



Water and Sewer Service Connections

**Requirements for the
Installation of New
Services**

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1.0 General

1.1 Purpose

- 1.1.1 The purpose of this policy is to define the process to be followed and the applicable charges to be paid when connecting to, or modifying an existing connection to Franklin County's public water and sanitary sewer system.

1.2 Authority

- 1.2.1 Ohio Revised Code section 6103.02 authorizes the Board of Commissioners to appoint a sanitary engineer and adopt, publish, administer, and enforce rules for the construction, maintenance, protection, and use of county-owned or county-operated public water supply facilities outside municipal corporations and of public water supply facilities within municipal corporations that are owned or operated by the county or that are supplied with water from water supply facilities owned or operated by the county, including, but not limited to, rules for the establishment and use of any connections, the termination in accordance with reasonable procedures of water service for nonpayment of county water rates and charges, and the establishment and use of security deposits to the extent considered necessary to ensure the payment of county water rates and charges. The rules shall not be inconsistent with the laws of the state or any applicable rules of the director of environmental protection.
- 1.2.2 In many areas throughout Franklin County, the Department of Sanitary Engineering purchases excess water and sewer capacity from the City of Columbus Department of Public Utilities. Because of the close working relationship between the City and County, and because the County's operations affect the City's operations and ability to provide excess service, the City of Columbus has required the County to adopt its rules and regulations for the design, construction, and operation of water and sewer system.
- 1.2.3 Franklin County Resolution No. 311-93 authorizes and requires the Department of Sanitary Engineering to adopt the chapter 1145 of the Columbus City Code as rules applicable to all Franklin County sewer districts.
- 1.2.4 Chapter 1145 of the Code requires the County to follow City of Columbus standards and procedures for the provision of public water and sewer service.

1.3 Reference

- 1.3.1 The following sources were referenced in the creation of this document:
- Ohio Revised Code
 - City of Columbus Codified Ordinances
 - City of Columbus Construction and Materials Specifications
 - City of Columbus Standard Construction Drawings

- 1.3.2 For the convenience of the reader, excerpts from the referenced sources have been incorporated into the text of this document. The intent is to assist the reader in synthesizing numerous disparate sources of information.

1.4 Payment Of Connection Fee Required

- 1.4.1 No property shall be allowed service from the water or sewer system until payment in full of the applicable permit and connection fee(s) has been received by the County.
- 1.4.2 For properties proposing to connect to the water or sewer system, the owner must obtain the applicable water and/or sewer connection permit. The applicant must provide estimates of average and peak daily uses to the County when applying for a water or sewer connection permit.
- 1.4.3 Applicants requesting new water or sewer service shall be required to pay a connection fee to the County for a property proposed for connection to the County's water and/or sewer system.
- 1.4.4 Any property requesting an enlarged sewer or water connection or an increase in water meter size shall be subject to a water and/or sewer connection fee equal to the difference in the charge for a new service or meter size and the current size. Properties that request a reduction in water or sewer service or meter size shall not be eligible for a refund or rebate. However, said property shall have the right to increase the water or sewer service size or meter size to the original (larger) size with no further charge. In all cases, the size of the water meter needed to accurately measure use shall be determined by the Director.
- 1.4.5 Applicants whose property is located in the County but who will be connecting to City of Columbus main lines will be required to pay front footage fees in addition to permit and inspection fees. Contact the City permit office for more details at (614) 645-7490.

1.5 Availability Of Service

- 1.5.1 Provisions of this Policy do not entitle any property to receive water or sewer service. Service will only be provided as approved by the County. If approved, service will be provided at a location and under the conditions approved by the County.
- 1.5.2 If sewer collection or water distribution pipes are not, in the opinion of the Director, available to serve the property, do not have sufficient capacity for the intended use, or are not in a public right-of-way abutting the property, the property owner may request the right to extend the water or sewer systems to the property. The County is under no obligation to approve such extensions.
- 1.5.3 Any property that applies for a Change of Use through the Zoning Department shall be reviewed by the County for consistency with this policy and applicable standards. If sewer or water service lines (and/or water meter) are not, in the opinion of the Director, sufficient to suitably service the property for the intended use, the Director may reject the application. The property owner shall request the right to

enlarge the sewer or water service line, add an additional water or sewer service line, and/or increase the water meter size. The County is under no obligation to approve such enlargements or additional services. If such enlargements or additional services are approved, the applicable connection fee(s) shall apply.

- 1.5.4 The property owner, not the County, shall be responsible for extending water distribution and/or sewer collection pipes to serve the property of an applicant for service. All such extensions shall be done in accordance with directions of the County.
- 1.5.5 The water and/or sewer extension shall be deeded to the County (at no cost to the County) upon acceptance by the County and in accordance with any testing and maintenance requirements. The County, at its sole discretion, may allow subsequent connections to such extensions without any reimbursement to any party. Design and construction requirements for water and sewer mains are provided in a separate document.
- 1.5.6 Any party that receives permission for water and/or sewer service shall assume all costs of the connection from the connection point at the water and/or sewer main to the structure(s) to be served. All materials required for the installation shall be provided and installed as required by the Director and the cost of such installations shall be the responsibility of the property owner.
- 1.5.7 Water meters shall be provided and installed by the applicant, with the size, type, make, and model of the meter to be determined by the Director based on the service requirements information provided in the connection permit. The cost of the meter installation, including materials, labor, and overhead shall be paid by the applicant.

1.6 Connection Fee Schedule

- 1.6.1 Sewer and Water Connection Fees shall be established by the County upon recommendation of the Director. The fees may be revised from time to time as determined by the Board of Commissioners.
- 1.6.2 Sewer and Water Connection Fees shall be assessed based on the size of the customer's water meter size.
- 1.6.3 Properties with individual premises shall be individually metered with individual accessible shut-offs.

1.6.4 Capacity fees are as follows:

Water Meter Size (inches)	Sewer Capacity Fee	Water Capacity Fee
¾	\$3,348.00	\$1,924.00
1	\$5,552.00	\$3,206.00
1½	\$11,162.00	\$6,412.00
2	\$17,860.00	\$10,259.00
3	\$34,096.00	\$19,584.00
4	\$52,361.00	\$30,076.00
6	\$103,099.00	\$59,218.00
8	\$163,984.00	\$94,189.00
10	\$235,016.00	\$134,989.00
12	\$437,966.00	\$251,559.00

1.7 License Required

- 1.7.1 It shall be unlawful for any person to engage in the business of constructing water and/or sewer service connections in any public right of way, easement or private property in the County without first securing a license from the City of Columbus to engage in such business.

1.8 Contact

- 1.8.1 To obtain a connection permit or inquire about this policy, contact the Franklin County Department of Sanitary Engineering at:
- 280 East Broad Street
Columbus, OH 43215
(614) 525-3940

2.0 Water Service Connections

2.1 This section summarizes important administrative and technical requirements for the installation of water services. The following sources were referenced in the preparation of these requirements:

- City of Columbus Codified Ordinances
- City of Columbus Standard Material and Construction Specifications
- City of Columbus Standard Construction Drawings

2.2 Applicants shall adhere to the requirements of this section and the following City of Columbus Construction and Material Specifications. Current versions of the specifications can be downloaded from the City's website at

<http://utilities.columbus.gov/ConstrucDesignSpecs.htm>

- 801 - Furnishing and Laying Pipe and Fittings
- 805 - Water Service Taps
- 806 - Casing Pipe
- 807 - Adjust Valve Boxes and Service Boxes to Grade
- 811 - Increase or Decrease in Excavation and Backfill
- 813 - Rock Excavation
- 815 - Crushed Stone or Gravel

2.3 The applicant shall adhere to additional specifications and requirements referenced within the above list of specifications.

2.4 Whenever a conflict occurs between the requirements of the City of Columbus and the County's requirements, the County's requirements shall govern.

2.1 Illegal Use Of Water

2.1.1 It is unlawful for any person to take water or in any way use water for private use which is furnished by the County, unless such person shall have first paid for and received a permit for such use from the Director of Sanitary Engineering.

2.1.2 It is unlawful for any person to take water or in any way use water for private use from a fire hydrant connected to the County's water distribution system.

2.2 Permit For Work On Pipes

- 2.2.1 No plumber, water contractor, or sewer/water contractor shall make any attachments, additions to or alterations in any County service pipe, cock or any fixture connected with the service water pipes, unless he or she shall first procure a permit from the Director of Sanitary Engineering for such work.

2.3 Tapping Mains

- 2.3.1 No person other than the properly authorized employees of the County acting under the direction of the Director of Sanitary Engineering or a person or firm authorized by the Director shall be permitted to tap or make any connections with the main or distributing pipes of the County.

2.4 Street Opening Permit

- 2.4.1 Before permits for extending connections are issued the plumber, water contractor, or sewer/water contractor must present a permit from the appropriate Owner of the affected street or right-of-way (ROW) authorizing him to open the street in which the connection is to be made.
- 2.4.2 No licensed plumber, water contractor, or sewer water contractor shall be granted a permit for work to be done by a person not in the employ of such plumber, water contractor, or sewer/water contractor.

2.5 Water Contractor Authorization

- 2.5.1 No person shall work on County water line systems without first obtaining authorization from the director to work on such lines; and a license issued as prescribed in Chapter 4114 of the Columbus Municipal Code through the board of review of plumbing and sewer contractors and of journeymen plumbers.

2.6 Sizing Of Service Connections

- 2.6.1 Provide documentation supporting the size of the domestic service line(s) and water meter(s). Supply a letter from the mechanical engineer stating the design flows or supporting calculations using fixture supply units (Appendix E of the 2006 International Plumbing Code). Identify irrigation demands and other flows not returning to sanitary sewer. This statement of demand is not required for single family residences.
- 2.6.2 These determinations are essential as basis of design. Then, it is advisable to discuss the available options with Franklin County's Project Engineer. Various configurations for metering and/or subtraction metering are possible.

2.7 Service Connection

- 2.7.1 A separate water service connection is required for each premises.

- 2.7.2 Water service connection shall not be permitted to pipes 20 inches and greater in diameter. Services shall be provided from distribution pipes running parallel to these transmission mains.
- 2.7.3 Water services may occasionally be permitted from 16-inch pipes with special approval of Franklin County. In such cases the connection may be required to be by means of tee and restrained 6-inch branch valve.
- 2.7.4 Service connections shall not come off mains with reduced cover, or off deep mains.
- 2.7.5 Service lines must be profiled if they are 1.5-inch or larger in diameter.
- 2.7.6 Provide a minimum 6 foot horizontal separation with sanitary laterals.
- 2.7.7 Provide a minimum 5 foot separation with driveways.
- 2.7.8 Provide a minimum 5 foot separation between water service connections along the main.
- 2.7.9 For 1.5-inch and 2-inch services, the maximum length of service is 50 feet (pipe to meter). For 1-inch services this maximum length is 90 feet. This is necessary to avoid couplings in the service line.
- 2.7.10 The service line between the pipe and the meter shall be the same as the nominal meter size.
- 2.7.11 Service lines 1-inch and smaller shall be connected to water pipe with a corporation stop. Where 1.5-inch, and 2-inch services leave the pipe, the service shall include a minimum 6 inches in diameter branch tee, valve, and a tapped MJ plug.
- 2.7.12 The service line to a fire suppression system must branch off the pipe independently of other service demands. Where it leaves the pipe, the fire service shall include a valve of a minimum 6 inches in branch diameter. This valve shall be restrained to the tee.
- 2.7.13 Service lines for multi-family structures shall enter building through the mechanical room.
- 2.7.14 Fire lines shall be downstream of service connections when located on dead end main.

2.8 Meter Placement

- 2.8.1 The location of outdoor water meters shall be shown on the plans. Meters 3-inch and smaller are to be located outdoors, in underground meter boxes. Larger meters may be located outdoors (in a vault) or indoors.
- 2.8.2 See standard details for desired placement of meter box.
- 2.8.3 The meter box is to be located immediately behind the curb and as close as possible to the main. For meters of 1-inch and smaller sizes, grass area must be at least 2 feet wide. For disc meters 1.5-inch and 2-inch, the grass area shall be a minimum of 3 feet wide. Turbo and compound meters housed outdoors require an area at least 6 feet square. Placement of meter boxes in the sidewalk or driveway should be avoided. Where no adequate unpaved space is available, consider whether it is best

to locate meter behind the sidewalk or in pavement. Where meter boxes must be installed in a pavement or sidewalk, and meter is 1-inch or smaller, specify a frame and cover for “special applications”, as established in the Approved Materials List. This type of frame is made for embedment in concrete or bituminous pavement. For meters 1.5-inch and larger, the standard frame and cover may be embedded if necessary. Installations in concrete are to be made according to the Standard Details.

- 2.8.4 All turbo, compound, and single jet meters, 3-inch and smaller, see the Standard Details. Design and installation will be according to this figure.
- 2.8.5 For services with meters 4-inch and larger, the meter may be located in an outdoor vault or in an accessible mechanical room. Plans must specify the meter’s location and provide appropriate detail. If an indoor setting is chosen, the service shall be an independent, privately owned branch of Franklin County’s pipe, constructed of ductile iron with a restrained branch valve (minimum 6 inches in diameter) at the pipe.
- 2.8.6 Where meter is to be located inside, provide an exterior lockable door (with a key provided to Franklin County). An outdoor drain capable of receiving 400 gpm must be provided for maintenance purposes within 75 feet of meter room door. When required, a remote register shall be installed on the outside of the building. Meter room must be heated.
- 2.8.7 Water meters may be placed over storm sewer if there is a minimum 5-foot vertical clearance from top of storm sewer pipe and bottom of meter box.
- 2.8.8 For all services with outdoor meters 1.5-inches and larger, and all indoor meters, provide an approved backflow prevention device to accomplish the required service line protection. These devices are to be located in the building’s mechanical room, within the service entrance. This requirement shall be noted on the site plan.
- 2.8.9 Landscaping is not permitted within 5 feet of the meter box.

2.9 Sizing Meters

- 2.9.1 Meters shall be sized in accordance with Table 2.1. Size and type of meter must be clearly specified on construction plans.

Table 2.1 Meter Capacities

Meter Size (inches)	Type	Maximum Continuous Rate (GPM)	Peak Rate (GPM)
5/8	Disc	10	20
¾	Disc	15	30
¾	Single Jet	22	31

Meter Size (inches)	Type	Maximum Continuous Rate (GPM)	Peak Rate (GPM)
1	Disc	25	50
1	Single Jet	50	70
1-1/2	Disc	50	100
1-1/2	Turbo	160	200
1-1/2	Single Jet	88	125
2	Disc	80	160
2	Turbo	200	300
2	Compound	170	200
2	Single Jet	130	180
3	Turbo	450	550
3	Compound	400	450
3	Single Jet	245	350

2.9.2 For meters 1.5-inch and 2-inch in size, single jet meters are used in most commercial and multifamily residential applications. 2-inch compound meters and single jet may be considered for multifamily applications. Turbine or single jet meters may be used where flow rates are consistently high.

2.9.3 For sizes 3 inches and larger, allowable flow rates and meter types will be selected by Franklin County, based upon the characteristics and volumes of flows, anticipated with the intended use.

2.10 Cross Connection And Backflow Prevention

2.10.1 An approved backflow prevention device is required at the service entrance of all buildings in multifamily residential, commercial, industrial, or institutional use. The back flow prevention device must be certified by ASSE or CSA. Installation and testing shall be in accordance with the International Plumbing Code (currently including Sections 312.9.2, 608.2, 608.3), and Franklin County's Cross Connection/Backflow Prevention Program.

2.10.2 Where water is supplied to fixtures or systems deemed high hazard, the device providing service line protection is typically required to be one using the reduced

pressure zone principle. High hazard fixtures and systems are associated with the following facilities, among others:

- multi-use commercial, office, or warehouse facilities
- high rise buildings (four or more stories)
- lawn sprinkler systems and irrigation systems
- fire suppression systems with chemical additives
- hospitals, mortuaries, clinics, veterinary establishments, nursing homes, and medical buildings
- laboratories, and schools or colleges with laboratory facilities
- sewage treatment plants, sewage pumping stations or water pumping stations
- food and beverage processing plants
- health clubs with swimming pools, therapeutic baths, hot tubs or saunas
- metal plating industries
- petroleum or natural gas processing or storage plants
- car washes and laundries
- pesticide or exterminating companies, and associated vehicles with storage or mixing tanks
- farms where water is used for purposes other than typical household use
- commercial greenhouses and nurseries

2.10.3 Customers who are required to install a backflow prevention device shall be required to install an expansion tank on their interior plumbing system. Sizing, location, and installation of the expansion tank shall be the responsibility of the customer and their plumber.

2.10.1 Auxiliary Water Systems

2.10.1.1 As the County owns and operates a public water system, it is obligated and required by the laws of the State of Ohio to implement and conduct a backflow prevention program to protect and safeguard the general public against the threat of contamination caused by the backflow of contaminants by an auxiliary water system into the public water system.

2.10.1.2 In accordance with the County's backflow prevention program, customers possessing an auxiliary water system are required to enter into an agreement to restrict and control all activity on his or her real property that may cause contamination of the public water system. In exchange for the County providing water service to the customer, the customer must sign an agreement stating that they understand the policies of the County concerning the control and/or abatement of auxiliary water systems on their real property.

2.10.1.3 If such auxiliary water system does exist on said real property, the Customer shall agree to select one of the following methods to bring their real property into compliance with the laws of the State of Ohio and the County's policies:

- Agree to completely remove the auxiliary water system from the real property and grant the County, or its assigns, access to the real property, to confirm the removal of said auxiliary water system.
- Agree to retain the auxiliary water system and relocate all components of said auxiliary water system to outside the premises, and to grant the County, or its assigns, access to the premises, as required, for the purpose of inspection, to ensure that the separation is maintained, at regular intervals as required in OAC 3745-95-04.
- Agree to retain the auxiliary water system and install or cause to have installed a reduced pressure (RP) principle backflow prevention assembly at the premises, to disconnect the auxiliary water system from the public water system on the premises, and to grant the County, or its assigns, access to the premises, as required, for the purpose of inspection, to ensure that the separation is maintained. Further agree to maintain the backflow prevention assembly in good working order and to have it tested by a certified backflow tester at regular intervals as required in OAC 3745-95-06.
- The Customer shall not install or maintain a connection between the public water system or the Customer's water system and an auxiliary water system.
- Water service shall be denied or discontinued, after reasonable notice is given to the occupant thereof, to any premises wherein any backflow prevention device required in not installed, tested and maintained in a manner acceptable to the County, or if it is found that the backflow prevention device has been removed or bypassed, or if an unprotected cross-connection exists on the premises, or if the County's personnel, or authorized representative, is denied entry to determine compliance with the backflow regulations.
- Water service to such premises shall not be restored until the Customer has corrected or eliminated such conditions or defects in conformance with all applicable rules and regulations, and to the satisfaction of the County.
- Other penalties and conditions as stated in OAC 3745-95-08 and the County's Water User's Agreement shall be in full force, and not be nullified in any way by this agreement.

2.10.1.4 If a private well exists at a site that connects to the public water system, the property owner must, at their expense, either abandon the existing well or install a reduced pressure zone assembly, ASSE 1013 at the meter. This device would then be subject to annual certification as noted in the County's backflow regulations.

2.10.1.5 If a property owner installs a well for irrigation purposes, they must install, at their expense, a reduced pressure zone assembly, ASSE 1013 at the meter. This device would be then be subject to annual certification as noted in the County's backflow regulations.

2.10.1.6 Private wells shall be physically separated by all plumbing served by the public water system. Franklin County shall inspect the home plumbing system annually to verify the physical separation.

3.0 Sewer Service Connections

3.1 This section summarizes important administrative and technical requirements for the installation of sewer services. The following sources were referenced in the preparation of these requirements:

- City of Columbus Codified Ordinances
- City of Columbus Standard Material and Construction Specifications
- City of Columbus Standard Construction Drawings

3.2 Applicants shall adhere to the requirements of this section and the following City of Columbus Construction and Material Specifications. Current versions of the specifications can be downloaded from the City's website at

<http://utilities.columbus.gov/ConstrucDesignSpecs.htm>

- 901 - Pipe Sewers Complete in Place
- 902 - Increased or Decreased Earth Excavation
- 903 - Rock Excavation
- 904 - Miscellaneous Concrete Structures
- 905 - Concrete
- 906 - Stone Foundation
- 911 - Compacted Backfill
- 912 - Compacted Granular Material
- 914 - Six-Inch Diameter Pipe Risers
- 915 - Wyes, Fittings and Clean-Outs
- 918 - Sanitary House Connection Service

3.3 The applicant shall adhere to additional specifications and requirements referenced within the above list of specifications.

3.4 Whenever a conflict occurs between the requirements of the City of Columbus and the County's requirements, the County's requirements shall govern.

3.1 Only Licensed Sewer Contractors To Make Excavations

3.1.1 It shall be unlawful for any person, except a sewer contractor or water/sewer contractor duly licensed by the City of Columbus Board of Review of Plumbing and

Sewer Contractors and Journeymen Plumbers, to make any excavation in any public right-of-way, easement or private property, for the purpose of constructing, reconstructing, repairing, examining or locating any sewer, drain, catch basin, inlet, manhole, flush tank, trap or any other sewer or drain appurtenance.

3.2 Line And Grade Of Sewers

3.2.1 All sewers shall be laid as straight as possible and to a uniform grade, not less than the appropriate minimum grade per the design requirements of the Division of Sewerage and Drainage for the size of sewer being constructed.

3.3 Permits

3.3.1 No person shall open any public right of way, easement, or private property for the purpose of constructing, reconstructing, repairing, locating or cleaning any sewer or service lateral without obtaining a permit from the County, before the work is started.

3.3.2 Each permit application shall be accompanied by a non-refundable inspection fee of eighty-five (\$85.00) dollars and shall be paid to the Franklin County Sanitary Engineer.

3.3.3 All permits shall expire ninety (90) days from the date of issuance. Permits may not be transferred.

3.4 Information Required For Permit

3.4.1 The person applying for a sewer permit is required to furnish the certified address, property owner name, domestic water tap size, subdivision, lot number and the name of the licensed sewer contractor who will perform the work.

3.5 Notification For Inspection

3.5.1 The licensed sewer contractor or water/sewer contractor shall schedule an inspection through the sewer permit office at least twenty-four (24) hours prior to commencing work on a sewer. No person shall backfill any part of the service lateral installation until it has been inspected and approved by the sewer inspector.

3.6 Damage To Pipe Or Structures

3.6.1 If any person breaks a pipe or structure during work performed under a sewer permit, the permit holder shall repair or replace the damaged pipe or structure to the satisfaction of the Director of Sanitary Engineering.

3.7 Securing Permit For Someone Not Licensed

3.7.1 No person shall procure a permit in the interest of someone who is not licensed. Any person who procures a permit in the interest of someone not licensed shall have his or her permit revoked.

3.8 Sewer Service Connections

- 3.8.1 For each premises receiving service, provide one or more independent connection(s) to public sewer.
- 3.8.2 Connections to single family homes shall be 6-inch minimum; connections to multifamily, commercial, and industrial buildings shall be 6-inch minimum.
- 3.8.3 Connections shall be made directly to the main line sewer. Connections shall be made using Kor N Tee or approved equal for connections made to existing main line sewers. Where access to the main line sewer is not possible, connections to a manhole may be permitted with the prior approval of the Department.
- 3.8.4 Connection by saddle tap or hammer tap is strictly prohibited.
- 3.8.5 Laterals 8-inch diameter and larger must connect at a manhole. Additionally, manholes are required in lieu of clean-outs at all changes in horizontal alignment and vertical grade on all laterals 8-inch diameter and larger.
- 3.8.6 Services of single family dwelling (attached and detached) units are preferred to connect directly to pipe, not to manhole.
- 3.8.7 All laterals utilizing grease interceptors, oil/water separators, and other pre-treatment devices must connect at a manhole. Similarly, all laterals from customers classified as a Significant Industrial User (SIU) must connect at a manhole.
- 3.8.8 When connecting to pipe just outside a manhole, a minimum distance of 5.0 feet is required between outside wall of manhole and connection point; this corresponds to 7.5 feet between connection point and center of manhole on standard 4.0-foot diameter manholes.
- 3.8.9 Minimize length of laterals, with initial stub-out to be less than 100 feet wherever possible.
- 3.8.10 Provide minimum horizontal separation of 5.0 feet (center to center) between laterals directly connecting to sewer pipe.
- 3.8.11 Laterals shall extend at exactly 90 degrees when directly connecting to sewer pipe.
- 3.8.12 When connecting at a manhole, a lateral must describe no less than a 90 degree angle with effluent pipe.
- 3.8.13 Bends in laterals are prohibited within public right-of-way.
- 3.8.14 Laterals shall be located so as to minimize the number of bends in the subsequent extension of building sewer, taking into account all known architectural constraints or proposed homes.
- 3.8.15 Laterals in residential subdivisions shall be extended a minimum of 1 foot beyond the Common Shared Easement, or 16 feet inside lot, whichever is greater.
- 3.8.16 Laterals must be terminated at least 5.0 feet short of the anticipated house site. Additional distance between the end of the lateral and the structure is desirable, particularly if a vertical offset (1:1 riser) is likely to occur with the extension of the building sewer.

- 3.8.17 At town homes, service from the rear of lots is discouraged, due to the typical encumbrance of pipes for maintenance. If considering such a layout, investigate alternatives and consult Franklin County's Project Manager as basis of design.
- 3.8.18 For multi-family residential, commercial, and industrial site plans, laterals should be proposed as complete building sewers, extending to the respective buildings.
- 3.8.19 Where feasible, provide minimum horizontal separation of 6.0 feet between lateral and driveway apron.
- 3.8.20 Provide minimum horizontal separation of 6.0 feet between lateral and water service.
- 3.8.21 Where customer is not served by Franklin County's water system, specify an appropriately sized meter to be installed in the private water service. This meter will allow the billing for continuing sewer service to be based upon actual consumption.
- 3.8.22 Maintain minimum vertical separation of 2.0 feet if service spur is below another utility, and 1.5 feet if service spur is above another utility.
- 3.8.23 Laterals connecting at a manhole may match crown elevations with the highest influent sewer, or be higher. However, the invert elevation of the lateral shall not exceed the crown of the highest influent sewer.
- 3.8.24 Laterals are to be at sufficient depth to sewer the lowest portion of a structure, including basement.
- 3.8.25 Where depth of pipe would result in excess depth of lateral, the slope of the lateral may be increased to 4.17 percent . If further reduction of cover is warranted, specify a vertical offset (1:1 riser). Such vertical offsets must be 3.0 vertical feet or more, and must be exterior to right-of-way and easement.
- 3.8.26 Building sewers of multi-family residential, commercial, or industrial premises may be run at higher slopes, typically not to exceed 8.32 percent. Vertical offsets (1:1 risers) may be employed.
- 3.8.27 Vertical offsets shall be located a minimum of 5.0 feet off of the pipe or outside edge of manhole, depending on connection type.
- 3.8.28 Tabulation and/or profile must be provided for each lateral. Any non-residential or multifamily lateral crossing another utility shall be profiled.
- 3.8.29 All lateral connections must be stationed in the profile of the sewer main.
- 3.8.30 Show crossing laterals on profiles of storm drains and water pipes if vertical clearance (outside to outside) is less than 3.0 feet.
- 3.8.31 One cleanout per every 100 linear feet of sewer lateral is required.
- 3.8.32 The first cleanout shall be located within 5.0 feet of the building's exterior wall. Clean-outs must be shown in plan and profile of all commercial laterals.
- 3.8.33 No drains subject to receiving storm water may be tributary to the sanitary sewer.
- 3.8.34 For properties tributary to a sewage pump station, installation of a backwater valve on the lateral shall be required. In certain circumstances and depending on the type

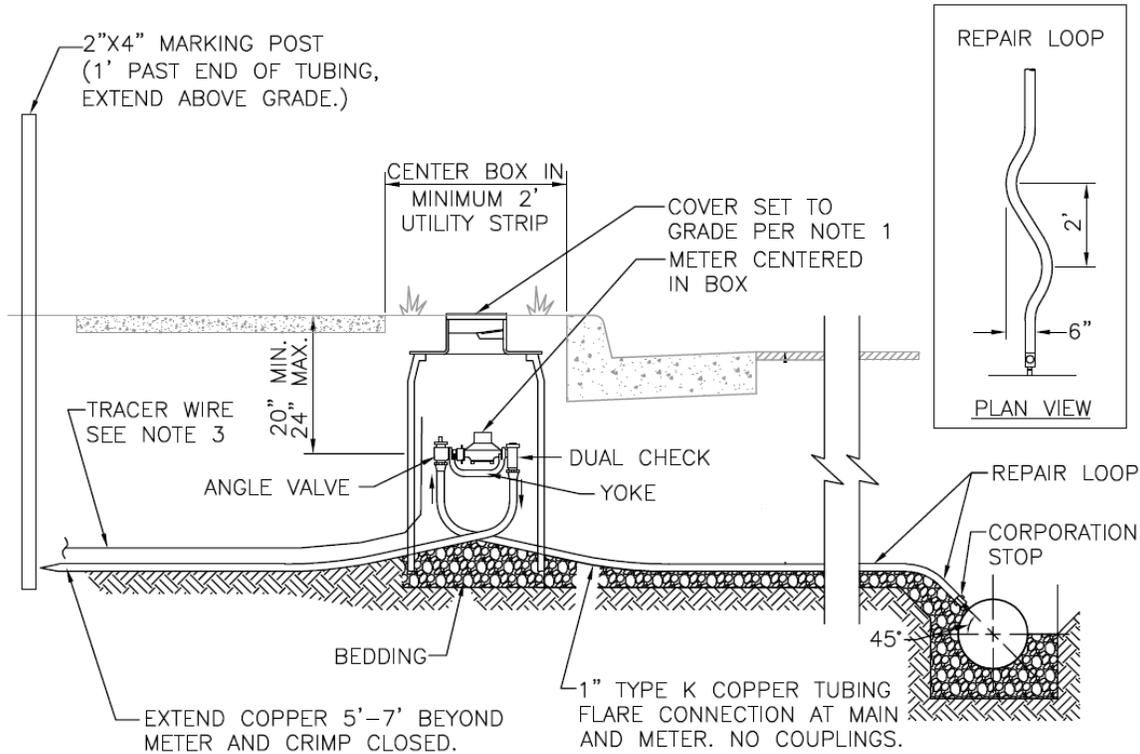
of backwater valve selected, the backwater valve may act as a cleanout. Backwater valves shall be furnished by the customer and installed by a certified contractor.

A1-1 Water Standard Details

A1-1.1 The following standard details are contained in this booklet.

Table A1-1: Water Standard Details List

Description	Drawing No.
Service connection for 5/8, 3/4, and 1-inch exterior meters	W-1
Water service by jack and bore	W-2
Water meter in sidewalk or slab	W-3
Dual water meter setting	W-4
Service connection for 1.5 and 2-inch disc and single jet water meters	W-5
1.5, 2, and 3-inch meter	W-6
Large meter outdoors	W-7
Large meter indoors	W-8
5/8, 3/4, or 1-inch deduct meter	W-9
1.5, 2, or 3-inch deduct meter	W-10

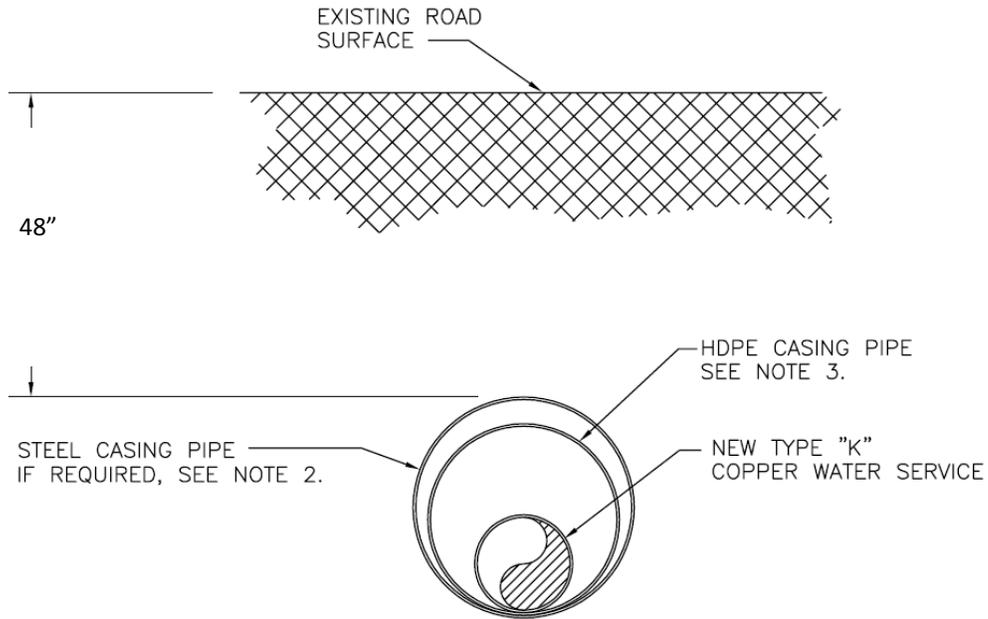


1. At initial installation, rotational (adjustable) frame shall be in center of height range.
2. Where at curb, set cover flush to 1-inch above top of curb.
3. Where no curb, set cover 1-inch above final grade.
4. In slope, provide timber retaining wall 3-ft from cover.
5. Where tap is on 4-inch main, corporation stop shall have 3/4-inch inlet and 1-inch flare outlet. On 3-inch water main, use 3 x 3/4-inch brass saddle.
6. Where service between meter and building is plastic tubing, provide tracer wire of AWG #12 solid copper with 45 mil polyethylene insulation. No splices. Turn tracer wire up inside meter box. Terminate tracer wire indoors or at exterior wall with a soil marker.
7. All materials shall conform to the County's approved materials list.
8. Meter shall be as required by the County.
9. The County shall determine if a dual check is required.
10. Service line depth shall be 48-inches

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SERVICE CONNECTION FOR 5/8-INCH, 3/4-INCH,
AND 1-INCH EXTERIOR METERS

W-1



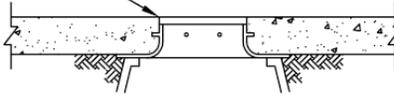
1. A permit from the applicable authority having jurisdiction over roads and streets is required for all work within an existing public right of way.
2. If roadway owner requires casing to be steel, insert plastic casing pipe into steel casing to insulate the water service from steel. Otherwise use plastic casing only.
3. For 1-inch water service, use 3-inch high density polyethylene (HDPE). For 1.5-inch service or 2-inch water service use 4-inch HDPE. PVC not acceptable.
4. Seal both ends of casing.

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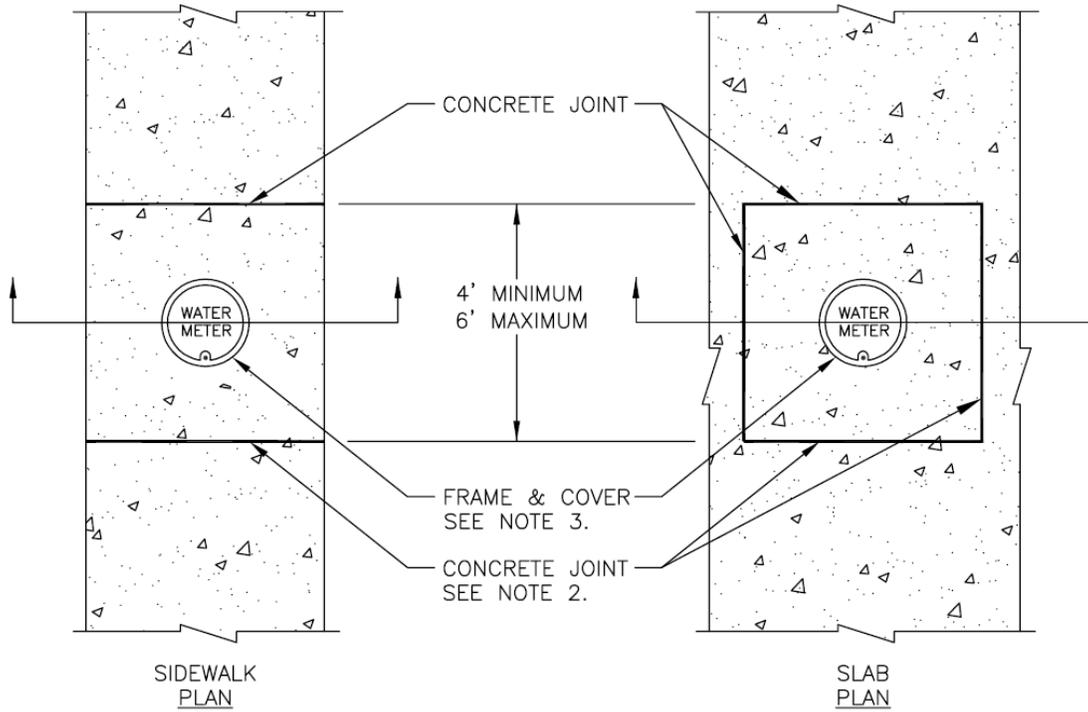
WATER SERVICE BY JACK AND BORE

W-2

COVER MUST BE
FLUSH WITH CONCRETE



ELEVATION

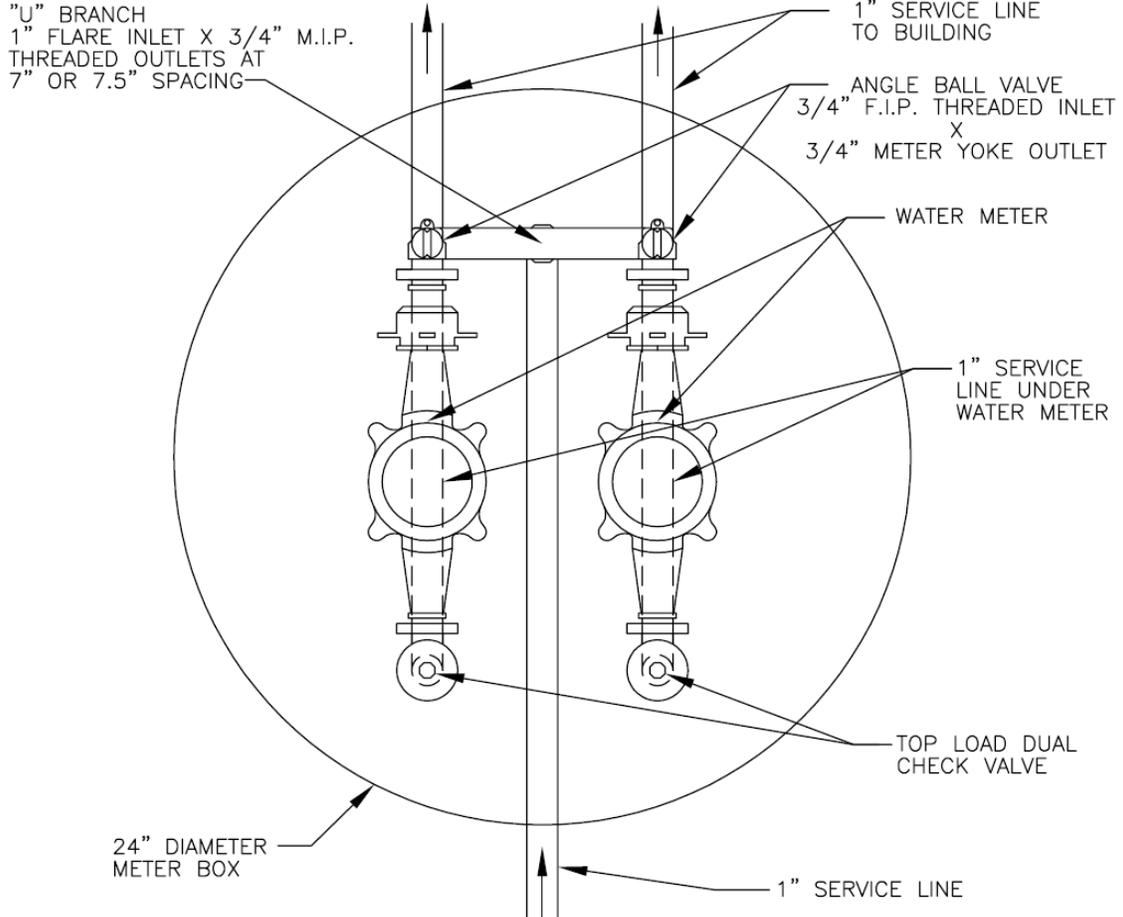


1. For use only where specifically approved by Franklin County. Meter not permitted within direct wheel path of vehicles.
2. Extend joints in concrete to a depth of at least 1-inch.
3. Frame and cover for "Special Applications" required. See Franklin County's approved materials list for manufacturer's and part numbers.

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WATER METER IN SIDEWALK OR SLAB

W-3

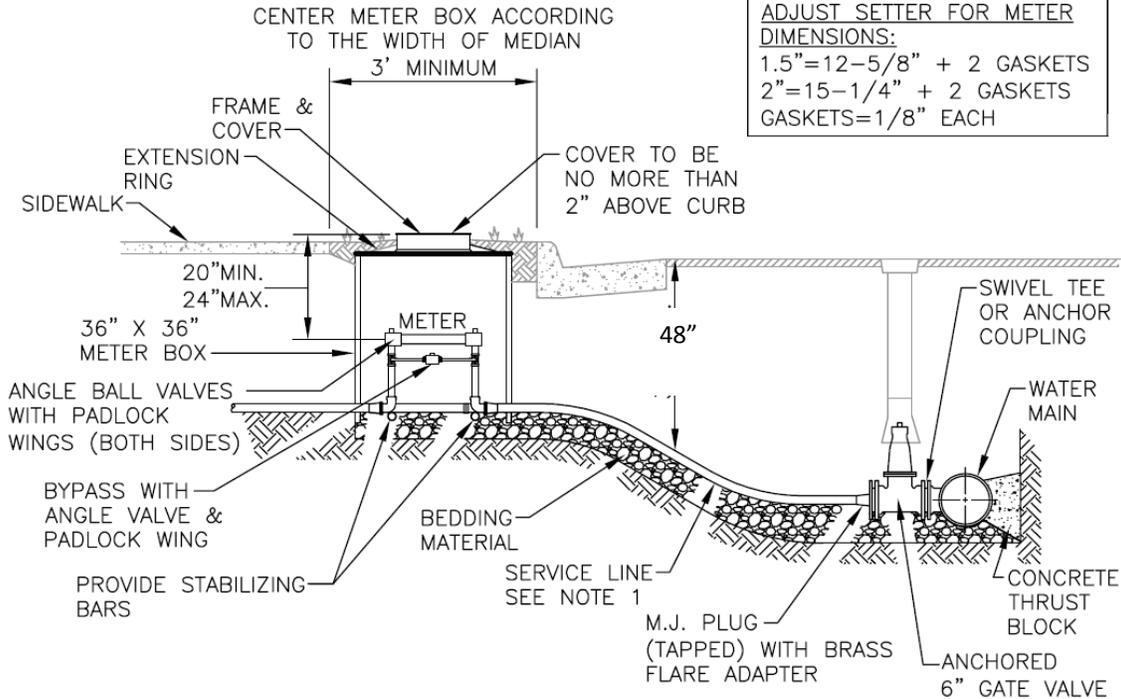


1. For use only where specifically approved by Franklin County. Cannot supply residential fire suppression systems.
2. See Franklin County's approved materials list for manufacturer's and part numbers.

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DUAL WATER METER SETTING

W-4



1. Service line to be type K copper tubing with flared connections at main and setter. No couplings permitted. Typical maximum design length is 50-ft.
2. See Franklin County's approved materials list for manufacturer's and part numbers.
3. All parts including meter to be furnished and installed by contractor.
4. This detail applicable to disc and single jet meters only.
5. The building's internal plumbing shall include a backflow preventer (certified by ASSE). Installation and testing shall be in accordance with the international plumbing code.

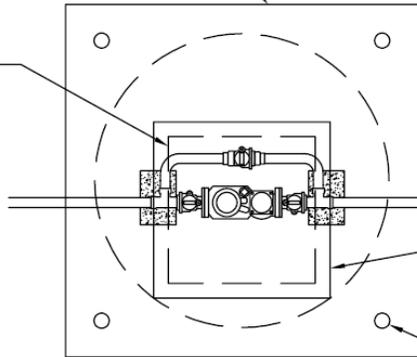
FEBRUARY
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SERVICE CONNECTION FOR 1.5 AND 2-INCH
DISC AND SINGLE JET METERS

W-5

72"x72"x3/8" STEEL PLATE

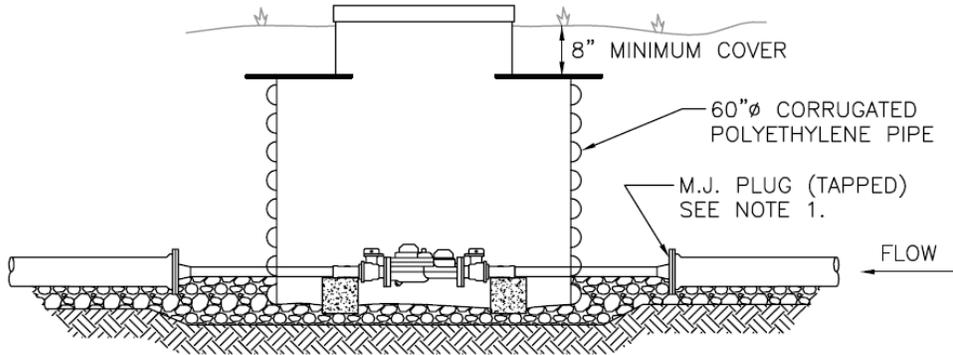
CUT OPENING



METER TYPE	METER LENGTH	SERVICE LINE
1.5" TURBO	13.0"	2"Ø COPPER OR 4"Ø DIP
2" COMPOUND	22.25"	
2" TURBO	17.0"	
3" COMPOUND	24.0"	6"Ø DIP
3" TURBO	19.0"	

36"x36" ALUMINUM HATCH
BOLT TO STEEL PLATE.

2" HOLE FOR LIFTING



8" MINIMUM COVER

60"Ø CORRUGATED
POLYETHYLENE PIPE

M.J. PLUG (TAPPED)
SEE NOTE 1.

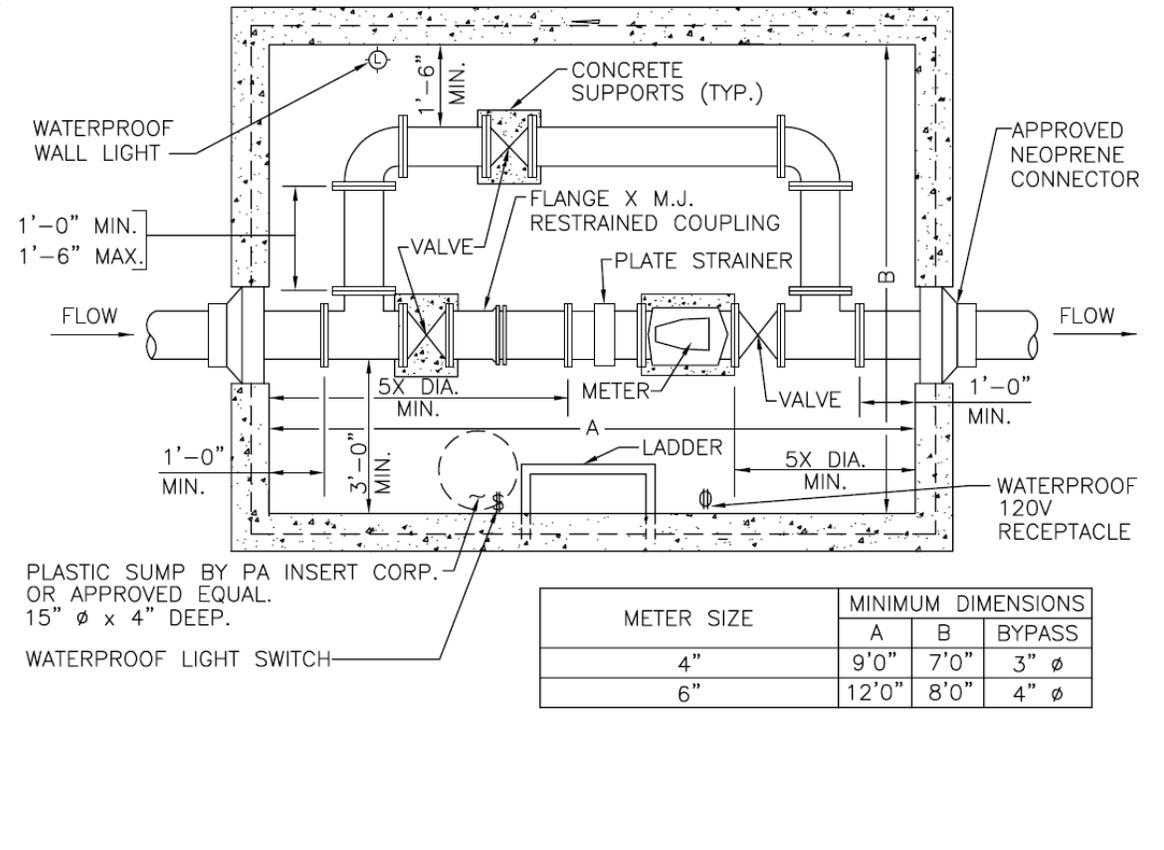
FLOW

1. Transition 2-inch copper with brass flare adapter. For 3-inch meter, transition to 3-inch ductile iron nipple, with NPT threads and fusion bonded epoxy coating. Transition to other piping materials allowed downstream of meters.
2. Connection at main shall be 6-inch with restrained branch valve. Restrain all iron service line, between main and building. Use approved restraining gland at each mechanical joint. Restrain all pipe joints with locking gasket or other approved restraining system.
3. Meter pit shall be located in an unpaved area.
4. Verify meter length with meter manufacturer.
5. Single jet meters allowed in lieu of turbo and compound meters.

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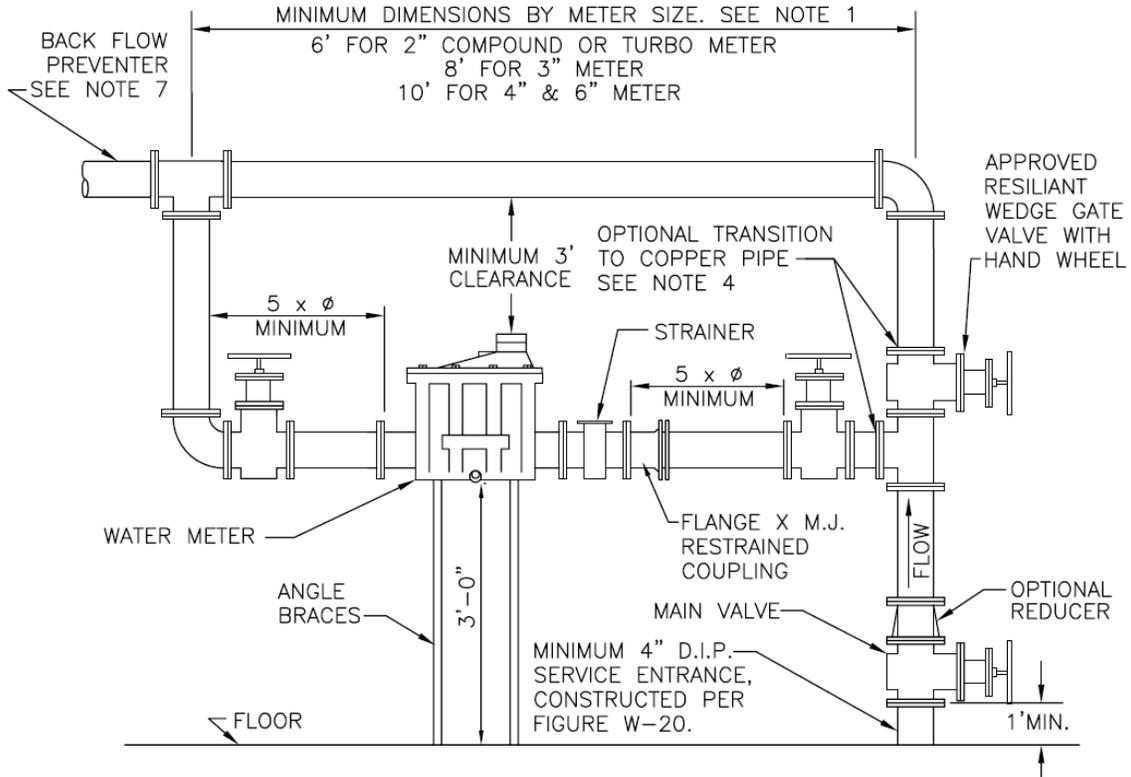
1.5, 2, AND 3-INCH METER

W-6



1. Ceiling height shall be a minimum of 6.5 ft. Pipe center shall be 3-ft above floor.
2. Manway shall be covered with a minimum 3-ft x 3-ft hinged frame and cover with safety grate, all aluminum construction.
3. Structure shall be water tight. Apply approved joint wrap on exterior, slope floor to sump.
4. All pipe shall be flanged ductile iron. All valves shall be resilient wedge gate with NRS handwheel operator.
5. All wiring shall be within sealed PVC electrical conduit.
6. Connection at main shall be 6-inch minimum with restrained branch valve. Restrain all service line between main and building.
7. Submittal required for vault. Structural design shall be certified by a registered professional engineer in the State of Ohio.
8. The building's internal plumbing shall include a backflow preventer (certified by ASSE). Installation and testing shall be in accordance with the international plumbing code.
- 9.

FEBRUARY 2011	LARGE METER OUTDOORS	W-7
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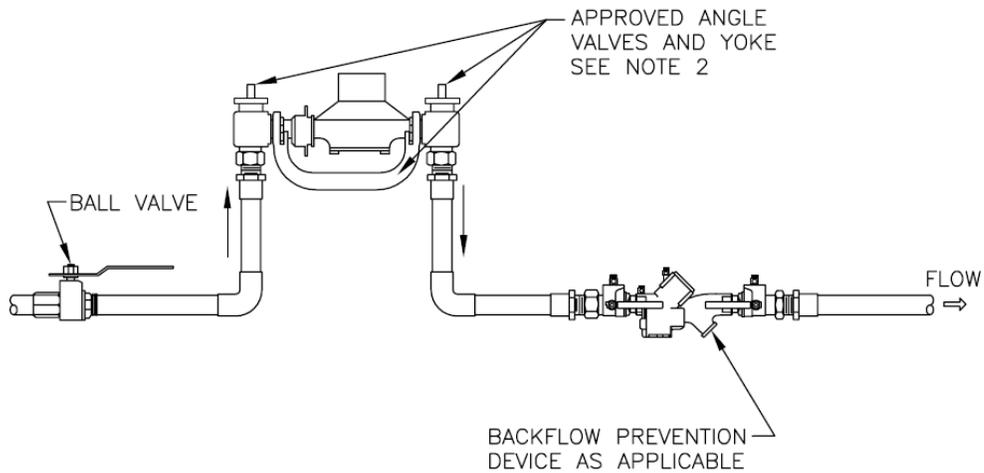


1. If distances specified are not available, put meter outside in a vault. All pipes shall clear walls by 1 ft.
2. Floor drain required.
3. Water room shall have a locked exterior door. Franklin County shall be provided a key.
4. Optional transition from ductile iron to copper pipe. With copper pipe, ball valves, and dresser coupling may be used.
5. All materials shall conform to Franklin County's approved materials list.
6. All materials and installation by Contractor.
7. The building's internal plumbing shall include a backflow preventer (certified byASSE). Installation and testing shall be in accordance with the international plumbing code.

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LARGE METER INDOORS

W-8



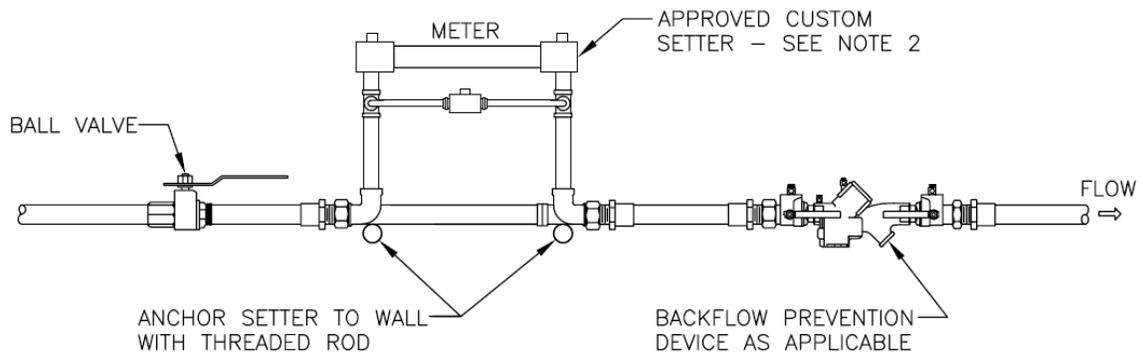
1. This detail for use for indoor installation in a branch of the customer's plumbing, where flow qualifies for deduct metering.
2. Refer to the County's approved materials list for approved manufacturers and model numbers. Angle valves may have threaded or compression connection to tubing.
3. Water meter shall be as approved by the County. Meter shall be purchased and installed by customer, inspected by the County.

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5/8, 3/4, OR 1-INCH DEDUCT METER

W-9

ADJUST SETTER FOR METER DIMENSIONS:
 1.5"=12-5/8" + 2 GASKETS
 2"=15-1/4" + 2 GASKETS
 GASKETS=1/8" EACH



1. This detail for use for indoor installation in a branch of the customer's plumbing, where flow qualifies for deduct metering.
2. Refer to the County's approved materials list for approved manufacturers and model numbers. Angle valves may have threaded or compression connection to tubing.
3. Water meter shall be as approved by the County. Meter shall be purchased and installed by customer, inspected by the County.

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1.5 OR 2-INCH DEDUCT METER

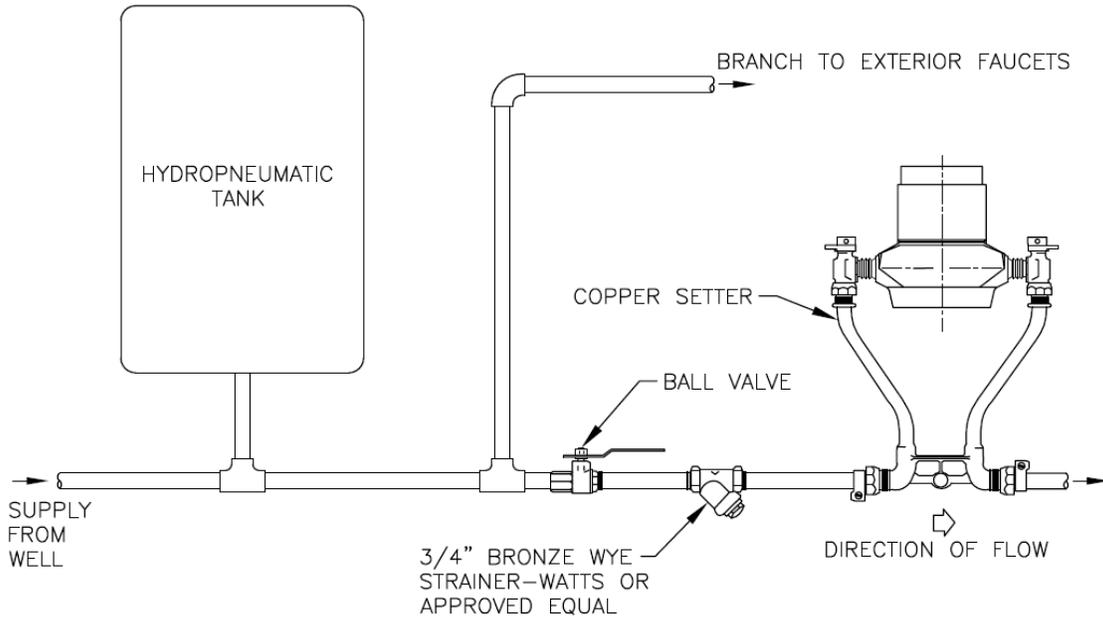
W-10

A1-2 Sewer Standard Details

A1-2.1 The following sewer standard details are contained in this booklet.

Table A2-1: Sewer Standard Details List

Description	Drawing No.
Water meter setting for sewer-only accounts	S-1
Sanitary cleanout	S-2
Typical sanitary house connection service	AA-S160
Typical cleanout	AA-S161

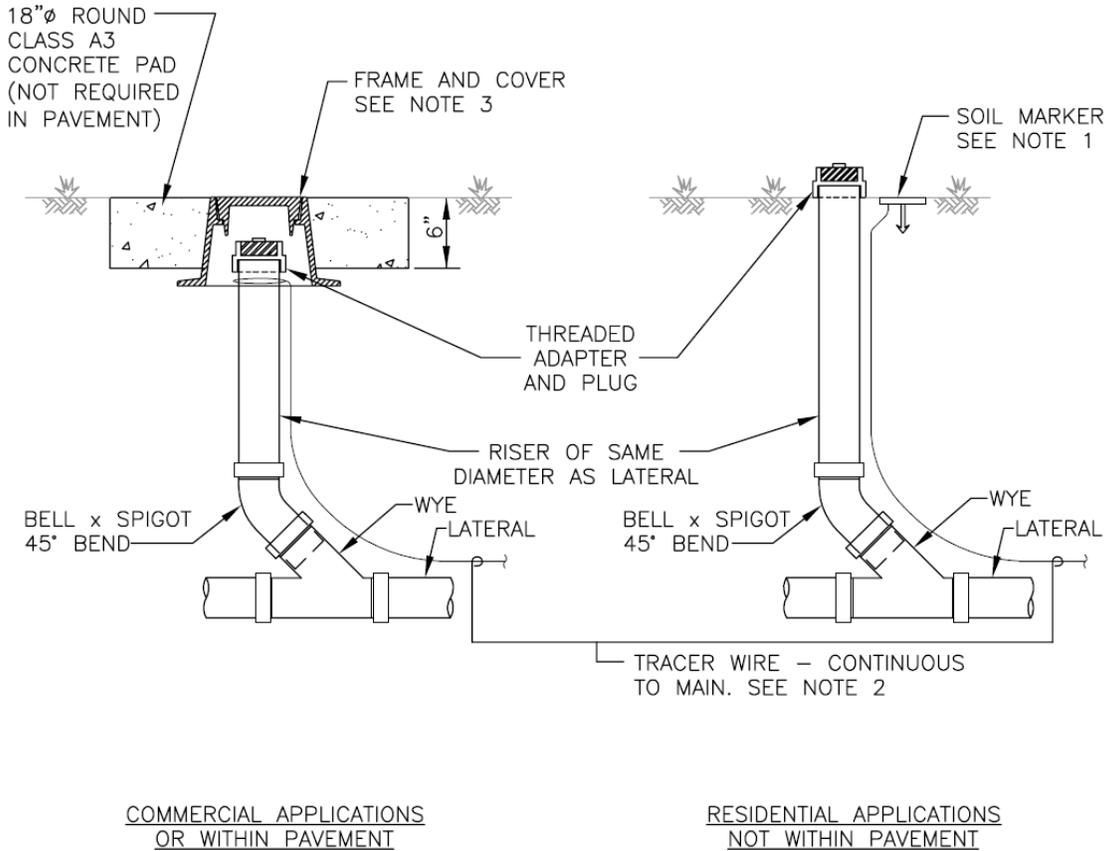


1. Meter shall be set horizontally
2. Meter shall be installed before sanitary lateral is connected to sewer main.
3. The strainer, setter, water meter, labor, installation, and other materials shall be furnished by the applicant.
4. Refer to the County's approved materials list for approved manufacturers and model numbers. Angle valves may have threaded or compression connection to tubing.

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WATER METER SETTING FOR SEWER-ONLY
ACCOUNTS

S-1

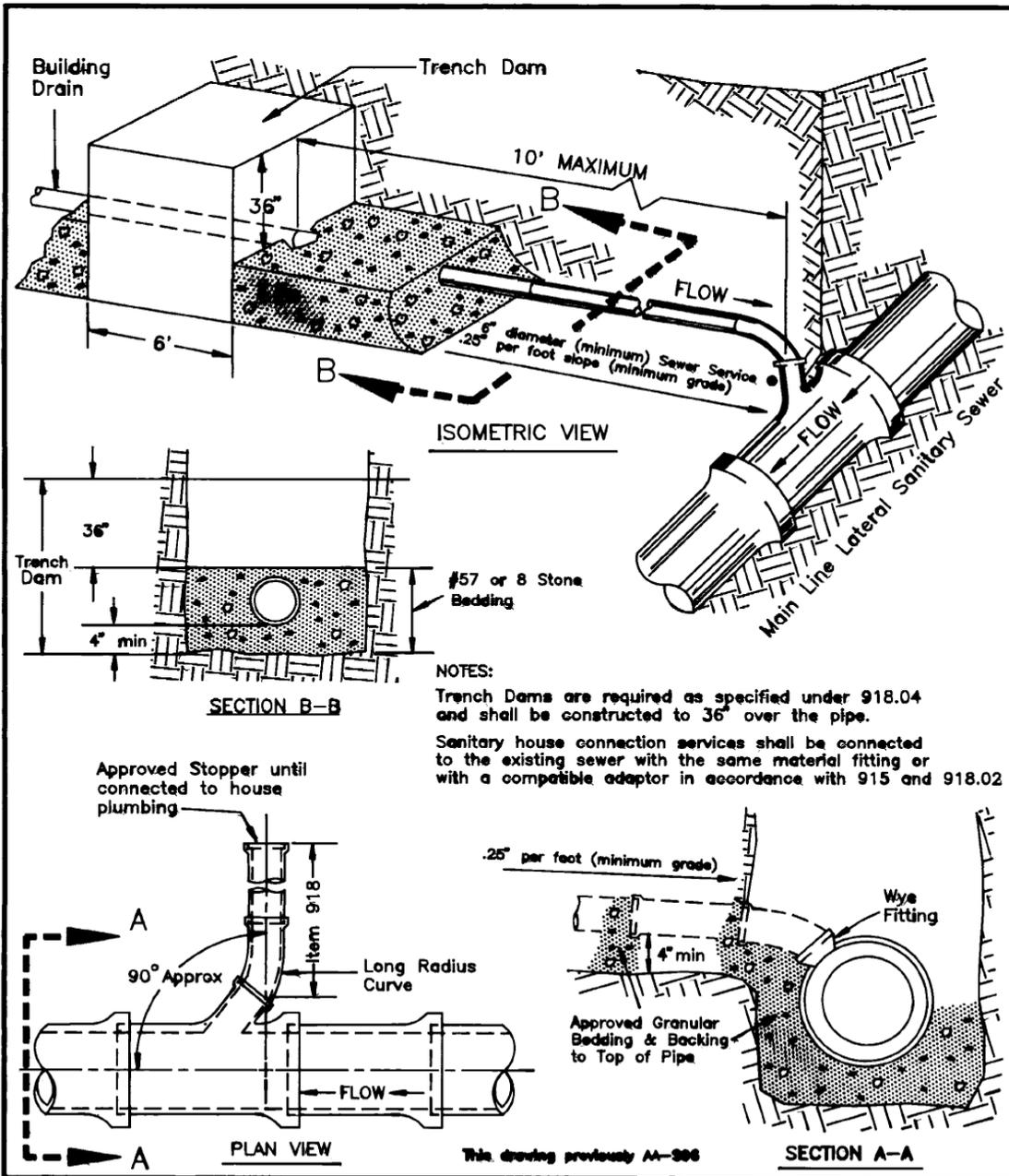


1. Terminate tracer wire with cleanout that is within 5-ft of building's exterior. If not using iron frame and cover, provide green soilmarker by Rhino marking and protection systems. Connect tracer wire to terminal on soil marker.
2. Tracer wire shall be #12 AWG solid copper with 45 mil polyethylene insulation. At temporary termination of lateral by utility contractor, make splice with butt connector and shrink sleeve. No other splices permitted.
3. All materials shall conform to the County's approved materials list.

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SANITARY CLEANOUT

S-2



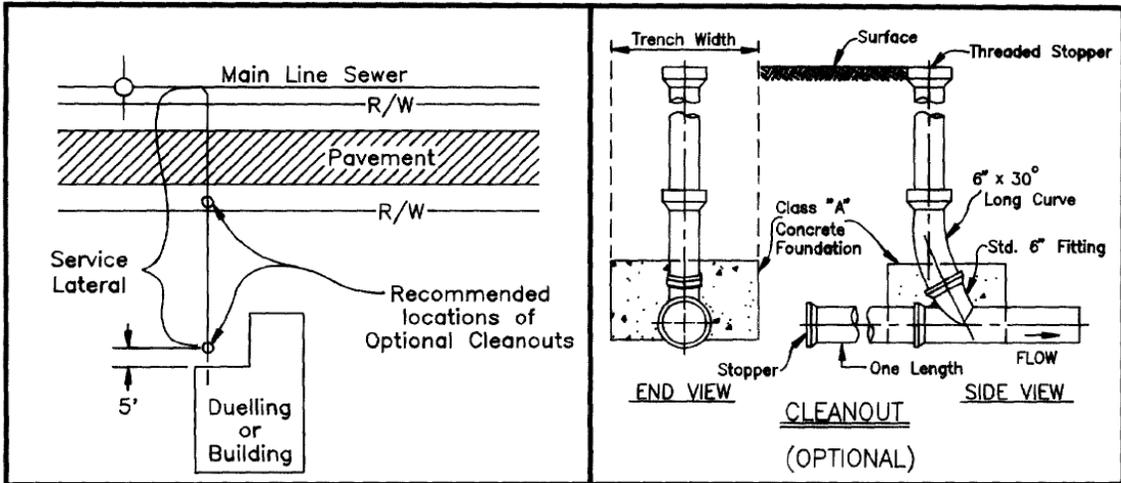
Stephen J. Salany
 Public Works Division Engineer

Anthony Brancisi
 ENGINEER

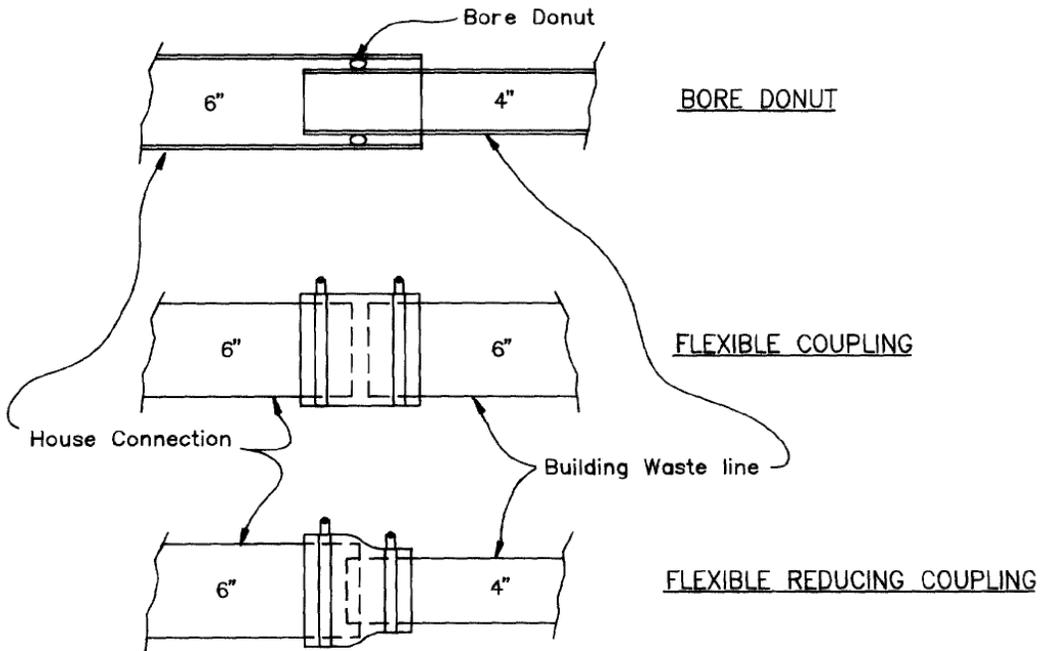
12/15/93

TYPICAL SANITARY
 HOUSE CONNECTION
 SERVICE

CITY OF COLUMBUS, OHIO.		
DEPARTMENT OF PUBLIC UTILITIES		
DIVISION OF SEWERAGE & DRAINAGE		
STANDARD		
CONSTRUCTION DRAWING		
DR. CAW	SHEET 1	FILE NO.
CK. DJH	OF 2	AA-S160



ALLOWABLE CONNECTIONS —
SANITARY HOUSE CONNECTION TO BUILDING WASTE LINE



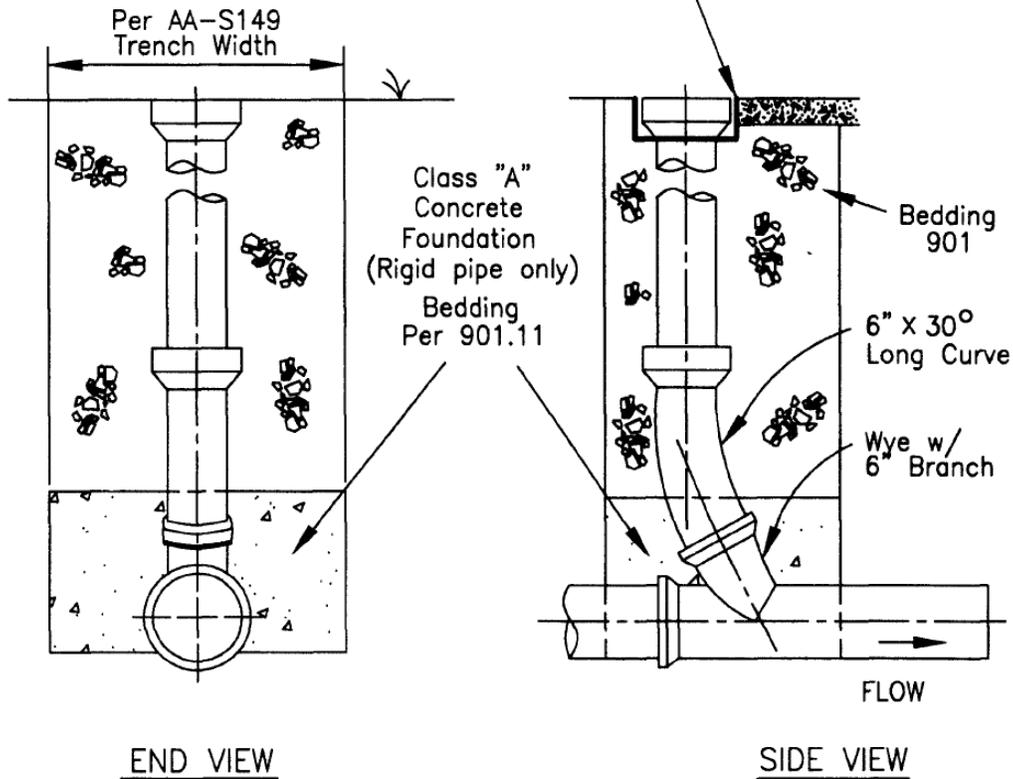
COUPLING CLAMPS SHALL BE STAINLESS STEEL

<p><i>Stephen J. Salay</i> SEWER SYSTEMS ENGINEERING MANAGER</p> <p><i>Jerry Francis</i> ADMINISTRATOR</p>	<p align="center">TYPICAL SANITARY HOUSE CONNECTION SERVICE</p>	<p align="center">CITY OF COLUMBUS, OHIO. DEPARTMENT OF PUBLIC UTILITIES DIVISION OF SEWERAGE & DRAINAGE</p>		
		<p align="center">STANDARD CONSTRUCTION DRAWING</p>		
<p>12/15/93 APPROVED</p>	<p>REVIEWED</p>	<p>DR. W.C.K. CK. DJH</p>	<p>SHEET 2 OF 2</p>	<p>FILE NO. AA-S160</p>

NOTE:

Pipe materials shall be the same material fitting or with a compatible adapter as the main sewer or in accordance with 914.02.

For cleanouts that terminate in paved areas, a frame and cover (East Jordan 1578 or approved equal) shall be used in addition to manufacturers cap/plug



This Drawing Previously AA-S161

[Signature]
SEWER SYSTEM ENGINEERING MANAGER

[Signature]
ADMINISTRATOR

APPROVED

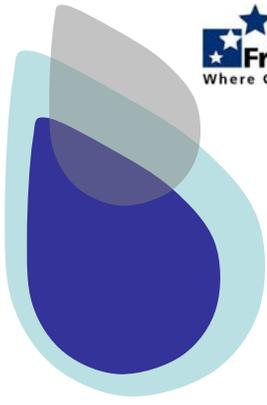
FEB 2005
REVISED

TYPICAL CLEANOUT

CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF SEWERAGE & DRAINAGE

STANDARD
CONSTRUCTION DRAWING

DR. <u>RLS</u>	SHEET <u>1</u>	FILE NO.
CK. _____	OF <u>1</u>	AA-S161



Franklin County Department of Sanitary Engineering
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Columbus, OH 43215-4562
(614) 525-3940

