WATER SYSTEM STANDARD DRAWING INDEX

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

WATER SYSTEM
STANDARD DRAWING INDEX

NO.	REVISIONS	DATE	BY
1	MISC DRAWINGS REMOVED OR RENAMED	01/29/2019	HSO
2	INDEX CORRECTIONS, ADDED DRAWING	7/30/2024	TAP
3			
4			

DRAWING NO.
400

DATE: 9/12/2017
SCALE: NTS

NOTES:

1. CONSTRUCTION OF IMPROVEMENTS SHALL BE IN ACCORDANCE WITH OAK LODGE WATER SERVICES (OLWS a.k.a. DISTRICT) DEVELOPER EXTENSION AGREEMENT (as applicable), DISTRICT STANDARD DETAILS AND THE OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, MOST CURRENT EDITION, AS ISSUED BY THE OR. STATE DEPT. OF TRANSPORTATION.

2. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO CONSTRUCTION AND 48 HOURS ADVANCE NOTIFICATION OF THE LOCAL MUNICIPALITY, OLWS AND ALL AFFECTED UTILITY COMPANIES PRIOR TO THE ACTUAL START OF WORK.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE PROVISIONS OF THE ROAD OPENING PERMIT AS ISSUED BY CLACKAMAS COUNTY.

4. LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY, LOCATE AND PROTECT ALL UTILITIES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR REPAIRING ANY UTILITIES DAMAGED DURING CONSTRUCTION. SHOW THESE UTILITIES ON THE AS-BUILTS. IF A UTILITY IS DAMAGED, CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY IMMEDIATELY.

5. ALL MAINS, SERVICES, VALVES, FITTINGS, AND OTHER APPURTENANCES MUST BE INSPECTED BY A DISTRICT REPRESENTATIVE BEFORE BURIAL.

6. WATER MAIN TRENCH SECTION AND ALL EXCAVATED AREAS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE STANDARD DETAILS, WITH SECTION 01140.40 OF THE STANDARD SPECIFICATIONS, AND WITH CLACKAMAS COUNTY ROAD OPENING PERMIT. COMPACTION TESTING SHALL BE REQUIRED DURING BACKFILLING OPERATIONS WITHIN ALL ROADWAYS AND AT THE DISCRETION OF THE DISTRICT. IF TRENCH BACKFILL DOES NOT MEET COMPACTION REQUIREMENTS, CONTRACTOR SHALL EXCAVATE, RECOMPACT AND RETEST MATERIAL AT CONTRACTOR'S EXPENSE.

7. RESTORATION OF DAMAGED ROAD SURFACING SHALL BE IN ACCORDANCE WITH CLACKAMAS COUNTY'S REQUIREMENTS. ALL OTHER AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR AS DIRECTED BY THE DISTRICT. THIS INCLUDES SHOULDERS, LANDSCAPING, WALLS, FENCES, DRIVEWAYS, AND OTHER IMPROVEMENTS.

8. THE WATER MAIN SHALL BE INSTALLED WITH A MINIMUM OF 36" OF COVER. INSTALLATION OF MAIN WITH GREATER THAN 48" OF COVER SHALL BE ACCEPTABLE ONLY UNDER THE DIRECTION OF THE DISTRICT.

9. ALL VALVES AND FITTINGS MUST BE MECHANICALLY RESTRAINED BY MEGALUG OR ROMAGRIP JOINT RESTRAINING GLANDS. ALL BELL AND SPIGOT JOINTS MUST BE RESTRAINED BY FIELD LOK GASKETS OR APPROVED EQUAL.

10. A SANITARY GAP MUST BE PROVIDED BETWEEN THE EXISTING AND NEW WATER SYSTEMS. CONNECTION TO THE EXISTING WATER SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR ONLY AFTER COMPLETING OF AN ACCEPTABLE HYDROSTATIC PRESSURE TEST AND THE PIPELINE IS DISINFECTED AND RECEIPT OF APPROVAL OF WATER QUALITY TEST RESULTS FROM THE TESTING LAB.

11. CONTRACTOR SHALL PERFORM PRESSURE TEST AT 180psi OR 1.5 TIMES THE NORMAL WORKING PRESSURE, WHICHEVER IS HIGHER, INCLUDING ON HYDRANTS AND SERVICE LINES. MAINLINE SHALL BE TESTED IN SECTIONS OF NO MORE THAN 1,500 FEET. PRESSURE SHALL BE MAINTAINED FOR 1 HOUR MINIMUM. ANY LEAKAGE IS UNACCEPTABLE.

12. A PIPE PLUG SHALL BE USED ON EACH JOINT DURING INSTALLATION TO PROTECT AGAINST FLOODING OF THE PIPE.

13. NO OTHER UTILITIES SHALL BE INSTALLED WITHIN 36" HORIZONTALLY OF ANY ACTIVE WATER LINE UNLESS OTHERWISE PRE-APPROVED BY THE DISTRICT.

14. CONTRACTOR SHALL POTHOLE A SUFFICIENT DISTANCE AHEAD TO VERIFY DEPTH OF ALL EXISTING WATER MAINS AND CROSSING UTILITIES PRIOR TO CONSTRUCTION AND CONNECTIONS AND TO ANTICIPATE ANY NECESSARY CHANGES IN FITTINGS OR ALIGNMENT.

15. A PROPOSED CONSTRUCTION DRAWING MUST BE SUBMITTED TO THE DISTRICT BEFORE WATER SERVICE WILL BE PROVIDED.

16. DEFLECTION AT PIPE AND FITTING JOINTS WILL BE ALLOWED UP TO 3.0° (11" OVER 18') OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS LESS.

17. CONTRACTOR SHALL ONLY DISPOSE OF WASTE MATERIAL AT SITES APPROVED BY CLACKAMAS COUNTY. STOCKPILE MATERIALS ONLY ON DISTRICT APPROVED SITES.

18. HATCH NOTE: ALL VAULT HATCHES 2'x2' OR LARGER SHALL BE HINGED, SPRING ASSIST OPENING, INCLUDE RECESSED PADLOCK HASP, DRAINABLE FRAME (C OR U CHANNEL WITH PIPE CONNECTION), H20 RATED MINIMUM, ALUMINUM OR GALVANIZED STEEL. IF HATCH WILL BE LOCATED IN A TRAVELED AREA (ROAD OR DRIVEWAY), SUBMIT MANUFACTURER'S STATEMENT THAT HATCH IS RATED FOR CONTINUOUS AND DELIBERATE H20 TRAFFIC SERVICE. HATCHES SHALL BE CAST INTO VAULT LID OR RISER.

19. ALL PIPE 3" AND LARGER SHALL BE DUCTILE IRON (DI) MINIMUM CLASS 52 (12" AND SMALLER), EXCEPT WHERE TRENCH BACKFILL AND LOADING DICTATE A STRONGER CLASS PIPE OR IN AREAS WHERE PRESSURE EXCEEDS 150 PSI. ALL HYDRANT RUNS AND PIPING INSTALLED WITH MEGA-LUG TYPE JOINT RESTRAINTS SHALL BE DUCTILE IRON PIPE CLASS 52, NO EXCEPTIONS. PIPING INSTALLED WITHIN VAULTS OR OTHER EXPOSED AREAS SHALL BE DUCTILE IRON CLASS 53.

20. CASINGS SHALL BE NEW STEEL, HDPE OR PVC; MATERIAL AND WALL THICKNESS AT THE DISCRETION OF THE DISTRICT. PIPE THROUGH CASINGS SHALL BE SUPPORTED WITH RUNNERS SPACED NO FARTHER THAN 8 FEET APART. RUNNERS SHALL BE MANUFACTURED PRODUCTS (PSI, CALPICO, OR APPROVED EQUAL), NO BLOCKS AND STRAPS. CASING ENDS SHALL BE CAPPED WITH MANUFACTURED CASING END SEALS.

21. WATER MAINS AND SERVICES MUST BE INSTALLED A MINIMUM CLEAR DISTANCE OF 5 FEET HORIZONTALLY FROM SANITARY SEWERS.

22. CONTRACTORS WORKING WITHIN THE RIGHT OF WAY OR ON EXISTING DISTRICT INFRASTRUCTURE SHALL BE LICENSED, BONDED AND HAVE EXPERIENCE INSTALLING PUBLIC DOMESTIC WATER SYSTEMS AND BE PREPARED TO PRESENT EXAMPLES OF 5 SUCH PROJECTS UPON REQUEST BY THE DISTRICT.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

WATER SYSTEM CONSTRUCTION NOTES

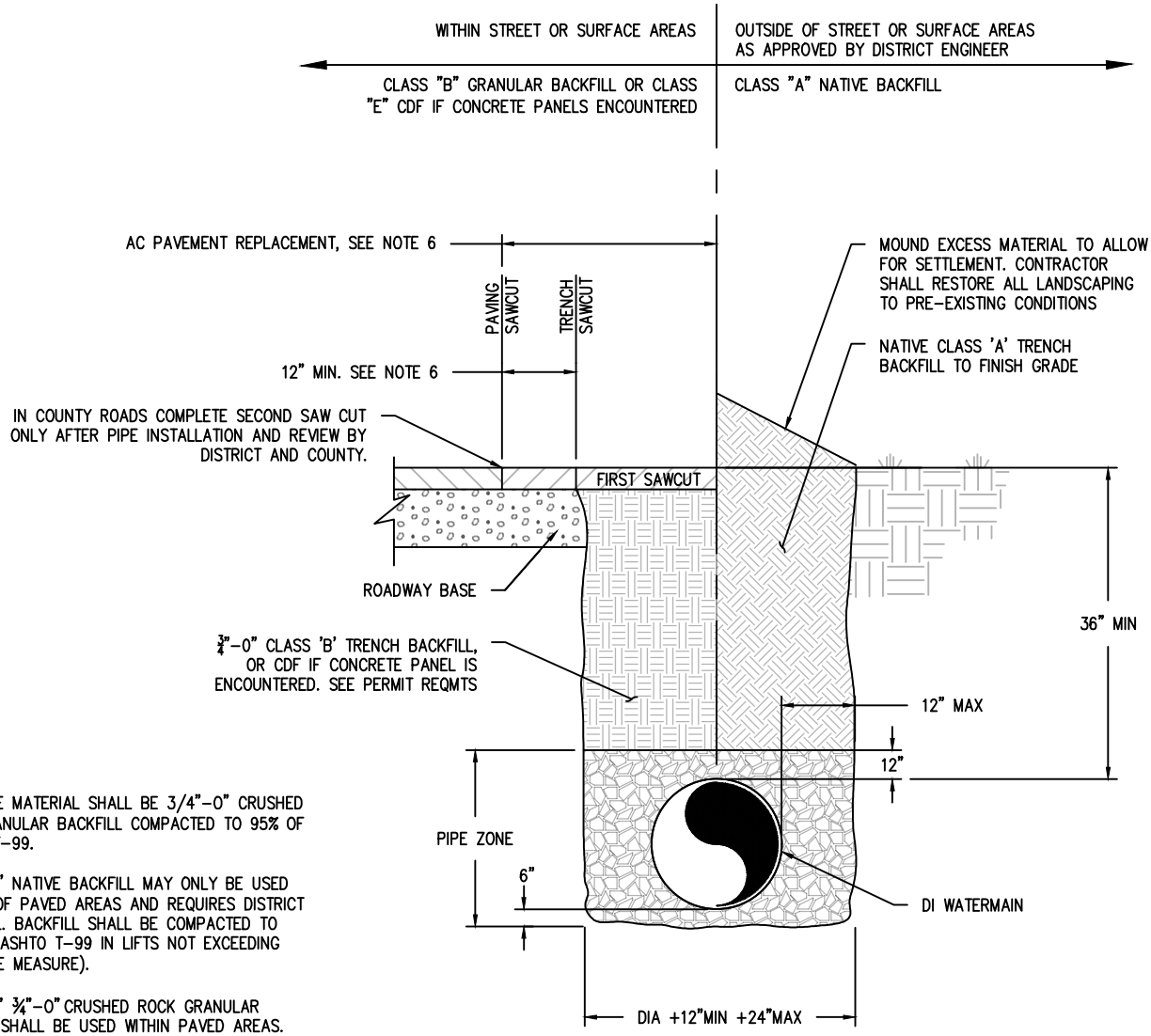
NO.	REVISIONS	DATE	BY
1	MISC NOTES	02/18/2020	HSO
2			
3			
4			

DRAWING NO.

401

DATE: 9/12/2017

SCALE: NTS



NOTES:

1. PIPE ZONE MATERIAL SHALL BE 3/4"-0" CRUSHED ROCK GRANULAR BACKFILL COMPACTED TO 95% OF AASHTO T-99.
2. CLASS "A" NATIVE BACKFILL MAY ONLY BE USED OUTSIDE OF PAVED AREAS AND REQUIRES DISTRICT APPROVAL. BACKFILL SHALL BE COMPACTED TO 90% OF AASHTO T-99 IN LIFTS NOT EXCEEDING 18" (LOOSE MEASURE).
3. CLASS "B" ¾"-0" CRUSHED ROCK GRANULAR BACKFILL SHALL BE USED WITHIN PAVED AREAS. BACKFILL SHALL BE COMPACTED TO 95% OF AASHTO T-99.
4. BACKFILL SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 24-INCH LIFTS. COMPACTION TESTING REQUIRED PER COUNTY SPECIFICATIONS.
5. COMPLETE SURFACE AND PAVEMENT RESTORATION IN ACCORDANCE WITH THE PROVISIONS OF THE ROAD OPENING PERMIT FROM CLACKAMAS COUNTY.
6. SAWCUT WIDTH AND AC PAVEMENT REPLACEMENT SHALL BE PER APPLICABLE JURISDICTIONAL REQUIREMENTS. SAWCUT CLEAN EDGE FOR AC PAVEMENT REPLACEMENT. SAND SEAL JOINT.
7. PROVIDE CLASS "E" CDF BACKFILL FOR ALL TRENCH CROSSINGS LOCATED IN VEHICLE TRAVEL LANES OF ARTERIAL & COLLECTOR STREETS, OR WHERE CONCRETE PANELS ARE ENCOUNTERED. IF THESE SPECIFICATIONS CONFLICT WITH THE SPECIFICATIONS OF ANOTHER APPLICABLE JURISDICTION, THE MORE STRINGENT SPECIFICATION SHALL GOVERN.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

TYPICAL PIPE TRENCH DETAIL

NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DRAWING NO.

402

DATE: 02/18/2020

SCALE: NTS

RESTRAINED JOINT PIPE IS APPROPRIATE TO USE IN MANY SITUATIONS. HOWEVER, OLWS WILL BE THE SOLE DETERMINER IF THE APPLICATION IS APPROPRIATE ON A GIVEN JOB. TYPICAL APPLICATIONS INCLUDE:

1. DEAD END MAINS THAT MAY BE EXTENDED.
2. SOILS NOT SUPPORTIVE OF THRUST BLOCKING.
3. INSUFFICIENT BEARING SOIL BEHIND FITTINGS.
4. VERTICAL BENDS (not covered here. must be designed by engineer for each job)

THE FOLLOWING PRODUCTS ARE PRE-APPROVED FOR USE IN RESTRAINED JOINT APPLICATIONS. ALL RESTRAINED JOINT PIPE SHALL BE DUCTILE IRON, UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.

1. GRIFFIN: SNAP-LOK or BOLT-LOK
2. US PIPE: TR-FLEX or FIELD-LOK GASKET
3. PACIFIC STATES: THRUST-LOCK
4. EBAA IRON: MEGALUG
5. ROMAC: ROMAGRIP

THE FOLLOWING TABLE HAS BEEN DEVELOPED USING THE *DUCTILE IRON PIPE RESEARCH ASSOCIATION* RESTRAINED JOINT CALCULATOR. THE FOLLOWING CONDITIONS MUST BE MET FOR THESE RESULTS TO BE VALID. IF ANY OF THESE CONDITIONS CANNOT BE MET, PROJECT SPECIFIC CALCULATIONS MUST BE PROVIDED:

A) THIS TABLE ONLY FOR BARE DUCTILE IRON PIPE. ANY OTHER TYPES OF PIPE WILL REQUIRE RE-EVALUATION.

B) PIPE LAYING CONDITION TYPE 4 or 5. SELECT GRANULAR BEDDING MATERIAL BELOW PIPE. PIPE ZONE MATERIAL EXTENDING TO TOP OF PIPE MECHANICALLY COMPACTED. PIPE RESTING DIRECTLY ON NATIVE TRENCH BOTTOM IS NOT ACCEPTABLE.

C) BEDDING SAND IS WELL GRADED WITH FINES. IF GRAVELLY SAND IS USED, LENGTHS MUST BE MULTIPLIED BY 1.3

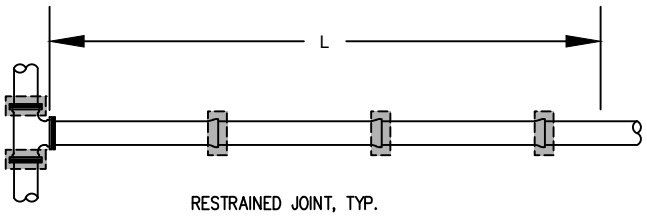
D) DEPTH OF COVER IS 3 FEET MINIMUM.

E) 300psi TEST PRESSURE MAXIMUM. FOR HIGHER TEST PRESSURE, TABLE LENGTHS MUST BE MULTIPLIED BY THE PROPORTIONAL DIFFERENCE. EXAMPLE: FOR 350psi, 350/300=1.17 THEREFORE, LENGTHS MUST BE MULTIPLIED BY 1.17

THE LENGTH "L" GIVEN BELOW INDICATES THE DISTANCE THAT PIPE MUST BE RESTRAINED PAST THE FITTING JOINT. ALL JOINTS WITHIN THIS DISTANCE MUST BE RESTRAINED, INCLUDING THE FITTING.

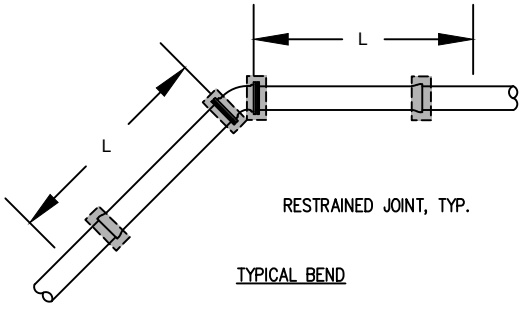
PIPE DIAMETER	RESTRAINED LENGTH, "L"						
	11¼° BEND	22½° BEND	45° BEND	90° BEND	TEE w/SAME SIZE BRANCH*	DEAD END	REDUCER **
4"	3'	5'	11'	25'	26'	50'	30'
6"	4'	7'	14'	36'	48'	72'	37'
8"	5'	10'	19'	46'	70'	94'	67'
10"	6'	11'	24'	56'	90'	114'	70'
12"	7'	13'	28'	66'	110'	134'	71'
16"	10'	17'	35'	85'	151'	175'	104'
18"	11'	19'	40'	95'	170'	196'	106'

* assumes all three legs restrained, and a minimum 5' stick of pipe in each run leg.
** assumes reducer down 2 sizes. (example 12"x8"). Larger reductions shall be treated as a tee.



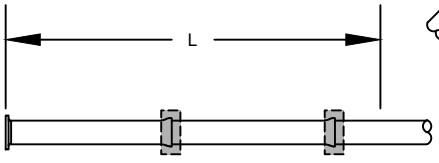
RESTRAINED JOINT, TYP.

TYPICAL TEE



RESTRAINED JOINT, TYP.

TYPICAL BEND



DEAD END

OAK LODGE WATER SERVICES

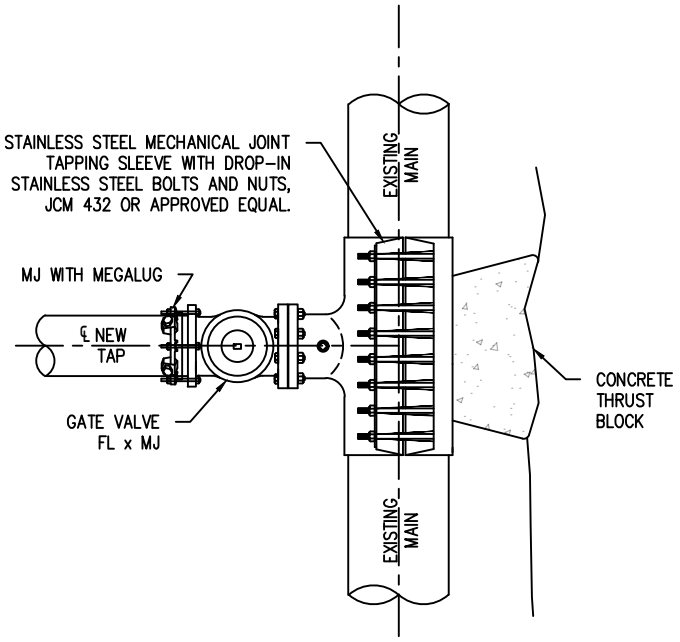
WATER SYSTEM STANDARD DRAWING

RESTRAINED JOINT PIPE

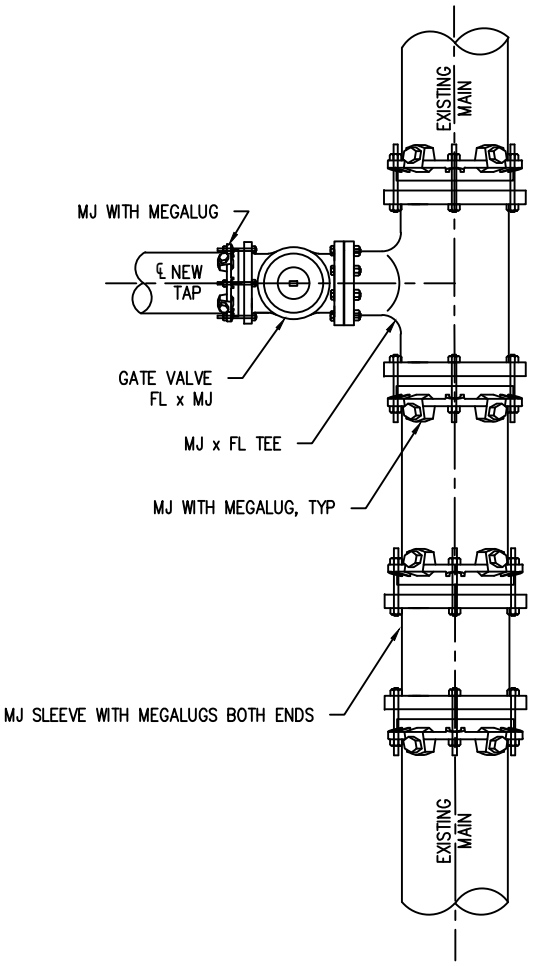
NO.	REVISIONS	DATE	BY
1	UPDATED NOTES	3/11/2024	TAP
2			
3			
4			

DRAWING NO.
407

DATE: 02/18/2020
SCALE: NTS



LIVE TAP



CUT-IN-TEE

NOTES:

1. TAPPING SLEEVE SHALL BE STAINLESS STEEL MECHANICAL SLEEVE.
2. CONNECTIONS TO EXISTING MAIN SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF OLWS AND WILL NOT BE ALLOWED ON FRIDAYS, HOLIDAYS OR WEEKENDS. VALVES SHALL BE OPERATED BY OLWS ONLY.
3. 11 MIL PLASTIC OR CONSTRUCTION FABRIC SHALL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCK IS POURED.
4. SUPPORT VALVE AND SLEEVE CONTINUOUSLY THROUGH INSTALLATION.
5. TEST TAPPING SLEEVE PRIOR TO CUTTING EXISTING MAIN.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

TAPPING AND CUT-IN METHODS

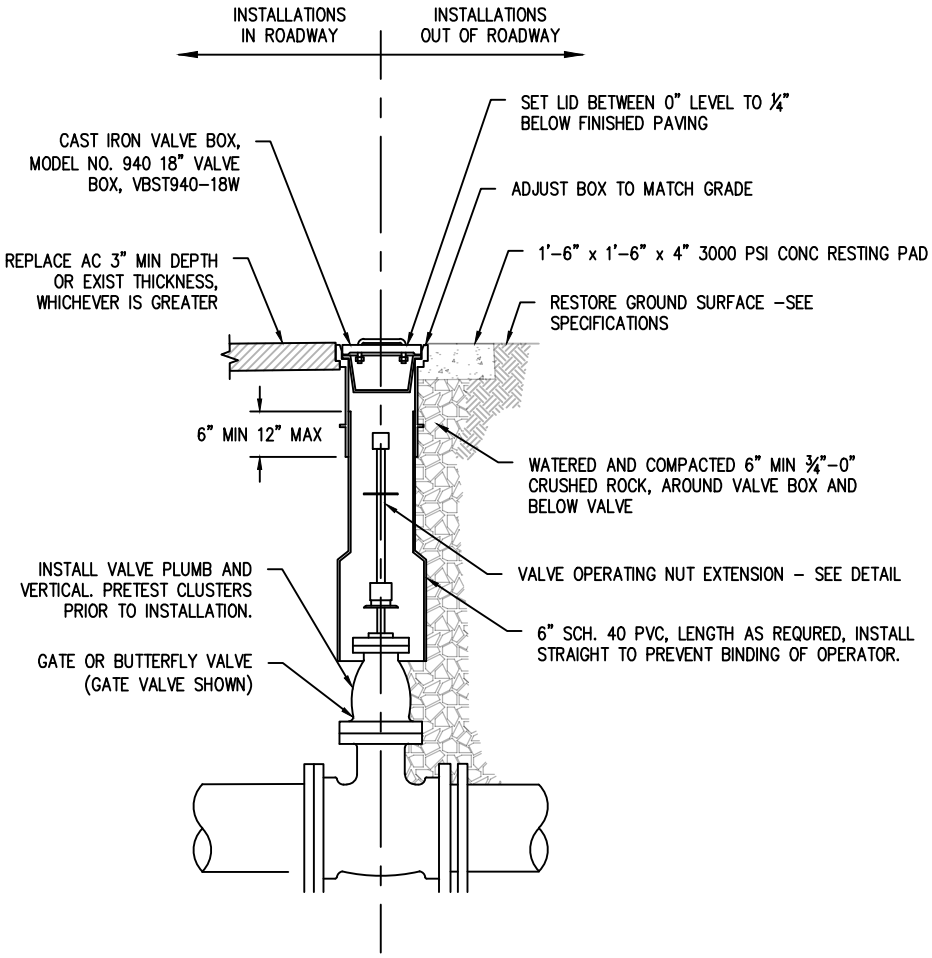
NO.	REVISIONS	DATE	BY
1	BACKFILL REMOVED, SLEEVE MATERIAL TO SST	1/2/2020	HSO
2			
3			
4			

DRAWING NO.

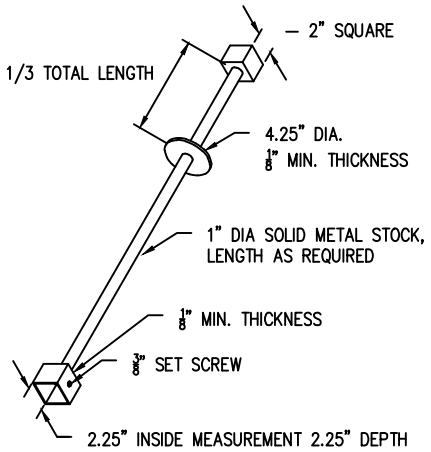
408

DATE: 7/7/2017

SCALE: NTS



ISOLATION VALVE DETAIL



OPERATING NUT EXTENSION

ISOLATION VALVE NOTES:

1. VALVES SHALL BE INSTALLED AT NO MORE THAN 500 FT SPACING REGARDLESS OF MAIN SIZE.
2. ISOLATION VALVES 2" AND LARGER ARE TO BE NRS RESILIENT SEATED GATE VALVES MEETING AWWA C509 OR C515. VALVES 14" AND LARGER SHALL BE BUTTERFLY VALVES MEETING AWWA C504.
3. BACKFILL AROUND VALVE BOXES SHALL BE COMPACTED USING A JUMPING JACK.
4. STAR PIPE PRODUCTS MODEL NUMBERS SHOWN. OWNER APPROVED EQUALS WILL BE ALLOWED.
5. ALL VALVES SHALL BE SUPPLIED WITH VALVE BOX AND LID. LID SHALL HAVE RECESSED HANDLE.
6. ALL VALVES THAT WILL BE PART OF A CUT-IN CONNECTION OR HOT TAP ON AN EXISTING MAIN SHALL BE PRE-PRESSURE TESTED ON BOTH SIDES OF THE SEAT PRIOR TO INSTALLATION.

OPERATING NUT EXTENSION NOTES:

1. EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS 5 FEET OR DEEPER BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG, ONLY ONE EXTENSION PER VALVE. ALL EXTENSIONS ARE TO BE SIZED AS NOTED AND MADE OF STEEL TO ASTM A36 A40 A120.
2. FOR EXTENSIONS LONGER THAN 4 FEET AND/OR VALVES LARGER THAN 12" DIAMETER, BAR SHALL BE 1¼" DIAMETER.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

ISOLATION VALVE DETAILS

NO.	REVISIONS	DATE	BY
1	SPACING AND DEPTH REQ'D	02/18/2020	HSO
2	SPACING AND DEPTH REQ'D	12/14/2020	HSO
3	REVISED MANUFACTURER, EXTENSION REQ'D	7/25/2024	TAP
4			

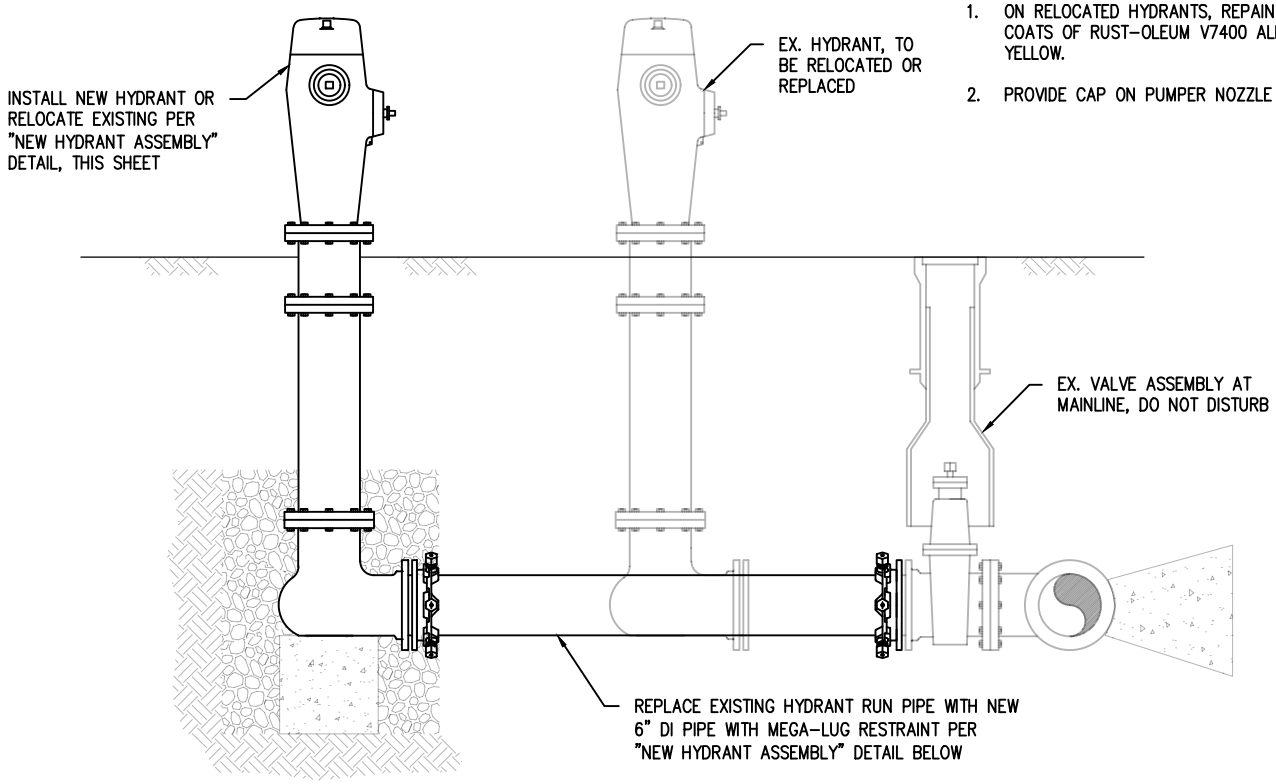
DRAWING NO.

410

DATE: 9/12/2017

SCALE: NTS

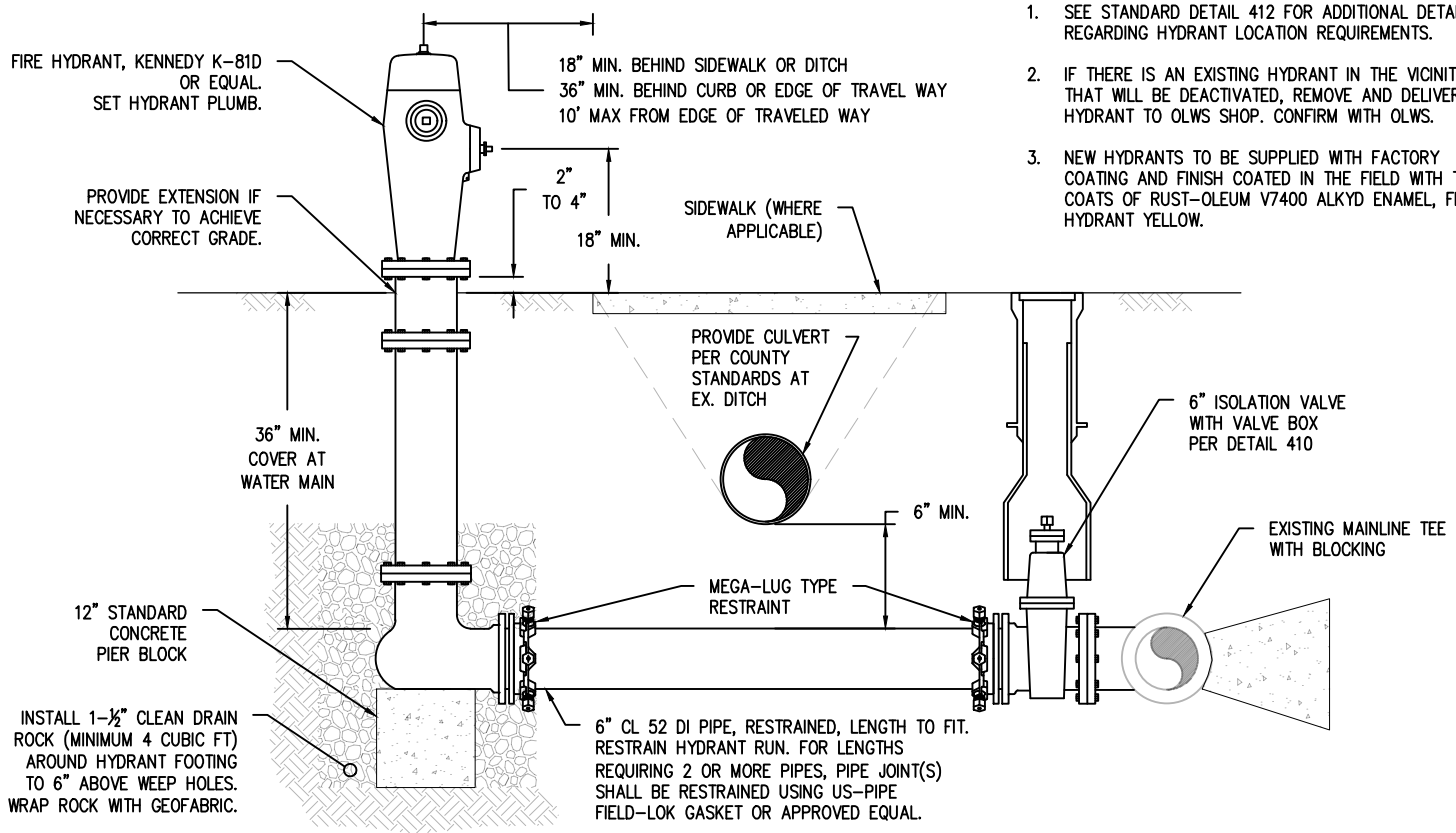
HYDRANT RELOCATION



RELOCATED HYDRANT NOTES:

1. ON RELOCATED HYDRANTS, REPAINT HYDRANTS WITH TWO COATS OF RUST-OLEUM V7400 ALKYD ENAMEL, FIRE HYDRANT YELLOW.
2. PROVIDE CAP ON PUMPER NOZZLE PER OLWS STANDARDS.

NEW HYDRANT ASSEMBLY



NEW HYDRANT NOTES:

1. SEE STANDARD DETAIL 412 FOR ADDITIONAL DETAILS REGARDING HYDRANT LOCATION REQUIREMENTS.
2. IF THERE IS AN EXISTING HYDRANT IN THE VICINITY THAT WILL BE DEACTIVATED, REMOVE AND DELIVER HYDRANT TO OLWS SHOP. CONFIRM WITH OLWS.
3. NEW HYDRANTS TO BE SUPPLIED WITH FACTORY COATING AND FINISH COATED IN THE FIELD WITH TWO COATS OF RUST-OLEUM V7400 ALKYD ENAMEL, FIRE HYDRANT YELLOW.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

FIRE HYDRANT ASSEMBLY

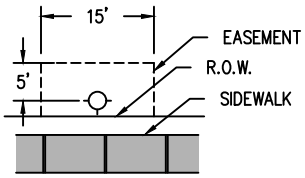
NO.	REVISIONS	DATE	BY
1	MINOR DRAIN ROCK AND BLOCK CHANGES	1/2/2020	HSO
2	CHANGE TO FH MANUFACTURER	7/24/2024	TAP
3			
4			

DRAWING NO.

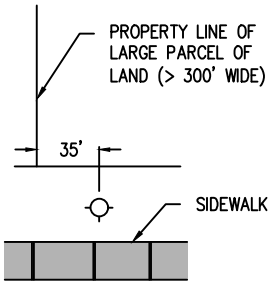
411

DATE: 9/12/2017

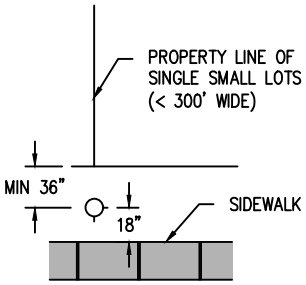
SCALE: NTS



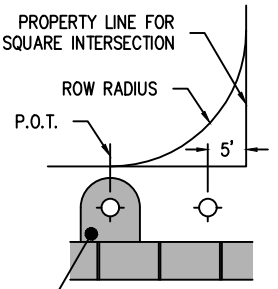
GENERAL



LARGE PARCEL



SMALL PARCEL

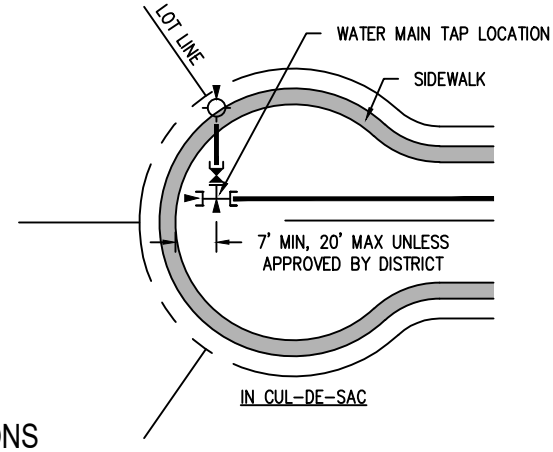


SQUARE INTERSECTION

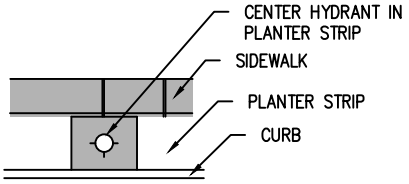
4" THICK CONCRETE APRON, 24" RADIUS, WHEN REQUIRED BY DISTRICT

HYDRANT LOCATIONS NOTES:

1. COORDINATE HYDRANT LOCATION WITH DISTRICT.
2. HYDRANTS SHALL BE INSTALLED AT THE END OF ALL 8" DIAMETER AND LARGER DEAD END MAINS.
3. IF HYDRANT CANNOT BE LOCATED WITHIN ROW WITH 3' CLEAR, AN EASEMENT MUST BE PROVIDED.

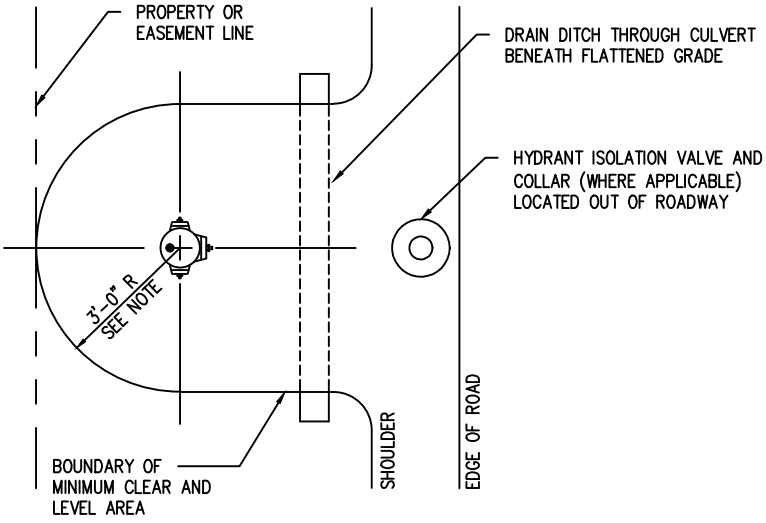


IN CUL-DE-SAC

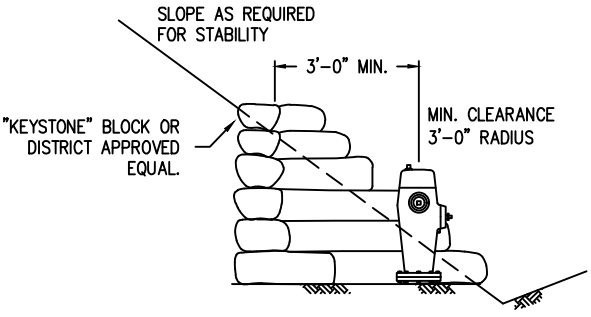


PLANTER STRIP

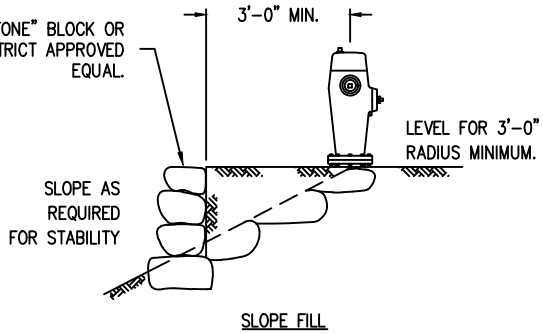
TYPICAL HYDRANT LOCATIONS



PLAN



HILL CUT



SLOPE FILL

NOTES:

1. SURFACE TO 4" THICK CONCRETE PAD, FREE FROM OBSTRUCTIONS, LEVEL, AND UNIFORMLY GRADED AROUND HYDRANT, MIN OF 3 FEET IN ALL DIRECTIONS.
2. ROCKERY OR KEYSTONE TYPE RETAINING WALL TO BE PROVIDED WHERE NECESSARY IN CUT AND FILL AREAS.

CLEARANCE AND GRADING REQUIREMENTS FOR HYDRANTS

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

FIRE HYDRANT LOCATIONS

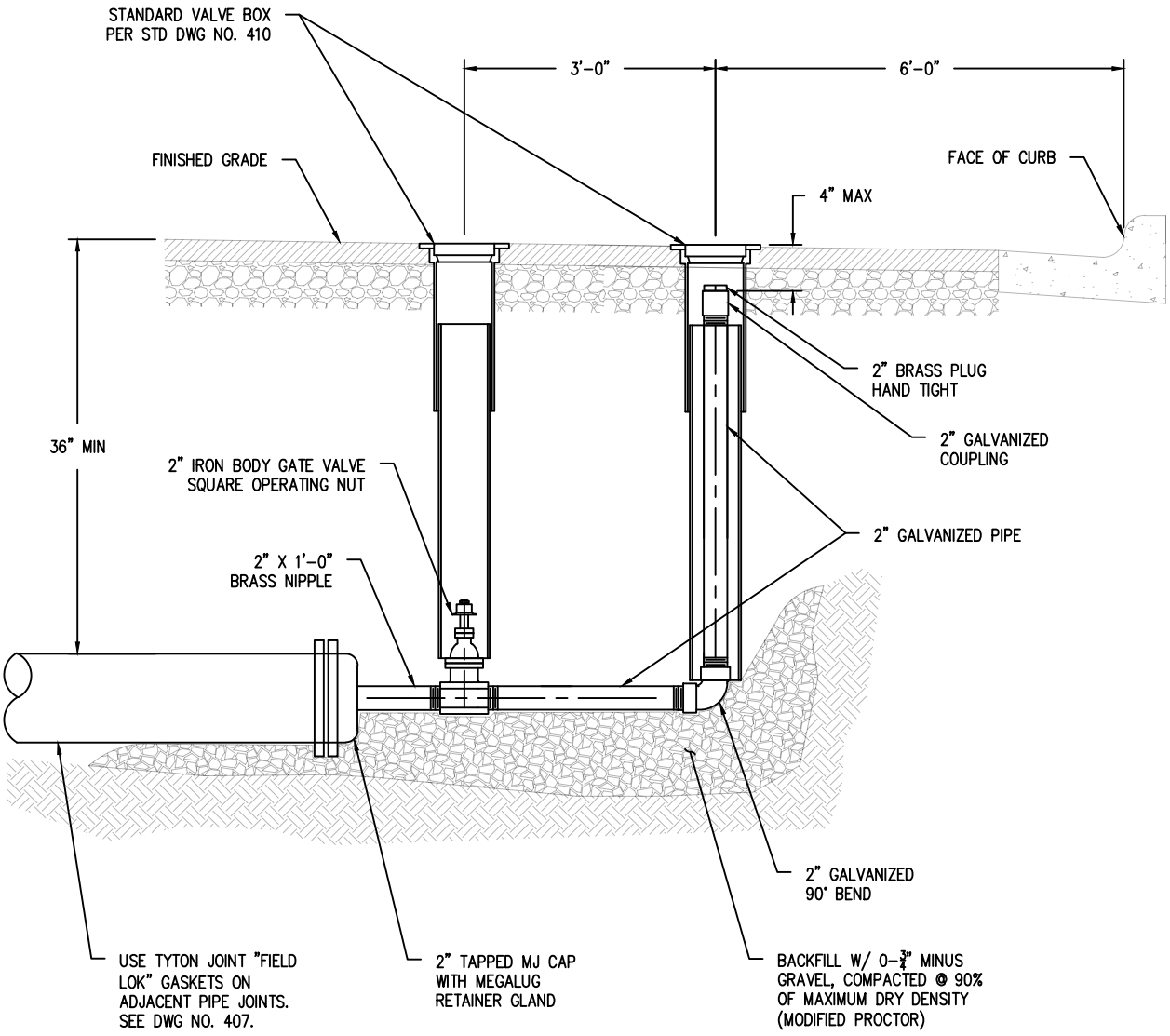
NO.	REVISIONS	DATE	BY
1	REARRANGED AND ADDED HEADINGS	02/18/2020	HSO
2			
3			
4			

DRAWING NO.

412

DATE: 07/07/2017

SCALE: NTS



OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

BLOWOFF ASSEMBLY

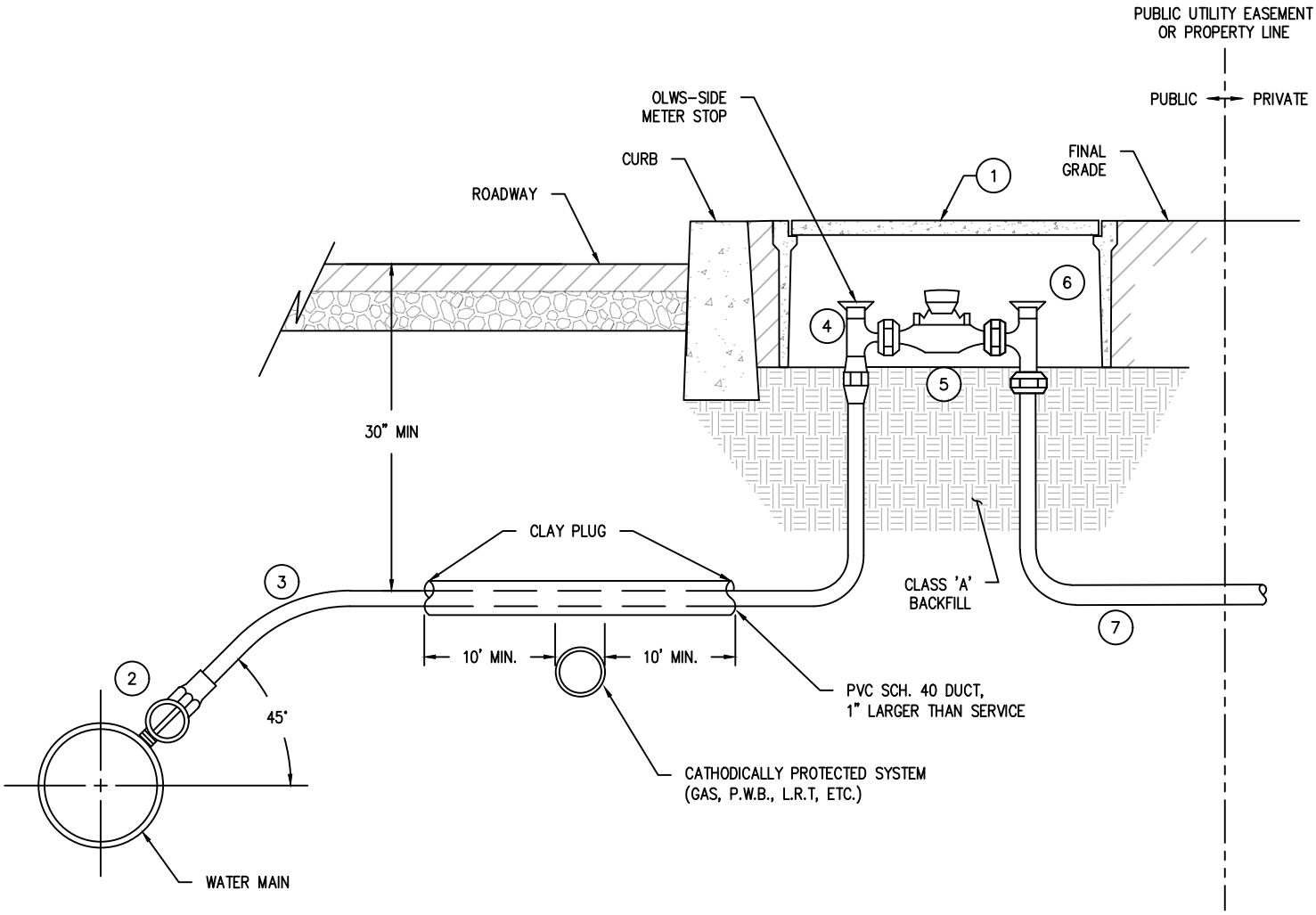
NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DRAWING NO.

413

DATE: 09/12/2017

SCALE: NTS



NOTES:

1. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE PRE-APPROVED BY OLWS.
2. WATER MAIN TRENCH MUST BE 3-FOOT WIDE X 6-FOOT DEEP MINIMUM, WITH 1-FOOT CLEAR BEHIND THE MAIN AND 1-FOOT CLEAR UNDER THE MAIN.
3. ALL PIPE AND STRUCTURE ZONES SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGGREGATE AND COMPACTED TO 95% MAX. DENS. AS DETERMINED BY AASHTO T-180. COPPER SERVICE SHALL BE BEDDED AND COVERED WITH BACKFILL 6" ALL AROUND SERVICE. IN ROADS, BACKFILL SHALL BE EXTENDED TO TOP OF EXCAVATION.
4. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN ABOVE WITH CLAY PLUG.
5. THE COMPLETE WATER SERVICE MUST BE INSPECTED OLWS PRIOR TO BACKFILL OR BE RE-EXCAVATED WITHOUT COST TO OLWS.
6. FOR LOCATION OF OLWS-SIDE METER STOP RELATIVE TO PROPERTY LINE, EASEMENT LINE, CURB, OR SIDEWALK, SEE DRAWING 430.

KEYNOTES:

1. OLWS STANDARD METER BOX WITH TOP OF LID AT FINAL GRADE.
2. CORPORATION STOP VALVE. FULL-PORT BALL TYPE UNIT TAPPED DIRECTLY INTO WATER MAIN WITH MALE IRON PIPE THREADS. OPERATING NUT INSTALLED IN 3 O'CLOCK OR 9 O'CLOCK POSITION.
3. 3/4" OR 1" SOFT TEMPER, TYPE 'K' COPPER TUBING COMPLYING WITH ASTM B-88. ENTIRE SERVICE SHALL BE SINGLE PIECE OF NEW PIPE FROM CORP STOP TO OLWS-SIDE METER STOP. COPPER-TO-COPPER UNIONS ARE ONLY ACCEPTABLE WHEN WATER SERVICE IS LONGER THAN 100 FEET AND ONLY WITH PRIOR APPROVAL OF DISTRICT ENGINEER.
4. OLWS-SIDE METER STOP INSTALLED 7" TO 9" BELOW FINISH GRADE. FULL-PORT BALL TYPE ANGLED METER STOP WITH LOCKING WINGS.
5. WATER METER, TO BE SUPPLIED AND INSTALLED BY OLWS.
6. CUSTOMER-SIDE METER STOP SAME AS OLWS-SIDE, EXCEPT BOTH BALL-TYPE AND KEY-TYPE ARE ACCEPTABLE AND LOCKING WINGS ARE NOT REQUIRED.
7. CUSTOMER-SIDE PLUMBING WITHIN THE METER BOX SHALL BE PEX OR COPPER. PVC IS NOT ACCEPTABLE.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

3/4" AND 1" WATER SERVICE ASSEMBLY

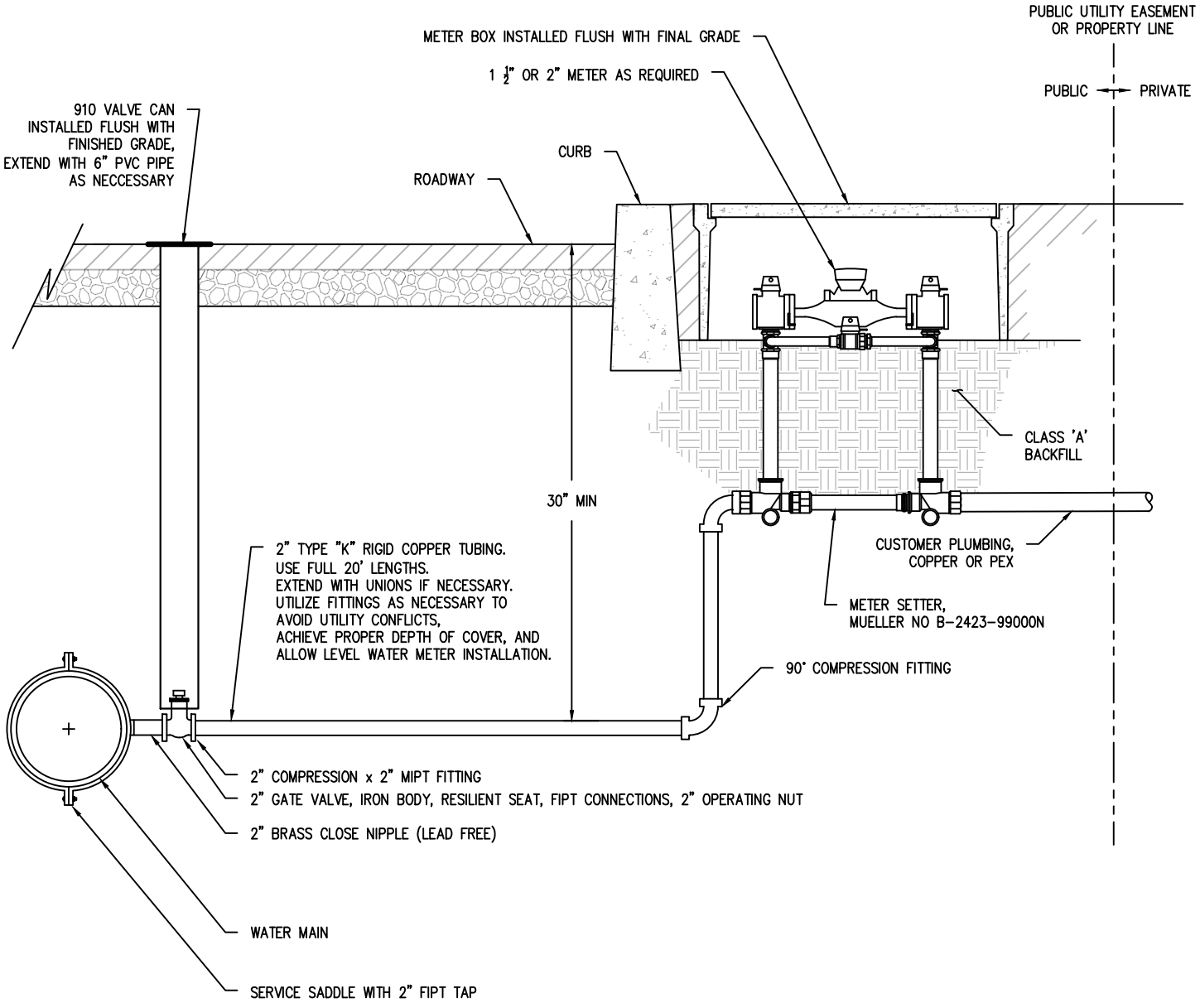
NO.	REVISIONS	DATE	BY
1	SPECS	02/18/2020	HSO
2	TRENCH DIMENSIONS AND UNION ALLOWANCE	12/14/2024	HSO
3	NOTE CORRECTIONS	3/5/2024	TAP
4			

DRAWING NO.

420

DATE: 7/7/2017

SCALE: NTS



OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

1 ½" AND 2" WATER SERVICE ASSEMBLY

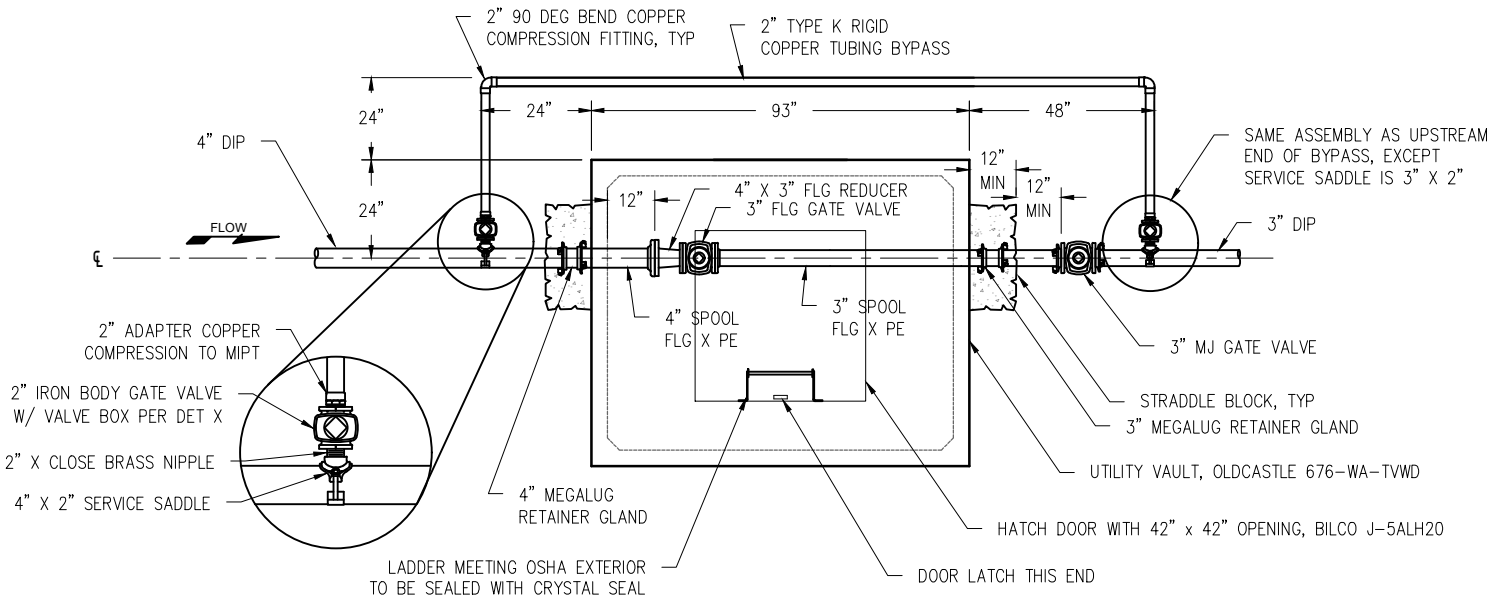
NO.	REVISIONS	DATE	BY
1	CLARIFICATION AND TYPOS	12/14/2020	HSO
2	ADDED METER SETTER	7/30/2024	TAP
3			
4			

DRAWING NO.

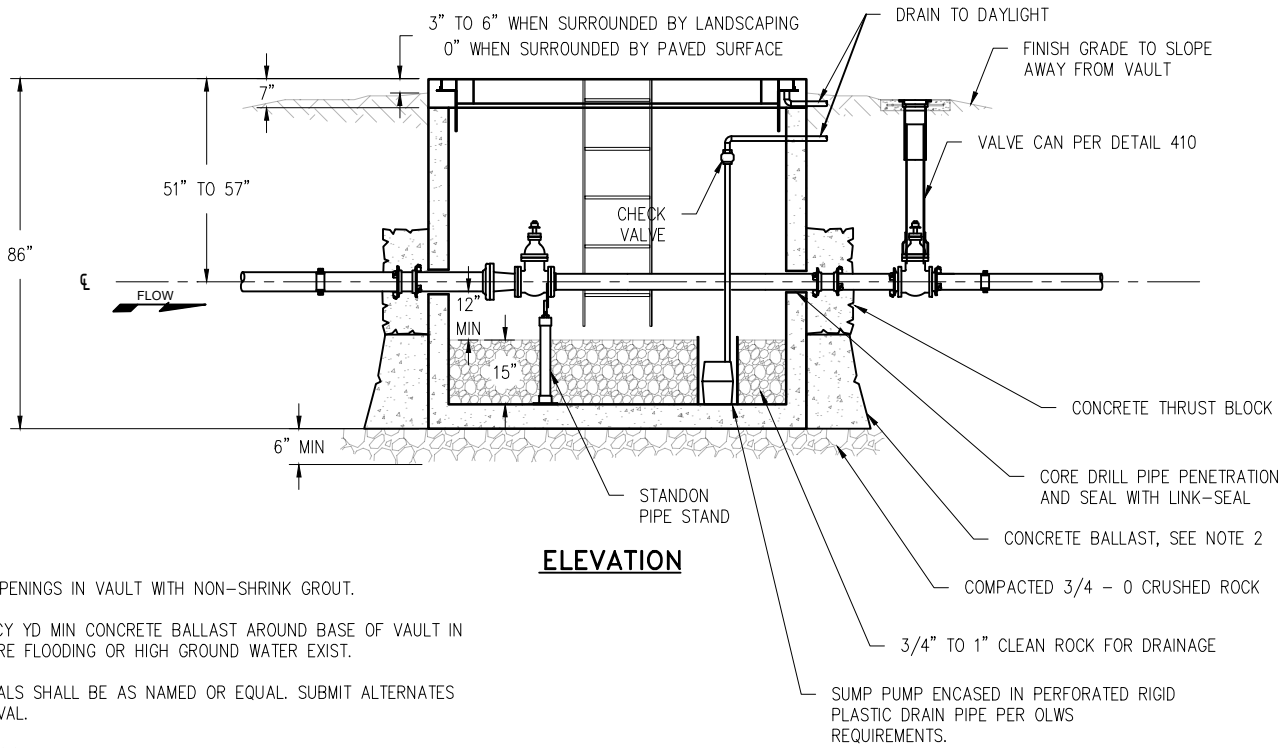
421

DATE: 02/18/2020

SCALE: NTS



PLAN



ELEVATION

NOTES:

1. SEAL ALL OPENINGS IN VAULT WITH NON-SHRINK GROUT.
2. INSTALL 3 CY YD MIN CONCRETE BALLAST AROUND BASE OF VAULT IN AREAS WHERE FLOODING OR HIGH GROUND WATER EXIST.
3. ALL MATERIALS SHALL BE AS NAMED OR EQUAL. SUBMIT ALTERNATES FOR APPROVAL.
4. ORS 92.044(7) PROHIBITS LOCATING ANY UTILITY INFRASTRUCTURE WITHIN 12 INCHES OF A SURVEY MONUMENT. DEVELOPER SHALL PAY FOR ANY RELOCATION OF SERVICES AND/OR METER BOXES FOUND TO FALL WITHIN 12 INCHES OF A SURVEY MONUMENT LOCATION.

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

3-INCH WATER SERVICES ASSEMBLY

NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

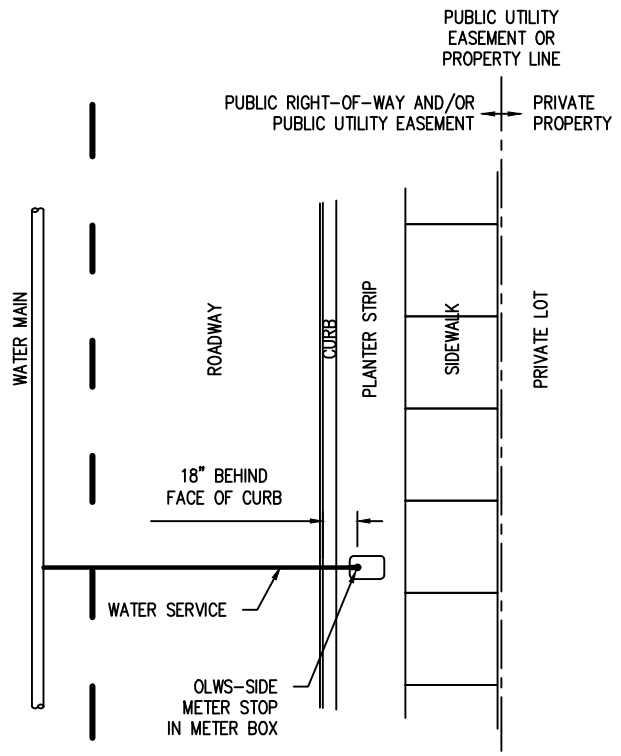
DRAWING NO.

422

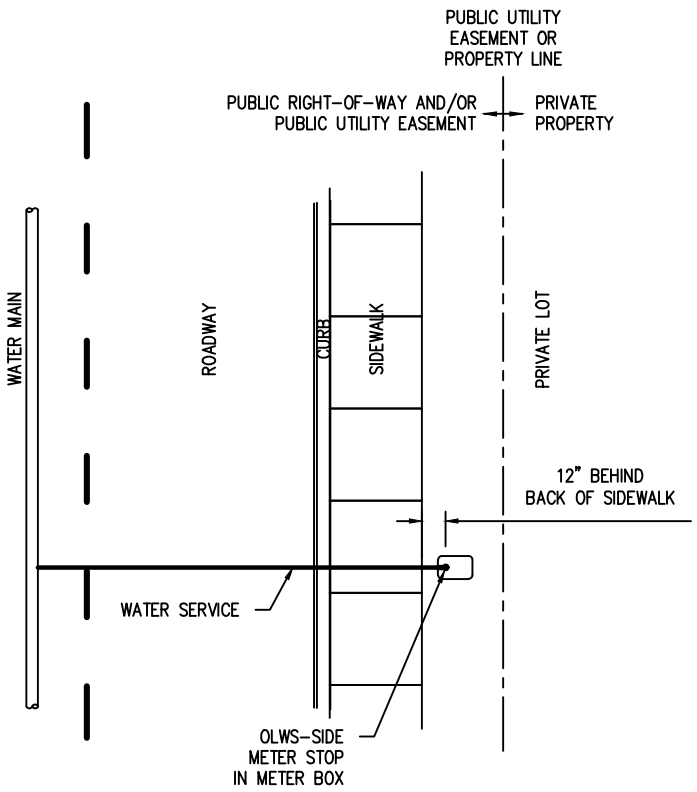
DATE: 12/04/2020

SCALE: NTS

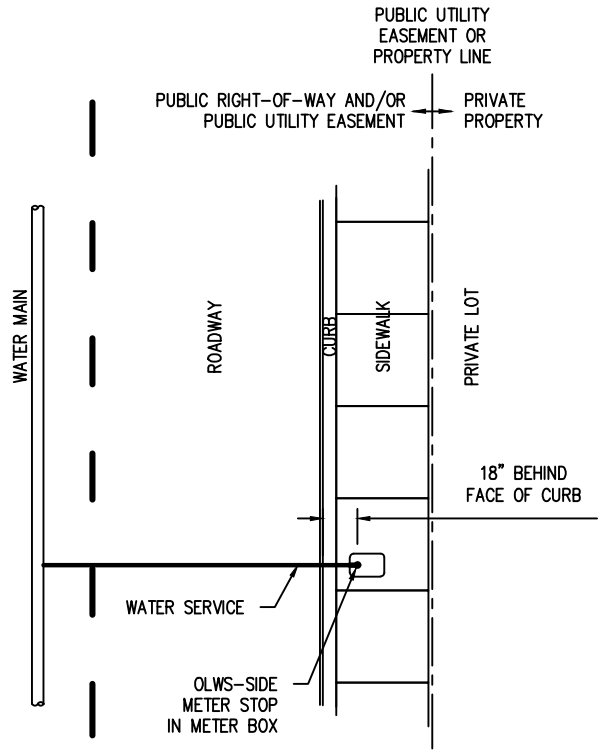
1st PREFERENCE – METER BOX LOCATED IN PLANTER STRIP



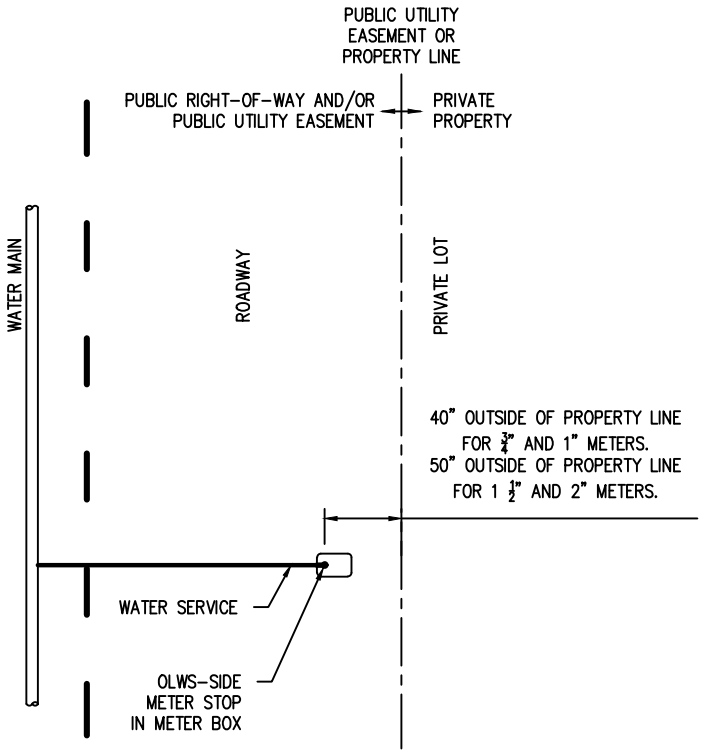
2nd PREFERENCE – METER BOX LOCATED BEHIND SIDEWALK



3rd PREFERENCE – METER BOX LOCATED IN SIDEWALK



4th PREFERENCE – NEITHER CURB NOR SIDEWALK PRESENT



OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

WATER METER LOCATION 3/4" THROUGH 2" METERS

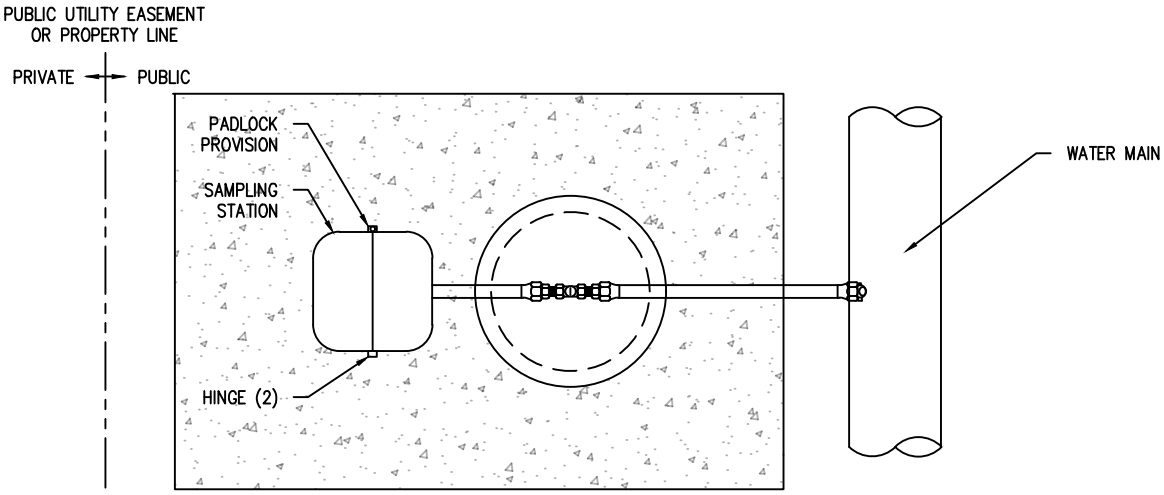
NO.	REVISIONS	DATE	BY
1	EVERYTHING	02/18/2020	HSO
2	DRAWING NUMBER	12/14/2020	HSO
3			
4			

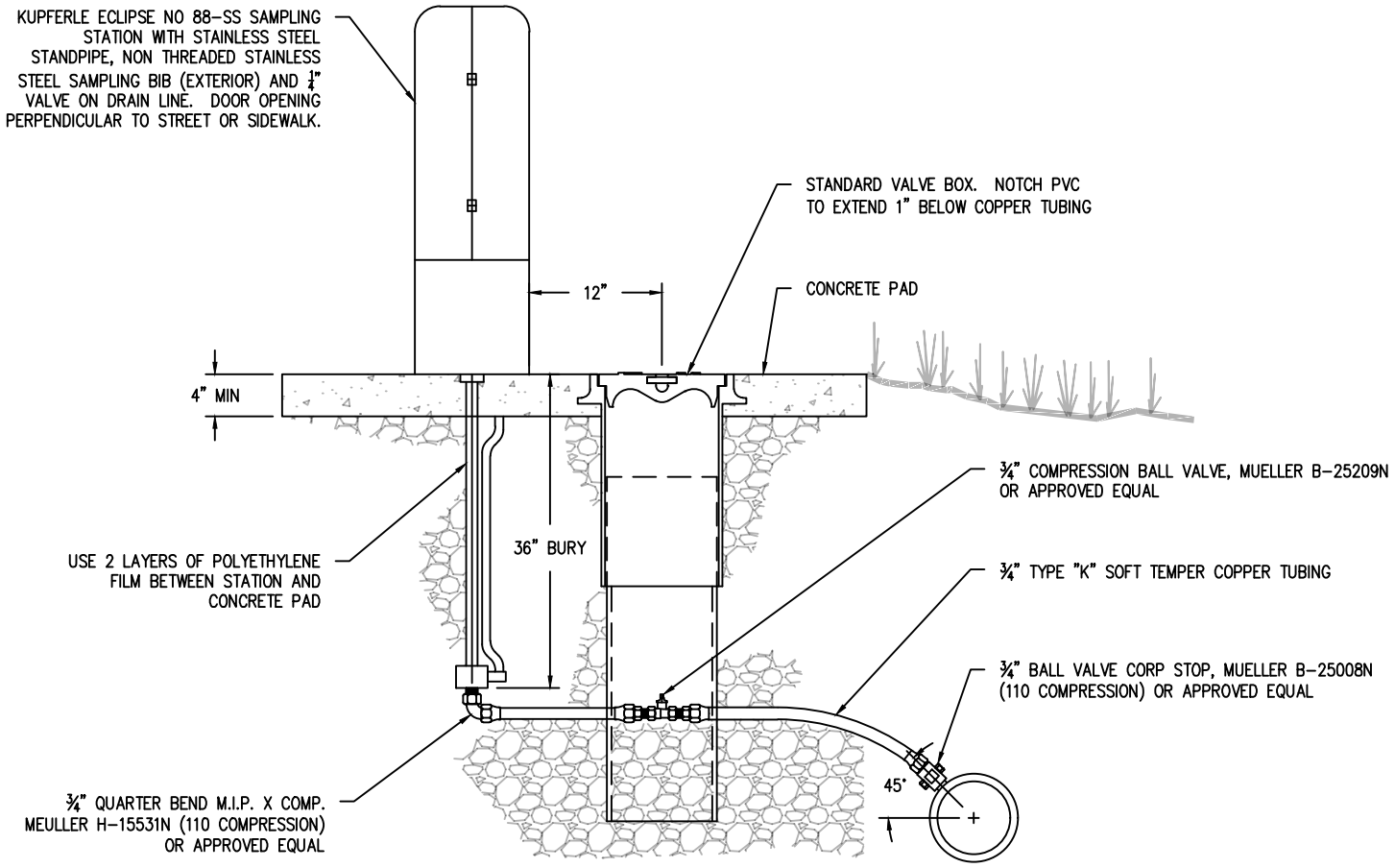
DRAWING NO.

430

DATE: 7/7/2017

SCALE: NTS





NOTES:
1. PIPE ZONE MATERIAL SHALL BE 3/4"-0" CRUSHED ROCK GRANULAR BACKFILL COMPACTED TO 95% OF AASHTO T-99.
2. WHEN CROSSING CATHODICALLY PROTECTED SYSTEM, INSTALL PVC SLEEVE
3. WHERE NO SIDEWALK EXISTS, PLACE CONCRETE PAD AS SHOWN. WHERE SIDEWALK EXISTS, PLACE MIN. 12" AROUND BACK OF SAMPLE STATION AND INCORPORATE INTO NEW CONCRETE POUR.
4. COLOR: STOCK GREEN

OAK LODGE WATER SERVICES

WATER SYSTEM STANDARD DRAWING

WATER SAMPLING STATION

NO.	REVISIONS	DATE	BY
1			
2			
3			
4			

DRAWING NO.
435

DATE: 7/30/2024
SCALE: NTS