



Water Service and Meter Installation Manual

**City of Redmond
Public Works Department
Water Division**

Updated, September, 2009

This Manual is designed to provide the detail necessary for developers, contractors, plumbers and property owners to correctly install water meters as outlined in the City of Redmond's "Construction Standards and Specifications" book. The City of Redmond is presently employing an Automated Meter Reading System utilizing meters equipped with fully encoded registers and radio reading equipment from Star Hexagram (Aclara). The purpose of the Automated Meter Reading (AMR) system is to supply both the City of Redmond and Redmond water customers with near real time meter reading data. The deployment of AMR has required significant changes to the meter installation standards.

Water Service Installation Criteria.

1. Water services, service lines and appurtenant piping will be installed by contractors, developers, builders or plumbers. Water meters will no longer be installed during the construction phase of the subdivision process. Instead a jumper will be placed in the space that is typically occupied by the meter. Care must be taken to ensure that the length of the jumper is exactly equal to the lay length of the meter.
2. Water meters will be supplied by the City and installed at the request of the plumber/property owner as part of the building permit process. All water meter fees shall be include in the cost of the building permit.
3. Meters 3" and larger in size will be installed by the contractor/builder, however, the meter will be supplied by the City of Redmond Water Division. All water meter fees shall be include in the cost of the building permit.
4. Water meter boxes shall be cleaned out, centered, and shall meet the installation standards that will appear later in this manual before the meter will be installed. If the meter box is not properly installed, installation of the water meter will be delayed until proper installation has been done.
5. City of Redmond Water Division Staff will remove the jumper, install, program and activate the water account as a part of the meter installation process.
6. **ALL MATERIALS SHALL MEET NSF-61 STANDARDS.** All other materials will be rejected.
7. The property owner assumes all responsibility for protecting the integrity of the water service, meter box, meter and AMR equipment. Cost of repair or replacement of any water service component(s) damaged during construction is the responsibility of the property owner.

INSTALLATION FEES EFFECTIVE SEPTEMBER 2009

8. A meter installation charge of \$314.75 for a 5/8"X 3/4" Meters.
9. A meter installation charge of \$407.25 for a 1" Meter.
10. A meter installation charge of \$609.75 for a 1 1/2" Meter.
11. A meter installation charge of \$777.87 for a 2" Meter.
12. Larger meters and MTU's will be installed by the developer. **The cost of meters 3" and larger will be dependent on current pricing from the manufacturer.**
13. Meter installation charges for meters 2" and smaller will be updated annually. Larger meters will be dependent on current pricing from the manufacturer.

Any adjustments required to the water service, meter box, or plumbing must be done by the contractor prior to meter installation. Meter installation will include the following:

1. Water meter with AMR register
2. Meter Transmitting Unit (MTU)
3. Meters 3" and larger, require the developer to coordinate with the City of Redmond to facilitate the installation. *Meters 3" and larger shall be equipped with a screen as suggested by the manufacturer, and will be constructed according to the standard drawing in the City of Redmond Standards and Specifications booklet.*

1.0 Water Service Line Installation Standards

1.1. Water Service Line Standard for 5/8 – 3/4” water service line

Water service line installation for a typical 5/8 x 3/4” water meter shall consist of a water service saddle (direct taps are allowed on DI water mains only), a 3/4” iron pipe thread or CC thread corporation stop, sufficient 3/4” type K soft copper tubing to reach from the water main to the meter box, a 3/4” angle meter stop, a 7 1/2” jumper, a second angle meter stop on the customer side of meter, and a tail of 3/4” type K soft copper pipe extending out the back side of the meter box to facilitate connection by the plumber.

1.2. Water Service Line Standard for 1” water service on a one inch service line

Water service line installation for a typical 1” water meter shall consist of a water service saddle (direct taps are allowed on DI mains only), a 1” iron pipe thread or CC thread corporation stop, sufficient 1” type K soft copper tubing to reach from the water main to the meter box, a 1” angle meter stop, a 10 3/4” jumper, a second angle meter stop on the customer side of the meter, and a tail of 1” type K soft copper pipe extending out the back side of the meter box to facilitate connection by the plumber.

1.3. Water Service line Standard for a 2” water service from a two inch service line.

Water Service line installation for a typical 2” water meter shall consist of a service saddle with a 2” female iron pipe tap, a 2” brass nipple three inches long, a 2” resilient seated gate valve, a 2” Male Iron Pipe by Copper Pack adaptor, sufficient 2” type K hard copper to extend from the mainline to the water meter. A 17 1/4” jumper will be used supplied by the contractor. 1.5” water meters will be installed on two inch services utilizing 1.5” to 2” meter adapters supplied by the City.

1.4. Water Service line Standard for services 3” and larger

Installation requirements and configurations for meters 3” and larger vary widely, please contact the City of Redmond Utility Inspection staff to determine the best installation for each particular application. Lead time of six (6) weeks is required for ordering meters. To avoid construction delays contractor/owner must contact the City in advance so that the meter can be ordered. Please consult City of Redmond Public Works Standards and Specifications book.

2.0 Water Meter Installation Standards

Water meters for all new installations will be supplied by the City of Redmond. The following is a list of meters that are approved by the City of Redmond. Meters will be equipped with factory potted Star Hexagram MTU's as specified by the City of Redmond. Alternate meter brands may be substituted at the discretion of the City of Redmond.

2.1 Water meter installation 5/8 X 3/4"

Neptune; T-10 meter with Pro Read register

2.2 Water meter installation 1"

Neptune; T-10 meter with Pro Read register

2.3 Water meter installation 1.5 – 2"

Neptune; T-10 meter with Pro Read register

2.4 Water meter installation for services 3" and larger

Neptune; Tru/Flo meter with Pro Read register

2.5 Water meter installation for irrigation only services 1 1/2" and larger (Only with City Engineer approval)

Neptune; High Performance Turbine with Pro Read register

2.6 Water meter installation for fire service rated meters

Neptune; Protectus III Fire Service Meter with Pro Read register

2.7 Water Meter Box Standards

Cast iron and steel lids are not allowed. Meter boxes in sidewalk or traffic areas shall be concrete polymer with a lid rated 10,000 lbs in sidewalks and 20,000 lbs in traffic areas respectively.

Service Size	Use	Manufacturer	Box Part Number	Lid Part #
5/8" – 1"	Traffic	Armor	AUPHB132418H	AUCHC1324S
1" – 2"	Traffic	Armor	AUPHB173018H	AUCHC1730S
5/8" – 1"	Traffic	Armorcast RPM	A6001946PCX18 (1324X18)	A6001866 A6001866R
5/8" – 1"	Traffic	Armorcast	P6001868X18 (1324X18)	A6001866 water
1" – 2"	Traffic	Armorcast	P6001534X18 (1730x18)	A6001643 water A6001643R
1"-2"	Traffic	BES	PL36SW (1730 x 18")	BL36D
1" 2"	Traffic	BES	PL30SW (1324 x 18")	BL30D
5/8" – 1"	Traffic	Synertech	S1324B18FA (13x24)	S1324HHBOA
1" – 2"	Traffic	Synertech	S1730B18FA (17x30)	S1730HHBOA
5/8" – 1"	Landscape	Carson	L1220-12 + 6" extension	1220-3
1" – 2"	Landscape	Carson	L1730-18	1730-3B
5/8" – 1"	Traffic	Carson	H1324-PPC18	H1324-PC 10Ksolid
1" – 2"	Traffic	Carson	H1730-PPC18	H1730-PC 10Ksolid

Water meter vaults for meters 3" and larger, see the City of Redmond Public Works Standards and Specifications booklet

2.8 Brass Fittings

Corp Stops

Service Size	Fitting	Manufacturer	Part Number
¾"	Corporation Stop	Ford	FB1000-3 CC thread
¾"	Corporation Stop	Ford	FB1100-3 IP thread
¾"	Corporation Stop	Mueller	B25008 CC thread
¾"	Corporation Stop	Mueller	B25028 IP thread
1"	Corporation Stop	Ford	FB1000-4 CC thread
1"	Corporation Stop	Ford	FB1100-4 IP thread
1"	Corporation Stop	Mueller	B25008 CC thread
1"	Corporation Stop	Mueller	B25028 IP thread

Couplings (compression both sides)

Service Size	Fitting	Manufacturer	Part Number
¾"	Coupling	Ford	C44-33-Q
¾"	Coupling	Mueller	H-15403
1"	Coupling	Ford	C44-44-Q
1"	Coupling	Mueller	H-15403
2"	Coupling	Ford	C44-77-Q
2"	Coupling	Mueller	H-15403

90 Degree Couplings (compression both sides)

Service Size	Fitting	Manufacturer	Part Number
2"	90 degree coupling	Ford	L44-77-Q
2"	90 degree coupling	Mueller	H-15526

Straight Couplings (MIP x compression)

Service Size	Fitting	Manufacturer	Part Number
2"	Straight coupling	Ford	C84-77Q
2"	Straight coupling	Mueller	H-15428

Angle Meter Stop (w/Locking Ears)

Service Size	Fitting	Manufacturer	Part Number
¾"	Angle Meter Stop	Ford	BA43-33WQ
¾"	Angle Meter Stop	Mueller	B-24258
1"	Angle Meter Stop	Ford	BA43-44WQ
1"	Angle Meter Stop	Mueller	B-24258
2"	Angle Meter Stop	Ford	BFA43-777WQ
2"	Angle Meter Stop	Mueller	B-24276

2" Commercial, Medical & Multi Residential Services

Service Size	Fitting	Manufacturer	Part Number
2"	Copper Setter	Ford	VBB87-12HB-11-77
2"	Copper Meter Yoke	Mueller	MB2427-12-0000

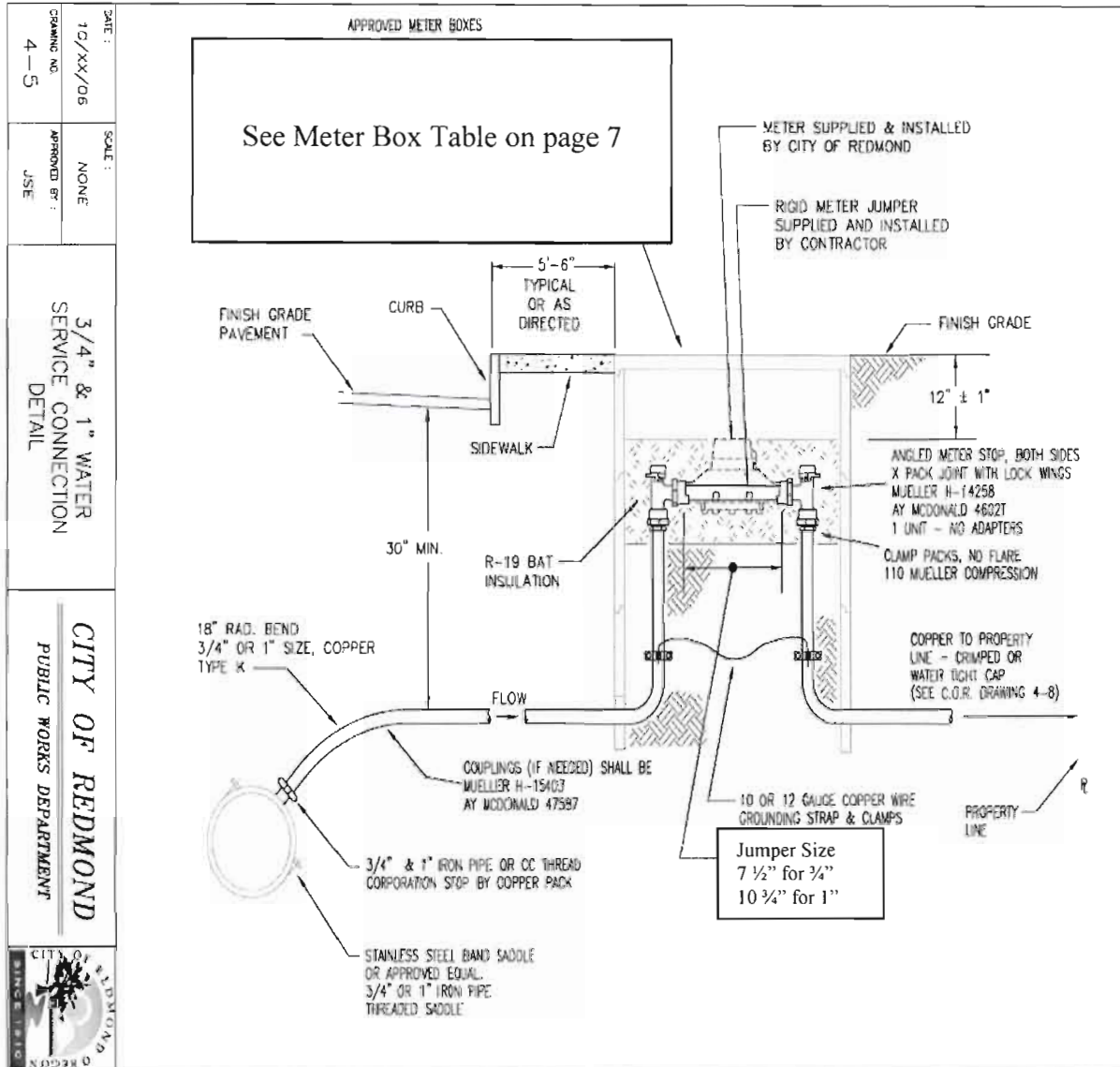
4.0 Standard Drawings from City of Redmond Public Works Standards and Specifications

Excerpts from the City of Redmond standard drawings have been included showing the typical meter installations for meters sizes 5/8" up to 8". Fire Line Meters are not included in these drawings. Any facility requiring a fire line meter should contact the Engineering Department for the City of Redmond to facilitate installation of the correct meter and screening system.

Commercial and industrial water services, fire-lines and all water services larger than 1" require backflow devices, please consult City of Redmond Public Works Standards and Specifications book to determine correct installation.

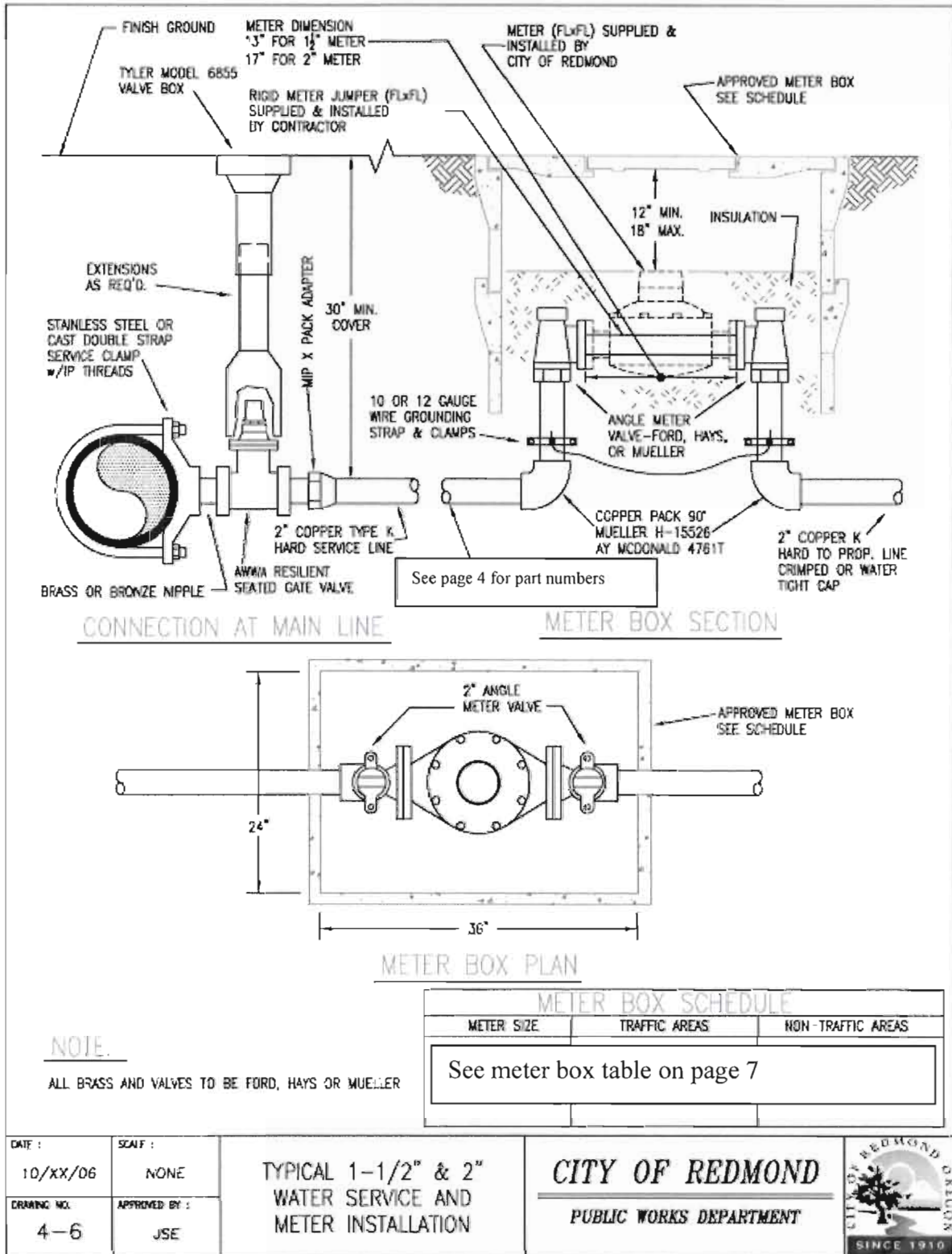
City of Redmond Standard Drawing 4-5.

3/4" and 1" Water Service Connection Detail



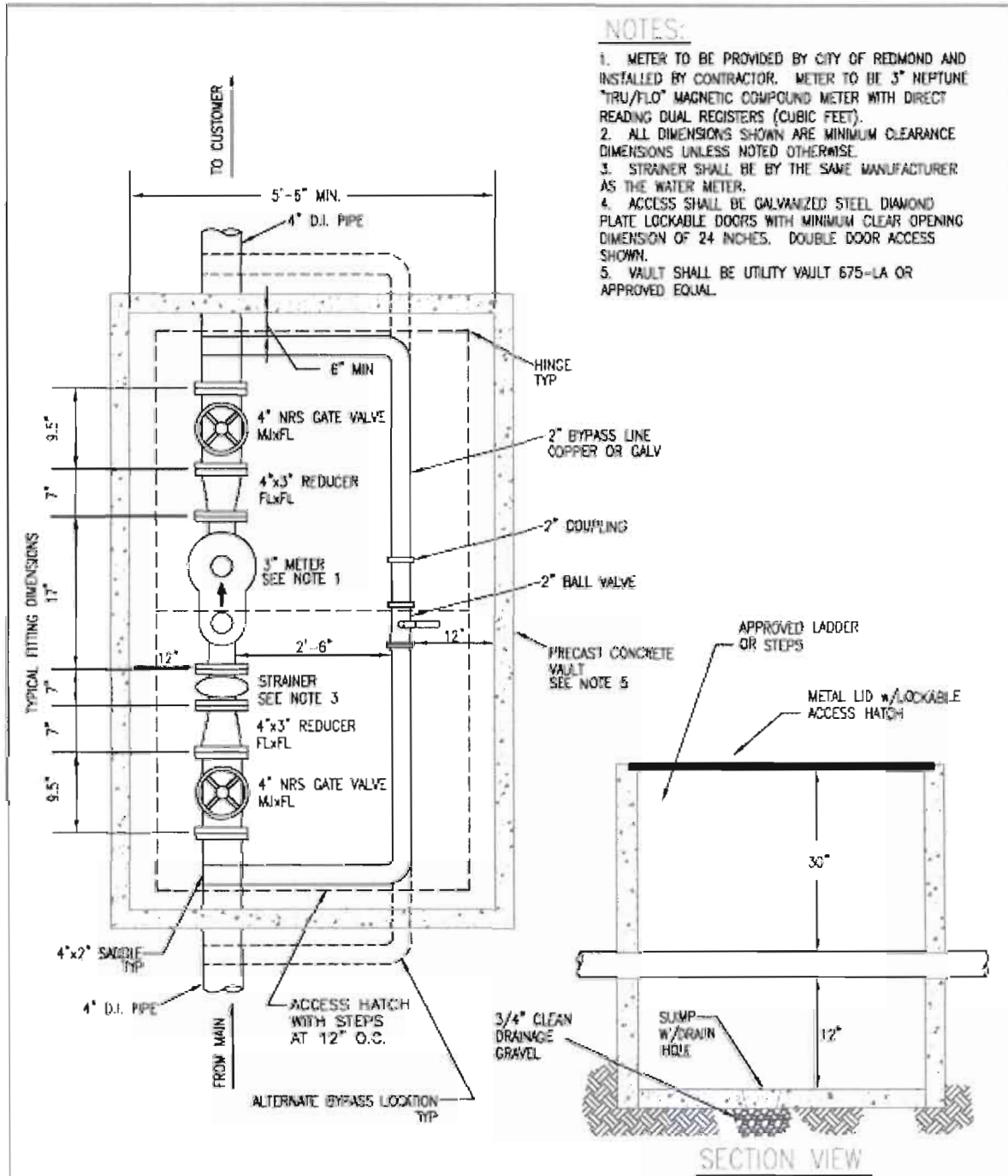
City of Redmond Standard Drawing 4-6.

1 1/2" and 2" Water Service and Meter Installation Detail



City of Redmond Standard Drawing 4-7

Typical 3" Water Meter Vault



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10/XX/06	NONE
DRAWING NO.	APPROVED BY :
4-7	G.KOLB

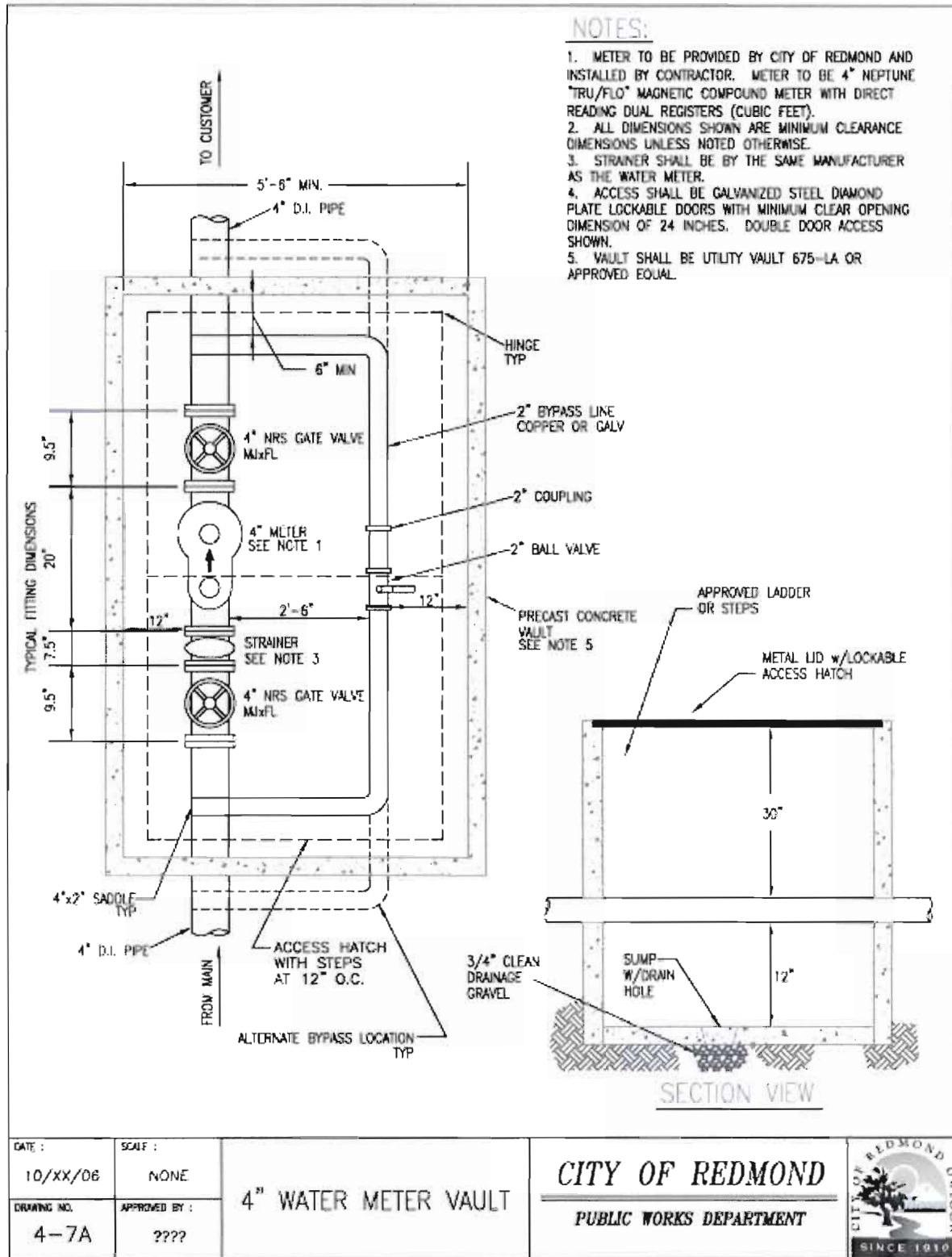
3" WATER METER VAULT

CITY OF REDMOND
PUBLIC WORKS DEPARTMENT



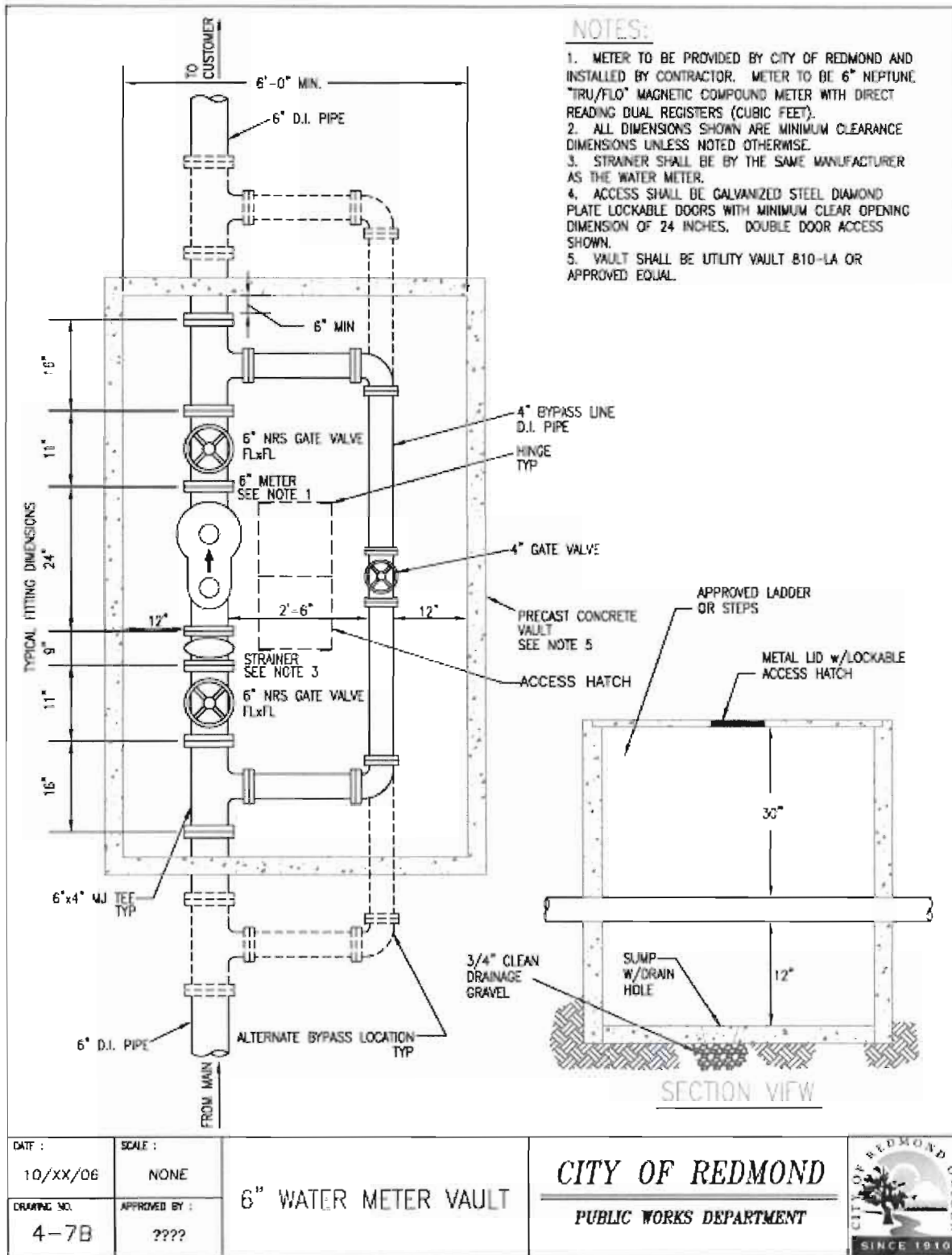
City of Redmond Standard Drawing 4-7a

Typical 4" Water Meter Vault



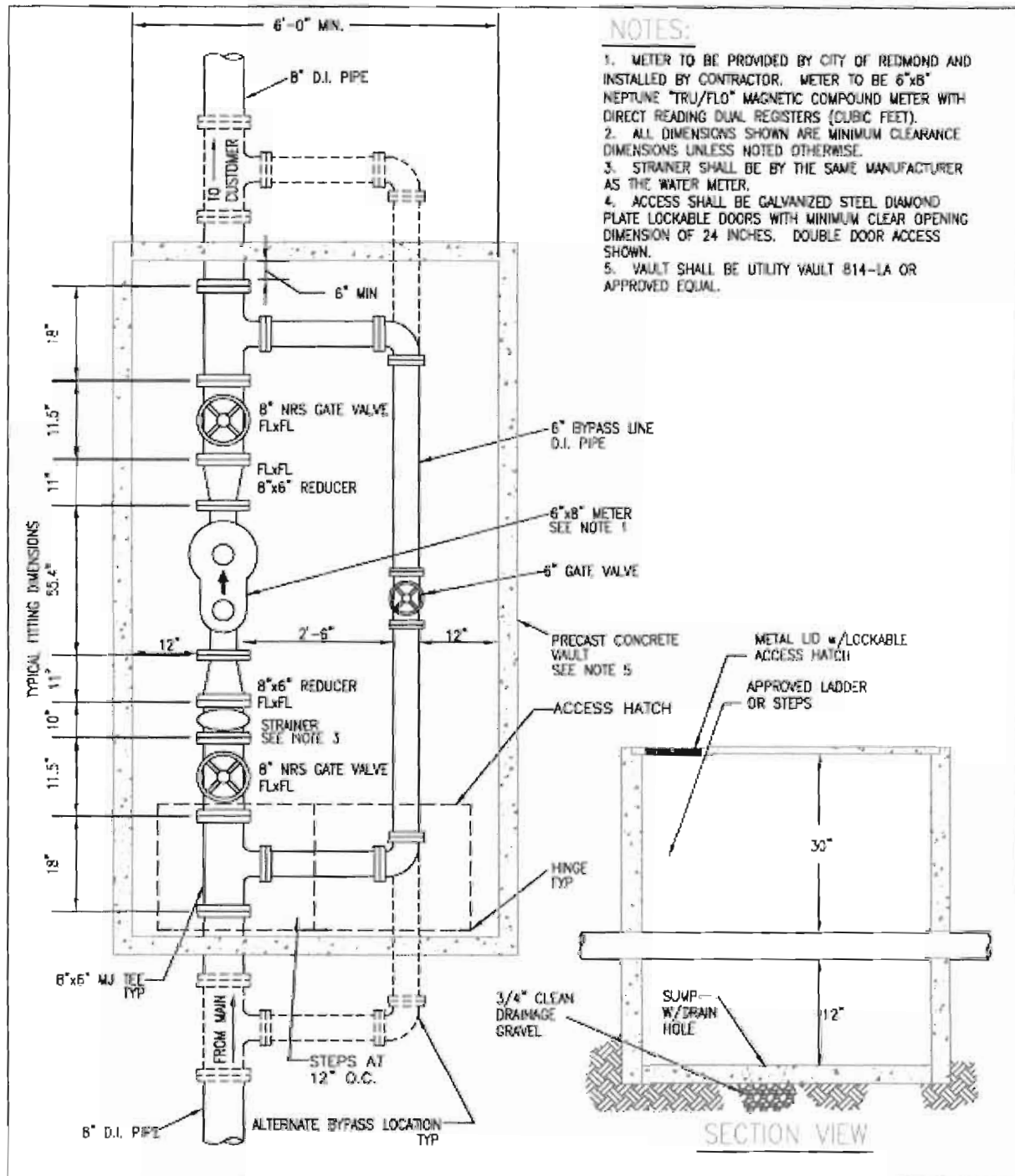
City of Redmond Standard Drawing 4-7b

Typical 6" Water Meter Vault



City of Redmond Standard Drawing 4-7c

Typical 8" Water Meter Vault



- NOTES:**
- METER TO BE PROVIDED BY CITY OF REDMOND AND INSTALLED BY CONTRACTOR. METER TO BE 6"x8" NEPTUNE "TRU/FLO" MAGNETIC COMPOUND METER WITH DIRECT READING DUAL REGISTERS (CUBIC FEET).
 - ALL DIMENSIONS SHOWN ARE MINIMUM CLEARANCE DIMENSIONS UNLESS NOTED OTHERWISE.
 - STRAINER SHALL BE BY THE SAME MANUFACTURER AS THE WATER METER.
 - ACCESS SHALL BE GALVANIZED STEEL DIAMOND PLATE LOCKABLE DOORS WITH MINIMUM CLEAR OPENING DIMENSION OF 24 INCHES. DOUBLE DOOR ACCESS SHOWN.
 - VAULT SHALL BE UTILITY VAULT 814-1A OR APPROVED EQUAL.

DATE:	SCALE:
10/xx/06	NONE
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8" WATER METER VAULT

CITY OF REDMOND
PUBLIC WORKS DEPARTMENT

