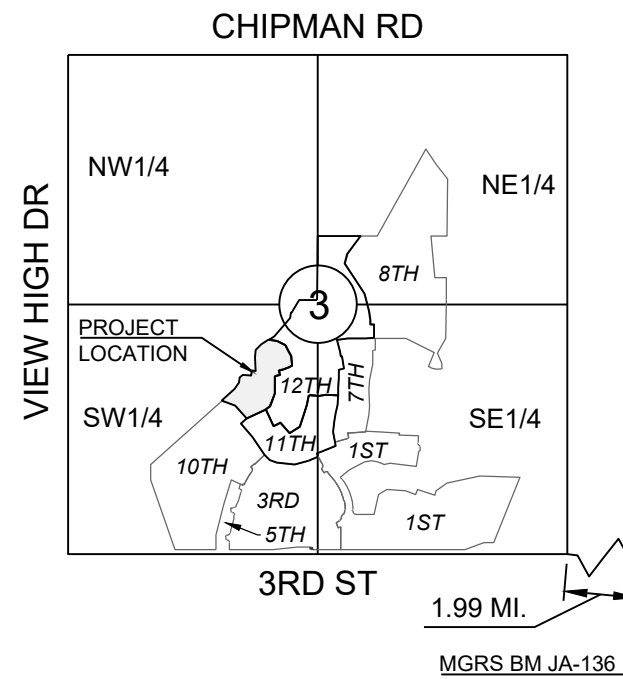


# WATER LINE PLANS FOR WINTERSET VALLEY, 13TH PLAT IN THE CITY OF LEE'S SUMMIT JACKSON COUNTY, MISSOURI

**LEGEND:**

- A/E - ACCESS EASEMENT
- BC - BACK OF CURB
- B/B - BACK TO BACK
- BM - BENCHMARK
- BL or B.L. - BUILDING LINE
- CO - CLEANOUT
- TJB - TELEPHONE JUNCTION BOX
- C&G - CURB AND GUTTER
- D/E - DRAINAGE EASEMENT
- E/E - ELECTRICAL EASEMENT
- EL - ELEVATION
- FL - FLOW LINE
- G/E - GAS LINE EASEMENT
- HDPE - HIGH-DENSITY POLYETHYLENE
- L/E - LANDSCAPE EASEMENT
- MSFE - MINIMUM SERVICEABLE FLOOR ELEVATION
- PVC - POLYVINYL CHLORIDE
- P/L - PROPERTY LINE
- PUB/E - PUBLIC EASEMENT
- RCP - REINFORCED CONCRETE PIPE
- ROW or RW - RIGHT-OF-WAY
- S/E - SANITARY SEWER EASEMENT
- SL - SERVICE LINE
- S/W - SIDEWALK
- TE - TOP ELEVATION
- U/E - UTILITY EASEMENT
- WSE - WATER SURFACE ELEVATION
- W/E - WATERLINE EASEMENT

- ASPHALT PAVEMENT - EXISTING
- ASPHALT PAVEMENT - PROPOSED
- CONCRETE PAVEMENT - EXISTING
- CONCRETE PAVEMENT - PROPOSED
- ASPHALT PAVEMENT - EXISTING
- CONCRETE SIDEWALK - EXISTING
- CONCRETE SIDEWALK - PROPOSED
- CURB & GUTTER
- CURB & GUTTER - EXISTING
- TREELINE
- EXISTING LOT AND RW LINES
- EXISTING PLAT LINES
- PROPERTY LINES
- RIGHT-OF-WAY
- SANITARY SEWER MAIN
- SANITARY SEWER MAIN - EXIST.
- STORM SEWER
- STORM SEWER - EXISTING
- CABLE TV - EXISTING
- FIBER OPTIC CABLE - EXISTING
- TELEPHONE LINE - EXIST.
- ELECTRIC LINE - EXISTING
- OVERHEAD POWER LINE - EXIST.
- UNDERGROUND ELECTRIC - EX.
- GAS LINE - EXISTING
- WATERLINE - EXISTING
- LIGHT - EXISTING
- EXISTING MANHOLE
- CLEANOUT
- EXISTING SANITARY MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING AREA INLET
- EXISTING CURB INLET
- EXISTING GRATE INLET
- EXISTING JUNCTION BOX
- EXISTING STORM MANHOLE



SECTION 3-47N-32W  
**LOCATION MAP**  
SCALE 1" = 2000'

**UTILITY CONTACTS:**

- MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)**  
Steve Holloway  
600 NE Colbern Road  
Lee's Summit, MO 64086  
(816) 607-2186
- MISSOURI GAS ENERGY (MGE)**  
Brent Jones  
3025 SE Clover Drive  
Lee's Summit, MO 64082  
(816) 399-9633  
brent.jones@spireenergy.com
- KANSAS CITY POWER & LIGHT COMPANY (KCP&L)**  
Ron Dejamette  
1300 SE Hamblin Road  
Lee's Summit, MO 64081  
Office: (816) 347-4316  
Cell: (816) 810-5234  
ron.dejamette@kcpcl.com
- CITY OF LEE'S SUMMIT DEVELOPMENT SERVICES**  
Development Service Inspections  
220 SE Green Street  
Lee's Summit, MO 64063  
(816) 969-1200
- AT&T**  
Mark Manion or Marty Loper  
500 E. 8th Street, Room 370  
Kansas City, MO 64106  
(816) 275-2341 or (816) 275-1550
- COMCAST CABLE**  
John Meadows,  
4700 Little Blue Parkway  
Independence, MO 64057  
Office: (816) 795-2257  
Cell: (816) 918-3088  
john\_meadows@cable.comcast.com
- PUBLIC WATER SUPPLY DISTRICT**  
Mark Schauflier  
220 SE Green Street  
Lee's Summit, MO 64063  
(816) 969-1900

**GENERAL NOTES:**

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.
- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
- PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER AT NO ADDITIONAL COST.
- ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1800 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
- THE CONTRACTOR SHALL CONTACT THE CITY'S EROSION CONTROL SPECIALIST AT: 816-969-1800 PRIOR TO ANY LAND DISTURBANCE.
- THE CONTRACTOR SHALL CONTACT THE RIGHT OF WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT OF WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).
- ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. TRENCH CHECK SHALL EXTEND TO BOTTOM OF TRENCH, TO WIDTH OF TRENCH, TO 12 INCHES ABOVE PIPE, FOR A MINIMUM LENGTH OF 12 INCHES. TRENCH CHECK SHALL BE LOCATED AT LEAST 5 FEET FROM SANITARY MAIN.

**EARTHWORK:**

- PRIOR TO EARTHWORK ACTIVITIES, PRE-DISTURBANCE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PER THE STORM WATER POLLUTION PREVENTION PLAN AND/OR THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THIS SITE.
- ALL BACKFILL MATERIAL SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO 95-PERCENT OF MAXIMUM DENSITY AS DEFINED USING A STANDARD PROCTOR TEST (AASHTO T99/ASTM 698).
- BACKFILL MATERIALS SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REDISTRIBUTING THE TOPSOIL OVER PROPOSED TURF AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY.
  - TURF AREAS - 2.5% MINIMUM, 4H:1V MAXIMUM
  - ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDING AND MULCHED IMMEDIATELY AFTER EXCAVATION ACTIVITIES HAVE CEASED. SEEDING SHALL BE PER THE EROSION AND SEDIMENT CONTROL PLAN AND/OR LANDSCAPE PLAN. IF NOT SPECIFIED SEEDING SHALL BE PER APWA SECTION 2400, LATEST EDITION, UNLESS OTHERWISE NOTED. SEEDING SHALL BE SUBSIDIARY TO THE CONTRACT PRICE FOR PIPE INSTALLATION.
  - CONTRACTOR SHALL ADHERE TO THE REPORTING REQUIREMENTS OUTLINED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROPERLY MAINTAINED AND KEPT CLEAN OF SILT AND DEBRIS AND IN GOOD WORKING ORDER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS REQUIRED.

**UTILITIES:**

- EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL VERIFY FLOW-LINES AND STRUCTURE TOPS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES. PROVIDE SHOP DRAWINGS FOR ALL PRECAST AND MANUFACTURED UTILITY STRUCTURES FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURES.
- UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET VERTICAL SEPARATION FROM ALL SANITARY AND STORM SEWER LINES. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, CONCRETE ENCASMENT OF THE SANITARY OR STORM SEWER LINE SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE CONFLICT.
- PAYMENT FOR TRENCHING, BACKFILLING, PIPE EMBEDMENT, FLOWABLE FILL, BACKFILL MATERIALS, CLEAN UP, SEEDING, SODDING AND ANY OTHER ITEMS NECESSARY FOR THE CONSTRUCTION OF THE UTILITY LINE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE UTILITY INSTALLATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING RESPECTIVE UTILITY COMPANIES 48-HOURS IN ADVANCE FOR THE INSPECTION OF ANY PROPOSED UTILITY MAIN EXTENSION OR SERVICE LINE OR SERVICE CONNECTION TO ANY EXISTING MAIN.
- TRENCH SPOILS SHALL BE NEATLY PLACED ONSITE ADJACENT TO THE TRENCH, AND COMPACTED TO PREVENT SATURATION AND EXCESS SEDIMENT RUNOFF. UNSUITABLE MATERIALS, ROCK AND SHALE, ASPHALT, CONCRETE, TREES, BRUSH ETC. SHALL BE PROPERLY DISPOSED OF OFFSITE. MATERIALS MAY BE WASTED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL LAYOUT
3	WATER LINE 1 & 2
4	WATER LINE 3
5	WATER LINE DETAILS

**PREPARED AND SUBMITTED BY:**

SCHLAGEL & ASSOCIATES, P.A.

**APPROVED BY:**

CITY ENGINEER  
APPROVED FOR ONE YEAR FROM THIS DATE

DATE

**OWNER/DEVELOPER:**

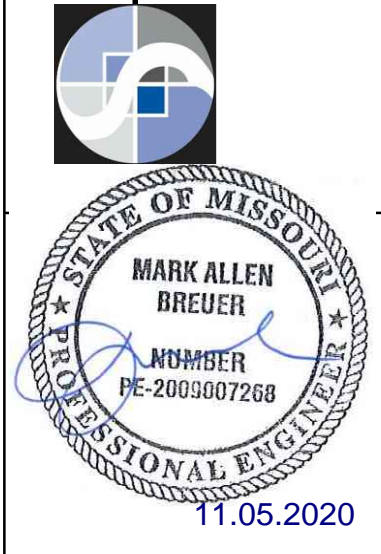
GALE COMMUNITIES, INC.  
400 SW LONGVIEW BLVD, STE 109  
LEE'S SUMMIT, MO 64081  
p 816.645.2336  
f -  
DGALE@GALECOMMUNITIES.COM

**CONFORMING TO CONSTRUCTION RECORDS.**

AJC 11.05.2020  
BY DATE

SUMMARY OF QUANTITIES			
	ITEM	QUANTITY	UNITS
1	CONNECT TO EXISTING WATER LINE	1	EA
2	FIRE HYDRANT ASSEMBLY	3	EA
3	END OF LINE TEMPORARY FIRE HYDRANT ASSEMBLY	1	EA
4	REMOVE TEMPORARY FIRE HYDRANT ASSEMBLY	1	EA
5	8" C-900 PVC	809	LF
6	8" CLASS 50 DIP	25	LF
7	12" C-900 PVC	348	LF
8	8" GATE VALVE	2	EA
9	12" BUTTERFLY VALVE	2	EA
10	8" 11.25" DIP BEND	6	EA
11	8" 22.5" DIP BEND	18	EA
12	8" 45" DIP BEND	8	EA
13	12"x8" REDUCER	1	EA
14	12" 11.25" DIP BEND	1	EA
15	12" 45" DIP BEND	6	EA
16	12"x12"x8" TEE	2	EA

**SCHLAGEL & ASSOCIATES, P.A.**  
 Engineers • Planners • Surveyors • Landscape Architects  
 14920 West 10th Street • Lenexa, Kansas 66215  
 (913) 492-5188 • Fax: (913) 492-8400  
 WWW.SCHLAGELASSOCIATES.COM  
 Missouri State Certificates of Authority  
 #E2002003600F #LAC201005237 #S200200899F



**WINTERSET VALLEY, 13TH PLAT**  
**WATER LINE PLANS**  
**NW THOREAU DRIVE AND AUDUBON LANE**  
**LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
4-8-19	CITY COMMENTS
6-3-19	CITY COMMENTS
7-11-19	CITY COMMENTS
11-26-19	REVISE PVC FITTINGS TO DIP
11-05-2020	ASBUILTS

DRAWN BY: NSC  
 CHECKED BY: MAB  
 DATE PREPARED: 2-15-19  
 PROJ. NUMBER: 18-230

**COVER SHEET**

SHEET  
**1**  
OF 5



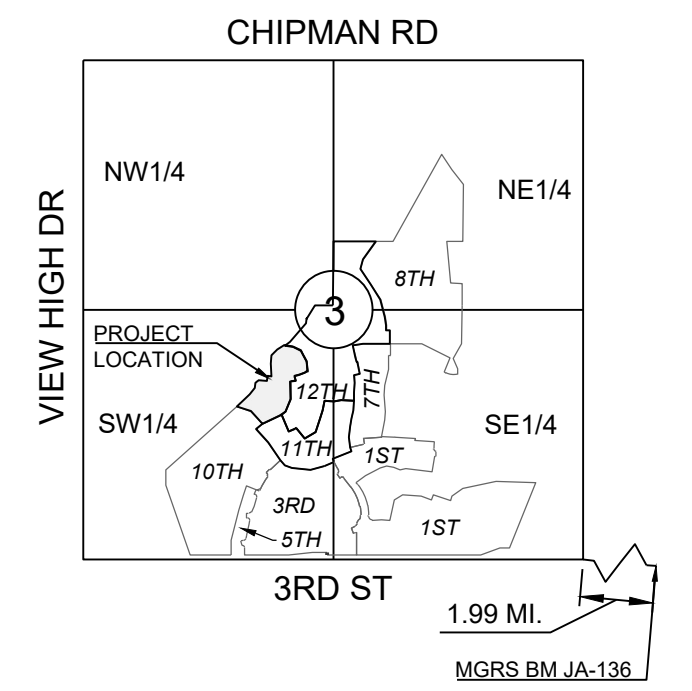
**MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:**

BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.

ELEV. 993.11'

**PROJECT BENCH MARK:**

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.  
ELEV. 935.45'



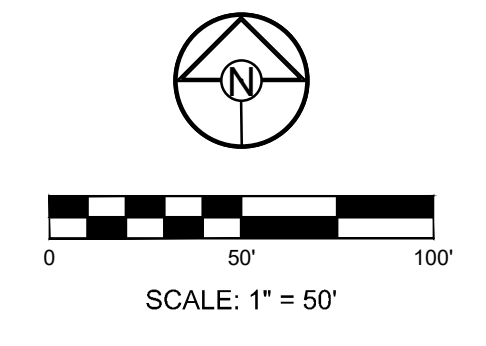
SECTION 3-47N-32W  
**LOCATION MAP**  
 SCALE 1" = 2000'

**MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:**  
 BM JA-136, LOCATED AT INTERSECTION OF SW OLDHAM PARKWAY AND SW WARD ROAD, 61 FT SOUTH OF CL OF OLDHAM PARKWAY AND 28.9 FT EAST OF THE EAST EDGE OF WARD ROAD.  
 ELEV. 993.11'

**PROJECT BENCH MARK:**  
 SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.  
 ELEV. 935.45'

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

**CONFORMING TO CONSTRUCTION RECORDS.**  
 AJC 11.05.2020  
 BY DATE



**SCHLAGEL & ASSOCIATES, P.A.**  
 Engineers-Planners-Surveyors-Landscape Architects  
 14920 West 10th Street • Lenexa, Kansas 66215  
 (913) 492-5188 • Fax: (913) 492-8400  
 WWW.SCHLAGELASSOCIATES.COM  
 Missouri State Certificates of Authority  
 #E2002003600F #LAC201005237 #LS200200899F

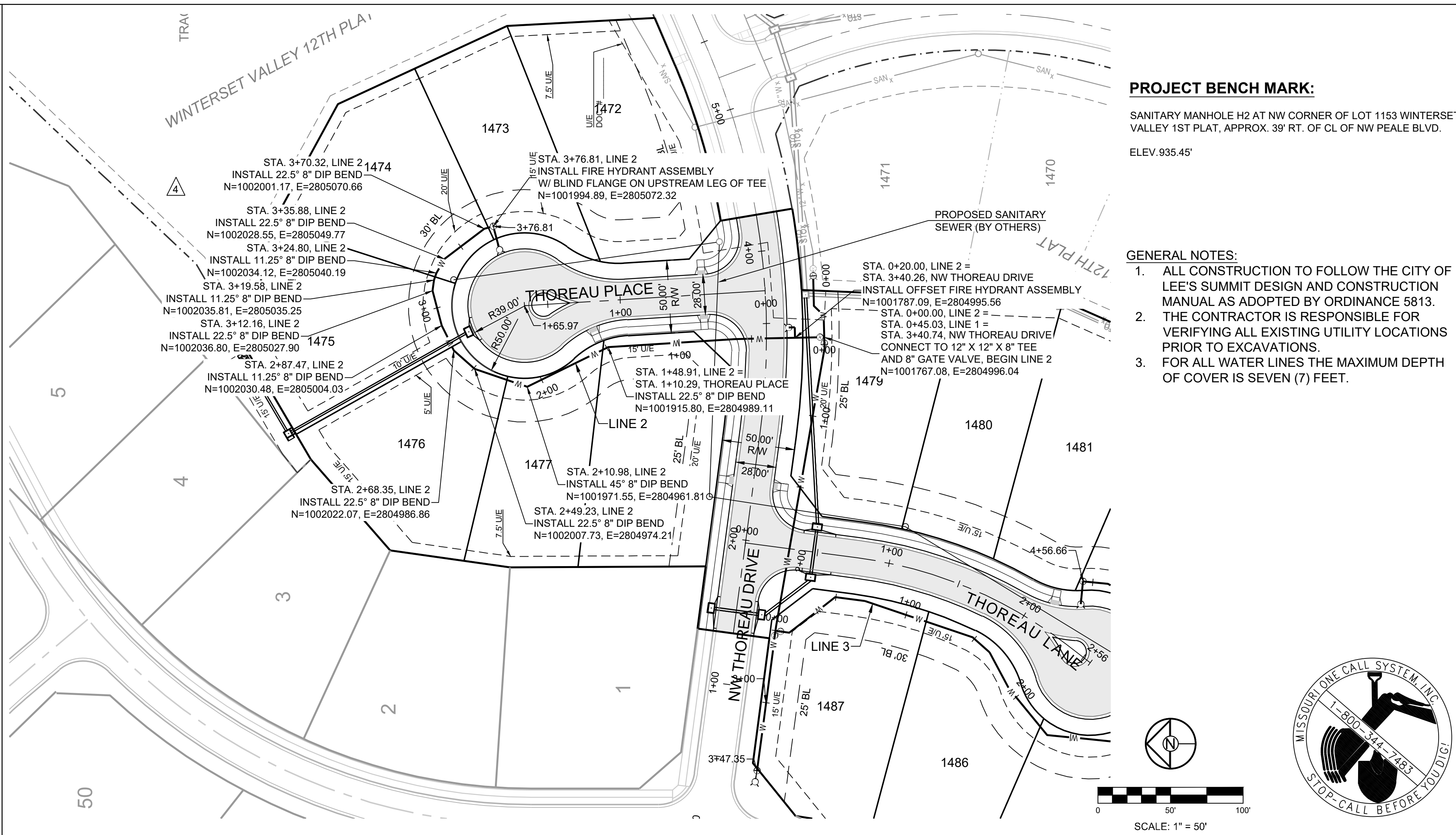
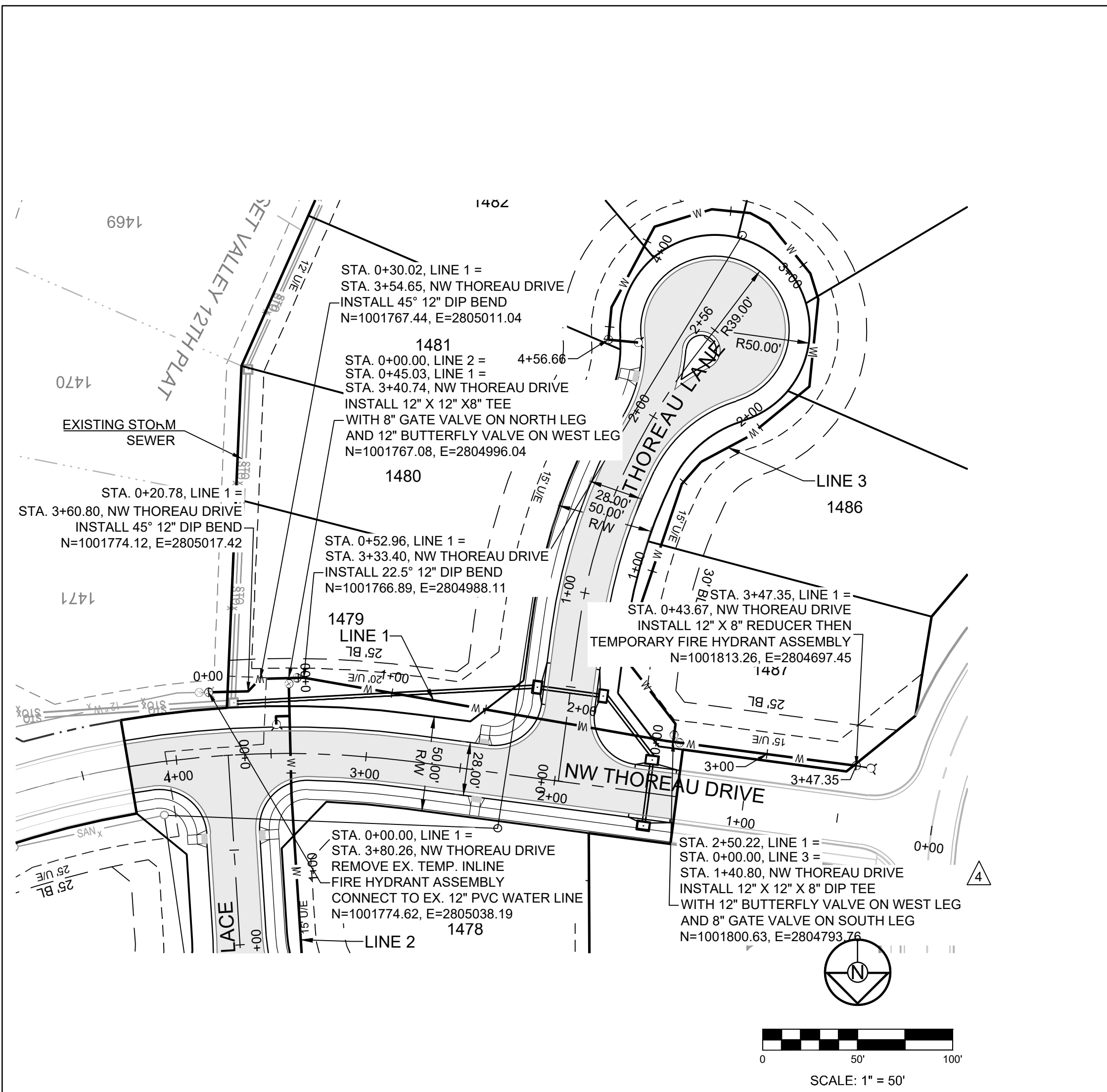


**WINTERSET VALLEY, 13TH PLAT  
 WATER LINE PLANS  
 NW THOREAU DRIVE AND AUDUBON LANE  
 LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
4-8-19	CITY COMMENTS
6-3-19	CITY COMMENTS
7-11-19	CITY COMMENTS
11-26-19	REVISE PVC FITTINGS TO DIP
11-05-2020	ASBUILTS

**GENERAL LAYOUT**

SHEET  
**2**  
 OF 5



**PROJECT BENCH MARK:**

SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL OF NW PEALE BLVD.  
ELEV. 935.45'

**GENERAL NOTES:**

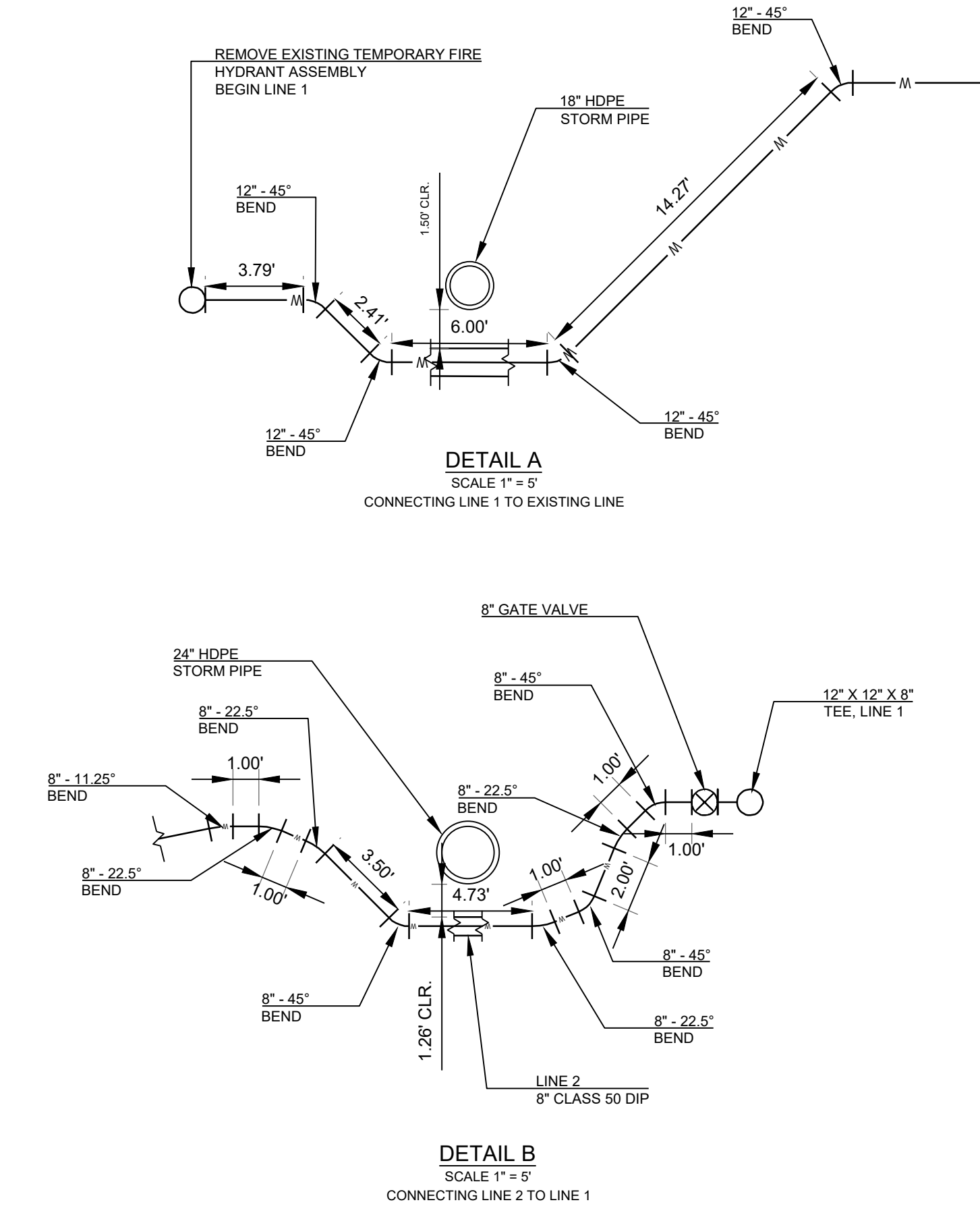
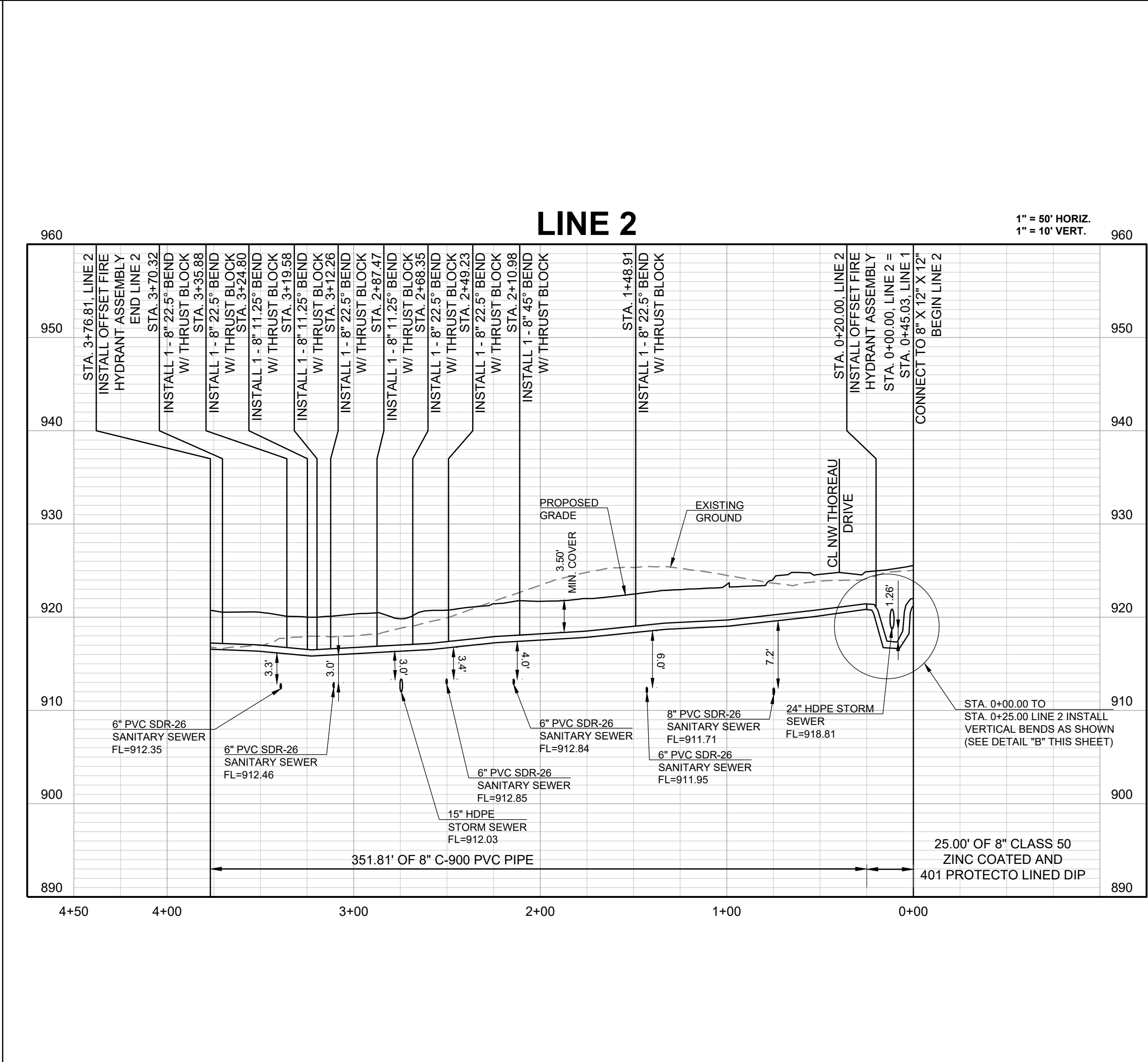
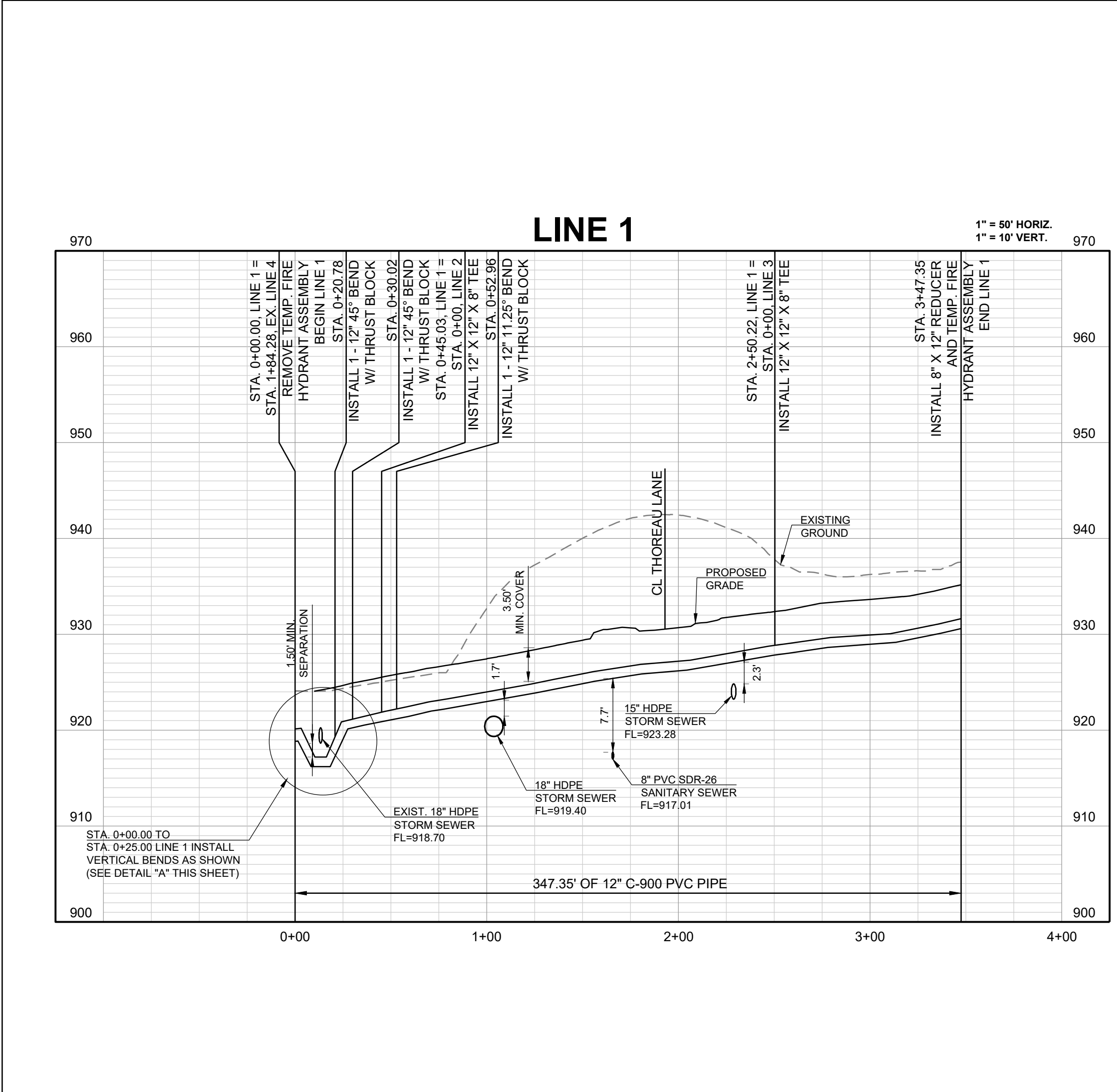
- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.
- FOR ALL WATER LINES THE MAXIMUM DEPTH OF COVER IS SEVEN (7) FEET.



**SCHLAGEL & ASSOCIATES, P.A.**  
Engineers • Planners • Surveyors • Landscape Architects  
14920 West 10th Street • Lenexa, Kansas 66215  
(913) 492-5188 • Fax: (913) 492-8400  
WWW.SCHLAGELASSOCIATES.COM  
Missouri State Certificate of Authority  
#E2002003800P #LAC201005237 #LS200200895F

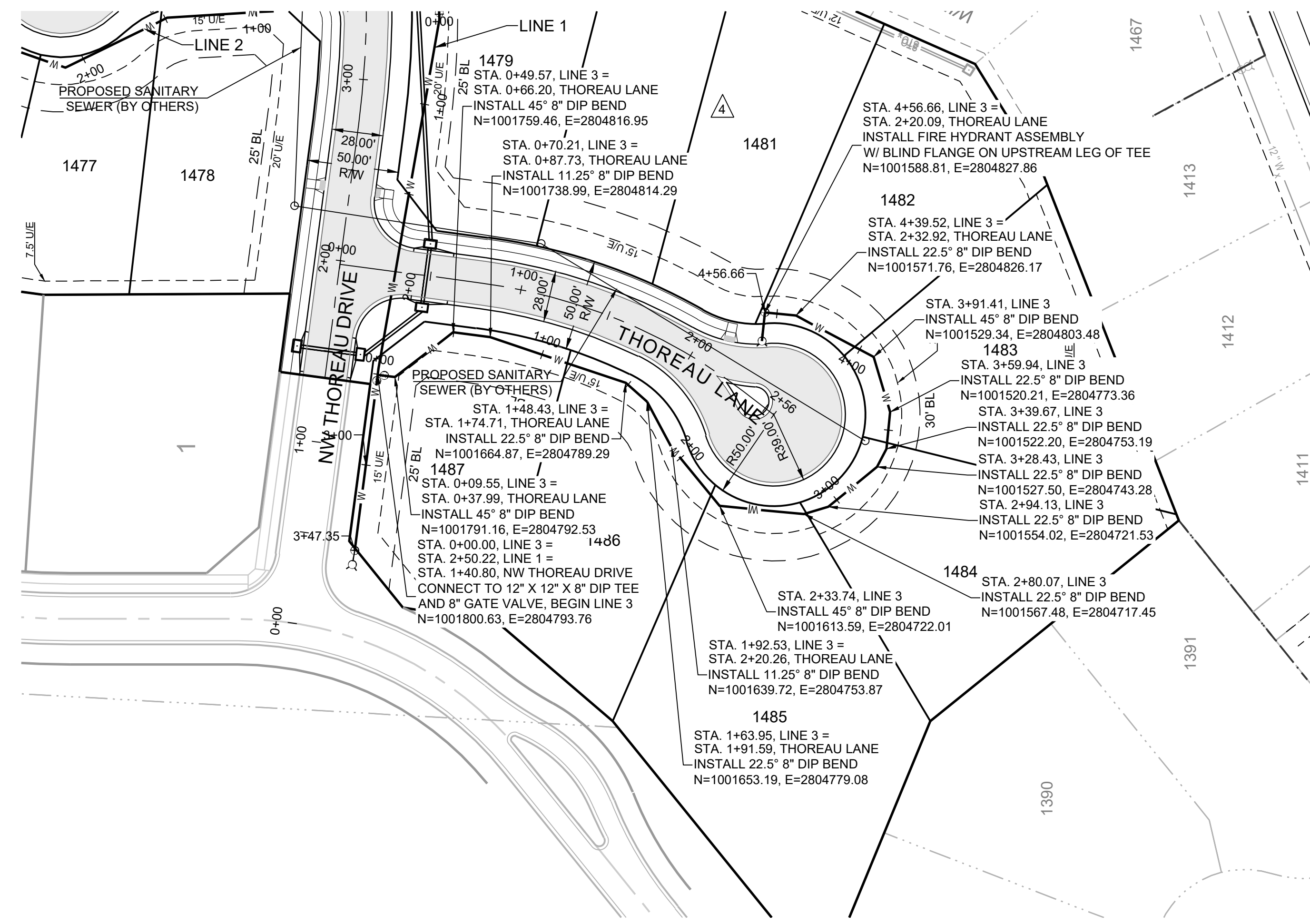
11.05.2020

**WINTERSET VALLEY, 13TH PLAT  
WATER LINE PLANS  
NW THOREAU DRIVE AND AUDUBON LANE  
LEE'S SUMMIT, MISSOURI**



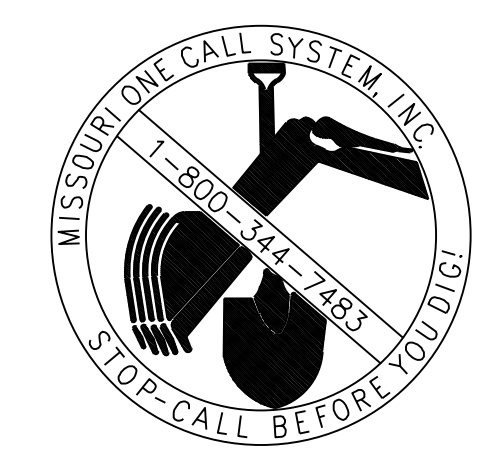
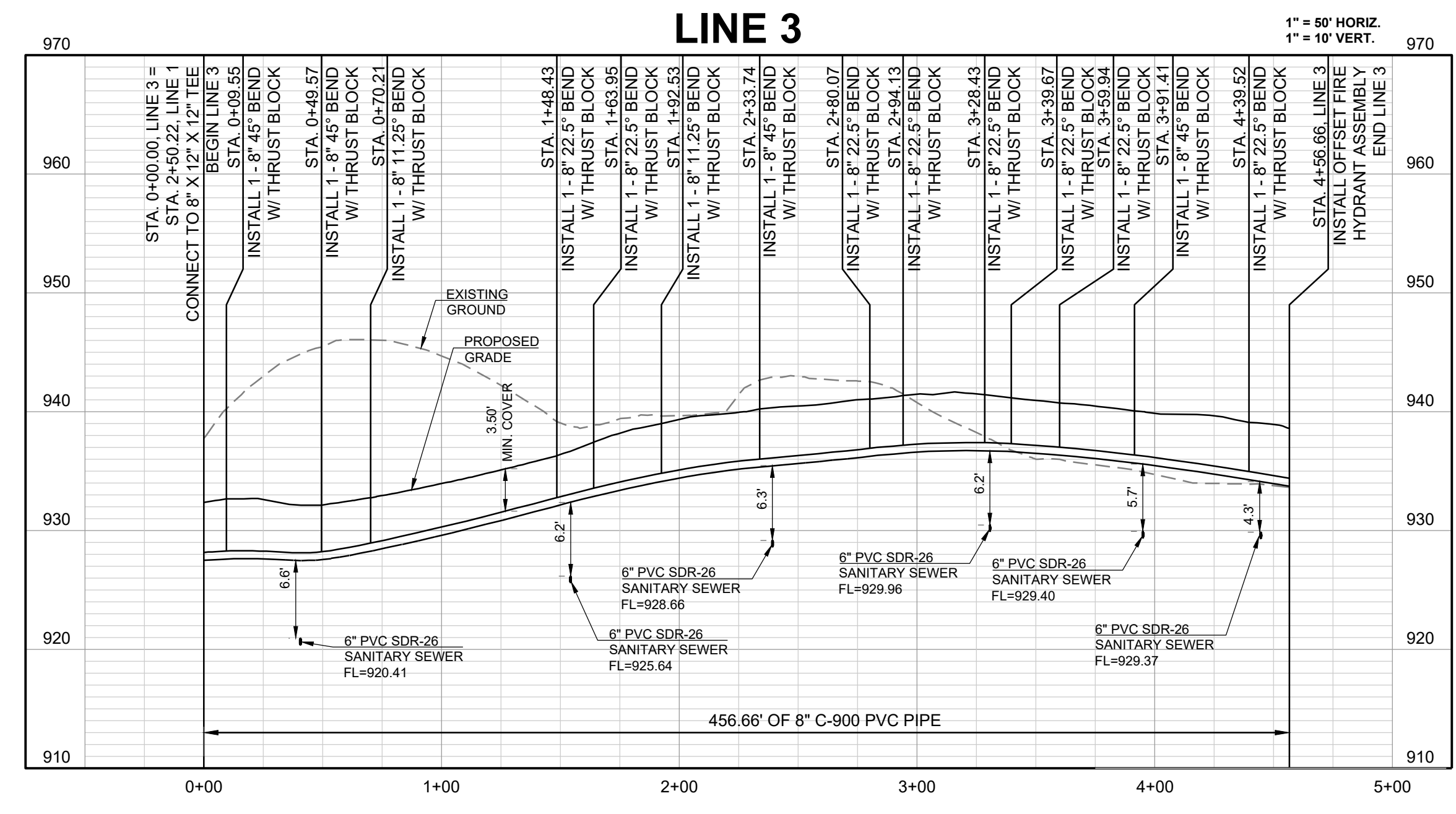
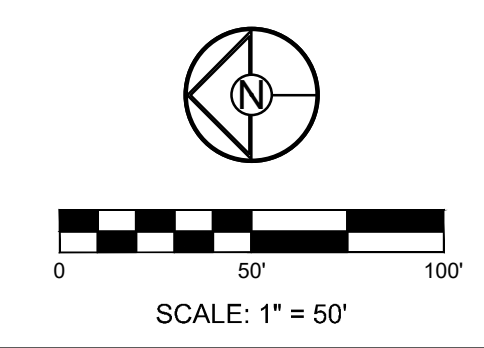
CONFORMING TO CONSTRUCTION RECORDS.  
AJC 11.05.2020  
BY DATE

REVISION DATE	DESCRIPTION
4-8-19	CITY COMMENTS
6-3-19	CITY COMMENTS
7-11-19	CITY COMMENTS
11-26-19	REVISE PVC FITTINGS TO DIP
11-05-2020	ASBUILTS



**PROJECT BENCH MARK:**  
 SANITARY MANHOLE H2 AT NW CORNER OF LOT 1153 WINTERSET VALLEY 1ST PLAT, APPROX. 39' RT. OF CL. OF NW PEALE BLVD.  
 ELEV. 935.45'

- 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.



CONFORMING TO CONSTRUCTION RECORDS.  
 AJC 11.05.2020  
 BY DATE

**SCHLAGEL & ASSOCIATES, P.A.**  
 Engineers • Planners • Surveyors • Landscape Architects  
 14920 West 10th Street • Lenexa, Kansas 66215  
 (913) 492-5188 • Fax: (913) 492-8400  
 WWW.SCHLAGELASSOCIATES.COM  
 Missouri State Certificates of Authority  
 #E2002003600F #LAC201005237 #LS200200869F

WINTERSET VALLEY, 13TH PLAT  
 WATER LINE PLANS  
 NW THOREAU DRIVE AND AUDUBON LANE  
 LEE'S SUMMIT, MISSOURI

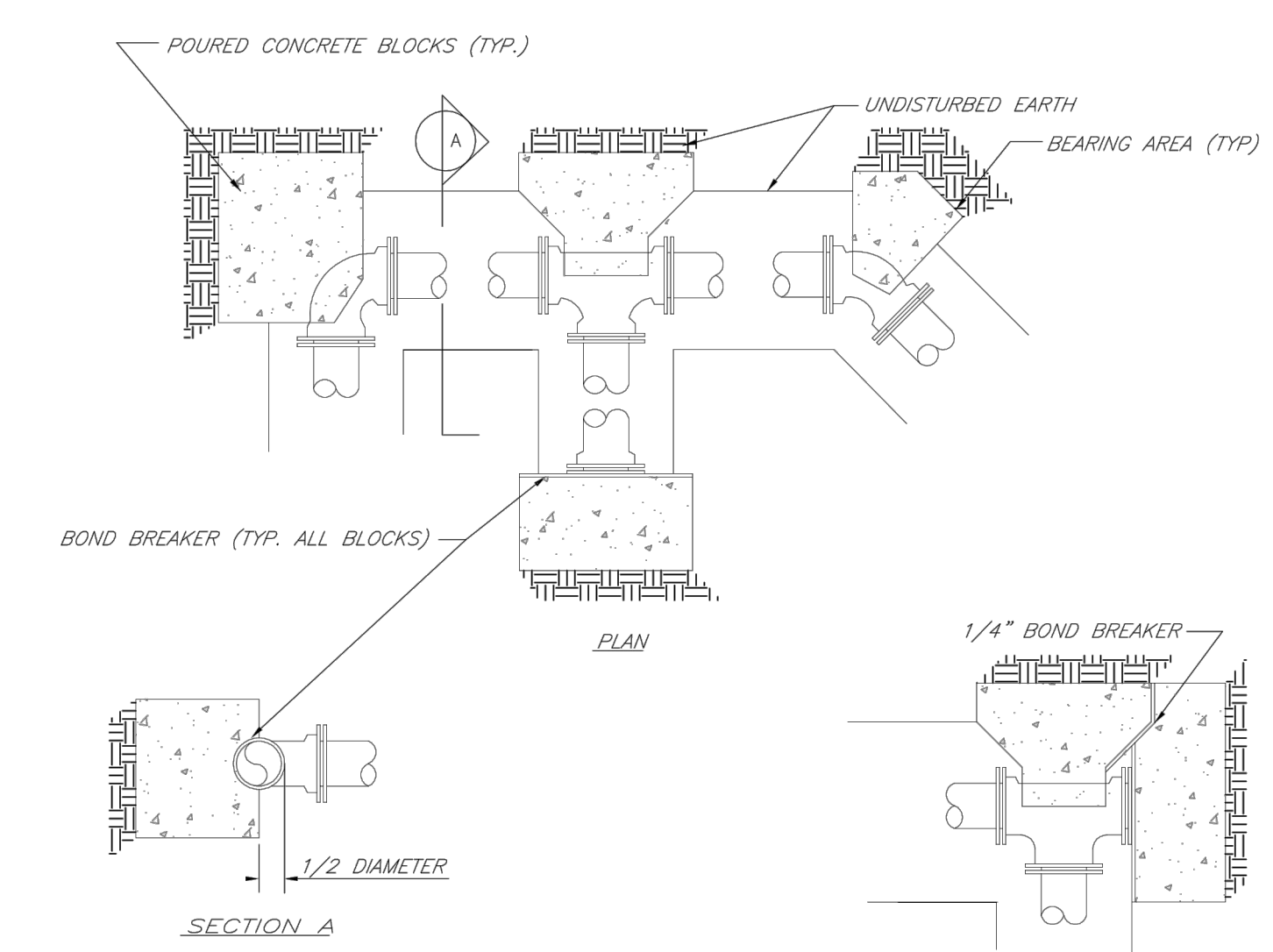
REVISION DATE	DESCRIPTION
4-8-19	CITY COMMENTS
6-3-19	CITY COMMENTS
7-11-19	CITY COMMENTS
11-26-19	REVISE PVC FITTINGS TO DIP
11-05-2020	ASBUILTS

WATER LINE 3

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)

NOM. DIA. (INCHES)	TEE, PLUG	BEND	BEND	22.5	11.25
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	19.0	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	58.2	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

- NOTES:
- ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
  - MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
  - BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
  - 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

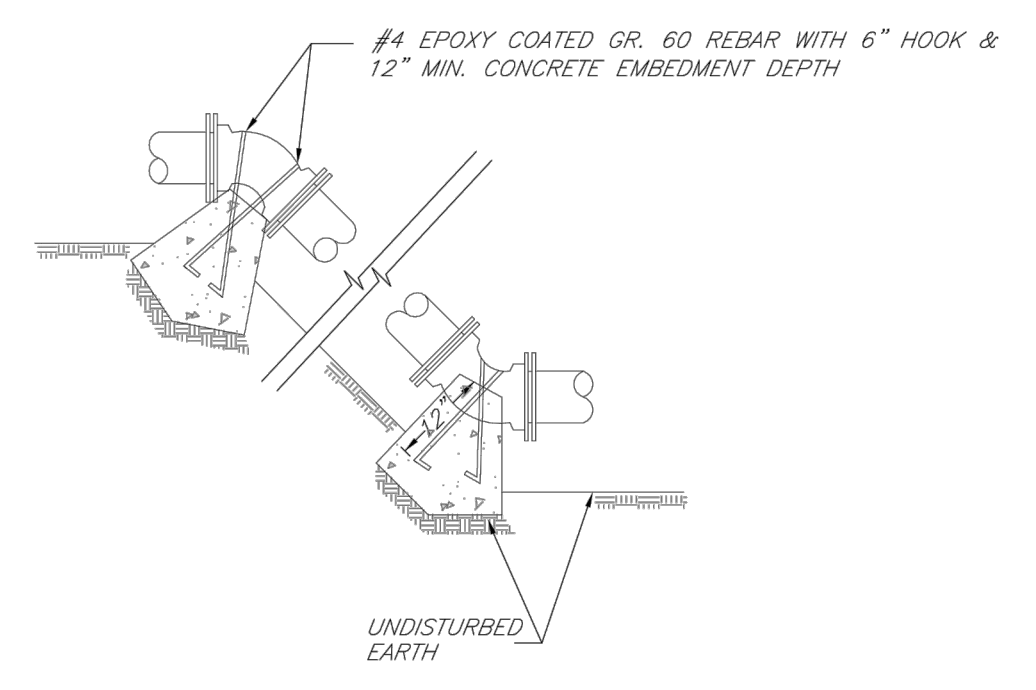
**HORIZONTAL THRUST BLOCKS**

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

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)

NOM. DIA. (INCHES)	TEE, PLUG	BEND	BEND	22.5	11.25
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	282.0	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

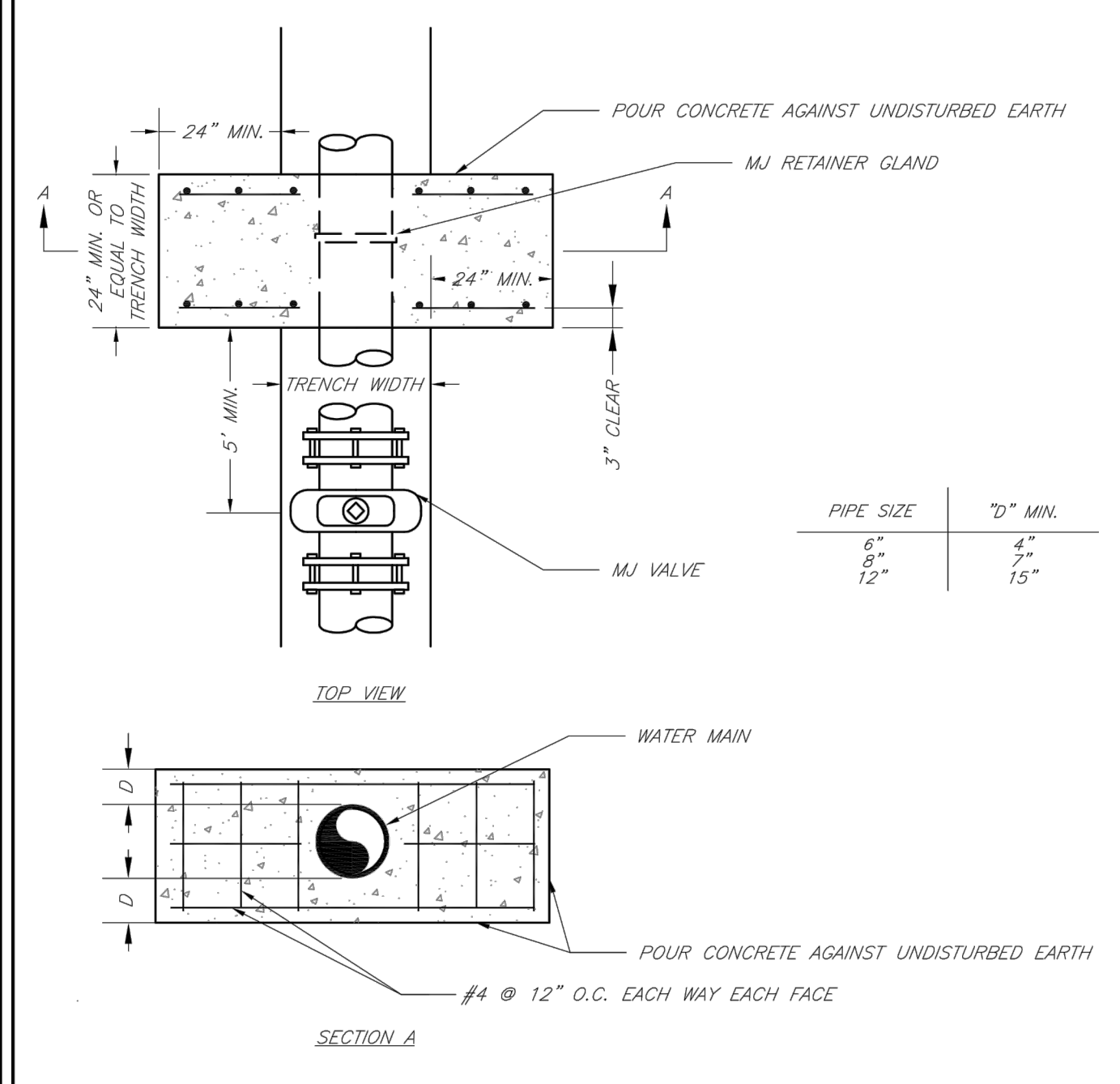
- NOTES:
- ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
  - MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
  - BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
  - DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



**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

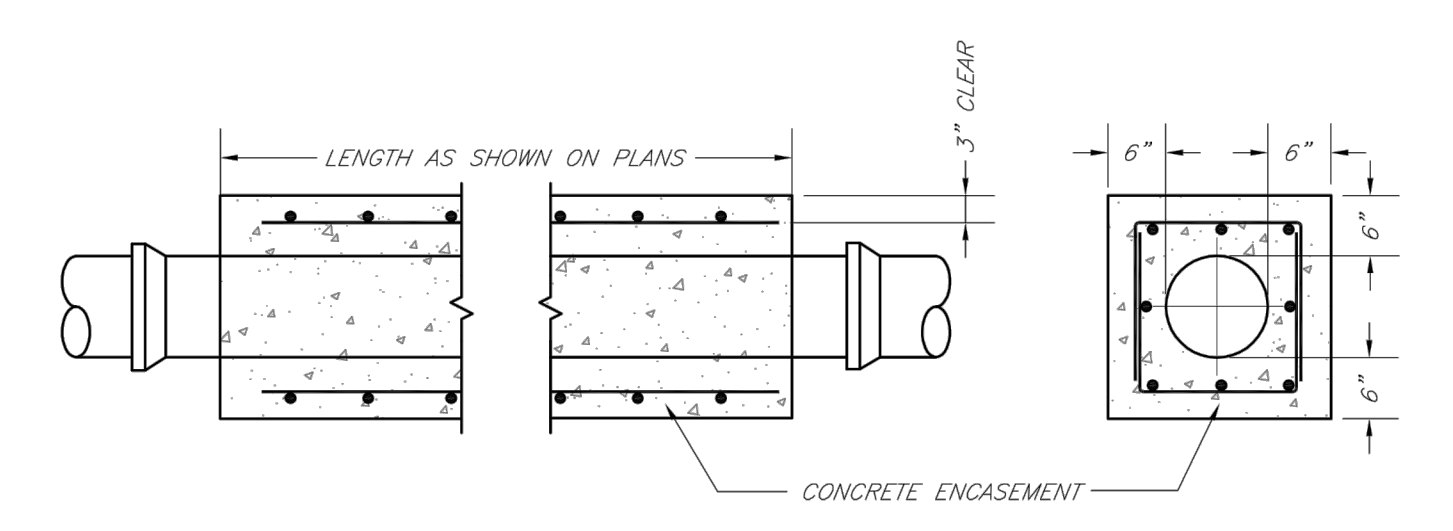


- NOTE:  
THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

**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

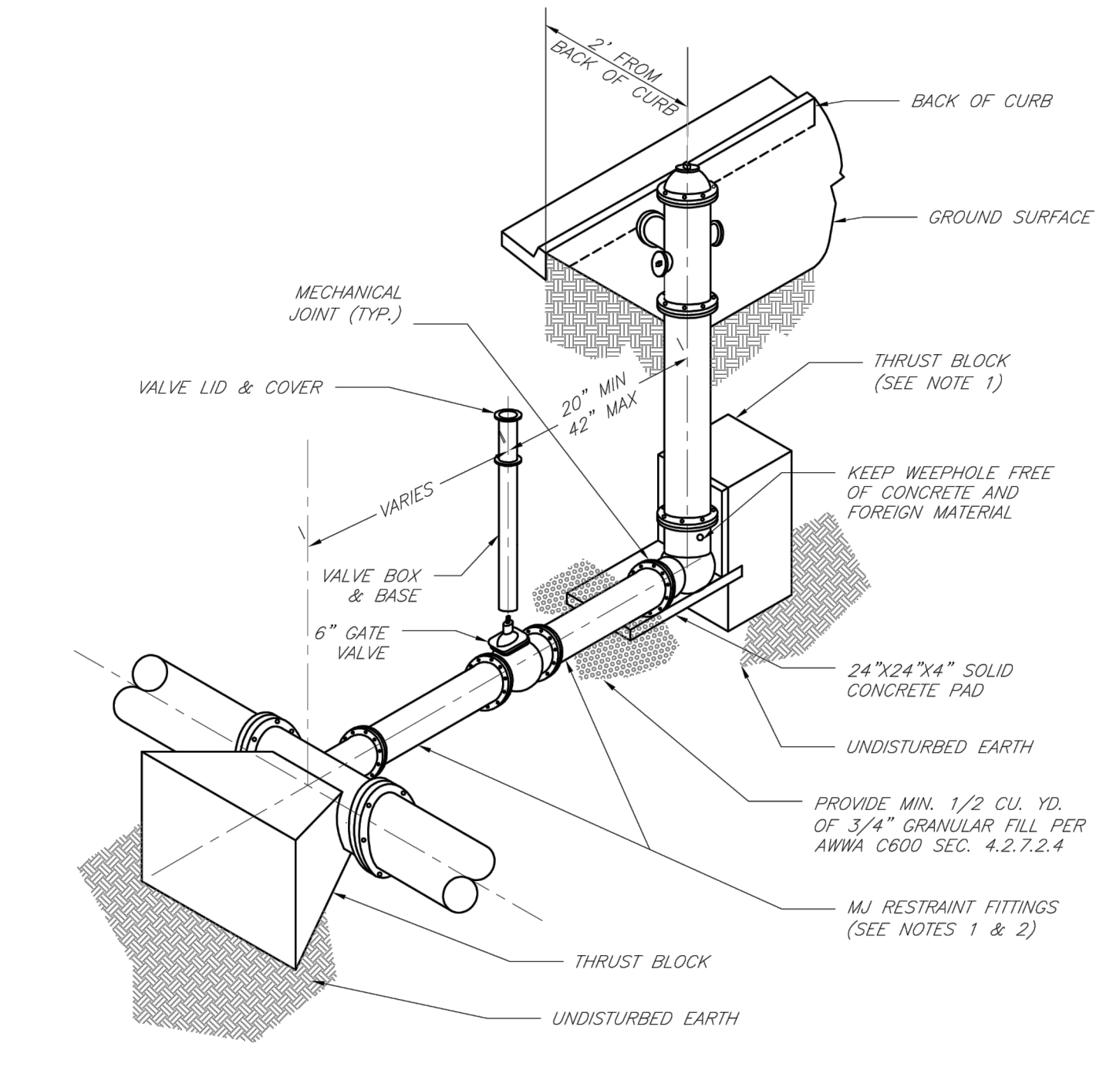


- NOTES:
- INTERMEDIATE BELLS SHALL BE ENCASED.
  - REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".
  - THIS DETAIL IS FOR PIPES 12" AND SMALLER.

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

**WATER PIPE ENCASEMENT**

Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-4  
Rev: 1/14

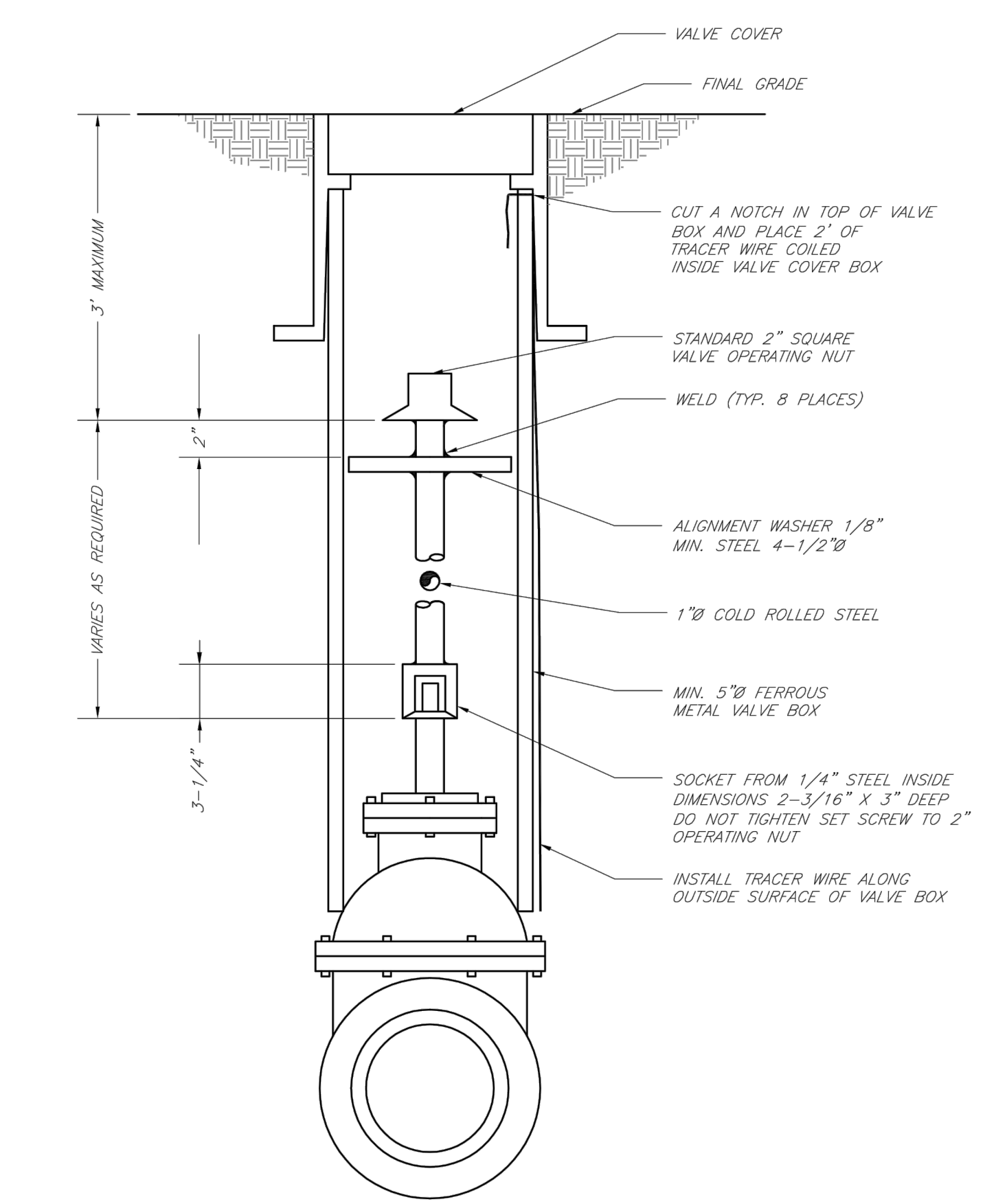


- NOTES:
- WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
  - GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
  - SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
  - BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
  - 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.
  - 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**

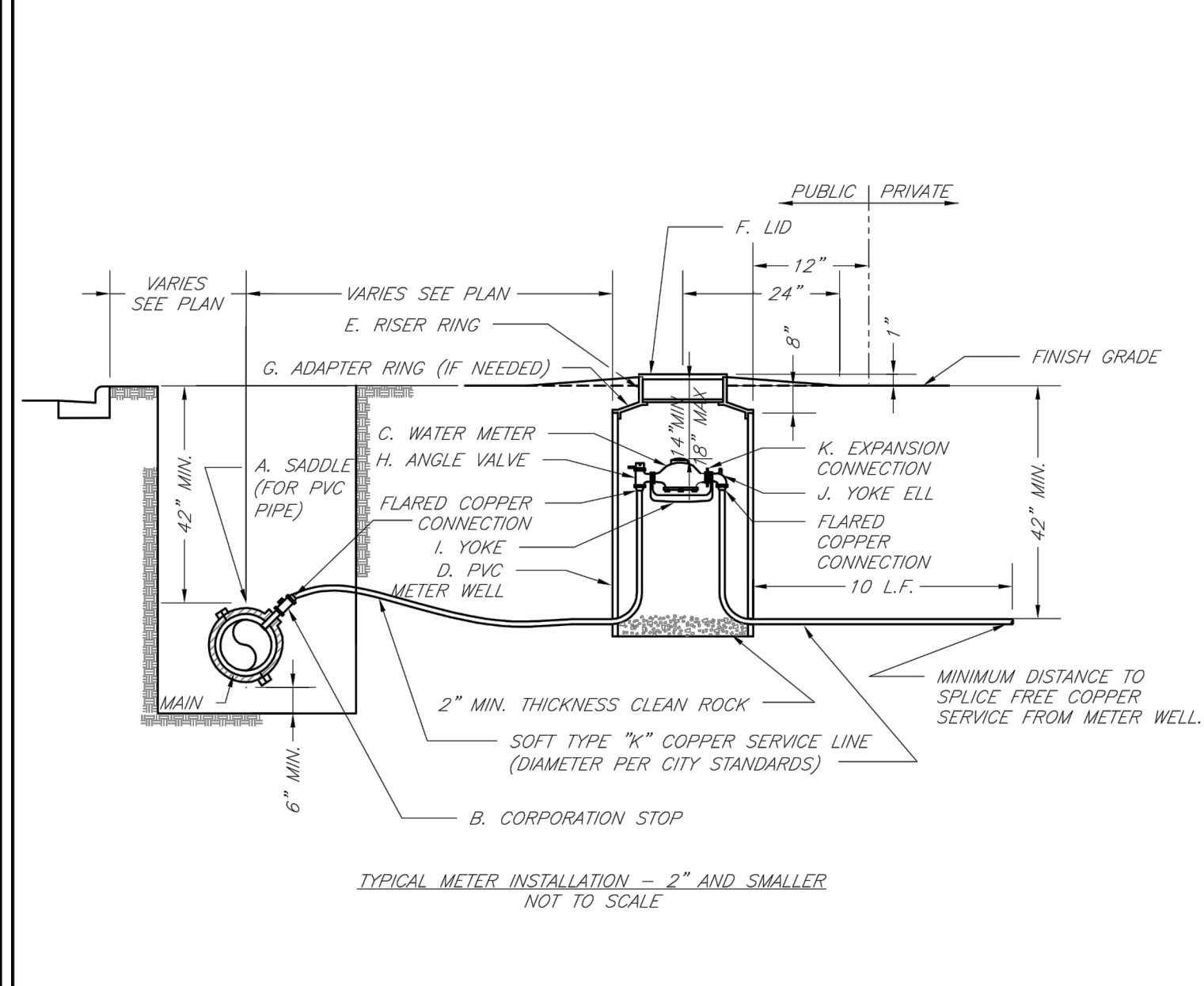
Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-7  
Rev: 1/14



**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-8  
Rev: 1/14



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

**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

CONFORMING TO CONSTRUCTION RECORDS.  
AUC BY DATE 11.05.2020

**SCHLAGEL & ASSOCIATES, P.A.**  
Engineers-Planners-Surveyors-Landscape Architects  
14920 West 107th Street • Lenexa, Kansas 66215  
(913) 492-5158 • Fax: (913) 492-8400  
WWW.SCHLAGELASSOCIATES.COM  
Missouri State Certificates of Authority  
#E2002003600F #LAC201005237 #LS200200899F

**MARK ALLEN BREUER**  
NUMBER PE-2005007268  
PROFESSIONAL ENGINEER  
11.05.2020

WINTERSET VALLEY, 13TH PLAT  
WATER LINE PLANS  
NW THOREAU DRIVE AND AUDUBON  
LANE LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
4-8-19	CITY COMMENTS
6-3-19	CITY COMMENTS
7-11-19	CITY COMMENTS
11-26-19	REVISE PVC FITTINGS TO DIP
11-05-2020	ASBUILTS

DRAWN BY: KSC  
CHECKED BY: MAB  
DATE PREPARED: 2-15-19  
PROJ. NUMBER: 18-230

WATER LINE DETAILS  
SHEET 5 OF 5