(Posted on City Website tualatinoregon.gov)

NOTICE OF PROPOSED RULE

PUBLIC WORKS CONSTRUCTION CODE

(Authorized by TMC 2-3)

The City of Tualatin is releasing draft changes to the Public Works Construction Code for public comment. Copies of the proposed changes are available. Revised content available below.

Subject Matter and Purpose: The City of Tualatin is currently in the process of updating the Scope of Work, General Provisions, Potable Water Design, Storm Drainage Design, Manholes, and Water Pipe and Fittings sections of the Public Works Construction Code. The revised code sections are as follows:

- 103 Scope of Work
  - *103.2.00 Precedence of Permit Documents* revised.
- 201 General Provisions
  - *201.1.01 Scope* revised.
- 204 Potable Water Design
  - *204.2.07 Detectable Warning Tape and Tracer Wire* added.
    - *Standard Drawing 241* revised.
    - *Standard Drawing 635* added.
    - *Standard Drawing 636* added.
    - *Standard Drawing 637* added.
  - *204.3.01 Size* revised.
    - *Standard Drawing 632* revised.
- 206 Storm Drainage Design
  - *206.4.0 Pipe Design* revised.
- 324 Manholes
  - *324.3.08 Drop Assembly* revised.

    - *324.3.10 Pipe Connections* revised.
- 326 Water Pipe and Fittings
    - *326.2.01 Pipe* revised.
    - *326.2.03D Pipe Push-On Joint Restraint* deleted.

The above outline identifies specific section updates, but is not inclusive of all the revisions in that section or subsection.

Submit Written Comments: You can submit testimony or comments on the draft changes by email or letter. Written comments or testimony must be received by 5:00 pm on September 26, 2025 and must include a first and last name to be considered.

Email comments to: Engineering@tualatin.gov

Mail comments to:

City of Tualatin
Engineering Division c/o City Engineer
10699 SW Herman Rd
Tualatin, OR 97062

When Rule Adopted: The proposed rule is scheduled to be adopted on October 3, 2025.

Interested Persons List. If you would like to be added to the interested persons list to receive notices regarding changes to the Public Works Construction Code, please contact Engineering@tualatin.gov.

Accommodations and Translation. If you need assistance or to request a reasonable accommodation or translation services, please contact Mike McCarthy, 503-691-3674, mmccarthy@tualatin.gov.

Updated Code Sections:
Clean Versions

- 103 Scope of Work
  - *103.2.00 Precedence of Permit Documents*
- 201 General Provisions
  - *201.1.01 Scope*
- 204 Potable Water Design
  - *204.2.07 Detectable Warning Tape and Tracer Wire*
  - *204.3.01 Size*
- 206 Storm Drainage Design
  - *206.4.0 Pipe Design*
- 324 Manholes
  - *324.3.08 Drop Assembly*
  - *324.3.10 Pipe Connections*
- 326 Water Pipe and Fittings
  - *326.2.01 Pipe*
  - *326.2.03D Pipe Push-On Joint Restraint*

103.2.00 **Precedence of Permit Documents**

In case of conflict, the order of precedence of the following documents in controlling the work shall be:

1. Public Works Construction Code/Permit
2. Permits from outside agencies required by law
3. Standard Drawings
4. Oregon Standard Specifications for Construction (Current Version)
5. Public Right-of-Way Accessibility Guidelines (PROWAG)
6. Plans

Approved changes in the work will take precedence over the documents listed above.

201 GENERAL PROVISIONS

201.1.01 Scope

This chapter covers the standards for the design of public works facilities, water quality facilities, Public Utilities, and the preparation and submittal of construction plans. Except as provided otherwise in a specific section, these standards and regulations apply to all public works and water quality construction within the City.

201.1.01A Precedence of Codes

Use current version of all codes below:

1. Design and construct all public works facilities in accordance with the Public Right-of-Way Accessibility Guide (PROWAG).
2. Tualatin:
    - Public Works Construction Code
    - Municipal Code
    - Development Code
3. ODOT:
    - Oregon Standard Specifications for Construction
    - Oregon Standard Drawings and Details: Engineering
4. MUTCD (and Oregon supplement)
5. AASHTO: A Policy on the Geometric Design of Highways and Streets
6. Clean Water Services:
    - Design & Construction Standards
    - LIDA Handbook
7. Washington County (WASHCO):
    - Road Design and Construction Standards

Section 202, Construction Plans, does not apply to Public Utilities.

204.2.07 Detectable Warning Tape and Tracer Wire

204.2.07A Detectable Warning Tape

1. Warning tape required for water mains with a diameter of 8 inches or greater, per Standard Detail 241.
2. Plastic warning tape shall be acid and alkali-resistant clear virgin polyethylene film, 4-inches wide with minimum thickness of 5-mil overall. Tape shall be reverse printed using a diagonally striped design for maximum visibility and meet APWA color-code standard for identification of buried utilities. Tape shall have a minimum strength of 1,750 psi lengthwise and 1,500 psi cross wise.
3. The tape shall be manufactured with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 3 feet deep. The metallic core of the tape shall be encased in a protective jacket or provided with other means to protect from corrosion.

204.2.07B Tracer Wire

1. Tracer wire must be used for water mains with a diameter of 8 inches or greater, any pipe deeper than 5 feet, any nonconductive pipe, or for critical water mains as required by the City Engineer, and in accordance with Standard Details 241, 635, 636, and 637.
2. Use Copperhead Industries ® tracer wire, connectors, locate clips, magnesium grounding anode, components, and accessories.
3. Locate stations for tracer wire shall be located inside standard traffic-rated valve boxes with a “Water Locate” cast into the cover as indicated in Standard Detail 635. Locate stations or risers must meet the requirements of Copperhead Industries ® for compatibility with their product.

204.3.01 Size

Size water services for maximum demand. Match meter size to the diameter of the service line or one diameter size less. 1½-in. water service lines are prohibited.

206.4.00 Pipe Design

A) Size. Install the following minimum pipe diameters for all storm sewer pipes installed in the public rights of way or public easements:

1. 10-inches between catch basin and main line.

2. 12-inches for main line pipe.

3. Use the following minimum pipe sizes for service laterals:

Commercial, Industrial, Multi-Family	10-inch
Single Family Residential	6-inch

Single family residential service laterals may be 4-inch diameter where site constraints exist, if approved by the City Engineer. Size pipe to meet the minimums specified above or to meet the requirements of Section 206.3.00, whichever is larger.

B) Location. When storm pipes are located within a public street right-of-way, locate the storm pipe between the curbs, but not closer than 5-feet to a curb unless approved by the City Engineer. Storm pipes may not be located under sidewalks on arterial streets. When in easements, locate the storm pipe on the centerline of the easement unless otherwise approved by the City Engineer. Do not place the centerline of a storm pipe closer than five feet to an easement side line.

C) Pipe length between structures:

10-inch pipe: 250-feet
12-inch pipe: 400-feet

D) Alignment. Install public storm pipes on a straight alignment and uniform grade, except as provided in Section 206.4.00 (E).

E) Grade. Design storm pipe mains with sufficient slope to maintain a minimum velocity of three feet per second when at design flow, but not less than 0.5%. For service laterals, use a minimum slope of three percent for six-inch pipe and two percent for four-inch pipe. Do not allow flow velocity in concrete storm pipes to exceed ten feet per second. If the slope is such that the velocity exceeds 10-feet per second, use PVC pipe.

F) Pipe Cover. Install storm pipes per CWS Design and Construction Standards Section 5.06.7, Pipe Cover. Where this requirement cannot be met, the City Engineer may approve a lesser amount of cover, with the use of properly designed pipe material.

G) Headwalls. When headwalls are required, design according to the ODOT Hydraulics Manual standards.

H) Access. Provide manholes as specified in Section 206.6.00, Manhole.

I) Rip rap. Where rip rap is required, submit a design of the rip rap outfall area per CWS Table 5-5 to be approved by the City Engineer. Place suitable geotextile fabric under and around the sides of riprap.

J) Pipe Material. Concrete, PVC, ductile iron, and HDPE pipe materials are acceptable for the construction of public storm pipe systems. Design all systems to resist permanent and construction loading. Polymer type protective coatings may be required if the pipe is to be installed in possible aggressive soils or where cathodic protection is present.

324.3.08 Drop Assembly

For drops less than 12 inches within sanitary sewer manholes or less than 48 inches in stormwater manholes, connect the pipe to the manhole and build a concrete ‘beaver slide’ slope (at a maximum 45-degree angle) from the pipe invert to the bottom of the manhole, without blocking other flows in the manhole, in accordance with Clean Water Services Drawing No. 080.

For drops more than 12 inches for sanitary sewer or 48 inches for stormwater above the manhole invert, construct an inside drop manhole with bowl in accordance with Clean Water Services Drawing 090.

If the sewer is PVC, the pipe and fittings for the assembly shall be PVC manufactured gasketed sewer fittings encased within a minimum of 4 inches of concrete from the manhole base to the bottom of the tee. Use PVC manhole adapters at manhole wall and penetrations.

324.3.10 Pipe Connections

Sanitary and Storm:

All pipes entering or leaving a manhole must be placed on firmly compacted bedding. Special care must be taken to ensure that the openings through which sewer pipes enter the structure are completely watertight by using non-shrink grout. All flexible pipes must be connected to manholes by using:

- Kor-N-Seal boot
- Solvent cement and clean sand application according to the manufacturer's recommendations
- City Engineer approved equal

326.2.00 Material

326.2.01 Pipe

Pipe must be Class 52 ductile iron pipe, unless specified otherwise by the City Engineer. Pipe must conform to ANSI/AWWA C151/A21.51 and be NSF 61 certified, with asphaltic coating per ANSI/AWWA A21.4/C104.

Pipe must be push-on joint with locking gaskets approved by the manufacturer for use only with their pipe unless otherwise stated.

Updated Code Sections:
Redline Versions

- 103 Scope of Work
  - *103.2.00 Precedence of Permit Documents*
- 201 General Provisions
  - *201.1.01 Scope*
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  - *204.2.07 Detectable Warning Tape and Tracer Wire*
  - *204.3.01 Size*
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- 326 Water Pipe and Fittings
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  - *326.2.03D Pipe Push-On Joint Restraint*

103.2.00 **Precedence of Permit Documents**

In case of conflict, the order of precedence of the following documents in controlling the work shall be:

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4. Oregon Standard Specifications for Construction (Current Version)
4.5. Public Right-of-Way Accessibility Guidelines (PROWAG)
5.6. Plans

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201 GENERAL PROVISIONS

201.1.01 Scope

This chapter covers the standards for the design of public works facilities, water quality facilities, Public Utilities, and the preparation and submittal of construction plans. Except as provided otherwise in a specific section, these standards and regulations apply to all public works and water quality construction within the City.

201.1.01A Precedence of Codes

Use current version of all codes below:

1. Design and construct all public works facilities in accordance with the ~~Proposed Accessibility Guidelines for Pedestrian Facilities in the~~ Public Right-of-Way Accessibility Guide (PROWAG).
2. Tualatin:
    - Public Works Construction Code
    - Municipal Code
    - Development Code
3. ODOT:
    - Oregon Standard Specifications for Construction
    - Oregon Standard Drawings and Details: Engineering
4. MUTCD (and Oregon supplement)
5. AASHTO: A Policy on the Geometric Design of Highways and Streets
6. Clean Water Services:
    - Design & Construction Standards
    - LIDA Handbook
7. Washington County (WASHCO):
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Section 202, Construction Plans, does not apply to Public Utilities.

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1. Warning tape required for water mains with a diameter of 8 inches or greater, per Standard Detail 241.
2. Plastic warning tape shall be acid and alkali-resistant clear virgin polyethylene film, 4-inches wide with minimum thickness of 5-mil overall. Tape shall be reverse printed using a diagonally striped design for maximum visibility and meet APWA color-code standard for identification of buried utilities. Tape shall have a minimum strength of 1,750 psi lengthwise and 1,500 psi cross wise.
3. The tape shall be manufactured with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 3 feet deep. The metallic core of the tape shall be encased in a protective jacket or provided with other means to protect from corrosion.

204.2.07B Tracer Wire

1. Tracer wire must be used for water mains with a diameter of 8 inches or greater, any pipe deeper than 5 feet, any nonconductive pipe, or for critical water mains as required by the City Engineer, and in accordance with Standard Details 241, 635, 636, and 637.
2. Use Copperhead Industries ® tracer wire, connectors, locate clips, magnesium grounding anode, components, and accessories.
3. Locate stations for tracer wire shall be located inside standard traffic-rated valve boxes with a “Water Locate” cast into the cover as indicated in Standard Detail 635. Locate stations or risers must meet the requirements of Copperhead Industries ® for compatibility with their product.

204.3.01 Size

~~Water services shall be sized~~Size water services for maximum demand~~,~~ ~~and~~ . Match meter size ~~shall match~~to the diameter of the service line or ~~be a maximum of~~ one diameter size less ~~than the service line, as approved by the City Engineer~~. 1½-in. water service lines are prohibited.

206.4.00 Pipe Design

A) Size. Install the following minimum pipe diameters for all storm sewer pipes installed in the public rights of way or public easements:

1. 10-inches between catch basin and main line.

2. 12-inches for main line pipe.

3. Use the following minimum pipe sizes for service laterals:

Commercial, Industrial, Multi-Family	10-inch
Single Family Residential	6-inch

Single family residential service laterals may be 4-inch diameter where site constraints exist, if approved by the City Engineer. Size pipe to meet the minimums specified above or to meet the requirements of Section 206.3.00, whichever is larger.

B) Location. When storm pipes are located within a public street right-of-way, locate the storm pipe between the curbs, but not closer than 5-feet to a curb unless approved by the City Engineer. Storm pipes may not be located under sidewalks on arterial streets. When in easements, locate the storm pipe on the centerline of the easement unless otherwise approved by the City Engineer. Do not place the centerline of a storm pipe closer than five feet to an easement side line.

C) Pipe length between structures:

10-inch pipe: 250-feet
12-inch pipe: 400-feet

D) Alignment. Install public storm pipes on a straight alignment and uniform grade, except as provided in Section 206.4.00 (E).

~~E) Curved Storm Pipe. Install all non-metallic pipe with a locating wire. To determine the minimum radius of the curve of concrete pipe use the following formula:~~

~~Where:~~
~~R = minimum radius of curvature (feet)~~
~~D = outside pipe diameter (feet)~~
~~L = length of individual pipe sections (feet)~~

$$R = 32DL$$

~~F~~E) Grade. Design storm pipe mains with sufficient slope to maintain a minimum velocity of three feet per second when at design flow, but not less than 0.5%. For service laterals, use a minimum slope of three percent for six-inch pipe and two percent for four-inch pipe. Do not allow flow velocity in concrete storm pipes to exceed

ten feet per second. If the slope is such that the velocity exceeds 10-feet per second, use PVC pipe.

~~G~~F) Pipe Cover. Install storm pipes per CWS Design and Construction Standards Section 5.06.7, Pipe Cover. Where this requirement cannot be met, the City Engineer may approve a lesser amount of cover, with the use of properly designed pipe material.

~~H~~G) Headwalls. When headwalls are required, design according to the ODOT Hydraulics Manual standards.

~~I~~H) Access. Provide manholes as specified in Section 206.6.00, Manhole.

~~J~~I) Rip rap. Where rip rap is required, submit a design of the rip rap outfall area per CWS Table 5-5 to be approved by the City Engineer. Place suitable geotextile fabric under and around the sides of riprap.

~~K~~J) Pipe Material. Concrete, PVC, ductile iron, and HDPE pipe materials are acceptable for the construction of public storm pipe systems. Design all systems to resist permanent and construction loading. Polymer type protective coatings may be required if the pipe is to be installed in possible aggressive soils or where cathodic protection is present.

324.3.08 Drop Assembly

For drops less than 12 inches within sanitary sewer manholes or less than 48 inches in stormwater manholes, connect the pipe to the manhole and build a concrete 'beaver slide' slope (at a maximum 45-degree angle) from the pipe invert to the bottom of the manhole, without blocking other flows in the manhole, in accordance with Clean Water Services Drawing No. 080.

For drops more than 12 inches for sanitary sewer or 48 inches for stormwater above the manhole invert, construct an inside drop manhole with bowl in accordance with Clean Water Services Drawing 090. ~~Construct drop assemblies at locations shown on the Plans, using either PVC ASTM 3034 SDR 35 or Class 150 MJ cast iron pipe and fittings. The sewer run of cast iron pipe shall extend beyond the area of manhole excavation and the lower cast iron elbow shall be cast into the concrete manhole base.~~

If the sewer is PVC, the pipe and fittings for the assembly shall be PVC manufactured gasketed sewer fittings encased within a minimum of 4 inches of concrete from the manhole base to the bottom of the tee. Use PVC manhole adapters at manhole wall and ~~base~~ penetrations. ~~Use a secured but removable, gasketed cap or plug, in lieu of a mortar dam.~~

324.3.10 Pipe Connections

Sanitary and Storm:

All pipes entering or leaving a manhole must be placed on firmly compacted bedding. Special care must be taken to ensure that the openings through which sewer pipes enter the structure are completely watertight by using non-shrink grout. All flexible pipes must be connected to manholes by using:

- ~~PVC sanded bell adapter~~
- Kor-N-Seal boot
- Solvent cement and clean sand application according to the manufacturer's recommendations
- City Engineer approved equal

326.2.00 Material

326.2.01 Pipe

Pipe ~~shall~~ must be ~~push-on joint~~ Class 52 ductile iron pipe, ~~centrifugally cast and minimum Class 52 thickness, conforming to the latest revision of ANSI/AWWA C151/A21.51~~unless specified otherwise by the City Engineer. ~~Heavier special thickness classes may be required, per AWWA C150, where shown on the plans.~~Pipe must conform to ANSI/AWWA C151/A21.51 and be NSF 61 certified, with asphaltic coating per ANSI/AWWA A21.4/C104.

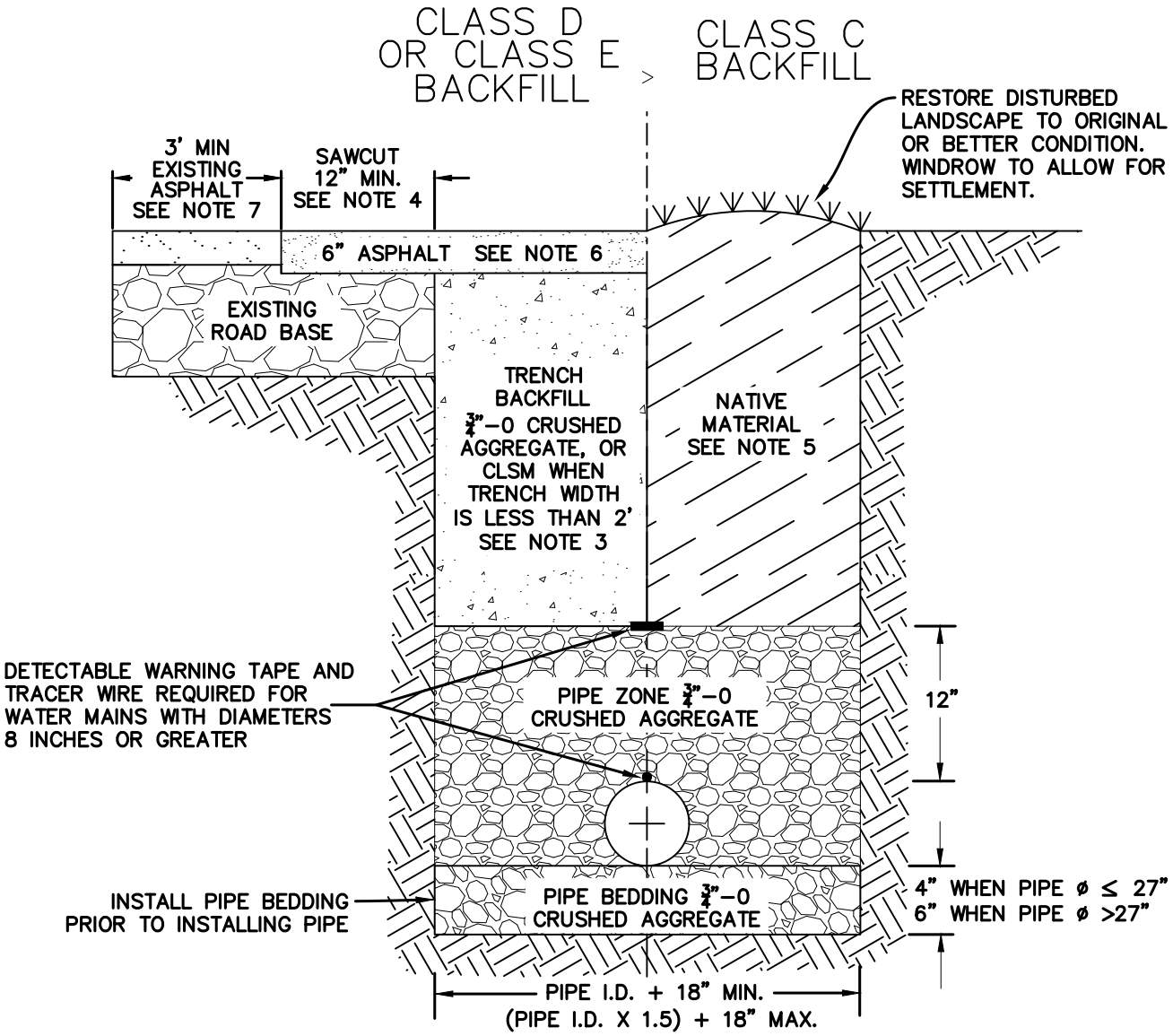
~~The pipe shall be lined with a shop-applied NSF 61 cement mortar lining, smoothed finish, in accordance with AWWA C104. An asphaltic exterior coating shall be applied in accordance with AWWA Standard C151.Rubber gaskets and lubricant conforming to AWWA C111, are to be supplied by the pipe manufacturer, suitable for the specified pipe size and pressure, and in sufficient quantity for installing the pipe.~~ Pipe must be push-on joint with locking gaskets approved by the manufacturer for use only with their pipe unless otherwise stated. In cases where restrained joints are not feasible, thrust blocking may only be used with prior authorization from the City Engineer.

~~**326.02.03D Pipe Push-On Joint Restraint**~~

~~American "Fast-Grip" or U.S. Pipe "Field Lok" gaskets, or approved equal, shall be utilized in place of thrust blocking as shown on the Drawings or as approved by the City Engineer to fully restrain all pipe. Install restraints in accordance with manufacturer's recommendations.~~

Updated Standard Drawings

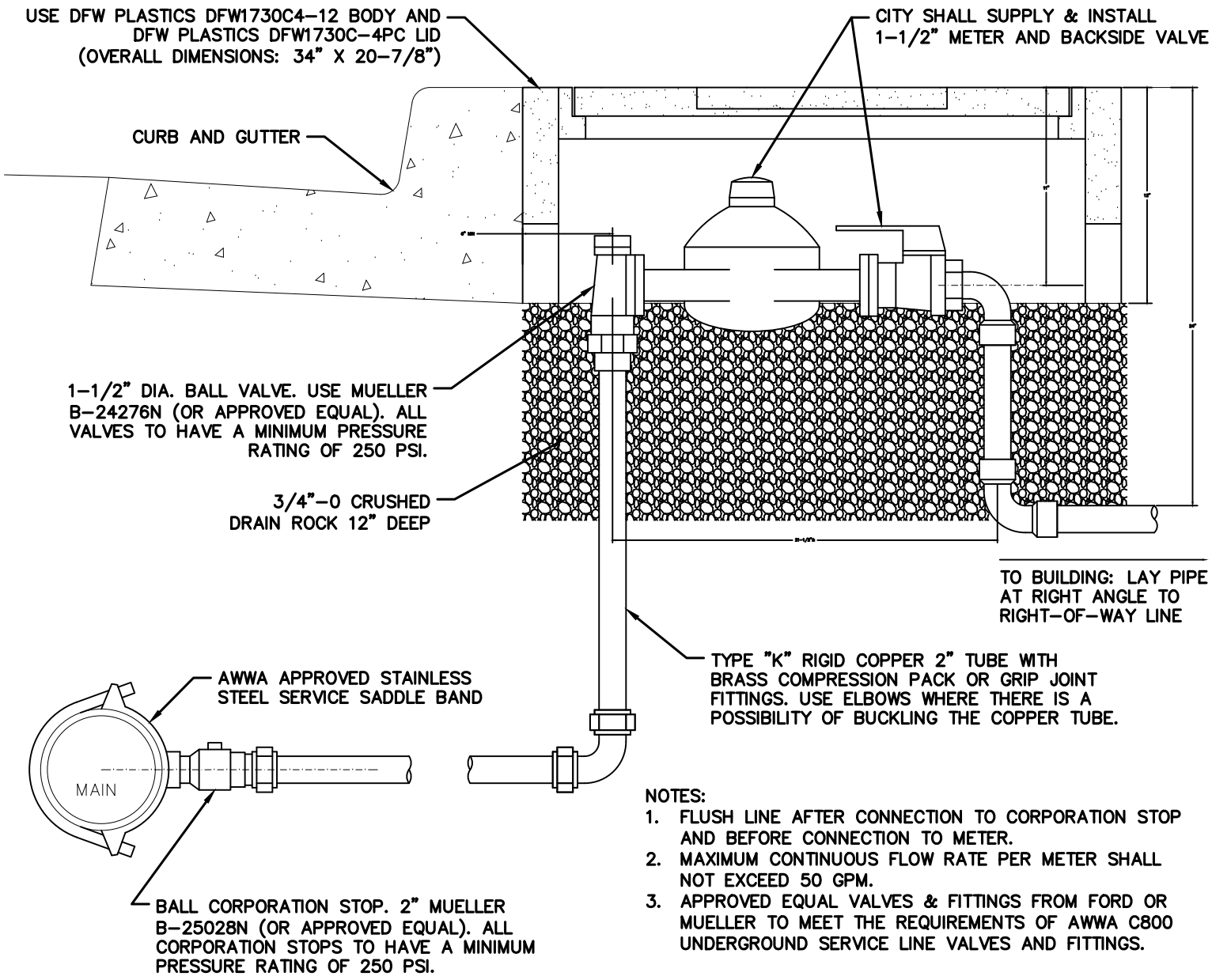
- 241: Trench & Surface Restoration
- 632: Water Service – 1-1/2 Inch Meter
- 635: Locate Station
- 636: Locate Station Closeup
- 637: Locate Station Placement



NOTES:

1. SEE STANDARD DRAWING NO. 480 FOR ROADS PAVED WITHIN THE LAST 5 YEARS.
2. SEE STANDARD DRAWING NO. 481 FOR CONCRETE ROADWAY RESTORATION.
3. WHEN TRENCH WIDTH IS LESS THAN 2' WIDE, BACKFILL WITH CLASS E, CONTROLLED LOW STRENGTH MATERIAL (CLSM) WITH A 28–DAY DESIGN STRENGTH OF 100–200 PSI.
4. SAWCUT A MINIMUM OF 12" OF PAVEMENT FROM EDGE OF TRENCH.
5. COMPACT CRUSHED AGGREGATE BACKFILL TO 92% AASHTO T 180, AND COMPACT NATIVE MATERIAL TO 90% AASHTO T 99, OR TO SATISFACTION OF CITY ENGINEER.
6. PROVIDE A MINIMUM ASPHALT THICKNESS OF 6" OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
7. IF LESS THAN 3' OF UNDISTURBED ASPHALT REMAINS BETWEEN THE EXCAVATION AND EDGE OF THE ROADWAY, REMOVE AND REPAIR THE REMAINING AREA.

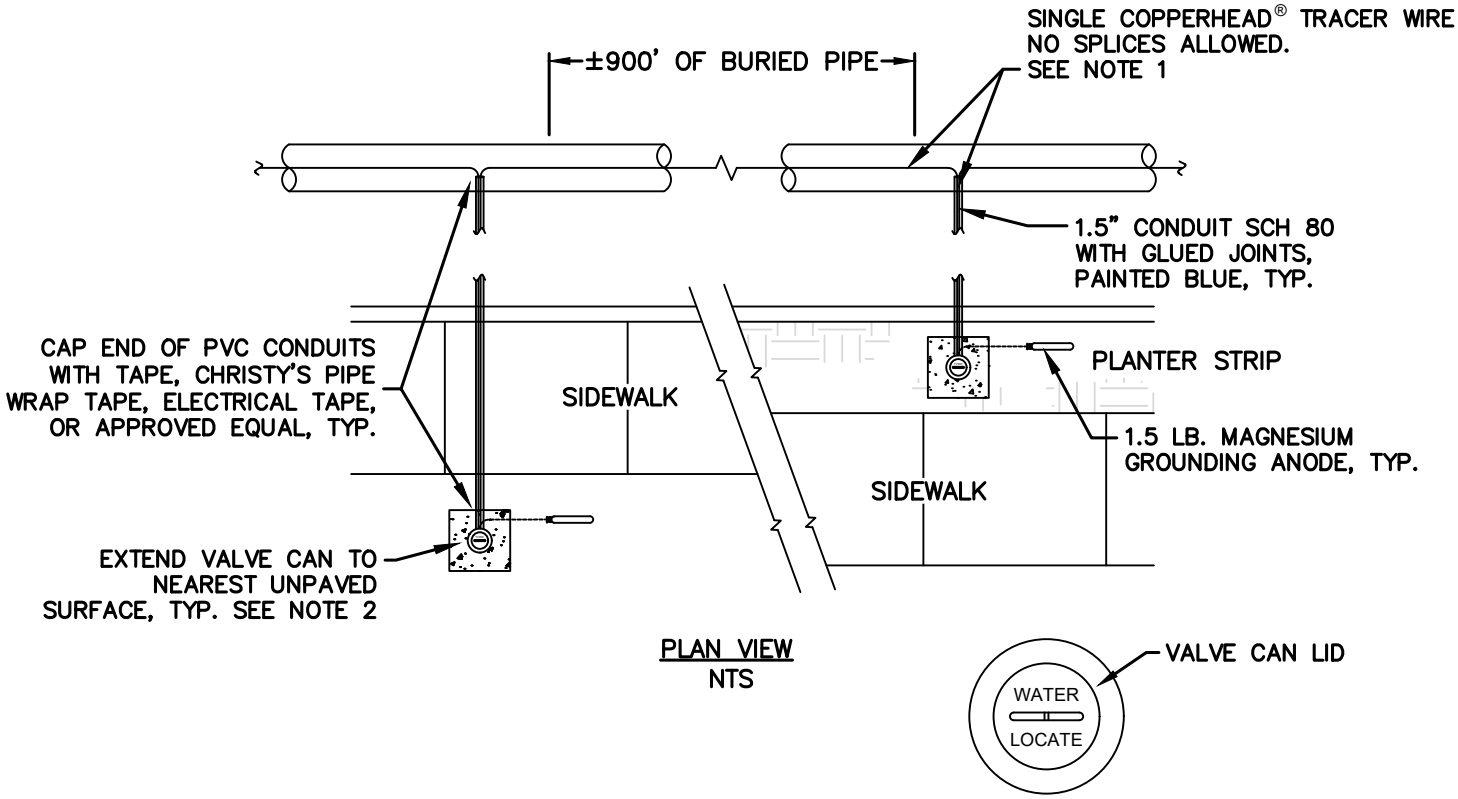
CITY of TUALATIN	APPROVED BY M. MCCARTHY DRAWING SCALE NONE	TRENCH & SURFACE RESTORATION	EFF. DATE 10/2025 STANDARD DRAWING 241



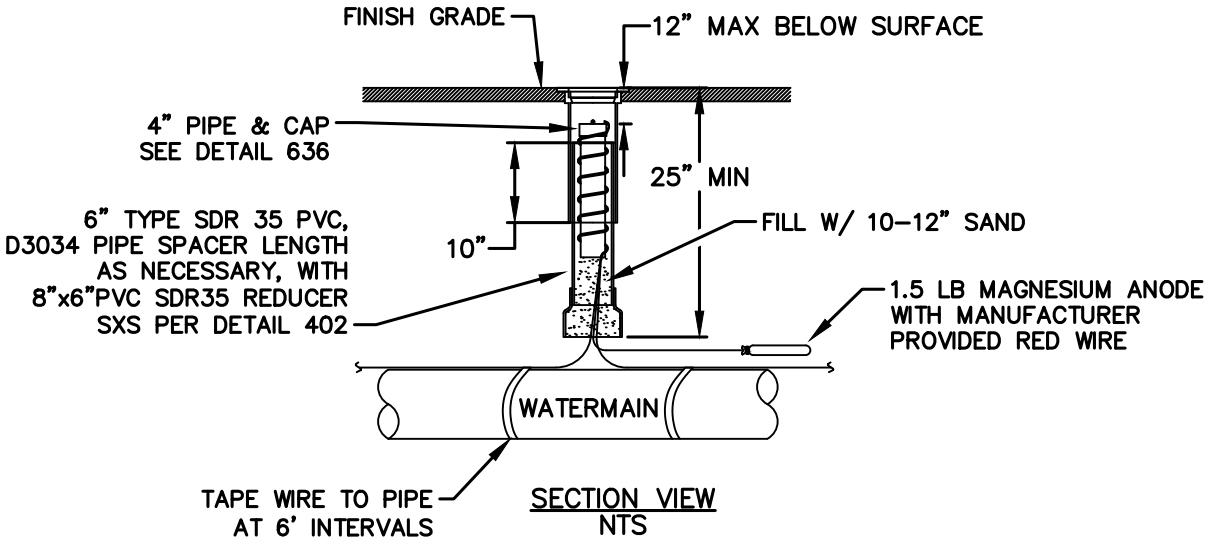
NOTES:

1. FLUSH LINE AFTER CONNECTION TO CORPORATION STOP AND BEFORE CONNECTION TO METER.
2. MAXIMUM CONTINUOUS FLOW RATE PER METER SHALL NOT EXCEED 50 GPM.
3. APPROVED EQUAL VALVES & FITTINGS FROM FORD OR MUELLER TO MEET THE REQUIREMENTS OF AWWA C800 UNDERGROUND SERVICE LINE VALVES AND FITTINGS.

CITY of TUALATIN	APPROVED BY M. MCCARTHY DRAWING SCALE NONE	WATER SERVICE 1-1/2 INCH METER	EFF. DATE 10/2025 STANDARD DRAWING 632	



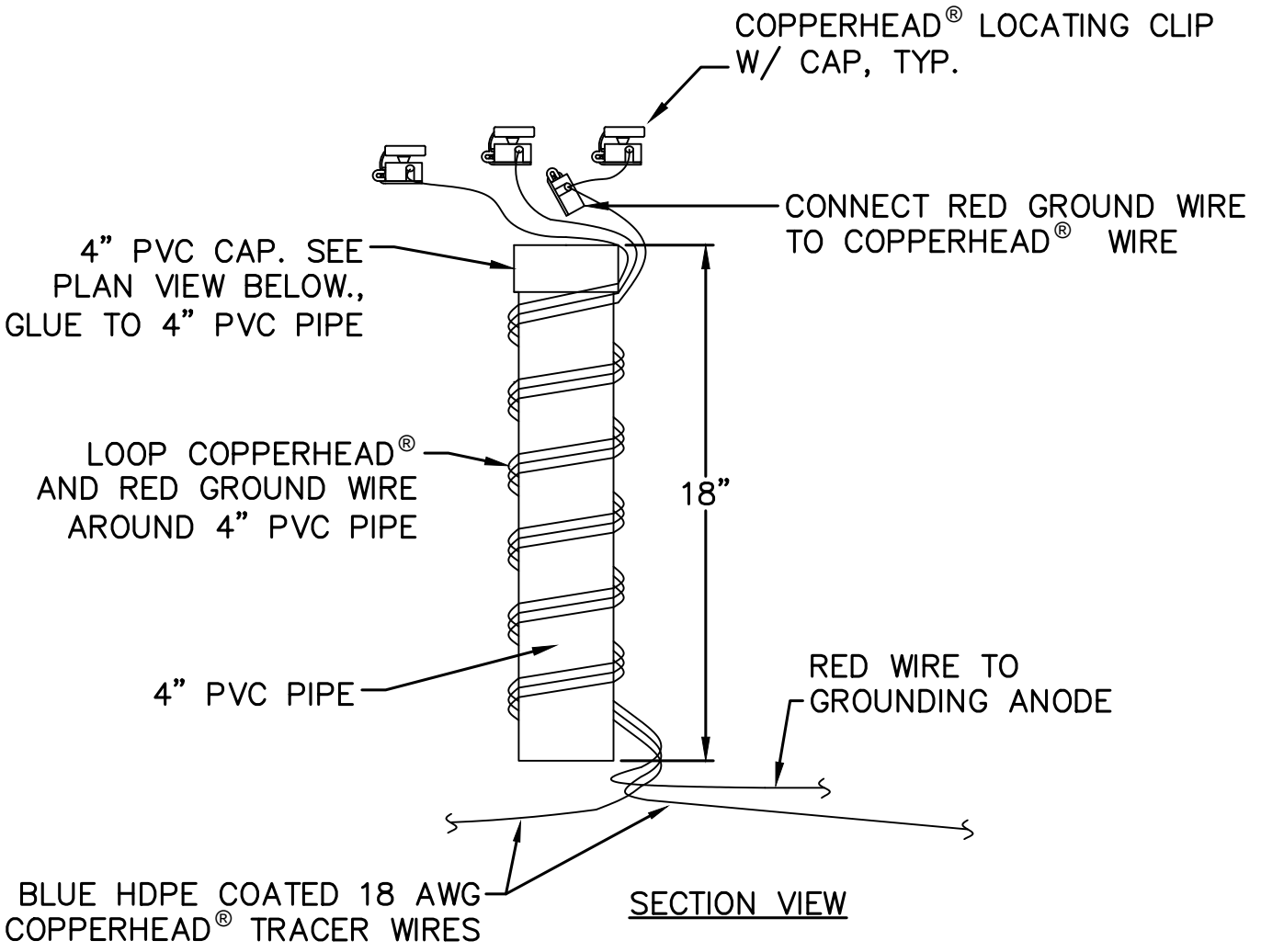
PLAN VIEW
NTS



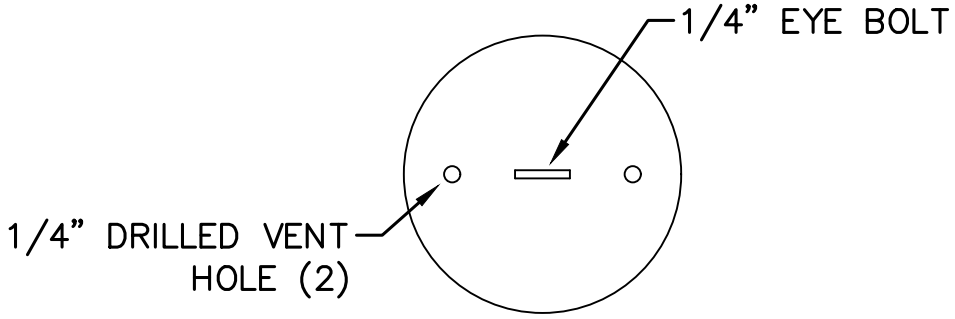
SECTION VIEW
NTS

NOTES:
1. TRACING WIRE TO BE SINGLE CONTINUOUS LENGTH OF WIRE BETWEEN LOCATE STATIONS. IF SPLICE IS NEEDED, CITY ENGINEER APPROVAL IS REQUIRED.
2. CONDUIT SWEEPS ARE NOT PERMITTED AT VALVE CANS.
3. INSTALLATION OF CONDUIT UNDER CURB AND SIDEWALK SHALL UTILIZE TRENCHLESS METHOD(S).
4. INSTALL ON MAINS DEEPER THAN 5 FEET REGARDLESS OF SIZE. TRACER WIRES SHALL NOT BE INSTALLED DEEPER THAN 8 FEET, FOR PIPES DEEPER THAN 8 FEET INSTALL TRACER WIRE ABOVE PIPE AT 8 FEET DEPTH.
5. SEE STANDARD DETAIL 636 FOR ADDITIONAL WIRE DETAIL.

CITY of TUALATIN	APPROVED BY M. MCCARTHY	LOCATE STATION	EFF. DATE 10/2025
	DRAWING SCALE NONE		STANDARD DRAWING 635



SECTION VIEW

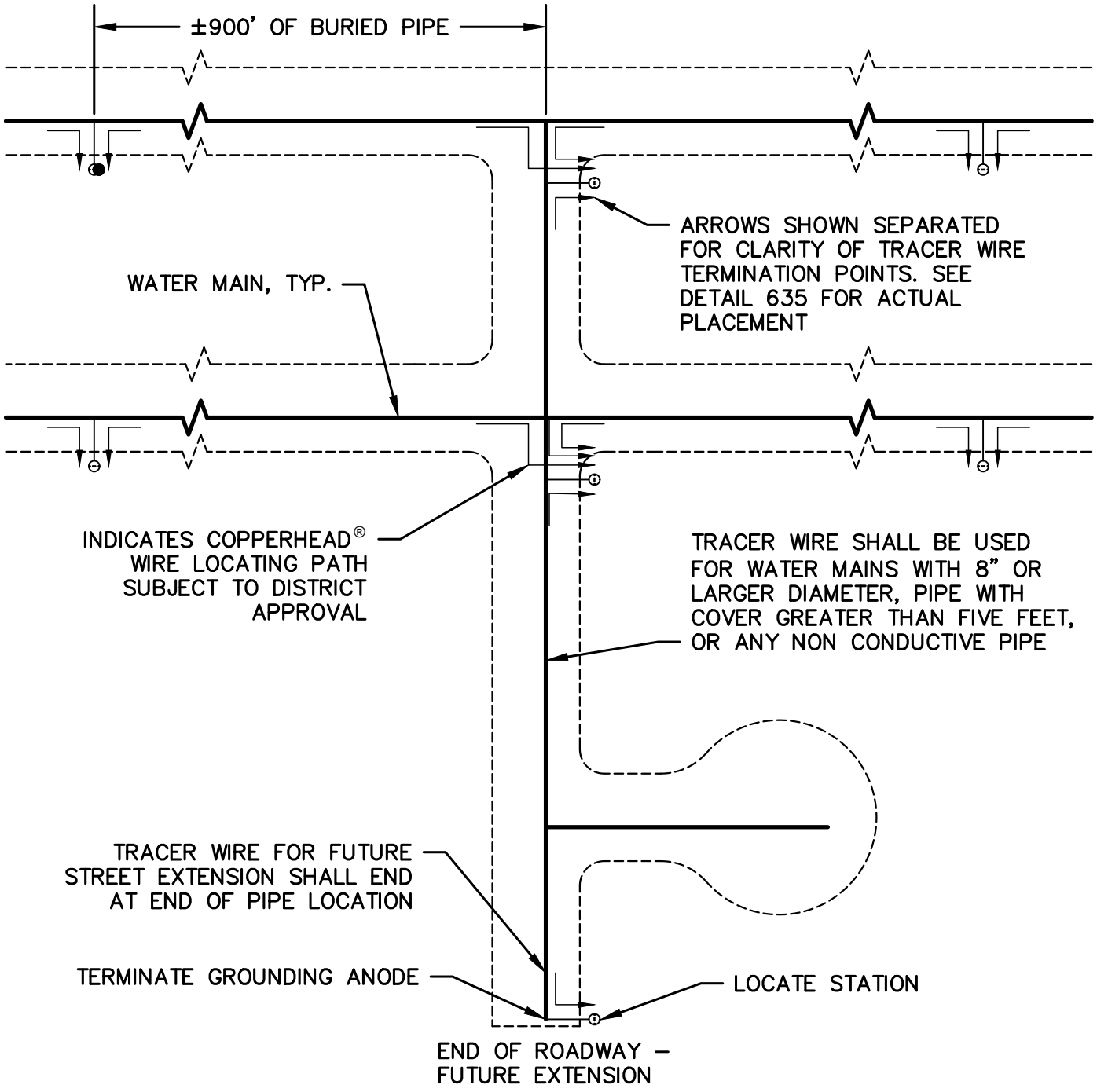


PLAN VIEW
4" PVC CAP

NOTES:

1. FOR END OF TRACER WIRE RUN, ONLY INCLUDE ONE TRACER WIRE AND ONE ANODE WIRE.

CITY of TUALATIN	APPROVED BY M. MCCARTHY DRAWING SCALE NONE	LOCATE STATION CLOSEUP	EFF. DATE 10/2025 STANDARD DRAWING 636



NOTES:
1. WHEN CONNECTING TO EXISTING PIPE WITHOUT EXISTING LOCATE WIRE, INSTALL LOCATE STATION AT START OF NEW PIPING.
2. LOCATE STATION WIRE IS PREFERRED TO BE IN THE SAME TRENCH AS SERVICES OR HYDRANT PIPING WHERE POSSIBLE.

CITY of TUALATIN	APPROVED BY M. MCCARTHY	LOCATE STATION PLACEMENT	EFF. DATE 10/2025
	DRAWING SCALE NONE		STANDARD DRAWING 637