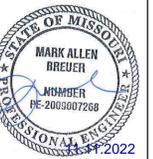


PREPARED BY:

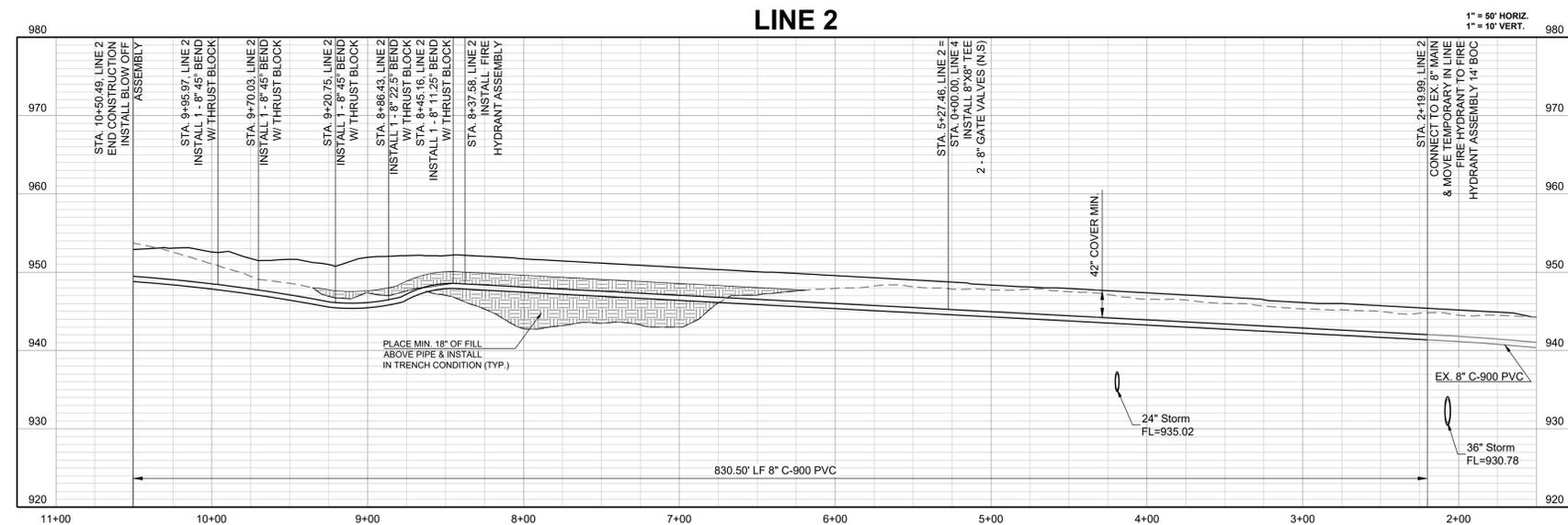
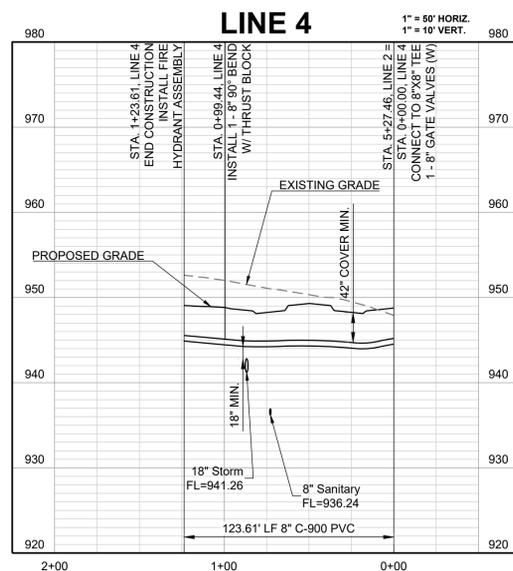
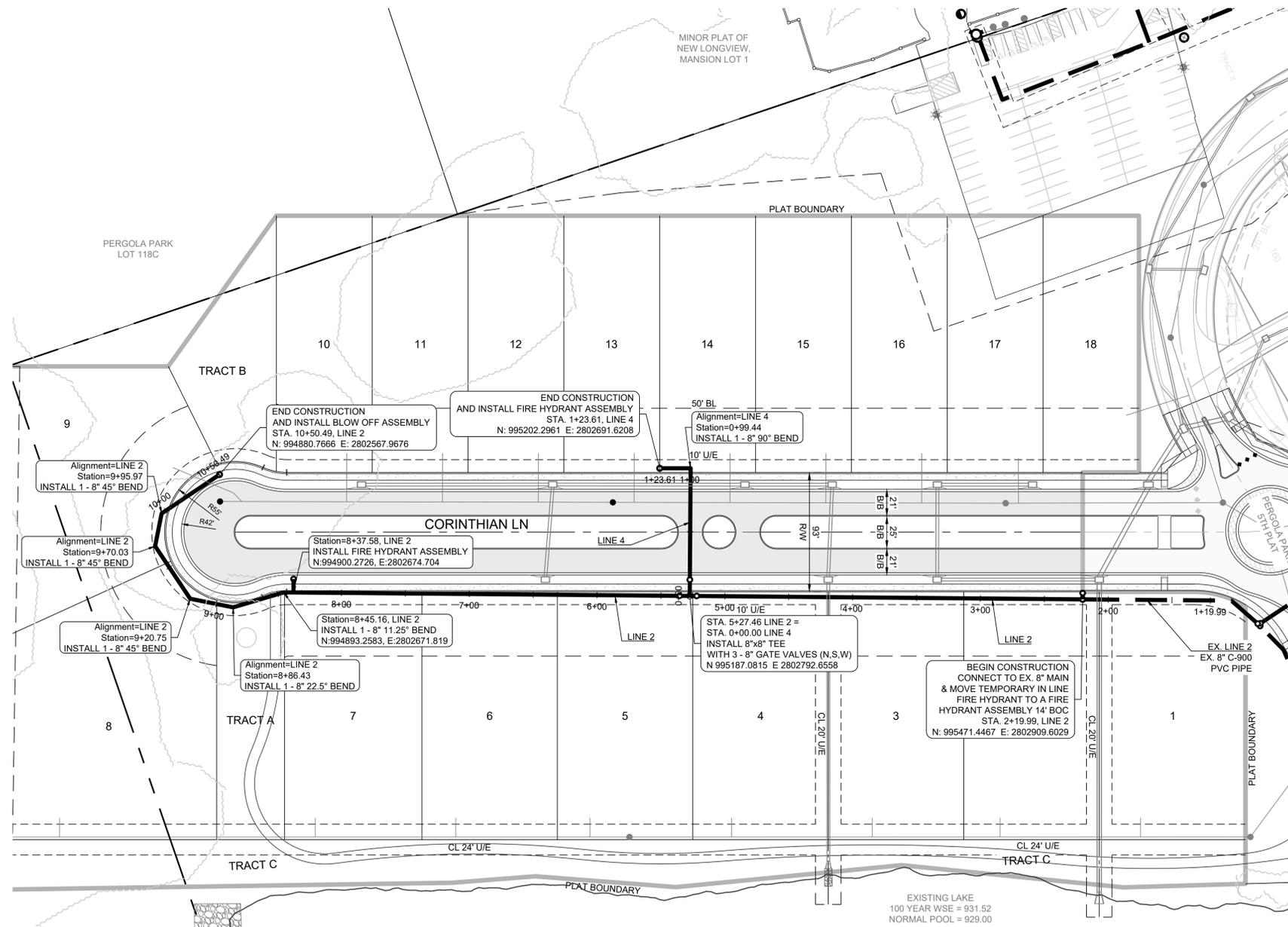


SCHLAGEL & ASSOCIATES, P.A.

- GENERAL NOTES:**
1. ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
 2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.
 3. FOR ALL WATER LINES THE MAXIMUM DEPTH OF COVER IS SEVEN (7) FEET.

PROJECT BENCHMARK:

CHISELED "SQUARE" ON STORM CURB INLET AT NORTHWEST INTERSECTION OF SW. TOWER PARK DRIVE AND SW. LONGVIEW BOULEVARD.
 NORTHING: 998893.4148
 EASTING: 2803318.5413
 ELEV. 1004.09



**LUMBERMAN'S ROW
 WATER MAIN PLANS**

LEE'S SUMMIT, MISSOURI

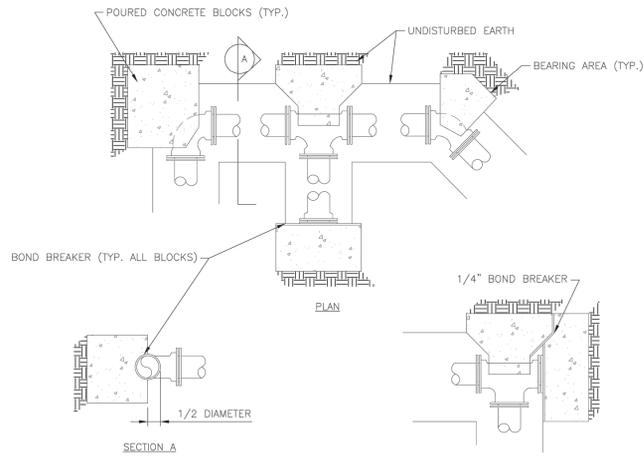
REVISION DATE	DESCRIPTION
9-30-22	CITY COMMENTS
11-7-22	CITY COMMENTS

DRAWN BY: BAL	CHECKED BY: MAB	DATE PREPARED: 8-16-22	PROJ. NUMBER: 22-034
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LINES 2 & 4 PLAN & PROFILE

SHEET

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	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8



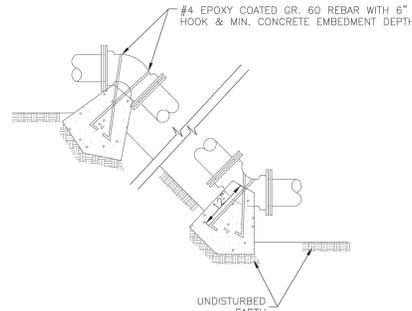
- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 230 SE GREEN STREET | LEE'S SUMMIT, MO 64063

LS **WAT-1**

Date: 01/2016
Drawn By: JN
Checked By: DL

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.	156.4

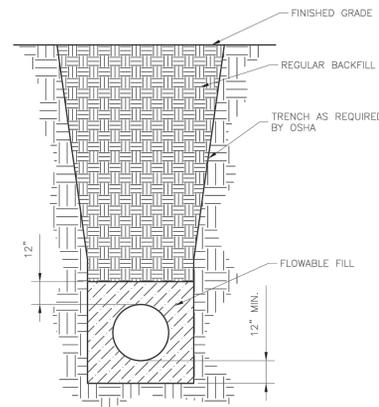


- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 230 SE GREEN STREET | LEE'S SUMMIT, MO 64063

LS **WAT-2**

Date: WAT-2
Drawn By: JN
Checked By: DL

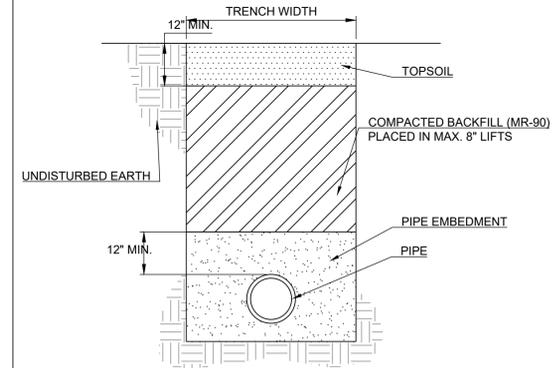


- NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
 2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
 3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.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

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 230 SE GREEN STREET | LEE'S SUMMIT, MO 64063

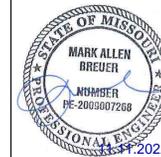
LS **WAT-6**

Date: 01/2016
Drawn By: JN
Checked By: DL



NTS
TRENCH AND BACKFILL DETAIL

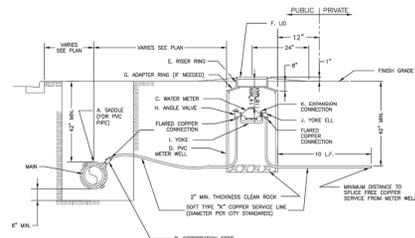
PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

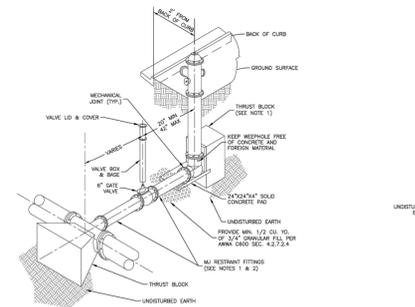
LUMBERMAN'S ROW
WATER MAIN PLANS

LEE'S SUMMIT, MISSOURI



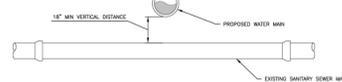
- NOTES:
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE REPAIRS WITHOUT CITY APPROVAL.
 2. 4\"/>

SERVICE CONNECTION METER WELL



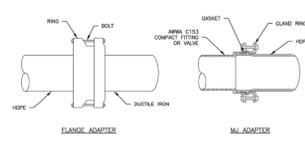
- NOTES:
1. WHEN RESTRAINT GLASSES ARE USED IN LIEU OF MECHANICAL JOINT (M) RESTRAINT FITTINGS, HYDRANT SHALL BE BOLTED TO RESTRAINT FITTING.
 2. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
 3. 8\"/>

HYDRANT INSTALLATION STRAIGHT SET



SANITARY SEWER UTILITY CROSSING

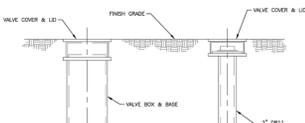
- NOTES:
1. FULL LENGTH OF WATER PIPE SHALL BE LOCATED SUCH THAT BOTH JOINTS WILL BE AT LEAST 18\"/>



HOPE TO DUCTILE IRON CONNECTION



ABANDONED WATER MAIN



BLOW OFF ASSEMBLY

- NOTES:
1. WHEN RESTRAINT GLASSES ARE USED IN LIEU OF MECHANICAL JOINT (M) RESTRAINT FITTINGS, HYDRANT THRUST BLOCKS ARE REQUIRED.
 2. GATE VALVE MAY BE BOLTED DIRECTLY TO M RESTRAINT FITTING.
 3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
 4. 8\"/>

HYDRANT WITH 90° BEND

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 230 SE GREEN STREET | LEE'S SUMMIT, MO 64063

LS **WAT-1**

Date: 01/2016
Drawn By: JN
Checked By: DL

PROJECT: BIDD 496-1
WATER MAIN REPLACEMENT FY22-1
CITY OF LEE'S SUMMIT, JACKSON COUNTY, MO
HYDRANTS & METERS

Scale: 3/2022
Sheet: 496-1

30

REVISION DATE	DESCRIPTION
9-30-22	CITY COMMENTS
11-7-22	CITY COMMENTS

DRAWN BY: BAL
CHECKED BY: MAB
DATE PREPARED: 8-16-22
PROJ. NUMBER: 22-534

DETAIL SHEET

SHEET 4