Rules of the City of New York

Title 15

Chapter 20

Rules Governing and Restricting the Use and Supply of Water

New York City Department of
Environmental Protection
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§20-01 **Permits.**

(a) **General information**

Subject to the provisions of this chapter, permits will be issued for the following purposes upon receipt of proper applications and permit fee:

Hydrant, Use of
Meter Disconnect for Repair or Change of Piping ("Break Seal")
Meter Setting, New, Replacement or Additional
Plug, Tap/Wet Connection (Termination of Service)
Service Pipe, Relay of
Service Pipe, Repair of
Service Pipe, Thawing of
Tap Installation
Tap Installation and Plug of Prior Tap
Tap Location, Electrical Indicator
Wet Connection Installation
Wet Connection Installation and Plug of Prior Tap or Wet Connection

All work under a permit shall be performed by the permittee and/or persons directly employed and supervised by the permittee.

(b) **Issuance**

Permit applications shall be submitted, and permits shall be obtained before commencement of any work requiring a permit. Where permits involving plumbing work are required, such permits will be issued only to Licensed Master

Plumbers, and to plumbers in the employ of municipal, state or federal agencies and authorities. Permits to set, reset, repair, or disconnect a water meter on service pipes with a diameter of less than one and one-half (1½) inches may be issued to persons who may lawfully perform such work under §20-05(c) of these Rules. Meter repair permits may also be issued to meter repair companies for repair on the premises of water meters.

1) Any work performed without a permit as required by these Rules shall be a violation.
2) Permits for all emergency work must be obtained within forty-eight (48) hours or by the end of the second business day following commencement of the work.
3) Upon the expiration date of a plumber's license, if such license is not renewed within sixty (60) days after such expiration date, all permits issued under that license shall also expire.

(c) **Regulation of permit work**

If a Licensed Master Plumber or meter repair company fails to comply with three (3) or more provisions, standards or requirements of these Rules, or the terms and conditions of any permit already issued under these Rules, during a three (3) month period, the Commissioner or his/her designee, in accordance with §24-309 of the Administrative Code, may make a determination not to issue additional permits from applications submitted from such Licensed Master Plumber or meter repair company until such time as all the violations or non-compliances are corrected.

1) In the event the Commissioner or his/her designee makes such a determination, the BCS Deputy Commissioner shall mail the determination to the address set forth in DOB's records.

2) The Licensed Master Plumber or meter repair company, as applicable, may appeal the Commissioner's determination by filing a notarized petition within 60 days from the date of the Commissioner's determination with the Commissioner, 59-17 Junction Boulevard, 19th Floor, Flushing, New York 11373-5108. The appeal shall state the name and address of the petitioner, include a short and plain statement of the matters to be adjudicated, address each of the violations mentioned in the Commissioner's determination, with a statement of the reason or reasons why the petitioner believes the determination was incorrect, including supporting documentation, and include the Commissioner's determination. During the review of the appeal, the Commissioner shall continue to issue permits to the Licensed Master Plumber or meter repair company.

3) Upon review of the appeal, the Commissioner may, in his/her discretion, grant or deny the petition. Appeals shall be processed within thirty (30) calendar days of receipt of such appeal. If the Department shall fail to process an appeal within thirty (30) calendar days the appeal shall be granted, provided that the petitioner has responded to all requests for information submitted by the Department.

4) The filing of an appeal shall not relieve the petitioner from complying with any requirements of the Rules, and shall not immunize any person or entity from any civil or criminal prosecution authorized pursuant to the Rules.

(d) **Department of Transportation Approvals**

All permits for work requiring opening or obstructing a street and/or sidewalk shall be contingent upon approval by the Department of Transportation (DOT) or the agency having jurisdiction to authorize such opening.

(e) **Permits at Job Site**

All permits required by the Department must be displayed at the work site. Failure to display necessary permits shall be a violation of these Rules.

(f) **Emergency Repairs**

1) A Licensed Master Plumber may perform emergency repairs where a defective service or defective interior piping results in leakage of City water and/or immediate danger to the public safety. All required permits must be obtained in accordance with the provisions of §20-01(b)(2).

2) Where it is necessary to open a street for emergency repairs, a Licensed Master Plumber shall obtain an emergency permit from DOT or the agency having jurisdiction to authorize such an opening.

(g) **Return of permit after completion of work**

Within ten (10) business days following the completion of any work for which a meter permit has been issued, the permit, carrying a certification of the date of completion of the work, shall be returned to the Department A permit shall expire after 365 days for new construction work and after thirty (30) days for meter replacements or first-time meter installations in existing buildings. If the work is to be performed after that time, the applicant must apply for a permit extension before the original permit expires. If a completed meter permit is not returned upon completion of the work, the official meter set date shall be thirty (30) days after issuance of the permit for meter replacements or first-time meter installations in existing buildings or 365 days after issuance of the permit for new construction work.

(h) **Department of Parks and Recreation Permits**

Excavation work for water services, or for outdoor pit meters immediately adjacent to or under the drip line of a street tree requires a permit from the Department of Parks and Recreation and adherence to their "Forestry Protocol for Planned and Emergency Utility Work."

§20-02 Taps To City Water Mains.

(a) **Separate Supply**

A separate corporation stop (tap) and service pipe shall be installed for each building supplied with City water, except for buildings that have service pipes supplied by internal water mains as described in §20-03 (b).

Siamese corporation stops (taps) or service pipes on the inlet side of the main house control valve are prohibited. A service pipe connected to the City main by a T-connection, or by any means other than a corporation stop (tap) or a wet connection, shall be controlled by a gate valve placed in the service pipe, and located within two (2) feet of the point of connection to the main.

(b) **Connections to City Mains**

1) Corporation stops (taps) and wet connections to a City Main shall be inserted or installed only by Department employees.
Waivers may be granted for T-connections in extenuating circumstances (i.e. connections to two (2) inch mains and two (2) or three (3) inch connections to a four (4) inch main).

2) A two (2) or three (3) inch connection to any main four (4) inches in diameter or less shall be made by a T-Connection with an adjacent valve.

3) Direct corporation stop connections (taps) shall not exceed one (1) inch in diameter for mains four (4) inches or less in diameter. Each one and one-half (1 ½) inch corporation stop connection (tap) to such a main shall be made through a tapping saddle, as directed by the Department. The tapping saddle is to be provided and set by the Licensed Master Plumber.

4) Direct corporation stop connections (taps) shall not exceed one and one-half (1½) inches in diameter for six (6) inch mains. Larger connections to mains of this size shall be wet connections.

5) Direct corporation stop connections (taps) shall not exceed two (2) inches in diameter for all mains larger than six (6) inches in diameter. All connections larger than two (2) inches shall be wet connections.

6) Tapping saddles shall be provided by the Licensed Master Plumber whenever, in the opinion of the Department, a pipe to be tapped lacks sufficient wall thickness to securely hold the corporation stop (tap).

(c) **Spacing of Corporation Stops (Taps) and Wet Connections**

1) No corporation stop (tap) or wet connection shall be inserted on a fitting or within eighteen (18) inches of a hub, fitting, hydrant, branch, dead end, etc.

2) The minimum spacing interval for corporation stops (taps) and wet connections shall be twelve (12) inches for both three quarter (¾) inch and one (1) inch corporation stops (taps), and eighteen (18) inches for one and one-half (1½) and two (2) inch corporation stops (taps) and wet connections.

3) No corporation stop (tap) or wet connection shall be installed below the horizontal diameter of the main.

(d) **Location of Corporation Stops (Taps) and Wet Connections.**

Water main corporation stops (taps) or wet connections shall be installed in front of the property to be supplied with water. All old taps or wet connections shall be plugged or destroyed prior to the installation of the new tap or wet connection, unless interruption of service to building occupants dictates that installation of the new tap or wet connection be completed prior to plugging or destroying the old tap or wet connection.

(e) **Charges for Corporation Stops (Taps) and Wet Connections**

The charges for the installation of a corporation stop (tap) or a wet connection shall be as fixed by the New York City Water Board Water and Wastewater Rate Schedule.

(f) **Permits at Job Site**

Permits for corporation stops (taps), wet connections and plugs shall be displayed at the work site.

(g) **Plugs**

If an approved excavation for the removal or destruction of a single corporation stop (tap) reveals that the service pipe is supplied by two (2) or more corporation stops (taps), the Licensed Master Plumber making the excavation shall plug or destroy the additional corporation stops (taps). The Department will make its records relative to the location of any corporation stop (tap) to be plugged or destroyed available to the licensed plumber. The Licensed Master Plumber shall be solely responsible for locating the corporation stop (tap). A separate permit will be required for each corporation stop (tap) destroyed.

(h) **Destruction of Wet Connections, Corporation Stops (Taps) and Three-Way Connections**

1) Destruction of a wet connection shall be performed by the Licensed Master Plumber engaged by the owner or the owner's duly authorized representative. The valve shall be closed, the stuffing box gland thoroughly tightened, the valve stem cut off flush with the stuffing box gland, the service pipe disconnected, and a plug inserted in the outlet end of the valve. The plug and wet connection valve shall be anchored to the main as directed by the Department.

2) A screw corporation stop (tap) shall be destroyed by removing a diagonal portion of the corporation stop thread. The corporation stop (tap) shall be closed, and the service pipe shall be disconnected. A driven corporation stop (tap) shall be removed and replaced with a screw plug, unless otherwise authorized by the Department.

3) All corporation stops (taps) and wet connections which are destroyed shall have the service pipes disconnected, the curb box (if any) removed, and a portion of the service pipe at the entry to the building removed.

4) When a corporation stop (tap) or wet connection has been shut off and the service pipe connected thereto is not to be used, the Licensed Master Plumber shall take the necessary steps to plug the corporation stop (tap), as outlined above.

5) Three-way connections to be abandoned shall have all piping disconnected and removed from the branch hub of the three-way, and an approved plug inserted into the hub. The plug shall be anchored to the main as directed by the Department. All work shall be done by a Licensed Master Plumber, and the permittee shall pay all costs

associated with shutting the main.

When a three-way hub is not available, the existing three-way outlet shall be capped and anchored to the main. All work shall be consistent with the Standard Water Main Specifications of the Department of Design and Construction (DDC).

(i) **Use of Tap Location Electrical Indicator**

When a building is to be demolished and the Tap Location Electrical Indicator Permit has been obtained, the Department will assist a Licensed Master Plumber in locating a tap through the use of an electrical indicator. If the indicator fails to locate the tap within five (5) feet of the expected location, the Licensed Master Plumber will be relieved of the obligation to plug and destroy the tap. No refund or credit of the permit fee will be granted if the indicator fails to locate the tap.

(j) **Sizes of Corporation Stops (Taps) and Services Pipes**

The size of the corporation stop (tap) and service pipe to supply a premise shall be determined by the water demand load (gpm) of the premises, as determined by fixture units. In premises used for commercial and industrial purposes, where it is not feasible to determine the size of the tap and service pipe as indicated above, these sizes shall be determined solely by the water demand load (gpm) of the premises. (Tables for determining the appropriate sizes of taps and service pipes are found in Appendix Tables #1, #2 and #3.) The minimum tap shall be three-quarter (¾) inch, and the service pipe shall be at least one (1) inch in diameter. Unless otherwise approved by the Department, all taps shall be the same size as their corresponding service pipes and the goosenecks required by §20-03(n) shall be the same size as the service pipes.

(k) **Fire Connections and Supply**

1) **Fire Connections**

The Department of Buildings shall determine the size of all fire service pipes to be installed. The size of corporation stops (taps) or wet connections for fire service pipes shall be subject to the approval of the Department.

All fire connection sizes shall be as follows:

(i) The size of the corporation stop (tap) or wet connection for fire service pipes up to, and including, four (4) inches in diameter shall be the same size as the fire service pipe.

(ii) For fire service pipes larger than four (4) inches in diameter, the size of the wet connection shall be one size smaller than the size of the fire service pipe.

2) **Combined Service Pipes/Dual Fire and Domestic Service Pipes**

A connection for domestic purposes may be made from a fire service pipe only upon approval of the Department of Buildings. For such installations, valve(s) and meter(s) must be installed as required by §20-05 of these Rules.

3) **Prohibitions**

Fire service pipes shall not be cross-connected with any system of piping except as described in §20-02(l)(2).

(l) **Appointments for Tapping, Wet Connections, and Inspections**

1) The Licensed Master Plumber shall provide the Department with advance notification of the requested corporation stop (tap) or wet connection installation date.

2) An inspection shall also be requested by the Licensed Master Plumber before backfill is placed on new or repaired service pipes.

3) The Department shall schedule corporation stop (tap) and wet connection installations during business hours, for the next available date.

(m) **Rescheduling of Corporation Stop (Tap), Wet Connection Installation or Service Pipe Inspection**

1) When a permittee fails to provide a safe and adequately sized excavation for installation of a corporation stop (tap) or wet connection on the date and time for which an appointment has been scheduled, the installation will not be made and the permittee will be required to schedule a new appointment.

2) When a permittee fails to have a completed service pipe installation or plug ready for inspection on the date and time for

which an inspection has been scheduled, the permittee will be required to schedule a new appointment.

3) If a permittee must leave an excavation open for a subsequent corporation stop (tap)/ wet connection installation or service pipe inspection, the excavation shall be made safe, in accordance with DOT requirements.

(n) **Size of Excavation**

Sizes of excavations for wet connections and corporation stops (taps) shall be in accordance with the requirements of Appendix Table #4. If subsurface conditions prevent a plumber from making an excavation of the dimensions indicated therein, the plumber shall immediately notify the Department. The Department has the discretion to determine whether the dimensions should be changed, and what the new dimensions for the excavation shall be. All excavations shall be made safe by sheeting and bracing, where necessary, and shall conform with all applicable laws, rules and regulations.

(o) **Driven Corporation Stops (Taps)**

Where a driven corporation stop (tap) is uncovered, it must be maintained and protected. If a driven corporation stop (tap) is disturbed, it must be replaced with a screw corporation stop.

(p) **Service Pipe Leak**

1) Upon discovery of a leaking service pipe, the Department will shut the corporation stop (tap) or wet connection unless it determines that there is no immediate threat to life or property. When there is no immediate threat to life or property, a Three-Day Notice to Repair will be served upon the

owner or occupant of the premises. If the notice is not complied with, the Department will shut the corporation stop (tap) or wet connection.

2) When the corporation stop (tap) or wet connection is shut off by the Department, the owner/occupant must engage a Licensed Master Plumber to assume responsibility for the street excavation and make the necessary repairs. If the owner/occupant fails to engage a Licensed Master Plumber, the corporation stop (tap) or wet connection will remain closed, the excavation will be backfilled, and the street will be properly restored.

(q) **Shut-off of Tap by Licensed Master Plumber.**

A Licensed Master Plumber must secure a permit to open or shut a tap controlling a service pipe connected to a City water main for any repair, replacement or installation. If it is necessary to shut off the water main while repairing, replacing or installing a service pipe, the Licensed Master Plumber shall immediately notify the Department. The shut off shall be made only by the Department, and the permittee must pay all costs associated with shutting off the main. If a property is vacant and sealed longer than one year, the property owner must have the tap destroyed or plugged and the service line plugged. If the property owner fails to take this action, the Department may perform the work upon written notice to the property owner at the mailing address on file with the Department and assess the cost to the property owner.

§20-03 Water Service Pipes.

(a) Advance Conceptual Design Approval

1) A Licensed Professional Engineer, Registered Architect or Licensed Master Plumber may obtain advance conceptual design approval for corporation stops (taps), wet connections, service pipes or relays by submitting a conceptual design drawing to the Department and paying the required fee. Information on the related water demand, length of service pipe, proposed size of the corporation stop (tap)/ wet connection, service pipe and fire sprinkler heads to be utilized must also be provided.

2) The advance review and approval of a conceptual design may be the basis for a permit application for a period of two (2) years.

3) Prior to the expiration of an advance conceptual design approval, the Department may extend the approval for an additional sixty (60) days upon receipt of a written request for an extension.

(b) Internal Water Main Approval

1) Advance approval for internal water mains shall be obtained from the Department of Buildings by a Licensed Professional Engineer or Registered Architect .

2) Internal water mains shall have either an approved valve and valve box or an approved meter and meter pit installed in the property within two (2) feet of the property line in addition to meters required by 20 - 05 (a). After installation, such meters will be owned, maintained, repaired and read by the Department.

(c) **Department of Buildings Approval**

1) Evidence of prior Department of Buildings approval of service pipe size will be required before DEP approval of a permit application for:

(i) Any new corporation stop (tap), wet connection and/or service pipe installation which supplies water to a sprinkler, fire or standpipe system.

(ii) Any corporation stop (tap), wet connection and/or service pipe installation for a sprinkler, fire or standpipe system for a major renovation, or for any location where a new certificate of occupancy is required.

(iii) Any corporation stop (tap), wet connection and/or service pipe installation for a domestic water supply system to which fire sprinkler heads are connected.

(iv) Any corporation stop (tap) or wet connection installed in order to supply an internal water main.

2) For premises that are not under the jurisdiction of the Department of Buildings, or where the owner/developer is exempt from obtaining Department of Buildings approval, a Licensed Professional Engineer or Registered Architect may submit a letter to the Department that certifies that the corporation stop (tap), wet connection and service pipe are adequately sized, and will provide an adequate degree of fire protection and a sufficient supply of water for domestic purposes. This certification will be accepted by the Department in lieu of Department of Buildings approval for the purposes of processing a permit application.

(d) **Sizing Services**

1) Minimum acceptable sizes of corporation stops (taps), wet connections and service pipes that provide domestic water supply shall be determined by Department sizing tables. (See Appendix Tables #1, #2 and #3.)

2) Where the Department sizing tables indicate that a two (2) inch tap and a two and one-half (2 ½) inch service line are required, approval will also be granted for a two (2) inch tap and a three (3) inch service line.

3) Where a Licensed Professional Engineer, Registered Architect, or Licensed Master Plumber proposes sizes of taps, wet connections, service pipes, or internal water mains using methods other than Department sizing tables, all calculations shall be submitted to the Department for review and approval.

(e) **Department of Buildings Service Pipe Sizing**

For service pipes that supply water to both domestic and fire protection systems, the service pipe size shall be the larger of the size determined by the Department of Buildings or the size as determined by the Department sizing tables. (See Appendix Tables #1, #2, and #3.)

(f) **Materials for service pipes and fittings.**

(1) New service pipes two (2) inches in diameter or less shall be brass pipe or copper tubing.

(2) Service pipes larger than two (2) inches in diameter shall either be brass or ductile iron, except that the above-ground portion of the service pipe, up to four (4) inches in diameter, may be Type K or Type L copper.

(3) Only new materials shall be used for service pipes.

(4) Service pipes shall be of uniform diameter and material unless otherwise approved by the Department.

(5) All service pipes shall conform to the most recent revision of the following standards, except that all service pipes, corporation stops, tail pieces, nuts and other fittings shall have a lead content that shall not exceed 0.250%:

(i) Department of Citywide Administrative Services, Division of Municipal Supply Services 32-P-3 Standard for Brass and Copper.

(ii) Department of Citywide Administrative Services, Division of Municipal Supply Services 32-T-1 Standard for Copper Tubing, except that above-ground, indoor service pipe four (4) inches or smaller, including the meter setting and piping for any backflow prevention device, shall be Type K or Type L copper.

(iii) For three (3) inch and four (4) inch diameter pipe: ANSI/AWWA C151/A21.51, Class 52, Standard for Ductile – Iron Pipe, Centrifugally Cast, for Water or Other Liquids.

(iv) For greater than four (4) inch diameter pipe: ANSI/AWWA C151/A21.51, Class 56, Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids.

(g) **Approved Dimensions and Weights**

Pipe dimensions and weights shall be in accordance with Appendix Tables #5, #6 and #7. Ductile iron pipes shall be lined with a cement-mortar lining and coated with an asphaltic coating, in accordance with the latest revision of ANSI/AWWA C104/A21.4.

(h) **Joints**

Ductile iron pipe shall have mechanical or push-on joints with field-lock gaskets. Rodding of fittings, when necessary, shall be in accordance with DDC Specifications.

(i) **Mechanical and Flare Joints**

Connections of existing lead service pipes to copper tubing or brass service pipes shall be made using either a compression coupling or an equivalent approved by the Department.

(j) **House Control Valves.**

House control valves, which shall be made of material similar to the corresponding service pipes, shall be gate type with the exception of those between the sizes of three-quarter (¾) inch and two (2) inches, which may be full port ball valves. The lead content of such valves shall not exceed 0.250%. The house control valve shall be placed in the service pipe inside the building within two (2) feet of the building wall, and shall be located where it is accessible at all times. All valves shall be designed for a 150 psi minimum working pressure. For fire, sprinkler, and standpipe service pipes, and for any service pipe which supplies sprinkler heads, the house control valve shall be an OS&Y Valve or an indicating valve approved by the Department of Buildings. Notwithstanding the preceding sentence, for fire or combined service pipes two (2) inches or smaller, the house control valve may be an OS&Y valve or a UL/FM-approved full-port ball valve approved by the Department of Buildings.

(k) **Curb Valves.**

(1) Curb valves shall be full port ball valves or non-rising stem gate valves designed for a minimum of 150 psi of working pressure.

(2) Curb valves shall be required on all domestic water service pipes larger than two (2) inch and on any water service pipe that provides for fire protection. All curb valves shall be set in the service pipe in the sidewalk area, and shall be located eighteen (18) inches from the curb or other such locations as may be approved by the Department.

(3) All curb valves shall be provided with a tar coated iron extension box with a cover which is flush with the sidewalk. Each curb valve larger than two (2) inches in diameter shall be equipped with an operating nut at least one and one quarter (1¼) inch square. Curb valves two (2) inches and smaller in diameter may be full port ball valves equipped with a quarter turn shutoff nut.

(4) The property owner shall protect the curb valve/box from any damage and shall promptly report in writing to the Department any circumstances that may adversely affect the operation of the curb valve.

(l) **Straight Service Pipes**

Service pipes shall be laid in a straight line at right angles to the street main, and shall extend from the corporation stop (tap) or wet connection to the main house control valve. Where conditions preclude such an installation, a Licensed Master Plumber shall submit a proposed alternate for review and approval.

(m) **Gooseneck and Offset Swing Joints on Service Pipe Connections**

Each brass or copper tubing service pipe must have at least three (3) feet of copper tubing formed in a gooseneck connection to the corporation stop (tap) and laid to the right hand facing the tap, as shown in Appendix Figure #2. Each brass service pipe with threaded joints shall be installed as shown in Appendix Figure #2. No offset swing joint shall be made for ductile iron connections.

Swing joints and/or goosenecks shall be located at the corporation stop (tap) or wet connection, and may also be placed immediately outside a building laid to

the right hand facing the building where the building is constructed on a pile foundation or other unyielding support.

(n) **Service Pipe Depth**

All service pipes shall be installed at a depth of at least three and one-half (3 ½) feet, no more than six (6) feet below ground, unless a written waiver is obtained from the Department. Where a service pipe is installed with less than three and one-half (3 ½) feet of cover, it must be insulated and protected in accordance with the requirements described in §20-03(y). A service pipe shall not be laid within six (6) inches of any other sub-surface structure, conduit or pipe. A service pipe shall not be laid directly below, and parallel with, any sub-surface structure, conduit or pipe.

(o) **Service in Construction Trench**

Service pipes laid in a construction trench shall be supported and protected from settlement.

(p) **Service Pipe in Subway Air Vent**

Where service pipes are installed through a subway vent or similar construction, the method of installation shall be as illustrated in Appendix Figure #4.

(q) **Backfill**

Backfill around and one foot over a service pipe shall be of clean earth, free of stones, and shall be carefully tamped and compacted in accordance with the latest DOT specifications. The remainder of the backfill shall be free of stones larger

than three (3) inches in diameter, and shall be satisfactorily compacted either by tamping, flushing or both. Where tunneling has been permitted, the backfilling of the tunnel portion shall be well compacted with clean earth fill free of stones.

(r) **Test of Service Pipe**

Each new or repaired service pipe shall be subject to a pressure test performed under street main pressure. This test shall be conducted by the Licensed Master Plumber in the presence of a Department inspector. All service pipes and appurtenances shall remain uncovered for the duration of the test for observance of leakage.

(s) **Service Pipe Repairs.**

A new service pipe must be installed where more than one-half (½) of an existing service pipe is in need of a repair or when any repairs are required and the existing service pipe is lead, galvanized steel or galvanized iron. All repairs must conform with the standards described in §20-03 of these Rules.

(t) **Service Pipe Damaged by Electrolysis, Galvanic Action or Other Local Conditions**

When a service pipe has been damaged by electrolysis, galvanic action or other local conditions, it shall be repaired and protected against such damage in a manner approved by the Department.

(u) **Thawing**

Thawing of water service pipes shall be performed under permit only by Licensed Master Plumbers.

(v) **Protection of Service Pipe and House Control Valve.**

The property owner is responsible for preventing physical deterioration of the service, curb valve, house control valve or distribution pipe which may damage a meter or prevent its maintenance or replacement. The owner shall be responsible for repairing or replacing equipment, service or distribution piping to allow maintenance, proper operation or replacement of the meter. The property owner, and not the Department, is responsible for the maintenance of the service and distribution pipe and its associated fittings and equipment. The meter setting is the responsibility of the Department.

(w) **Replacement of Old Service Pipes Upon Establishment of New Water Service**.

If a tap or wet connection has been destroyed or shut off due to vacancy of a building, the service pipe must be replaced as part of any new tap or wet connection unless the existing service pipe is less than 40 years old, has a functioning curb valve and is neither lead, galvanized steel or galvanized iron.

(x) **Installation of a Meter on Unmetered Properties Whenever a Domestic Service Pipe is Replaced, Repaired or Relaid**.

Whenever a domestic or combined service pipe for an unmetered property is installed, replaced, repaired or relaid, a water meter shall be installed to cover the entire premises in accordance with §20-05 of these Rules. When the work is not performed under emergency conditions, DEP will indicate on the permit that the property is unmetered. When the service pipe relay, repair or replacement occurs on an emergency basis, the Licensed Master Plumber may install a set of meter inlet and outlet valves and a spool piece of a length similar to the displacement meter for that size service if the Licensed Master Plumber does not have a meter available for installation at the time of the emergency visit. If the property owner will not allow the installation of a water meter as part of the service replacement,

installation, repair or relay, the Licensed Master Plumber must return the meter permit completed but include a statement that the owner would not allow the installation of a meter.

(y) **Insulation**.

Insulation, where required by §20-03(n), shall be cellular glass insulation manufactured in accordance with ATSM C552 "Standard Specification for Cellular Glass Thermal Insulation", where a quality system for manufacturing, inspecting and testing insulation is certified in accordance with the requirements of ISO 9002. The insulation shall be fabricated in half sections wherever possible. For large diameter piping where half sections are not practical, curved sidewall segments are preferred. Wherever possible, the insulation should be factory jacketed with a 70 mil thick self-sealing high polymer asphaltic membrane with an integral glass scrim and aluminized mylar film on the surface. Mastic finish shall be pitcote 300 or an asphalt cutback mastic. Reinforcing fabric shall be an open mesh polymer fabric with 6 x 5.5 mesh per inch configuration. Sealant shall be a nonsetting butyl sealant with a minimum 85% solids content. The Department shall maintain a list of approved insulation materials. Alternate materials may be submitted for approval by the Department.

§20-04 Backflow Prevention Devices, Water Hammer Arresters, Pumps And Separation Valves

(a) **Backflow Prevention Devices**

Reduced Pressure Zone devices (RPZ's) and Double Check Valve Assemblies are backflow prevention devices. Backflow prevention devices shall be installed to prevent possible backflow/backsiphonage from a commercial property or dwelling unit into a City water main, private water main, or internal water main. A property owner shall install an approved backflow prevention device in every water service pipe that has a potential cross connection hazard, as determined by the Commissioner.

(b) **Backflow Prevention Device Requirements**

Backflow prevention devices shall be installed to address potential hazards, as follows:

DEP CONTAINMENT REQUIREMENT

DEGREE OF HAZARD	PROTECTION REQUIRED
Hazardous Facilities	Air Gap or Reduced Pressure Zone Device
Aesthetically Objectionable	Double Check Valve Assembly
Non-Hazardous Facilities with Hazardous Fixtures (such as treated boilers, cooling towers,etc.)	Double Check Valve Assembly (Provided that internal protective devices are installed for the hazardous fixtures in accordance with Department of Building requirements).
Non-Hazardous Facilities	None

Subject to review by the Department, the degree of hazard shall be determined by the property owner's Licensed Professional Engineer, Registered Architect or Licensed Master Plumber in accordance with guidelines established by the New York State Department of Health.

(c) **Cross Connection Control Reviews.**

A Cross Connection Control Review shall be required prior to approval of a permit application for installation of a corporation stop (tap) or wet connection that will be used to supply water to a property that poses a backflow hazard. A Cross Connection Control Review shall also be required prior to installation of a wet connection. Approval of Cross Connection submissions shall not constitute approval of the meter setting or other aspects of the water service design.

(d) **Installation of Backflow Prevention Devices**

1) Where the Commissioner determines that a facility poses a potential hazard to the City Water Supply, he or she shall direct the building owner or customer to install an approved backflow prevention device in the service pipe.

2) A Licensed Master Plumber shall submit an application to the Department of Buildings for a permit or an approval to install a RPZ or a Double Check Valve Assembly. RPZ's and Double Check Valve Assemblies shall be installed in accordance with plans approved by the Department. A Licensed Professional Engineer or Registered Architect shall inspect and certify that the complete installation conforms to plans approved by the Department.

3) A building owner or customer who fails of install a backflow prevention device as directed by the Commissioner shall be subject to the issuance of notices of violation, cease and desist orders, other civil and criminal actions and proceedings, and such fines, penalties and other enforcement measures as may be imposed pursuant to section 24-346 of the Administrative Code, including but not limited to the termination of the water supply to the building or to any portion thereof or a facility therein which the Environmental Control Board or the Commissioner may deem necessary to prevent or alleviate any hazard to the City Water Supply.

4) The customer shall pay any fees which the New York City Water Board may establish in connection with the termination or restoration of Water service to the customer.

(e) **Backflow Prevention Device Testing Requirements.**

(1) Each RPZ or Double Check Valve must be tested upon installation, device repair, and at least once annually, thereafter, and as otherwise required by the Building or Health Codes. Testing shall be performed by a backflow preventer tester who is certified by the New York State Department of Health and employed by a Licensed Master Plumber. A test report certifying that the backflow prevention device is operating properly must be submitted to the Department.

(2) Defects in any device tested shall be repaired within thirty (30) days, and the repair shall be followed by a retest. Retest results shall be submitted to the Department within thirty (30) days of completion of the repair.

(3) Failure of a building owner or customer to provide an annual test report certifying that an exsting backflow prevention device installed pursuant to

this section or otherwise is properly operating shall be a violation of these rules.

(f) **Suspension of Service Due to Backflow**

1) Where a backflow is detected from premises into a City water main or a private water main, the water supply to the premises may be terminated by the Department.

2) Prior to restoration of water service, a Licensed Master Plumber must certify to the Department that the backflow has been eliminated, and an approved backflow prevention device has been installed.

3) The customer shall pay any fees that the New York City Water Board may establish in connection with the termination or restoration of water service to the customer.

(g) **Water Hammer Arresters**

Where flushometers, suction tanks, other fixtures or piping are equipped with quick closing valves and are supplied by direct street pressure, an approved water hammer arrester shall be installed in the service pipe two (2) feet downstream of the meter as required by Reference Standard P107-5 F of the NYC Building Code.

(h) **Suction Tanks.**

(1) Domestic water connections to premises with a pumped supply which exceeds 400 gpm (total) must be equipped with either a suction or a surge tank, as required by the Department of Buildings.

(2) Suction tanks shall be sized as required by the Department of Buildings.

(i) **Separation (Section) Valves**

The installation of a separation (section) valve in an existing City water main or private water main for the purpose of installing two separate sources of water for a property is prohibited, except upon a finding by the Department that the separation (section) valve is required for protection of life or property.

§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 under 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 in the same building or 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, Inspection and Approval of Meter Work.

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 (1 ½) 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 through an approved automatic meter reading system.

6) For displacement type water meters, the following shall also be required:

(i) All five-eighth (⅝) 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 that 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 matters 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

(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 ($^3/_{32}$) of an inch in diameter. Compression fittings are permitted for three quarter (¾) 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 and Resetters.

Meter setters and resetters five-eighths inch (⅝) 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 (□) 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 (¼) 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 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.

(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 (¼) 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 (½) 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 (½) 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 (½) 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 (¾) 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 (½) inch to fifteen (15) inch openings and lid sizes.

(e) For one and one-half (½) 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□) inches or larger, and four (4) inches for meters less than one and one-half (1□) 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.

(l) **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(l)(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 landmarked 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.

(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.

§20-06 AIR CONDITIONING AND REFRIGERATION

(a) **General Rules**

1) Air Conditioning and Refrigeration

(i) Each direct water connection to a refrigeration or air conditioning unit using City water for cooling purposes shall be equipped with a check valve set not more than two (2) feet from the unit.

(ii) Each unit containing more than twenty (20) pounds of refrigerant shall be provided with a relief valve installed between the check valve and the unit. The relief valve shall be set at five (5) pounds above the maximum water pressure at the point of installation.

(iii) All water-cooled air conditioning or refrigeration systems shall be connected to a metered supply.

(iv) Water conserving devices shall be designed and operated in accordance with American Society for Heating, Refrigeration and Air Conditioning (ASHRAE) standards that consumes City water for make-up purposes at no more than two (2) percent of the total flow of water through the system. An additional two (2) percent shall be allowed for the purpose of bleeding and wash down.

(v) Where the City water is piped to a water conserving device, the piping supplying such water shall discharge at least two (2) inches above the over-flow rim of the pan.

(vi) Condensate from steam used directly or indirectly to produce the cooling effect in air conditioning or refrigeration systems shall be collected and used as part of the make-up water to the water conserving device or shall be put to some other beneficial use which displaces potable water.

2) Refrigeration

(i) All refrigeration systems in excess of six (6) tons of rated capacity using City water must be equipped with approved water conserving devices.

(ii) All refrigeration systems of six (6) tons of rated capacity or less using City water without an approved water conserving device shall be equipped with an automatic water regulating device on each individual unit.

3) Air Conditioning

(i) All air conditioning systems in excess of two (2) tons of rated capacity using City water must be equipped with an approved water conserving device.

(ii) All air conditioning systems of two (2) tons of rated capacity or less using City water without an approved water conserving device shall be equipped with an automatic water regulating device on each individual unit.

(b) **Hours of Use of Air Conditioning Systems**

1) Hours of use of air conditioning systems may be limited by the Department from time to time as water supply conditions so warrant.

2) Lists of □permissible hourly operation□ will be on file in the Department and may be obtained upon request.

3) The hours during which air conditioning using City water is allowed shall be posted prominently in each building and establishment using such air conditioning.

(c) **Variances**

The Department will receive and review requests for variances from this section due to demonstrated peculiar individual situations.

§20-07 INSPECTIONS

(a) **General**

All corporation stops (taps), wet connections, meters, service pipe installations, repairs, plugs and relays shall be subject to inspection by the Department. A Licensed Master Plumber shall certify that all work was performed in accordance with these Rules and all other applicable rules.

(b) **Mandatory Inspections**

Inspections shall be mandatory, and may not be waived for the following categories of work:

1) Corporation stops (taps) and service pipes supplying fire sprinkler systems.

2) Corporation stops (taps) and service pipes supplying fire protection systems.

3) Corporation stops (taps) and service pipes supplying wet standpipes.

4) Corporation stops (taps) and service pipes supplying domestic water systems to which fire sprinkler heads are connected.

5) Water service terminations (plug only).

6) Destruction of any tap or wet connection which requires an excavation separate from the one required for the new tap or wet connection.

7) Installed new wet connections and corresponding service pipes.

8) Relay or repair of sprinkler, fire, standpipe and domestic service pipes to which fire sprinkler heads are connected.

9) Meters larger than one (1) inch.

Any parts of service pipes which are installed without excavation of a trench need not be made available for inspection.

(c) **Inspection Waiver**

For domestic water service pipe installations where inspections are not mandatory, as described in . 20-07 (b), the Licensed Master Plumber shall request an inspection as described in . 20-02 (l) and . 20-02 (m). The Department in its discretion may waive such inspections. If the Department waives an inspection, the Licensed Master Plumber must submit the tap location with certification that all work was performed in accordance with these Rules and all other applicable rules.

(d) **Fee for Inspections**

A fee shall be paid for each inspection in accordance with the Water and Wastewater Rate Schedule of the New York City Water Board.

(e) **Inside Flow Test**

1) A Licensed Master Plumber may submit a written request for permission to conduct an Inside Flow Test in lieu of a mandatory inspection. Such requests may be granted, at the discretion of the Department, but *only* upon demonstration of substantial hardship.

2) Where a request for an Inside Flow Test is denied, the Licensed Master Plumber shall re-excavate and make the work available for an inspection.

3) When performing an Inside Flow Test, the Licensed Master Plumber shall provide all necessary tools, gauges, hoses, etc.

4) An Inside Flow Test shall be conducted, in the presence of a Department inspector, as follows:

(i) The Licensed Master Plumber installs a pressure gauge on the water service pipe near the entry to the premises.

(ii) The Department inspector records the static pressure.

(iii) The Licensed Master Plumber runs a large quantity of water to waste within the premises.

(iv) The Department inspector records the dynamic (with flow) pressure.

Pressure readings with a measurable difference between the static pressure and the dynamic (with flow) pressure shall be acceptable.

(f) **Permit at Work Site**

The Licensed Master Plumber must display the permit at the work site except for emergencies.

(g) **Inspection Hours**

The Department will conduct inspections Monday through Friday (except holidays) between the hours of 7:30 a.m. and 5:00 p.m., except upon a demonstration of substantial hardship.

(h) **Backfilling Before 2:00 PM**

Backfilling on installations where mandatory inspections are not required may not commence before 2:00 PM . Failure to observe this requirement may result in the suspension of the Licensed Master Plumber's privilege to self-inspect. The Licensed Master Plumber must comply with all DOT requirements.

§20-08 Water Use Restrictions And Fire Hydrant Use.

(a) **Water use restrictions.**

The use of water is permitted, subject to the following restrictions:

1) Prohibition of Use as a Source of Energy

The use of the pressure or flow of water as a source of energy is prohibited, except when specifically approved by the Department.

2) Restrictions on Use for Coolant Purposes

The use of City water for coolant purposes in industrial and commercial equipment is prohibited, except with the use of an approved □water conservation device, in accordance with . 20-06.

3) Required Recirculation in Fountains, Ornamental Pools, Aquariums and Similar Structures;

Display fountains, ornamental pools, aquariums, and similar structures using water in excess of the rate of one-half (½) gpm shall be recirculated.

(4) Shutoffs Required for Drinking Fountains and Recreational Sprinklers. Drinking fountains shall operate only when activated by a user. Recreational sprinklers shall be equipped with a timer to stop flow if the sprinkler is not being used or shall not operate when not in use.

5) Restrictions on Serving of Water

No person or entity shall cause, permit or allow the serving of water from the City water system to any patron of a restaurant, club, or other eating place unless it is specifically requested by such patron.

(6) Watering of Lawns and Gardens.

(i) The use of a hose, automatic sprinkler or other means to water lawns or gardens is prohibited between the hours of 11:00 a.m. and 7:00 p.m. Automatic irrigation systems shall include a sensor or control which shall prevent operation during or within 24 hours of substantial rain.

(ii) Between the first day of November and the last day of the following March, the following activities are prohibited using City water: (a) the use of hoses and sprinklers, and (b) the watering of lawns and gardens, except for the watering of non-turf plants with a hand-held container.

(iii) The following activities are prohibited at all times: (a) the use of hoses which flow at more than five (5) gpm at sixty (60) psi or which, regardless of flow rate, are not equipped with an automatic shutoff mechanism which will turn off the flow of water if a handle or trigger is not actively held or compressed, and (b) the practice of allowing sprinklers to flood sidewalks, gutters and roadways.

(7) Sidewalks flushing.

The flushing of sidewalks is prohibited between the hours of 11:00 a.m. and 7:00 p.m. In addition, the flushing of sidewalks by means of a hose or piping is prohibited between the first day of November and the last day of the following March. This provision, however, shall not be construed to prohibit the washing of such surfaces, particularly the exterior surface of a building, where such washing is required as part of repairs mandated by the Administrative Code or to protect the health and safety of the public. Any hose used to supply City water for sidewalk cleaning purposes must be equipped with a nozzle which limits flow to no more than five (5) gpm at sixty (60) psi and which is equipped with an automatic shutoff mechanism which will turn off the flow of water if a handle or trigger is not actively held or compressed.

(8) Temporary Suspension of Permission to Use City Water for Purposes Listed in paragraphs (6) and (7).

The Commissioner may suspend the authorization granted herein for the flushing of sidewalks and the watering of lawns and gardens. Such a suspension may be implemented without formal notice, through advisories issued via broadcast or print media. Upon the declaration of either a Water Pressure Alert or a Water Pressure Emergency, the use of City water to flush sidewalks and to water lawns or gardens is prohibited until the alert/emergency has ended.

(9) Car washing.

(i) The use of City water for commercial car washing purposes is prohibited, except (a) where at least seventy-five (75) percent of the water is reused by means of a recirculating system which uses City water for the final rinse only, or (b) where coin operated automatic high pressure equipment is employed. Any premises using City water for commercial car washing must install an approved backflow prevention device.

(ii) Garages, gasoline service stations, and other similar establishments which furnish car washing as part of their regular service and do not employ automatic car washing equipment with appurtenances, as described above, may use buckets of water only.

(iii) Any hose used to supply City water for non-commercial car washing purposes must be equipped with a nozzle which limits flow to no more than five (5) gpm at sixty (60) psi and which is equipped with an automatic shutoff mechanism which will turn off the flow of water if a handle or trigger is not actively held or compressed.

(b) **Fire hydrant use.**

(1) Fire hydrants may be routinely opened only by authorized employees of the Department and/or the Fire Department. All others seeking permission to open a fire hydrant must secure a permit from the Department. Fire Hydrant Use Permits must be displayed at the site where water is being used. Permits for the use of hydrants may not be granted when, in the view of the Department, water from a metered source is available to serve the end use described in the permit application. Permit applicants are required to describe the proposed use in detail and indicate why another alternative (e.g., existing metered source or construction meter) cannot be used. Only approved hydrant wrenches shall be used. Water shall be obtained from the smaller size hydrant nozzle only. Caps and chains are not to be broken and shall be securely replaced after use.

2) Fire Hydrant Use Permits shall be valid only between the hours of 7:30 a.m. and 7:30 p.m. on the days specified therein, unless otherwise approved by the Department.

3) Permits shall not be issued for use of fire hydrants supplied by water mains which are twenty (20) inches or larger in diameter. Fire hydrants may not be obstructed, and shall be available, at all times, for use by the Fire Department.

(4) With the exception of hoses used to extinguish fires, any hose connected to a fire hydrant must be equipped with either an approved backflow prevention device or an approved four (4) inch air gap, unless in the Department's opinion, the application does not pose a backflow hazard, such as watering a community garden. Applications which do require an air gap or backflow prevention device include, but are not limited to, demolition dust control, pavement breaking, cutting and sawing, mixing and curing of concrete or mortar, well digging, washing/pumping of manholes, basements or sewers, application of pesticides, herbicides, paints, curing agents or fertilizers, washing down roadway construction, or make-up water. (See Appendix Figure #6).

5) Connections to fire hydrants shall be made by valve and couplings which can be readily detached in case of emergency. Where valve and couplings are used, the hydrant must be fully open at all times. The rate of flow shall be governed by the installed valve, and all such connections shall be uncoupled immediately after use.

6) All fire hydrants used during the period from November 1st to April 15th shall be pumped out immediately after use. Hydrants Use Permits shall be invalid when the temperature is below thirty-two (32) degrees Fahrenheit.

7) Defective hydrants shall immediately be reported to the Department by the permit holder.

8) Opening a fire hydrant without a permit shall be a violation.

(c) **Installation and Maintenance of Corporation Stops (taps), Wet Connections, Service Pipes and Curb Valves**.

1) Installation and Maintenance

The property owner shall be responsible for installation and maintenance of corporations stops (taps), wet connection sleeves and valves, three-ways, service pipes, and curb valves.

(2) Shut-off charges

Should the Department shut a tap because of a leaking service pipe, non-payment of a bill, denial of access for an inspection or meter replacement or repair, failure to make repairs required for the installation or replacement of a meter, or non-compliance with Department rules, the owner shall pay a shut-off charge in accordance with the Water and Wastewater Rate Schedule of New York City Water Board.

§20-09 Enforcement.

Any person who is in violation of or fails to comply with any provision, standard or requirement of these Rules or the terms and conditions of any permit issued pursuant to these Rules shall be subject to the issuance of notice(s) of violation and other civil or criminal enforcement action(s) pursuant to the provisions of §24-346 of the Administrative Code of the City of New York, including but not limited to payment of civil penalties and compliance with orders of the Commissioner and/or the Environmental Control Board.

In addition to any civil and criminal enforcement pursuant to §24-346 of the Administrative Code of the City of New York, the Department may refuse to issue permits to any person who is in violation of, or fails to comply with, any provision, standard or requirement of these Rules or the terms and conditions of any permit, in accordance with Section 20-01(c) of these Rules.

§20-10 GLOSSARY

For the purposes of The Rules Governing and Restricting the Use and Supply of Water□, the following definitions shall apply:

Aesthetically Objectionable - A condition which could be objectionable to other water consumers, but would not adversely affect human health. Substances such as food-grade dyes, hot water, and stagnant water from fire lines in which no chemical additives are used may result in aesthetically objectionable conditions.

Air Gap - The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device, and the flood level rim of the receptacle, which shall be at least double the diameter of the supply pipe.

Applicant - Any person applying for a permit pursuant to these Rules.

ANSI - The American National Standards Institute.

ASCII - American Standard Code for Information Interchange.

ASTM - The American Society for Testing Materials.

AMR – Automatic Meter Reading. The use of radio or telephone-based technology to read water meters.

AUTOMATIC WATER REGULATING DEVICE- A self regulating valve or other device, the purpose of which shall be to limit the maximum use of City water on air conditioning and refrigeration units that do not have a water conserving device to 1.5 gpm per ton of refrigeration or air conditioning.

AWWA - The American Water Works Association.

Backflow Prevention Device - An approved air gap, reduced pressure zone (RPZ) device, or double check valve assembly (DCV) used to contain potential contamination within a facility.

Backflow/Backsiphonage- The reversal of normal flow in a system caused by a negative pressure (vacuum or partial vacuum) in the supply piping.

Ball Valve - A valve capable of regulating, stopping or starting flow with a one-quarter (90E) turn of the valve by means of a movable ball which fits in a spherical seat.

BCS. Bureau of Customer Services

Booster System - A pumped system used to deliver water at a higher pressure within a building.

Building - An enclosed structure having a specific block and lot (or tax sub-lot) and a separate entry from the street or an outdoor area.

City - The City of New York.

City Water - Water supplied by the City of New York.

City Water Main - A water main owned and maintained by the City of New York under the jurisdiction of the Department.

Combined service. A water service which supplies both domestic and fire suppressions end uses and the fire protection requirements exceed the domestic demand and determine the size of the service.

Commissioner - The Commissioner of the New York City Department of Environmental Protection.

Completed meter permit. A meter permit returned to the Department that indicates the meter size, type, serial number, remote identification number, meter and remote receptacle location, and date of installation that has been signed and sealed by the licensed plumber and lists the licensed plumber's business address.

Cross Connection - A physical connection or arrangement between two separate piping systems where one system contains potable water; the other contains steam, gas, a chemical, or water of questionable safety, and there may be a flow from one system to the other.

Curb Valve - A shutoff valve on the service pipe in the sidewalk area outside the building, generally located eighteen (18) inches from the curb.

Customer - Any person to whom City water is supplied.

Day. Except as otherwise stated, day shall refer to calendar day.

DDC- New York City Department of Design and Construction.

DOT- New York City Department of Transportation.

Degree of Hazard - The potential of a facility to cause contamination of the public water supply. A facility may be rated Hazardous, Aesthetically Objectionable or Non-Hazardous.

Department or DEP. The New York City Department of Environmental Protection.

Detector Assembly - A device installed in a water service pipe, in lieu of a meter, which indicates that flow has occurred.

Disinfection - Chlorination in accordance with methods approved by the Department.

Distribution piping. All piping downstream of the water meter setting.

Domestic service with sprinkler heads. A domestic service sized for domestic demands which has been approved by the Department of Buildings to supply a limited number of fire sprinkler heads.

Domestic Use- Water consumed for purposes other than extinguishing fire.

Double Check Detector Assembly- A device consisting of two (2) single independently acting check valves, suitable connections for testing the water tightness of each valve, and an indicator that shows whether flow has occurred from the water service pipe into the premises housed together as one unit.

Double Check Valve Assembly- A device consisting of two (2) single independently acting check valves, suitable connections for testing the water tightness of each valve, an inlet control valve and an outlet control valve housed together as one unit.

Encoder-Register - A device from which electronic meter reading data can be obtained from the meter semiautomatically and at a remote location.

Fee - A charge determined by the New York City Water Board.

Fire Department - The New York City Fire Department.

Fire Meter - A water meter used to monitor consumption by sprinklers or other fire protection systems.

Fire Pump - A pump installed on a service pipe to insure adequate flow for purposes of fire protection.

Fire Service - A service pipe that supplies water exclusively to a fire protection system.

Fixture Units - A measure of the probable hydraulic demand on the water supply by various types of plumbing fixtures.

Flood Level Rim - The edge of the receptacle from which water overflows.

Flushometer Valve - A device which discharges a predetermined quantity of water to fixtures for flushing purposes and is actuated by direct water pressure.

Gooseneck - An extra three (3) to five (5) feet of water service pipe installed to the right of the corporation stop (tap) when facing the corporation stop (tap). (See Appendix Figure # 2).

G.P.M. (gpm) - The rate of flow of water in a service pipe, or through a meter or a pump, measured in gallons per minute.

Hazardous Facility - A facility in which substances may be present that may endanger the health of other customers if introduced into the public water system. Examples include: laboratories, sewage treatment plants, chemical plants, hospitals, and mortuaries.

House Tank (Roof Tank) - An elevated water storage tank used to feed domestic and/or fire systems, which is usually located on the roof.

Hydrant - A standard New York City fire hydrant.

I. D. - The inside diameter of a pipe.

Internal water main. A water main constructed by a private entity in private property and not in a mapped street, record street or a street for which an opinion of dedication has been issued. Internal water mains are under the jurisdiction of the Department from the City or private water main up to and including the meter.

Internal Fire Protection System - A fire pump system, a sprinkler system or a standpipe system.

Irrigation System - Piping used to supply water to vegetation.

Licensed Master Plumber - A plumber licensed by the City agency having jurisdiction over such licenses to perform plumbing work within New York City.

Mapped Street - A street that appears on the official map of New York City.

Meter - An instrument for measuring amounts of water consumed.

Meter Register - The system component that converts the movement of the meter's impeller, turbine, or disc into an electronic signal or display. This component consists of a meter register and a signal (data) encoder assembly, and is assembled as either a single unit, or as separate units to be mounted on the meter.

Meter set date. The date the meter is installed.

Meter setter/resetter. A shop or factory-fabricated set of piping, valves and an electrical continuity bar installed as a unit designed to hold a water meter of two (2) inches or less in diameter.

New York City Water Board - A corporate municipal instrumentality of the State of New York established by Chapter 515 of the Laws of 1984 which is authorized to establish and collect fees, rates and other service charges for use of, or for services furnished by, the New York City water and sewer systems.

Non-turf plants. Plants other than a lawn.

Nozzle - A spring loaded self-closing device used for controlling the flow of water from a hose.

Offset Swing Joint - An installation consisting of three (3) lengths of pipe and four (4) elbows which are installed in lieu of a gooseneck. (See Appendix Figure # 2.)

OSHA - The Occupational Safety and Health Administration of the United States Department of Labor.

OS & Y Valve - The outside screw and yoke valve used on fire lines.

Person - An individual, partnership, company, corporation, association, organization, governmental agency, administration, department, any other group of individuals, or an officer or an employee thereof.

Pit Meter - A water meter installed in an outside pit or vault.

Private Water Main - A water main constructed by a private person in the bed of a final mapped street or record street.

Professional Engineer - An engineer licensed by the New York State Education Department to practice professional engineering in New York State.

psi - The static pressure of water within a closed piping system, or the loss of water pressure due to flow through a piping system, flow control devices or flow measuring devices, measured in pounds per square inch.

Record Street - A street that appears on the Tax Map of the City but may not be a mapped street.

Reduced Pressure Zone (RPZ) Device - A minimum of two (2) independently acting check valves, with an automatically operated pressure differential relief valve located between the two (2) check valves.

Registered Architect - A person licensed by the New York State Education Department to practice architecture in New York State.

Relay - Replacement of an entire water service pipe without replacement of the corresponding corporation stop (tap) or wet connection.

Remote Receptacle - A system component at a location away from the meter that receives the probe of a portable visual-display unit, or a portable meter reading unit.

Rodding - The installation of steel rods in order to secure and prevent movement of joints, valves, caps, plugs, fittings and appurtenances.

Sealed Building. A building with windows and doors which are locked and covered or blocked by concrete block, bricks, sheet metal or other materials intended to prevent access. Windows covered with wooden boards shall not constitute a sealed building.

Separation (Section) Valve - A valve installed in a City water main or private water main to ensure two (2) separate sources of water.

Service Pipe. A water supply pipe which connects the customer to a City water main, private water main or internal water main. Service pipes connecting a single customer's premises to a City water main or a private water main are under the jurisdiction of the Department from the City or private water main up to and including the meter set in metered properties, or first valve within the property in unmetered properties.

Sidewalk Valve - A valve on a domestic service pipe located in the sidewalk area, at a distance of two (2) feet (street side) from the property line.

Stuffing Box - That part of a valve which contains packing or similar material which prevents leakage when the valve is operated.

Suction Tank - A tank used to protect the City distribution system from a large, sudden water demand.

Swing Joint Connection - An acceptable method of connecting to either well water or City water.

Tap - A corporation stop approved by the Department which controls the flow of water.

Tee Connection - A three-way pipe fitting installed in a private water main or internal water main in lieu of a tap or wet connection.

Title Vested Street - A mapped street or record street whose ownership has been accepted by the City of New York, or a street which has a Corporation Counsel Opinion of Dedication.

UL/FM. Underwriter's Laboratories/Fireman's Mutual.

Vacant building. A building which is not inhabited, or is occupied illegally.

Water Meter Setting. The water meter, inlet and outlet isolation valves, test port or test tee and associated piping and fittings.

Valve - An non-rising stem gate valve.

Valve Box - A standard New York City valve enclosure including the skirt, head and cover.

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Waiver- The act of intentionally relinquishing a right or privilege.

Water Conserving Device - With reference to air conditioning or refrigeration systems, an evaporative condenser, water cooling tower, spray pond or economizer.

Water Meter Setting. The water meter, inlet and outlet isolation valves, test port or test tee and associated piping and fittings.

Water Outlet - An orifice through which water is supplied to a fixture, into the atmosphere, to a boiler or heating system, or to any device which requires water to operate.

Wet Connection - The hardware required to install a connection larger than two (2) inches without interruption of water service. A wet connection shall consist of a sleeve and a corresponding valve approved by the Department.

§20-11

RCNY

Title 15

Chapter 20

APPENDIX

Effective June 22, 2009

Appendix to Chapter 20 of Title 15

TABLE # 1 FIXTURE UNITS - TABLE OF EQUIVALENTS		
FIXTURE	**DWELLINGS**	**COMMERCIAL/INDUSTRIAL BUILDINGS**
Kitchen & Laundry		
Kitchen Sink	2	4
Laundry Tray (1 to 3 Sections)	3	3
Dishwasher (2 Inch Outlet)	1	4
Washing Machine (Automatic)	2	See Commercial Washing Machine Fixture Units Below
Bathroom, Washroom & Shower		
Bathroom Group: (Toilet, Sink & Tub/Shower) (a) Tank (b) Flush Valve	 6 8	 11 15
Toilet (a) Tank (b) Flush Valve	 3 6	 5 10
Wash Basin	1	2
* Bath Tub	2	4
* Shower	2	4
Urinal	3	6
Commercial Washing Machine & Other Plumbing Outlets		
Cold Water Only - e Inch & Smaller	1	2
Hot & Cold Water - e Inch & Smaller	2	4
Cold Water only - : Inch	2	4
Hot & Cold Water - : Inch	4	8
Cold Water Only - 1 Inch	3	6
Hot & Cold Water - 1 Inch	6	12

A bath tub and the shower over it are considered to be a single fixture.

TABLE #2 Conversion of Fixture Units to Rate of Flow		
FIXTURE UNITS		**RATE OF FLOW**
Premises with more than 20% flushometers	Premises with less than 20% flushometers	(gpm)
–	10	8
–	15	12
–	20	15
5	30	20
10	40	25
15	60	33
25	80	39
35	108	43
50	125	49
65	150	55
75	175	60
90	200	64
100	210	66
110	225	70
125	250	74
150	270	78
175	300	83
200	340	92
250	375	100
300	410	105
325	450	115
358	475	120
400	500	130
450	550	135
500	600	140
550	630	150
600	700	155
650	720	165
700	750	170
750	800	180
800	850	185
850	875	190
900	925	195
950	950	200
1000	1000	205
1500	1500	270
2000	2000	330
2500	2500	380
3000	3000	440
3500	3500	490
4000	4000	540
5000	5000	670

TABLE #3

MINIMUM SIZE OF SERVICE PIPES, CORPORATION STOPS (TAPS) AND WET CONNECTIONS

Based on the Rate of Flow in Gallons

Per minute and the Length of Service Pipe in Fee

LENGTH OF SERVICE PIPE (ft.)		10	20	25	30	40	50	55	60	80	100	150	200	250	300	350	400	450	500	550	600
SERVICE PIPE SIZE (in.)	TAP/W.C SIZE(in)	ALLOWABLE FLOW (gpm)																			
1	:	21	15	13	12	10	9	9	8	7	6	4	4	3	3	3	2	2	2	2	2
1	1	21	15	13	12	10	9	9	8	7	6	4	4	3	3	3	2	2	2	2	2
13	1	37	25	23	21	17	16	15	14	13	12	10	8	7	6	6	5	5	5	4	4
1 2	1	55	41	37	34	28	25	24	23	20	18	14	12	11	10	9	8	8	7	7	7
1 2	1 2	55	41	37	34	28	25	24	23	20	18	14	12	11	10	9	8	8	7	7	7
2	1 2	100	84	75	70	59	52	50	48	41	37	28	24	21	19	18	16	15	15	14	13
2	2	100	84	75	70	59	52	50	48	41	37	28	24	21	19	18	16	15	15	14	13
2 2	2	150	150	135	125	105	93	90	86	73	65	46	39	35	31	29	27	25	23	22	21
3	3	220	220	210	200	165	145	140	135	120	105	81	70	61	56	51	48	45	42	40	38
4	3	300	300	300	290	250	220	210	200	170	155	130	119	110	104	98	94	90	86	82	78
4	4	390	390	390	390	350	320	305	290	250	220	165	142	126	114	105	98	92	86	82	78
6	4	600	600	600	600	600	550	525	500	430	380	285	245	215	195	185	177	170	165	162	158
6	6	880	880	880	880	880	880	840	810	700	620	490	420	370	335	310	290	270	254	245	235
8	6	1550	1550	1550	1550	1550	1550	1550	1550	1400	1300	1010	865	765	670	640	595	555	525	500	475
10	8	2450	2450	2450	2450	2450	2450	2450	2450	2450	2300	1840	1575	1395	1260	1160	1080	1015	955	905	865
12	10	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	2950	2530	2245	2030	1870	1740	1635	1535	1460	1400

TABLE #3 FLOWS ARE BASED ON A MAXIMUM PRESSURE LOSS OF TWO (2) psi IN THE SERVICE PIPE OR A MAXIMUM VELOCITY OF TEN (10) FT PER SECOND, WHICHEVER RESULTS IN A LESSER RATE OF FLOW

Assumptions: (a) Hazen-Williams Coefficient C = 100

(b) Loss through tap is negligible

(c) Loss through curb valve and house control is negligible

(d) Loss through meter is negligible

(e) Loss through backflow preventer is negligible

TABLE #4

Excavations for Corporation Stops (Taps) and Wet Connections

WET CONNECTIONS							CORPORATION STOPS				
SIZE		DIMENSION OF OPENINGS					DIMENSION OF OPENINGS				
Wet Conn.	Water Main	A	B	C	D	E	Water Main	F	G	H	I
3" & 4"	6"	8' - 2"	4' - 0"	1' - 0"	7' - 2"	2' - 0"	4"	4' - 4"	3' - 0"	2' - 2"	1' - 6"
3" & 4"	8"	8' - 4"	4' - 0"	1' - 1"	7' - 3"	2' - 0"	6"	4' - 6"	3' - 0"	2' - 3"	1' - 6"
3" & 4"	12"	8' - 8"	4' - 6"	1' - 3"	7' - 5"	2' - 3"	8"	4' - 8"	3' - 0"	2' - 4"	1' - 6"
3" & 4"	16"	9' - 1"	4' - 10"	1' - 5"	7' - 8"	2' - 5"	12"	5' - 0"	3' - 0"	2' - 6"	1' - 6"
3" & 4"	20"	9' - 5"	5' - 2"	1' - 7"	7' - 10"	2' - 7"	16"	5' - 4"	3' - 0"	2' - 8"	1' - 6"
6"	8"	8' - 7"	5' - 0"	1' - 1"	7' - 6"	2' - 6"	20"	5' - 8"	3' - 0"	2' - 10"	1' - 6"
6"	12"	9' - 0"	5' - 0"	1' - 3"	7' - 9"	2' - 6"	24"	6' - 0"	3' - 0"	3' - 0"	1' - 6"
6"	16"	9' - 4"	5' - 0"	1' - 5"	7' - 11"	2' - 6"					
6"	20"	9' - 8"	5' - 2"	1' - 7"	8' - 1"	2' - 7"					
8"	12"	9' - 2"	5' - 0"	1' - 3"	7' - 11"	2' - 6"					
8"	16"	9' - 6"	5' - 2"	1' - 5"	8' - 1"	2' - 7"					
8"	20"	9' - 10"	5' - 6"	1' - 7"	8' - 3"	2' - 9"					
12"	16"	9' - 10"	5' - 4"	1' - 5"	8' - 5"	2' - 8"					
12"	20"	10' - 2"	5' - 8"	1' - 7"	8' - 7"	2' - 8"					
16"	20"	10' - 8"	5' - 8"	1' - 7"	8' - 11"	2' - 10"					

Where two corporation stops are placed in the same opening, make G 4' - 0" for corporation stops up to and including 1" in size, and 5' - 0" for corporation stops 12" and 2" in size.

Note: Refer to Figure #1 for Dimensions of Openings.

TABLE #5

Specification 32-P-3:93, Division of Municipal Supply Services

Red Brass Pipe

Nominal Size (Inches)	**Outside Diameter (Inches)**	**Wall Thickness (Inches)**	**Nominal Weight (Pounds Per Foot)**
:	1.050	0.114	1.27
1	1.315	0.126	1.78
1 3	1.660	0.146	2.63
1 2	1.900	0.150	3.13
2	2.375	0.156	4.12
2 2	2.875	0.187	5.99
3	3.500	0.219	8.56
4	4.500	0.250	12.7

TABLE #6

Specification 32-T-1:94, Division of Municipal Supply Services

Seamless Copper Tubing

Nominal Size (Inches)	Outside Diameter (Inches)	Wall Thickness (Inches)	Nominal Weight (Pounds Per Foot)
:	0.875	.065	0.641
1	1.125	.065	0.839
1 3	1.375	.065	1.04
1 2	1.625	.072	1.36
2	2.125	.083	2.06

TABLE #7

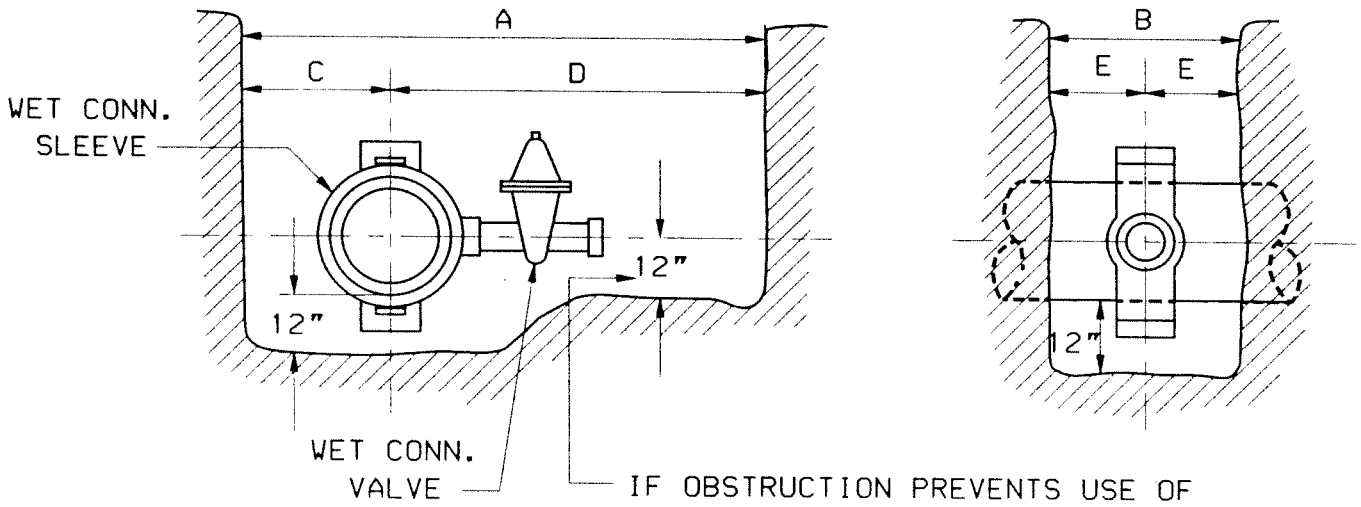
Specification ANSI/AWWA/C151/a21.51-91

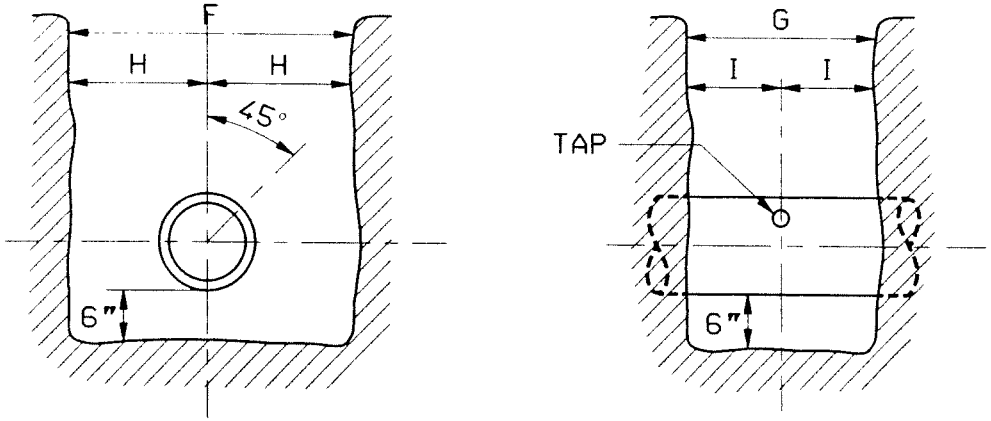
Ductile Iron Pipe

Nominal Size (Inches)	Outside Diameter (Inches)	Wall Thickness (Inches)	Class	Nominal Weight (Pounds Per Foot)
3	3.96	0.28	52	9.9
4	4.80	0.29	52	12.6
6	6.90	0.43	56	26.7
8	9.05	0.45	56	37.2
10	11.10	0.47	56	48.0
12	13.20	0.49	56	59.9
14	15.30	0.51	56	72.5
16	17.40	0.52	56	84.4
20	21.30	0.54	56	109.3

TABLE # 8

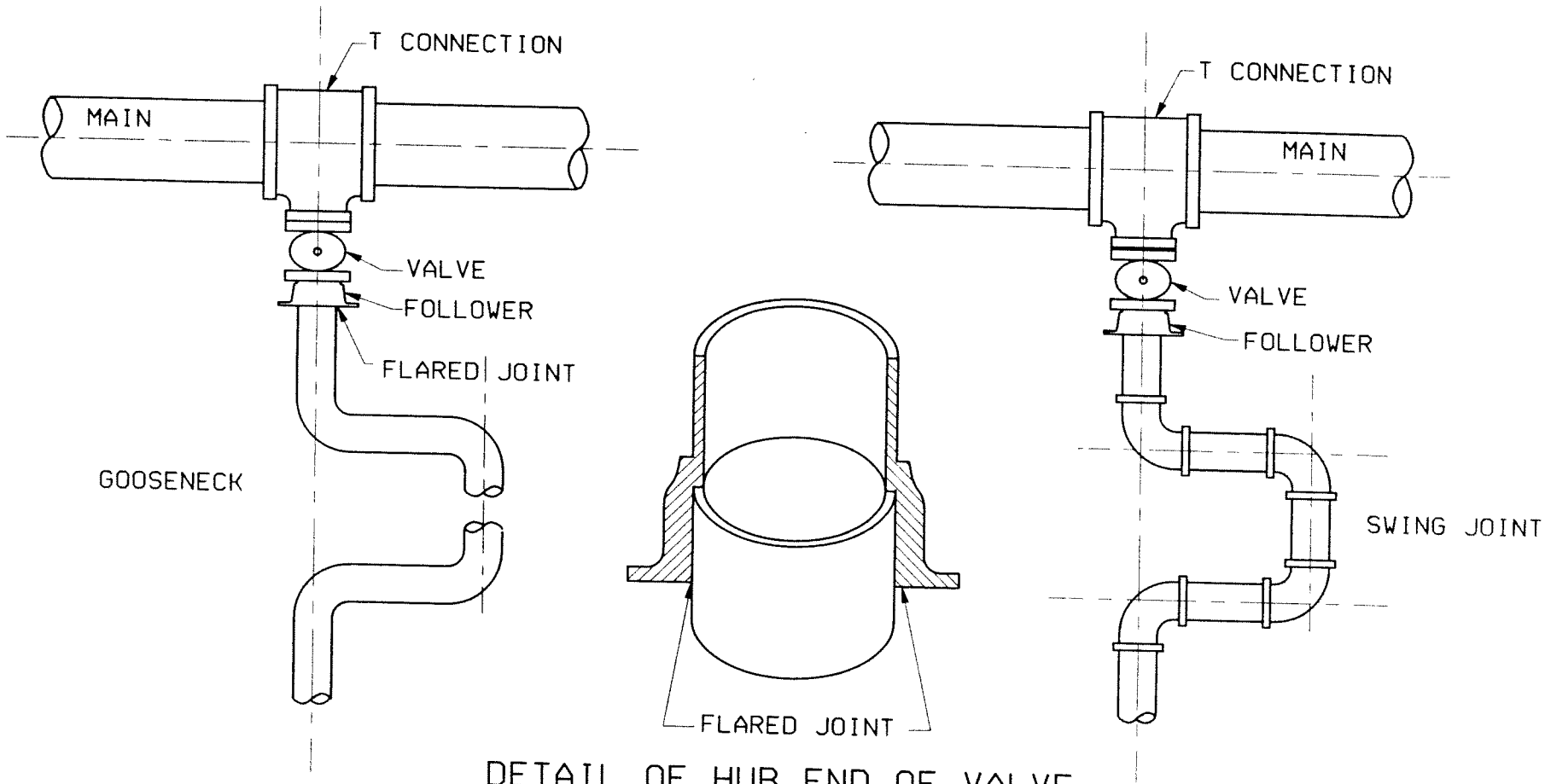
Meter Size Selection Table		
Meter Size	**Meter Type**	**Max. Peak Flow Rate (gpm)**
:"	Displacement	25
1"	Displacement	50
12"	Displacement	100
2"	Displacement	150
12	Vertical Turbine	100
2"	Turbine	180
3"	Turbine	1000
4"	Turbine	1250
6"	Turbine	2500
8"	Turbine	3500
10"	Turbine	5500
12"	Turbine	7000
1"	Single-jet	20
12"	Single-jet	90
2"	Single-jet	130
3"	Single-jet	200
4"	Single-jet	350
6"	Single-jet	650
2"	Compound	120
3"	Compound	350
4"	Compound	600
6"	Compound	1600
8"	Compound	2500
10"	Compound	3500





EXCAVATION FOR TAPS AND WET CONNECTIONS

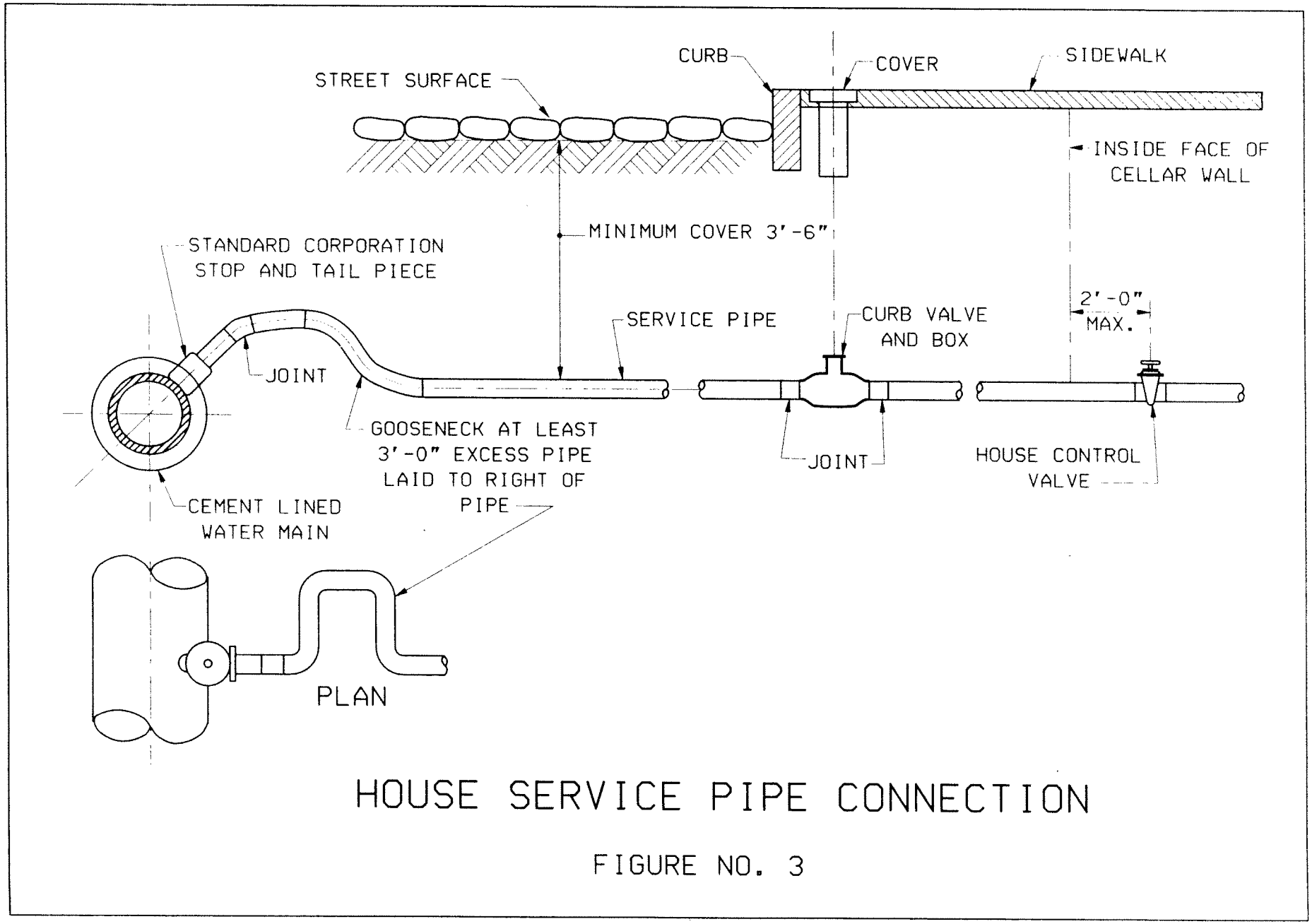
FIGURE NO. 1



DETAIL OF HUB END OF VALVE
AND FOLLOWER ON PIPE

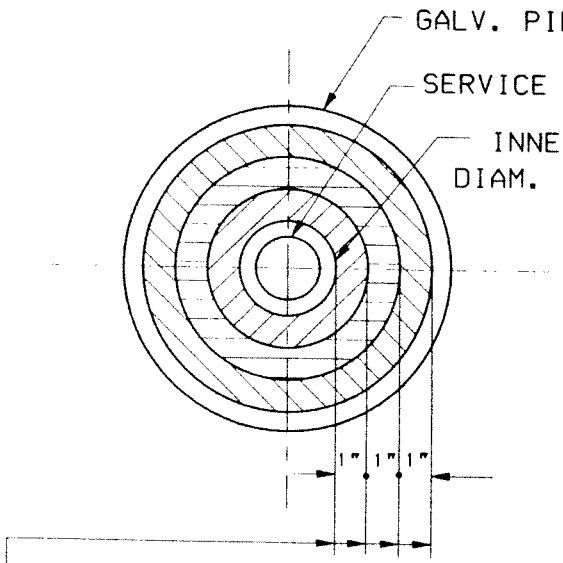
METHODS FOR CONNECTING SERVICE PIPE

FIGURE NO. 2

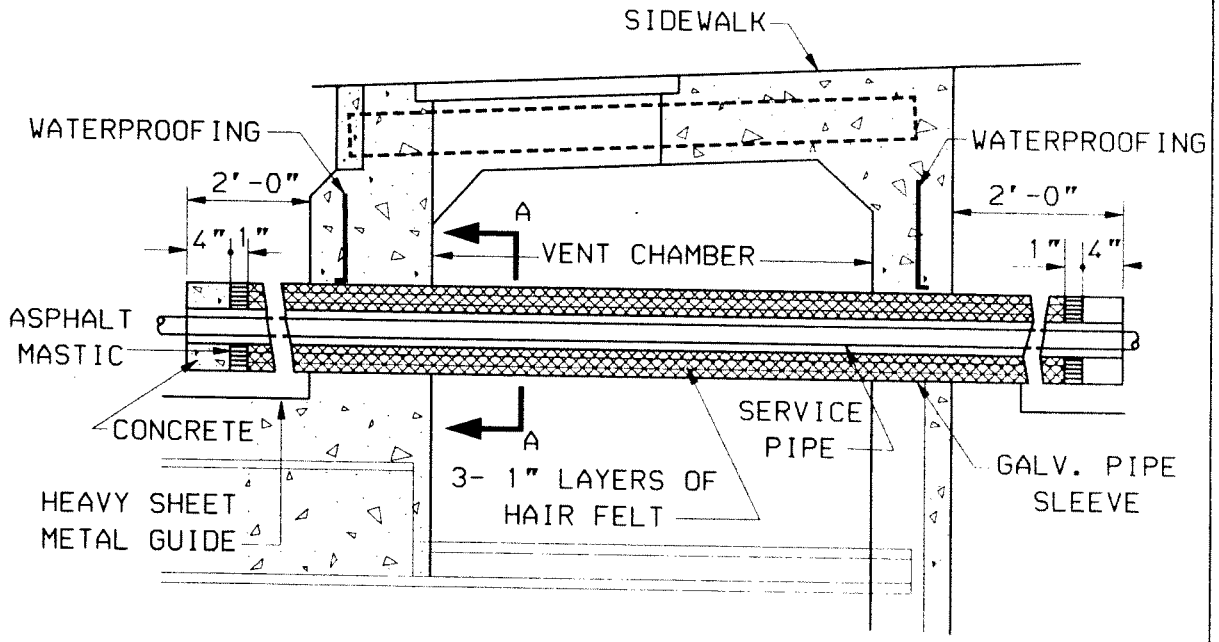


HOUSE SERVICE PIPE CONNECTION

FIGURE NO. 3



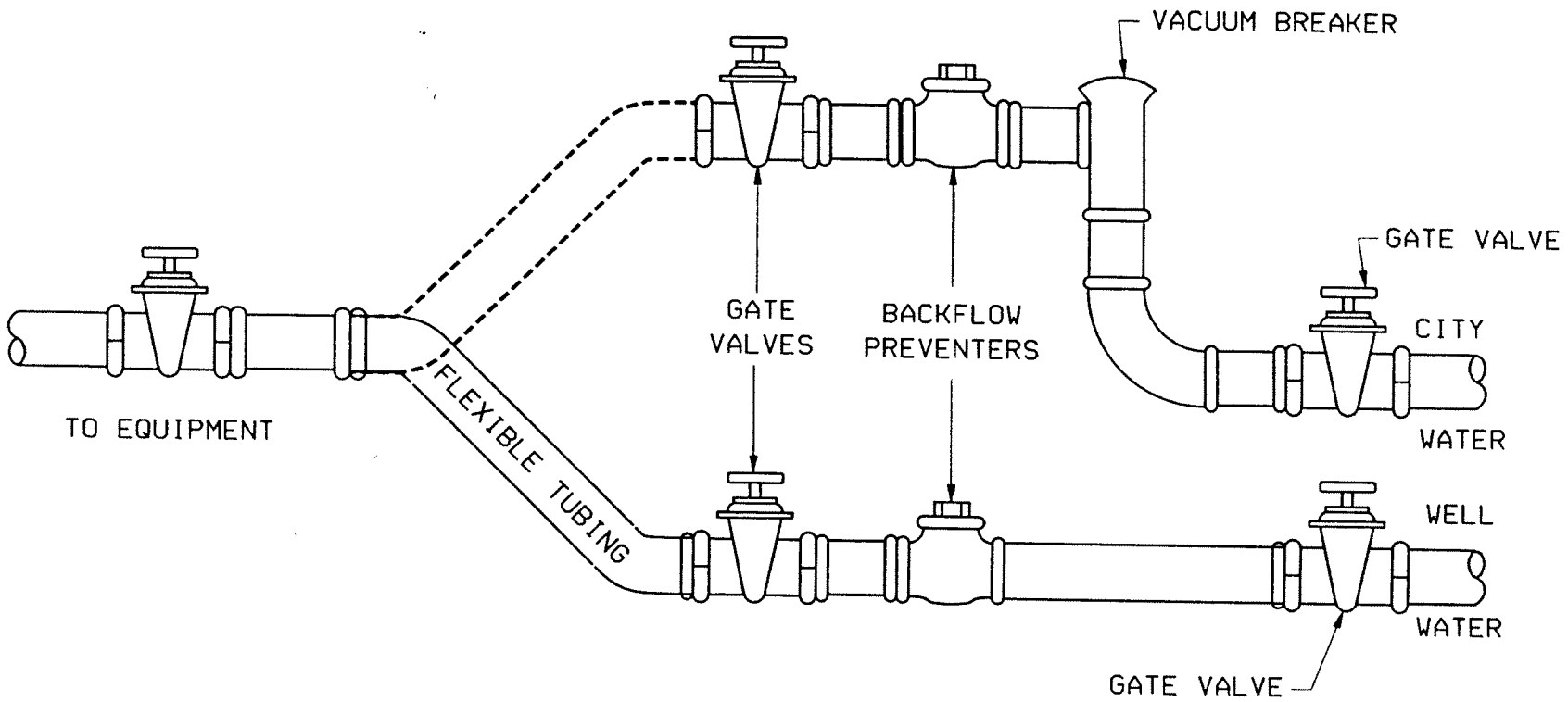
SECTION A - A



SECTION THROUGH VENT

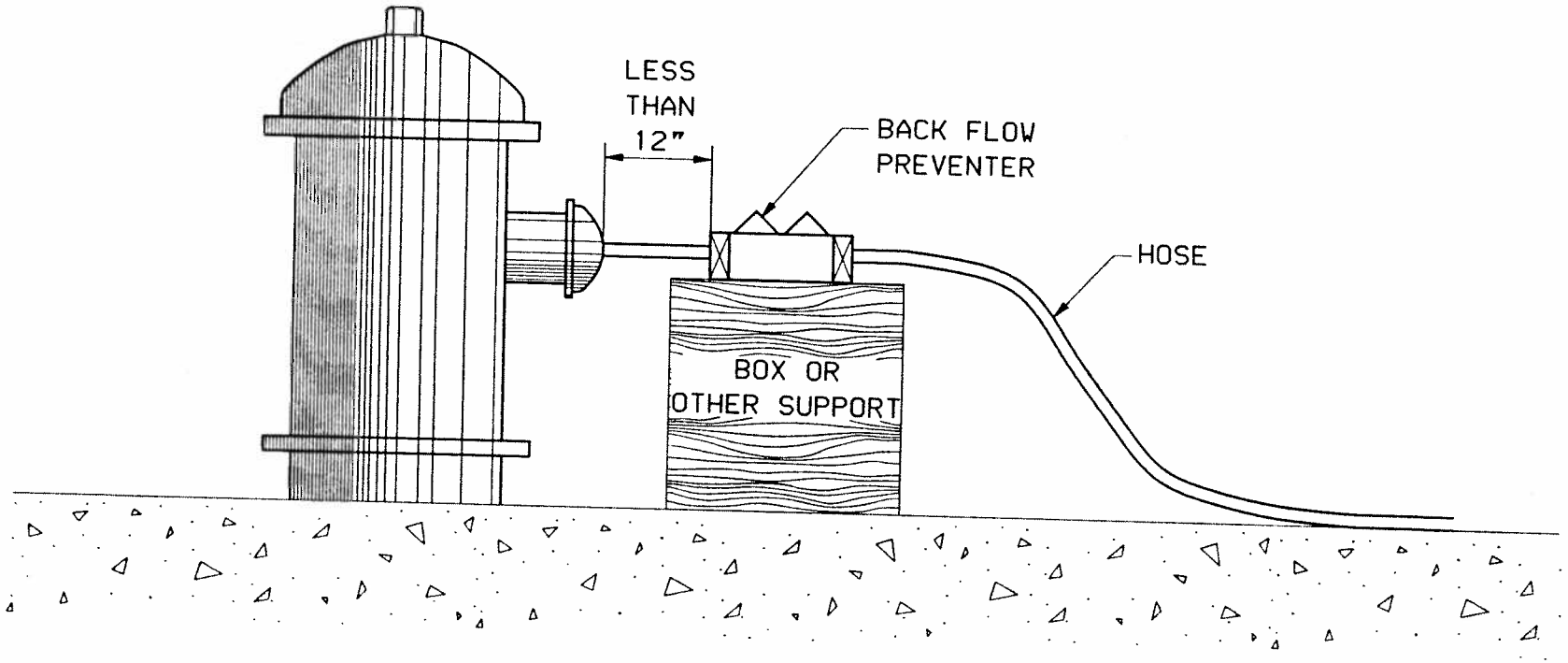
SERVICE PIPE IN SUBWAY AIR VENT

FIGURE NO. 4



SWING JOINT CONNECTION BETWEEN CITY WATER AND WELL WATER SUPPLY

FIGURE NO. 5

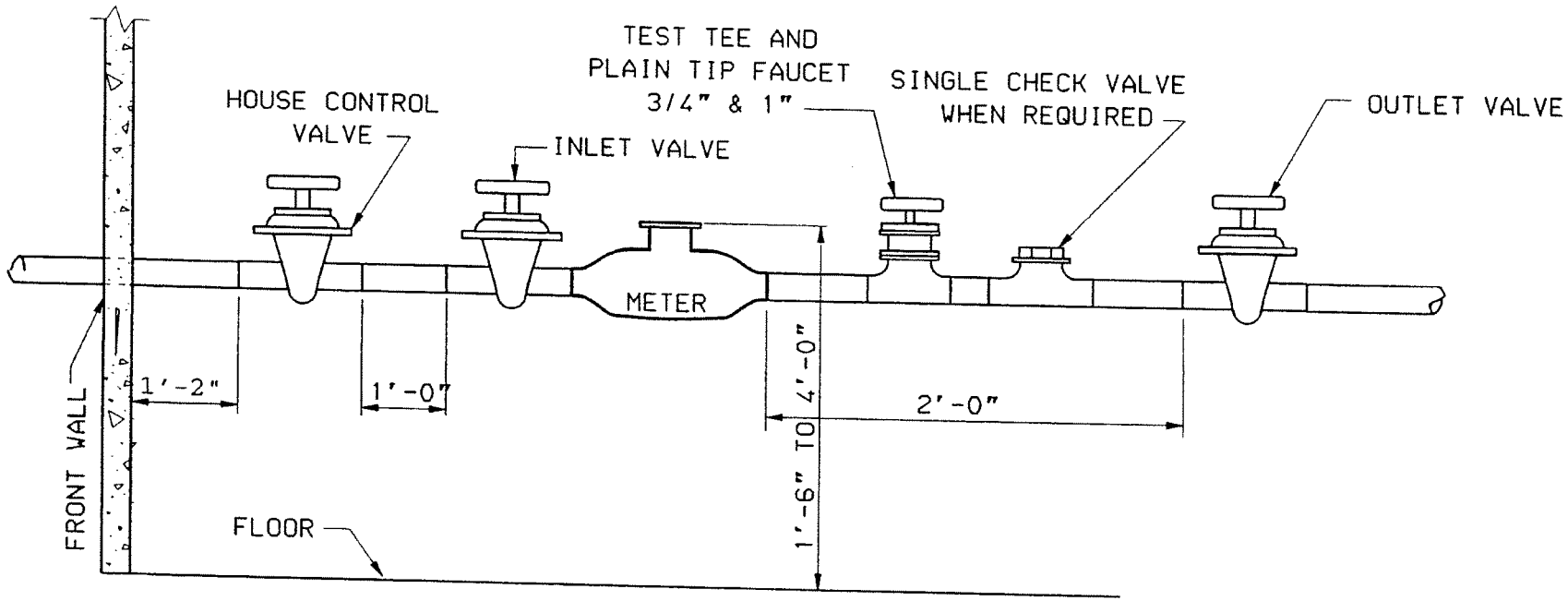


ARRANGEMENT FOR USE OF A BACKFLOW PREVENTER WHEN USING A FIRE HYDRANT

FIGURE NO. 6

NOTES:

1. METER SETTING TO BE PROPERLY SUPPORTED WITH PERMANENT SUPPORTS ANCHORED TO FLOOR OR WALL.
2. VALVES UP THROUGH 2" MAY BE FULL-PORT BALL VALVES.
3. FOR 1.5" AND 2" DISPLACEMENT METERS THE TEST ASSEMBLY SHALL BE AS SHOWN IN FIGURE 9.



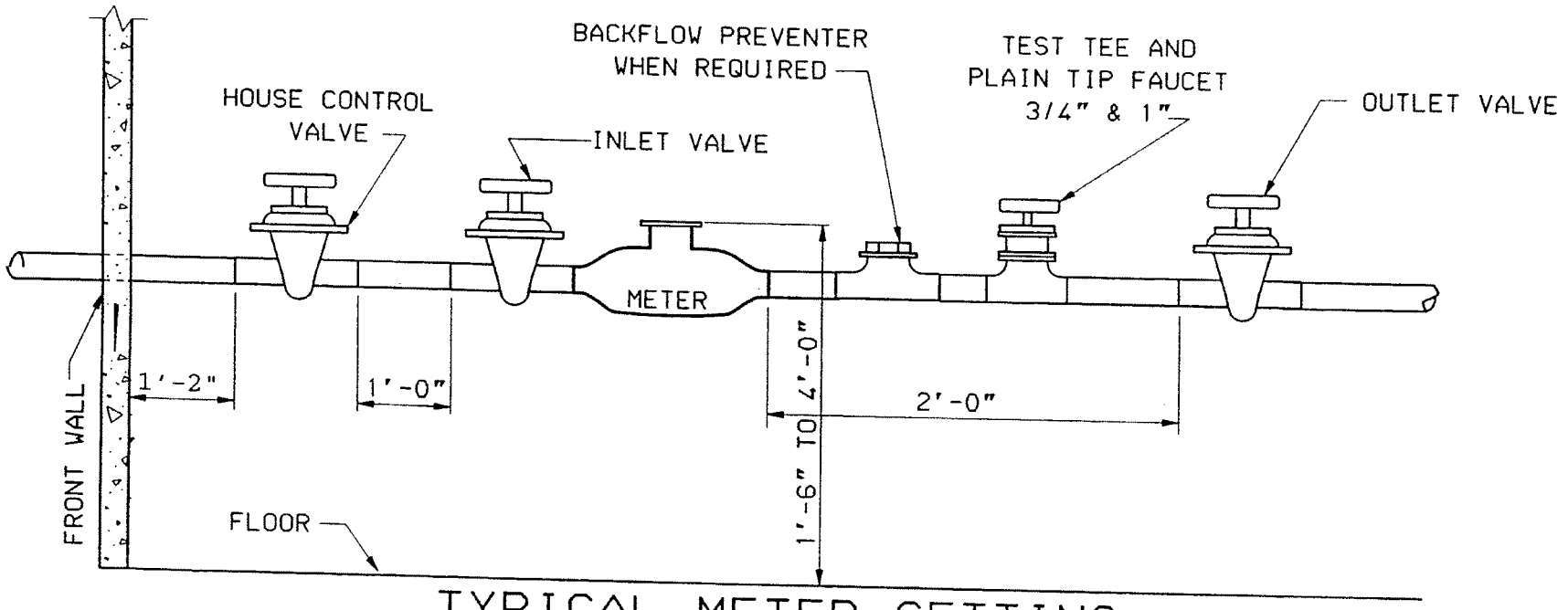
TYPICAL METER SETTING
(NEW INSTALLATION WITH SINGLE CHECK VALVE OR NO CHECK VALVE)

FOR DISPLACEMENT METERS

FIGURE NO. 7

NOTES:

1. METER SETTING TO BE PROPERLY SUPPORTED WITH PERMANENT SUPPORTS ANCHORED TO FLOOR OR WALL.
2. VALVES UP THROUGH 2" MAY BE FULL-PORT BALL VALVES.
3. FOR 1.5" AND 2" DISPLACEMENT METERS THE TEST ASSEMBLY SHALL BE AS SHOWN IN FIGURE 9A.
4. WHERE A BACKFLOW PREVENTER IS REQUIRED, THE BACKFLOW PREVENTER SHALL BE INSTALLED BETWEEN THE METER AND THE TEST TEE.



TYPICAL METER SETTING
(NEW INSTALLATION WITH DOUBLE CHECK VALVE OR RPZ)

FOR DISPLACEMENT METERS

FIGURE NO. 7A

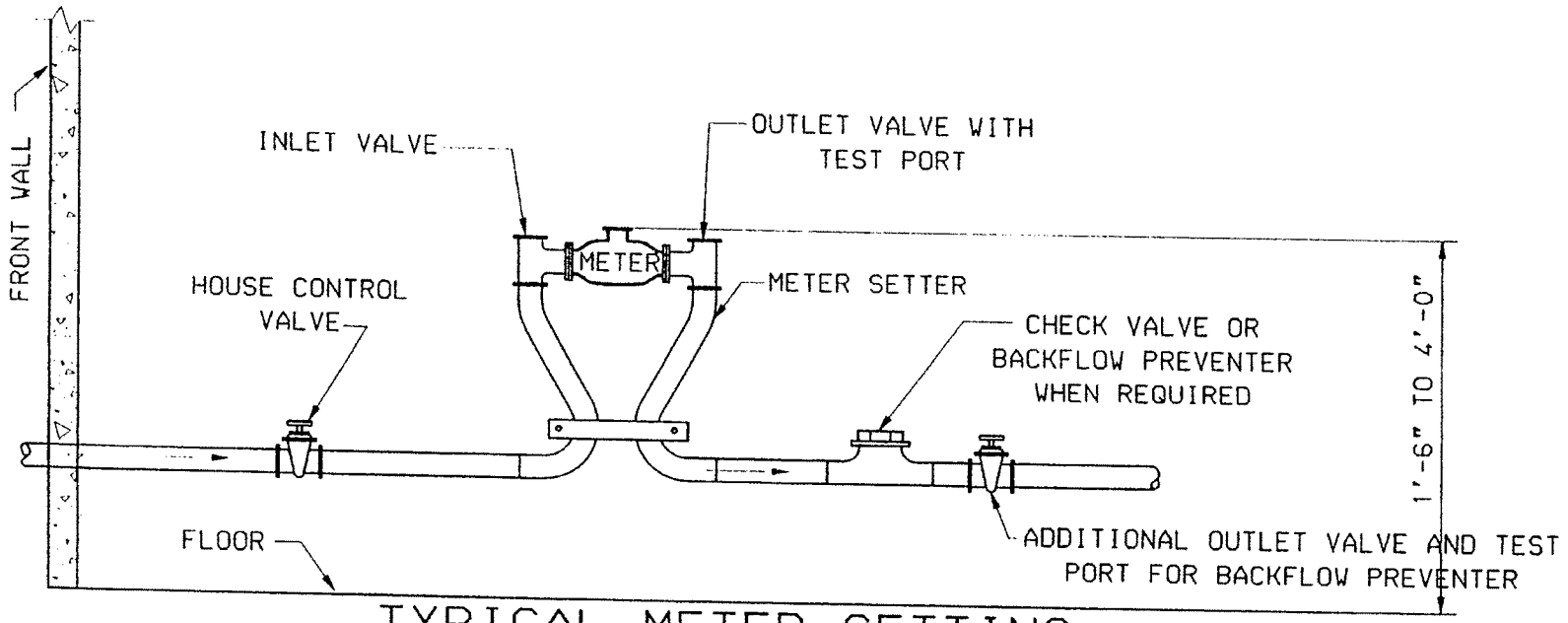
NOTE:

SETTER IS INSTALLED:

-WHEN ELECTRICAL CONTINUITY IN THE SERVICE PIPE IS REQUIRED.

-FOR VERTICAL SERVICE LINES IN ORDER TO PROVIDE A HORIZONTAL POSITION FOR THE METER.

-WHEN PROPER SPACING AND ALIGNMENT FOR THE METER IN THE RAISED POSITION IS REQUIRED.



TYPICAL METER SETTING
(NEW AND EXISTING INSTALLATION)

TYPICAL FOR DISPLACEMENT METERS

FIGURE NO. 8

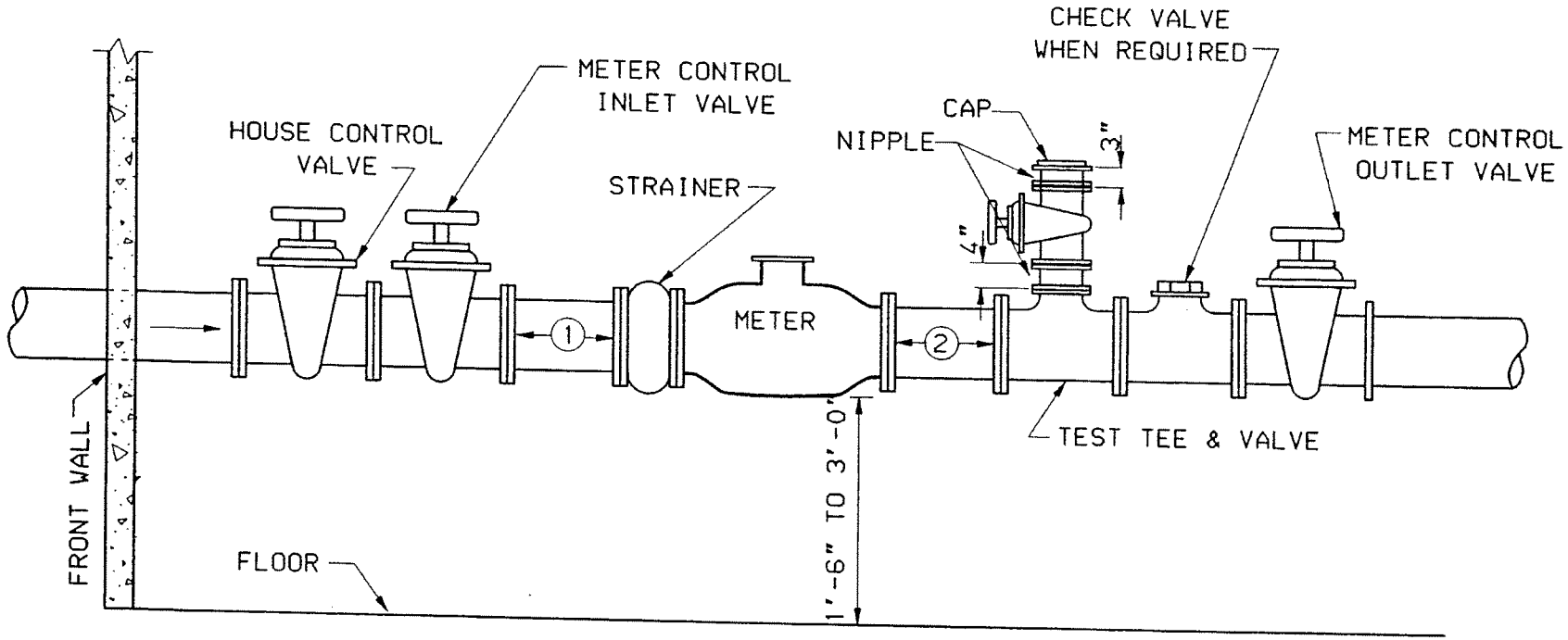
NOTES:

① 5 x PIPE DIAMETER (MINIMUM)

② 3 x PIPE DIAMETER (MINIMUM)

③ METER SETTING TO BE PROPERLY SUPPORTED WITH PERMANENT SUPPORTS ANCHORED TO FLOOR OR WALL.

④ VALVES UP THROUGH 2" MAY BE FULL-PORT BALL VALVES.



TYPICAL METER SETTING

TYPICAL FOR COMPOUND AND TURBINE METERS WITH SINGLE CHECK VALVE OR NO CHECK VALVE

FIGURE NO. 9

NOTES:

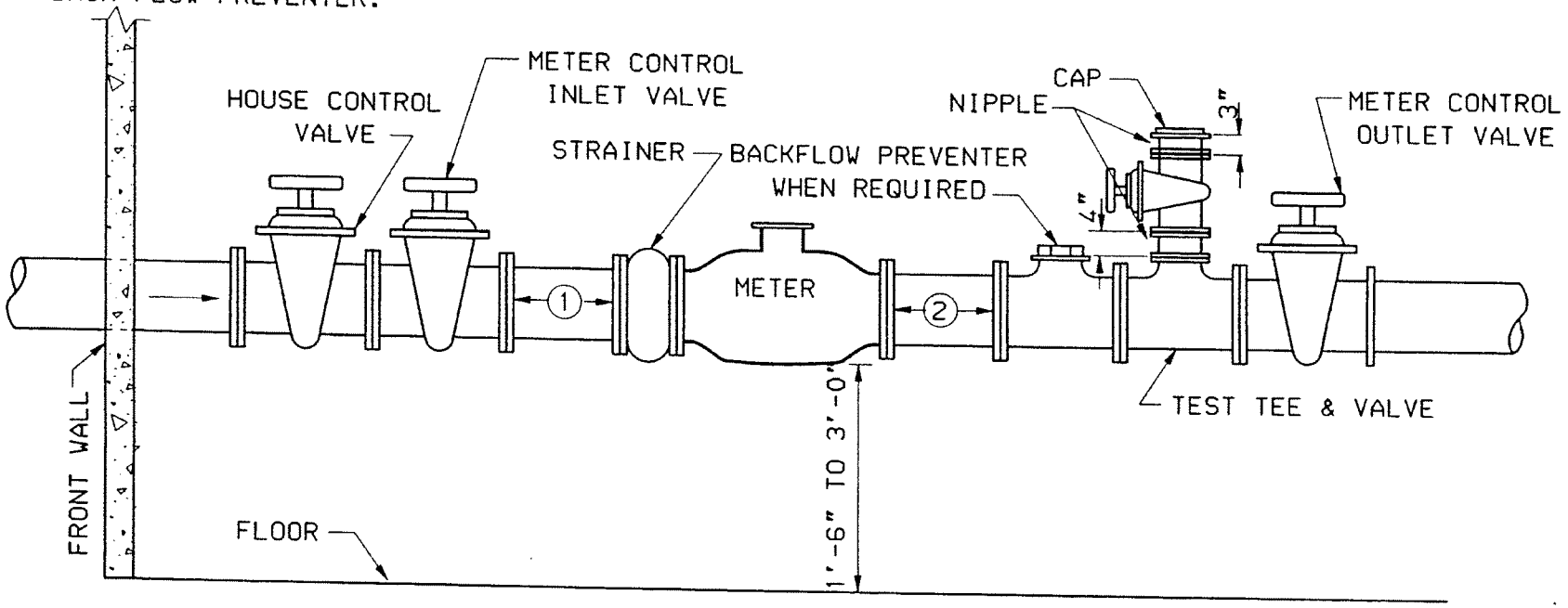
① 5 x PIPE DIAMETER (MINIMUM)

② 3 x PIPE DIAMETER (MINIMUM)

③ METER SETTING TO BE PROPERLY SUPPORTED WITH PERMANENT SUPPORTS ANCHORED TO FLOOR OR WALL.

④ WHEN BACK FLOW PREVENTER IS REQUIRED BY THE BUILDING CODE OR RCNY 20-04, THE TEST TEE ASSEMBLY AND OUTLET CONTROL VALVE SHALL BE INSTALLED DOWNSTREAM OF THE BACK FLOW PREVENTER.

⑤ VALVES UP THROUGH 2" MAY BE FULL-PORT BALL VALVES.



TYPICAL METER SETTING

TYPICAL FOR COMPOUND AND TURBINE METERS WITH DOUBLE CHECK VALVE OR RPZ

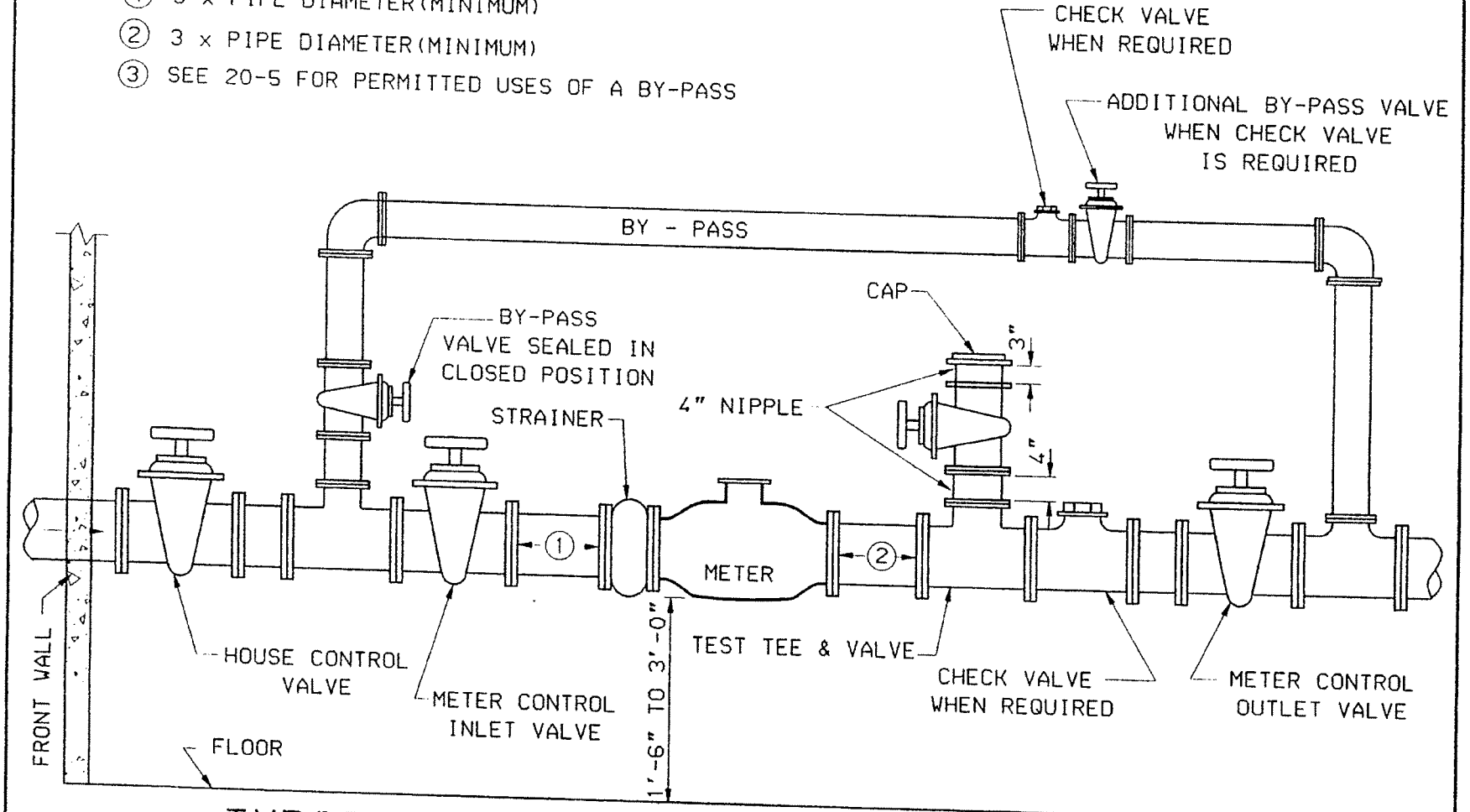
FIGURE NO. 9A

NOTES:

① 5 x PIPE DIAMETER (MINIMUM)

② 3 x PIPE DIAMETER (MINIMUM)

③ SEE 20-5 FOR PERMITTED USES OF A BY-PASS



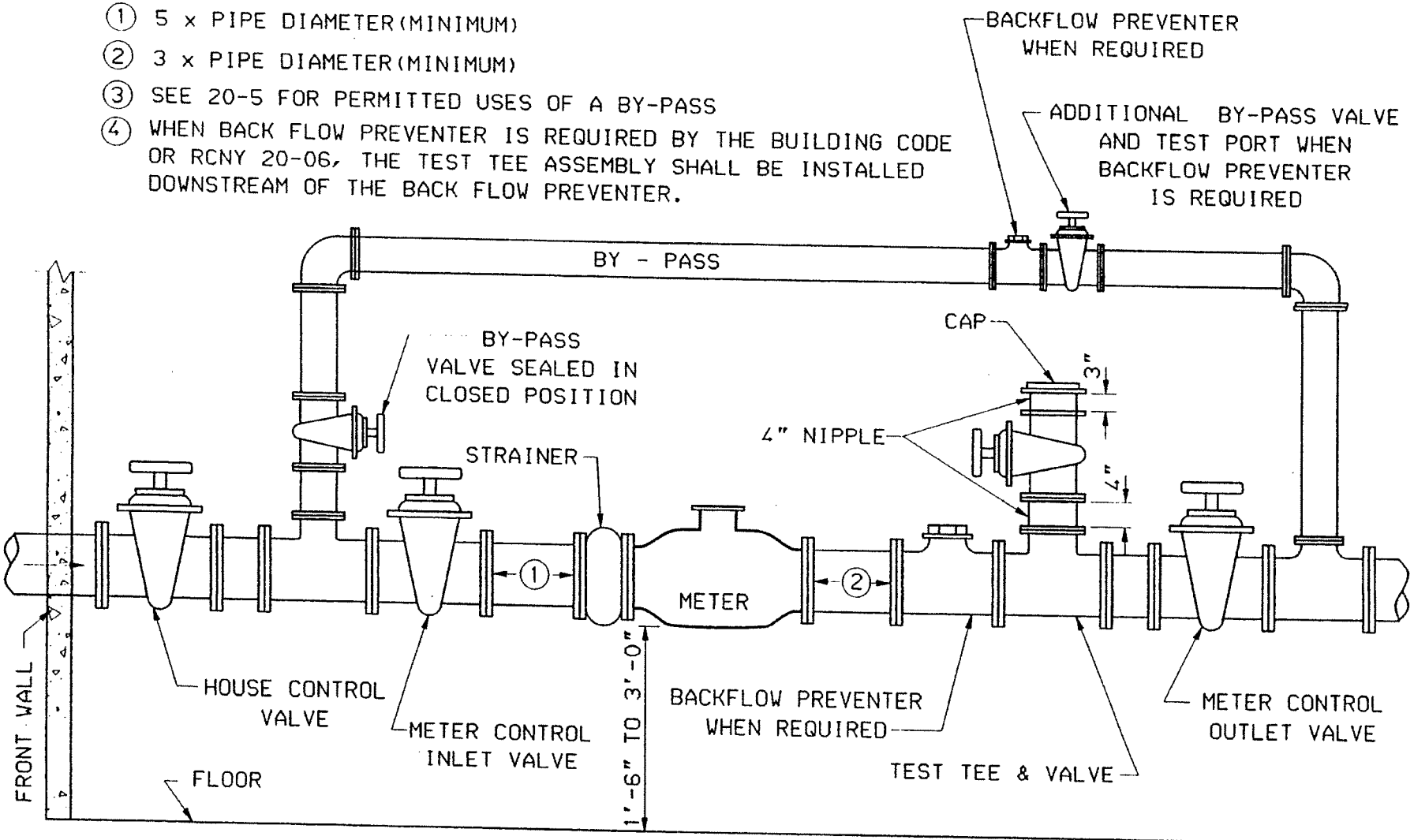
TYPICAL METER SETTING WITH BY-PASS

TYPICAL FOR COMPOUND AND TURBINE METERS
WITH SINGLE CHECK VALVE OR NO CHECK VALVE

FIGURE NO. 10

NOTES:

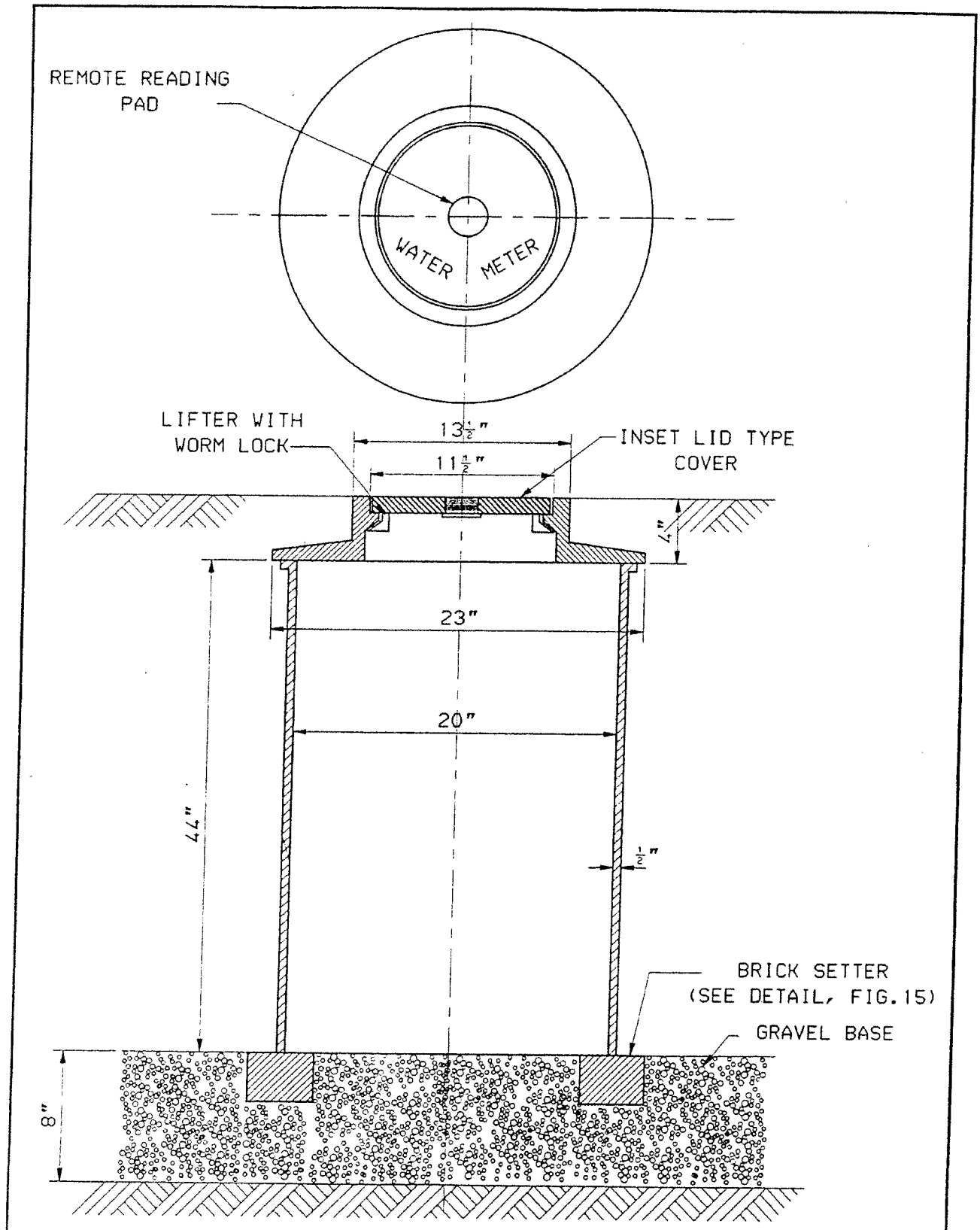
1. 5 x PIPE DIAMETER (MINIMUM)
2. 3 x PIPE DIAMETER (MINIMUM)
3. SEE 20-5 FOR PERMITTED USES OF A BY-PASS
4. WHEN BACK FLOW PREVENTER IS REQUIRED BY THE BUILDING CODE OR RCNY 20-06, THE TEST TEE ASSEMBLY SHALL BE INSTALLED DOWNSTREAM OF THE BACK FLOW PREVENTER.



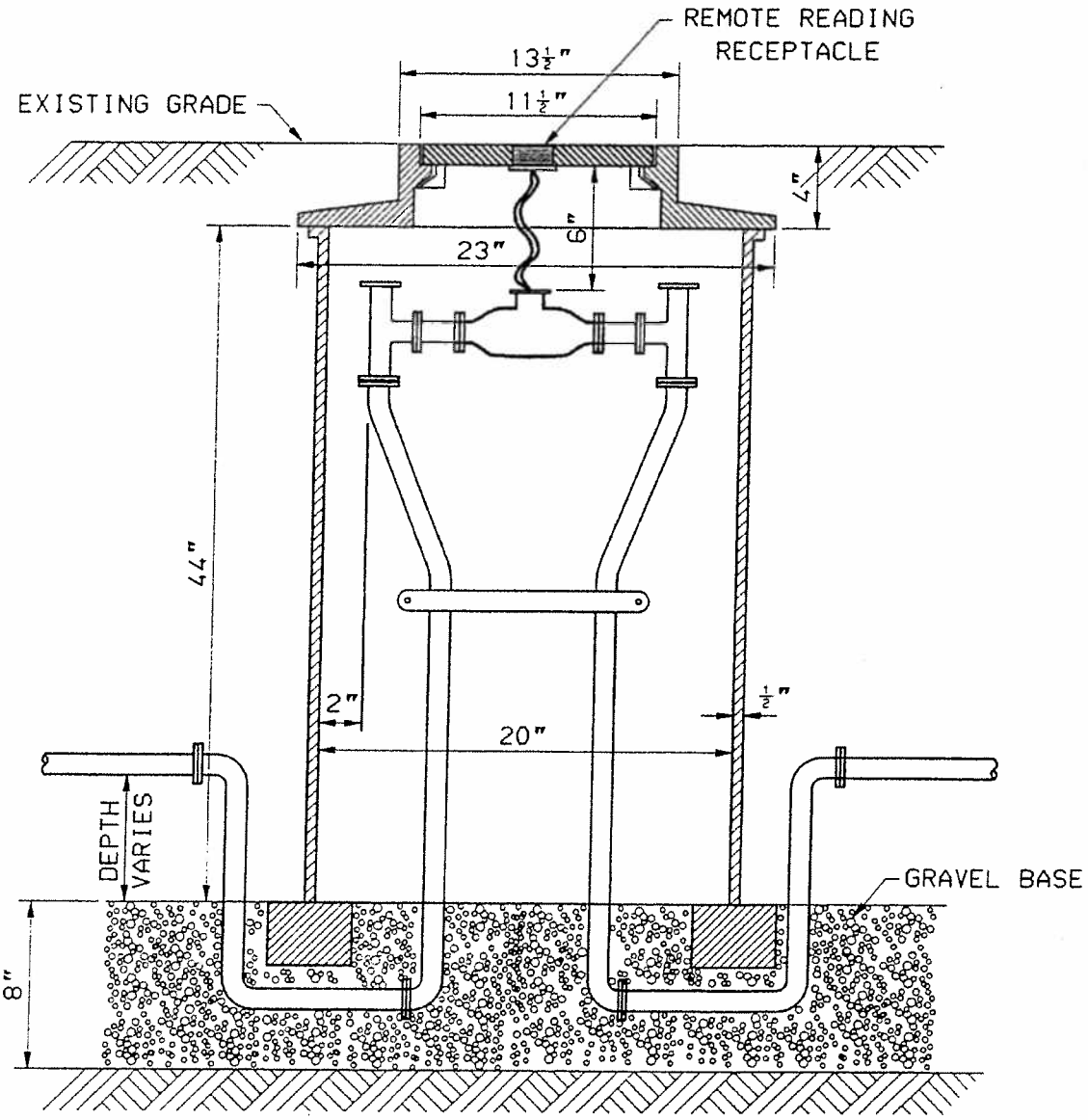
TYPICAL METER SETTING WITH BY-PASS

TYPICAL FOR COMPOUND AND TURBINE METERS WITH DOUBLE CHECK VALVE OR RPZ

FIGURE NO. 10A



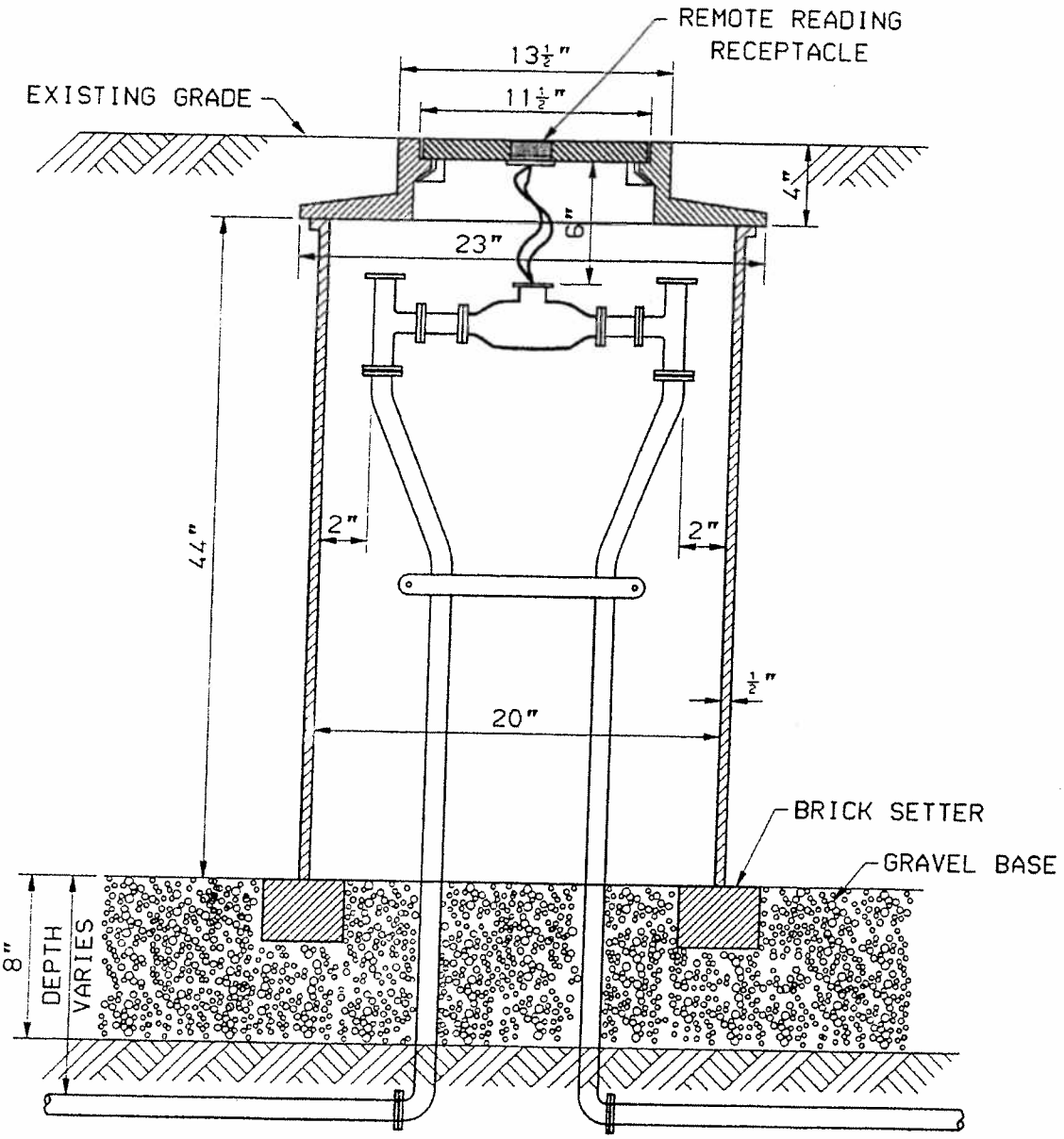
WATER METER ENCLOSURE FOR 3/4" AND 1" METERS
FIGURE NO. 11



INSTALLATION OF 3/4" & 1" WATER METER IN ENCLOSURE
WITH SERVICE PIPE 4FT OR LESS BELOW GRADE

NOT TO SCALE

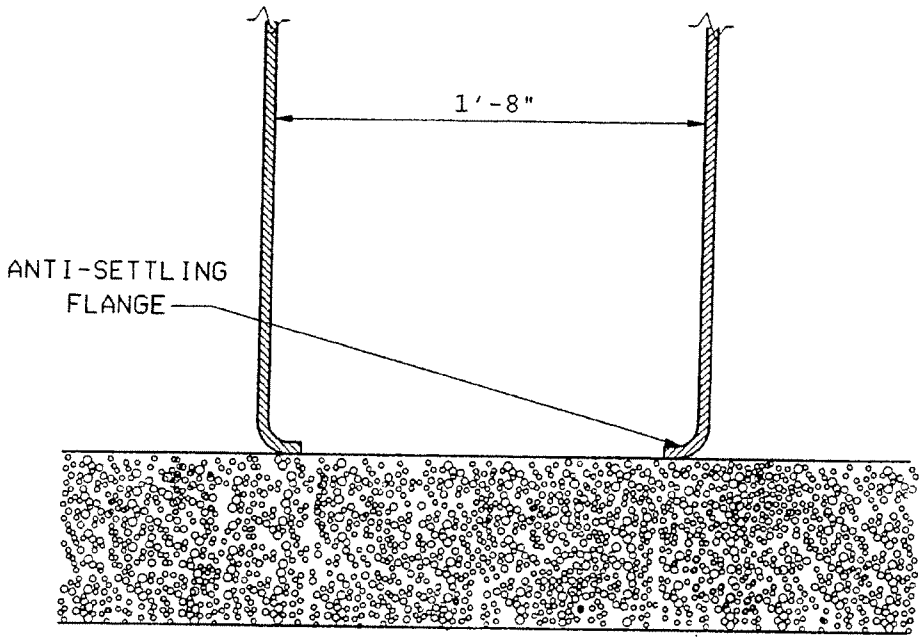
FIGURE NO. 12



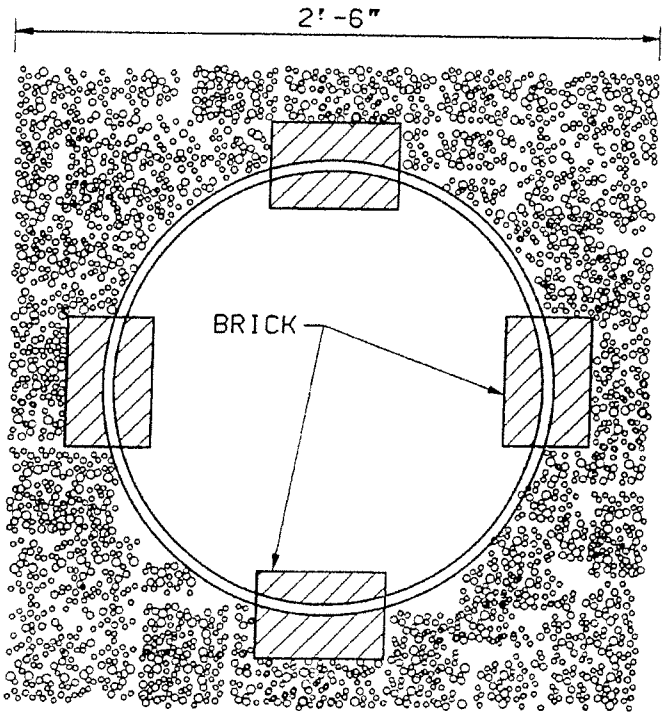
INSTALLATION OF 3/4" & 1" WATER METER IN ENCLOSURE WITH SERVICE PIPE MORE THAN 4FT BELOW GRADE

NOT TO SCALE

FIGURE NO. 13



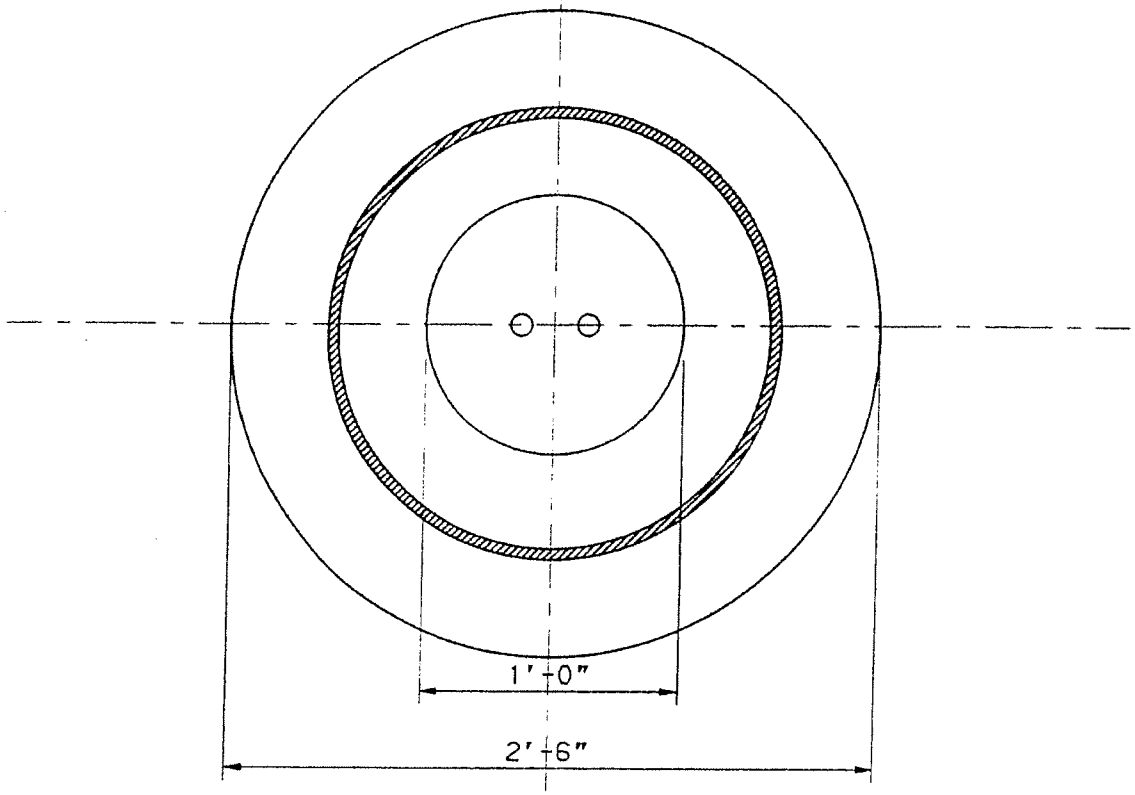
INSTALLATION OF WATER METER ENCLOSURE
WITH ANTI-SETTLING FLANGE



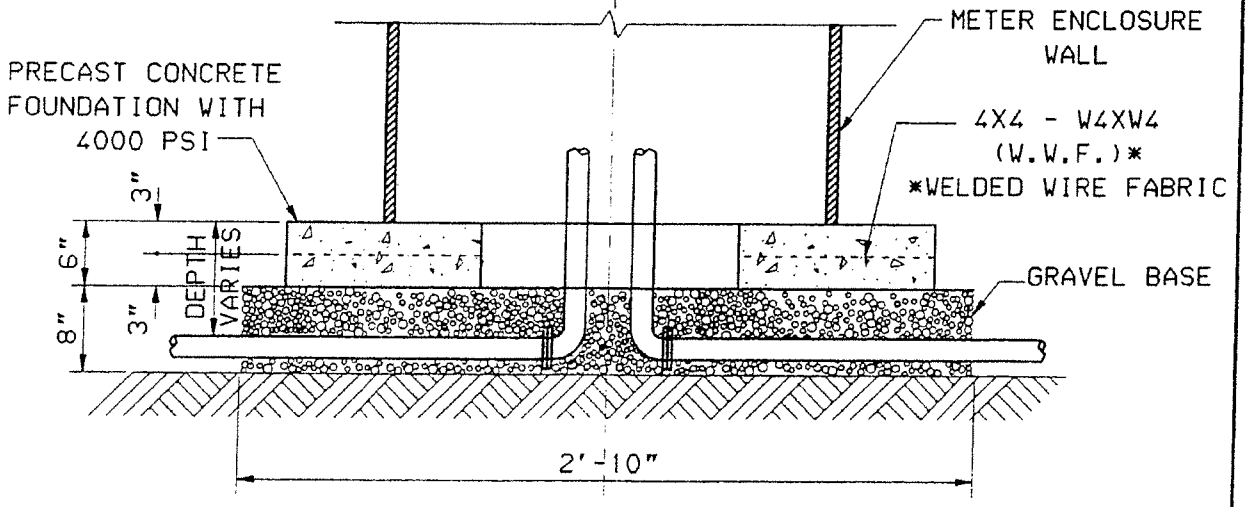
DETAIL: BRICK SETTING FOR
BOTTOM OF ENCLOSURE
FIGURE NO. 14

NOTE:

THE FOUNDATION SHALL BE ONE PIECE OR 2 TO 4 PIECES PROVIDED WITH TWO 1/4"X6" S.S. JOINT LINKS FOR EACH JOINT



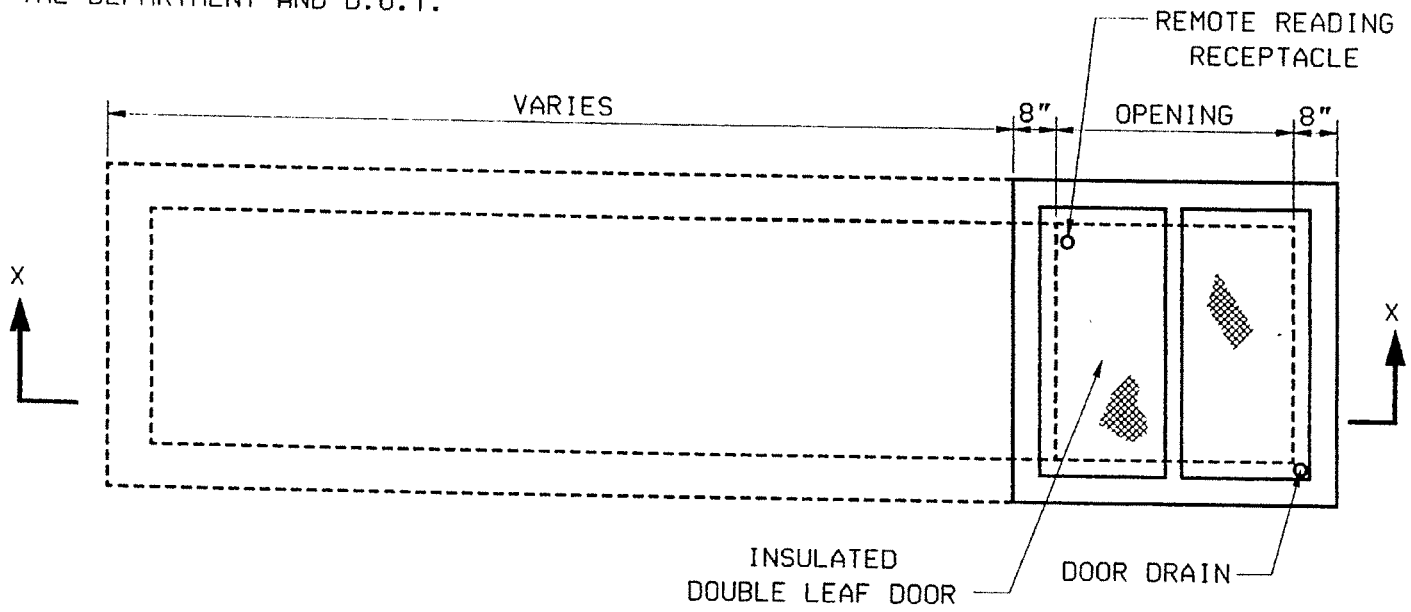
PLAN



SECTION
CONCRETE FOUNDATION FOR
BOTTOM OF ENCLOSURE IN
SIDEWALK AND DRIVEWAY AREAS
FIGURE NO. 15

NOTES:

- ALL DIMENSIONS ARE MINIMUM
  ACCESS DOOR AS SHOWN IS FOR INSIDE PROPERTY LINE INSTALLATIONS.
  FOR OUTSIDE PROPERTY LINE WHERE THERE IS LIGHT OR HEAVY TRAFFIC,
  THE ACCESS COVER SHALL MEET THE LOAD AND DESIGN REQUIREMENTS OF
  THE DEPARTMENT AND D.O.T.



TYPICAL METER VAULT

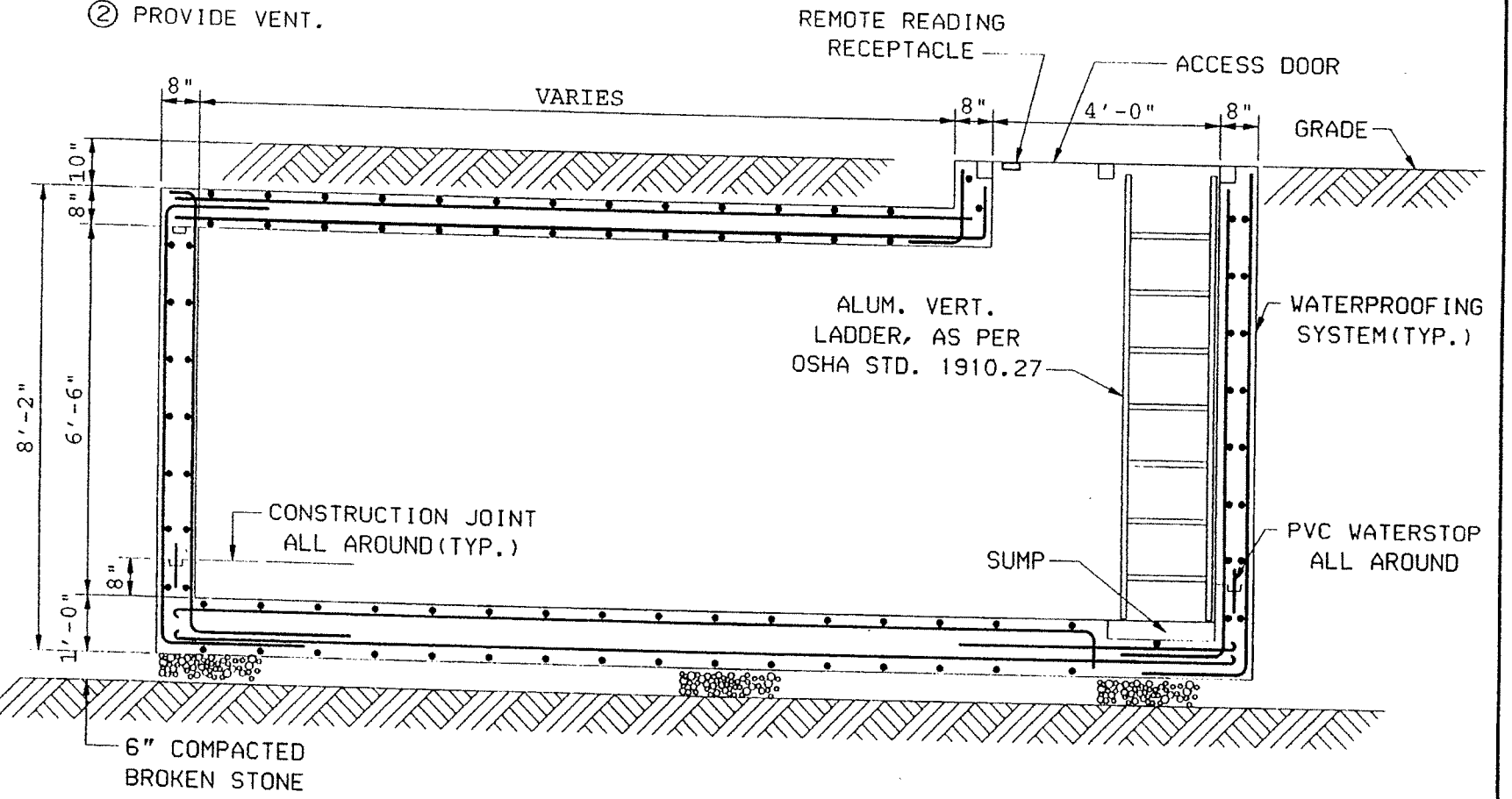
ROOF PLAN

FIGURE NO. 16

NOTE:

① ALL DIMENSIONS ARE MINIMUM DIMENSIONS

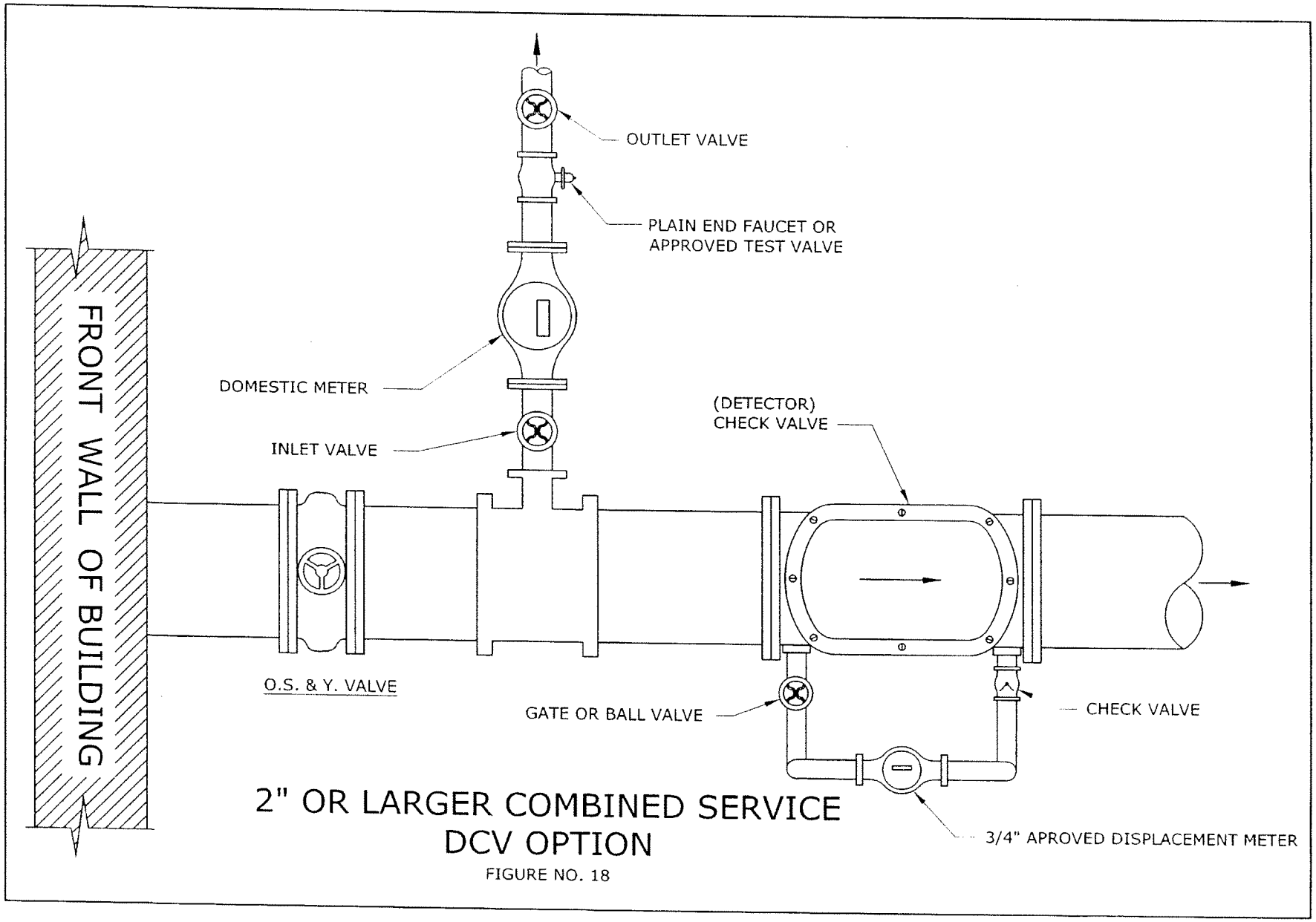
② PROVIDE VENT.



TYPICAL METER VAULT

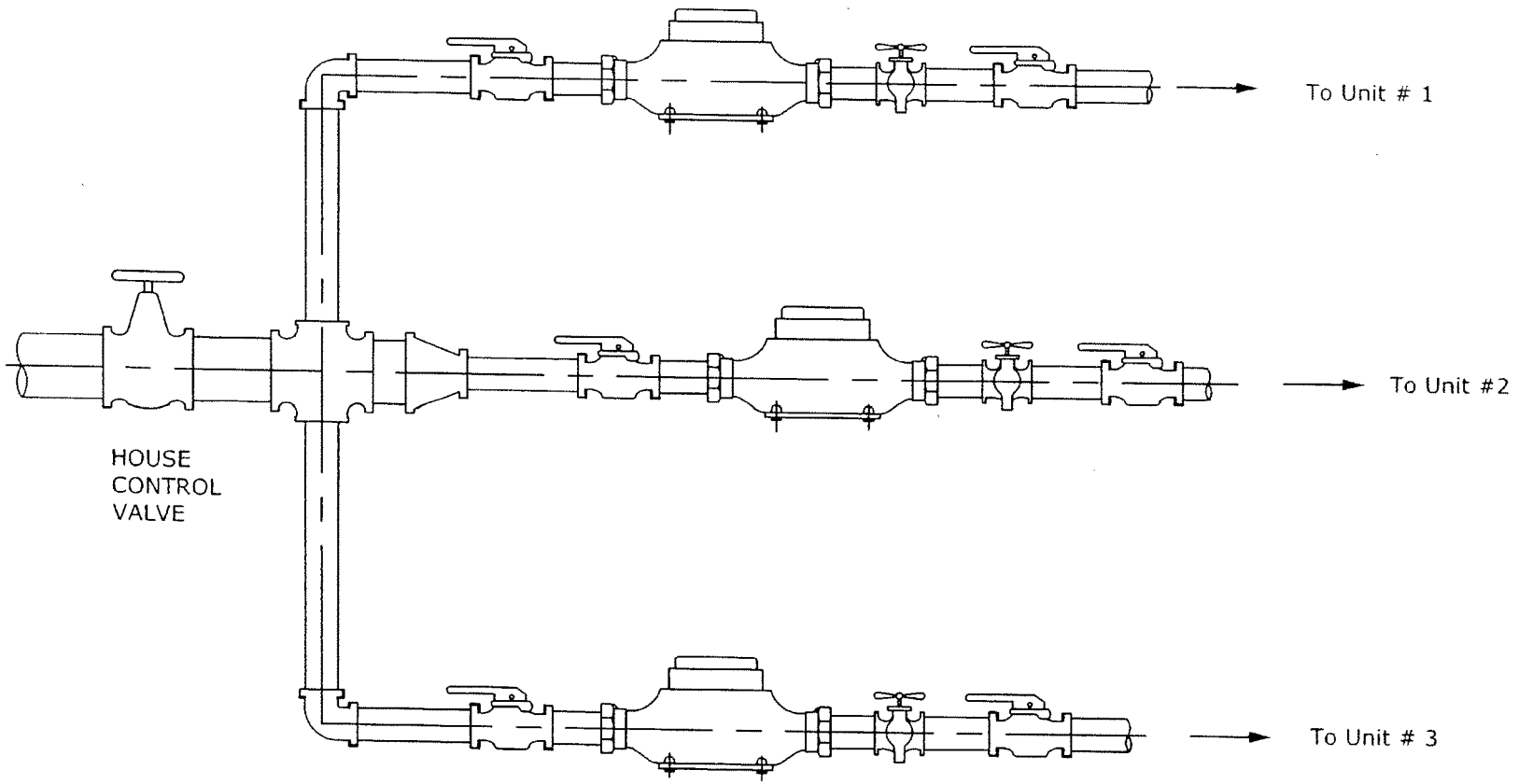
SECTION X-X

FIGURE NO. 17



2" OR LARGER COMBINED SERVICE
DCV OPTION

FIGURE NO. 18



TYPICAL CONDOMINIUM METERING

REFER TO RCNY 20-05 (I)

FIGURE No. 19