

RESOLUTION NO. 5383-18

A RESOLUTION UPDATING THE PUBLIC WORKS CONSTRUCTION CODE

WHEREAS, Tualatin Municipal Code (TMC) 2-3-010 establishes the Public Works Construction Code (PWCC) as the standards, specifications and procedures used for all Public Works Construction within the City; and

WHEREAS, under Tualatin Municipal Code 2-3-020, the City Engineer has the duty to maintain and update the PWCC, subject to Council approval by resolution; and

WHEREAS, the PWCC was adopted by Council resolution on October 8, 2001, and subsequently amended on February 11, 2002; October 14, 2002; March 10, 2003; March 22, 2004; April 12, 2010; July 26, 2010; September 26, 2011; February 25, 2013; December 12, 2016; April 24, 2017; February 12, 2018; and June 25, 2018; and

WHEREAS, the City Engineer is recommending the PWCC be revised.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TUALATIN, OREGON, that:

Section 1. PWCC Section 205.2.07, Pipe Design, is deleted and replaced to read as follows:

205.2.07 **Pipe Design**

Install public sanitary sewer lines that are minimum 8 inches in diameter unless otherwise approved by the City Engineer. Install sanitary sewer laterals that are six inches in diameter minimum unless otherwise approved by the City Engineer. Where site constraints exist, four-inch diameter pipe may be used as approved by the City Engineer. Concrete laterals are not allowed.

Section 2. PWCC Section 205.2.07C, Grade, is deleted and replaced to read as follows:

205.2.07C **Grade**

Lay sanitary sewer mains on a grade which will produce a minimum velocity of two feet per second at design peak flow. For service laterals, use a minimum slope of three percent for six-inch pipe and two percent for four-inch pipe. Where flow velocities at design peak flow are greater than 15 ft/sec, use PVC pipe.

Section 3. PWCC Section 205.2.09, Cleanouts, is deleted and replaced to read as follows:

205.2.09 Cleanouts

Cleanouts are required for all sanitary sewer laterals. Install cleanouts for sanitary sewer laterals within the public utility easement, 12 to 18-inches from the right of way line or as directed by City Engineer.

Install cleanout no more than 150-feet from sanitary sewer main. The stand pipe must be the same material and size as the sanitary main.

Cleanouts may be temporarily installed within the right-of-way at the end of a stub street under the following conditions: (1) where the street is expected to be extended in the future; and (2) the design of the sewer system does not warrant a manhole be constructed at this location. The City Engineer will make the determination of when and where cleanouts will be allowed, or required.

Use a cast iron frame and bolt down cover embossed with the word "SEWER" for all sanitary cleanouts.

Section 4. PWCC Section 206.4.00, Pipe Design, is deleted and replaced to read as follows:

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

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

J) 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) 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.

Section 5. PWCC Section 206.10.00, Cleanouts at the Right-of-Way, is added to read as follows:

206.10.00 Cleanouts at the Right-of-Way

Install cleanouts for storm pipe service laterals within the public utility easement, 12 to 18-inches from the right of way line or as directed by City Engineer. Use a cast iron frame and bolt down cover embossed with the word "STORM" for all storm cleanouts.

Section 6. PWCC Section 312.3.07, Finish, is deleted and replaced to read as follows:

312.3.07 Finish

Construct concrete sidewalks so longitudinal slope, cross slope, surface, and other features do not exceed maximum allowable slope according to the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG).

If the existing adjacent sidewalk cross slope exceeds PROWAG requirements, construct a transition panel that is at least two feet long between the new sidewalk panel and the existing sidewalk. Extend the transition panel to the nearest control joint if less than 2-feet of the existing panel remains. The intent of transitional segments is to smoothly transition between the PROWAG-compliant replacement sidewalk panels and non-compliant existing sidewalk panels that may be replaced in the future.

After the concrete has been thoroughly consolidated and leveled, float surface with a wood or magnesium float and finish with a steel float at the proper time. Edge joints with 1/4-inch radius edger. Use a fiber hair brush to apply a light broomed finish perpendicular to the centerline of the sidewalk as approved by the City Engineer.

Construct surfaces to be free of humps, sags, or other irregularities. Construct surfaces to within 0.02 feet of the specified line, cross section, and thickness. Grades and slopes may not exceed maximum values required by PROWAG.

Section 7. The following Standard Drawings are deleted and replaced as set forth in Exhibit A, which is attached and incorporated by reference.

- 100 (Sewer Cleanout)
- 300 (Sewer Building Lateral)
- 460 (ADA Ramp General Note)
- 475 (Concrete Sidewalk)
- 630 (Water Service 5/8" x 3/4" Meter)
- 631 (Water Service 1" Meter)
- 632 (Water Service 1.5" Meter)

Section 8. Standard Drawing 530 (Fold-Down Bollard) is added as set forth in Exhibit B, which is attached and incorporated by reference.

Section 9. To the extent this resolution conflicts with a prior resolution involving the PWCC, the provisions of this resolution control.

Section 10. This resolution is effective upon adoption.

INTRODUCED AND ADOPTED this 23rd day of July 2018.

CITY OF TUALATIN OREGON

BY 

Mayor

APPROVED AS TO LEGAL FORM

BY 

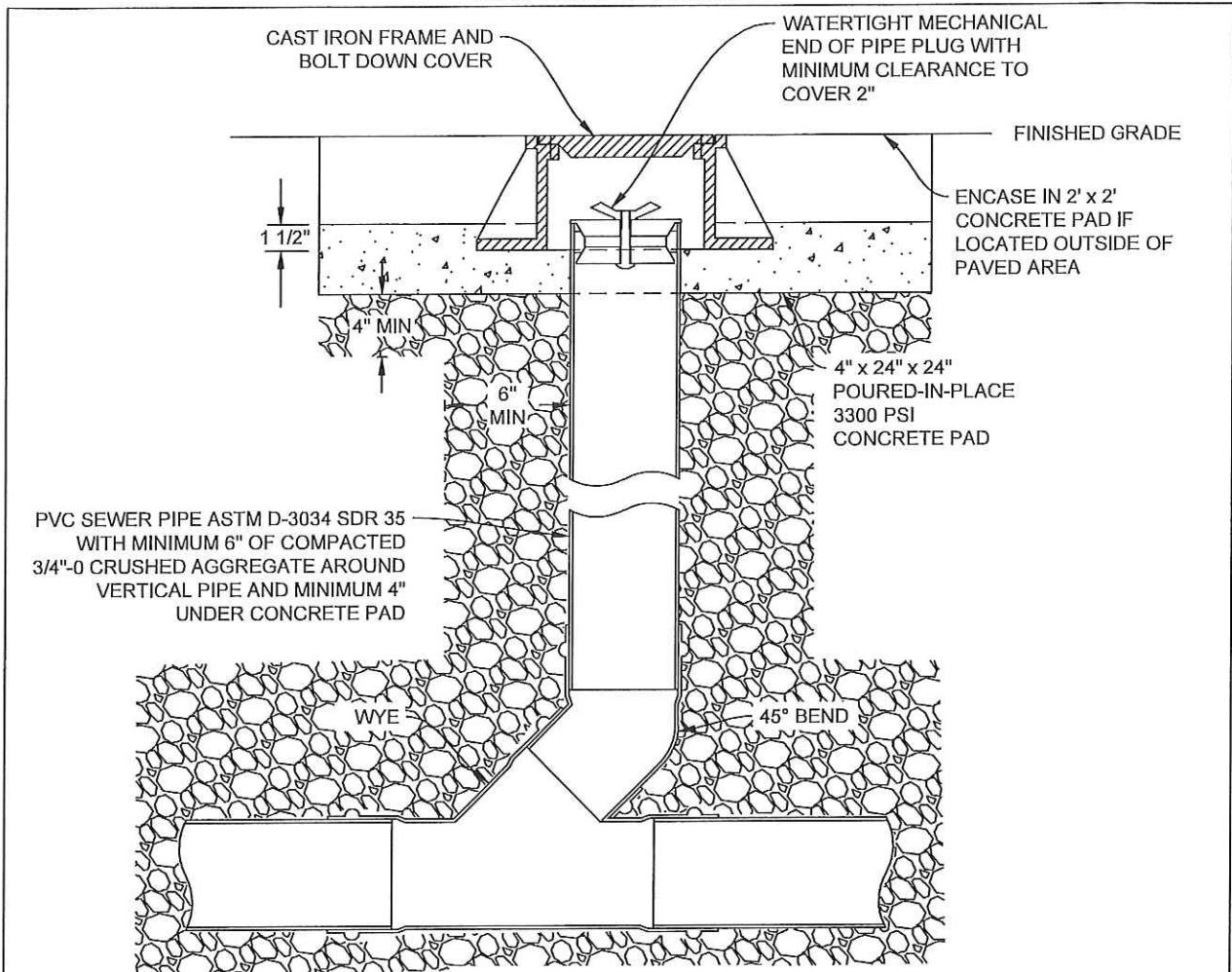
City Attorney

ATTEST

BY 

City Recorder

Res. 5383-18 Exhibit A



PVC SEWER PIPE ASTM D-3034 SDR 35 WITH MINIMUM 6" OF COMPACTED 3/4"-Ø CRUSHED AGGREGATE AROUND VERTICAL PIPE AND MINIMUM 4" UNDER CONCRETE PAD

SECTION VIEW




SANITARY CLEANOUT LID EXAMPLE

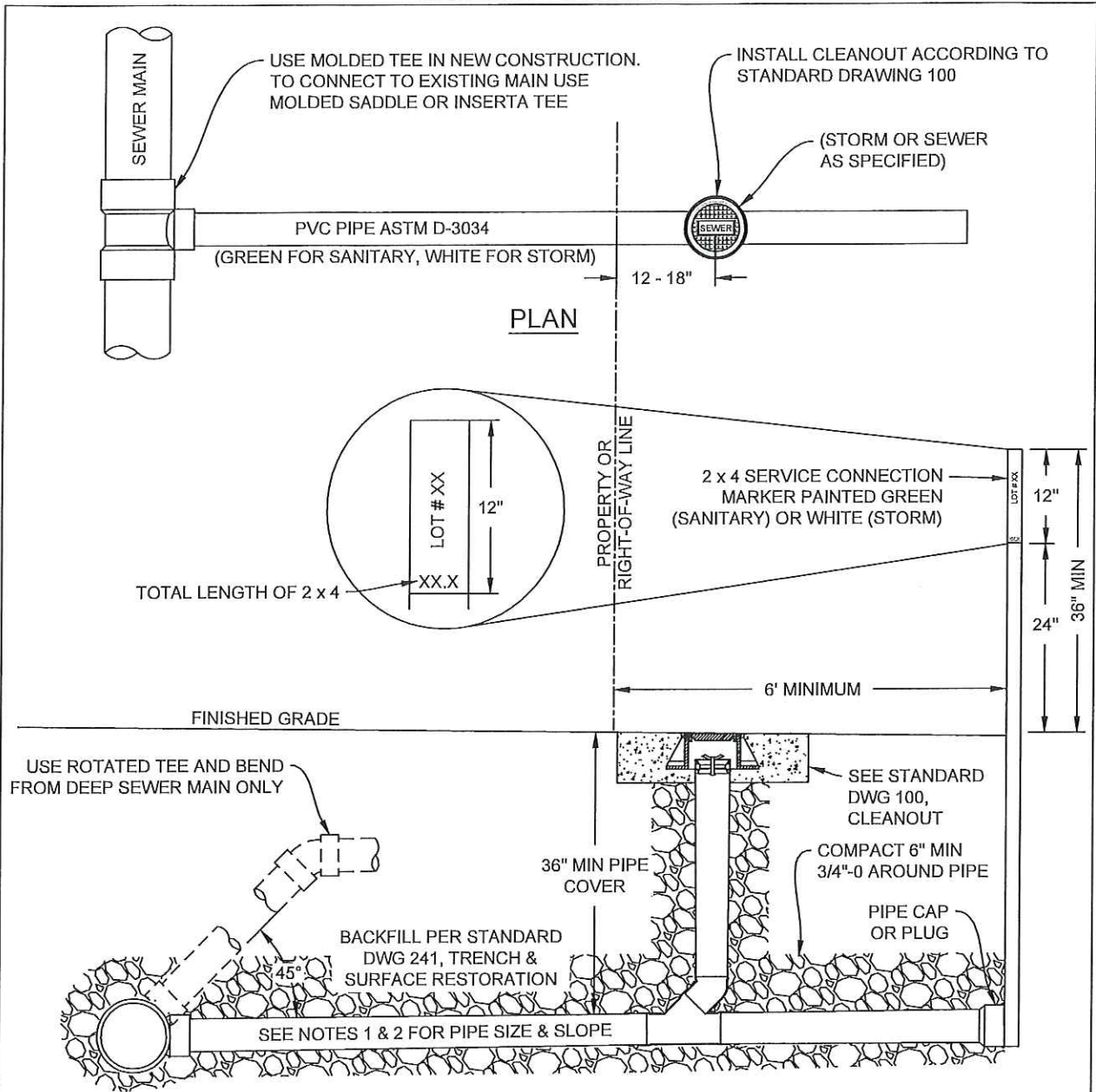


STORM CLEANOUT LID EXAMPLE

NOTES:


1. FOR SANITARY CLEANOUT, USE CAST IRON FRAME AND BOLT DOWN COVER EMBOSSED WITH THE WORD "SANITARY", OF THE FOLLOWING TYPES:
UP TO 8" DIAMETER PIPE: EJ 00367103, OR APPROVED EQUAL
2. FOR STORM CLEANOUT, USE CAST IRON FRAME AND BOLT DOWN COVER EMBOSSED WITH THE WORD "STORM", OF THE FOLLOWING TYPES:
UP TO 8" DIAMETER PIPE: EJ 00367143B01, OR APPROVED EQUAL
3. FOR SERVICE LATERAL CONNECTIONS, SEE STANDARD DWG 300, SEWER BUILDING LATERAL.
4. RISER PIPE SHALL BE SAME MATERIAL AND DIAMETER AS LATERAL PIPE.

 CITY OF TUALATIN, OR	CLEANOUT		
	REVISED: 7/23/2018 DRAFTED BY: S. STRASSER APPROVED BY: J. FUCHS	SCALE: NTS	DRAWING NO.




NOTES:

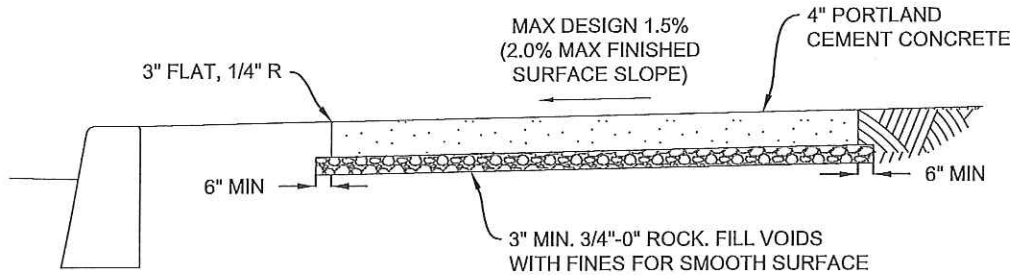
1. INSTALL 6" MINIMUM DIAMETER LATERAL PIPE WITHIN RIGHT OF WAY. WHERE SITE CONSTRAINTS EXIST, 4" DIAMETER PIPE MAY BE USED AS APPROVED BY THE CITY ENGINEER.
2. INSTALL 6" PIPE AT A MINIMUM SLOPE OF 1%, AND 4" PIPE AT A MINIMUM SLOPE OF 2%.
3. DO NOT BACKFILL PRIOR TO INSPECTION.
4. BACKFILL SERVICE CONNECTION MARKER AGAINST PIPE CAP TO SECURE IN PLACE.
5. PLACE MAGNETIC PIPE LOCATION TAPE 18" ABOVE PIPE (GREEN FOR SANITARY, WHITE FOR STORM). EXTEND LOCATION TAPE UP THE 2 x 4 SERVICE CONNECTION MARKER TO 12" BELOW THE TOP.
6. A TV INSPECTION IS REQUIRED FOR ACCEPTANCE OF SERVICE LATERALS.

	<h2 style="margin: 0;">CITY OF TUALATIN, OR</h2>	<h2 style="margin: 0;">SEWER BUILDING LATERAL</h2>	
REVISED: 7/23/2018	DRAFTED BY: S. STRASSER APPROVED BY: J. FUCHS	SCALE: NTS	DRAWING NO. 300

Res. 5383-18 Exhibit A

1. REFER TO STANDARD DRAWINGS 461, 462, AND 463 FOR TYPICAL RAMP GEOMETRY AND DIMENSIONS.
2. ALTERNATIVE ENGINEERED CURB RAMP DESIGNS THAT MEET ALL REQUIREMENTS OF THE UNITED STATES ACCESS BOARD PROPOSED PUBLIC RIGHTS- OF- WAY ACCESSIBILITY GUIDELINES (PROWAG) MAY BE USED IF APPROVED BY THE CITY ENGINEER.
3. MEET THE REQUIREMENTS OF PROWAG. GENERAL NOTES AND DETAILS ARE PROVIDED TO CONVEY MINIMUM REQUIREMENTS TO MEET PROWAG FOR DESIGN AND CONSTRUCTION OF ADA RAMPS. EACH PROJECT REQUIRES A DESIGN BY A STATE OF OREGON LICENSED ENGINEER.
4. SEE DWG. NO. 470 & 471 FOR CURB DETAILS. SEE DWG. NO. 475 FOR SIDEWALK DETAILS.
5. CONSTRUCT TURNING SPACE/LANDING WITH 1.5% MAX. SLOPE IN THE DIRECTION OF TRAVEL AND PERPENDICULAR TO THE DIRECTION OF TRAVEL. SLOPE TURNING/LANDING SPACE TO DRAIN TOWARDS STREET UNLESS OTHERWISE NOTED.
6. PROVIDE EDGED JOINTS AT ALL SIDEWALK RAMP SLOPE BREAK LINES.
7. FOR THE PURPOSE OF THESE DRAWINGS, A CURB RAMP IS CONSIDERED "PERPENDICULAR" IF THE ANGLE BETWEEN THE LONGITUDINAL AXIS OF THE RAMP AND A LINE TANGENT TO THE CURB AT THE RAMP CENTER IS 75 DEGREES OR GREATER.
8. SIDEWALK CURB RAMP SLOPES SHOWN ARE RELATIVE TO THE TRUE LEVEL HORIZON (ZERO BUBBLE). VERIFY ALL SLOPES USING A CALIBRATED SMART LEVEL.
9. PLACE TRUNCATED DOME DETECTABLE WARNING SURFACE IN THE LOWER 2' ADJACENT TO TRAFFIC OF THE THROAT OF THE RAMP ONLY. SEE DWG. NO. 464.
10. LOCATE THE RAMP WIDTH EXCLUDING FLARED SIDES COMPLETELY WITHIN THE LEGAL CROSSWALK LIMITS. SEE DWG. NO. 464.
11. CONSTRUCT RAMP FLARED SIDES 9.0% MAX SLOPE (10.0% MAX. FINISHED SURFACE SLOPE) MEASURED PARALLEL TO THE CURBLINE, WHEN IN THE PEDESTRIAN CIRCULATION PATH.
12. COUNTER SLOPE FOR STREETS, GUTTERS, AND TRANSITIONS, AT THE FOOT OF THE CURB RAMP IS 5.0% MAX.
13. IF EXISTING ADJACENT SIDEWALK PANEL DOES NOT MEET PROWAG REQUIREMENTS, CONSTRUCT TRANSITIONAL PANEL THAT IS AT LEAST 2' LONG BETWEEN THE NEW CONSTRUCTION AND THE EXISTING SIDEWALK. EXTEND TRANSITION PANEL TO THE NEAREST CONTROL JOINT IF LESS THAN 2' OF THE EXISTING PANEL REMAINS. TRANSITIONAL SEGMENTS ARE INTENDED TO SMOOTHLY TRANSITION BETWEEN THE NEW RAMP AND SIDEWALK CROSS SLOPE AND THE EXISTING CROSS SLOPE.
14. REFER TO PROWAG SECTION R403 - OPERABLE PARTS AND MUTCD (CHAPTER 4) FOR PEDESTRIAN SIGNAL REQUIREMENTS.
15. CONSTRUCT RAMPS WITH A RUNNING SLOPE BETWEEN 5.0% TO 7.5% MAXIMUM (8.3% FINISHED SURFACE). MEET RUNNING SLOPE REQUIREMENTS FOR UP TO 15.0'. RUNNING SLOPE FOR THAT PORTION OF RAMP LONGER THAN 15.0' MAY EXCEED 7.5% MAX. (8.3% MAX FINISHED SURFACE) TO MATCH SIDEWALK GRADE AS APPROVED BY THE CITY ENGINEER.


 CITY OF TUALATIN, OR		ADA RAMP- GENERAL NOTES	
REVISED: 7/23/2018	DRAFTED BY: S. STRASSER APPROVED BY: J. FUCHS	SCALE: NTS	DRAWING NO. 460

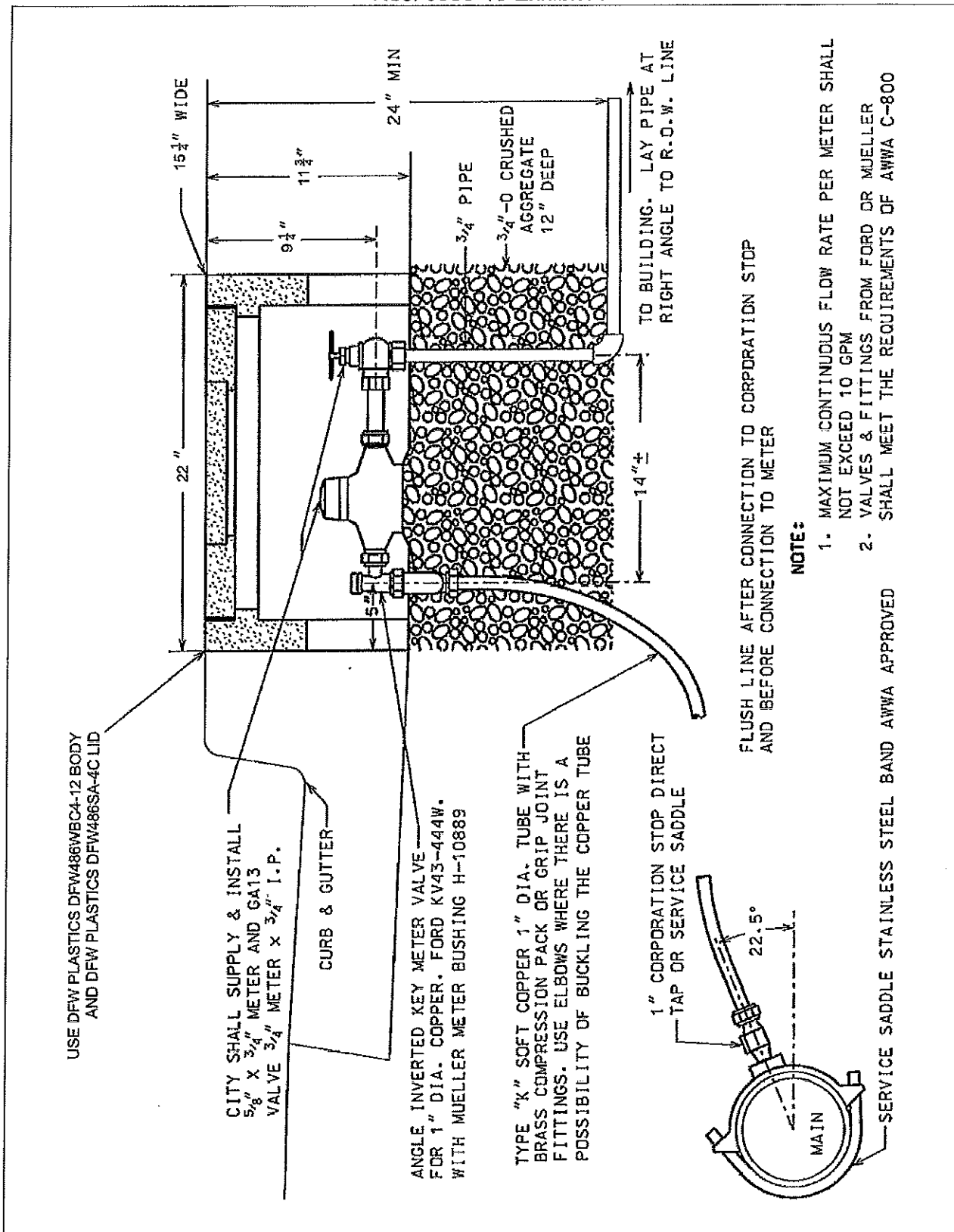


CROSS SECTION

NOTES:

1. PLATE COMPACT THE SIDEWALK SUBGRADE AND BASE ROCK TO SATISFACTION OF THE CITY ENGINEER. DO NOT COMPACT EARLIER THAN 7 DAYS AFTER CONSTRUCTING CURB OR BEFORE COMPLETING THE PLACEMENT OF PAVEMENT BASE ROCK. FILL VOIDS WITH FINES WHERE NECESSARY TO PROVIDE SMOOTH SURFACE.
2. USE PORTLAND CEMENT CONCRETE WITH 4-7% AIR ENTRAINMENT AND A 28 DAY COMPRESSIVE STRENGTH OF AT LEAST 3,300 PSI.
3. CONSTRUCT TRANSVERSE CONTROL JOINTS OF THE WEAKENED PLANE TYPE, 1-1/2" CONCRETE DEPTH AND SPACE AT 5' INTERVALS AND AT POINTS OF TANGENCY.
4. FORM CONTROL JOINTS WITH A SMOOTH FACE SQUARE TO THE SIDEWALK.
5. WHERE A STRUCTURE IS SURROUNDED BY OR IS ADJACENT TO THE SIDEWALK (EXCLUDING CURB), PROVIDE SEPARATION WITH 1/2" PREMOLDED ASPHALT-IMPREGNATED, NON-EXTRUDING EXPANSION JOINT MATERIAL.
6. BROOM FINISH THE SURFACE TRANSVERSE TO THE DIRECTION OF TRAFFIC.
7. FINISH ALL EDGES WITH 1/4" RADIUS EDGER WITH 3" FLAT.
8. WHERE PRACTICAL, ALIGN SIDEWALK CONTROL JOINTS WITH CURB JOINTS.
9. IN ACCORDANCE WITH THE UNITED STATES ACCESS BOARD PROPOSED PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES, IF THE EXISTING ADJACENT SIDEWALK PANEL CROSS SLOPE IS GREATER THAN 2.0%, CONSTRUCT A TRANSITIONAL PANEL THAT IS AT LEAST 2' LONG BETWEEN THE NEW SIDEWALK PANEL AND THE EXISTING SIDEWALK. EXTEND TRANSITION PANEL TO THE NEAREST CONTROL JOINT IF LESS THAN 2' OF THE EXISTING PANEL REMAINS.

 CITY OF TUALATIN, OR	CONCRETE SIDEWALK	
	REVISED: 7/23/2018 DRAFTED BY: S. STRASSER APPROVED BY: J. FUCHS	SCALE: NTS



USE DFW PLASTICS DFW486WBC4-12 BODY AND DFW PLASTICS DFW486SA-4C LID

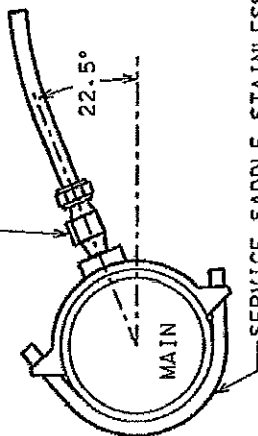
CITY SHALL SUPPLY & INSTALL 5/8" X 3/4" METER AND GA13 VALVE 3/4" METER X 3/4" I.P.

CURB & GUTTER

ANGLE INVERTED KEY METER VALVE FOR 1" DIA. COPPER. FORD KV43-444W. WITH MUELLER METER BUSHING H-10889

TYPE "K" SOFT COPPER 1" DIA. TUBE WITH BRASS COMPRESSION PACK OR GRIP JOINT FITTINGS. USE ELBOWS WHERE THERE IS A POSSIBILITY OF BUCKLING THE COPPER TUBE

1" CORPORATION STOP DIRECT TAP OR SERVICE SADDLE



FLUSH LINE AFTER CONNECTION TO CORPORATION STOP AND BEFORE CONNECTION TO METER

NOTE:

1. MAXIMUM CONTINUOUS FLOW RATE PER METER SHALL NOT EXCEED 10 GPM
2. VALVES & FITTINGS FROM FORD OR MUELLER SHALL MEET THE REQUIREMENTS OF AWWA C-800

SERVICE SADDLE STAINLESS STEEL BAND AWWA APPROVED



CITY OF TUALATIN, OR

WATER SERVICE

5/8" X 3/4" METER

REVISED:

7/23/18

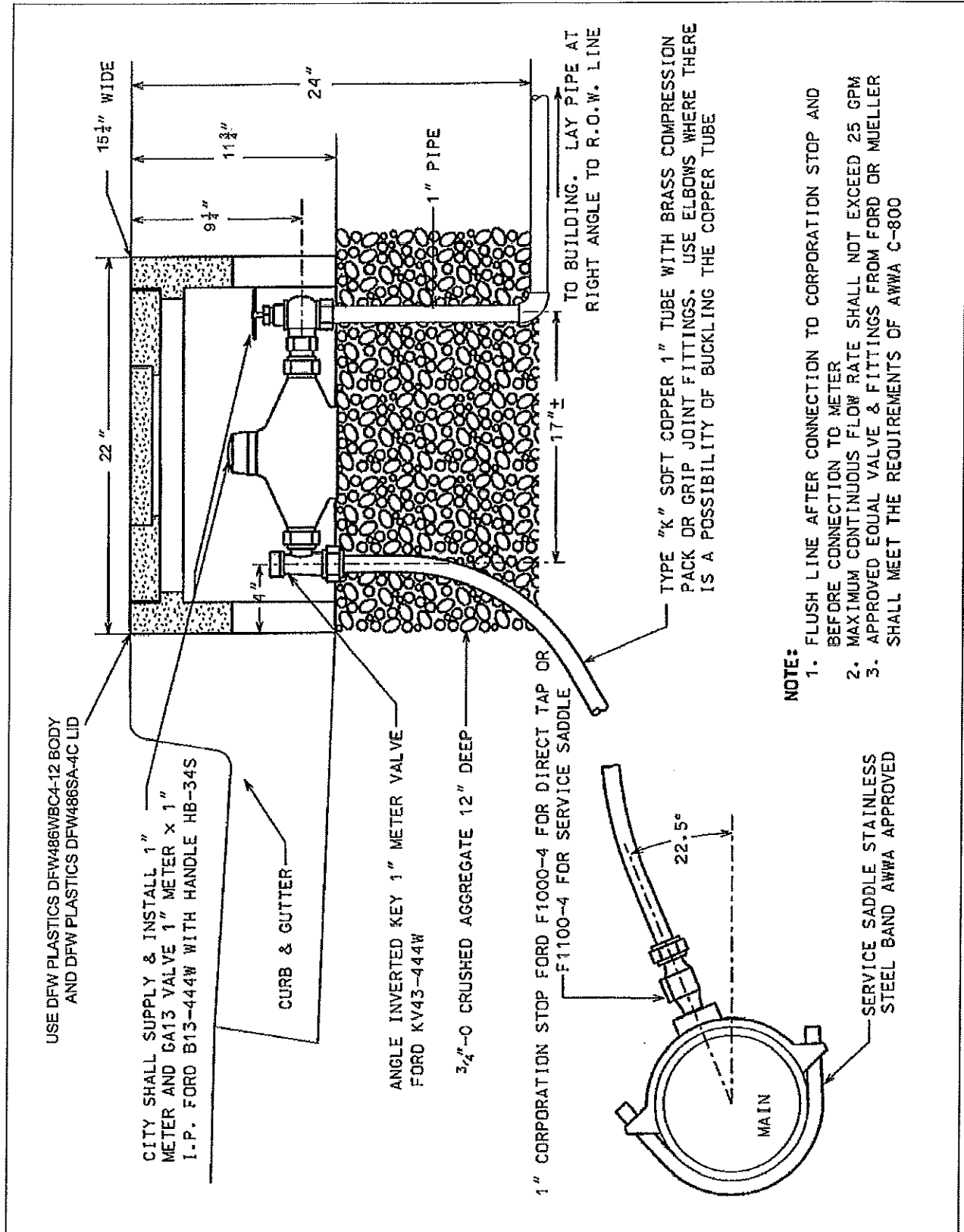
DRAFTED BY: S. STRASSER
APPROVED BY: J. FUCHS


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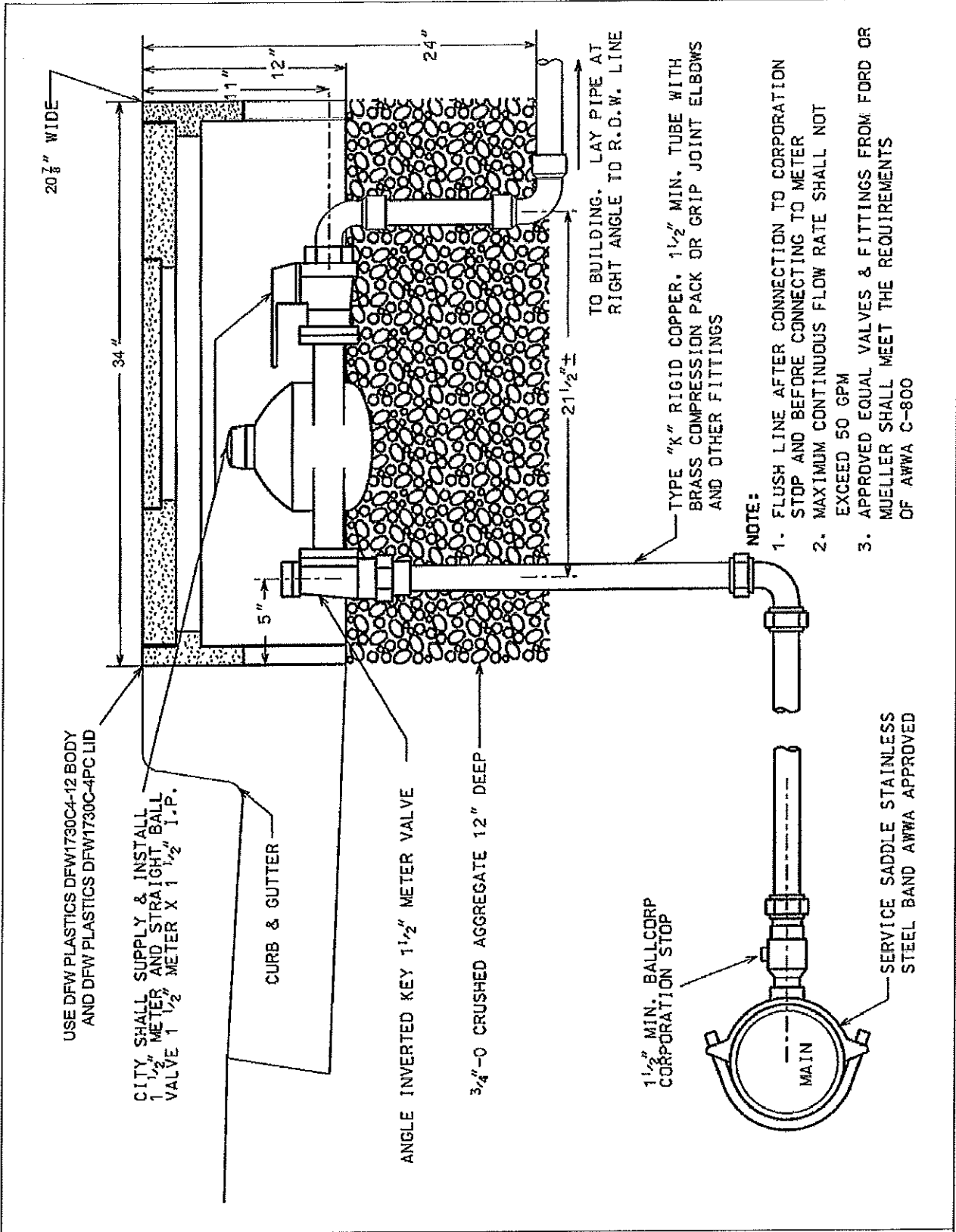
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DRAWING NO.

630

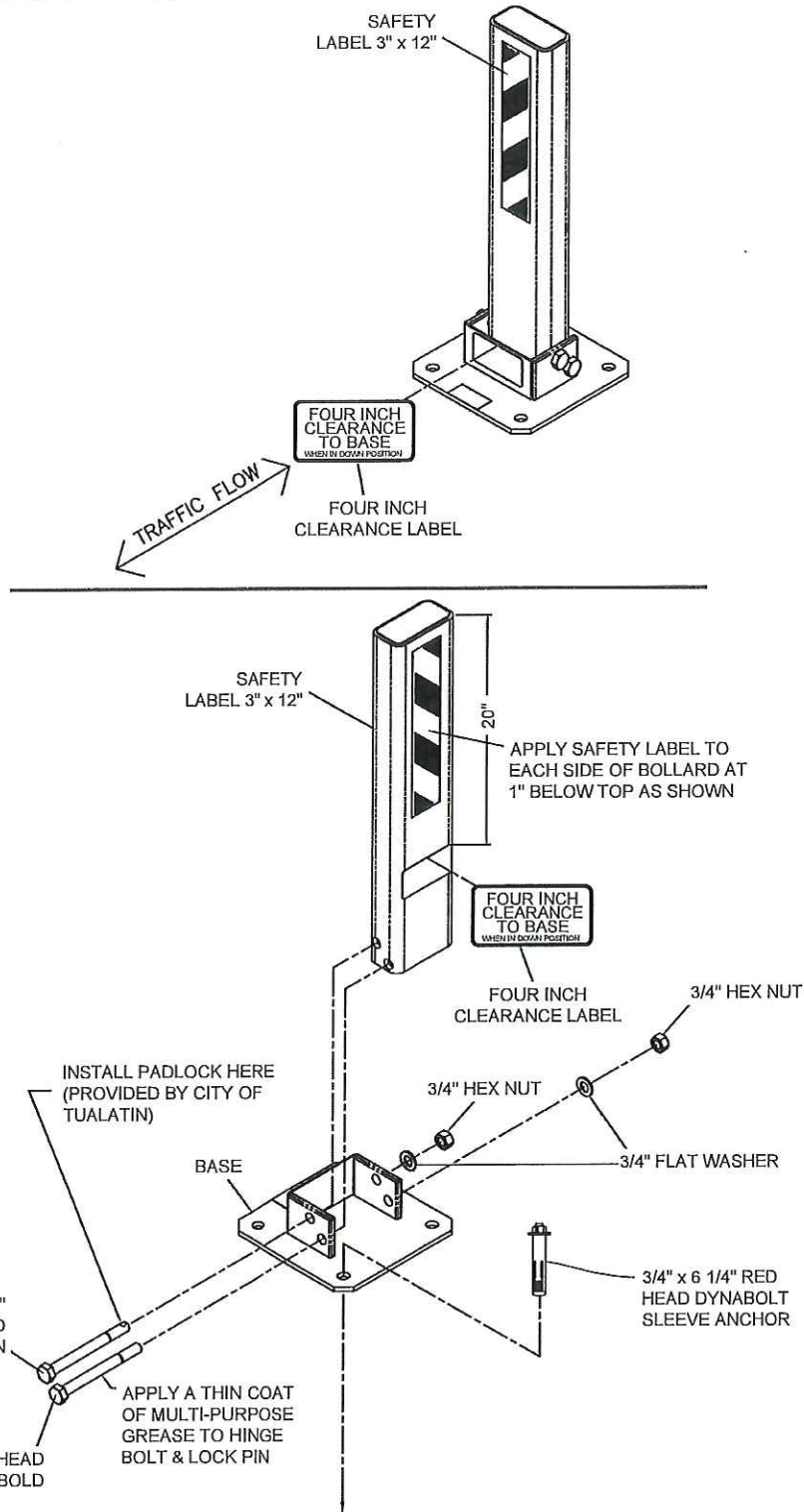


 CITY OF TUALATIN, OR	WATER SERVICE 1" METER	
	REVISED: 7/23/18 DRAFTED BY: S. STRASSER APPROVED BY: J. FUCHS	SCALE: NTS



 CITY OF TUALATIN, OR	WATER SERVICE 1 ¹/₂" METER		DRAWING NO. 632
	REVISED: 7/23/18 DRAFTED BY: S. STRASSER APPROVED BY: J. FUCHS	SCALE: NTS	

Res. 5383-18 Exhibit B



NOTE: USE TRAFFICGUARD LPHDHA2 LOW PROFILE HEAVY DUTY HINGED BOLLARD OR EQUIVALENT .



CITY OF TUALATIN, OR

FOLD-DOWN BOLLARD

REVISED: 7/9/18

DRAFTED BY: S. STRASSER
APPROVED BY: J. FUCHS

SCALE: NTS

DRAWING NO. **530**