2020 - SECTION 68
WATER METER SERVICES

68.1 GENERAL

The scope of this section includes general requirements for the meter installation and associated work up to a maximum diameter of 50mm.

68.2 MATERIALS

68.2.1 PIPE
Type "K" annealed copper tubing conforming to ASTM B88 and CSA HC7.6 – 1978.

68.2.2 FITTINGS
Copper alloy or brass alloy conforming to AWWA C800 – 89.

68.2.3 CONDUIT (for ORD Wire)
16mm rigid PVC Conduit conforming to CSA C22.2 No. 211.2 .

68.2.4 METER VALVES
Bypass and inlet and outlet control valves shall be Ford style ball valve (or equivalent) conforming to AWWA C800 -89. All valves are to have pad-lock wings and open in a counter-clockwise direction. A common used Brass Ball Valve is the MAS B3 Series and it is made with an optional locking handle.

68.2.5 PRE-MANUFACTURED METER SETTINGS
Ford style (or equivalent) for sizes up to 50.8mm where approval has been granted by Aquatera.

68.3 INSTALLATION

The following items are required prior to meter installation, contact Aquatera at connections@aquatera.ca:

1) All services greater than 75mm, require a full test package as per AWWA standards (see section 91 – testing and section 300 – water testing sequence). A testing plan and site plan shall be submitted to Aquatera Engineering prior to construction for review and approval.

   All test results are to be submitted to Aquatera Engineering for review and approval prior to a meter installation.

2) All services greater than 75mm require a minimum 19mm injection point and/or flush point minimum 50mm for testing.

3) The meter size for each building shall be determined by Aquatera Account Services, based on the proposed usage.

4) Aquatera must witness well/cistern disconnection if applicable.

5) Aquatera must do a site inspection to check the private infrastructure, ie) sanitary maintenance holes, valves, hydrants and blow offs if applicable.

68.3.1 METER SETTING

Aquatera is unable to install a meter in any set ups existing or new if there is no back flow prevention.

Meter settings shall be constructed using only approved materials in accordance with section 68.2 and shall meet the following requirements:

68.3.1.1 In accordance with Standard Detail Drawing 68-01, 68-02, 68-02a, 68-03, 68-04, 68-05, 68-06 and 68-07 (as size requires) attached to this section.

68.3.1.2 Such that the setting is fixed, rigid and properly supported.

68.3.1.3 With an opening of sufficient length to suit the meter and any appurtenances to be installed.

68.3.1.4 With threaded fittings to suit the flange or tail pieces, as the case may require.

68.3.1.5 In a location where the meter will be protected from temperature extremes and accessible for the purpose of reading, inspection and maintenance.

68.3.1.6 In a horizontal position.

68.3.1.7 With inlet and outlet control valves within 300mm of the meter.

68.3.1.8 Bypasses shall not be constructed in any case unless permission has been granted in writing by Aquatera.

68.3.1.9 Spacing requirements for water meters.

5/8" x 3/4" T10:
Total space needed 12 ¾" (includes two tail pieces, two gaskets, and meter).

5/8" x 3/4" T10 (West Aqua):
Total space needed 24 ¾" (includes three tail pieces, two gaskets and y strainer assembly, flow restrictor, and meter).

3/4" T10:
Total space needed 14 ¼" (includes two tail pieces, two gaskets, and meter).

1" T10:
Total space needed 16 ¼" (includes two tail pieces, two gaskets, and meter).

1 1/2" T10:
Total space needed 15 ¼" (includes two flanges, two gaskets, and meter).

2" T10:
Total space needed 19 ¼" (includes two flanges, two gaskets, and meter.

2" Compound/Tru Flo:
Total space needed 24 ¾" (includes two flanges, three gaskets, one strainer, and meter).

3" Compound/Tru Flo:
Total space needed 24 ¾" (includes two flanges, three gaskets, one strainer, and meter).

4" Compound/Tru Flo:
Total space needed 29 ¾" (includes two flanges, three gaskets, one strainer, and meter).

68.3.2 RIGID PVC CONDUIT
Only rigid PVC conduit conforming to the requirements of this specification shall be used and shall be installed in accordance with the following requirements:

68.3.2.1 In accordance with the manufacturer's recommendations.

68.3.2.2 In the shortest possible route between the meter and the location of the outside reading device approved by Aquatera.

68.3.2.3 In a manner that allows for the passage of an electricians fish tape.

68.3.2.4 To be installed by the builder when the basement is finished prior to the installation of a meter.

68.3.3 IRRIGATION METER
As per the National Plumbing Code of Canada clause 2.6.2.1 and CSA B64.10 clause 5.8.1 and 5.8.2, all irrigation systems shall be installed with back flow preventers (see detail 68-04).

Aquatera is unable to install a meter in any set ups existing or new if there is no back flow prevention.

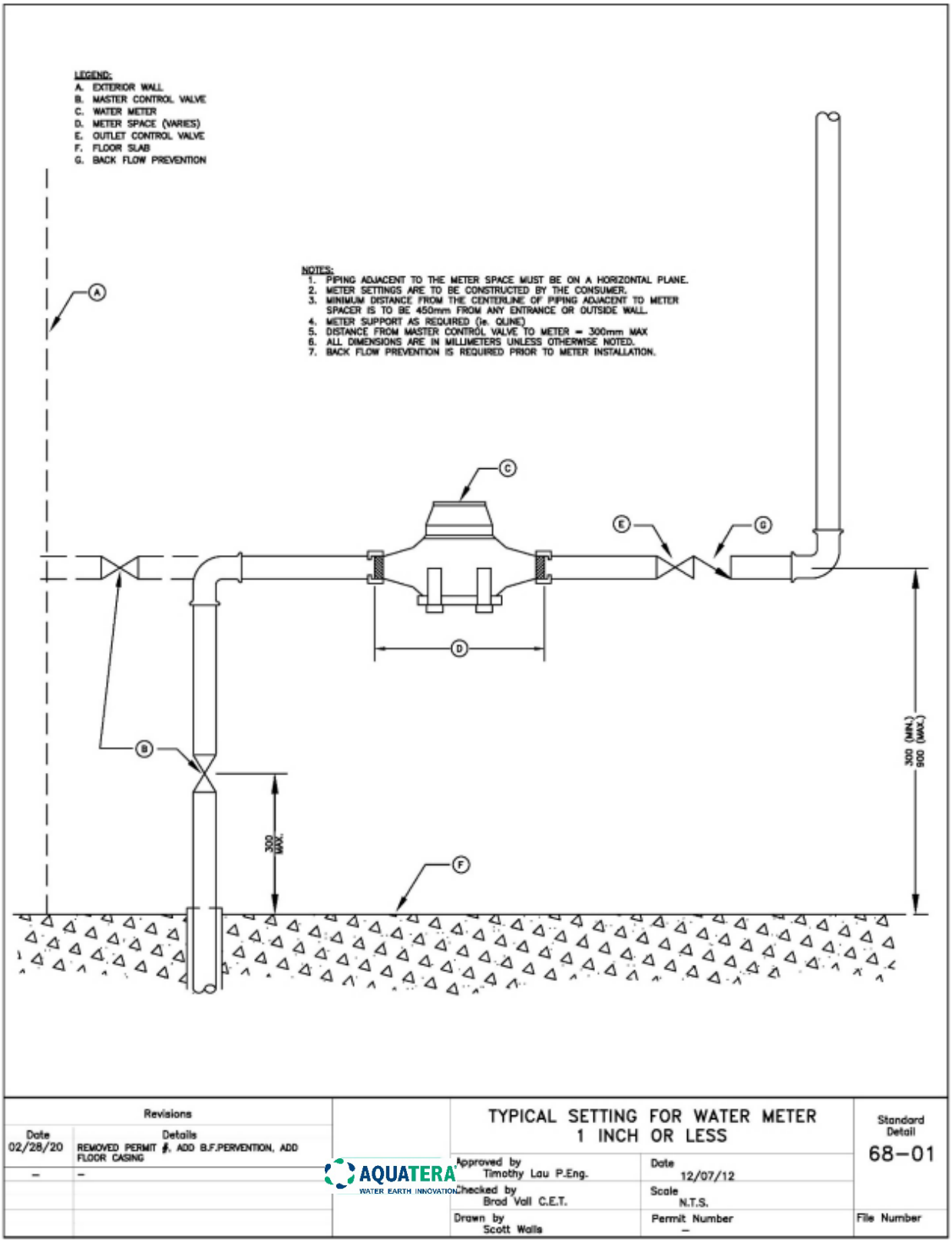
68.3.4 Pressure reducing valves
In cases where the system pressure exceeds 80 psi the building owner is required to install a pressure reducing valve after the master control valve and prior to the meter.

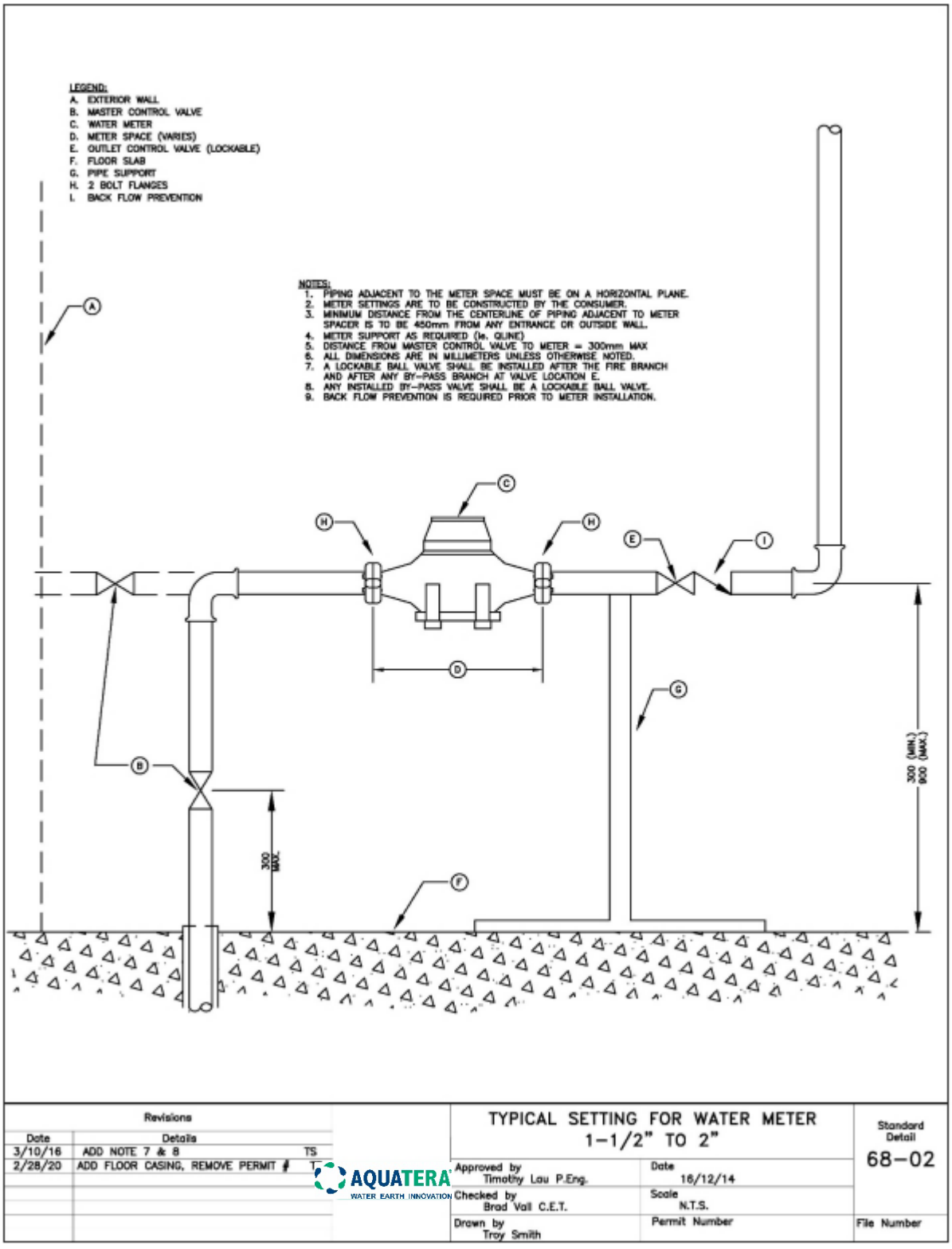
68.4 TESTING

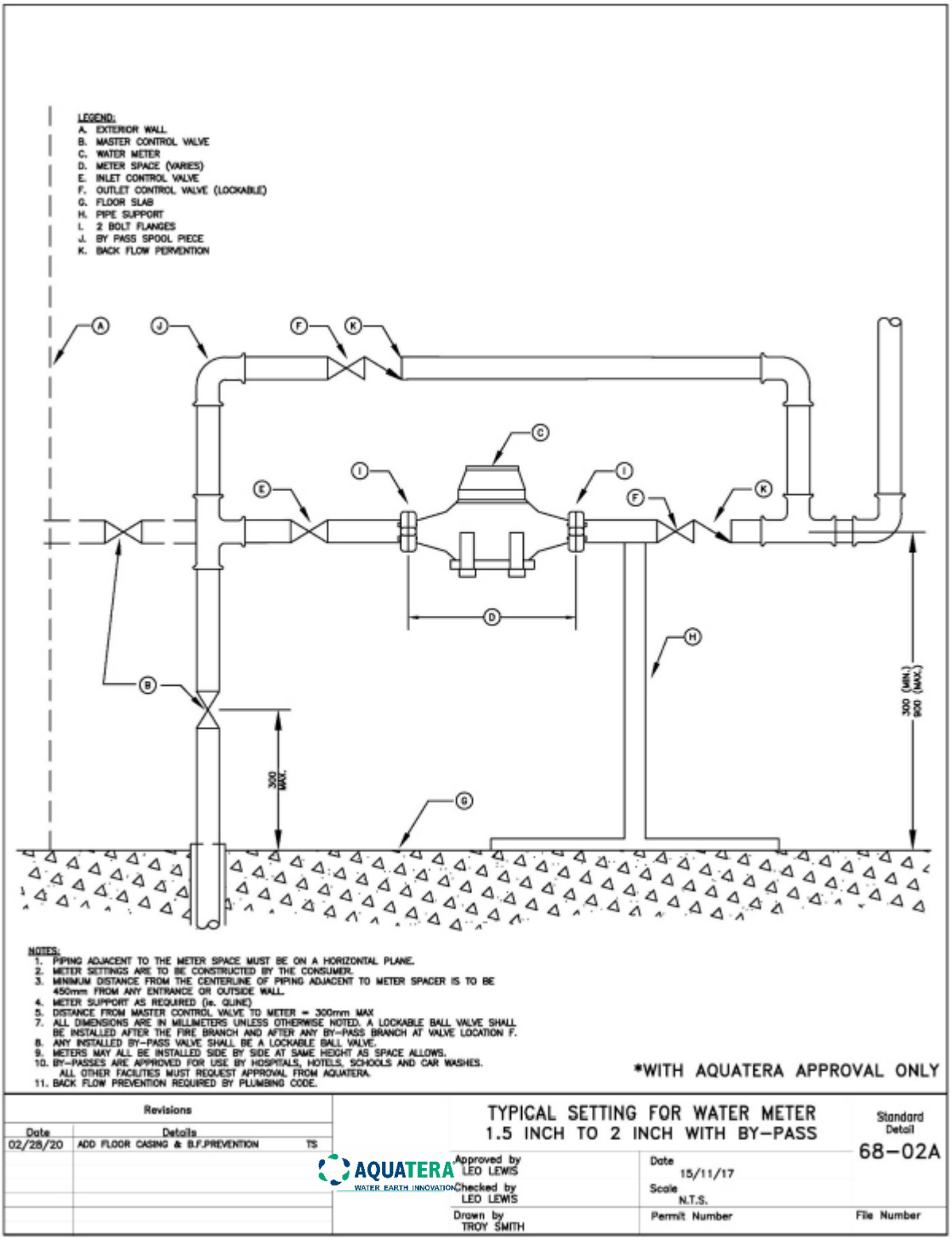
There are no requirements for testing of a meter setting other than that which is required by the Building Code.

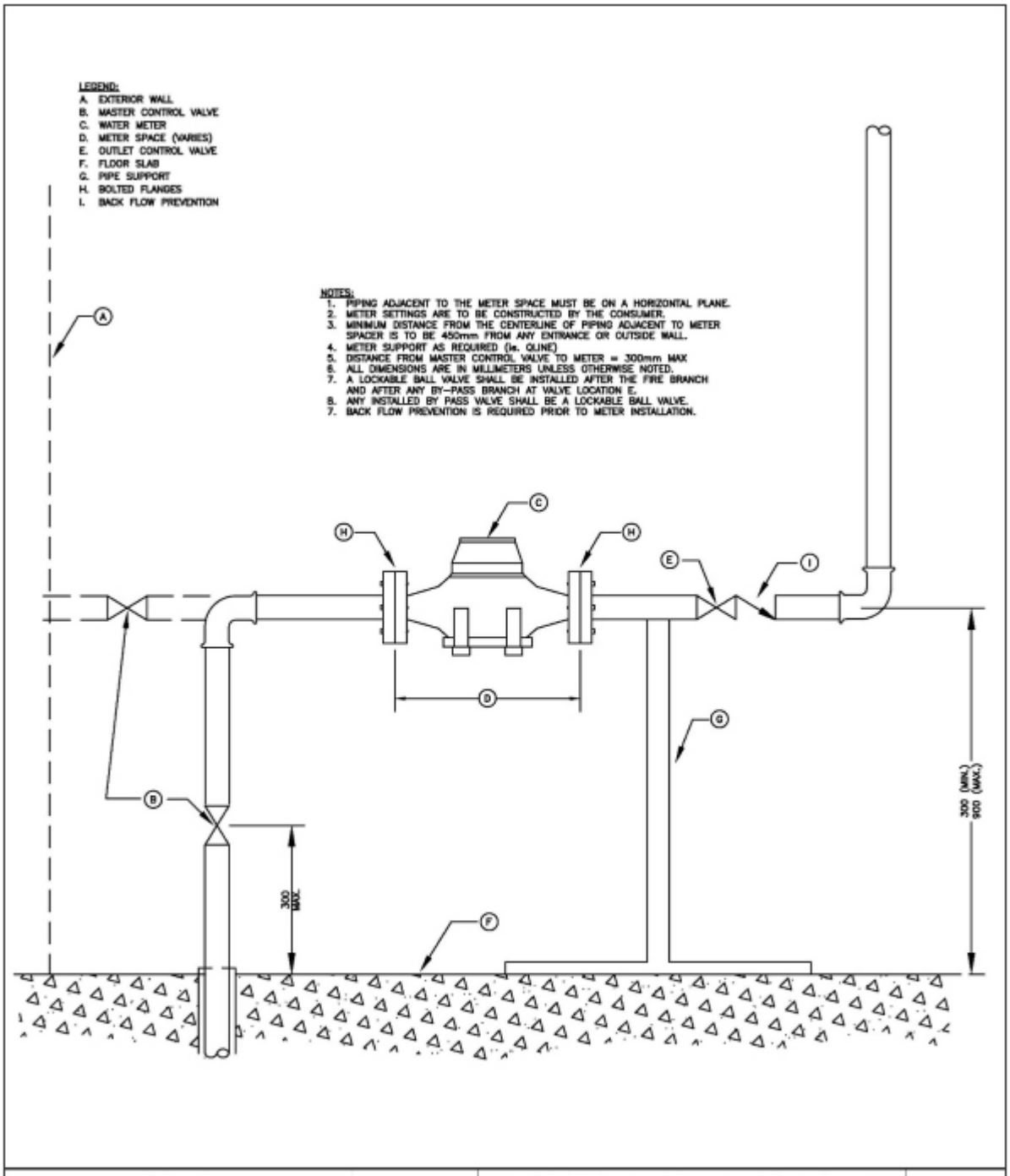
68.5 PAYMENT

There is no payment for the construction of a meter setting. All costs are to be the responsibility of the property owner.


LEGEND:
A. EXTERIOR WALL
B. MASTER CONTROL VALVE
C. WATER METER
D. METER SPACE (VARIES)
E. OUTLET CONTROL VALVE
F. FLOOR SLAB
G. BACK FLOW PREVENTION
NOTES:
1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. METER SETTINGS ARE TO BE CONSTRUCTED BY THE CONSUMER.
3. MINIMUM DISTANCE FROM THE CENTERLINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT AS REQUIRED (ie. QLINE)
5. DISTANCE FROM MASTER CONTROL VALVE TO METER = 300mm MAX
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
7. BACK FLOW PREVENTION IS REQUIRED PRIOR TO METER INSTALLATION.
A
B
C
D
E
F
G
300 MAX.
300 (MIN.)
900 (MAX.)
Revisions
Date
Details
02/28/20
REMOVED PERMIT #, ADD B.F.PERVENTION, ADD FLOOR CASING
–
–
AQUATERA
WATER EARTH INNOVATION
TYPICAL SETTING FOR WATER METER
1 INCH OR LESS
Approved by
Timothy Lau P.Eng.
Date
12/07/12
Checked by
Brad Vail C.E.T.
Scale
N.T.S.
Drawn by
Scott Walls
Permit Number
–
Standard Detail
68–01
File Number


LEGEND:
A. EXTERIOR WALL
B. MASTER CONTROL VALVE
C. WATER METER
D. METER SPACE (VARIES)
E. OUTLET CONTROL VALVE (LOCKABLE)
F. FLOOR SLAB
G. PIPE SUPPORT
H. 2 BOLT FLANGES
I. BACK FLOW PREVENTION
NOTES:
1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. METER SETTINGS ARE TO BE CONSTRUCTED BY THE CONSUMER.
3. MINIMUM DISTANCE FROM THE CENTERLINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT AS REQUIRED (ie. CLINE)
5. DISTANCE FROM MASTER CONTROL VALVE TO METER = 300mm MAX
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
7. A LOCKABLE BALL VALVE SHALL BE INSTALLED AFTER THE FIRE BRANCH AND AFTER ANY BY-PASS BRANCH AT VALVE LOCATION E.
8. ANY INSTALLED BY-PASS VALVE SHALL BE A LOCKABLE BALL VALVE.
9. BACK FLOW PREVENTION IS REQUIRED PRIOR TO METER INSTALLATION.
A
B
C
D
E
F
G
H
H
I
300 MAX.
300 (MIN.)
900 (MAX.)
Revisions
Date
Details
3/10/16
ADD NOTE 7 & 8
TS
2/28/20
ADD FLOOR CASING, REMOVE PERMIT #
TS
AQUATERA
WATER EARTH INNOVATION
TYPICAL SETTING FOR WATER METER
1-1/2" TO 2"
Approved by
Timothy Lau P.Eng.
Date
16/12/14
Checked by
Brad Vail C.E.T.
Scale
N.T.S.
Drawn by
Troy Smith
Permit Number
Standard Detail
68-02
File Number


LEGEND:
A. EXTERIOR WALL
B. MASTER CONTROL VALVE
C. WATER METER
D. METER SPACE (VARIES)
E. INLET CONTROL VALVE
F. OUTLET CONTROL VALVE (LOCKABLE)
G. FLOOR SLAB
H. PIPE SUPPORT
I. 2 BOLT FLANGES
J. BY PASS SPOOL PIECE
K. BACK FLOW PERVENTION
300 MAX.
300 (MIN.)
900 (MAX.)
NOTES:
1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. METER SETTINGS ARE TO BE CONSTRUCTED BY THE CONSUMER.
3. MINIMUM DISTANCE FROM THE CENTERLINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT AS REQUIRED (ie. QLINE)
5. DISTANCE FROM MASTER CONTROL VALVE TO METER = 300mm MAX
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. A LOCKABLE BALL VALVE SHALL BE INSTALLED AFTER THE FIRE BRANCH AND AFTER ANY BY-PASS BRANCH AT VALVE LOCATION F.
8. ANY INSTALLED BY-PASS VALVE SHALL BE A LOCKABLE BALL VALVE.
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 AQUATERA.
11. BACK FLOW PREVENTION REQUIRED BY PLUMBING CODE.
*WITH AQUATERA APPROVAL ONLY
Revisions
Date
Details
02/28/20
ADD FLOOR CASING & B.F.PREVENTION
TS
AQUATERA
WATER EARTH INNOVATION
TYPICAL SETTING FOR WATER METER
1.5 INCH TO 2 INCH WITH BY-PASS
Standard Detail
68-02A
Approved by
LEO LEWIS
Checked by
LEO LEWIS
Drawn by
TROY SMITH
Date
15/11/17
Scale
N.T.S.
Permit Number
File Number



Revisions		
Date	Details	
3/10/16	ADD NOTE 7 & 8	TS
2/28/20	ADD FLOOR CASING, REMOVE PERMIT #	TS

AQUATERA WATER EARTH INNOVATION

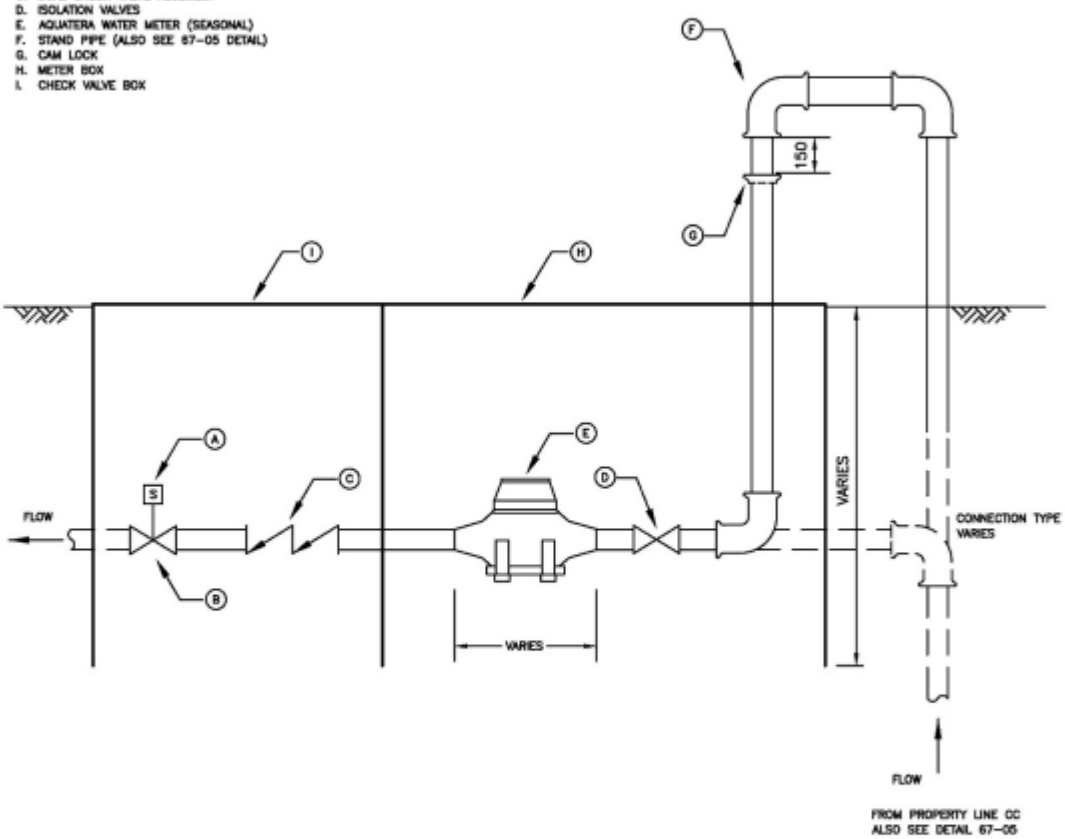
TYPICAL SETTING FOR WATER METER 3" & GREATER

Approved by: Timothy Lau P.Eng.	Date: 16/12/14
Checked by: Brad Vail C.E.T.	Scale: N.T.S.
Drawn by: Troy Smith	Permit Number

Standard Detail: 68-03

File Number

LEGEND:
A. SOLENOID VALVE
B. IRRIGATION CONTROLLER
C. DUAL CHECK VALVE ASSEMBLY
D. ISOLATION VALVES
E. AQUATERA WATER METER (SEASONAL)
F. STAND PIPE (ALSO SEE 67-05 DETAIL)
G. CAM LOCK
H. METER BOX
I. CHECK VALVE BOX



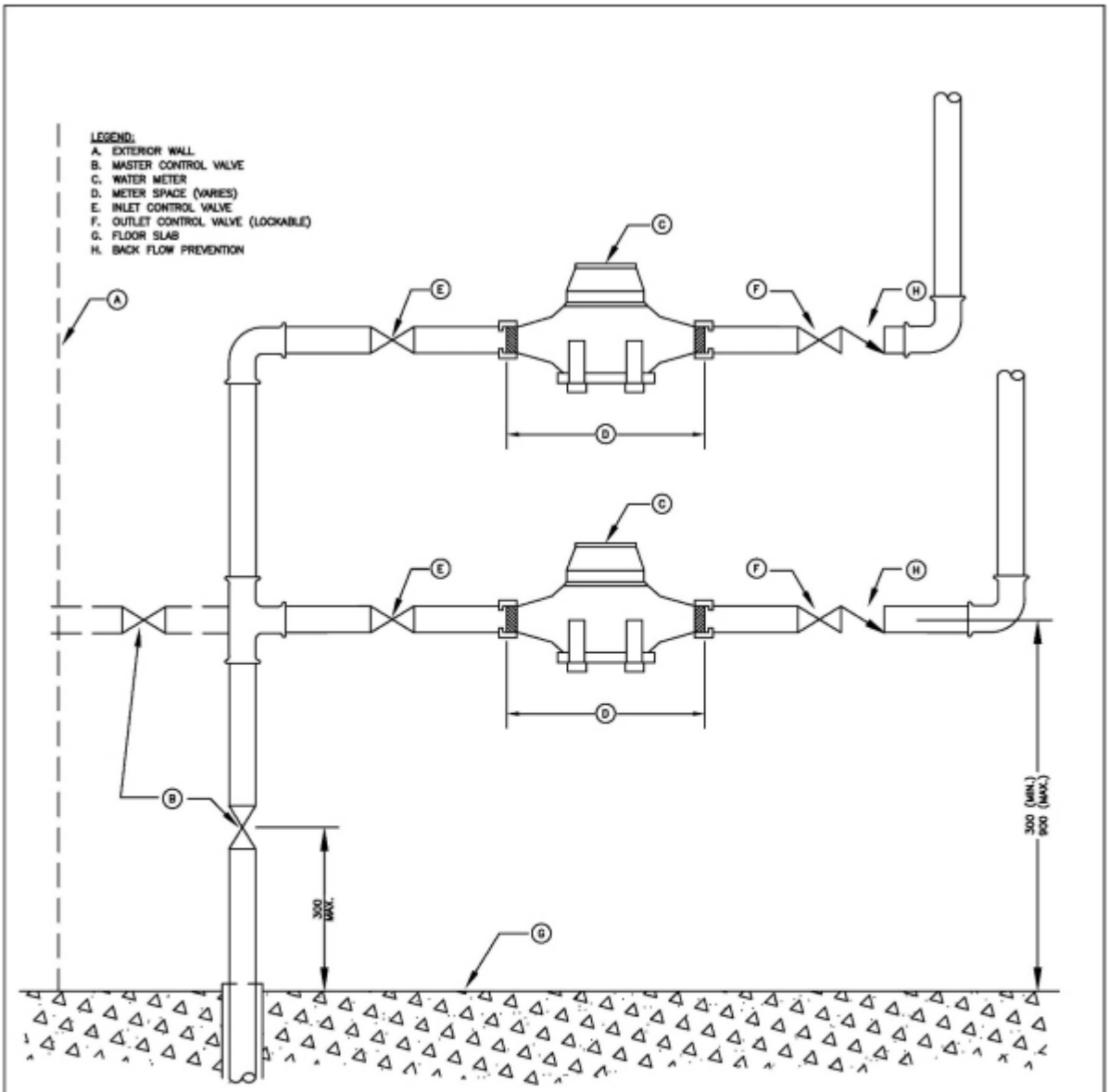
NOTES:
1. METER SETTINGS ARE TO BE CONSTRUCTED BY THE CONSUMER.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
3. DUAL CHECK VALVE AND METER TO BE IN SEPARATE LANDSCAPE BOXES.

Revisions		
Date	Details	
Nov 15/17	REMOVED VALVE AFTER METER	TS

AQUATERA WATER EARTH INNOVATION

TYPICAL SETTING FOR IRRIGATION WATER METER

Approved by Brad Vail C.E.T.	Date 26/11/16	Standard Detail 68-04
Checked by Brad Vail C.E.T.	Scale N.T.S.	
Drawn by Troy Smith	Permit Number –	File Number



NOTES:
1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. METER SETTINGS ARE TO BE CONSTRUCTED BY THE CONSUMER.
3. MINIMUM DISTANCE FROM THE CENTERLINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT AS REQUIRED (ie. QLINE)
5. DISTANCE FROM MASTER CONTROL VALVE TO METER = 300mm MAX
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. A LOCKABLE BALL VALVE SHALL BE INSTALLED AFTER THE FIRE BRANCH AND AFTER ANY BY-PASS BRANCH AT VALVE LOCATION F.
8. ANY INSTALLED BY-PASS VALVE SHALL BE A LOCKABLE BALL VALVE.
9. METERS MAY ALL BE INSTALLED SIDE BY SIDE AT SAME HEIGHT AS SPACE ALLOWS.
10. BACK FLOW PREVENTION REQUIRED BY PLUMBING CODE.

*WITH AQUATERA APPROVAL ONLY

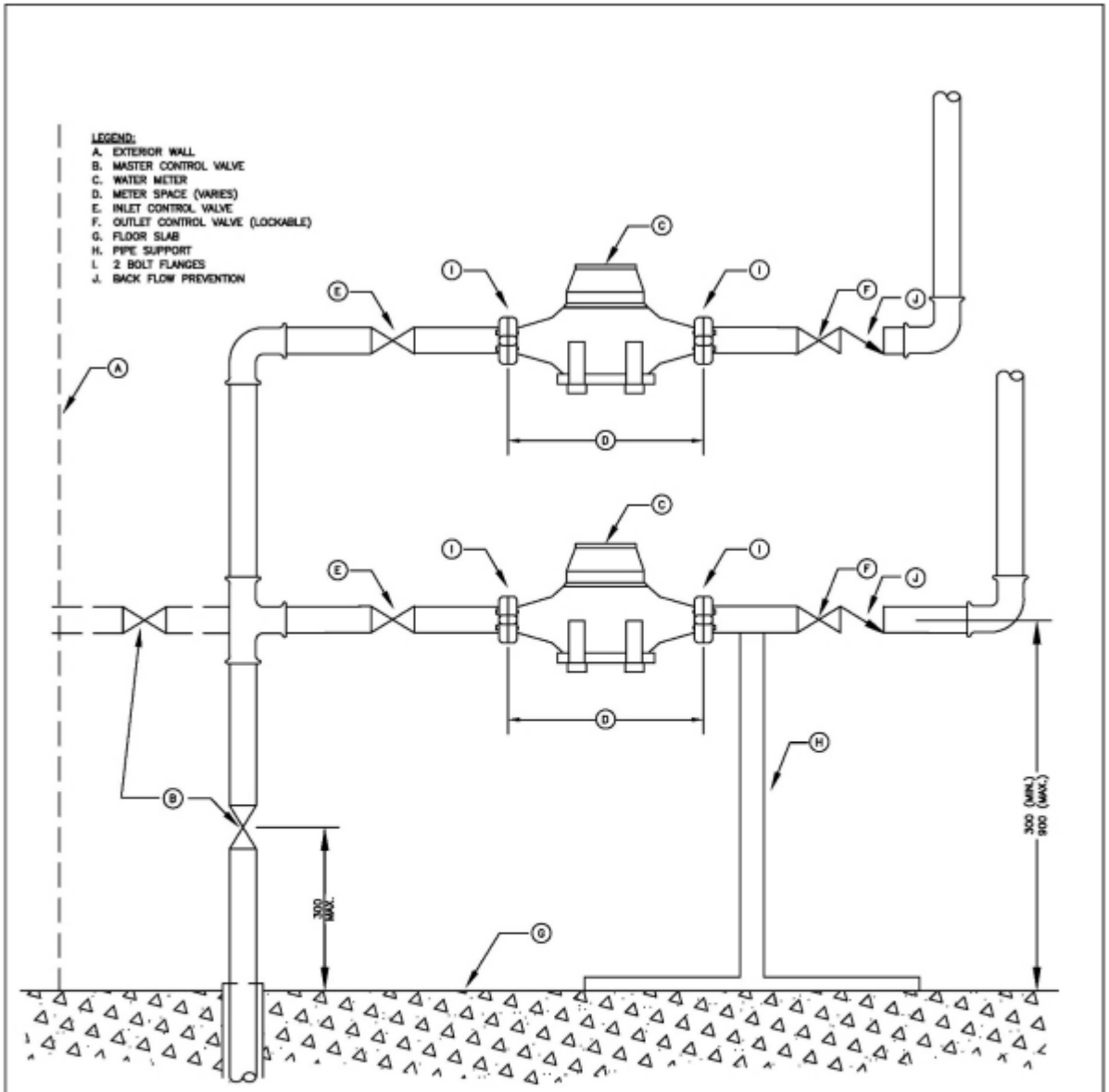
Revisions		
Date	Details	
NOV 18/19	ADDED AQUATERA APPROVAL TEXT	TS
FEB 28/20	ADDED FLOOR CASING	

AQUATERA WATER EARTH INNOVATION

TYPICAL SETTING FOR WATER SUB-METER 1 INCH OR LESS

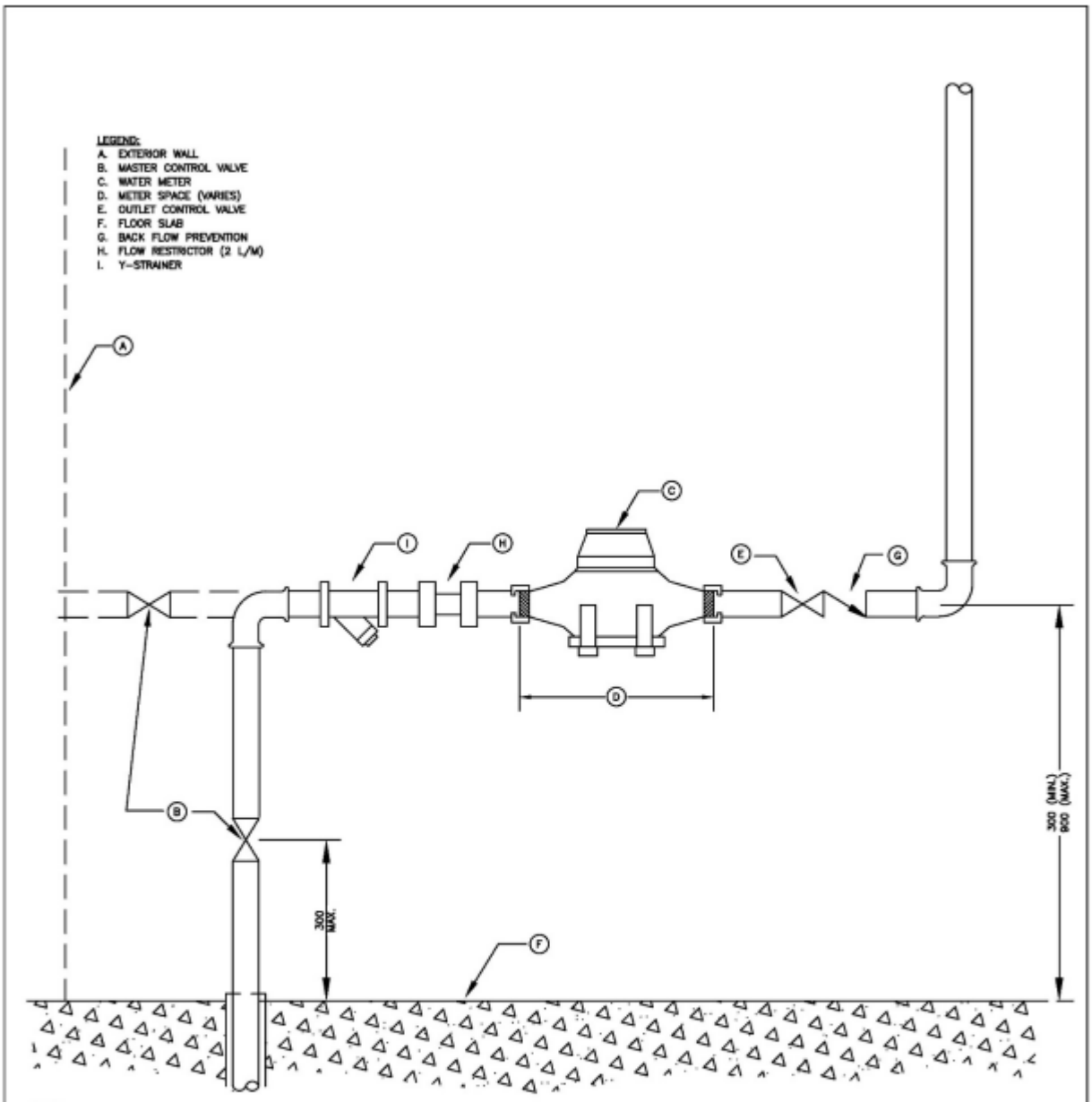
Standard Detail 68-05

Approved by TAMERA WATUTTNEE-CAMPBELL
Date 12/06/16
Checked by LEO LEWIS
Scale N.T.S.
Drawn by TROY SMITH
Permit Number
File Number



NOTES:
1. PIPING ADJACENT TO THE METER SPACE MUST BE ON A HORIZONTAL PLANE.
2. METER SETTINGS ARE TO BE CONSTRUCTED BY THE CONSUMER.
3. MINIMUM DISTANCE FROM THE CENTERLINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT AS REQUIRED (ie. QLINE)
5. DISTANCE FROM MASTER CONTROL VALVE TO METER = 300mm MAX
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. A LOCKABLE BALL VALVE SHALL BE INSTALLED AFTER THE FIRE BRANCH AND AFTER ANY BY-PASS BRANCH AT VALVE LOCATION F.
8. ANY INSTALLED BY-PASS VALVE SHALL BE A LOCKABLE BALL VALVE.
9. METERS MAY ALL BE INSTALLED SIDE BY SIDE AT SAME HEIGHT AS SPACE ALLOWS.
10. BACK FLOW PREVENTION REQUIRED BY PLUMBING CODE.

Revisions		TYPICAL SETTING FOR WATER SUB-METER 1.5 INCH TO 2 INCH		Standard Detail
Date	Details			68-06
		AQUATERA WATER EARTH INNOVATION Approved by TAMERA WATUTTNEE-CAMPBELL	Date 12/06/16	
		Checked by LEO LEWIS	Scale N.T.S.	
		Drawn by TROY SMITH	Permit Number	File Number



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3. MINIMUM DISTANCE FROM THE CENTERLINE OF PIPING ADJACENT TO METER SPACER IS TO BE 450mm FROM ANY ENTRANCE OR OUTSIDE WALL.
4. METER SUPPORT AS REQUIRED (ie. CLINE)
5. DISTANCE FROM MASTER CONTROL VALVE TO METER = 300mm MAX
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
7. FLOW RESTRICTOR REQUIRED
8. BACK FLOW PREVENTION REQUIRED BY PLUMBING CODE.

Revisions	
Date	Details
SEP2 2021	ADD Y STRAINER

AQUATERA WATER EARTH INNOVATION

TYPICAL SETTING FOR WATER METER 1 INCH OR LESS FOR TRICKLE FEED SYSTEM

Standard Detail: 68-07

Approved by: Brad Vail C.E.T.	Date: 12/07/12
Checked by: Markus Oeser	Scale: N.T.S.
Drawn by: Troy Smith C.E.T.	Permit Number / File Number