



Stouffville

WATER METER INSTALLATION BUILDER INFORMATION PACKAGE

Revised January 2024

Water Meter Installation Request Process

To be used during:

- a new service connection
- a renovation
- new construction
- a shared service upgrade

1. A Water Meter Installation Request Form must be filled out and submitted to proceed with a meter installation by the builder, contractor, or homeowner. The form can be accessed using the URL provided below.

<https://www.townofws.ca/live/water-and-utilities/water-meters/>

Fees for supplying and installing a standard-sized water meter are as follows (Fees & Charges By-Law Number 2023-143-FI, subject to amendment) and are collected during the building permit stage. Please email watermeter@townofws.ca to arrange payment if payment was not made during the building permit process.

Water Meter Size (inches)	Water Meter Fee
3/4	\$514.00 + HST
1	\$676.00 + HST
Larger than 1 (Commercial, Industrial, Institutional)	Please email watermeter@townofws.ca

2. The Town's Revenue & Taxation Department will assign a water account number once the Water Meter Installation Request Form is received and reviewed.
3. The Town will facilitate initial communication between the Builder/Contractor/Homeowner and the Town's water meter contractor in order to schedule the water meter installation. When you are ready for installation, please email watermeter@townofws.ca.
4. Additional work (carpentry, plumbing, etc.) may be required during the installation of a water meter. If the plumbing does not meet our specifications and extra work is required, the Town will invoice the builder/contractor/homeowner separately.
5. The Town must verify the installation of the water meter for an Occupancy Permit to be issued. A final Occupancy Permit **will not** be issued without a water meter.

The Town no longer installs 5/8 by 3/4 inch meters.

Water Meter Installation Request Form Instructions

The Water Meter Installation Request Form can be accessed using the URL provided below.

<https://www.townofws.ca/live/water-and-utilities/water-meters/>

Please fill out the Additional Property Listing – Water Meter Request Form if you are submitting a request for more than one property. When completing the electronic submission form, you must attach the document.

You will receive an email confirmation once you have successfully submitted your form.

Please be advised:

- ✓ Water meters of 1.0” diameter and smaller may require up to 30 days for installation following receipt of this form.

- ✓ Water meters of 1.5” diameter and larger may require up to 90 days for installation following receipt of this form.

Before contacting the Town or the Town’s contractor (Neptune) to schedule an appointment, it is crucial to ensure that all necessary plumbing work is completed. This guarantees a seamless installation process with no delays. The next page contains plumbing instructions and specifications.

Neptune Technology Group is contracted by the Town of Stouffville to install water meters in all new homes. In an effort to organize the process and to better serve builders, we are implementing the following procedure.

Ensure that the plumbing is completed in accordance with the following specifications.

- 1) There must be a building control valve in place on the pipe coming into the house.
- 2) A few inches above the valve pipe, there should be an elbow to turn the setting for the meter to a horizontal position. Meters must be installed horizontally.
- 3) There needs to be a ¾" FIP fitting after the elbow and another FIP fitting to connect to the pipe after the meter (elbows with a ¾" FIP side can be used).
- 4) A connecting pipe (spacer) with MIP ends should be put in place to space the gap between FIP fittings (this 'spacer' will be cut and removed during installation). The gap in between these FIP fittings should be 13.5 inches wide.
- 5) The setting for the meter should be strong enough to support the weight of the meter. If all the pipe is plastic, a support platform should sit 1" below the 'spacer'.

In all cases, please ensure the area around the meter setting is clear for the technician to work.

Procedure to book an appointment for a water meter installation:

- 1) All installations will take place on Mondays, so please allow time to schedule on that day.
- 2) Arrange access to the home. This can be done by providing the technician with an access code, a key, or by having someone available on site.
- 3) Contact Neptune's call centre at 1-800-667-4387 to schedule an appointment.

Schedule all installations a minimum of 2 weeks prior to the occupancy date of the property.

Once the work is complete, Neptune will report all meter information to the Town of Stouffville.

Your contact information was obtained from the Town of Stouffville's records associated with this property. If there is an alternative person for us to coordinate with, please provide their contact information.

Regards,

Neptune Technology Group

polytarp-sup

69009-CAN/CBSB-55 4-1188

COOTE LAMINATION

R20

196/21

SILVER COOTE LAMINATION





A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

T-10 Meter

SIZES $\frac{5}{8}$ " , $\frac{3}{4}$ " , AND 1"

Every T-10® water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle has been time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.

Construction

The T-10 water meter consists of three major assemblies: a register, a lead free, high-copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant, lead-free, high-copper alloy maincase will withstand most service conditions; internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element is unaffected by meter position or in-line piping stresses while the unique chamber seal extends the low-flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

Warranty

Neptune® provides a limited warranty with respect to its T-10 water meters for performance, materials, and workmanship.

When desired, maintenance is easily accomplished either by replacement of major assemblies or individual components.

Guaranteed Systems Compatibility

All T-10 water meters are guaranteed adaptable to our ARB®V, ProRead™ (ARB VI) AutoDetect, ProCoder™, E-CODER® (ARB VII), E-CODER®)R900i™, E-CODER®)R450i™, E-CODER®)L900i™, TRICON®/S, TRICON/E®3, and Neptune meter reading systems without removing the meter from service.

Systems Compatibility

Adaptability to all present and future systems for flexibility is available only with Neptune's ARB® Utility Management Systems™.



KEY FEATURES

REGISTER

Magnetic-driven, low-torque registration ensures accuracy

Impact-resistant register

High-resolution, low-flow leak detection

Bayonet-style register mount allows in-line serviceability

Tamperproof seal pin deters theft

Date of manufacture, size, and model stamped on dial face

LEAD FREE MAINCASE

Made from lead free, high-copper alloy

NSF/ANSI 372, NSF/ANSI 61

Lifetime guarantee

Resists internal pressure stresses and external damage

Handles in-line piping variations and stresses

Lead free, high-copper alloy provides residual value vs. plastic or composite

Electrical grounding continuity

NUTATING DISC MEASURING CHAMBER

Positive displacement

Widest effective flow range for maximum revenue

Proprietary polymer materials maximize long-term accuracy

Floating chamber design is unaffected by meter position or in-line piping stresses

Specifications

- NSF/ANSI 372, NSF/ANSI 61
- National Type Evaluation Program (NTEP) certification

Application

- Cold water measurement of flow in one direction in residential service applications

Maximum Operating Water Pressure

- 150 psi (1034 kPa)

Maximum Operating Water Temperature

- 80°F

Measuring Chamber

- Nutating disc technology design made from proprietary synthetic polymer

Options

Sizes

- $\frac{5}{8}$ " , $\frac{5}{8}$ " x $\frac{3}{4}$ "
- $\frac{3}{4}$ " , $\frac{3}{4}$ " SL, $\frac{3}{4}$ " x 1"
- 1" , 1" x 1 $\frac{1}{4}$ "

Units of Measure:

- U.S. gallons, imperial gallons, cubic feet, cubic metres

Register Types

- Direct reading: bronze box and cover (standard)

Remote Reading:

- ProRead, ProCoder, E-CODER, E-CODER)R900i, E-CODER)R450i, E-CODER)L900i, TRICON/S, TRICON/E3

- Reclaim

Bottom Caps

- Synthetic polymer ($\frac{5}{8}$ " only)
- Cast iron
- Lead free, high-copper alloy

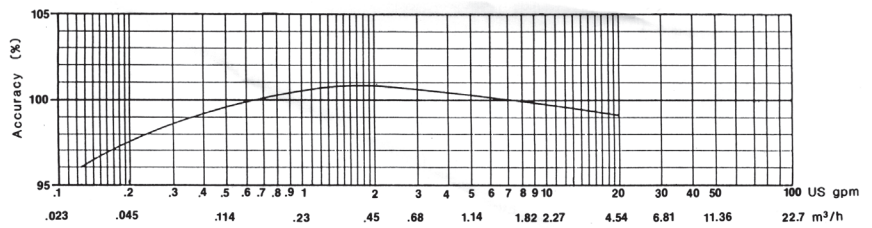
Connections

- Lead free, high-copper alloy, straight or bent

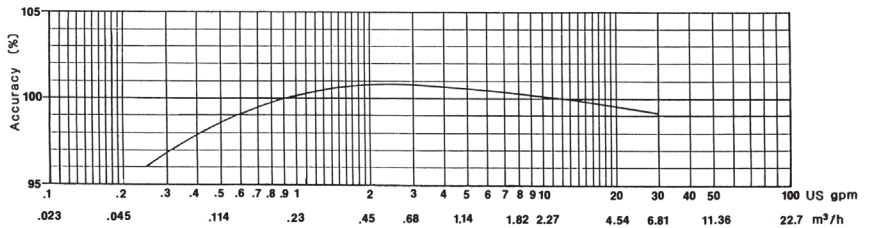
Environmental Conditions

- Operating temperature:
+33° F to +149° F (0° C to +65° C)
- Storage temperature:
+33° F to +158° F (0° C to +70° C)

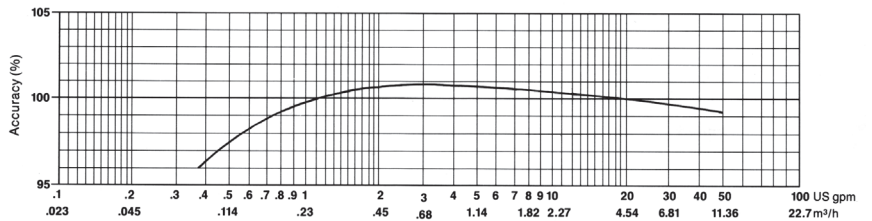
$\frac{5}{8}$ " ACCURACY



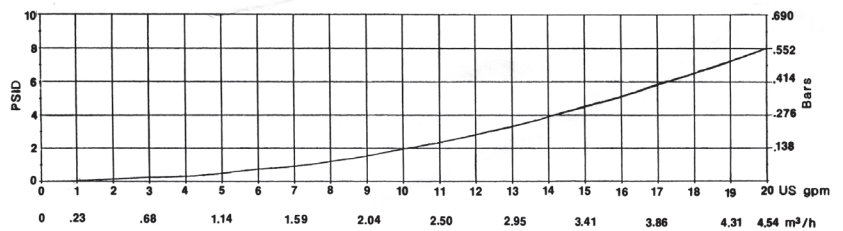
$\frac{3}{4}$ " ACCURACY



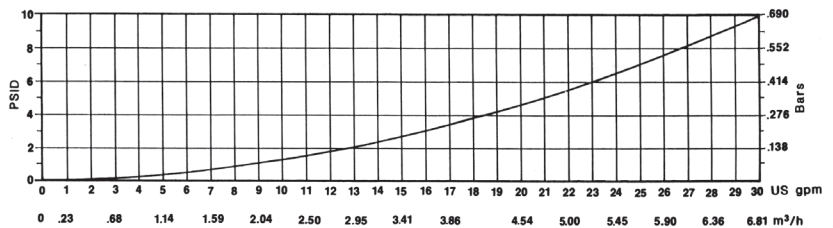
1" ACCURACY



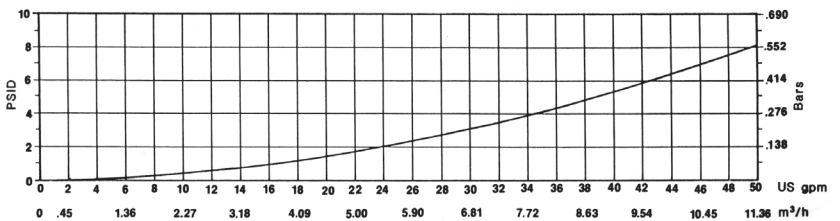
$\frac{5}{8}$ " PRESSURE LOSS



$\frac{3}{4}$ " PRESSURE LOSS

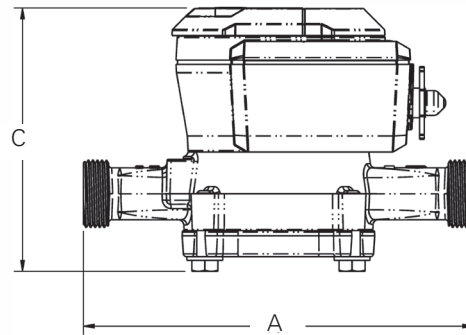
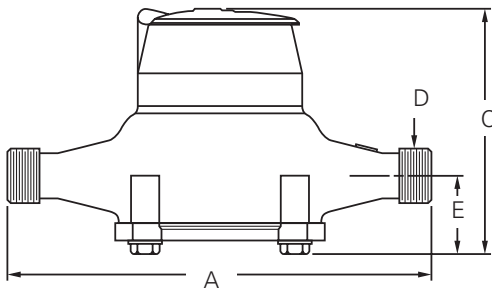
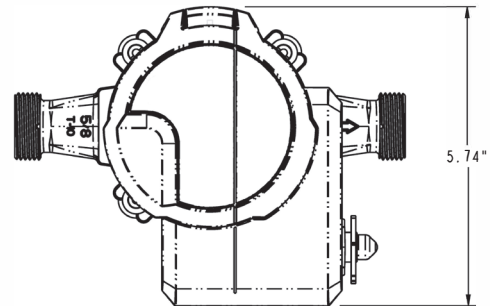
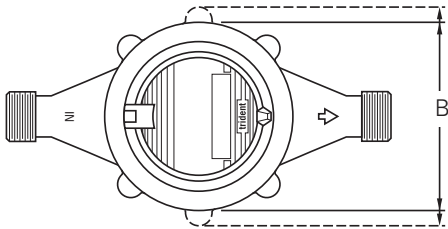


1" PRESSURE LOSS



Dimensions

Meter Size	A	B	C					D-	E-	Weight lbs/kg
	in/mm	in/mm	Std. in/mm	ARB in/mm	ProCoder™ or E-CODER®	ProCoder™) R900i™ or ProCoder™) R450i™	E-CODER®) R900i™ or E-CODER®) R450i™	NPSM Thread	in/mm	
5/8	7½ 191	3⅝ 92	4⅜ 111	5¼ 133	5¼ 133	5¼ 133	5¼ 133	¾" - 14	1½ 38	3¼ 1.4
5/8 x ¾	7½ 191	3⅝ 92	4⅜ 111	5¼ 133	5¼ 133	5¼ 133	5¼ 133	1" - 11½	1½ 38	3⅝ 1.5
Pre 2011 ⅝	7½ 191	3⅝ 92	4⅞ 124	5½ 146	5½ 139	5½ 139	5½ 139	¾" - 14	1⅝ 41	3¾ 1.7
Pre 2011 ⅝ x ¾	7½ 191	3⅝ 92	4⅞ 124	5½ 146	5½ 139	5½ 139	5½ 139	1" - 11½	1⅝ 41	4 1.8
¾	9 229	4⅜ 111	5½ 140	6¼ 159	6¼ 159	6¼ 159	6¼ 159	1" - 11½	1⅞ 48	6 2.7
¾" SL	7½ 911	4⅜ 111	5½ 140	6¼ 159	6¼ 159	6¼ 159	6¼ 159	1" - 11½	1⅞ 48	5½ 2.5
¾ x 1"	9 229	4⅜ 111	5½ 140	6¼ 159	6¼ 159	6¼ 159	6¼ 159	1¼" - 11½	1⅞ 48	6½ 2.9
1"	10¾ 273	6½ 165	6⅝ 162	7 178	7 178	7 178	7 178	1¼" - 11½	2⅞ 54	9¾ 4.4
1" x 1¼"	10¾ 273	6½ 165	6⅝ 162	7 178	7 178	7 178	7 178	1½" - 11½	2⅞ 54	10¼ 4.6



Operating Characteristics

Meter Size	Normal Operating Range @ 100% Accuracy (+/- 1.5%)	AWWA Standard	Low Flow @ 95% Accuracy
5/8"	1/2 to 20 US gpm 0.11 to 4.55 m ³ /h	1 to 20 US gpm 0.23 to 4.5 m ³ /h	1/8 US gpm 0.03 m ³ /h
3/4"	3/4 to 30 US gpm 0.17 to 6.82 m ³ /h	2 to 30 US gpm 0.45 to 6.8 m ³ /h	1/4 US gpm 0.06 m ³ /h
1"	1 to 50 US gpm 0.23 to 11.36 m ³ /h	3 to 50 US gpm 0.68 to 11.4 m ³ /h	3/8 US gpm 0.09 m ³ /h

Registration

ProRead Registration (per sweep hand revolution)		5/8"	3/4" & 1"
10	US Gallons	√	√
10	Imperial Gallons	√	√
1	Cubic Foot	√	√
0.1	Cubic Metre	√	√
Register Capacity ProRead, ProCoder, and E-CODER		5/8"	3/4" & 1"
10,000,000	US Gallons	√	√
10,000,000	Imperial Gallons	√	√
1,000,000	Cubic Feet	√	√
100,000	Cubic Metres	√	√
ProCoder and E-CODER High Resolution (8-digit reading)		5/8"	3/4" & 1"
0.1	US Gallons	√	√
0.1	Imperial Gallons	√	√
0.01	Cubic Feet	√	√
0.001	Cubic Metres	√	√



#winyourday
neptunetg.com

Neptune Technology Group
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800-633-8754 f 334-283-7293



A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

R900[®] Wall or Pit Meter Interface Unit (MIU)



Build Onto Your Existing Technology Investment

As part of Neptune's R900[®] System, the R900[®] meter interface unit (MIU) was designed for flexibility. Like its fellow system components, the R900 MIU works seamlessly with prior generations of equipment. At the same time, it allows your utility to incorporate innovations as you need. A single radio frequency unit that can transmit meter reading data using any reading method – mobile or fixed network – the R900 MIU never has to be reprogrammed. That makes migrating to new technologies simple whenever your utility is ready to implement them. When it's time to add new features or functionality, you can do it at your own pace, confident of continual system support without stranded assets.

Conserve Resources, Simplify Operations

With the pressures your utility faces, Neptune knows you don't have time, personnel, water, or revenue to waste. That's why we designed the R900 MIU and the rest of the system for ease of use. In addition, the R900 MIU's interleaved, high-power, 1 Watt fixed network message reduces infrastructure costs while allowing reading in any mode – without separate reading systems, site visits, or any type of MIU reconfiguration. The R900 MIU provides fixed network transmission capability at all times, while it also transmits readings for walk-by or mobile methods. Making operations even easier, the user-friendly, intuitive R900 System design requires only minimal training, providing you flexibility to adapt to changes in your workforce and reallocate staff to different departments as needed.

Reduce Complaints, Delinquencies, And Write-Offs

Neptune's R900 MIU greatly improves access to meter readings, while delivering detailed consumption profile information as well as alerts for leak or backflow, helping your utility more proactively identify and resolve customers' questions. This accurate, timely data can be used to head off high bill complaints, reduce delinquent payments, and eliminate write-offs.

Because detailed data logging information from the last 96 days is always available, just waiting to be transmitted by the R900 MIU when needed, personnel can take care of a customer's issue then and there, in a single site visit. Not only can the data boost efficiency and customer service, but it will also help your utility make better-informed decisions going forward.

KEY BENEFITS

Facilitates Migration to AMI

- 1 Watt fixed network message reduces infrastructure costs
- Interleaved mobile and fixed network messages facilitate migration without changing the "modes" in the MIU

Reduces Non-Revenue Water

- Provides leak history/diagnostics
- Enables proactive leak notification
- Provides hourly consumption data
- Improves meter reading accuracy
- Eliminates estimated reads

Identifies Potential Theft

- Tamper detection
- Reverse flow detection
- Identifies significant periods of zero consumption

Simplifies Installation Process

- Easy to install/no programming required
- Reduces labor cost

Technical Specifications

Electrical Specifications:

- MIU power: Lithium battery with capacitor

Transmitter Specifications:

- Two-way MIU
- Transmit period (interleaved mobile and fixed network messages):
 - Standard mobile message every 14 seconds at 100 mW
 - Standard fixed network message every 7½ minutes at 1 Watt
- FCC verification: Part 15.247
 - Transmitter channels: 50; frequency-hopping, spread-spectrum
 - Channel frequency: 910 to 920 MHz
- Encoder register reading interval:
 - Every 15 minutes
- Data logging interval:
 - 96 days of hourly data

Environmental Conditions:

- Operating temperature: -22°F to +149°F (-30°C to +65°C)
- Storage temperature: -40°F to +158°F (-40°C to +70°C)
- Operating humidity: 100% condensing

Antennas:

- Wall MIU: standard internal antenna
- Pit MIU: standard through-the-lid antenna
 - 18" Coax
 - 6' Coax
 - 20' Coax

Encoded Register Compatibility:

- Neptune ARB® V, ProRead™, and E-CODER®
- Sensus ECR II, ICE, iPerl, Electronic Register and OMNI
- Hersey/Mueller Translator
- Badger ADE and HR E|LCD
- Elster/AMCO InVision (Sensus protocol version)

Options

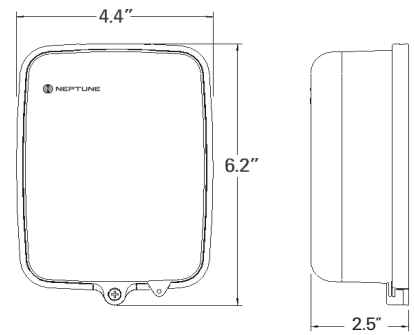
System Compatibility:

- Handhelds with R900® Belt Clip Transceiver - mobile RF
- MRX920™ - mobile RF
- R900® Gateways - fixed network RF

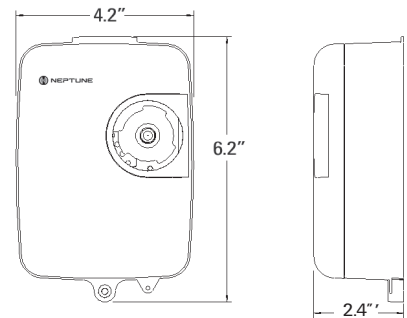
Warranty

20 years (10/10); refer to specific Warranty Statement

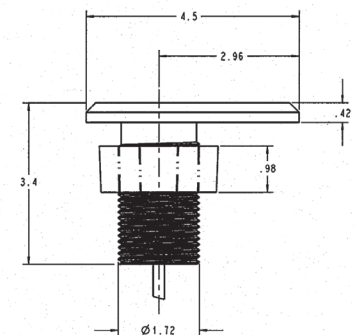
Dimensions



R900 Wall MIU

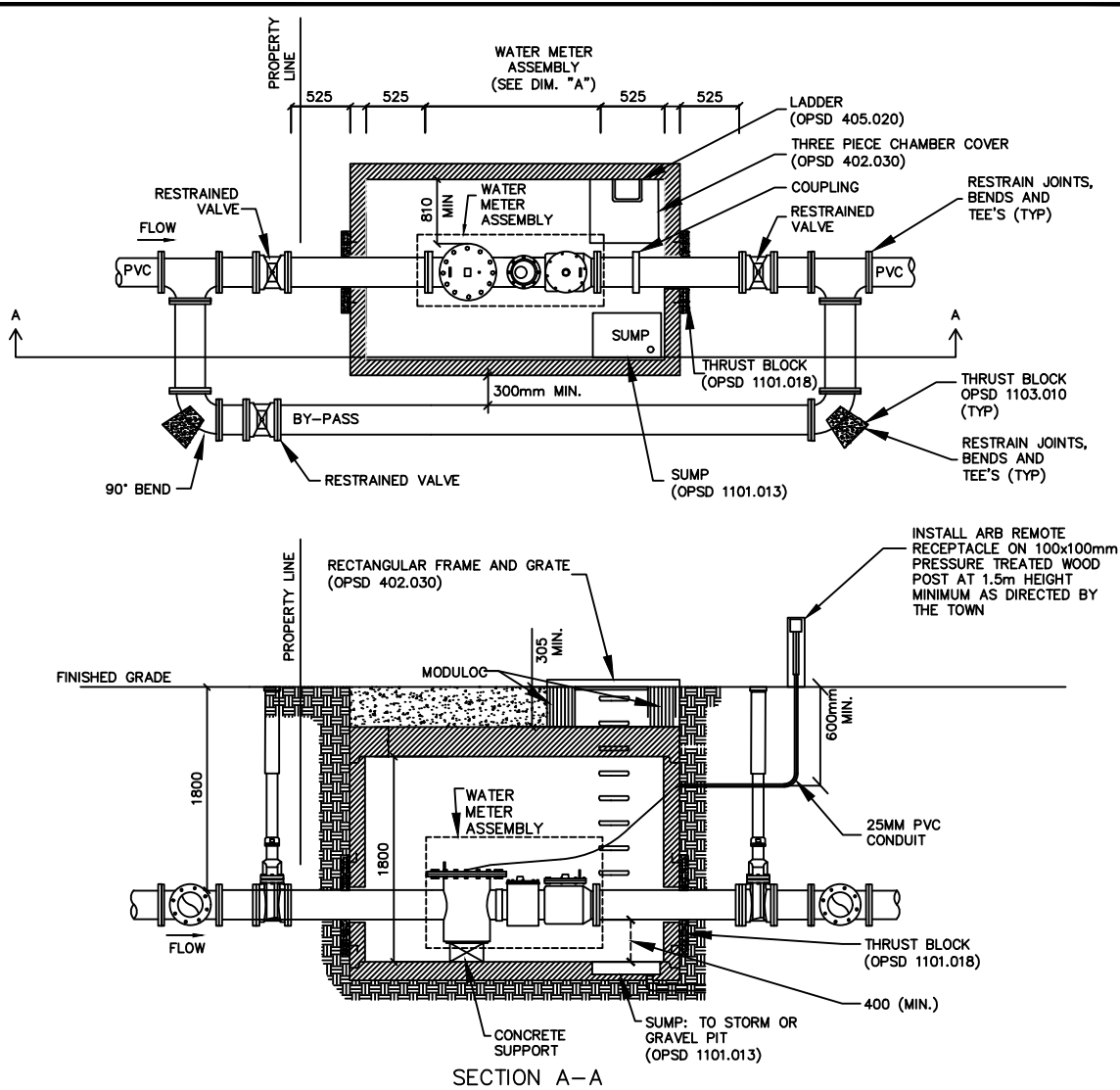


R900 Pit MIU



R900 Pit Antenna






SECTION A-A

NOTES:

1. CONCRETE TO BE 32MPa COMPRESSIVE STRENGTH.
2. 25mm PVC CONDUIT TO BE INSTALLED FROM WATER METER TO A SUITABLE LOCATION AS DIRECTED BY THE TOWN.
3. DIMENSIONS OF THE CHAMBER SHALL BE VERIFIED BEFORE INSTALLATION.
4. ALL VALVE CHAMBER CUT-OUTS TO BE FILLED WITH CONCRETE BRICKS AND MORTAR THEN PARGED INSIDE AND OUTSIDE WITH 1:3 MORTARS MIX.
5. ALL PIPE JOINTS INSIDE METER CHAMBER SHALL BE FLANGE TO FLANGE FOR SIZES 100mm AND LARGER.
6. VALVES TO BE RESTRAINED TO THE CHAMBER.
7. A BACKFLOW PREVENTION DEVICE IS TO BE INSTALLED IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICES; THE REQUIREMENTS OF THE ONTARIO BUILDING CODE (O. REG. 350/ 06). AS AMENDED AND THE CSA STANDARD CSA B64.10-07, "SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS".
8. CONTRACTOR TO INSTALL PVC PIPE CONTINUOUS THROUGH CHAMBER.
9. CHAMBER SHALL BE INSULATED IF MINIMUM DEPTH OF BURY IS NOT MET.
10. ALL RESTRAINED VALVES SHALL BE INSTALLED WITH BOX.
11. ALL VALVES SHALL BE RATED FOR WORKING PRESSURE OF 1035kPa (MIN.).
12. ALL VALVES SHALL BE FLANGED, THREADED, OR SOLDER TYPE. ACID CORE SOLDER IS NOT PERMITTED.
13. PIPE REDUCERS REQUIRED TO ACCOMMODATE A SMALLER WATER METER THAN THE PRIVATE WATER SERVICE SHALL ONLY BE INSTALLED BETWEEN THE INLET AND OUTLET VALVES AND SHALL BE ATTACHED DIRECTLY TO THE VALVES.
14. ALL VALVES SHALL HAVE A HANDLE SHOWING THE OPEN & CLOSE DIRECTION.
15. DRAINAGE VALVES (IF REQUIRED) SHALL BE A BRASS VALVE WITH A BRASS PLUG.
16. ALL VALVES SHALL BE INSTALLED SUCH THAT OPERATION OF THEIR HANDLES DO NOT INTERFERE WITH ONE ANOTHER.

CHAMBER OPSD	METER SIZE	DIM. A
1101.012 (1800 X 2400mm)	4"/100mm	33"/838mm
	6"/150mm	45"/1143mm
1101.016 (2400 X 3600mm)	8"/200mm	53"/1346mm
	10"/250mm	68"/1727mm

TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	100mm to 250mm	
	WATER METER INSTALLATION	
	IN CHAMBER	
	FOR COMBINED FIRE & DOMESTIC	
	DATE: JUNE. 2019	
	ISSUE NO. 1	
	SCALE: N.T.S.	
	DWG. NO. WS-603	

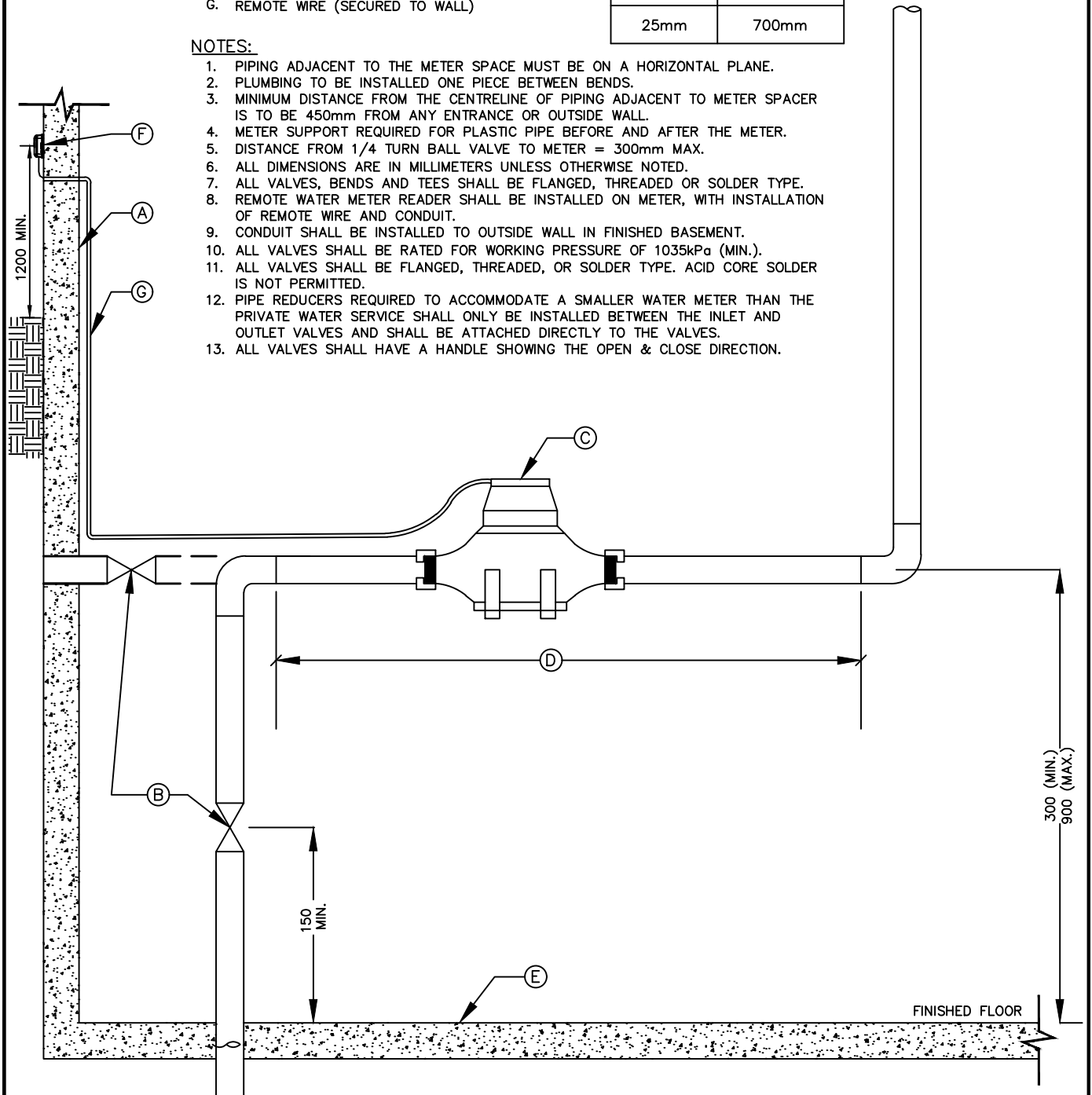
LEGEND:


- A. EXTERIOR WALL
- B. 1/4 TURN BALL VALVE (SAME SIZE AS SERVICE)
- C. WATER METER
- D. METER SPACE (VARIES)
- E. FLOOR SLAB
- F. REMOTE READER
- G. REMOTE WIRE (SECURED TO WALL)

METER SIZE	MIN. DISTANCES (D)
16 x 19mm	500mm
19mm	600mm
25mm	700mm

NOTES:

1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. PLUMBING TO BE INSTALLED ONE PIECE BETWEEN BENDS.
3. MINIMUM DISTANCE FROM THE CENTRELINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT REQUIRED FOR PLASTIC PIPE BEFORE AND AFTER THE METER.
5. DISTANCE FROM 1/4 TURN BALL VALVE TO METER = 300mm MAX.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
7. ALL VALVES, BENDS AND TEES SHALL BE FLANGED, THREADED OR SOLDER TYPE.
8. REMOTE WATER METER READER SHALL BE INSTALLED ON METER, WITH INSTALLATION OF REMOTE WIRE AND CONDUIT.
9. CONDUIT SHALL BE INSTALLED TO OUTSIDE WALL IN FINISHED BASEMENT.
10. ALL VALVES SHALL BE RATED FOR WORKING PRESSURE OF 1035kPa (MIN.).
11. ALL VALVES SHALL BE FLANGED, THREADED, OR SOLDER TYPE. ACID CORE SOLDER IS NOT PERMITTED.
12. PIPE REDUCERS REQUIRED TO ACCOMMODATE A SMALLER WATER METER THAN THE PRIVATE WATER SERVICE SHALL ONLY BE INSTALLED BETWEEN THE INLET AND OUTLET VALVES AND SHALL BE ATTACHED DIRECTLY TO THE VALVES.
13. ALL VALVES SHALL HAVE A HANDLE SHOWING THE OPEN & CLOSE DIRECTION.



TOWN OF WHITCHURCH—STOUFFVILLE		APPROVED:
	25mm OR LESS DOMESTIC WATER METER INSTALLATION	DATE: JUNE, 2019
		ISSUE NO. 1
		SCALE: N.T.S.
		DWG. NO. WS-608

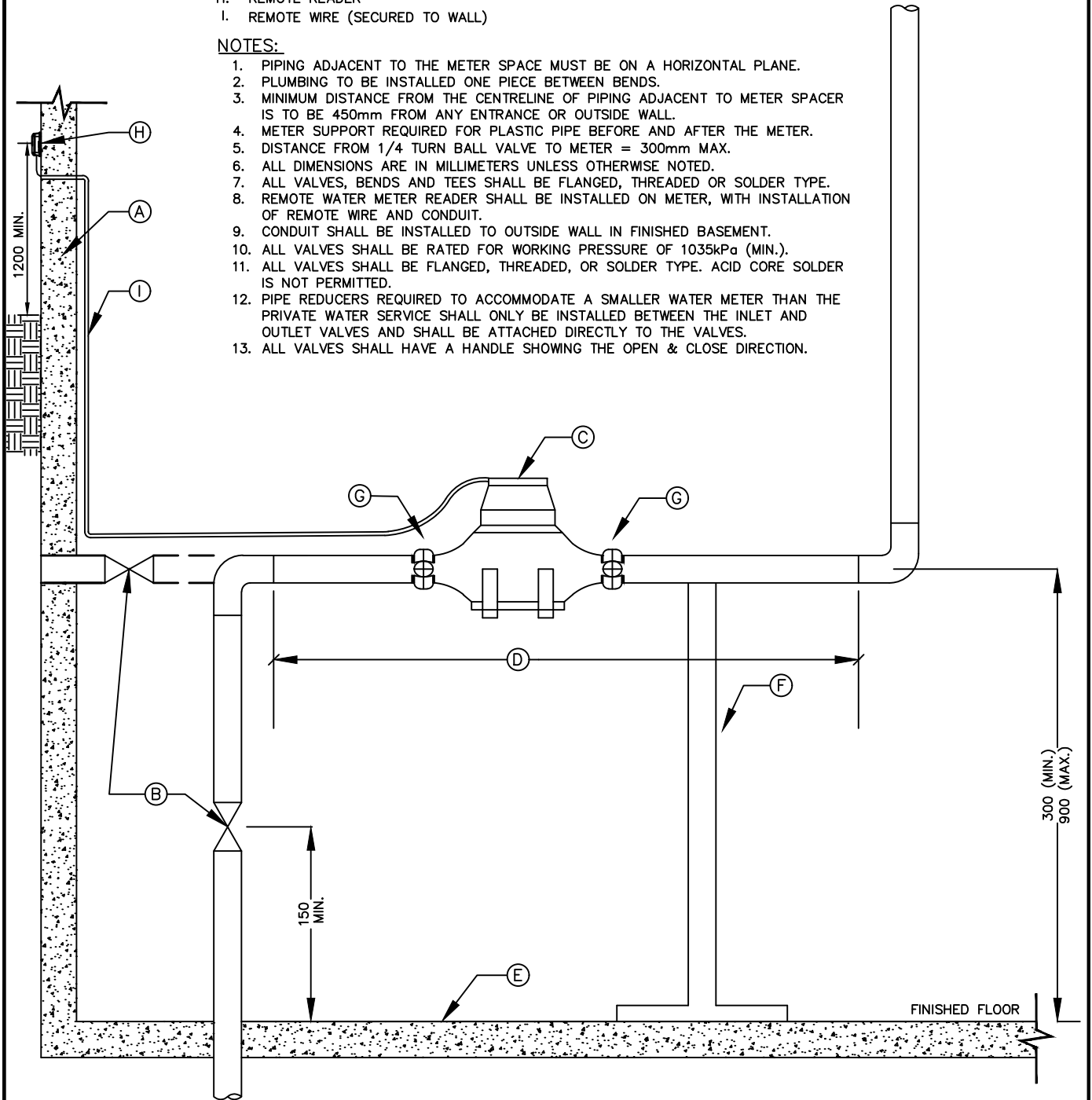
LEGEND:


- A. EXTERIOR WALL
- B. 1/4 TURN BALL VALVE (SAME SIZE AS SERVICE)
- C. WATER METER
- D. METER SPACE (VARIES)
- E. FLOOR SLAB
- F. PIPE SUPPORT/STAND
- G. 2 BOLT FLANGES
- H. REMOTE READER
- I. REMOTE WIRE (SECURED TO WALL)

METER SIZE	MIN. DISTANCES (D)
38mm	700mm
50mm	825mm

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13. ALL VALVES SHALL HAVE A HANDLE SHOWING THE OPEN & CLOSE DIRECTION.



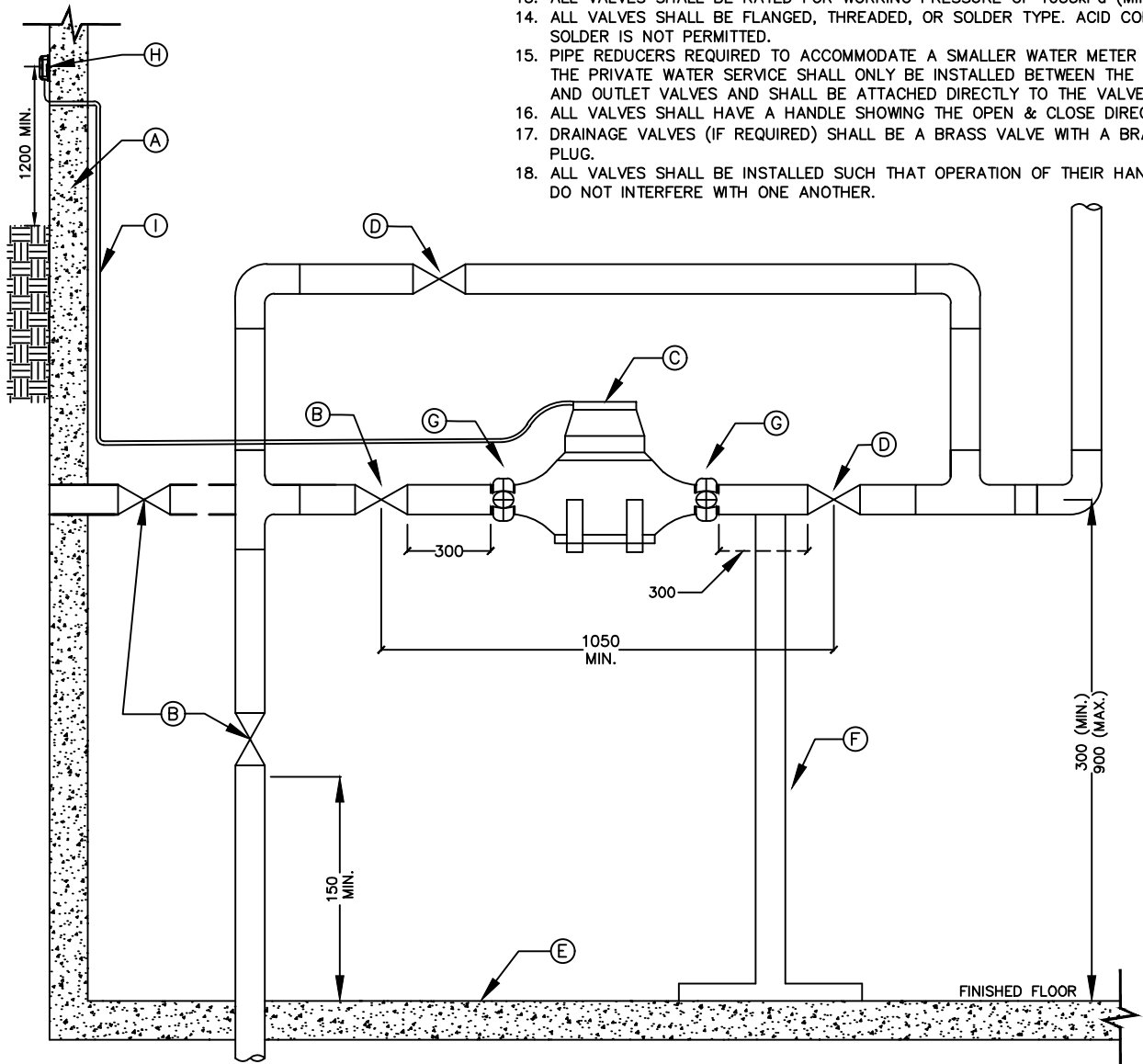
TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	38mm TO 50mm DOMESTIC WATER METER INSTALLATION	DATE: JUNE, 2019
		ISSUE NO. 1
		SCALE: N.T.S.
		DWG. NO. WS-609


LEGEND:

- A. EXTERIOR WALL
- B. 1/4 TURN BALL VALVE (SAME SIZE AS SERVICE)
- C. WATER METER
- D. 1/4 TURN BALL VALVE (LOCKABLE AND SAME SIZE AS SERVICE)
- E. FLOOR SLAB
- F. PIPE SUPPORT/STAND
- G. 2 BOLT FLANGES
- H. REMOTE READER
- I. REMOTE WIRE (SECURED TO WALL), PROTECTED BY A 12mm ϕ PUC OR EMT CONDUIT

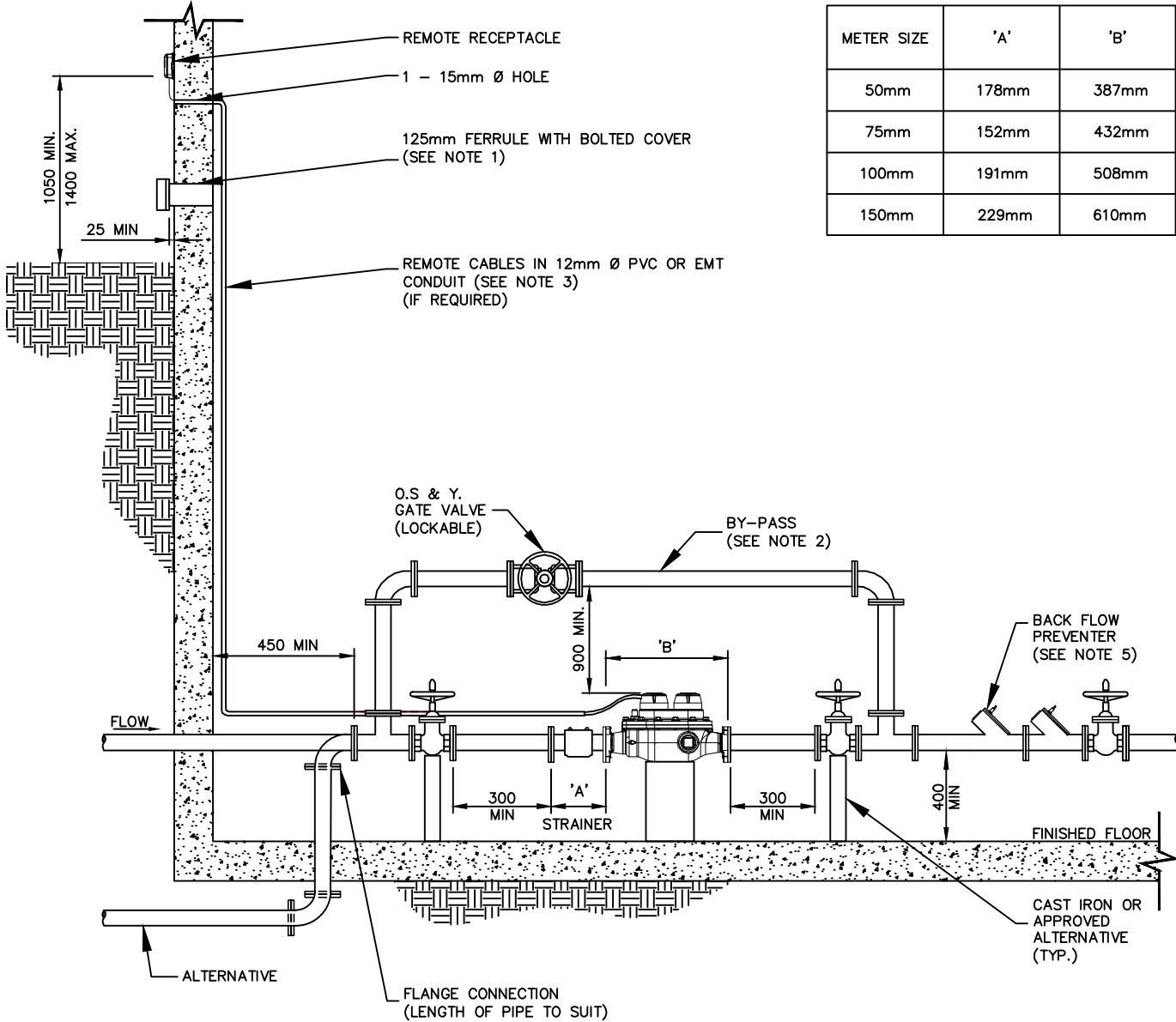
NOTES:

1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. METER SETTINGS ARE TO BE SET BY THE TOWN.
3. MINIMUM DISTANCE FROM THE CENTRELINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. CONTRACTOR SHALL SUPPORT ALL METERS, VALVES AND BY-PASSES WITHIN CHAMBERS WITH ADJUSTABLE PIPE STANDS APPROVED BY THE TOWN. BRICKS, CONCRETE OR WOOD BLOCKING ARE NOT ACCEPTABLE MEANS OF SUPPORT.
5. MIN. DISTANCE OF 300mm SHALL BE MAINTAINED ON EITHER SIDE OF 1/4 TURN BALL VALVES LOCATED ADJACENT TO THE WATER METER.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
7. A LOCKABLE BALL VALVE SHALL BE INSTALLED AFTER ANY BY-PASS BRANCH AT VALVE LOCATION D.
8. ANY INSTALLED BY-PASS VALVE SHALL BE A LOCKABLE BALL VALVE AND IS TO BE LOCKED AND SEALED BY THE TOWN.
9. METERS MAY ALL BE INSTALLED SIDE BY SIDE AT SAME HEIGHT AS SPACE ALLOWS.
10. BY-PASSES ARE APPROVED FOR USE BY HOSPITALS, HOTELS, SCHOOLS AND CAR WASHES. ALL OTHER FACILITIES MUST REQUEST APPROVAL FROM TOWN.
11. BY-PASS MAY BE INSTALLED HORIZONTALLY OR VERTICALLY.
12. REMOTE WATER METER READER SHALL BE INSTALLED ON METER, WITH INSTALLATION OF REMOTE WIRE AND CONDUIT.
13. ALL VALVES SHALL BE RATED FOR WORKING PRESSURE OF 1035kPa (MIN.).
14. ALL VALVES SHALL BE FLANGED, THREADED, OR SOLDER TYPE. ACID CORE SOLDER IS NOT PERMITTED.
15. PIPE REDUCERS REQUIRED TO ACCOMMODATE A SMALLER WATER METER THAN THE PRIVATE WATER SERVICE SHALL ONLY BE INSTALLED BETWEEN THE INLET AND OUTLET VALVES AND SHALL BE ATTACHED DIRECTLY TO THE VALVES.
16. ALL VALVES SHALL HAVE A HANDLE SHOWING THE OPEN & CLOSE DIRECTION.
17. DRAINAGE VALVES (IF REQUIRED) SHALL BE A BRASS VALVE WITH A BRASS PLUG.
18. ALL VALVES SHALL BE INSTALLED SUCH THAT OPERATION OF THEIR HANDLES DO NOT INTERFERE WITH ONE ANOTHER.




TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	38mm to 50mm	DATE: JUNE, 2019
	DOMESTIC WATER METER	ISSUE NO. 1
	INSTALLATION WITH BY-PASS	SCALE: N.T.S.
		DWG. NO. WS-610

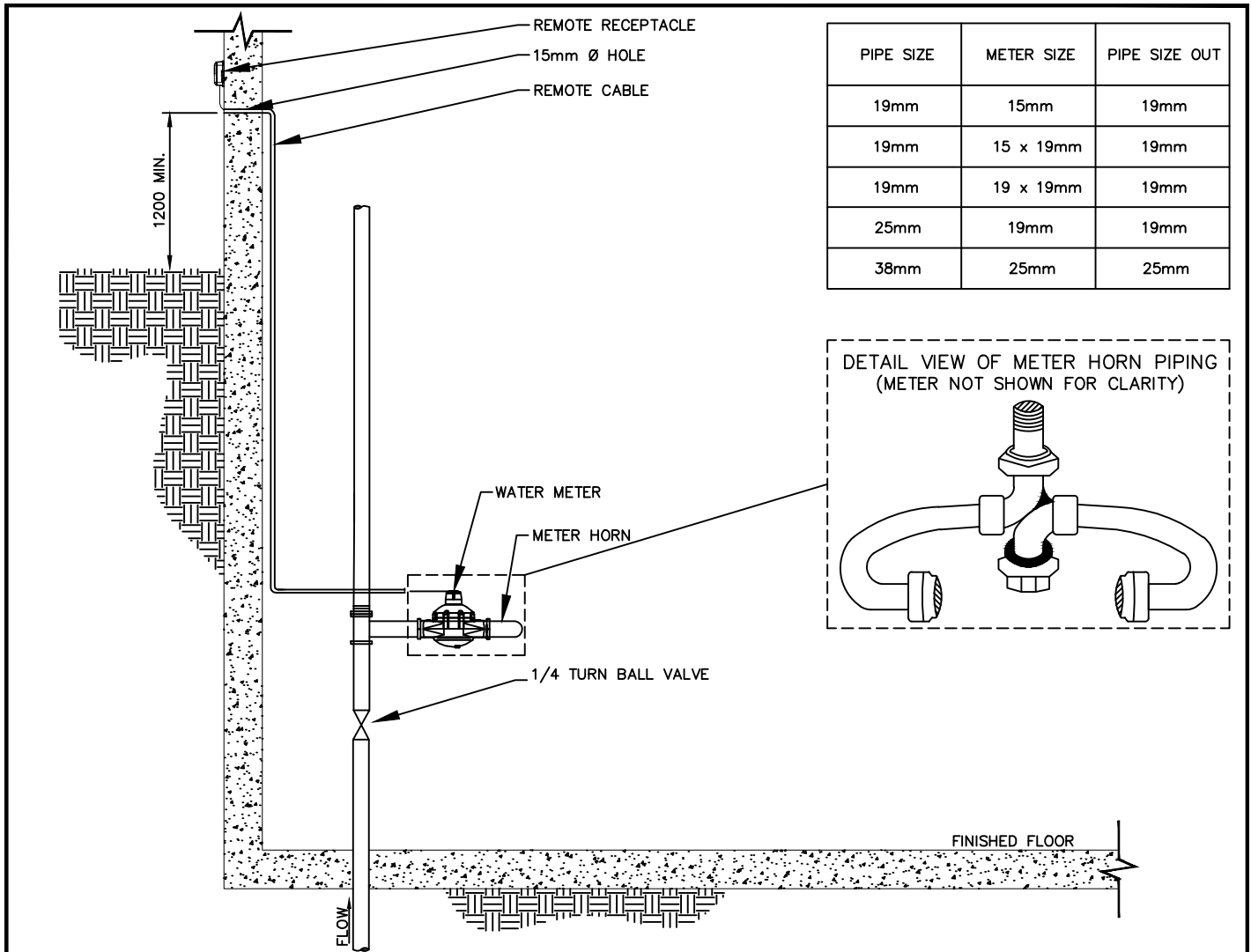
METER SIZE	'A'	'B'
50mm	178mm	387mm
75mm	152mm	432mm
100mm	191mm	508mm
150mm	229mm	610mm



NOTES:


1. PROVISION IS TO BE MADE FOR THE DISPOSAL OF WATER USED FOR IN PLACE TESTING OF TRU-FLO COMPOUND METER EITHER THROUGH EXISTING FLOOR DRAIN OR THE 125mm FERRULE.
2. BY-PASS MAY BE ONE PIPE SIZE SMALLER THAN METER SIZE AND MAY BE INSTALLED HORIZONTALLY.
3. WHERE METER ROOM IS NOT ADJACENT TO AN OUTSIDE WALL OR IS BELOW EXTERIOR FINISHED GRADE, THE APPLICANT/CONTRACTOR SHALL PROVIDE A CONTINUOUS 12mm Ø E.M.T. CONDUIT COMPLETE WITH NYLON FISH LINE FROM METER ROOM TO 1.0m ABOVE EXTERIOR FINISHED GROUND.
4. METER SHALL BE ACCESSIBLE AT ALL TIMES.
5. BACKFLOW PREVENTOR SHALL BE INSTALLED AFTER BOTH THE METER AND BY-PASS.
6. BY-PASS TO BE LOCKED AND SEALED BY THE TOWN.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
8. REMOTE CABLE SHALL BE SECURED TO WALL.
9. ALL VALVES SHALL BE RATED FOR WORKING PRESSURE OF 1035kPa (MIN.).
10. ALL VALVES SHALL BE FLANGED, THREADED, OR SOLDER TYPE. ACID CORE SOLDER IS NOT PERMITTED.
11. PIPE REDUCERS REQUIRED TO ACCOMMODATE A SMALLER WATER METER THAN THE PRIVATE WATER SERVICE SHALL ONLY BE INSTALLED BETWEEN THE INLET AND OUTLET VALVES AND SHALL BE ATTACHED DIRECTLY TO THE VALVES.
12. ALL VALVES SHALL HAVE A HANDLE SHOWING THE OPEN & CLOSE DIRECTION.
13. DRAINAGE VALVES (IF REQUIRED) SHALL BE A BRASS VALVE WITH A BRASS PLUG.
14. ALL VALVES SHALL BE INSTALLED SUCH THAT OPERATION OF THEIR HANDLES DO NOT INTERFERE WITH ONE ANOTHER.

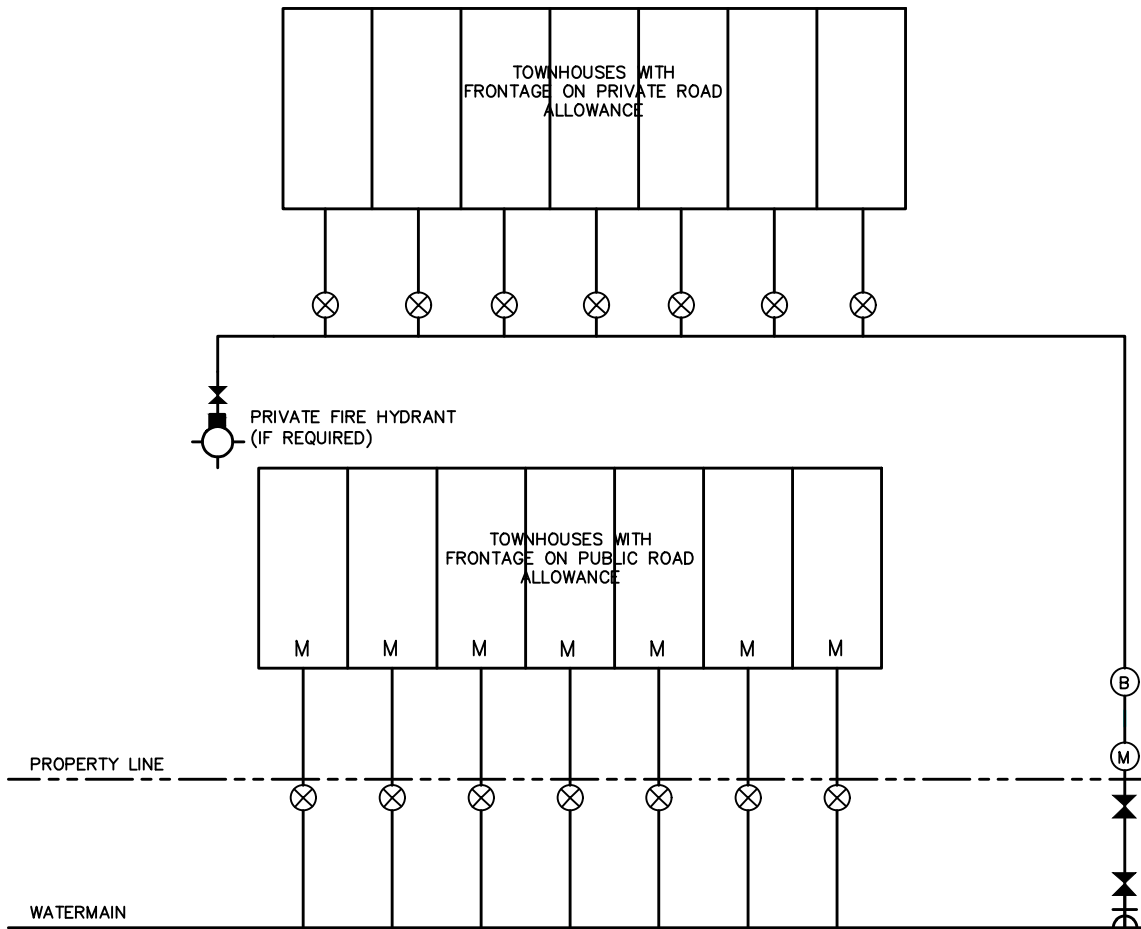
TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	50mm to 150mm COMPOUND METER ICI INSTALLATION IN BUILDING	DATE: JUNE. 2019
		ISSUE NO. 1
		SCALE: N.T.S.
		DWG. NO. WS-611







NOTES:



1. ALL WATER METERS SHALL BE INSTALLED IN THE HORIZONTAL POSITION.
2. WATER METERS SHALL BE INSTALLED WITH A MINIMUM 1.2m UNOBSTRUCTED CLEARANCE IN FRONT OF WATER METER TO NEAREST WALL.
3. THE WORKING SPACE IN FRONT OF THE METER SHALL HAVE A MINIMUM OF 2.0m UNOBSTRUCTED HEAD CLEARANCE.
4. ALL VALVES, BENDS AND TEES SHALL BE FLANGED, THREADED OR SOLDER TYPE.
5. ALL PIPING, TEES, BENDS AND VALVES, SHALL BE THE SAME DIAMETER AS THE PRIVATE WATER SERVICE PIPE. PIPE REDUCERS REQUIRED TO ACCOMMODATE A SMALLER WATER METER THAN THE PRIVATE WATER SERVICE PIPE SHALL ONLY BE INSTALLED PAST THE INLET VALVE.
6. THE WATER METER SHALL BE SEALED BY THE TOWN.
7. ALL PIPE TYPES SHALL CONFORM TO TOWN REQUIREMENTS AND BE APPROVED BY THE TOWN.
8. ALL VALVES, DEVICES AND BRANCH FITTINGS SHALL BE LOCATED DOWNSTREAM OF THE METER.
9. ANY INSULATION PLACED AROUND ANY WATER METER SHALL BE EASILY REMOVABLE AND REPLACEABLE AND SHALL NOT CONTAIN ASBESTOS OR ANY OTHER TOXIC OR HAZARDOUS MATERIALS. SUCH INSULATION SHALL NOT COVER OR OBSTRUCT THE WATER METER REGISTER. THE TOWN OR CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO SUCH INSULATION DURING ANY REMOVAL OR REPLACEMENT OF SUCH INSULATION.
10. ALL WATER METER INSTALLATIONS SHALL CONFORM WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
11. THE PRIVATE WATER SERVICE PIPE SHALL BE FLUSHED PRIOR TO AND AFTER THE INSTALLATION OF THE WATER METER.
12. REMOTE READOUT DEVICE WIRE SHALL BE INSTALLED WITH A MINIMUM HEIGHT OF 1.0m CLEARANCE FROM THE GROUND ON THE NEAREST AVAILABLE OUTSIDE WALL.
13. ALL PIPING AFTER THE 1/4 TURN BALL VALVE SHALL BE COPPER. PIPING FOR METER TO BE RUN HORIZONTALLY & METER TO BE INSTALLED ON HORIZONTAL PIPING ONLY.
14. IF BASE PIPE IS NON-METALLIC, SUPPORT SHALL BE PROVIDED AS PER DIRECTION BY THE TOWN.
15. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
16. ALL VALVES SHALL BE RATED FOR WORKING PRESSURE OF 1035kPa (MIN.).
17. ALL VALVES SHALL HAVE A HANDLE SHOWING THE OPEN & CLOSE DIRECTION.


TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	15mm TO 25mm	DATE: JUNE, 2019
	RESIDENTIAL METER INSTALLATION	ISSUE NO. 1
	IN BUILDING - VERTICAL	SCALE: N.T.S.
		DWG. NO. WS-612

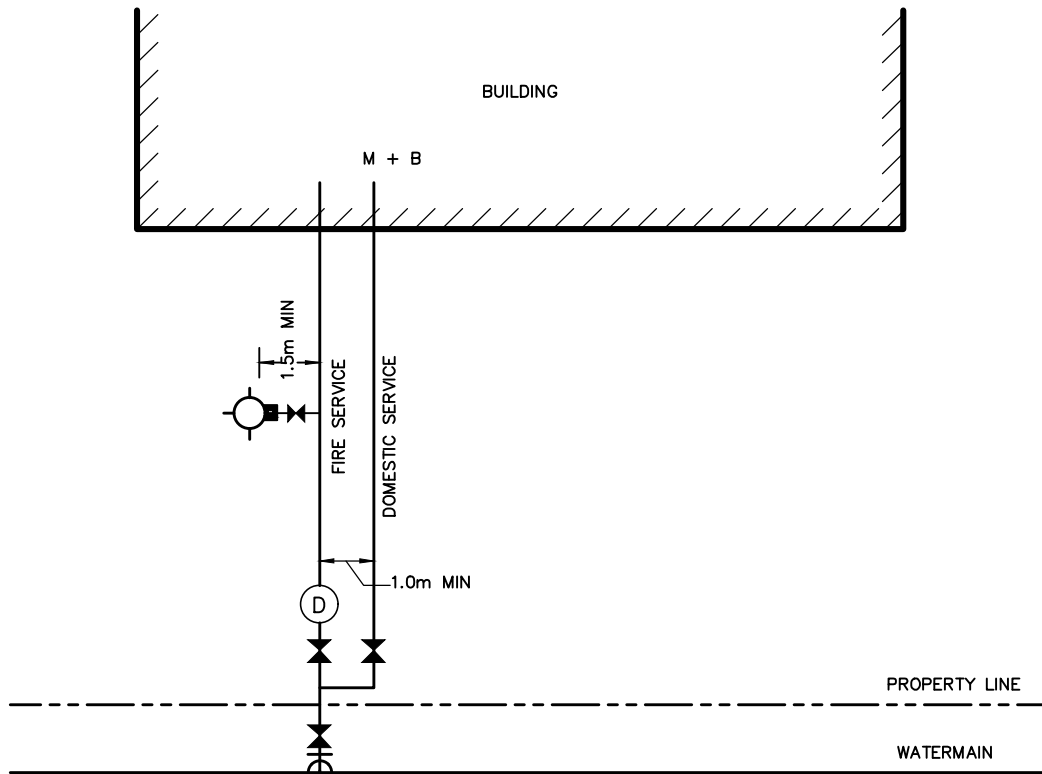


LEGEND




-  CURB BOX
-  VALVE & BOX
-  FIRE HYDRANT WITH VALVE & BOX
-  TAPPING SLEEVE & VALVE & BOX




-  METER IN CHAMBER
-  BACKFLOW PREVENTER IN CHAMBER
- M WATER METER
- PM PRIVATE METER

TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	WATER SERVICING FOR TOWNHOUSE COMPLEX	DATE: JUNE, 2019
		ISSUE NO. 1
		SCALE: N.T.S.
		DWG. NO. WS-613




LEGEND

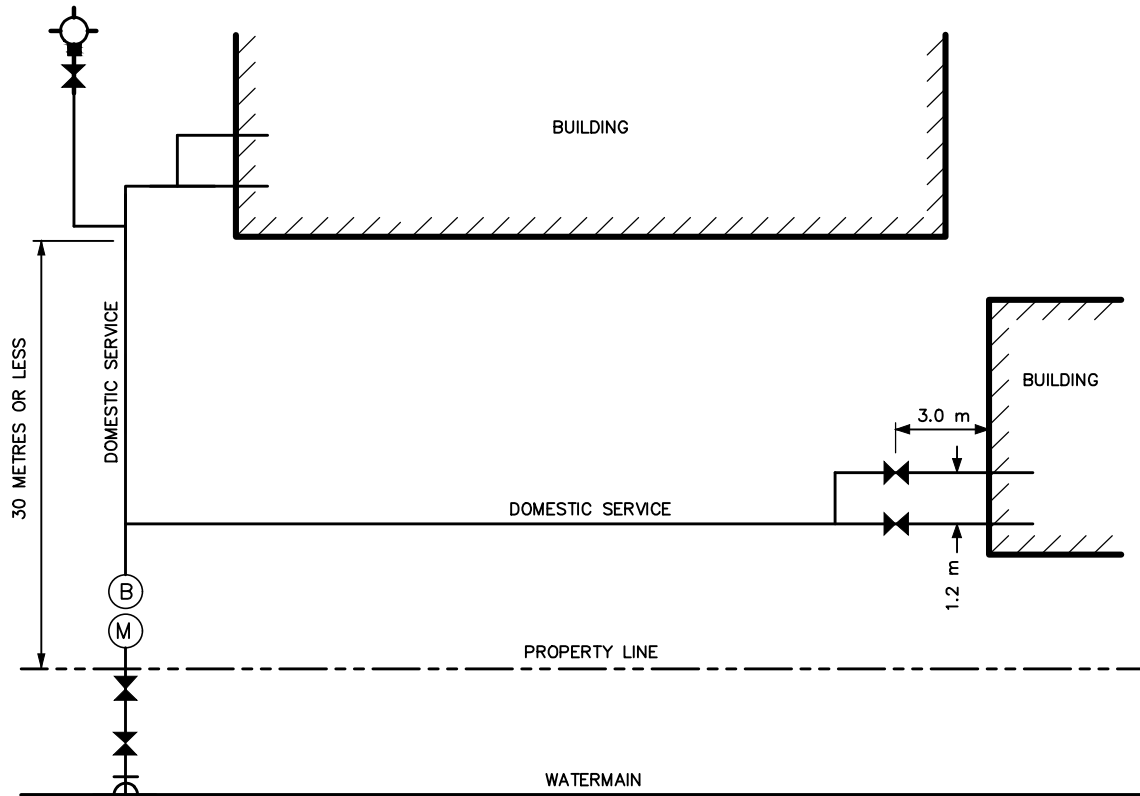
-  VALVE & BOX
-  FIRE HYDRANT WITH VALVE & BOX
-  TAPPING SLEEVE & VALVE & BOX

-  DETECTOR ASSEMBLY IN CHAMBER
-  BACKFLOW PREVENTER
-  WATER METER




NOTES:



1. THE REQUIRED DETECTOR ASSEMBLY ON THE FIRE SERVICE IS DETERMINED BASED ON THE FIRE SPRINKLER OR STANDPIPE CLASSIFICATION AS FOUND IN SECTION 7.6.2.4, BACKFLOW FROM FIRE PROTECTION SYSTEMS, OF THE 2006 ONTARIO BUILDING CODE AND SECTION 5.5 OF THE CSA B64.10 SERIES STANDARD. IF THE BUILDING CODE AND CSA B64.10 REQUIRES A DOUBLE CHECK VALVE ASSEMBLY FOR THE FIRE SERVICE THEN THE WATER SUPPLY BYLAW REQUIRES IT TO BE DOUBLE CHECK DETECTOR ASSEMBLY. CONVERSELY, IF THE BUILDING CODE OR CSA B64.10 REQUIRES A REDUCED PRESSURE PRINCIPAL ASSEMBLY, THEN IT SHOULD BE A REDUCED PRESSURE DETECTOR ASSEMBLY. IT SHOULD BE NOTED THAT A REDUCED PRESSURE DETECTOR ASSEMBLY CANNOT BE INSTALLED BELOW GRADE IN A VAULT OR CHAMBER.
2. WHEN A BUILDING REQUIRES A HYDRANT FOR FIRE PROTECTION MAKE ALL ATTEMPTS TO LOCATE PROPOSED HYDRANT ON PRIVATE PROPERTY.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

TOWN OF WHITCHURCH-STOUFFVILLE		APPROVED:
	WATER SERVICING FOR SINGLE BUILDING WITH FRONTAGE ON MUNICIPAL ROAD ALLOWANCE	
	ONE LOT	
	DATE:	JUNE. 2019
	ISSUE NO.	1
SCALE:	N.T.S.	
DWG. NO.	WS-614	




LEGEND

-  VALVE & BOX
-  FIRE HYDRANT WITH VALVE & BOX
-  TAPPING SLEEVE & VALVE & BOX

-  METER IN CHAMBER
-  BACKFLOW PREVENTER

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

TOWN OF WHITCHURCH–STOUFFVILLE		APPROVED:
	WATER SERVICING FOR MULTIPLE BUILDINGS WITH FRONTAGE ON MUNICIPAL ROAD ALLOWANCE ONE LOT	DATE: JUNE, 2019
		ISSUE NO. 1
		SCALE: N.T.S.
		DWG. NO. WS-615

AMI Your Way

Neptune® R900® System: Cellular Endpoint



Neptune's cellular endpoint allows you to progress at your own pace to AMI when integrated into your Neptune® R900® System. Neptune's cellular endpoint provides all of the benefits of an advanced meter reading solution without the operational burden of network infrastructure while allowing you to protect existing asset investments. An easily deployable AMI solution, the cellular endpoint allows you to start collecting actionable meter data immediately. You are assured a reliable, highly secure, and easy-to-deploy cellular AMI data solution for both current and future needs.

- No AMI fixed network infrastructure installation, maintenance, operations, or upgrade costs for the life of the deployment.
- Seamlessly integrates with existing R900 technology for a flexible AMI solution.
- Access all of your meter data from anywhere at any time with Neptune® 360™.
- Improve operations and customer service with real-time, high-resolution AMI data and advanced analytics.
- Automatically recover from network outages with 96 days of stored data.
- Two-way solution using LTE-M cellular technology helps ensure robust coverage.
- Maximized coverage with any of Canada's cellular networks.
- Sensitive information is highly secure.

Specifications

Environmental Conditions

- Operating temperature:
-22°F to +149°F (-30°C to +65°C)
- Storage temperature:
-40°F to +158°F (-40°C to +70°C)
- Operating humidity:
100% condensing

Antennas

- Wall: standard internal antenna
- Pit: internal or external antenna

Encoded Register Compatibility

- Neptune® MACH 10®, ARB®V, ProRead™, E-CODER®, and ProCoder™
- Sensus ECR II, ICE, iPerl, Electronic Register and OMNI
- Hersey/Mueller Translator
- Badger ADE, HR E|LCD, E-Series
- Elster/AMCO InVision (Sensus protocol version)

Operation

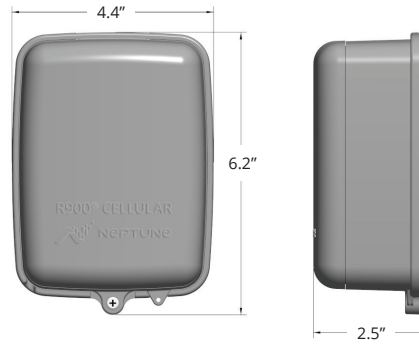
- Four cellular LTE-M transmissions per day
- Mobile 900 MHz backup transmissions
- Verify installation via the cellular endpoint manager tool
- 15-minute interval data with automatic back-fill
- Priority alerts
- Configurable transmission windows

Warranty

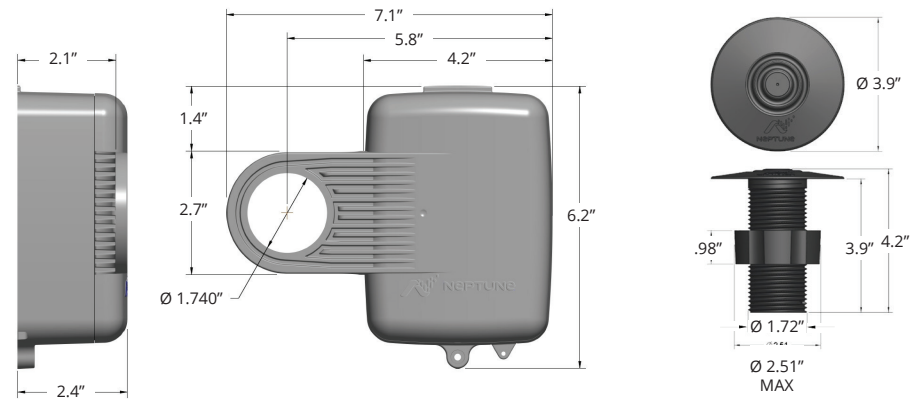
- Neptune provides a limited warranty for performance, materials, and workmanship. See warranty statement for details.

Dimensions

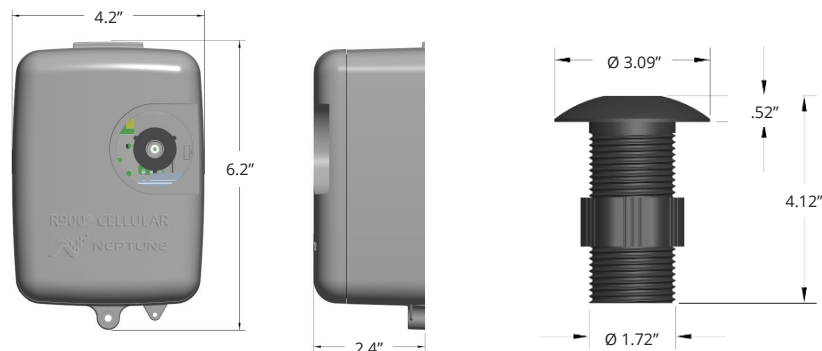
Wall Endpoint



Pit Endpoint (Internal Antenna)



Pit Endpoint with External Through-the-Lid Antenna



Neptune Technology Group
1600 Alabama Highway 229
Tallahassee, AL 36078
800-633-8754 f 334-283-7293



Cellular Endpoint

What is the cellular endpoint?

The Neptune cellular endpoint is a meter interface unit that utilizes a cellular network to transmit data to Neptune® 360™. A network infrastructure is not required, eliminating the operational and capital burden that can come with having a traditional RF fixed network. The cellular endpoint supports targeted or full-scale deployments, providing a solution that can be tailored to each utility's unique needs.

What network supports the cellular endpoint?

The cellular endpoint will use any major Canadian carrier available to achieve maximum possible network coverage.

How do I know whether I have service in my area?

The following link is to a coverage map that can be used to verify cellular coverage:

<https://www.att.com/maps/wireless-coverage.html>

Additionally, the websites of the different carriers also have coverage maps that can be used to verify coverage. Please be sure to use 4G LTE or LTE M options when investigating.

Does the cellular endpoint require any programming?

No, the cellular endpoint auto-detects the type of encoded register it is connected to and only requires a magnet swipe along the endpoint housing to be activated.

With what encoder registers will the cellular endpoint function?

The cellular endpoint is part of the Neptune R900® System and is compatible with the following encoder registers: Neptune® ARB® V, ProRead™, ProCoder™, E-CODER®, MACH 10®, KROHNE WATERFLUX 3070, Sensus (Invensys) ECR II, ECR III, ICE, iPerl, Electronic Register, OMNI, Hersey/Mueller Translator, Badger ADE, HR E|LCD, E-Series.

Please refer to the latest product sheet for any updates to the compatibility list.

If I change the register attached to the cellular endpoint do I need to wait to get an updated reading?

No, magnet swiping the endpoint will force it to interrogate the register and initiate network transmits of the data. Any subsequent readings after the magnet swipe will contain the latest reading from the new register.

How often is data sent from the cellular endpoint to Neptune 360?

The cellular endpoint interrogates the meter register every 15 minutes. This data is stored in the endpoint data log and is transmitted via the cellular network to Neptune 360 four times a day/once every six hours.

Does the cellular endpoint support a local data unload of the endpoints data log?

No, the endpoint does not support a local data log unload. Instead, usage profile information can be accessed remotely from Neptune 360. Additionally, the endpoint stores up to 96 days of data to backfill readings into Neptune 360 in the event of a cellular network interruption. Once communication is restored, any readings that are stored and have not been transmitted will be queued and transferred via the cellular network, so that there are no missed readings.

Does the cellular endpoint support mobile messages?

Yes, the cellular endpoint will transmit a mobile message every 30 seconds after 72 consecutive hours of unsuccessful cellular transmission. After successful cellular transmission, the endpoint will stop transmitting the mobile message every 30 seconds.



How is the cellular endpoint activated?

The endpoint is shipped in a “sleep” mode and requires a magnet swipe along the top left corner to activate and begin transmitting meter reading data.

Is the battery replaceable on the cellular endpoint?

No, the cellular endpoint is fully potted for field reliability and there is no mechanism for field replacement of the battery.

How can I distinguish the cellular endpoint - cellular from other R900 System endpoints?

The cellular endpoint can be distinguished from other R900 System endpoints in the following ways:

- Pit units with an internal antenna have a distinct mounting arm with a circular hole through it that extends from the side of the endpoint’s housing.
- Wall units and pit units with an external antenna have “R900 CELLULAR” printed on the cover of the unit.
- The label on the endpoint housing for all units includes “R900 cellular endpoint”.

Can the cellular endpoint be connected to two separate encoded registers?

No, the cellular endpoint does not support networking and can only be connected to a single encoded register.

How do I verify that the cellular endpoint is connected to the cellular network once installed?

Connectivity can be verified by using the Neptune® 360™ Field Manager app. The Field Manager app will display information regarding the endpoint’s cellular network status and meter reading from the connected register. This displayed information can be used to verify that you have properly wired the endpoint to the register along with a verification of cellular signal strength at the installation location.

How do I download and install the Field Manager to my iOS or Android device?

Contact Neptune Customer Support to obtain a license key and directions for installing the application to your device.

Is the Field Manager app required for installation?

No, the Field Manager app is not required for endpoint installation, but it is useful to verify a valid meter reading and good cellular network connectivity at the installation location.

Why is the cellular endpoint transmitting all colons (:::):)?

The endpoint is not detecting an encoder register. Check all wiring connections and magnet swipe the endpoint to force a register interrogation.

What head-end software is supported by the cellular endpoint?

The cellular endpoint is supported by Neptune 360 only.

Does the cellular endpoint support remote firmware updates?

Yes, the endpoint supports remote firmware upgrades, initiated from Neptune 360, for future enhancements and bug-fixes.



#winyourday

neptunetg.com

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