

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C\_TTL\_WTR1\_81450.dwg  
DATE: Aug 19, 2019 6:48am  
XREFS: t\_pbase\_81450 C\_TBLK\_22x34\_81450 V\_XBOU\_81450 V\_TOPO\_81450 USER: thill

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           |
| ⊞TP   | 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                 | ⊞WV  | WATER METER                |
| ⊞LTP  | LIGHT POLE                 | ⊞WV  | WATER VALVE                |
| ⊞     | POWER POLE                 | ⊞FP  | FLAG POLE                  |
| ⊞LPPP | POWER POLE W/ LIGHT        | ⊞    | SIGN                       |
| ⊞     | GUY WIRE                   | ⊞    | BOLLARD                    |
| ⊞     | STUMP                      | ⊞    | WOOD POST                  |
| ⊞     | BUSH                       | ⊞    | STEEL POST                 |
| ⊞     | EVERGREEN TREE             | ⊞COL | COLUMN                     |
| ⊞     | DECIDUOUS TREE             | ⊞    | BORE HOLE                  |

|     |                                      |
|-----|--------------------------------------|
| --- | SECTION LINE                         |
| --- | PROPERTY LINE                        |
| --- | CENTER LINE                          |
| --- | PROPOSED ROW LINE                    |
| --- | EXISTING ROW LINE                    |
| --- | UTILITY EASEMENT                     |
| --- | EXISTING CONTOUR                     |
| --- | EXISTING CONTOUR                     |
| --- | PROPOSED MINOR CONTOUR               |
| --- | PROPOSED MAJOR CONTOUR               |
| --- | EXISTING TELEPHONE LINE              |
| --- | EXISTING SANITARY LINE               |
| --- | EXISTING STORM LINE                  |
| --- | EXISTING GAS LINE                    |
| --- | EXISTING WATER LINE                  |
| --- | EXISTING CHAIN LINK FENCE            |
| --- | EXISTING OVERHEAD ELECTRIC           |
| --- | EXISTING PIPE LINE                   |
| --- | GRADING LIMITS                       |
| --- | TEMPORARY CONSTRUCTION EASEMENT      |
| --- | PROPOSED UTILITY OVERHEAD EASEMENT   |
| --- | PROPOSED PERMANENT DRAINAGE EASEMENT |
| --- | 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                |



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

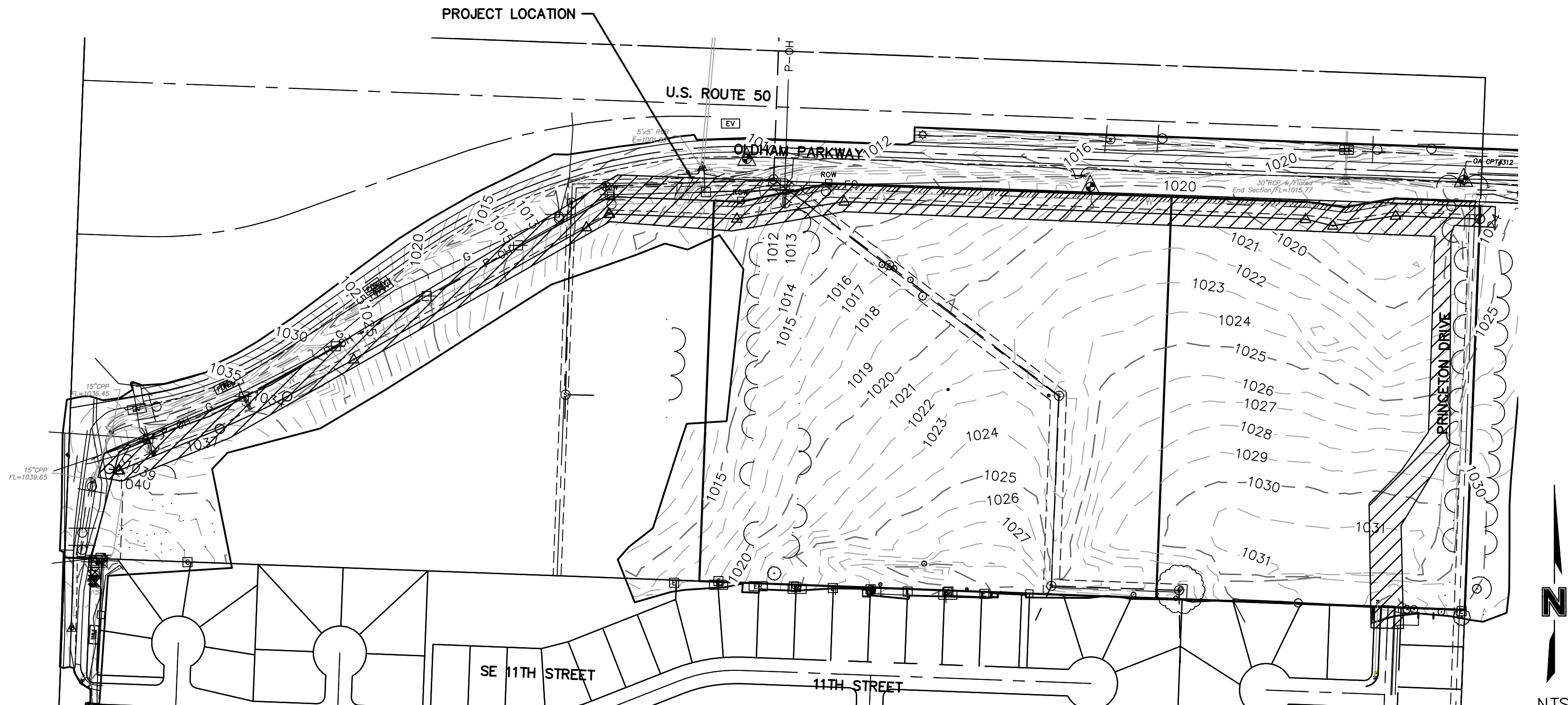
THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1-800-DIG-RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!

\*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 |
| --- | [CCL]    | 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

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

CONSOLIDATED COMMUNICATIONS  
JOHN CASTLOW  
14859 W. 95TH STREET  
LENEXA, KS 66215  
PHONE: (913) 322-9785  
EMAIL: JOHN.CASTLOW@CONSOLIDATED.COM

GOOGLE FIBER  
LAUREN MARCUCCI  
PHONE: (913) 663-1900  
EMAIL: LMARCUCCI@GOOGLE.COM

FIRE DEPARTMENT  
LEE'S SUMMIT FIRE DEPARTMENT  
207 SE DOUGLAS STREET  
LEE'S SUMMIT, MISSOURI 64063  
(816)-969-1300

AMBULANCE SERVICE  
TELE: 911

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

LEE'S SUMMIT WATER UTILITIES  
DAVID LOHE  
PHONE: (816) 969-1800  
EMAIL: DAVID.LOHE@CITYOFLS.NET

LEE'S SUMMIT SEWER UTILITIES  
1200 SE HAMBLIN ROAD  
LEE'S SUMMIT, MISSOURI 64801  
(816) 969-1900

SPIRE GAS  
RICHARD FROCK  
3025 SE CLOVER DRIVE  
LEE'S SUMMIT, MO 64082  
PHONE: (816) 472-3489  
EMAIL: RICHARD.FROCK@SPIREENERGY.COM

CHARTER/SPECTRUM CABLE  
TROY PREWITT  
8221 W. 119TH STREET  
OVERLAND PARK, KS 66213  
PHONE: (816) 401-3573  
EMAIL: TROY.PREWITT@CHARTER.COM

COMMUNICATION:  
CENTURYLINK  
COMCAST  
GOOGLE FIBER NOC  
SPRINT/ERICSSON  
TIME WARNER CABLE  
TW TELECOM  
UNITE PRIVATE NETWORKS  
VERIZON COMMUNICATIONS INC.  
1-800-246-4237  
1-888-262-5101  
1-866-954-1572  
1-800-521-0579  
1-866-967-7611  
1-800-829-0420  
1-866-963-4237  
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: 995857.9570  
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:

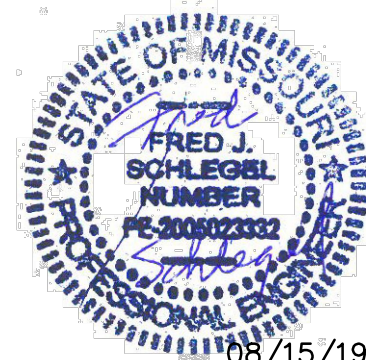
LEE'S SUMMIT SENIOR COMMUNITY, LLC.  
CONTACT: DENISE K. HEINTZ  
5051 S. NATIONAL AVENUE, STE 4-110  
SPRINGFIELD, MISSOURI 65810  
TELE: (417)893-6006  
FAX: (417)862-9501

PREPARED & SUBMITTED BY:

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

olsson

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 417.890.8802  
www.olsson.com



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

|                                            |                                                  |                        |      |
|--------------------------------------------|--------------------------------------------------|------------------------|------|
| PUBLIC WATER MAIN EXTENSION<br>TITLE SHEET | THE PRINCETON SENIOR LIVING<br>SE OLDHAM PARKWAY | LEE'S SUMMIT, MISSOURI | 2019 |
|--------------------------------------------|--------------------------------------------------|------------------------|------|

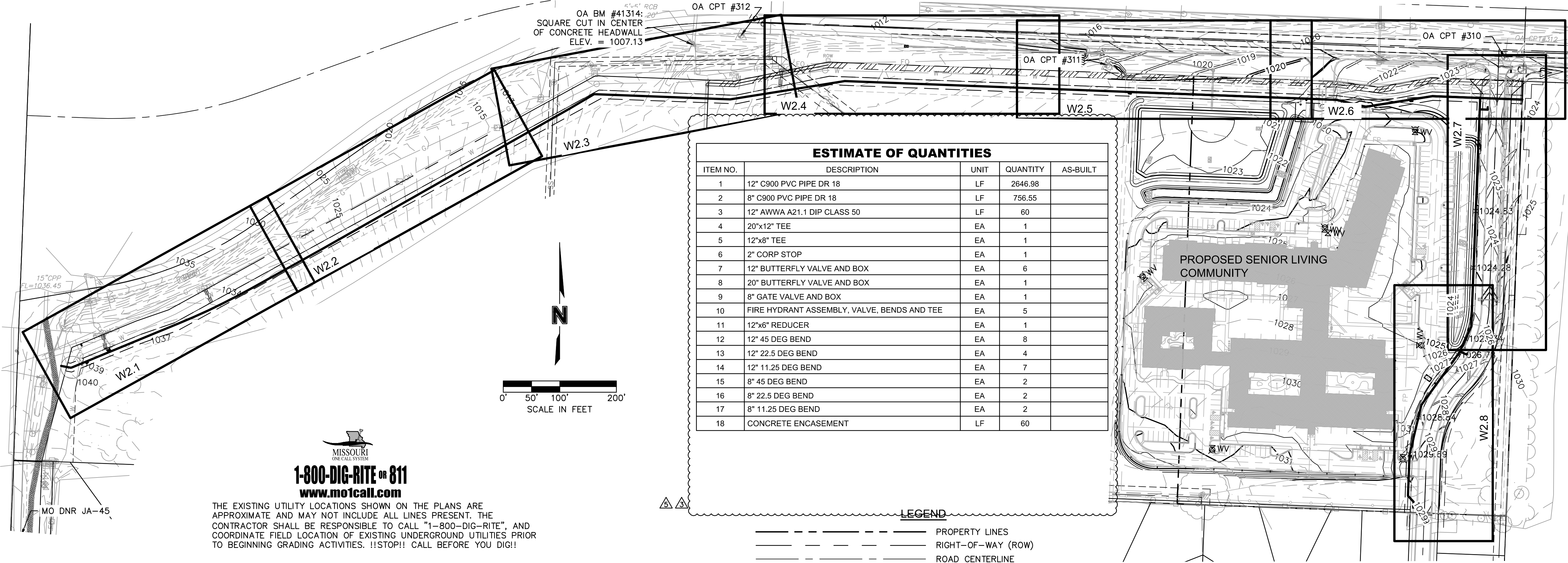
|              |                  |
|--------------|------------------|
| drawn by:    | TMH              |
| designed by: | FJS              |
| checked by:  | JLR              |
| project no.: | 018-1450         |
| drawing no.: | C_TTL_WTR1_81450 |
| date:        | 00.00.00         |

SHEET  
W0.1

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final\_Plans\Sheets\GNVC\PUBLIC\_WATER\C\_WPP\_81450.dwg  
DATE: Aug 19, 2019 8:20am  
XREFS: v\_xbou\_81450 c\_pbase\_81450 c\_tblk\_22x34\_81450 c\_palgn\_wtr\_81450 v\_topo\_81450 c\_legend\_81450  
USER: thill  
C:\PBASE\_81450 T\_PBASE\_81450

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 IS SUCH A MANNER TO PROVIDE THE LEAST AMOUNT OF INTERRUPTION TO WATER SERVICE.



| 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                    |

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.

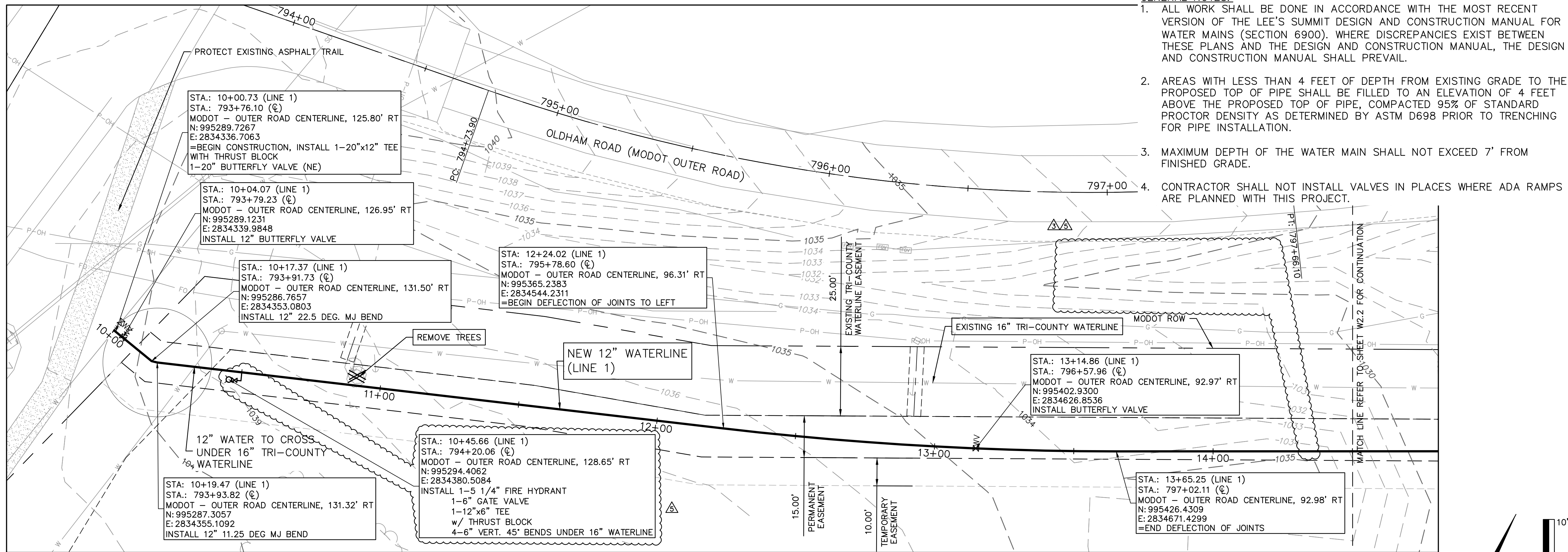
Olsson Engineering MO State Certificate of Authority #001592  
Olsson Landscape Architecture MO State Cert. of Authority #205000285  
550 St. Louis St.  
Springfield, MO 65806  
TEL 417.890.8802  
www.olsson.com

| REVISIONS |                       |
|-----------|-----------------------|
| REV. NO.  | DESCRIPTION           |
| 5         | ENGR. REVIEW COMMENTS |
| 3         | ENGR. REVIEW COMMENTS |

|                                               |  |
|-----------------------------------------------|--|
| WATER MAIN EXTENSION WATERLINE INDEX SHEET    |  |
| THE PRINCETON SENIOR LIVING SE OLDHAM PARKWAY |  |
| LEE'S SUMMIT, MISSOURI                        |  |

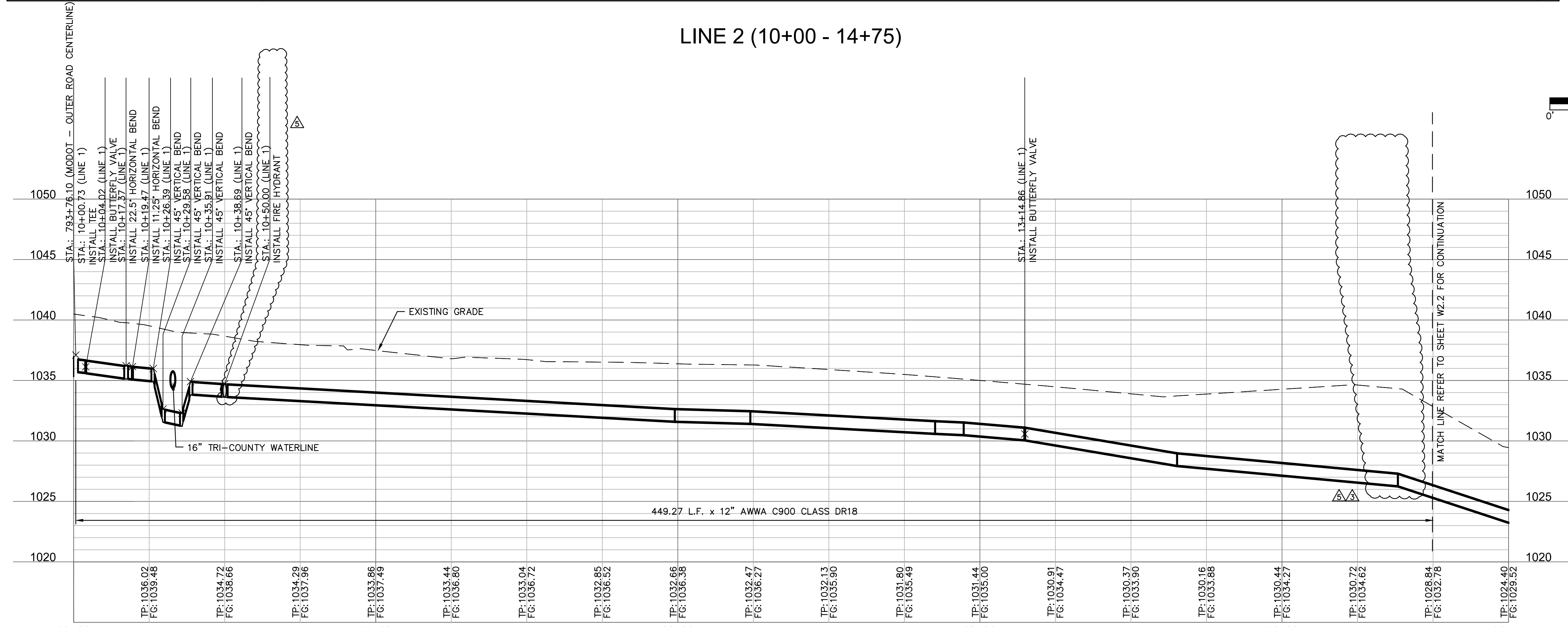
|                          |
|--------------------------|
| drawn by: TMH            |
| designed by: FJS         |
| checked by: JLR          |
| project no.: 018-1450    |
| drawing no.: C_WPP_81450 |
| date: 08.15.19           |

SHEET W1.0



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.



|                                                                                                                                                                 |  |                                                 |  |            |            |                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------|--|------------|------------|-----------------------|
| drawn by: _____ TMH<br>designed by: _____ FJS<br>checked by: _____ JLR<br>project no.: _____ 018-1450<br>drawing no.: _____ C WPP 81450<br>date: _____ 08.15.19 |  | WATER MAIN EXTENSION<br>LINE 1 PLAN AND PROFILE |  | REV. NO.   | DATE       | REVISIONS DESCRIPTION |
|                                                                                                                                                                 |  |                                                 |  |            |            |                       |
|                                                                                                                                                                 |  |                                                 |  |            |            |                       |
|                                                                                                                                                                 |  |                                                 |  |            |            |                       |
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|                                                                                                                                                                 |  |                                                 |  | 5          | 08/15/2019 | ENGR. REVIEW COMMENTS |
| THE PRINCETON SENIOR LIVING<br>SE OLDHAM PARKWAY                                                                                                                |  |                                                 |  | REVISIONS: |            |                       |
| LEE'S SUMMIT, MISSOURI                                                                                                                                          |  | 2019                                            |  |            |            |                       |

**SHEET**

**W2.1**

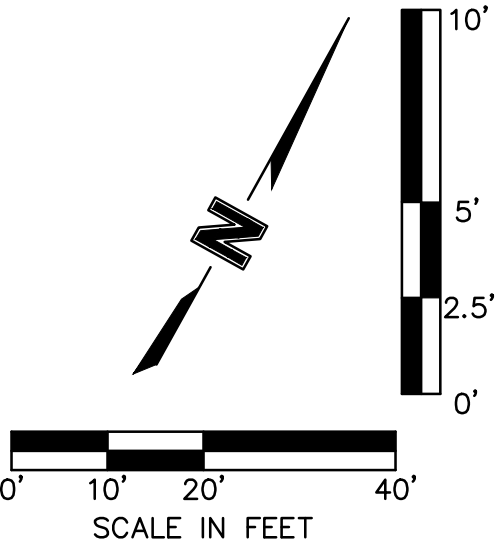
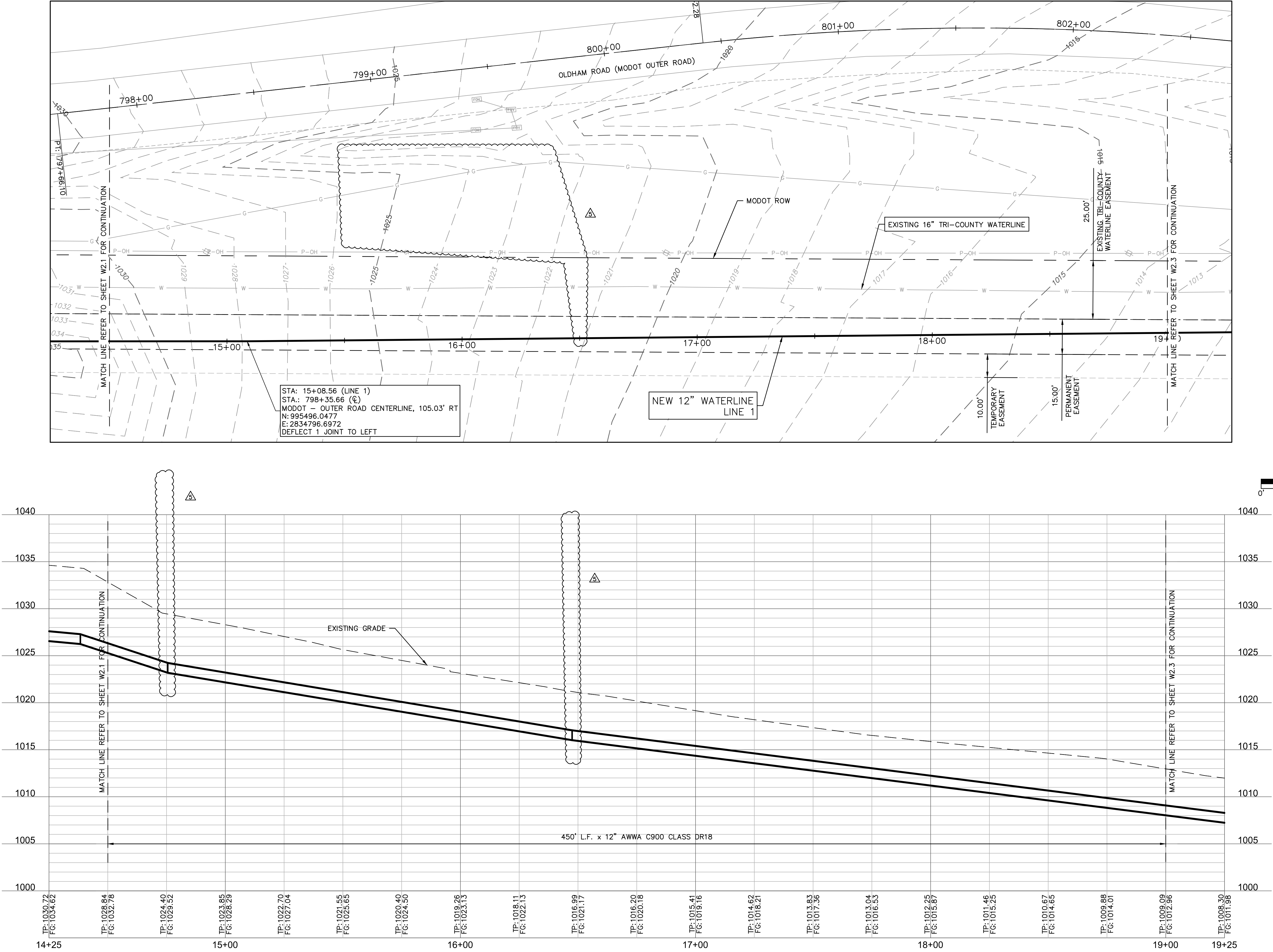
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08/15/19

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|----------|------------|-----------------------|
| 5        | 08/19/2019 | ENGR. REVIEW COMMENTS |
| 3        | 07/19/2019 | ENGR. REVIEW COMMENTS |

REVISIONS

WATER MAIN EXTENSION  
LINE 1 PLAN AND PROFILE

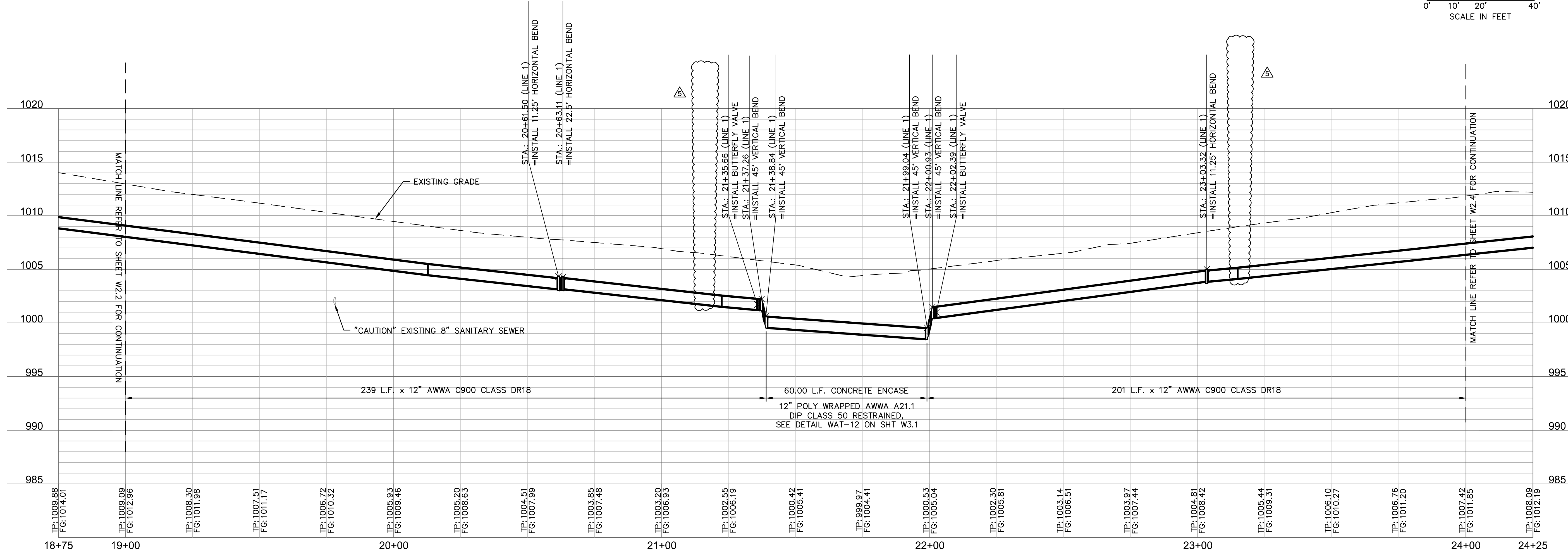
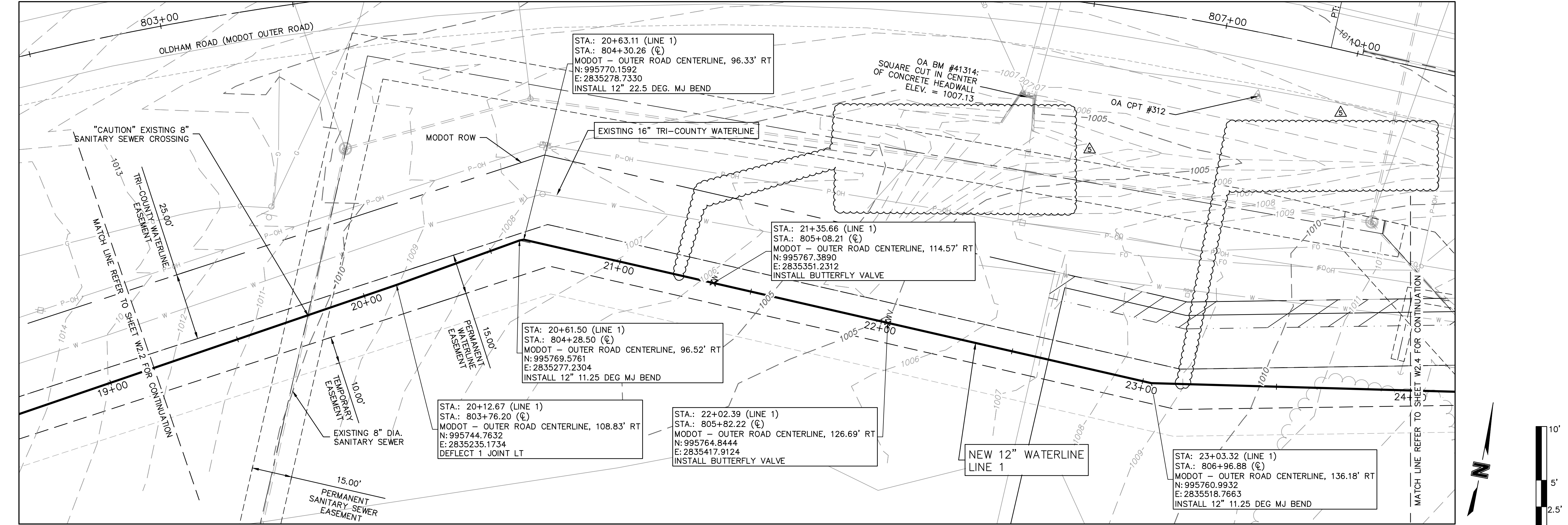
THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

drawn by: TML  
designed by: FJS  
checked by: JLR  
project no.: 018-1450  
drawing no.: C\_WPP\_81450  
date: 08.15.19

SHEET  
W2.2

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EXPIRATION DATE 08/15/19

08/15/19

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

WATER MAIN EXTENSION  
LINE 1 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY

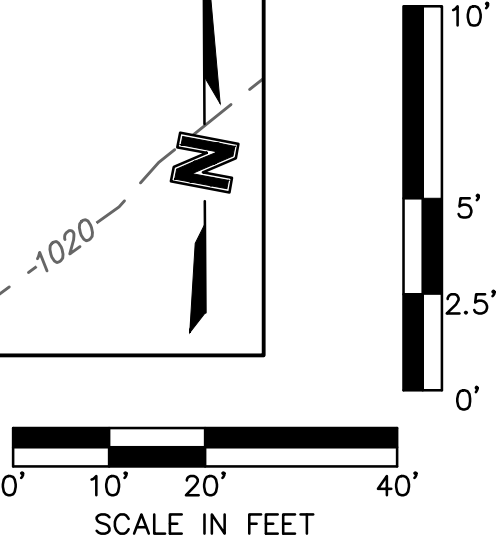
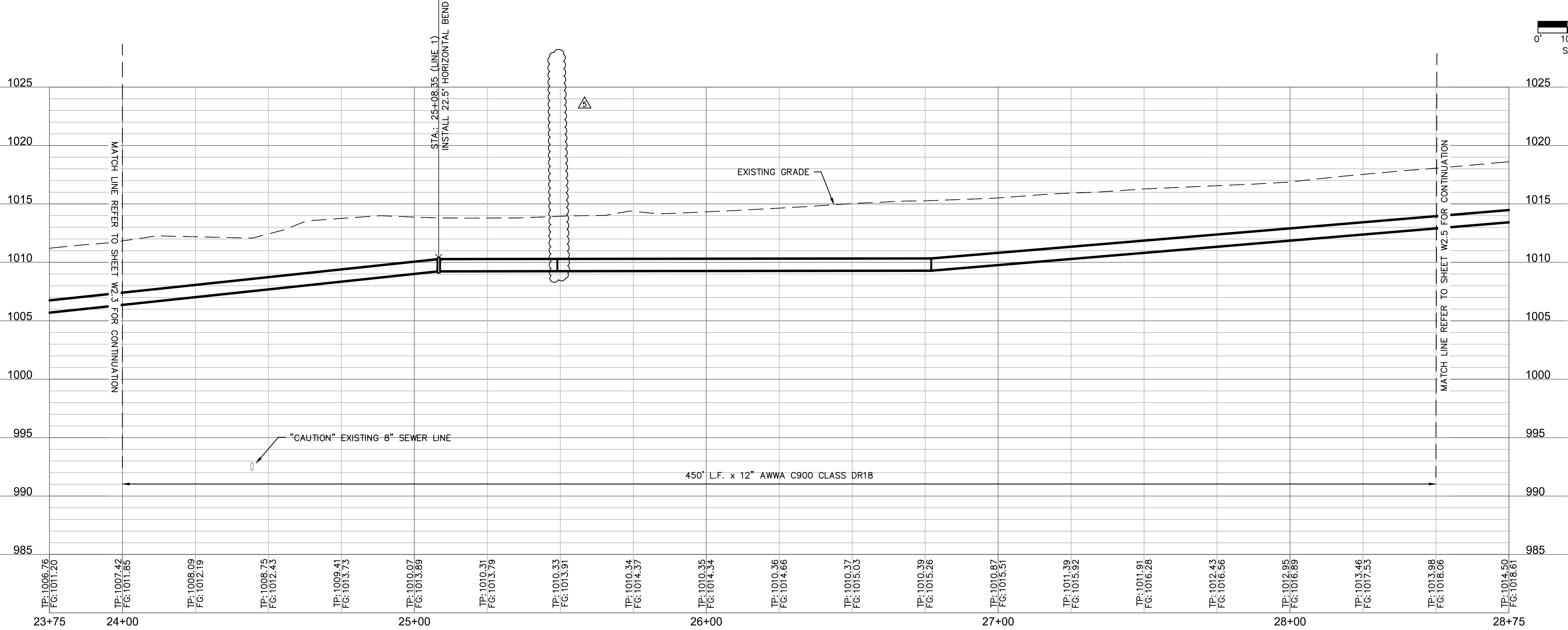
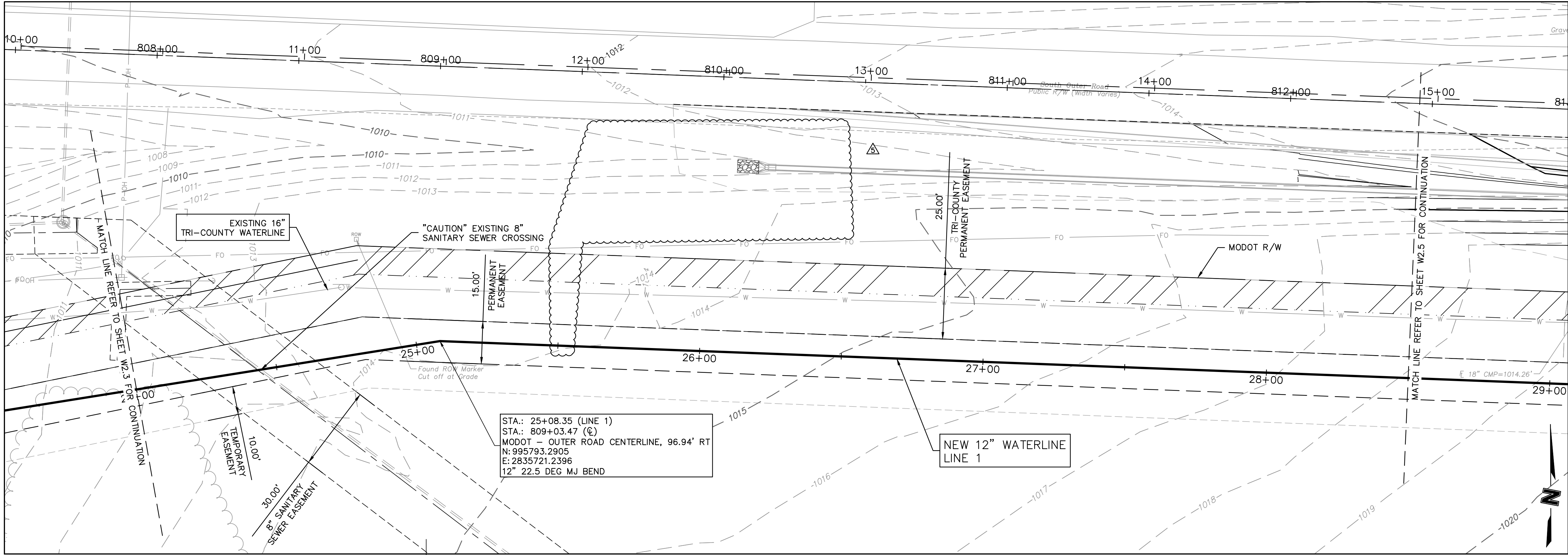
LEE'S SUMMIT, MISSOURI

drawn by: TMH  
designed by: FJS  
checked by: JLR  
project no.: 018-1450  
drawing no.: C\_WPP\_81450  
date: 08.15.19

2019

SHEET  
W2.3

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NUMBER  
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| 3        | 07/19/19 | ENGR. REVIEW COMMENTS |

REVISIONS

WATER MAIN EXTENSION  
LINE 1 PLAN AND PROFILE

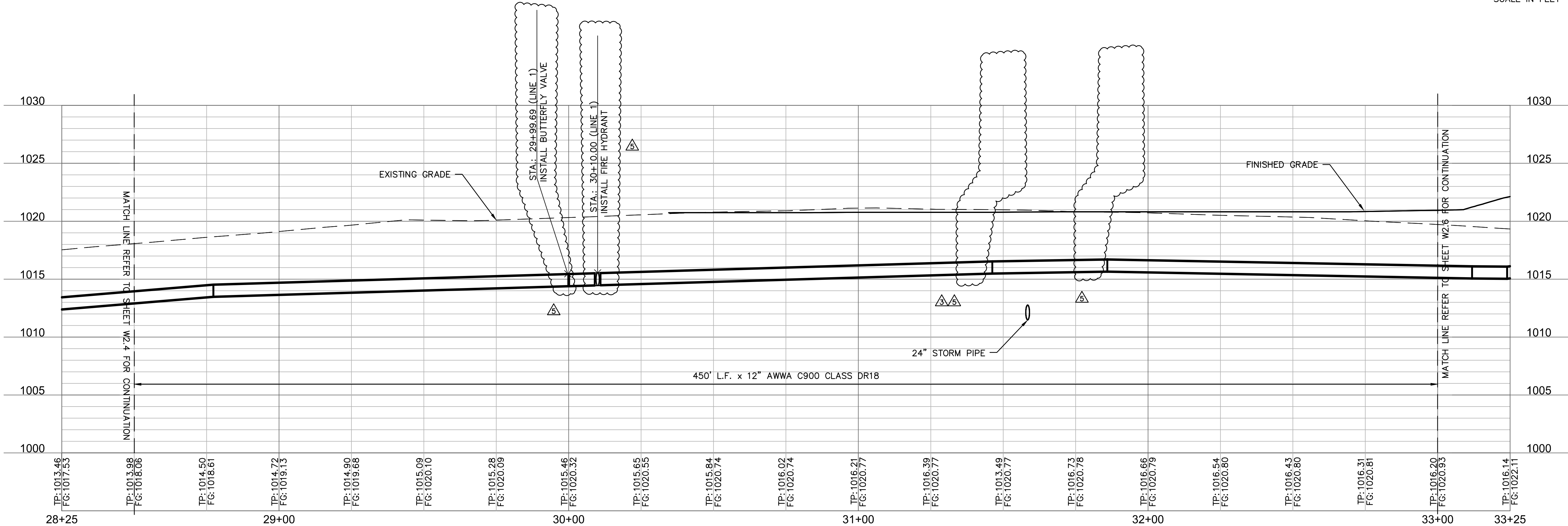
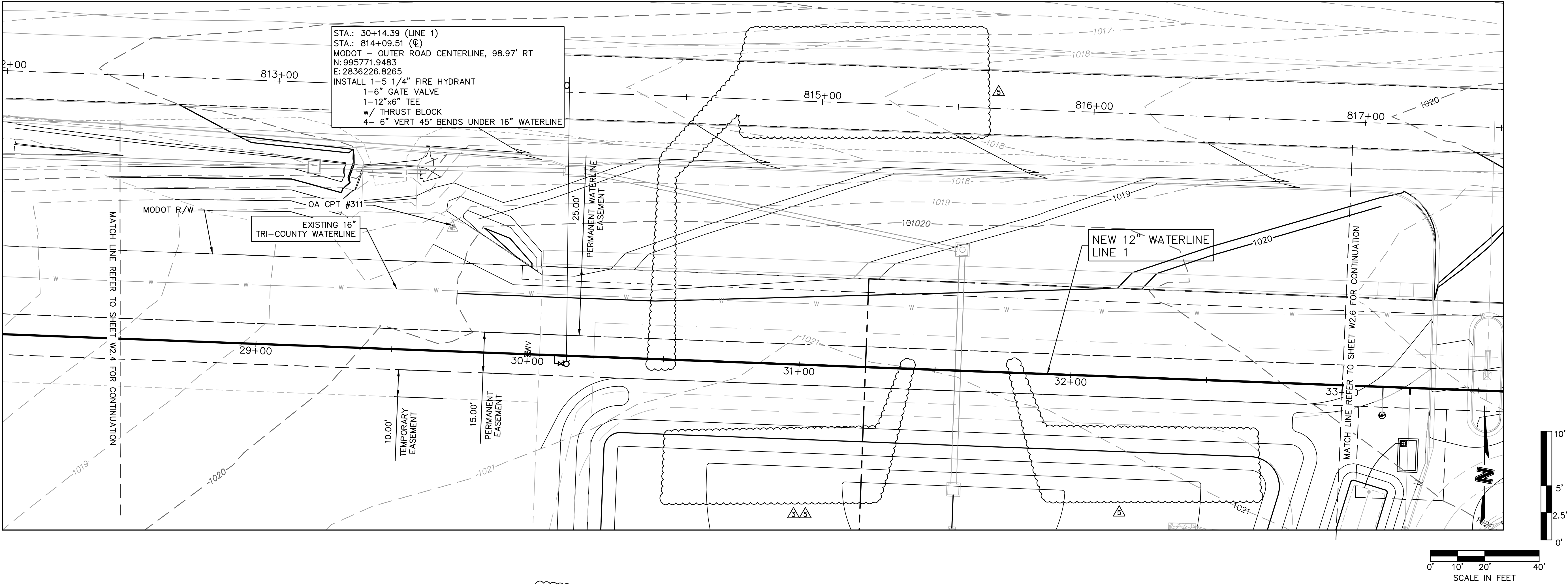
THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY

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  
W2.4

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FRED J. SCHLEGEL  
REGISTERED PROFESSIONAL ENGINEER  
NO. 000000000  
EXPIRATION DATE 08/15/19

08/15/19

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

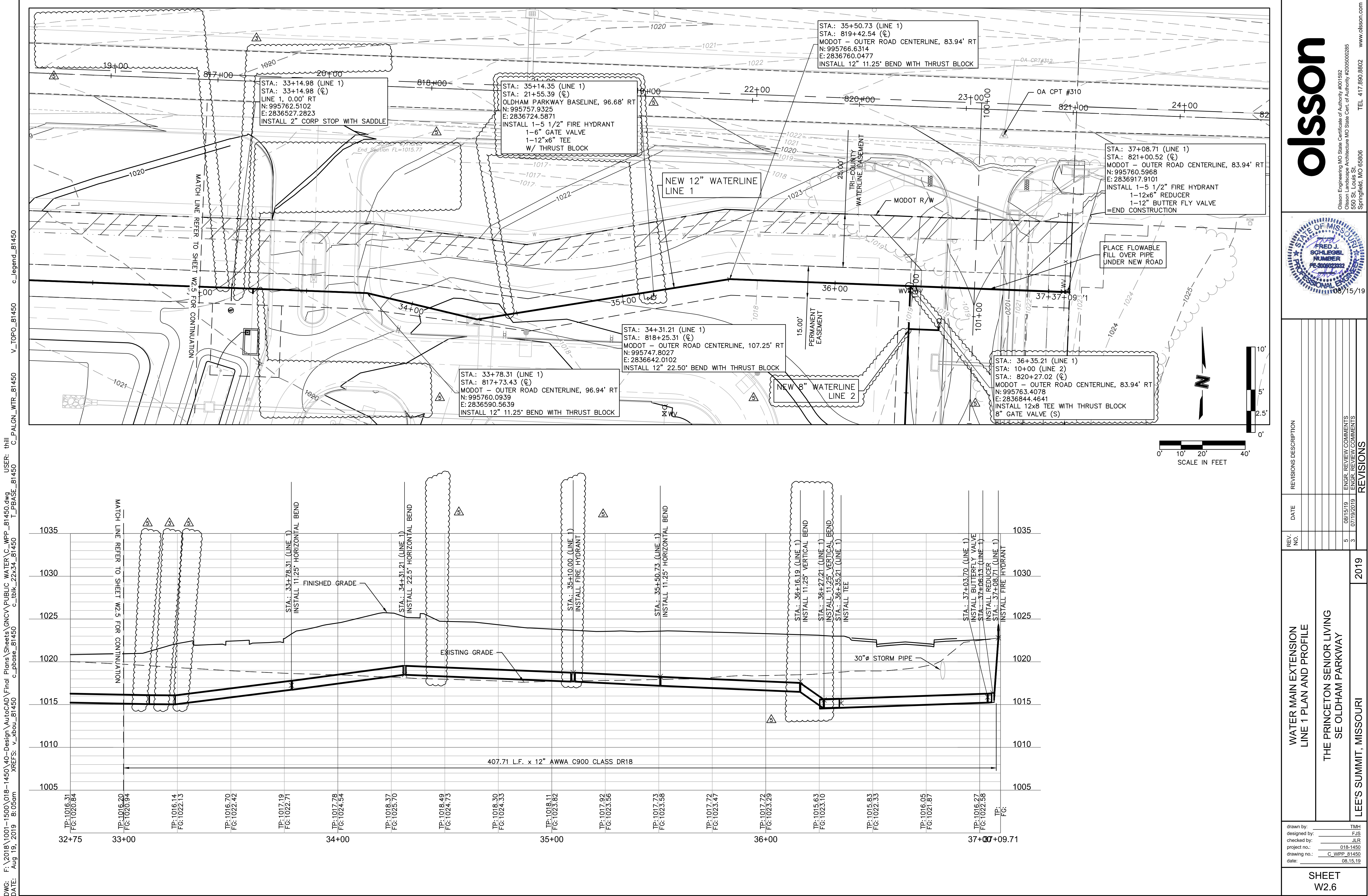
WATER MAIN EXTENSION  
LINE 1 PLAN AND PROFILE

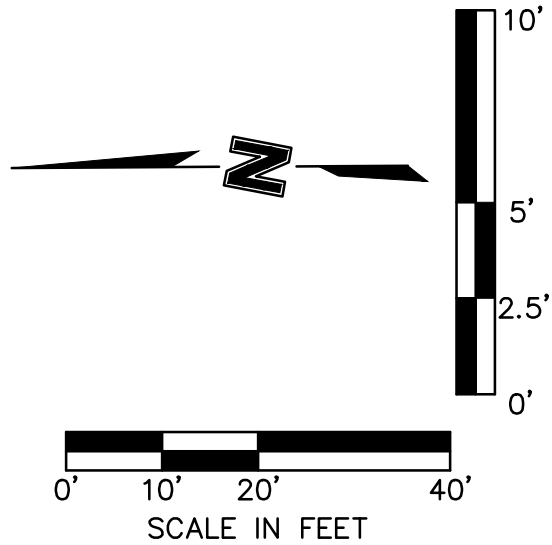
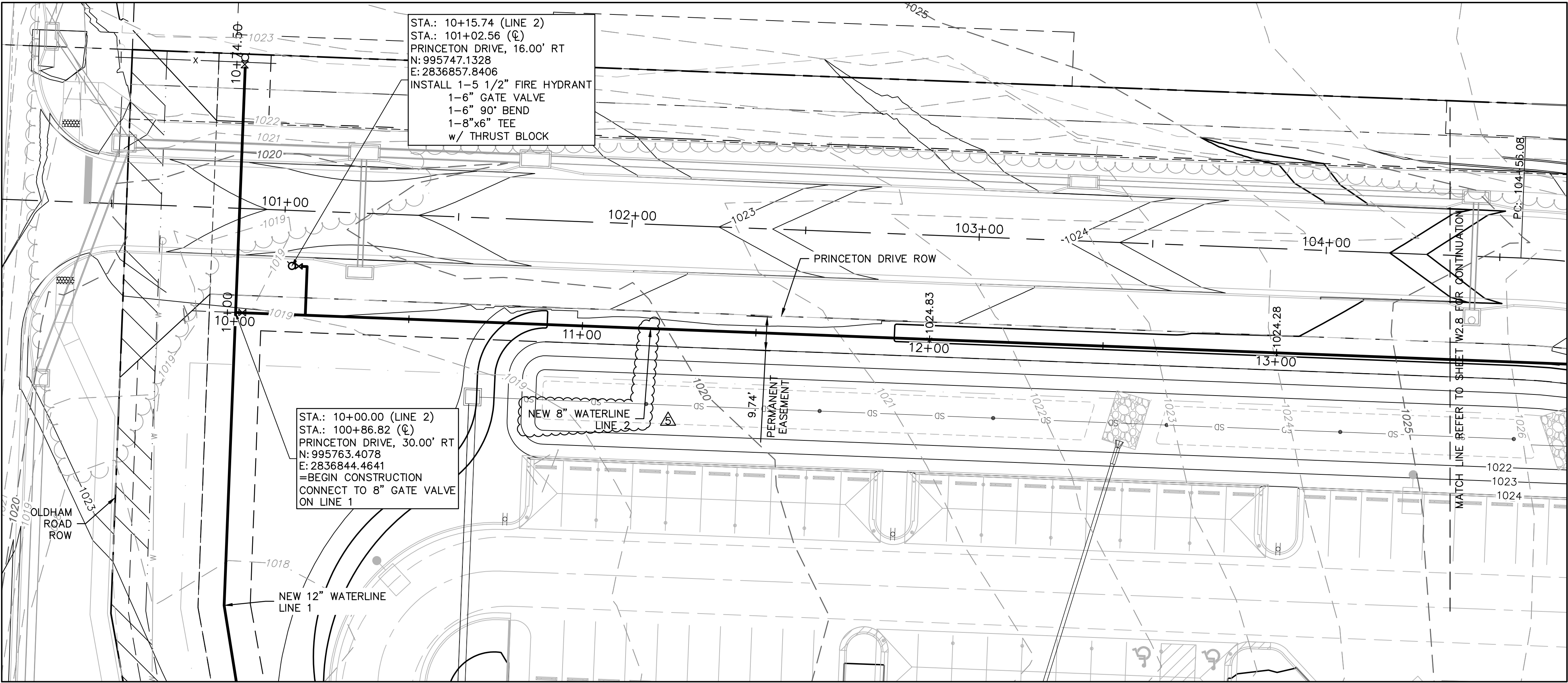
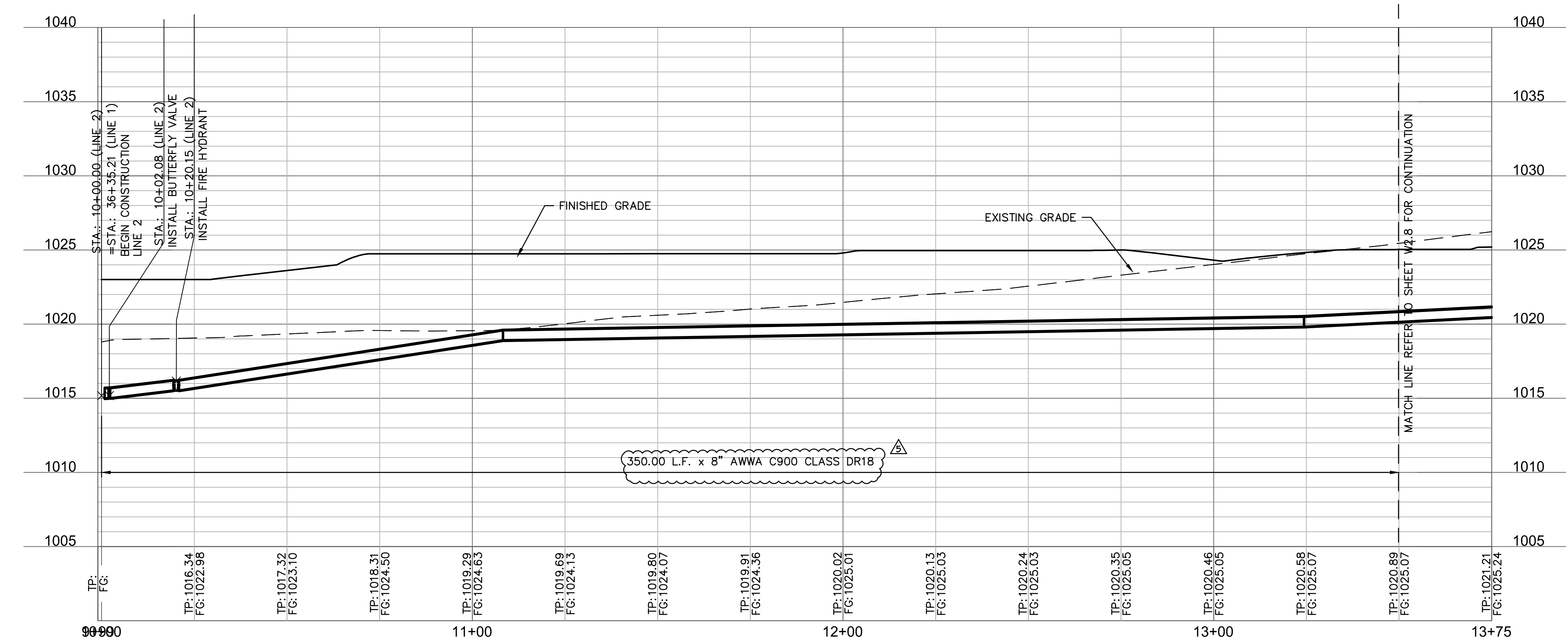
THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

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project no.: 018-1450  
drawing no.: C\_WPP\_81450  
date: 08.15.19

SHEET  
W2.5





WATER MAIN EXTENSION  
LINE 2 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY

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checked by: JLR  
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drawing no.: C\_WPP\_81450  
date: 08.15.19

DATE

REV. NO.

REVISIONS DESCRIPTION

|   |            |                       |
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| 3 | 07/19/2019 | ENGR. REVIEW COMMENTS |

2019

SHEET  
W2.7

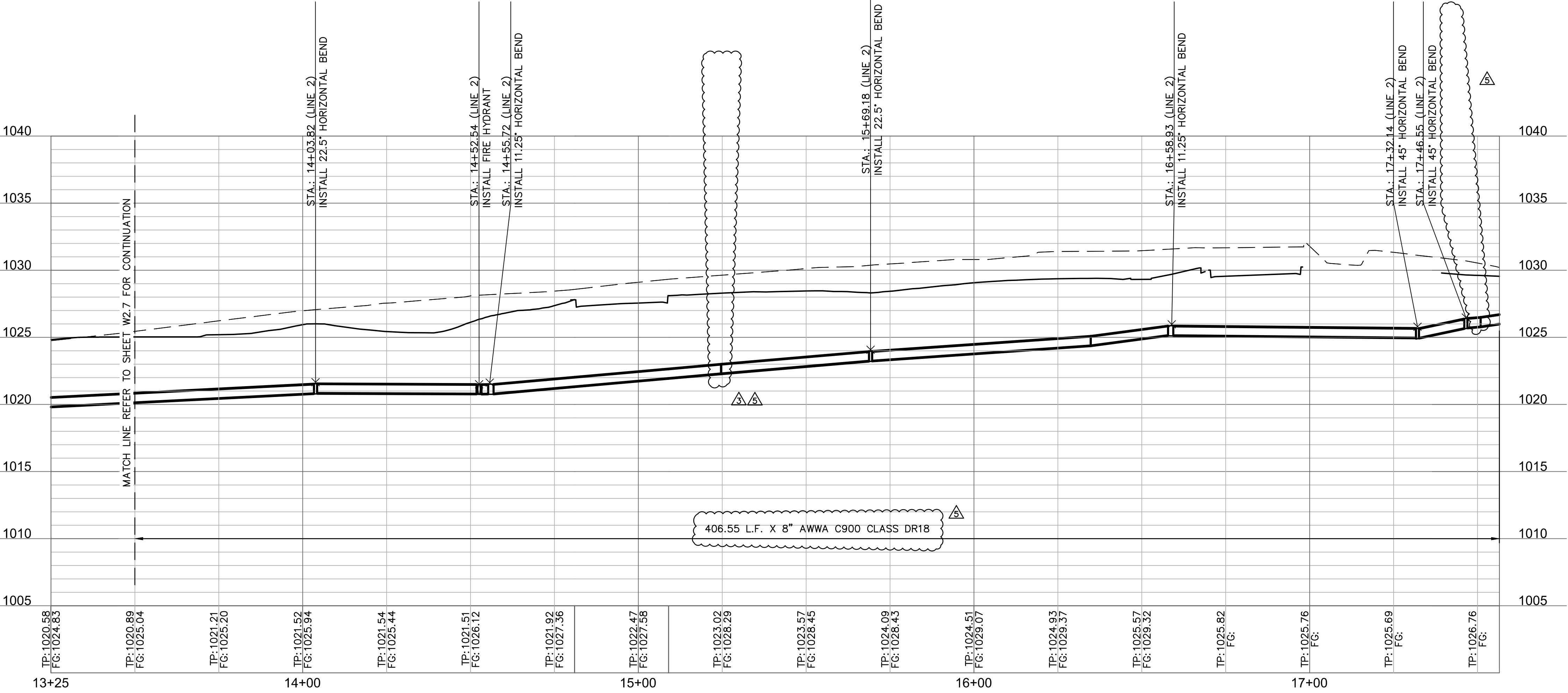
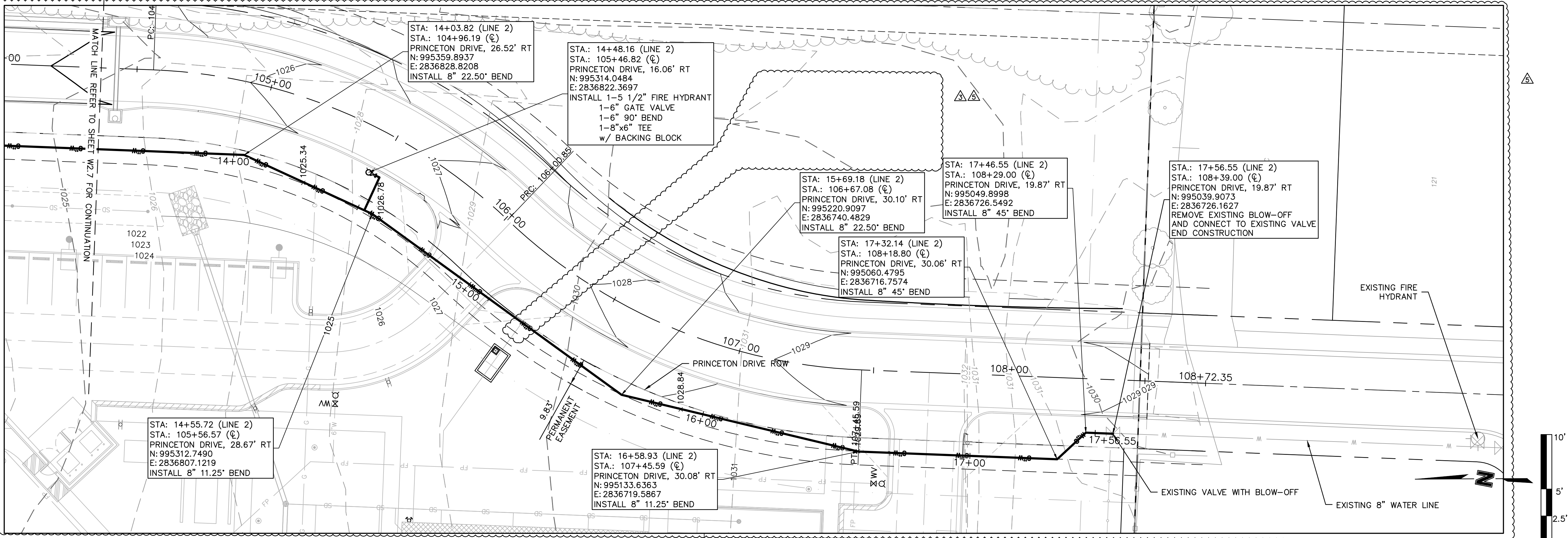
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NO. 000000000  
EXPIRATION DATE 08/15/19

08/15/19

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NUMBER  
FC-000022003  
08/15/19

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

REVISIONS

WATER MAIN EXTENSION  
LINE 2 PLAN AND PROFILE

THE PRINCETON SENIOR LIVING  
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

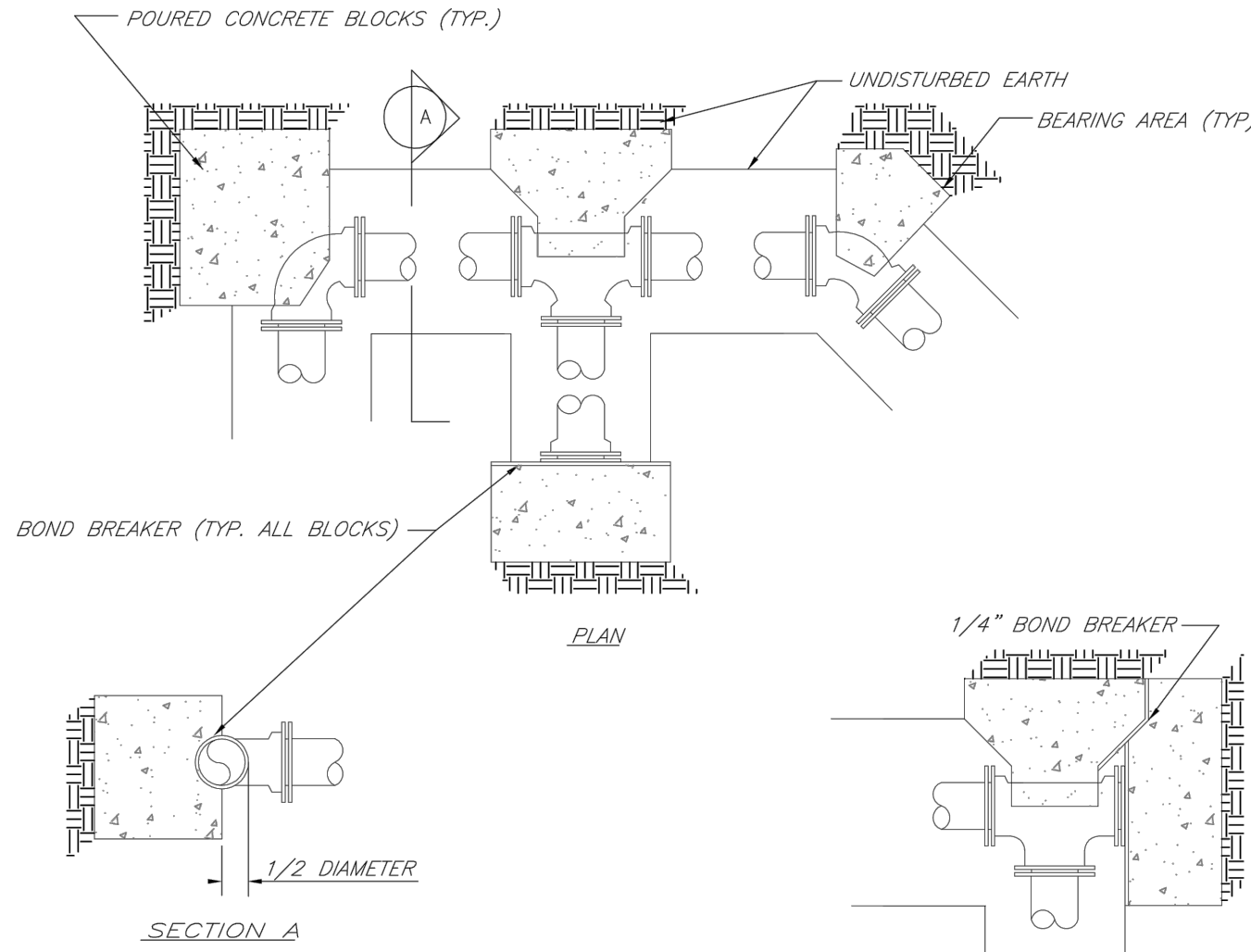
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designed by: FJS  
checked by: JLR  
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drawing no.: C\_WPP\_81450  
date: 08.15.19

SHEET  
W2.8

| REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF) |           |            |            |              |               |
|---------------------------------------------------|-----------|------------|------------|--------------|---------------|
| NOM. DIA.<br>(INCHES)                             | TEE, PLUG | 90<br>BEND | 45<br>BEND | 22.5<br>BEND | 11.25<br>BEND |
| 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.

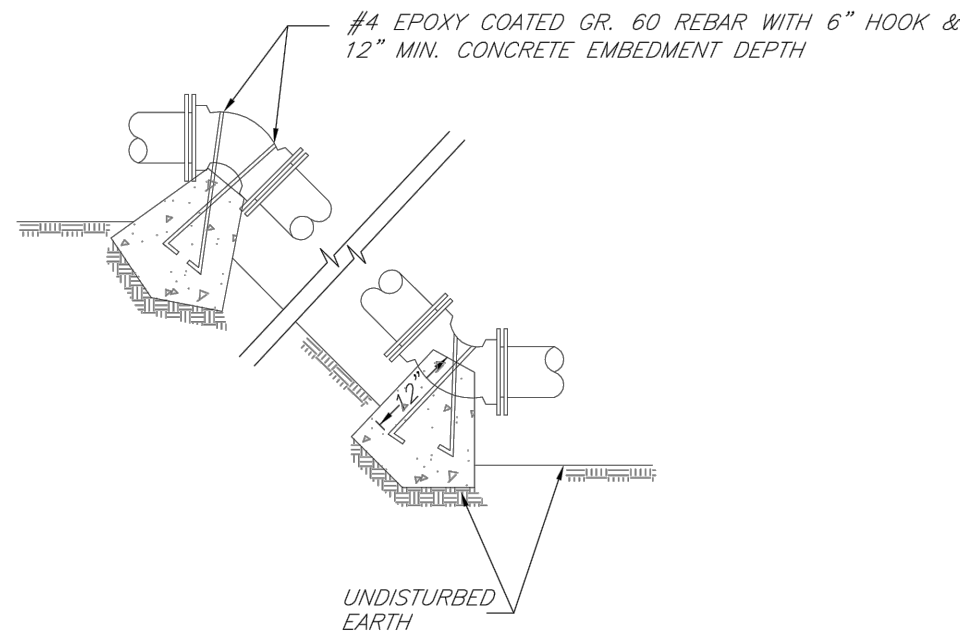


|           |                                                                                  |                |
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| <b>LS</b> | <b>LEE'S SUMMIT<br/>MISSOURI</b>                                                 | Date: 02/13    |
|           | PUBLIC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

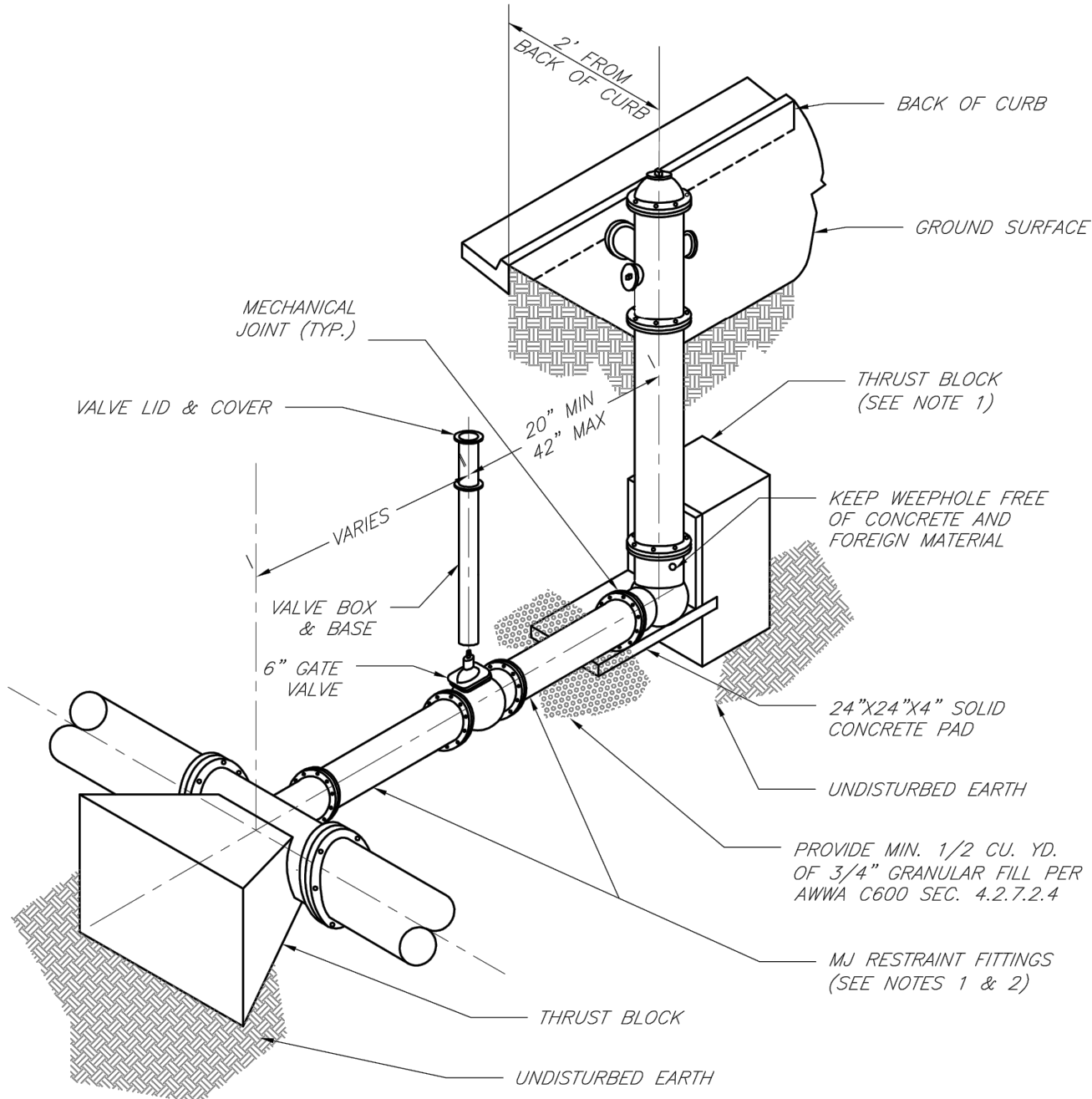
| REQUIRED CONCRETE VOLUME (CUBIC FEET - CF) |           |            |            |              |               |
|--------------------------------------------|-----------|------------|------------|--------------|---------------|
| NOM. DIA.<br>(INCHES)                      | TEE, PLUG | 90<br>BEND | 45<br>BEND | 22.5<br>BEND | 11.25<br>BEND |
| 6                                          | 50.5      | 71.4       | 38.6       | 19.7         | 9.9           |
| 8                                          | 89.8      | 126.9      | 68.7       | 35.0         | 17.6          |
| 10                                         | 140.2     | 198.1      | 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.



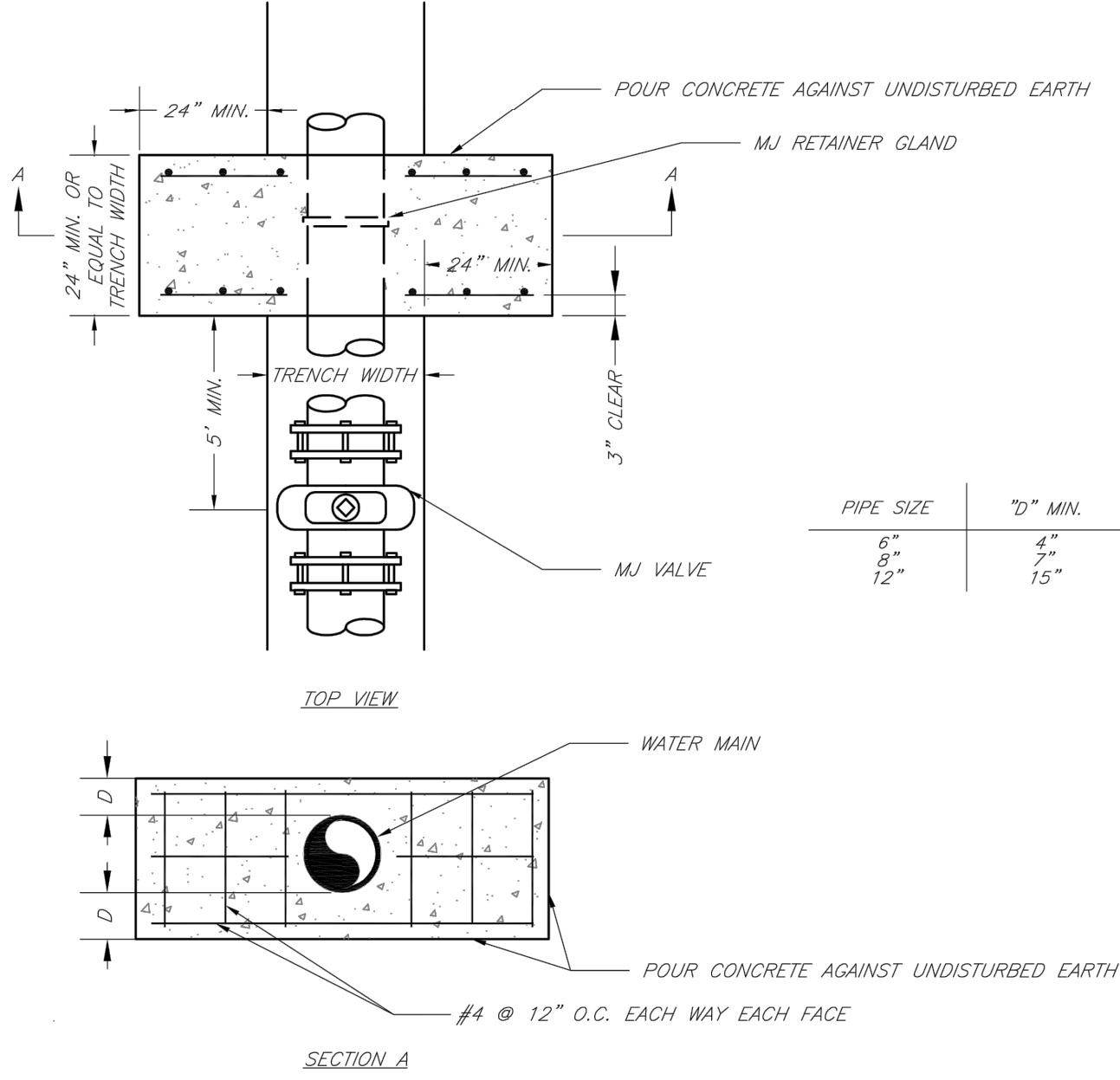
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| <b>LS</b> | <b>LEE'S SUMMIT<br/>MISSOURI</b>                                                 | Date: 02/13    |
|           | PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063 | Drawn By: JN   |
|           | VERTICAL THRUST BLOCKS                                                           | Checked By: DL |
|           |                                                                                  | FILE: WAT-2    |
|           |                                                                                  | Rev: 1/14      |
|           |                                                                                  | Rev:           |



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.

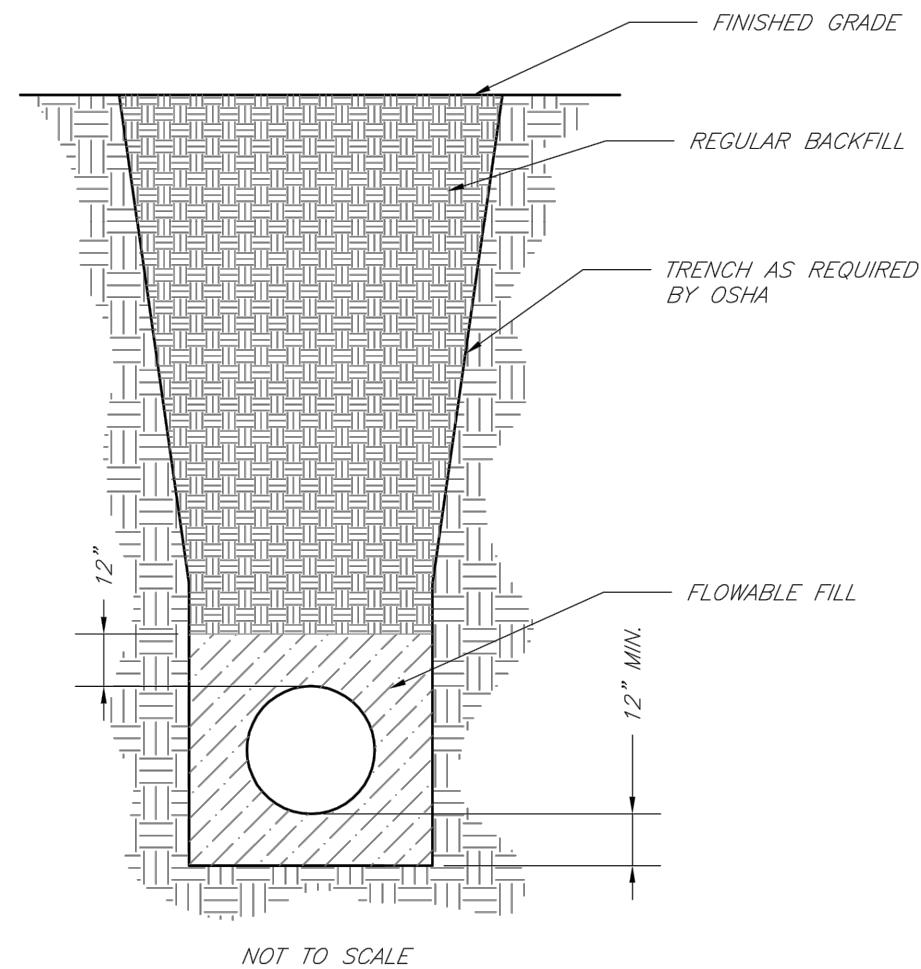
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| <b>LS</b> | <b>LEE'S SUMMIT<br/>MISSOURI</b>                                                 | Date: 02/13    |
|           | PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063 | Drawn By: JN   |
|           | HYDRANT INSTALLATION - STRAIGHT SET                                              | Checked By: DL |
|           |                                                                                  | FILE: WAT-7    |
|           |                                                                                  | Rev: 1/14      |
|           |                                                                                  | Rev:           |



NOTE:

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

|           |                                                                                  |                |
|-----------|----------------------------------------------------------------------------------|----------------|
| <b>LS</b> | <b>LEE'S SUMMIT<br/>MISSOURI</b>                                                 | Date: 02/13    |
|           | PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063 | Drawn By: JN   |
|           | STRADDLE BLOCK                                                                   | Checked By: DL |
|           |                                                                                  | FILE: WAT-3    |
|           |                                                                                  | Rev: 1/14      |
|           |                                                                                  | Rev:           |



NOTES:

1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" 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".

|           |                                                                                  |                |
|-----------|----------------------------------------------------------------------------------|----------------|
| <b>LS</b> | <b>LEE'S SUMMIT<br/>MISSOURI</b>                                                 | Date: 02/13    |
|           | PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063 | Drawn By: JN   |
|           | TRENCH CHECK                                                                     | Checked By: DL |
|           |                                                                                  | FILE: WAT-6    |
|           |                                                                                  | Rev: 1/14      |
|           |                                                                                  | Rev:           |

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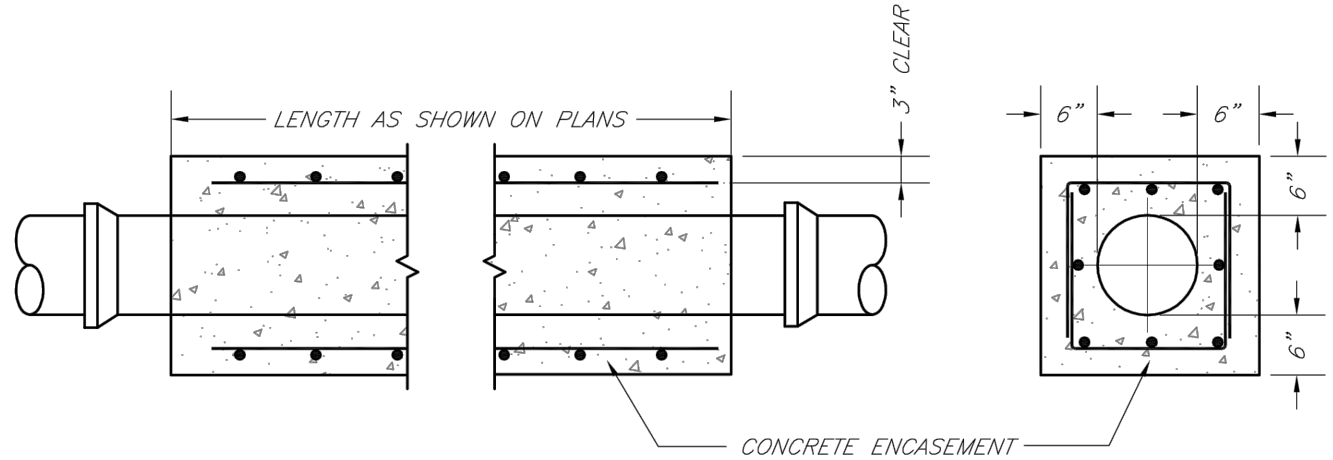
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| 5        |  | 08/19/2019 | ENGR. REVIEW COMMENTS |
| 3        |  | 07/19/2019 | ENGR. REVIEW COMMENTS |

|                                                     |  |                        |
|-----------------------------------------------------|--|------------------------|
| PUBLIC WATER MAIN EXTENSION<br>WATER SYSTEM DETAILS |  | 2019                   |
| THE PRINCETON SENIOR LIVING<br>SE OLDHAM PARKWAY    |  | LEE'S SUMMIT, MISSOURI |

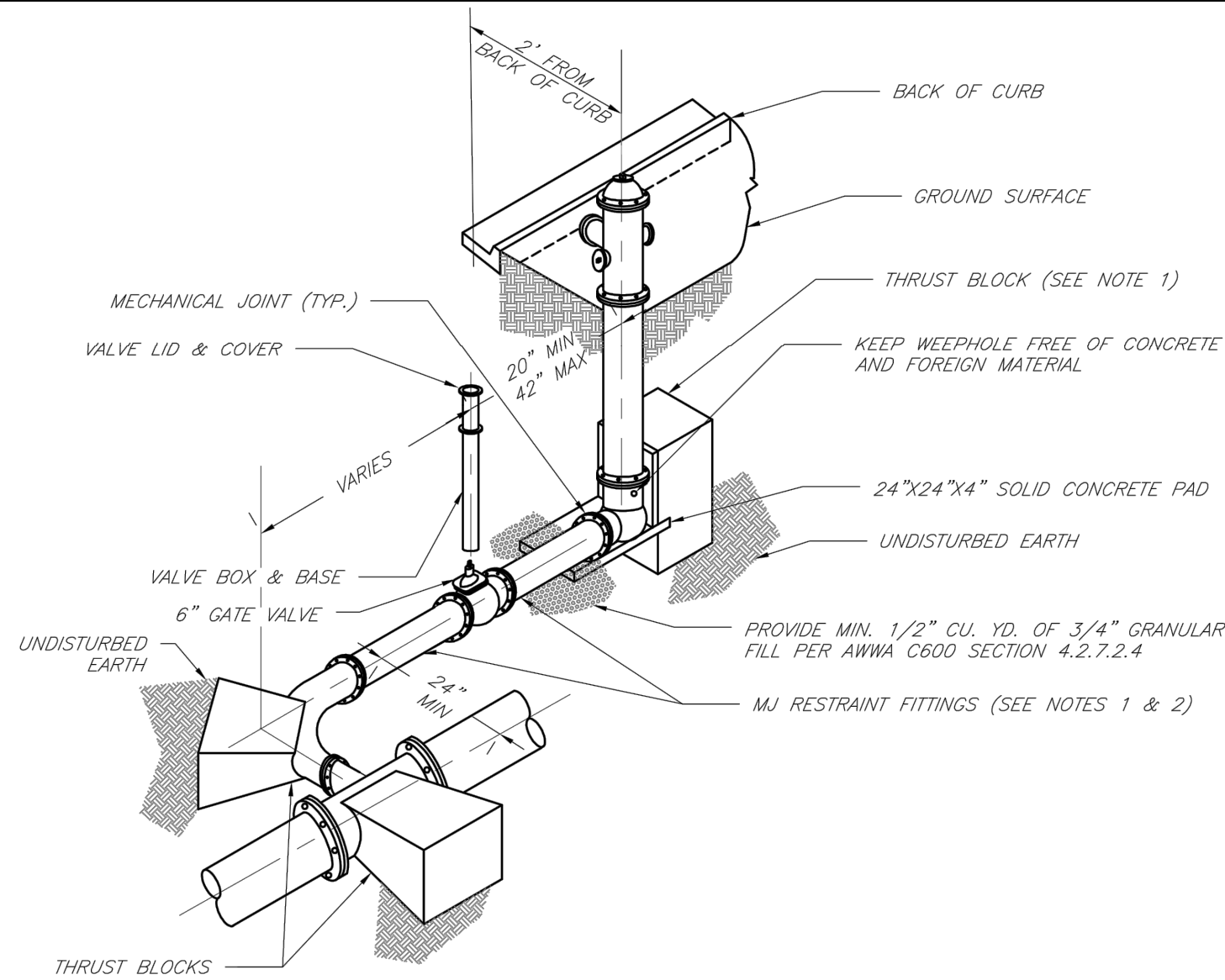
|              |              |
|--------------|--------------|
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| designed by: | FJS          |
| checked by:  | JLR          |
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| drawing no.: | C_DTLS_81450 |
| date:        | 08.15.19     |

USER: thil

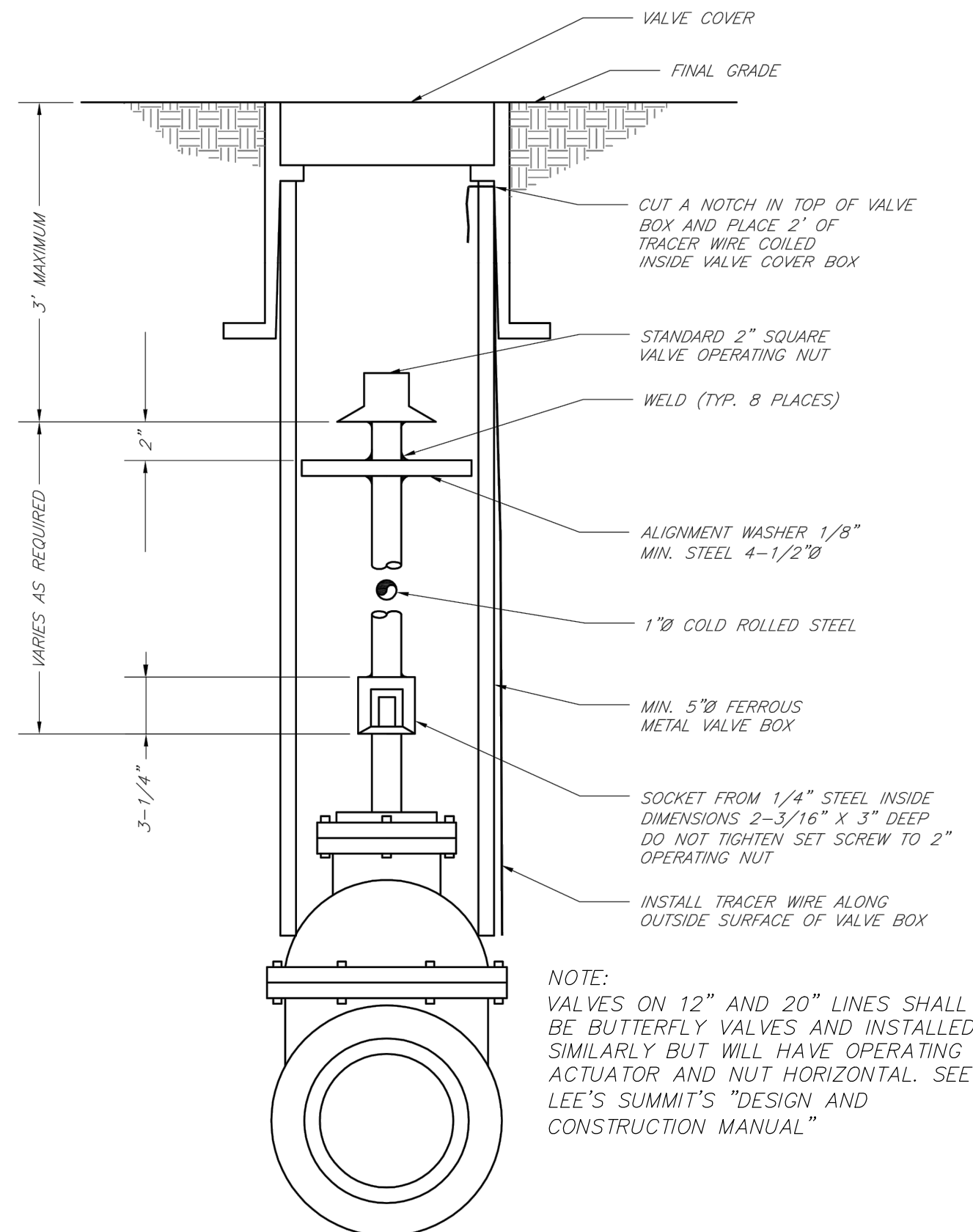
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DATE: Aug 19, 2019 8:33am XREFs: C\_TBLK\_22x34\_81450



- 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.



- 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.



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

LS

LEE'S SUMMIT

MISSOURI

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WATER PIPE ENCASEMENT

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

LS

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HYDRANT WITH 90 DEGREE BEND

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

LS

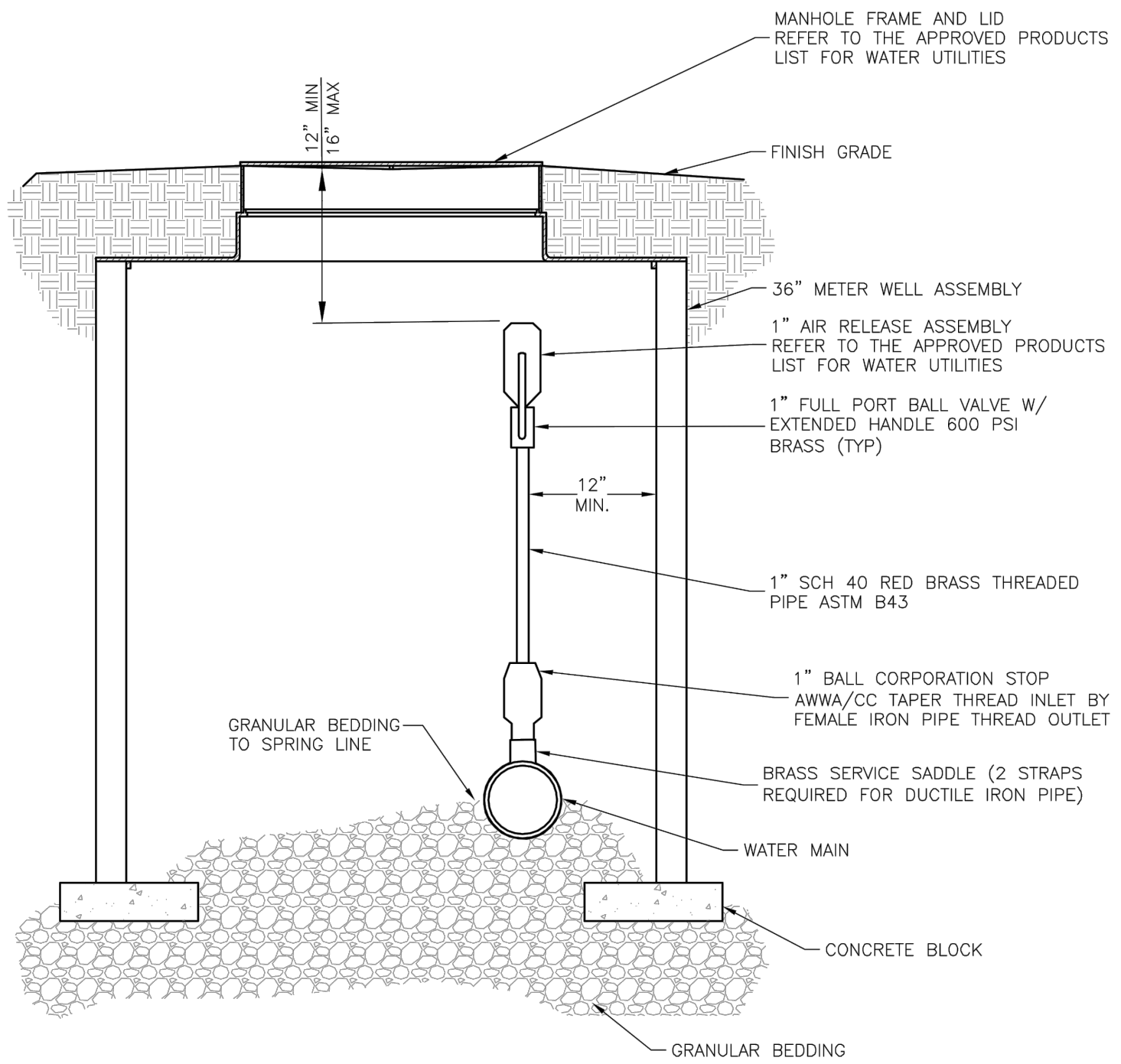
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VALVE STEM EXTENSION AND VALVE BOX

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



AIR RELEASE ASSEMBLY  
NOT TO SCALE

LS

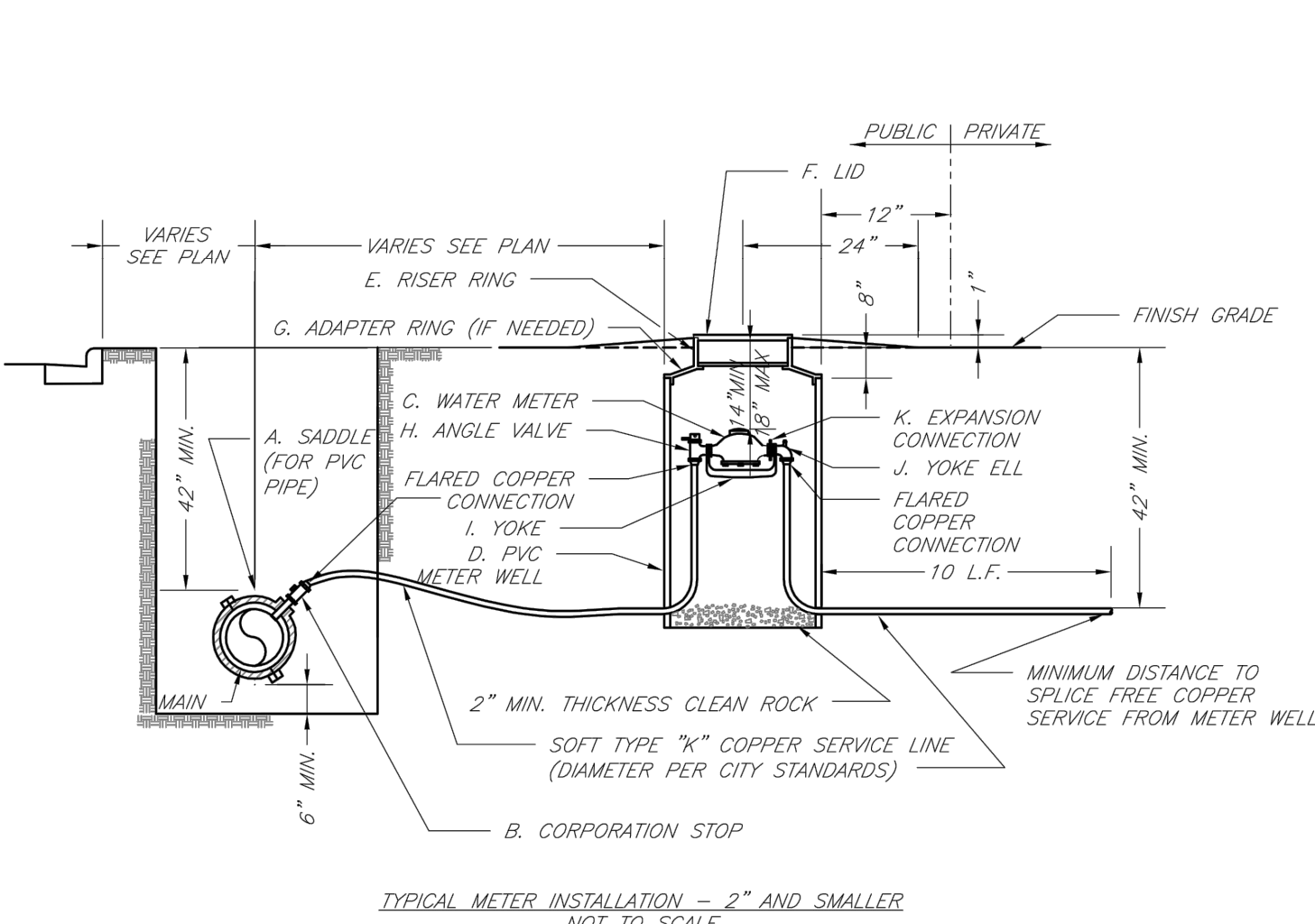
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AIR RELEASE ASSEMBLY

Date: 04/17  
Drawn By: MJF  
Checked By: DL



- 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 SPICES 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"

LS

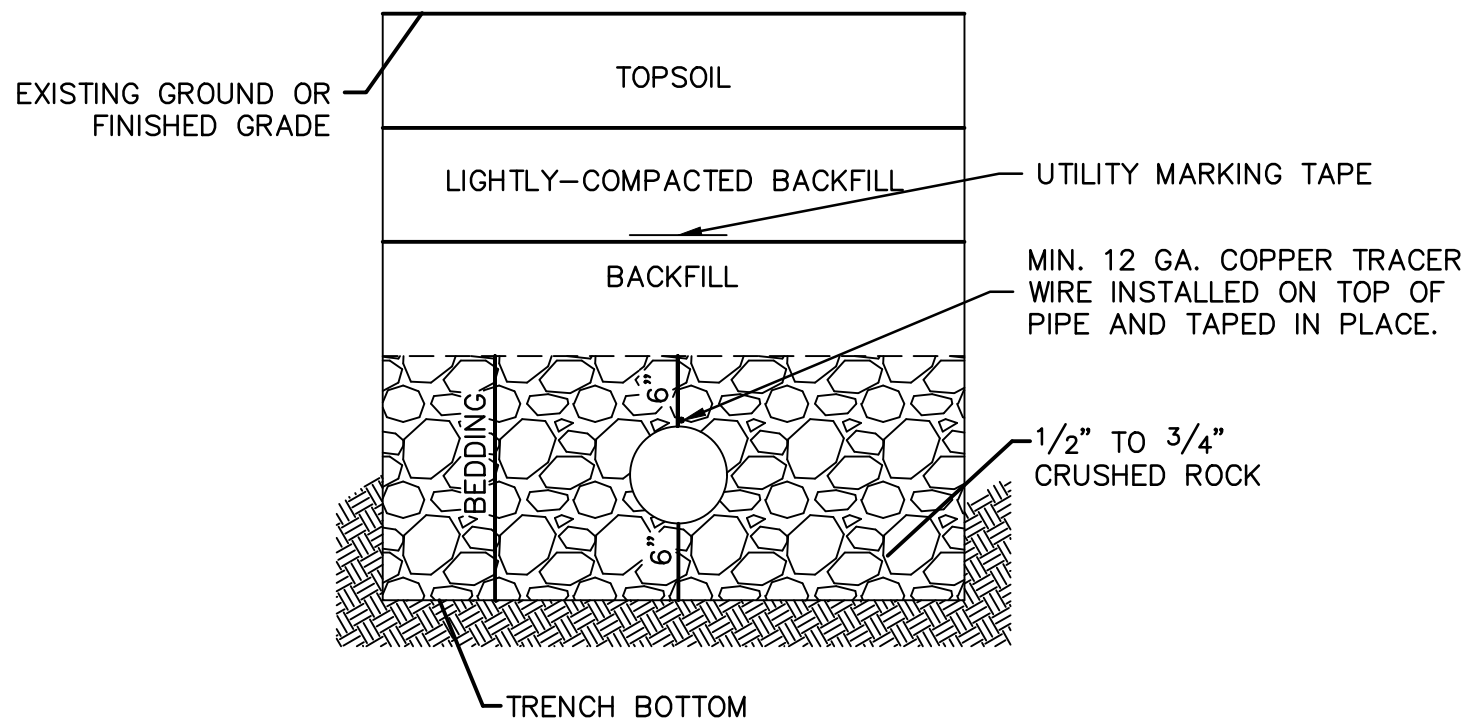
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SERVICE CONNECTION/METER WELL

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



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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08/15/19

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

|                                                     |  |                                                  |  |
|-----------------------------------------------------|--|--------------------------------------------------|--|
| PUBLIC WATER MAIN EXTENSION<br>WATER SYSTEM DETAILS |  | THE PRINCETON SENIOR LIVING<br>SE OLDHAM PARKWAY |  |
| LEE'S SUMMIT, MISSOURI                              |  | 2019                                             |  |

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