

**LEGEND**

▲ CTL	SURVEY CONTROL POINT	⊠	TRAFFIC SIGNAL BOX
▲	SURVEY BENCHMARK	⊙	TRAFFIC SIGNAL MANHOLE
▲ TBM	SURVEY TEMPORARY BENCHMARK	⊙-⊙	TRAFFIC SIGNAL POLE W/ ARM
⊠	GAS METER	⊙-⊙	TRAFFIC SIGNAL POLE
⊠ GAR	GAS RISER	⊠	TRAFFIC SIGNAL CONTROL BOX
⊙	GAS MANHOLE	⊠	TRAFFIC SIGNAL PEDESTAL
⊙ GR	GAS REGULATOR	⊙	ELECTRIC MANHOLE
⊠ TWP	TELEVISION PEDESTAL	⊠	ELECTRIC METER
⊠	FIBER BOX	⊠	ELECTRIC RISER
⊙	FIBER PEDESTAL	⊠	ELECTRIC BOX
⊠	CABLE BOX	⊠	ELECTRIC CABINET
⊠	CABLE VAULT	⊠	ELECTRIC JUNCTION BOX
⊠	TELEPHONE PEDESTAL	⊙ SPH	SPRINKLER HEAD
⊙	STORM MANHOLE	⊙ SCV	SPRINKLER CONTROL VALVE
⊠	STORM GRATE	⊙	WATER METER PIT
⊙	SANITARY MANHOLE	⊙	FIRE HYDRANT
⊙ XL	YARD LIGHT	⊠ W	WATER METER
⊙ LTP	LIGHT POLE	⊠ WV	WATER VALVE
⊠	POWER POLE	⊠ OFP	FLAG POLE
⊠ LFP	POWER POLE W/ LIGHT	⊠	SIGN
⊠	GUY WIRE	⊠	BOLLARD
⊠	STUMP	⊠	WOOD POST
⊠	BUSH	⊠	STEEL POST
⊠	EVERGREEN TREE	⊠	COLUMN
⊠	DECIDUOUS TREE	⊠	BORE HOLE

---	SECTION LINE
---	PROPERTY LINE
---	CENTER LINE
---	PROPOSED ROW LINE
---	EXISTING ROW LINE
---	UTILITY EASEMENT
-1371	EXISTING CONTOUR
+1371	EXISTING CONTOUR
1371	PROPOSED MINOR CONTOUR
1371	PROPOSED MAJOR CONTOUR
TEL	EXISTING TELEPHONE LINE
---	EXISTING SANITARY LINE
---	EXISTING STORM LINE
G	EXISTING GAS LINE
W	EXISTING WATER LINE
X	EXISTING CHAIN LINK FENCE
P-OH	EXISTING OVERHEAD ELECTRIC
P	EXISTING PIPE LINE
---	GRADING LIMITS
---	TEMPORARY CONSTRUCTION EASEMENT
---	PROPOSED UTILITY OVERHEAD EASEMENT
---	PROPOSED PERMANENT DRAINAGE EASEMENT
X	PROPOSED CHAIN LINK FENCE
---	PROPOSED WOOD PRIVACY FENCE
---	EXISTING TREELINE

**ABBREVIATION TABLE**

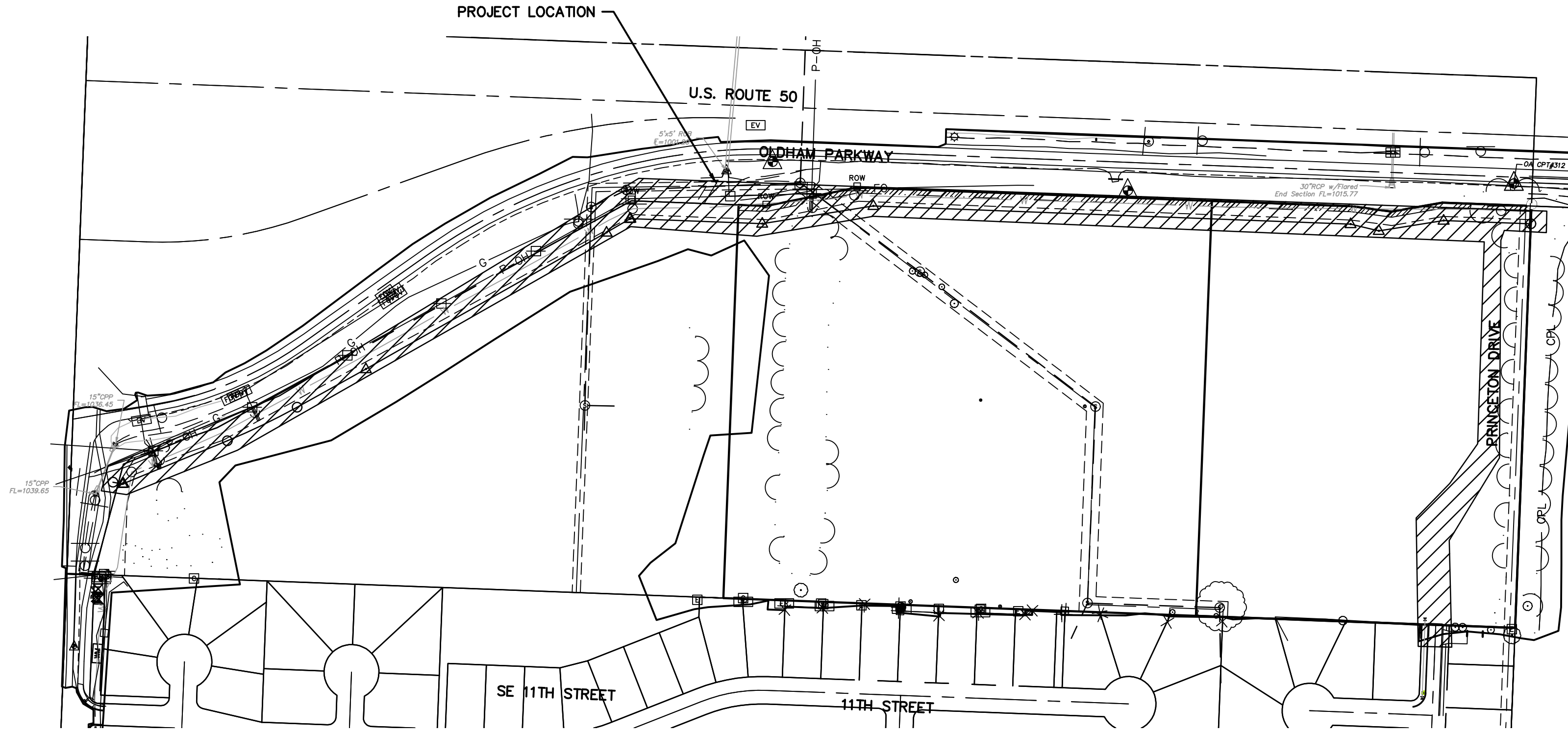
M.G.	MATCH GRADE
BOC	BACK OF CURB
EOP	EDGE OF PAVEMENT
R/W	RIGHT-OF-WAY
D/E	DRAINAGE EASEMENT
S/E	SANITARY EASEMENT
S/W	SIDEWALK
TCE	TEMPORARY CONSTRUCTION EASEMENT
UOHE	UTILITY OVERHEAD EASEMENT
PDE	PERMANENT DRAINAGE EASEMENT
PROP.	PROPOSED
EXIST.	EXISTING
TYP.	TYPICAL
CONST.	CONSTRUCT
TBM	TEMPORARY BENCHMARK
C.P.	CONTROL POINT
D.N.D.	DO NOT DISTURB
U.I.P.	USE IN PLACE
ADJ.	ADJUST
EL.	ELEVATION
ESMT.	EASEMENT
BK.CB.	BACK OF CURB
BK.SWK.	BACK OF SIDEWALK

**\*PROPOSED UTILITIES**

---	[ATT]	PROPOSED AT&T
---	[FO]	PROPOSED FIBER
---	[G]	PROPOSED GAS
---	[W]	PROPOSED WATERLINE
---	[UTL OH]	PROPOSED OVERHEAD UTILITIES
---	[SL]	PROPOSED STREET LIGHT CONDUIT
---	[CCI]	PROPOSED CONSOLIDATED

\*The utilities as shown in this legend represent the intended construction or relocation of utilities. These plans do not take into account the construction schedule or "As-Constructed Plans" of utility construction or relocations. Therefore, the Contractor shall notify all utility agencies before beginning work and shall cooperate with them in locating and protecting their utilities. The Engineer and Owner make no guarantee as to accuracy or completeness of information shown.

**FINAL PLANS FOR  
PUBLIC WATER MAIN EXTENSION  
SE OLDHAM ROAD  
LEE'S SUMMIT, MISSOURI**



**LOCATION MAP**  
SEC. 10, TWP. 47N, RNG. 31W

**UTILITY COMPANIES:**

<b>AT&amp;T</b> RON GIFFERT 500 E. 8TH STREET, ROOM 1146 KANSAS CITY, MISSOURI 64106 PHONE: (816) 275-1550 EMAIL: RG7910@ATT.COM	<b>LEE'S SUMMIT R-7 SCHOOL DISTRICT</b> KINZIE WOODERSON 301 NE TUDOR ROAD LEE'S SUMMIT, MO 64086 PHONE: (816) 986-1050 EMAIL: KINZIE.WOODERSON@LSR7.NET
<b>KANSAS CITY POWER &amp; LIGHT</b> JEFF R. WILLIAMS, ENGINEER - CENTRAL DESIGN 401 SE BAILEY ROAD LEE'S SUMMIT, MO 64081 PHONE: (816) 347-4310 EMAIL: JEFF.WILLIAMS@KCPL.COM	<b>LEE'S SUMMIT WATER UTILITIES</b> DAVID LOHE PHONE: (816) 969-1800 EMAIL: DAVID.LOHE@CITYOFLS.NET
<b>CONSOLIDATED COMMUNICATIONS</b> JOHN CASTLOW 14859 W. 95TH STREET LENEXA, KS 66215 PHONE: (913) 322-9785 EMAIL: JOHN.CASTLOW@CONSOLIDATED.COM	<b>LEE'S SUMMIT SEWER UTILITIES</b> 1200 SE HAMBLEN ROAD LEE'S SUMMIT, MISSOURI 64801 (816) 969-1900
<b>GOOGLE FIBER</b> LAUREN MARCUCCI PHONE: (913) 663-1900 EMAIL: LMARCUCCI@GOOGLE.COM	<b>SPIRE GAS</b> RICHARD FROCK 3025 SE CLOVER DRIVE LEE'S SUMMIT, MO 64082 PHONE: (816) 472-3489 EMAIL: RICHARD.FROCK@SPIREENERGY.COM
<b>FIRE DEPARTMENT</b> LEE'S SUMMIT FIRE DEPARTMENT 207 SE DOUGLAS STREET LEE'S SUMMIT, MISSOURI 64063 (816)-969-1300	<b>CHARTER/SPECTRUM CABLE</b> TROY PREWITT 8221 W. 119TH STREET OVERLAND PARK, KS 66213 PHONE: (816) 401-3573 EMAIL: TROY.PREWITT@CHARTER.COM
<b>AMBULANCE SERVICE</b> TELE: 911	<b>COMMUNICATION:</b> CENTURYLINK 1-800-246-4237 COMCAST 1-888-262-5101 GOOGLE FIBER NOC 1-866-954-1572 SPRINT/ERICSSON 1-800-521-0579 TIME WARNER CABLE 1-866-967-7611 TW TELECOM 1-800-829-0420 UNITE PRIVATE NETWORKS 1-866-963-4237 VERIZON COMMUNICATIONS INC. 1-800-624-9675

**INDEX OF SHEETS**

**SHEET NO. TITLE**

W0.1	TITLE SHEET
W1.0	WATERLINE INDEX SHEET
W2.1	LINE 1 PLAN & PROFILE
W2.2	LINE 1 PLAN & PROFILE
W2.3	LINE 1 PLAN & PROFILE
W2.4	LINE 1 PLAN & PROFILE
W2.5	LINE 1 PLAN & PROFILE
W2.6	LINE 1 PLAN & PROFILE
W2.7	LINE 2 PLAN & PROFILE
W2.8	LINE 2 PLAN & PROFILE
W3.0	WATER SYSTEM DETAILS
W3.1	WATER SYSTEM DETAILS

**BENCHMARKS:**

MO DNR JA-45: KC METRO ALUMINUM GRS DISK SET IN CONCRETE 3"± BELOW PAVEMENT ON THE SHOULDER OF SE RANSON ROAD STAMPED "JA-45" ELEV.=1046.26'  
PUBLISHED COORDINATES (1988 ADJUSTMENT):  
N: 303273.664M  
E: 863885.886M  
GRID=GROUND  
N: 994990.3460  
E: 2834265.6110  
CAF: 0.99989860A

BENCHMARK #41314:  
NORTHING: 995873.9570  
EASTING: 2835453.8010  
SET SQUARE CUT IN CENTER OF CONCRETE HEADWALL FOR REINFORCED CONCRETE BOX ELEVATION=1007.13' (NAVD 88)

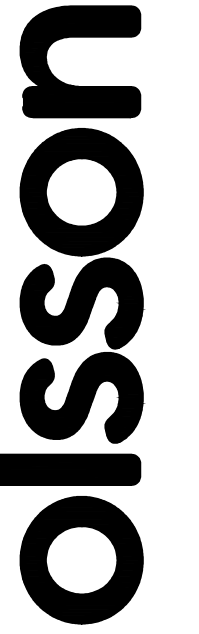
OA CONTROL POINT #310  
NORTHING: 995873.4445  
EASTING: 2835537.7320  
FOUND 1/2" REBAR W/CAP 8' SOUTH OF PAVEMENT EAST OF REINFORCED CONCRETE BOX ELEVATION=1008.08' (NAVD 88)

**SURVEYOR:**

OLSSON  
7301 W. 133rd STREET, SUITE 200  
OVERLAND PARK, KS. 66213-4750  
TELE: (913) 381-1170  
FAX: (913) 381-1174

**OWNER/APPLICANT/DEVELOPER:**

LEE'S SUMMIT SENIOR COMMUNITY, LLC.  
CONTACT: DENISE K. HEINTZ  
5051 S. NATIONAL AVENUE, STE 4-110  
SPRINGFIELD, MISSOURI 65810  
TELE: (417)893-6006  
FAX: (417)862-9501



Olsson Engineering MO State Certificate of Authority #001592  
Olsson Landscape Architecture MO State Cert. of Authority #2005000265  
550 S. LOUISE ST.  
SPRINGFIELD, MO 65806  
TEL 417.890.8602  
www.olsson.com



REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

PUBLIC WATER MAIN EXTENSION  
TITLE SHEET  
THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY  
LEE'S SUMMIT, MISSOURI

drawn by: TMH  
designed by: FJS  
checked by: JLR  
project no.: 018-1450  
drawing no.: C\_TTL\_WTR1\_81450  
date: 00.00.00

**PREPARED & SUBMITTED BY:**  
OLSSON  
550 E. ST. LOUIS STREET  
SPRINGFIELD, MO. 65806

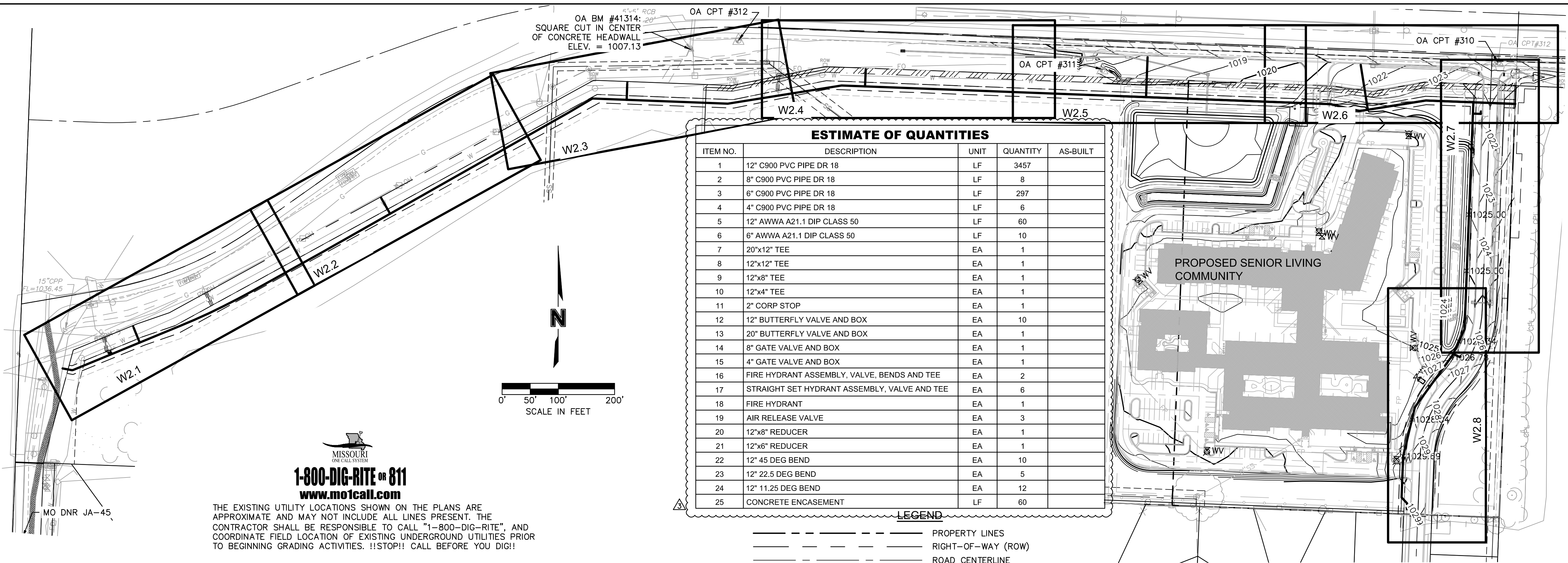
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 C:\TBLK\_22x34\_81450\_V\_XBOU\_81450

**1-800-DIG-RITE or 811**  
**www.mo1call.com**

THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1-800-DIG-RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!

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 USER: thill C\_PALGN\_WTR\_81450 V\_TOPO\_81450 c\_legend\_81450



ESTIMATE OF QUANTITIES				
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	12" C900 PVC PIPE DR 18	LF	3457	
2	8" C900 PVC PIPE DR 18	LF	8	
3	6" C900 PVC PIPE DR 18	LF	297	
4	4" C900 PVC PIPE DR 18	LF	6	
5	12" AWWA A21.1 DIP CLASS 50	LF	60	
6	6" AWWA A21.1 DIP CLASS 50	LF	10	
7	20"x12" TEE	EA	1	
8	12"x12" TEE	EA	1	
9	12"x8" TEE	EA	1	
10	12"x4" TEE	EA	1	
11	2" CORP STOP	EA	1	
12	12" BUTTERFLY VALVE AND BOX	EA	10	
13	20" BUTTERFLY VALVE AND BOX	EA	1	
14	8" GATE VALVE AND BOX	EA	1	
15	4" GATE VALVE AND BOX	EA	1	
16	FIRE HYDRANT ASSEMBLY, VALVE, BENDS AND TEE	EA	2	
17	STRAIGHT SET HYDRANT ASSEMBLY, VALVE AND TEE	EA	6	
18	FIRE HYDRANT	EA	1	
19	AIR RELEASE VALVE	EA	3	
20	12"x8" REDUCER	EA	1	
21	12"x6" REDUCER	EA	1	
22	12" 45 DEG BEND	EA	10	
23	12" 22.5 DEG BEND	EA	5	
24	12" 11.25 DEG BEND	EA	12	
25	CONCRETE ENCASEMENT	LF	60	

LEGEND	
---	PROPERTY LINES
---	RIGHT-OF-WAY (ROW)
---	ROAD CENTERLINE
---	EASEMENT LINES
---	SETBACK LINES
○	FOUND MONUMENT
△	TEMPORARY BENCHMARK
□	EXIST. POWER POLE
□	EXIST. ELECTRIC BOX
□	EXIST. ELECTRIC VAULT
□	EXIST. ELECTRIC METER
—	EXIST. GUY WIRE
□	EXIST. TELEPHONE PEDESTAL
□	EXIST. FIRE HYDRANT
□	EXIST. WATER METER
□	EXIST. WATER VALVE
□	EXIST. GAS MARKER
□	EXIST. CABLE VAULT
□	EXIST. SANITARY MANHOLE
□	EXIST. FLARED END SECTION
□	EXIST. DECIDUOUS TREE
○	EXIST. SIGN
○	PROP. SANITARY SEWER CLEANOUT
○	PROP. FIRE HYDRANT
○	PROP. GATE VALVE
○	PROP. SIGN
—	EXIST. OVERHEAD ELECTRIC
—	EXIST. UNDERGROUND TELEPHONE
—	EXIST. GAS LINE
—	EXIST. STORM SEWER LINE
—	EX. WOOD FENCE
—	PROP. SANITARY SEWER SERVICE
—	PROP. STORM SEWER 12" OR LARGER
—	PROP. STORM SEWER 10" OR SMALLER
—	PROP. UNDERGROUND ELECTRIC
—	PROP. PUBLIC WATER MAIN
—	PROP. IRRIGATION LINE
—	PROP. WATER SERVICE
—	PROP. FIRE PROTECTION LINE
—	PROP. FENCE
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	STRAIGHT BACK DRY CURB & GUTTER (TYPE CG-1 DRY)
---	STRAIGHT BACK CURB & GUTTER (TYPE CG-1)
---	STRAIGHT CURB (TYPE C-1)
---	"FLUSH" CURB
---	BACK OF CURB TO BACK OF CURB

Control: Horizontal & Vertical Control is based on the MoDOT Continuously Operating GNSS Network, Missouri Coordinate System 1983, West Zone, MO DNR Control Point JA-45.

Coordinate Datum: State Plane Bearings, Local Ground Coordinates, Ground Distances, US Survey Feet

MO DNR JA-45: KC Metro Aluminum GRS Disk Set in Concrete 3"± below Pavement on the Shoulder of SE Ranson Road Stamped "JA-45" Elev.=1046.26'  
Published Coordinates (1988 Adjustment):  
N: 303273.664m  
E: 863885.886m  
Grid=Ground  
N: 994990.3460  
E: 2834265.6110  
CAF: 0.9998986

OA CPT #310: Found 1/2" Rebar w/Cap 8' South of Pavement East of RCB  
N: 995873.44  
E: 2835537.73

OA CPT #311: FOUND 1/2" Rebar w/Cap 30' South of Pavement Southeast of Gravel Field Entrance  
N: 995821.94  
E: 2836184.94

OA CPT #312: Set 1/2" Rebar w/Cap "Olsson Associates Survey Control Point" 1' South of Pavement  
N: 995834.09  
E: 2836888.17

Elevations Datum: NAVD 1988

OA Bench Mark #41314: Set Square Cut in Center of Concrete Headwall for RCB  
Elevation=1007.13'

Utilities: Utilities shown have been located from field survey information, together with obtained records. The Surveyor makes no guarantee that the utilities shown comprise all such utilities in the area, either in-service or abandoned. The Surveyor further does not warrant that the utilities shown are in the exact location indicated. Locates are in compliance with Subsurface Utility Engineering Quality Level "B", and were through the Missouri One-Call System, Ticket Number 181362453. Companies listed on said Ticket are: ATT Distribution, Google Fiber, Spire MO Midwest, City of Lee's Summit, City of Lee's Summit Sewer, City of Lee's Summit Stormwater, Tri-County Water Authority, Time Warner Cable and Kansas City Power & Light.

**GENERAL NOTES**

- CONTRACTOR SHALL "POTHOLE" AND EXPOSE ALL TIE-IN AND CROSSING LOCATIONS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS REQUIRED TO PROVIDE PROPER HORIZONTAL AND VERTICAL ALIGNMENT FOR NEW WATER MAINS. CONNECTIONS TO EXISTING WATER MAINS AT THE PROPER LOCATION AND ELEVATION, WHETHER OR NOT THE PROPER FITTINGS, LOCATION OR ELEVATIONS ARE CALLED OUT ON THESE DRAWINGS, INCLUDING MODIFICATIONS OF EXISTING INFRASTRUCTURE REQUIRED TO MAKE ALL OF THE WORK CONFORM TO THE CURRENT LEE'S SUMMIT PUBLIC WORKS STANDARDS AND MISSOURI DEPARTMENT OF NATURAL RESOURCES, MINIMUM DESIGN STANDARDS FOR COMMUNITY WATER SYSTEMS 2013.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY BLOW-OFF ASSEMBLIES, FITTINGS, THRUST BLOCKING, AND RESTRAINING DEVICES REQUIRED FOR TEMPORARY CONNECTIONS FOR FLUSHING, PRESSURE TESTING, CHLORINATION, AND DE-CHLORINATION OF THE NEW WATER MAINS PRIOR TO PLACING NEW MAINS IN SERVICE. THE CONTRACTOR SHALL REMOVE ANY CORPORATION COCKS USED FOR TESTING OR CHLORINATION AND REPLACE THEM WITH TAPERED BRASS PLUGS.
- SCHEDULING OF WATER MAIN SHUTDOWNS AND CONNECTION TO EXISTING MAINS SHALL BE AT THE DISCRETION OF LEE'S SUMMIT PUBLIC WORKS. ALL WATER LINE SHUTDOWNS MUST BE COORDINATED THROUGH LEE'S SUMMIT PUBLIC WORKS. THE CONTRACTOR SHALL PLAN ON THIS WORK BEING SCHEDULED DURING THE NIGHT AT OFF PEAK HOURS.
- THE LOCATIONS OF EXISTING UTILITIES, AS SHOWN, ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES. CONTRACTOR SHALL "POTHOLE" AND EXPOSE ALL UTILITIES (INDICATED ON THE DRAWINGS, LOCATED AT GRADE BY A UTILITY LOCATING SERVICE, OR EVIDENT FROM UTILITY COMPANY INFORMATION) AT LEAST 500 FEET IN ADVANCE OF WATER MAIN CONSTRUCTION, DETERMINING THE DEPTH, SIZE, AND MATERIAL OF THE UTILITIES IN PROXIMITY TO THE PROPOSED WATER MAIN ALIGNMENT.
- THE CONTRACTOR SHALL COMPLY WITH STATE LAW REQUIRING ANY PERSON OR FIRM DOING EXCAVATION ON THE PUBLIC RIGHT-OF-WAY. PROCEED ONLY AFTER GIVING NOTICE TO AND OBTAINING INFORMATION FROM UTILITY COMPANIES.
- WATER MAINS SHALL BE INSTALLED WITH A MINIMUM GROUND COVER OF 42 INCHES BELOW FINISHED GRADE AND A MAXIMUM OF 7' IN DEPTH.
- WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY SEWER. WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A WATER MAIN MAY BE LAID CLOSER THAN 10 FEET TO A SEWER, PROVIDED THAT THE WATER MAIN IS LAID IN A SEPARATE TRENCH, OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER, AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WATER MAINS SHALL BE LAID SUCH THAT THERE IS A MINIMUM OF 18 INCHES CLEARANCE BETWEEN THE PIPE WALL AND THE EXTERIOR OF ANY MANHOLE AND/OR INLET ON THE SEWER LINE.  
  
WHENEVER A WATER MAIN MUST CROSS ABOVE A SEWER, A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER SHALL BE MAINTAINED. WHENEVER A WATER MAIN MUST CROSS UNDER A SEWER, A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE SEWER AND THE TOP OF THE WATER MAIN SHALL BE MAINTAINED. A FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ON THE SEWER TO BE CROSSED SO THAT THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS FAR AWAY AS POSSIBLE. THE 18-INCH VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN 10 FEET, HORIZONTALLY, OF ANY SEWER IT CROSSES.  
  
WHERE THESE CONDITIONS CANNOT BE MET, LEE'S SUMMIT PUBLIC WORKS SHALL BE CONSULTED AS TO THE PRECAUTIONS TO BE TAKEN TO PROTECT THE PUBLIC WATER SUPPLY.
- THE CONTRACTOR SHALL VERIFY THE OUTSIDE DIAMETER (O.D.) OF THE EXISTING WATER MAIN PRIOR TO SCHEDULING CONNECTION.
- CONTRACTORS SHALL PROTECT EXISTING POWER POLES AND LIGHT POLES FROM DAMAGE AND SHALL PROVIDE BRACING, SHORING, OR OTHER WORK NECESSARY FOR SUCH PROTECTION. ANY STRUCTURES REMOVED DURING CONSTRUCTION OPERATIONS SHALL BE REPLACED.
- THE PROPOSED WATER LINE IMPROVEMENTS SHALL BE COMPLETED IN SUCH A MANNER TO PROVIDE THE LEAST AMOUNT OF INTERRUPTION TO WATER SERVICE.



THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1-800-DIG-RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!

olsson

Olsson Engineering MO State Certificate of Authority #001592  
 Olsson Landscape Architecture MO State Cert. of Authority #200500285  
 550 St. Louis St.  
 Springfield, MO 65806  
 TEL 417.890.8602 www.olsson.com

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

WATER MAIN EXTENSION WATERLINE INDEX SHEET

THE PRINCETON SENIOR LIVING SE OLDHAM PARKWAY

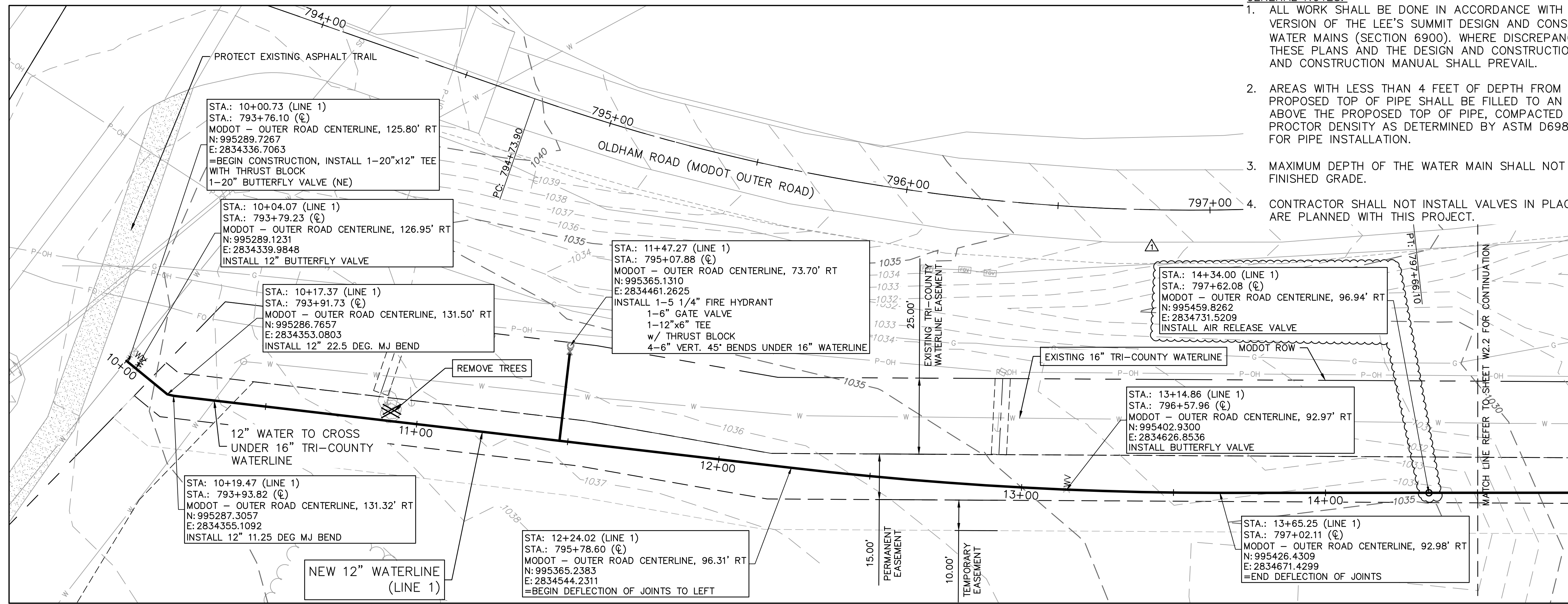
LEE'S SUMMIT, MISSOURI

2019

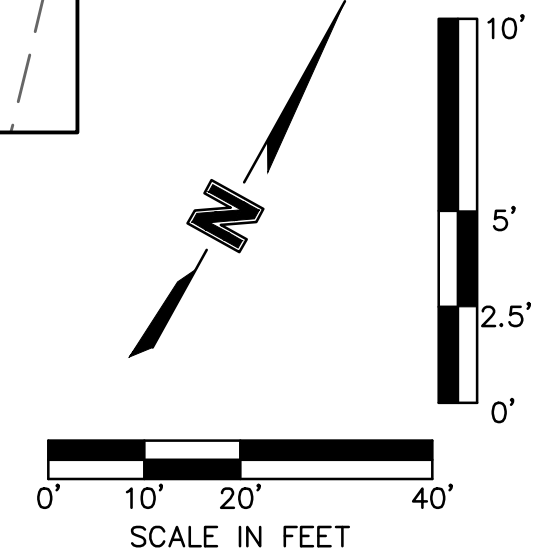
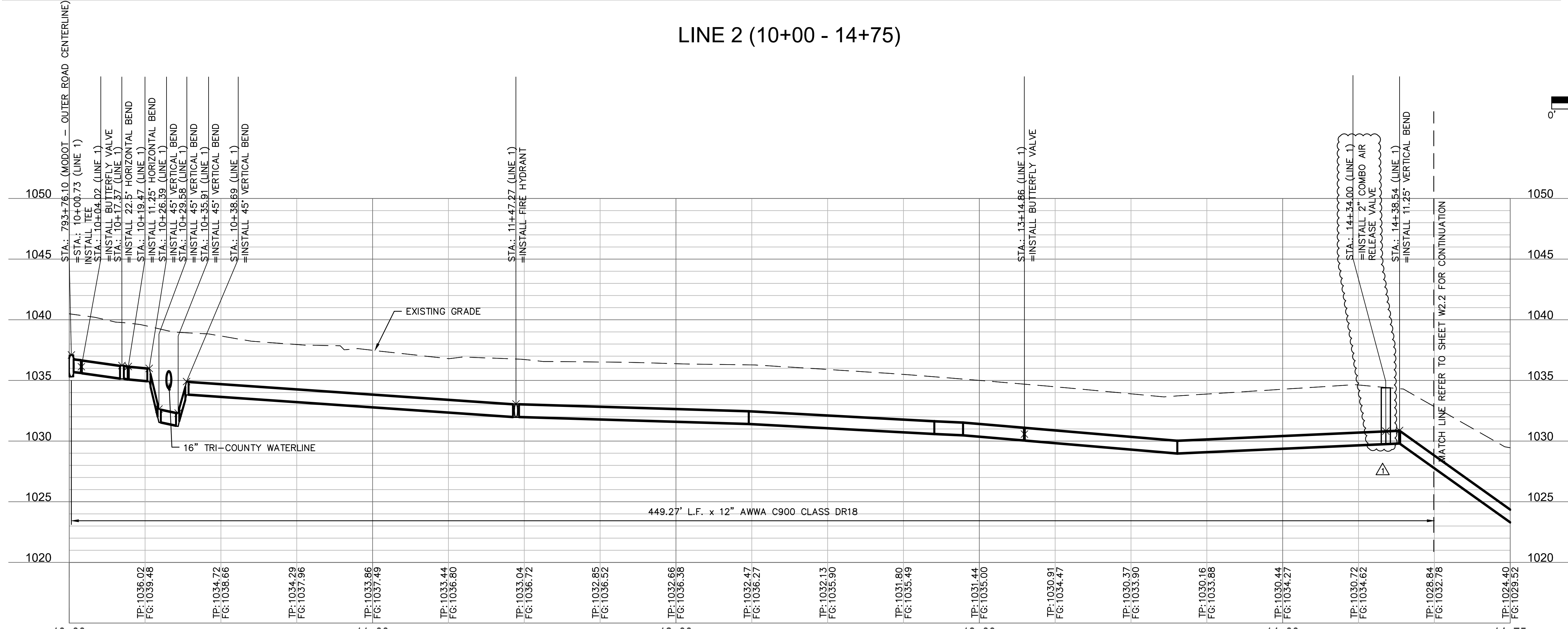
SHEET W1.0

drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

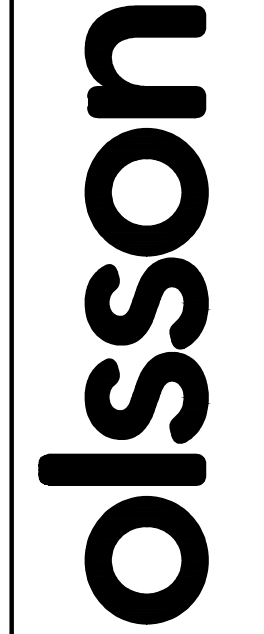
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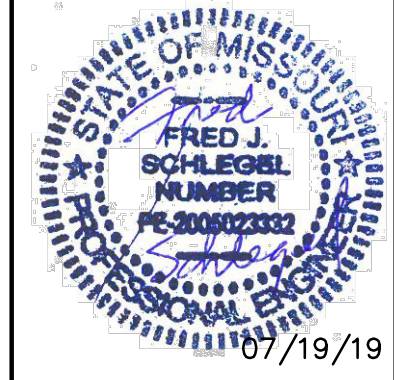
LINE 2 (10+00 - 14+75)



- GENERAL NOTES:
1. 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.
  2. AREAS WITH LESS THAN 4 FEET OF DEPTH FROM EXISTING GRADE TO THE 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.
  3. MAXIMUM DEPTH OF THE WATER MAIN SHALL NOT EXCEED 7' FROM FINISHED GRADE.
  4. CONTRACTOR SHALL NOT INSTALL VALVES IN PLACES WHERE ADA RAMPS ARE PLANNED WITH THIS PROJECT.



Olsson Engineering MO State Certificate of Authority #001592  
 Olsson Landscape Architecture MO State Cert. of Authority #205000285  
 550 S. Louise St.  
 Springfield, MO 65806  
 TEL 417.890.8602  
 www.olsson.com



REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

**REVISIONS**

WATER MAIN EXTENSION  
 LINE 1 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY

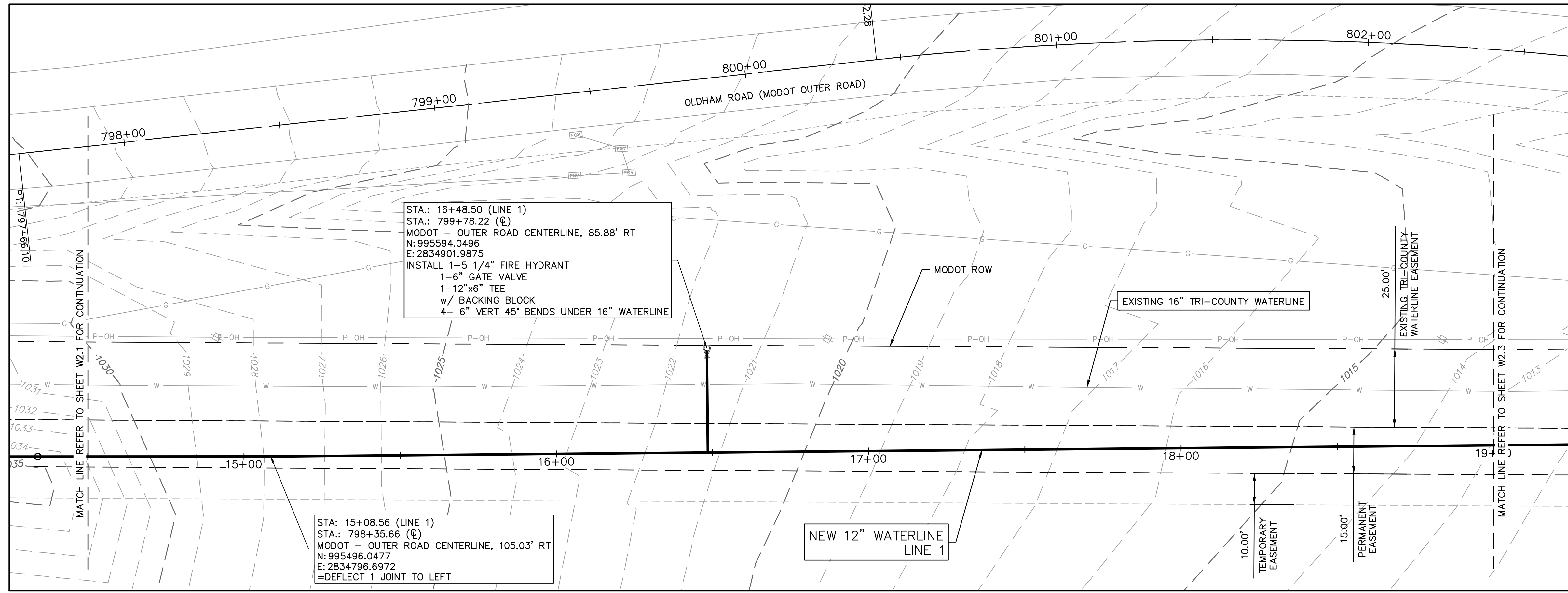
LEE'S SUMMIT, MISSOURI

2019

drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

**SHEET**  
W2.1

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNVC\PUBLIC WATER\C\_WPP\_81450.dwg USER: thill  
 DATE: Jul 11, 2019 9:31am XREFS: v\_xb01\_81450 c\_pbase\_81450 c\_tblk\_22x34\_81450 T\_PBASE\_81450 V\_TOPO\_81450 c\_legend\_81450



STA.: 16+48.50 (LINE 1)  
 STA.: 799+78.22 (℄)  
 MODOT - OUTER ROAD CENTERLINE, 85.88' RT  
 N: 995594.0496  
 E: 2834901.9875  
 INSTALL 1-5 1/4" FIRE HYDRANT  
 1-6" GATE VALVE  
 1-12"x6" TEE  
 w/ BACKING BLOCK  
 4- 6" VERT 45° BENDS UNDER 16" WATERLINE

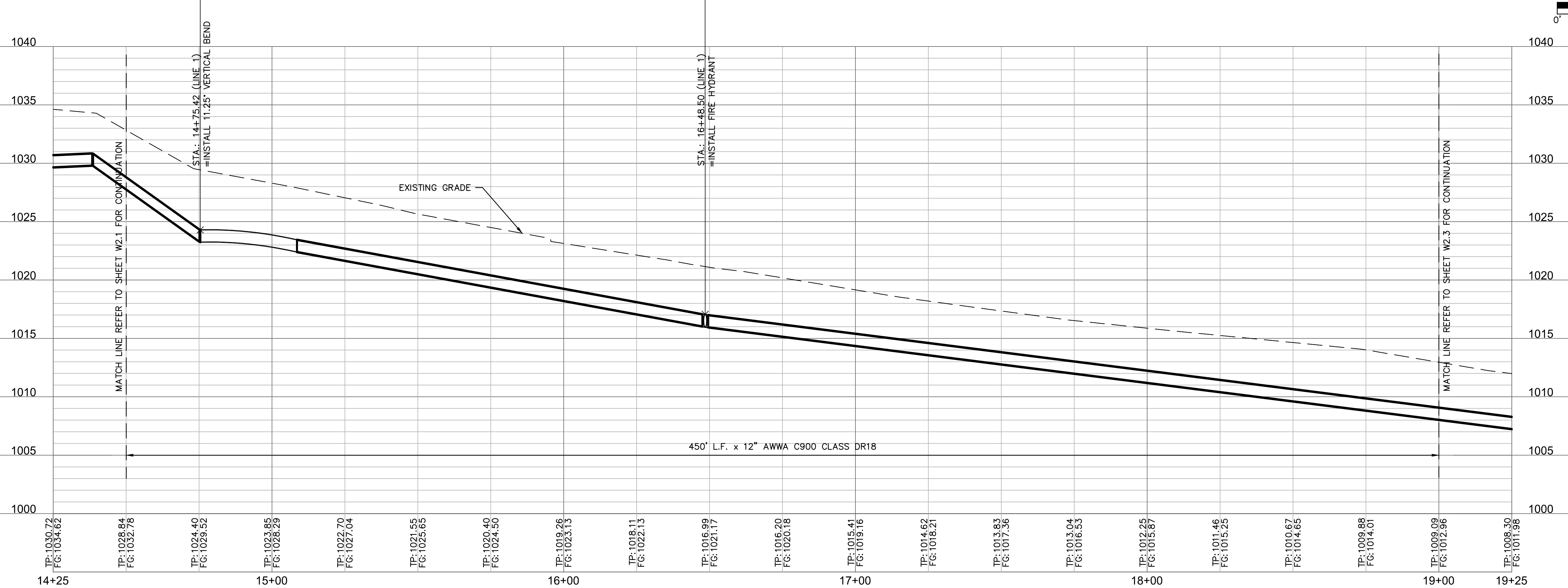
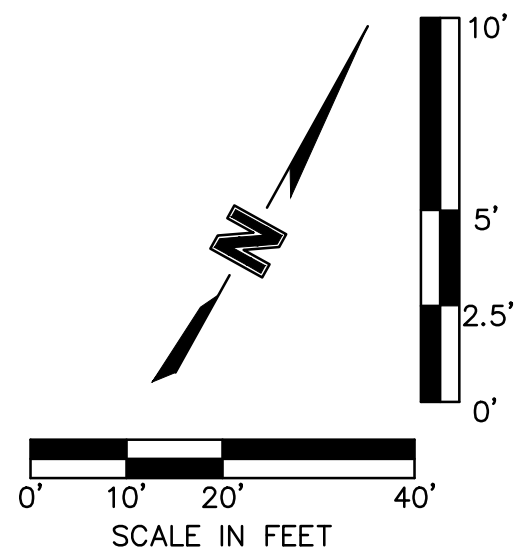
STA.: 15+08.56 (LINE 1)  
 STA.: 798+35.66 (℄)  
 MODOT - OUTER ROAD CENTERLINE, 105.03' RT  
 N: 995496.0477  
 E: 2834796.6972  
 DEFLECT 1 JOINT TO LEFT

NEW 12" WATERLINE  
 LINE 1

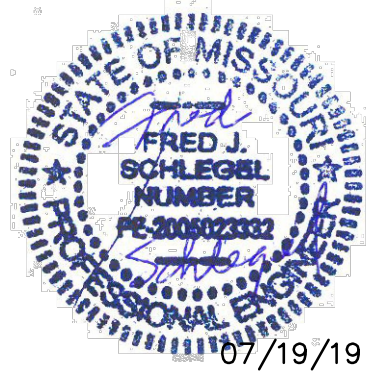
EXISTING 16" TRI-COUNTY WATERLINE

EXISTING TRI-COUNTY WATERLINE EASEMENT

MATCH LINE REFER TO SHEET W2.3 FOR CONTINUATION



450' L.F. x 12" AWWA C900 CLASS DR18



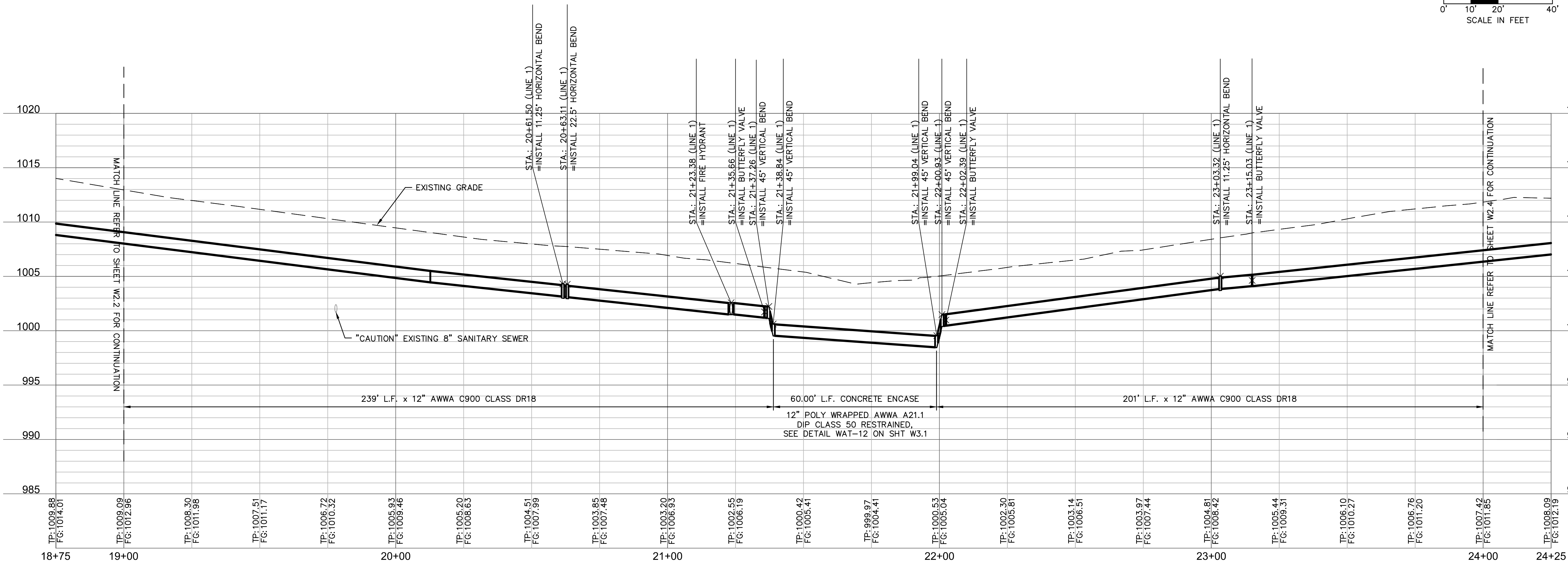
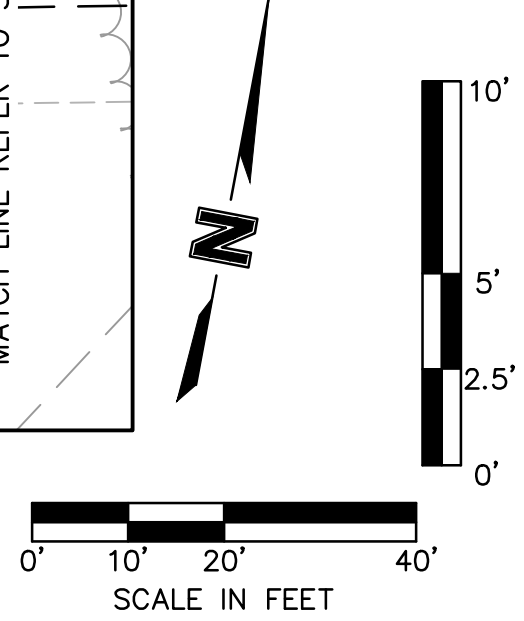
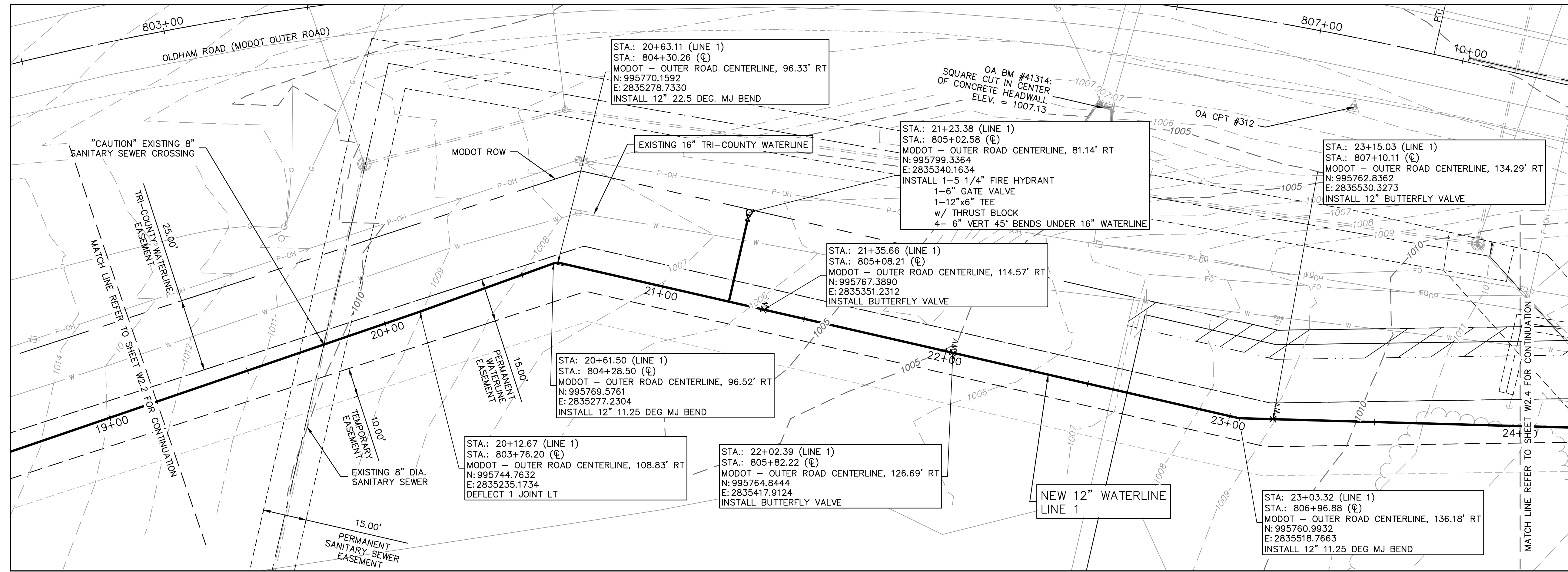
REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

WATER MAIN EXTENSION LINE 1 PLAN AND PROFILE		2019
THE PRINCETON SENIOR LIVING SE OLDHAM PARKWAY		
LEE'S SUMMIT, MISSOURI		

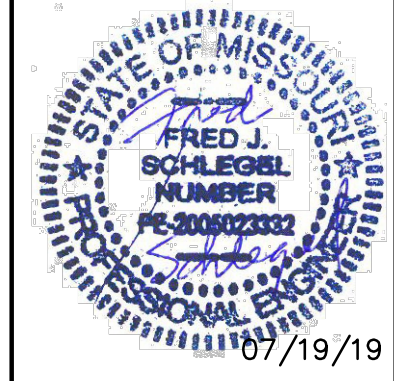
drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

SHEET  
 W2.2

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REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

WATER MAIN EXTENSION  
 LINE 1 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY

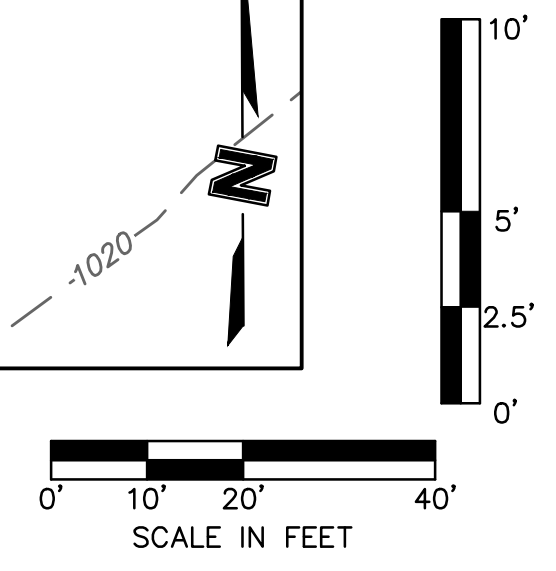
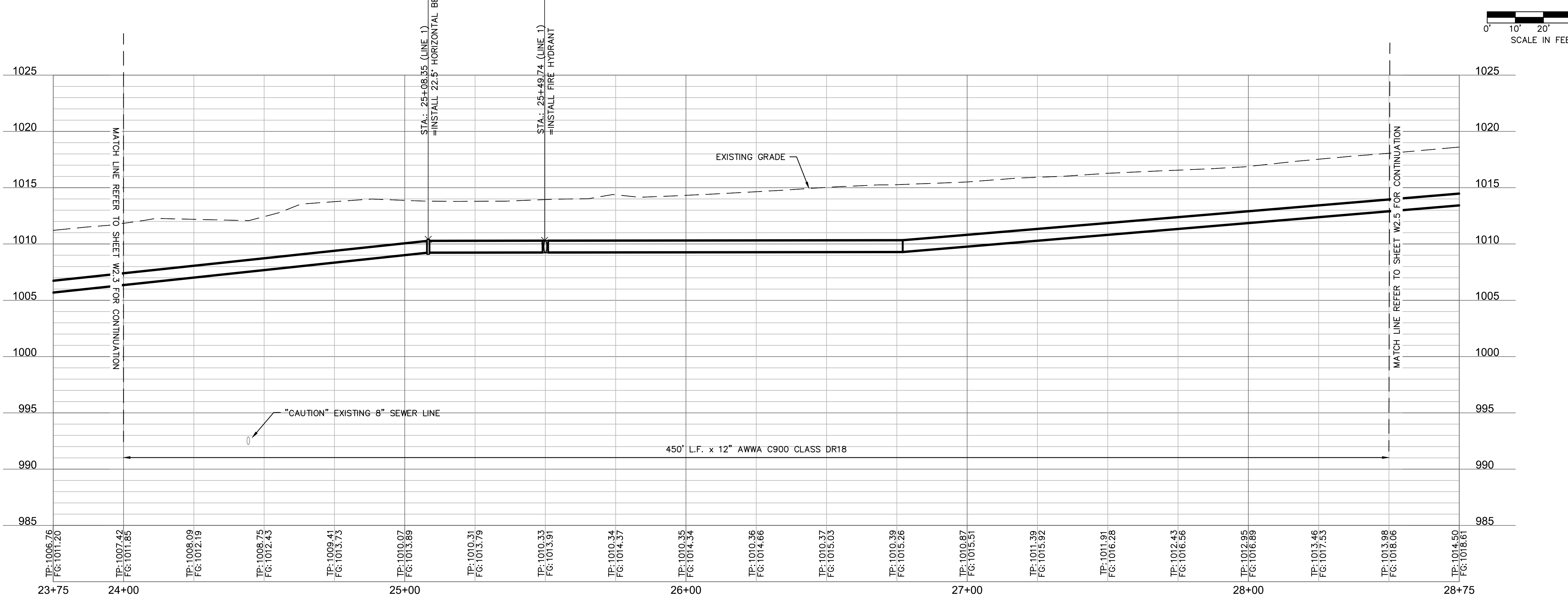
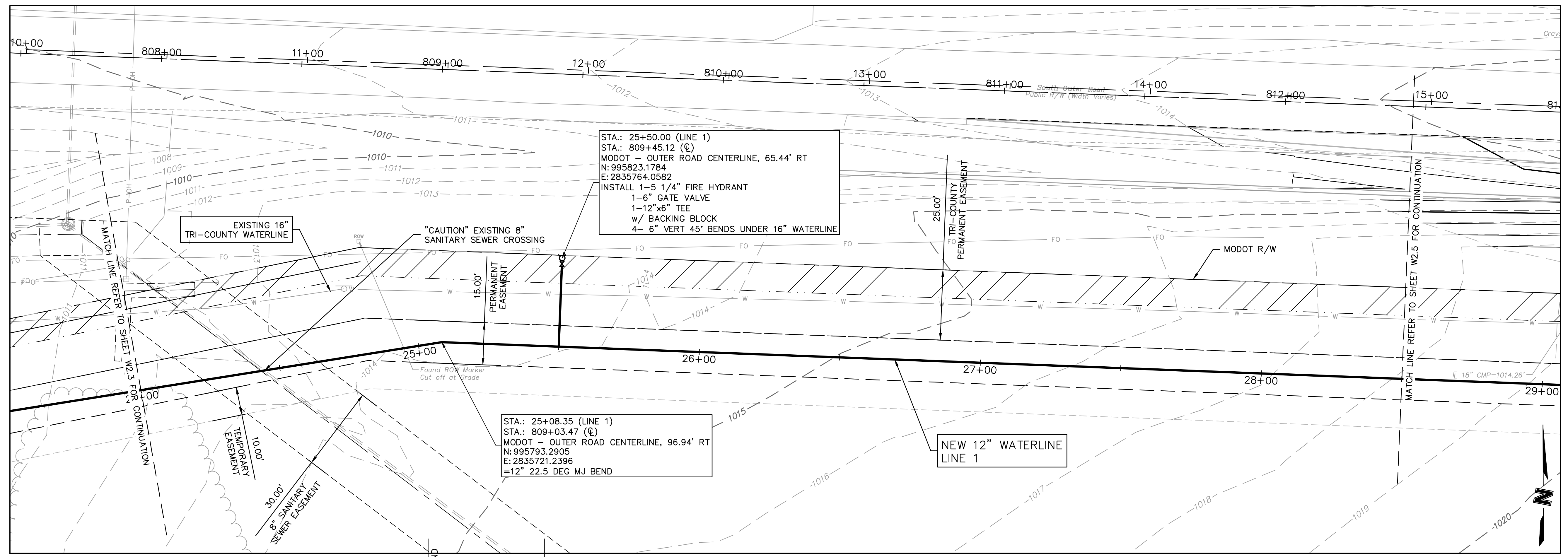
LEE'S SUMMIT, MISSOURI

2019

drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

SHEET  
 W2.3

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNVC\PUBLIC WATER\C\_WPP\_81450.dwg USER: thill  
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FRED J. SCHLEGEL  
 PROFESSIONAL ENGINEER  
 LICENSE NUMBER PE-20022333  
 07/19/19

REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/19	ENGR. REVIEW COMMENTS

WATER MAIN EXTENSION  
 LINE 1 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY

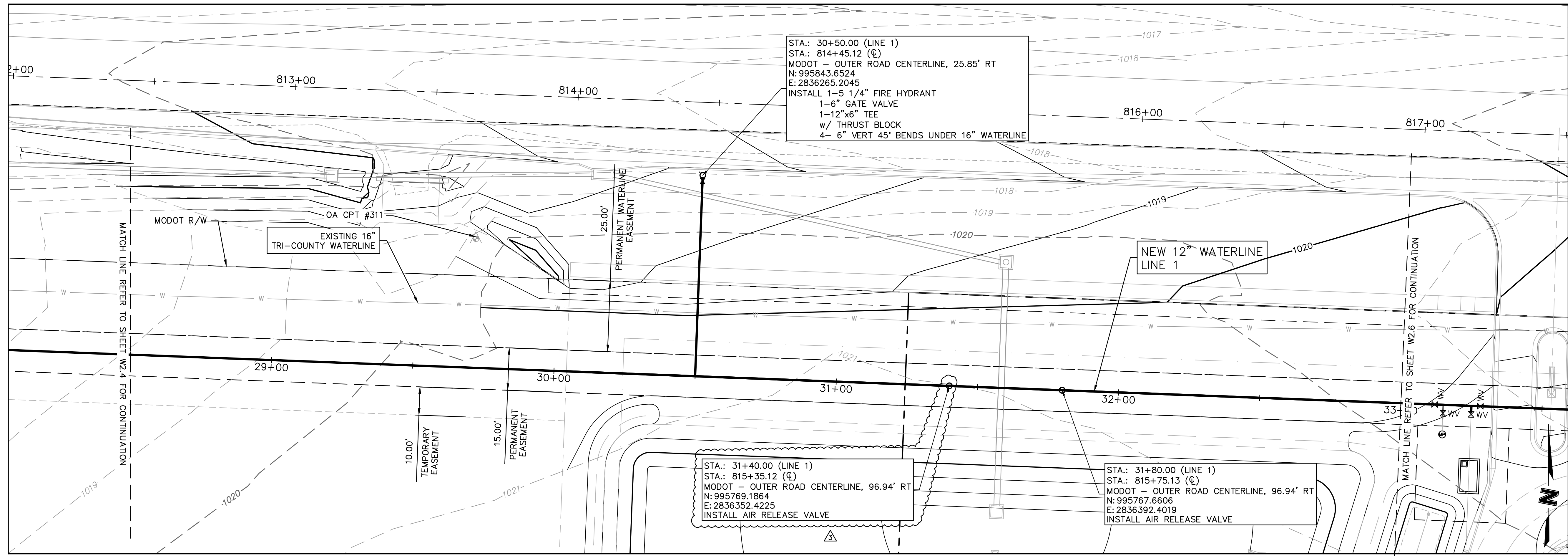
LEE'S SUMMIT, MISSOURI

2019

drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

**SHEET W2.4**

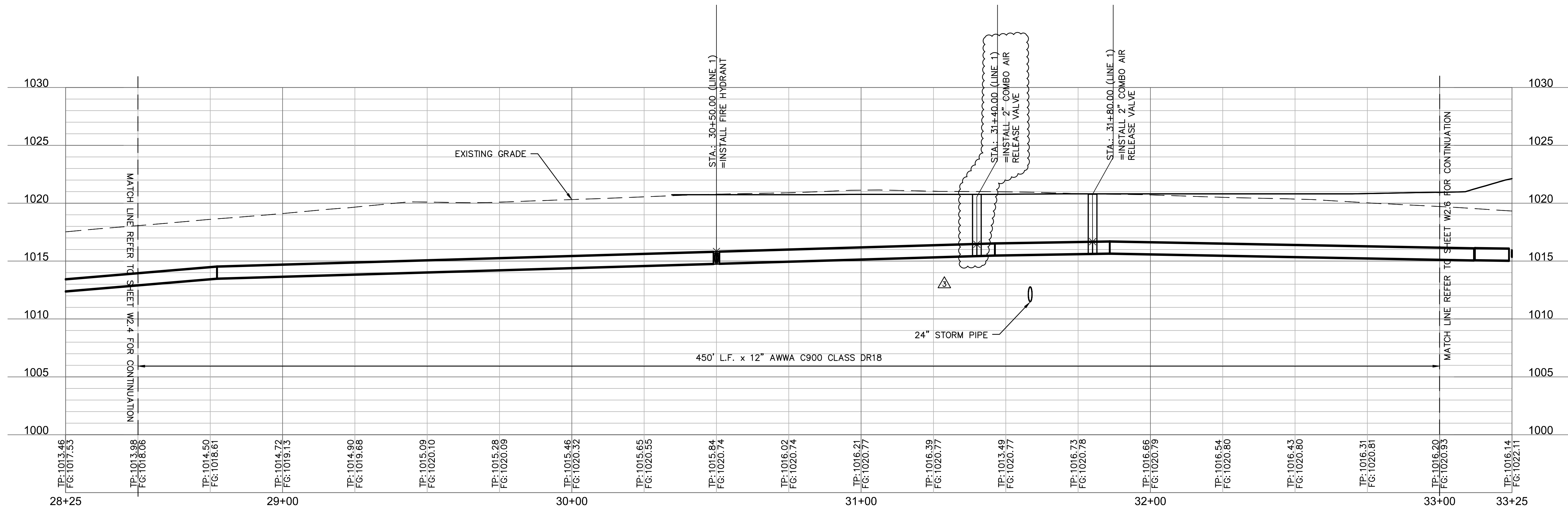
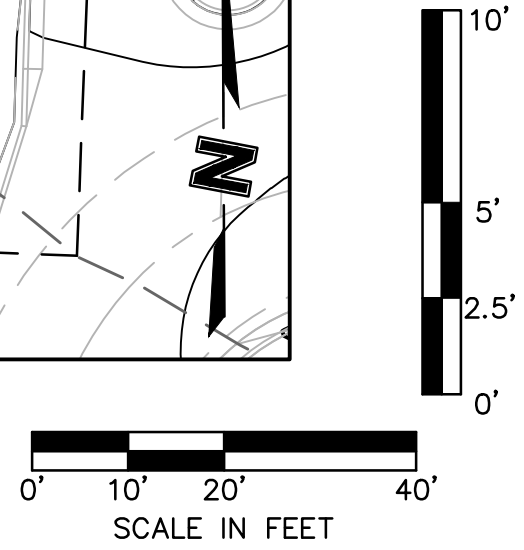
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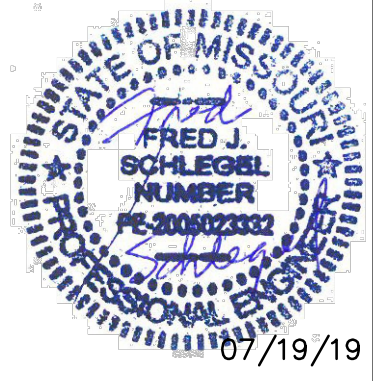
STA.: 30+50.00 (LINE 1)  
 STA.: 814+45.12 (℄)  
 MODOT - OUTER ROAD CENTERLINE, 25.85' RT  
 N: 995843.6524  
 E: 2836265.2045  
 INSTALL 1-5 1/4" FIRE HYDRANT  
 1-6" GATE VALVE  
 1-12"x6" TEE  
 w/ THRUST BLOCK  
 4- 6" VERT 45° BENDS UNDER 16" WATERLINE

STA.: 31+40.00 (LINE 1)  
 STA.: 815+35.12 (℄)  
 MODOT - OUTER ROAD CENTERLINE, 96.94' RT  
 N: 995769.1864  
 E: 2836352.4225  
 INSTALL AIR RELEASE VALVE

STA.: 31+80.00 (LINE 1)  
 STA.: 815+75.13 (℄)  
 MODOT - OUTER ROAD CENTERLINE, 96.94' RT  
 N: 995767.6606  
 E: 2836392.4019  
 INSTALL AIR RELEASE VALVE



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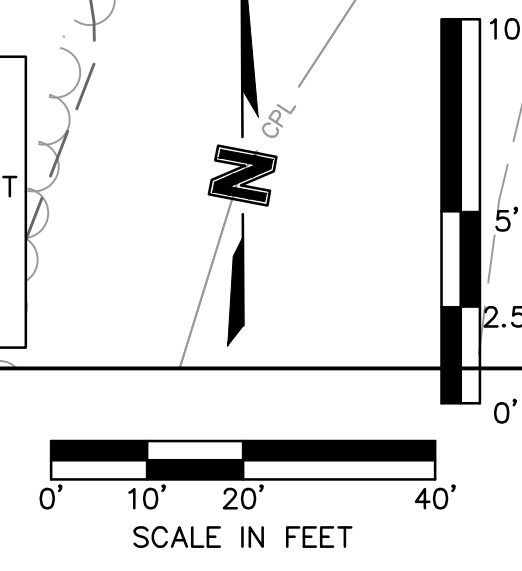
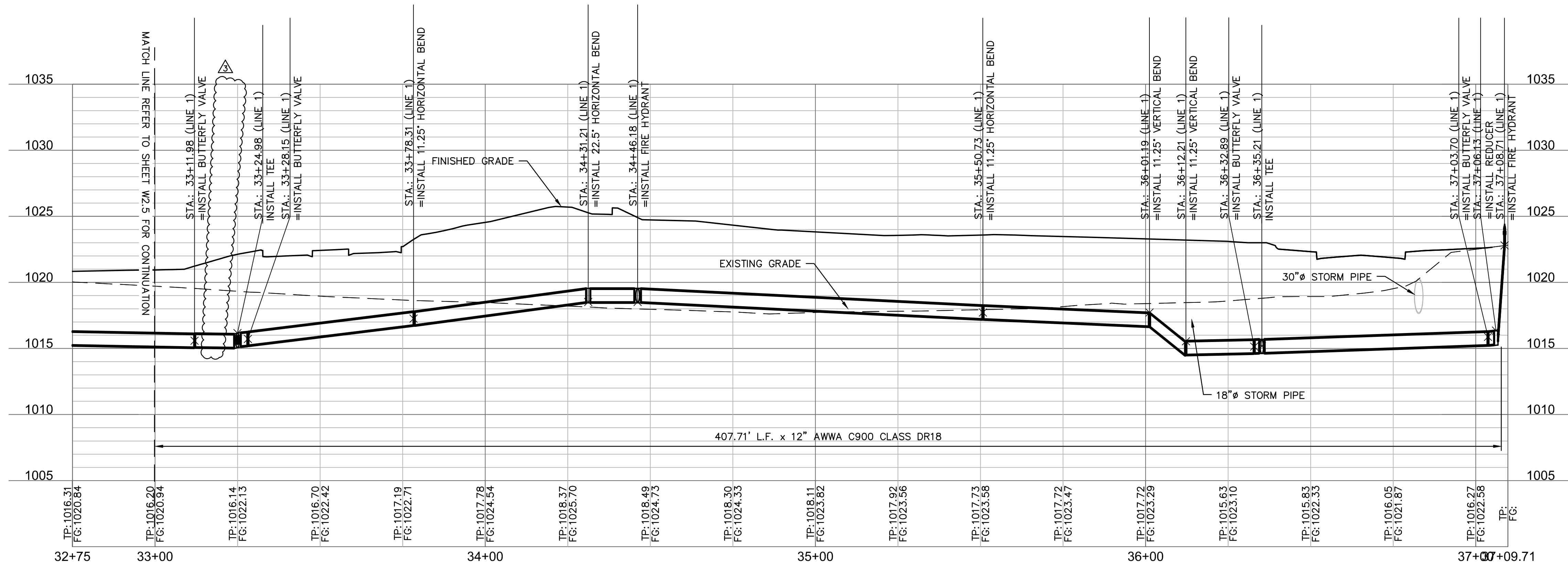
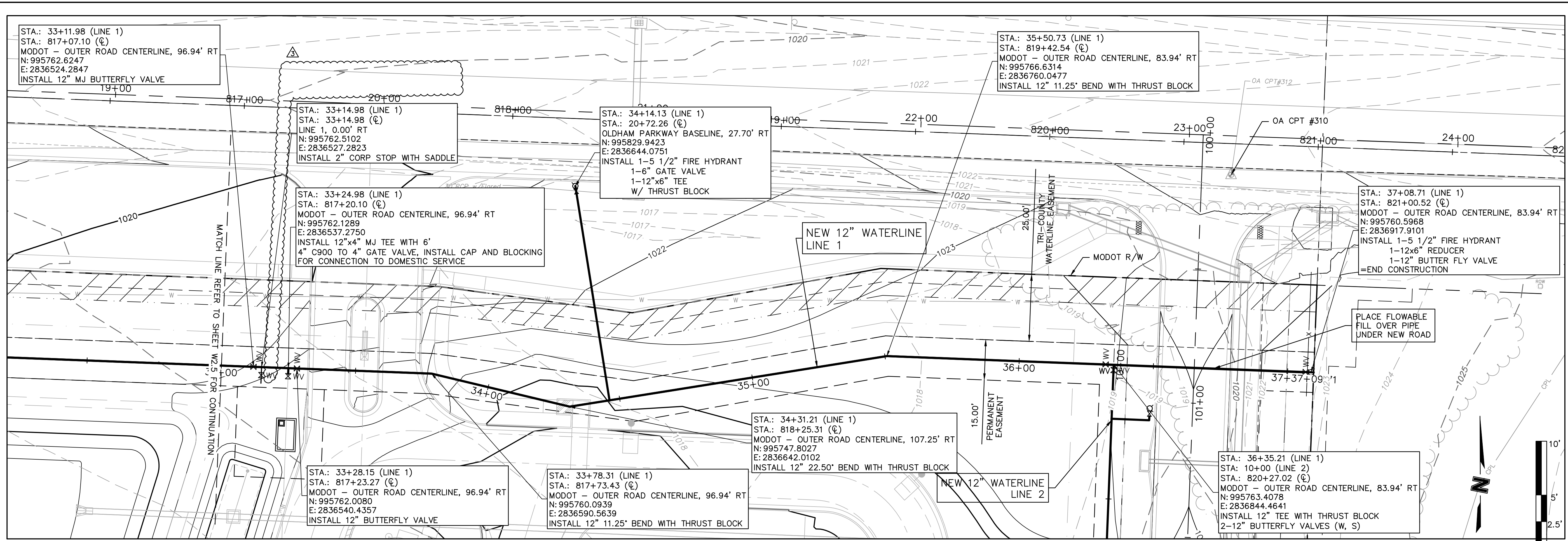


REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

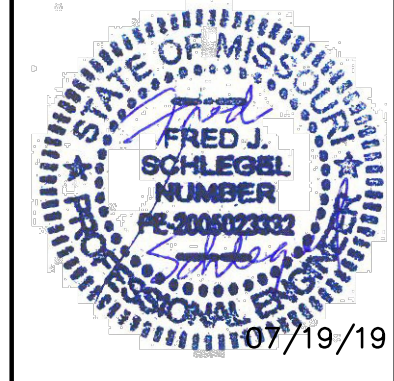
WATER MAIN EXTENSION  
 LINE 1 PLAN AND PROFILE  
 THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI  
 2019

drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C\_WPP\_81450.dwg USER: thll  
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REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

WATER MAIN EXTENSION  
 LINE 1 PLAN AND PROFILE  
 THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

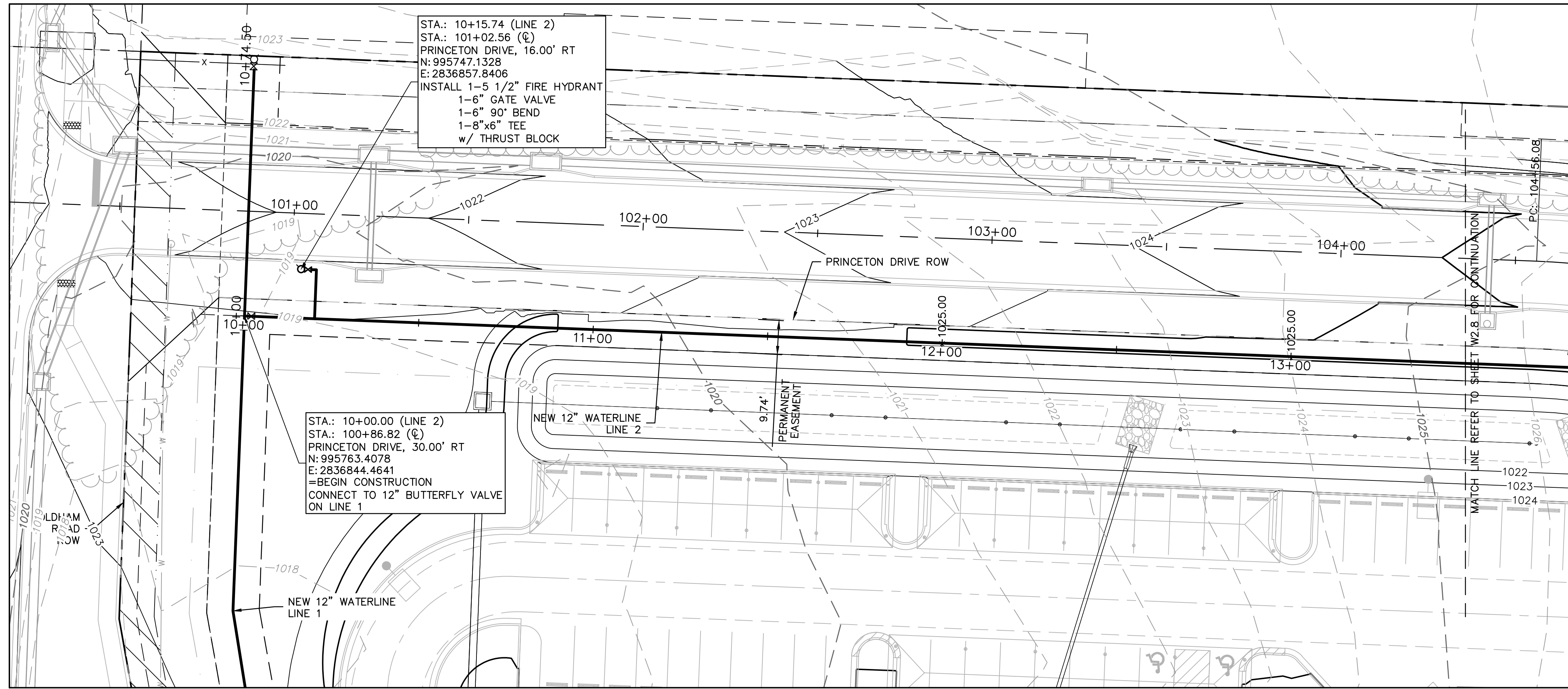
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 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
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SHEET  
 W2.6



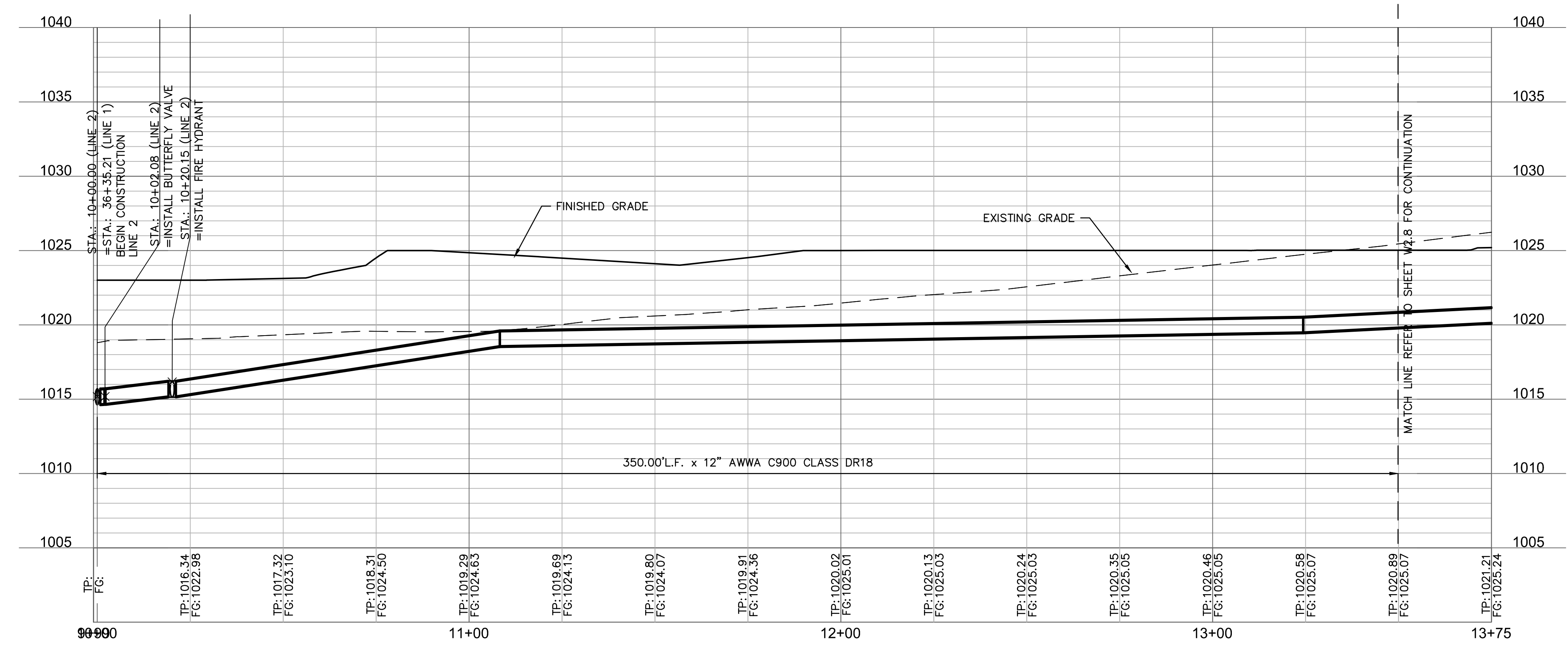
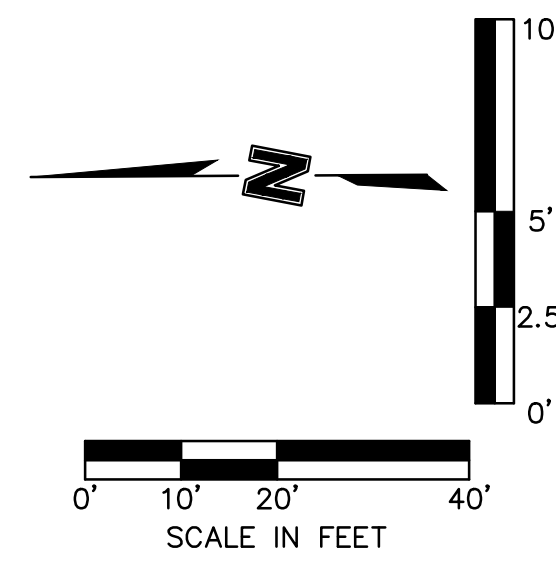
MATCH LINE REFER TO SHEET ### FOR CONTINUATION

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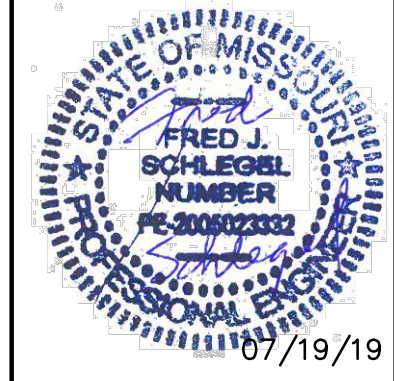


STA.: 10+15.74 (LINE 2)  
 STA.: 101+02.56 (℄)  
 PRINCETON DRIVE, 16.00' RT  
 N: 995747.1328  
 E: 2836857.8406  
 INSTALL 1-5 1/2" FIRE HYDRANT  
 1-6" GATE VALVE  
 1-6" 90° BEND  
 1-8"x6" TEE  
 w/ THRUST BLOCK

STA.: 10+00.00 (LINE 2)  
 STA.: 100+86.82 (℄)  
 PRINCETON DRIVE, 30.00' RT  
 N: 995763.4078  
 E: 2836844.4641  
 =BEGIN CONSTRUCTION  
 CONNECT TO 12" BUTTERFLY VALVE  
 ON LINE 1



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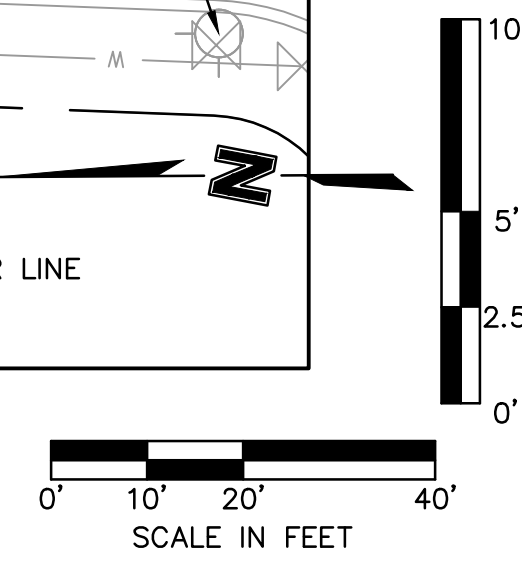
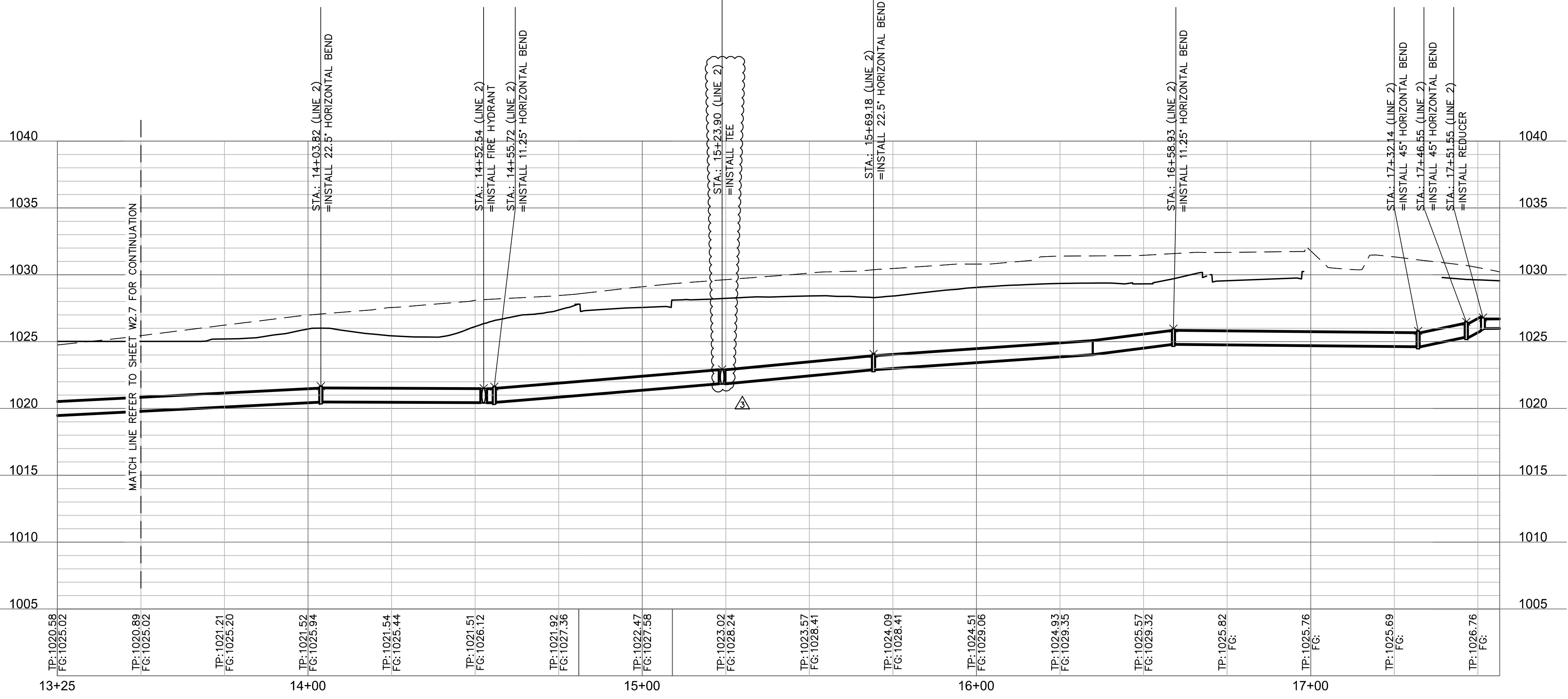
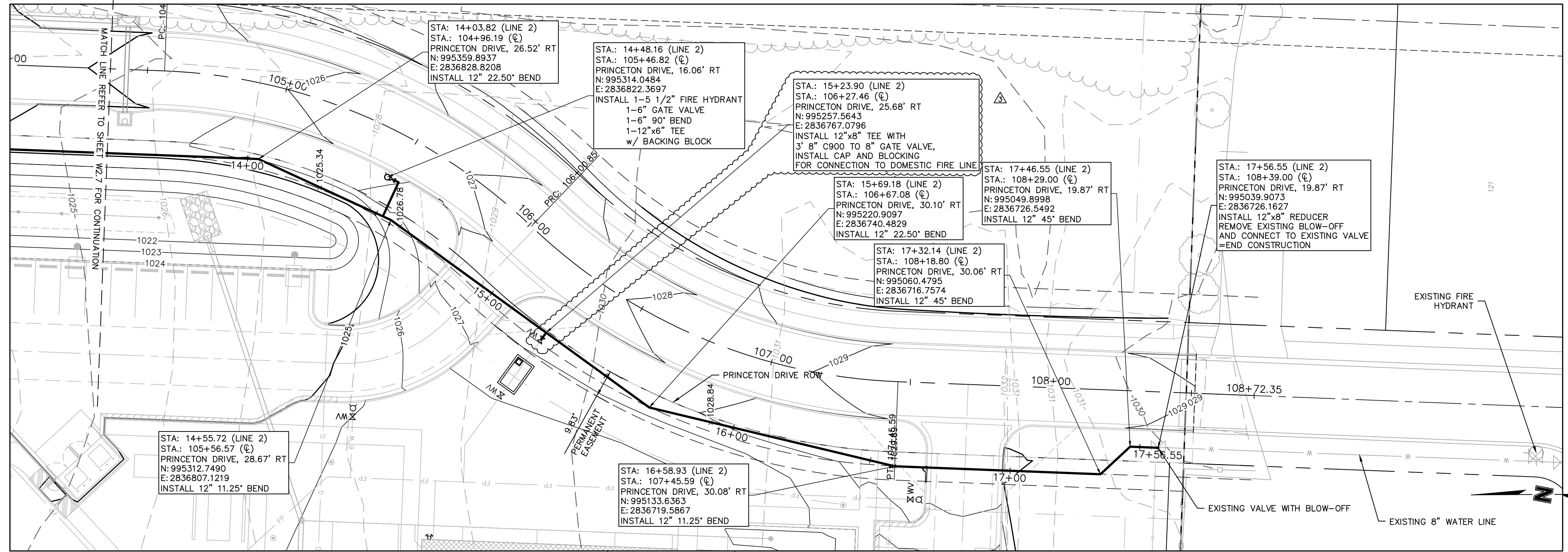


REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

WATER MAIN EXTENSION  
 LINE 2 PLAN AND PROFILE  
 THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY  
 LEE'S SUMMIT, MISSOURI

drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNVC\PUBLIC WATER\C\_WPP\_81450.dwg USER: thill  
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 550 S. Louisa St.  
 Springfield, MO 65806  
 TEL 417.890.8602 www.olsson.com

FRED J. SCHLEGEL  
 PROFESSIONAL ENGINEER  
 NO. FE-30022333  
 STATE OF MISSOURI  
 07/19/19

REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

**REVISIONS**

WATER MAIN EXTENSION  
 LINE 2 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
 SE OLDHAM PARKWAY

2019

LEE'S SUMMIT, MISSOURI

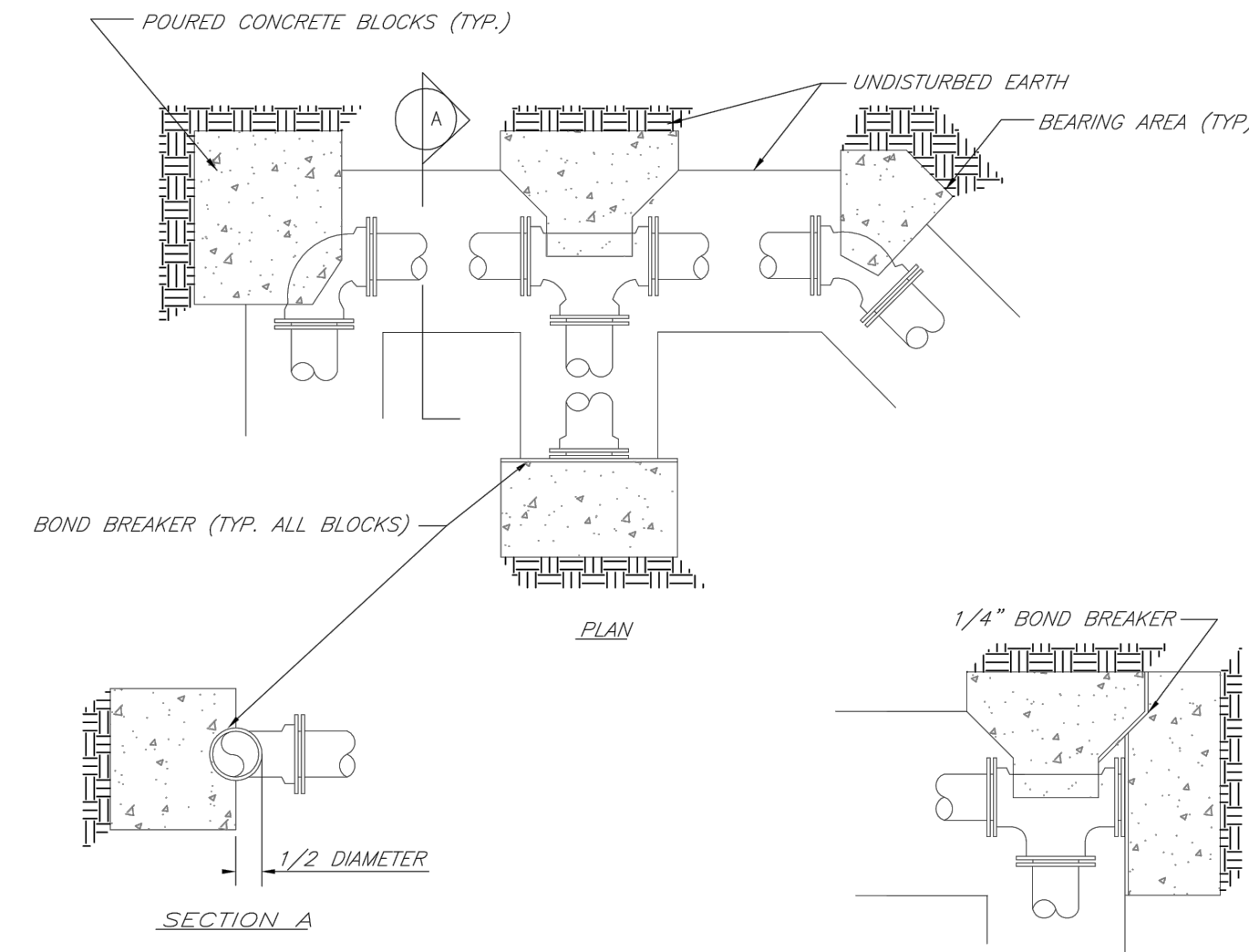
drawn by: TMH  
 designed by: FJS  
 checked by: JLR  
 project no.: 018-1450  
 drawing no.: C\_WPP\_81450  
 date: 00.00.00

SHEET  
 W2.8

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)

NOM. DIA. (INCHES)	180	90	45	22.5	11.25
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.9	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.
  5. ALL DUCTILE IRON FITTINGS SHALL BE POLYETHYLENE WRAPPED.



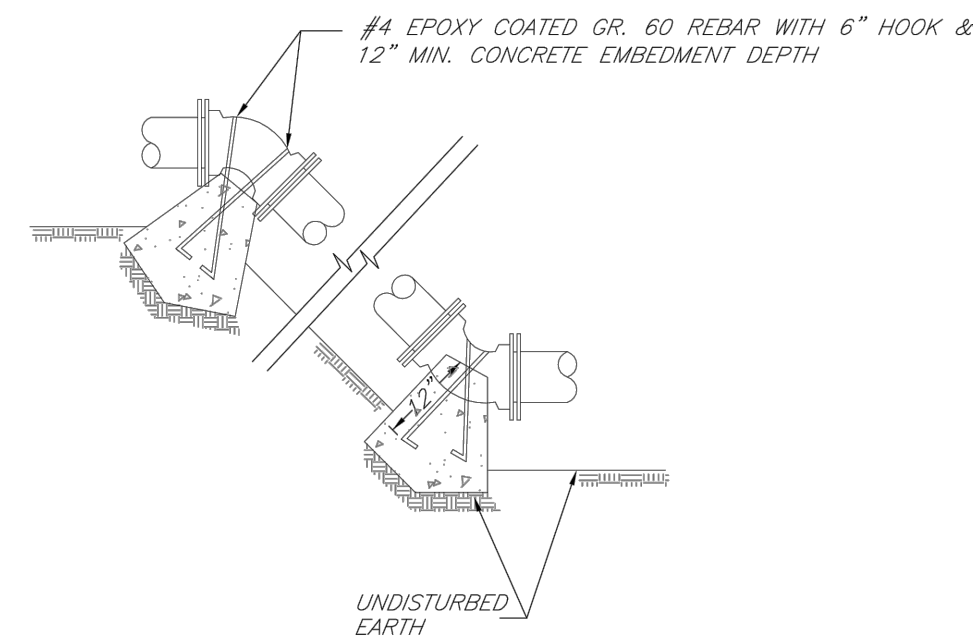
**LS** **LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
**HORIZONTAL THRUST BLOCKS**

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

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)

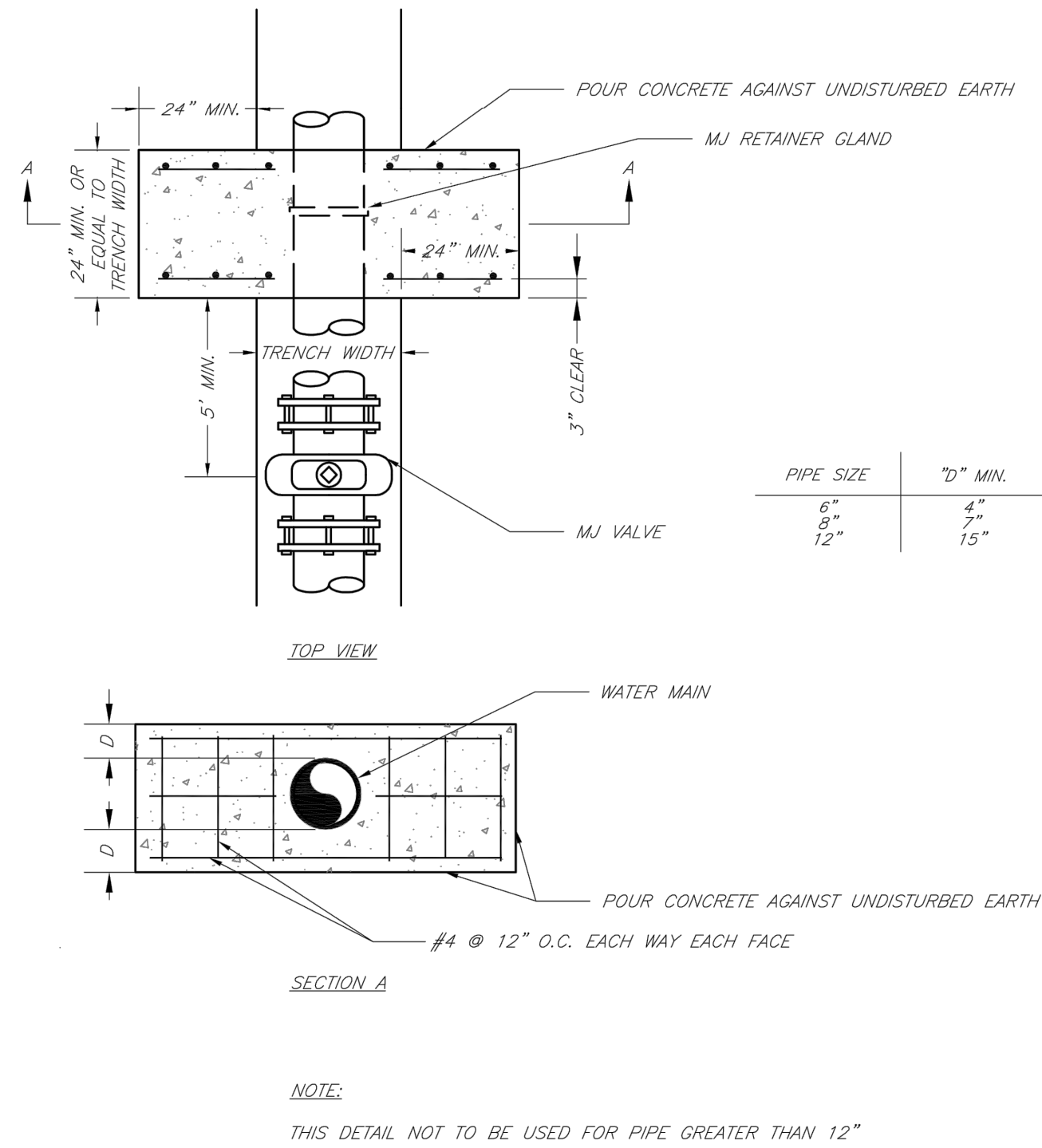
NOM. DIA. (INCHES)	180	90	45	22.5	11.25
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	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.
  5. USE POLYETHYLENE AROUND ALL FITTINGS AND COAT BOLTS PER SPECS.



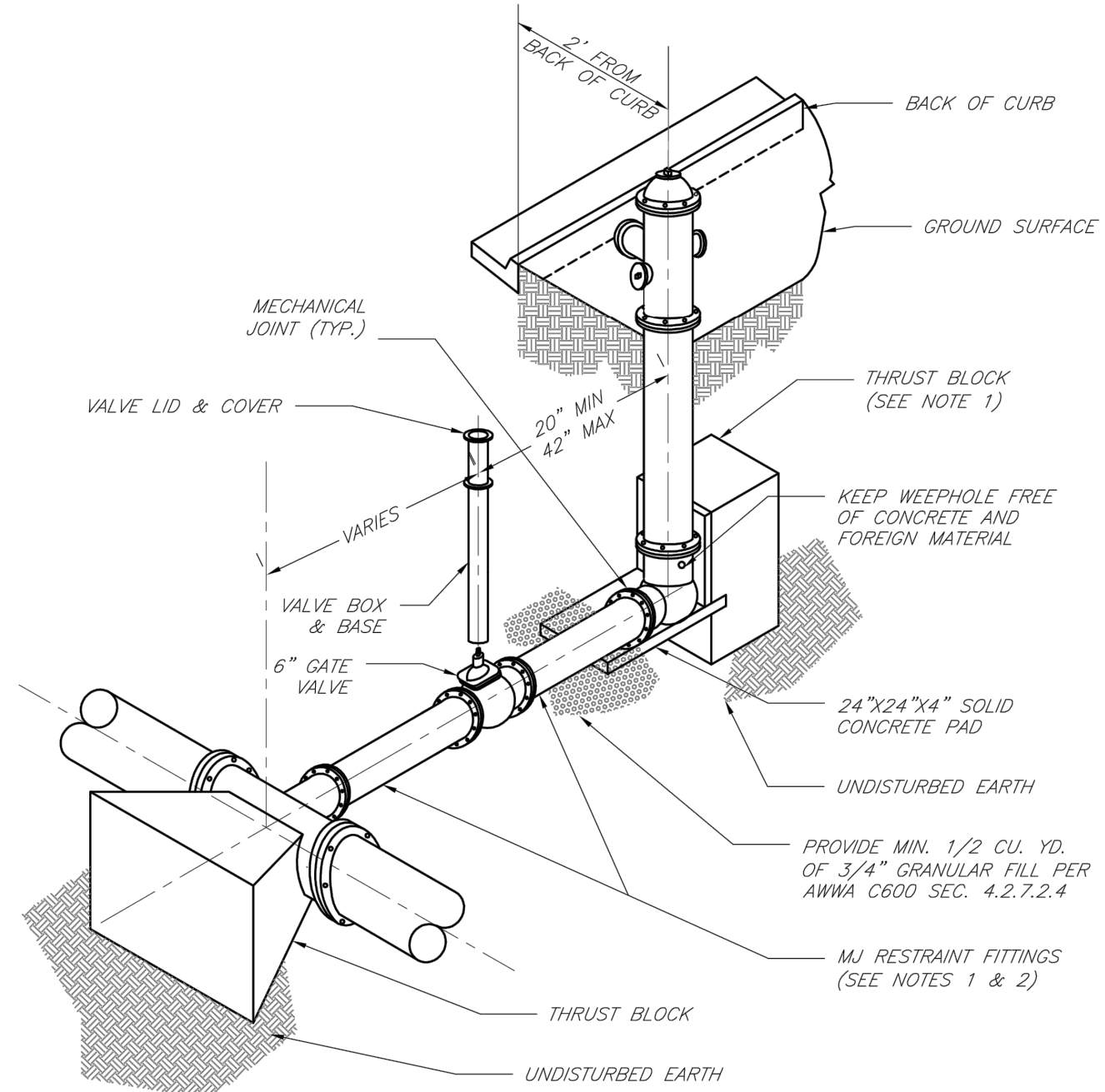
**LS** **LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063  
**VERTICAL THRUST BLOCKS**

Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-2  
Rev: 1/14



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

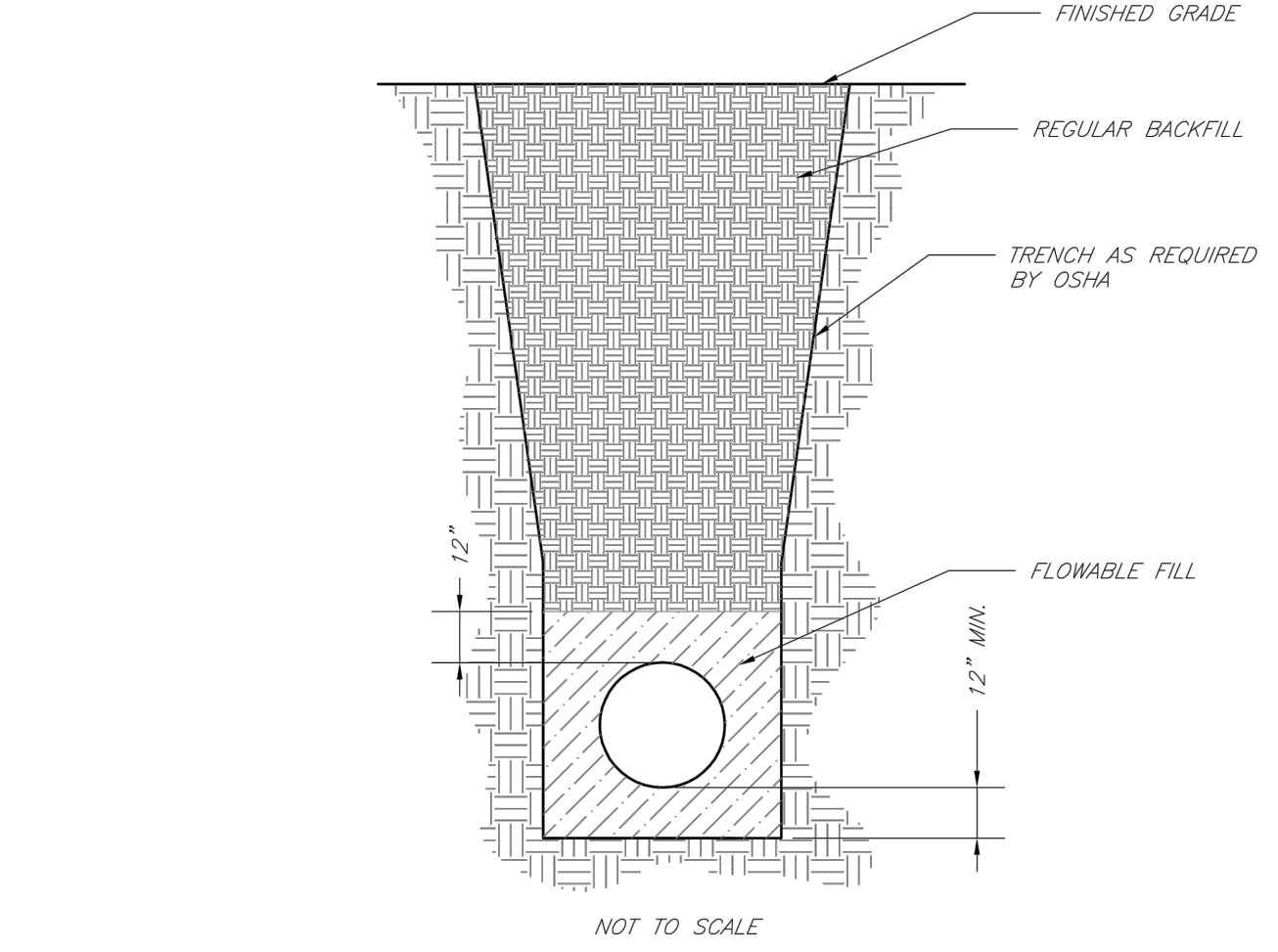
Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-3  
Rev: 1/14



- NOTES:
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.

**LS** **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



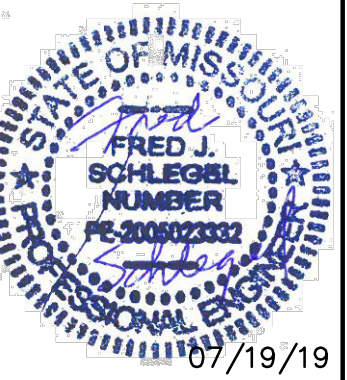
- NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
  2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
  3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE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

- NOTE:
1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF LEE'S SUMMIT'S "DESIGN AND CONSTRUCTION MANUAL".
  2. SEE LEE'S SUMMIT'S "DESIGN AND CONSTRUCTION MANUAL" FOR LIST OF APPROVED VENDORS

**olsson**

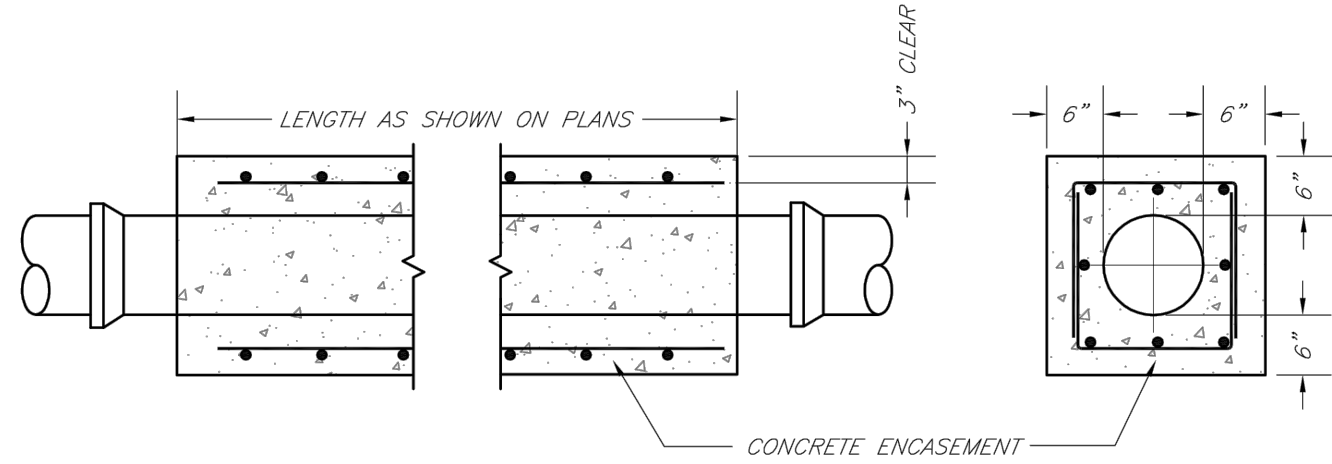


REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

**LEE'S SUMMIT, MISSOURI**  
PUBLIC WATER MAIN EXTENSION  
WATER SYSTEM DETAILS  
THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY  
2019

USER: thill

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\GNCV\PUBLIC WATER\C\_DTLS\_81450.dwg  
DATE: Jul 11, 2019 9:39am XREFS: C:\BLK\_22x34\_81450



NOTES:

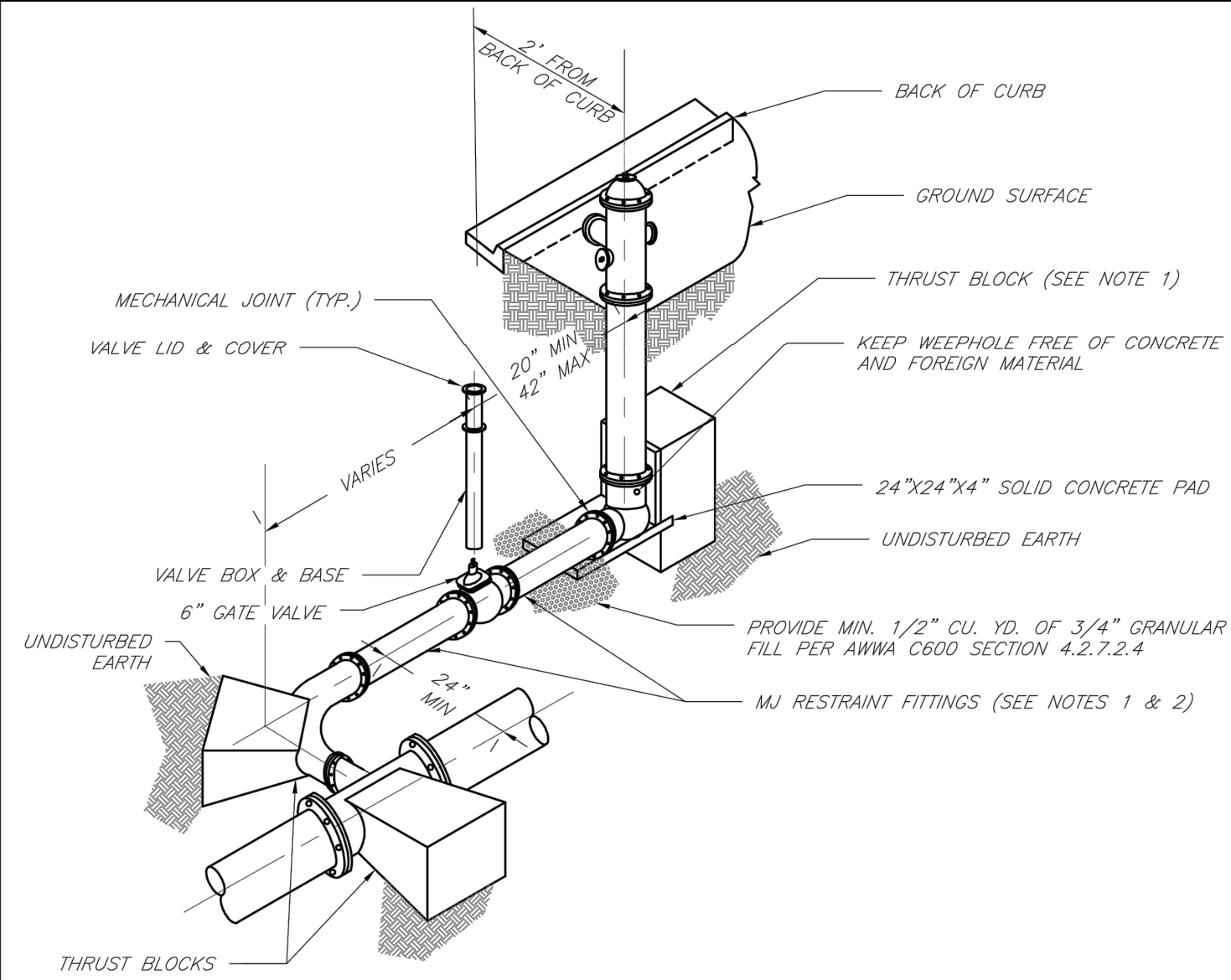
1. INTERMEDIATE BELLS SHALL BE ENCASED.
2. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".
3. THIS DETAIL IS FOR PIPES 12" AND SMALLER.
4. FOR CONTINUITY CONTINUE TAPPING TRACE WIRE TO DUCTILE IRON PIPE THROUGH CONCRETE ENCASEMENT ZONE.



**LEE'S SUMMIT MISSOURI**  
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Checked By: DL  
FILE: WAT-4  
Rev: 1/14

WATER PIPE ENCASEMENT



NOTES:

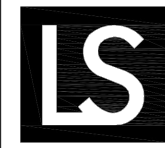
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT 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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Checked By: DL  
FILE: WAT-8  
Rev: 1/14

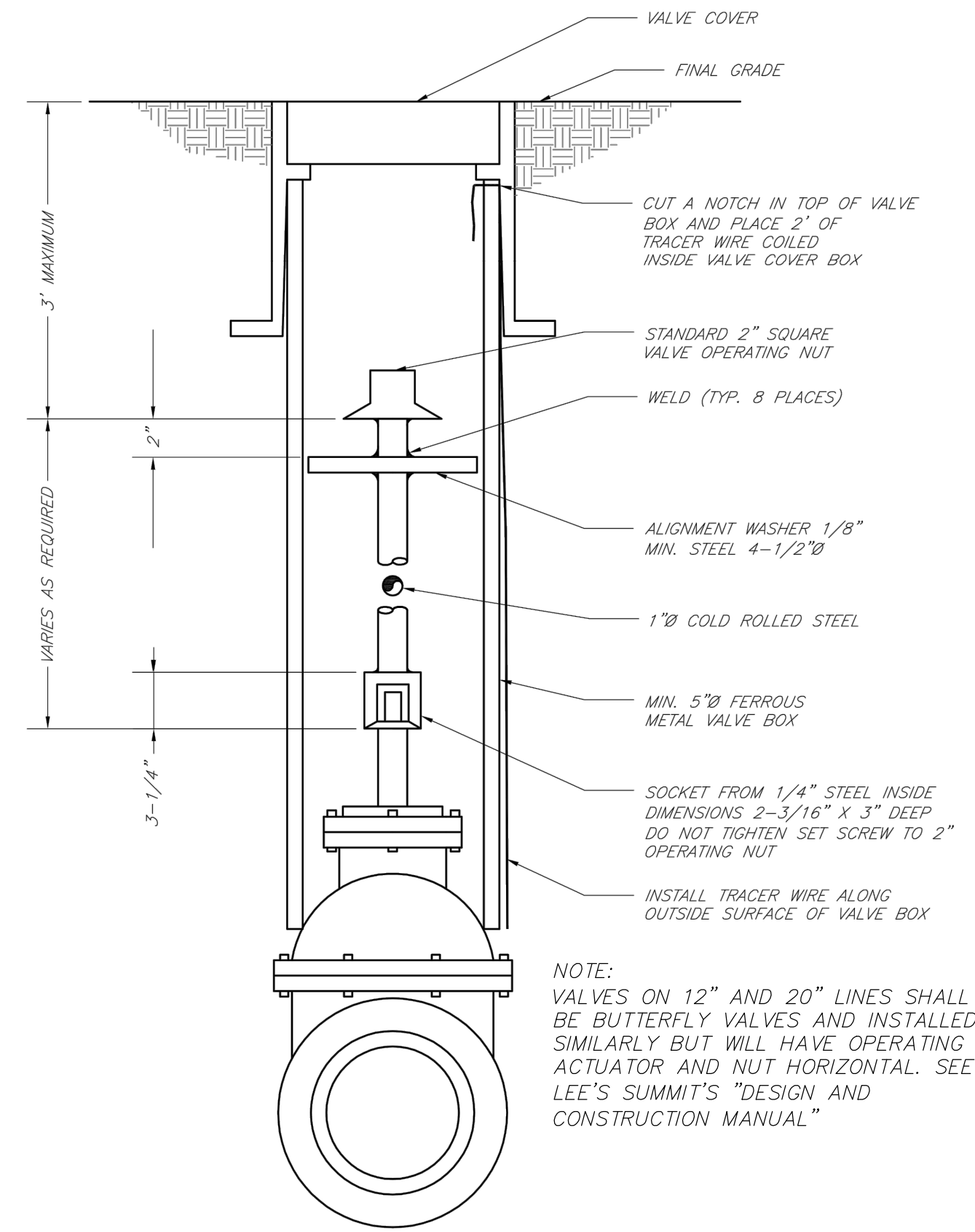
HYDRANT WITH 90 DEGREE BEND



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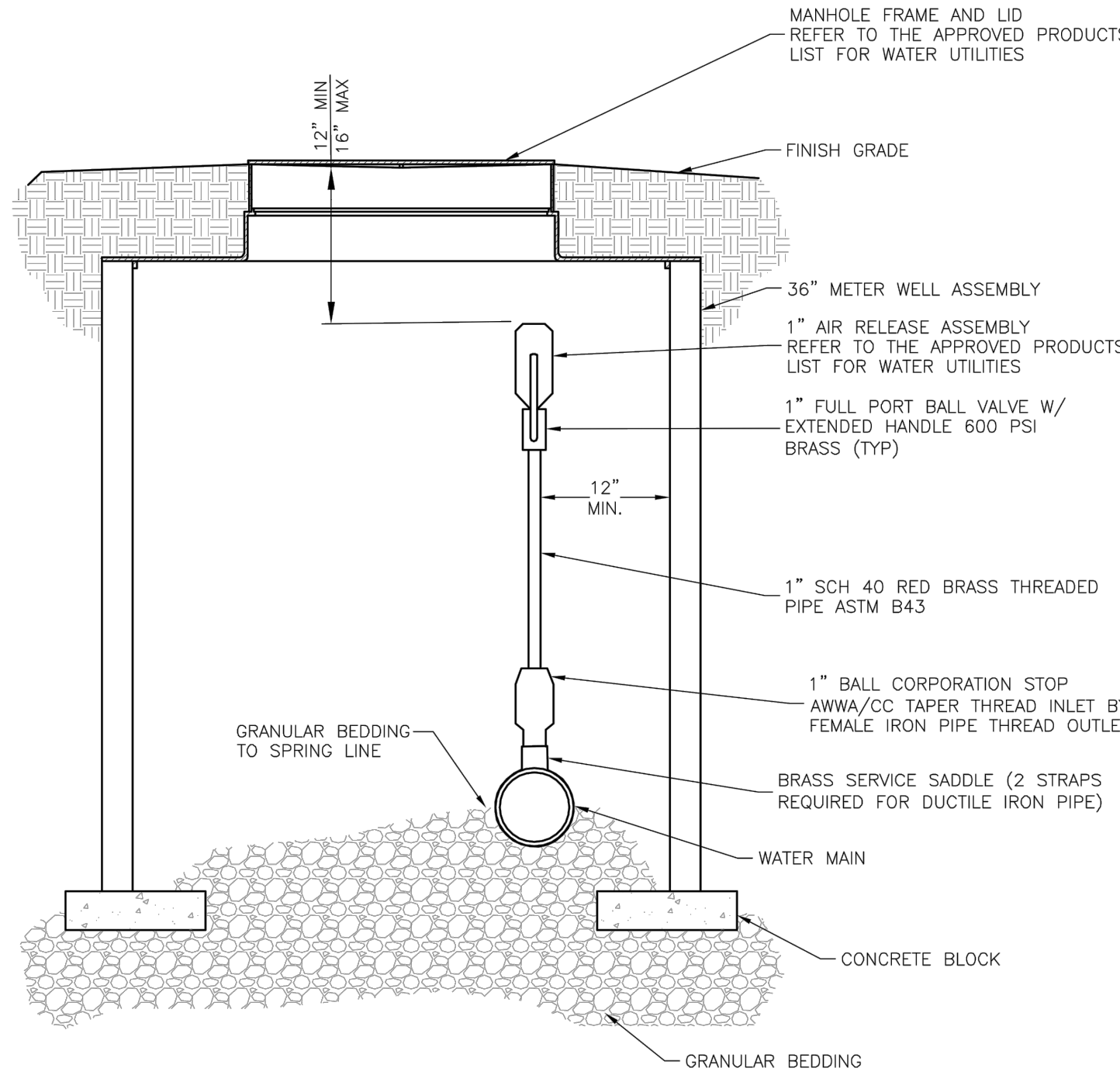
Date: 02/13  
Drawn By: JIN  
Checked By: DL  
FILE: WAT-9  
Rev: 1/14

VALVE STEM EXTENSION AND VALVE BOX



NOTE:  
VALVES ON 12" AND 20" LINES SHALL BE BUTTERFLY VALVES AND INSTALLED SIMILARLY BUT WILL HAVE OPERATING ACTUATOR AND NUT HORIZONTAL. SEE LEE'S SUMMIT'S "DESIGN AND CONSTRUCTION MANUAL"

FOR VALVES 10" OR SMALLER



AIR RELEASE ASSEMBLY NOT TO SCALE

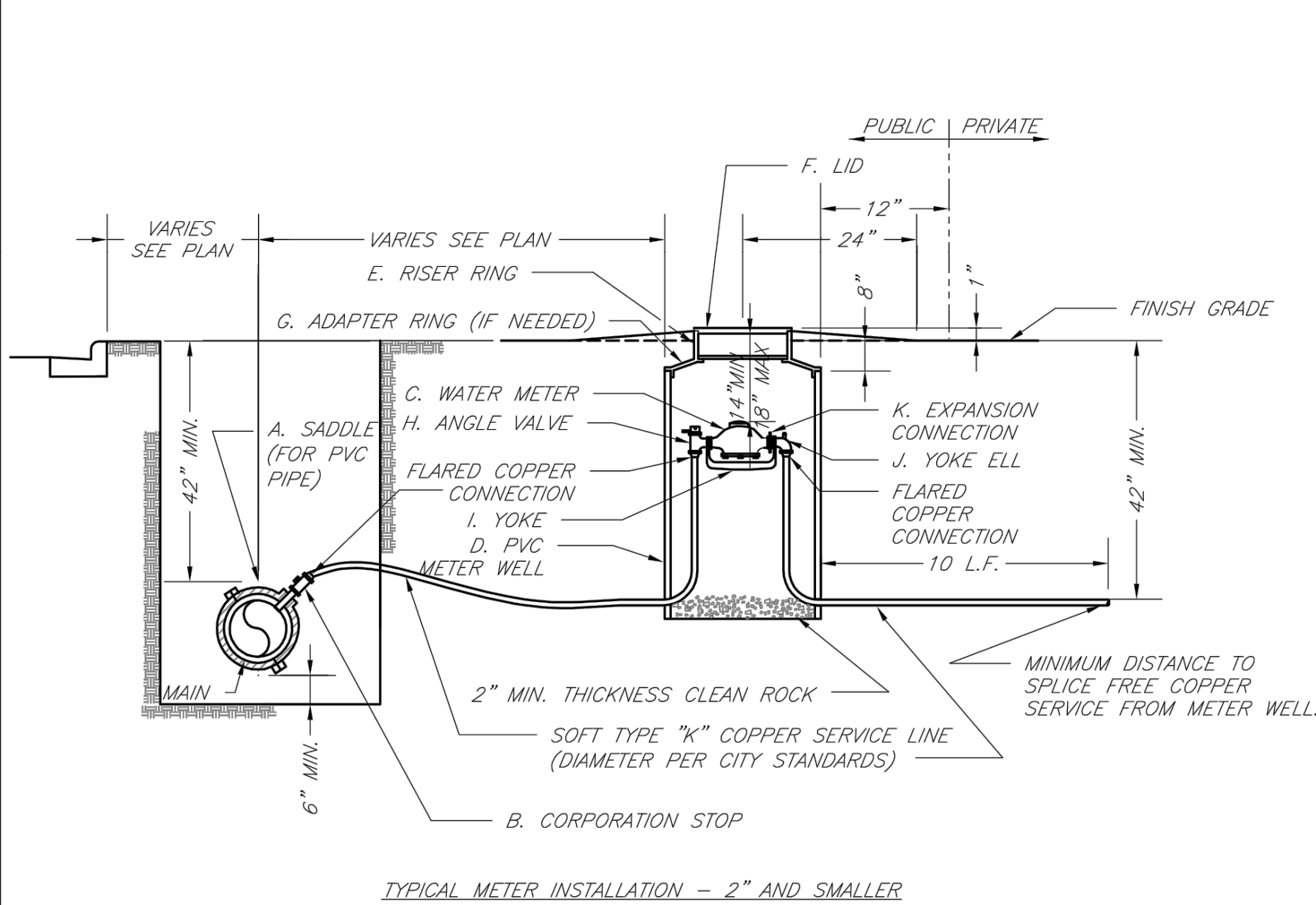
NOTE: A COMBINATION AIR VACUUM/AIR RELEASE VALVE (CAV-ARV) IS REQUIRED. SIZE OF FITTINGS TO BE 2" AS PER LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.



**LEE'S SUMMIT MISSOURI**  
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Date: 04/17  
Drawn By: MIF  
Checked By: DL  
WAT-10

AIR RELEASE ASSEMBLY



NOTES:

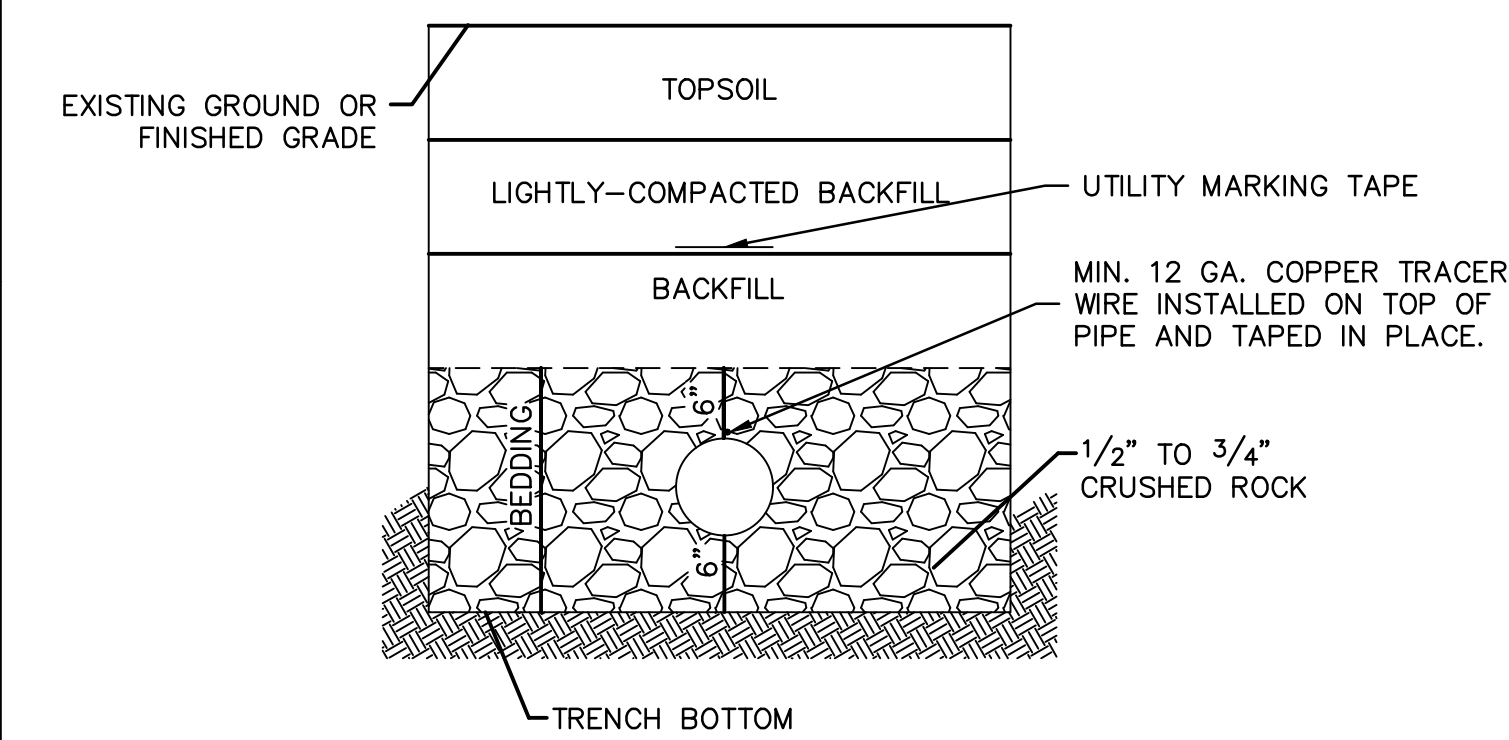
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A-K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN 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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Date: 02/13  
Drawn By: JIN  
Checked By: DL  
FILE: WAT-11  
Rev: 1/14

SERVICE CONNECTION/METER WELL



UNDERGROUND PIPE INSTALLATION FOR WATER LINES N.T.S.

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 PIPE TO THE FINISHED GRADE. A MAXIMUM ALLOWED COVER SHALL BE 7'.
2. BEDDING AGGREGATE SHALL BE PLACES 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.

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Olsson Engineering MO State Certificate of Authority #001592  
Olsson Landscape Architecture MO State Cert. of Authority #2005000285  
550 S. Louise St.  
Springfield, MO 65906  
TEL 417.890.8602  
www.olsson.com

07/19/19

REV. NO.	DATE	REVISIONS DESCRIPTION
3	07/19/2019	ENGR. REVIEW COMMENTS

2019

PUBLIC WATER MAIN EXTENSION  
WATER SYSTEM DETAILS  
THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY  
LEE'S SUMMIT, MISSOURI

drawn by: TMH  
designed by: FJS  
checked by: JLR  
project no.: 018-1450  
drawing no.: C\_DTLS\_81450  
date: 00.00.00

SHEET W3.1