

MEMORANDUM

DATE: October 24, 2022

TO: Ted Corrigan, CEO and General Manager

FROM: Jenny Puffer, Director of Water Distribution

SUBJECT: 2023 Rules and Regulations Update

Each year, Des Moines Water Works' (DMWW) Rules and Regulations document, including the Schedule of Charges, is updated to clarify existing requirements, establish new requirements, and revise fees to cover DMWW's cost for providing various services. A document titled "Outline of Proposed Changes to Des Moines Water Works' Rules and Regulations for 2023" is attached to this memo. This outline gives a brief description of each change by section number. A draft of the proposed changes is also attached, including the updated figures.

Some of the larger changes being proposed include:

- Editing tracer wire materials listed to those now being used on water main projects for Des Moines Water Works.
- Clarifying the proper way to decommission an irrigation system in a manner that does not create a potential future cross connection.
- Specifying that individual meters shall be installed in individual pits for manufactured home complexes.
- Requiring that if a meter pit is installed in the right of way, a traffic rated lid is required instead of a hatch.
- Clarifying that sewer deduct/water only meters connected to the same service line as the domestic meter shall be billed to the same account as the domestic meter.
- Editing the public records language to be consistent with the updates to the Iowa Code Chapter 22, per Iowa Senate File 2322, signed into law and in effect on July 1, 2022.

Fee schedules have been updated to reflect increases in labor and material costs based on the Engineering News Record Construction Cost Index for the month of August 2022.

It is proposed that these revisions, including the revised fees, become effective on January 1, 2023.

Outline of Proposed Changes to Des Moines Water Works' Rules and Regulations for 2023

Section 500 – Preface

No Changes

Section 501 – General

No Changes

Section 502 – Applications for Use of Water

502.1.1 has been edited to clarify that if a customer has an unpaid balance for water service at a previous location, that balance must be paid, or arrangements made for payment, before service can be started in the customer's name.

Section 503 – Application for Installation of Water Service

No Changes

Section 504 – Taps and Connections

No Changes

Section 505 – Water Service Installation

505.5.2.5 and 505.6.6 have been edited to match the tracer wire materials currently being used on water main projects for Des Moines Water Works.

Section 506 – Cross Connection and Backflow Prevention

506.1.7 has been added to clarify the proper way to decommission an irrigation system in a manner that does not create a potential future cross connection.

Section 507 – Public Fire Protection

No Changes

Section 508 – Private Fire Protection

No Changes

Section 509 – Water Meters

509.4.1 has been edited to specify that individual meters shall be installed in individual pits for manufactured home complexes.

509.12.4 has been edited to clarify that if a meter pit is in the right of way, a traffic rated lid is required instead of a hatch.

509.15.1 has been edited to clarify that sewer deduct meters that are connected to the same service line as the domestic meter, shall be billed to the same account as the domestic meter.

509.15.2 has been edited to clarify that water only meters that are connected to the same service line as the domestic meter, shall be billed to the same account as the domestic meter.

509.15.3 has been added to clarify tap and service line requirements for irrigation of common use areas at multi-unit properties.

Section 510 Service Main Extensions

Section 510 was eliminated in 2013.

Section 511 Schedule of Charges

1. FIRE PROTECTION CHARGES

Fire protection fee charts have been updated to account for construction cost increases.

2. SYSTEM DEVELOPMENT FEE STRUCTURE

The system development fee charts have been updated to account for increases in construction cost.

3. UNIFORM TAP CHARGES

Uniform tap charges have been updated to account for changes in labor and material costs.

4. UNIFORM TAP RETIREMENT CHARGES

Uniform tap retirement charges have been updated to account for changes in labor and material costs.

5. METERS

Coupling fees and meter fees have been updated to account for changes in labor and material costs.

7. MISCELLANEOUS CHARGES

Miscellaneous charges have been updated to account for increases in labor and material costs.

Section 512 Figures

Figures have been edited to reflect changes in the above sections.

Section 513 Glossary of Terms

No Changes

Section 514 Supplemental Requirements for the former Southeast Polk Rural District

Section 514 was eliminated in 2019.

Section 515 Water Shortage Plan

515 has been edited to replace the term irrigation with lawn watering, as well as to clarify the even and odd day watering schedule.

515.6.5 has been clarified as to the water rate that will be billed during the Stage IV Monthly Water Ration.

Section 516 Public Records

516 has been edited to clarify the current practices and updates to the Iowa Code Chapter 22, per Iowa Senate File 2322, signed into law and in effect on July 1, 2022.

TABLE OF CONTENTS

	Section
Preface	
Rules for Providing Water Service	500
General	501
Applications for the Use of Water	502
Applications for Installation of Water Service	503
Taps and Connections	504
Water Service Installation	505
Cross Connections and Backflow Prevention	506
Public Fire Protection	507
Private Fire Protection	508
Water Meters	509
Service Main Extensions (eliminated)	510
Schedule of Charges	511
Figures	512
Glossary of Terms	513
Southeast Polk Supplemental Requirements (eliminated)	514
Water Shortage Plan	515
Public Records	516

WATER SERVICE RULES AND REGULATIONS

ADMINISTRATIVE PROCEDURES

OF THE

DES MOINES WATER WORKS

DES MOINES, IOWA

PREFACE

1. The Des Moines Water Works is a municipal utility which is governed by, and officially title as, The Board of Water Works Trustees of the City of Des Moines, Iowa (“Des Moines Water Works” or “DMWW”). These Water Service Rules and Regulations (“Rules and Regulations”) have been developed in accordance with the Policy Manual of the Board of Water Works Trustees of the City of Des Moines, Iowa, Section 5, Water Service. These Rules and Regulations provide for implementation of the Section 5 policies.

2. The Des Moines Water Works delivers water to customers through water mains installed in public right-of-way and occasionally on easements on private property. The mains are either owned or maintained by the Des Moines Water Works and are under its exclusive control. The property owner is responsible for the maintenance and care of all piping, appurtenances and fixtures (including corporations) other than the water main. The water meter, automated meter reading devices and related wiring are installed and owned by the Des Moines Water Works, but the customer remains responsible for protecting them from frost and other external forces. Normal meter repair is made by the Des Moines Water Works, without charge.

3. All water service is subject to these Rules and Regulations and shall be provided on terms of a water service agreement as provided to all new customers and to existing customers from time to time. No installation of a water service (the pipe and fixture from the main in the street to the meter), nor repair thereof, shall be made which does not conform to these Rules and Regulations and the applicable plumbing code. All installations or repairs shall be made by a Licensed Plumber. Inspection for conformance by the Des Moines Water Works or the appropriate jurisdictional plumbing inspector is required for all installations and repairs of water service facilities.

500 RULES FOR PROVIDING WATER SERVICE (Revised January 2022)

- 500.1 These rules shall govern water service provided by the Des Moines Water Works. Compliance with these rules is a condition of service. Failure to conform to these Rules and Regulations may result in termination of water service.
- 500.2 Except to the extent a different right of appeal is specified in any section of these Rules and Regulations with respect to a particular matter, any person aggrieved by the application of these Rules and Regulations, shall within 90 days of the decision or action complained of be required to request a hearing before an appeals committee consisting of: (1) the CEO and General Manager or the CEO and General Manager's duly appointed representative; (2) the Director of Customer Service; and (3) the Chief Operating Officer ("Appeals Committee") before commencing any action in court. After hearing, a written decision shall be issued by the Appeals Committee, which shall be final as to all matters considered. Prior to commencing any action in court, the persons making the appeal must file a written request to appear before the Board of Trustees with the CEO and General Manager within ten days of the date of the Appeals Committee decision. Such issue will then be considered by the Board of Trustees as provided in Section 206.8 of Board Policy Manual at the next scheduled meeting.

501 GENERAL

501.1 WATER PRESSURE

Water pressure varies throughout the distribution system depending upon the ground elevation. Information on pressure at a specific location may be obtained upon request to the Des Moines Water Works.

501.2 INTERRUPTIONS OF SERVICE

The Des Moines Water Works may interrupt a customer's water supply in order to make repairs to the system or for other operational reasons. An effort will be made to provide 24-hour advance notification of any interruption for scheduled repairs. In case of unanticipated interruptions and emergencies such as main breaks, mains or services may be shut down and water service interrupted without notification. Des Moines Water Works makes no guarantee of uninterrupted service and will have no liability for direct, indirect, incidental or consequential damages arising from any interruption of water service for any reason.

501.3 LOCATION OF WATER FACILITIES

501.3.1 Water mains and facilities owned or maintained by the Des Moines Water Works:

The Des Moines Water Works will furnish information, as available from its records, regarding locations of mains, hydrants, valves, and other fixtures owned by the Des Moines Water Works. The Des Moines Water Works will use its employees and tools in this effort at no cost to the person assisted. The Des Moines Water Works will assume responsibility for the location of its mains, pipes, valves, or other fixtures. It should be understood that after the location of the facility is established, the Des Moines Water Works shall expect the facility to be protected from damage or harm.

501.3.2 Water mains, valves, services, and fixtures not owned or maintained by the Des Moines Water Works:

This section references private water mains and valves, benefited water district mains, rural water district mains, etc. On such mains and facilities, the Des Moines Water Works will make available to persons who have a reasonable need, information concerning these mains and facilities from records on file with the Des Moines Water Works.

Records on private mains and facilities and similar installations are furnished to the Des Moines Water Works on behalf of the owners of these mains and facilities and may not be current or reflect as-built conditions. It should be understood that these facilities are not owned or maintained by the Des Moines Water Works.

The Des Moines Water Works makes no assurances of the accuracy or validity of the records or information. Persons shall use their own discretion when making use of these records of private facilities. The Des Moines Water Works will, upon request, provide assistance, at its convenience, in an effort to locate a private pipe, valve, or fixture. If, in the Des Moines Water Works judgment, an exceptional amount of time has been spent in this effort, the Des Moines Water Works reserves the right to bill for the costs involved.

501.4 WATER AVAILABILITY

All requests for water service will be evaluated on whether adequate capacity is available at the desired location. If adequate service is not available, alternatives may be provided to the owner to obtain the desired service. In some locations, a connection fee may be charged and applied in addition to the tap charges.

502 APPLICATIONS FOR THE USE OF WATER

502.1 APPLICATIONS (Revised January 2023)

502.1.1 Applications for the use of water shall be made via phone or by means of electronic forms available on the internet at www.dmww.com. If a customer has an unpaid balance for water service at a previous location, this balance must be paid, or arrangements made for payment, before service can be ~~turned on~~ started in customer's name. If an existing or former customer receives water at a new location and DMWW becomes aware of an unpaid delinquent balance of such customer at a previous property, payments made by the customer to settle charges on their current account will be first applied to satisfy the oldest charges at the previous property. DMWW's customary collection procedures as outlined in 502.3 of these Rules and Regulations will apply to unsatisfied charges at the customer's new property.

502.1.2 Customers who are tenants of a property will be charged a deposit equal to the usual cost of 90 days of water service based on an average household consumption of 7,500 gallons per thirty-day period. Such deposit will be added to the customer's account and will be reflected on the customer's first statement. Deposits are subject to Des Moines Water Works' collection rules, and as such, service may be terminated for non-payment of a deposit. The deposit will be applied to the balance of the account at the date of final service. Any amounts remaining after application of the deposit to the final balance will be refunded to the customer within a reasonable period of time subsequent to the customer's final service date. See Section 511-Schedule of Charges.

502.1.3 If there is no water service into the premise, see Section 503.

502.2 BILLING (revised January 2019)

502.2.1 Meters will be read periodically and bills will be mailed or delivered electronically monthly. All bills for water service shall be due and payable on or before the due date.

- 502.2.2 Payment may be made by mail or at the Des Moines Water Works' office located at 2201 George Flagg Parkway, or at other designated pay stations. A list of the pay stations and addresses is available online at www.dmww.com. Payment may also be made by automatic debit to a checking account. Payment may also be made by means of credit card or check card at the Des Moines Water Works office, by telephone, or online at www.dmww.com.
- 502.2.3 All customers shall make it possible for the Des Moines Water Works representatives to obtain valid readings of any water meter(s) attached to the water service serving the premises. Water service may be discontinued if the Des Moines Water Works is unable to read the meter(s) or make repairs to the meter(s) or to any meter reading equipment.
- 502.2.4 In the event of errors in the amount billed for water service, the amounts due to or from customers shall be subject to retroactive adjustment for a period of not more than five (5) years prior to the date of discovery of the error.
- 502.2.5 During any period which Des Moines Water Works is unable to obtain a good meter read, whether by meter reading equipment malfunction or other cause, the customer's bill will be estimated based on previous consumption used at the property until such time that a good read is obtained. If no consumption history exists for the property, the estimated consumption will be based on such other information, including typical use for similar customers as Des Moines Water Works may determine to be applicable. At such time that a good read is obtained, Des Moines Water Works will calculate the amount of actual consumption used during the estimating period and will compare that to the estimated consumption as billed. A true up will be calculated, and the customer will receive a credit on their next billing statement for any consumption overestimated and amounts overpaid, or an increase adjustment to their bill for any consumption underestimated and amounts underpaid.

- 502.2.6 Residential customers who experience a leak after the meter (e.g., as a result of running toilet, burst pipes, etc.) may request a leak adjustment. Any leak adjustment granted shall be based on monthly consumption during the period during which the leak has been shown to have occurred and shall be limited to 50% of the excess consumption as measured against the account's next highest month's consumption in the immediate 12 months prior to the leak. The leak adjustment will be applied to not more than three monthly bills, absent a showing of highly compelling or extraordinary circumstances. Leak adjustments are a one-time reduction in charges and will be granted only after the leak is verified to have been remedied.

502.3 DEFAULT IN PAYMENT (Revised January 2021)

- 502.3.1 When a customer is in default of payment of an account for water supplied to his/her premises, or for fire service, the customer shall be charged a delayed payment (i.e., late) fee equal to 5% of the new charges not collected by the due date stated on the customer's billing statement, and water service may be terminated in accordance with the Turn Off and Collection Procedures then in effect.

The Des Moines Water Works may cause a lien to be placed against property under Section 384.84 of the Code of Iowa as amended unless such property has been exempted from lien under Section 384.84 of the Code of Iowa. Any lien filing shall be in accordance with applicable provisions, including notice provisions of Section 384.84 of the Iowa Code of Iowa.

- 502.3.2 Where a water service has been turned off because of violation of the Rules and Regulations, or non-payment of bills due, a charge shall be collected for terminating service as provided in Section 511 of these Rules and Regulations.

502.4 UNAUTHORIZED USE OF UNMETERED WATER

- 502.4.1 Where a water service has been turned off at the stop box or water main for any reason, and is subsequently found turned on without proper authority, Des Moines Water Works may discontinue the water service. The water service shall not be reactivated until the customer pays an amount equal to or greater than the termination amount, plus applicable penalties.

- 502.4.2 The discovery of piping bypassing the meter, or tampering with the meter that would allow unauthorized water to be used on the premises of a customer, is in violation of Chapter 714.4, Code of Iowa. The following charges will be made against the customer in such cases:
- 502.4.2.1 Cost for removal of piping and all other incidental costs.
- 502.4.2.2 A penalty as established by the Board and as provided in Section 511 of these Rules and Regulations.
- Des Moines Water Works also reserves the right to charge for estimated water consumption in addition to the above charges.
- 502.4.3 In addition to the above charges, the Code of Iowa provides for the punishment for each offense by a fine of not less than one hundred dollars (\$100.00), or by imprisonment in the county jail for a period of not more than 30 days, or by both fine and imprisonment.
- 502.5 CUSTOMER/OWNER RESPONSIBILITY (Revised January 2022)
- 502.5.1 The customer shall be liable for water consumed as metered until provisions are made for the Des Moines Water Works to turn off water service or remove the meter.
- 502.5.2 When a customer is moving out of a premise and orders the water meter read on a certain day, the water must be turned off when the meter is read, unless there is an application already on file from a prospective customer, or a written request from the property owner in the case of a rental property, to keep the water on and transfer responsibility for service to the prospective customer or property owner's name.

502.5.3 The owner of the premises served shall be the owner of, and responsible for all water service pipes and fixtures of every kind from the point of incorporation of the customer's service line at the water main. Water service pipes and fixtures shall include, but not be limited to, water service lines, stop boxes, valves, and interior plumbing. The owner, at his/her expense, shall protect, safeguard, and keep all of his/her water service pipes and fixtures in good working order. The Des Moines Water Works is not responsible for maintaining, repairing or replacing water service pipes and fixtures or for any damages arising from the use or failure of any water service pipes and fixtures.

Des Moines Water Works shall not be liable for damages due to the breakage or failure of any water service pipes or fixtures, even if such breakage or failure occurs during, or arises from, work performed by Des Moines Water Works. The damages for which Des Moines Water Works shall not be liable include any damages for breakage of any stop box during operation of the stop box by Des Moines Water Works and any damages for accidental or temporary failure in the supply of water.

- 502.5.4 Whenever it shall come to the attention of the Des Moines Water Works that a water service, stop box, valve, or meter pit (including its cover) is broken, inoperable, or otherwise in a dangerous or unsafe condition, the Des Moines Water Works will make reasonable efforts to notify the customer and the owner of the premises, if different. Such notification will require the immediate repair and restoration of the facility. The obligation to cause or make required repairs is a condition of continued service to all affected premises. The Des Moines Water Works may terminate water service to the premises until such repairs are made or in case such condition poses a hazard to the public or adjoining property or requires repair to an inoperable stop box, it may make or cause to be made, all such repairs as are necessary. The costs of such termination and repairs, if any, shall be included in the next water bill and, if not paid, may result in termination of service to the premises or the certification of such amount as a lien against the property as with other unpaid water bills. Responsibility for the costs of repair shall be assessed to the owner of the property as shown in the applicable county real estate records as of the date that the Des Moines Water Works discovers or is otherwise informed of the condition requiring the repair. Notwithstanding the foregoing, the failure of the responsible person to pay charges for repairs as defined above shall not be grounds for termination of service or imposition of a lien against a subsequent transferee of the premises or a subsequent customer account holder. (Revised January 2019)
- 502.5.5 The customer and owner shall operate valves and other appurtenances of their water piping system in such a manner that pressure surges are not transmitted to the Des Moines Water Works' water distribution system.
- 502.5.6 The property owner or customer shall provide a proper address that is visible from the street.

502.6 SERVICE LINE OWNERSHIP IN THE FORMER SE POLK SYSTEM

Service lines installed in the area of the former SE Polk System after April 1, 2007 shall be owned by the property owner, and shall be subject in all respects to these Rules and Regulations, including but not limited to Rule 502.5.

For service lines installed prior to April 1, 2007 the Des Moines Water Works will be responsible for the maintenance and repair of the service line from the point of connection, to the water main up to and including the meter pit, as an exception to Rule 502.5, but only until ownership of the property that is serviced is transferred of record. The owner will be responsible for the remainder of the water service. Ownership and responsibility for repair and maintenance of the entire service line from the water main under Rule 502.5 will transfer to the new property owner at such time as the property changes ownership as shown in the applicable county real estate records. The new property owner will become responsible for all maintenance and repair of the service line as provided in Rule 502.5 after the date of transfer as shown in the applicable county real estate records.

503 APPLICATION FOR INSTALLATION OF WATER SERVICE

503.1 APPLICATION FOR WATER SERVICE PERMIT

- 503.1.1 The Des Moines Water Works will assign a permit number for installation of a water service from the main up to and including the water meter. Each service must have its own tap in the water main. No work of any nature shall be done in connection with the tapping of any water main, or the introduction of water into the premises (public or private) between the water main and meter, unless a permit has been obtained from the Des Moines Water Works for such work. If a water service tap has not been installed at an address within 6 months of the date of the application, the permit will expire and the applicant must reapply. Each residence or premise requiring water shall have an individual service, which does not take water from another domestic service or building, with the exception of Private Water Mains. (Figures 1-2 & 5-10 and Section 505.9)
- 503.1.2 In cooperation with the City of Des Moines or other political subdivisions, the Des Moines Water Works will not issue a permit to tap its water mains without a ROW opening or plumbing permit.
- 503.1.3 The Des Moines Water Works must be provided with the legal description of the property to be served.
- 503.1.4 Application for water service in unincorporated areas and other areas with small diameter mains will initiate an evaluation of the distribution system in the area to determine if capacity is available to provide the requested service. These applications will be evaluated by Des Moines Water Works before a permit is issued.
- 503.1.5 Des Moines Water Works retains final discretion for approval of any application for water service, which it will approve in its sole discretion. The applicant, or party in control of the applicant, shall have paid all system development fees, tap charges, and any other fee owed to Des Moines Water Works prior to approval of any new water service. Des Moines Water Works may consider other factors in its sole discretion before approving new water service.

503.2 APPLICATION REQUIREMENTS FOR FIRE SERVICES AND DOMESTIC SERVICES 2" IN DIAMETER AND LARGER

503.2.1 GENERAL REQUIREMENTS

The following items shall be submitted to the Des Moines Water Works for review prior to installation of any fire service or any domestic service 2" in diameter or larger.

503.2.1.1 A site plan showing buildings, pavement, right-of-way lines, existing water mains, valves, hydrants, and the proposed service line.

503.2.1.2 Plumbing plans which show water meter and backflow preventer locations as well as all water-using fixtures in the building.

503.2.1.3 Fire sprinkler system plans or a written description of the system and a detail of the riser piping.

503.2.1.4 A fire department review form showing maximum required fire flow and approved fire service layout.

503.2.1.5 An estimate of peak domestic demand to assist in selecting and sizing the water meter. If large flow fluctuations are anticipated, a load profile may be required. A load profile is defined as a written or graphical estimate of the lowest measurable flow, average, and peak gallon consumptions for each hour of a 24-hour period. (See Figure 28) Peak flows felt to be unrealistic will be checked using the fixture unit method.

503.2.2 The tap may be scheduled with the Des Moines Water Works after the submittal has been reviewed and approved by Des Moines Water Works, after Des Moines Water Works determines if the applicant has satisfied the requirements of 503.

503.2.3 The Plumbing Contractor who signs for the tap will be billed for the tap based on current rates as established by the Board and stated in the Schedule of Charges.

- 503.2.4 A connection fee shall be charged and collected for all connections made to the Des Moines Water Works Distribution System. Such fees shall be based on tap size for fire and domestic service as stated in the Schedule of Charges.
- 503.3 OBLIGATIONS OF PLUMBING CONTRACTORS (Revised January 2022)
- 503.3.1 Any Plumbing Contractor performing work on the Des Moines Water Works distribution system must have a State of Iowa Plumbing License and provide an annual \$20,000 bond to the Board, with approved surety, conditioned upon no loss, damage, or injury, including failure to pay fees, being incurred by the Des Moines Water Works by reason of the work of such Plumbing Contractor.
- 503.3.2 The Plumbing Contractor, as a licensed individual, has full personal responsibility for all obligations to Des Moines Water Works even if doing business under an entity or company name or bond. The Des Moines Water Works may refuse to allow taps to be made by a Plumbing Contractor with a delinquent balance owing to Des Moines Water Works for prior work performed by the Plumbing Contractor either in such person's own name or under a company or entity name. The Des Moines Water Works may refuse to recognize any Plumbing Contractor who fails to comply with these Rules and Regulations or meet such Plumbing Contractor's financial responsibility to Des Moines Water Works.
- 503.3.3. Should Plumbing Contractor's creditworthiness, financial responsibility, or performance become unsatisfactory to DMWW in DMWW's reasonably exercised discretion, DMWW may require the Plumbing Contractor to provide, at the Plumbing Contractor's option (but subject to DMWW's acceptance based upon reasonably exercised discretion), one or more of the following (i) the posting of a letter of credit, (ii) a cash prepayment, (iii) the posting of other acceptable collateral or security by the Plumbing Contractor, or (iv) some other mutually agreeable method of satisfying DMWW.

In evaluating the creditworthiness of the Plumbing Contractor, DMWW will consider the payment and delinquency history of the Plumbing Contractor and the number of permits requested by the Plumbing Contractor. DMWW will also include in its evaluation of Plumbing Contractor's financial responsibility the Plumbing Contractor's payment history, whether under the Plumbing Contractor's own name or any corporate name, and whether Plumbing Contractor employs individuals who have unpaid obligations owed to DMWW from prior work that the employed individual performed as a separate Plumbing Contractor.

503.4 PLUMBING INSPECTION

The Des Moines Water Works will make inspections to verify compliance with these Rules and Regulations at the time that the water service is activated.

503.5 WATER FOR BUILDING OR OTHER CONSTRUCTION

Water may be used for building or other construction purposes only after application has been made to the Des Moines Water Works for a temporary construction meter. Temporary meters will not be allowed after building or construction has been completed.

503.6 REUSING EXISTING WATER SERVICE LINES

Any existing unused water service may be utilized provided it is in compliance with these Rules and Regulations and permission is obtained from the Des Moines Water Works in advance. In order to obtain permission lot lines must be clearly identifiable by Des Moines Water Works staff. If not clear, lot pins must be exposed or property corners shall be staked by a licensed land surveyor in the State of Iowa.

503.7 SPECIAL CASES

503.7.1 FIRE SERVICES

Any Plumbing Contractor or other contractor desiring a permit to extend a water service to a premise to supply water for fire protection must complete all items listed under Section 503.2.1.

Additionally, the applicant must provide fire flow requirements and a fire service proposal, reviewed by the Des Moines Fire Marshal or the jurisdictional authority. A copy of this form is included as Figure 29 of these Rules and Regulations.

504 TAPS AND CONNECTIONS

504.1 GENERAL

- 504.1.1 All taps and/or connections to water mains, public and private, shall be made by the Des Moines Water Works or its authorized contractors. This includes the installation of the corporation cock, tee, or tapping sleeve and gate valve at the main. Taps will be made only after application is completed by a Plumbing Contractor and the property owner as outlined in Section 503 of these Rules and Regulations.
- 504.1.2 All corporations and tapping valves will be considered to be in good operating condition after installation unless the contractor notifies the Des Moines Water Works of any defects within 1 year of installation.
- 504.1.3 The Des Moines Water Works will assess charges for more than one trip to the same tap location unless notification is given that the Plumbing Contractor is not ready for the tap to be made prior to the arrival of the tapping crew.
- 504.1.4 No new tap shall be installed where a water service or stub already exists unless prior approval has been obtained from the Des Moines Water Works. If there are water service stubs serving the property which will not be used these stubs must be disconnected from the main before a new tap will be made.
- 504.1.5 A minimum of 24-hour advance notification is requested for taps. Before a tap request is made, the appropriate paperwork must have been completed in accordance with Section 503 of these Rules and Regulations.
- 504.1.6 Lot lines must be clearly identifiable by Des Moines Water Works staff prior to any new taps. If not clear, lot pins must be exposed or property corners shall be staked by a licensed land surveyor in the State of Iowa upon request by Des Moines Water Works.
- 504.1.7 Mains 16" and larger cannot be tapped without prior approval from the Des Moines Water Works.

504.2 LOCATION OF TAP

- 504.2.1 Generally, taps will be made for 1" services at 45° angles on the main in front of and within the projected lot lines of the property to be served. Taps 2" and larger will be made at a 90° angle.
- 504.2.2 Taps on the backside of the main will be made only after the proper side of the main has been exposed and the Des Moines Water Works has verified that obstacles make it impossible to tap the house side of the main.
- 504.2.3 Taps shall not be located:
 - (1) On hydrant branches; or
 - (2) Within an intersection.
- 504.2.4 Taps 1" in size shall not be located closer than 18" from another tap, joint, or pipe fitting.
- 504.2.5 Taps 2" in size shall not be located closer than 2' from another tap, joint, or pipe fitting.
- 504.2.6 Tapping sleeve & valve (TS&V) or tee service connection shall not be located closer than 3' from another TS&V, pipe, joint, or fitting.

504.3 SIZE OF TAP

- 504.3.1 Minimum size tap allowed is 1".
- 504.3.2 Maximum size corporation allowed is as follows:
 - a. 1" on 2" main
 - b. 1" on 3" main
 - c. 1" on 4" main
 - d. 2" on 6" main
- 504.3.3 Taps 2" and larger must have prior approval from the Des Moines Water Works.

- 504.3.4 Taps larger than 2" will be made by the installation of a tapping sleeve and valve at the main, or in a similar manner, as prescribed by the Des Moines Water Works.
- 504.3.5 Taps of a size equal to the main may be allowed.
- 504.4 EXCAVATION FOR TAP
- 504.4.1 The Plumbing Contractor shall make the excavation required for the tapping of a water main. The top and bottom of the excavation for a 1" tap shall be a minimum of 3' by 5'. When shoring is required, the minimum work area shall be 3' x 5'. Floor of excavation shall be level leaving a clearance of at least 12" around the main. (Figure 1). For larger taps see Figures 2 & 22.
- 504.4.2 The excavation shall be shored in accordance with OSHA and the Iowa Occupational Safety & Health Standards for the Construction Industry (IOSH) rules. Des Moines Water Works will not enter an excavation or trench which does not conform to OSHA and IOSH requirements. Plumbers and contractors shall be solely responsible for compliance with OSHA and IOSH excavation and trench protection regulations.
- 504.4.3 Tapping of a main with structures or obstructions overhead will be permitted only if IOSHA standards are met.
- 504.5 REMOVAL OF TAP OR CONNECTION (Revised January 2021)
- 504.5.1 Services having a ½", ¾", or 1" corporation tap are to be disconnected from the corporation stop and the stop box removed in accordance with these Rules and Regulations (Figure 3). This work shall be performed at the owner's expense by a Plumbing Contractor and inspected by Des Moines Water Works.
- 504.5.2 The Des Moines Water Works will assess charges for more than one trip to the same location for a tap cut inspection if the work is not ready for inspection when the water works representative arrives for the inspection unless notification is given that the work is not ready for the inspection prior to the arrival of Des Moines Water Works.

- 504.5.3 When services are connected to the main by a 2" corporation, a tee, or a tapping sleeve and valve, Des Moines Water Works shall permanently disconnect the service from the water main by an appropriate method determined by Des Moines Water Works, at the owner's expense. (see Uniform Tap Retirement Charges, Section 511.8)
- 504.5.4 The excavation shall be prepared by the plumber or contractor and shored in accordance with OSHA and the Iowa Occupational Safety & Health Standards for the Construction Industry (IOSH) rules. Des Moines Water Works will not enter an excavation or trench which does not conform to OSHA and IOSH requirements. Plumbers and contractors shall be solely responsible for compliance with OSHA and IOSH excavation and trench protection regulations.
- 504.5.5 Removal of taps or connections through a tunnel, with dirt or concrete overhead, will not be permitted due to the hazard incurred by workers.
- 504.5.6 Upon proper application by customer, approved by Des Moines Water Works, an existing $\frac{3}{4}$ ", 1", or 2" service connection may be temporarily plugged at the stop box with the understanding that the service connection so stubbed must be reused in one year. Such service lines may be stubbed only if the service line is copper and the curb valve meets current curb valve requirements. A new curb stop shall be installed at the time the service line is stubbed if the existing curb stop does not meet these standards. (see required application, Figure 31).
- 504.5.7 Upon proper application by customer, approved by Des Moines Water Works, an existing service connection 4" and larger may be temporarily plugged with the understanding that the service connection so stubbed must be reused in one year. Such service lines may be stubbed only if the service connection was made using an O-ring style gate valve. Split services shall be plugged in public right-of-way upstream of the tee. Service connections 3" in diameter shall not be stubbed.
- 504.5.8 For removal of a service from a private main, see Figure 4.
- 504.5.9 Water service lines that have been removed may not reuse the corporation tap for a future water service.

505 WATER SERVICE INSTALLATION

505.1 DEFINITION

A service line is comprised of the piping and related appurtenances including the connection installed from the Des Moines Water Works water main to the outlet connection of the first shut off device within the building to be served.

505.2 APPLICATION

Refer to Section 503.

505.3 GENERAL LOCATION REQUIREMENTS

All service lines shall conform to the following requirements:

- 505.3.1 The water service shall normally be installed perpendicular to the main from the tap to the right-of-way line and shall tap in front of and within the projected lot lines of the property to be serviced. (Figures 1-2 & 5-12)
- 505.3.2 A clearance of not less than 12" shall be maintained between the service line and any pipe, cable, or conduit in the same trench.
- 505.3.3 Service lines shall have a cover, wherever feasible, of not less than 5'. Whenever the local plumbing code conflicts with this section, the plumbing code shall be followed.
- 505.3.4 The water service shall extend through and beyond the outer wall of the building (see Section 509 for meter setting). Where the building has a rear basement or rear cellar only, the service may extend underground beyond the inner foundation wall a maximum of 2' and then may go vertically through the rear basement floor or wall, or extend around the building and enter through the side of the basement wall. (Figure 8)
- 505.3.5 In a building with a poured floor that has no basement, the service shall extend inside the outer wall of the building and into the building at which point it shall go vertical through the floor and a meter setting made. (Figure 9)
- 505.3.6 For a building with a crawl space, see Figure 10.

505.3.7 For a building with a standard basement, see Figure 7.

505.4 SIZE OF WATER SERVICE LINES

505.4.1 New or replacement residential service lines shall not be less than 1" inside diameter. Reconnection of existing 3/4" type K copper water service lines from an existing main to a new main shall be allowed. Use of existing 3/4" type K copper water service stubs shall be allowed provided they meet the requirements of these Rules and Regulations.

505.4.2 Commercial, industrial, and fire service lines shall be properly sized for the required demand but shall be no smaller than that specified for a residential service.

505.5 MATERIAL FOR SERVICE PIPING 2" AND SMALLER (revised January 20~~23~~²⁴)

505.5.1 All water service pipes through 2" shall be type K copper, red brass or PEX pipe as specified in section 505.5.2

505.5.2 PEX A 200 psi. pipe can be used for 1" – 2" water service installations as follows:

- a. From the tap to the meter inside the premise on water service replacements. If PEX pipe is used PEX shall be installed all the way from the stop box to meter, from the tap to the stop box, or from the tap to the meter. PEX shall not be used for repairs or partial replacements.
- b. New water service installations from the tap to the meter inside the premise provided that the entire service line is installed as one installation.
- c. PEX pipe can be used between the main and the meter pit or stop box in rural areas of the former SE Polk system.

Type K copper is required for all service lines which run parallel to the street before entering the property. Type K copper is required from the tap to the stop box for all new water service stubs in new developments and all other instances where the water service is stubbed to the stop box. Copper can also be used from the stop box to the meter inside the premise on any service line through 2".

- 505.5.2.1 This section has been eliminated.
- 505.5.2.2 PEX pipe shall be blue in color for all 1-inch installations.
- 505.5.2.3 PEX pipe shall be installed as one continuous piece from the tap to the stop box. Splicing of PEX pipe between stop box and meter inside the building is discouraged and will only be approved under special circumstances.
- 505.5.2.4 PEX pipe shall not be used within 200' of a Leaking Underground Storage Tank or in other areas where the soil may be contaminated. A copy of the assessment report from the IDNR indicating there is no potential health risk will be required for use of PEX pipe when working within a 500' radius of a LUST site. Information on the location of Leaking Underground Storage Tanks may be obtained from the Iowa Department of Natural Resources by following the instructions in Figure 36.
- 505.5.2.5 Tracer wire shall be installed when PEX pipe is used. The tracer wire shall be installed according to Des Moines Water Works' specifications (Figure 1A, 1B, 1C, 16B). Tracer wire shall be installed with all water service lines except when the water service line is type K copper or red brass. Tracer wire specifications shall be as follows:
- a. For open cut installations, the tracer wire shall be No. ~~14-12~~ AWG ~~high-strength copper-clad steel (HS-CCS)~~ solid single copper conductor with a minimum ~~282 pounds break load manufactured by Copperhead Industries, or pre-approved equal tensile strength of 150 pounds.~~ Insulation shall be ~~30-45~~ mil, high-density, high molecular weight ~~-polyethylene~~ (HDPE) and rated for direct burial, 30 volts, and blue in color.

- b. When directional drilling/boring the tracer wire shall be No. 12 AWG, extra-high strength copper clad steel conductor (EHS-CCS) with a minimum 1,150 pounds break load ~~manufactured by Copperhead Industries, or pre-approved equal.~~ Insulation shall be 45 mil, high-density, high molecular weight polyethylene (HDPE) and rated for direct burial, 30 volts, and blue in color.
- c. When conduit is used the tracer wire shall be placed inside the conduit. When conduit is not used tracer wire shall be installed alongside the pipe and shall be fastened to pipe with zip ties a minimum of every 5 feet.
- d. ~~Anode Ground Rod shall be 1 Lb., 1.315" D x 18.5" L, magnesium drive in anode manufactured by Copperhead Industries 3/8 inch minimum diameter, 8 foot minimum length, steel rod uniformly coated with metallically bonded electrolytic copper.~~ Anode Ground Rod shall be spliced to tracer wire using a high-strength, corrosion resistant copper alloy ground rod clamp, 3M Scotchcast 3832 Buried Service Wire Splice Kit with Burndy KS15 8-14 AWG Splice Bolt DryConn Direct Bury Lug Aqua (SKU 90220).
- e. Splice Kits, when approved, shall be DryConn Direct Bury Lug Aqua (SKU 90220)
- ~~d.f.~~ f. Tracer wire connectors shall be Rhino TriView, TracerPed, or approved equal. Wire connectors shall contain three internal terminals with two shunts, be 5 feet in length, white in color, and triangular in shape. Removable top cap, three 2-7/8-inch by 14-inch custom vinyl decals No. SD-5594K, and tri-grip anchor.

- 505.5.2.6 PEX pipe shall be stored in a way that prevents damage as a result of crushing or piercing, excessive heat, harmful chemicals, or exposure to sunlight for prolonged periods.
- 505.5.2.7 Joint methods for attaching PEX pipe to fittings shall meet AWWA C 904 Standards and ASTM F1960, F2080, or F1807 Specifications. Fittings shall be installed in accordance with PEX Pipe Manufactures Installation Guidelines and related plumbing codes.
- 505.5.2.8 A tracer wire inspection is required for all PEX service line installations. Contact Des Moines Water Works at 283-8772 when the installation is ready for inspection.

505.6 SERVICE LINE APPURTENANCES (revised January 2020)

All water service lines shall include a curb stop or valve between the water main and the property line as follows:

505.6.1 WATER SERVICES 2" IN DIAMETER OR LESS

Service lines 2" in diameter or less shall have a curb stop installed within a stop box located 1' to 6' out from the property line. Stop boxes installed in rural areas shall be installed within these guidelines outside of the drainage ditch areas whenever possible. Where the water main is located in a frontage easement on the same side of the road as the property to be served, the curb stop shall be placed 5' from the water main towards the property to be served. (See Figure 37). If an alternate location for the curb stop is necessary, approval of the alternate location shall be received from Des Moines Water Works prior to installation. When the main that the water service is connected to is a private or public water main in an easement, the stop box shall be installed 5' from curb of street. Where unusual circumstances prevent this location, the curb stop and stop box may be placed in the street but in such event must be installed within a roadway box. The curb stop shall be installed in the water service pipe so that the tee head is parallel with the curb when the water is turned off. The curb stop shall not have a waste opening.

505.6.1.1 CURB STOP/VALVE STANDARD

An unobstructed main shut-off on the water supply line for each customer shall be provided on public property, private property where public access is provided, or another location approved by the Des Moines Water Works. The shut-off shall be located as shown. (Figures 1, 2, and 34)

The shut-off for existing 3/4" service lines and new or existing 1" through 2" services shall consist of a curb stop (Type: "T" handle, quarter-turn, ball valve conforming to AWWA C800 and a stainless steel self-centering rod with a stainless-steel pin installed within a stop box housing with a 1" upper section and an Erie style lid. (See DMWW Specifications) The curb stop shall have valve head checks that limit rotation to 90 degrees and operate clockwise to shut off. The "T" handle on the curb stop will be parallel with the curb when the water is turned off. When installed, the curb stop shall not be less than 5' or more than 7' below the surface of the ground.

If the water service connection taps the water main outside of the property line, a general box will be required at a location specified by Des Moines Water Works.

505.6.1.2 STOP BOX STANDARD (CURB BOX)

Stop boxes for 1" through 2" water service lines shall be of the extension type, 1" upper section, stainless steel self-centering rod, stainless steel pin, and Erie style lid. All stop box installations shall be completed in such a manner that the top of the rod is between 12" and 24" below the surface, the lid is level with the surrounding surface, and the stop box does not present a hazard to the public. Stop boxes installed in paved areas shall be installed in a manner that prevents the lid of the stop box from being cast into the concrete. (Figures 1-2 & 14-15)

The design of all valves, curb stop boxes and valve boxes must meet the standards of the Des Moines Water Works.

New copper service lines 2" or less in diameter shall be one continuous piece of pipe from the corporation stop to the curb stop and one continuous piece of pipe from the curb stop to the inlet valve at the meter with no fittings when these distances are less than 100' in length. Only one fitting shall be allowed per 100' of pipe.

505.6.2 WATER SERVICES LARGER THAN 2"

For the water services larger than 2" the valve shall be installed on the water service line adjacent to the water main. (Figure 22) The valve shall be installed in a roadway box.

505.6.3 Any valves, roadway boxes and precast concrete manhole vaults must have the approval of the Des Moines Water Works.

505.6.4 Curb stop boxes, roadway boxes and precast concrete manhole vaults shall be installed so that they will function properly and so that an access to the shut-off device is maintained. All shall be set vertically so the top is flush with the surrounding surface so as not to be a hazard to the public.

505.6.5 All service lines shall have a shut-off device or valve inside the building where the service enters the building. There shall be no appurtenances between this valve and the main, other than the curb stop or valve as previously described, or when an outside meter is approved. (Figures 1-2)

505.6.6 Tracer wire shall be installed with all water service lines except when the water service line is type K copper or red brass. The tracer wire shall be installed according to Des Moines Water Works' specifications (see figures 17, 18, ~~18A~~, 20, 20A, 24, 26, and 35). Tracer wire specifications shall be as follows: (revised January 2023)

- a. For open cut installations the tracer wire shall be No. ~~14~~ 12 AWG high strength copper clad steel (HS-CCS) solid single copper conductor with a minimum ~~282 pounds break load manufactured by Copperhead Industries, or pre-approved equal~~ tensile strength of 150 pounds. Insulation shall be ~~30- 45~~ mil, high-density, high molecular weight polyethylene (HDPE) and rated for direct burial, 30 volts, and blue in color.
- b. When Directional Drilling/Boring the tracer wire shall be No. 12 AWG, extra-high strength copper clad steel conductor (EHS-CCS) with a minimum 1,150 pounds break load ~~manufactured by Copperhead Industries, or pre-approved equal~~. Insulation shall be 45 mil, high-density, high molecular weight polyethylene (HDPE) and rated for direct burial, 30 volts, and blue in color.
- ~~b.c.~~ When conduit is used the tracer wire shall be placed inside the conduit. When conduit is not used tracer wire shall be installed alongside the pipe and shall be fastened to pipe with zip ties a minimum of every 5 feet.
- d. ~~e.~~ Anode Ground Rod shall be ~~1 Lb., 1.315" D x 18.5" L, magnesium drive in anode manufactured by Copperhead Industries 3/8 inch minimum diameter, 8 foot minimum length steel rod uniformly coated with metallicallly bonded electrolytic copper.~~ Anode Ground Rod shall be spliced to tracer wire using ~~3M Scotcheast 3832 Buried Service Wire Splice Kit with Burndy KS15 8-14 AWG Splice Bolt DryConn Direct Bury Lug Aqua (SKU 90220).~~ a high-strength, corrosion resistant copper alloy ground rod clamp.
- e. Splice Kits, when approved, shall be DryConn Direct Bury Lug Aqua (SKU 90220)

e-f. Tracer wire connectors shall be Rhino TriView, TracerPed, or approved equal. Wire connectors shall contain three internal terminals with two shunts, be 5 feet in length, white in color, and triangular in shape. Removable top cap, three 2-7/8-inch by 14-inch custom vinyl decals No. SD-5594K, and tri-grip anchor.

505.7 COMBINATION SERVICE PIPES

A property requiring a domestic service line and a fire protection service line may be served from a single tap. When a single tap is used, the fire protection service line shall extend straight from the main into the property to a “tee” located outside the property line with valves on the fire and domestic lines in public right-of-way or the service may split immediately inside the building. The fire service shall run straight through the “tee” to a gate valve immediately following the “tee”. The domestic shall “tee” off the fire service immediately outside the property line or immediately inside the building and have a shut off valve following the “tee”. (Figures 20 & 33)

505.8 MAINTENANCE OF WATER SERVICES

- 505.8.1 If an existing water service is to be repaired, the materials used for the repair shall be of the type and size specified for new services. If it is determined that half or more of either section of the service, between the main and the curb stop or the curb stop and the building, must be replaced, then that entire section must be replaced with materials as approved for new services and a new stop box complete with stainless steel self-centering rod, stainless steel pin, and Erie style lid must be installed. (See DMWW Specifications) Dissimilar metals may not be used in the repair of a service unless insulators are used.
- 505.8.2 If an existing 2” or smaller curb stop does not meet Section 505.6.1 of these Rules and Regulations, it does not need to be upgraded unless more than half of the service line from the main to the curb stop or from the curb stop to the building is being replaced.

- 505.8.3 If an existing arch pattern stop box, or the rod in an existing arch pattern stop box, must be replaced and the curb stop meets the requirements of Section 505.6.1, a rod and an arch pattern stop box which meet current requirements can be used with the existing curb stop. The rod can be attached to the curb stop using a stainless-steel pin or an approved self-attaching coupling.

505.9 PRIVATE WATER MAINS

A private water main is a privately owned and maintained water line used to provide service to multiple service line connections on a single qualifying property. Private water mains may provide fire service, domestic service, or a combination of fire and domestic service to properties such as apartment complexes, shopping centers, and town homes.

Installation of a private water main will only be allowed if all three of the following conditions apply:

- a. No public water main is available to effectively serve the property.
- b. A public water main cannot be installed in public right-of-way to effectively serve the property.
- c. Space is not available to install a public water main in a 40-foot-wide water main easement to effectively serve the property.

Qualifying properties must be a single property owned by a single owner, entity, or association and must not be divided by public right-of-way.

For requirements related to jointly owned private water mains serving multiple qualifying properties see Section 505.9.2.

505.9.1 GENERAL

- 505.9.1.1 The design and location of new private water mains and alterations to existing private water mains must be reviewed by the Des Moines Water Works prior to construction to insure all Des Moines Water Works requirements are met. Additionally, the requirements of the applicable plumbing codes must also be met.

- 505.9.1.2 Private water mains must be constructed and maintained in accordance with minimum specification prescribed by the Des Moines Water Works Department of Engineering generally consistent with the applicable specification of Des Moines Water Works for its own mains. All private water main materials shall also comply with applicable plumbing code requirements.
- 505.9.1.3 The owner of a private water main shall be solely responsible for all costs of installing, operating, and maintaining the private water main in good condition and shall be solely liable for any and all loss, damage or injury to persons or property arising from the installation, ownership, maintenance, or use of the private water main.
- 505.9.1.4 Des Moines Water Works shall have no responsibility for any costs of installing, operating, and maintaining any private water main and shall not be liable for any and all loss, damage or injury to persons or property arising from the installation, ownership, maintenance, or use of the private water main.
- 505.9.1.5 System development fees for private water mains will be assessed based on the size of the connection to a Des Moines Water Works owned water main unless individual metered service connections are made off of the private water main in which case fees will be assessed as if the individual metered connections were made to a Des Moines Water Works owned water main.
- 505.9.1.6 Private water mains must be located within public access way, pursuant to an easement in a form approved by Des Moines Water Works and filed of record for the benefit of all property served by the main and for the benefit of Des Moines Water Works.

505.9.2 JOINTLY OWNED PRIVATE WATER MAINS

505.9.2.1 A jointly owned private water main is a privately owned and maintained water line used to provide service to multiple service line connections on multiple qualifying properties. Jointly owned private water mains may provide fire service, domestic service, or a combination of fire and domestic service to properties not more than one of which has frontage on public right-of-way.

505.9.2.2 Qualifying properties must be adjoining, must not be separated by public right-of-way, and not more than one of the properties can have frontage on public right-of-way.

505.9.2.3 In addition to the General Requirements set forth in 505.9.1 above the following conditions shall be met for jointly owned private water mains:

505.9.2.3.1 An Iowa Department of Natural Resources Construction Permit must be obtained through Des Moines Water Works for construction of new or alterations to existing jointly owned private water mains prior to the start of construction.

505.9.2.3.2 Maintenance and repair responsibilities and liabilities for jointly owned private water mains serving multiple properties shall be shared among all property owners who own properties which receive service from the main. The liability of such owners shall be joint and several, except to the extent otherwise approved by Des Moines Water Works for good cause. The owners shall jointly and severally indemnify and hold harmless, Des Moines Water Works, and its respective officers, employees, trustees and agents from any and all loss, damage or injury to persons or property arising from the installation, ownership, maintenance, or use of the jointly owned private water main.

505.9.2.3.3 An easement document containing provisions covering maintenance, repair and ownership responsibilities consistent with the provisions of this Rule 505.9, in a form approved by Des Moines Water Works must be executed, must contain a legal description of the affected properties, must run with the land, must be filed of record with the County Recorder, and a copy of the easement must be provided to Des Moines Water Works before the jointly owned private water main connection or a new connection to an existing jointly owned private water main will be made.

505.9.2.3.4 System development fees for connections made to jointly owned private water mains serving multiple properties will be assessed as if the connections were made to a Des Moines Water Works owned water main.

505.9.3 TRANSMISSION MAINS

Private water mains shall not tap Des Moines Water Works owned transmission mains without permission from Des Moines Water Works. Such permission may be contingent upon the requirement to provide redundant connections to the transmission main.

505.9.4 SERVICE LINES SERVED FROM PRIVATE WATER MAINS

505.9.4.1 Buildings, business units or town homes which do not front a public water main shall be served from a private water main meeting the requirements of Section 505.9.

505.9.4.2 Buildings, business units or town homes that front public right-of-way may tap an available public water main or a private main.

505.9.4.3 Individual service lines connected to a private water main shall meet all requirements of Des Moines Water Works Rules and Regulations and applicable plumbing codes.

505.9.4.4 Ownership of individual service lines from a private water main to the building, business unit or town home, including maintenance responsibility, shall be defined in the lease or association agreement.

505.9.4.5 Individual service lines in manufactured home complexes connected to a private water main shall be installed, owned, and maintained by the complex owner.

505.9.5 DUPLEX/FLAT

Duplexes/flats shall not be served through a private water main.

505.9.5.1 Duplexes/flats shall install water service in one of the following ways:

- a. Install individual taps, individual stop boxes, and individual meters for each living unit.
- b. Install one tap, one stop box, and one meter to supply both living units. (See 509.5 Metering of Duplexes/Flats)

For the purpose of this section, multiple duplexes/flats owned by one common owner will be considered an apartment complex and can be served from a private water main.

505.9.6 METERING OPTIONS

Multiple metering options are available for buildings, business units and town homes served from private water mains. In general, only one meter will be installed for each individual service line connected to a private water main. See metering requirements in Section 509.

505.9.7 SUBMITTAL PROCEDURES

505.9.7.1 The following must be submitted, reviewed, and approved before a private water main connection to a Des Moines Water Works owned water main can be approved:

505.9.7.1.1 Site plan including the following minimum information:

- a. Existing Des Moines Water Works owned water mains with main size and relative location with respect to right-of-way lines and existing curb lines.

- b. Location of the proposed taps, valves, hydrants, and fittings.
- c. Routing of proposed private water main within public right-of-way and on private property. In general, valves located on private property for the individual fire and domestic service(s) must be located in paved, non-parking areas such as driveways and sidewalks. Valves must be located in such a manner as to permit operation by the Des Moines Water Works 24 hours a day.
- d. Location of existing and proposed building(s) on property to be served by the private water main.
- e. Legal description of property to be served.
- f. Proposed paved areas including parking lots, driveways, and sidewalks.
- g. North arrow and any dimensions required for clarity.
- h. Include statement that all private water main work shall be completed in accordance with Des Moines Water Works Standard Specifications.

505.9.7.1.2 Fire flow requirements and the riser detail (if applicable for the project).

505.9.7.1.3 Load profile for any domestic or process service line 2" or larger in diameter. (See Section 503.2.1.5)

505.9.7.1.4 City of Des Moines Fire Marshall review form granting approval for the fire service, where applicable.

505.9.7.1.5 "System Development Fee" payment (See Schedule of Charges, Section 511).

505.9.7.1.6 Mechanical details showing the location and type of backflow prevention device to be installed, if required.

505.9.7.2 Once items 1-6 above have been received and approved by Des Moines Water Works the owner's representative may contact Des Moines Water Works to enter a tap request.

505.9.7.3 One (1) "as-built record drawing" of the private water main shall be submitted to the Des Moines Water Works within 30 days of its construction and before the meter is set, unless otherwise approved by the Des Moines Water Works

505.9.8 PRESSURE TESTING

505.9.8.1 All private water mains and appurtenances shall be tested for leakage in compliance with applicable plumbing code requirements.

505.9.8.2 The Plumbing Contractor shall notify Des Moines Water Works when the private water main is installed and ready to be filled for pressure testing and disinfection.

505.9.8.3 The pressure test, when applied to private water mains, may or may not be witnessed by Des Moines Water Works personnel since these services are under the jurisdiction of the Building Inspection Department. Therefore, a certificate of compliance shall be submitted to Des Moines Water Works stating the test pressure has been performed and listing duration of test, total leakage, allowable leakage, and stating that the test met all requirements.

505.9.9 DISINFECTION

505.9.9.1 Following satisfactory pressure tests all private water mains shall be disinfected, sampled, and tested as follows:

505.9.9.1.1 The form of chlorine used and the procedures for disinfection shall be as outlined in AWWA Standard C-651. A minimum free residual chlorine concentration of 10 mg/l shall be maintained for the 24-hour disinfection period.

505.9.9.1.2 After the 24-hour disinfection period, the private water main shall be flushed to remove all free chlorine.

505.9.9.1.3 Immediately following flushing of the private water main and again at least 24 hours after flushing, samples of water from the private water main shall be taken to be tested by Des Moines Water Works. Approximately one sample will be taken for each 1,200 feet of private water main. Test results will be available 24 hours from the time when the samples were submitted for testing. Samples must show the absence of coliform organisms and other contaminants and must meet requirements of the Iowa Department of Natural Resources to be considered acceptable. Water used for flushing and sampling shall be provided by the Des Moines Water Works for up to 2 flushing and sampling procedures, if required, to pass laboratory tests.

If either of the first two sets of samples do not pass laboratory tests, the piping represented by those samples must be flushed and rechlorinated by the Contractor at the discretion of, and as directed by Des Moines Water Works. Any labor and equipment costs incurred by the Des Moines Water Works for further disinfection, flushing, or sampling shall be billed to the Plumbing Contractor.

505.9.10

**WATER MAIN EXTENSIONS FOR BENEFIT OF
SPECIFIC PROPERTIES**

(New Provision effective January 1, 2019)

Each water service must tap in front of the property to be served. Not all properties have access to existing water mains. In cases where service is desired and there is no water main, a new water main must be installed at the expense owner or owners requesting service. The need for a water main extension will be evaluated during the water service application process. The property owner or owners will be advised of the need for a water main extension and given the option to proceed with installation at their expense.

If the property owner or owners chooses to proceed with installation of a water main extension the new water main will be installed by a Des Moines Water Works' contracted installer and the cost of the installation, including inspection and administration costs must be paid in full in advance by the property owner or owners.

506 CROSS CONNECTIONS AND BACKFLOW PREVENTION
(revised January ~~2019~~2023)

506.1 GENERAL

- 506.1.1 Cross connections from any well or other source of water to any piping system connected to the Des Moines Water Works distribution mains are prohibited.
- 506.1.2 The customer shall be responsible for ensuring that no cross connections exist within their premises starting at the water service entrance unless approved backflow prevention is installed.
- 506.1.3 The customer shall prevent pollutants and contaminants from entering their facility's potable water supply system or the Des Moines Water Works distribution mains by all means necessary to prevent backflow.
- 506.1.4 All water-using devices must be so designed that backflow to the distribution system cannot occur.
- 506.1.5 Where harmful contaminants or pollutants are used with any device or process connected to the water system, the customer must install and maintain an approved testable reduced pressure backflow prevention assembly in accordance with these Rules and Regulations and any applicable plumbing code requirements.
- 506.1.6 All permanently installed underground irrigation systems shall contain an approved testable backflow prevention assembly at the water service entrance designed to prevent backflow to the Des Moines Water Works distribution system.

506.1.7 Decommissioning an irrigation system must be done in a manner that does not create a potential future cross connection. Capping an irrigation system outside the building does not meet the requirements. The system must be permanently terminated in the basement at the tee that serves the irrigation line by removing the tee or permanently capping the tee, not by just installing a threaded fitting. All notices and late fees will continue until either the backflow device is tested or correct termination can be confirmed by Des Moines Water Works. See Figures 542-13-D, 13-E.

- 506.1.78 All newly constructed fire suppression systems shall contain an approved testable backflow prevention assembly at the water service entrance designed to prevent backflow to the Des Moines Water Works distribution system.

506.2 BACKFLOW PREVENTION (Revised January 2021)

- 506.2.1 All new and existing service lines are subject to the requirements of the State of Iowa and any applicable local Plumbing Codes respecting backflow prevention and in addition are also subject to the specific requirements set forth in these Rules and Regulations. State of Iowa requirements are set forth in the Rules of the Public Health Department, Chapter 25 State Plumbing Code, Rule 25.1, 641 I.A.C 25.5. City of Des Moines requirements are set forth in Section 26-614 of the Des Moines Municipal Code. The Des Moines Water Works acts as an administrative authority under the State of Iowa, City of Des Moines, and other municipal and county plumbing codes, and also under its own authority under Chapter 388, Code of Iowa. The backflow protection requirements of these Rules and Regulations are in addition to any applicable Plumbing Code.
- 506.2.2 An approved backflow prevention assembly for containment as defined in applicable State and local plumbing codes shall be installed at the domestic water service entrance as a condition of service to all newly constructed or remodeled commercial buildings. For the purposes of these Rules and Regulations, any upgrade to an existing service line is deemed a new service.
- 506.2.3 An approved backflow prevention assembly for containment shall be installed at the water service entrance in any existing service where an actual or potential cross connection to non-potable or hazardous substances exists, is created, or is identified by the Des Moines Water Works. All commercial, multi-tenant properties are deemed to have a potential for cross connections to non-potable or hazardous substances.

- 506.2.4 Private wells and any piping served by a private well shall be physically disconnected from any plumbing pipes and fixtures that will be connected to Des Moines Water Works' distribution system. If a well will be left in service, no well equipment or piping shall be allowed to remain in the building even if it is physically separated or isolated with a valve. An approved reduced pressure zone backflow prevention assembly will be required at the service entrance.

506.3 INTERCONNECTED SERVICES AND/OR FIRE LINES

Where a customer is served by two or more inter-connected services and/or fire lines connected to different Des Moines Water Works distribution mains or different sections of distribution mains, the customer shall install and maintain, at customer's expense, on each service and/or fire line, an approved check valve according to the latest edition of the AWWA Standard C508.

This check valve shall be installed in an access manhole and shall be located on private property just inside the property line. Even though the check valve is located on private property, Des Moines Water Works personnel shall at all times have the right of access to it and the installation of such check valve shall be deemed to grant a license for such access.

506.4 ADMINISTRATION & ANNUAL TESTING (Revised January 2022)

- 506.4.1 Backflow protection requirements shall be administered by the Utility Incident Manager of the Des Moines Water Works (the "Backflow Program Manager").
- 506.4.2 The Backflow Program Manager may withhold approval to commence water service to a new service line until all backflow requirements are met.

- 506.4.3 The Backflow Program Manager shall investigate service provided to existing service lines to determine the degree of cross contamination hazard that may exist or potentially exist and may require customers to provide a Water Usage Inventory to allow evaluation of degree of hazard at any existing service line or may request access to the location served for purposes of inspection of water usage. If a customer fails to timely and fully complete a Water Usage Inventory, or fails to provide access upon request, a high hazard condition shall be deemed to exist.
- 506.4.4 If the Backflow Program Manager finds a high hazard condition or other cause to require installation of backflow protection, the Backflow Program Manager shall order installation of the required backflow protection device or devices and shall give written notice by mail or hand delivery to the customer of such order (the "Installation Notice").
- 506.4.5 If the customer fails to complete installation pursuant to an Installation Notice, or to notify the Backflow Manager of appeal pursuant to Rule 500.2 within fifteen (15) days of the date the Installation Notice is mailed or delivered, then the water service at the affected service line shall be terminated until such time as the required installation is made.
- 506.4.6 The customer shall cause each backflow prevention assembly installed in his, her or its facility to be tested annually by a backflow prevention assembly technician registered with the Iowa Department of Public Health. Such test shall be due on an annual testing date for such premises specified by the Backflow Program Manager to the customer (the "Annual Backflow Test Date"). A report of each such annual test shall be submitted to the Backflow Program Manager using the method prescribed by the Backflow Program Manager. The required test and report shall be past due if the test is not performed and the report of the test received by the Backflow Program Manager by the Annual Backflow Test Due Date.

- 506.4.7 An administration fee will be applied to the customer's account annually for each backflow prevention assembly installed at the property as provided in the Schedule of Charges.
- 506.4.8 Any failure to have backflow devices that are categorized as containment backflow prevention assemblies to be tested and a report thereof to be received by the Backflow Program Manager by the Annual Backflow Test Due Date will result in the imposition of late fees as provided in the Schedule of Charges.
- 506.4.9 DMWW may refuse to accept backflow test reports from certain technicians or companies even if the technicians are registered with the Iowa Department of Public Health when, in the experience of the Backflow Program Manager, the technician or company that employs the technician has established a pattern of failing to provide timely, complete, legible, consistent, or accurate test reports to DMWW on behalf of DMWW customers. The Backflow Program Manager may also refuse to accept backflow test reports from certain technicians or companies if it becomes apparent to DMWW that the technician or company are not actually performing backflow tests or are otherwise improperly reporting the results of testing or repairs made to backflow prevention assemblies. DMWW will only disallow test reports from a particular technician or company that employs technicians after DMWW provides notice to the company or the technician, and DMWW provides the company or technician a reasonable opportunity to correct the deficient test procedures.

If the customer, or a company or technician on behalf of a customer, provides a test report from a technician or company that DMWW has determined does not provide acceptable backflow test reports, DMWW will provide the customer with written notice that the test report submitted for the customer is insufficient, and the customer must obtain a backflow test report from another technician or company. DMWW will give the customer an extension of 30 days from the date the customer receives the notice specified in this section, or 30 days from the Annual Backflow Test Date, whichever is later, to provide a backflow test report from another technician or company. The deadline for providing a complete and accurate test report may be extended in the discretion of the Backflow Program Manager for good cause.

507 PUBLIC FIRE PROTECTION

507.1 OPERATION OF FIRE HYDRANTS

- 507.1.1 Public fire hydrants are installed primarily for fire protection. They may also be used by the Des Moines Water Works to flush water mains and by other governmental agencies for street and sewer flushing.
- 507.1.2 Others may use hydrants by license agreement with the Des Moines Water Works under the conditions and rates established by the Board for such services. Hydrants shall not be used for any other purpose without express permission of the Des Moines Water Works.

507.2 PENALTY FOR UNAUTHORIZED USE

Anyone who shall operate or attempt to operate a fire hydrant without permission of the Des Moines Water Works may be prosecuted as provided by law and outlined in Section 511-Schedule of Charges.

507.3 RELOCATION OF PUBLIC FIRE HYDRANTS

- 507.3.1 Where an existing public fire hydrant interferes with a property owner's use or proposed use of his property, the hydrant may be relocated at the property owner's expense. Approval from the Fire Protection Authority and the Des Moines Water Works must be obtained prior to any work being done.
- 507.3.2 Where the grade of an existing street or property is changed at the request of the property owner, such that an existing public fire hydrant will not be at the proper elevation with respect to the ground, the hydrant will be raised or lowered at the expense of the property owner.

507.4 OBSTRUCTION OF HYDRANTS

- 507.4.1 Nothing shall be erected or planted which shall interfere with the use of a fire hydrant. Sufficient clearance shall be maintained around the hydrant to permit easy connection of hoses and full circle operation of the hydrant using regular hydrant wrenches and hose spanners.

- 507.4.2 Shrubs, trees, flowers, or weeds shall not be planted nor permitted to grow so as to prevent full view of a fire hydrant from the street.

507.5 PAINTING OF PUBLIC FIRE HYDRANTS

Painting of fire hydrants will be done by the Des Moines Water Works only. The hydrant bonnets are color coded in accordance with National Fire Protection Association (NFPA) standards to show the amount of water that can be discharged out of them.

<u>BONNET COLOR</u>	<u>GPM</u>
Green	1,000 or greater
Orange	500 - 1,000
Red	less than 500

In addition, hydrants on feeder mains shall have caps painted the same color as the bonnet.

- 507.6 Red banding on hydrants will be done by Des Moines Water Works personnel only. This will show that these are out of service.

508 PRIVATE FIRE PROTECTION

508.1 DEFINITION OF PRIVATE FIRE PROTECTION SYSTEM

Private fire protection systems consist of a fire service connection to the Des Moines Water Works main and any or all of the following: standpipe(s), automatic sprinkler system(s), fire pump(s), or fire hydrant(s).

508.2 OPERATION OF PRIVATE FIRE PROTECTION SYSTEMS

Private fire protection systems are installed primarily for fire protection for the property on which they are installed and are not to be used for any other purpose without the express written permission of the Des Moines Water Works.

508.3 PERMIT FOR INSTALLATION OF PRIVATE FIRE PROTECTION SYSTEM

See Section 503.7.1.

508.4 DESIGN OF PRIVATE FIRE PROTECTION SYSTEMS

Fire service connections and fire lines shall comply with applicable portions of Sections 505.3, 505.4, and 505.5 of these Rules and Regulations.

508.5 COMBINATION SERVICE FROM FIRE LINE

A combination domestic and fire line as outlined in Section 505.7 of these Rules and Regulations may be installed if approved by the owner's fire underwriter. Domestic service branches and residential fire sprinkler branches shall be metered in accordance with Section 509 of these Rules and Regulations.

508.6 ALTERATIONS TO PRIVATE FIRE PROTECTION

When requested by the owner and approved by the Des Moines Water Works, a private fire system can be altered by a building owner who shall be responsible for any fees charged by the Des Moines Water Works.

508.7 PRIVATE FIRE HYDRANTS (revised January 2020)

- 508.7.1 Fire hydrants located on privately owned property, or on streets not dedicated to public use, are the responsibility of the owner and are to be used for fire protection only. These hydrants are designated "private fire hydrants".

Where it is the owner's intention that these hydrants be used by the public fire department, these hydrants shall conform to the requirements of Section 507 of these Rules and Regulations and also to the Des Moines Water Works specifications. Private fire hydrants shall be red in color. Copies of the Des Moines Water Works hydrant specifications are on file at Des Moines Water Works, 2201 George Flagg Parkway, Des Moines, Iowa. (Figure 24)

- 508.7.2 Private hydrants installed at the owner's expense, in accordance with these Rules and Regulations, for use by public fire departments, must be reviewed by the Des Moines Water Works and the Fire Department. Replacement of obsolete hydrants and repair or replacement of hydrants, broken parts, or damage caused by physical abuse or improper operation will be done at the owner's expense. Standards are available upon request to Des Moines Water Works.

- 508.7.3 Each fire service connected to the Des Moines Water Works' owned and/or operated distribution system shall be charged at the rate established by the Board. For looped systems, an annual charge shall be collected for each connection to the Des Moines Water Works' owned and operated distribution system. (See Section 511.5)

508.8 PENALTIES FOR IMPROPER USE

When the owners or occupants of any premises are found to be using water from a private fire protection system for purposes other than fire protection, the Des Moines Water Works may discontinue fire service. The Des Moines Water Works also reserves the right to require the installation of an approved fire line meter, or an additional line and meter, at the owner's expense. A penalty may also be imposed against the property owner at a rate as established by the Board.

508.9 RESIDENTIAL FIRE SERVICES

- 508.9.1 No fire service shall be allowed on a water service line smaller than 1" in diameter.
- 508.9.2 A backflow device is required on all residential fire services except web fire sprinkler systems.
- 508.9.3 Unmetered residential fire services shall be subject to annual fire protection charges at a rate established by the Board (See Section 511.5)
- 508.9.4 Web fire sprinkler systems require a single UL listed and/or FM approved fire service/domestic meter for the combined domestic and fire sprinkler system (Figure 33B). The Web fire sprinkler system does not require a backflow device because the sprinkler system is intermingled with the home's cold-water plumbing system to provide water to the both the water fixtures and fire sprinklers.

Web fire services can only be used on 1" through 2" diameter service lines. A web fire sprinkler system cannot be used if the fire service/domestic meter cannot accommodate the maximum required fire flow of the designed fire sprinkler system.
- 508.9.5 Dedicated fire services (Fire service only) are required to be metered with a UL listed and/or FM approved fire service meter, unless the fire service meter cannot accommodate the maximum required fire flow of the designed fire sprinkler system (Figure 33A). Unmetered residential fire services shall be subject to annual fire protection charges.
- 508.9.6 Combination fire & domestic services are required to be metered with a UL listed and/or FM approved fire service meter unless the fire service meter cannot accommodate the maximum required fire flow of the designed fire sprinkler system. Unmetered residential fire services shall be subject to annual fire protection charges. A combination fire and domestic service shall split before the domestic meter (Figure 33).
- 508.9.7 Irrigation systems are not allowed to tap a residential fire sprinkler system.

508.10 COMMERCIAL FIRE SERVICES (Inside Building)

- 508.10.1 No fire service shall be allowed on a water service line smaller than 1" in diameter. Des Moines Water Works retains the discretion to approve any connection for commercial fire service based on the water pressure available at the location. Des Moines Water Works may refuse to permit a connection for commercial fire service if it determines that the available water pressure is insufficient. If available pressure is close to the threshold deemed advisable for commercial fire service, Des Moines Water Works may permit the installation of the fire service if the applicant executes a release and waiver of claims against Des Moines Water Works.
- 508.10.2 A combination fire and domestic service shall split before the domestic meter (Figures 20 & 20A).
- 508.10.3 A backflow device is required on all commercial fire services whether potable pipe or black iron pipe is used.
- 508.10.4 Each fire service connected to the Des Moines Water Works' owned and/or operated distribution system shall be charged at the rate established by the Board. For looped systems, an annual charge shall be collected for each connection to the Des Moines Water Works' owned and operated distribution system. (See Section 511.5)
- 508.10.5 Web fire sprinkler systems are not allowed for commercial properties.
- 508.10.6 Irrigation systems are not allowed to tap a commercial fire sprinkler system.

509 WATER METERS

509.1 GENERAL (Revised January 2021)

All connections to DMWW's water mains must be metered except:

- 509.1.1 Water authorized by the Des Moines Water Works for the use of other governmental subdivisions for the purpose of firefighting or street and sewer flushing.
- 509.1.2 Water used in flushing or maintaining new and existing mains under the supervision of the Des Moines Water Works.
- 509.1.3 Water for special purposes or demonstrations when approved by the CEO and General Manager, or designated representative.
- 509.1.4 If a straight connection is used in place of a meter for testing the plumbing, the straight connection must be removed before the Plumbing Contractor leaves the premises. If it is necessary to leave the straight connection in for any reason, it is the Plumbing Contractor's responsibility to call the Supervisor of Field Customer Service at Des Moines Water Works and request permission to do so. Failure to do so may result in a penalty levied against the customer.
- 509.1.5 Once a building is framed and sheeted the contractor is required to call Des Moines Water Works to have a construction meter set. This meter will be in place prior to any water being used. Once this meter is in place it may be used to settle ditches and foundations as well as being used for general purpose needs. Failure to do so may result in a penalty levied against the customer.

509.2 RESIDENTIAL

- 509.2.1 Each single-family dwelling must have its own meter.
- 509.2.2 Residential fire sprinkler lines must be metered using a UL listed, FM approved water meter accepted for use on fire services and domestic water lines.

509.3 MULTI-UNIT METERING (TOWNHOMES, CONDOMINIUMS, APARTMENTS, AND SHOPPING CENTERS)

There are four options for metering multi-unit properties, such as townhomes, condominiums, apartments, and shopping centers as follows:

- 509.3.1 Option 1. Install meters on each individual water service to each individual unit. When the individual water service option is utilized, no master meter will be installed. Each water service must comply with these Rules and Regulations for water service installation and Des Moines Water Works must be given legal access to the stop box and meter.
- 509.3.2 Option 2. Where only one stop box exists for multiple units, a meter manifold serving multiple units may be installed in a common room when all of the following conditions exist (Figures 12A & 12B):
 - 509.3.2.1 Meters must be installed in a restricted, permanently heated common room at ground level or in the basement with an outside wall and outside keypad access. Des Moines Water Works must be given and will retain on file the code to gain access. Keys and key cards will not be allowed.
 - 509.3.2.2 Each service must be permanently marked with its corresponding unit.
 - 509.3.2.3 If the property is a rental property when a tenant or customer finalizes their account, the unit will go back in the landlord, association, or property manager's name.
 - 509.3.2.4 If the property is a rental property the landlord or property manager must have on file with Des Moines Water Works a permanent indemnity and waiver agreement for water restoration covering all units. This agreement will allow Water Works to restore water at the tenant's request without verifying the tenant is home, and would further specify the owner assumes all liability for damages in conjunction with a potential burst pipe, open faucets, etc.

- 509.3.2.5 Individually metered accounts in multi-unit buildings will follow regular Des Moines Water Works collections policies, including the potential for service termination at the meter, or a lien on the property as allowed by Iowa law or both.
- 509.3.2.6 All meter settings in a multi-unit building are required to have a swinging check valve installed after the outlet valve. This will prevent the water meters from running backwards. Thermal expansion must also be addressed and installed if needed.
- 509.3.3 Option 3. Master meter the private water main, with the property owner responsible for all water charges on the master meter.
- 509.3.4 Option 4. Master meter the private water main and contracting with Des Moines Water Works to provide individualized unit billing and collecting of the rates and charges associated with that water main. Terms and conditions of such service shall be subject to negotiation, execution, and delivery of a mutually acceptable agreement. This arrangement requires that submeters are installed after the master meter. The Des Moines Water Works totals the water usage from those individual meters and subtracts it from the master meter. If a difference exists, the resulting balance will be billed to the owner of the private main. In addition, any unpaid balances on the submeters remaining at fifty (50) days after their rendering, including but not limited to bills for surcharges, shall be transferred to the master or owner's account and shall be paid by the owner in accordance with DMWW's normal collection terms. Any collection efforts with respect to individual units thereafter shall be made solely by the service main owner.

509.4 MANUFACTURED HOME COMPLEXES (revised January 2023)

There are two options to metering manufactured home complexes as follows.

509.4.1 Option 1. Install meters on each individual water service to each individual unit. Individual- meters shall be installed in individual pits (Figure 16A or 16C). When the individual water service option is utilized, no master meter will be installed. Each water service must comply with these Rules and Regulations for water service installation and Des Moines Water Works must be given legal access to the stop box and meter.

509.4.2 Option 2. Master meter the private water main serving the complex.

509.5 METERING OF DUPLEXES/FLATS

509.5.1 Metering of duplexes/flats with two separate water service lines shall be done with two separate water meters and the property owner may pay both bills; (Figure 5) or a tenant may have an individual account and pay his/her respective bill. If only one water service is installed, the property owner will be responsible for the water bill. (Figure 6)

509.6 TYPES OF METERS

The type and make of meter used will be specified by the Des Moines Water Works. With the exception of irrigation only meters, when a compound, turbine, fire, or special metering device is required for proper metering, special piping will be required to facilitate annual meter testing. (Figures 17 & 18)

509.7 SIZE OF METERS

509.7.1 Meter sizing shall be based on flow requirements only and not on pressure loss through the meter. The prospective user or his/her agent shall supply the following information before a meter can be sized.

- a. Maximum rate of flow
- b. Average rate of flow
- c. Minimum rate of flow

Meters, 5/8" through 1 1/2" will be sized by the Des Moines Water Works based on the recommended applications listed below.

Meter Size	Recommended Applications
5/8"	Demand flow rates 1/8 to 20 gpm Maximum continuous demand 10 gpm
3/4"	Demand flow rates 1/4 to 30 gpm Maximum continuous demand 15 gpm
1"	Demand flow rates 3/8 to 50 gpm Maximum continuous demand 25 gpm
1 1/2"	Demand flow rate 3/4 to 100 gpm Maximum continuous demand 80 gpm

- 509.7.2 Fire service meters and meters 2" or larger must be sized by the Des Moines Water Works based on information provided by the owner.

509.8 OWNERSHIP

All water meters to be used for billing purposes must be provided by the Des Moines Water Works. The Des Moines Water Works reserves the right to read, inspect, or test the meter at any reasonable time or with such frequency as deemed necessary. Failure by the customer to allow reasonable access to the meter may result in termination of water service. For sewer deduct/irrigation meters see section 509.15.

509.9 INSTALLATION

- 509.9.1 Water meters will be installed by the Des Moines Water Works without charge, except as otherwise provided in these rules or as otherwise provided under specific water or other service agreements. On all meter settings, a properly bonded ground consisting of a copper cable or wire not less than 1/8" diameter shall be installed across the meter setting to avoid electrical shock when the meter is removed. (Figure 13)
- 509.9.2 Meters will be installed on a properly drained concrete or dirt floor allowing water to escape or drain at the time of a meter change or from leakage without causing damage to finished areas.

- 509.9.3 All water meters will be sealed using an approved cable and locking device. Any meter found to have the sealing device altered or removed will be subject to penalty as outlined in the schedule of charges Section 511.12. "Charges for Unauthorized Use of Water/Meter Tampering".

509.10 METER VALVES (revised January 2020)

Water meters shall be equipped with a shut-off at each end. Water meters larger than 3" shall have gate valves attached at each end. Spacing required between the inlet and outlet shut-offs for meter installation is as follows: (Figures 1 & 2)

<u>Size of Meter</u>	<u>Distance face to face of stops</u>
5/8"	11 3/4"
3/4"	13 3/4"
1"	15 3/4"
1 1/2" or 2" screw type	30"
1 1/2" flanged type	13 1/4"
2" flanged type	17 1/4"

- 509.10.1 When 1/4-turn ball valves or quick closing valves are used, they shall be operated in such a manner that pressure surges will not be transmitted to the Des Moines Water Works' distribution system.
- 509.10.2 Not more than 1 shut-off will be allowed between where the service enters the building and the meter. (Figures 1 & 2)

509.11 METER LOCATION (revised January 2022)

- 509.11.1 All water meters installed within buildings shall be in a horizontal position, at a height where they may be easily maintained and as near as possible to the point where the water service enters the building.
- 509.11.2 Meters shall not be exposed to damage by freezing. After a meter has been removed due to freezing, the customer is responsible for making corrections to prevent freezing before a replacement meter will be installed.

509.11.3 Water meters shall be accessible at all times. No appliances or other fixtures can be built over or in front of the meter setting. If obstructions exist which interfere with meter reading or maintenance of the meter, water service may be terminated until the obstructions are removed.

509.11.4 Installation of a 5/8" through 1" meter shall be as follows:

A 3/4" Pex tubing conduit with pull string shall be installed from the meter to a location deemed appropriate for meter reading equipment, as determined by DMWW. It is the owner/contractor responsibility to ensure a wire can be run to the outside using the 3/4" Pex.

The inlet valve for the meter setting shall not be more than 18" from the point where the service enters the building. (Figures 1-2 & 7-10)

509.11.5 Installation of 1 1/2" to 2" meters shall be as follows:

The inlet valve for the meter setting shall not be more than 36" from the point where the service enters the building.

509.11.6 Meter pits for 5/8" to 2" meters may be required if unusual circumstances exist. If required, the meter pit must meet the following requirements and be installed and maintained at the owner's expense.

Before an existing meter pit is re-used or a new one installed, the Des Moines Water Works shall inspect the proposed installation and determine if the meter pit is necessary to service the customer. Existing meter pits to be reused must meet current meter pit requirements and must be safe to enter.

509.11.6.1 A meter pit is required:

- a. Where a location satisfactory to the Des Moines Water Works is not available inside of the building
- b. When the length of the water service on private property exceeds 250 feet. This does not apply to private water mains (see Section 505.9) or

- c. When the water service is installed within an easement and crosses property lines.
- d. In rural areas, where the roadway is constructed with a rural cross section (ditches on either side of the road with no curb), subject to the following provisions. A meter pit will not be required in rural areas where the roadway is constructed with an urban cross section. In these areas the meter must be set inside the building (provided the setback limit of 250' is not exceeded, in which case a meter pit will be required). (moved from previous Section 514).

509.11.6.2 Location of pit:

- a. Inside City Limits in Des Moines Metro Area:

Meter pits shall be located on private property as near as practical to the property line.

- b. Location of pit Outside City Limits in Des Moines Metro Area :

The meter pit shall be located 10' from the water main when the water main is in easement and the property to be served is on the same side of the road as the water main. The meter pit shall be located 10' into private property when the water main is in the ROW or the property to be served is on the opposite side of the road as the water main. (See Figure 37). (moved from previous section 514).

509.11.6.3 Pit Requirements: (revised January 2020)

- a. Inside City Limits in Des Moines Metro Area:
 - a. 5/8" through 1" meters can utilize a standard meter pit see figure 16 or a Mueller/Hunt Thermal-Coil meter pit see figure 16 C.

1 1/2" and 2" meters will require a standard meter pit see figure 16.

Under no circumstance will a Mueller/Hunt Thermal Coil meter pit be installed within 5 feet of a driveway, in a sidewalk or any portion of a roadway.

- b. Outside City Limits in Des Moines Metro Area (moved from previous section 514):

Meter pits shall be Mueller / Hunt Thermo-Coil Meter Box, tandem set design for a water meter in position one and a pressure-reducing valve in position two. Provide 66" deep pit 15" diameter for 5/8" meters or 18" diameter for 3/4" or 1" meters. Provide meter pit with lock-wing angle ball valve inlet, Watts 5M3-Z6 or approved equal 3/4" pressure reducing valve, dual check valve meter outlet, 4" insulation pad, flat non-locking metal lid, and a second flat non-locking metal lid as the base.

See detail of Mueller/Hunt Thermal-Coil Meter Pit at Figure 16A.

509.11.6.4 Pit abandonment:

When a meter is removed from a meter pit and the pit is not to be re-used, it is the responsibility of the property owner to see that the rim and lid are removed, the valves are removed from the service line and the pit filled in to grade with an appropriate substance. Before the pit is filled in, the property owner must notify the Des Moines Water Works so that it may verify that the valves have been removed from the service line.

509.11.6 For meters set inside of buildings, meters 3" and larger shall be set level and in a horizontal position on a solid floor or solid base not more than 24" high. There must be at least 6' clearance above and not less than 12" behind the meter. Meters may be suspended or supported by the piping. There shall be an adequate floor drain or pit within 5' of the meter setting for disposal of water. An outside test header will be installed in a suitable location so that the meter can be tested annually, with the exception of irrigation only meters. (See Bypass and Test Header Specifications, Figure 21)

509.11.8 No devices or connections of any kind, such as regulators or check valves, shall be installed between the meter outlet and the test tee.

509.12 METER PITS FOR 3" METERS AND LARGER (Revised January ~~2022~~2023)

Where unusual circumstances exist, or the length of the water service on private property exceeds 250 feet, an outside meter may be required. If required, the meter must be installed in a pit constructed at the owner's expense to meet the following requirements. See figures 17-18.

509.12.1 The pit shall be of reinforced concrete, pre-cast concrete or concrete block construction. See Figures 17 – 18.

509.12.2 The pit shall be not less than six, or more than eight, feet in depth.

509.12.3 The pit shall have concrete roof and floor slabs.

509.12.4 The pit shall have a 48" X 48" square hatch with compression spring operators. If meter pit is in the Right of Way, a traffic rated lid is required instead of a hatch.

- 509.12.5 The pit roof slab shall be removable for meter installation or a secondary access large enough to allow the meter to be removed shall be provided directly over the meter setting.
- 509.12.6 There shall be a minimum distance of 10' between the meter pit and any hydrant or standpipe.
- 509.12.7 A 3/4" Pex tubing conduit with pull string shall be installed from the meter to a location deemed appropriate for meter reading equipment, as determined by DMWW. It is the owner/contractor responsibility to ensure a wire can be run to the outside using the 3/4" Pex.

509.13 METER BY-PASS

- 509.13.1 By-pass lines for emergency service will not be permitted around meters 2" in diameter or less except in cases where the customer also provides a meter in the by-pass line or when a turbine or compound meter is used.
- 509.13.2 By-pass lines around meters 3" and larger must be locked and sealed to prevent accidental usage.
- 509.13.3 By-pass lines must be designed, valved, and installed in accordance with these Rules and Regulations. (Figures 17-18 & 21). No by-pass will be required on a 3" or larger meter if it is an irrigation only meter.

509.14 MAINTENANCE

The Des Moines Water Works will provide the following maintenance on the meter:

509.14.1 Residential:

- 509.14.1.1 Repair or replace the meter with a new or rebuilt meter of the same size if the meter becomes inoperative through no fault of the customer. If there is evidence of physical damage externally or to the interior of the meter from hot water, freezing, or other casualties, through carelessness or neglect by the customer, the customer will be billed for the cost of repairs.

509.14.1.2 The Des Moines Water Works may test or exchange the meter periodically to ascertain its accuracy.

509.14.1.3 The Des Moines Water Works will test any meter upon application by the customer. If the meter testing results fall within American Water Works Association (AWWA) standards, the customer will be billed a fee equal to one (1) hour of labor at the labor rate as established by the Board and provided in Section 511 of these Rules and Regulations.

509.14.2 Industrial and Commercial:

509.14.2.1 Positive displacement meters 2" and smaller will be maintained in the same manner as residential meters.

509.14.2.2 Compound and Turbine meters 3" and larger will be repaired at no cost to the property owner providing there is no evidence of physical damage as described above.

509.14.2.3 Water meters shall be equipped with shut-off valves at each end. Water meters larger than 2" shall have shut-off valves attached at each end and the outlet end of the meter shall be provided with a 4" tee fitting for testing purposes. The branch of the tee shall face upwards and be provided with a 4" valve threaded cap and plug. (Figures 17, 18 & 21)

509.15 SEWER DEDUCT/WATER ONLY METERS (revised January 2023)

- 509.15.1 Sewer deduct meters are meters that measure a portion of the water which has already been metered by another meter for deduct billing purposes. The installation of these meters will be performed as permitted by the appropriate local ordinance for the purpose of measuring water not returning to the sewer system. Meters need not be located at or near the service entrance. Property owners are responsible to provide and install sewer deduct meters, but meters must be approved (manufacturer, make, and model) by DMWW in order to ensure they are readily compatible with DMWW's reading and billing systems. All maintenance, repairs, and testing of sewer deduct meters will be by the Des Moines Water Works, at the owner's expense. Sewer deduct meters apply to DMWW's service areas of City of Des Moines, City of Windsor Heights, City of Cumming, City of Runnells, and unincorporated Polk County. Sewer deduct meters that are connected to the same service line as the domestic meter, shall be billed to the same account as the domestic meter.
- 509.15.2 Water only meters are meters that have not had the water previously registered by another meter. The amount of water measured by the water only meter is added to the bill but is not charged sewer rates. Such meters are installed on a tee off the inlet service line right after the inlet valve. Water only meters must be approved (manufacturer, make, and model) by DMWW in order to ensure they are readily compatible with DMWW's reading and billing systems. Water only meters that are connected to the same service line as the domestic meter, shall be billed to the same account as the domestic meter. Water-only meters are permitted only in the City of Pleasant Hill.
- 509.15.3 In cases where there is not a master meter, for multi-unit development, there must be a sperate tap and service line for irrigation that meet specifications in DMWW's Rules and Regulations.

509.16 SUB-METERS (revised January 2019)

Sub-meters are meters installed by the customer to measure water usage downstream of Des Moines Water Works' meter. Sub-meters are not read or billed by the Des Moines Water Works unless under contracted services. Sub-meters may be repaired by Des Moines Water Works at the owner's expense, provided they are delivered to Des Moines Water Works. All meter settings are required to have a swinging check valve installed after the outlet valve. This will prevent the water meters from running backwards. Thermal expansion must also be addressed and installed if needed.

509.17 CHANGES IN LOAD

In cases where changes in water consumption result in a meter being substantially undersized or oversized, Des Moines Water Works may need to install a larger or smaller meter. Any alterations required in the meter setting will be at the owner's expense.

509.18 HYDRANT METERS

509.18.1 ELIGIBILITY AND REQUIREMENTS

The Des Moines Water Works may issue hydrant meters to qualified contractors or civic organizations when alternate methods of water supply are not available. The Water Board reserves the right to decline hydrant meter service to any applicant not deemed qualified to meet the requirements of this rule. Meters shall be issued for a specified time period not to exceed eight (8) months. At the time of application, the applicant shall state the location and purpose for which the meter will be used, the name and telephone number of a contact person, and why water is not available from another source.

As used in this rule, "hydrant meter" shall mean and include a hydrant meter together with valves, fittings, and operational tools.

All hydrant meters will be handled on a first-come/first-serve basis. City, County, and State projects will be given higher priority.

Des Moines Water Works reserves the right to determine the proper size of the hydrant meter based upon the use and location of the hydrant meter.

Des Moines Water Works reserves the right to determine the use of a hydrant meter to serve a concrete batch plant. If a concrete batch plant is going to be in service for three (3) months or longer it will not qualify for a hydrant meter. It will be required to install an individual service line in accordance with section 503.1 of the Des Moines Water Works Rules and Regulations.

All hydrant meters issued from Des Moines Water Works shall be used only in the areas served directly by Des Moines Water Works. Des Moines Water Works' hydrant meters may NOT be used in other suburbs or areas that provide their own hydrant meters.

Des Moines Water Works reserves the right to inspect and test hydrant meters at its discretion. The applicant must make the hydrant meter available within 48 hours of any inspection request.

It is the responsibility of the applicant to use the hydrant meter in a safe and proper manner and to keep the hydrant meter secured at all times, even when it is not in use. Unsecured hydrant meters may be repossessed by Des Moines Water Works.

509.18.2 DEPOSIT AND AGREEMENT

A deposit, as established by the Board, must be paid at the time a hydrant application is made with Des Moines Water Works at 2201 George Flagg Parkway. Des Moines Water Works will hold this deposit as security for the full performance of the applicant's obligations until the applicant returns the hydrant meter to Des Moines Water Works. Upon return of the hydrant meter, and payment of the final bill, the deposit will be mailed to the applicant upon request, less any outstanding charges due to Des Moines Water Works.

A hydrant meter shall at all times remain the property of the Des Moines Water Works and shall be issued to the applicant under the terms of a bailment and temporary water service agreement, which must be signed by the applicant before the hydrant meter is issued.

509.18.3 OBTAINING HYDRANT METER

To reserve a hydrant meter, arrangements should be made by calling Des Moines Water Works at 515-283-8700. It will be the responsibility of the applicant to pick up the meter according to the instructions provided by Des Moines Water Works. Meters can be obtained from 8:00 a.m. to 3:00 p.m., Monday through Friday, except holidays.

509.18.4 DAMAGE TO DES MOINES WATER WORKS PROPERTY

It will be the obligation of the applicant to protect the hydrant meter, hydrant, and other Des Moines Water Works' property from damage due to weather or use of the facility. The repair of any damaged property will be completed by Des Moines Water Works and charged to the applicant.

509.18.5 METER READING (revised January 2019)

The applicant shall report a monthly hydrant meter read to DMWW according to the instructions provided.

509.18.6 HYDRANT METER TESTING

After 8 months of use or at the request of the Des Moines Water Works, whichever is first, the meter shall be returned to Des Moines Water Works according to the instructions provided. The applicant will be notified when the testing has been completed and whether the hydrant meter can be picked up.

509.18.7 CHARGES AND FEES (revised January 2019)

The following charges and fees will apply as outlined in Section 511, Schedule of Charges:

- a. A monthly hydrant meter availability fee will be charged based on the size of the hydrant meter.
- b. If the applicant fails to call in a monthly meter read, a daily fee will be assessed for each a read is not called in.
- c. If the applicant fails to return the assigned hydrant meter on or before the agreed date, a daily late fee will be assessed.

Rates for water consumption will be applied according to the Inside City of Des Moines water rate structure as defined by the Des Moines Water Works Board of Trustees.

509-18.8 FILLING OF SWIMMING POOLS

Hydrant meters will not be provided to individuals or businesses for the purpose of filling swimming pools. If a customer wants their pool filled, Des Moines Water Works will supply the materials and labor to fill a swimming pool at the current hourly rate (labor, vehicle, and water) as specified in the Schedule of Charges section of the Des Moines Water Works Rules and Regulations. A 24-hour advance notice will be required to allow for proper staffing for this task.

509.18.9 DISQUALIFICATION

Failure to comply with Section 509.18 of these Rules and Regulations shall be grounds for the applicant to be immediately disqualified from continued use of a hydrant meter. Future use of a hydrant meter may also be forfeited. Upon disqualification, the meter will be surrendered to the Des Moines Water Works and deposit retained as liquidated damages.

509.19 REMOTE METER INSTALLATION/REPAIR

- 509.19.1 If a customer does not permit the installation or repair of our meter reading equipment upon request, then the customer shall be notified that water service will be discontinued in accordance with the procedures then in effect.

510 SERVICE MAIN EXTENSION

Eliminated and incorporated in Section 505.9 effective November 2013.

511 SCHEDULE OF CHARGES

511.1 CHARGES

The Board of Trustees, from time to time, may establish, abolish, or change charges for services and/or equipment provided to its customers. These charges shall be reviewed periodically and based as much as possible on costs of service.

511.2 ADJUSTMENTS TO CHARGES

The Board of Trustees grants the CEO and General Manager, or his designee, authority to adjust charges on a case-by-case basis where in his or her judgment the case warrants an adjustment.

511.3 ESCALATION OF CHARGES

Charges and fees listed in the Schedule of Charges, will be escalated annually based on the increase in the Engineering News Record Construction Cost Index.

511.4 METERED WATER AND WATER AVAILABILITY (Revised January 2021)

All water shall be supplied to customers by meter measurement, except as herein otherwise provided, at the rates established by the Board. Rates shall be structured and established to recover the cost of service to a customer or class of customers, and may be multi-factor, including one or more variable components, and one or more fixed components. Prevailing rate schedules may be obtained from Des Moines Water Works or by visiting www.dmww.com, clicking on "Customer Service, Rates & Service Areas" and then selecting the service area in question.

Water availability is charged based on the size of the meter approved for the property and is charged regardless if water service is active or inactive.

511.5 FIRE PROTECTION CHARGES

Table 511.5 Fire Protection Charges (effective January 1, ~~2022~~2023)

DES MOINES WATER WORKS FIRE PROTECTION CHARGES

Annual charges for all unmetered fire protection connections shall be as follows:

Size of <u>Connection</u>	<u>Inside City</u>	<u>Outside City</u>
1"	\$5.00	\$7.00 <u>8.00</u>
2"	\$18.00 <u>19.00</u>	\$25.00 <u>30.00</u>
3"	\$40.00 <u>45.00</u>	\$60.00 <u>65.00</u>
4"	\$70.00 <u>75.00</u>	\$110.00
6"	\$160.00 <u>170.00</u>	\$240.00 <u>260.00</u>
8"	\$290.00 <u>300.00</u>	\$430.00 <u>450.00</u>
10"	\$450.00 <u>480.00</u>	\$680.00 <u>720.00</u>
12"	\$640.00 <u>680.00</u>	\$970.00 <u>1,025.00</u>

511.5.1 Annual charges for all unmetered fire protection connections shall be at rates established by the Board.

511.5.2 Fire protection service charges will be determined as follows:

511.5.2.1 One tenant + one building + one connection to Des Moines Water Works owned and/or operated distribution system = one charge according to size.

511.5.2.2 One tenant + one building + more than one connection to Des Moines Water Works owned and/or operated distribution system = each connection charged by size.

511.5.2.3 Shopping centers, industrial, and apartment complexes shall be charged for each fire service connection to the Des Moines Water Works owned and/or operated distribution system by size.

- 511.5.3 An additional charge shall be made for filling gravity or pressure storage tanks based on the total storage capacity of such tanks at the prevailing rate charged for water at the location.
- 511.5.4 The annual stand-by charge for fire service to a private property shall be paid by the owner of the property which is served. If such property is owned by a public agency or it is a part of a public thoroughfare, the responsible agency or government desiring to establish and maintain the service must agree in writing to make the payments and show evidence of their ability to make proper levy to obtain funds for such purpose.

511.6 SYSTEM DEVELOPMENT FEES

Table 511.6 System Development Fee Structure (effective January 1, ~~2022~~2023)

System development fees are required for all new water services in the City of Des Moines, Pleasant Hill, Cumming, Alleman, and other areas as defined below. System development fees are charged to aid in covering the costs associated with distribution, pumping, and storage facilities that have been or will be constructed to support new and additional demands on the water system that arise with new customers and connections. System Development Fees will be based on the tap size and are as follows:

Des Moines

	1 inch	2 inch	3inch*	4 inch	6 inch	8 inch	12 inch
Metered							
Connections:	\$520 <u>550</u>	\$1,300 <u>1,375</u>	\$4,125 <u>4,350</u>	\$11,900 <u>12,500</u>	\$31,100 <u>32,900</u>	\$64,900 <u>68,600</u>	\$103,700 <u>109,600</u>
Fire Service							
Connections:	\$170 <u>180</u>	\$440 <u>460</u>	n/a	\$4,000 <u>4,225</u>	\$10,300 <u>10,900</u>	\$21,700 <u>22,900</u>	\$34,600 <u>36,500</u>

Pleasant Hill

	1 inch	2 inch	3 inch*	4 inch	6 inch	8 inch	12 inch
Metered							
Connections:	\$1,550 <u>1,625</u>	\$1,550 <u>1,625</u>	\$4,125 <u>4,350</u>	\$11,900 <u>12,500</u>	\$31,100 <u>32,800</u>	\$64,900 <u>68,600</u>	\$103,700 <u>109,600</u>
Fire Service							
Connections:	\$520 <u>550</u>	\$520 <u>550</u>	n/a	\$4,000 <u>4,225</u>	\$10,300 <u>10,900</u>	\$21,700 <u>22,900</u>	\$34,600 <u>36,500</u>

Cumming

	1 inch	2 inch	3 inch*	4 inch	6 inch	8 inch	12 inch
Metered							
Connections:	\$1,025	\$1,900	\$1,900	\$9,000	\$27,700	\$60,500	n/a
Fire Service							
Connections:	\$1,200	\$1,500	n/a	\$3,900	\$10,100	\$21,100	n/a

Alleman

	1 inch	2 inch	3 inch*	4 inch	6 inch	8 inch	12 inch
Metered							
Connections:	\$2,575 <u>2,725</u>	\$4,200 <u>4,425</u>	\$4,200 <u>4,425</u>	\$11,900 <u>12,500</u>	\$31,100 <u>32,800</u>	\$64,900 <u>68,600</u>	n/a
Fire Service							
Connections:	\$860 <u>900</u>	\$1,400 <u>1,475</u>	n/a	\$4,000 <u>4,225</u>	\$10,300 <u>10,900</u>	\$21,700 <u>22,900</u>	n/a

All Other Service Areas (Outside City DM, Berwick, PCRWD #1, Runnells, Unincorporated Polk County, Unincorporated Warren County, etc.)

	1 inch	2 inch	3 inch*	4 inch	6 inch	8 inch	12 inch
Metered							
Connections:	\$1,925 <u>2,050</u>	\$4,375 <u>4,625</u>	\$4,375 <u>4,625</u>	\$11,900 <u>12,500</u>	\$31,100 <u>32,800</u>	\$64,900 <u>68,600</u>	n/a
Fire Service							
Connections:	\$650 <u>680</u>	\$1,475 <u>1,575</u>	n/a	\$4,000 <u>4,225</u>	\$10,300 <u>10,900</u>	\$21,700 <u>22,900</u>	n/a

511.6.1 DMWW does not make 3" taps but 3" domestic connections can be teed off of the fire service for the building or property.

- 511.6.2 System Development Fees for projects with both fire and domestic services, or any combination of multiple services, will be the total of all of the System Development Fees added together.
- 511.6.3 System Development Fees for projects with metered combination fire and domestic services (master metered) shall be considered domestic services with fees being charged accordingly.
- 511.6.4 System Development Fees for subdivisions will be based upon the number and size of service stubs to be installed within the subdivision. All service stubs within subdivision will be considered domestic stubs unless sufficient evidence is provided to indicate otherwise.
- 511.6.5 If DMWW has record that a tap previously existed at a property, System Development Fees will not be required for replacement taps of equal size. Existing taps that are less than one inch in diameter and are being replaced with new one-inch taps will not require System Development Fees. Any replacement tap that is to be a larger size than the original tap, other than upsizing to a one-inch diameter tap, will require a fee that will be the difference between the fee for the new tap size and the fee for the original tap size.

511.7 UNIFORM TAP CHARGES

Table 511.7 Uniform Tap Charges (effective January 1, ~~2022~~2023)

Tap Size	1" *	2" **	3"***	4"	6"	8"	12"
2" Main	\$380 <u>400</u>						
4" Main	\$380 <u>400</u>	\$1,425 <u>1,500</u>		\$2,225 <u>2,350</u>			
6" Main	\$380 <u>400</u>	\$1,425 <u>1,500</u>		\$2,500 <u>2,650</u>	\$2,875 <u>3,050</u>		
8" Main	\$380 <u>400</u>	\$1,425 <u>1,500</u>		\$2,550 <u>2,700</u>	\$2,875 <u>3,050</u>	\$3,725 <u>3,950</u>	
10" Main	\$380 <u>400</u>	\$1,525 <u>1,600</u>		\$2,675 <u>2,825</u>	\$3,000 <u>3,175</u>	\$3,725 <u>3,950</u>	
12" Main	\$380 <u>400</u>	\$1,575 <u>1,675</u>		\$2,675 <u>2,825</u>	\$3,000 <u>3,175</u>	\$3,825 <u>4,050</u>	\$6,000 <u>6,350</u>
14" Main	\$380 <u>400</u>	\$1,875 <u>1,975</u>		\$2,675 <u>2,825</u>	\$3,050 <u>3,225</u>	\$3,825 <u>4,050</u>	\$6,000 <u>6,350</u>
16" Main	\$380 <u>400</u>	\$2,050 <u>2,175</u>		\$3,050 <u>3,225</u>	\$3,050 <u>3,225</u>	\$3,750 <u>3,975</u>	\$6,300 <u>6,650</u>
20" CI/DI Main	N/A	\$2,100 <u>2,225</u>		\$3,100 <u>3,275</u>	\$3,475 <u>3,675</u>	\$4,325 <u>4,575</u>	\$6,750 <u>7,125</u>
20" Concrete Main	N/A	N/A		\$8,100 <u>8,550</u>	\$8,450 <u>8,925</u>	\$9,500 <u>10,000</u>	\$12,000 <u>12,700</u>
24" CI/DI Main	N/A	\$2,200 <u>2,325</u>		\$3,150 <u>3,325</u>	\$3,575 <u>3,775</u>	\$4,625 <u>4,900</u>	\$8,300 <u>8,750</u>
24" Concrete Main	N/A	N/A		\$8,225 <u>8,700</u>	\$8,750 <u>9,250</u>	\$9,550 <u>10,100</u>	\$12,200 <u>12,900</u>

511.7.1 All taps larger than 12" and all mains larger than 24" to be tapped for any size will be done on a labor-and-materials basis. Price estimates may be quoted on request.

511.7.2 *The fee for 1" taps on ASTM D2241 pipe in the former SE Polk system which require a tapping saddle will be ~~\$440~~ 470.

511.7.3 **The fee for 2" taps made on 16" PVC, which will require a tapping saddle, will be ~~\$2,550~~ 3,475.

511.7.4 ***DMWW does not make 3" taps but 3" domestic connections can be teed off of the fire service for the building or property. See 511.6 above for System Development Fees related to 3" domestic connections.

511.7.5 City of Des Moines projects funded with expenditures from the City of Des Moines general fund are not required by these rules to pay system development fees. Any projects funded by expenditures from a City of Des Moines enterprise fund must still pay system development fees.

511.8 UNIFORM TAP RETIREMENT CHARGES

Table 511.8 Uniform Tap Retirement Charges (effective January 1, ~~2022~~
2023)

Tap retirement charges are based on the size of the main that is tapped, rather than the size of the tap.

Main Size	Fee
2"	\$1,125 <u>1,200</u>
3"	\$1,275 <u>1,350</u>
4"	\$1,425 <u>1,500</u>
6"	\$1,525 <u>1,600</u>
8"	\$1,625 <u>1,725</u>
10"	\$1,975 <u>2,100</u>
12"	\$2,550 <u>2,700</u>
14"	\$2,875 <u>3,050</u>

Charges for retirements on concrete mains or mains larger than 14" will be the current prices for materials and labor.

511.8.1 Tap retirement charges for other than corporations are based on the size of the main that is tapped, rather than the size of the tap. Charges for retirements on concrete mains and mains larger than 14" will be the current prices of materials and labor.

511.9 METERS (revised January 1, 2020)

511.9.1 Damaged or lost meters will be replaced by Des Moines Water Works and charged to the owner at current market value, plus necessary labor for repair or replacement.

511.9.2 Charges for damaged meters larger than those priced on the Schedule of Charges will be the actual costs of materials and labor for repair or replacement.

511.9.3 Des Moines Water Works will test any meter upon application by the customer. If the meter testing results fall within American Water Works Association (AWWA) standards, the customer will be billed a fee equal to one (1) hour of labor at the labor rate stated in 511.20.

Table 511.9.1 Coupling Fees (effective January 1, ~~2022~~ 2023)

Size	Fee
5/8"	\$15.00 each
5/8" x 3/4"	\$19.00 each
3/4"	\$18.00 each
1"	\$26.00 each
1 1/2"	\$110 103 .00 each
2"	\$160 150 .00 each

Table 511.9.2 Meter Measuring Chamber Fees (effective January 1, ~~2021~~ 2023)

Size	Fee
5/8"	\$39 36 .00
3/4"	\$45 42 .00
1"	\$88 83 .00
1 1/2"	\$200 187 .00
2"	\$267 250 .00

Table 511.9.3 Meter Fees (effective January 1, ~~2022~~ 2023)

Size	Fee
5/8"	\$133 125 .00
3/4"	\$171 160 .00
1"	\$235 220 .00
1 1/2"	\$470 437 .00
2"	\$634 593 .00

511.10 DAMAGED OR LOST METER READING SYSTEM EQUIPMENT

Table 511.10 Damaged or Lost Meter Reading System Equipment
(effective January 2023)

3-pair cable	\$2.00/foot
Underground cable	\$1.00/foot
Meter head 5/8", 3/4"	\$106 99.00
Meter head 1", 1 1/2", 2"	\$106 99.00
Single port MTU	\$178 155.00
Dual port MTU	\$215.00
Upcharge for dual port MTU for secondary meter	\$42.00
Pressure regulator valve	\$135.00

511.11 EQUIPMENT (effective January 1, ~~2020~~ 2023)

Table 511.11 Equipment Fees

Standard Vehicle	\$20.00/hour
Valve Operation Truck	\$30.00/hour
Distribution Repair/Maintenance Equipment	
• Crew Van	\$40.00/hour
• Tapping Truck	\$40.00/hour
• Dump Truck	\$65.00/hour
Heavy Construction Equipment	
• Rubber Tire Backhoe	\$45.00 65.00/hour
• Loader	\$60.00/hour
• Track Backhoe	\$90.00 100/hour

511.12 CHARGES FOR UNAUTHORIZED USE OF WATER/METERING TAMPERING (effective January 1, 2020)

First unauthorized use \$250.00, plus estimated water usage at the applicable rate structure

Second and Subsequent unauthorized use

\$500.00, plus estimated water usage at the applicable rate structure

Third unauthorized use Will terminate water service up to and including cutting water service at main at owner's expense.

511.13 CHARGES FOR UNAUTHORIZED TAP

511.13.1 If an unauthorized tap is made, DMWW will excavate and inspect the tap. The property owner will be charged for time and materials spent completing this task including backfill and restoration. Labor and equipment will be charged at the current rates documented in these Rules and Regulations. If the tap passes our inspection, the property owner will be charged any applicable system development fees and taps fees. The property owner will also be subject to charges for the unauthorized use of water/metering tampering (See 502.4 Unauthorized Use of Unmetered Water).

511.13.2 If the unauthorized tap does not meet current Des Moines Water Works Rules and Regulations and/or material standards, DMWW will cut the water service at main at the property owner's expense. The property owner will be charged for time and materials spent completing this task including backfill and restoration. Labor and equipment will be charged at the current rates documented in these Rules and Regulations. The property owner will also be subject to charges for the unauthorized use of water/metering tampering (See 502.4 Unauthorized Use of Unmetered Water).

511.14 CHARGES FOR UNAUTHORIZED USE OF FIRE HYDRANT

First unauthorized use	\$570 plus service inspection cost and cost of repairs, if applicable
Second unauthorized use	\$1,125 plus service inspection cost and cost of repairs, if applicable
Third unauthorized use	\$1,700 plus service inspection cost and cost of repairs, if applicable

511.15 DEPOSIT FOR HYDRANT METER (effective January 1, ~~2020~~2023)

3/4"	\$750 670.00
1"	\$950 860.00
2"	\$1800 1,700.00
3"	\$2250 1,900.00

511.16 CHARGES FOR THE USE OF HYDRANT METERS
(effective January 1, 2019)

Monthly Availability Charge:

¾" Garden Meter	\$30.00
1" Hydrant Meter	\$55.00
2" Hydrant Meter	\$115.00
3" Hydrant Meter	\$225.00

Late Fee: \$20.00 per day if Hydrant Meter is not returned by agreed upon date.

Failure to Report a Monthly Hydrant Meter Read: \$20.00 per day until read is submitted according to instructions provided at the time of rental.

511.17 TERMINATION FEE FOR COLLECTIONS (effective January 1, 2020)

511.17.1 A termination fee of \$65.00 will be applied to all accounts when a water service is terminated or attempted to be terminated due to non-payment of charges. This fee includes the restoration of water service once the termination amount is paid.

511.17.2 An additional after-hours service restoration fee will be applied when restoration of water service is requested according to the hours shown below.

Table 511.17 After Hours Service Restoration Fees

Service Area	Definition	After Hour Fee
Des Moines, Windsor Heights, Pleasant Hill, Unincorporated Polk County	During normal field hours: Monday – Friday 7:30 am – 6:00 pm Saturday 7:30 am – 3:30 pm After hours: Monday – Friday 6:00 pm – 9:30 pm	None (included in the termination fee) \$35 after hour fee
Area formerly known as SE Polk Rural Water District, Runnells, Cumming, Alleman	During normal field hours: Monday – Friday 7:30 am– 3:30 pm After hours: Monday – Friday 3:30 – 9:30 pm Saturday 7:30 am – 3:30 pm	None (included in the termination fee) \$75 after hour fee
All Areas - Other hours	Turn-on will be deferred to the next business day (unless deemed an emergency)	Not applicable

511.18 MISSED APPOINTMENT FEES

511.18.1 When a service appointment has been made with Des Moines Water Works by a customer, and the customer or owner fails to meet this appointment without reasonable advance notice, Des Moines Water Works will assess a \$40 missed appointment fee, plus any after-hour fee, if applicable. This charge applies to any scheduled appointment, including water service restoration appointments. No more than one missed appointment fee will be charged per day.

511.18.2 When an appointment has been made for tap cut inspections, taps, tap removals or other work by a contractor requiring inspection assistance or approval by Des Moines Water Works, and the contractor fails to meet this appointment without reasonable advance notice, Des Moines Water Works will assess a trip charge fee to the contractor. The assessed trip charge fee will be calculated based on travel time to and from the job site and include time incurred loading and unloading materials and equipment required for the job, if applicable. Labor and equipment will be charged at the current rates documented in these Rules and Regulations.

511.19 STOP BOX VERIFICATION

511.19.1 If a property owner or their designated agent desire for Des Moines Water Works to verify the property's stop box is in good working condition prior to a potential property transfer, Des Moines Water Works will assess a fee of \$40 to the current property owner at the time of the request. As provided in Rule 502.5.3 herein, Des Moines Water Works will not be responsible for stop boxes found in the process of verification to be in inoperable condition or for stop boxes that may become inoperable when DMWW staff operates them during verification.

511.20 LABOR (effective January 1, ~~2022~~ 2023)

Standard Hourly Labor Rate	\$ 70.00 75.00/hour
Overtime Hourly Labor Rate	\$ 105.00 110.00/hour

511.20.1 Other labor charges for work completed by Des Moines Water Works may be calculated based upon specific wage rates with the appropriate multiplier in lieu of the standard hourly rate.

511.21 COMPUTERIZED LEAK PINPOINTING

\$200.00 hour

511.22 RETURNED CHECK \$30.00

511.23 DEPOSIT FOR TENANTS (effective January 1, 2021) \$100.00

511.24 FIRE HYDRANT FLOW TEST (effective January 1, 2020) \$180.00

511.25 CREDIT CARD CONVENIENCE (via website or telephone only,
charged by third-party processor) ~~\$2.75~~ 2.95

511.26 PUBLIC RECORDS REQUEST FEES

511.26.1 Fees for public records requests as outlined in Section 516 shall be actual costs incurred for search, retrieval, compilation and examination, excluding overhead. Costs for copying shall be \$1.00 for first page and \$0.25 per page thereafter, or actual costs incurred if an outside printing vendor is utilized.

511.27 LAB FEES (effective January 1, 2022)

Table 511.27.1 Microbiological Fees

Sample	Analysis	Cost
Private wells	Coliform	\$35.00
Distributions	Coliform	\$15.00
HPC	HPC	\$15.00
New Mains	Coliform	\$15.00
Pool	Coliform	\$15.00
Spa	Coliform/Pseudomona	\$25.00
Quantitray	Coliform	\$25.00
Raw Water	Algal ID	\$30.00

Table 511.27.2 Chemical Fees

Sample	Analysis	Cost
Anions	Bromide	\$18.00
	Chloride	\$18.00
	Fluoride	\$18.00
	Nitrate	\$18.00
	Nitrite	\$18.00
	Phosphate (ortho)	\$18.00
	Sulfate	\$18.00
	All	\$60.00
Solids	TSS	\$18.00
	TDS Grav	\$18.00
Metals	Aluminum	\$18.00
	Arsenic	\$18.00
	Cadmium	\$18.00
	Calcium	\$18.00
	Chromium	\$18.00
	Copper	\$18.00
	Iron	\$18.00
	Lead	\$18.00
	Magnesium	\$18.00
	Nickel	\$18.00
	Potassium	\$18.00
	Selenium	\$18.00
	Silver	\$18.00
	Sodium	\$18.00
	Zinc	\$18.00
Softening	Calcium Hardness	\$18.00
	Magnesium Hardness	\$18.00
	Chlorine Residual	\$12.00
	Conductivity	\$12.00
	Alkalinity	\$15.00
	pH	\$12.00
	Total Hardness	\$25.00
	Turbidity	\$12.00
DBP's	TTHM	\$75.00
	HAA	\$100.00
Algal Toxins ELISA	Microcystin	\$75.00
	Cylindrospermopsin	\$75.00
	Saxitoxin	\$75.00
	Anatoxin	\$75.00

511.28 INSPECTION FEES FOR NEW WATER MAIN EXTENSIONS

Fees shall be charged for construction inspection and related as built drawings for installation of all new water main extensions.

Base Inspection Fee	\$200.00
Inspection Fee Unit Cost – first 1,000 ft.	\$1.50/ft.
Inspection Fee Unit Cost – all additional footage	\$1.00/ft.

Inspection fees of water main extensions shall be paid prior to issuance or approval of IDNR Construction Permit.

Illustrative Example: Installation of 1500 feet of eight-inch water main for Hawkeye Development on Cyclone Avenue.

Base Inspection	\$200.00
First 1,000 feet (1000 x 1.50)	\$1,500.00
Additional 500 feet (500 x 1.00)	<u>\$500.00</u>
Total	\$2,200.00

511.29 PLAN REVIEW FEE FOR NEW WATER MAIN EXTENSIONS

Fees shall be charged for plan review of all new main extensions.

Base Plan Review Fee	\$200.00
Unit Cost Plan Review Fee	\$.10/ft.
Construction Permit Fee (DMWW issued IDNR Permits)	\$.10/ft.

Plan review fees for water main extensions are to be paid at the time materials are submitted for review.

Illustrative Example: Installation of 1500 feet of eight-inch water main for Hawkeye Development on Cyclone Avenue.

Base Plan Review	\$200.00
Unit Cost Review (1,500 x \$.10)	\$150.00
DMWW issued IDNR Permit (1,500 x \$.10)	<u>\$150.00</u>
Total	\$500.00

511.30 TWO-INCH AND LARGER WATER SERVICE PLAN REVIEW FEE

Des Moines Water Works Engineering Department shall review all two-inch and larger water service connections. Payment for plan review will be required at the time the formal request is issued to Des Moines Water Works.

Plan Review Fee – One Tap	\$150.00
Plan Review Fee – Two or More Taps	\$250.00

Plan review fees for large water services are to be paid at the time materials are submitted for review.

511.31 ADMINISTRATION FEE FOR CONTRACTED STOP BOX REPAIR \$90.00

511.31.1 Fee charged to customers when stop box repairs are completed by DMWW's contracted plumber.

511.32 SUBMETERING FEES

Fees for submetering contracts as outlined in Section 509.3.4 are charged to the property owner and are as follows:

- \$500 one-time administrative fee
- \$50 per submetered account for billing system set up
- Meter, MTU, and labor charges as outlined in these Rules & Regulations

In addition, a monthly meter reading fee of \$2.75 will be charged to the customer of each submeter on their monthly bill.

511.33 S.E. POLK ANNEXATION ASSET/SERVICE TERRITORY TRANSFER (moved from previous Section 514) (Revised January 1, 2021)

Des Moines Water Works purchased SE Polk Rural Water District in April 2004. The purchase of this district was completed to provide a more economical way to stimulate the growth of cities into the SE Polk District. As annexation occurs in these areas, it is intended that these customers become customers of the city that annexes such area of the district.

The city annexing the area into its service territory shall pay Des Moines Water Works for the service territory acquired based on the number of existing customers connected to the water system.

For annexing cities that receive their water supply from DMWW, the buy-out shall be \$3,700 per existing residential customer.

For annexing cities who do not receive their water supply from DMWW, the buy-out shall be \$5,700 per existing residential customer.

The buy-out of existing commercial and industrial customers will be determined on a case-by-case basis (effective January 1, 2019).

511.34 BACKFLOW FEES

511.34.1 An administration fee of \$15.00 per backflow prevention assembly shall be applied to the customers' account annually.

511.34.2 A \$100.00 late fee will be applied to the customer's account if the report of annual test of a containment backflow prevention assembly as required by Rule 506.4.7 is not received by the Backflow Program Manager within fifteen (15) days of the Annual Backflow Test Date.

An additional \$200.00 late fee will be applied to the customer's account if such report is not received within thirty (30) days of the Annual Backflow Test Date.

511.35 PRIVATE FIRE HYDRANT MAINTENANCE FEE (Effective January 1, 2021) \$120.00/hydrant

511.36 ADMINISTRATION FEE FOR BILLED SERVICES (Effective January 1, 2021) \$25.00

511.36.1 Fee charged to customers when DMWW completes a billed service.

511.37 A customer may appeal the adoption of a new or increased rate or charge applicable to such customer by filing notice of appeal to the Board of Trustees. Such notice of appeal shall be submitted in writing to the CEO and General Manager of DMWW within 30 days of the date of publication of such new or increased rate. No appeal shall stay application of the rate or charge to customer, or stay collection of any water service charges or other charges, pending appeal.

Such issue will then be considered by the Board of Trustees as provided in Section 206.8 of Board Policy Manual at the next scheduled meeting of the Board of Trustees.

If the appeal is successful the customer will be entitled to such prospective or retrospective adjustment as the Board of Trustees shall allow in its sole discretion. Appeals concerning the application of a rate or charge to a specific case or specific customer shall be submitted and governed by section 500.2 of these Rules & Regulations. The CEO and General Manager shall have the authority to determine if any appeal is concerning the adoption of rates and charges or the application of rates and charges, and shall apply the process under these rules that is thus applicable under this provision.

511.38 CHARGES FOR UNAUTHORIZED OPERATION OF A VALVE (effective January 1, 2022)

First unauthorized use	\$570 plus service inspection cost and cost of repairs, if applicable
Second unauthorized use	\$1,125 plus service inspection cost and cost of repairs, if applicable
Third unauthorized use	\$1,700 plus service inspection cost and cost of repairs, if applicable

List of Figures (revised January 2023)

Figure 1	512-1	Detail of 1" Copper Service Installation
Figure 1A	512-1A	Detail of 1" Service Copper to Box/PEX to House
Figure 1B	512-1B	Detail of 1" PEX Service Installation
Figure 1C	512-1C	Detail of 1" Service PEX Main to Stop Box
Figure 1D	512-1D	Detail of 1" Service Installation –Pleasant Hill Only
Figure 1E	512-1E	Detail of 1" Service Installation for Deduct Meter
Figure 2	512-2	Detail of 1 ½" or 2" Service Installation
Figure 3	512-3	Tap Cut at Main Procedures ½" to 1" Direct Taps
Figure 4	512-4	Private Main Abandonment Details
Figure 5	512-5	Installation of Service Into a Duplex (Option #1)
Figure 6	512-6	Installation of Service Into a Duplex (Option #2)
Figure 7	512-7	Building with Standard Basement
Figure 8	512-8	Building with Basement in Rear
Figure 9	512-9	1 st Floor Setting with Concrete Floor
Figure 10	512-10	1 st Floor Setting with Crawl Space Below
Figure 11A	512-11A	Water Service to Shopping Center (Case 1) Multiple Domestic Meters w/Fire Service
Figure 11B	512-11B	Water Service to Shopping Center (Case 2) Multiple Domestic Meters & Individual Fire Services
Figure 12A	512-12A	Multiple Unit Metering (Townhomes, Condominiums, Apartments, and Shopping Centers)
Figure 12B	512-12B	Typical Meter Manifold – Multiple Unit Metering (Townhomes, Condominiums, Apartments, & Shopping Centers)
Figure 13	512-13	Meter Setting with Grounding Strap
Figure 13A	512-13A	ARB Requirements for Meter Setting in Unfinished Area
Figure 13B	512-13B	ARB Requirements for Meter Setting in Finished Area
Figure 13C	512-13C	ARB Requirements for Meter Setting in Meter Pit
Figure 13D	512-13D	Irrigation System Decommission and Backflow (Inside) Preventer Removal
Figure 13E	512-13E	Irrigation System Decommission and Backflow (Outside) Preventer Removal
Figure 14	512-14	Adjusting Stop Box to New Grade (Arch Pattern Box)
Figure 15	512-15	Adjusting Stop Box to New Grade (Minn. Style Box)
Figure 16	512-16	Detail of the Standard Meter Pit – Disc Meters
Figure 16A	512-16A	Outside City of Des Moines Water Service & Meter Pit Detail
Figure 16B	512-16B	Des Moines & Outside City 1" – 2" Water Service w/Meter Pit Tracer Wire Detail
Figure 16C	512-16C	Inside City of Des Moines Water Service & Meter Pit Detail
Figure 17	512-17	Turbine or Compound Meter Pit Detail w/Tracer Wire
Figure 18	512-18	Fire Service Meter Pit Detail w/Tracer Wire

List of Figures (Continued)

Figure 19	512-19	Standard 2" Meter Setting for Meter Box
Figure 20	512-20	<u>Typical Combination Fire & Domestic Service w/Tracer Wire</u>
Figure 20A	512-20A	<u>Typical Combination Fire & Domestic Service w/Tri-View Tracer Wire Station</u>
Figure 21	512-21	Standard Plan for Meter & By-Pass Installation
Figure 22	512-22	Excavation Detail for Tapping Sleeve
Figure 23	512-23	Concrete Thrust Block Standard
Figure 23A	512-23A	Concrete Gravity Block Standard
Figure 24	512-24	<u>Standard Hydrant Detail w/Tracer Wire</u>
Figure 25	512-25	Polyethylene Wrap Detail
Figure 26	512-26	<u>Tracer Wire Detail</u>
Figure 27	512-27	Typical Trench Section
Figure 28	512-28	Example of Load Profile
Figure 29	512-29	Example of Fire Department Review
Figure 30A	512-30A	Example of Water Service Agreement (2 of 2)
Figure 30B	512-30B	Example of Water Service Agreement – Spanish Version (2 of 2)
Figure 31	512-31	Example of Application to Stub & Reuse Water Service Line
Figure 32	512-32	Blank Sheet
Figure 33	512-33	Residential Combination Fire & Domestic Service Installation
Figure 33A	512-33A	Residential Dedicated Fire Service Installation
Figure 33B	512-33B	Residential Web Fire & Domestic Service Installation
Figure 34	512-34	Detail of Service Off of Private Main on Private Property
Figure 35	512-35	<u>Tracer Wire Termination Options</u>
Figure 36	512-36	LUST (Leaking Underground Storage Tank) Sites and the DMWW Distribution System
Figure 37	512-37	Southeast Polk Stop Box & Meter Pit Location Options

GLOSSARY OF TERMS (Revised January 2021)

Apartment. A multi-family living unit with one owner of all of the units and the property that the units set upon.

Applicant. Any person association, corporation, entity or governmental agency requesting water service.

(The) Board. The Board of Water Works Trustees, of the City of Des Moines, is the governing body as constituted under the laws of the State of Iowa.

(The) City. The City of Des Moines, Iowa, a municipal corporation acting through the City Council or its duly authorized representatives.

Combination General Service Line. Domestic service line and fire protection line served from a single tap.

Condominium. A multi-family living unit with individual owners for each unit. The property that each unit sets upon is normally owned by one common owner (a homeowner's association).

Connection Fee. A calculated charge assessed to a property owner who will utilize increased flow capacity of the distribution system for which the Des Moines Water Works has made a capital cost investment.

Cross Connection. Any connection or structural arrangement between a public or a consumer's potable water system and any non-potable source or system through which backflow can occur.

Des Moines Water Works or DMWW. The Des Moines Water Works or DMWW is the utility, which is governed by, and officially titled as the Board of Water Works Trustees of the City of Des Moines, Iowa.

Distribution Main. The water pipe, located in a street or approved easement area, from which domestic water supply is delivered to the service pipe leading to specific premises; usually not larger than 12" in diameter.

CEO and General Manager. The duly appointed chief executive officer of the Des Moines Water Works.

Duplex/Flat. A two family living unit with one owner of the two living units. The owner of the units also owns the property that the two units set upon (side-by-side or stacked).

Implied Public Access. Areas on private property that are accessible to the general public, and will remain accessible in the future. Examples of such areas are driveways and parking lots for shopping malls and apartment complexes.

Manufactured Home Complexes. Two or more manufactured homes adjacent to each other, located on a property owned by one common owner. (Ewing trace)

Master Plumber. A plumber who has satisfactorily completed the Master Plumber Certificate of competency examination administered by the City of Des Moines.

Master Service. A water supply line to a group of buildings or planned units, usually metered in one location to indicate total consumption for the development.

Owner. The agency or individual in possession of a property being serviced by the Des Moines Water Works.

Plumbing Contractor. An individual who holds a certificate of competency as a Master Plumber and posts the appropriate surety and cash bonds to the City of Des Moines Building Inspection Department and supplies a plumber's license bond to the Des Moines Water Works.

Private Fire Protection System. Consists of a fire service connection to the Des Moines Water Works main and any or all of the following: standpipe(s), automatic sprinkler system(s), fire pump(s), or fire hydrant(s).

Private Water Main. Water pipe, which supplies water to a specific premise or premises, owned and maintained by people or organizations other than the Des Moines Water Works.

Process Service. A water supply line used for providing a consistent, high-volume demand for water over a period of time for industrial or cooling purposes.

Service Line. All piping and appurtenances installed from the water main to the outlet connection of the first shut-off device within a building.

Service Main. A privately owned and maintained water service to a single property, which provides fire and domestic service connections with the individual valves located in implied public access way.

Street, Road, or Alley. The whole area within the right-of-way limits.

Tap. The physical connection to a water main through which the water supply is carried.

Townhome. A multi-family living unit with individual owners for each unit. The owner of the living unit normally owns the property that each unit sets upon.

Transmission Main. Large diameter water pipe, usually 16" or larger in diameter, which delivers water from treatment plants or pumping stations to the Distribution Mains. Transmission Mains cannot be tapped directly for water service without special permission from Des Moines Water Works.

Water Service. The provision of municipal water supply to a property, or all piping and appurtenances installed from the water main to the outlet connection of the first shut-off device within a building, as context requires

(The) Des Moines Water Works. The Des Moines Water Works is the utility, which is governed by, and officially titled as the Board of Water Works Trustees of the City of Des Moines, Iowa.

- 514 SUPPLEMENTAL REQUIREMENTS FOR THE FORMER SOUTHEAST
POLK RURAL DISTRICT (eliminated and incorporated into existing sections,
January 2019)

515 WATER SHORTAGE PLAN

515.1 INTRODUCTION (revised January 1, 2023)

This plan will apply to all direct retail customers of Des Moines Water Works. Municipal water systems and rural water systems that purchase water for resale are not subject to this plan, however, it is anticipated that all such municipal and rural systems will implement parallel water shortage plans which will result in reductions in demand similar to those described in this plan.

The intent of Des Moines Water Works' Water Shortage Plan is to manage system demand so customers do not experience pressure, quality, or availability issues during periods of extreme water demand or during other times when water availability may be limited due to other events, such as raw water shortage, water quality events, or mechanical failures.

The goal at each stage in the plan is to reduce system demands to 85% or less of the "Current Capacity" to produce safe drinking water, as defined in this plan.

Nominal capacity of the Des Moines Water Works system is 100 MGD. Winter demand in a typical year averages approximately 40 MGD as shown in Figure A. Seasonal outdoor water use including moderate irrigation lawn watering, increases demand to an average of approximately 60 MGD during the summer months as shown in Figure A. The majority of demand above 60 MGD is attributed to be irrigation lawn watering. Heavy irrigation-lawn watering causes spikes in demand which can reach more than 95 MGD.

Based on historic consumption patterns, irrigation, primarily turf irrigation, lawn watering accounts for as much as 40 MGD of demand during heavy irrigation-lawn watering periods. Thus, a 25% reduction in irrigation-lawn watering should result in a 10 MGD reduction in total demand to approximately 85 MGD, a reduction of more than 10% compared to peak demand otherwise expected. This is the premise of Stage I. Stage I may be skipped if a water shortage occurs during a time of year when irrigation-lawn watering demand is not significant.

Based on historic consumption patterns, total outdoor water use accounts for as much as 50 MGD of demand during heavy ~~irrigation~~ -lawn watering events. Thus, a 50% reduction in outdoor water use should result in a 25 MGD reduction in total demand to 70 MGD, a reduction of more than 25% compared to peak demand otherwise expected. This is the premise of Stage II. Stage II may be skipped if a water shortage occurs during a time of year when ~~outdoor water use~~ lawn watering demand is not significant.

Based on the foregoing analysis, that ~~irrigation~~ -lawn watering accounts for as much as 40 MGD of the demand during heavy ~~irrigation~~ -lawn watering periods, and understanding that the vast majority of this is ~~turf~~ irrigation lawn watering, prohibiting ~~turf irrigation~~ lawn watering should result in a 40 MGD reduction in total demand to approximately 55 MGD, a reduction of more than 40% compared to peak demand otherwise expected. This is the premise of Stage III. Stage III may be skipped if a water shortage occurs during a time of year when ~~irrigation~~ -lawn watering demand is not significant.

Limiting consumption to a representative average of off peak months, plus or minus a small allowance, will result in a demand of approximately 40 MGD, a reduction of nearly 60% compared to peak consumption. This is the premise of Stage IV.

The stages of this plan are not necessarily consecutive. When a water shortage occurs the stage deemed most appropriate for the conditions will be implemented.

515.2 CURRENT CAPACITY TO PRODUCE SAFE DRINKING WATER AND EXPECTED PEAK DEMAND

515.2.1 CURRENT CAPACITY

The current capacity to produce safe drinking water on any day is referred to “Current Capacity” or C_{Total} . Current Capacity is defined as the amount of water Des Moines Water Works can produce and deliver on any day taking into consideration raw water availability and quality, seasonal treatment efficacy, and any mechanical or operational issues on that given day. The number will vary seasonally and may vary day to day depending on specific water quality and operational conditions. Current Capacity is computed as the sum of the daily capacities of the individual Des Moines Water Works treatment plants and may be expressed in the following formula:

$$C_{\text{Total}} = C_{\text{Fleur}} + C_{\text{McMullen}} + C_{\text{Saylorville}}$$

Current Capacity will be evaluated on a daily basis when there is potential for a water shortage. Des Moines Water Works Water Production staff will perform the daily evaluation and report the Current Capacity in Million Gallons per Day.

515.2.2 EXPECTED PEAK DEMAND

“Expected Peak Demand” is defined as the peak daily demand that is expected by the Des Moines Water Works without implementation of water shortage measures under this plan.

515.3 STAGE I: VOLUNTARY 25% REDUCTION IN ~~TURF IRRIGATION~~ LAWN WATERING (revised January 1, 2023)

515.3.1 TRIGGER

During a period of substantial ~~irrigation-~~ lawn watering demand, when Expected Peak Demand reaches 90% of Current Capacity or system demand is generating a high number of areas with low pressure, or there are other indications that without wise usage of water, a shortage could occur.

515.3.2 ANTICIPATED IMPACT

It is anticipated that Stage I will most likely be triggered during peak ~~irrigation-~~ lawn watering season. In a typical year ~~irrigation-~~ lawn watering can account for as much as 40 MGD of demand on a peak day. If this is the case, a 25% reduction in ~~irrigation-~~ lawn watering will result in a 10 MGD reduction in total demand. At peak demand 10 MGD would be more than a 10% reduction.

515.3.3 GOAL

A 10% reduction in system demands as compared to Expected Peak Demand.

- 515.3.4 ACTION ~~(Revised January 1, 2021)~~
- 515.3.4.1 Request a **metro wide** 25% reduction in lawn ~~irrigation watering~~.
- 515.3.4.2 Encourage residential and business customers to optimize their ~~irrigation- lawn watering~~ systems so water is not directed onto impervious surfaces and turf is not overwatered.
- 515.3.4.3 Continued reinforcement that Recommend residential and business customers ~~irrigate water~~ on alternate days and excluding Mondays (historically a peak demand day), by a system under which even numbered addresses water only on ~~even days of the month~~ Wednesday, Friday and Sunday, and odd-numbered addresses water only ~~on odd-numbered days of the month~~ Tuesday, Thursday, and Saturday.
- 515.3.4.4 Suspend Des Moines Water Works' hydrant flushing program except for water quality purposes.
- 515.3.4.5 Request that City officials minimize high water use activities such as street sweeping and watering golf course fairways.
- 515.3.4.6 Coordinate with wholesale customers to ensure they are relaying the same message.
- 515.3.5 ENFORCEMENT
- There will be no enforcement at this stage.

515.4 STAGE II: VOLUNTARY 50% REDUCTION IN ~~OUTDOOR WATER USE (INCLUDING TURF IRRIGATION)~~ LAWN WATERING (revised January 1, 2023)

515.4.1 TRIGGER

During a period of substantial ~~irrigation~~ lawn watering demand, after Stage I has been implemented and failed to achieve an adequate reduction in consumption, when Expected Peak Demand exceeds 90% of Current Capacity, or system demand continues to generate areas of low pressure, or there are other indications that without further reductions in demand, a shortage could occur.

515.4.2 ANTICIPATED IMPACT

It is anticipated that Stage II will most likely be triggered during the peak outdoor water use season. In a typical year ~~outdoor water~~ lawn watering use can account for as much as 50 MGD of demand on a peak day. If this is the case, a 50% reduction in outdoor water use will result in a 25 MGD reduction in total demand. At peak demand 25 MGD would be more than a 25% reduction.

515.4.3 GOAL

A 25% reduction in system demands as compared to Expected Peak Demand.

515.4.4 ACTION (~~Revised January 1, 2021~~)

515.4.4.1 Request customers further reduce water consumption by taking the following measures in addition to those implemented in Stage I:

515.4.4.1.1 Request a **metro wide** 50% reduction in outdoor water use.

515.4.4.1.2 Remind residential and business customers to optimize their ~~irrigation~~ lawn watering systems so water is not directed onto impervious surfaces and turf is not overwatered.

515.4.4.1.3 Reinforce the recommendation for customers to ~~irrigate-~~ lawn water on alternate days and excluding Mondays.

515.4.4.1.4 Encourage wise use of water during outdoor activities including washing cars, playing in the sprinkler, playing with water toys, and filling swimming pools.

515.4.4.1.5 Encourage wise use of water indoors including identifying and repairing leaking fixtures, washing only full loads in dishwashers and washing machines, shorter showers, etc.

515.4.4.2 Coordinate with wholesale customers to ensure they are relaying the same message.

515.4.4.3 Request that public agencies (City, County, or State) set an example by:

515.4.4.3.1 Closing recreational facilities with known water inefficiencies.

515.4.4.3.2 Suspend the operation of decorative fountains.

515.4.5 ENFORCEMENT

There will be no enforcement at this stage.

515.5 STAGE III: ~~TURF IRRIGATION~~ LAWN WATERING PROHIBITED
AND NO USE OF AUTOMATIC ~~IRRIGATION-~~ LAWN WATERING
SYSTEMS (revised January 2023)

515.5.1 TRIGGER

During a period of substantial ~~irrigation-~~ lawn watering demand, after Stage I and Stage II have been implemented and failed to achieve an adequate reduction in consumption, when Expected Peak Demand exceeds 90% of Current Capacity, or system demand continues to generate areas of low pressure, or there are other indications that without further reductions in demand, a shortage could occur.

515.5.2 ANTICIPATED IMPACT

It is anticipated that Stage III will most likely be triggered during peak ~~irrigation-~~ lawn watering season. In a typical year ~~irrigation lawn watering, primarily turf irrigation,~~ can account for as much as 40 MGD of demand on a peak day. If this is the case, prohibiting ~~irrigation-~~ lawn watering will result in a 40 MGD reduction in total demand. At peak demand 40 MGD would be almost a 40% reduction.

515.5.3 GOAL

A 40% reduction in system demands as compared to Expected Peak Demand.

515.5.4 ACTION

Require residential and business customers to further reduce water consumption by suspending **all** ~~turf irrigation lawn watering~~ and the use of **all** automatic ~~irrigation-~~ lawn watering systems. This reduction is in addition to all steps implemented in Stage I and Stage II.

515.5.5 ENFORCEMENT

Customers observed by DMWW irrigating in violation of this policy will be notified by a tag left at the property. If ~~irrigation-lawn watering~~ is not suspended within 48 hours, water service will be terminated and the published termination fee will apply. Water service will be restored only upon receipt, by the Des Moines Water Works, of an undertaking by the customer that the customer understands and will comply with the mandatory conservation measures. Any subsequent violation will result in further termination of service. In addition the use of water for ~~irrigation-lawn watering~~ in violation of this plan shall be deemed an unauthorized use of water and Section 511.12 “Charges for the Unauthorized Use of Water/Metering Tampering”, of these Rules and Regulations shall apply and must be paid before water service will be restored.

515.6 STAGE IV: WATER RATIONING

515.6.1 TRIGGER

During periods of substantial ~~irrigation-lawn watering~~ demand ~~or other potential shortage~~, after Stage I, Stage II, and Stage III have been implemented and failed to achieve an adequate reduction in consumption, when Expected Peak Demand exceeds 90% of Current Capacity, or system demand is generating a high number of areas with low pressure, ~~limited source water supply~~, or there are other indications that without wise usage of water, a shortage could occur.

Stage IV may also be invoked, without resort to Stages I through III, if Expected Peak Demand exceeds 90% of Current Capacity for any reason that cannot be addressed by the measures contemplated by Stages I through III.

515.6.2 ANTICIPATED IMPACT

It is anticipated that Stage IV will only be triggered in the event of a significant and severe water shortage, or other event, which severely reduces capacity relative to demand. In this case a reduction in demand to the lowest level which will meet public health and safety standards will be sought.

515.6.3 GOAL

A reduction in system demands as compared to Expected Peak Demand sufficient to allow the Des Moines Water Works to meet public health and safety standards

515.6.4 ACTION

Water rationing measures will be implemented and enforced by application of an Emergency Water Shortage Rate. In order to implement such rate the Des Moines Water Works shall set a target level for demand consistent with its Current Capacity and shall use such target to establish a “Rationing Factor” as defined in this Plan. All customers will be asked to reduce their consumption to a level at or below a “Stage IV Monthly Water Ration”, and consumption above such level will be charged at the Emergency Water Shortage Rate intended to strongly discourage consumption above such level.

515.6.5 ENFORCEMENT (Revised January 2022)

“Stage IV Monthly Water Ration” means for each customer the Typical Off-Peak Consumption of such customer multiplied by an announced Rationing Factor. “Typical Off-Peak Consumption” shall be computed as of the date that Stage IV is invoked as the mean monthly consumption of the customer for the immediately preceding months of March, April, and May. The Rationing Factor shall be a percentage, which may be above or below 100%, as announced by the Des Moines Water Works and designed to effectively reduce consumption to the level as required by the prevailing circumstances.

While Stage IV is in effect each customer will be billed for all water at published rates. Additionally, all water used beyond the Stage IV Monthly Water Ration for each customer will be billed at the “Emergency Water Shortage Rate”. The Emergency Water Shortage Rate shall be four times the rate otherwise applicable to such customer. In the event stepped rates apply, the Emergency Water Shortage Rate shall be four times the Step 1 rate. Customers may appeal the Typical Off-Peak Consumption level determined for the customer as the basis for the customer’s bill as inaccurate or inequitable under the circumstances applicable to the customer. Appeals must be submitted in writing and will be considered on a case-by-case basis as provided under these Rules and Regulations.

516 PUBLIC RECORDS

Commented [SL1]: Clarifications to current practices and updates to Iowa Code Chapter 22, per Iowa Senate File 2322, signed into law and in effect on July 1, 2022.

516.1 POLICY

It is the policy of the Board of Trustees that the Des Moines Water Works shall comply fully with the open records requirements of applicable law. Public records of or belonging to the Water Works are available for public examination and reproduction as of right, except those records that are exempt from disclosure by law.

516.2 DEFINITION OF PUBLIC RECORDS

The term “public record” is defined in Section 22.1(3) Code of Iowa.

516.3 EXEMPT RECORDS

Exempt Records are those records required or permitted by law to be kept confidential, including records defined as confidential or exempt in Section 22.7, Code of Iowa, Section 388.9, Code of Iowa, Section 388.9A, Code of Iowa, and Section 622.10, Code of Iowa. Records which include information, such as health information, required by federal law to be kept confidential shall be deemed Exempt Records. Security matters as set out in Rule 618.2 are Exempt Records. Attorney client communications and attorney work product are confidential Exempt Records.

516.4 EXEMPTION AND WAIVER OF EXEMPTION (revised January 2023)

Exempt Records are not ~~generally~~ available for examination or copying by the public. Water Works may, in its discretion, make Exempt Records available when such disclosure is not prohibited by law and disclosure is deemed in the best interests of Water Works.

516.5 COPYRIGHT

Except as permitted by law, materials subject to third party copyright, and which Water Works does not have the rights to copy, may be examined, but shall not be copied unless the requesting party secures and provides permission to copy to Water Works, provided by the holder of the copyright.

516.6 REQUESTS FOR EXAMINATION OF RECORDS (revised January 2023)

Any person may make a request to examine or copy a public record. A request may be made in writing, orally in person, by telephone, or by electronic means. Requests for public records should be directed to the Chair, the CEO and General Manager, or the Director of Customer Service. Any request received by any other staff member shall be referred to the Director of Customer Service, and the request shall be deemed made upon receipt of the Director of Customer Service. To assure a consistent application of fees, and to document responses provided, the Director of Customer Service is the person designated by the Water Works to respond to all requests. If public records that are requested are available online, the requesting party may be advised of such availability and requested to obtain access by such means. Authority to make decisions as to the proper response to a request is delegated to the Director of Customer Service. If the Director of Customer Service is uncertain if a records request seeks records that are exempt from disclosure, a written opinion of counsel to the Water Works may be obtained, and records may be withheld from examination and copying in accordance with such opinion. The Director of Customer Service, or counsel to the Water Works are also authorized to request informal advice or a formal opinion from the Iowa Public ~~Records~~ Information Board with respect to any issue arising from a public records request.

516.7 COSTS (revised January 2023)

The Water Works may charge a reasonable fee for the services of a Water Works employee(s) to supervise the examination and copying of the records, or to identify, review, and produce requested records. —All expenses of the examination and copying shall be paid by the person desiring to examine or copy a public record.

If the requested records take less than 30 minutes to identify, review, and produce, then there will be no charge for producing records. If, after reviewing the request, the Director of Customer Service determines that it will take more than 30 minutes to identify, review, and produce records, then the Director of Customer Service will communicate to the requester an estimate of the number of Water Works staff hours it will take to identify, review, and produce the requested records. The Director of Customer Service will communicate to the requester the hourly rate of each staff member and time required of each staff member to respond to the request. The hourly cost for Water Works staff time to fulfill a records request is limited to the staff's hourly rate, and does not include employment benefits, depreciation, maintenance, electric, or insurance costs associated with the administration of the Water Works' office. In addition to the cost of staff time to identify, review, and produce records, the Director of Customer Service will disclose any other actual costs Water Works will incur to identify, review, and produce the requested records.

~~The Water Works may charge a reasonable fee for the services of a Water Works employee to supervise the examination and copying of the records. The Water Works will communicate an estimate of the costs to the requester following the receipt of the request. Except when the request identifies a specific record to be examined, the estimate of costs may include the cost for employee time to locate or identify records which are responsive to the request.~~

The estimate of costs may include attorney fees if the request will require that the requested records be reviewed by an attorney to determine whether portions of the records ~~which~~ are confidential attorney-client privilege or attorney work product, ~~or~~ are otherwise ~~privileged records~~ protected confidential information.

516.8 PREPAYMENT OF COSTS

When the estimated costs to fulfill a request to examine or copy a public record will exceed \$50.00, fulfillment of the request may be contingent on the Water Works receiving prepayment in advance of the expenses to be incurred in fulfilling the request.

516.9 EXAMINATION OF RECORDS

Public records are available for public examination during office hours at the main office of the Des Moines Water Works at 2201 George Flagg Parkway, Des Moines, Iowa 50321, or at such other location in Des Moines, Iowa, as the Director of Customer Service shall specify. Examination includes, but is not limited to, the right of an examining party to make copies on site by means which do not require unreasonable accommodation by the Water Works. Examination of records shall be done under the supervision of a Water Works employee, at the cost of the requesting party.

516.10 TIMING (revised January 2023)

Most ~~Re~~ requests to examine and copy public records will be granted or denied within twenty days of the request, and ordinarily within ten business days of the request. However, depending on the size and nature of the request, Water Works may require additional time to respond to a request. If the request is to be fulfilled by providing copies of records, Water Works will make reasonable efforts to provide such copies ~~should be provided~~ within twenty days of the request, and ordinarily within ten business days of the request, unless additional time is necessary due to the size and nature of the request. Water Works will determine whether records should be withheld to protect confidentiality within a reasonable time, not to exceed twenty days of the request.

516.11 COPIES OF RECORDS

Paper copies of public records will be made available during office hours upon request. A Water Works employee shall perform any copying using Water Works copying facilities or copying services of an outside vendor will be engaged in the discretion of the Director of Customer Service. The cost of paper copies will be actual costs incurred. If an outside copy vendor is utilized such cost shall be the amount paid to the vendor, without markup for overhead. If the Des Moines Water Works makes the copies using its own facilities the cost shall be deemed to be \$1.00 for the first page and \$0.25 per page thereafter unless special circumstances indicate a different actual cost.

516.12 ELECTRONIC RECORDS AND COPIES (revised January 2023)

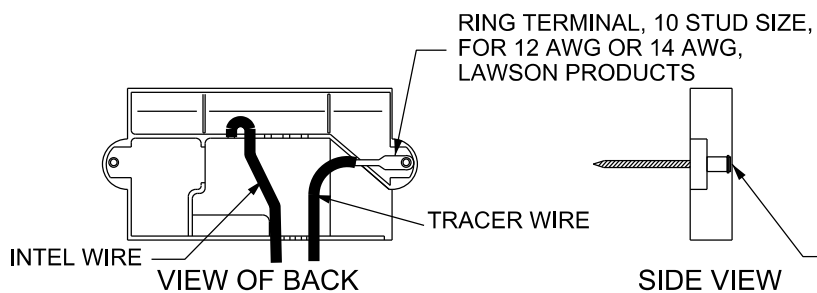
Public records maintained in electronic format may be provided in an electronic format useable with commonly available data processing or database management software. Copies of other public records may also be provided in electronic form. The amount charged for access to electronically maintained public records, and for copies provided in electronic form shall be the costs required for electronic search and retrieval of the information and direct publication or reproduction costs, including but not limited to editing, compilation, and media production costs incurred by the Water Works for transfer to the requestor. No person is permitted to access the data processing software Water Works uses to access or store public records. If a person requests a record that is combined with the data processing software then Water Works will separate the record from the data processing software prior to providing the record to the person requesting the record. Water Works will bear the cost of separating a record from the data processing software.

516.13 INCIDENTAL COPIES

Staff of the Water Works may provide copies of public records to any person, including a customer, without charge in their discretion when incidental to the conduct of business.

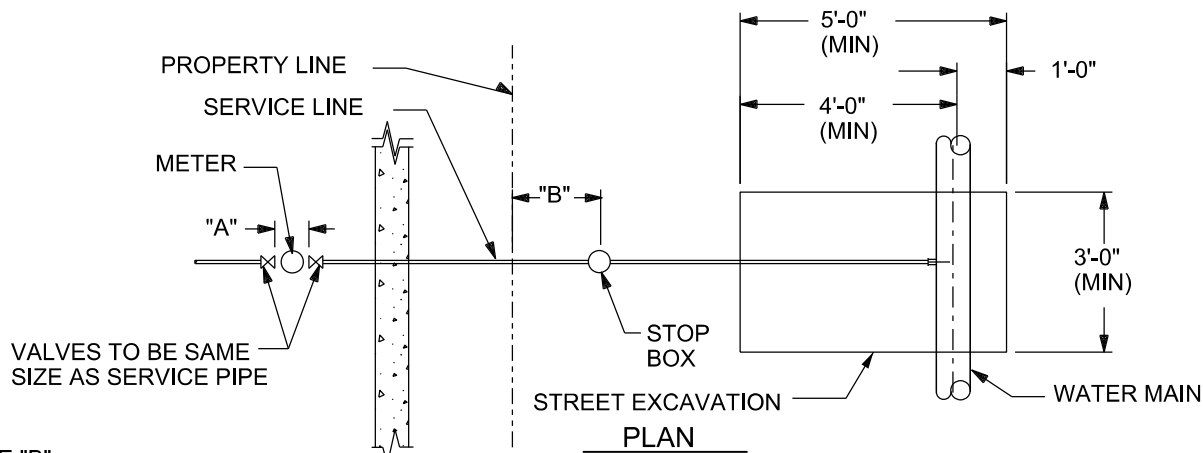
516.14 COURTESY COPIES

To the extent public records are not available online, copies of requested public records may be provided without charge to accredited representatives of news organizations and to bona fide interest groups, non-profit entities and government agencies having an interest in the matters set forth in the public records. The Director of Customer Service shall have the right to limit the number of courtesy copies provided without charge to any recipient if providing requested copies without charge would impose an undue financial burden on the Water Works.



MTU UNIT DETAIL

METER SPACING	
SIZE OF METER	"A" - FACE TO FACE OF VALVES
5/8"	11-3/4"
3/4"	13-3/4"
1"	15-3/4"



DISTANCE "B"
INSIDE CITY OF D.M. = 1'-0" TO 6'-0"
OUTSIDE CITY OF D.M. = 1'-0" TO 6'-0"

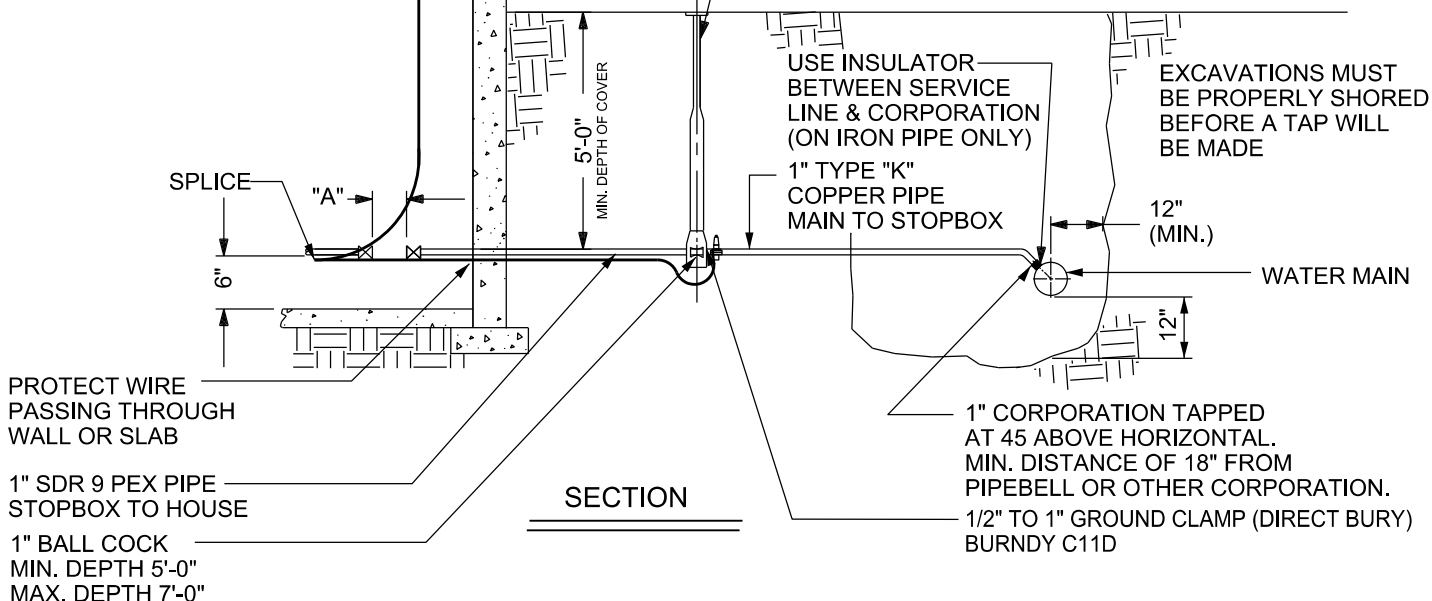
TRACER WIRE REQUIRED WITH PEX PIPE (SEE 505.5.2.5 FOR TRACER SYSTEM SPECIFICATIONS). FASTEN TRACER WIRE WITH ZIP TIES EVERY 5 FEET.

MTU--INSTALLED W/INTEL WIRING AND TRACER WIRE TERMINATION (SEE DETAIL ABOVE)

STOP BOX WITH 1" RISER, STAINLESS STEEL ROD, & STAINLESS STEEL PIN

USE INSULATOR BETWEEN SERVICE LINE & CORPORATION (ON IRON PIPE ONLY)

EXCAVATIONS MUST BE PROPERLY SHORED BEFORE A TAP WILL BE MADE



Des Moines Water Works
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Des Moines, Iowa

DETAIL OF 1" SERVICE
COPPER TO BOX/PEX TO HOUSE
(REPAIR OPTION ONLY)

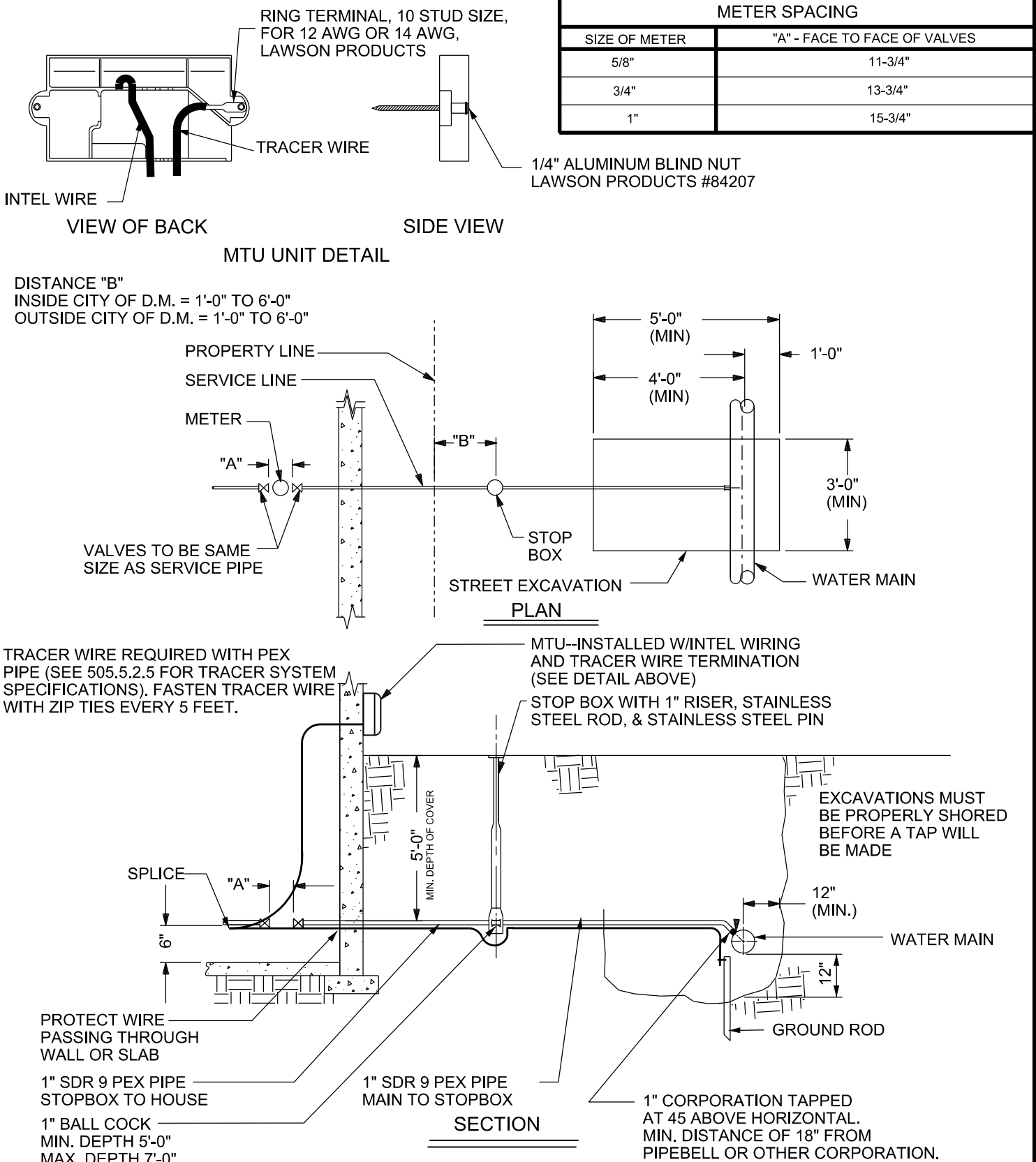
SCALE: NONE

DATE: 5-19-96

DRAWN BY: DLH

APPROVED BY: TPC

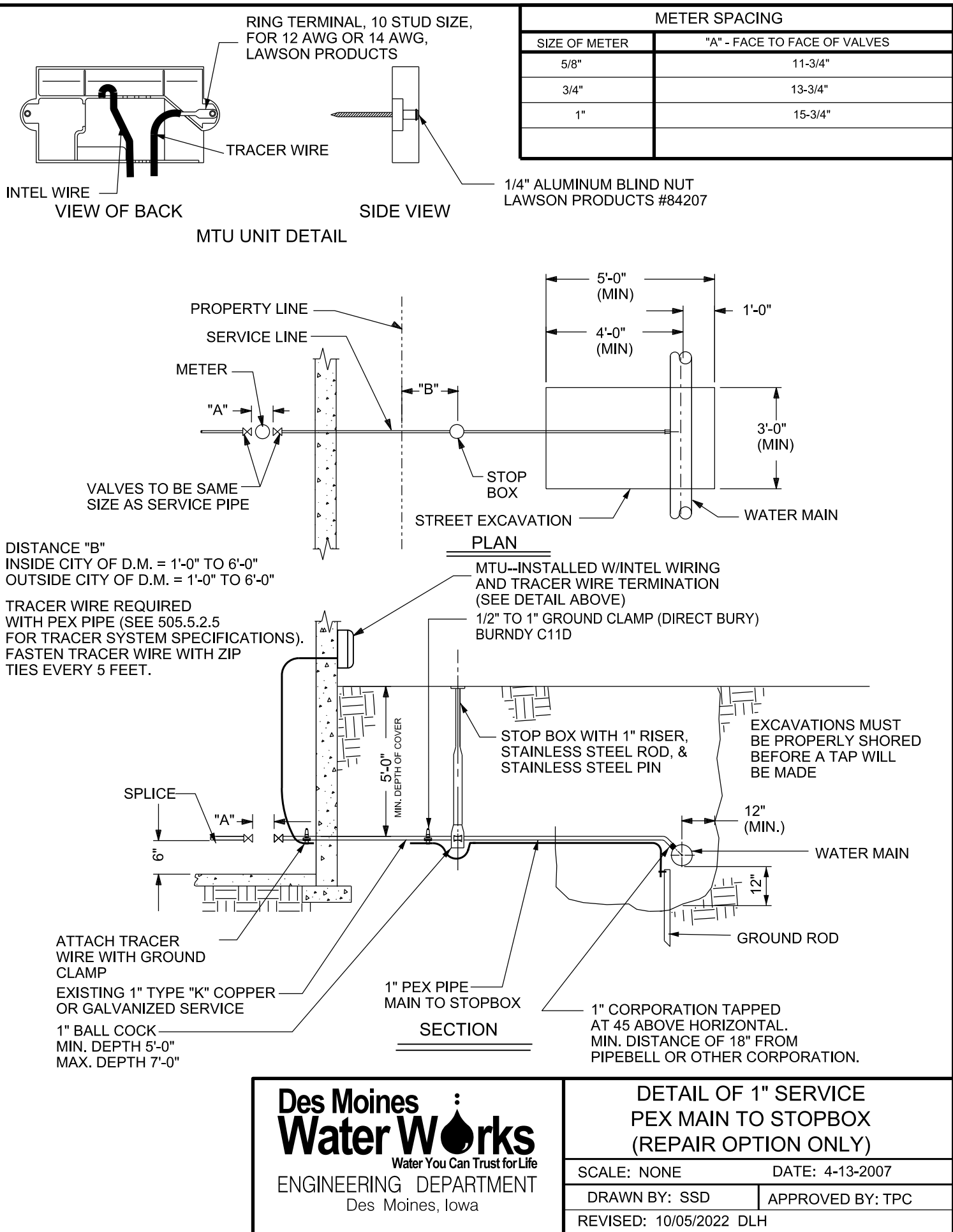
REVISED: 10/05/2022 DLH



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 Des Moines, Iowa

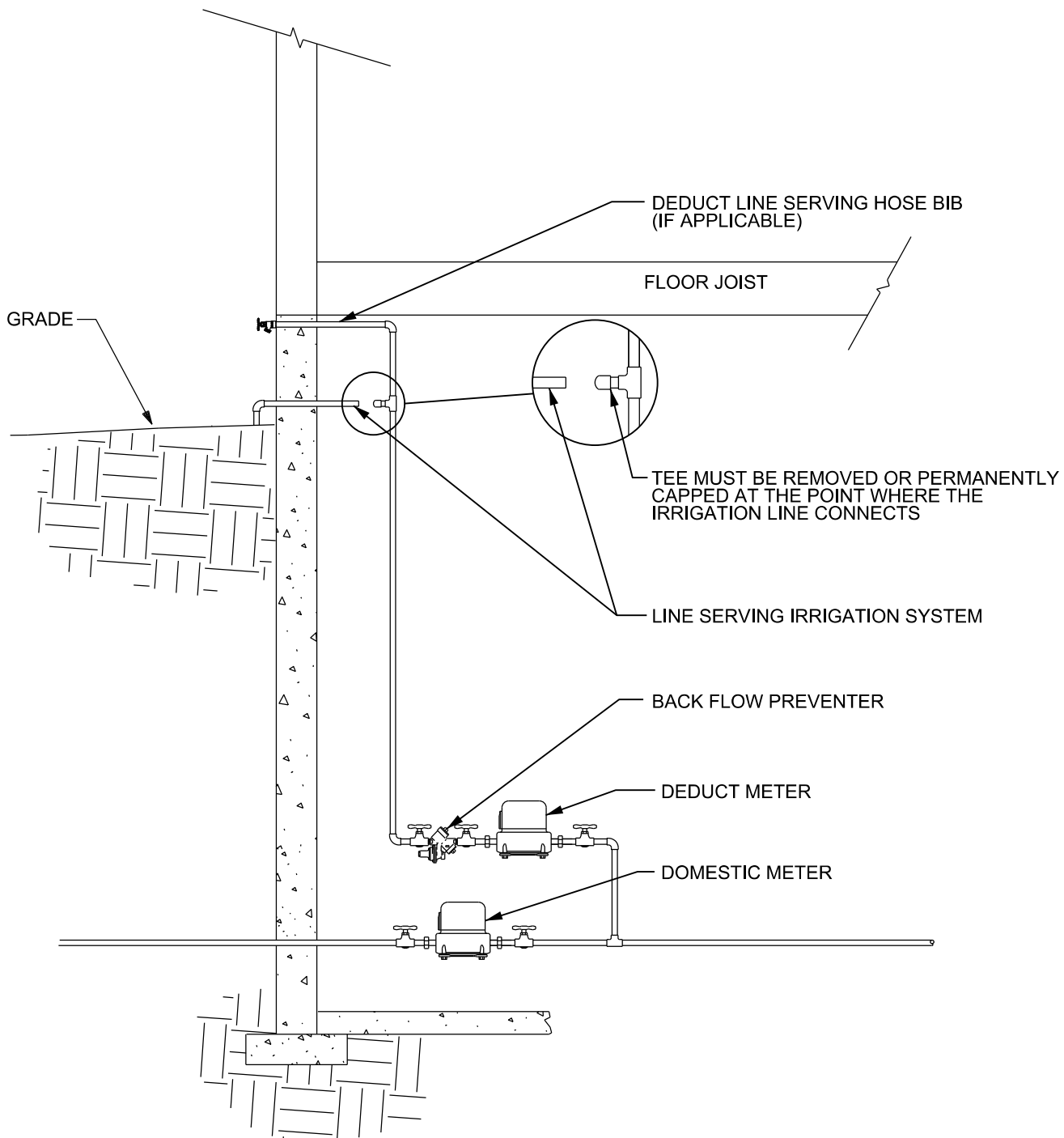
**DETAIL OF 1" PEX
 SERVICE INSTALLATION**

SCALE: NONE DATE: 4-13-2007
 DRAWN BY: SSD APPROVED BY: TPC
 REVISED: 10/05/2022 DLH



512-1C
FIGURE 1C

\\projects\in\design\genrules\regs\current\files\512-13D.DGN



Des Moines
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ENGINEERING DEPARTMENT
Des Moines, Iowa

IRRIGATION SYSTEM
DECOMMISSION AND BACKFLOW (INSIDE)
PREVENTER REMOVAL

SCALE: NONE

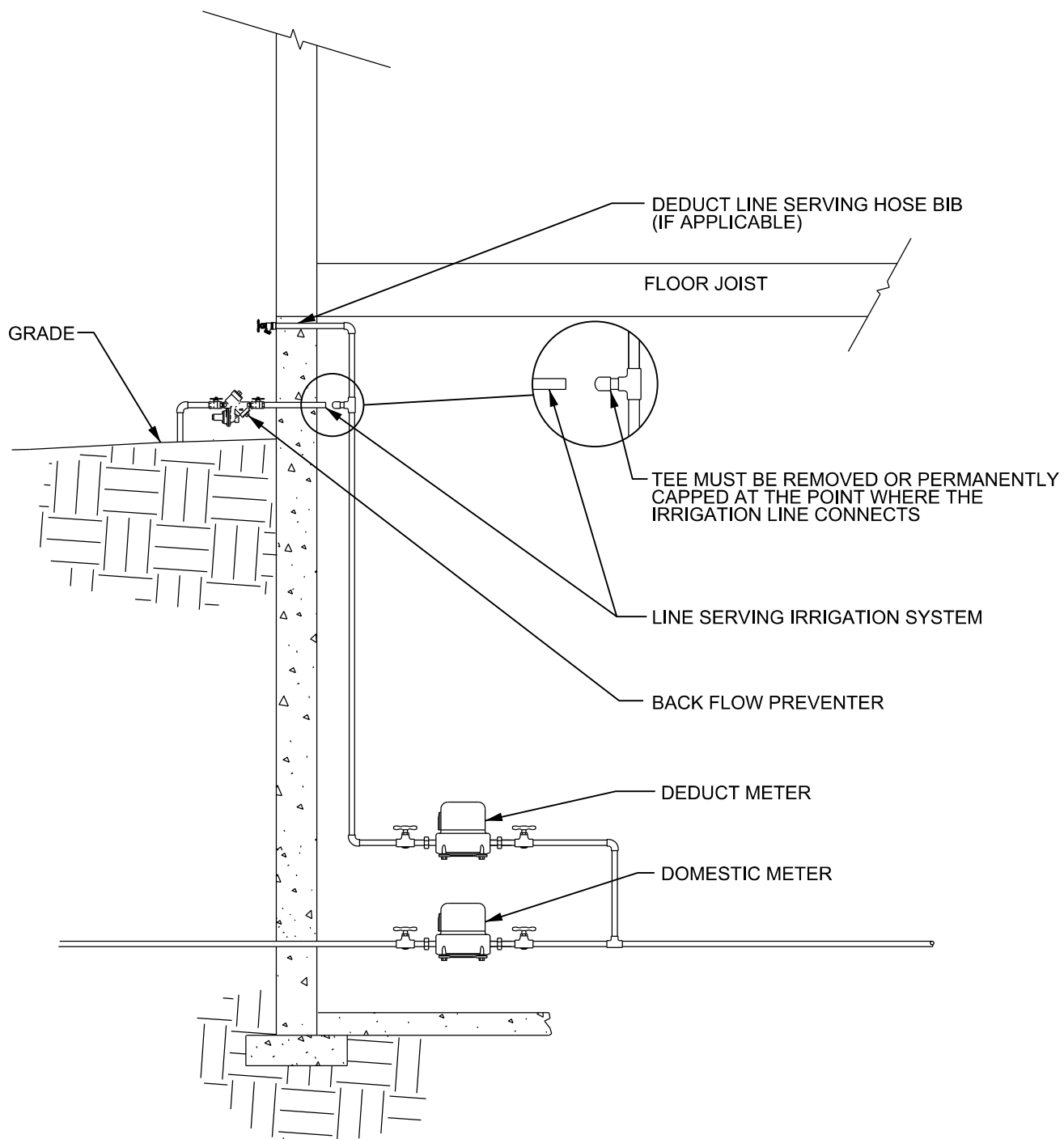
DATE: 9/23/2022

DRAWN BY: DLH

APPROVED BY: JJL

512-13
FIGURE 13D

\\projects\in\Design\GEN\RULES\REGS\Current\files\512-13E.DGN



Des Moines
Water Works
Water You Can Trust for Life
ENGINEERING DEPARTMENT
Des Moines, Iowa

IRRIGATION SYSTEM
DECOMMISSION AND BACKFLOW (OUTSIDE)
PREVENTER REMOVAL

SCALE: NONE

DATE: 9/23/2022

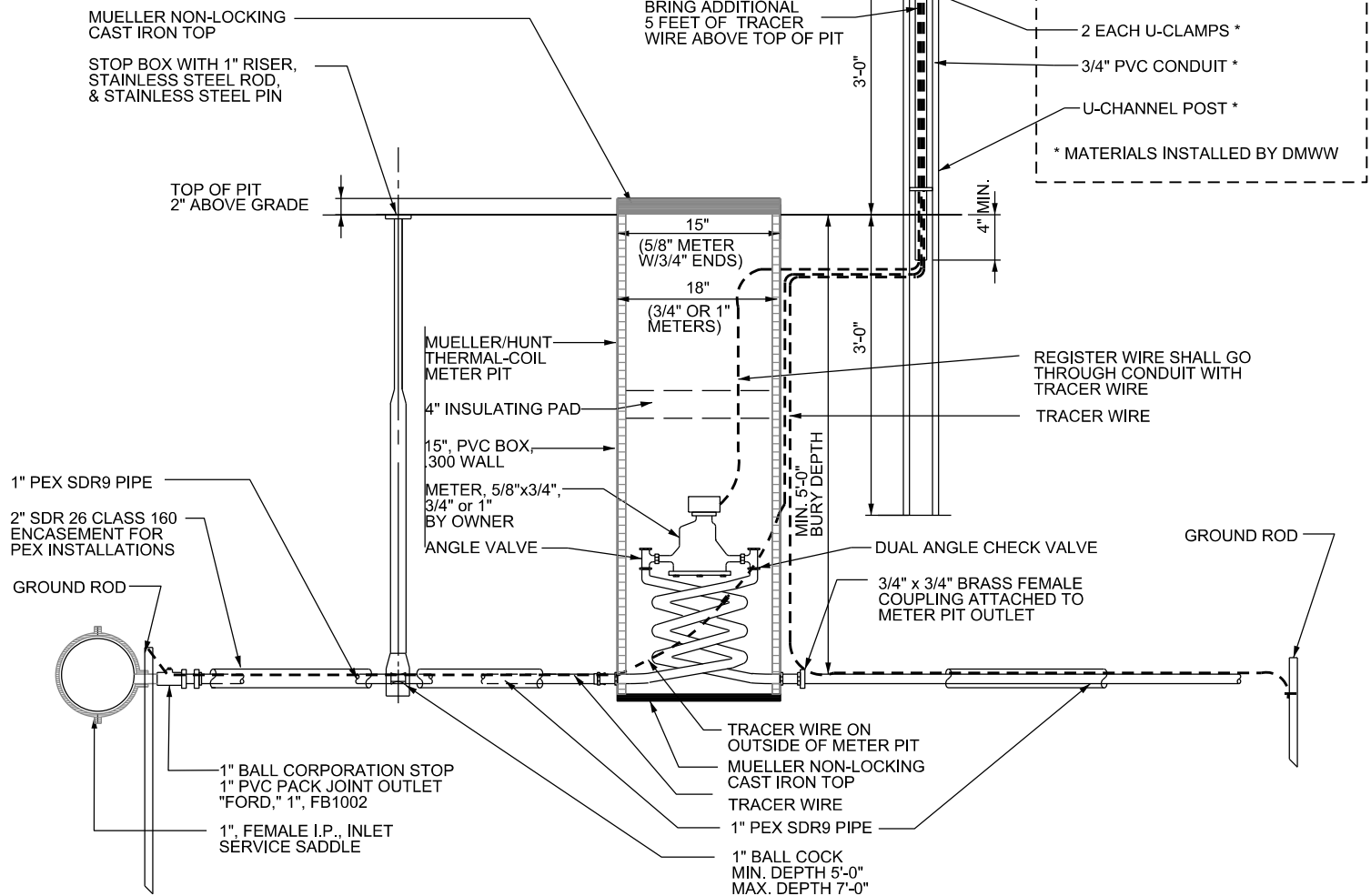
DRAWN BY: DLH

APPROVED BY: JJL

512-13
FIGURE 13E

NOTE:
METER PITS SHALL BE
66" IN LENGTH (MIN.)

NOTE:
WHEN SPECIFIED THE SETTER SHALL BE
PROVIDED WITH A TANDEM SETTER WITH
A 3/4" WATTS REGULATOR (5M3-Z6) FOLLOWING
METER.



TRACER WIRE REQUIRED
WITH PEX PIPE (SEE 505.5.2.5
FOR TRACER SYSTEM SPECIFICATIONS).
FASTEN TRACER WIRE WITH ZIP
TIES EVERY 5 FEET.

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OUTSIDE CITY OF DES MOINES
WATER SERVICE
AND METER PIT DETAIL

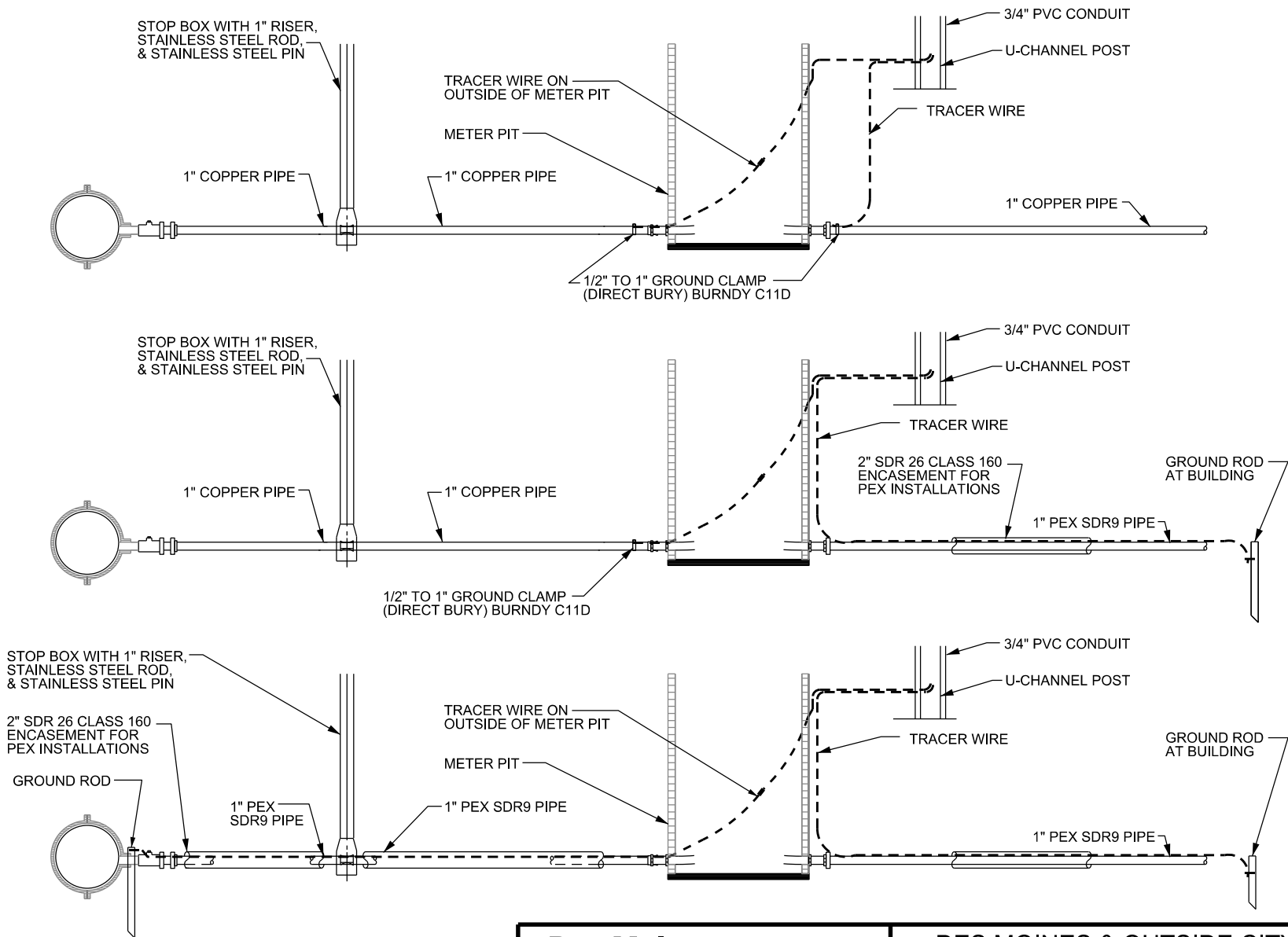
SCALE: NONE

DATE: 6-29-2007

DRAWN BY: DLH

APPROVED BY: TPC

REVISED: 10/05/2022 DLH



- NOTES:
1. BRING ADDITIONAL 5 FEET OF TRACER WIRE ABOVE TOP OF PIT
 2. TRACER WIRE REQUIRED WITH PEX PIPE (SEE 505.5.2.5 FOR TRACER SYSTEM SPECIFICATIONS). FASTEN TRACER WIRE WITH ZIP TIES EVERY 5 FEET.

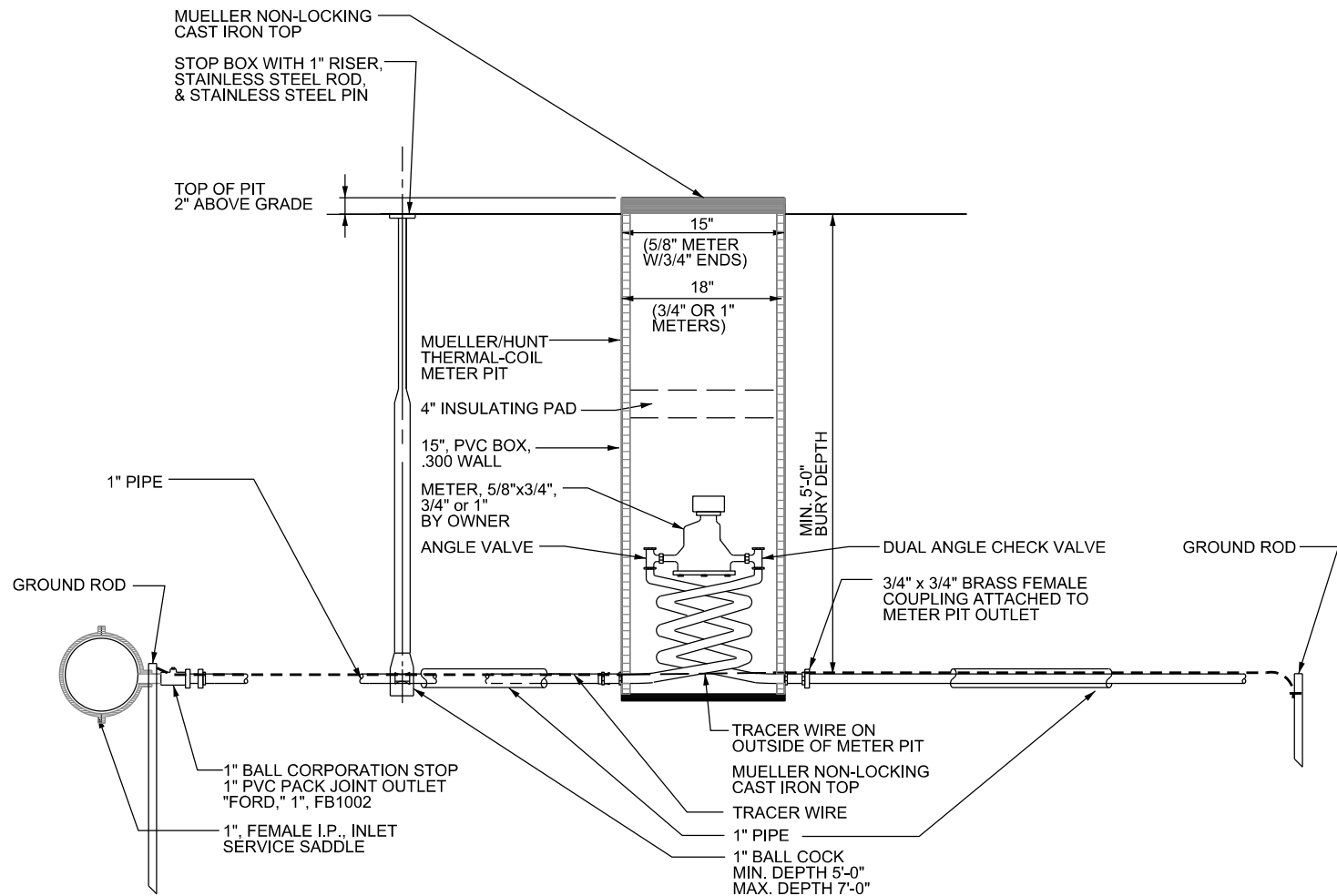
Des Moines Water Works
 Water You Can Trust for Life
 ENGINEERING DEPARTMENT
 Des Moines, Iowa

DES MOINES & OUTSIDE CITY 1"-2" WATER SERVICE W/ METER PIT TRACER WIRE DETAIL	
SCALE: NONE	DATE: 6-29-2007
DRAWN BY: DLH	APPROVED BY: TPC
REVISED: 10/05/2022 DLH	

512-16B
 FIGURE 16B

NOTE:
METER PITS SHALL BE
66" IN LENGTH (MIN.)

NOTE:
WHEN SPECIFIED THE SETTER SHALL BE
PROVIDED WITH A TANDEM SETTER WITH
A 3/4" WATTS REGULATOR (5M3-Z6) FOLLOWING
METER.



TRACER WIRE REQUIRED
WITH PEX PIPE (SEE 505.5.2.5
FOR TRACER SYSTEM SPECIFICATIONS).
FASTEN TRACER WIRE WITH ZIP
TIES EVERY 5 FEET.

Des Moines
Water Works
Water You Can Trust for Life

ENGINEERING DEPARTMENT
Des Moines, Iowa

INSIDE CITY OF DES MOINES
WATER SERVICE
AND METER PIT DETAIL

SCALE: NONE

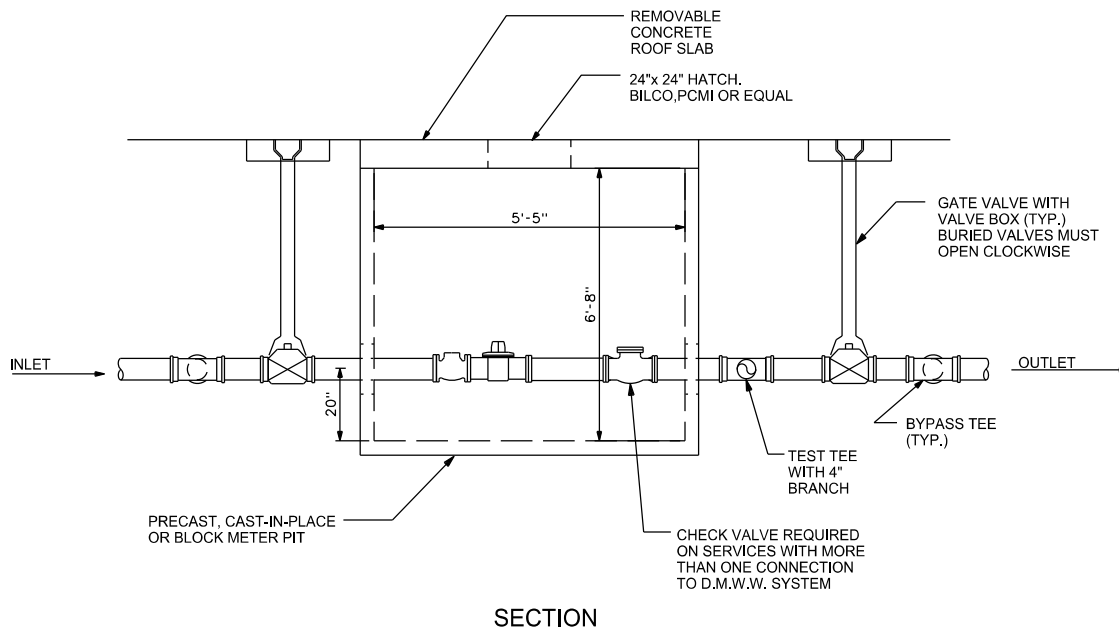
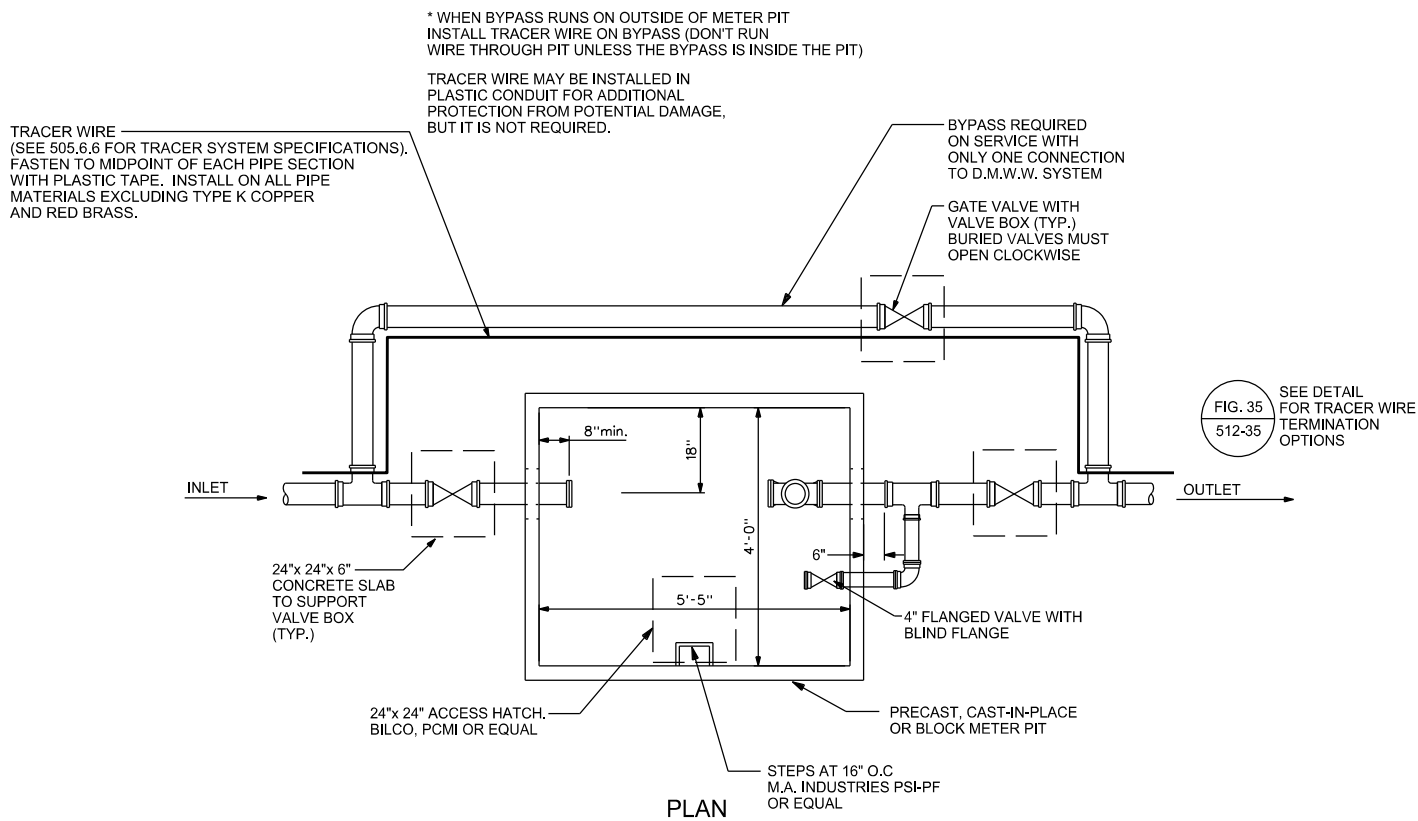
DATE: 10/02/2019

DRAWN BY: JLH

APPROVED BY: TPC

REVISED: 10/06/2022 DLH

512-16C
FIGURE 16C



Des Moines
Water Works
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ENGINEERING DEPARTMENT
Des Moines, Iowa

**TURBINE OR COMPOUND
METER PIT DETAIL
W/TRACER WIRE**

SCALE: NONE

DATE: 5-10-1996

DRAWN BY: DLH

APPROVED BY: TPC

REVISED: 10/05/2022 DLH

* WHEN BYPASS RUNS ON OUTSIDE OF METER PIT
INSTALL TRACER WIRE ON BYPASS (DON'T RUN
WIRE THROUGH PIT UNLESS THE BYPASS IS INSIDE THE PIT)

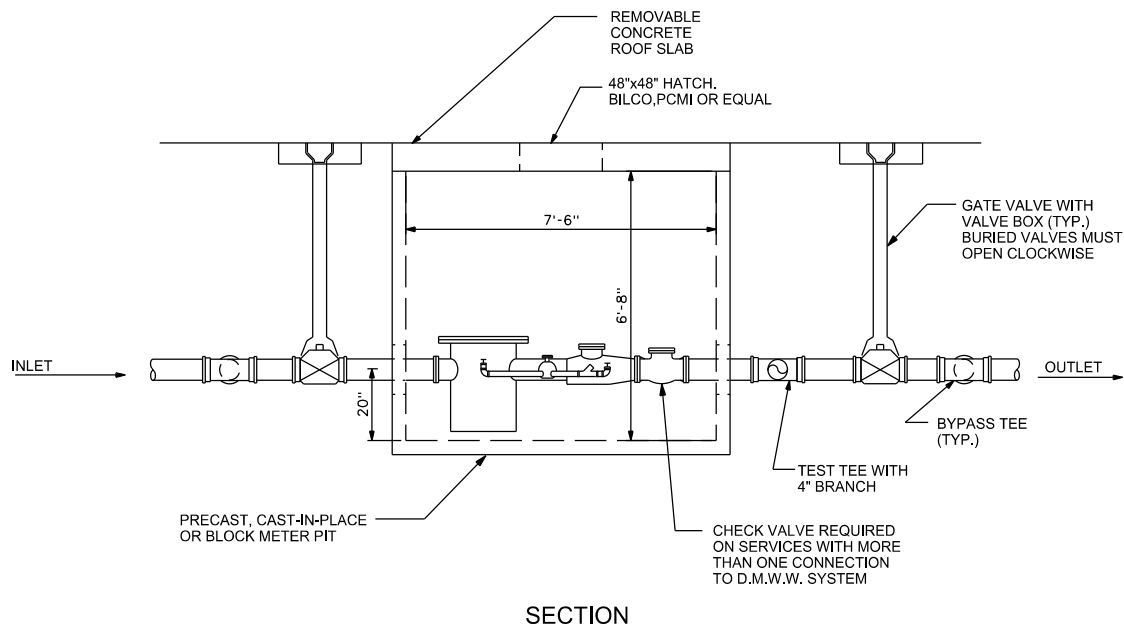
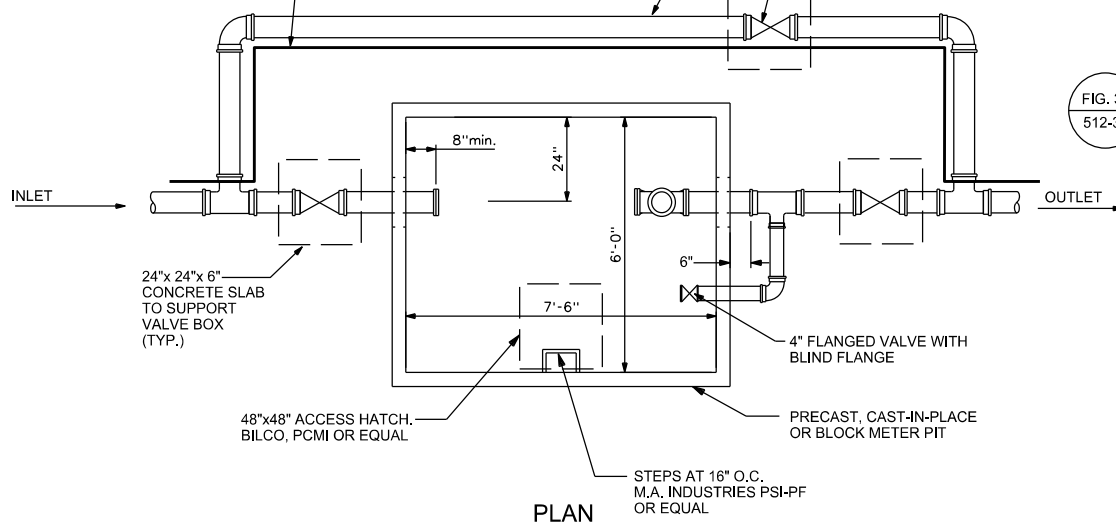
TRACER WIRE MAY BE INSTALLED IN
PLASTIC CONDUIT FOR ADDITIONAL
PROTECTION FROM POTENTIAL DAMAGE,
BUT IT IS NOT REQUIRED.

BYPASS REQUIRED
ON SERVICE WITH
ONLY ONE CONNECTION
TO D.M.W.W. SYSTEM

GATE VALVE WITH
VALVE BOX (TYP.)
BURIED VALVES MUST
OPEN CLOCKWISE

TRACER WIRE
(SEE 505,6,6 FOR TRACER SYSTEM SPECIFICATIONS),
FASTEN TO MIDPOINT OF EACH PIPE SECTION
WITH PLASTIC TAPE. INSTALL ON ALL PIPE
MATERIALS EXCLUDING TYPE K COPPER
AND RED BRASS.

FIG. 35
512-35
SEE DETAIL
FOR TRACER WIRE
TERMINATION
OPTIONS



Des Moines
Water Works
Water You Can Trust for Life
ENGINEERING DEPARTMENT
Des Moines, Iowa

FIRE SERVICE METER PIT DETAIL W/TRACER WIRE

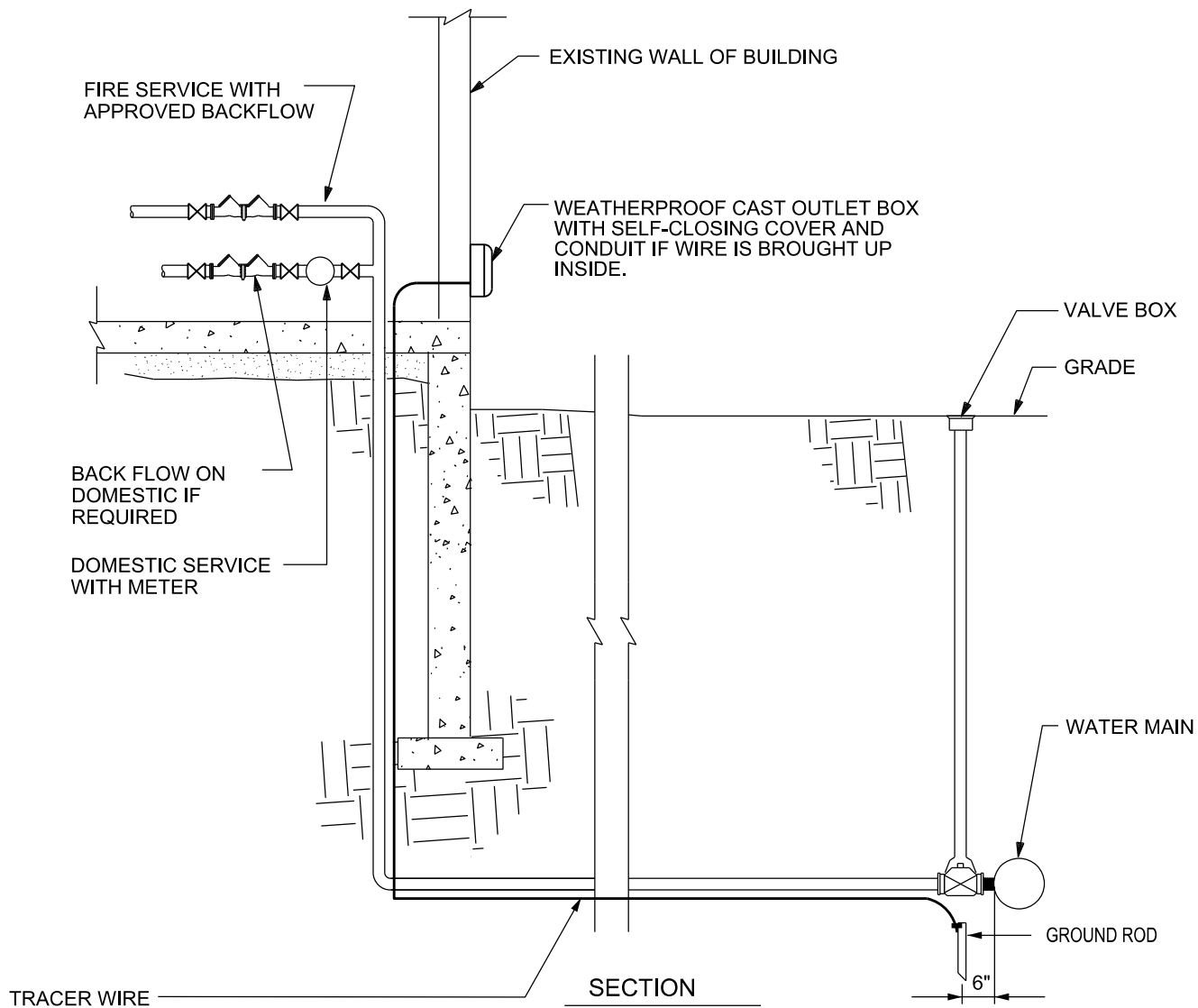
SCALE: NONE

DATE: 5-10-1996

DRAWN BY: DLH

APPROVED BY: TPC

REVISED: 10/06/2022 DLH



TRACER WIRE
(SEE 505.6.6 FOR TRACER SYSTEM SPECIFICATIONS).
FASTEN TO MIDPOINT OF EACH PIPE SECTION
WITH PLASTIC TAPE. INSTALL ON ALL PIPE
MATERIALS EXCLUDING TYPE K COPPER
AND RED BRASS.

TRACER WIRE MAY BE INSTALLED IN
PLASTIC CONDUIT FOR ADDITIONAL
PROTECTION FROM POTENTIAL DAMAGE,
BUT IT IS NOT REQUIRED.

Des Moines
Water Works
Water You Can Trust for Life
ENGINEERING DEPARTMENT
Des Moines, Iowa

TYPICAL COMBINATION FIRE &
DOMESTIC SERVICE W/TRACER
WIRE

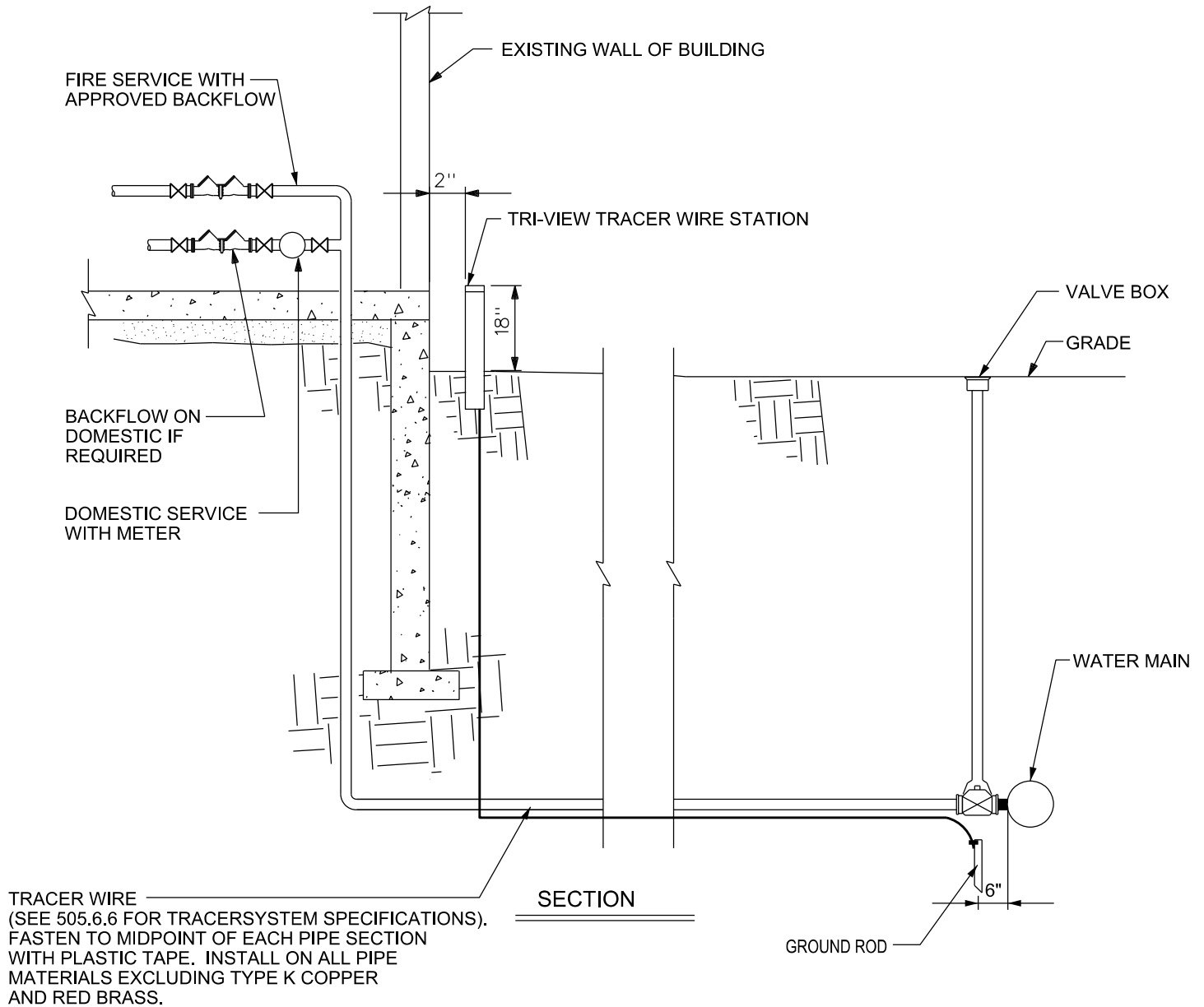
SCALE: NONE

DATE: 8-11-2000

DRAWN BY: DLH

APPROVED BY: TPC

REVISED: 08/05/2014 JLH



Des Moines
Water Works
 Water You Can Trust for Life
 ENGINEERING DEPARTMENT
 Des Moines, Iowa

TYPICAL COMBINATION
 FIRE & DOMESTIC SERVICE
 W/TRI-VIEW TRACER
 WIRE STATION

SCALE: NONE

DATE: 2-11-2005

DRAWN BY: DLH

APPROVED BY: TPC

REVISED: 10/06/2022 DLH

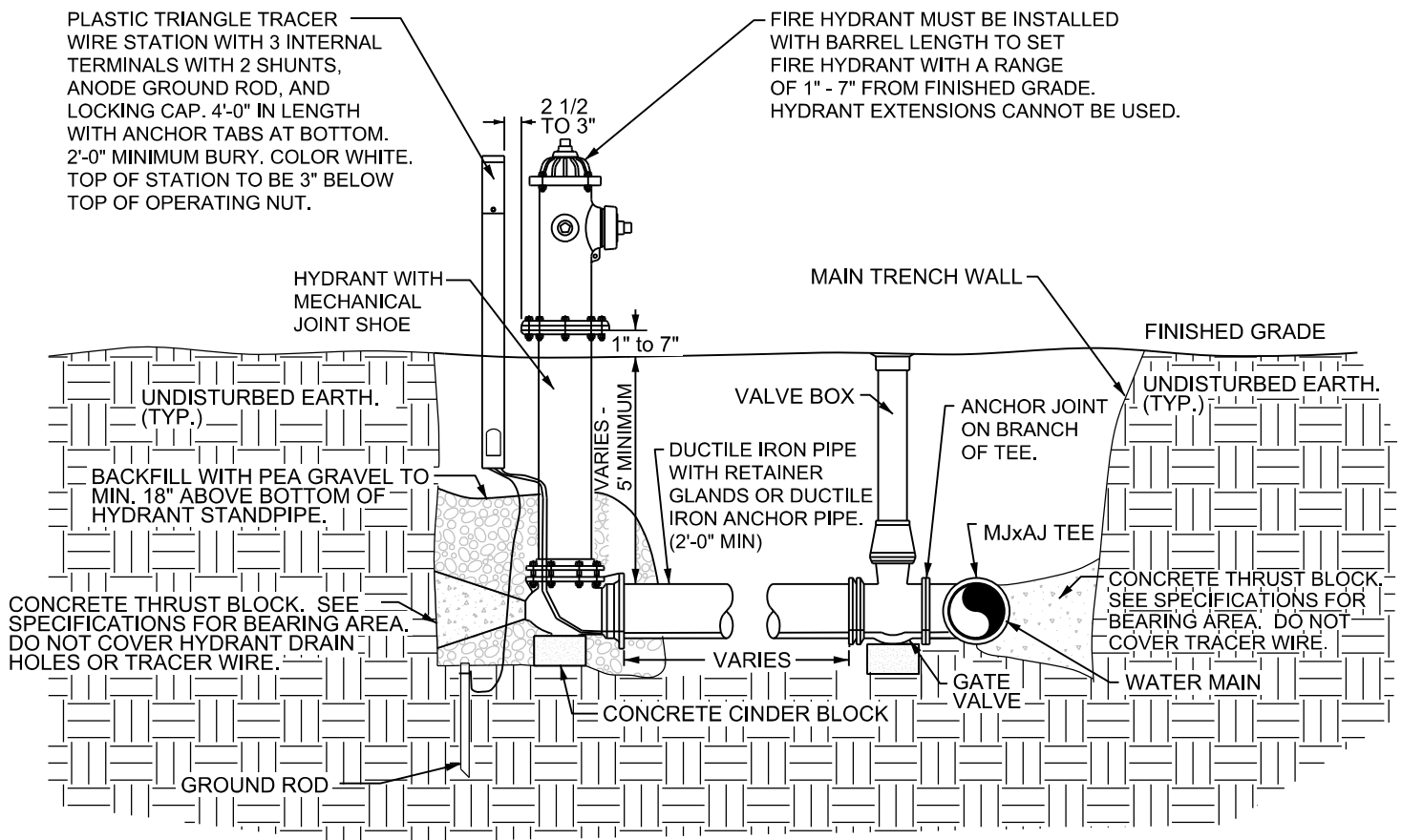
NOTE:

IRON PIPE, VALVE, FITTINGS AND HYDRANT (BURIED PORTION) TO BE WRAPPED WITH POLYETHYLENE ENCASEMENT MATERIAL PER DES MOINES WATER WORKS STANDARDS.

TRACER WIRE MAY BE INSTALLED IN PLASTIC CONDUIT FOR ADDITIONAL PROTECTION FROM POTENTIAL DAMAGE, BUT IT IS NOT REQUIRED.

TRACER WIRE (SEE 505.6.6 FOR TRACER SYSTEM SPECIFICATIONS). FASTEN TO MIDPOINT OF EACH PIPE SECTION WITH PLASTIC TAPE. INSTALL ON ALL PIPE MATERIALS EXCLUDING TYPE K COPPER AND RED BRASS.

TRACER WIRE MAY BE INSTALLED IN PLASTIC CONDUIT FOR ADDITIONAL PROTECTION FROM POTENTIAL DAMAGE, BUT IT IS NOT REQUIRED.



STANDARD HYDRANT ON WATER MAINS 16" OR LESS

NOT TO SCALE

Des Moines Water Works
Water You Can Trust for Life
ENGINEERING DEPARTMENT
Des Moines, Iowa

**STANDARD HYDRANT
DETAIL W/ TRACER WIRE**

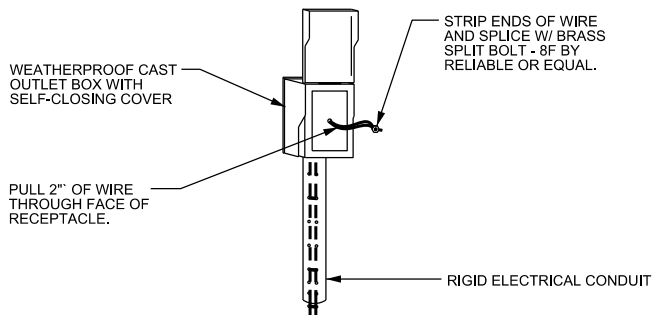
SCALE: NONE

DATE: 5-10-1996

DRAWN BY: DLH

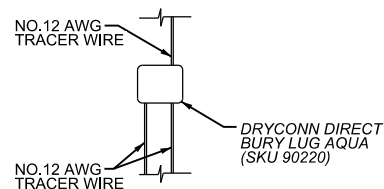
APPROVED BY: TPC

REVISED: 10/05/2022 DLH



TRACER WIRE RECEPTACLE DETAIL ON BUILDING

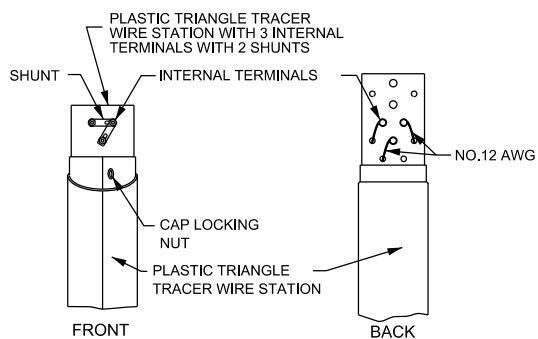
Not to Scale



*SPICES PERMITTED ONLY WITH DMWW APPROVAL

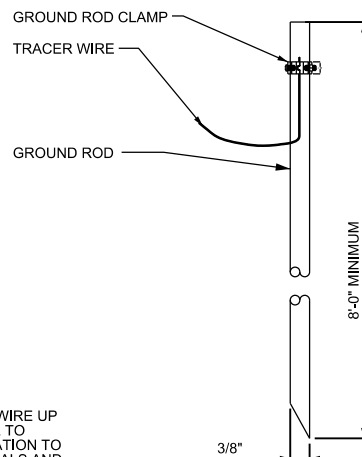
TRACER WIRE SPLICE DETAIL

Not to Scale



TRACER WIRE RECEPTACLE DETAIL

Not to Scale

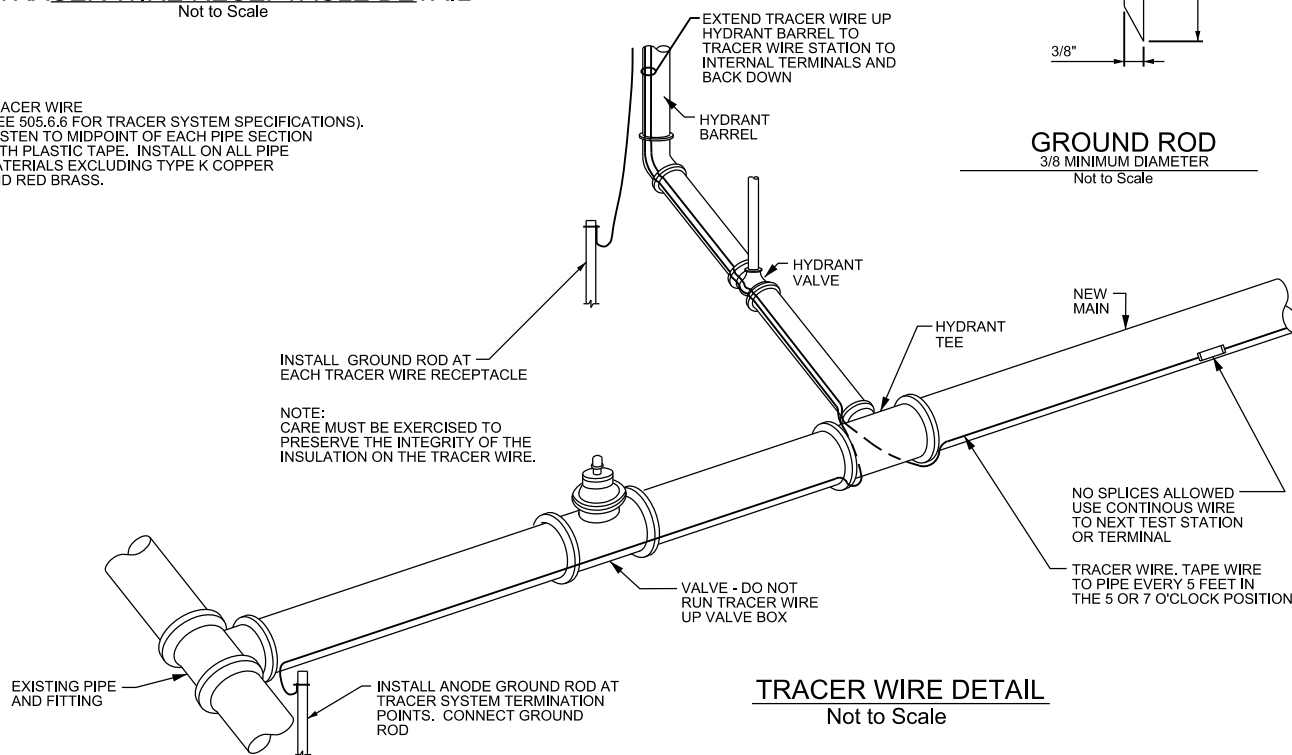


GROUND ROD

3/8 MINIMUM DIAMETER

Not to Scale

TRACER WIRE (SEE 505.6.6 FOR TRACER SYSTEM SPECIFICATIONS). FASTEN TO MIDPOINT OF EACH PIPE SECTION WITH PLASTIC TAPE. INSTALL ON ALL PIPE MATERIALS EXCLUDING TYPE K COPPER AND RED BRASS.



TRACER WIRE DETAIL

Not to Scale

TRACER WIRE MAY BE INSTALLED IN PLASTIC CONDUIT FOR ADDITIONAL PROTECTION FROM POTENTIAL DAMAGE, BUT IT IS NOT REQUIRED.

Des Moines Water Works
Water You Can Trust for Life
ENGINEERING DEPARTMENT
Des Moines, Iowa

TRACER WIRE DETAIL

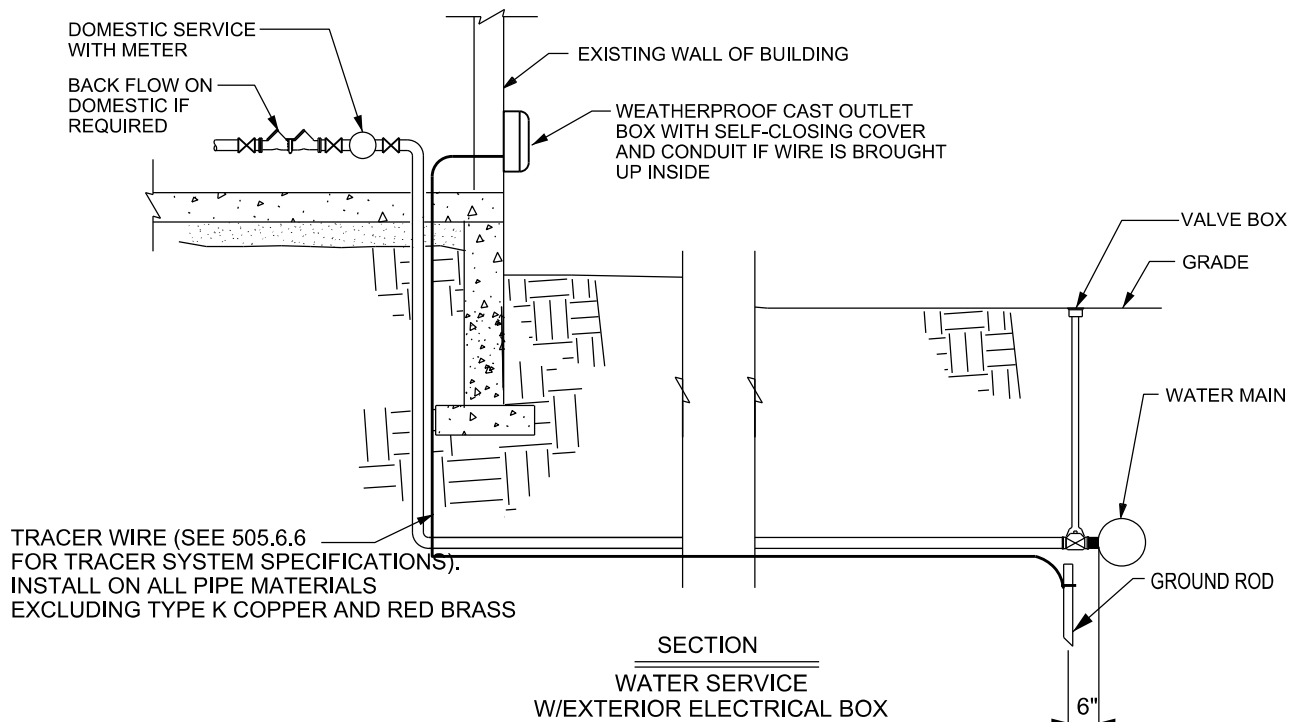
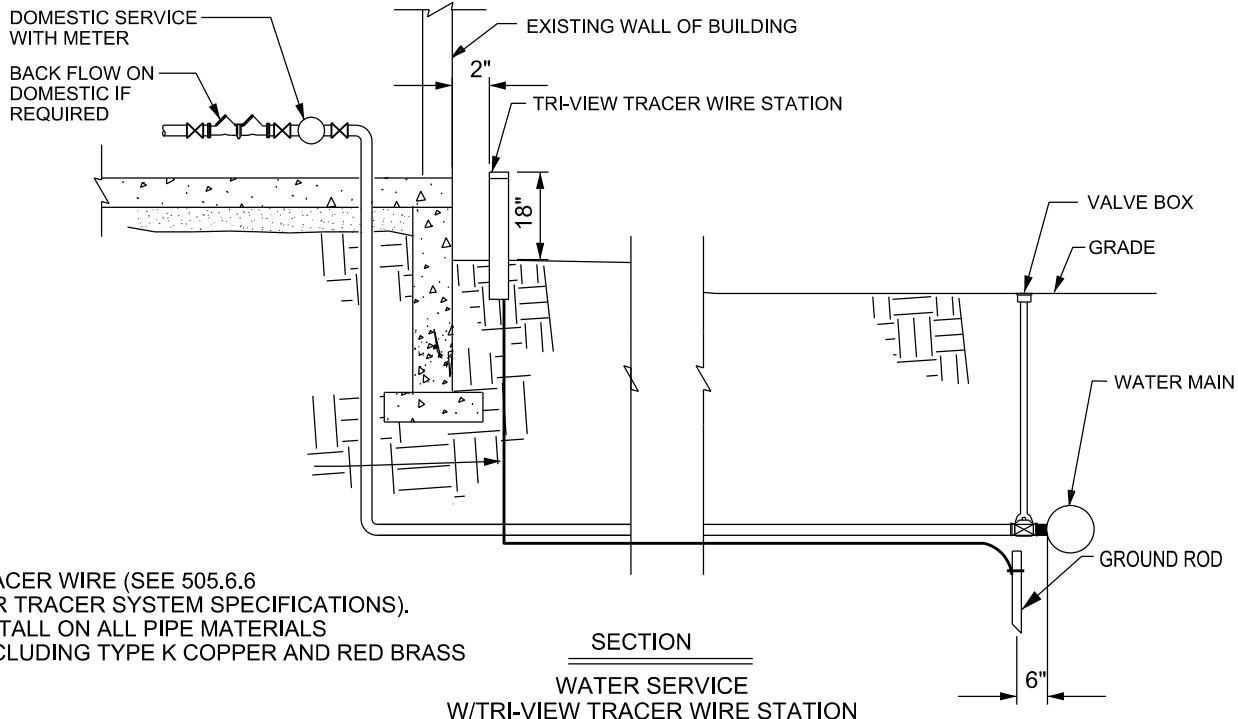
SCALE: NONE

DATE: 5-10-1996

DRAWN BY: DLH

APPROVED BY: TPC

REVISED: 10/05/2022 DLH



TRACER WIRE MAY BE INSTALLED IN PLASTIC CONDUIT FOR ADDITIONAL PROTECTION FROM POTENTIAL DAMAGE, BUT IT IS NOT REQUIRED.

Des Moines Water Works
Water You Can Trust for Life
ENGINEERING DEPARTMENT
Des Moines, Iowa

TRACER WIRE TERMINATION OPTIONS

SCALE: NONE

DATE: 2-11-2005

DRAWN BY:

APPROVED BY: TPC

REVISED: 10/05/2022 DLH