

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
⊙ YL	YARD LIGHT	⊠ W	WATER METER
⊙ LTP	LIGHT POLE	⊠ WV	WATER VALVE
⊠	POWER POLE	⊠ OFP	FLAG POLE
⊠ LPPP	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

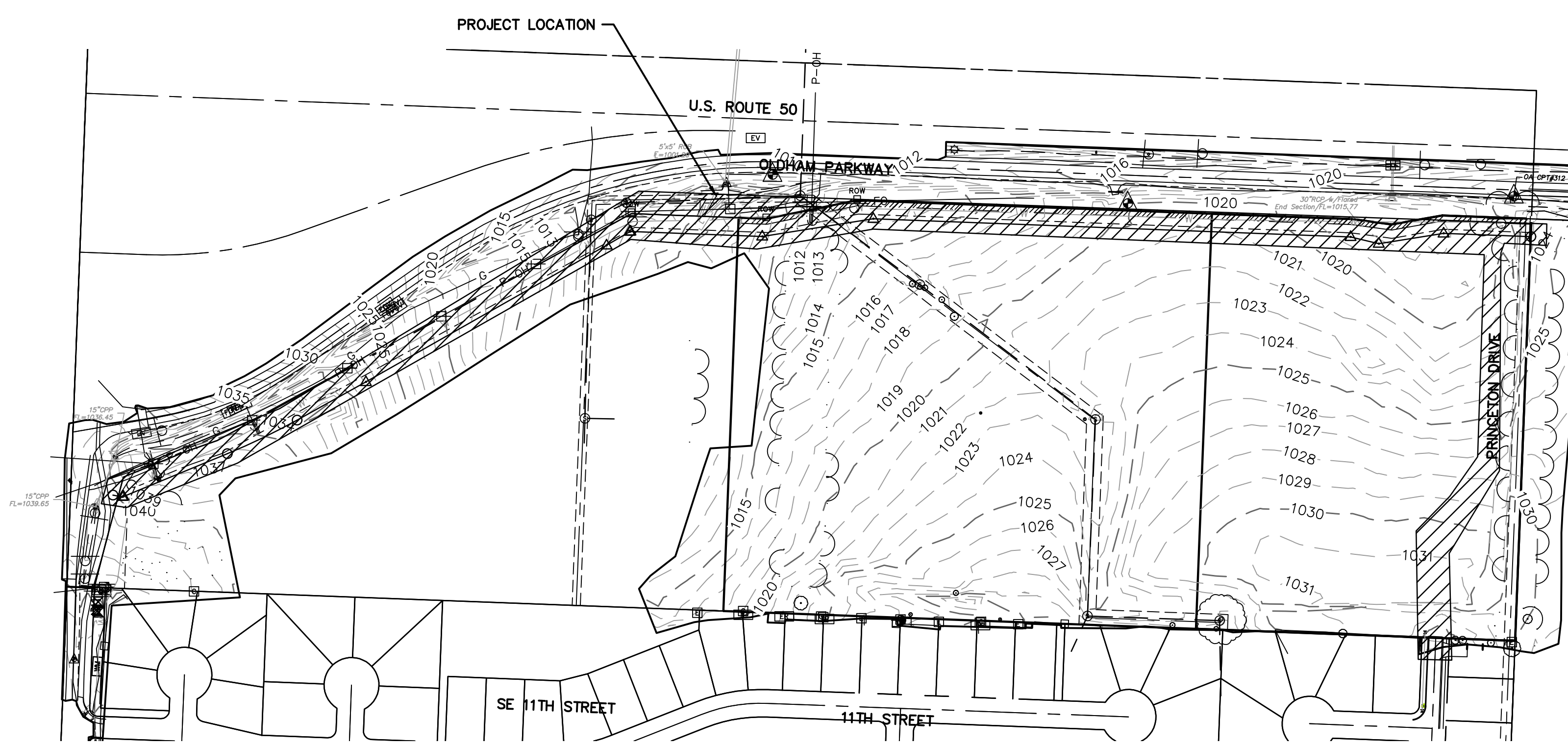
M.G.	MATCH GRADE
BOC	BACK OF CURB
EOP	EDGE OF PAVEMENT
R/W	RIGHT-OF-WAY
D/E	DRAINAGE EASEMENT
S/E	SANITARY EASEMENT
S/W	SIDEWALK
TCE	TEMPORARY CONSTRUCTION EASEMENT
UOHE	UTILITY OVERHEAD EASEMENT
PDE	PERMANENT DRAINAGE EASEMENT
PROP.	PROPOSED
EXIST.	EXISTING
TYP.	TYPICAL
CONST.	CONSTRUCT
TBM	TEMPORARY 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:

AT&T RON GIFFERT 500 E. 8TH STREET, ROOM 1146 KANSAS CITY, MISSOURI 64106 PHONE: (816) 275-1550 EMAIL: RG7910@ATT.COM	LEE'S SUMMIT R-7 SCHOOL DISTRICT KINZIE WOODERSON 301 NE TUDOR ROAD LEE'S SUMMIT, MO 64086 PHONE: (816) 986-1050 EMAIL: KINZIE.WOODERSON@LSR7.NET
KANSAS CITY POWER & LIGHT JEFF R. WILLIAMS, ENGINEER - CENTRAL DESIGN 401 SE BAILEY ROAD LEE'S SUMMIT, MO 64081 PHONE: (816) 347-4310 EMAIL: JEFF.WILLIAMS@KCPL.COM	LEE'S SUMMIT WATER UTILITIES DAVID LOHE PHONE: (816) 969-1800 EMAIL: DAVID.LOHE@CITYOFLS.NET
CONSOLIDATED COMMUNICATIONS JOHN CASTLOW 14859 W. 95TH STREET LENEXA, KS 66215 PHONE: (913) 322-9785 EMAIL: JOHN.CASTLOW@CONSOLIDATED.COM	LEE'S SUMMIT SEWER UTILITIES 1200 SE HAMLEN ROAD LEE'S SUMMIT, MISSOURI 64801 (816) 969-1900
GOOGLE FIBER LAUREN MARCUCCI PHONE: (913) 663-1900 EMAIL: LMARCUCCI@GOOGLE.COM	SPIRE GAS RICHARD FROCK 3025 SE CLOVER DRIVE LEE'S SUMMIT, MO 64082 PHONE: (816) 472-3489 EMAIL: RICHARD.FROCK@SPIREENERGY.COM
FIRE DEPARTMENT LEE'S SUMMIT FIRE DEPARTMENT 207 SE DOUGLAS STREET LEE'S SUMMIT, MISSOURI 64063 (816)-969-1300	CHARTER/SPECTRUM CABLE TROY PREWITT 8221 W. 119TH STREET OVERLAND PARK, KS 66213 PHONE: (816) 401-3573 EMAIL: TROY.PREWITT@CHARTER.COM
AMBULANCE SERVICE TELE: 911	COMMUNICATION: 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)

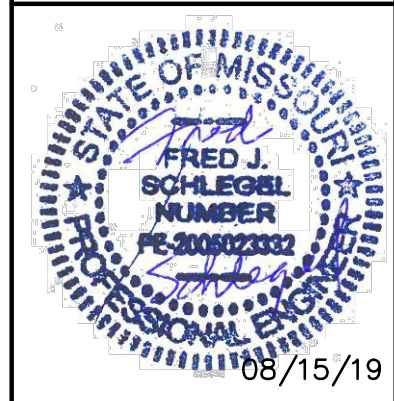
SURVEYOR:

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
Olsson Engineering MO State Certificate of Authority #001592
Olsson Landscape Architecture MO State Cert. of Authority #2005000285
550 S. LOUISE ST.
SPRINGFIELD, MO 65806
TEL 417.890.8602
www.olsson.com



REV. NO.	DATE	REVISIONS DESCRIPTION
3	08/15/2019	ENGR. REVIEW COMMENTS

PUBLIC WATER MAIN EXTENSION TITLE SHEET	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_TTL_WTR1_81450
date: 00.00.00

PREPARED & SUBMITTED BY:

OLSSON
550 E. ST. LOUIS STREET
SPRINGFIELD, MO. 65806

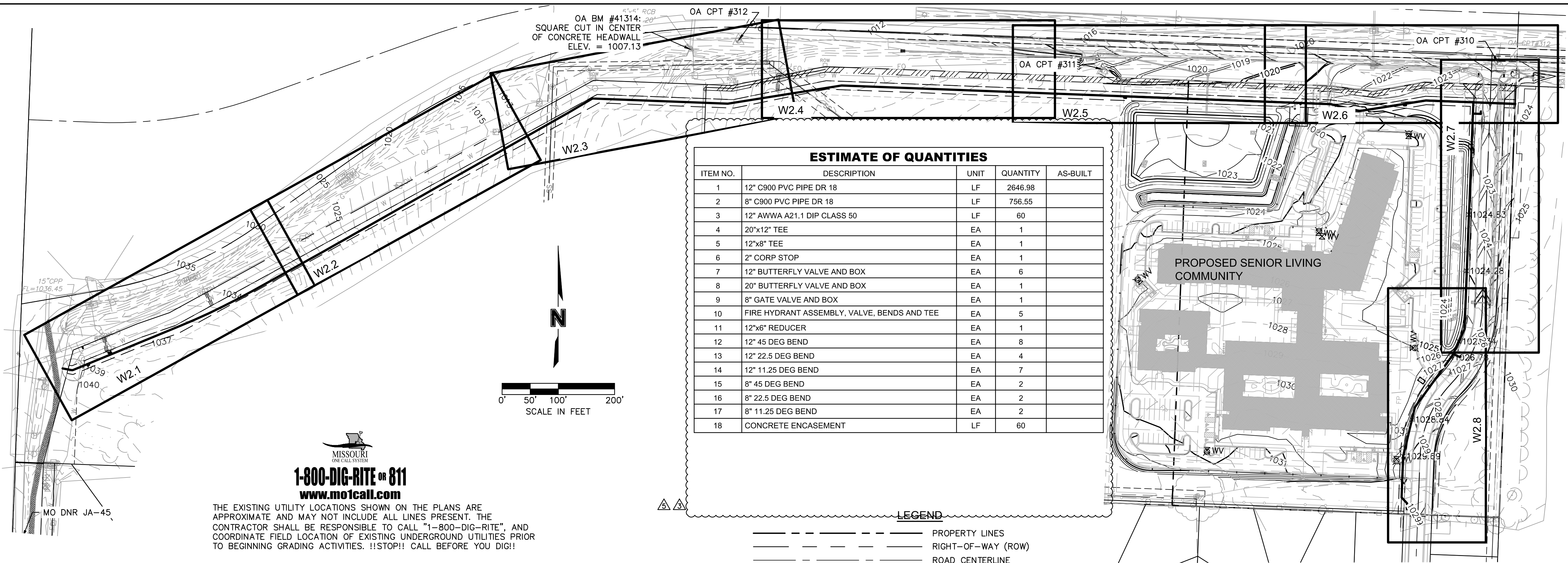
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 C:\TBLK_22x34_81450_V_XBOU_81450

MISSOURI ONE CALL SYSTEM
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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ESTIMATE OF QUANTITIES				
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	12" C900 PVC PIPE DR 18	LF	2646.98	
2	8" C900 PVC PIPE DR 18	LF	756.55	
3	12" AWWA A21.1 DIP CLASS 50	LF	60	
4	20"x12" TEE	EA	1	
5	12"x8" TEE	EA	1	
6	2" CORP STOP	EA	1	
7	12" BUTTERFLY VALVE AND BOX	EA	6	
8	20" BUTTERFLY VALVE AND BOX	EA	1	
9	8" GATE VALVE AND BOX	EA	1	
10	FIRE HYDRANT ASSEMBLY, VALVE, BENDS AND TEE	EA	5	
11	12"x6" REDUCER	EA	1	
12	12" 45 DEG BEND	EA	8	
13	12" 22.5 DEG BEND	EA	4	
14	12" 11.25 DEG BEND	EA	7	
15	8" 45 DEG BEND	EA	2	
16	8" 22.5 DEG BEND	EA	2	
17	8" 11.25 DEG BEND	EA	2	
18	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

1-800-DIG-RITE OR 811

www.mot1call.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!!

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.

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.

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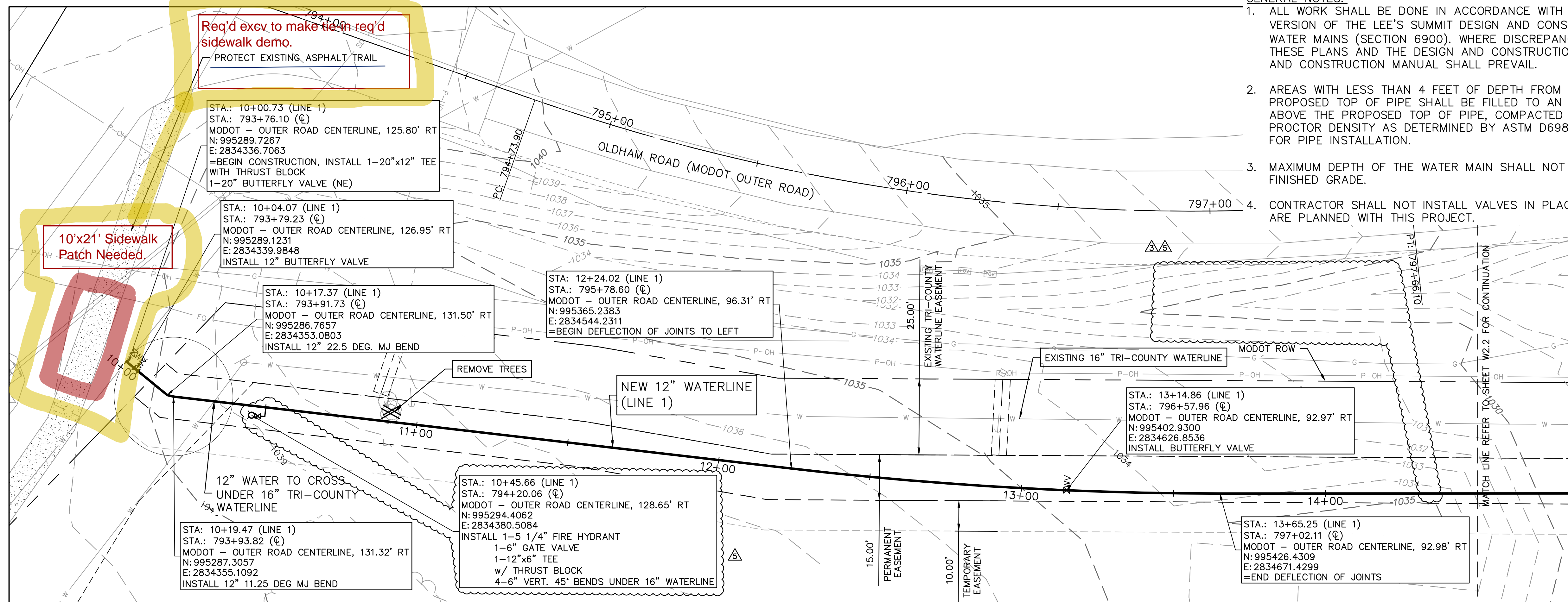
Olsson Engineering MO State Certificate of Authority #001592
 Olsson Landscape Architecture MO State Cert. of Authority #200500285
 550 St. Louis St.
 Springfield, MO 65806
 TEL 417.890.8602 www.olsson.com

REVISIONS
 NO. DATE REVISIONS DESCRIPTION
 5 08/15/19 ENGR. REVIEW COMMENTS
 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

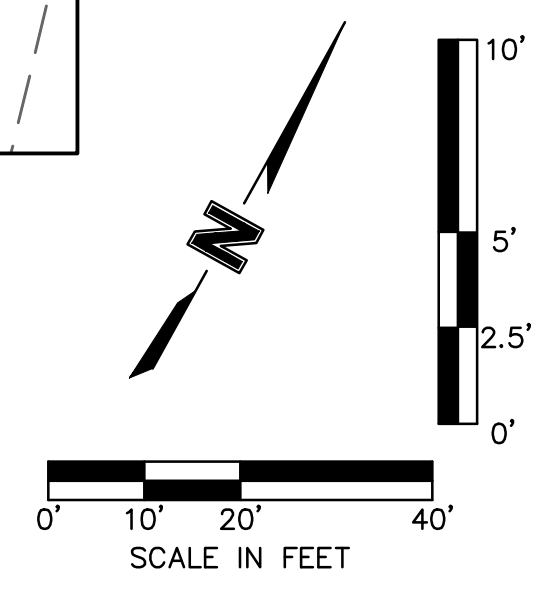
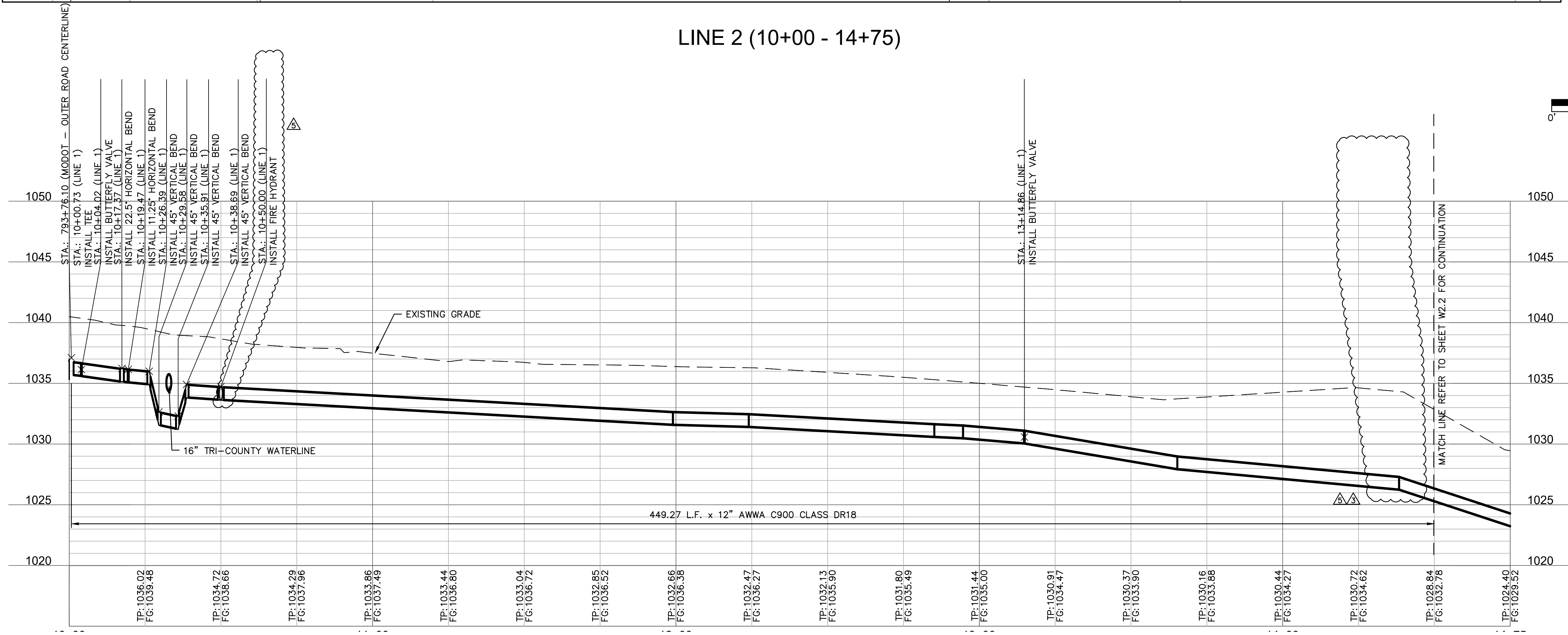
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 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19

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 USER: thill



- 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.

LINE 2 (10+00 - 14+75)



Olsson Engineering MO State Certificate of Authority #001592
 Olsson Landscape Architecture MO State Cert. of Authority #205002085
 550 St. Louis St.
 Springfield, MO 65806
 TEL 417.890.8602
 www.olsson.com

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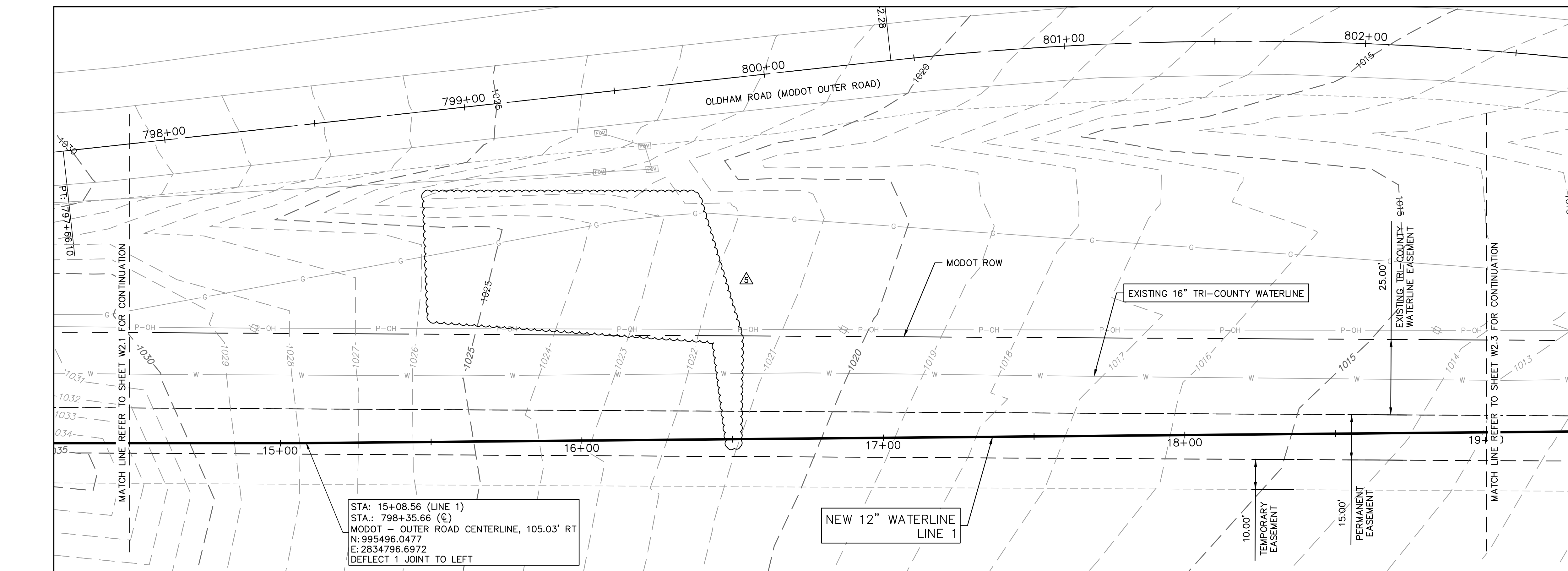
REVISIONS

WATER MAIN EXTENSION
 LINE 1 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: 08.15.19

SHEET W2.1

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

NEW 12" WATERLINE
 LINE 1

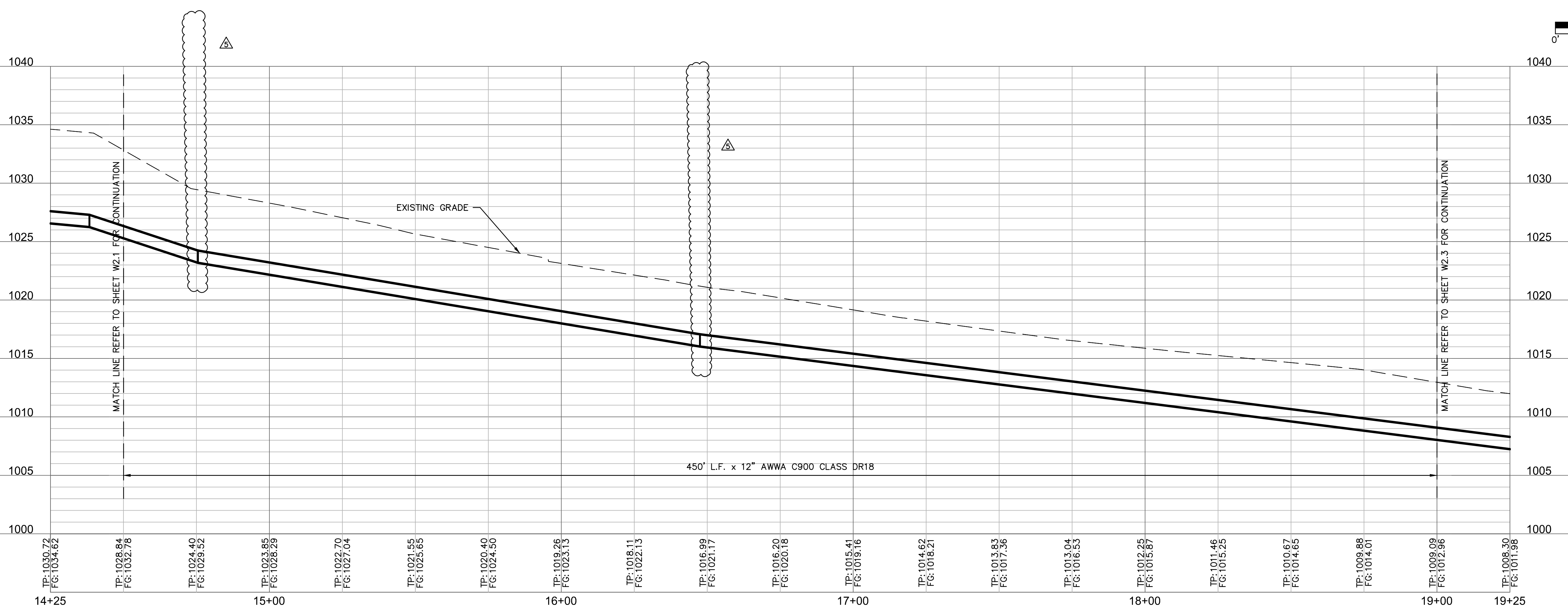
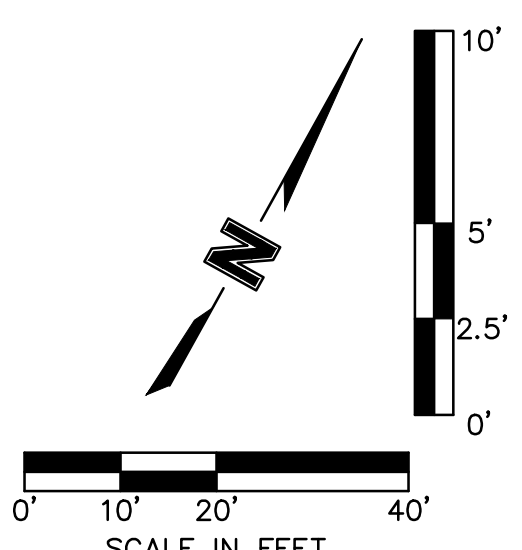
EXISTING 16" TRI-COUNTY WATERLINE

EXISTING TRI-COUNTY WATERLINE EASEMENT

10.00'
 TEMPORARY EASEMENT

15.00'
 PERMANENT EASEMENT

25.00'
 EXISTING TRI-COUNTY WATERLINE EASEMENT



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5	08/15/2019	ENGR. REVIEW COMMENTS
3	07/19/2019	ENGR. REVIEW COMMENTS

REVISIONS

WATER MAIN EXTENSION
 LINE 1 PLAN AND PROFILE

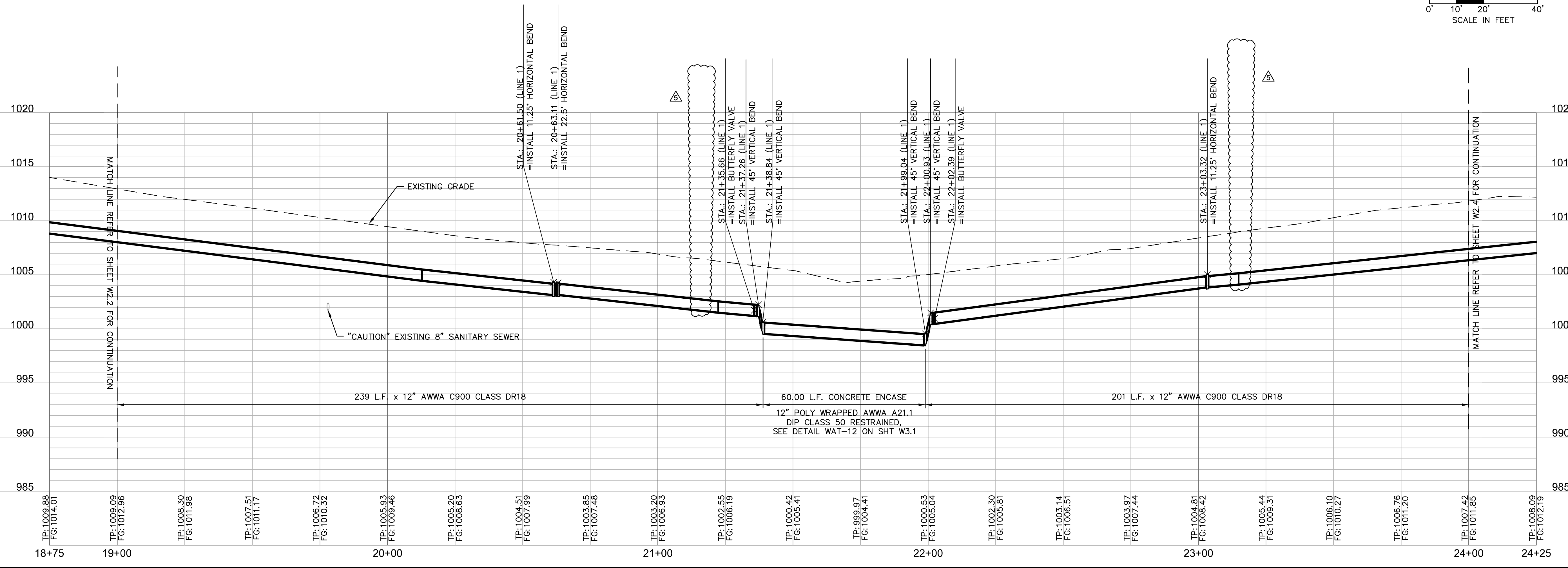
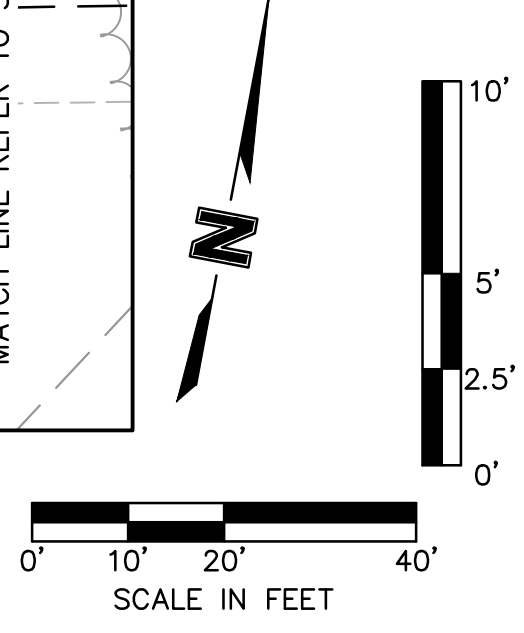
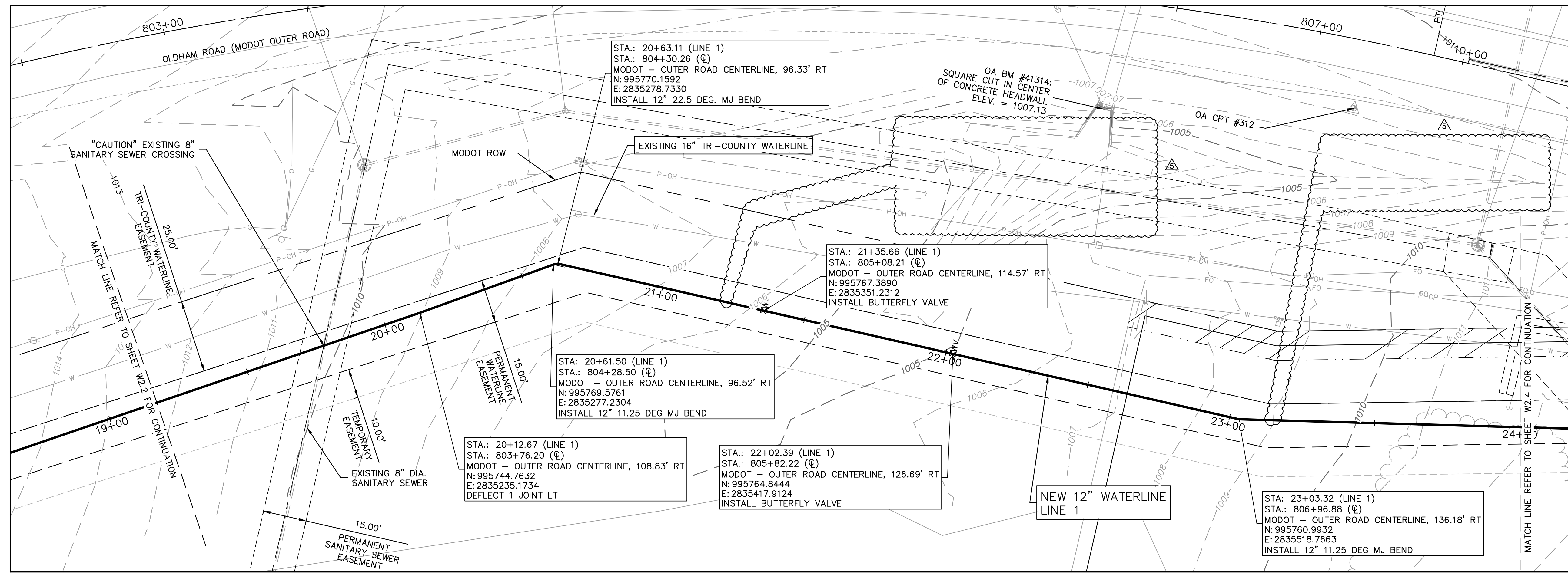
THE PRINCETON SENIOR LIVING
 SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

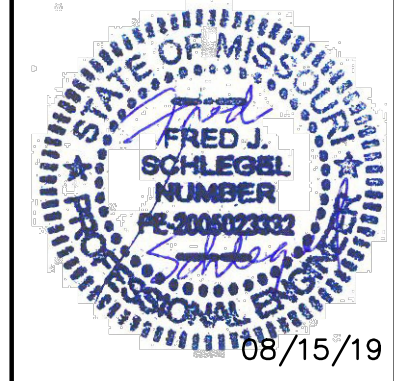
2019

drawn by: TMH
 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19

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5	08/15/19	ENGR. REVIEW COMMENTS
3	07/19/2019	ENGR. REVIEW COMMENTS

2019

WATER MAIN EXTENSION
 LINE 1 PLAN AND PROFILE

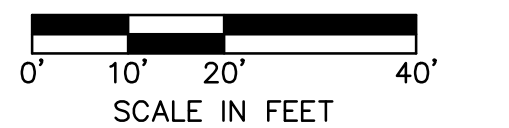
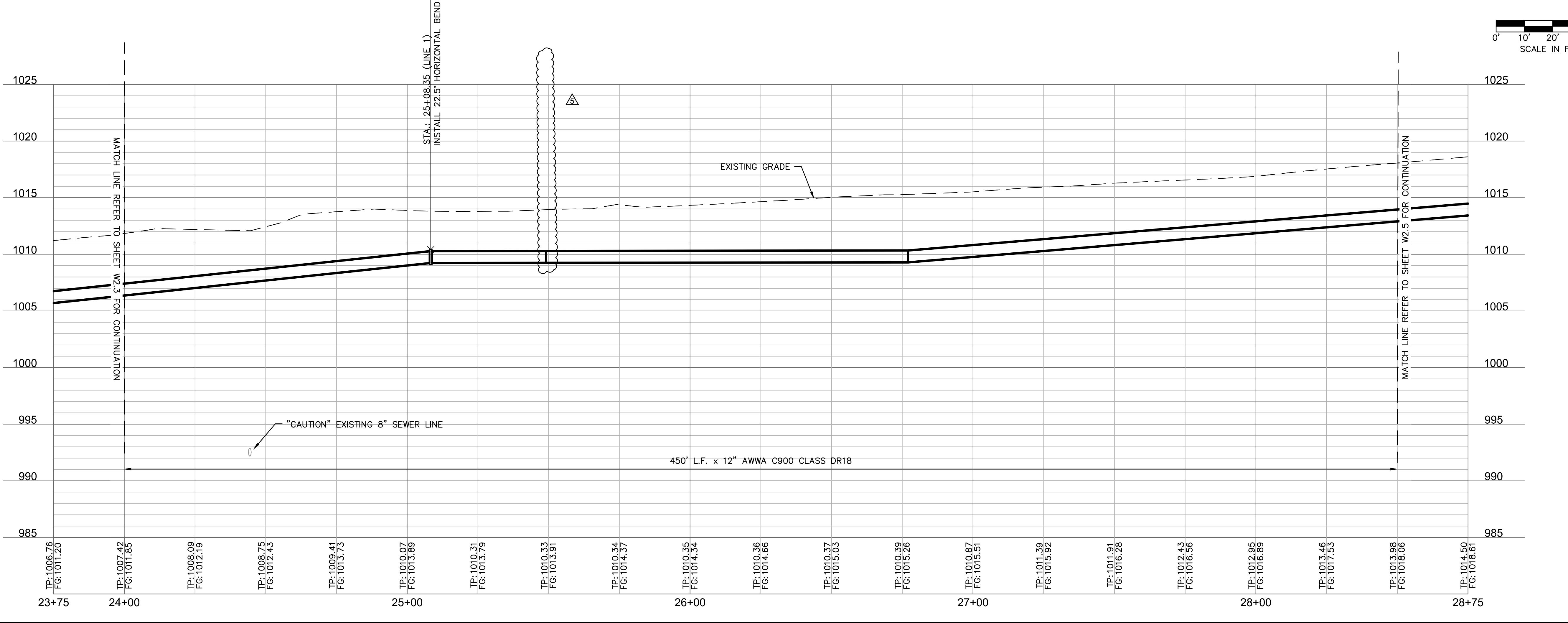
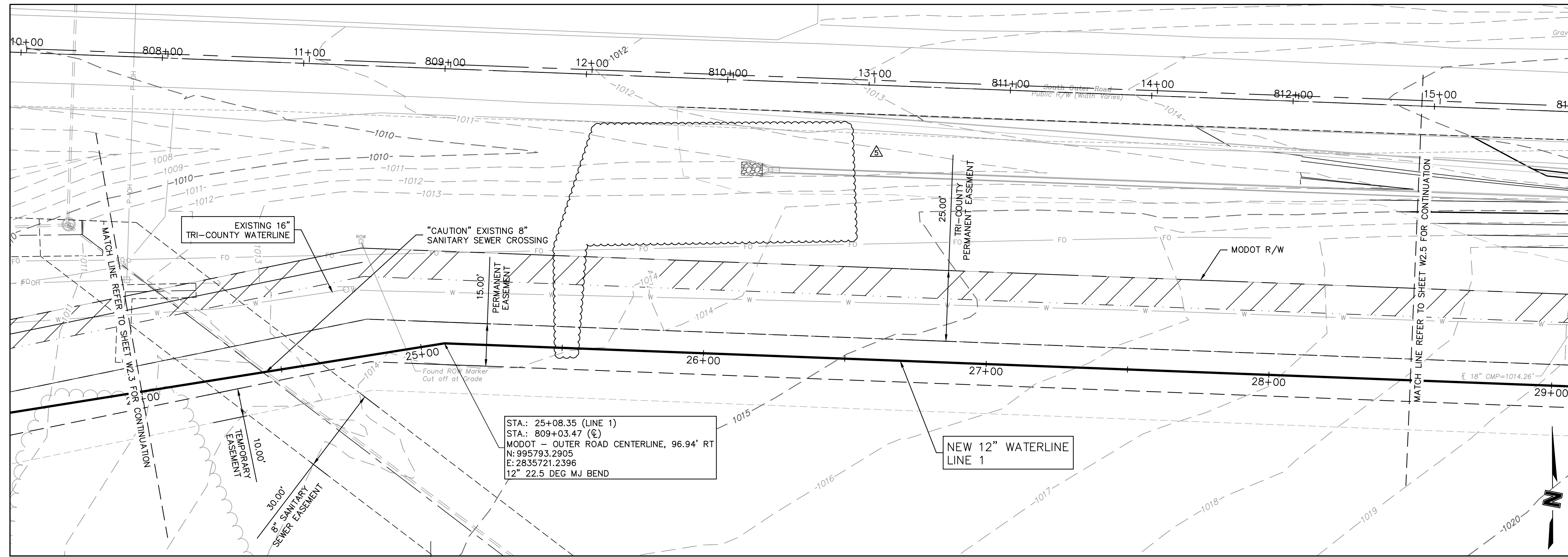
THE PRINCETON SENIOR LIVING
 SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

drawn by: TMH
 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19

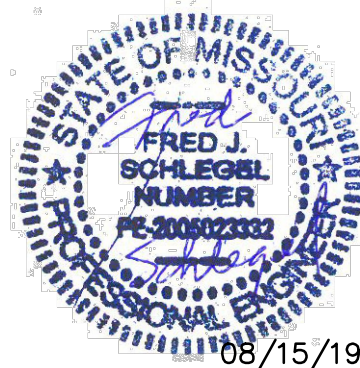
SHEET
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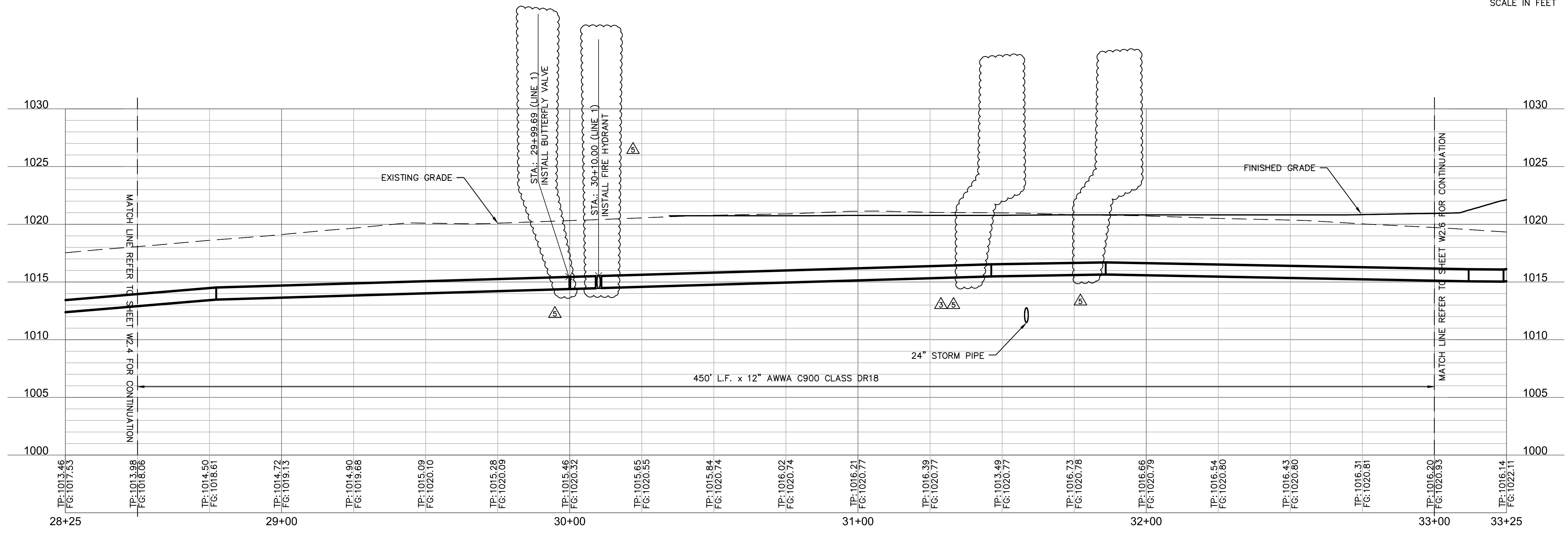
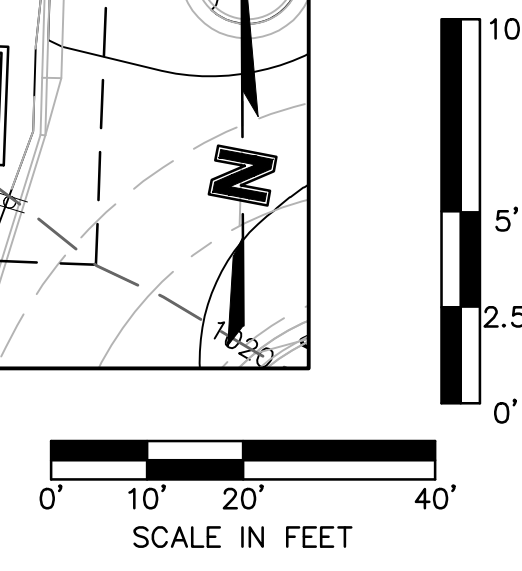
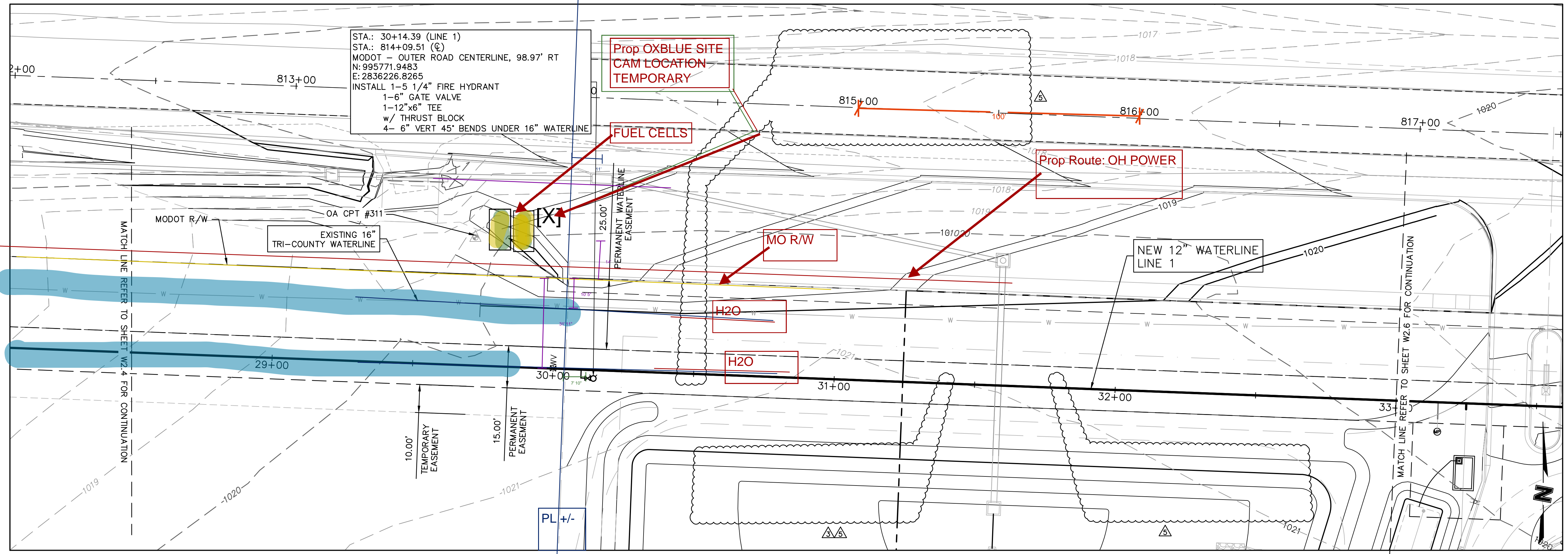
REV. NO.	DATE	REVISIONS DESCRIPTION
5	08/15/19	ENGR. REVIEW COMMENTS
3	07/19/19	ENGR. REVIEW COMMENTS

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

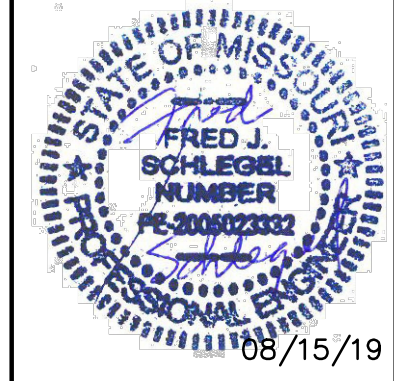
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 drawing no.: C_WPP_81450
 date: 08.15.19

SHEET
 W2.4

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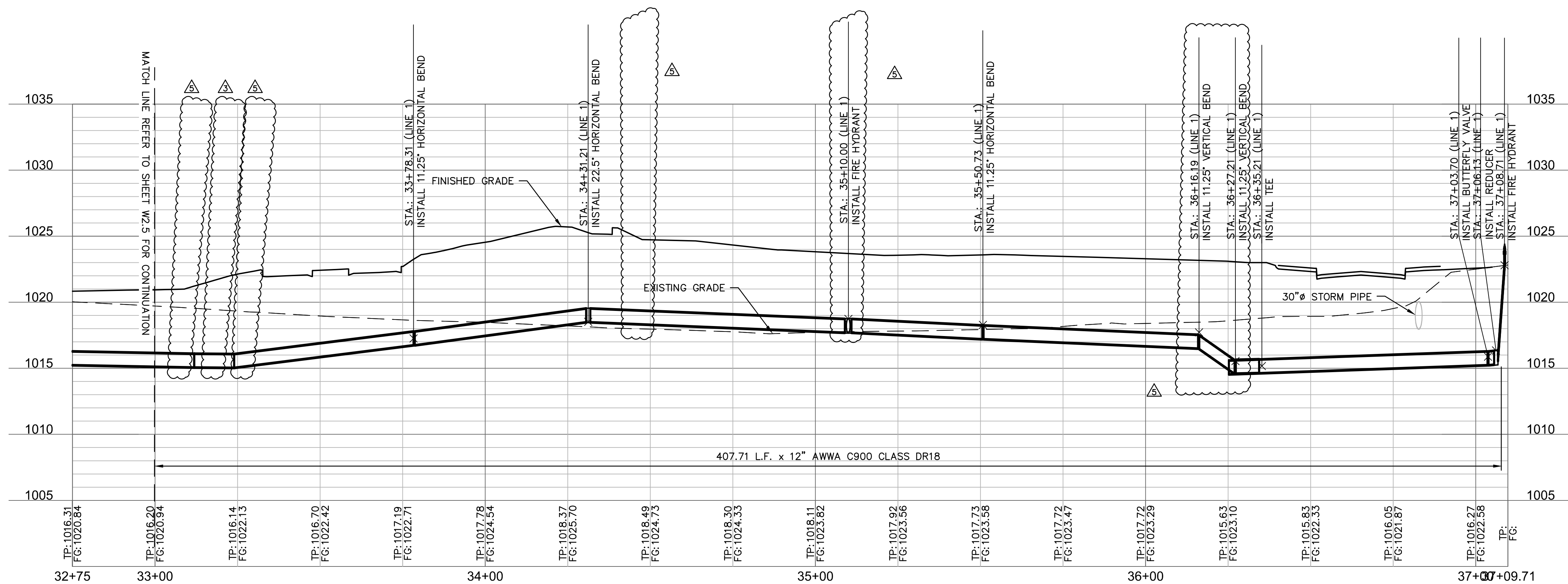
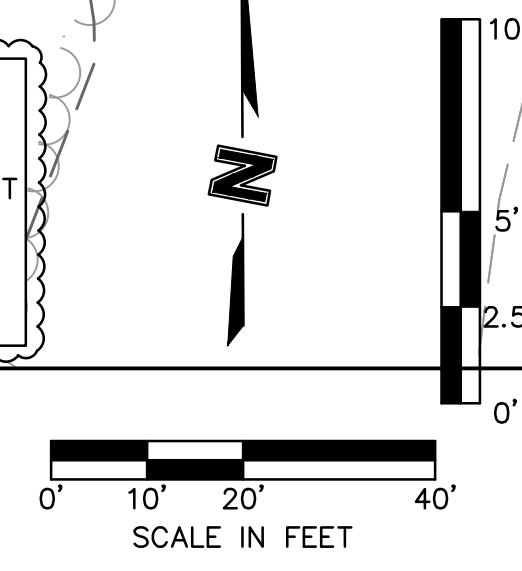
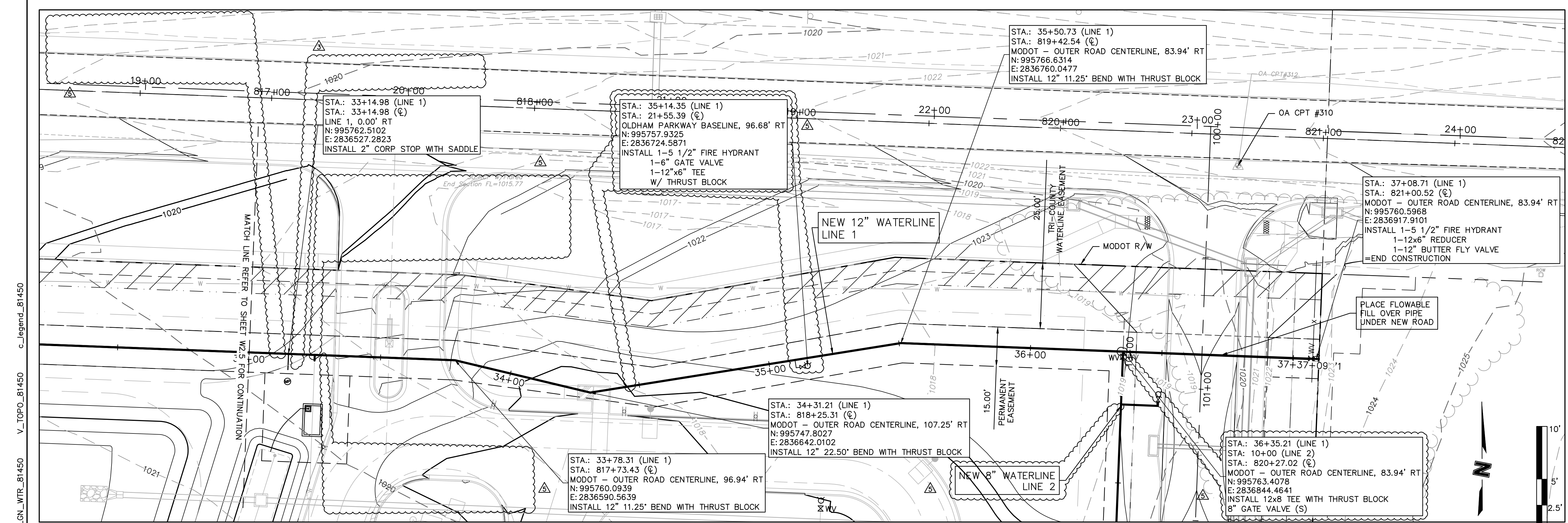


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3	07/19/2019	ENGR. REVIEW COMMENTS

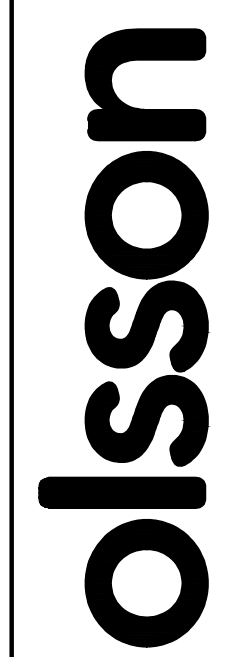
WATER MAIN EXTENSION
 LINE 1 PLAN AND PROFILE
 THE PRINCETON SENIOR LIVING
 SE OLDHAM PARKWAY
 LEE'S SUMMIT, MISSOURI
 2019

drawn by: TMM
 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19

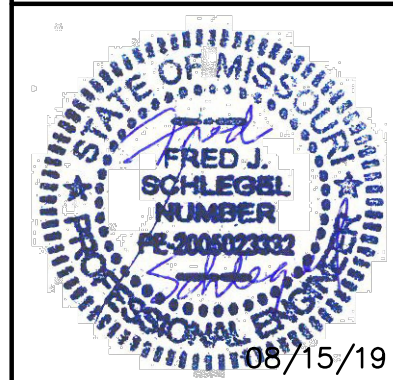
SHEET
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REVISIONS

2019

**WATER MAIN EXTENSION
 LINE 1 PLAN AND PROFILE**

THE PRINCETON SENIOR LIVING
 SE OLDHAM PARKWAY

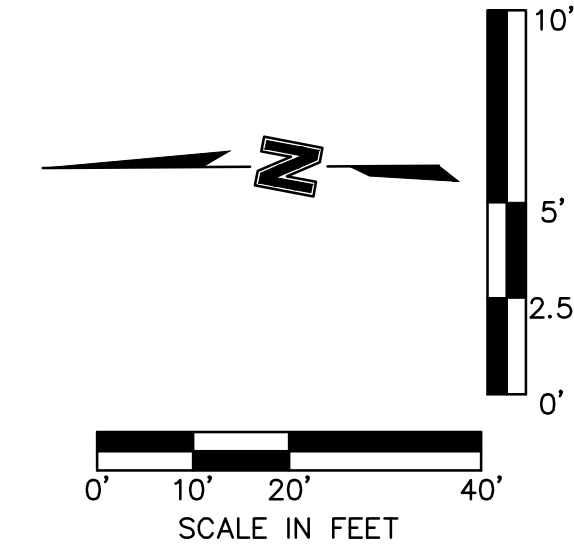
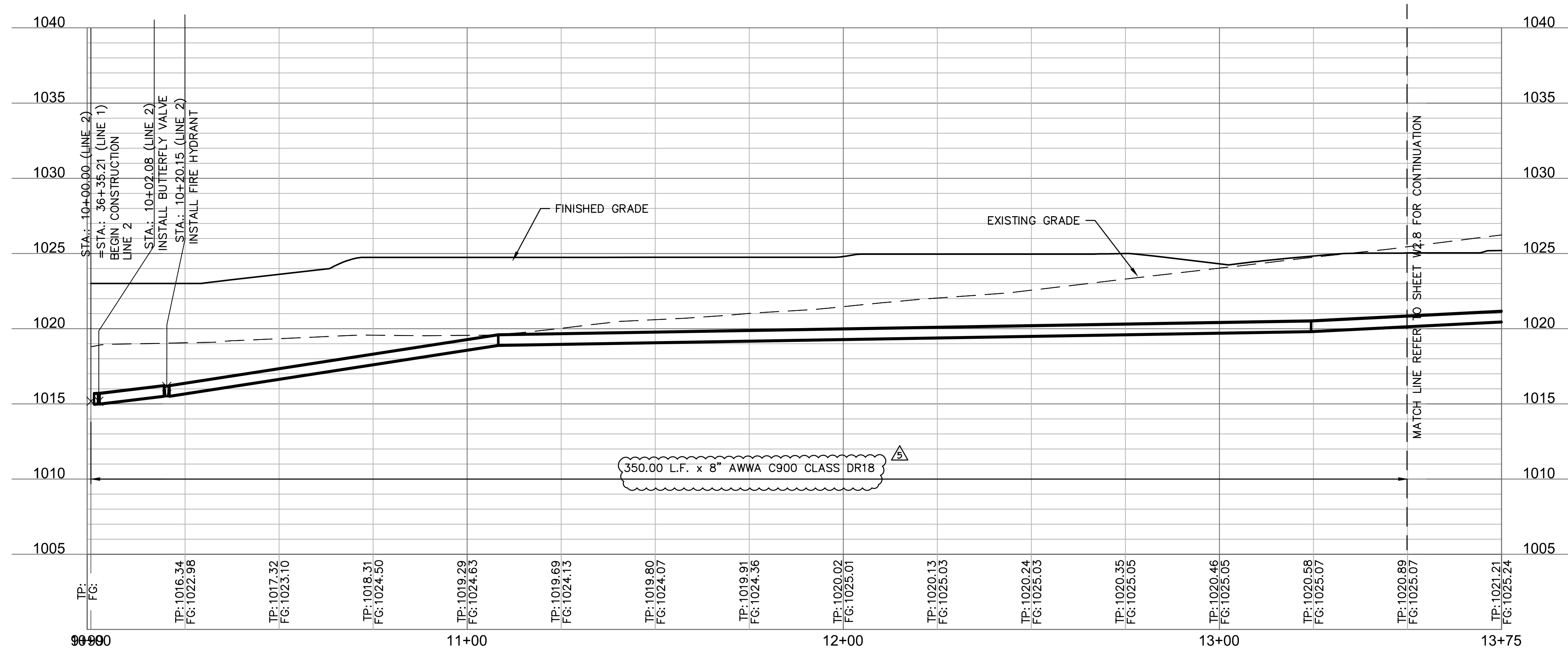
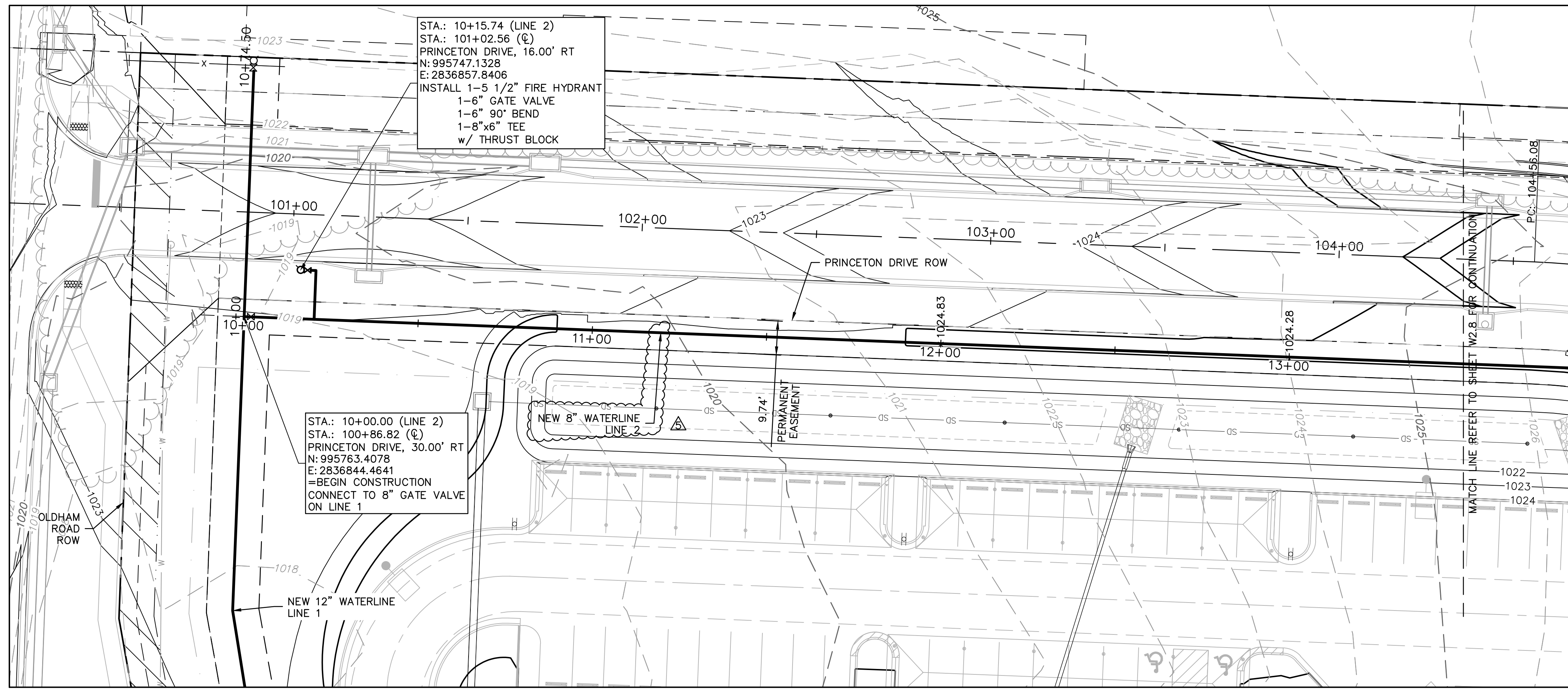
LEE'S SUMMIT, MISSOURI

drawn by: TMH
 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19

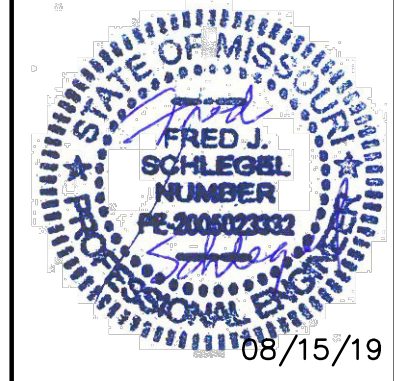
**SHEET
 W2.6**

MATCH LINE REFER TO SHEET ### FOR CONTINUATION

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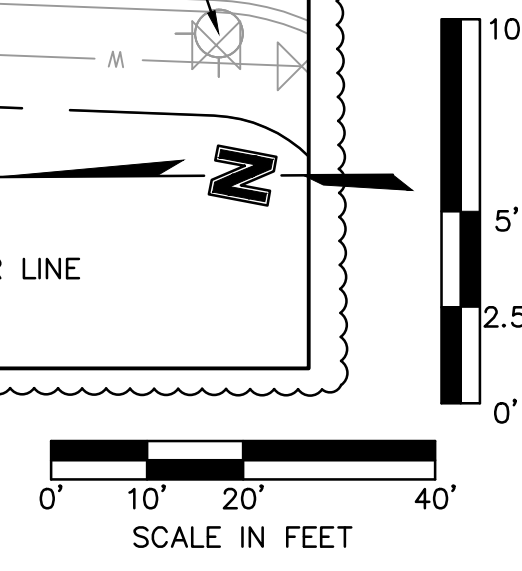
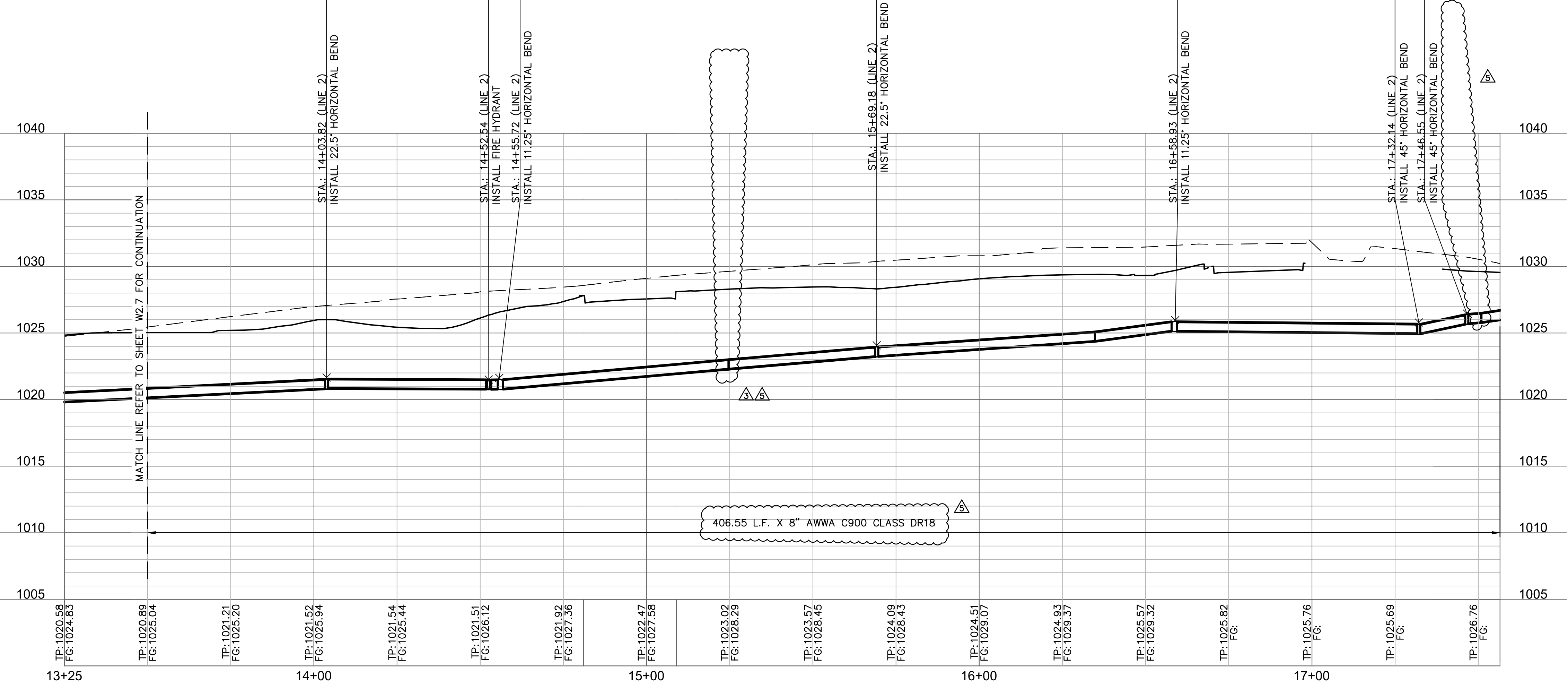
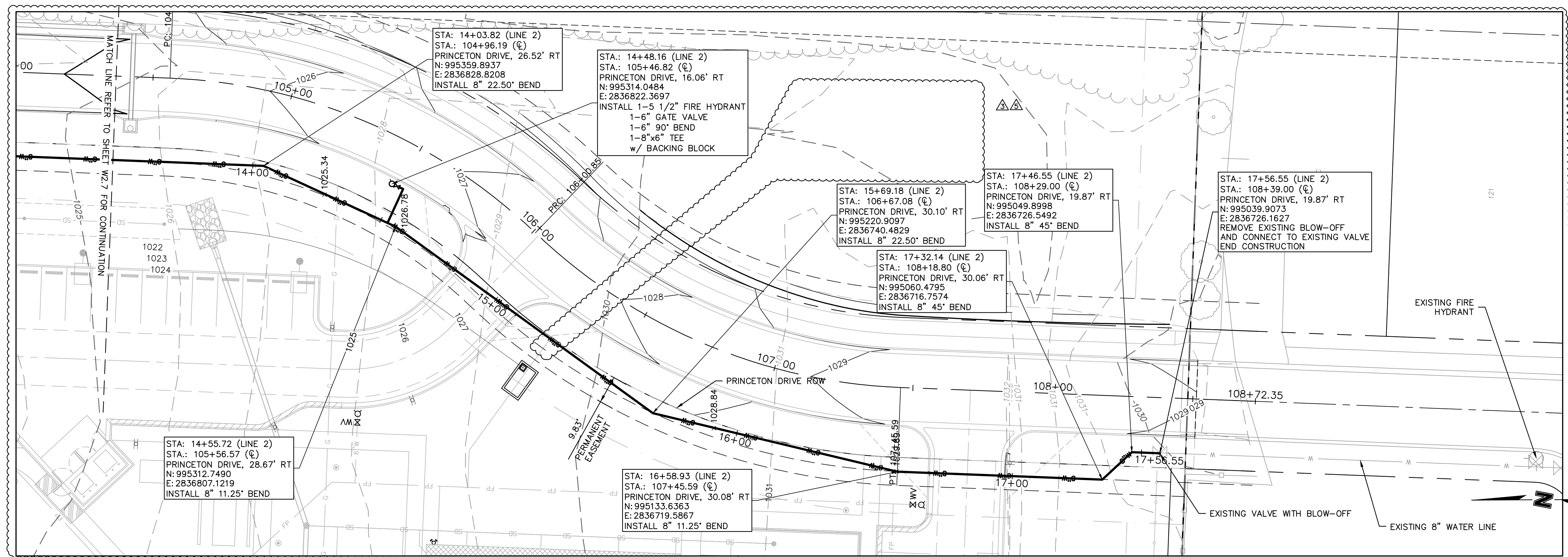
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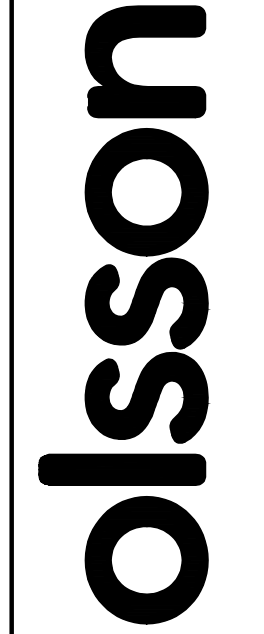


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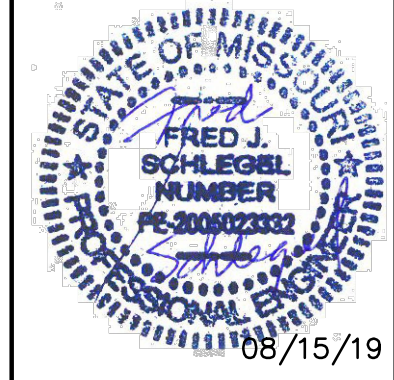
WATER MAIN EXTENSION
 LINE 2 PLAN AND PROFILE
 THE PRINCETON SENIOR LIVING
 SE OLDHAM PARKWAY
 LEE'S SUMMIT, MISSOURI

drawn by: TMH
 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19





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3	07/19/2019	ENGR. REVIEW COMMENTS

REVISIONS

2019

WATER MAIN EXTENSION
 LINE 2 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING
 SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

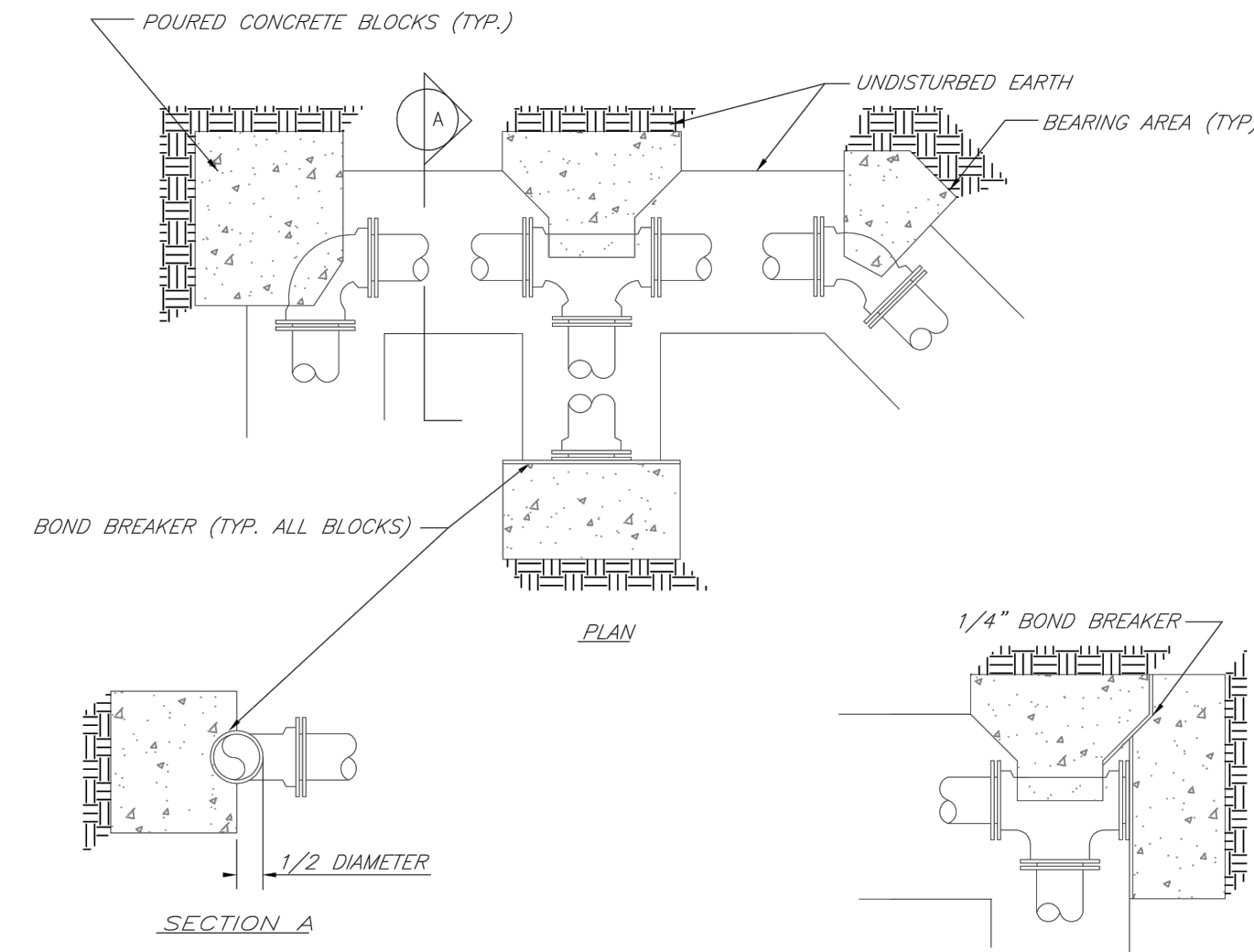
drawn by: TMH
 designed by: FJS
 checked by: JLR
 project no.: 018-1450
 drawing no.: C_WPP_81450
 date: 08.15.19

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.



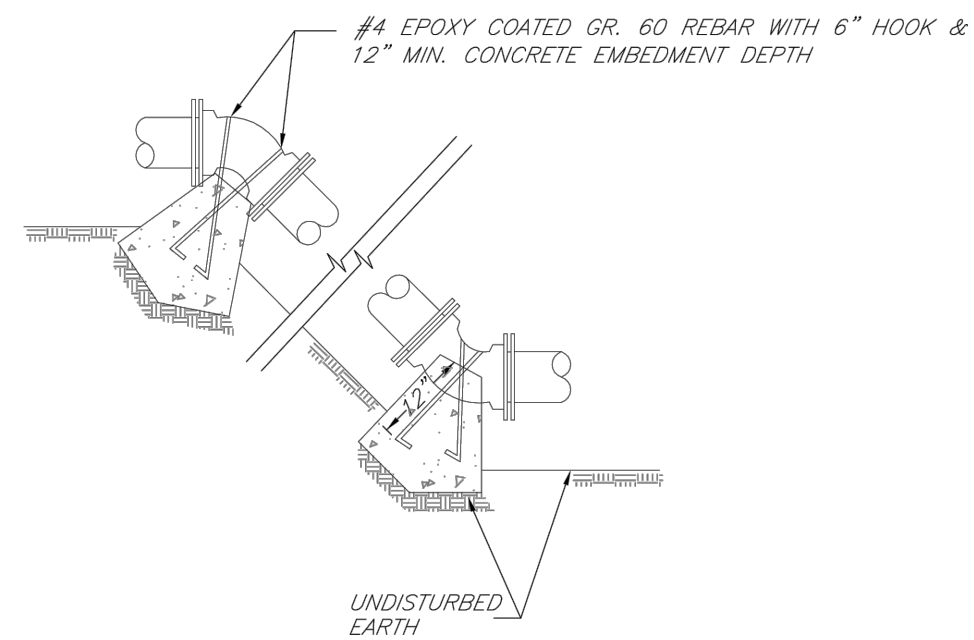
LS **LEE'S SUMMIT MISSOURI**
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HORIZONTAL THRUST BLOCKS

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

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)

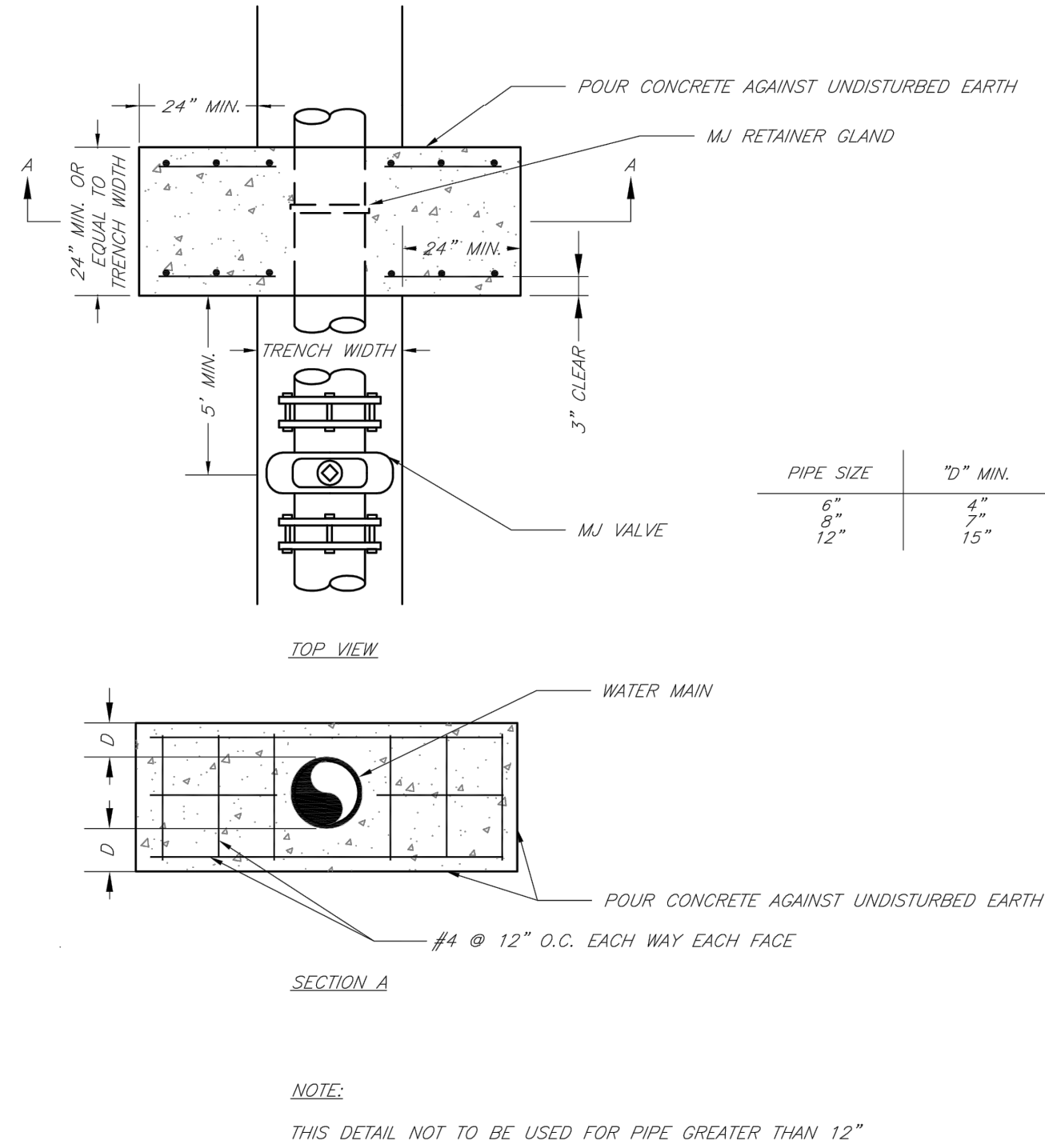
NOM. DIA. (INCHES)	180	90	45	22.5	11.25
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.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



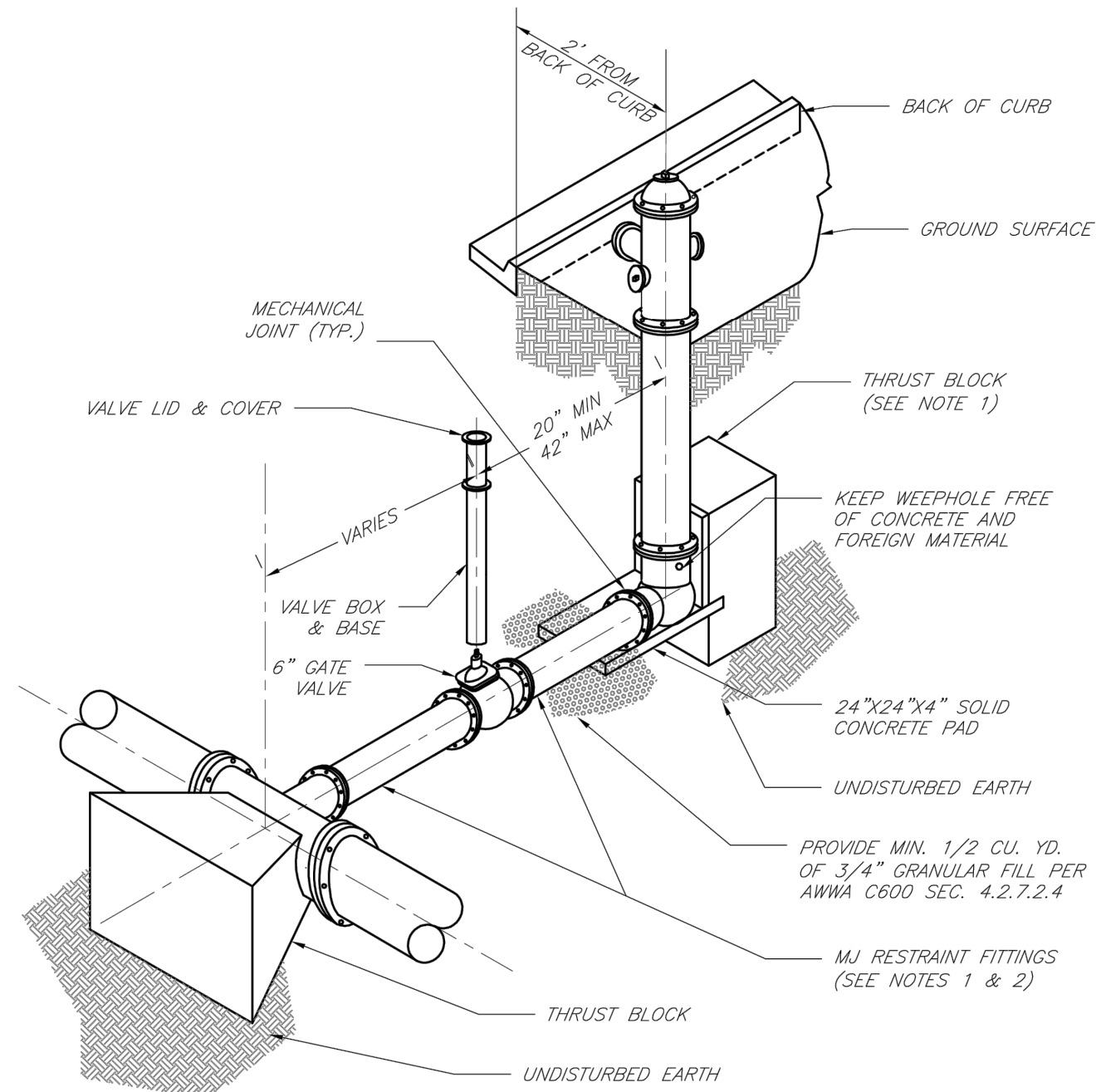
LS **LEE'S SUMMIT MISSOURI**
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
VERTICAL THRUST BLOCKS

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

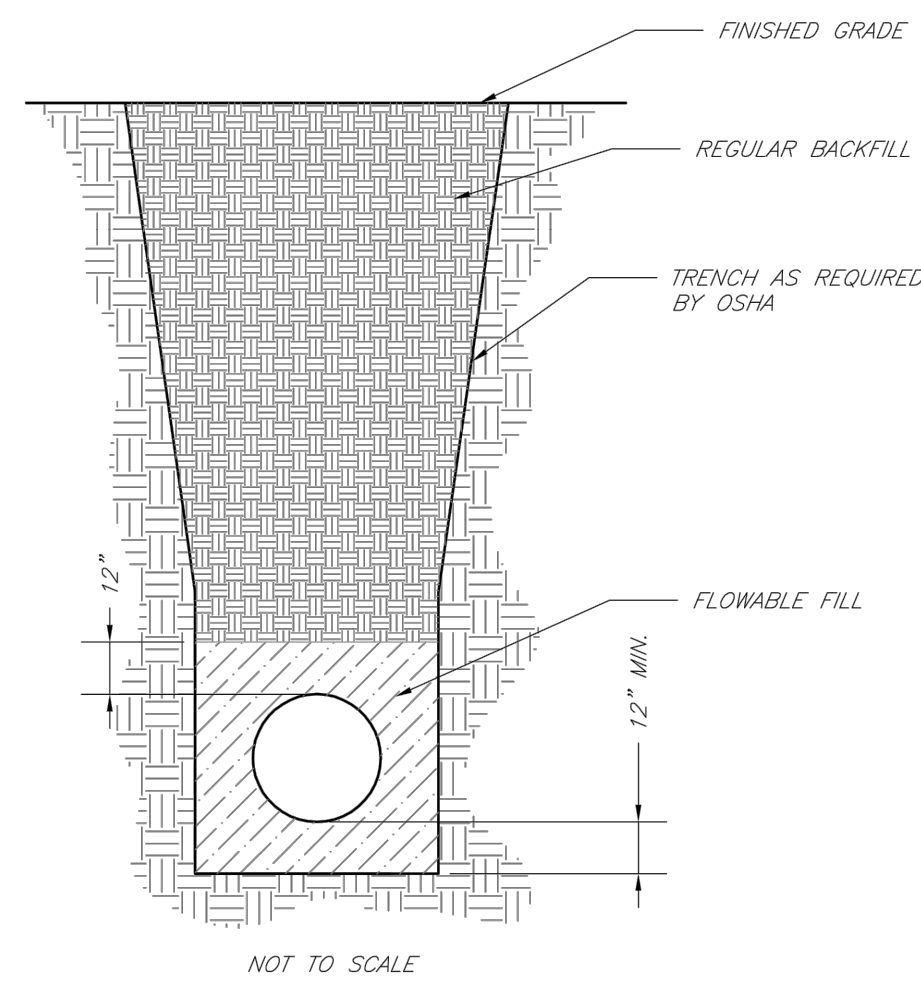
Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-3
Rev: 1/14



- 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

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5	08/15/2019	ENGR. REVIEW COMMENTS
3	07/19/2019	ENGR. REVIEW COMMENTS

LEE'S SUMMIT, MISSOURI

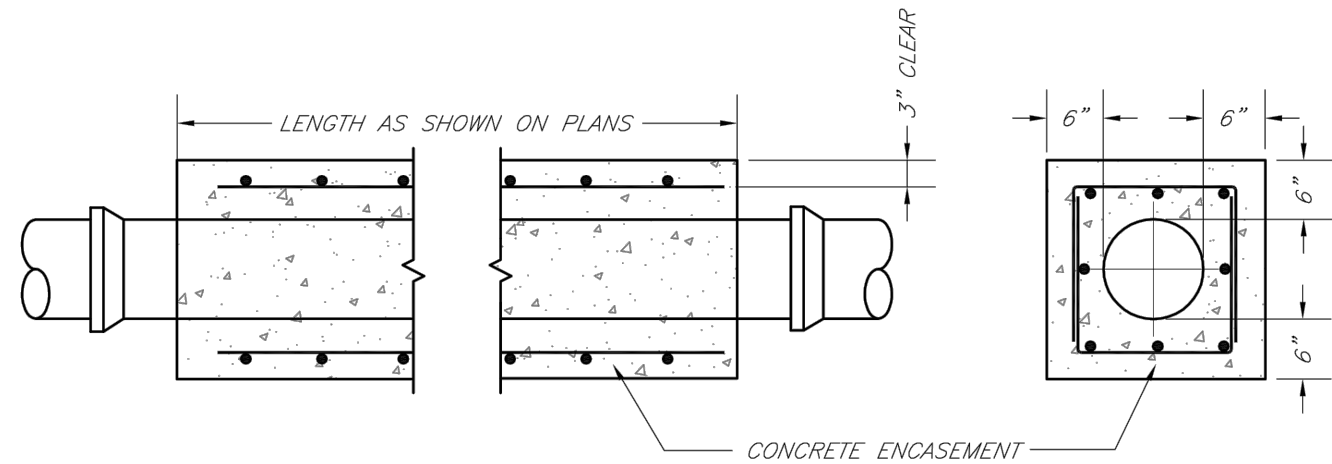
PUBLIC WATER MAIN EXTENSION
WATER SYSTEM DETAILS

THE PRINCETON SENIOR LIVING
SE OLDHAM PARKWAY

2019

drawn by: TMH
designed by: FJS
checked by: JLR
project no.: 018-1450
drawing no.: C_DTLS_81450
date: 08.15.19

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\GNCV\PUBLIC WATER\C_DTLS_81450.dwg
 DATE: Aug 19, 2019 8:33am XREFS: C:\TBLK_22x34_81450 USER: thill



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
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
WATER PIPE ENCASEMENT

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



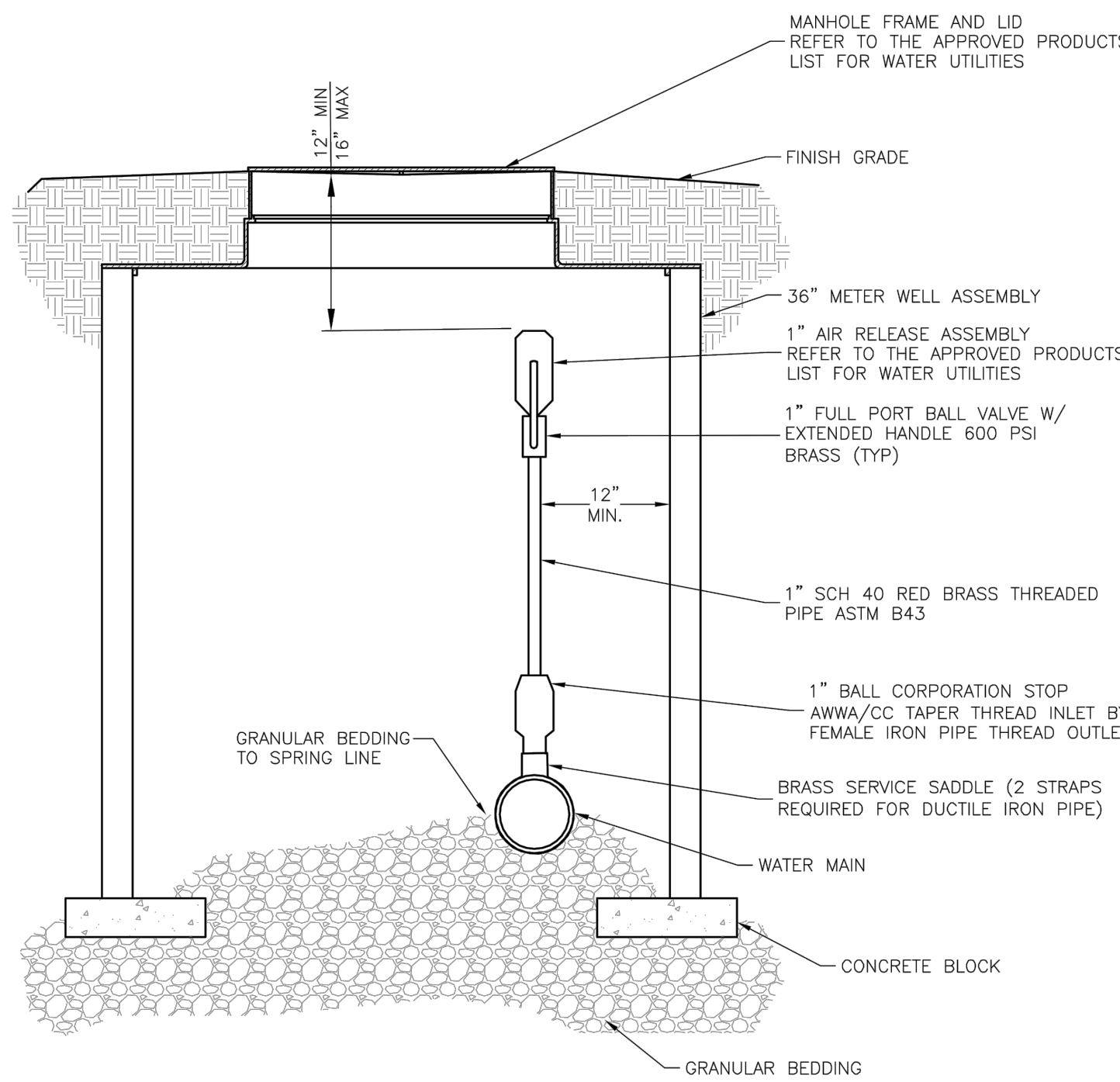
LEE'S SUMMIT MISSOURI
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HYDRANT WITH 90 DEGREE BEND

Date: 02/13
 Drawn By: JIN
 Checked By: DL
 FILE: WAT-8
 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: JIN
 Checked By: DL
 FILE: WAT-9
 Rev: 1/14



AIR RELEASE ASSEMBLY
 NOT TO SCALE



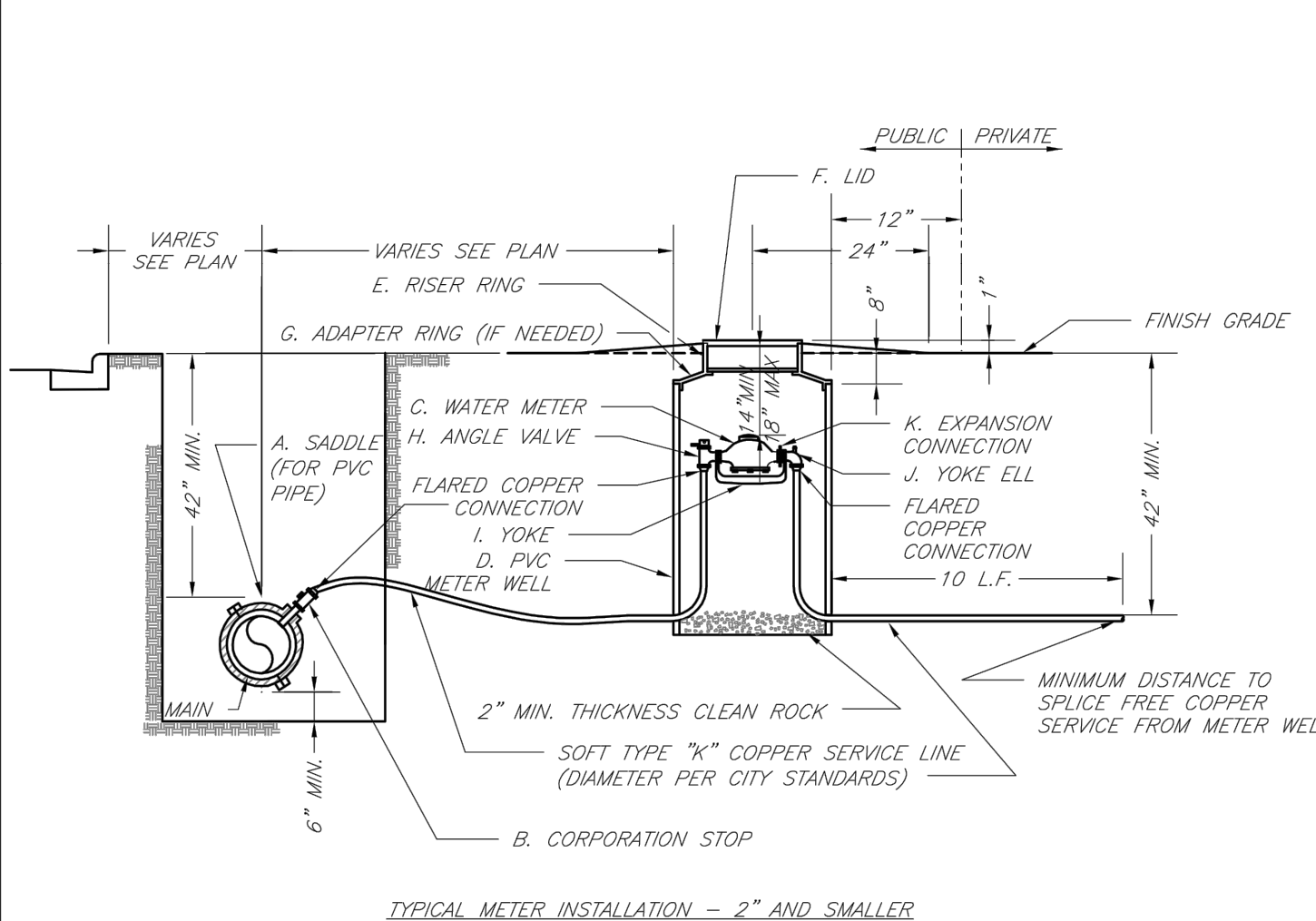
LEE'S SUMMIT MISSOURI
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AIR RELEASE ASSEMBLY

Date: 04/17
 Drawn By: MIF
 Checked By: DL
WAT-10



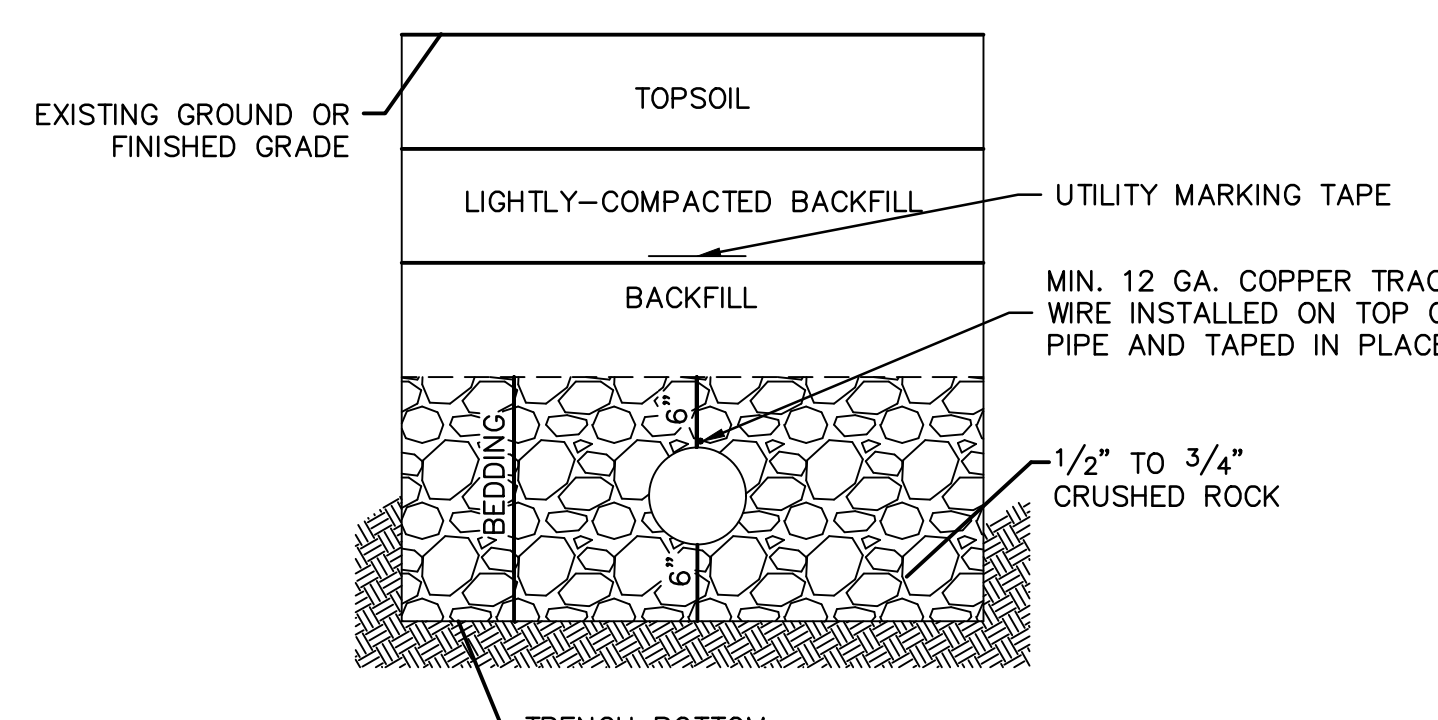
LEE'S SUMMIT MISSOURI
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
SERVICE CONNECTION/METER WELL

Date: 02/13
 Drawn By: JIN
 Checked By: DL
 FILE: WAT-11
 Rev: 1/14



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, 816-989-1900, FOR REQUIREMENTS OF A METER LARGER THAN 2".



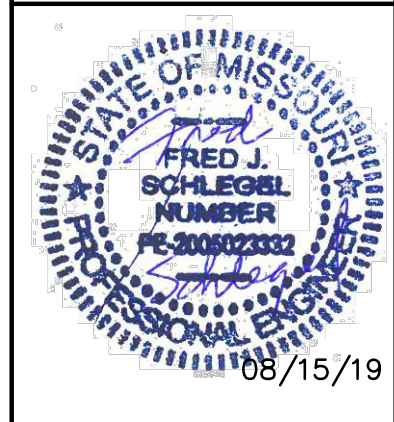
UNDERGROUND PIPE INSTALLATION FOR WATER LINES
 N.T.S.

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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REV. NO.	DATE	REVISIONS DESCRIPTION
5	08/15/2019	ENGR. REVIEW COMMENTS
3	07/19/2019	ENGR. REVIEW COMMENTS

REVISIONS

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

2019

drawn by: TMH
 designed by: FJS
 checked by: JLR
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 date: 00.00.00

SHEET W3.1