ADDENDUM No. 1
to
TOWN OF MANHATTAN MODIFICATIONS
TO
MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS, FIFTH EDITION

Instructions: To update your copy of the Town of Manhattan Modifications to Montana Public Works Standard Specifications, Fifth Edition, remove the old material and insert the enclosed new material in the appropriate sections, as indicated by the page numbers. We realize a new version of the Montana Public Works Standard Specifications (Seventh Edition) will be issued soon, at which time further modifications will be made.

Modifications to Standard Specifications:

	Take Out Page(s)	*Insert Page(s)*
Section 02660 Water Distribution Remove reference to standard drawing for water service line (moved to 02679). Allow polyethylene service pipe from curb stop to building (blue only) and from temporary wells to buildings (black only). Clarify curb stop requirements. Require hydrants to be painted red (no silver).	1-4	1-4
Section 02679 Water Distribution Remove requirement of meter pits	1-3	1-3

Modifications to Standard Drawings:

Standard Drawing 02679-1 (revised)	1	1

Approved By: Dave Rowell Date: 9/16/16
Dave Rowell-Mayor, Town of Manhattan

DIVISION 2 – SITE WORK

SECTION 02660
WATER DISTRIBUTION
(Reference MPWSS Section 02660)

All applicable portions of this specification section in the MPW Standard Specifications shall apply with the following additions, deletions and/or modifications.

Modifications:

PART 1 – GENERAL

DELETE: 1.4.A Standard Drawings:

02660-4	Fire Hydrant Setting
02660-5	Hydrant Location Detail
02660-7	Blowoff Valve

ADD: Town of Manhattan Standard Drawings

02660-02	Fire Hydrant With Remote Auxiliary Valve
02660-06	Hydrant Barrier Posts
02660-09	Marker Post
02660-12	Water Service Line for Sizes 4" and Larger
02660-13	Standard Fire Service Line Installation, Class I, II, III
02660-14	Standard Fire Service Line Installation, Class IV, V
~~02660-15~~	~~Water Service Line From Curb Stop to Building~~
02660-16	Water and Sewer Service Main and Service Location Standards
02660-31	Blow-Off/Air Release Valve (4" Thru 12" Mains)
02660-32	Blow-Off Valve 6" and 4" Mains
02660-42	Utility Trench Hydrant (Encased)
02660-43	Utility Pipe Trench (Top Only)

PART 2: PRODUCTS

2.2.B.2 DELETE.

ADD: Use underground pipe and fittings having push-on joints meeting AWWA C-111 unless noted on the drawings.

2.2.B.4 DUCTILE IRON PIPE FITTINGS

ADD: Furnish push on style fittings unless otherwise shown on the drawings. Mechanical joint fittings are not permitted unless specifically called out on the drawings. Utilize compact fittings meeting the requirements of AWWA C153. Use all push-on type fittings, cement mortar lined

meeting AWWA C104 or fusion bonded epoxy lined meeting AWWA C550 with thrust blocking except where specifically stated otherwise on the plans.

2.2 C. POLYVINYL CHLORIDE (PVC) PRESSURE PIPE. DELETE.

ADD: 2.2 C POLYVINYL CHLORIDE (PVC) PRESSURE PIPE. For pipe diameters 12 inches or less, furnish water pipe meeting AWWA C-900 requirements made to ductile iron O.D.'s for "Push-On" joints. Use DR 18, Class 150 pipe conforming to AWWA C-900 for pipe diameters 12" or smaller. For pipe larger than 12" in diameter, furnish water pipe meeting AWWA C-905 DR 18 requirements made to ductile iron O.D.'s for "push-on" joints. Assure pipe joints for all size pipes are bell and spigot push-on having an elastomeric gasket.

2.2.D. DELETE: Concrete cylinder pipe

2.2.E.d. ~~DELETE: Polyethylene Sevice Pipe~~ DELETE: last sentence; ADD: Polyethylene service pipe is only allowed from curb stop to building, where 250 psi polyethylene pipe is allowed. If polyethylene pipe is used from the curb stop to the building, it must be blue in color. In special circumstances where the Town has approved the use of temporary wells to provide water supply, only black polyethylene pipe can be used from the well to the building.

2.4 CORPORATE STOPS.

ADD: Corporation stops shall be bronze ball type stops, Mueller 300 corporation ball valves Minneapolis pattern or equal rated for a minimum 250 psi working pressures.

2.6 CURB STOPS.

ADD: Curb stops shall be ball type curb stops rated for a minimum of 250 psi working pressure. Curb stops shall be Mueller B-25210N 300 ball curb stops or equal. Curb stops must have compression fittings on both sides, and accept Type K copper on the public main side of the curb stop, and accept iron pipe size polyethylene or Type K copper on the private property side of the curb stop.

2.8 A. GATE VALVES.

DELETE: Entire section

ADD: For gate valves furnish iron body gate valves, resilient seat with design, construction and pressure rating of 250 psig meeting AWWA C500 or AWWA C509 requirements and following:

Use push-on joint valves that open counter clockwise. Furnish gate valves for underground installation with a 2 inch square operating nut, fusion bonded epoxy exterior and interior coating and double wrapped with polyethylene encasement in accordance with AWWA C105. Assure stem seals are double "O" ring seals capable of replacing the seal above the stem collar with the valve under pressure in full open position. Valves shall be Mueller or equal.

2.8.B. DELETE: Butterfly valves.

2.8.C. ADD: AUXILIARY VALVES FOR FIRE HYDRANTS. For fire hydrants, furnish 6-inch resilient seated gate valves as described in Section 2.8.A., with the exception that the valves have flange by push-on joint.

2.9 VALVE BOXES.

ADD: Use three piece screw type valve boxes double wrapped with polyethylene in accordance with AWWA C105. Use valve boxes by Tyler Model 6860 or approved equal.

2.10 FIRE HYDRANTS

2.10.B. DELETE: paragraph as written.

ADD: Furnish hydrants with 5¼-inch main valve, 6 inch shoe with push-on joint, one 4-inch pumper nozzle with NST #40484 gage, 2½-inch hose nozzles which meet ASA Specification B26 for National Standard Fire Hose Coupling Screw Threads, 7½ threads per inch, double wrapped with polyethylene in accordance with AWWA C105. Assure pumper nozzle size and threads match Owner's existing pattern. Furnish national standard operating nut. Furnish hydrants opening counter clockwise and having an arrow on the hydrant top designating opening direction. Drainage shall be provided at the base of the hydrant by placing clean, washed, ¾" gravel under and around the base of the hydrant, a minimum of 1-foot on all sides from the base of the hydrant to the point at least 6-inches above the drain opening.

2.10.C. ADD: Furnish Mueller Super Centurion 250 Model A-423, painted red ~~and silver~~ with hydrant defenders.

DELETE: 2.10.D.

ADD: Furnish hydrants for 7.0 feet of bury from the bottom of the supply pipe or 6.5 feet of bury from the top of the supply pipe.

2.12 DELETE: SPECIAL FITTINGS

2.12 POLYETHYLENE ENCASEMENT

ADD: Double wrap all ductile iron or cast iron pipe and pipe fittings with polyethylene encasement in accordance with AWWA C105.

3.3 POLYETHYLENE ENCASEMENT

DELETE: as written.

ADD: Double wrap all direct bury cast or ductile iron pipe and fittings including hydrants, valves, valve boxes and all other metal parts and surfaces in polyethylene encasement. Wrapping shall be done in accordance with AWWA C105.

ADD: 3.4.A. and 3.4.D. LOCATION OF TEST TAP FOR BACTERIOLOGICAL AND PRESSURE TESTING. Locate test taps for bacteriological and pressure testing on the new water main within 5 feet of the beginning and end of the main, at end of main line valve, and at a minimum of 400 feet intervals along the main.

PART 4: MEASUREMENT AND PAYMENT

DELETE: Entire Section.

END OF SECTION

CONSTRUCTION SPECIFICATIONS

DIVISION 2 - SITE WORK
SECTION 02679
WATER SERVICE METERS ~~AND METER PITS~~

1. GENERAL.

Work included in this section includes providing water meters ~~and meter pits~~.

1.1 Waranty. All meters shall be guaranteed by the manufacturer to meet AWWA new meter accuracy standards and for material and workmanship for a minimum of ten years from the date of initial operation.

2. APPLICABLE PUBLICATIONS.

American Water Works Association (AWWA).

AWWA C-700 Cold Water Meters – Displacement Type, Bronze Main Case

AWWA C-708 Cold Water Meters – Multijet Type

AWWA C-712 Cold Water Meters – Singlejet Type

3. MATERIALS.

3.1 Water Meter. The meters shall meet the minimum standard of the American Water Works Association standards above. The meters shall be ¾ inch x ¾ inch bronze bodied meters with a laying length of 7 ½ inches, and must meet the applicable AWWA standard above in its most current revision. Meters shall have frost protection devices to prevent damage to any other part of the meter. All said meters shall be capable of interfacing with the Town of Manhattan's existing AMR RF radio read system. The meter provided must meet the following parameters:

1. Meter main case shall be cast bronze with cast-iron bottom plate designed to break in such a manner as not to damage the main case or internal parts of the meter should the water service become frozen.

2. Each meter shall incorporate a strainer to help prevent foreign matter form entering the measuring chamber.

3. Pressure loss through the ¾ inch meter shall not exceed 8 psi at 20 gpm.

4. If the meter runs continuously for 24 hours or more, the meter must send a message to the AMR at the next reading, alerting the system manager of a potential leak.

5. If the meter runs backward at any time, the meter must send a message to the AMR at the next reading, alerting the system manager of a potential back flow.

3.2 Electronic Register Requirements. The electronic encoder register shall provide a digital output produced. The register shall be pre-wired to the radio transponder and shall be potted at the factory to insure the quality of the seal. Field splicing of register and radio transponder should not be required.

3.3.2 Transmitter Requirements. The transmitter shall be compatible with the electronically encoded register and designed ~~for meter pit installations~~ for conditions where the system may be subjected to submergence. Transmitters must ~~also~~ be capable of operation ~~if~~ when installed in basements, crawlspaces, below mobile homes, or other locations.

The transmitter antenna shall be integral with the meter, with no external wire connecting the meter to the transmitter.

Communication from the computers shall contain a sync-work command and its unique serial number for the transmitter. The transition from the transmitter includes current meter reading, tamper status, error detection and water audit/leak detection.

All internal electronic components shall be conformably sealed to provide environmental protection. Wire entrances are factory sealed. The ~~pit~~ transponder shall be specifically designed for harsh ~~pit~~ set environments with possible submergence in water and shall be pre-wired, potted, and randomly tested at the factory which manufactures the proposed components and system.

3.2.3 AMR Meter Pit Transmitters.

3.2.3.1 General. The manufacturer shall provide ~~pit~~ transmitter meter modules. The meter module shall be designed for ~~through the lid~~ installations subject to submergence, as well as installations inside buildings. All meter modules must be compatible with all sections of this specification.

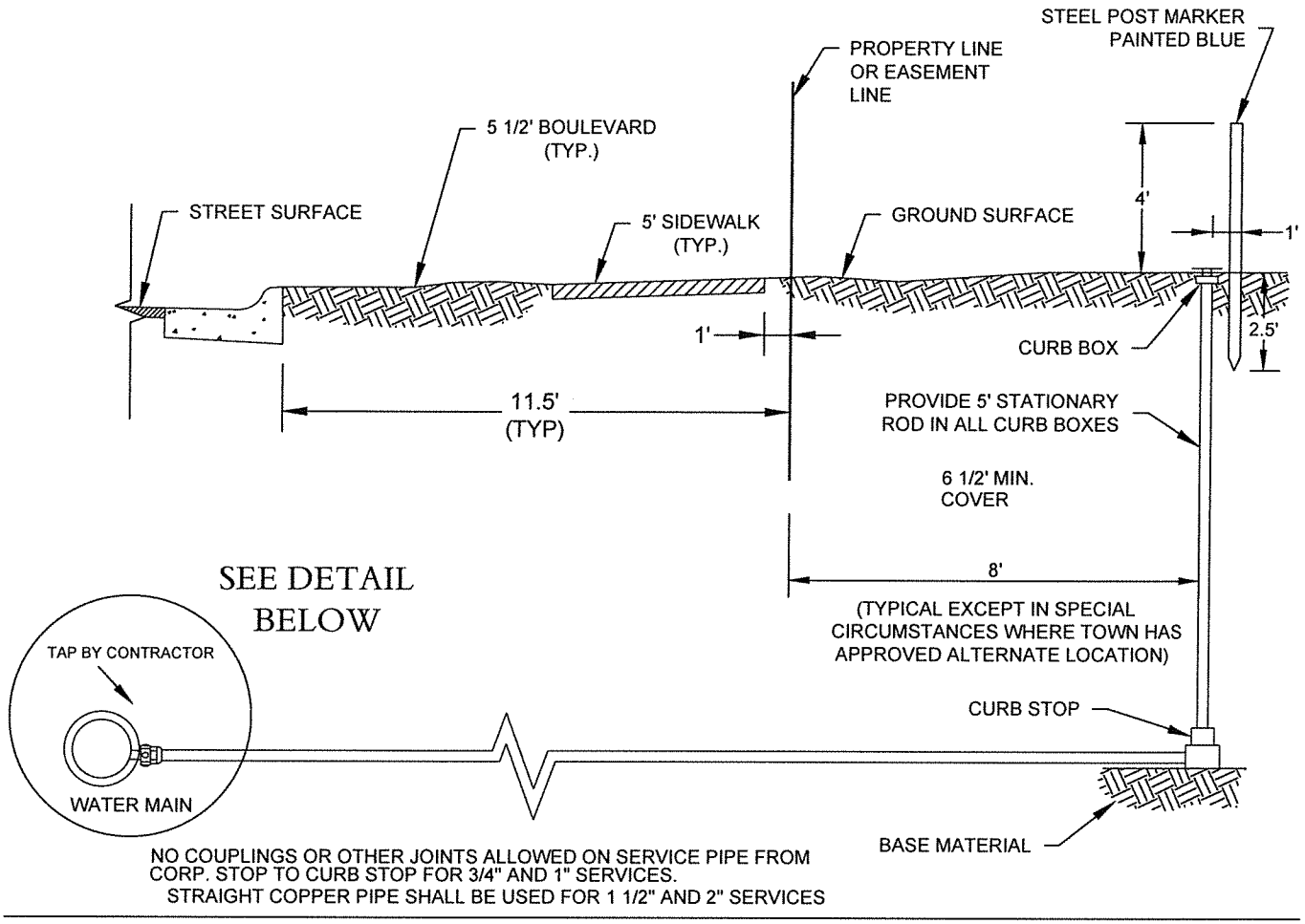
3.2.3.2 Registration. All transmitters shall be connected to a register which shall provide for visual total flow volume registration at the meter. Registration capacity shall be 1,000,000 gallons. The register shall function in temperature variations from 32°F (0°C) to 110°F (43°C). The signal transmission assembly shall induce no drag that could result in accelerated wear of the meter or cause under registration.

3.2.3.3 Module Requirements. Batteries shall power the ~~pit~~ transmitter with a typical battery life exceeding 10 years in typical operating conditions. The ~~pit~~ transmitter enclosure shall be factory potted and factory wired to the meter register. The ~~pit~~ transmitter shall be stored and shall operate in temperature ranging from -30° to 140°F. The ~~pit~~ transmitter shall operate in atmospheres of 5% to 100% condensing humidity and be designed for submerged applications. ~~Pit~~ Transmitter shall be designed to perform accurately and successfully transmit signals to the mobile receiver from ~~beneath the meter pit lid~~ basements, crawlspaces, below mobile homes, or other locations, so the signal can be read from the AMR unit in a vehicle on the adjacent street. Mounting brackets shall be furnished with the transmitters. The brackets shall be suitable for all mounting locations. ~~the transmitters beneath meter pit lids.~~

4. CONSTRUCTION.

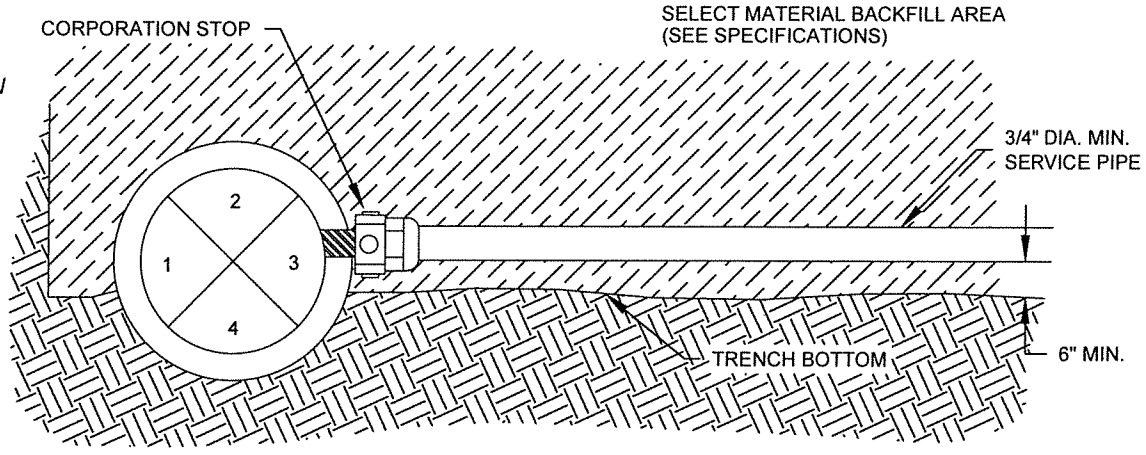
~~All new ¾ inch and 1 inch meter installations shall include installation of a Mueller Thermacoil meter pit.~~ All new meters ~~larger than 1 inch~~ may be installed inside the building, unless the meter only services exterior water needs, such as irrigation, in which case the meter ~~must~~ may include a Mueller meter pit.

END OF SECTION



NO COUPLINGS OR OTHER JOINTS ALLOWED ON SERVICE PIPE FROM CORP. STOP TO CURB STOP FOR 3/4" AND 1" SERVICES.
STRAIGHT COPPER PIPE SHALL BE USED FOR 1 1/2" AND 2" SERVICES

DETAIL OF A PROPERLY INSTALLED CORPORATION STOP. TAP MAIN AT SPRINGLINE.



GENERAL NOTES:

1. WATER SERVICE LINES SHALL HAVE A MINIMUM 6 1/2 FOOT COVER MEASURED FROM THE EXISTING GROUND SURFACE, EXCEPT THAT COVER SHALL BE MEASURED FROM CENTER LINE STREET GRADE WHEN SERVICE LINES ARE LAID TO A STREET SIDE WHICH HAS AN UPHILL SLOPE. WATER SERVICE LINES SHALL HAVE A MAXIMUM 7 1/2 FOOT COVER AT CURB STOP.
2. WATER SERVICE LINES SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS OR AS SPECIFIED.
3. BEDDING SHALL BE 1" DIA. MAXIMUM WITHIN 6" OF SERVICE PIPE.
4. INSTALL CURB STOP SO THAT OPERATING KEY IS PARALLEL TO STREET IN OFF-POSITION.

Date: 8/2005	Revised: 9/2016	By: DJC	**CONSTRUCTION STANDARD NO. 02679-1**
TOWN OF MANHATTAN, MT.			**WATER SERVICE LINE**