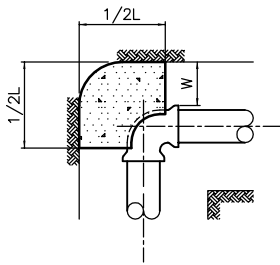


3. The following MMCD Standard Detail Drawings are to be used or replaced as indicated below:

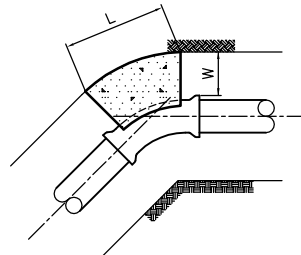
3.7 WATERWORKS DETAILS			
MMCD STANDARD DETAIL DRAWING		CITY OF VICTORIA SUPPLEMENTARY STANDARD DETAIL DRAWINGS	
W1	Typical Thrust Block Arrangements	SD W1	Typical Thrust Block Arrangements
W2a	Water Service Connection - Service Box	SD W2a	Water Service Connection for 19mm to 50mm
W2b	Water Service Connection – Valve Box		Do Not Use.
W2c	Meter Installation for 19mm and 25mm Services.	SD W2c	Meter Installation for 19mm and 25mm Water Service Connections
W2d	Meter Installation for 38mm and 50mm Service Connection	SD W2d	Meter Installation for 38mm and 50mm Water Service Connections
		SD W2e	Pit Pad Installation - Travelled Areas
W3	Gate Valve Installation	SD W3	Gate Valve Installation
W4	Fire Hydrant Installation	SD W4	Fire Hydrant Installation
W5	Test Point Installation		Do Not Use.
W6	Air Valve Assembly - 25mm and 50mm Valves		Use BUT Change Manhole Cover to SD W12
W7	Air Valve Assembly - 100mm Valve		Use BUT Change Manhole Cover to SD W12 . Do NOT Install Vent.
W8	Blow-off for Water main		Adopt MMCD Drawing
W9	Blow - Down Chamber		Do Not Use.
W10	Waterworks Chamber Drain		Do Not Use.
		SD W11	Watermain Valve Box Frame & Cover - for Mains 75mm and Larger
		SD W12	Watermain Manhole Frame and Cover



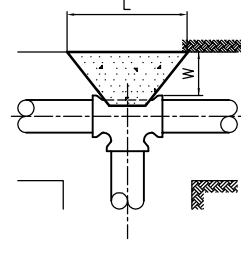
Victoria Subdivision and Development Servicing Bylaw
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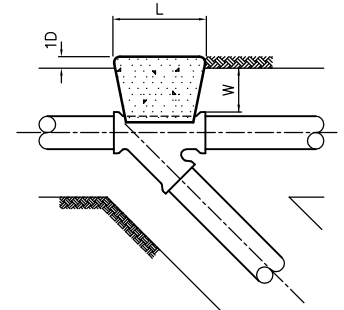
90° BENDS



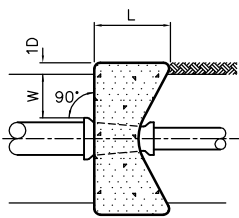
45° & 22 1/2° BENDS



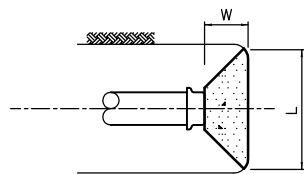
TEES



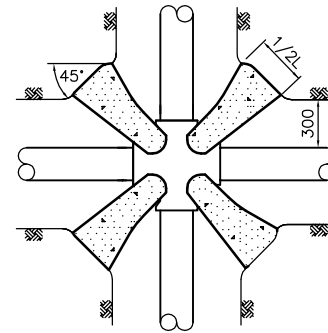
45° BENDS



REDUCERS



CAPS



CROSSES

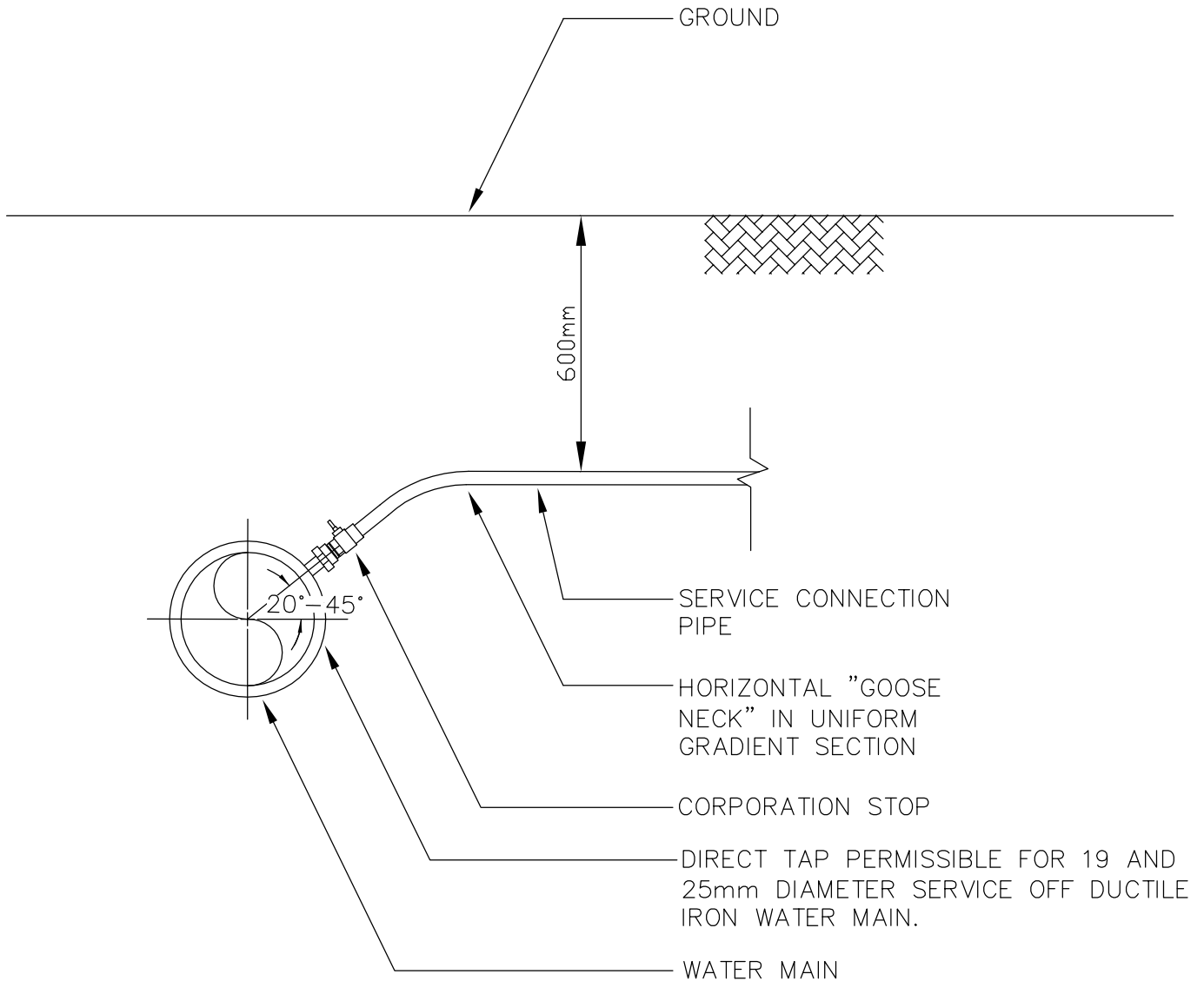
NOTES:

1. TO FIND DIMENSIONS OF THRUST BLOCKS IN SOFT CLAY (BEARING STRENGTH 95–190kPa) MULTIPLY DEPTH SHOWN ON TABLE BY TWO (i.e. 100–90° BEND USE 0.85x0.30 THRUST BLOCK).
2. FOR PEAT, SILT, UNCONSOLIDATED MATERIAL (i.e. FILL), WITH BEARING STRENGTH LESS THAN 95kPa OR WHERE GROUND CANNOT BE EXCAVATED TO FREE STANDING UNDISTURBED SOIL A THRUST BLOCKS SHALL BE DESIGNED BY AN ENGINEER. CONCRETE THRUST BLOCKS SHALL EXTEND INTO THE VERTICAL FACE OF UNDISTURBED SOIL. THRUST IN SOFT UNSTABLE SOILS WITH BEARING STRENGTH LESS THAN 95kPa WILL REQUIRE REMOVAL OF SOIL AND REPLACEMENT WITH COMPACTABLE FILL OF SUFFICIENT STABILITY TO RESIST THRUST OR SPECIAL ANCHOR BLOCK AS DIRECTED BY THE ENGINEER.
3. FOR MAINS LARGER THAN 250 DIA THRUST BLOCKS SHALL BE DESIGNED BY AN ENGINEER.
4. AT VERTICAL BENDS, BLOCKING SHALL BE DESIGNED BY AN ENGINEER.
5. BLOCKING WILL BE REQUIRED FOR ALL BENDS, TEES, PLUGS, CAPS, PIPE DEFLECTIONS AND OTHER FITTINGS ON LIVE MAINS WHERE ANCHOR RODS ARE NOT PRACTICAL.
6. BLOCKING SHALL BE KEPT CLEAR OF BELLS.
7. THRUST BLOCKS SHALL BE OF AT LEAST 15mPa 28 DAY CONCRETE OR HIGH EARLY STRENGTH CONCRETE IF REQUIRED.
8. MINIMUM CURING TIME OF CONCRETE THRUST BLOCKS SHALL BE 48 HOURS BEFORE WATERMAINS ARE CHARGED.
9. PLACE 6 mil POLYETHYLENE ON INTERFACE BETWEEN CONCRETE AND FITTING.

CONCRETE THRUST BLOCKING

MINIMUM THRUST AREAS BASED ON 1380kPa

BEARING STRENGTH MORE THAN 190kPa FOR HARD CLAY & COMPACTED SAND OR GRAVEL SEE NOTES FOR OTHER MATERIALS					
TYPE OF FITTING	DIA OF FITTING	DIST TO BEARING FACE –m	AREA –m ²	LENGTH & DEPTH @ FACE –m	HEIGHT –m
	D	W		L	H
90° BEND	100	0.30	0.13	0.85 x 0.15	0.30
	150	0.30	0.26	1.25 x 0.21	0.45
	200	0.30	0.45	1.25 x 0.36	0.60
	250	0.37	0.72	1.25 x 0.58	0.75
45° BEND 45° WYE	100	0.30	0.07	0.47 x 0.15	0.30
	150	0.30	0.14	0.70 x 0.20	0.45
	200	0.30	0.24	1.25 x 0.19	0.60
	250	0.37	0.39	1.25 x 0.31	0.75
TEES, CAPS PLUGS & PLUGGED CROSSES	100	0.30	0.09	0.63 x 0.15	0.45
	150	0.30	0.18	0.91 x 0.20	0.45
	200	0.30	0.31	1.00 x 0.32	0.75
	250	0.37	0.51	1.25 x 0.41	0.75
22 1/2° BEND	100	0.30	0.04	0.25 x 0.15	0.23
	150	0.30	0.07	0.35 x 0.20	0.23
	200	0.30	0.13	0.63 x 0.20	0.30
	250	0.35	0.20	0.80 x 0.25	0.45
REDUCER LARGE DIA	100	0.30	0.05	0.50 x 0.10	0.30
	150	0.30	0.08	0.50 x 0.15	0.45
	200	0.30	0.13	0.65 x 0.20	0.60
	250	0.35	0.20	0.80 x 0.25	0.75



NOTES:

1. THIS DETAIL FOR SERVICES 19 TO 50mm ONLY.
2. PVC SADDLES AS PER THE APPROVED PRODUCT LIST.
3. INSTALL SERVICE PIPE WITH "GOOSE NECK" IN HORIZONTAL POSITION.

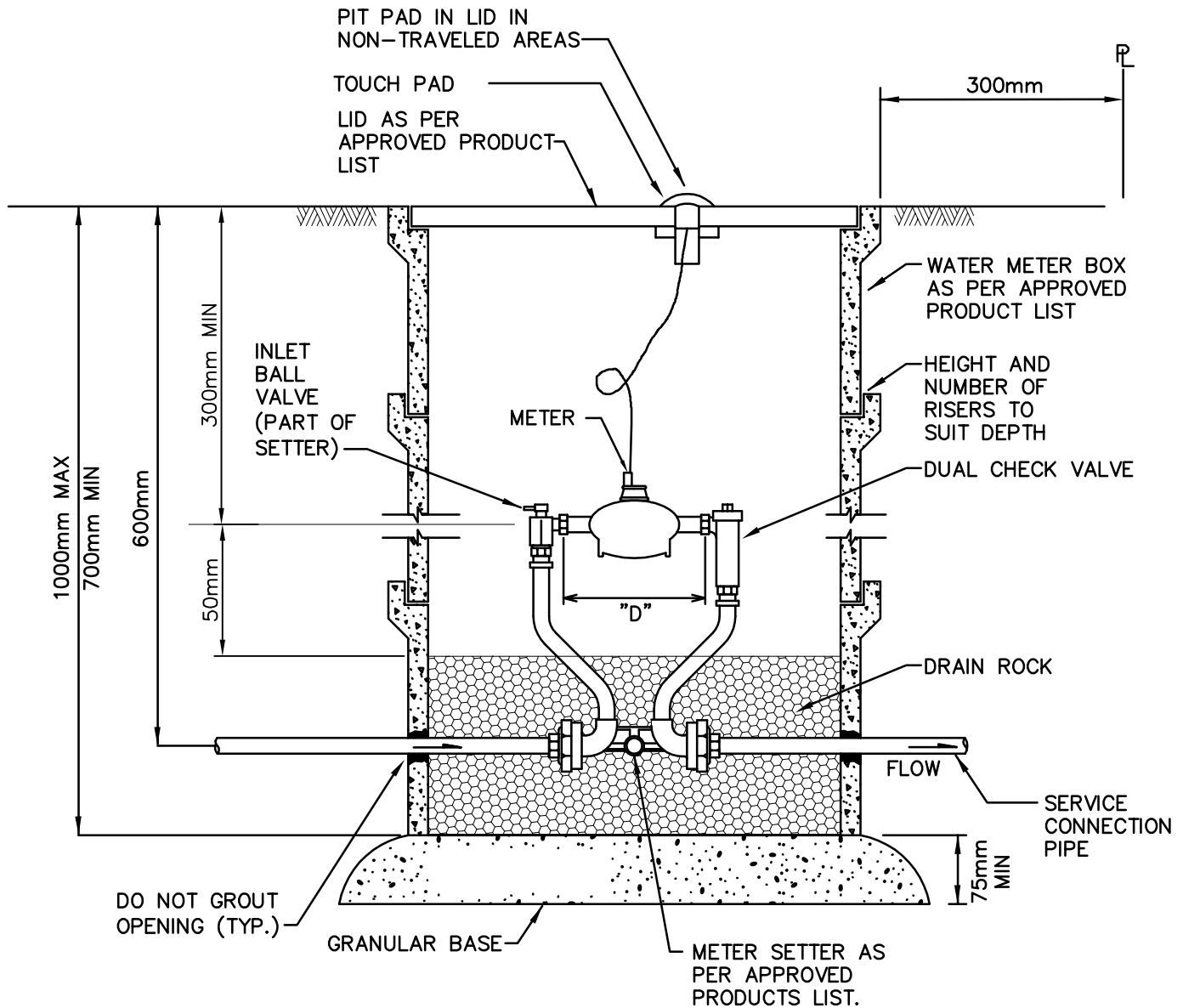
NOT TO SCALE

**WATER SERVICE CONNECTION
FOR 19mm TO 50mm**

REVISIONS

DRAWING NUMBER:

SD W2a



METER SIZE	'D'
16x19	191
19	229
25	273

NOTES:

1. FOR 38mm AND 50mm DIA SERVICE REFER TO DRAWING SD W2d.
2. REFER TO CONTACT DRAWINGS, SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.
3. REFER TO DRAWING NUMBER SD W2a FOR DETAIL OF SERVICE CONNECTION TO WATER MAIN.
4. DUAL CHECK VALVE TO BE INSTALLED ON NEW INSTALLATIONS ONLY.

NOT TO SCALE

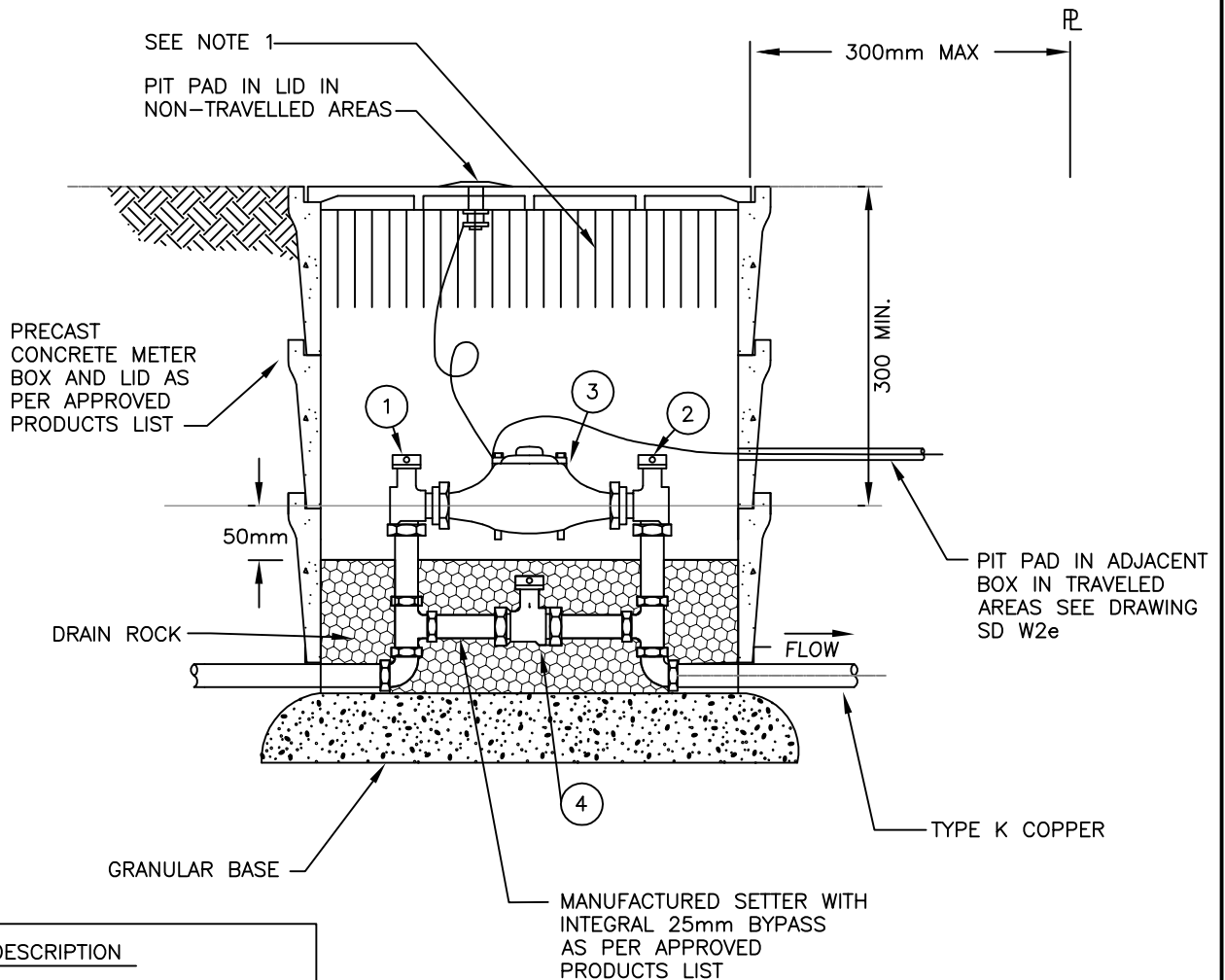
2011

**METER INSTALLATION FOR
19mm & 25mm WATER SERVICE CONNECTIONS**

REVISIONS

DRAWING NUMBER:

SD W2c

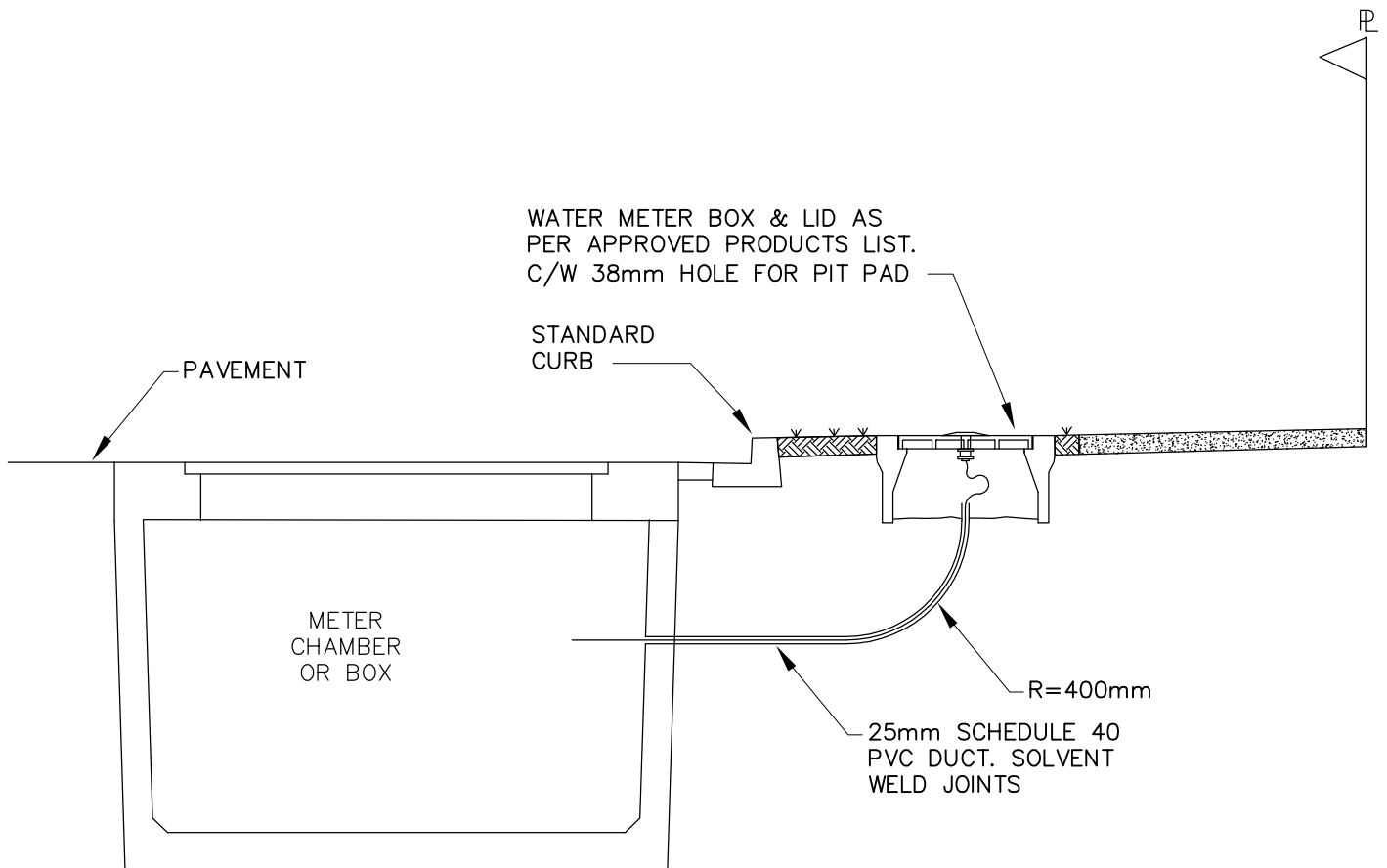


No.	DESCRIPTION
①	STOP WITH LOCKWING
②	DOWNSTREAM BALL VALVE
③	METER AS PER APPROVED PRODUCTS LIST
④	BYPASS STOP WITH LOCKWING

NOTES:

1. IF DISTANCE BETWEEN LID AND METER IS LESS THAN 600mm INSTALL 100mm OF STYROFOAM INSULATION CUT TO FIT METER BOX OPENING.

NOT TO SCALE



NOTE: PIT PAD TO BE LOCATED OUT OF THE MAIN PEDESTRIAN CORRIDOR AND OUT OF DRIVEWAY CROSSINGS.

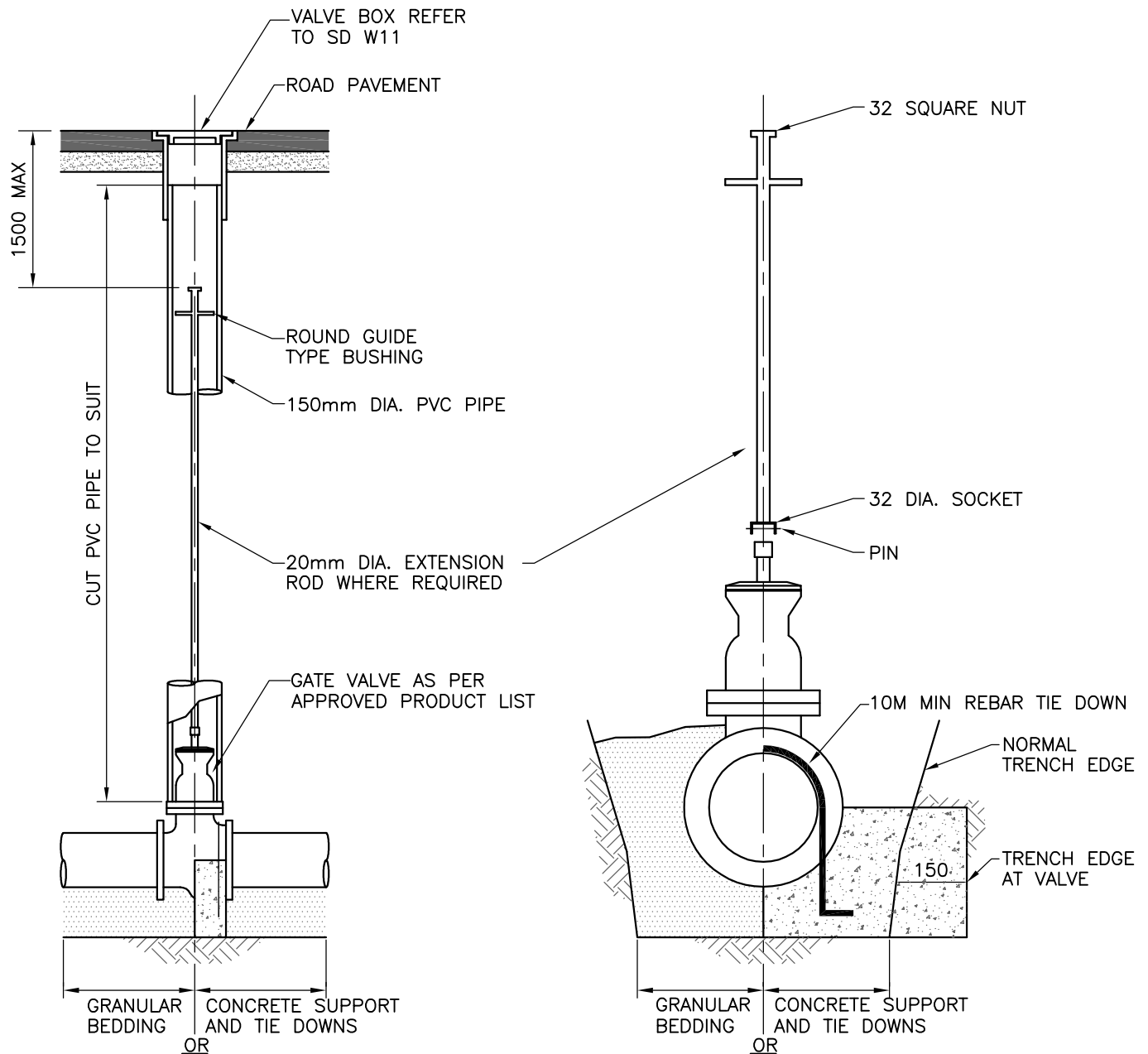
NOT TO SCALE

**PIT PAD INSTALLATION
TRAVELLED AREAS**

REVISIONS

DRAWING NUMBER:

SD W2e



NOTES

1. REFER TO CONTRACT DRAWINGS FOR VALVE INSTALLATION DETAILS IN AREAS OF UNSTABLE GROUND (WHERE APPLICABLE).
2. REFER TO CONTRACT DRAWINGS AND SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.
3. VALVE OPENS CLOCKWISE.

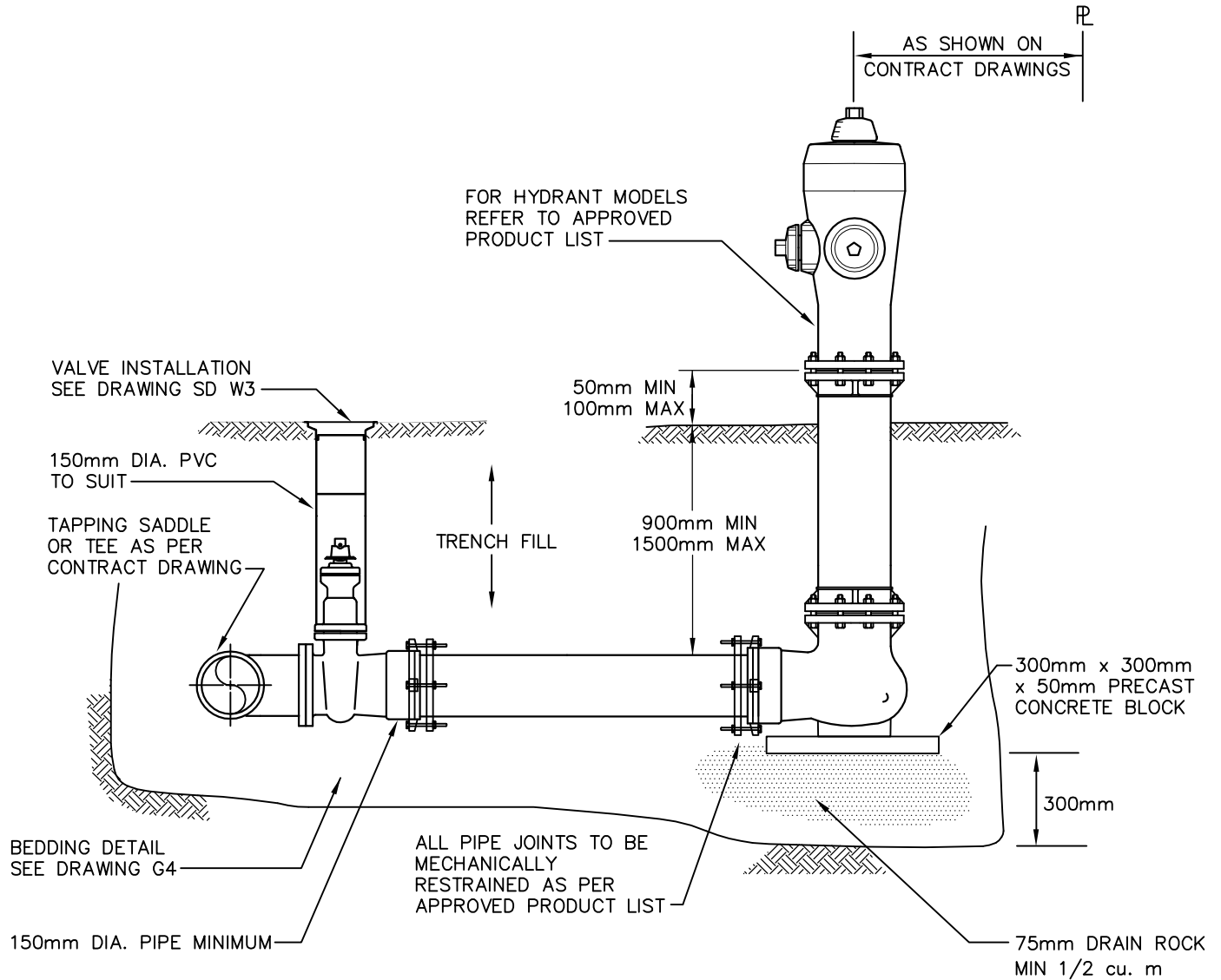
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GATE VALVE INSTALLATION

REVISIONS

DRAWING NUMBER:

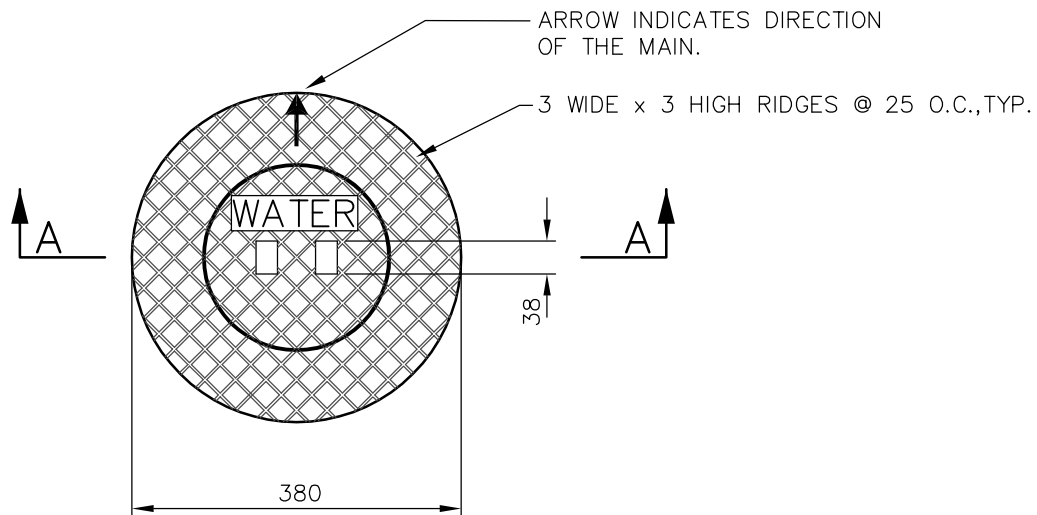
SD W3



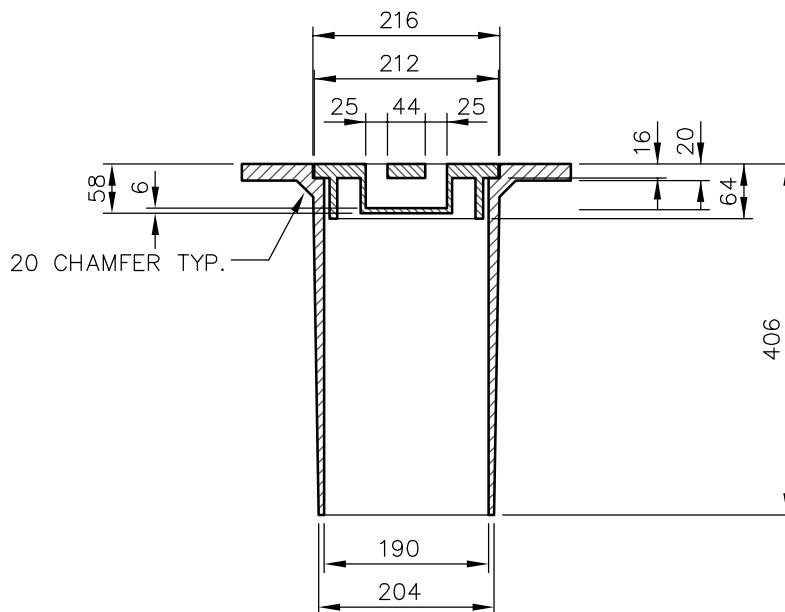
NOTES:

1. REFER TO SUPPLEMENTAL SPECIFICATIONS FOR HYDRANT PAINTING REQUIREMENTS.
2. REFER TO CONTRACT DRAWINGS AND SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.
3. FOR INSTALLATIONS SHOWN ON CONTRACT DRAWINGS WHERE WATER TABLE (AT SEASONAL HIGH) IS ABOVE BASE OF DRAIN ROCK, INSERT THREADED PLUGS IN DRAIN HOLES AND SUBSTITUTE GRANULAR PIPE BEDDING FOR DRAIN ROCK (COMPACT PIPE BEDDING TO 95% MODIFIED PROCTOR DENSITY).
4. ALL VALVES TO OPEN CLOCKWISE.
5. USE PIPE JOINT RESTRAINTS ON THE MAIN CONNECTION.

NOT TO SCALE



PLAN — FRAME & COVER



SECTION A-A

NOTES:

1. ALL METAL BEARING SURFACES BETWEEN FRAME AND COVER MACHINED TO ENSURE GOOD SEATING

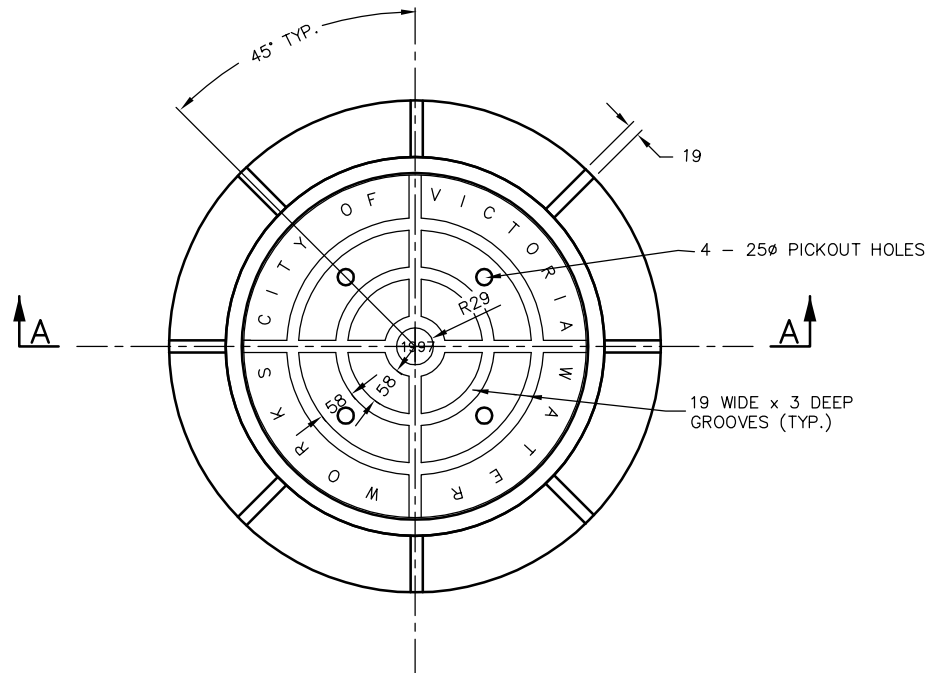
NOT TO SCALE

**WATERMAIN VALVE BOX FRAME & COVER
FOR MAINS 75mm AND LARGER**

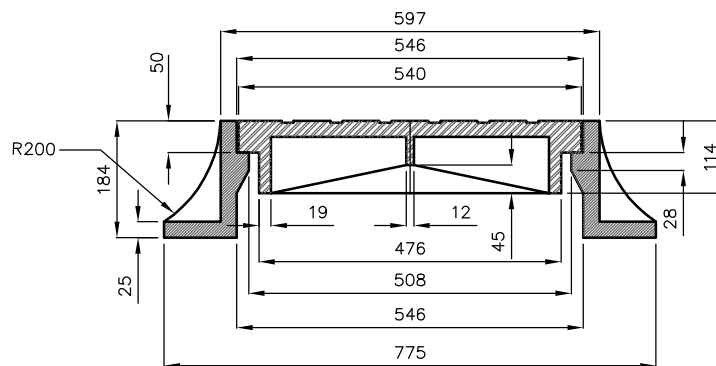
REVISIONS

DRAWING NUMBER:

SD W11



PLAN — FRAME & COVER



SECTION A-A

NOTES:

1. CASTING SHALL HAVE A DESIGN LOAD STRENGTH IN ACCORDANCE WITH AASHTO — H20 LOADING.
2. ALL METAL BEARING SURFACES BETWEEN FRAME AND COVER MACHINED TO ENSURE GOOD SEATING
3. YEAR OF DATE MANUFACTURED ON COVER
4. COVER TO BE IDENTIFIED AS 'WATER'

NOT TO SCALE

WATERMAIN MANHOLE FRAME & COVER

REVISIONS

DRAWING NUMBER:

SD W12



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