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CHAPTER 50: WATER PROVISIONS

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GENERAL PROVISIONS

§ 50.01 APPLICATION FOR WATER CONNECTION PERMIT.

(A) As per SDCL § 9-47-28, the owner of every residence, business, structure, or building wherein water is used, abutting upon any street or alley in which municipal water mains are maintained shall, at his or her own expense, connect the residence, business, structure, or building to the municipal water system within 30 days after notice to do so, provided the municipal water main is within 200 feet of his or her property line. Application must be made to the Board of Trustees for permits to connect/tap any water pipe or pipes to the town water supply main. Application must be made by the owner or agent of the property served. Application shall designate the legal description of property, what kind and size of tap to be made, the nature and number of the water users, and be accompanied by the appropriate fee as described below. This fee is to be retained by the town.

(B) The cost of such tap shall be based on the size of the meter:

	<i>Residential</i>	<i>Commercial</i>
1"	\$1,000.00	\$2,000.00
1 ½"	\$1,000.00	\$2,000.00
2"	\$1,250.00	\$2,500.00

(C) If larger taps are required than depicted in the above table, the rates will increase \$250 per one-inch increments for residential and will increase \$500 per one-inch increments for commercial.

(D) If the permit is granted, applicant assumes all expenses covering material, labor, etc. for installation and connection of such pipes. This shall include, but is not limited to, curb stops, valves and boxes, and dual check back flow prevention valves and water meters. Applicant shall assume all responsibility, cost, and expense of maintenance and repairs of such components including, but not limited to, such pipes, curb stops, valves and boxes, and dual check back flow prevention valves and water meters, from the property owner's property line to the structure.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015; Ord. passed 1-8-2019; Ord. passed 5-18-2021; Ord. passed 4-18-2023)

§ 50.02 METERS.

All connections shall be metered. The town will provide the meter. Only persons designated by the town shall read the meter on or about the twentieth of each month for all service meters. A person, designated by the town, shall read and verify meter and remote once each year to verify accuracy.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015; Ord. 52.02A, passed 11-21-2017)

§ 50.03 PLUMBERS.

Only a duly licensed plumber/contractor, per the *Town's Standard Construction Specification and Standard Details*, approved by the Town Board, or an employee of the Water Department shall be permitted to do any work on any pipes or connections in any way connected with the town water supply. All such plumbers/contractors shall be governed by state and town regulations that are in force or that may be hereafter adopted.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.04 PERMISSION REQUIRED.

Written permission shall be obtained from the supervisor or other officer in charge of the Water Department before plumbing work of any kind shall be done by any plumber in or upon any water pipes, fixtures, or apparatus connected with the town water system.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.05 INSTALLATION OF CURB STOPS, VALVES AND BOXES, AND DUAL CHECK BACKFLOW PREVENTION VALVES.

All connections with the municipal water mains must be in accordance with the *Town Standard Construction Specifications and Standard Details*.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.06 STANDARD SERVICE PIPE INSTALLATION.

Service line installation shall be done by a licensed water and sewer contractor as required by the *Town Standard Construction Specifications and Standard Details* and inspected and approved by the town. Service lines are to be installed according to South Dakota State Plumbing Codes with regard to water and sewer line spacing and interior plumbing. Under no circumstances will any contractor without water and sewer licenses be allowed to dig, trench, or install any piping.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.07 INSPECTION AND TESTING.

All water service lines shall be tested in accordance with the *Town of Hermosa Standard Construction Specification and Standard Details*.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.08 RIGHT-OF-WAY REPAIR.

All back fill and surface repair shall be done to the satisfaction of public works per the *Town's Standard Construction Specifications*.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.09 APPLICATION FOR WATER SERVICE/SECURITY DEPOSIT.

(A) Written application for water service shall be made to the Town Finance Officer by the owner/occupant of the property or his agent, together with a security deposit. Such deposit shall be recorded by the Town Finance Officer and receipts issued to the applicant. Upon discontinuance of service, the applicant shall be entitled to a refund of such deposit, less such part thereof applied toward payment of current or delinquent water bills. Such deposit shall be as follows:

Homeowner	As per current fee schedule
Rental property owner	As per current fee schedule
Renter	As per current fee schedule
Contractor/ home builder	As per current fee schedule

(B) The town shall retain a floating deposit until such time that the property ownership changes.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.10 RENTAL PROPERTIES.

Property owners must give notice of change of tenants or parties responsible for utility bills. Renters shall be responsible for balance owed. The property owner will be contacted if payment is not made by due date of the current month. After a five-day grace period, water will be disconnected and not resumed until said balance is paid in full. A reconnection fee, per the current fee schedule, will be assessed and collected prior to resuming service. If a new tenant applies for water service, they will be denied service if there is a balance due for the metered property which they intend to rent. The property owner will not be able to restart service until the balance is paid in full.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.11 COMMERCIAL AND RESIDENTIAL WATER RATES.

Fees, charges, and rates for water services, connections, and tap fees may be changed per resolution by the Board of Trustees whose authority to do so is granted by the State of South Dakota SDCL § 9-47-19. The Board of Trustees shall establish just and equitable rates by policy. Refer to the current water rate resolution, as outlined within the current fee schedule.

(Ord. 10, passed 6-20-2006; Ord. 10.1, passed 8-18-2009; Res. 2009-5, passed 9-1-2009; Ord. 10R-2015, passed 2-2-2015)

§ 50.12 BILLING AND PAYMENT.

Bills are due and payable upon receipt and shall become delinquent on the fifteenth of same month. If the Town Office does not receive payment by the fifteenth a late fee will be charged to the account on the twentieth of same month as per current fee schedule. If payment is not received by the fifteenth of the following month, or the balance of the current month is more than \$100, collection action shall commence including but not limited to disconnecting service. There will be an additional late fee, as per current fee schedule, charged to the account for each subsequent month if account is not paid in full.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.13 DISCONNECTION FOR NON-PAYMENT.

(A) In the event a customer is disconnected due to non-payment that customer will be charged a reconnect fee, per current fee schedule, and may be required to pay an additional and/or increased security deposit, per current fee schedule, and initial deposit may be applied to the past due amount.

(B) Water service will be reconnected after all past due amounts have been paid or a payment agreement has been signed by the customer. Only an authorized agent of the town shall be allowed to turn water service back on. A fine will be assessed, as per current fee schedule, if water is turned back on without authority of the town.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.14 NOTICE OF DISCONTINUANCE REQUIRED.

Property owners or consumers desiring to discontinue the use of water shall be required to give notice to the town office. Regular water rates and charges to be billed accordingly until proper notice has been received, and a final meter reading has been taken.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.15 METERS FAILING TO REGISTER.

In cases where meters shall fail to register the amount of water used, charges shall be based on the average use.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.16 INTERFERING WITH FIRE HYDRANTS.

Only persons designated by the town shall open, take any water from, or in any way interfere with any public fire hydrant within the town. The Fire Department, or other emergency services may take water from a fire hydrant in the case of an emergency without prior approval.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015) Penalty, see § 50.99

§ 50.17 EXTENSION OF WATER PIPES.

Water pipes cannot be extended from one premise to another without permission of the Board of Trustees or its duly authorized agent.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015) Penalty, see § 50.99

§ 50.18 WATER LIMITATIONS.

All water used for air-cooling systems, street, lawn or garden sprinkling is subordinate to domestic use or fire protection and may be restricted at any time should a scarcity of water or an emergency of any kind so require.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.19 AUTHORITY OF WATER DEPARTMENT.

Only persons designated by the town shall be permitted at all reasonable hours to enter the premises or buildings of consumers for the purpose of reading meters, examining water pipes, to set or remove a meter, or change its location whenever necessary.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.20 DUTY AND RESPONSIBILITY OF OCCUPANT OR OWNER.

A suitable place for meters, safe from frost or other damage and accessible for examination, must be provided by and at the expense of the owner or occupant. In any case where the meter is injured by freezing or otherwise damaged by act or neglect of the owner or occupant, it shall be repaired and the expense thereof shall be paid by the owner or occupant of said premises. In case of neglect, refusal to repair, or refusal to pay expenses thereof, the water supply may be turned off and not turned on until such costs and a reconnect fee have been paid.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.21 MALICIOUS OR WILLFUL DAMAGE TO WATER SYSTEM.

No person shall maliciously or willfully break, damage or tamper with any water main, meter, structure, device, or equipment that is a part of the municipal water system. Any violator, upon conviction, shall be guilty of a misdemeanor and shall be subject to a penalty of up to 30 days in jail, and/or a fine, as per current fee schedule, and the total cost of the repairs.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015) Penalty, see § 50.99

§ 50.22 WATER USERS OUTSIDE OF TOWN LIMITS.

(A) All users of water supplied by the town waterworks, outside the town limits, shall be responsible for repairs and maintenance of water lines that are not in the town limits. Users outside town limits shall be governed by all rules, regulations and ordinances in effect with the town concerning the same, and shall be charged rates, as per the current fee schedule.

(B) The town has the right to require annexation to any new or current serviced area. All new services may be required to agree, in writing, to annex into the town limits when, and if, the property is within the legal proximity.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.23 RESPONSIBILITY FOR BREAKAGE OF LINES.

The town shall have authority to close the curb stop at any time a break in the service line appears to have occurred, and will reopen the curb stop when satisfied that no break exists or the break has been repaired.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.24 RATES AND CHARGES FOR SERVICES.

The Board of Trustees shall establish just and equitable rates by policy. Refer to the current water rate resolution, as outlined within the current fee schedule.

(Ord. 10R-2015, passed 2-2-2015)

§ 50.25 FEES; WATER FUND.

Any fees, regular charges, connection collections, etc., shall be deposited in the Water Fund.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.26 CONSTRUCTION STANDARDS.

All construction covered under this chapter shall comply with state codes, and laws, and shall comply with the *Town of Hermosa Standard Construction Specifications and Details*.

(Ord. 10, passed 6-20-2006; Ord. 10R-2015, passed 2-2-2015)

§ 50.27 REPAIRS OF CITY WATER MAINS AND SERVICE LINES.

(A) Any repairs performed to the city's water mains are the sole responsibility of the municipality with the exception of any damage incurred during the installation of any private service. In this situation the licensed contractor will be responsible to complete repairs to the line, per the current adopted Building Codes, and the supervision of the Public Works Department.

(B) Any repairs required to private service lines, starting from the property line to the home will be the responsibility of the property owner and from the property line to the main is the responsibility of the town. If during the repairs, it is discovered that the damaged section is not up to current adopted codes the service will not be continued until the line from the main is replaced.

(Ord. 10R-2015, passed 2-2-2015)

WATER PIPING SYSTEMS

§ 50.40 DESCRIPTION.

(A) *General.* This work consists of furnishing and installing water mains, service lines, and appurtenances. This includes all equipment, tools, materials, labor, and other incidentals to provide water mains and service lines complete and ready for immediate and continuous use. The work includes, but is not limited to, all necessary excavation, backfilling, compaction, testing, clean up, and restoration required for a complete installation of water mains, service lines, and appurtenances.

(B) *Definitions.* For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

ASTM. The American Society for Testing and Materials.

AWWA. The American Water Works Association.

DISTRIBUTION MAIN. A water main that supplies one or more branch mains.

FIRE HYDRANT LEAD. That portion of the fire hydrant branch line from the main to the fire hydrant auxiliary valve.

FIRE SERVICE LINE. Pipe and appurtenances delivering water from the town water distribution system to a building fire extinguishing system. Fire service lines may be located on private property or in public right-of-way and are owned, operated, and maintained by the property being served.

L LENGTH FOR JOINT RESTRAINING DEVICES. The length of pipe from a fitting, valve, or feature that needs to have each pipe joint within that length restrained.

PRIVATE FIRE PROTECTION SYSTEM. Hydrants, valves, water pipes, and appurtenances, sprinkler systems, hose connections, and other equipment constructed for the purpose of providing fire protection for a building or group of buildings and supplied with water from a public water supply system. Private fire protection systems are located on private property, although some components may be located in public right-of-way, and are owned, operated, and maintained by the property being served.

PROPERTY WATER DISTRIBUTING SYSTEM. Those pipes within the building or the premises which convey water from the water service pipe to the point of use. For purposes of this definition, the property water distributing system begins five feet outside of the building and will usually be the same pipe material as the water service line up to where it actually enters the building.

PSI. Pounds per square inch.

TRANSMISSION MAIN. A water main that supplies many tributary branches, serves a large area, and has few taps.

WATER MAINS. Those pipes of at least six inches in diameter, which will be installed in public right-of-way or easements and will become a part of the town water distribution system and which will be owned, operated, and maintained by the town.

WATER SERVICE LINE. The line from the main to within five feet of the building and is owned and maintained by the owner of the property being served. The service line then connects to the property water distributing system. For purposes of this definition, it is understood that the building or premises property water distributing system begins five feet outside of the building and will usually be the same pipe material as the water service line up to where it actually enters the building.

(C) *License and permit requirements.* For any construction, altering, repairing, or improving of water mains, appurtenances, and/or service lines, contractors will be licensed as state water contractors. All contractors will carry a minimum of the following insurance:

General liability aggregate	\$1 million
Per occurrence	\$500,000

(D) *Submittals.* Submittals may be required as deemed necessary by the Town Board and/or Town Engineer. The term **SUBMITTALS** includes, but is not necessarily limited to, manufacturer's product data, sheets of pipe, appurtenances, and fittings. Submittals may be required for the following items: fire hydrants, pipe, pipe fittings and their appurtenances including T-bolts, joint restraints, polyethylene encasement, and any other pertinent information concerning construction materials that the engineer deems necessary for the review of the materials used on the project in accordance with the specifications and drawings.

(E) All work under this subchapter shall comply with the current edition of Ten State Standards, Recommended Standards for Water Works.

(Ord. passed 3- -2006)

§ 50.41 MATERIALS.

(A) *Pipe.*

(1) *General.* Pipe for water mains shall be polyvinyl chloride (PVC) with push-on joints.

(2) PVC pressure pipe, four inches through 12 inches, shall conform to the requirements of AWWA specification C900 (CIOD). PVC pipe shall have bell ends with elastomeric gaskets. Pipe joints shall use the Rieber joining system, which has the gasket formed into the pipe during the pipe manufacturing process. Installation procedures shall conform to AWWA C605 standards.

(3) Water service pipe one inch minimum through one-and-one-half inches diameter shall be Type K soft copper tubing or 200 psi coil with compression fitting. Two inches and larger service pipe shall be PVC or 200 psi coil with compression fittings minimum.

(4) Type K soft copper tubing shall be US government Type K soft tubing in 60 foot single or double pancake coils for one inch and one-and-one-half inch diameter material. The minimum center coil diameter shall not be less than 16 inches.

(5) Tubing material for two inches material shall be supplied in 20 foot lengths with ends of tubing to be cut off evenly. Two inch coiled material will not be accepted.

(B) *Fittings.*

(1) *Water main fittings.*

(a) *General.* Fittings used with ductile iron pipe shall be ductile iron. Fittings 12 inches and smaller, used with PVC pipe shall be ductile iron or PVC.

(b) All bolts and nuts shall conform to AWWA C111 and ASTM A325 Type 3. The bolts and nuts shall be cor-blue, fusion bonded epoxy, series 300 stainless steel, or approved equal. Coated bolts and nuts shall be near white or white metal with eight to ten millimeters minimum coating thickness. Fitting types applicable to this specification consist of bends, crosses, tees, reducers/increasers, plugs, caps, couplings, and sleeves.

(2) *Ductile iron water main fittings.* Fittings shall be ductile iron with 350 psi pressure rating and rubber gasket joints meeting all applicable requirements of the latest edition of AWWA C110, C111, and/or C153 specifications. All internal and external ferrous surfaces shall be coated with a minimum six millimeter thick fusion bonded epoxy coating applied electrostatically and at a minimum shall meet the requirements of AWWA C116.

(3) Unless specified otherwise on the plans or detailed specifications, fittings 12 inches and smaller shall be push-on joint. Push-on joint fittings shall be furnished with restraining lugs. The lug pattern for all sizes shall accommodate gripper-type restrainers.

(4) *PVC water main fittings.* PVC fittings may be used in-lieu of ductile iron fittings for PVC pipe installations 12 inches and smaller. PVC fittings shall meet all applicable requirements of the latest edition of AWWA C900. The PVC fitting bell ends shall have elastomeric gaskets. Installation procedures shall conform to AWWA C605 standards.

(5) *Couplings.* Straight couplings shall be Romac style 501, or equal, and shall have ductile iron center rings and end rings meeting ASTM A536-80, Grade 65-45-12. Center rings shall be epoxy coated. Gaskets shall be SBR compounded for water service.

(6) *Tapping sleeves.* Shall be two strap/bolt red brass configuration or stainless steel, flanged branch ends, with test plugs for pressure testing. The sleeve shall be approved for use at pressures equaling or exceeding those of the pipe classification being installed. Stainless steel tapping sleeves shall have a 304 stainless steel shell with SBR gaskets compounded for water service, a stainless steel flange, and shall have 304 stainless steel nuts, bolts, and washers.

(C) *Valves.*

(1) *General.* Valves 16 inches and smaller shall be gate valves, and valves 18 inches and larger shall be butterfly type or gate valves as specified on the plans or detailed specifications.

(2) Gate valves shall conform to the requirements of AWWA standards C509 and C515 with a 250 psi pressure rating and shall have a ductile iron body and bonnet, be resilient seated, utilize mechanical joints including gaskets and bolts, and include all accessories. Bolts shall be cor-blue, fusion bonded epoxy, series 300 stainless steel or approved equal. All internal and external ferrous surfaces shall be coated prior to assembly with a fusion bonded epoxy coating applied electrostatically prior to assembly meeting the requirements of AWWA C550. Gate valves shall have ductile iron wedge fully encapsulated with a SBR rubber or nitrile elastomeric coating. Stems shall be non-rising, one piece cast, forged, or rolled bronze. Valves shall have two inch ductile iron operating nuts and shall open left, counter clockwise. Bonnet bolts and nuts shall be Series 300 stainless steel and shall be rust proofed after threading and final tightening.

(D) *Valve boxes.*

(1) *Gate valves and butterfly valves.* Valve boxes shall be Mueller 666-S or equal and shall be a two piece screw-type construction with five-and-one-fourth inch riser and shall be adjustable from four-and-one-half feet to six feet, with the top section to be at least 24 inches in length. Drop lids shall be marked "water" and are to be of all metal construction.

(2) *Valve box adaptor.* A valve box adaptor shall be installed on the valve bonnet prior to installing the valve box. The valve box adaptor eliminates shifting of the valve box, protects the coatings, centers the valve box, and seals the valve box with a resilient material. The adaptor shall be installed in lieu of hardwood blocking and shall be incidental to the valve box.

The valve box adaptor shall be installed per the manufacturer's recommendations. The valve box adaptor shall be an Adaptor Inc. Valve Box Adaptor II, an American Flow Control Valve Box Self-Centering Alignment Ring, or an approved equal.

(E) *Fire hydrants.*

(1) Fire hydrants shall meet AWWA standard C502 and shall be Mueller A423, American AVK Series 27, or Waterous WB-67 pacer, traffic model with six feet bury and six inch mechanical joint inlets. Hydrants shall have five-and-one-fourth inch minimum valve openings, having o-ring packing and oil chamber to hold soft oil for stem thread lubrication, and shall have all operating parts, including valve seat, removable through the barrel. Barrel and upper standpipe shall be ductile iron with breaker flange and operating stem at ground level. A steel breakaway coupling shall be installed on the operating stem so that in case of breakage, no damage will result to the fire hydrant other than safety breakers.

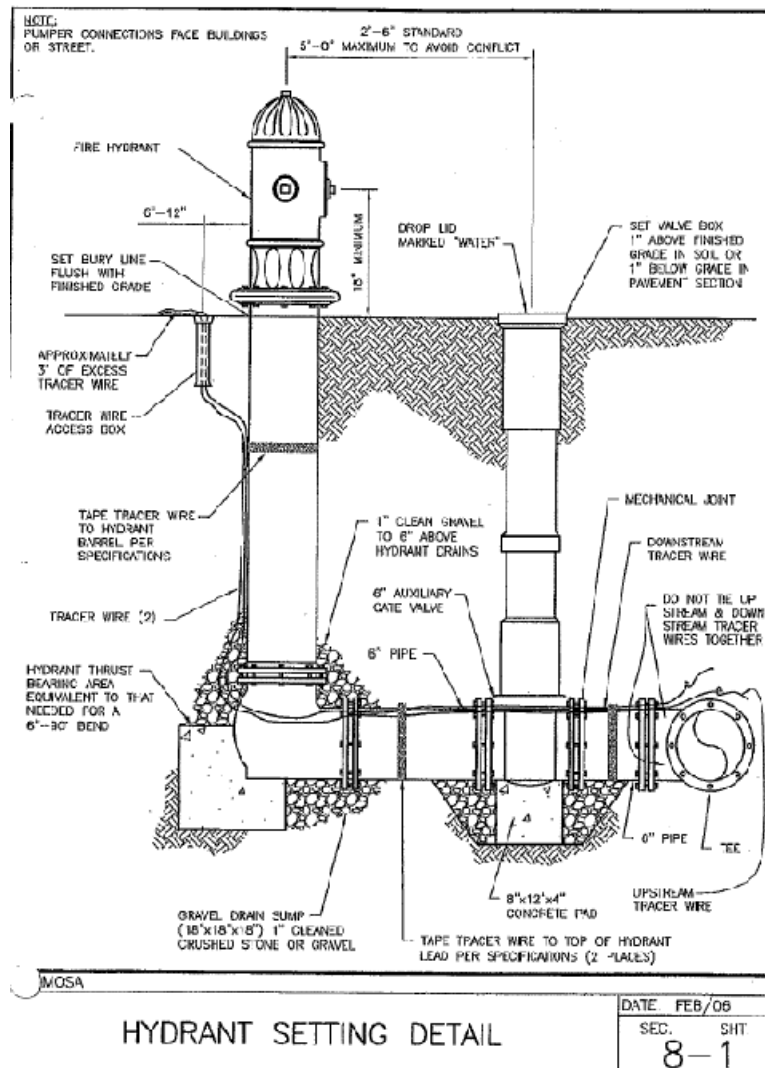
(2) All external surface areas on fire hydrant riser (barrel) sections and adjoining 90 degree ells shall be coated with HB Fuller IF1947T red oxide powder, Tnemec Series 140 Pota-Pox epoxy, or equal. All exposed nuts and bolts below the breakaway (direct bury) shall be series 300 stainless steel.

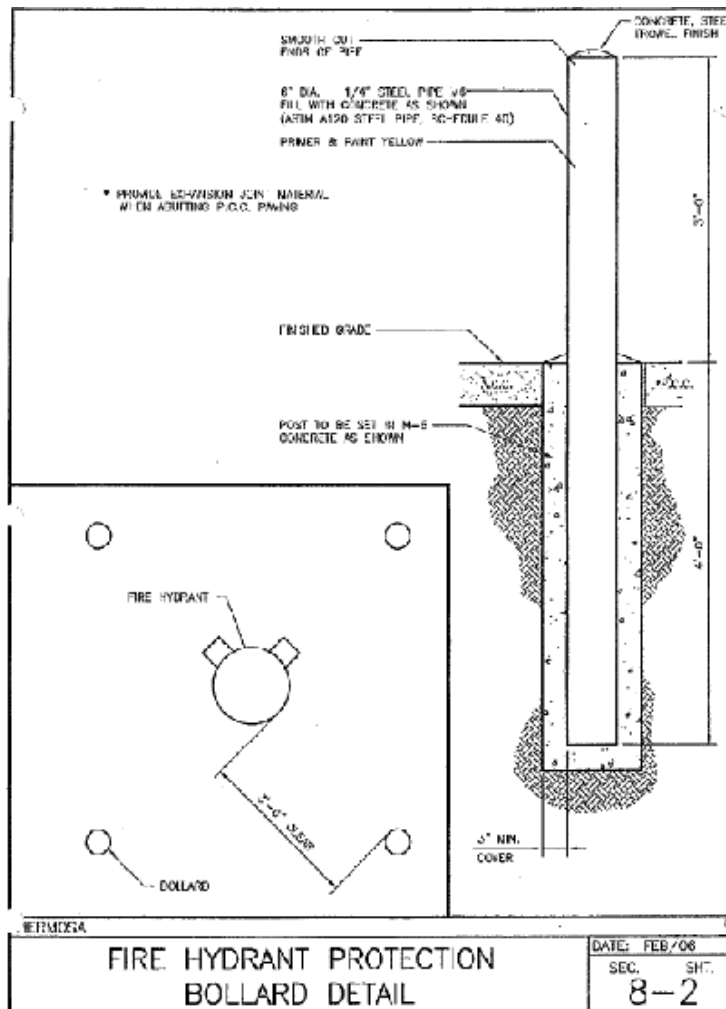
(3) All hydrants shall be capable of being extended in six inch increments. However, the minimum hydrant adjustment shall be 12 inches.

(4) Hydrants shall be constructed so that they will close with the existing water pressure acting on the hydrant. Drain valves shall be bronze and shall be positively operated by the main operating rod. All threads shall be National Standard threads. Operating nuts shall be one-and-one-half inches point-to-flat, pentagon (National Standard). Hydrants shall open left, counter clockwise. Fire hydrants shall have an internal travel stop nut.

(5) Hydrants are to have 2 two-and-one-half inch nozzles and 1 four-and-one-half inch steamer nozzle, all with National Standard threads. The minimum distance from the hydrant breaker flange to the centerline of the lower nozzle shall be 16 inches. Caps shall be nut type and shall be provided with chains. Hydrants shall be painted fire hydrant red.

(6) All fire hydrants are to be ordered with barrel lengths of six to eight feet to facilitate their installation per the grades and lines shown on the drawings. Adjustments greater than eight feet shall be accomplished using vertical bends (45, 22.5, or 11.25) along the hydrant lead. The use of a fire hydrant extension will not be an acceptable method of adjustment for a new fire hydrant.





(F) *Service line valves and fittings.*

(1) *General.* Service line valves and fittings shall meet AWWA standard C800 and ASTM B26. All castings shall be 85/5/5/5 copper alloy.

(2) Service line copper splicing couplings shall be flared or compression type such as Mueller 110 conductive compression, Hayes-tite, or equal. Soldered joints shall not be used for service lines installed underground.

(3) Curb stop valves shall be a ball valve type with a 300 psi working pressure rating. A double o-ring port seal shall be provided in the stem and the o-rings shall be supported in precision machined grooves. The end pieces shall be o-ring sealed to provide additional protection against leaking. Ninety degree valve operation, with internal movement restraint, is required. Drains are not permitted on valves. Minneapolis type valve and box are required (not allowing Buffalo type).

(4) Copper pipe connections shall be Mueller 110 conductive compression, A.Y. McDonald McQuick Compression Q Series, Hayes-tite, or equal.

(5) Curb stop valves shall be:

- (a) Mueller 300 Ball Curb Valve with Mueller 110 Conductive Compression Connection, model B-25155;
- (b) A.Y. McDonald Minneapolis Pattern Ball Valves, 300 psig Water, model 6104Q or 6100Q;
- (c) Ford B44 Series; or
- (d) Equal.

(6) *Corporation stops.*

(a) Shall be a ball valve type with a 300 psig working pressure rating. The inlet shall have a taper thread (AWWA standard) and the outlet shall be a conductive compression connection for Type K copper. Copper pipe connections shall be Mueller 110 Conductive Compression, A.Y. McDonald McQuick Compression Q Series, Hayes-tite, or equal.

(b) Corporation stops shall be:

- 1. Mueller 300 ball with Mueller 110 Conductive Compression Connection, model B-25008;
- 2. A.Y. McDonald Ball Valves, 300 psig Water, model 4701BQ;

3. Ford FB1000 Series; or

4. Equal.

(7) *Service saddles.* Service saddles for one inch through two inch copper service pipe shall utilize a wide band/strap with a minimum of two bolts and nuts, per width of the band/strap, for securing the band/strap to the main. The saddle shall provide full support around the circumference of the pipe. Nuts and bolts shall be rolled thread stainless steel or silicon bronze. Gaskets shall be neoprene or NBR compounded for water service.

(8) It shall be the contractor's responsibility to ensure that saddles and corporation stops are compatible with the pipe on which they are to be installed. If a compatibility question arises, the contractor shall inform the engineer and provide him or her with a recommended substitution.

(9) *Saddles for six to 12 inch mains.*

(a) Saddles for six to 12 inch mains shall utilize a stainless steel, cast brass per ASTM B62, bronze, or a high strength ductile iron body with a minimum 12 millimeters of fusion applied epoxy or Nylon 11 coating and a stainless steel band.

(b) Saddles shall be pre-sized if required or recommended by the saddle or pipe manufacturer. Pre-sized saddles will conform to the pipe without placing undue stress on the PVC pipe. Not all of the following indicated saddles are pre-sized and it is the responsibility of the contractor and supplier to ensure that the saddle is pre-sized if required or recommended by the saddle or pipe supplier.

(c) Saddles for six to 12 inch mains shall:

1. *One inch service taps.* Provide a minimum total band/strap width of two inches along the axis of the pipe. Saddles for one inch taps on six to 12 inch pipe shall be Ford style FS303 or FC202, Romac styles 306, 202N and 202BS with SS straps, A.Y. McDonald Model 3845, Mueller DR2S series with double studs, or approved equal.

2. *One-and-one-half and two inch service taps.* Provide a minimum total band/strap width of three-and-one-fourth inches along the axis of the pipe. Saddles for one-and-one-half and two inch taps on six to 12 inch pipe shall be Ford style FS303 or FC202, Romac styles 306, 202N and 202BS with SS straps, A.Y. McDonald Model 3845, Mueller DR2S series with double studs, or approved equal.

(10) Curb boxes shall be Tyler series, Mueller, Minneapolis type, or equal. The box shall be capable of telescoping, at a minimum, from five feet to a length of six feet. Lid shall be marked "water" and have a 13/16 inch (point to flat) pentagon brass nut. Risers shall be a minimum of two-and-one-half inches in diameter.

(11) Tapping sleeves and valves shall be used for service lines larger than two inches.

(G) *Concrete thrust blocks.* Thrust blocks shall be M-6 (4,000 psi) concrete.

(H) *Joint restraining devices.* Joint restraint devices at fittings shall meet the following requirements.

(1) In general, solid ring restraints shall be used whenever possible. Split restraints may be used when connecting to existing systems, for special cases, and when a solid ring restraint is not available for the application. All joint restraint devices shall be epoxy coated (minimum six millimeters), utilize the E Coat coating system as specified by the Ford Meter Box Company, or utilize the Mega-Bond coating system as specified by EBAA Iron, Inc. All bolts, rods, etc. shall be cor-blue, epoxy coated, stainless steel, or fluoropolymer coated per EBAA Iron, Inc. and the Ford Meter Box Company specifications.

(2) *For PVC pipe to DI push-on fittings.* Fitting joint restraints shall be EBAA Series 15PF00, or equal.

(3) *For PVC pipe to DI MJ fittings.* Fitting joint restraints shall be EBAA Series 2000PV, Series 2000SV, Series 15PF00, or equal.

(4) *For PVC pipe to PVC push-on fittings.* Fitting joint restraints shall be EBAA Series 2500, or equal.

(5) Joint restraint devices at pipe bells shall meet the following requirements.

(a) In general, solid ring restraints shall be used whenever possible. Split restraints may be used when connecting to existing systems, for special cases, and when a solid ring restraint is not available for the application. All joint restraint devices shall be epoxy coated (minimum six millimeters), utilize the E Coat coating system as specified by the Ford Meter Box Company, or utilize the Mega-Bond coating system as specified by EBAA Iron, Inc. All bolts, rods, etc. shall be cor-blue, epoxy coated, stainless steel, or fluoropolymer coated per EBAA Iron, Inc. and the Ford Meter Box Company specifications.

(b) *For PVC C-900 pipe.* The bell restraint shall be EBAA Series 1600, or equal.

(c) *For PVC C-905 pipe.* The bell restraint shall be EBAA Series 2800, or equal.

(I) Polyethylene encasement (poly-wrap) shall meet AWWA C105. For fittings and joint restraining devices, which are not epoxy coated, the encasement shall be eight millimeters thickness sheet polyethylene meeting AWWA C105. Joint tape for encasement shall be 3M Scotchwrap 50, or equal.

(J) *Pipeline insulation.*

(1) Pipeline insulation shall be Type IV Styrofoam brand Square Edge or Score Edge as manufactured by Dow

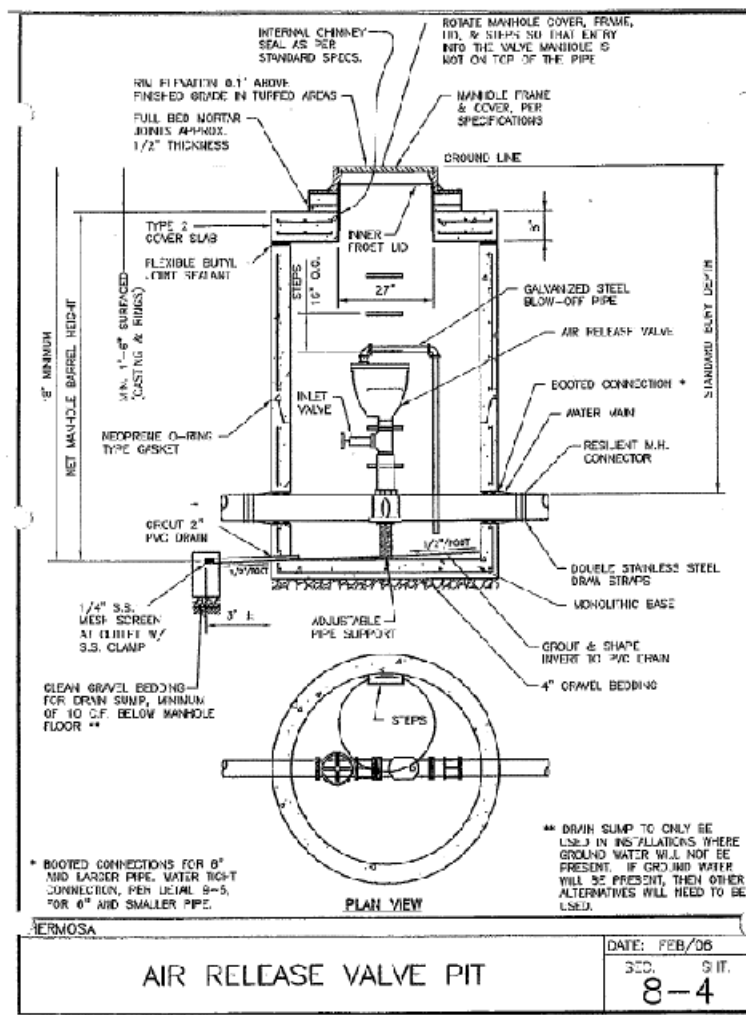
Chemical Company, or approved equal shall be used for insulating water pipes where required. The total thickness and dimensions shall be specified on the drawings or in the specifications. The minimum insulation thickness, however, shall be two inches.

(2) Approved equal products from other manufacturer's shall be extruded-polystyrene board insulation formed from polystyrene base resin by an extrusion process using hydrochlorofluorocarbons as blowing agent to comply with ASTM C578, Type IV, with 1.60 pounds per cubic feet minimum density and a compressive strength of 25 pounds per square feet in as specified in ASTM D1622 and ASTM D1621 respectively. The maximum thermal conductivity of the insulation shall conform to ASTM C518, C177, and C578. The maximum water absorption percentage by volume shall be 1% in accordance with ASTM D2842. The range of water vapor permeance shall be 0.4 to 1.0 perm in accordance with ASTM E96.

(K) *Meter, air release, and valve pits.*

(1) Meter, air release, and valve pits shall be constructed in accordance with the detailed drawings and unless specified otherwise on the drawings or detailed specifications, the pits shall be constructed in accordance with precast concrete manholes as modified as follows.

(2) Meter, air release, and valve pits shall be provided with steps. Flat cover slabs, when required, shall be designed for HS-20 loading and shall have an offset 24 inches diameter hole in line with the manhole steps. Cones shall have an offset 27 inches diameter hole in line with the manhole steps. Standard frames and covers shall be Neenah 1758, E Frost Retardant Frame and Lid with Inner Lid, or equal unless otherwise indicated on the drawings or specifications. The lid shall be a diamond top design Neenah Type C unmarked.



(L) *Tracer wire system.* Tracer wire shall be a direct bury wire that meets or exceeds the following requirements.

(1) *Conductor.* Twelve AWG solid strand softdrawn copper per ASTM B-3 , or B-8 . The breaking pounds of the wire shall be a minimum of 124 with an OD of 0.154. All wire shall be spark tested at 7,500 VAC.

(2) *Insulation.* Conductor shall be insulated with low density high molecular weight polyethylene insulation suitable for direct bury applications per ASTM D-1248. The minimum insulation thickness shall be 0.045. The color of the insulation shall be blue with a print line saying "water."

(3) *Splices and/or connectors.* Splices and/or connectors should be capable of handling two to four wires per connector and designated as water-proof. PVC adhesives or sealing compounds are not acceptable.

§ 50.42 CONSTRUCTION REQUIREMENTS.

(A) *Materials handling and storage.*

(1) The contractor shall be responsible for the safe handling and storage of all materials furnished by them and shall replace, at their expense, all such materials found defective in manufacture or damaged in transportation, handling, or storage.

(2) Pipe, fittings, and accessories shall be loaded and unloaded by lifting with hoists or skidding to avoid shock or damage. Under no circumstance shall such materials be dropped. All material shall be stored in a neat and orderly manner. Pipe shall be stored, to the greatest extent possible, in unit packages or bundles, and shall be handled to prevent stress to bell joints and prevent damage to bevel ends. In addition, materials shall be handled and stored in accordance with manufacturer's recommendations.

(3) If, in the opinion of the engineer, damage or defects in the factory-applied external coatings on steel or ductile iron pipe and fittings (including fire hydrants) can be repaired, then the contractor shall make said repairs as follows.

(a) If approved by the engineer, the contractor may make repairs when damage or defects occur in the factory-applied external epoxy or MegaBond coatings supplied on steel or ductile iron pipe and fittings (including fire hydrant risers and joint restraint devices). Coating repairs shall be made using a high build, low temperature applicable, fast cure, liquid epoxy coating. This epoxy coating material shall be DENSO Protal 7125 Repair Cartridge in packaged two component tubes with dispensing gun.

(b) When high ambient temperatures (greater than 85 degrees Fahrenheit) occur or when metal surface skin temperatures are high (greater than 100 degrees Fahrenheit) such that use of the DENSO Protal 7125 Repair Cartridge may be difficult due to the very short handling time of the material, an alternate modified amine cured epoxy coating may be used. This alternate coating shall be Tapecoat TC 7010 FS-Gray Fast Setting epoxy coating.

(B) *Alignment and grade.* Pipe shall be laid true to the line and grade established on the drawings. Where the drawings indicate that the finished ground surface elevations are to be modified from the existing elevations by this or future construction, the contractor shall exercise care to ensure that pipe, fittings, hydrants, valves and valve boxes are placed to the elevations indicated on the plans.

(C) *Underground obstructions.* The contractor shall expose existing underground obstructions shown on the plans or located in the field and shall determine their elevations far enough in advance of pipe laying that the proposed water main can be installed without the use of fittings at or near the points of crossing. Wherever obstructions not shown on the plans are encountered during the progress of the work and interfere with the proposed horizontal or vertical alignment of the pipeline, the engineer will change the plans and order a deviation in the line and/or grade, or may arrange for the removal or relocation of the obstructions. The contractor shall not deviate from plan line or grade without the engineer's approval.

(D) *Water main and sewer main/storm sewer separation.*

(1) *Vertical separation at crossings.*

(a) Water mains may cross above sanitary and storm sewers with a minimum vertical distance of 18 inches between the invert of the water main and the top of the sewer. In these cases where the water main is above the sewer and there is at least 18 inches of separation, then at the crossings one full 20 foot length of water pipe shall be centered on the crossing.

(b) A water main may cross above a sewer main with a vertical separation of less than 18 inches, or below the sewer main if either the water or sewer main is encased in PVC, ductile iron, or six inches of concrete for at least ten feet each side of the crossing. If PVC or ductile iron is utilized as encasement material, the ends shall be sealed with six inches of concrete.

(c) Water mains crossing under vitrified clay sewer pipes or concrete sewer pipes shall be encased in six inches of concrete extending ten feet either side of the crossing.

(d) The ten feet either side shall be measured from the outside wall of the sewer to the end of the encasement and is not measured from the centerline of the sewer main.

(2) *Water main and sewer main/storm sewer horizontal separation.*

(a) Water mains shall be constructed with ten feet of horizontal separation from any existing sanitary or storm sewer or proposed sanitary or storm sewer. The ten feet horizontal separation shall be the clear distance (water pipe sidewall to sewer pipe sidewall) and not the centerline distance between the utilities.

(b) The following installation requires engineer approval and is appropriate for installations where the ten feet separation physically is not possible.

1. A water main may be constructed closer than ten feet to a sanitary or storm sewer if it is laid in a separate trench or it is laid in the same trench and the water main is located on the opposite side on a bench of undisturbed earth. In both cases, the elevation of the crown of the sewer has to be at least 18 inches below the invert of the water main. The sewer main shall be constructed of water main pipe (pressure class pipe) meeting the requirements of § 50.41, and pressure tested for water tightness in accordance with AWWA standards for leakage testing.

2. As an alternative to constructing the sewer with water main pipe (pressure class pipe) and pressure testing the

sewer, it would also be acceptable to either encase the water or sewer main with six inches of concrete or to encase either the water or sewer within a PVC or cast iron casing.

(3) *Sanitary sewer manholes and storm sewers.*

(a) Sanitary sewer manholes and storm sewer pipes and inlets are considered to be sewers in regards to the above separation requirements.

(b) A water main can be constructed within the ten foot horizontal separation from a storm sewer pipe or storm sewer inlet provided that the storm sewer pipe is constructed with sealed joints. The pressure test shall be maintained for a minimum of 30 minutes.

(E) *Installation.*

(1) (a) Minimum cover depth from top of pipe to finished grade shall be as follows.

Size of pipe (inches)	Minimum cover (feet)
12 or less	6
14 to 18	5 1/2
20 or larger	5

(b) In the event adequate cover cannot be achieved, then, if approved by the engineer, the water pipe may be insulated. Insulation may also be required if adequate separation between a storm sewer or culvert and the water pipe cannot be achieved.

(2) Cleaning shall be done as necessary so that the interior of all water pipe and fittings is free from all dirt, cement, or other foreign material before installation. Contact surfaces shall be wire brushed immediately prior to jointing.

(3) Pipe cutting shall be done without damage to the pipe with saw or abrasive wheel and shall be smooth, straight, and at right angles to the pipe axis. Ends of pipe shall be dressed and beveled to remove roughness and sharp corners.

(4) (a) Laying and joining of PVC pipe shall be in accordance with AWWA C900, AWWA C905, and AWWA C605, and with the pipe manufacturer's instructions.

(b) Pipe shall be laid with bell ends facing in the direction of laying. Each pipe length shall be inspected for defects prior to being lowered into the trench. All pipe and fittings shall be carefully lowered into the trench piece by piece by means of pipe slings to prevent damage to the pipe and/or coating. Full lengths of pipe shall be installed except where connecting to appurtenances and fittings. The contractor shall leave an appurtenance or fitting with a full length of pipe whenever possible.

(c) Water main pipe shall not be installed in frozen ground or in water, and no water shall be allowed to run into or through the pipe.

(d) During the course of construction, a suitable stopper shall be kept in the end of the pipe so as to prevent any dirt and/or water from entering during the progress of the work at all times. Any dirt, loose material, or cement mortar which may accumulate in the pipe shall be removed as the work progresses.

(e) *Push-on joints.* The spigot end of field cut piping shall be cut square and then beveled. Joint surfaces shall be cleaned and lubricated immediately before completing the joint.

(f) *Mechanical joints.* Joints shall not be over-tightened. If an effective seal is not obtained the joint shall be disassembled, cleaned thoroughly, and reassembled. Where joint restraint devices are used with a mechanical joint, the holes shall be carefully aligned to permit installation of harness bolts. At mechanical joints, a beveled PVC spigot may not be used. Rather, a non-beveled spigot shall be used for insertion into mechanical joint.

(5) *Protection of the work.* Once in place, the pipe shall have its open end plugged to prevent soil, water, or other matter from entering the pipe.

(6) *Pipe deflection.* Deflection of the pipe or pipe joint shall not be permitted except as approved by the engineer. Changes in horizontal and vertical direction shall be achieved using standard fittings, fabricated fittings, and/or high deflection pipe couplings specifically designed and approved for use in joint deflection. The engineer may approve deflection of the pipe or pipe joint if the engineer of record specifically designed for the deflection and the deflection is approved by the pipe manufacturer.

(7) *Fittings.* Bends and tees shall be placed on a stable foundation, which may require the use of concrete pads of equal size or larger than specified for valves. Fittings shall be provided with thrust blocks, joint restraining devices, and polyethylene encasement (where fittings which are not epoxy coated) as specified herein.

(8) *Couplings.* Couplings shall be placed on a stable foundation and shall be wrapped in polyethylene encasement as specified herein. Couplings shall be approved by the pipe manufacturer for the use with the pipe and shall be installed according to the coupling manufacturer's recommendations.

(9) *Thrust restraint.*

(a) Thrust restraints in the form of concrete thrust blocks shall be provided at tees, crosses, horizontal bends, plugs, caps, valves, fire hydrants, and similar locations whether specifically indicated on the drawings or not. Refer to subdivision (10) below regarding joint restraining device installations for situations and fittings that require the use of joint restraints in lieu of thrust blocks.

(b) Concrete thrust blocks shall have a thickness at the fitting equal to at least half the diameter of the pipe being installed, but shall not be less than six inches thick under any circumstances. They shall extend from the fitting to the undisturbed wall of the excavation. The contractor shall ensure that the concrete does not cover or render inoperable nuts or bolts on the fittings. All metal fittings, valves, or appurtenances shall be wrapped in polyethylene prior to pouring thrust blocks.

(c) Concrete thrust blocks shall be allowed to cure for 48 hours prior to activating the water main. If the water main needs to be activated prior to the concrete curing, then the water main shall be restrained using joint restraining devices. Prior to backfilling, thrust blocks shall cure for a minimum of four hours.

(d) Thrust blocks shall be installed as shown on the drawings and shall meet or exceed the minimum volume or bearing area requirements as specified on the drawings or specifications for the water pressures and soil conditions.

(e) In muck, peat, or similar weak soils, thrust loads shall be resisted by using joint restraining devices or by removal of the soil and replacement with a material of sufficient stability to resist thrust loads as determined by the engineer.

(f) Where prior approval of the engineer is obtained, the contractor may substitute acceptable joint restraining devices for concrete thrust blocking.

(10) *Joint restraining device installations.* Joint restraining devices are required for the following installations.

(a) All valves 12 inches and larger, and pipe joints within their corresponding L lengths shall be restrained;

(b) All high pressure valves (working pressures greater than 110 psi) and pipe joints within their corresponding L lengths shall be restrained;

(c) Valves ten inches and smaller placed on dead end mains with less than 71 feet of pipe downstream of the valve shall be restrained using the appropriate joint restraining devices for a dead end. Both the upstream and downstream pipe joints within their corresponding L lengths shall be restrained;

(d) All reducers/increasers and their corresponding L lengths shall be restrained;

(e) All vertical bends and pipe joints within their corresponding L lengths shall be restrained;

(f) All water main lowering and pipe joints shall be restrained. Water main lowering restraint shall include restraining all joints within the fitting's corresponding L length, plus restraining all pipe joints which lie between the start of the lowering and the end of the lowering, regardless whether or not the pipe joint is located within the fitting's L length;

(g) All joint restraint devices shall be double poly wrapped and taped per city specifications for polyethylene encasement. If cathodic protection anodes are used, double poly wrap shall not be required. The polyethylene encasement ends shall be taped around the entire pipe diameter;

(h) Joint restraining devices shall be installed per the manufacturer's recommendations and for the appropriate water pressures and soil conditions as shown on the drawings or specifications.

(11) *Tracer wire.* Tracer wire shall be installed along with all water pipes as described below.

(a) The tracer wire shall be extended along with the water main. The wire shall be installed along the top of the pipe and shall be securely anchored to the pipe every four feet horizontally with an adhesive tape. The tracer wire shall be extended along all water main branches and hydrant leads as well. At fire hydrant leads, two tracer wires (the upstream tracer wire and the downstream tracer wire) shall be brought along the lead and brought to the surface at the fire hydrant. The upstream and downstream tracer wire at fire hydrants shall not be tied together, as this is intended to allow independent tracing of the downstream and upstream main.

(b) Tracer wire shall not be installed with copper water service lines.

(c) Tracer wire shall be installed with PVC water services. Tracer wire installed with PVC service lines shall be installed in accordance with water main requirements except that the tracer wire shall be brought to the surface at a service line valve location. Do not connect the water service tracer wire to the tracer wire on the main. Tracer wire installed along service lines shall be independent of the tracer wire installed along the main. This allows for only tracing the service line.

(d) At locations where the PVC water service is not being replaced entirely, the contractor shall splice the new tracer wire to the existing tracer wire at the point of re-connection. In instances where a PVC water service is not being replaced entirely and an existing tracer wire is not encountered, the contractor shall coil approximately five feet of wire at the re-connection location(s) to facilitate a future splice.

(e) All tracer wire connections shall be accomplished through the use of pig-tails. All splices and pig-tails shall be accomplished by stripping the wires to be connected, twisting the wires together, securing the connection by using an appropriately sized wire nut, and then preserving the splice or pig-tail wire nut with silicone.

(f) The main line tracer wire shall run continuous along the main(s) from fire hydrant auxiliary valves to fire hydrant auxiliary valve but shall not be continuous at fire hydrant auxiliary valves. At fire hydrant auxiliary valves, two tracer wires shall be installed. One wire is the main line wire from downstream of the fire hydrant, and the second wire is the main line wire going upstream of the fire hydrant. The tracer wire shall be extended at least three feet above the auxiliary valve, the wires folded, connected with wire nuts, wire nuts made waterproof with silicone and inserted into the auxiliary valve box for storage. The wire shall be easily retrievable for connection to and subsequent testing. The main line tracer wire shall not be interconnected at the fire hydrant auxiliary valve or at the main. This is intended to allow independent tracing of the downstream main from the upstream main and vice versa. Service line tracer wire shall not be connected to the main line tracer wire.

(g) The Public Works Department shall be able to successfully electronically trace all newly installed tracer wire/water mains. Personnel should be able to connect to tracing wires at every fire hydrant auxiliary valve location and energize all water mains between that fire hydrant auxiliary valve and the surrounding fire hydrants auxiliary valve. The contractor is responsible for coordinating conductivity testing with public works personnel prior to finish surfacing activities. If the tracer wire does not function as intended, the contractor shall repair the system to the satisfaction of the engineer.

(h) The Public Works Department shall inspect all underground splices and pig tails prior to backfilling.

(12) *Insulation.* Insulation shall be placed where noted on the plans. Insulation board shall be placed on a smooth and level cushion, minimum of two inches, of fine concrete aggregate (sand) and shall be covered with a minimum of two inches of the same material before placing bedding or backfill material on the insulation. The build-up of insulation sheeting shall be done by staggering the joints. An acceptable adhesive may be used to retain the individual sheets in the final specified dimensions.

(13) *Fire hydrants and auxiliary valves.*

(a) Fire hydrants shall stand plumb and shall have their nozzles parallel with or at right angles to the street, with the pumper nozzle facing the street. At intersections, the pumper nozzle shall face the higher classification street. Hydrants shall be set with the bottom of the breaker flange two inches above the finished ground elevation as shown on the standard details, resulting in the centerline of the lowest nozzle being at least 18 inches above finished grade. In no case shall hydrants be set closer than four feet from curb or edge of pavement, measured from outside of hydrant barrel to back of curb or edge of pavement.

(b) The contractor shall set each fire hydrant on an eight inch by 12 inch precast concrete pad with a four inch thickness and shall place a minimum of one-third cubic yards of Type 2 Foundation Material around the lower part of the hydrant to at least six inches above the drain port to provide a drainage area for the hydrant barrel. The contractor shall ensure that the drain port at the base of the hydrant is open to allow for the hydrant to drain properly when closed. Cast in place concrete may be used in lieu of the pre-cast pad if the hydrant lead is not charged for at least 48 hours and the drainage ports are maintained.

(c) The hydrant barrel shall be poly wrapped to the ground surface and the poly wrap shall not cover up the weep holes.

(d) An appropriately sized thrust block shall be installed between the hydrant valve chamber and the undisturbed trench wall. The thrust block shall meet the thrust block specifications herein.

(e) An auxiliary valve matching the size of the fire hydrant lead and a valve box shall be installed on the fire hydrant lead. Auxiliary valves shall be installed as detailed on the standard plate and shall be placed on a precast concrete block, or shall be fitted with a joint restraining device as approved by the engineer. Cast in place concrete may be used in lieu of the pre-cast pad if the hydrant and hydrant lead are not charged for 48 hours, and four hours cure time is allowed before backfilling. If the auxiliary valve needs to be moved away from the fire hydrant to avoid a conflict, it may be moved up to five feet away from the hydrant.

(f) Tracer wire conduit shall be attached to the fire hydrant auxiliary valve prior to backfill. Refer to subdivision (11) above for tracer wire installation requirements.

(g) Fire hydrant lead shall mean that portion of the hydrant branch line from the main to the auxiliary valve.

(14) *Valves.*

(a) Valve interiors and adjacent piping shall be cleaned of foreign material prior to making valve to pipe connection. Pipe/valve joints shall be straight and without deflection. All valves shall be encased in polyethylene per AWWA standard C105 and as specified herein, and shall be placed on a precast concrete anchor block and centered on the valve. Valves shall be backfilled with Type 1 bedding material to one foot above the valve. The contractor shall check all operating mechanisms for proper functioning. Valves which do not operate easily or are otherwise defective shall be replaced at the contractor's expense.

(b) Valves placed on dead-ends of mains with less than the required L length of pipe extending beyond the valve shall be restrained using the appropriate joint restraining devices.

(c) All valves which are not epoxy coated shall be poly wrapped.

(15) *Valve boxes.*

(a) Valve boxes shall be installed straight and plumb directly over the valve stem and shall not be placed in direct

contact with the valve. The top of the valve box shall be placed flush to one-fourth inches below flush with the surfacing in paved or graveled areas and one to two inches above finished grade in grass surfaced areas. Where the drawings indicate that the future grade at the valve location will be higher or lower than the existing grade at the time of valve installation, the contractor shall provide the correct combination of extension pieces so that the valve box can be adjusted to the future finished grade without replacing the valve box.

(b) A valve box adaptor shall be installed on the valve bonnet prior to installing the valve box.

(c) Tracer wire shall be secured to the valve box section prior to backfill.

(16) *Tapping tees for taps four inches and larger.*

(a) Where new four inch or larger service lines or mains are to be connected to a main, the contractor shall furnish all material necessary for connection to the water main, as specified herein. The tapping tee shall be assembled in accordance with the manufacturer's instructions. Tapping sleeves shall be supported independently from the pipe prior to tapping and shall be provided with thrust restraint as specified for other fittings. All tapping tees which are not epoxy coated or non-corrosive material shall be poly wrapped.

(b) The Public Works Department will coordinate all taps, and the contractor shall schedule all taps between 7:30 a.m. and 12:30 p.m. Monday through Friday, or as alternately scheduled by the Public Works Department.

(c) The contractor shall obtain and pay for all applicable permits and tapping fees.

(17) *Polyethylene fitting encasement.* All fittings and accessories, which are not epoxy coated or made of non-corrosive material, shall be encased in eight millimeter thickness sheet polyethylene per AWWA standard C105. The polyethylene sheet shall be installed per AWWA C105 and taped. The polyethylene shall fully encase the fitting and appurtenances. Excess material shall be neatly trimmed away and all seams shall be taped. The transition between the polyethylene sheet and PVC pipe or the DI poly tube shall be accomplished by sealing the ends of the sheet and taping the material fully around the circumference of the pipe. Cost of the encasement shall be incidental to the bid price of the fitting.

(F) *Disinfection.*

(1) *General.* Disinfection shall comply with the requirements of AWWA standards C651, C605, and C600. All new water mains and appurtenances shall be disinfected before they are placed in service. All water mains taken out of service for inspecting, repairing, or other activity that might lead to contamination shall be disinfected before they are returned to service.

(2) *Preventative methods.*

(a) The tablet method specified below may be used only if the pipes and appurtenances are kept clean and dry during construction. Therefore, the contractor shall take precautions to protect the interiors of pipes, fittings, and valves against contamination. Pipe delivered for construction shall be strung so as to minimize the entrance of foreign material.

(b) If dirt enters the pipe, it shall be removed and the interior of the pipe surface swabbed with a 1-5% hypochlorite disinfecting solution. If, in the opinion of the engineer, the dirt remaining in the pipe will not be removed by flushing, the contractor shall clean the interior of the pipe by mechanical means, such as a hydraulically propelled foam pig. Following mechanical cleaning the contractor shall flush the line achieving minimum flushing velocities of at least 30 feet per second, and shall then disinfect the pipe using either the continuous feed or the slug method. Flushing a completed main will not be allowed as a method of cleaning sediment allowed to enter the pipe during construction.

(c) All openings in the pipeline shall be closed with watertight plugs when pipe laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods. If water accumulates in the trench, the plugs shall remain in place until the trench is dry. If, for any reason, the water main is flooded during construction, it shall be cleared of the floodwater by draining and flushing with potable water until the main is clean. The section exposed to floodwater shall then be filled with a chlorinated potable water that, at the end of a 24 hour holding period, will have a free chlorine residual of not less than 25 milligrams per liter. The chlorinated water shall then be flushed from the main and after construction is completed, the main shall be disinfected using the continuous feed or slug method.

(3) *Disinfectant.*

(a) Unless specified otherwise in the detailed specifications or on the drawings, or required by other provisions of this specification, disinfection shall be accomplished by the tablet method. The contractor shall obtain the engineer's approval prior to using a method other than the tablet method.

(b) This method requires that the pipes and appurtenances be kept clean and dry. This method may not be used if the pipes and appurtenances are not kept clean and dry. In the event this happens, the engineer must be contacted.

(c) Tablets shall be five gram calcium hypochlorite tablets conforming to AWWA standard B300 and shall contain between 65-70% available chlorine. Tablets shall be fresh and shall be stored in a cool, dry, and dark environment to prevent loss of strength, which occurs upon exposure to the atmosphere.

(d) Do not use calcium hypochlorite intended for swimming pool disinfection, as this material has been sequestered and is extremely difficult to eliminate from the pipe after the desired contact time has been achieved.

(4) *Dosage.* Unless otherwise specified, the contractor shall place hypochlorite tablets in each section of water pipe

installed, including the hydrant branch, according to the table below.

Number of five gram calcium hypochlorite tablets required							
Length of pipe section (feet)	Diameter of pipe (inches)						
	4	6	8	10	12	14	16
13 or less	1	2	2	3	5	6	8
13-18	1	2	3	5	6	8	11
18-20	1	2	3	5	7	9	12
20-30	2	3	5	7	10	14	18
30-40	2	4	6	9	14	18	24

¹ For pipes 18 inches and larger, refer to drawings or detailed specifications for disinfection requirements.

(5) *Placing tablets.* Tablets shall be adhered to the inside top section of each pipe length using a food-grade adhesive, such as Permatex Form-a-Gasket No. 2 or Loctite Corporation Permatex Clear RTV Silicone Adhesive Sealant. There shall be no adhesive on the tablet except on the broad side attached to the surface of the pipe. If the tablets are attached before the pipe section is placed in the trench, their position shall be marked on the pipe section to indicate the pipe has been installed with the tablets at the top.

(6) *Filling and contact.* The water main shall be filled slowly so that the water velocity is no greater than one foot per second. Precautions shall be taken to assure that air pockets are eliminated. The water shall be allowed to stand in the pipe for at least 24 hours. Valves shall be positioned so that the strong chlorine solution in the treated main will not flow into water mains in active service. The chlorinated water shall remain in the pipe for at least 24 hours. The contractor shall notify the engineer at the end of the 24 hour retention period prior to flushing to allow the engineer to check the chlorine residual in the pipe. If the chlorine residual is less than 25 milligrams per liter, the contractor shall, at his or her expense, disinfect the water main again by the continuous feed method or the slug method, as approved by the engineer.

(7) *Flushing.*

(a) Within 48 hours of the end of the 24 hour retention period, the contractor shall flush the heavily-chlorinated water from the main until the chlorine concentration in the water leaving the main is no higher than that prevailing in the system or is less than one ppm as determined by the engineer. In addition to the above requirements, a minimum flushing velocity of three feet per second and flushing duration of one minute per 100 feet of pipe being flushed shall be achieved per the table below.

(b) Flushing shall be done in accordance with AWWA C651. Flushing shall be accomplished through use of hydrants or temporary fittings installed for the purpose. Flushing through corporations and/or water service lines is prohibited. The contractor shall obtain the engineer's approval prior to installing special fittings for flushing.

(c) Flushing shall be conducted in such a way as to prevent contamination of existing water mains and/or water service lines and to minimize traffic and pedestrian hazards and nuisance conditions. When possible, flushing shall be to the nearest storm sewer or drainage way. Flushing to the sanitary sewer is prohibited.

(d) The contractor will be responsible for any damage to fish and/or aquatic life caused by the chlorine residual. If chlorine reaches or is detected in a stream, river, or other waterway the contractor will be in violation for that discharge.

(e) A velocity in the main of at least three feet per second shall be attained during flushing. The flushing shall proceed until the chlorine concentration in the water leaving the main is no higher than that prevailing in the system, or is less than one ppm as determined by the engineer. The table below shows the rates of flow required to produce a velocity of three feet per second in pipes of various sizes, and the minimum flushing duration per 100 feet of pipe length. In no case shall the flushing duration be less than that indicated in the table below.

Required flow and minimum flow duration to flush pipelines				
Pipe diameter (inches)	Flow required to produce 3 feet per second velocity in main² (gpm)	Fire hydrants		Minimum flushing duration (minutes per 100 feet of pipe)
		Number of fire hydrants	Outlet size (inches)	
Required flow and minimum flow duration to flush pipelines				

Pipe diameter (inches)	Flow required to produce 3 feet per second velocity in main ² (gpm)	Fire hydrants		Minimum flushing duration (minutes per 100 feet of pipe)
		Number of fire hydrants	Outlet size (inches)	
4	120	1	2.5	1
6	280	1	2.5	1
8	480	1	2.5	1
10	740	1	2.5	1
12	1,100	2	2.5	1 ³
14	1,450	2	2.5	1 ³
16	1,950	3	2.5	1 ³

1 For pipes 18 inches and larger, refer to drawings or detailed specifications for flushing requirements
2 Requires a minimum 40 psi pressure in the main and the hydrant flowing to atmosphere
3 Assumes that the corresponding flow rate is being met

(f) Per AWWA C651, the contractor shall sample for coliform bacteria contamination. After the water lines have been flushed, the contractor shall sample the lines. Two consecutive samples of water from the end of the disinfected/flushed line must be collected at least 24 hours apart. These samples must be submitted to the state health laboratory, or other laboratory acceptable to the state Department of Environment and Natural Resources and the engineer. The samples must show the absence of coliform bacteria contamination before any taps may be made to the main or the main is activated and placed into service. Copies of all sample results shall be submitted to the engineer within 48 hours of receipt thereof.

(g) Because of the high risk of contamination during sampling, the contractor shall use certified lab personnel or a trained sampler to collect all samples submitted for testing.

(8) *Disposal of chlorinated water.* When, in the opinion of the engineer or contractor, the potential exists for chlorinated water to reach a stream, river, or waterway, the contractor shall apply a neutralizing chemical to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water as listed in appendix B of AWWA standard C651. The contractor will be responsible for any damage to fish and/or aquatic life caused by the chlorine residual. If chlorine reaches or is detected in a stream, river, or other waterway the contractor will be in violation for that discharge.

(G) *Pressure and leakage test for mains and service lines four inches or larger.*

(1) *General.* Pressure and leakage tests shall be performed on all newly installed water mains. The simultaneous pressure and leakage tests will be used unless otherwise specified. The testing methods specified in this division are specific for water pressure testing only. Air pressure testing is prohibited due to the catastrophic nature of failure should failure occur.

(2) *Test restrictions.*

(a) The pressure shall be 150% of the working pressure at the point of test, but not less than 125% of normal working pressure at the highest elevation, whichever is greater. Test pressure shall not exceed pipe, valve, or thrust restraint design pressures, and shall not vary by more than five psi (plus or minus) for the duration of the test. The duration of the hydrostatic test shall be a minimum of two hours.

(b) The contractor shall anticipate the need to conduct multiple tests in areas of varying topography and shall conduct testing in such a manner and sequence that the pressure requirements indicated above are achieved.

(3) *Pressurization.* Before applying the specified test pressure, each valved section of pipe to be tested shall be slowly filled with potable water and all air expelled from the pipe, valves, fittings, and hydrants. Where town water is not available, the contractor shall furnish sufficient potable water to fill and test the pipe. The specified test pressure, based on the elevation of the lowest point of the section under test and corrected to the elevation of the test gauge, shall then be applied by means of a suitable pump connected to the pipe in a manner satisfactory to the engineer and shall be sustained for the specified time. The test pump shall be equipped with two accurate pressure gauges, between the pump shut-off valve and water main being tested, both to show the line pressure reading during testing. When hydrants are in the test section, the test shall be made against closed hydrant valves.

(4) Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe or any valved section thereof to maintain pressure within five psi of the specified test pressure after the pipe has been filled with water and the air has been expelled. Leakage shall not be measured by the drop in pressure for a test section over a period of time.

(5) *Allowable leakage for PVC pipe.* The PVC pipe shall be pressure and leakage tested in accordance with AWWA C605. No pipe installation will be accepted if the leakage is greater than that indicated in the table below.

Allowable leakage in gallons per hour per 1,000 feet of pipe (gph)
Average test pressure (psi)

<i>Pipe diameter (inches)</i>	<i>50 psi (gph)</i>	<i>100 psi (gph)</i>	<i>150 psi (gph)</i>	<i>200 psi (gph)</i>	<i>250 psi (gph)</i>	<i>300 psi (gph)</i>
<i>Allowable leakage in gallons per hour per 1,000 feet of pipe (gph)</i>						
<i>Average test pressure (psi)</i>						
<i>Pipe diameter (inches)</i>	<i>50 psi (gph)</i>	<i>100 psi (gph)</i>	<i>150 psi (gph)</i>	<i>200 psi (gph)</i>	<i>250 psi (gph)</i>	<i>300 psi (gph)</i>
4	0.19	0.27	0.33	0.38	0.43	0.47
6	0.29	0.41	0.50	0.57	0.64	0.70
8	0.38	0.54	0.66	0.76	0.85	0.94
10	0.48	0.68	0.83	0.96	1.07	1.17
12	0.57	0.81	0.99	1.15	1.28	1.40
14	0.67	0.95	1.16	1.34	1.50	1.64
16	0.76	1.08	1.32	1.53	1.71	1.87
18	0.86	1.22	1.49	1.72	1.92	2.11
20	0.96	1.35	1.66	1.91	2.14	2.34
24	1.15	1.62	1.99	2.29	2.56	2.81
30	1.43	2.03	2.48	2.87	3.21	3.51
36	1.72	2.43	2.98	3.44	3.85	4.21

(6) (a) Acceptance shall be determined on the basis of allowable leakage. If any test of installed pipe discloses leakage greater than that specified in the table above, the contractor shall, at his or her own expense, locate and make approved repairs as necessary until the leakage is within the specified allowance. All visible leaks shall be repaired, regardless of the amount of leakage.

(b) Any damaged or defective pipe, fittings, valves, hydrants, or joints discovered following the pressure test shall be repaired or replaced with approved material at the contractor's expense, and the test shall be repeated until it is within the specified allowance.

(H) *Pressure and leakage test for service lines less than four inches.* Pressure and leakage tests shall be performed on all newly installed copper water service lines if the service line has one or more couplings installed between the corporation and the curb stop, and/or one or more couplings installed between the curb stop and the property water distributing system. The testing method shall be as specified in the National Standard Plumbing Code with the exception that air pressure testing is prohibited.

(I) *Water main closures and temporary service.*

(1) Water main closures shall be scheduled to minimize the inconvenience to the public. Consequently, water main closures shall be scheduled between 8:00 a.m. and 4:00 p.m. Monday through Friday, when possible. Water main closures scheduled to begin prior to or continue beyond those times listed above will require approval from the engineer. In any case, water main closures will not be allowed until the engineer gives his or her approval.

(2) The contractor shall notify the Public Works Department of all proposed closures at least 48 hours prior to closure of any water main, unless a shorter time of notice is approved by the engineer. The Public Works Department will issue closure notification to affected landowners.

(3) *Operation of valves.* Only public works personnel shall operate valves on existing water mains. The contractor may operate valves on newly installed water mains that are under his or her control, until such time as they are accepted by the city for operation and maintenance.

(4) Temporary water service for private residences affected shall be provided by the contractor when the water main closure will exceed eight hours. The contractor shall provide temporary water service for businesses upon request, regardless of the length of closure. When temporary service is to be provided to businesses, the contractor shall obtain the name and phone number of a responsible contact person at each affected business and submit the information to the engineer at least 48 hours prior to closure.

(J) *Abandonment and/or salvage of water main and appurtenances.*

(1) *Water mains.* The contractor shall seal all open ends of water mains to be abandoned with a concrete plug having a length equal to the diameter of the pipe being plugged.

(2) *Fire hydrants.* Fire hydrants and auxiliary valves are to be removed and salvaged, unless indicated otherwise on the drawings or detailed specifications, and shall be delivered by the contractor to the Public Works Department in good working condition. Any damage to the hydrant and/or appurtenances as a result of removing, salvaging, and delivering, shall be repaired by the contractor at no cost to the city.

(3) *Valves.* Unless indicated otherwise on the drawings or detailed specifications, valves are to be removed, salvaged,

and delivered by the contractor to the Public Works Department in good working condition. Any damage to the valve as a result of removing, salvaging, and delivering, shall be repaired by the contractor at no cost to the town.

(4) *Valve boxes.* The contractor shall close the valve, remove and salvage the top sections of those water main valve boxes marked on the plans to be abandoned and shall deliver them to the Public Works Department. The resulting holes shall be backfilled and compacted to meet the requirements of these specifications and shall be resurfaced with the appropriate material: i.e. seed, sod, asphalt, concrete, etc.

(5) *Others.* When the drawings indicate items are to be removed or salvaged, the contractor shall deliver the items to the Public Works Department in good working condition. Any damage to the items as a result of removing, salvaging, and delivering, shall be repaired by the contractor at no cost to the town. Unless an item is indicated as salvaged, the item will be considered a contractor obligation to remove and dispose of.

(K) *Service lines and fittings.*

(1) Permits, obtainable from the Public Works Department, will be required for all connections to the town water system.

(2) *Service pipe.* Copper pipe shall be laid with sufficient waving as to prevent rupture in settlement. A goose-neck shape shall be constructed in the copper pipe leading from the corporation stop. Copper splicing couplings shall be as described in this specification. PVC or Class 200 psi black poly service pipe shall be laid as specified herein for water mains. Minimum cover depth for water service lines shall be six feet. A ten foot horizontal separation shall be maintained between water service and sewer service lines. Tracer wire shall be installed along with all PVC service lines, as described in the specification section relating to tracer wire. Tracer wire shall not be installed with copper service lines.

(3) Service saddles shall be installed for all connections to water mains. Unless specified otherwise on the drawings or detailed specifications, the contractor shall furnish and install all service saddles.

(4) Corporation stops shall be provided by the contractor, and inspected by the Public Works Department.

(5) Service lines larger than two inches diameter shall be connected to the main with either an appropriately sized tapping sleeve and valve or an epoxy coated ductile iron tee as specified for water main fittings elsewhere in these specifications.

(6) Curb stops and boxes shall be installed on all service lines and shall be located entirely within the public right-of-way. The curb stop and box shall be located between one and seven feet from the property line, unless otherwise approved by the engineer. If any curb box is closer to the property line than 0.9 feet or farther from the property line than 7.1 feet, measured to the center of the box, then the box shall be reset to within the allowable tolerance.

(7) *Water service new connections.*

(a) Where new service lines are to be installed for undeveloped property or future buildings or additional services added to an existing building, the contractor shall furnish all materials necessary for connection of new service lines to the water main as specified herein, and shall obtain and pay permits and tapping fees as established by ordinance.

(b) Where the new service line is terminated, the service line shall be capped and plugged water tight to prevent leakage if the curb stop is inadvertently opened. New service connections shall have curb stops left turned off at the time of installation and the termination point shall be marked with a minimum three foot long steel fence post. The steel post shall be buried below the surface at least eight inches. The post needs to be steel to facilitate location by magnetic locators.

(c) The contractor shall schedule all service taps between 7:30 a.m. to 4:00 p.m. Monday through Friday, and the Public Works Department shall inspect.

(d) Water service new connections for service lines four inches or larger shall be made as described in division (E) (16) of this section.

(8) *Water service reconnections.*

(a) The contractor shall furnish all materials necessary for reconnecting service lines existing prior to reconstruction of a water main. On town projects, all permits and tapping fees will be waived. However, the contractor shall obtain a no charge permit to work in the right-of-way from the Public Works Department.

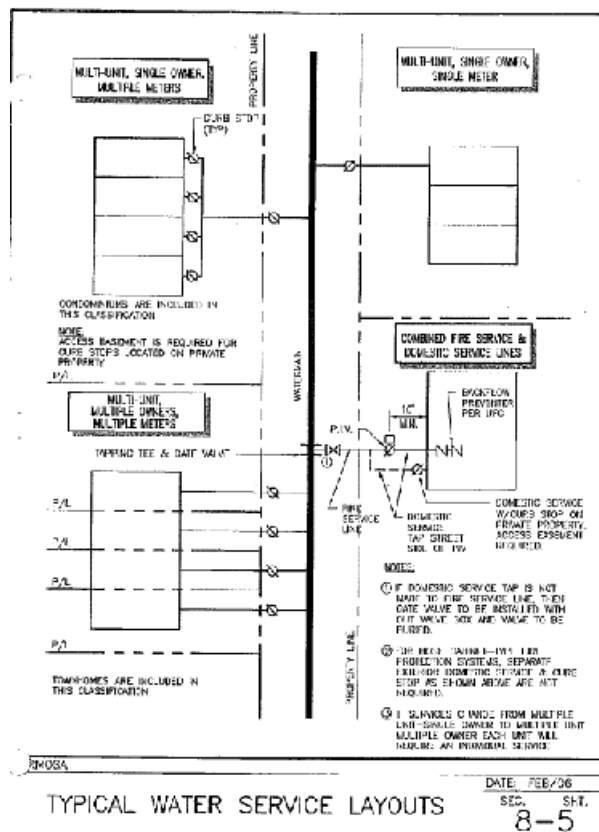
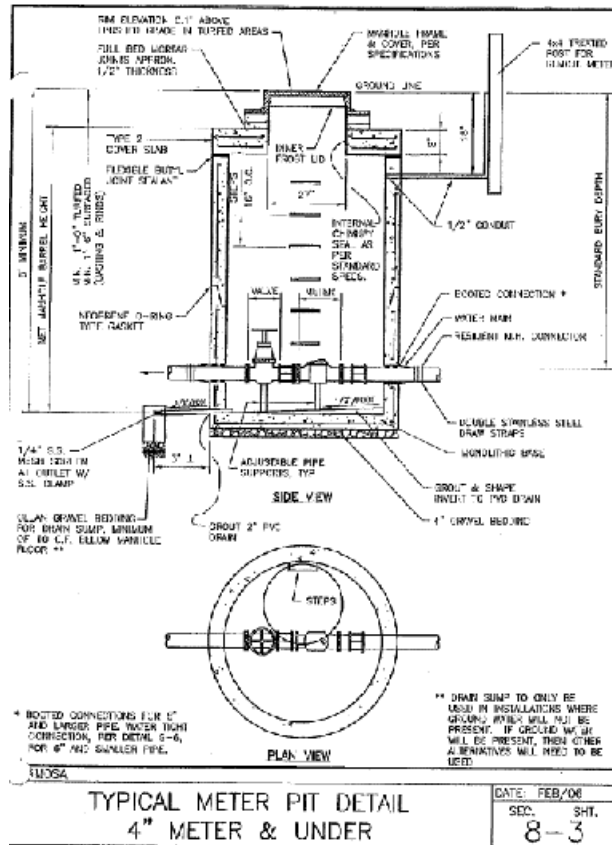
(b) On non-town projects, the new account set-up/inspection permit (tap permit), the right-to-work permit, and tapping fees are applicable and will be secured prior to beginning work.

(c) The contractor shall schedule all service taps between 7:30 a.m. to 4:00 p.m. Monday through Friday, with the Public Works Department to inspect.

(9) *Inspection.* All water service installations, regardless of whether or not the service is located on private property or in public right-of-way, shall be inspected by the Public Works Department prior to the contractor backfilling the trench. The contractor shall notify the Public Works Department Supervisor a minimum of four hours prior to the time he or she needs the inspection. Any trench backfilled without being inspected and approved by authorized town personnel shall be re-excavated by the contractor to expose the work for the required inspection. Discrepancies shall be corrected by the contractor and re-inspected by town personnel. Any re-inspection fees will be charged to the contractor.

(L) *Acceptance of curb stops and main valves.* As a condition for project acceptance, all curb stops and water main

valves within the project boundaries shall be in proper operating condition. Town personnel will inspect and operate each curb stop and water main valve as part of the final inspection. The contractor shall correct any deficiencies discovered during the inspection.



(Ord. passed 3- -2006)

§ 50.43 FINAL INSPECTION.

(A) Upon substantial completion of the improvements, the contractor will request a final inspection of the project to be

attended by public works personnel, the Town Engineer, contractor, and owner.

(B) During the final inspection, a punch list of discrepancies will be identified. Once these discrepancies have been corrected and corrective action verified, an acceptance letter will be issued by the town per § 50.44.

(Ord. passed 3- -2006)

§ 50.44 PROJECT ACCEPTANCE AND WARRANTY PERIOD.

Final acceptance of the project by the owner will be documented by the issuance of an acceptance letter, which is issued according to the following criteria.

(A) Construction has been substantially completed and the facilities can be put to their intended use.

(B) All testing has been completed, and the required results have been met.

(C) The date of the acceptance letter documents the start of the two year warranty period, during which the contractor shall be notified in writing of any defects in the project and shall correct the defects at his or her expense within ten days of receipt of the notice. Failure to correct or undertake with due diligence, to correct the deficiencies within the specified time, will cause to have the owner make the necessary repairs and bill the contractor one-and-one-half times the costs incurred. Providing, however, that in case of an emergency, where, in the judgment of the owner, delay would cause serious loss or damage, repairs may be made without notice being sent to the contractor, and the contractor shall pay the cost thereof.

(D) The owner reserves the right to extend the warranty period if excessive problems are apparent during the initial two year period.

(E) During a period of two years after the completion of the work covered by this contract and the final acceptance in writing thereof by the owner, the contractor shall make all needed repairs arising out of defective workmanship or materials furnished by the contractor, or both, which in the judgment of the owner shall become necessary during said period. The owner is hereby authorized to make such repairs at the contractor's expense, if within ten days after the receipt of a written notice to the contractor, or his or her agent, the said contractor shall neglect to make, or undertake with due diligence to make, the aforesaid repairs. Providing, however, that in case of an emergency where, in the judgment of the owner, delay would cause serious loss or damage, repairs may be made without notice being sent to the contractor and the contractor shall pay the cost thereof.

(F) The contractor shall be required to provide a warranty bond in the amount of 10% of the construction cost of the improvement or as agreed upon by the Town Engineer and the Town Board. The town will hold the warranty bond for the two year warranty period.

(G) Acceptance letter shall remain on file at the Town Hall for the duration of the warranty period.

(Ord. passed 3- -2006)

§ 50.45 ACCEPTANCE BY TOWN.

(A) Following expiration of the warranty period, unless extended per §50.44, the town will accept maintenance responsibility for the improvements.

(B) The acceptance letters will remain on file at the town office for documentation of improvements accepted by the town.

(Ord. passed 3- -2006)

§ 50.46 INITIAL CHARGING AND FLUSHING OF WATER MAINS.

(A) The contractor will be charged for municipal water used for charging, testing and flushing of water mains.

(B) *Initial charge.* The charge will be based upon the calculated quantity of water to fill the line based on size of line and lineal feet of line.

(C) If pressure testing fails and the line requires recharging, the quantity of water for the initial charge will be billed for each additional charge whether the line is completely drained or not.

(D) The following rates apply.

6 inch line	1.47 gallons per lineal feet
8 inch line	2.62 gallons per lineal feet
10 inch line	4.08 gallons per lineal feet

(E) *Flushing.* The amount of water for flushing will be on set usage of two times the initial charge. Each flushing will be charged this usage if multiple flushings are required. If excess water is used, public works personnel can recommend a higher usage amount be billed.

(Ord. passed 3- -2006)

§ 50.47 INSPECTION FEES.

(A) Inspection fees for inspection required by this specification shall be billed to the contractor at the hourly rate of the public works personnel or the hourly rate of the Town Engineer, depending on who performs the inspection.

(B) It shall be the responsibility of the contractor to pay inspection fees in full prior to the town issuing a final acceptance letter.

(C) The cost of initial inspection required to verify pressure testing of the water main and for inspection of taps will be included as part of the tap fees. However, if the testing fails, all subsequent inspections will be billed to the contractor at the applicable hourly rate.

(D) The public works personnel will validate pressure testing and perform taps, unless other arrangements are coordinated through the Public Works Department, and any additional fees paid prior to beginning work.

(E) The contractor is responsible for conducting the pressure testing and taps under the supervision of public works personnel, but the Public Works Department is not responsible for performing the testing or making the taps unless approved by public works personnel.

(Ord. passed 3- -2006)

§ 50.99 PENALTY.

Any person, firm, association or corporation who violates, disobeys, omits, neglects, refuses to comply with, or resists the enforcement of, any of the provisions of this chapter shall, upon conviction thereof, be subject to a fine of \$100 in addition to the cost of the enforcement action, including but not limited to, reasonable attorney fees, expert fees and inspector fees. Each day of violation shall constitute a separate offense. Compliance therewith may also be enforced by injunctive order at the suit of the petitioner or the owner of real estate within the district affected by the regulations of this chapter.

(Ord. passed 6-12-2017)

CHAPTER 51: SEWER REGULATIONS

Section

- 51.01 Definitions
- 51.02 Use of municipal sewers required
- 51.03 Private sewage disposal
- 51.04 Building sewers and connections
- 51.05 Use of the municipal sewers
- 51.06 Malicious or willful damage to sewer system
- 51.07 Powers and authority of inspectors
- 51.08 Rates and charges for services
- 51.09 Fees
- 51.10 Construction standards
- 51.11 Repairs of city sewer mains and service lines

- 51.99 Penalty

§ 51.01 DEFINITIONS.

Unless the context specifically indicated otherwise, the meaning of terms used in this chapter shall be as follows:

BUILDING DRAIN. That part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer, as defined by the Uniform Plumbing Code (typically within five feet of building or structure).

BUILDING SEWER. The extension from the building drain to the municipal sewer or other place of disposal, as defined by the Uniform Plumbing Code (normally within five feet of the building or structure).

COMMERCIAL. All other premises which are not classed residential.

GARBAGE. Shall mean solid wastes from the preparation, cooking, and dispensing of food, and from the handling, storage and sale of produce.

INDUSTRIAL WASTES. The liquid wastes from industrial processes as distinct from sanitary sewage. Industrial waste includes, but is not limited to, restaurants, rendering plants, slaughter floors and service stations.

MAY. Is permissive.

MUNICIPAL SEWER. A sewer in which all owners of abutting properties have equal rights, and is controlled by public authority.

NATURAL OUTLET. Any outlet into a watercourse, pond, ditch, lake or other body of surface or ground water.

PERSON. Any individual, firm, company, association, society, corporation or group.

PRE-TREATMENT. Any treatment facility or process required to bring sewage strength to acceptable levels comparable to domestic sewage levels, as determined by the Board of Trustees, so as not to damage the municipal treatment facilities or process.

PROPERLY SHREDDED GARBAGE. The wastes from the preparation, cooking and dispensing of food that has been shredded to such a degree that all particles will be carried freely, under the flow conditions normally prevailing in municipal sewers, with no particle greater than one-half inch in any dimension.

RESIDENTIAL. All premises occupied and used exclusively as a home by not more than two families.

SANITARY SEWER. A sewer, which carries sewage, and to which storm, surface, and ground waters are not intentionally admitted.

SD DENR. South Dakota Department of Environment and Natural Resources.

SEWAGE TREATMENT PLANT. Any arrangement of devices and structures used for treating sewage.

SEWAGE SYSTEM. All facilities for collecting, pumping, treating, and disposing of sewage.

SEWAGE. A combination of the water carried wastes from residences, business buildings, institutions, and industrial establishments.

SEWER. A pipe or conduit for carrying sewage.

SHALL. Is mandatory.

SUPERINTENDENT OF PUBLIC WORKS. The superintendent of the sewer system of the municipality, or the authorized deputy, agent, or representative of the municipality.

SUSPENDED SOLIDS. Solids that either float on the surface of, or are in suspension in water, sewage, or other liquids, and which are removable by laboratory filtering.

WATERCOURSE. A channel in which a flow of water occurs, either continuously or intermittently.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015)

§ 51.02 USE OF MUNICIPAL SEWERS REQUIRED.

(A) It shall be unlawful to discharge to any natural outlet within the municipality, or in any area under the jurisdiction of said municipality, any sanitary sewage, industrial wastes, or other polluted water, except where suitable treatment has been provided in accordance with subsequent provisions of this chapter.

(B) Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cess pool, or other facility intended or used for the disposal of sewage.

(C) As per SDCL § 9-48-53, the owner of all houses, buildings or properties used for human occupancy, employment, recreation, or other purposes situated within the municipality is hereby required, at his expense, to install suitable toilet facilities therein, and to connect such facilities directly with the proper municipal sewer in accordance with the provisions of this chapter, within 90 days after date of official notice to do so, provided:

(1) The structure or wastewater system is located within the jurisdictional boundaries of a municipality or sanitary district;

(2) The sewer collection system of the public entity exists within 200 feet of the home, trailer court, commercial establishment, business, park, institution, or property line; and

(3) The municipality or sanitary district requests to provide service to the premises (ref: Individual & Small On-site Wastewater Systems 74:03:01:44), except as provided in the following section.

(D) The town has the right to require annexation to any new or current serviced area. All new services may be required to agree, in writing, to annex into the town limits when, and if, the property is within the legal proximity.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015; Ord. passed 1-8-2019) Penalty, see § 10.99

§ 51.03 PRIVATE SEWAGE DISPOSAL.

(A) Where a municipal sanitary sewer is not available under the provision of §51.02(C), the building sewer may be connected to a private sewage disposal system complying with the provision of this chapter.

(B) Before commencement of construction of a private sewage disposal system the owner shall first obtain a written permit approved by the Board of Trustees. The application for such permit shall be made on a form furnished by the municipality, which the applicant shall supplement with any plans, specifications, and other information as are deemed necessary by Public Works. Charges as per the current fee schedule shall be paid to the municipal Finance Officer at the time the application is filed.

(C) A permit for any sewage disposal system shall not become effective until the installation is completed to the satisfaction of the Superintendent. He/she shall be allowed to inspect the work at any stage of construction and, in any event, the applicant for the permit shall notify the Superintendent, when the work is ready for final inspection, and before any underground portions are covered. The Superintendent shall make the inspection within 12 hours of the receipt of notice.

(D) The type, capacities, location and layout of a private sewage disposal system shall comply with all recommendations of the SD DENR. No permit shall be issued for any private sewage disposal system employing sub-surface soil absorption facilities unless it meets the minimum lot size as required by current SD DENR regulations for individual and on-site wastewater systems. No septic tank shall be permitted to discharge to any municipal sewer or natural outlet.

(E) At such time as your private sewage disposal system fails and/or a municipal sewer becomes available to a property served by a private sewage disposal system, as provided in § 51.02(C), a direct connection shall be made to the municipal sewer in compliance with this chapter, and any septic tanks, and similar private sewage disposal facilities shall be abandoned and filled with suitable material as required by current SD DENR regulations, at no expense to the municipality.

(F) The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times, at no expense to the municipality.

(G) No statement contained in this chapter shall be construed to interfere with any additional requirements that may be imposed by SD DENR.

(H) Any individual or corporation desiring connection of the sewage disposal system to any property within the limits of the municipality where the system is not available may, at no cost to the municipality construct any such necessary extension to the specifications of this chapter and SD DENR requirements applicable at the date of construction and approval of the Board of Trustees. Any individual or corporation desiring connection to the sewage disposal system outside the limits of the municipality may be required to annex into the city limits.

(I) A copy of all plans and specifications shall be filed with the Town Finance Officer 30 days prior to the start of such construction.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015) Penalty, see § 10.99

§ 51.04 BUILDING SEWERS AND CONNECTIONS.

(A) Only a duly licensed plumber/contractor, per the *Town's Standard Construction Specifications and Standard Details* approved by the Town Board, or an employee of the Public Works Department shall be permitted to do any work on or uncover, make any connections with, make an opening into, use, alter, or disturb any municipal sewer or appurtenances. All such plumbers/ contractors shall be governed by state and town regulations that are in force or that may be hereafter adopted.

(B) Any person desiring sewer service from the municipal sewer system for premises not currently connected with the system shall apply to the Town Finance Officer for a permit. The owner or his agent shall make application on a form furnished by the municipality. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgment of the Superintendent. The time the application is filed, the applicant shall pay to the municipal Finance Officer a connection/tap fee to be determined by the following schedule:

(1) Owners of commercial premises shall pay an assessment fee, per current fee schedule, for connection to the municipal sewage system; and

(2) Owners of residential premises shall pay an assessment fee, per current fee schedule, per dwelling for connection to the municipal sewage system.

(C) All costs and expenses incident to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the municipality from any loss or damage that may directly or indirectly be caused by the installation of the building sewer.

(D) A separate and independent building sewer connection shall be provided for every dwelling as required by State

Plumbing Code. Under exceptional circumstances the Town Board may waive the provisions of this section.

(E) Existing building sewers, in working condition, may be used in connection with new buildings only when they are found, on examination and tested by the Public Works Department, or individual appointed by the Superintendent, to meet all requirements of this chapter and are approved by the Town Board.

(F) The size and slope of the building sewer shall be subject to the approval of the Superintendent, but in no event shall the diameter be less than four inches. Slope shall comply with State Plumbing Code requirements.

(G) Wherever possible the building sewer shall be brought to the building at an elevation below the basement floor. No building sewer shall be laid parallel to or within three feet of any bearing wall, which might thereby be weakened.

(H) In all buildings in which any building drain is too low to permit gravity flow to the municipal sewer, sanitary sewage carried by such drain shall be lifted by approved artificial means and discharge to the building sewer, at no cost to the municipality.

(I) The connection for the building sewer into the municipal sewer shall be made at the owner's expense with an approved saddle in the municipal sewer at the location specified by the "Superintendent".

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015) Penalty, see § 10.99

§ 51.05 USE OF THE MUNICIPAL SEWERS.

(A) No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water or unpolluted industrial process waters to any sanitary sewer.

(B) Storm water and all other unpolluted drainage shall be discharged to such sewers as are specifically designated storm sewers, or to a natural outlet approved by the Superintendent. Industrial cooling water or unpolluted process waters may be discharged, upon approval of the Superintendent, to a storm sewer or natural outlet.

(C) Except as hereinafter provided, no person shall discharge or cause to be discharged any of the following described waters or wastes to any municipal sewer:

(1) Any liquid or vapor having a temperature higher than 150° F;

(2) Any water or waste which may contain more than 100 parts per million, by weight, of fat, oil, or grease;

(3) Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas;

(4) Any garbage that has not been property shredded;

(5) Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, leathers, tar, plastics, wood, paunch, manure, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewage system;

(6) Any waters or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process constitute a hazard to humans or animals or create any hazard in the receiving waters of the sewage treatment plant;

(7) Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant; or

(8) Any noxious or malodorous gas or substance capable of creating a public nuisance.

(D) Grease, oil and sand interceptors shall be provided when, in the opinion of the Superintendent, they are necessary for the proper handling of the liquid wastes containing grease in excessive amounts, or any inflammable wastes, sand and other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the Superintendent, and shall be located as to be readily and easily accessible for cleaning, and inspection. Grease and oil interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction; water tight and equipped with easily removable covers which when bolted in place shall be gas tight and watertight.

(E) Where installed, all grease, oil and sand interceptors shall be maintained by the owner, at his expense, in continuously efficient operation at all times.

(F) Pre-treatment of waste may be required if deemed necessary by the Superintendent. If required, pre-treatment must comply with SD DENR requirements, be approved by the Board of Trustees and installed at no expense to the town. Pre-treatment shall occur prior to municipal treatment facilities and processes.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015) Penalty, see § 10.99

§ 51.06 MALICIOUS OR WILLFUL DAMAGE TO SEWER SYSTEM.

No unauthorized person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the municipal sewage system. Any person violating this

provision shall be subject to immediate arrest under charge of disorderly conduct. Any violator, upon conviction, shall be guilty of misdemeanor and shall be subject to a penalty of up to 30 days in jail, and/or a fine, as per current fee schedule, and the total cost of the repairs.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015)

§ 51.07 POWERS AND AUTHORITY OF INSPECTORS.

Public Works and other duly authorized employees of the municipality bearing proper credentials and identification shall be permitted to enter upon all properties for the purposes of inspection, observation, measurement, sampling, and testing, in accordance with the provisions of this chapter.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015)

§ 51.08 RATES AND CHARGES FOR SERVICES.

Fees, charges, and rates for sewer services, connections, and tap fees may be changed per resolution by the Board of Trustees whose authority to do so is granted by the State of South Dakota SDCL § 9-48-26. The Board of Trustees shall establish just and equitable rates by policy. Refer to the current sewer rate resolution, as outlined within the current fee schedule.

(Ord. 15, passed 6-20-2006; Ord. 15.1, passed 8-18-2009; Ord. 15R-2015, passed 2-2-2015)

§ 51.09 FEES.

Any fees, regular charges, connection collections, etc., shall be deposited in the Sewer Fund.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015)

§ 51.10 CONSTRUCTION STANDARDS.

All construction covered under this chapter shall comply with state codes, laws and shall comply with the *Town of Hermosa Standard Construction Specifications and Details*.

(Ord. 15, passed 6-20-2006; Ord. 15R-2015, passed 2-2-2015)

§ 51.11 REPAIRS OF CITY SEWER MAINS AND SERVICE LINES.

(A) Any repairs performed to the city's sewer mains are the sole responsibility of the municipality with the exception that any damage incurred during the installation of any private service. In this situation the licensed contractor will be responsible to complete repairs to the line per the current adopted Building Codes and the Public Works Department.

(B) Any repairs required to private service lines, starting from the property line to the structure will be the responsibility of the property owner, and from the property line to the main is the responsibility of the town. If during the repairs it is discovered that the damaged section is not up to current adopted codes the service will not be continued until the line from the main is replaced.

(Ord. 15R-2015, passed 2-2-2015)

§ 51.99 PENALTY.

Any person, firm, association, or corporation who violates, disobeys, omits, neglects, refuses to comply with, or resists the enforcement of, any of the provisions of this chapter shall, upon conviction thereof, be subject to a fine of \$100 in addition to the cost of the enforcement action, including, but not limited to, reasonable attorney fees, expert fees, and inspector fees. Each day of violation shall constitute a separate offense. Compliance therewith may also be enforced by injunctive order at the suit of the petitioner or the owner of real estate within the district affected by the regulations of this chapter.

(Ord. passed 6-12-2017)

CHAPTER 52: GARBAGE AND REFUSE

Section

52.01 Definitions

52.02 Family domestic units collection and containers

- 52.03 Yard waste collection
- 52.04 Collection charges
- 52.05 Unlawful deposits
- 52.06 Scavenging
- 52.07 Burning

- 52.99 Penalty

§ 52.01 DEFINITIONS.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

FAMILY DOMESTIC UNIT. Any single independent family unit, irrespective of the number of persons constituting the family, but shall not include a situation where more than one family lives together in any single residence or abode, but in such situation, each of the independent families shall be deemed and regarded as a separate and distinct family domestic unit. Each independent family unit living in a multiple dwelling residence, apartment house, or any type of residence (including mobile homes other than mobile homes in a licensed mobile home court) shall each be deemed a **FAMILY DOMESTIC UNIT** for the purposes of this chapter. A rooming house that supplies lodging only for hire and which does not serve meals to any lodgers and does not permit cooking and eating on the premises shall be deemed a **FAMILY DOMESTIC UNIT** for the purposes of this chapter.

GARBAGE. Solid and semisolid putrescible animal and vegetable wastes resulting from the handling, preparing, cooking, storing, serving or consuming of food, or of material intended for use as food, and all offal, excluding useful industrial byproducts, from all public and private establishments and from all residences.

MULTI-FAMILY UNIT. A residential duplex to four-plex unit for the purpose of town garbage collection.

REFUSE. Putrescible and non-putrescible wastes, including, but not limited to, garbage, rubbish, ashes, incinerator ash, incinerator residues, street cleanings, market and industrial solid wastes, and sewage treatment wastes in dry or semisolid form.

RUBBISH. Non-putrescible solid waste consisting of combustible and noncombustible wastes, such as ashes, paper, cardboard, tin cans, yard clippings, wood, glass, bedding, crockery, trees or portions of trees, or other litter with similar properties.

SCAVENGING. The unauthorized removal of an item(s) from a town-owned garbage can, recycling can, roll-off container, or solid waste property, including the landfill and material recovery facility.

YARD WASTE. Natural, non-putrescible solid vegetation waste produced by commercial or private residential landscaping activities. The waste shall include lawn cuttings, lawn rakings, branches, trees, garden waste, and other similar waste vegetative material, all free of other debris or rubbish.

(Ord. passed 6-19-2018)

§ 52.02 FAMILY DOMESTIC UNITS COLLECTION AND CONTAINERS.

The town shall contract for all residential garbage and trash collection within the town including single-family or multi-family, up to and including 4-plex units; residents receiving garbage service are required to utilize the contracted service provider through the municipality. All residents of single family residences and multi-family units within the town receiving town garbage service shall pay the charges and fees specified in resolution and shall comply with the following rules and regulations pertaining to the collection of trash and garbage.

(A) Residents of the town, subject to this chapter, shall comply with collection approved by the town in the manner which follows:

(1) All residents of the town and each family unit (single through 4-plex) who are subject to this chapter shall be issued one collection container by the contracted service provider.

(2) Each family unit (single through 4-plex) shall have one collection container for garbage unless a request is submitted at town hall.

(3) Only garbage service provided collection containers shall be allowed for use.

(4) All requirements of the garbage service provider shall be followed.

(5) If the container is stored outside, it shall be kept so as to protect the container and its content from animals. Garbage placed in the containers shall be bagged and tied to prevent blowing during collection. Loose garbage placed in the container is prohibited.

(6) Residents should place the collection containers in a location suitable and readily accessible for collection by the collection truck no later than 6:00 a.m. on the scheduled collection day. Containers shall be removed from the curb within 24 hours of being emptied.

(B) Residents of the town are responsible for picking up trash and garbage from tipped containers.

(C) If a collection container becomes unusable due to damages resulting from causes other than the collection truck, the resident shall be responsible for purchasing a new container from the service provider.

(Ord. passed 6-19-2018)

§ 52.03 YARD WASTE COLLECTION.

Yard waste collection is limited to residents who live within municipal town limits. Yard waste will not be collected for disposal, it must be delivered without any container to the yard waste disposal containers located on 1st Street. No yard waste shall be commingled with any trash, rubbish, infectious or hazardous waste, or other non-yard waste materials.

(Ord. passed 6-19-2018; Ord. passed 12-20-2022)

§ 52.04 COLLECTION CHARGES.

(A) The town shall make a charge for each month for the collection of refuse from each family domestic unit. The charge shall be billed on the monthly water bill to each family domestic unit and shall be immediately due and payable upon the billing date. It shall be payable with, and in addition to, the water bill.

(B) In the event refuse collection is provided by the town under the provisions of this chapter to a family domestic unit within the garbage service district not independently served by the town water service and billed therefor, the owner and occupant of the dwelling unit occupied by the family domestic unit shall be billed for each month at the same rate that the water users are billed. The refuse collection charge shall be forthwith payable to the town by either the owner or occupant of the dwelling unit.

(C) Bills shall be payable at the Town Finance Office or at the authorized bank depository by automatic withdrawal upon enrollment.

(D) The rates for any and all charges the town shall make under this provision shall be prescribed by resolution of the Common Council.

(E) In addition to the foregoing methods of billing and collecting the charges for refuse collection, the Finance Officer, with the approval of the Board of Trustees, may from time to time adopt, use, and enforce such other methods of billing and collection of the charges as may be reasonably efficient, feasible, and appropriate, to the end that in every case all collection charges provided by this section shall be paid.

(Ord. passed 6-19-2018)

§ 52.05 UNLAWFUL DEPOSITS.

No person shall deposit, place, or throw any refuse in or upon any street, alley, or other public place. No person shall place any refuse upon any private property, whether owned by the person or not, unless the garbage shall be enclosed in a collection container meeting the requirements of this chapter.

(Ord. passed 6-19-2018)

§ 52.06 SCAVENGING.

It is unlawful for any person to scavenge or salvage any trash or recyclables at the curb, alley, or right-of-way from containers. Materials so placed shall be removed only by the service provider.

(Ord. passed 6-19-2018)

§ 52.07 BURNING.

No garbage, tires, creosote, or other matter from which dense smoke or offensive odors emanate during combustion shall be burned outside of any building, or inside any building in a fireplace, wood stove, or other wood-fired appliance.

(Ord. passed 6-19-2018)

§ 52.99 PENALTY.

(A) Any person violating this chapter shall be subject to the general penalty provision of §10.99.

(B) Further, any person violating this chapter shall be subject to a civil action for the recovery of any damages occurring as a result of the violation(s).

(Ord. passed 6-19-2018)