

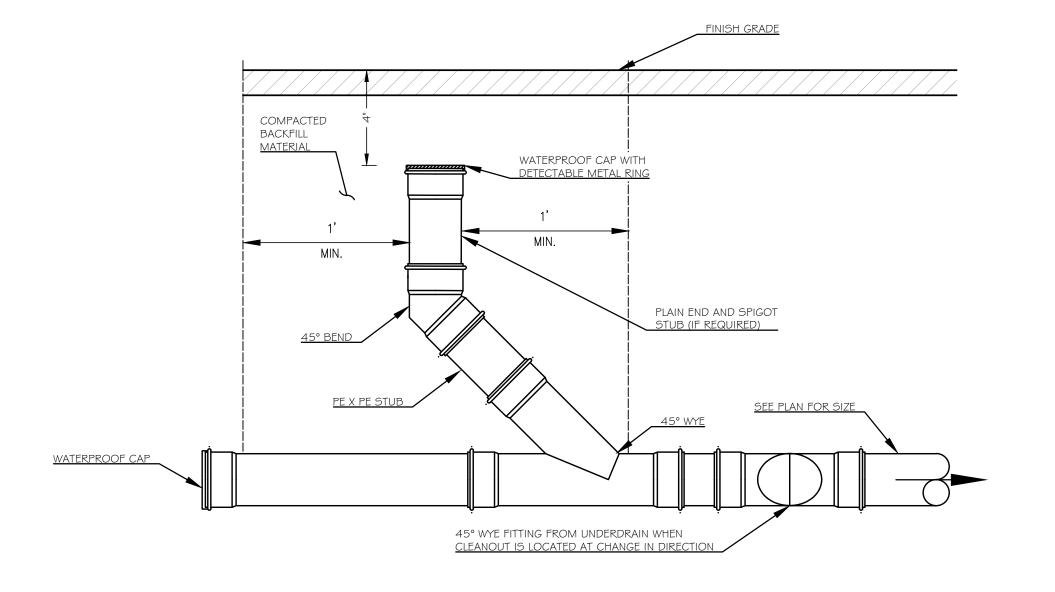
I. USE ${\rm D_{50}}$ NOTED ON TABLE UNLESS OTHERWISE SPECIFIED ON PLANS.

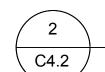
2. UNDERLAY RIP-RAP WITH 6" OF GRAVEL OR GEOTEXTILE USE WIDTHS NOTED ABOVE OR CONFORM TO NATURAL CHANNEL OR TOPOGRAPHY.

4. RIPRAP INLET PROTECTION SHALL BE A CIRCULAR APRON WITH A RADIUS OF IX THE PIPE DIAMETER.

RIP-RAP APRON

NOT TO SCALE





UNDERDRAIN CLEANOUT

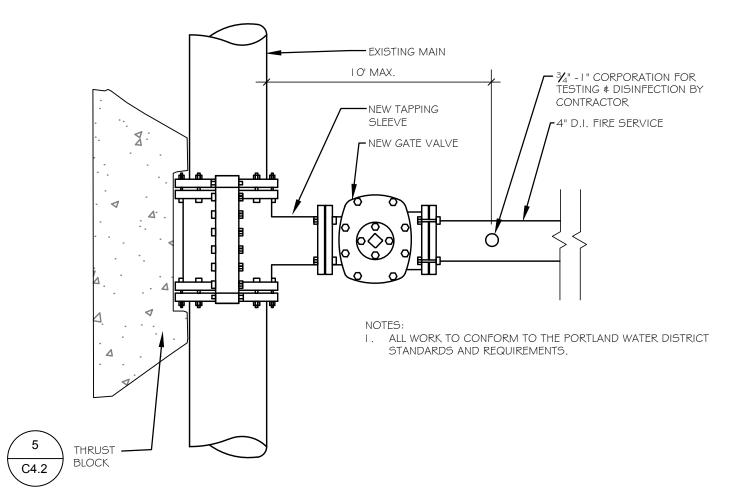
NOT TO SCALE

FOR USE IN PAVED AND UNPAVED AREAS FINISH GRADE IN

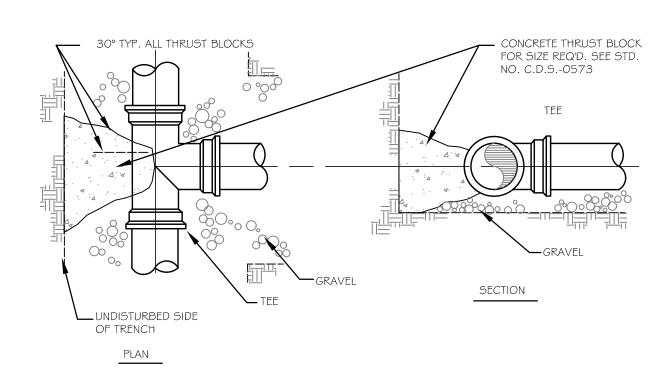
> NOTES:
>
> I. ALL WORK TO CONFORM TO THE PORTLAND WATER DISTRICT STANDARDS AND REQUIREMENTS.
>
> 2. D.I.P. MAY BE USED FOR VALVE BOX EXTENSIONS.
>
> 3. VALVE BOX SHOULD NOT CONTACT WATER MAIN OR VALVE.
>
> 4. CONCRETE PROTECTOR RING SHALL BE USED IN ALL UNPAVED AREAS.

C4.2

VALVE AND VALVE BOX INSTALLATION DETAIL NOT TO SCALE



STANDARD TAPPING SLEEVE DETAIL (ALTERNATE #1) C4.2

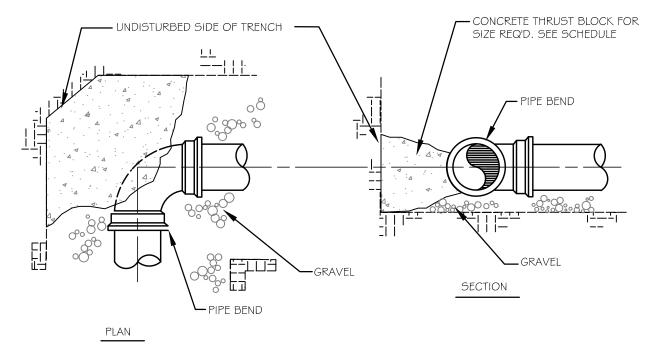


THRUST BLOCK DETAILS

NOT TO SCALE

4.2

THRUST BLOCK PLACEMENT AT TEE(S)



THRUST BLOCK PLACEMENT AT BEND(S)

			SIZE REQUIREMENTS FO		
		BEARING ON UNDISTURBED SOIL (SQUARE FT.)			
FITTINGS		90° BENDS	45° BENDS	TEES \$ PLUGS	HYDRANTS
PIPE SIZE	4"	2.0	1.0	1.0	N/A
	6"	3.0	2.0	2.0	6.0
	8"	5.0	3.0	4.0	N/A

THRUST BLOCK SCHEDULE

Drawn Check Rev. Date Description

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DETAILS