

§20-05 Meters.

(a) *Placement.*

(1) An approved water meter shall be installed wherever City water is supplied and for all wells or other water sources that discharge into the City sewer system, in new construction, upon replacement or repair of a service line in an unmetered property, or on a retrofit basis the rules of the New York City Water Board (15 RCNY 42, Appendix A (Part VII, §1)). The Department may require installation of additional meters as a condition for certain New York City Water Board rate or billing programs.

(2) Each building shall have one (1) meter on each service pipe supplying the building set at the point of entry. However, the Department may issue a variance or approval allowing two (2) or more separate meters to serve residential and non-residential (or rate-eligible and ineligible) occupancies on the same lot to comply with a rate or billing program established by the New York City Water Board.

(3) Placement during building construction

(i) All water used in the construction of buildings 75 feet or six (6) or more stories in height shall be metered.

(ii) Prior to the commencement of actual building construction, a meter of proper size shall be installed on each tap or service pipe supplying the premises.

(iii) The meter shall be placed in an accessible location at a point to be designated by the Department.

(iv) The meter shall be close to the point of entry of the service pipe, and shall be enclosed in a vault or box of ample size and substantial construction which will provide adequate protection against damage or injury from frost or any other cause.

(v) Each meter shall remain in service throughout the entire period of building construction. If a different meter is to be used during operation of the completed building, a separate meter permit is required for that replacement.

(vi) Where the meter is inoperable, has not accurately measured the water supplied to the premises, or has not been maintained in good working order during the entire period of building operations, the charge for water consumed during building construction shall be established as provided by the New York City Water Board in accordance with the Water and Wastewater Rate Schedule.

(4) All water used in the construction of buildings less than six (6) stories in height shall either be metered or be supplied by a hydrant permitted in accordance with §20-08. If water used during construction is metered, the

meter shall be placed as described in §20-05(a)(3). Permit applications for temporary water service during construction shall include the name and contact information for the Licensed Master Plumber or construction management company.

(5) *Metering of fire service pipes and combined service pipes.*

(i) Fire service pipes in premises supplied with City water shall be metered with an approved detector assembly or an approved fire service meter. Fire service pipes of two-and-one-half (2½) inches shall be provided with equipment applicable to a three (3) inch service pipe.

(ii) Combined services or domestic services with sprinkler heads two (2) inches or smaller shall use a single meter approved by the Department on the service pipe. Positive displacement meters shall not be used for such applications. Domestic services with sprinkler heads larger than two (2) inches may use one meter specifically approved by the Department for this purpose on the service pipe, or a standard displacement or other meter approved by the Department on the domestic branch and a detector check valve assembly on the fire branch. Combined services with sprinkler heads larger than two (2) inches may use one fire service meter approved by the Department on the combined service pipe, or a standard displacement or other meter approved by the Department on the domestic branch and a detector check valve assembly on the fire branch. Service pipes of two-and-one-half (2½) inches shall be provided with equipment applicable to a three (3) inch service pipe.

(iii) The use of water through meters or detector assemblies approved for fire sprinkler systems only is prohibited, except for fire suppression or the testing of the fire sprinkler system.

(iv) Inlet and outlet valves are not required for fire service meters or detector assemblies on combined service pipes, except for the building shut-off valve. A test tee must be provided for meter testing purposes on fire service meters. A test port shall not be placed on the bypass meter on a Detector Check Valve Assembly.

(b) *Meter permits.*

(1) No person shall set, reset, repair or disconnect a water meter used for Department billing purposes without having obtained a meter permit, except for sets, resets, repairs or disconnects done by the Department, its authorized agents or contractors. Applications for permits shall be made by a Licensed Master Plumber duly authorized by the customer; provided, however, that applications for permits to reset, repair or disconnect a water meter may be made by a meter repair company authorized by the Department.

(2) Within ten (10) business days following the completion of any work for which a meter permit has been issued, the permit, carrying: (i) a certification of the date of completion of the work, (ii) the final reading from the old meter (for replacements or repairs) and (iii) the meter manufacturer's accuracy test document for the new meter shall be returned to the Department. A permit shall expire after 365 days for new construction work and after 30 days for meter replacements or first-time meter installations in existing buildings. If the work is to be performed after that time, the Licensed Master Plumber must apply for a permit extension before the original permit expires.

(3) After acceptance by the Department of the meter work, indicated by installation of a seal, or after one year from the return of a completed permit with access to the property available for the Department to inspect the work, whichever comes first, such meters will be owned, maintained, repaired and read by the Department. If access to the property is not made available to the Department, a denial of access notice shall be issued to the property owner.

(c) *Work on small meters.*

(1) No person other than authorized Department personnel, its contractors or permit holders shall set, reset, repair or disconnect a water meter on service pipes of less than one and one-half (1½) inch diameter.

(2) A meter repair company authorized by the Department may obtain permits to perform repairs of water meters by demonstrating that it has detailed written repair procedures that have been approved by the Department and a detailed written training program. All training programs shall include meter repairs, meter testing, manufacturing specifications, permit and specification requirements and the use of any testing and repair equipment. Proposals for such authorization shall be forwarded to the Department. The Department reserves the right to withdraw its authorization if it finds that the meter repair company is not abiding by the standards set forth in the work procedures approved by the Department.

(d) *Approved water meters.*

Meters shall meet the following requirements:

(1) All water meters used for billing purposes must comply with applicable specifications of the most recent AWWA Standards for Water Meters, and/or be specifically tested and approved by the Department as to their accuracy, performance and construction. The Department shall maintain and regularly update a list of approved water meters, detector assemblies, pit meter equipment, meter attachments and meter-associated equipment.

(2) The following information shall be on all meters used for billing purposes:

(i) Size and model of meter;

- (ii) Trade or brand name of meter; and,
 - (iii) Direction of flow.
- (3) The serial number of the meter shall be imprinted on the case or register head in a permanent manner and all meter serial numbers shall be unique for the manufacturer.
- (4) All meters used for billing purposes shall read in cubic feet.
- (5) All meters used for billing purposes shall be equipped with a touch-pad type remote meter reading receptacle that is compatible with the Department's meter reading probes, unless the meter has been approved by the Department for reading exclusively through an approved automatic meter reading system.
- (6) For displacement type water meters, the following shall also be required:
 - (i) All five-eighth ($\frac{5}{8}$) inch through one (1) inch meters shall be of frost protection design with cast-iron bottom plates. Cast-iron bottom plates shall be made corrosion resistant by suitable coating and/or internal lining as approved by the Department.
 - (ii) All casing bolts, studs, nuts, screws and other external fastening devices shall be made of a bronze alloy or stainless steel conforming to AWWA standards, and shall be designed for easy removal following lengthy service.
 - (iii) There shall be no stuffing box for displacement-type meters. The motion of the disc or piston measuring element shall be transmitted to the sealed register through the upper wall of the main case utilizing a magnetic coupling.
 - (iv) All displacement meters shall be provided with a plastic strainer that can be easily removed for cleaning.
 - (v) All meters installed at locations which may be subject to freezing temperatures shall be insulated with non-asbestos material having a thermal resistance of at least "R-6."
- (7) All meters shall have a main case composed of an alloy which shall have a lead content that shall not exceed 0.250%.
- (8) Meter manufacturers shall notify the Department at least thirty (30) days after any changes in design, serial numbering, or other matter that might affect the use of the water meter or billing processes.

(e) *Turbine and compound meters.*

- (1) Turbine and compound meters may be installed only upon approval of the Department upon filing of satisfactory proof that the quantity of water required will be drawn at a rate to insure proper registration.
- (2) An approved meter strainer shall be installed on all new or replacement compound and turbine meter installations, unless the meter is manufactured complete with an internal strainer.

(3) There shall be no stuffing box for turbine, compound and fire service type water meters. The meter shall transmit the motion of the measuring elements to the register utilizing a magnetic coupling.

(4) Compound meters shall not be used on service pipes that go directly to house pumps, unless there are connections before the pumps.

(f) *Used or repaired meters.*

No used or repaired meter shall be installed to cover a service pipe at the same or a different location unless it has been repaired, tested for accuracy, found to conform to AWWA new meter accuracy standards and has been approved by the Department.

(g) *Sizing.*

(1) A meter shall be restricted to a size and type that will insure accurate registration on the basis of the water requirements of the premises, or portion of the premises, to be metered. For residential premises, the permit applicant shall perform a fixture count and develop a peak flow estimate using Appendix Tables #1 and #2. The meter shall be sized according to Appendix Table #8. For non-residential premises, the flow rate shall be based on the analysis of a Licensed Professional Engineer or Registered Architect. The meter shall be sized according to that flow rate and Appendix Table #8.

(2) A meter shall not be larger than the service pipe supplying the meter, the piping in the meter setting, or the water distribution piping in the building, unless specifically approved in writing by the Department or as noted in §20-05(a)(5) for two-and-one-half (2½) inch fire services or combined services. If two meters both cover the calculated peak flow rate, the smaller of the two meters shall be used unless approved in writing by the Department. Unless a fixture count and flow analysis, as described in §20-05(g)(1), has been approved by the Department, a one- or two-family home with gravity-flush water closets shall not have a meter on a domestic service without fire sprinklers larger than three-quarters (¾) inch and three-, four-, five- and six-family homes shall not have a meter on a domestic service larger than one (1) inch.

Exceptions to these requirements, and the use of Appendix Table #8 for meter sizing, will be considered by the Department only when a building's plumbing system uses only street water pressure and documented incoming water pressure is less than 35 psi for buildings four (4) through six (6) stories high, or less than 30 psi for buildings less than four (4) stories in height.

(3) The minimum size meter for new installations and replacements shall be five-eighths (⅝) inch.

(4) The appropriate low-flow range for compound meters varies with the manufacturer. The ranges of sizes in Appendix Table #8 refer to the high-flow

side. The Department may require that a permit applicant provide a basis for using a compound meter instead of another type of meter. That justification must outweigh the higher maintenance and other operating costs to the Department of the compound meter.

(h) *Tests.*

The permit applicant shall submit the manufacturer's meter accuracy test results to the Department at the time of permit application. The Department retains the right, in specific instances, to require that a new, used or repaired meter be sent to a designated Department facility for testing at the owner's expense.

(i) *Settings.*

Notwithstanding any other provisions to the contrary, all meters shall be set or reset according to the following requirements:

(1) Meters shall be set as near as possible to the point of entry of the service pipe through the building or vault wall and shall be placed so that they may be easily inspected, maintained and replaced. Evaporative cooling tower meters or other meters used to calculate a wastewater allowance when located downstream of a billing meter shall be placed as close to the end use as practical. A property owner shall not erect or maintain any physical barrier that prevents access to, or repair or replacement of, the water meter.

(i) Displacement meters shall not be set beyond three (3) feet of the entry point without written approval from the Department.

(ii) Turbine and compound meters shall be set with straight sections of pipe as provided in Appendix Figures #7, #7A, #9, #9A, #10 and #10A. If pipe lengths cannot conform to those indicated in Appendix Figures #7, #7A, #9, #9A, #10 and #10A, a meter technology shall be used which does not require minimum straight pipe lengths. The Department shall identify such meter technologies in its list of approved meters. An approved meter strainer is required unless one is included in the meter design or in the case of single-jet or electromagnetic meters, is not required by the meter manufacturer.

(2) No fittings shall be permitted in the section of pipe upstream of the meter or meter setter with the exception of an approved strainer. The strainer shall be located immediately before the inlet side of the meter. The service pipe between the point of entry and the meter setting shall be kept visible.

(3) If conditions exist that prevent the setting of a meter in accordance with the above requirements, the meter may be set outside the building in a meter pit, vault or above-ground meter box (See §20-05(k)).

(4) Meter settings shall have an inlet valve and outlet valve immediately upstream/downstream of the meter which shall be of a type approved by the Department.

(i) Except for meters two (2) inches or smaller where space constraints prevent any approved meter technology from being installed with an inlet valve, or as noted in §20-05(a)(5), a house control valve shall not be used in lieu of a meter inlet valve.

(ii) A meter outlet valve is not required for fire meters on a dedicated fire service or the fire service branch of a combined service, for a Detector Check Valve Assembly or if the property has approved backflow prevention equipment which includes an outlet valve.

(iii) Where a meter is placed in a pit alongside a sewer trap, the meter test tee shall be located outside of the pit in an accessible location.

(5) Connections shall be made by coupling, union, flange union or approved compression fittings and bored for sealing with holes not less than three thirty-seconds ($\frac{3}{32}$) of an inch in diameter. Compression fittings are permitted for three quarter ($\frac{3}{4}$) inch through two (2) inch meters only. Unions, couplings or compression fittings that permit removal of the meter and/or setter without breaking the seal wire are prohibited. All water meter settings of two (2) inches and smaller sizes shall utilize valves and fittings constructed of bronze with a lead content that shall not exceed 0.250%, or copper alloys of commercially pure copper and bronze mill products. Bolts, studs, nuts, screws and other external fastening devices shall be made of a bronze alloy or stainless steel conforming to AWWA standards, and shall be designed for easy removal following lengthy service. Above-ground, indoor service pipe, including the meter setting and any backflow prevention device shall be Type K or Type L copper, if copper is acceptable for such size service pipe.

(6) Meter setters & resetters. Meter setters and resetters five-eighths inch ($\frac{5}{8}$) through two inch (2) shall conform to the following:

(i) Seamless copper tubing having a type K wall thickness in accordance with ASTM B-88 specifications shall be used for all prefabricated water meter setters. All bronze parts shall be an alloy with a lead content that shall not exceed 0.250%.

(ii) The internal waterway shall be equal to the meter size to be installed, i.e. one (1) inch meter = one (1) inch internal diameter.

(iii) The end of the copper tubing at the meter coupling for three quarter ($\frac{3}{4}$) inch and one (1) inch meters shall be spun and/or formed to produce a strong positive bearing surface on the full face of the gasket and meter spud.

(iv) Copper tubing arms shall be affixed to the setter body using leadless solder at the cup joint.

- (v) All setters, valves and compression adapters shall be designed to ensure positive electrical bonding continuity with, or without, the meter being set, via an approved external method which can be confirmed visually.
- (vi) All setters shall be designed to avoid any significant head loss.
- (vii) An approved test port located between the meter and the outlet control valve shall be included in the design of all setters. The test port shall be capable of delivering flows from at least one quarter ($\frac{1}{4}$) to two (2) gpm, but no more than four (4) gpm.
- (7) Above-ground, indoor service pipe, including the meter setting and any backflow prevention device shall be Type K or Type L copper, if copper is acceptable for that size service pipe.
- (8) Valves. All new displacement type water meter settings shall utilize full port ball valves or angle key valves for the inlet and outlet control of the meter. These valves shall be furnished with handles for the manual operation of the valves without the need of a wrench. Turbine and compound meters shall be installed with full port ball valves (through two (2) inch only) or gate type valves.
- (9) Meters shall be set as shown in Figures #7, #7A, #9, #9A, #10 and #10A.
- (10) All meter settings shall contain a test tee or test valve downstream of the meter and before the outlet valve. The test tee/valve can be incorporated as part of the outlet valve design.
- (11) Any connection to a test tee assembly or to any point ahead of a meter used for billing purposes is strictly forbidden.
- (12) Electrical continuity. All settings shall be designed to ensure positive electrical continuity with, or without, the meter being set, via bronze grounding clamps with stainless steel screws and electrical bonding cables (#6 THHN-THWN) which can be confirmed visually, unless a pre-fabricated setter designed for electrical continuity is used or the water service is known not to be used as an electrical ground.

(j) *By-pass.*

- (1) Unmetered by-passes around meters are prohibited except those approved in writing by the Department, such as:
 - (i) Tunnels where hazardous conditions may exist.
 - (ii) Selected properties having only one (1) source of supply where any shut-down would endanger public health and safety.
- (2) If a by-pass is permitted by the Department, the installation shall conform to Appendix Figure #10 or #10A. The by-pass shall be configured so that the top case and interior meter can be removed for repairs or replacement.

(3) Properties that wish to avoid lengthy shutdowns related to replacement of large meters may install paired meters that can supply the building through one or the other meter on a service pipe.

(k) *Meter pit/meter box requirements.*

Meter pits shall be constructed in accordance with the following requirements:

(1) All meter electrical connections shall be factory sealed to be water proof.
(2) The Department shall maintain detailed specifications for three quarter ($\frac{3}{4}$) inch and one (1) inch pit meter installations and equipment including setters, enclosures and covers.

(3) Meter pits for meters less than 3".

(i) For meters less than three (3) inches, the enclosure shall be frost-proof and shall follow one of these alternate requirements:

(a) Thermoplastic polyvinyl chloride (PVC) conforming to ANSI/ASTM D1785, Type I, Grade 1, seamless, extruded pipe with white interior. The enclosure shall be as uniform as commercially practicable in color, opacity, density and other physical properties. Thickness shall be at least one-half ($\frac{1}{2}$) inch.

(b) Polyethylene (PE) enclosures shall be constructed in accordance with the ANSI/ASTM D2104 latest revision. The PE shall be of medium density. Polyethylene shall conform to all applicable sections of the latest edition of ASTM D-1598, and ASTM D-1599. Thickness shall be at least one-half ($\frac{1}{2}$) of an inch.

(c) A composite of polyester resin, fiberglass and calcium carbonate. The composite material shall consist of non-aggregate base materials using the bulk molded compound process or the thick molded compound process. The thickness shall be at least one-half ($\frac{1}{2}$) inch.

(ii) Covers and lids shall be constructed in accordance with the following requirements:

(a) Covers shall be of polymer concrete, heavy duty plastic, or other composite materials that allow transmission of an AMR signal and meet load requirements set by the department. The department shall publish a list of approved products and materials in its list of approved meters and equipment.

(b) Lids shall have a lifter worm lock with a standard waterworks pentagon nut constructed of bronze.

(c) Extra heavy lids and covers shall be used for driveway and sidewalk applications.

(d) For three quarter ($\frac{3}{4}$) inch and one (1) inch meter sets, covers shall fit on twenty (20) inch nominal I.D. meter vaults. Covers shall have thirteen and one-half ($13\frac{1}{2}$) inch to fifteen (15) inch openings and lid sizes.

(e) For one and one-half ($1\frac{1}{2}$) inch and two (2) inch meter sets, covers shall fit on thirty-six (36) inch nominal I.D. meter vaults. Covers shall have eighteen (18) inch to fifteen (15) inch openings and lid sizes.

(4) Meter vaults for meters 3" and larger. For meters three (3) inches in size and larger, a meter vault shall be constructed as follows (See Appendix Figures #11 through #17 for typical meter pit and vault installation details):

(a) Waterproof and frost proof and of sufficient size to permit easy access to all portions of the meter and connections with at least one (1) foot clearance on each side of meter.

(b) In conformance with any requirements of the U.S. Occupational Safety and Health Administration.

(c) Pits less than four (4) feet in depth shall not be less than two feet, six inches (2'6") wide and three feet, six inches (3'6") long. Pits less than four (4) feet in depth shall be provided with a hinged cover not to exceed forty (40) pounds in weight, with suitable handle and so constructed as to permit the uncovering of entire pit, or a circular cover as described above in (ii) provided that there is sufficient clearance to remove and replace the meter.

(d) Pits four (4) feet or more in depth shall be provided with an access opening of at least two feet, six inches (2'6") square, but of sufficient size to remove and replace the meter. The cover of such opening shall be hinged and shall be provided with a suitable handle. Covers exceeding forty (40) pounds in weight shall be counter balanced.

(e) Pits three (3) feet or more in depth shall be provided with permanent steps or a metal ladder.

(f) Pits containing sewer traps shall be provided with an air vent.

(5) Meter boxes (above-ground enclosure).

(i) The enclosure shall be capable of housing the water meter with all required valves, strainer and above-ground appurtenances. It shall have easy access for testing and maintenance including at least one (1) foot, clearance around the meter, piping and valves. The boxes shall have lockable access doors or lids to prevent theft or vandalism. The enclosure shall be anchored to a concrete base of eight (8) inches minimum for meters one and one-half ($1\frac{1}{2}$) inches or larger, and four (4) inches for meters less than one and one-half ($1\frac{1}{2}$) inches. The enclosure

shall an approved remote meter reading receptacle mounted on the exterior.

(ii) The enclosure shall be a minimum of:

(a) Eighteen (18) gauge reinforced aluminum, or;

(b) Extra heavy duty fiberglass reinforced polyester with high-gloss gelcoat finish, or;

(c) Twelve (12) gauge steel finished with three coats of baked enamel.

(iii) The enclosure shall be insulated with a material in addition to the enclosure itself which has a thermal resistance ("R-value") of at least 8.0.

(iv) The enclosure shall have a thermostatically-controlled heat source mounted to the interior wall for freeze protection down to -10°F.

(1) *Metering condominium and homeowners' association developments.*

(1) An individual water meter to be read by the Department shall be installed for each separately-owned dwelling unit in all new condominium and homeowners' associations structures of three (3) stories or less when each such unit is supplied with hot water and space heat by its own separate domestic hot water heater and space heating system, and not by a common water heater or space heater. If fire protection sprinklers are present they shall be supplied by a separate dedicated service pipe. Any hose bib or irrigation supply shall be connected to one of the unit's metered branches. All remote receptacles or AMR transmitters shall be located in a common location in each structure with each meter clearly labeled as to the unit it supplies.

(2) Condominiums and homeowner's associations that cannot be individually metered as described in §20-05(1)(1) shall have a meter at the point of entry of the water service for the building or buildings.

(3) Each individual unit/meter shall have its own account under the "75XX" joint condominium lot.

(m) *Removal.*

(1) If a meter has been disconnected without securing a permit as per §20-05(b) and §20-05(c), it shall not be reset but shall be replaced with a new meter approved by the Department.

(2) When a tap or wet connection is destroyed on a metered service pipe (See §20-02 (g) and §20-02 (h)), the meter shall be removed under permit and returned to the Department.

(3) If a meter is moved, a permit shall be obtained to report the new location. Relocation of a meter from an outdoor pit to an indoor location shall include filling the pit with clean sand and restoring the surface in kind.

(n) *Seals.*

A seal placed by the Department for the protection of any meter, valve, fitting or other water connection shall not be tampered with or defaced. The seal shall not be broken except after securing a permit from the Department. Breaking the seal without such a permit shall be a violation, except for emergency repairs as described in §20-01(f). The Department may also remove the meter for testing and resetting or replacement. The customer shall be responsible for safeguarding and protecting the seal and the meter. Application of a seal on a new or replacement meter shall denote approval by the Department.

(o) *Meter shut-off.*

Where water is obtained through more than one (1) meter, and where tests indicate accurate registration is not being obtained by reason of the divided delivery of water, the Department may, at its discretion, shut off and seal the meter(s) to ensure accuracy of registration.

(p) *Protection of meters and settings.*

(1) The property owner shall protect the meter, setting, AMR transmitter, wiring and remote against physical damage, freezing conditions and abuse. The property owner shall be responsible for any break or disconnection of wire within the building. The property owner is responsible for preventing physical deterioration or other conditions of the service pipe which may damage a meter or prevent its maintenance or replacement. In such cases the owner shall be responsible for repairing or replacing equipment, service piping or any other physical barriers, including asbestos insulation, needed to allow maintenance, proper operation or replacement of the meter.

(2) The property owner is prohibited from relocating the remote receptacle or AMR transmitter except upon securing a permit from the Department.

(3) The property owner's installation of branch meters or submeters for the owner's use shall not interfere with the City's meter setting.

(q) *Encoding registers.*

When used, all encoder-type remote registration systems shall comply with all applicable requirements of AWWA Standard C707 and the following requirements:

(1) The register shall encode the six (6) most significant digits which will be read from the remote receptacle.

(2) The unit shall employ a leak detection indicator or a test sweep hand on the face of the meter register.

(3) Registers shall read in cubic feet.

- (4) The assembly shall have a tamper resistant locking device as well as a provision for seal wire, or other method approved by the Department.
- (5) The data stream must be, or be convertible to, seven-bit ASCII format, and is to be capable of interfacing directly to an automatic meter reading device to transmit data via radio, cable T.V. or telephone lines to a central location.
- (6) All encoder registration systems shall be capable of transmitting the data for a minimum distance of three hundred (300) feet utilizing solid twenty-two (22) gauge minimum non-shielded copper cable between the register and the remote receptacle or interface device.
- (7) All encoding registers shall be subject to the approval of the Department.
- 8) The register shall be capable of being read through a remote receptacle, and/or an automatic meter reading system.
- (9) All registers shall be installed with wire to a remote receptacle or AMR transmitter with all three wires properly connected at the register head.

(r) *Remote receptacles and AMR transmitters.*

(1) *Mechanical Construction.*

The assembly shall be resistant to accidental or unauthorized use and tampering without the need for seal wire. The device shall be sturdy and materials shall be corrosion resistant. The assembly's operation shall not be affected by rain, condensation or temperature variations from -40 degrees to +180 degrees Fahrenheit.

(2) *Electrical construction.*

Pin-type remote receptacles are not permitted. Remote receptacles shall be touch-pad or proximity types. Connecting cable or wires shall be twenty-two (22) gauge and approved by the Department. The materials employed in contacts and connectors shall resist corrosion.

(3) *Placement of receptacle.*

Placement of the remote receptacle shall comply with the following guidelines:

(i) *Location.*

Receptacles shall be located on the front or side exterior of the building. The remote receptacle shall be accessible to the meter reader and close to electric and gas meters. Receptacles shall not be installed behind bushes, locked gates, etc. If applicable, remotes shall be set inside storefront security gates. When meters are installed for a two (2) family home, the remotes should be as close together as possible so that both readings can be taken from the same location, preferably on the front of the building. For certain high-rise apartment or office buildings with glass, marble or other similar facades, the remote may be located in a publicly accessible location, such as the building lobby, where it will not require the meter reader to obtain keys or contact building personnel. In the alternative, for

buildings with glass, marble or similar facades or with landmark status, the remote may be placed in the electric meter room with a sign, "Water Meters." The location of the remote must be indicated in the permit as returned to the Department.

For all underground meter installations, the remote pad shall be mounted in the meter pit lid or some support or structure immediately adjacent to the pit, to allow meter readings without opening the lid.

(ii) *Height.*

The receptacle shall be set at forty-two (42) inches above ground, but may be set between twelve (12) and sixty (60) inches if circumstances preclude a better height. Receptacles may be installed beyond these limits only when approved in writing by the Department.

(4) AMR Transmitter. The Department will conduct a transition from the use of remote receptacles to the use of radio-based automatic meter reading systems, with information on that transition to be published in the list of approved water meters, detector assemblies, pit meter equipment, meter attachments and meter-associated equipment as required pursuant to §20-05(d)(1). When the Department has begun installing AMR transmitters Citywide, meter installations shall be required to include the approved AMR transmitter, and the use of remote receptacles shall no longer be permitted. AMR radio transmitters for domestic meters shall be mounted on the exterior surface of an exterior building wall above ground level, unless otherwise specified by the Department. AMR radio transmitters for evaporative cooling tower makeup water meters or other meters located on the upper floors of a building shall be mounted on the exterior of the building wall, at a roof parapet or other location to permit effective transmission of the radio signal.

(s) *Meter attachments.*

(1) No customer shall attach any device to the water meter unless such device has been submitted to, and approved by, the Department.

(2) No device submitted for approval shall interfere with or affect the operation, inspection or reading of the meter in any way.

(3) Any device approved shall be solely the responsibility of the customer unless it is installed by the Department. The Department shall not be liable for any maintenance or replacement of any approved attachments to the meter, and shall not perform any additional steps to salvage the devices should the meter require replacement.

(4) The Department shall publish a list of approved meter attachments as part of its list of Approved Meters.