



WATER SERVICE BRANCH and METER PROCEDURES

Engineering Division/Branch Service Section



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This document provides information and instructions on applying for water service within the Greater Cincinnati Water Works service area.

GENERAL OVERVIEW

The Branch Services Section of the Greater Cincinnati Water Works (GCWW) Engineering Division coordinates the application process for new service branches. There are three different branch application processes dependent on the location and type of development.

The "Certified Person" referred to in this document, is one who holds a State of Ohio master plumber's license and has taken the GCWW test to ensure that the applicant is familiar with our rules and regulations for installing service from the right-of-way line up to and including the meter setting or detector check setting. The test is given by appointment and you may schedule to take it by calling John Waters (513-591-7836) at least two days in advance. There is no charge for the test. However, you must purchase the GCWW Rules and Regulations manual (\$8.00) (or) go online at www.cincinnati-oh.gov/water/pages/-13028/ and make a copy to bring with you when you take the test.

The bond that is referred to is a \$1,000 performance bond. The bond runs from January 1 to December 31. We provide the bond form for your insurance company to complete

Payment for branches and meters is made to the GCWW Cashier in cash, check or visa prior to receipt of service. Check should be made payable to the "Greater Cincinnati Water Works".

GCWW - LAWS, ORDINANCES, RULES, REGULATIONS AND STANDARD DRAWING REFERENCES:

BRANCHES: Sections 401-31, 32, 33, 35, 36 and 41

METERS: Sections 401-43, 51, 52, 53, 54 and 55

STANDARD DRAWINGS: 108-1 thru 108-22

1) SUBDIVISION/"CURB ONLY TAPS - 2" AND SMALLER ONLY

When a new subdivision is being developed, the developer or a GCWW Certified Tapper completes a form D-100-S for each tap to be installed. All lots in the development must be provided with a tap. The SUBDIVISION BRANCH price from the rate table on page 6, only applies to these taps. In this case only materials are included (ferrule, curb stop and "blue top stake").

Insulator couplings are required and are an additional cost. The Certified Tapper performs the actual branch installation work with a GCWW Construction Inspector present. A meter is not purchased until after the individual lot is developed. (See Section 401-31R13 thru R16 and Section 401-33 of GCWW - Laws, Ordinances, Rules and Regulations for detailed requirements) GCWW Water Works Construction Inspection fees apply.

2) SERVICE BRANCHES - 2" OR SMALLER ON DEDICATED RIGHT-OF-WAY

For new service on existing dedicated streets, a building permit or plumbing permit must be presented at time of application. Application must be made by a plumber who is bonded and certified to do this type of work. The following is the general procedure when applying for a service branch two inches or less in size.

- 1.) The applicant must complete a CROSS-CONNECTION QUESTIONNAIRE (CCQ - blue form). This card provides GCWW with information about branch and meter size, desired branch location as well as proposed use of the new service. The branch location is specified from the nearest fire hydrant and cross street as well as the side of the street that the tap will run to. **EXAMPLE: You are building on the west side of Vine Street and the nearest cross street is Mitchell Avenue. Typical branch measurements would be- WEST SIDE OF VINE 105 FEET SOUTH OF THE FIRST FIRE HYDRANT SOUTH OF MITCHELL.**
- 2.) Provide a plot plan showing property lines and all easements for each tap.
- 3.) All applicable service fees are charged at this time including meter, branch and bulk fee for unmetered construction water. **SEE TABLES BEGINNING ON PAGE 6 FOR PRICE LISTS. IN MOST CASES THE "ANY STREET" PRICE WILL APPLY TO THESE BRANCHES.**
- 4.) After paying the cashier, the applicant picks up the meter and a "blue top" stake from our storeroom. The stake is used by the applicant to mark the actual tap location.

This process usually takes 15 to 30 minutes, depending on the number of people making application and how busy the cashiers are.

The next day the application goes to the Inspection Department for street opening permit and a field check of the tap location. Call (513) 591-7873 to inform the Tap Inspector, in the Inspection Department, that you have set the stake at the tap location. After we receive the street opening permit, the GCWW Tap Contractor will install the tap within 30 days.

3) SERVICE BRANCH APPLICATIONS FOR:

All sizes of fire branches, all portions of Dual or Tri-services, “Curb-Only” branches larger than 2”, and Domestic or Irrigation branches larger than 2”.

The Branch Application involves filling out a Cross Connection Questionnaire (CCQ) and submitting that hard copy (which must be the actual form on cardstock, and can be obtained at the permitting counter at Greater Cincinnati Water Works, 4747 Spring Grove Avenue), along with 2 copies of a single plan sheet showing the property and the proposed branch, a copy of the permit, and recent flow test information. When the plan itself is approved as satisfying all GCWW requirements, the applicant must provide four copies of the final draft of the plan sheet to GCWW Branch Services.

The Cross Connection Questionnaire (CCQ)

This must be filled out in its entirety; **every** question on it must be filled out. For a dual service branch for which the same company will be performing the work for both the domestic and the fire branches, both the fire CCQ **and** the domestic CCQ must be filled out completely. For projects where the fire and domestic branches will be taken care of by two different companies, each company must completely fill out the appropriate fire or domestic CCQ.

Each CCQ must be signed and dated by an appropriate authorized person.

A licensed, certified, fire installer, registered with GCWW, representing a company holding a current bond, may fill out and sign a CCQ for a fire only CCQ or a dual (or more) branch (which would require both a fire and a domestic CCQ). A licensed, certified plumber representing a company with a current bond may fill out a domestic CCQ for a domestic only branch, or a domestic CCQ for a domestic portion of a dual branch. The bond holder assumes the responsibility for the suitability of the applicant who is representing them.

There are materials at the permitting counter to outline our rules and regulations and help the applicant properly fill out the CCQ. The form must be filled out in its entirety, with no questions left blank.

The permit

A copy of an issued permit is required to approve this application. The permit may be the general building permit, a plumbing permit, or a fire-suppression (sprinkler) permit, but cannot be a permit application, or a foundation, shell, HVAC or other permit. **It cannot be just a submitted number, but must be an actual copy of the permit.** This can be brought in, faxed to us (513-591-7878) or emailed to ellen.betsch@gcww.cincinnati-oh.gov

Flow test

There must be current flow information for the area where the tap is to be made. Typically two fire hydrants, one to each side of where the tap is proposed, will be flowed and gauged. This flow test must have been performed within the last three years, or the applicant will be required to perform a new flow test. If a potential applicant wants to check on this prior to application, or to assist with their design process, please call Beth Thomas at (513) 591-7855 or email: beth.thomas@gcww.cincinnati-oh.gov Please be aware that flow test information, even if obtained from GCWW, may not be acceptable to us for application purposes if there have been system changes within the last 3 to 5 years.

Contractor Performed Flow Tests

As the contractor performing the proposed flow test you are required to do the following:

- 1.) Perform a valid flow test
- 2.) Collect all test data
- 3.) Make all calculations
- 4.) Submit flow test information to the Engineering Records Section.
 - a.) May be electronic or paper copy (Fax 513-591-7878)
 - b.) Must include a map showing which fire hydrants were flowed and gauged.

The following requirements are critical to have a valid flow test:

- 1.) The hydrants which are flowed and gauged must be on the same size water main, typically with no other water mains teed off between the hydrants used in the flow test.
- 2.) For flow tests run for large branch applications, the hydrants used for flow tests should be located on either side of the location for the proposed branch.

PLEASE NOTE: GCWW valve personnel are only present to make sure the contractor does not damage the water distribution system. They do not have any knowledge of the fire flow test procedures. GCWW considers the flow tests to be valid for a time period of 3-5 years. This timeframe will vary because of potential changes over time to the water distribution system where the flow test occurred.

Calculations

In order to make certain the system can provide the sustained flow that is needed for the new service, we need to see a copy of the calculations, indicating the flow and pressure needed. These calculations will show how the peak water demand requested on the application form was determined. This is true for *all* branches 4" or larger. This can be a printout of the hydraulic calculations, a copy of part of a spreadsheet, or manual calculations. For domestic and irrigation service branches, this is typically a Fixture Unit Sheet.

Plans

Two one-sheet plan copies must be submitted with the CCQ(s). If you prefer, you may submit your revised application drawings via email to ellen.betsch@gcww.cincinnati-oh.gov . A signed hard copy of the CCQ must be submitted with the plan sheets in order for the plan to be reviewed as part of an application.

The plans must comply with the following criteria:

- 1) Plans should show complete property/parcel including building footprints and all edges of pavement; existing and proposed. North arrow must be pointing to the top or to the right of the plan sheet (in the x,x quadrant).
- 2) Plans must be in **engineering** or decimal scale; **not** architectural scale.
- 3) Proposed branch(es) and proposed pit must be shown; we require that all branches be a minimum of 10' from hydrants and other GCWW fittings with blocking; 5' minimum from the outside of all other appurtenances or permanent features.
- 4) Dimension the distance, in round numbers from the nearest fire hydrant to the proposed tap.
- 5) **Label the dimension exactly as it is on the CCQ:** N. S. E. or W. side of STREET NAME, NUMBER feet N. S. E. or W. of NUMBER FH N. S. E. or W. of STREET NAME. Ex: *N side of Main, 130' E of 1st FH N of Eggleston.*
- 6) Label the FH: NUMBER FH N. S. E. or W. of STREET NAME. Ex. *1st FH N of Eggleston.*
- 7) There may be **no** horizontal bends from the main to the pit box.
- 8) All existing and proposed utilities and appurtenances in the area of the proposed branch should be shown. Call 1-800-362-2764 for OUPS "preplanning information".
- 9) For taps made in State Right of Way areas, profiles of proposed branch, main being tapped and existing/proposed utilities/appurtenances must be provided.
- 10) Applicant should check with municipality where tap is being made to determine whether an open-cut or bore & case is appropriate for installing the branch. Bore & Case is currently required on all large branches in areas where Hamilton County and the Ohio Department of Transportation is the permitting agency. Any bored & cased branch must include a profile of the branch on the drawing sheet, and must show the boring and receiving pits on the plan view.
- 11) Both sides of Right of Way must be shown, and dimension the width of the Right of Way. If Right of Way is proposed; documentation from the appropriate municipality must be provided, verifying the location of the proposed ROW and a date when proposed ROW will go into effect. If an easement is used in lieu of a ROW, an accepted easement plat must be provided.
- 12) The Center Line and names of streets and edges of pavement must be shown and labeled.
- 13) Show and label the main being tapped and its size.
- 14) Show all easement boundaries in the area of the property if applicable.
- 15) Show fire hydrant head, valve & lead.
- 16) Include on the plan sheet a copy of the appropriate approved and signed GCWW Standard Drawing. The current signed, standard drawings can be found at <http://www.cincinnati-oh.gov/water/pages/-13028-/> under the heading "Records Services" in pdf and tif formats, or hard copies of these can be obtained from Greater Cincinnati Water Works to be physically copied onto plan sheet. Altered or alternative drawings are not acceptable; only the approved Standard.
- 17) Meter settings are required to be outside of the building.

- 18) For projects within Hamilton County and outside of the City of Cincinnati corporation limits, the Hamilton County Traffic Notes must appear on the plan sheet in their entirety. An electronic file can be emailed for inclusion in electronic drawing files, or hard copies of these can be obtained from GCWW to be physically copied onto plan sheet.

When your application has been reviewed and field verified, you will be asked to provide **4** copies of the final plan sheet.

Cost of Service Branches

Class	3/4"	1"	1-1/2"	2"	4"	6"	8"	10"
Any Street	\$2,775	\$2,820	\$3,020	\$4,540	\$7,950	\$8,245	\$9,700	\$10,345
Unimproved	\$1,960	\$2,235	\$2,360	\$3,860	\$6,570	\$6,705	\$7,310	\$7,905
Restricted	\$2,730	\$2,760	\$2,965	\$4,450	\$6,340	\$6,405	\$6,805	\$7,925
Subdivision	\$390	\$415	\$525	\$715	\$1,665	\$1,805	\$2,195	\$2,670

SPECIAL NOTES:

1. Dual service installed by the GCWW: **3/4"-\$830, 1"-\$955, 1-1/2"-\$1,100, 2"-\$1,265.**
2. Add \$80 for a STOP BOX or \$120 for a ROADWAY BOX where required by GCWW.
3. Add \$300 to the cost of a branch to be installed in a STATE HIGHWAY.
4. Add \$2,455 for a branch 4" or larger on a 16" main; Add \$2,685 for a branch 4" or larger on a 20" main.
5. Add \$2,880 for each branch larger than 10".
6. Add \$350 for each branch 4" or larger within the City of Cincinnati.
7. Branches installed at other than normal hours as required by the customer or governing authority will require an additional overtime charge.
8. Street opening permits shall be obtained by the GCWW Contractor except when the applicant must perform preparatory work with the "right of way" as required by the GCWW or governing authority. In this case the applicant shall obtain the street opening permit.
9. Standard prices do not apply to restricted streets or special conditions. A restricted street is one in which the governing authority will not permit excavation in the street paving. Special conditions as determined by the GCWW which prohibit or prevent normal branch installations may include but are not limited to culvert, creek or railroad. In such cases, restricted prices will apply to branches. The applicant shall perform all necessary excavation, tunneling, boring/casing and final restoration. GCWW will perform all service branch work and backfill excavation at the water main. Backfilling of the boring pit must be performed by the applicant. In some cases it may be necessary to install a stop cock in a position other than the property line. This point will be determined by GCWW.

Construction Water Prices

	Cincinnati	Incorporated Hamilton Co. Clermont Co.	Unincorporated Hamilton Co.	Arlington Hts. Bulter Co. Mason Warren Co.	Venice Gardens	Cubic Feet
1 Family	\$106.50	\$133.00	\$142.50	\$153.00	\$219.50	50,000
2 Family	\$159.80	\$199.50	\$213.75	\$229.50	\$261.00	75,000
3 Family	\$186.40	\$232.75	\$249.40	\$267.75	\$270.40	87,500

Valve Prices

Size	MJ Gate	CJ Gate	MJxFlange tapping	CJxFlange tapping	FLGxMJ
4	\$334.69	\$343.71	\$422.20	\$444.67	\$319.83
6	\$427.34	\$452.37	\$596.05	\$604.50	\$427.34
8	\$680.12	\$686.85	\$885.43	\$916.18	\$667.54
10	\$1,060.44				\$1,060.44
12	\$1,341.81	\$1,390.86	\$2016.08	\$1,679.67	\$1,280.62

Meter Prices

Meter Size	Couplings Flanges	Encoder	Insulator Couplings
5/8"	\$8.78/ea standard \$12.53/ea short	\$233*	
3/4"	\$9.94/ea standard \$9.94/ea short	\$268*	\$26.31/ea
1"	\$15.30	\$305*	\$38.72
1-1/2"	\$43.72 male \$40.46 female	\$455*	\$79.84
2"	\$53.08 male \$52.83 female	\$520*	\$139.05
2"		\$922*	Turbine
3"		\$2,284*	Compound or Turbine
4"		\$3,688*	Compound, Turbine or Fire
4"		\$6,000*	Protectus Assembly
6"		\$5,427*	Compound, Turbine or Fire
6"		\$8,000*	Protectus Assembly
8"		\$4,229*	Turbine
8"		\$5,844*	Fire Assembly
8"		\$11,336*	Protectus Assembly
10"		\$6,900*	Turbine
10"		\$7,522*	Fire Assembly
10"		\$15,890*	Protectus Assembly
12"		\$11,817	Turbine
16"		\$13,417	Turbine
20"		\$17,690	Turbine

(* INCLUDES METER INTERFACE UNIT)

No more than one pair of couplings or flanges will be sold per each new meter purchase.

Material Prices

Item	Cost	Item	Cost
3/4 curb stop	\$56.22	4 x 1 service saddle	\$82.02
1" curb stop	\$76.73	4 x 1 1/2 service saddle	\$95.65
1 1/2 curb stop	\$167.61	4 x 2 service saddle	\$104.13
2 " curb stop	\$272.88	6 x 1 1/2 service saddle	\$110.46
curb box	\$41.24	6 x 2 service saddle	\$121.36
roadway boxes	see page 9	8 x 1 1/2 service saddle	\$125.88
3/4 ferrule	\$37.69	8 x 2 service saddle	\$137.04
1" ferrule	\$48.36	10 x 1 1/2 service saddle	\$162.69
1 1/2 ferrule	\$104.68	10 x 2 service saddle	\$174.74
2" ferrule	\$183.27	1 1/2 insulator couplings	\$79.84
3/4 insulator coupling	\$26.31	2" insulator coupling	\$139.05
1" insulator coupling	\$48.36		

Meter Size	Laying Length	Ford Yoke Sizes	
		Size	Man #
5/8"	7 1/2"	5/8"	501
3/4"	9"	5/8 x 3/4"	502
1"	10 3/4"	3/4"	503
1 1/2"	13"	1"	502
2"	17"		
3"	24"		
4"	29"		
6"	36"		
8"	42"		

The following guidelines are to be used in determining when to use service saddles:

Branch Size	Cast or Ductile Iron Pipe Size
3/4"	No saddle required on any size
1"	Use saddle on 3" and 4" only
1 1/2"	Use saddle on 3", 4", and 6" only
2"	Use saddle on 3", 4", 6", 8", and 10" only

Service saddles are required for all sizes of service branches installed on AC pipe. Service saddles will not be permitted where not required by the above regulations.

Curb Boxes

- 1.) Curb boxes required on all settings
- 2.) Insulator couplings are required on all branches.
- 3.) There are only three valve manufacturers that have accepted valves at this time:
 - a. Ford (B-11 series)
 - b. McDonald 6101
 - c. Jones J-1905

Roadway Box Parts

Item	Cost	Item	Cost
Box, Valve, Roadway, Hood Only	\$21.35	Box, Valve, Iron, Hood Only	\$106.40
Box, Valve, Roadway, Lid Only	\$20.08	Box, Valve, Iron, Lid Only	\$26.60
Box Valve, Roadway, Ring Only	\$18.78	Box, Valve, Iron, Telescope	\$179.55
Box Valve, Roadway, Telescope	\$23.21		
Box, Valve, Plastic, Hood Only	\$30.64	Box, Valve, Plastic, Lid Only	\$47.10
Box, Valve, Plastic, Ring Only	\$79.99	Box, Plastic, Telescope Only	\$79.24

2011 Mason Branch Costs

Size	3/4"	1"	1 1/2"	2"	4"	6"	8"	10"
Any Street	\$2,775	\$2,820	\$3,020	\$4,540	\$7,950	\$8,245	\$9,700	\$10,345
Unimproved	\$1,960	\$2,235	\$2,360	\$3,860	\$6,570	\$6,705	\$7,310	\$7,905
Restricted	\$2,730	\$2,760	\$2,965	\$4,450	\$6,340	\$6,405	\$6,805	\$7,925
Subdivision	\$390	\$415	\$525	\$715	\$1,665	\$1,805	\$2,195	\$2,670

- 1.) Dual service installed by GCWW: 3/4" - \$830.00, 1"-\$955.00, 1 1/2"-\$1100.00, 2"-\$1265.00
- 2.) Add \$80.00 for curb box or \$120.00 for roadway box where required by GCWW.
- 3.) Add \$300.00 for cost of branch to be installed in a state highway.
- 4.) Add \$2455.00 for a branch 4" or larger on 16" main; Add \$2685.00 for a branch 4" or larger on a 20" main.
- 5.) Add \$2880.00 for each branch size larger than a 10".
- 6.) Branches installed at other than normal hours as required by customer will require additional overtime charge.
- 7.) Street opening permits shall be obtained by GCWW contractor except when applicant must perform preparatory work within the right of way as required by the GCWW. In this case the applicant shall obtain the street opening permit.
- 8.) Standard prices do not apply to restricted prices or special conditions. A restricted street is one in which the governing entity will not permit excavation in the street paving. Special conditions as determined by the GCWW which prohibit or prevent normal branch installation may include but are not limited to culvert, creek or railroad. In such cases restricted rate prices will apply to branches. The applicant shall perform all excavation, tunneling, boring/casing and final restoration. GCWW will perform all service branch work and backfill excavation at water main. Boring pit backfill must be performed by the applicant. In some cases it

may be necessary to install a stop cock in a position other than the property line. This location will be determined by the GCWW.

- 9.) There will be a **\$957.00** system fee added to all branch costs at time branch is purchased.

Mason Residential Meters			Mason Commercial Meter	Mason Commercial Meter Expansion Fee	
Size	Type	Cost	Cost	Expansion Fee	Total
5/8"		\$320.00			
3/4"		\$320.00	\$320.00	\$3,611.00	\$3,906.00
1"		\$305.00	\$305.00	\$3,815.00	\$4,120.00
1 1/2"		\$455.00	\$455.00	\$6,382.00	\$6,837.00
2"		\$520.00	\$520.00	\$10,197.00	\$10,717.00
2"	turbine	\$922.00	\$922.00	\$10,197.00	\$11,119.00
3"	compound/tur	\$2,284.00	\$2,284.00	\$22,960.00	\$25,244.00
4"	compound/tur	\$3,688.00	\$3,688.00	\$40,858.00	\$44,546.00
4"	protectus	\$6,000.00	\$6,000.00	\$40,858.00	\$46,858.00
6"	compound/tur	\$5,427.00	\$5,427.00	\$97,635.00	\$103,062.00
6"	protectus	\$8,000.00	\$8,000.00	\$97,635.00	\$105,635.00
8"	turbine	\$4,229.00	\$4,229.00	\$162,774.00	\$167,003.00
8"	fire assembly	\$5,844.00	\$5,844.00	\$162,774.00	\$168,618.00
8"	protectus	\$11,336.00	\$11,336.00	\$162,774.00	\$174,110.00
10"	turbine	\$6,900.00			
10"	fire assembly	\$7,522.00			
10"	protectus	\$15,890.00			
12"	turbine	\$11,817.00			
16"	turbine	\$13,417.00			
20"	turbine	\$17,690.00			

- 1.) There will be an additional system expansion fee on all residential meters of \$3981.00 per family unit.
- 2.) For special purpose apartment projects, such as those intended for the elderly, containing one or two room efficiency units, with occupancy rigidly controlled and equipped with only one set of kitchen and bath fixtures, the expansion charge, tap size and meter size shall be seventy-five percent (75%) of size required in chart for multi-family units.
- 3.) For trailer parks, where more than one trailer is served by the same meter, the expansion charge, tap size and meter size shall be determined as apartments.
- 4.) For purposes of water system expansion fees the following facilities shall be considered businesses and pay fees as set forth for commercial meter fees: convalescent homes, hospitals, nursing homes, group homes and housing of elderly other than those described about in #2.

Domestic Branch and Meter Sizing Tables
Fixture Units Table

Fixture Type	Value @35 PSI	Fixture Type	Value @35 PSI
Bathtub	8	Urinal: Pedestal flush valve	35
Bedpan washers	10	Wall and stall	12
Combination sink and tray	3	Trough 2 ft unit	2
Dental Unit	1	Wash sink (each set of faucets)	4
Dental Lavatory	2	Water Closet: flush valve	35
Drinking Fountain (cooler)	1	Tank Type	3
Drinking Fountain (public)	2	Dishwater: 1/2" connection	4
Kitchen Sink: 1/2" connection	3	Dishwater: 3/4" connection	12
Kitchen Sink: 3/4" connection	7	Washing Machine: 1/2" connection	5
Lavatory: 3/8" connection	2	Washing Machine: 3/4" connection	12
Lavatory: 1/2" connection	4	Washing Machine: 1" connection	25
Laundry Tray: 1/2" connection	3	Hose connecting(wash down) 1/2"	6
Laundry Tray: 3/4" connection	7	Hose connection(washdown) 3/4"	10
Shower head (shower only)	4	Hose (50 ft long wash down) 1/2"	6
Service Sink: 1/2" connection	3	Hose (50 ft long wash down) 5/8"	9
Service Sink: 3/4" connection	7	Hose (50 ft long wash down) 3/4"	12

Value of a number of units by simply multiplying.

Minimum Requirements: Residential

Building size	Tap	Meter	Maximum Operating Capacity	Recommended Operating Capacity
1 family	3/4	5/8	20 gpm	10 gpm
2-6 family	1	3/4	30 gpm	15 gpm
7-12 family	1	1	50 gpm	25 gpm
13-20 family	1 1/2	1	50 gpm	25 gpm
20-50 family	1 1/2	1 1/2	100 gpm	50 gpm
51-75 family	2	1 1/2	100 gpm	50 gpm
76-120 family	2	2	160 gpm	80 gpm
121-175 family	4	3	320 gpm	150 gpm
176-250 family	4	4	500 gpm	250 gpm
251-350 family	6	4	500 gpm	250 gpm
351-500 family	6	6	1000 gpm	500 gpm

Calculate trailer parks @ 75% capacity, Calculate hotels/motels @ 50% capacity

Minimum Requirements: Commercial

Water demand Min. and Max. Flows	Branch Size	Meter Size
0.25 to 20	3/4	5/8
0.50 to 30	3/4	3/4
0.50 to 30	1	3/4
0.75 to 50	1	1
0.75 to 50	1.5	1
1.50 to 100	1.5	1.5
1.50 to 100	2	1.5
2.0 to 160	2	2
0.50 to 320	4	3
0.75 to 500	4	4
0.75 to 500	6	4
1.5 to 1000	6	6
1.5 to 1000	8	6
50.0 to 2400	8	8
75.0 to 3800	10	10
120.0 to 5000	12	12

BRANCH MATERIAL REFERENCE DATA

Branch Number	Date		Branch Number	Date
1	1837	Subject to have Gooseneck or Basket Ferrule	150000	1950
5000	1855		155000	1951
10000	1857		160000	1952
15000	1866		165000	1953
20000	1873		170000	1955
25000	1881		175000	1956
30000	1885		175615	
35000	1888		Branch & meter #’2 same from here on	
40000	1892		180000	1957
45000	1895		185000	1958
50000	1900		190000	1959
55000	1904		195000	1960
60000	1908		200000	1961
65000	1910		205000	1962
70000	1913		207160	1 st branch w/no curb box required
75000	1915		210000	1963
80000	1918		215000	1964
85000	1922		220000	1965
88000	All prior branches are lead		225000	1966
90000	1924		225420	First & only plastic branch (2")
95000	1926	Brass	230000	1967
100000	1927		240000	1972
101808	1928		250000	1976
All branches after this are copper			260000	1983
110000	1930		270000	1988
115000	1933		275000	Meters inside AMR C/B
120000	1935		279500	F/B with C/B
125000	1938		280000	1966
Mason Branches				
130000	1940		297000	2002
135000	1942		299401	2002
140000	1946		300000	2005
145000	1948		205000	2005