTERLINE, 68.92 FEET; THENCE NORTH 73 DEGREES 27 MINUTES 48 SECONDS WEST (DEED-NORTH 73 DEGREES 29 MINUTES 23 SECONDS WEST), ALONG SAID CENTERLINE, 114.02 FEET; THENCE NORTH 25 DEGREES 46 MINUTES 28 SECONDS WEST (DEED-NORTH 25 DEGREES 48 MINUTES 03 SECONDS WEST), ALONG SAID CENTERLINE, 73.12 FEET; THENCE NORTH 87 DEGREES 30 MINUTES 19 SECONDS WEST (DEED-NORTH 87 DEGREES 31 MINUTES 54 SECONDS WEST), ALONG SAID CENTERLINE, 473.33 FEET; THENCE NORTH 49 DEGREES 45 MINUTES 48 SECONDS WEST (DEED-NORTH 49 DEGREES 47 MINUTES 23 SECONDS WEST), ALONG SAID CENTERLINE, 343.23 FEET; THENCE NORTH 56 DEGREES 22 MINUTES 25 SECONDS WEST (DEED-NORTH 56 DEGREES 24 MINUTES 00 SECONDS WEST), ALONG SAID CENTERLINE, 277.94 FEET; THENCE NORTH 65 DEGREES 42 MINUTES 49 SECONDS WEST (DEED-NORTH 65 DEGREES 44 MINUTES 24 SECONDS WEST), ALONG SAID CENTERLINE, 182.37 FEET; THENCE NORTH 22 DEGREES 55 MINUTES 55 SECONDS WEST (DEED-NORTH 22 DEGREES 57 MINUTES 30 SECONDS WEST), ALONG SAID CENTERLINE, 65.99 FEET TO ITS INTERSECTION WITH THE WEST LINE OF SAID SOUTHWEST QUARTER; THENCE NORTH 2 DEGREES 36 MINUTES 17 SECONDS EAST (DEED-NORTH 2 DEGREES 34 MINUTES 42 SECONDS EAST), ALONG SAID WEST LINE, 239.42 FEET TO THE POINT OF BEGINNING.  
(SHOWN FOR CONVENIENCE IN REPORTING.)



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1301 Burlington Street  
North Kansas City, MO 64116  
TEL 816.361.1177  
FAX 816.361.1888  
www.olsson.com



REV. NO.	DATE	DESCRIPTION
1	06-24-2020	CITY COMMENTS
2	08-10-2020	REVISIONS FROM PLAN SET 1"
3	04-06-2021	SWALE AND ADA RAMP REVISIONS
4	05-04-2021	ADA RAMP REVISIONS
5	06-11-2021	HEARTHSTONE PLACE ENTRANCE REVISION

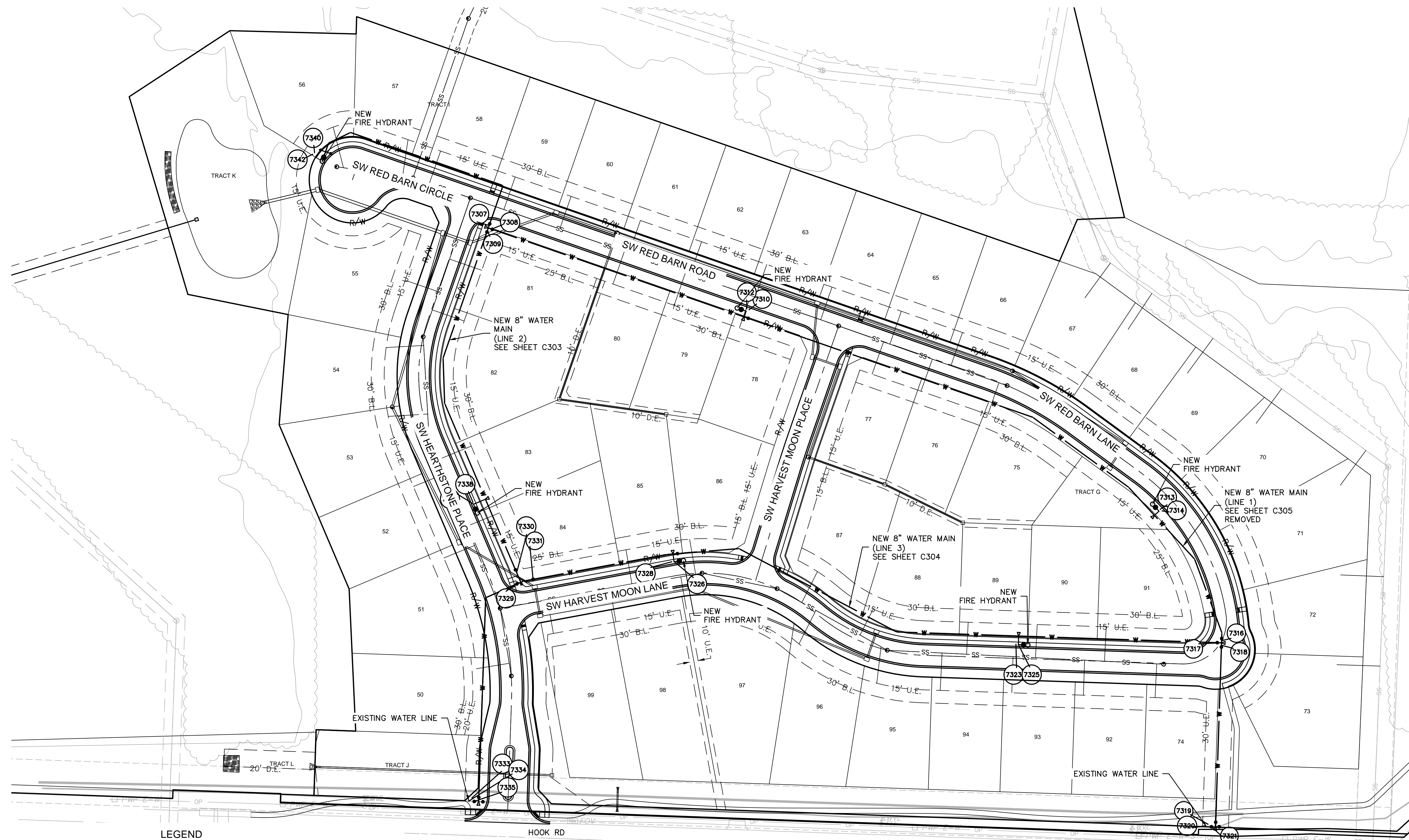
COVER SHEET  
WATER MAIN EXTENSION PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS  
LEE'S SUMMIT, MO  
2020

drawn by: EM  
checked by: EM  
designed by: RB  
QA/QC by: NH  
project no.: 019-4059  
drawing no.: C-TTL00\_0194059  
date: 4/20/2020

SHEET C300  
35 OF 54

AS-BUILT  
2021.09.01

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 C\_PBNDRY\_0194059  
 C\_XBASE\_0194059



**LEGEND**

<b>NEW</b>	<b>EXISTING</b>
WATER MAINS — W —	— W —
FIRE HYDRANTS ASSEMBLY — ● —	— ● —
STRAIGHT SET HYDRANT ASSEMBLY — ● —	— ● —
STRADDLE BLOCK — ↓ —	— ↓ —
VALVES — ● —	— ● —
<b>OTHERS</b>	
PROPERTY LINE — P —	
STOP SIGN ●	
END OF ROAD TREATMENT ● ● ● ●	

**GENERAL NOTES:**

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL FOR WATER MAINS (SECTION 6900). WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
- AREAS WITH LESS THAN 4' 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.

**SCALE IN FEET**  
 0' 30' 60' 120'

**AS-BUILT**  
 2021.09.01

**olsson**

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REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	06-24-2020	CITY COMMENTS	
2	02-01-2021	ADDED HOOK ROAD SWALE	
3	04-06-2021	SWALE AND ADA RAMP REVISIONS	
4	05-04-2021	ADA RAMP REVISIONS	
5	06-11-2021	HEARTHSTONE PLACE ENTRANCE REVISION	

GENERAL LAYOUT  
 WATER MAIN EXTENSION PLANS  
 THE RETREAT AT HOOK FARMS  
 CONSTRUCTION DOCUMENTS

2020

LEE'S SUMMIT, MO

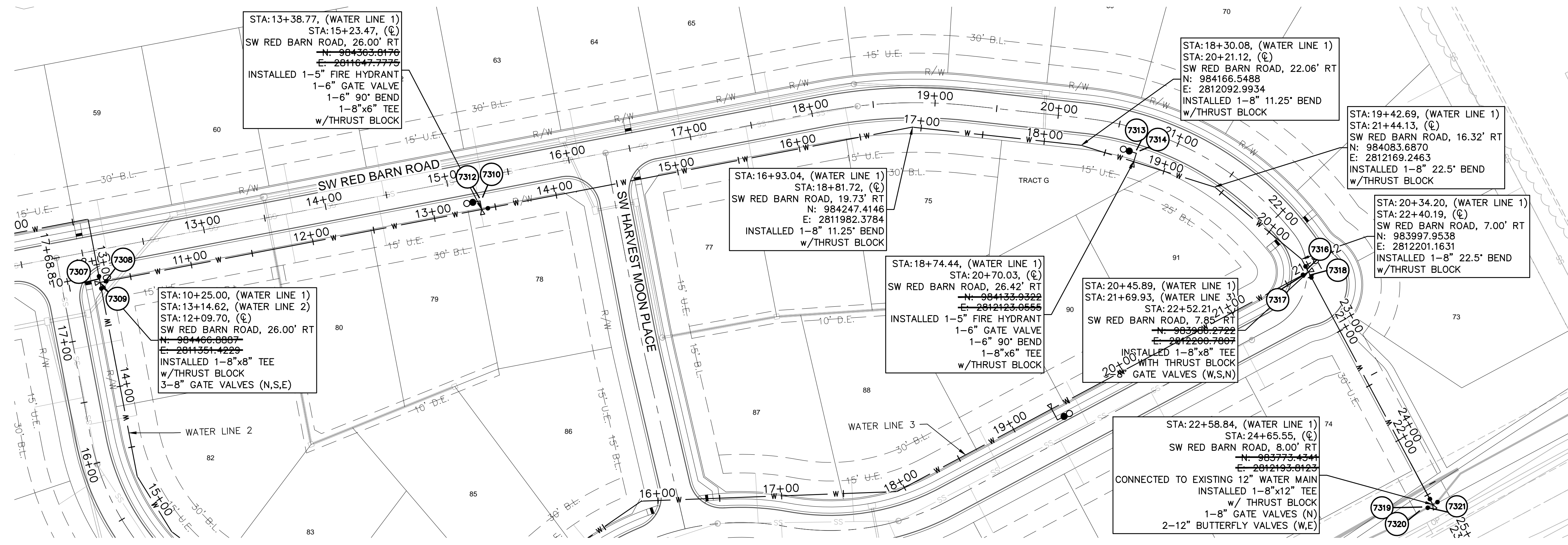
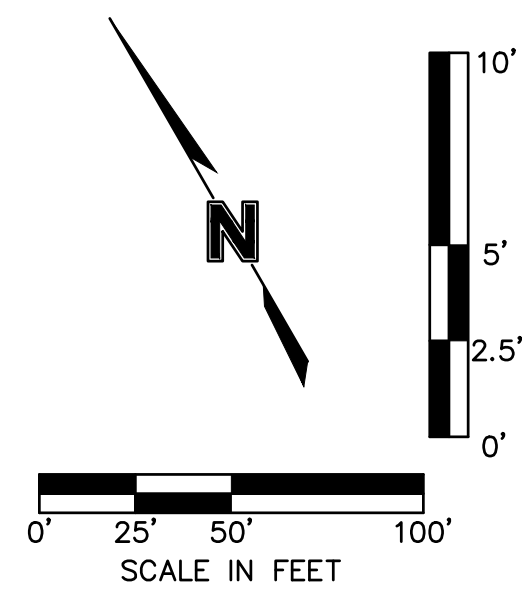
drawn by: EM  
 checked by: EM  
 designed by: RB  
 QA/QC by: NH  
 project no.: 019-4059  
 drawing no.: C\_WTR01\_0194059  
 date: 4/20/2020

SHEET C301  
 36 OF 54

- NOTES:
- CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.
  - CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4' MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.
  - CONTRACTOR SHALL NOT INSTALL GATE VALVES WITHIN ADA RAMP.
  - MAXIMUM DEPTH OF THE WATER MAIN SHALL NOT EXCEED 7' FROM FINISH GRADE.

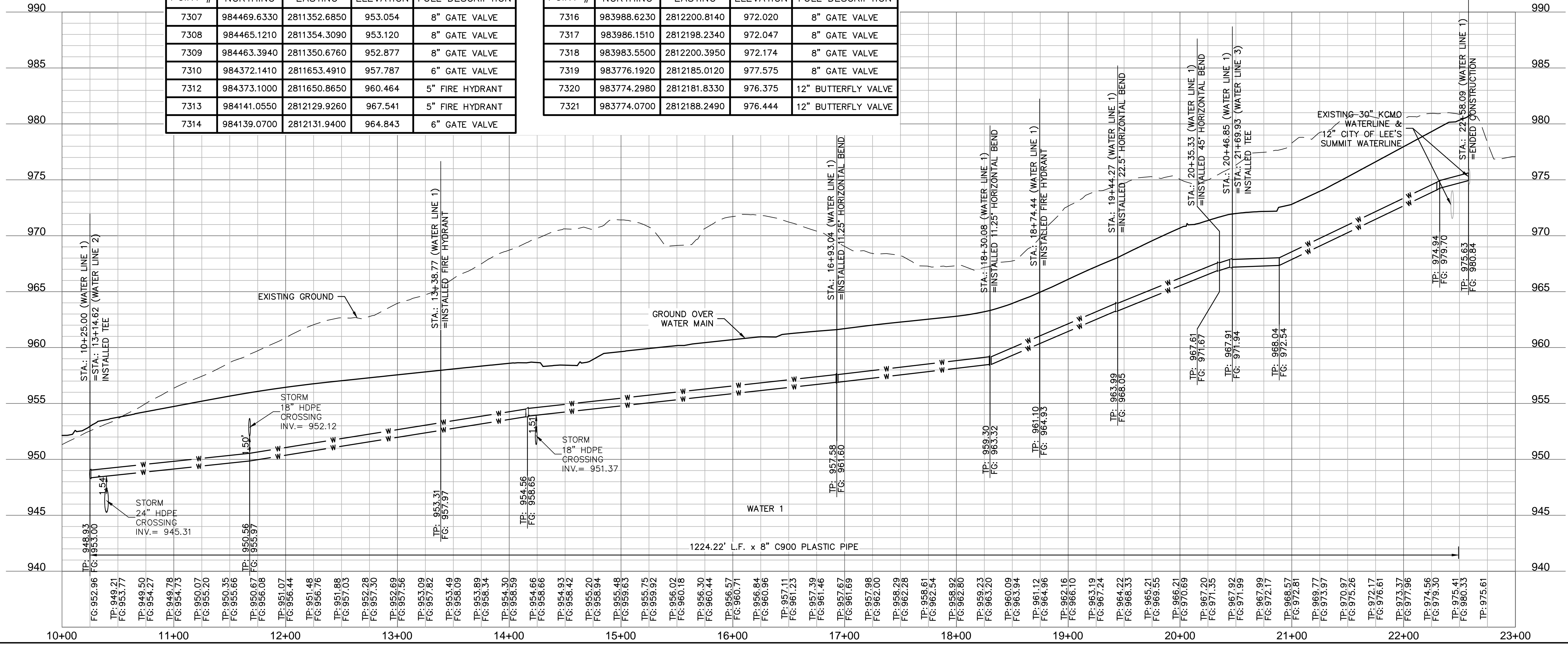
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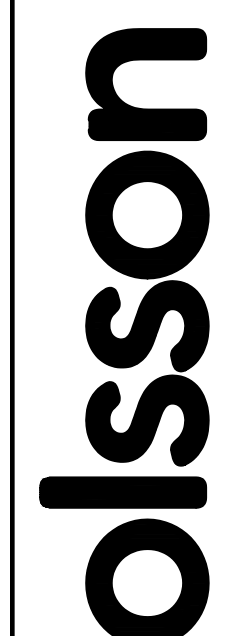
## 2021.09.01



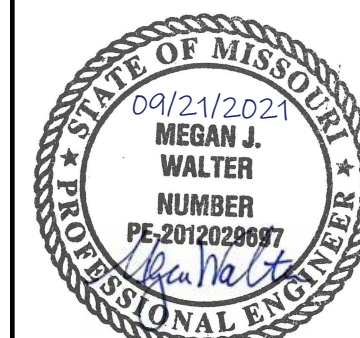
POINT #	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
7307	984469.6330	2811352.6850	953.054	8" GATE VALVE
7308	984465.1210	2811354.3090	953.120	8" GATE VALVE
7309	984463.3940	2811350.6760	952.877	8" GATE VALVE
7310	984372.1410	2811653.4910	957.787	6" GATE VALVE
7312	984373.1000	2811650.8650	960.464	5" FIRE HYDRANT
7313	984141.0550	2812129.9260	967.541	5" FIRE HYDRANT
7314	984139.0700	2812131.9400	964.843	6" GATE VALVE

POINT #	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
7316	983988.6230	2812200.8140	972.020	8" GATE VALVE
7317	983986.1510	2812198.2340	972.047	8" GATE VALVE
7318	983983.5500	2812200.3950	972.174	8" GATE VALVE
7319	983776.1920	2812185.0120	977.575	8" GATE VALVE
7320	983774.2980	2812181.8330	976.375	12" BUTTERFLY VALVE
7321	983774.0700	2812188.2490	976.444	12" BUTTERFLY VALVE





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STATE OF MISSOURI  
09/21/2021  
MEGAN J. WALTER  
NUMBER  
PE-201202897  
Professional Engineer

REV. NO.	DATE	REVISIONS DESCRIPTION
1	06-24-2020	CITY COMMENTS
2	02-01-2021	ADDED HOOK ROAD SWALE
3	04-06-2021	SWALE AND ADA RAMP REVISIONS
4	05-04-2021	ADA RAMP REVISIONS
5	06-11-2021	HEARTHSTONE PLACE ENTRANCE REVISION
	8-10-2020	REVISED EXISTING MAIN TO 12"

WATER MAIN 1 PLAN & PROFILE  
WATER MAIN EXTENSION PLANS  
THE RETREAT AT HOOK FARMS  
CONSTRUCTION DOCUMENTS

2020  
REVISIONS

drawn by: \_\_\_\_\_ EM  
checked by: \_\_\_\_\_ EM  
designed by: \_\_\_\_\_ RB  
QA/QC by: \_\_\_\_\_ NH  
project no.: 019-4059  
drawing no.: C\_WTR02\_0194059  
date: 4/20/2020

SHEET C302  
OF

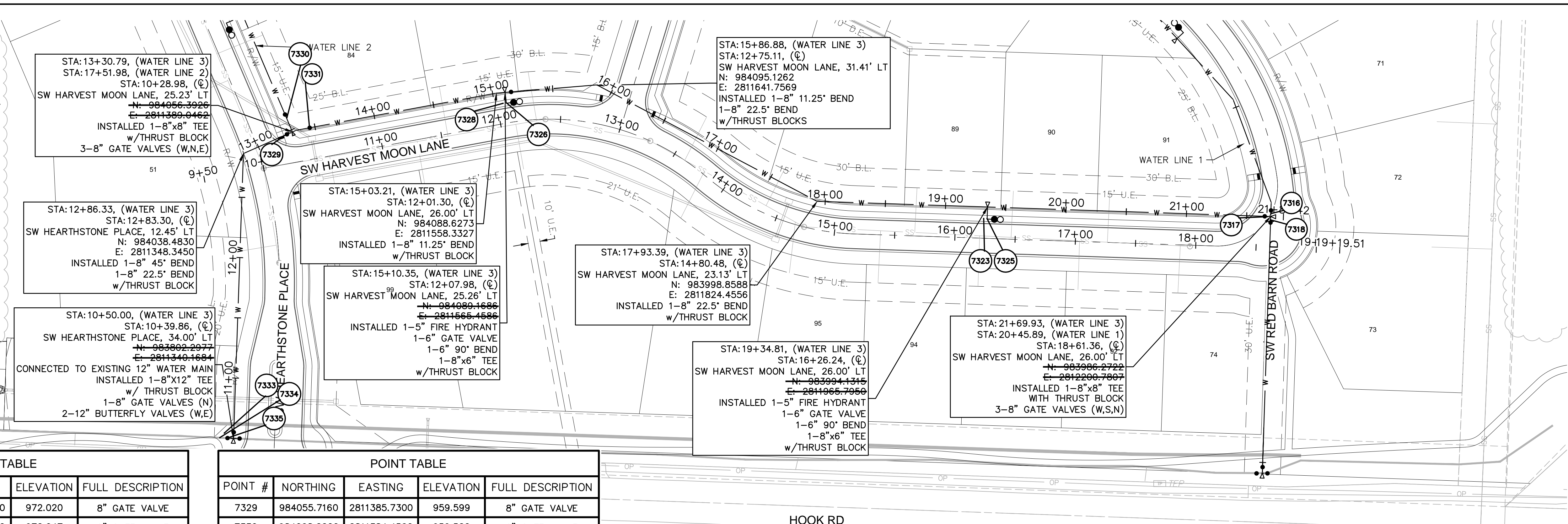
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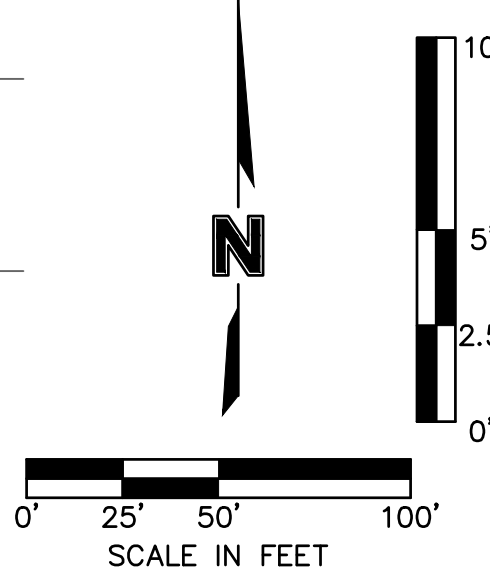
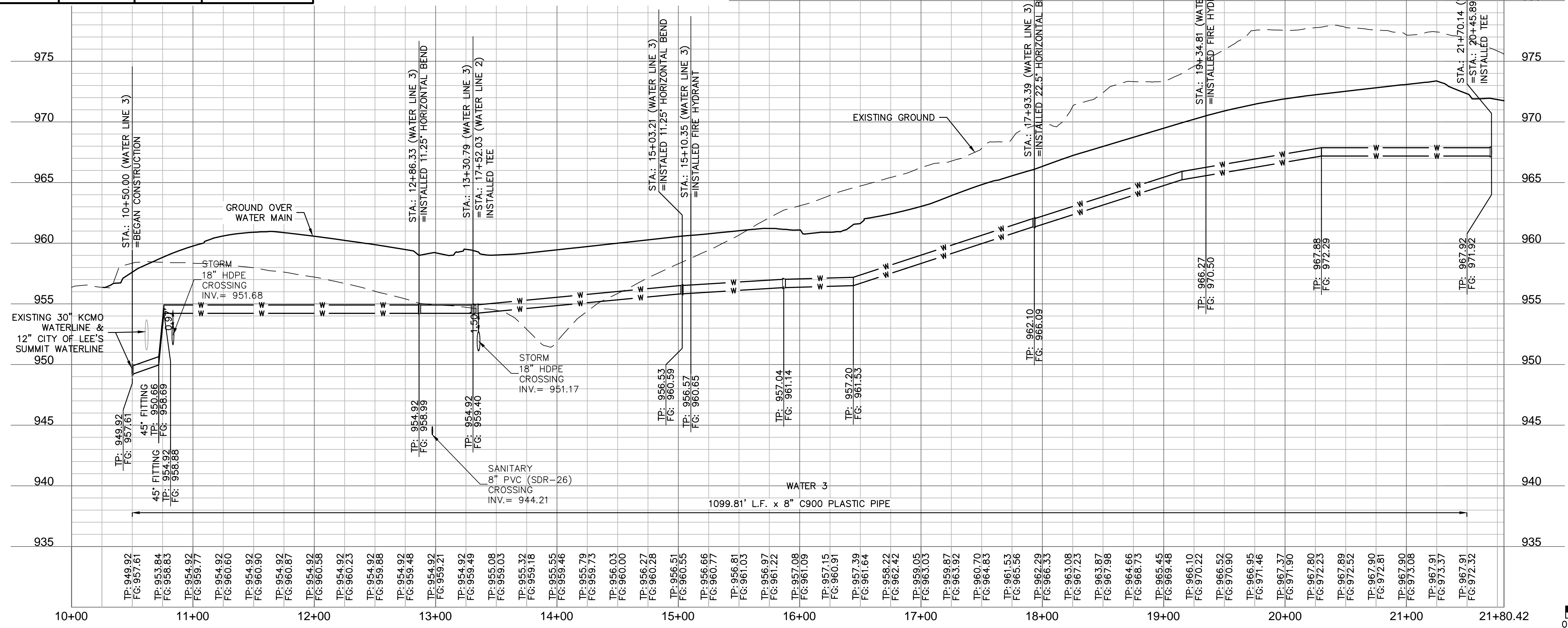
# AS-BUILT 2021.09.01

- NOTES:
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND COMMUNICATE WITH ENGINEER IF DIFFERENT THAN PLANS.
  2. CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 4' MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.
  3. CONTRACTOR SHALL NOT INSTALL GATE VALVES WITHIN ADA RAMP.
  4. MAXIMUM DEPTH OF THE WATER MAIN SHALL NOT EXCEED 7' FROM FINISH GRADE.



POINT #	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
7316	983988.6230	2812200.8140	972.020	8" GATE VALVE
7317	983986.1510	2812198.2340	972.047	8" GATE VALVE
7318	983983.5500	2812200.3950	972.174	8" GATE VALVE
7323	983984.6140	2811962.6210	970.383	6" GATE VALVE
7325	983984.6090	2811965.3450	972.996	5" FIRE HYDRANT
7326	984080.6270	2811566.5180	963.310	5" FIRE HYDRANT
7328	984080.1430	2811563.8080	960.719	6" GATE VALVE

POINT #	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
7329	984055.7160	2811385.7300	959.599	8" GATE VALVE
7330	984068.2200	2811384.4560	959.520	8" GATE VALVE
7331	984059.1040	2811403.2770	959.020	8" GATE VALVE
7333	983806.6310	2811332.4620	951.480	8" GATE VALVE
7334	983802.9080	2811328.7810	949.976	12" BUTTERFLY VALVE
7335	983802.6620	2811335.3510	950.492	12" BUTTERFLY VALVE



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STATE OF MISSOURI  
PROFESSIONAL ENGINEER  
MEGAN J. WALTER  
NUMBER PE-201202897  
EXPIRES 12/31/2021

REV. NO.	DATE	REVISIONS DESCRIPTION
1	06-24-2020	CITY COMMENTS
2	08-10-2021	REVISIONS FOR PUBLIC REVIEW
3	04-06-2021	SWALE AND ADA RAMP REVISIONS
4	05-04-2021	ADA RAMP REVISIONS
5	06-11-2021	HEARTHSTONE PLACE ENTRANCE REVISION

BY: \_\_\_\_\_

DATE: 2020

SHEET C304 OF

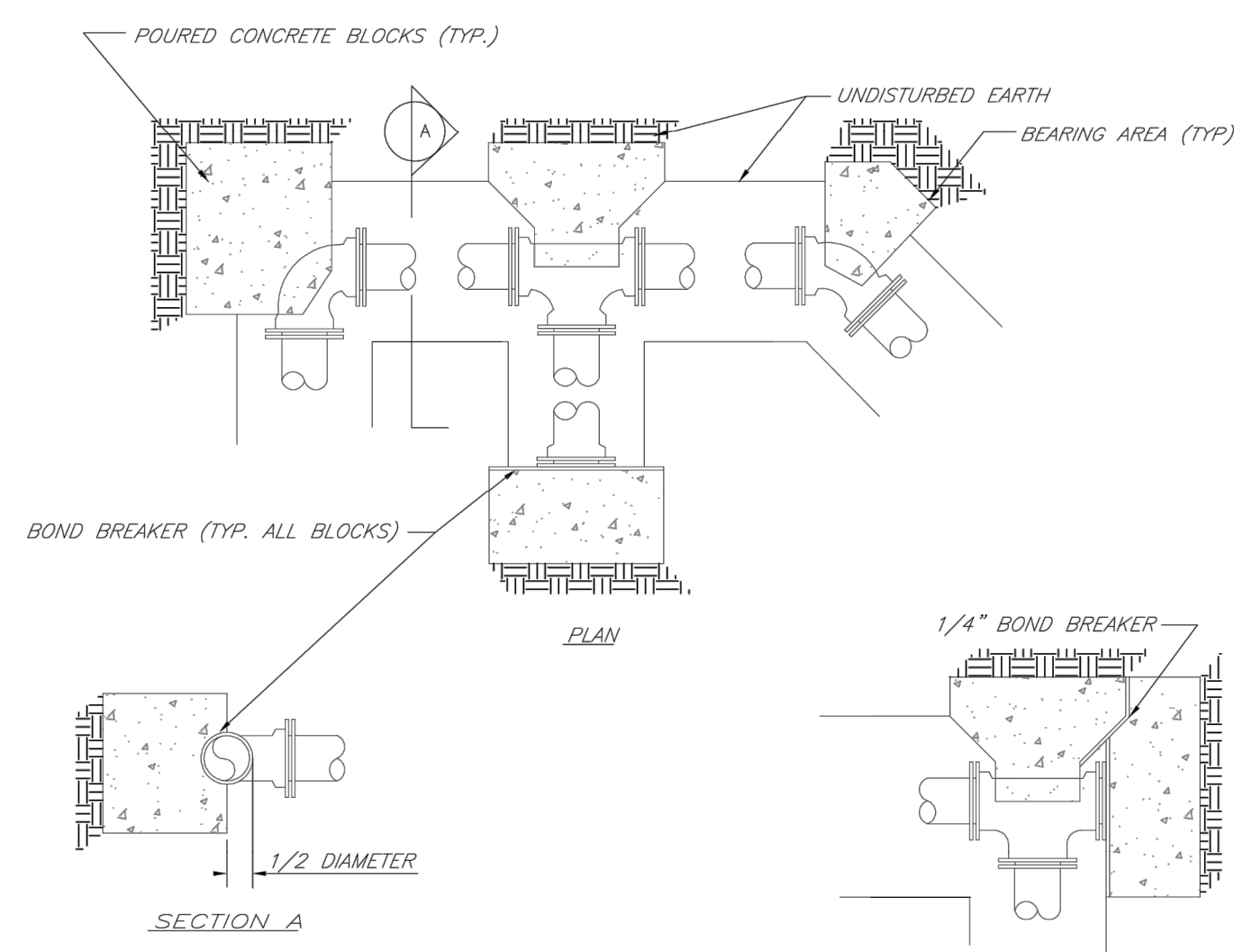
LEES SUMMIT, MO

DWG: F:\2019\4001-4500\019-4059\40-design\Autocad\final\_plans\_as-built\Sheets\GNCV\C\_DTL00\_0194059.dwg  
 DATE: Aug 25, 2021 4:57pm  
 USER: gsmith  
 XREFS: C\_PBLK\_0194059\_34x22 C\_PBASE\_0194059

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)

NOM. DIA. (INCHES)	TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	4.4	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

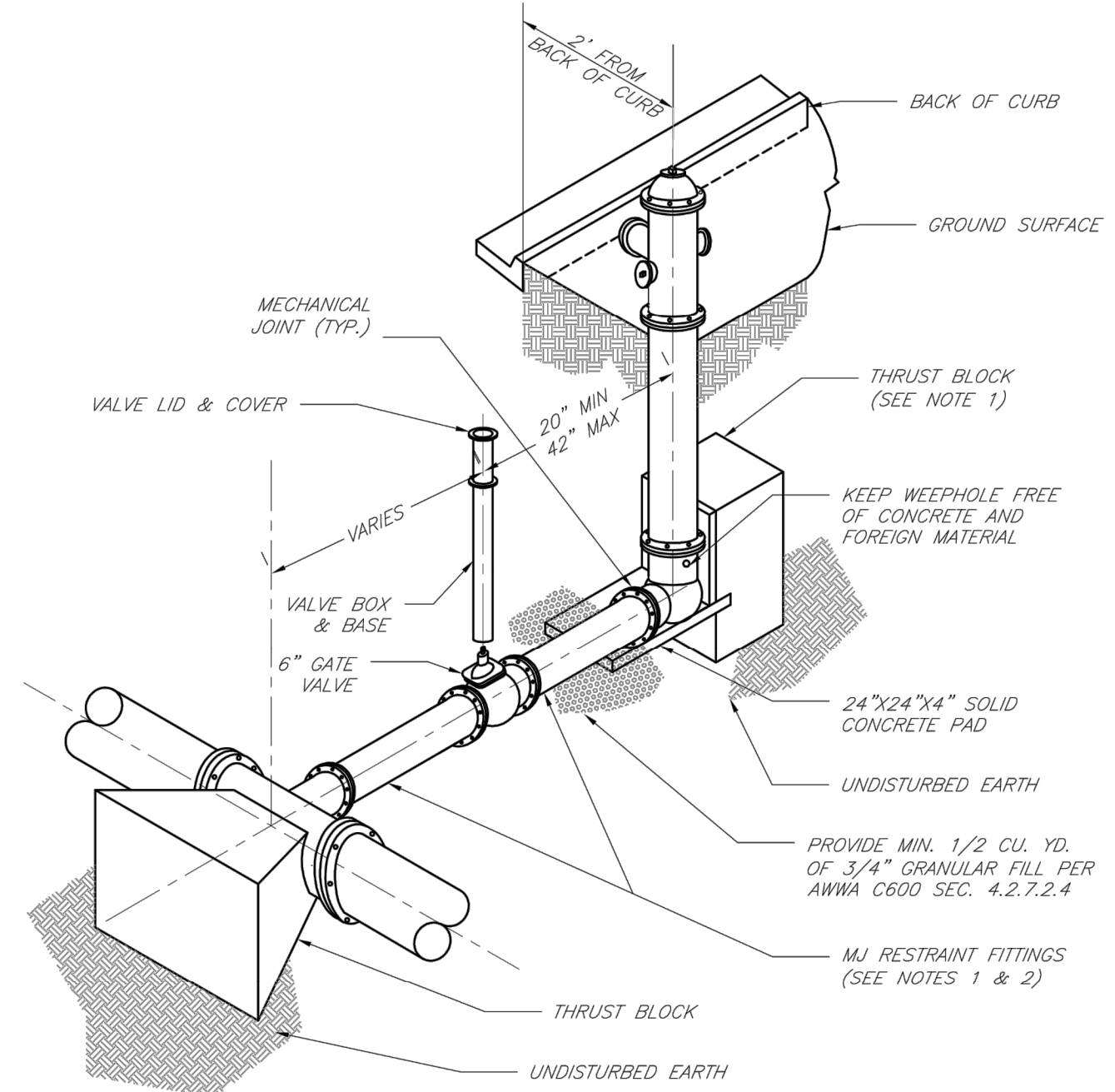
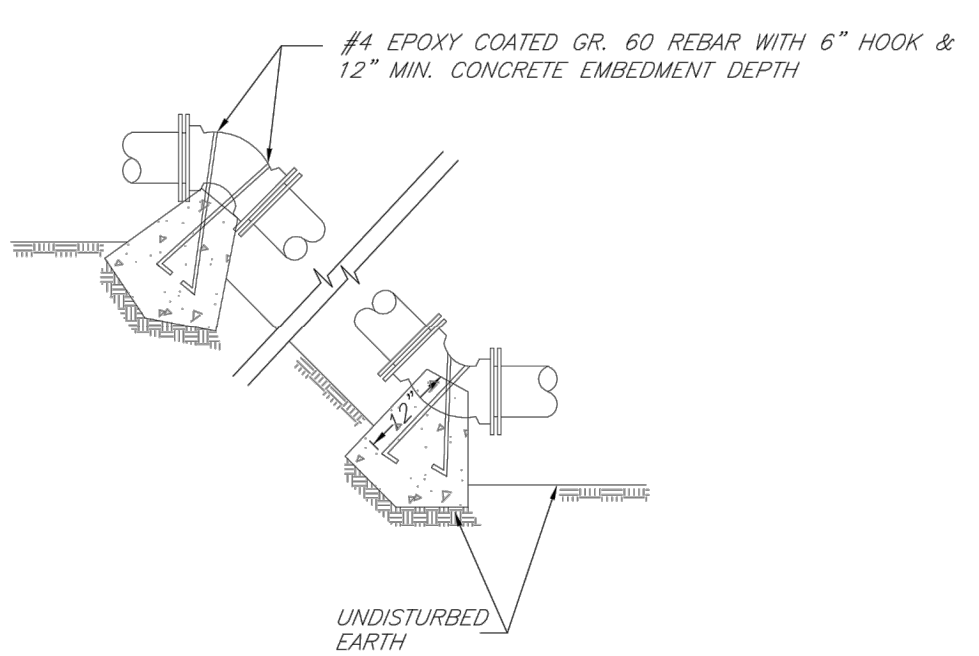
- NOTES:  
 1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.  
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.  
 3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.  
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH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



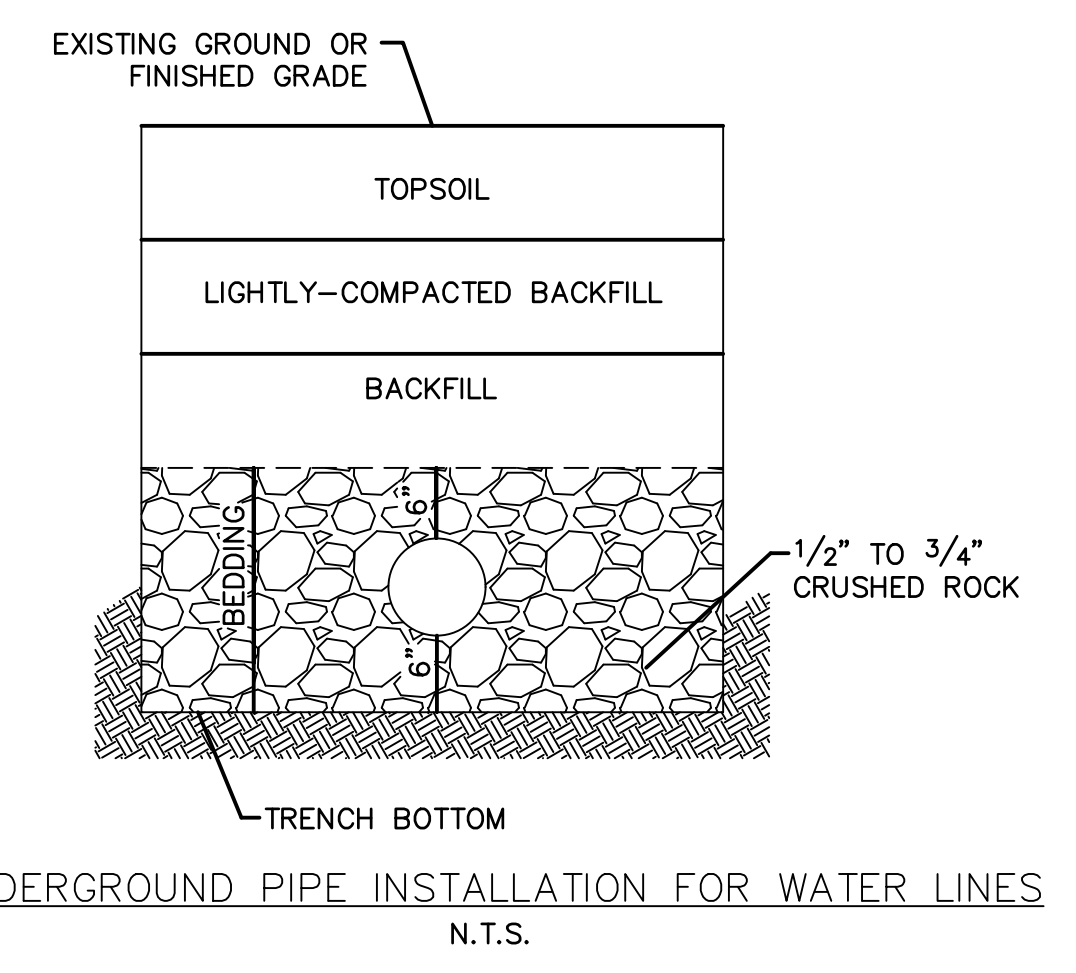
REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)

NOM. DIA. (INCHES)	TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	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	88.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4

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



- 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\"/>

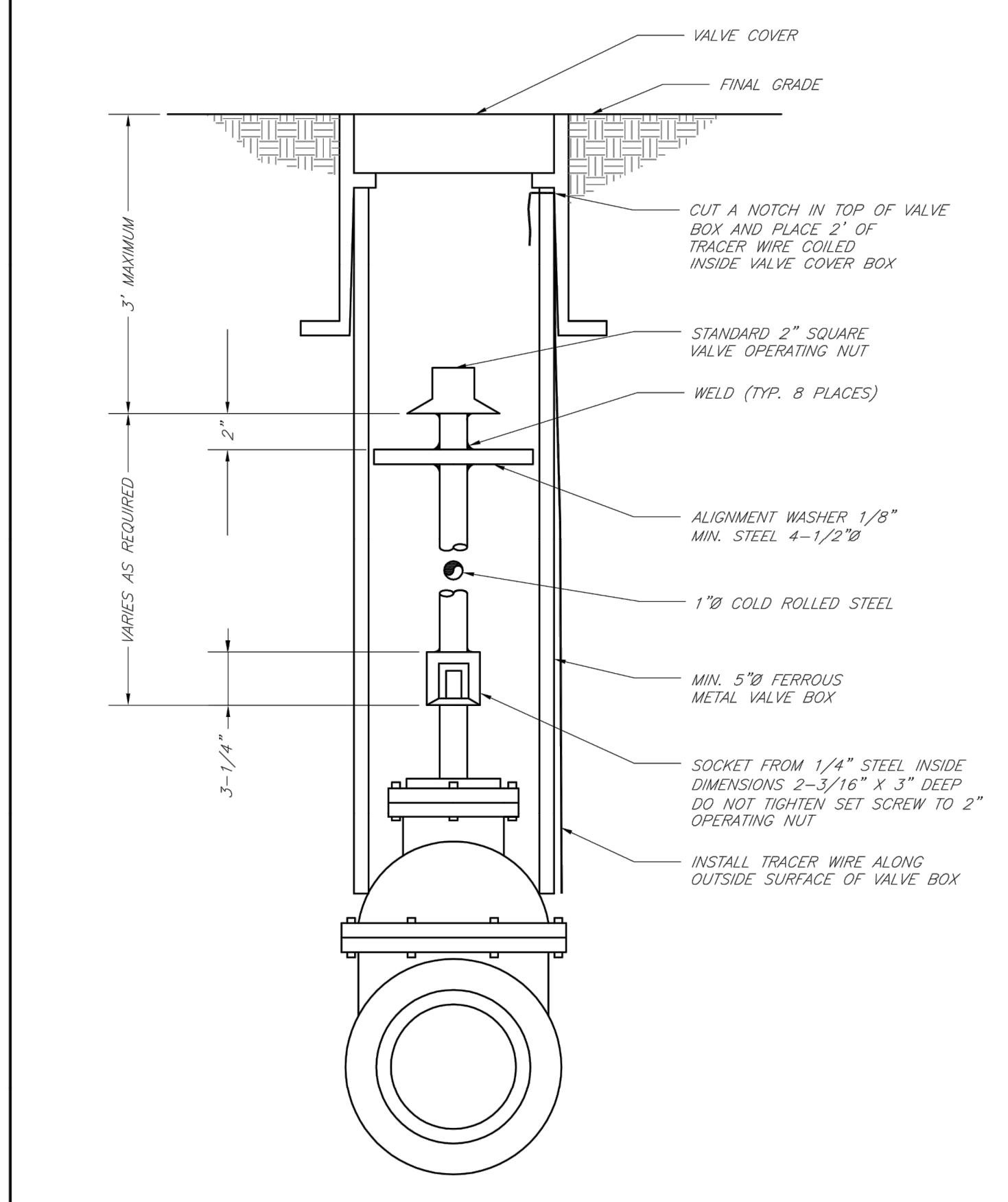


- NOTES:  
 1. A MINIMUM OF 42 INCHES OF COVER SHALL BE OVER THE TOP OF THE PIPE. THIS MINIMUM OF COVER SHALL BE FROM THE TOP OF THE PIPE TO THE FINISHED GRADE. A MAXIMUM COVER OF 7' SHALL BE ALLOWED.  
 2. BEDDING AGGREGATE SHALL BE PLACED FROM A LEVEL 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL 6 INCHES ABOVE THE TOP OF THE PIPE.  
 3. TRENCH BACKFILL IN PAVED AREAS WITHIN STREET OR ALLEY RIGHT OF WAYS  
 a. NARROW TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES 24 INCHES OR LESS IN WIDTH AND SHALL BE TYPE A FLOWABLE FILL.  
 b. STANDARD TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES BETWEEN 24 TO 48 INCHES WIDE SHALL BE EITHER TYPE A FLOWABLE FILL OR DENSE, WELL GRADED AGGREGATE BASE MATERIAL. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS FOR KDOT AB-3; MODOT TYPES 1 OR 5; OR APWA 2202.2.  
 c. WIDE TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES BETWEEN GREATER THAN 48 INCHES WIDE SHALL BE SUITABLE MATERIAL AS SPECIFIED FOR EARTH EMBANKMENT IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.C.  
 4. SUITABLE BACKFILL MATERIAL OUTSIDE OF PAVED AREAS WITHIN RIGHT OF WAY, AND ALL AREAS OUTSIDE RIGHT OF WAY, MAY BE SUITABLE MATERIAL AS SPECIFIED FOR EARTH EMBANKMENT IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.C. SUITABLE BACKFILL MATERIAL MAY ALSO BE OTHER TRENCH BACKFILL MATERIAL (FLOWABLE FILL OR AGGREGATE BASE) DEPENDING ON SITE CONDITIONS, TRENCH WIDTHS OR AT THE DIRECTION OF THE CITY'S ON SITE INSPECTOR.

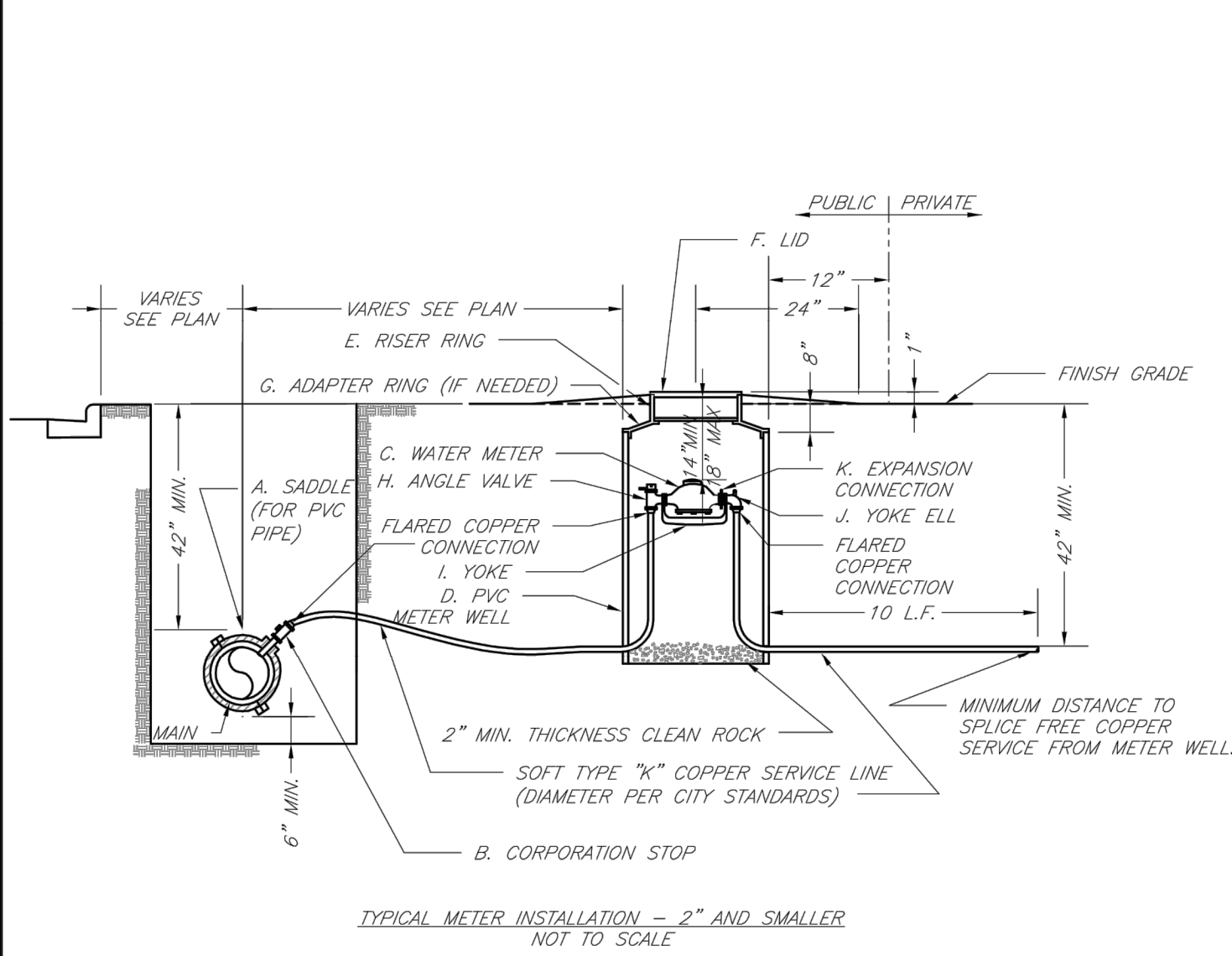
**LEE'S SUMMIT MISSOURI**  
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
**HORIZONTAL THRUST BLOCKS**  
 Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 FILE: WAT-1  
 Rev: 1/14  
 Rev:

**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:

**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:

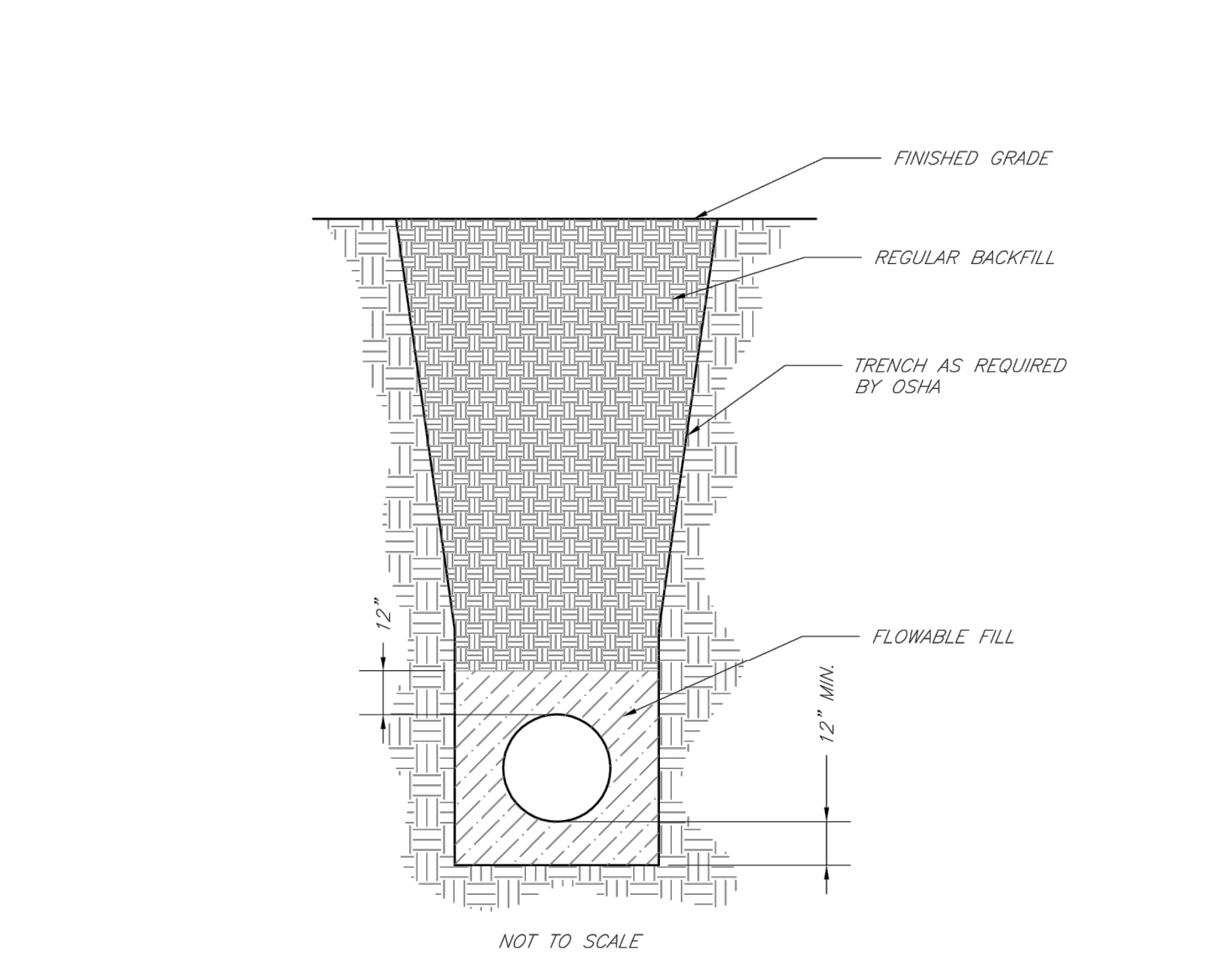


**LEE'S SUMMIT MISSOURI**  
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
**VALVE STEM EXTENSION AND VALVE BOX**  
 Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 FILE: WAT-9  
 Rev: 1/14  
 Rev:



- 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\"/>

**LEE'S SUMMIT MISSOURI**  
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
**SERVICE CONNECTION/METER WELL**  
 Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 FILE: WAT-11  
 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\"/>

**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:

**olsson**  
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STATE OF MISSOURI  
 MEGAN J. WALTER  
 PROFESSIONAL ENGINEER  
 PE-201202897

REV. NO.	DATE	REVISIONS DESCRIPTION
1	06-24-2020	CITY COMMENTS
2	02-01-2021	ADDED HOOK ROAD SWALE
3	04-06-2021	SWALE AND ADA RAMP REVISIONS
4	05-04-2021	ADA RAMP REVISIONS
5	06-11-2021	HEARTHSTONE PLACE ENTRANCE REVISION

**WATER MAIN DETAILS**  
**WATER MAIN EXTENSION PLANS**  
**THE RETREAT AT HOOK FARMS**  
**CONSTRUCTION DOCUMENTS**  
 LEE'S SUMMIT, MO  
 2020

drawn by:	EM
checked by:	EM
designed by:	RB
QA/QC by:	NH
project no.:	019-4059
drawing no.:	C_DTL00_0194059
date:	4/20/2020

AS-BUILT  
 2021.09.01