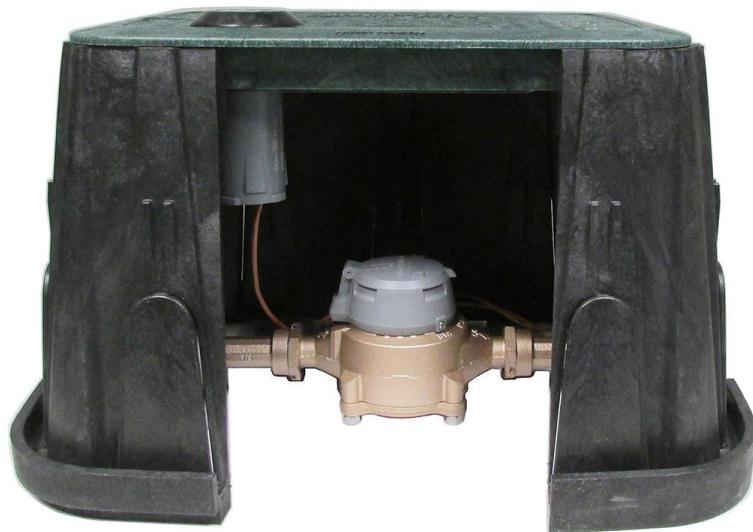




Yakima County Water Resource System Guidelines for Rural Water Meter Installations

Revised 1/3/2018



Steps for Installing Water Meters on Yakima County Water Resource System (YCWRS) Wells

1. Customer inquiries about YCWRS well permit and provides parcel number.
2. Public Services provides customer well depth criteria and meter data.
3. Customer constructs well to proper water bearing zone and installs pump.
4. Customer provides Public Services copy of Well Report.
5. Public Services reviews Well Report for proper well construction and provides copy to Health District.
6. Health District reviews Well Report for adequate water quantity and quality.
7. Customer applies for YCWRS well permit by completing “Application for YCWRS Well Permit” and paying Water Connection Permit Charge. Payment can be made at Yakima County Public Services, 128 North 2nd Street, 4th Floor Courthouse, Yakima WA 98901.
8. Customer installs meter box and meter setter.
9. Customer notifies Public Services that meter box and meter setter are ready for meter and transmitter installation.
10. Public Services installs meter and transmitter and checks operation with Customer.
11. Public Services, upon final approval, commences quarterly billings. First quarterly bill will include cost of meter and transmitter installation.

Installation Guidelines

1. Meter must be installed on the waterline from the well prior to any lateral connections.
2. Meter must be accessible and protected from freezing. Example meter installation is shown in Yakima County Standard Plan RW-1.
3. Transmitter must be installed away from large metal objects.
4. Meter and transmitter must be installed in accordance with the manufacturer's instructions.
5. Materials described below are provided as an example for installing meters on YCWRS wells. Equivalent materials from other manufacturers are available.

Meter and Transmitter

Meter and transmitter will be provided and installed by Public Services to ensure compatibility with County's meter reading system. All other materials will be provided and installed by Customer.

Meters will be Badger Meter E-Series Ultrasonic Meter. Available meter sizes include $\frac{3}{4}$ " and 1". The typical transmitter, also referred to as the endpoint, will be an Orion Cellular LTE Endpoint. If cellular service is not available, an Orion Migratable (ME) Endpoint will be installed. Fees for the cellular service will be paid by Public Services.

Meter flow range must be adequate for the capacity of the pump installed. Meter flow ranges and estimated pressure losses are noted below. Customer is advised to notify their pump installer of the estimated pressures losses to help in sizing the pump.

Meter Size	Meter Length	Meter Flow Range	Pressure Loss
$\frac{3}{4}$ "	7.5"	0.1 – 32 gpm	13 psi at 15 gpm, 30 psi at 25 gpm, 45 psi at 32 gpm
1"	10.75"	0.4 – 55 gpm	6 psi at 15 gpm, 15 psi at 25 gpm, 23 psi at 35 gpm

Notes:

1. Pressure losses include losses through meter and meter setter.
2. Meter setters with full port ball valves are available to help reduce pressure losses.

Meter Setter

A meter setter is used to provide easier access to the meter while maintaining additional space below the meter to minimizing the risk of freezing. Several manufacturers are available including the Ford Meter Box Company, Mueller, A.Y. McDonald, and Cambridge. Meter setters must be a minimum of 18" in height with an angle ball valve on the inlet and angle check valve on the outlet, or, to reduce pressure losses through the meter setter, the angle ball valve and angle check valve can be replaced with full port ball valves. Insert stiffeners must be used on each end to prevent leaks. Model numbers will vary depending on the meter size, pipe size and type of pipe used.

Meter Size	Pipe Size	Manufacturer	Meter Setter	Compression Coupling	Insert Stiffener
¾"	1"	Ford Meter Box	VBH72-18W-11-33-NL	C84-34-Q-NL	Insert-52
1"	1 ¼"	Ford Meter Box	VBH74-18W-11-44-NL	C84-45-Q-NL	Insert-72-Q
1"	1 ½"	Ford Meter Box	VBH74-18W-11-44-NL	C84-46-Q-NL	Insert-54-Q

Notes:

1. Part numbers listed are provided as an example. There are many combinations of meter setters and compression couplings available from several manufacturers.
2. Compression couplings listed are based on copper tube size (CTS) PEX and HDPE pipe. Compression couplings for use on iron pipe size (IPS) pipe and PVC, will vary from those listed.
3. Larger pipe sizes may be used by installing a brass nipple and bell reducer.
4. Smaller pipe line sizes will result in greater pressure losses and a decrease in pumping capacity.
5. Full port ball valves may be installed on the meter setter inlet and outlet in lieu of the reduced port ball valve and check valve to reduce pressure losses.

Pipe

Either High Density Polyethylene (HDPE) meeting the requirements of AWWA C901 or PEX pipe meeting the requirements of AWWA C904 with a minimum pressure class of 160 psi is recommended. Either of these pipe materials are available in copper tube size dimensions. HDPE pipe is also available in Iron Pipe Size (IPS) dimensions, which results in a slightly larger pipe diameter.

Meter Box

Meter boxes shall have a minimum cover size of 13"x23". Covers shall be suitable for automated meter reading systems and should include a recessed opening for the endpoint. In lieu of a recessed opening, a 1-7/8" hole can be drilled through most plastic meter box covers for mounting the endpoint. Plastic and polymer concrete meter box covers are generally suitable for automated meter reading systems. Ductile iron, metal and concrete meter box covers will reduce the signal strength from the endpoint making them unsuitable for automated meter reading systems.

Meter Boxes shall be located in non-traffic areas whenever possible. If meter box is located in an area where vehicular loads are possible, then meter box shall be rated for at least 20,000 lbs. The Customer is cautioned, that although meter boxes rated for 20,000 lbs will generally hold up when placed in areas where occasional vehicular loads are possible, they are not traffic rated. Meter boxes with a 20,000 lb load rating are designed to be placed alongside roadways in areas protected by curbs where incidental vehicle loads may occur.

Examples of meter boxes include:

Meter Size	20,000 lb rating	Manufacturer	Meter Box Model No.	Meter Box Lid
¾" or 1"	No	Carson	1324 BCF	HD HDPE Flush Solid
¾" or 1"	Yes	Carson	1324 BCF	Polymer Flush Solid

Notes:

1. Two 18" tall meter boxes may be used in lieu of three 12" tall meter boxes.

Insulation Board

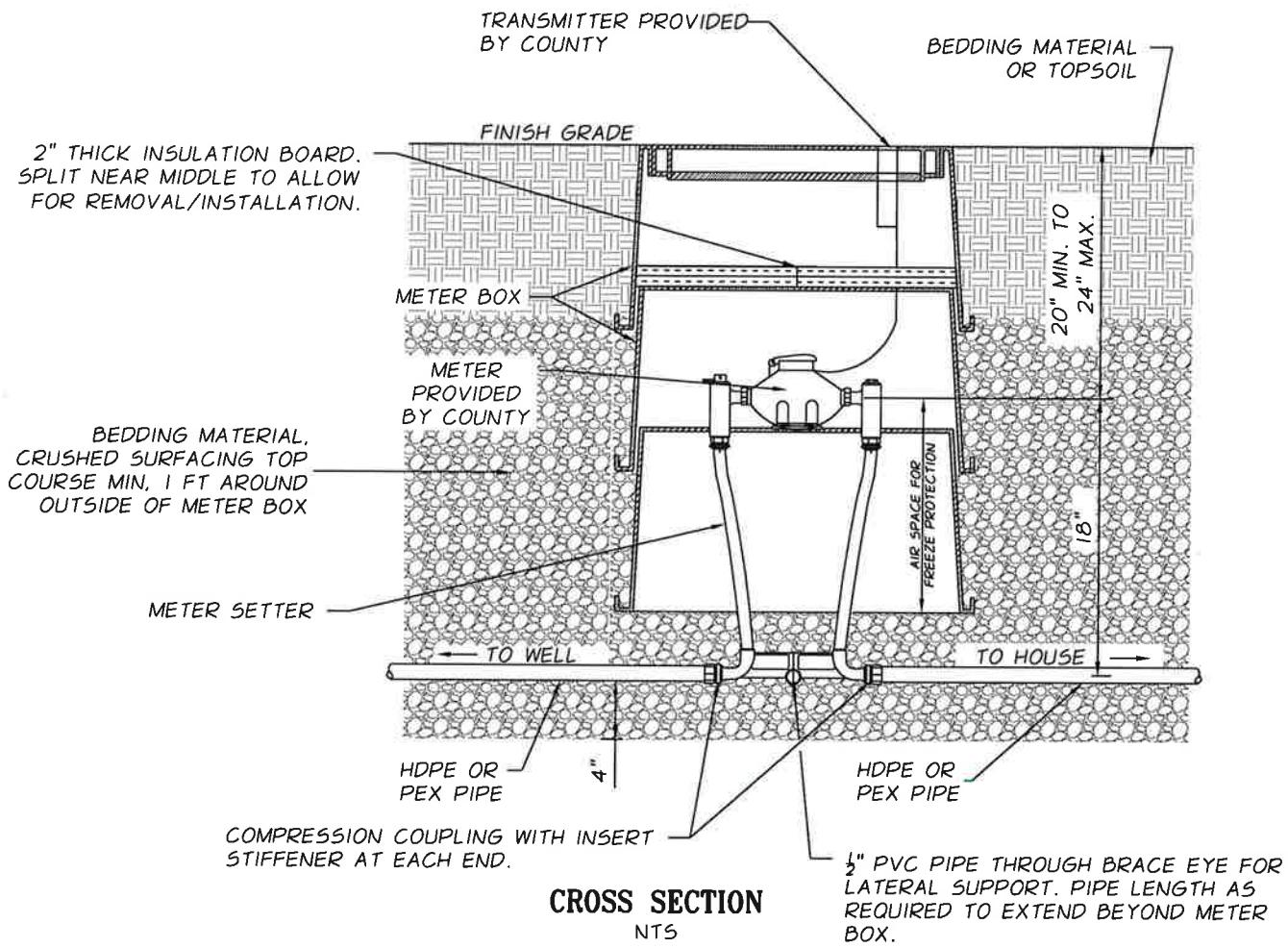
Insulation board shall be suitable for buried installations and shall be expanded polystyrene rigid insulation or equivalent. Insulation board is available at most hardware stores.

Example Material Suppliers

HD Fowler Waterworks
1100 River Road
Yakima, WA 98902
(509)-248-8400

Valley Supply Co.
404 N Railroad Avenue
Ellensburg, WA 98926
509-933-1800

Ferguson
1130 W Washington
Pasco, WA 99301
(509) 544-2245



NOTES:

- 1) METER SHALL BE PLACED IN A LOCATION CONVENIENT AND ACCESSIBLE FOR INSPECTION AND READING BY THE COUNTY (YCC TITLE 12.08.080).
- 2) METER SHALL BE LOCATED PRIOR TO ANY LATERALS IN WATER LINE LEADING FROM WELL.
- 3) METER SETTER, METER BOX AND COMPRESSION COUPLING PART NUMBERS WILL VARY BASED ON METER SIZE, PIPE TYPE AND PIPE SIZE. SEE "GUIDELINES FOR RURAL WATER METER INSTALLATIONS" FOR DETAILS.
- 4) METER AND TRANSMITTER WILL BE PROVIDED AND INSTALLED BY COUNTY TO ENSURE COMPATIBILITY WITH COUNTY'S METER READING SYSTEM. ALL OTHER MATERIALS WILL BE PROVIDED AND INSTALLED BY CUSTOMER.

1" RURAL WATER METER DETAIL



APPROVED BY:		1/2/18
<i>Joe Stump</i> Utilities Manager		
REVISION:		DATE:

STANDARD PLAN
RW-1
SHEET 1 OF 1

FILE NAME: Q:\STANDARDS\WATER\RW-1.DWG