Coquitlam

CITY OF COQUITLAM

WATER METER SPECIFICATIONS

January 2025

CONTENTS

1. Preamble

The following specifications detail the City's requirements for the installation of meters on City water service connections.

The specifications identify acceptable meter types, makes, location, sizing, and installation requirements.

2. Definitions

ANSI: American National Standards Institute.

ASTM: American Society for Testing and Materials.

AWWA: American Water Works Association

Activation: Opening of the service valve to permit the flow of water to the property.

Applicant: A person, company or agency that makes application for a water service connection from the City water system, as required by the City's *Water Distribution Bylaw*.

Developer: A person, company or agency developing a property as per the City guidelines and bylaws.

Domestic service: The service that carries water for domestic human consumption and gardening.

Fire service: The service that carries water for fire suppression and related purposes through fire sprinklers or otherwise.

Engineer: A professional engineer registered in the province of British Columbia practicing in the field of Civil or Mechanical Engineering.

FM: Factory Mutual Engineering and Research Organization, a research and testing agency accepted by the Insurance Industry.

Internal water system: The water system on the private property side of the property boundary or the City right-of-way after the *Meter Box*.

NSF: NSF International.

ULC: Underwriters' Laboratories of Canada, a research and testing agency accepted by the Insurance Industry.

Water Distribution Bylaw: Refers to the latest version of the City of Coquitlam Water Distribution Bylaw 4428, 2015 as amended.

Meter Box, Chamber or Vault: The compartment containing the meter, piping, and related components, and the names could be used interchangeably.

3. Responsibilities

a. The property owner, *Developer*, and the representing *Engineer* (if applicable) must refer the City of Coquitlam's latest *Water Distribution Bylaw* along with this *Water Meter Specifications* when installing a water meter to a property.

b. An *Applicant* is responsible for the supply and installation of meters and associated piping, *Chambers* and equipment on metered water service connections. If preferred, the *Applicant* can also pay the City to supply and install the meter(s) and associated piping, *Chambers*, and equipment at the

rate included within the *Fees and Charges Bylaw*. The City must accept the installation prior to activation of the service.

c. For all new developments, the required water service, water meter and water meter box must be installed at the *Developer's* cost

d. All water meters installed must be City approved radio-read meters as per the *Water Meter Specifications*.

e. When a new meter is installed, a request must be made to the City Public Works Department to activate the water meter.

f. Water meter size to be determined per the details outlined in Section 9. Meter Selection. The property owner, *Developer*, or the *Engineer* must size the water service and meter based on required water flow, and make a specific request with detailed calculations if the sizes indicated in Section 9 do not align with their calculations.

g. Installation requirements of backflow prevention devices are not covered in this document or in the *Typical Installation Drawings* but must be followed in accordance with the City of Coquitlam's *Building Bylaw* and Cross Connection Control requirements.

h. The *Meter Box* area must be kept free and accessible at all times to facilitate the inspection.
    i) The *Meter Box* and lid must be adjusted to final grade; and
    ii) The *Applicant* is responsible for protection of the meter installation from damage during construction. Any damages must be repaired prior to the inspection for approval of the installation by the City Plumbing Inspector and remain unobstructed to facilitate inspection, reading, and testing by the City staff.

i. The *Applicant*, *Developer* or *Engineer* must submit separate meter design drawings of the *Meter Boxes* and installation details for meter sizes 100 mm or larger as part of off-site works drawings. Installation of the water service, *Chamber*, or meter shall not begin prior to the City approval of the meter design drawings. The drawings shall contain the following details:
    i) Site plan showing *Chamber* location, layout, domestic and fire pipes as applicable;
    ii) *Meter Box / Chamber* layout, size, make/type/model of water meter, meter assembly/components, drainage details, and *Meter Box / Chamber* lid/access hatch, all labeled clearly;
    iii) Building use, details of on-site fire system hydrants/fire sprinklers (if any), details of irrigation system (if any);
    iv) Demand flow calculations and the basis used in the selection of water service and meter sizes; and
    v) Other relevant details related to the proposed meter installation.

j. Improper installations or non-compliance with the *Water Meter Specifications* must be rectified by the *Applicant* or the *Developer* any time after the installation and must be completed following the instructions of the City.

k. At the time of meter replacement by the City or the property owner where applicable, the property owner must inspect, test, and rectify all defects in the meter assembly prior to installing of the replacement meter. The meter assembly includes pipes / meter-setter, strainers, detector check valves / check valves, gate valves, couplings, pipe stands, *Chamber* draining mechanism/sump pump, ladder, and *Chamber* cover, in addition to the City approved meters. The meter-setter shall be factory assembled.

4. Services to be metered

a. The *Water Distribution Bylaw* identifies service connections that require meters. This includes but is not limited to all properties intended for commercial, industrial, institutional, agricultural, public, and residential as stated in the latest *Water Distribution Bylaw*.

b. All new *Domestic services* and *Fire services* larger than 100 mm must have separate fire and domestic pipes as per drawing WM-1.

c. All *Fire services* and *Domestic services* shall have meters. While the *Domestic service* line is installed with a meter in the service line itself, the *Fire service* line will have a “tattle-tale” meter in its by-pass. Refer to *Typical Installation Drawings*.

d. *Fire service* rated combined fire/domestic meters are allowed only in existing water services and when replacing the existing meters, and not allowed in new developments.

5. Location of Meters

a. Place meters at the interface between the City and private *Internal water system*. In most circumstances the interface is at the property line. The meter and *Meter Box / Vault / Chamber* shall be located entirely on private property, 300 mm offset to the property-line, unless approved otherwise by the City. In case of zero-lot line properties, place the meter box in the City property side of the property line.

b. Where a City water main is within private property in a right-of-way, place the meter and *Meter Box / Vault / Chamber* outside the right-of-way boundary line, with a 300 mm offset.

c. Where possible, locate meters in landscaped areas and free of obstructions. If unavoidable only, place meters in pedestrian path areas or parking stalls. If a meter is placed in a parking stall, place the pit-radio transceiver in a smaller box where it may be easily accessed and off parking stalls (refer to drawing WM-7). Do not locate meters in driveways or roadways/highways.

d. Place *Meter Box / Vault / Chamber* in proximity to the site drainage system to permit installation of a gravity drain from the *Vault / Chamber*. If not feasible, provide *Chamber* drainage through adequate permeable layers in its place, as per the City’s *Water Meter Specifications Typical Installation Drawings*.

6. Approved Meter Types, Makes and Models

The two types of cold-water meters approved for use by the City are,
i) positive displacement; and ii) ultrasonic

The acceptable meters are given in the Table 1 below.

a. The meters must be radio-read and be coupled with a City approved radio transceiver unit that will function with the City's current Advanced Metering Infrastructure (AMI) system.

b. The meters must be coupled with the City approved Sensus SmartPoint 510M (non-pit) / 520M (pit) radio transceiver.

c. The actual meter or combination of meters accepted for use must accurately account for the total water use of the property serviced.

d. All meters must be new. Used or reconditioned meters are not accepted.

e. Neptune R900i meters, ultrasonic or otherwise, are not accepted.

f. Positive Displacement meters are to be either nutating disk or oscillating piston type to AWWA C-700. Meters are to have a lead free bronze (NSF/ANSI 61, Annex G and Annex F) case with cast iron or plastic frost protection cover.

g. Meters 38mm and 50mm in size are to have oval two bolt flanged ends.

h. Ultrasonic meters 19 mm and larger in size are to be AWWA C715 complaint and NSF/ANSI 61 certified.

Table 1: City Approved Meters

WATER USE	LAND USE	METER SIZE		ACCEPTABLE METER TYPE (Radio Read Meters)	LAY LENGTH
		mm	inch.		inch.
Domestic	Residential, Commercial, Industrial, and Institutional	16	5/8	Neptune, Mach 10 Ultrasonic;	7 ½
				Sensus, SR II, PD	7 ½
		19	3/4	Neptune, Mach 10 Ultrasonic;	7 ½ & 9
				Sensus, SR II, PD	7 ½ & 9
		25	1	Neptune, Mach 10 Ultrasonic;	10 3/4
				Sensus, SR II, PD	10 3/4
	Residential, Commercial, Industrial, Institutional, Agricultural, Golf-course, and Park	38	1.5	Neptune, Mach 10 Ultrasonic, Oval Flanged	10
					13
				Neptune T10 Oval Flanged	13
		50	2	Neptune, Mach 10 Ultrasonic, Oval Flanged	10
					15 1/4
					17
				Neptune T10 Oval Flanged	17

Domestic	Residential, Commercial, Industrial, Institutional, Agricultural, Golf-course, and Park	75	3	Neptune, C&I Mach 10 Ultrasonic, Flanged	12
					15 1/4
					17
Domestic & Irrigation and Bulk water use	Residential & Agricultural, Golf-course, Park and Some Industrial and Commercial	100	4	Neptune, C&I Mach 10 Ultrasonic, Flanged	14
					20
		150	6	Neptune, C&I Mach 10 Ultrasonic, Flanged	18
					24
		200	8	Neptune, C&I Mach 10 Ultrasonic, Flanged	20
		250	10	Neptune, C&I Mach 10 Ultrasonic, Flanged	26
		300	12	Neptune, C&I Mach 10 Ultrasonic, Flanged	19 1/10
Fire	Residential, Commercial, Industrial, Institutional, Agricultural, Golf-course, and Park	19 - 25	3/4 - 1	Neptune, Mach 10 Ultrasonic	7 1/2 - 10 3/4
		38 - 50	1 1/2 - 2	Neptune, Mach 10 Ultrasonic, Oval Flanged	10 - 17
		75 - 300	3-12	Neptune, C&I Mach 10 Ultrasonic, Flanged	12 - 19 1/10
Tattle-Tale Meter on Fire	Residential, Commercial, Institutional, Industrial, Agricultural, Golf-course, and Park	16	5/8	Neptune, Mach 10 Ultrasonic;	7 ½

7. Meter Warranty

a. For all warranty purposes, a water meter is considered a composite unit and not an assembly of components such as body, register, etc. and the meter warranty must cover the entire meter and not certain components only.

b. The meters up to 50 mm must have a minimum 15 years full warranty and may have additional pro-rated warranty. Meters 75 mm and larger must have a minimum full warranty of 10 years and may have additional pro-rated warranty.

c. To be approved, prior to plumbing inspection, all meter installers must submit to the City documentation from the manufacturer or re-seller with the following information.

   i) meter manufactured date;

   ii) warranty start date; and

   iii) meter supplier / re-seller contact details.

8. Registers

a. All meters are to have direct reading, factory-sealed absolute encoder registers.

b. All registers and their internal and external components must be capable of functioning under the temperature conditions they may be exposed to and suitable for operation in humid / submerged-in-water conditions.

c. The unit of measure shall be cubic meters.

d. Registers must be new. Used or reconditioned registers are not acceptable.

e. All registers shall be programmed to read all digits left of the decimal place (minimum 5 digits).

f. The month and year of manufacture of the register and identification information must be printed in the register, or hard / digital copies of the documents to be provided to the Engineering & Public Works Department official at the time of activating the meter.

g. Acceptable encoder registers for indoor use are:
   i) Sensus Electronic Register+
   ii) Neptune Procoder Register

   Acceptable encoder registers for pit installations are:
   i) Sensus Electronic Register+ WP (waterproof)
   ii) Neptune Procoder Register

9. Meter Selection

a. The type or combination of types of meters to be used for recording water consumption through a water service must accurately record consumption over the expected range of flow determined,

   i) in accordance with the latest edition of *AWWA M22* Manual. The calculation is based on AWWA fixture value method and not the fixture unit method stated in the *BC Building Code*; and

   ii) by an *Engineer,* for meters 100 mm and larger or when a fire sprinkler installation is involved.

b. The meter size selected shall ensure pressure losses are accommodated, the flow is measured accurately, and provide a long expected meter life.

c. For all single-family residential properties without fire sprinklers, the water meter size shall be 19 mm, except in the case where the Engineer can demonstrate the need for a larger water meter.

d. The City allows a 25 mm meter for a duplex residential property.

e. The single family property with small scale residential multiple units must have a minimum meter size of 50 mm; an *Engineer* must calculate the flow requirements in case of fire sprinkler installation, and the City will accept a larger size meter request if the *Engineer* can demonstrate the need.

The following Table 2 provides a guide for acceptable meter types and sizes for a range of uses and flows.

Table 2: Meter Flow Ranges

WATER USE	LAND USE	SIZE		ACCEPTABLE METER TYPE	Flow (L/s)	
		mm	in		Operating Range	Maximum Continuous
Domestic	Residential, Commercial, Institutional, and Industrial	16	5/8	PD or U	0.032 - 1.26	1.26
		19	3/4	PD or U	0.047 - 1.89	1.89
		25	1	PD or U	0.063 - 3.16	3.16
		38	1 1/2	PD or U	0.032 - 6.31	6.31
		50	2	PD or U	0.032 - 12.62	12.62
		75	3	U	0.032 - 28.39	28.39
		100	4	U	0.063 - 63.09	63.09
		150	6	U	0.095 - 126.18	126.18
		200	8	U	0.252 - 170.34	170.34
		250	10	U	0.316 - 252.36	252.36
Irrigation/ Bulk Water Use	Agricultural, Golf Course, Park Some Industrial and Commercial	38	1 1/2	U	0.079-12.62	10.09
		50	2	U	0.095-15.77	12.62
		75	3	U	0.158-41.01	31.55
		100	4	U	0.189-78.86	63.09
		150	6	U	0.252-157.73	126.18
		200	8	U	0.316-220.82	220.82
		250	10	U	0.379-347.00	347.00

***NOTE**: PD refers to Positive displacement meter and U refers to Ultrasonic meter.*
Conversion Factors: L/sec to USGPM, multiply by 15.850
L/sec to IGPM, multiply by 13.198

10. Dedicated *Fire Services*

Fire service connections are to be metered to detect unauthorized water use.

i) Install an appropriately sized "tattle-tale" City approved radio type meter as indicated in Table 1, and a double detector check valve on a bypass to the fire line. Install "tattle-tale" meter in accordance with the *Typical Installation Drawings* in the *Water Meter Specifications*; and

ii) Provide all *Fire services* with a double detector check valve in accordance with the City's *Building Bylaw* and Cross Connection Control requirements.

11. Combined Fire Domestic Services

Only on the existing combined domestic and fire service, when replacing the existing meter, a FM approved ULC listed meter assembly shall be installed to measure the flows; refer Table 1 for the City approved meter.

12. Installation Requirements

Installation requirements are summarized on the following Table 3 and illustrated on the appended *Typical Installation Drawings*. The *Applicant's Engineer* must design installations for meter sizes that are not listed in Table 3.

Table 3: Installation Requirements

Size mm	Type	By Pass*		Strainer	Strainer	Chamber		
		Required	Size	Required	Type	Type	Size mm	Model
16x19	Displacement or Ultrasonic	No	-	No	-	Meter Box	300x500	Brooks 37
19-25	Displacement or Ultrasonic	No	-	No	-	Meter Box	425x750	Brooks 66
38-50	Displacement or Ultrasonic	Yes	25 mm	No	-	Meter Box	560x860	AEC 5686
75	Ultrasonic	Yes	50 mm	Yes	Straight	Vault	1200x2000	AEC 2121
100	Ultrasonic	Yes	50 mm	Yes	Straight	Vault	3260x1760	AEC 3151
150	Ultrasonic	Yes	50 mm	Yes	Straight	Vault	3260x1760	AEC 3151
150	Ultrasonic	Yes	50mm	Yes	FM/UL	Vault	3260x1760	AEC 3151
100-150	Ultrasonic, Detector Check / Fire	No	-	No	-	Vault	1200x2000	AEC 2121
200	Ultrasonic, Detector Check /Fire	No	-	No	-	Vault	3260x1760	AEC 3151

*NOTE: * A bypass is not required for dedicated irrigation meters.*

12.1 Pipe Installation:

a. Install meters horizontally with register casings plumb, facing upward; where installed in a meter box, center meter in the box.

b. Where required, install strainers immediately upstream of the meter using a flanged connection. Strainers shall be of the same size as the meter.

c. Provide isolation valves upstream and downstream of the meter to allow removal of meter and strainer cases. Install a valve on bypass. Provide a lock wing on the operating nut of the bypass valves.

d. For all meter installations provide a straight section of horizontal pipe, 5 pipe diameters in length, between the strainer and the upstream isolating valve. Do not install elbows, bends, non-concentric reducers, check valves, backflow preventers and/or pressure reducing valves within 10 pipe diameters upstream or 5 pipe diameters downstream of a meter.

e. Provide a test point for all meters 75mm in diameter and larger. In the absence of a test plug on the meter case, install a testing tee with a 50mm diameter threaded nipple and cap, between the meter and the downstream isolating valve.

f. For meters 75mm in diameter and larger provide a mechanical flange adapter on the downstream side of the meter to provide flexibility for meter and strainer removal.

g. Support all meters, valves and bypasses within *Chambers* with adjustable pipe stands. Bricks, concrete or wood blocking are not considered as acceptable supports.

h. *Vaults / Chambers* require drain connection to a storm drainage system. Where a gravity connection to the storm system is not feasible, the City may approve one of the following options:
   i) Installation of an electric sump pump;
   ii) Installation of a rock pit. A Professional Engineer specializing in geotechnical designs must design the rock pits; or
   iii) Installation of a hydraulic sump ejector assembly.

12.2 Radio Installation:

The required number of radio transceiver units must be installed according to the manufacturers' specifications.

a. In non-traffic areas mount radio transceiver in the *Chamber* lid in accordance with the manufacturer's instructions;

b. In traffic areas mount the radio transceiver unit in a *Meter Box* cover/lid with recessed-hole that will have the radio transceiver head flushed with the *Meter Box* cover/lid or in an adjacent Brooks 37 Box as shown in drawing WM-7;

c. Remote wiring connections shall be either factory or field sealed to ensure connections are waterproof. Field seals shall be in accordance with the manufacturers' instructions;

d. The wire/cable used to connect the meter and the radio transceiver must be supplied by or purchased from the meter manufacturer and has sufficient length, including slack, to be able to open or remove the lid/ hatch without snapping, removing, or separating the wire/cable from the meter and

e. For inside meter installations, only in already existing locations, locate wall mounted radio transceivers about 1.6 metres above grade in clearly accessible location. Wiring radio transceiver to outside building and wall installation must comply with the manufacturers' specifications.

13. Materials

13.1 Pipes & Fittings

a. All pipe material within *Chambers* shall be ductile iron, Schedule 80 PVC, C900 PVC, or Type K Copper. Pipes must be approved for potable water application. All pipe joints must be restrained: flanged, glued, welded or threaded.

b. **Copper Pipe:** Copper pipe to be Certified Type K soft copper to ASTM B 88m. All copper tubing joints are to be compression type or Victualic. Acceptable compression fittings are McDonald "T", James Jones "Super Grip", Ford "Quick Joint" or Mueller "110". Soldered joints are not permitted

c. **Brass Fittings: Brass** fittings 50 mm and smaller to meet AWWA C800. All fitting joints to be compression type, threaded to ANSI B1.20.1, flanged or Victaulic. For acceptable compression fitting refer the latest edition of the City's *MMCD Supplementary Specification and Approved Product List.* Grooved ends to be roll grooved per Victaulic Standard Groove specifications.

13.2 Valves

a. All valves are to be suitable for buried service.

b. Valves on *Domestic service* connections up to 50mm in diameter,

   i) Shall be full port bronze ball or cylinder corporation style valves meeting AWWA C-800 and shall have rubber o-ring seals;

   ii) Connections shall be National Pipe Threaded, compression type or flanged;

   iii) Actuation is to be by a tee-head style operating nut; and

   iv) A lock wing on the tee-head and case required for all bypass valves; locking mechanisms on levers are not acceptable.

c. Valves on domestic service connections 75mm to 250mm in diameter,

   i) Shall be cast iron, resilient seat, NRS gate valves to AWWA C-509 with flanged ends. Stem seal to be o-ring type; and

   ii) Actuation of buried valves or valves in vaults shall be by a standard 50mm square operating nut. Valves within person entry *Chambers* shall be operated by hand wheel.

d. A Nelson style valve box over buried valves is required.

e. *Fire service* valves within *Vaults* or *Chambers* shall be resilient seat, OS&Y gate valves to meet AWWA 509, and must comply with NFPA and Fire Code requirements.

13.3 Detector Check Valves

a. Double detector check valves are to comply with AWWA C-510 and superseded by the City's *Building Bylaw* and Cross Connection Control requirements.

b. Detector check valves for fire service use must be FM approved and ULC listed and superseded by the City's *Building Bylaw* and Cross Connection Control requirements.

13.4 Strainers

a. Strainers must be straight type and minimum of the same size as the meter and must be selected to meet the designed flows.

b. Strainers shall have stainless steel mesh.

13.5 Flange Adapters

a. Mechanical Flange adapters for 50mm to 200mm sizes shall be to AWWA C219.

13.6 Bolts and Nuts

Bolts and nuts are to be stainless steel to ASTM F-593 and F-594. Rolled threads, fit and dimension to AWWA C-111.

13.7 Meter Setters

a. All setters must meet NSF 61 Annex F/G requirements.

b. Setters are permitted only for water meters 50 mm or smaller and must be same size as the water service connection.

c. For 19 mm and 25 mm services, setters must be equipped with a full port inlet ball valve and dual check valve on outlet.

d. For 38 mm and 50 mm services, the setter shall be equipped with a full port inlet ball valve and full port outlet ball valve to facilitate in-situ testing of the meter. Further, the setter shall have a bypass valve with a lock wing.

13.8 *Meter Boxes*

a. The *Meter Box / Vault / Chamber* shall be precast concrete to the dimensions provided in Table 3. *Vaults* shall be design for boulevard (off road) use with static H-20 loading. *Chambers* shall be designed for roadway use with H-20 loading or deep installations. The minimum headroom for *Chambers* shall be 1.9 meters for worker entry.

b. *Meter Boxes* shall have galvanized steel or aluminum lids capable of withstanding H-20 static loads (for off road). Lids shall include a "bolt down" capability. Cast iron lids require City approval.

c. *Vaults* sized 1200 x 2000 shall have two hinged aluminum lids providing an 800mm x 1700mm opening. *Vaults* sized 1760 x 3260 shall have three hinged aluminum lids providing an 820mm x 2590mm opening. *Vault* lids shall be capable of withstanding H-20 static loading. Lids shall include a "bolt down" capability.

d. Lids for *Chambers* shall be 1200mm x 1200mm square split hinged aluminum. *Chamber* lids shall be capable of withstanding H-20 loading. Lids shall include a "bolt down" capability.

e. Lids for *Meter Boxes / Vaults / Chambers* shall be predrilled and with a recessed hole for transceiver unit installation. Where this is not feasible, follow drawing WM-7.

f. Where the depth from the top of the lid frame to the *Chamber* floor exceeds 0.6 meters, provide an aluminum ladder securely fastened to the *Chamber* floor and wall. Ladders shall have a telescoping aluminum post fixed to the ladder to enable safe worker entry or exit (Bilco LadderUP Safety Post LU4 or approved equal). The access hatch must be sized for a worker to enter or exit with confined space gear/clothing.

g. Damp proof the exterior surfaces of all vaults and chambers by applying an asphalt emulsion coating. Make construction joints water tight with an appropriate sealant.

h. An area of at least 1.0 metre horizontal around the meter box, vault or chamber shall be free of major landscaping or objects, including shrubs, trees, retaining or other types of walls, fences, gates, tracks, poles, etc. to facilitate maintenance of the meter assembly.

i. On existing installations only, where the meter is approved by the City to be installed within a building / utility room, the installation should be within a reasonable distance of a floor drain, which must be suitably sized to accept the flows associated with meter testing and/or maintenance. The meter should be installed a minimum of 600 mm above the floor. A space of at least 1.0 metre horizontal and 1.0 metre vertical from the meter assembly

shall be free of obstruction to allow for convenient servicing / maintenance and testing of the meter. No electrical, mechanical, or water-sensitive equipment should be placed or installed under the meter assembly or in an area where splash or flow from the meter assembly could occur during servicing / maintenance or testing of the meter.

j. The *Chamber* floors shall be sloped towards the drainage sump of the chamber to facilitate natural draining of water entering the chamber

k. Acceptable *Meter Boxes* / *Vaults* / *Chambers* are listed in Table 4 below:

Table 4: Meter *Chambers*

Type	Size (mm)	Model*	Lid / Hatch Size (mm)
Meter Boxes	300x500	Brooks 37	300x450 galv. steel (cast iron with City approval)
	425x750	Brooks 66	450x750 galv. Steel (cast iron with City approval)
	560x860	AE Concrete 5686	630x940 aluminum
Vaults	1200x2000	AE Concrete 2121	2 – 880x880 aluminum
	1760x3260	AE Concrete 3151	3 – 880x880 aluminum
Chambers	1760x3260	AE Concrete 3152	2 – 600x1200 aluminum

** Specified or equivalent product*

14. Water Service Connection Application and Installation Inspection Procedure

a. A request for water service connection is initiated by an application for a service connection at the Engineering Front Counter of Engineering & Public Works Department.

b. Plans submitted as part of the Plumbing Permit Application must indicate the meter size, type and *Chamber* location. The plans shall also indicate the expected range of flows and the average expected flow for the proposed installation. Further, plan(s) shall have drawing(s) showing the proposed *Domestic service* and *Fire service* pipes and the meter chamber arrangements where applicable.

c. For meter installations of 100 mm diameter and larger, the *Applicant's Engineer* must provide detailed drawings giving complete details of the installation.

d. The City Engineering Department will review the submitted drawings and provide comments for revision and submission by the *Developer* or *Engineer*.

e. On completion of the construction, at the *Applicant's* request, the City Development Services Department will inspect the meter installation to ensure conformance to the City's *Water Meter Specifications* and the *B.C. Plumbing Code*.

f. Upon approval of the installation by the Plumbing Official, the *Developer* is to call the City Engineering and Public Works Department at 604-927-3500 to lock the bypass valve where applicable, take the initial meter reading and activate the meter and service connection. All factory tags and labels are to remain on the meter until the City Public Works department removes them.

15. Water Service during Development Construction and for Temporary Service

a. Water service connections required during construction phase of a development project generally be unmetered per the latest applicable *Water Distribution Bylaw*, however at the discretion of the City a meter may be required.

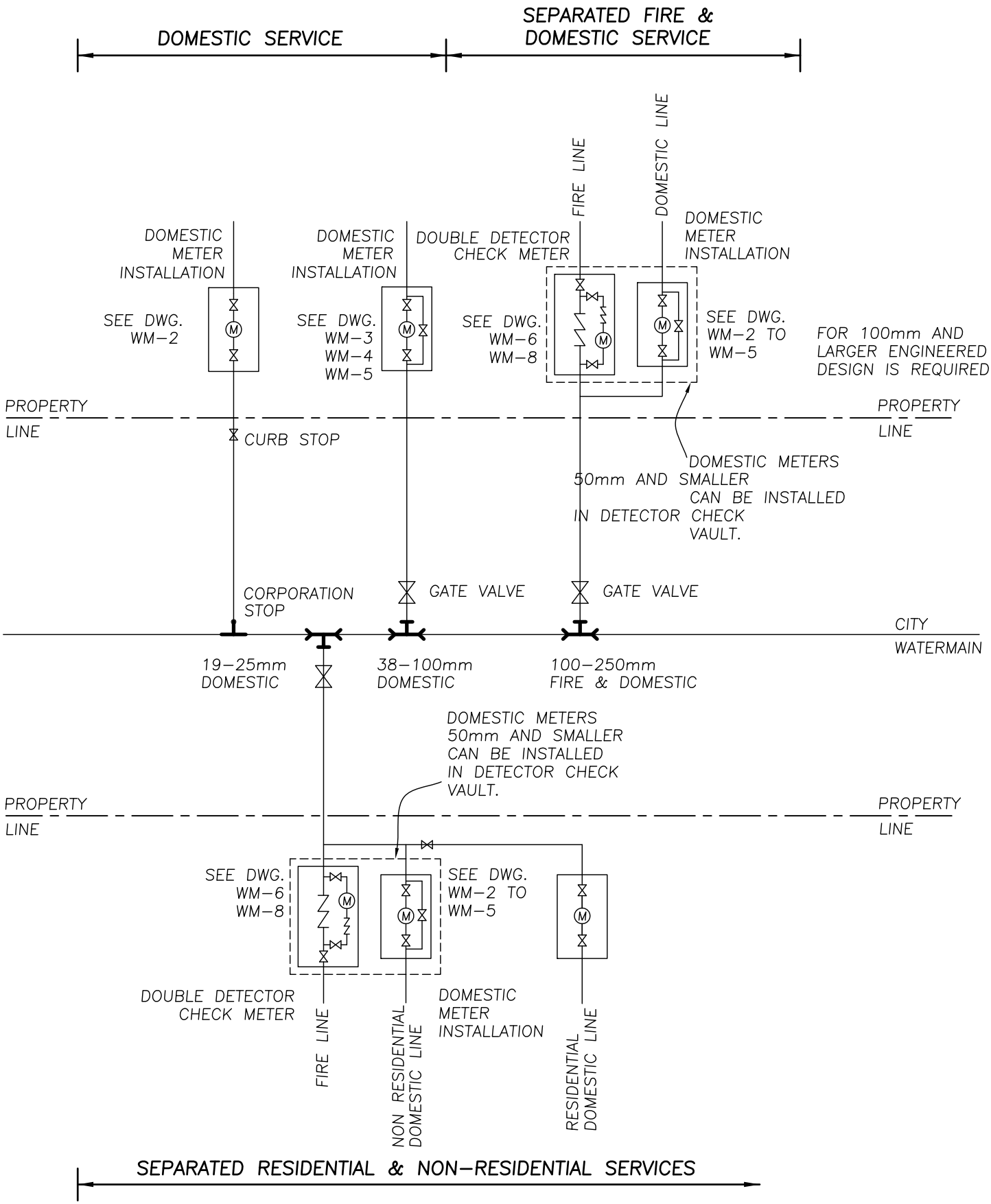
b. Water service connections that are allowed temporarily and not for the purpose of development construction must be metered per the City of Coquitlam's latest *Water Distribution Bylaw* and *Water Meter Specifications*.

c. Meters installed on service connections are to conform to the requirements of this *Water Meter Specifications* and the meter to be in place prior to the activation of the service. **Only City Engineering Department personnel may activate or deactivate such a service or remove the meter.** Contact the City Engineering Customer Service Desk at 604-927-3500.

Water Meter Specifications
Typical Installation Drawings

Coquitlam

STANDARD DETAIL DRAWINGS



TYPICAL SERVICE INSTALLATION

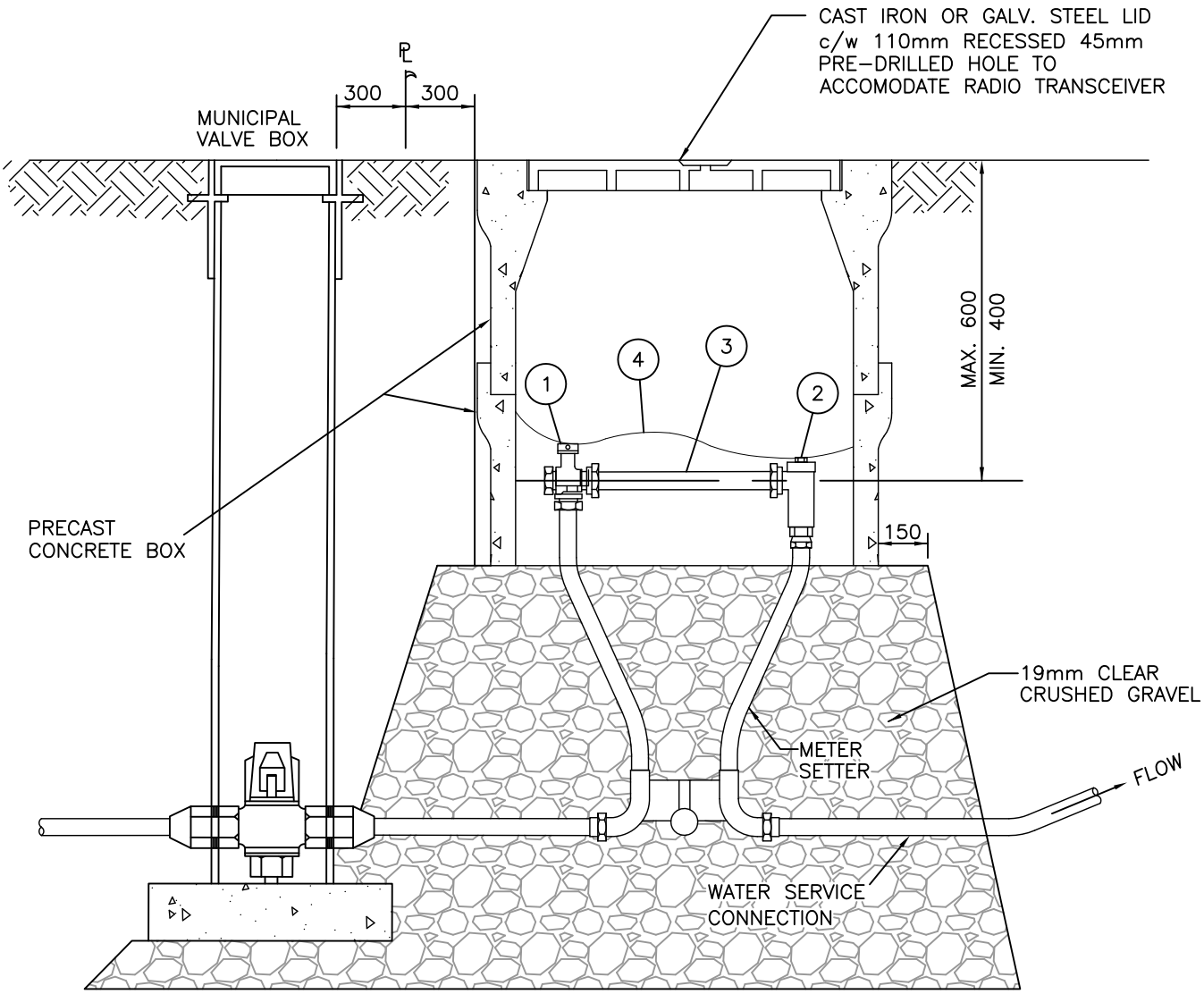
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

WM-1

Coquitlam

STANDARD DETAIL DRAWINGS



SECTION

METER BOXES			
16 mm	METER	–	BROOKS 37
16x19 mm	METER	–	BROOKS 37
19 mm	METER	–	BROOKS 66
25 mm	METER	–	BROOKS 66

No.	DESCRIPTION
1	INLET BALL VALVE (FULL PORT)
2	DUAL CHECK VALVE (IN SETTER)
3	TYPE K COPPER SPOOL PIECE IN PLACE OF METER
4	FOIL BUBBLE WRAP INSULATION BLANKET (CUT TO FIT)

NOTES:

1. THIS DRAWING SHOULD BE REVIEWED WITH WATER METER SPECIFICATIONS.
2. REFER TO SECTION MMCD 33 11 01 FOR DETAILED SPECIFICATIONS.
3. METER SETTER TO BE LOCATED ON PRIVATE PROPERTY (300mm FROM PROPERTY LINE) IF BEING INSTALLED AS PART OF A DEVELOPMENT.
4. PLUG TO BE PROVIDED FOR TRANSCEIVER HOLE IN LID.

16mmø - 25mmø METER SETTER INSTALLATION

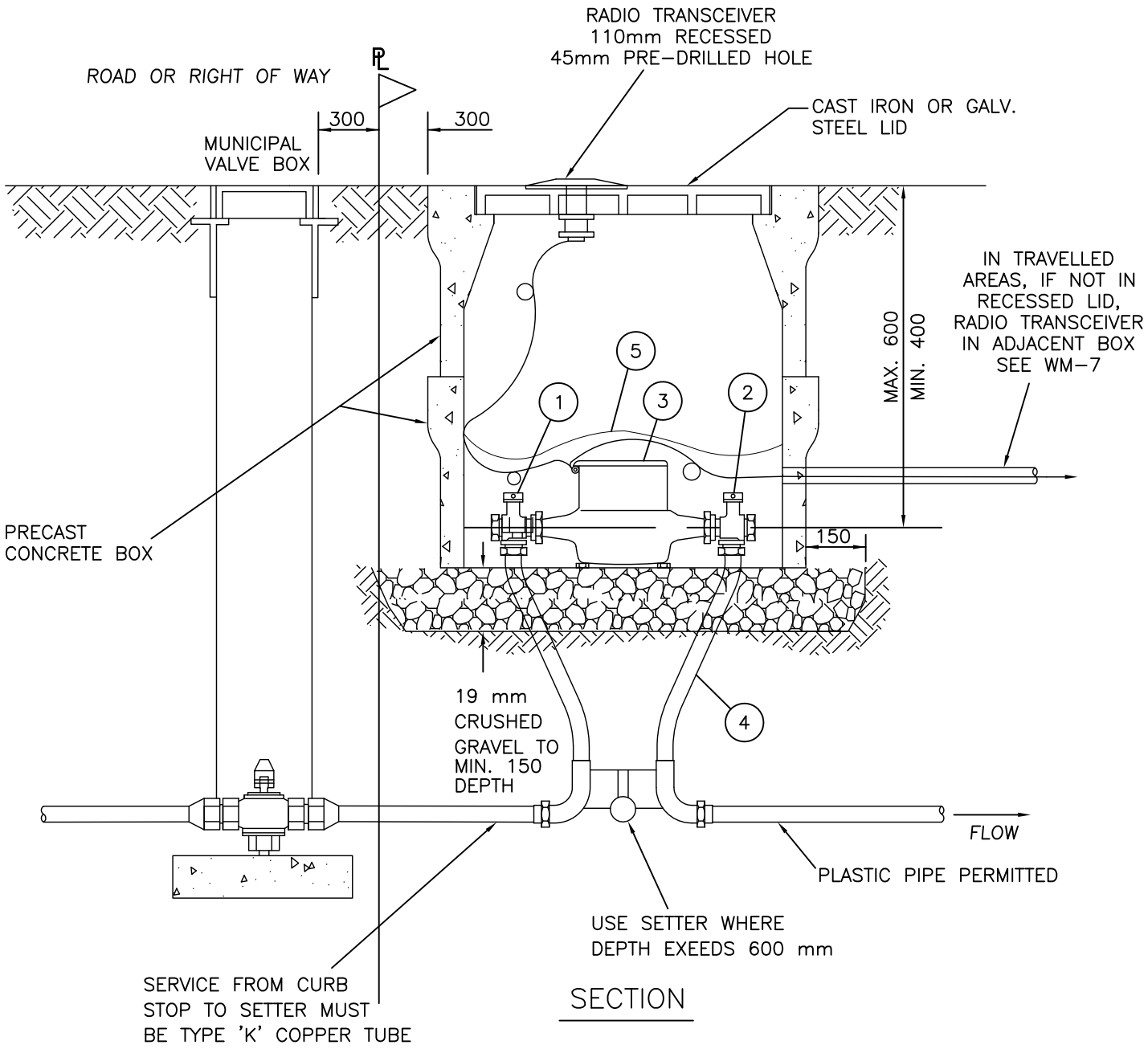
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

COQ-W2m

Coquitlam

STANDARD DETAIL DRAWINGS



SECTION

METER BOXES			
16 mm	METER	–	BROOKS 37
16x19 mm	METER	–	BROOKS 37
19 mm	METER	–	BROOKS 66
25 mm	METER	–	BROOKS 66

No.	DESCRIPTION
1	INLET BALL VALVE (FULL PORT)
2	DUAL CHECK VALVE (IN SETTER)
3	APPROVED METER, REFER TABLE 1.
4	APPROVED METER SETTER
5	FOIL BUBBLE WRAP INSULATION BLANKET (CUT TO FIT)

Note: This drawing should be reviewed with Water Meter Specifications.

16mmø – 25mmø METER INSTALLATION

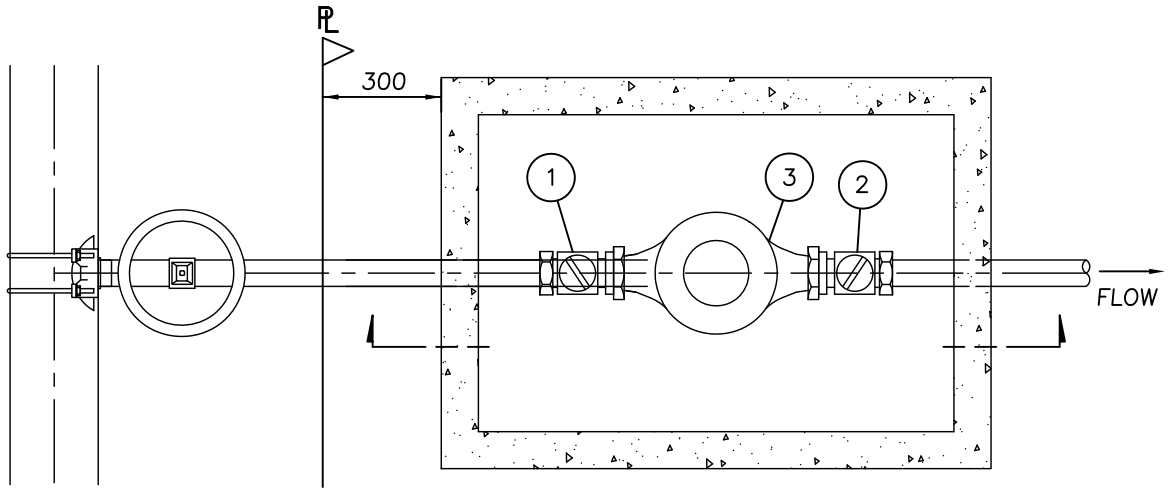
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

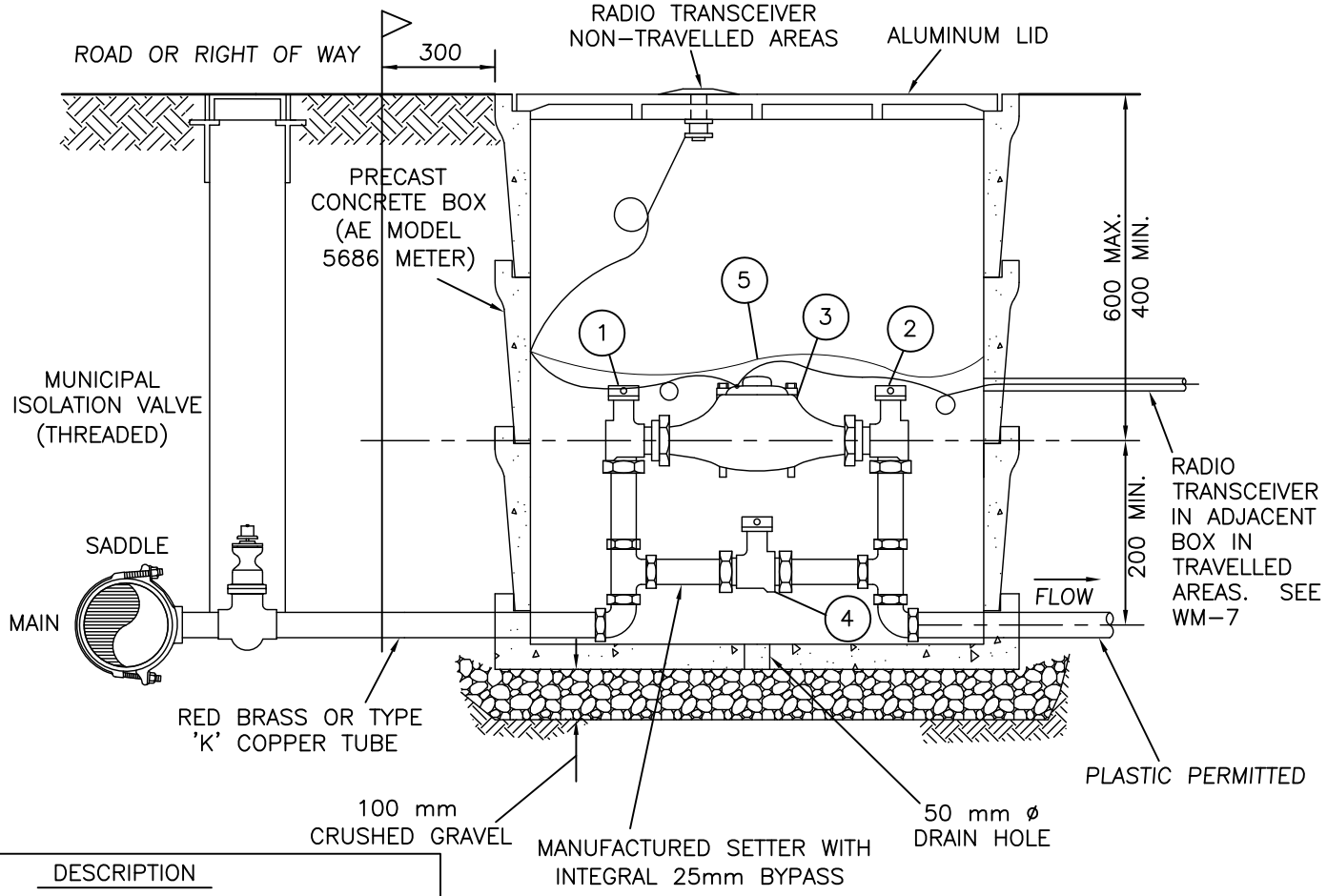
WM-2

Coquitlam

STANDARD DETAIL DRAWINGS



PLAN



SECTION

No.	DESCRIPTION
1	STOP WITH LOCKWING
2	DOWNSTREAM STOP
3	APPROVED METER, REFER TABLE 1.
4	BYPASS STOP WITH LOCKWING
5	FOIL BUBBLE WRAP INSULATION BLANKET (CUT TO FIT)

NOTE: 4 AND 5 ARE NOT SHOWN IN PLAN VIEW

NOTES:
ALL FIELD JOINTS TO BE THREADED OR COMPRESSION.
ALL PIPE TO BE BRASS OR COPPER TUBE.
MANUFACTURED SETTERS MAY HAVE SOLDERED JOINTS.

38mmø – 50mmø METER INSTALLATION

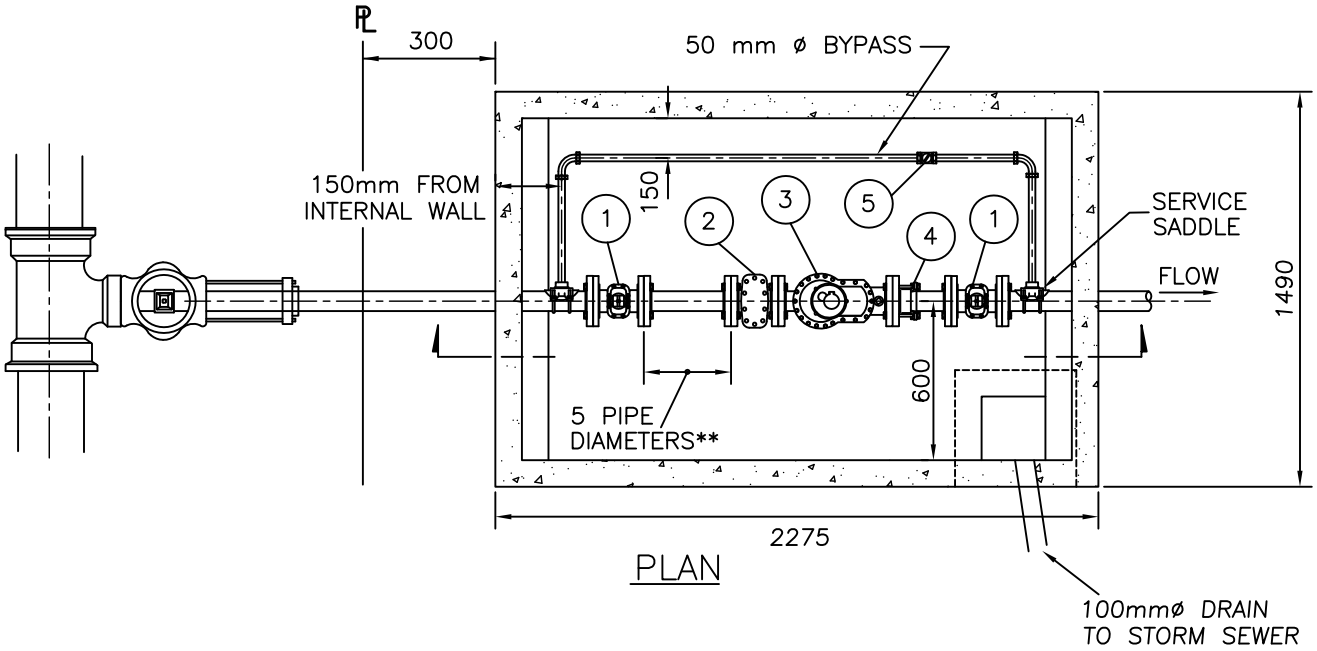
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

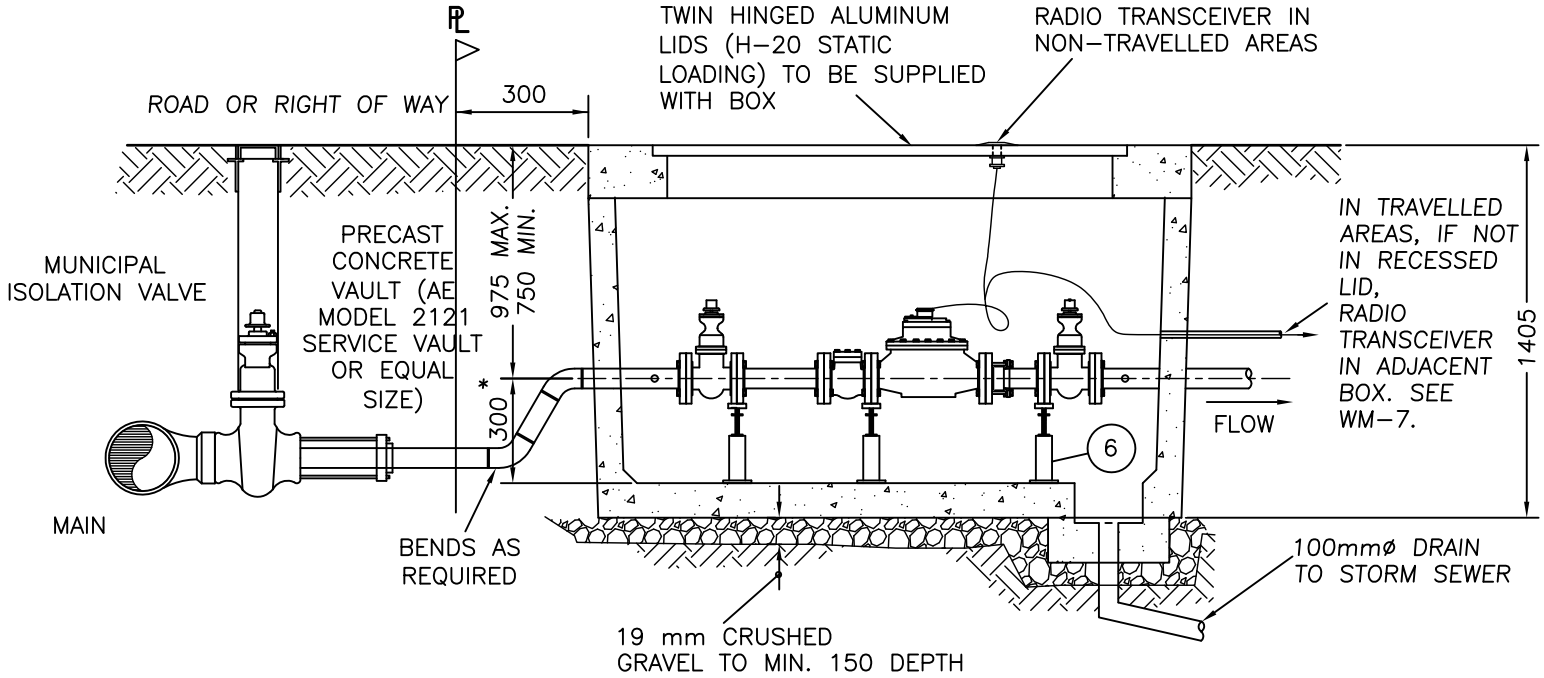
WM–3

Coquitlam

STANDARD DETAIL DRAWINGS



PLAN



SECTION

NOTES:
1. *THIS DRAWING SHOULD BE REVIEWED WITH WATER METER SPECIFICATIONS.*
2. *PIPE TO BE TYPE K COPPER, DUCTILE IRON, OR SCH. 80 PVC OR C900 PVC.*
3. *REFER DISTANCES IN WATER METER SPECIFICATIONS.*
4. *CONNECTIONS:*
   COPPER: COMPRESSION OR VICTAULIC. NO SOLDER PERMITTED

No.	DESCRIPTION
1	GATE VALVE (ISOLATION)
2	STRAINER
3	APPROVED METER, REFER TABLE 1.
4	MECHANICAL FLANGE ADAPTOR
5	BYPASS BALL VALVE WITH LOCKWING
6	ADJUSTABLE PIPE STANDS

75mmø METER INSTALLATION

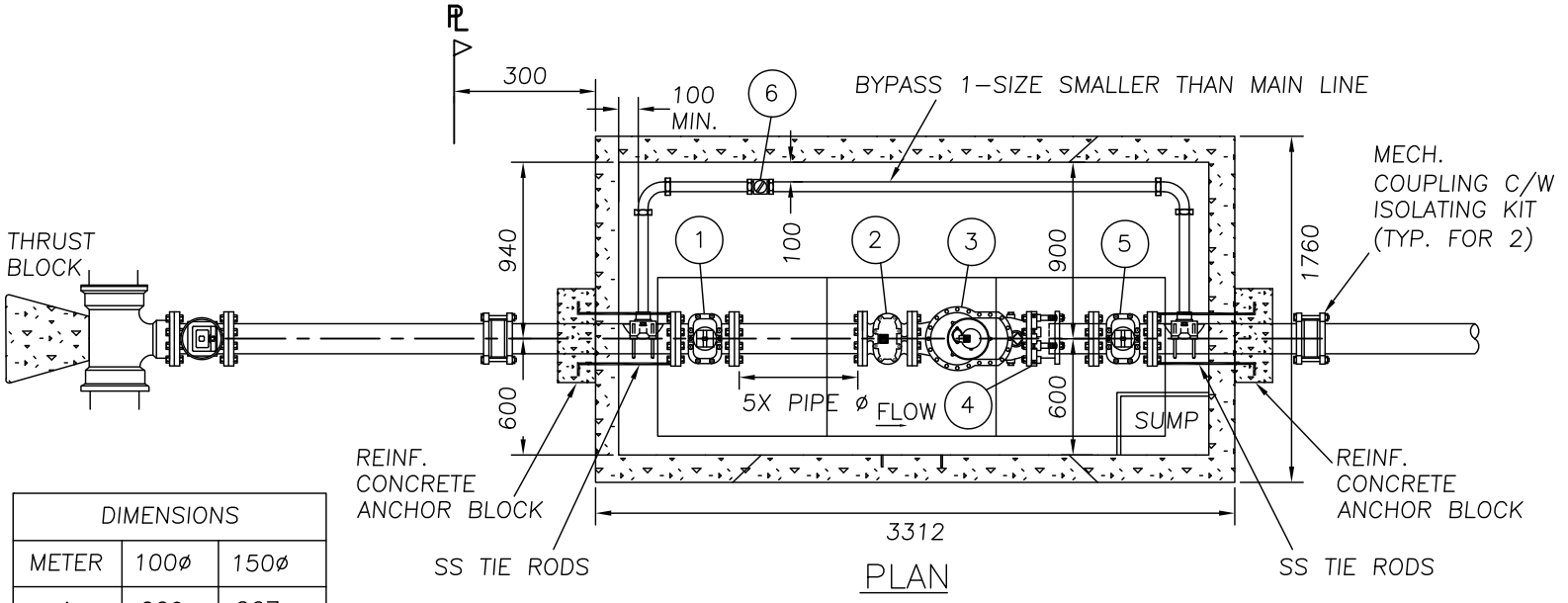
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

WM–4

Coquitlam

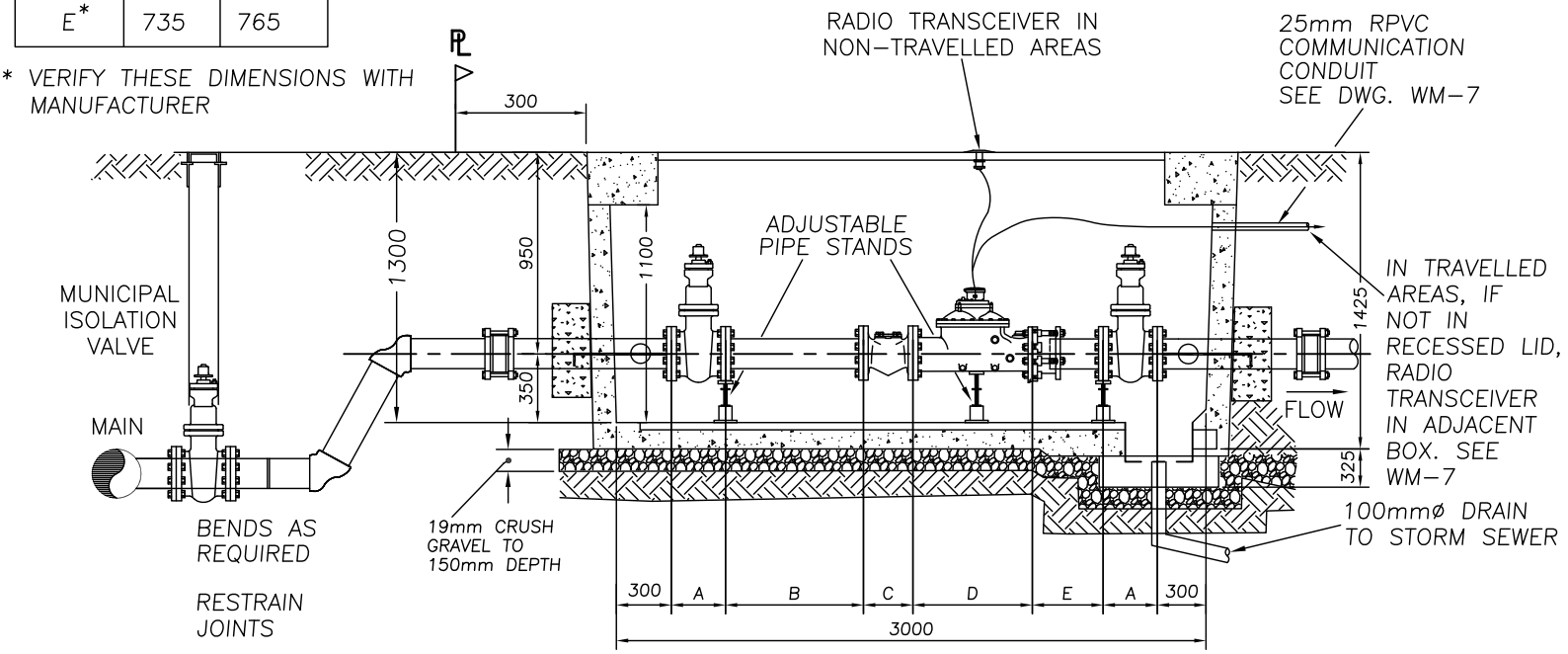
STANDARD DETAIL DRAWINGS



PLAN

DIMENSIONS		
METER	100ø	150ø
A	229	267
B	508	762
C*	191	229
D*	508	610
E*	735	765

* VERIFY THESE DIMENSIONS WITH MANUFACTURER



SECTION

NOTES:
PIPE: TO BE TYPE K COPPER, DUCTILE IRON, SCH. 80 PVC OR C900 PVC.

CONNECTIONS:
COPPER: COMPRESSION OR VICTAULIC. NO SOLDER PERMITTED

CHAMBER:
AE CONCRETE MODEL 3151 VAULT OR EQUAL SIZE

No.	DESCRIPTION
1	UPSTREAM RESILENT SEAT GATE VALVE
2	STRAINER
3	APPROVED METER, REFER TABLE 1.
4	MECHANICAL FLANGE ADAPTOR
5	DOWNSTREAM RESILENT SEAT GATE VALVE
6	BYPASS BALL VALVE WITH LOCKWING

100mmø – 150mmø DOMESTIC METER INSTALLATION

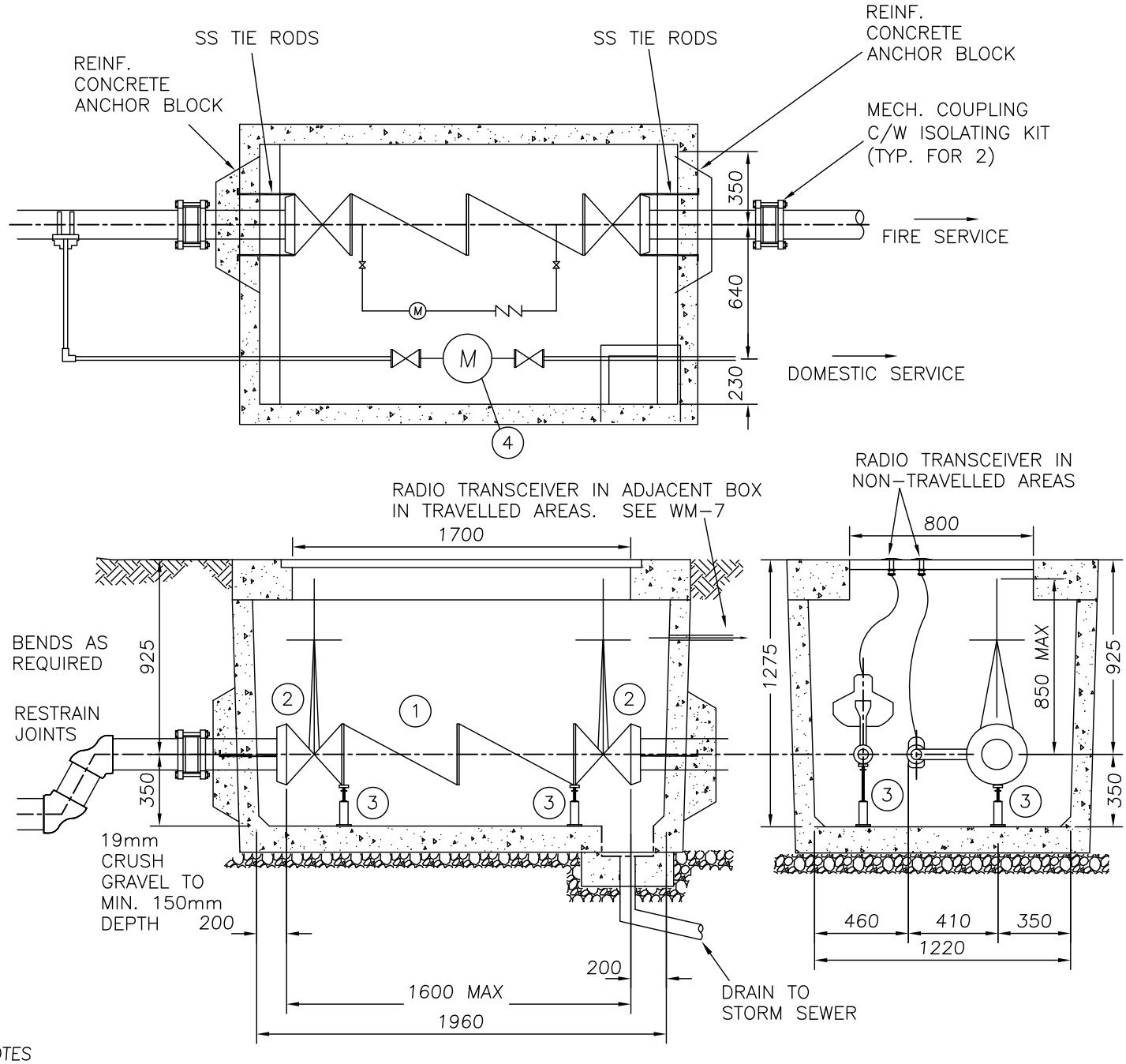
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

WM–5

Coquitlam

STANDARD DETAIL DRAWINGS



NOTES

1. *THIS DRAWING SHOULD BE REVIEWED WITH WATER METER SPECIFICATIONS DOCUMENT.*
2. *PIPE: TO BE TYPE K COPPER, DUCTILE IRON, SCH. 80 PVC OR C900 PVC.*
3. *CONNECTIONS:*
   COPPER: COMPRESSION OR VICTAULIC. NO SOLDER PERMITTED
4. *AS PER BC BUILDING CODE 3.2.4.9.1), 2) & 3), VALVE HANDWHEELS CONTROLLING THE FIRE WATER SERVICE SHALL BE ELECTRICALLY SUPERVISED AND MONITORED.*
5. *VAULT: AE CONCRETE MODEL 2121 OR EQUAL SIZE*

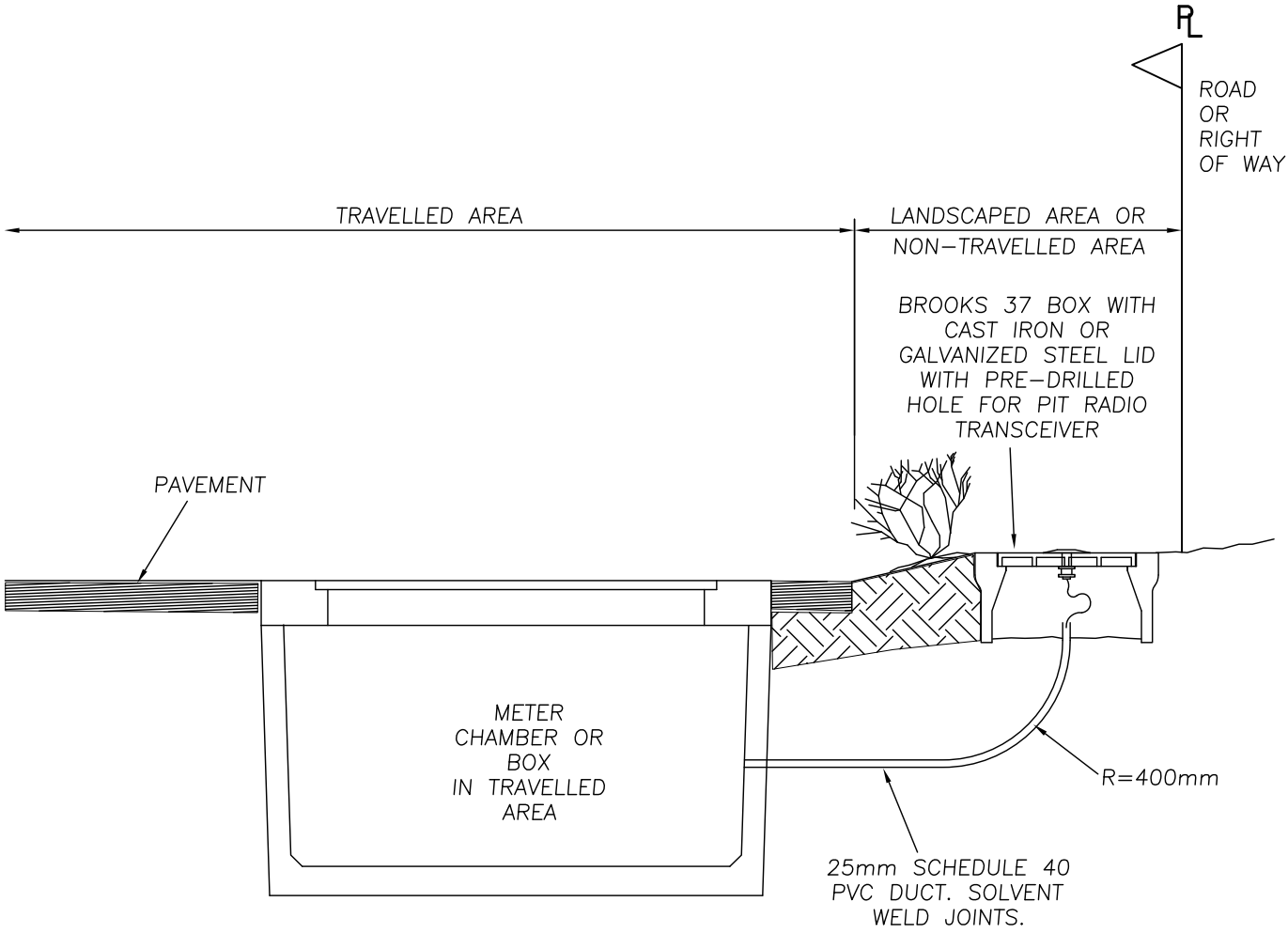
No.	DESCRIPTION
1	*FM APPROVED ULC LISTED DOUBLE DETECTOR CHECK ASSEMBLY CW 2 OS & Y GATE VALVES, TEST COCKS, APPROVED METER AND BY PASS.*
2	*"UNIFLANGE" OR "MEGA LUG" FLANGE ADAPTORS.*
3	*ADJUSTABLE PIPE STANDS.*
4	*50mm AND SMALLER DOMESTIC METER; REFER TABLE 1 FOR APPROVED METERS;* *METERS > 50mm REQUIRE SEPARATE VAULT.*

SEPARATE DOMESTIC AND FIRE METERS 100mm – 150mm WITH DOUBLE DETECTOR CHECK VALVE INSTALLATION

DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

WM-6



PIT RADIO TRANSCEIVER INSTALLATION FOR METERS IN TRAVELLED AREAS

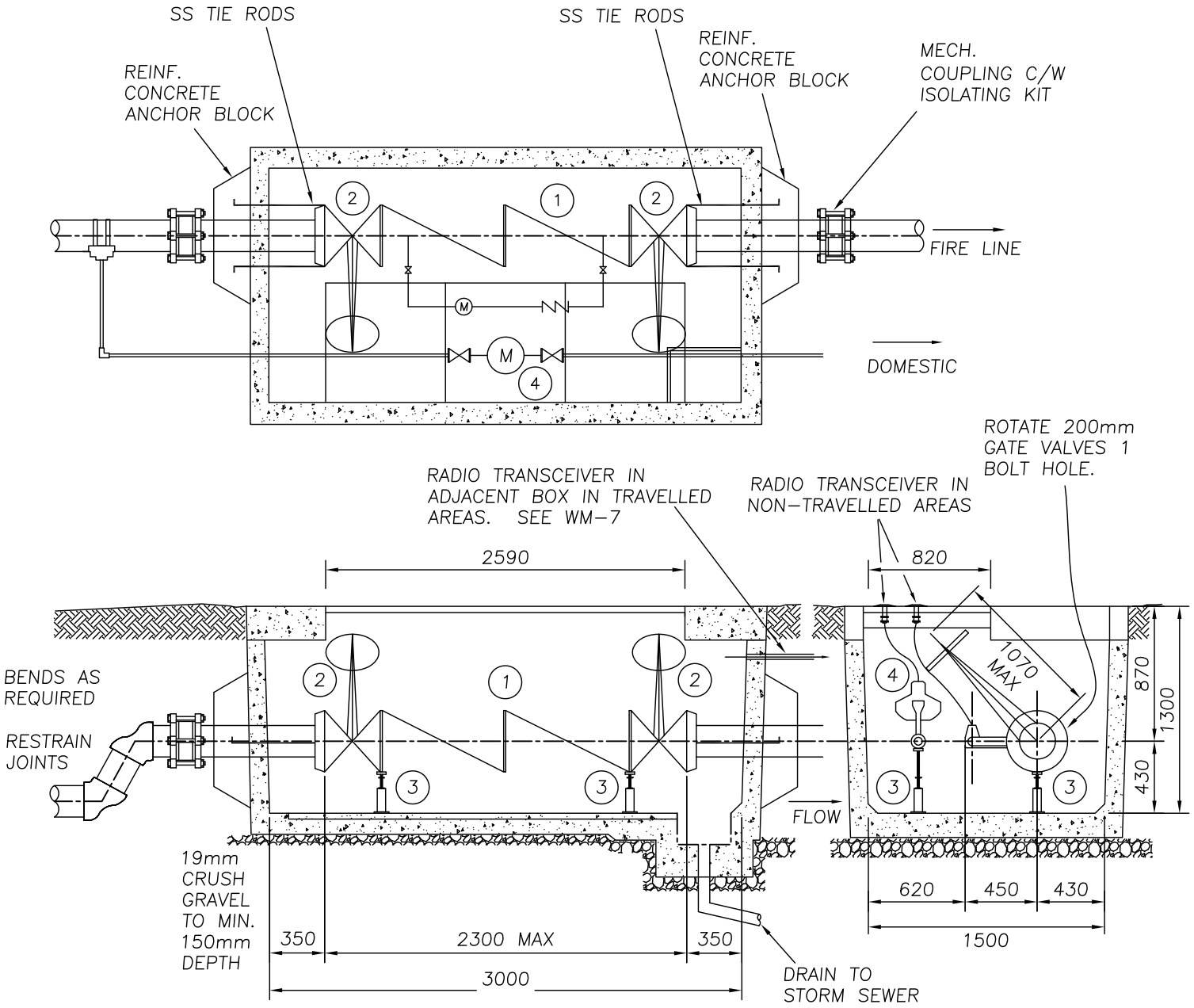
DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

WM-7

Coquitlam

STANDARD DETAIL DRAWINGS



NOTES

1. THIS DRAWING SHOULD BE REVIEWED WITH WATER METER SPECIFICATIONS DOCUMENT.
2. PIPE: TO BE TYPE K COPPER, DUCTILE IRON, SCH. 80 PVC OR C900 PVC.
3. CONNECTIONS:
   COPPER: COMPRESSION OR VICTAULIC. NO SOLDER PERMITTED
4. AS PER BC BUILDING CODE 3.2.4.9.1), 2) & 3), VALVE HANDWHEELS CONTROLLING THE FIRE WATER SERVICE SHALL BE ELECTRICALLY SUPERVISED AND MONITORED.
5. VAULT: AE CONCRETE MODEL 2121 OR EQUAL SIZE

No.	DESCRIPTION
1	FM APPROVED ULC LISTED DOUBLE DETECTOR CHECK ASSEMBLY C/W 2 OS & Y GATE VALVES, TEST COCKS, APPROVED METER AND BY PASS.
2	"UNIFLANGE" OR "MEGA LUG" FLANGE ADAPTORS.
3	ADJUSTABLE PIPE STANDS.
4	DOMESTIC METERS 50mm WITH LOW BYPASS SETTER; METERS > 50mm REQUIRE SEPARATE VAULT; REFER TABLE 1 FOR APPROVED METER.

SEPARATE FIRE/DOMESTIC LINES METER INSTALLATION

DATE:	DEC/2024
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

WM-8