



**BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF GUNNISON, COLORADO**

RESOLUTION NO. 2023- 20

**A RESOLUTION ADOPTING SEWER RULES AND REGULATIONS AND
CONSTRUCTION STANDARDS OF THE GUNNISON COUNTY WATER AND SEWER
DISTRICT**

WHEREAS, on March 21, 1977, by Resolution number 1977-9, the Board of Commissioners of Gunnison County ("Board") established the Gunnison County Sewer District ("District"), and naming the Board as the governing body of the District; and

WHEREAS, on June 4, 1991, by Resolution number 1991-20, the Board renamed the District the Gunnison County Water and Sewer District; and

WHEREAS, in order to promote the health, safety and welfare of the public, the Board finds it necessary to establish rules, regulations and standards for sewer systems as allowed under section 30-11-101 C.R.S.; and

WHEREAS, C.R.S. sections 30-20-401, et seq. grant the Board authority to enact rules for rates, connection, funding and delinquent accounts for sewer systems; and

WHEREAS, on August 22, 2023, the Board conducted a work session with the Department of Public Works to discuss and review the proposed Sewer Rules and Regulations and Construction Standards for the Gunnison County Water and Sewer District; and

WHEREAS, since that work session, the Gunnison County conducted outreach efforts seeking public input and providing opportunity for comments on the draft District Sewer Rules and Regulations and Construction Standards; and

WHEREAS, the Board seeks uniform County Sewer Rules and Regulations and Construction Standards to create consistency and predictability for new and existing sewer connections; and

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of the County of Gunnison, Colorado, that the Board adopts the following Rules and Regulations and Construction Standards for the Gunnison County Water and Sewer District:

1. Gunnison County Water and Sewer District Sewer Rules and Regulations, effective the date of adoption of this Resolution and attached hereto as "Exhibit A"; and
2. Construction Standards for the Gunnison County Water and Sewer District, effective the date of adoption of this Resolution and attached hereto as "Exhibit B."



INTRODUCED by Commissioner Puckett Daniels, seconded by Commissioner Houck, and adopted this 3rd day of October, 2023.

BOARD OF COUNTY COMMISSIONERS
OF THE COUNTY OF GUNNISON, COLORADO

By 
Jonathan Houck, Chairperson

By 
Elizabeth Smith, Vice Chairperson

By 
Laura Puckett Daniels, Commissioner

ATTEST [seal]:

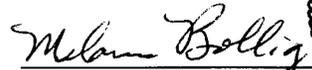
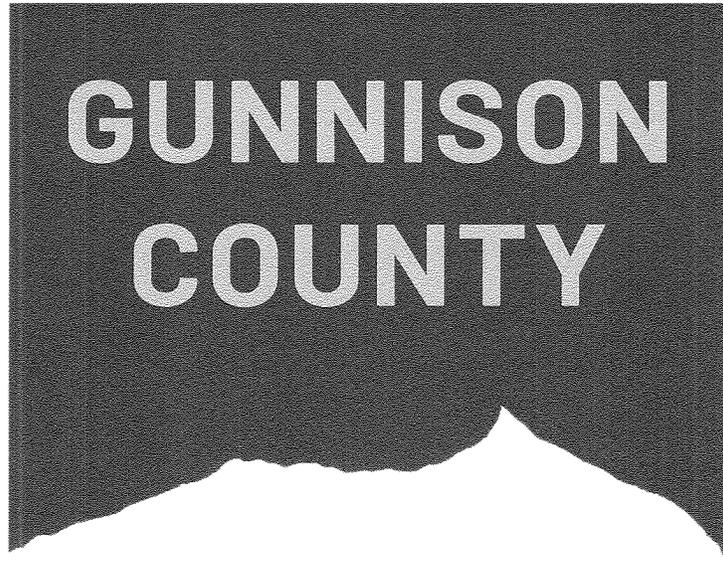

Deputy County Clerk



EXHIBIT A

**GUNNISON COUNTY
WATER AND SEWER DISTRICT
SEWER RULES AND REGULATIONS**



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SECTION 1. GENERAL

1.1 The District

The Gunnison County Water and Sewer District, referred to herein as “District” has all the rights, powers, privileges, authorities, functions, and duties granted to Counties by the laws of the State of Colorado, particularly Part 4 of Article 20 of Title 30, of the Colorado Revised Statutes., to acquire, construct, install, operate, and maintain sanitary sewer improvements within the District’s jurisdictional boundaries. The District was initially created in 1977 by Resolution No. 9, Series 1977 of the Gunnison County Board of County Commissioners and modified and expanded under subsequent Resolutions.

1.2 Board of Directors

The Board of County Commissioners of Gunnison County shall constitute ex officio the Board of Directors of the District, referred to herein as the “Board”. The Chairperson shall be ex officio the presiding officer. In the absence of the Chairperson, the Vice-Chairperson shall serve as the Presiding Officer. The County Clerk shall be ex officio the Secretary of the Board and District. The Deputy County Manager for Public Works shall serve as the ex officio District Manager.

1.3 District Agents and Representatives

The District Manager and any other employee or agent of the District designated by the District Manager or the Board shall have the full authority to act for and on behalf of the District in any manner affecting the administration or enforcement of these Rules and Regulations. The District Manager may appoint a Sanitation Supervisor and other employees of the District as necessary.

1.4 Rules and Regulation Scope

These Rules and Regulations shall be considered a comprehensive set of rules and regulations governing certain aspects of the control, management and operation of the District. It should be noted, however, that not every conceivable aspect of the control, management and operation of the District and its systems is covered in these Rules and Regulations, and the Board reserves the right to make rulings concerning matters not covered herein as and when appropriate, in the opinion of the Board. In addition, these Rules and Regulations are not intended to supersede or contravene specific terms or conditions of any agreement, contract, or other document entered into between the District and a party. Where silent, the District may utilize the policies and procedures of Gunnison County for guidance regarding any matter, including but not limited to personnel policies, construction codes, purchasing and contracting procedures, fiscal management and ethics. These Rules and Regulations shall not be construed as a limitation on the authority of the Board to exercise the powers conferred upon it by Colorado law.

1.5 Effective Date

These Rules and Regulations shall be effective immediately upon adoption by a majority of the Board at a public meeting.

1.6 Rules and Regulations Amendment Procedure

These Rules and Regulations may be amended from time to time by the Board in the same manner as the original Rules and Regulations herein were adopted.



1.7 Repeal of Conflicting Resolutions

All resolutions or parts of resolutions in conflict herewith are hereby repealed, except as may be expressly provided herein.

1.8 Severance Clause

If any section, paragraph, sentence, clause, or phrase of these Rules and Regulations is held to be unconstitutional or invalid for any reason, such decision shall not affect the validity or constitutionality of the remaining portions of these Rules and Regulations. The Board hereby declares that it would have passed these Rules and Regulations and each section or parts thereof, irrespective of the fact that any one section or part be declared invalid or unconstitutional.

1.9 Regulation by Other Entities

Any limitation, restriction, or prohibition validly placed upon the District by any governmental entity or by any agreement between the District and any other governmental entity is hereby incorporated into these Rules and Regulations by this reference and shall constitute a limitation, restriction and/or prohibition on each user.

1.10 Variances

The Board reserves the right to waive or modify the provisions of these Rules and Regulations at its sole discretion. Any person seeking a variance of a provision of the Rules and Regulations shall have the burden of proving that the operation of such a provision would cause undue hardship, or should not be applied to the person for another justifiable reason, and such variance shall not endanger the health, safety and welfare of the residents and inhabitants of the District. The Board's decision to grant or to deny the variance shall be final and conclusive.

1.11 District Not Liable

No claim for damage shall be made against the District, and the District and its officials and employees shall not be liable by reason of damage resulting from any of the following: breaking of any service or supply line, pipe, cock, or meter by any employee of the District; the making of connections or extensions; burst service line pipes or other facilities not owned by the District; blockage in the system causing the backup of effluent; damage caused by "smoking" of lines to determine drainage connections to District lines; pressure cleaning and televising of sewer lines; breakage of main lines by District personnel; interruption of sanitary sewer service and the conditions resulting there from where said interruption of service is brought about by request of claimant or by circumstances beyond the District's control; failure of any facilities to be located where the District's map indicates they should be; the malfunctioning of a wastewater lift station and possible backflow resulting there from; failure to obtain access to isolation valve; or for doing anything to the wastewater system of the District deemed necessary by the Board or its agents. This paragraph shall not relieve the District from liability for negligence of its employees, if such liability would otherwise have existed; however, the foregoing shall not constitute a waiver by the District of the defense of sovereign immunity or the Colorado Governmental Immunity Act, or any other defenses it may have to an action against the District, its officials or employees, nor a waiver of its insurance coverage.

These Rules and Regulations shall not be construed to hold the District in any manner responsible for any damages to persons or property resulting from any inspection as herein authorized or resulting from any failure to so inspect, or resulting from the issuance of court action as allowed by law, or the forbearance of the District to so proceed.



1.12 Officials Not Liable

Any District official or employee, charged with the enforcement of these Rules and Regulations, acting in good faith and without malice on behalf of the District in the discharge of their official duties, shall not thereby render themselves personally liable for any damages that may accrue to persons or property resulting from any such act or omission committed in the discharge of such duties. Any suit or proceeding instituted against such official or employee, stemming from any act or omission performed by them in the enforcement or attempted enforcement of any provision of these Rules and Regulations, shall be defended, indemnified and held harmless by the District until final termination of the proceedings. This section shall be construed in such a manner as to be consistent with the District's resolution indemnifying such officials and employees.

1.13 Not Liable for Work of Others

The District does not assume any liability for any work performed or failed to be performed by others. No claim shall be made against the District or any of its officers or employees on account of errors of omission or commission made by the District's licensees.

1.14 Indemnity

The user, contractor, and/or developer, as applicable, shall indemnify the District from any loss or damage that may directly or indirectly be occasioned by the installation, maintenance of, or work near, wastewater system facilities.

SECTION 2. DEFINITIONS AND ACRONYMS

2.1 Definitions

For the purpose of these Rules and Regulations, the following terms, phrases, acronyms, words, and their derivations shall have the meanings set forth below, regardless of whether they are capitalized. When not inconsistent with the context, words used in the present tense include the future, words in the plural include the singular number, and words in the singular include the plural number. The word "shall" is always mandatory and not merely directory. May is permissive.

2.1.1 ACCESSORY STRUCTURE OR SECONDARY USE STRUCTURE OR ACCESSORY DWELLING UNIT (ADU):): A use or structure that is located on the same parcel as the primary use or structure, clearly incidental, secondary and subordinate to the primary use or structure on the parcel; is devoted to the primary use or structure; is customarily found in conjunction with the primary use or structure; is not incompatible with the primary use or structure; and is subordinate in purpose to the primary use or structure.

2.1.2 ACT OR THE ACT. The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 3 U.S.C.1251 *et seq.*

2.1.3 APARTMENTS/CONDOS. A building or complex of buildings containing a group of residences with shared heating & plumbing, shared access hallways, with single land ownership on a master water meter.



- 2.1.4 APPLICANT. Any person, firm, corporation, association, or agency who desires to obtain sewer system service from the District.
- 2.1.5 APPROVAL AUTHORITY. The District Manager or their designated agents or representatives.
- 2.1.6 AREA MEDIAN INCOME (AMI). means the median income for Gunnison County adjusted for household size, as established and defined in an annual schedule published by the U.S. Department of Housing and Urban Development (HUD). AS-BUILTS. The surveyed data and final detailed drawings of the actual construction of the installed sewer system and/or service lines.
- 2.1.7 AUTHORIZED REPRESENTATIVE. (a) A user who is: (1) a principal executive officer of at least the level of vice president, if the user is a corporation; (2) a general partner or proprietor if the user is a partnership or proprietorship, respectively; (3) a duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates. (b) Any person designated by the District to act on its behalf.
- 2.1.8 BACKFILL. the dumping of earthen materials into excavated holes, or covering exposed features with soil. This can be done to protect features, or to level ground for construction of a road or building. Excavated dirt or soil used to refill a trench or hole.
- 2.1.9 BIOCHEMICAL OXYGEN DEMAND. The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five (5) days at twenty (20) degrees centigrade expressed in terms of weight and concentration milligrams per liter (mg/l).
- 2.1.10 BEDDING. Dirt/soil that surrounds a pipe after installation.
- 2.1.11 BOARD OF DIRECTORS or BOARD. The Board of Directors of the Gunnison County Water and Sewer District, which is composed of the Board of County Commissioners of Gunnison County.
- 2.1.12 BUILDING DRAIN. That part of the lowest horizontal piping of an internal sewer system which receives the discharge from waste and other drainage inside the walls of the building 5' outside the outer face of the building wall.
- 2.1.13 UTILITY INVESTMENT FEE (UIF). A fee assessed on new construction, new connections, or any increase in use of sewer through existing connections that cause an increase in Factor Units, used to pay for the incremental maintenance and expansion of capital improvements necessary to serve sewer service demand.
- 2.1.14 CATEGORICAL INDUSTRY. One of the industries for which the E.P.A. has established or is in the process of establishing categorical pretreatment standards.
- 2.1.15 CLEAN OUTS. Access points to a pipe system. A pair of clean outs with access directed to both the sewer main and the connected property is required at the property line or other location approved by an authorized District representative.



- 2.1.16 CODE OF FEDERAL REGULATIONS (CFR). Code of Federal Regulations as amended or as it may be subsequently amended.
- 2.1.17 CONTRACTOR. Any person, firm or corporation approved by the District to perform work on and to furnish materials to District facilities.
- 2.1.18 CONTROL AUTHORITY. The District Manager or his/her designated agents or representatives.
- 2.1.19 COOLING WATER. Water to which the only pollutant added is heat.
- 2.1.20 DEFLECTION TEST. A test that is conducted by pulling a solid pointed mandrel with a diameter equal to 95% of the pipe diameter through the completed pipeline.
- 2.1.21 DEVELOPER. Any person, corporation, partnership, joint venture, local governmental entity or other entity preparing land within the District for the construction of buildings or facilities and who will be constructing, rebuilding, remodeling, or otherwise changing the demand for services within or outside the boundaries of the District.
- 2.1.22 DIRECT DISCHARGE. The discharge of treated or untreated wastewater directly to the waters of the State of Colorado.
- 2.1.23 DISTRICT. The Gunnison County Water and Sewer District, the Board of Directors of the Gunnison County Water and Sewer District, the District Manager or a person designated by the Board of Directors or the District Manager to act on behalf of and for the District.
- 2.1.24 DISTRICT MANAGER. The Deputy County Manager for Public Works of Gunnison County.
- 2.1.25 DOMESTIC OR SANITARY SEWAGE OR WASTEWATER. Liquid waste (a) from the noncommercial preparation, cooking and handling of food, or (b) containing by-products of washing, laundry and household cleaning found in a normal household, or (c) containing only human excrement and similar matter from the sanitary conveniences of dwellings, commercial buildings, industrial facilities, and institutions or combination thereof.
- 2.1.26 EASEMENT. a conveyance or reservation of an incident of ownership in real property for one or more specific purposes, public or private.
- 2.1.27 EXTENSION. Any pipeline construction that adds to or extends or lengthens an existing District sewer main including lateral and intercepting sewers.
- 2.1.28 FATS, OIL OR GREASE (FOG). Any hydrocarbons, fatty acids, soaps, fats, waxes, oils and any other material that is extracted by Freon solvent, as specified in 40 CFR 136.3.
- 2.1.29 FINAL ACCEPTANCE. That point in time when the sewer lines and appurtenances constructed by others have been finally accepted by the District, as further described in Section 5 of these Rules and Regulations.
- 2.1.30 FOOD PREPARATION ESTABLISHMENTS. Any establishment that cooks or prepares food that is sold to or served to customers or patrons of that establishment for consumption either on or off premises.



- 2.1.31 **GARBAGE.** Solid waste from domestic and commercial preparation, cooking and dispensing of food and from handling, storage, and sale of produce. Properly ground garbage shall mean the wastes from the preparation, cooking, and dispensing of foods that have been ground to such a degree that all particles will be carried freely under the flow conditions normally prevailing in sewers and with no particles greater than 1/2” in any dimension. All floatable objects such as FOG, plastics or other prohibitive discharges must be removed from the waste stream before being discharged to the sewer system.
- 2.1.32 **GREASE INTERCEPTOR.** A passive interceptor having a rated flow exceeding 50 gallons per minute and is located outside of the building. This device separates and retains fats, oil, grease and other solids from the building while permitting wastewater to discharge to the sewer. Such devices must be designed by a Colorado licensed engineer, architect or approved by CDPHE
- 2.1.33 **GREASE TRAP.** A passive interceptor having a rated flow of less than 50 gallons per minute and may be located inside or outside of the building. This device separates and retains fats, oil, grease and other solids from the building while permitting wastewater to discharge to the sewer. Such devices must be designed by a Colorado licensed engineer, architect or approved by CDPHE.
- 2.1.34 **GROUNDWATER.** Underground water or referred to as the water table.
- 2.1.35 **HARMFUL WASTE.** Any solid, liquid, or gaseous substances, the discharge of which would violate these Rules and Regulations.
- 2.1.36 **HOLDING TANK WASTE.** Any waste from holding tanks including but not limited to vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.
- 2.1.37 **HOTEL, MOTEL, LODGE.** A building designated, intended or used for rental occupancy as the transient or temporary lodging place of five or more people who are lodged with or without meals.
- 2.1.38 **INDIRECT DISCHARGE.** The discharge or the introduction of non-domestic pollutants from any source regulated under Section 307(b), (c), or (d) of the Act, (33 U.S.C. 1317) into the collection system (including holding tank waste discharged into the system).
- 2.1.39 **INDUSTRIAL USER.** A source of indirect discharge, which contains non-domestic wastes.
- 2.1.40 **INDUSTRIAL WASTEWATER.** The liquid wastes from industrial manufacturing processes, trades or businesses as distinct from domestic or sanitary wastes. This wastewater may contain pollutants, elements and compounds such as but not limited to petroleum products, acids, solvents, salts and metals.
- 2.1.41 **SEWER INFILTRATION.** Groundwater, storm water, or other sources of inappropriate water that leaks through the walls of the sewer line, through damaged pipes, or manholes, and drains into a collection system. Inappropriate water is from sources other than sanitary fixtures and drains.



- 2.1.42 **INFLOW.** Water entering sanitary sewers from inappropriate connections is called inflow. Typical sources include sump pumps, roof drains, cellar drains, yard drains, and storm drains. An inappropriate connection lets water from sources other than sanitary fixtures and drains to enter the sanitary sewer system.
- 2.1.43 **INITIAL ACCEPTANCE.** That point in time when sewer lines and appurtenances constructed by others have been initially accepted by the District, subject to the 2-year warranty period.
- 2.1.44 **INSPECTOR.** The District's duly authorized representative(s).
- 2.1.45 **INTERCEPTOR.** Refers to any grease interceptor, grease trap, oil separator or sand separator.
- 2.1.46 **INTERCEPTING SEWER.** A pipe or conduit that receives sewage from two or more lateral sewers.
- 2.1.47 **INTERFERENCE.** The inhibition or disruption of the sewer system processes or operations that contributes to a violation of any District requirement.
- 2.1.48 **LATERAL SEWER LINE.** A pipe or conduit that receives sewage from 1 or more service lines and has no other lateral sewer discharging into it.
- 2.1.49 **LINE EXTENSION AGREEMENT (LEA).** Written legal documents between the District and developer that deal with offsite sewer construction that brings sewer service to a legal parcel and how the developer may be reimbursed for the cost of construction of pipeline.
- 2.1.50 **LIVING UNIT.** A house or dwelling that is a structure or the part of a structure or space that is used as a home, residence, or sleeping place by one person or more people who maintain a common household.
- 2.1.51 **MANHOLE VACUUM TESTING.** A test of a manhole to check the ability to hold vacuum and is determined by the ability to hold vacuum at 10 in/Hg for one (1) minute with no more than one half (½) in/Hg leakage.
- 2.1.52 **MAXIMUM EXTENT FEASIBLE** means that all practical efforts to comply with the regulations or minimize potential harm or adverse impacts have been undertaken and that no feasible and prudent alternative exists. Economic factors may be considered but shall not be the overriding or dispositive factor in determining whether no feasible and practical alternative exists in a particular situation.
- 2.1.53 **MIXED USE.** A combination of residences and commercial space in the same building or development. Each building is assessed individually if part of a development.
- 2.1.54 **SERVICE CHARGE (SC).** A recurring fee for use of the sewer system.
- 2.1.55 **NATIONAL CATEGORICAL PRETREATMENT STANDARD.** Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 207 (b) and (c) of the Act (33 U.S.C. 1347), which applies to a specific category of industrial users.



- 2.1.56 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES). The program for issuing, conditioning, and denying permits for the discharge of pollutants from point sources into navigable waters of the contiguous zone and the oceans pursuant to Section 402 of the Act (P.L. 95-217, 33 U.S.C. 1342).
- 2.1.57 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT. A permit issued pursuant to Section 402 of the Act (P.L. 95-217, 33 U.S.C. 1342).
- 2.1.58 NATIONAL PROHIBITIVE DISCHARGE STANDARD OR PROHIBITIVE DISCHARGE STANDARD. Any regulation developed under the authority of Section 307(b) of the Act and 40 C.F.R. 403.5.
- 2.1.59 NON-RESIDENTIAL. Facilities that include, but are not limited to commercial, industrial, schools, churches, hotels, motels, governmental buildings and all other building uses except for residences.
- 2.1.60 OIL SEPARATOR. A device that separates and retains oil, grease and flammable wastes while permitting wastewater to discharge to the sewer.
- 2.1.61 ON-SITE WASTEWATER TREATMENT SYSTEM. An absorption system of any size or flow or a system or facility for treating, neutralizing, stabilizing, or dispersing sewage generated in the vicinity, which system is not a part of or connected to a sewage treatment works.
- 2.1.62 OUTSIDE DROP MANHOLE. A vertical pipe on the outside of a manhole that conveys sewage when the grades of the pipe are more than 2' vertical separation.
- 2.1.63 PERMIT. Written permission from the District to connect a service line to the sewer system and discharge sewage. Also known as an application...
- 2.1.64 pH. The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.
- 2.1.65 POINT REPAIR. A repair to a damaged sewer pipe at 1 particular point.
- 2.1.66 POLLUTANT. Includes but is not limited to any dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, explosives, chemical wastes, corrosive substances, biological materials or nutrients, radioactive materials, heat, malodorous substances, wrecked or discharged equipment, rock, sand, slurry, cellar dirt, untreatable waste or industrial, municipal, and agricultural waste discharged into water or with water or a material or substance that contaminates air, soil, or water.
- 2.1.67 PRESSURE TEST. A test performed on the pipe to check the ability to withstand pressure when charged with air. The pipe should hold 4 psi for 3 minutes with no more than 1/2 psi drop.
- 2.1.68 PRETREATMENT OR TREATMENT. The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a publicly owned collection system. The reduction or alteration can be obtained by physical, chemical or biological processes or other means.

- 2.1.69 **PRETREATMENT REQUIREMENTS.** Any substantive or procedural requirement related to pretreatment, other than categorical pretreatment standard imposed on an industrial user and shall include conditions of a wastewater discharge permit.
- 2.1.70 **PRETREATMENT STANDARDS.** All applicable federal rules and regulations implementing Section 307 of the Act (33 U.S.C. 1317), as well as any non-conflicting state or local standards. In cases of differing standards or regulations, the more stringent standard or regulation shall apply.
- 2.1.71 **PRIORITY POLLUTANTS.** Any of the various toxic compounds that can reasonably be expected in the discharges from industries as determined by the EPA, pursuant to Section 307(a) of the Act (33 U.S.C. 1317(a)).
- 2.1.72 **PUNCH LIST.** A list of corrective actions needed on a construction project.
- 2.1.73 **RECEIVING WATERS.** Any lakes, rivers, streams, or other surface or subsurface watercourses, which receive treated or untreated wastewater.
- 2.1.74 **RESIDENCE.** A structure or any part of a structure designed for residential purposes having one or more rooms, not more than one kitchen, and at least one bathroom, that is designed for long-term occupancy by one or more persons for living and sleeping purposes, and that may or may not be placed on a permanent foundation. In addition, residences include factory-built housing, and alternative construction including, but not limited to, yurts, tepees, or plastic units that comply with the requirements of this *Resolution*, and, as applicable, with standards of the applicable building code, adopted and amended by Gunnison County. Vehicles, excluding mobile homes, but including recreational vehicles, shall not be considered to be habitable residences.
- **DETACHED SECONDARY RESIDENCE** means a secondary residence that is physical separate from the primary residence.
 - **DUPLEX** means a single building that contains two residences.
 - **INTEGRATED SECONDARY RESIDENCE** means a secondary residence that is structurally integrated within, and has an internal access to a single-family residence.
 - **MULTIPLE-FAMILY RESIDENCE** means a building that contains three or more residences, but not including hotels, motels, or lodges.
 - **PRIMARY RESIDENCE** means the largest single-family residence on a parcel.
 - **SECONDARY OR ACCESSORY RESIDENCE** means a residence that is an accessory structure to a primary residence, except this shall not include a secondary structure intended only for sleeping.
 - **SINGLE-FAMILY RESIDENCE** means a building that contains one residence.
- 2.1.75 **SAND SEPARATOR OR SAND TRAP.** A device that separates and retains heavy solids while permitting wastewater to discharge to the sewer.
- 2.1.76 **SANITARY SEWER.** A sewer which carries sewage and to which storm, surface and ground water are not intentionally admitted including the pipe or conduit system and appurtenances for the collection, transportation, pumping, and treatment of sewage.





- 2.1.77 SERVICE AREA. The legal boundaries of the District and properties served by the District.
- 2.1.78 SERVICE CONNECTION PERMIT. Written authorization from the District to connect to the sewer system.
- 2.1.79 SERVICE LINE. That portion of a sewer line intended for discharging wastewater into the sewer system commencing at a dwelling or structure and terminating at the main or lateral sewer line.
- 2.1.80 SEWAGE. Wastewater and other wastes generated and discharged into the sewer system by the users of the District facilities. May also be referred to as Wastewater.
- 2.1.81 SEWAGE TREATMENT PLANT. The area and facility used to remove or alter the objectionable constituents of the sewage.
- 2.1.82 SEWER. A pipe or conduit for carrying sewage.
- 2.1.83 SEWER SYSTEM. All facilities owned and/or operated by the District and used for collecting and conveying sewage. Excludes service lines. See also Sanitary Sewer, and Sewer.
- 2.1.84 SEWER MAIN. That portion of the sewer system used for the collection and transportation of wastewater to treatment facilities and which has been installed for the express purpose of allowing service connections to be made thereto.
- 2.1.85 SHORT TERM RENTAL. A lodging use of a furnished dwelling unit, or portion thereof, for less than six months per rental. Guests may have full access to kitchen facilities. Hotel, Motel, Lodge rooms, B&Bs and/or Inns are not considered a short-term rental.
- 2.1.86 SIGNIFICANT INDUSTRIAL USER. Any industrial user of the sewer system that:
 - 2.1.86.1 is subject to categorical pretreatment standards, or
 - 2.1.86.2 has a discharge flow of 25,000 gallons per average work day or more process wastewater to the sewer system (excluding sanitary, non-contact cooling and boiler blow-down wastewater), or
 - 2.1.86.3 has a flow greater than 5% of the average dry-weather hydraulic or organic capacity of the collection system, or
 - 2.1.86.4 has in the discharge toxic pollutants as defined pursuant to Section 307 of the Act, of State Statutes and Rules, or
 - 2.1.86.5 is designated as such by the control authority, Colorado Department of Public Health & Environment (CDPHE), or the U.S. Environmental Protection Agency (EPA) on the basis that the industrial user has a reasonable potential for adversely affecting the sewer system's operation or for violating any pretreatment standard or requirement.
- 2.1.87 SLUG LOAD. Any pollutant, including oxygen demanding pollutants, released in a discharge at a flow rate and/or polluted concentration, which will cause interference with the sewer system.



- 2.1.88 SMOKE TEST. A test that is used to determine the extent and location of exfiltration or leaks on a pipeline.
- 2.1.89 SOLID WASTE DISPOSAL ACT (SWDA). 4 U.S.C. 6901. *et seq.*
- 2.1.90 STANDARD INDUSTRIAL CLASSIFICATION (SIC). A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President's Office of Management and Budget 1972, including all revisions to date.
- 2.1.91 STORM SEWER. A sewer that carries only storm, surface and groundwater drainage.
- 2.1.92 STORM WATER. Any flow occurring during or following any form of natural precipitation and resulting from and includes but is not limited to water from roofs, streets and other areas.
- 2.1.93 STUB-OUT. A length or segment of pipe extended from a manhole, trunkline, lateral line, intercepting line or main line that has no discharger connected to it and is for either a future sewer system connection or a service, or lateral connection.
- 2.1.94 SUBDIVISION OR SUBDIVIDED LAND. Any parcel of land that is divided into two or more parcels, separate interests, or interests in common, or is to be used for condominiums, townhomes or townhouses, apartments, or any other multiple-dwelling units, unless the previous subdivision of such land was accomplished pursuant to a Land Use Change Permit that complied with the requirements of this Resolution, or the County's land use regulations in effect at that time, with substantially the same density; or unless expressly exempted within this definition. As used in this definition, "interests" includes any and all interests in the surface of land but excludes any and all subsurface interests.

The terms "subdivision" and "subdivided land" shall not apply to any division of land that creates parcels of land each of which comprises 35 or more acres of land and none of which is intended for use by multiple owners.
- 2.1.95 TAP. The physical connection point where the service line connects to the main sewer line.
- 2.1.96 TAPPING. The physical act of connecting a service line to the sewer system.
- 2.1.97 TOWNHOME. A residence attached to other residences with one or both sides sharing common walls, depending on whether the unit is in a center or end position, erected as single buildings on adjoining lots, each residence being separated from the adjoining unit or units by a party wall or walls extending from the basement floor to the roof along the dividing lot line. Townhomes can be grouped together as small units, such as duplexes or triplexes, or they can be parts of a larger complex
- 2.1.98 TOXIC POLLUTANT. Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provision of Section 307(a) of the Act or other acts.
- 2.1.99 TRUNKLINE. A pipe or conduit that receives sewage from two or more lateral sewers.



- 2.1.100 UNAUTHORIZED CONNECTION. Any connection to the sewer system without a District authorized tap.
- 2.1.101 USER. Any person, property owner, lessee, or entity who contributes, causes, or permits the contribution or introduction of wastewater into the sewer system.
- 2.1.102 WASTEWATER. The combination of the liquid and water-carried industrial or domestic waste from facilities including but not limited to residences, commercial buildings, industrial facilities, and institutions including cooling water, which is contributed into or permitted to enter the publicly owned collection system. May also be referred to as Sewage.

Definitions in conflict will defer to the current LUR definition.

2.2 Acronyms

- 2.2.1 ADU – Accessory Dwelling Unit
- 2.2.2 BOD - Biochemical Oxygen Demand
- 2.2.3 CDPHE – Colorado Department of Public Health and the Environment
- 2.2.4 CFR - Code of Federal Regulations
- 2.2.5 UIF - Utility Investment Fee
- 2.2.6 CRS – Colorado Revised Statutes
- 2.2.7 EPA - United States Environmental Protection Agency
- 2.2.8 FOG – Fats, Oil and Grease
- 2.2.9 LEA - Line Extension Agreement
- 2.2.10 SC – Service Charge
- 2.2.11 PLS – Professional Land Surveyor
- 2.2.12 POTW - Publicly Owned Treatment Works
- 2.2.13 PVC - Polyvinyl Chloride
- 2.2.14 SIC – Standard Industrial Classification
- 2.2.15 TSS - Total Suspended Solids
- 2.2.16 LUR – Current adopted and revised (Gunnison County) Land Use Resolution

SECTION 3. OBLIGATIONS AND RESPONSIBILITIES

3.1 District Ownership

Except as otherwise provided in these Rules and Regulations, all existing and future wastewater system facilities connected with and forming an integral part of the sewer system, excluding service, and identified private collection systems, shall become and are the property of the District. The District shall be responsible for maintenance, repair and reconstruction of such property, including wastewater mains, at its cost, unless the situation necessitating such repair or reconstruction is the result of a change or enlargement of use, abnormal use or damage to such



facilities, in which case such repair or reconstruction will be done at the expense of the person responsible for such abnormal use or damage. Said ownership will remain valid regardless of whether such property is constructed, financed, or paid for by other persons or otherwise acquired by the District. No other persons, except those authorized by the District, shall have any right to enter upon, inspect, operate, adjust, change, alter, move or relocate any portion of the sewer system.

As further described in these Rules and Regulations, developers who have completed construction of sewers shall, before these sewers are accepted by the District for service, convey title to these sewers and appurtenances to the District through a bill of sale, except for service lines, and any necessary easements shall be conveyed to the District, free and clear of all liens and encumbrances.

In the event a special district is formed by an applicant inside or outside of this District for the purpose of financing sewer collectors and appurtenances, the applicant shall agree that such transfer by bill of sale shall take place when the subject sewers and appurtenances are free of all liens and encumbrances incurred by said special district, and that in the interim period between acceptance for use and transfer to the District, the District shall be allowed to consider these sewers and appurtenances as though they had been transferred by bill of sale or other instrument. That is, the District shall have, without limitation, the discretion to determine who may use the sewer system, conditions of use, and rates, tolls and charges to be paid.

Sewer interceptors, trunklines, and laterals that make up the sewer system, as well as lift stations and force mains therein, are owned by the District. Gravity sewer lines owned by the District are typically 8" in diameter or larger. Force mains owned by the District serve multiple users. It is the District's responsibility to operate and maintain the sewer system.

Service lines on private property shall be installed, owned, and maintained by the owner of the building or property they serve. Lift stations that pressurize a service line are also installed, owned, and maintained by the owner of the building or property they serve.

3.2 District Obligation

The District was organized to provide sanitary sewer service to residents, businesses and other facilities within the District's service area. All property to which sewer service is provided by the District shall be part of or included within the District., except as provided in Section 5.16 of these Rules and Regulations. Inclusion into the District does not guarantee that sanitary sewer service will be immediately available nor that it will be available at a specific time or when requested by the user. However, it is the goal of the District to:

- 1) Consider for inclusion into the District all petitioning properties
 - 3.2.1 Build and maintain facilities to adequately supply service to all residential and non-residential users in the District service area, provided that it is practical and feasible to do so.
 - 3.2.2 Provide sanitary sewer service in a cost-efficient manner, consistent with county, state, and federal laws to residential and non-residential users of the District.

Provision of sanitary sewer service is contingent upon the capacity of the District's facilities to provide such service.



3.3 District Responsibility

The District is responsible for the collection of sewage from legally connected users within the District and for maintenance, repair and replacement of all facilities finally accepted by the District in accordance with section 5 of these Rules and Regulations, except for service, lateral, and/or trunk lines, private wastewater facilities, and/or building drains owned by the dischargers. The District shall not be liable or responsible for an interruption of service brought about by circumstances beyond the District's control.

3.4 Right of Entry for Inspections

Any duly authorized employee, representative and/or agent of the District, bearing proper credentials and identification, shall be permitted to enter upon all property within the district at reasonable times, without interference, for the purpose of inspecting, observing, measuring, sampling and testing sewer infrastructure, in accordance with the enforcement and administration of these Rules and Regulations. Justified entry into structures must be arranged in advance with the property owner or tenant.

SECTION 4. RATES, TOLLS, AND CHARGES

4.1 Amounts Set by Board

The Board shall set the amount of the rates, tolls and charges provided for in these Rules and Regulations by resolution, and the Board may amend the same from time to time.

4.2 Utility Investment Fee (UIF)

4.2.1 Generally

An applicant for sewer service shall pay the UIF when the service is approved by the District. The UIF shall be in addition to all other applicable rates, tolls and charges provided for in these Rules and Regulations. The UIF shall not be rebated or refunded, in whole or in part. A UIF is charged for each individual unit requesting service in accordance to the current fee resolution.

4.2.2 Exemption for Low, Very Low, or Moderate-Income Housing

The Board may by resolution grant an exemption for a percentage of the UIF for the development of low, very low, or moderate-income housing.

4.2.3 Calculation of the UIF

The UIF shall be calculated based on the size of the potable water meter size as determined in the current fee resolution.

4.3 Changes in Use

Upon notification that a change in use of the property or structure is planned, the District Manager or his/her designee shall review the then-current assessed factor unit and notify the user in writing of the Factor that will be assessed for the proposed use. Should the change in use result in a reduction in the assessed Factor, the District shall not refund any monies. Should the proposed use result in an increase in the assessed Factor, the user shall make payment of the



additional UIF immediately and prior to receiving a building permit or land use development permit. Service charges will reflect the assessed Factor for the new use, whether more or less than the prior use. A user may request a reassessment be performed at the discretion of the Board.

4.4 Temporary Connections

Temporary connections to the sewer system are intended for temporary situations where purchase of a tap and payment of the full UIF for a short period of service is not practical on behalf of the applicant. An applicant may request a temporary connection to the sewer system by leasing capacity in lieu of paying a UIF. If approved by the Board, in its sole discretion, a temporary connection charge will be imposed, in addition to the service charge.

4.5 Beneficial Use Requirement

All installed taps must be put to beneficial use (service) within 1 year following either payment of the UIF or completion and availability of District sewer system infrastructure necessary to accept sewage from such tap(s), whichever is later. Pre-taps installed at the request of the owner are subject to this section unless specified in writing. Users who do not put their installed taps to beneficial use within such time period shall pay the difference between the UIF actually paid and the UIF in effect at the time the tap is put to beneficial use.

4.6 Service Charge

In every case where the District furnishes sanitary sewer service to property, the District shall be paid for this service. The SC for sanitary sewer service shall be calculated as described in these Rules and Regulations. The Board may set a higher SC rate for service provided outside the District's service area.

Service charges become due and will be invoiced commencing when the user places the tap into service. The billing cycle is quarterly. Payment is due on the 20th day of the following month and is delinquent if not received within 5 days following the due date.

4.7 Non-Residential Users

Non-residential users may be reviewed on a periodic basis to determine the quantity of sewage collected, and the ability of the District's facilities to collect this sewage. The Board, in its discretion, may impose an additional surcharge to compensate the District for excessive consumption of sewer system capacity and/or reimbursement of expenses related thereto.

4.8 Availability of Service Charge

An Availability of Service charge is assessed on properties within the District that lie within 400' of a District sewer main, but do not have an installed tap to the District system. A property may or may not have a district installed service pre-tap extended to it. A map indicating this area will be maintained and available upon request.

4.9 Line Extension Charge

Whenever the District extends a sewer to serve a particular area, the users that connect to such extension shall pay a line extension charge to reimburse the District for costs related to the extension. The basis or formula for calculating the line extension charge shall be set by the Board when the extension is authorized. The line extension charge shall be in addition to other rates, tolls and charges imposed by the District, including but not limited to UIFs.



4.10 Plan Review Charge

A plan review charge shall be collected with the submittal of any application that requires the District to review plans in connection therewith. The user shall be responsible for costs of the District that exceed the plan review charge.

4.11 Inspection Charge

The inspection charge is included in the UIF for inspecting service lines and supervising the physical connection to the sewer system. There will be a supplemental charge for each additional inspection required due to failure of the user to have the facilities ready for the requested inspection.

4.12 Unauthorized Connection

Any user that connects to the sewer system without a District-authorized tap shall be charged an amount equal to twice the UIF plus all other applicable charges and/or legal fees that have accrued since the time of the unauthorized connection and may remain if the connection was made in conformance with these Rules and Regulations and/or Construction standards. If the connection was not made in conformance with these rules and regulations and/or construction standards, the connection must be fully removed and reinstalled in conformance with these rules and regulations and construction standards. Charges for an unauthorized connection may be waived, in whole or in part, by Board action.

4.13 Excessive Pollutant Charge

Any non-residential, commercial or industrial user that discharges wastewater having an average daily concentration of (1) BOD greater than 250 mg/L; (2) TSS greater 220 mg/L; or (3) FOG greater than 100 mg/L shall be subject to an additional charge calculated in accordance with this section.

Non-residential users whose wastewater discharge is regulated by a duly issued permit, shall use the concentration of BOD, TSS and FOG reported in their discharge monitoring reports required under these Rules and Regulations to determine the applicable surcharge rate.

Non-residential users of the sewer system not issued an industrial wastewater discharge permit shall use the average quarterly concentrations of BOD, TSS and FOG discharged to determine the applicable surcharge rate, if such discharges have been monitored by the District, which the District may do in its sole discretion. If the District has not monitored the discharges, the established industry standard concentrations for wastewater constituents shall be used to determine the applicable surcharge rate.

4.14 Charges for Violation of Rules and Regulations, Order, or Permit.

4.14.1 Daily Charge Per Violation

Any user who has violated or continues to violate any of the provisions of these Rules and Regulations, or any order or permit issued hereunder, and who has been served a notice of violation pursuant to Section 11.2 of these Rules and Regulations, shall be liable to the District for a charge of not more than \$1,000 per day, per violation for as long as the violation continues. Each day on which non-compliance occurs or continues shall constitute and be deemed a separate and distinct violation.



4.14.2 Reimbursement of Expenses

Any user violating any provision of these Rules and Regulations shall be liable to the District for reimbursement of any and all costs and expenses incurred by the District in connection with such violation, including but not limited to reasonable attorney's fees, court costs, sampling and monitoring expenses, the costs of managing effluent or sludge due to a user's discharge of pollutants, costs related to correcting an obstruction, other damage caused by a user's wastewater, or costs associated with correcting the violation.

4.14.3 Inflow and Infiltration (I/I) Fee.

Any parcel of real property whose use of the sewer system causes the excess flow of inappropriate water into the sewer system; whose owner or occupant connects sump pumps, downspouts, and/or foundation drains that channel directly into sewer system pipes or whose owner or occupant permits the infiltration of groundwater into the sewer system due to cracked or leaking pipes and/or fittings, shall repair the I/I issue or be charged an Inflow and Infiltration (I/I) penalty in an amount necessary to reimburse the County the costs of remediation or mitigation of the I/I as determined by the County, as well as a penalty of \$15.00 per day until the I/I is mitigated to the satisfaction of the County. For private collections systems, the fee will be assessed based on the number of units or rooms on the entire private system.

4.14.4 Excessive Usage Fee

Any parcel of real property whose metered sewer service flow exceeds usage based on 75 gallon per day (gpd) per bedroom per each unit within a calendar month shall be charged a penalty of \$15.00 per day for excessive usage for the entire billing cycle. This fee will be assessed until a reduction in flow or a reassessment of the Factor occurs.

4.15 Additional Charges

Additional charges may be set or levied by the Board for the following:

- 4.15.1 Monitoring, inspections, and surveillance activities.
- 4.15.2 Processing permit applications.
- 4.15.3 Filing appeals.
- 4.15.4 Removing pollutants subject to federal pretreatment standards.
- 4.15.5 Reimbursement of costs for enforcement.
- 4.15.6 Attorney or legal fees.
- 4.15.7 As deemed necessary to carry out the requirements contained herein.
- 4.15.8 As determined by the Board

4.16 Collection; Nonpayment of Rates, Tolls and Charges

A Schedule of Rates is adopted each year as part of the budget process and is available in the Schedule of Fees Resolutions for each District. Any past due account shall be subject to a penalty charge of 1% per month or portion thereof, and any past due amount may, at the option



of Gunnison County Finance Office, be certified for collection in the manner as though they were part of the taxes pursuant to C.R.S. 30-20-420, as amended.

Until paid, all such rates, tolls, and/or charges shall constitute a perpetual lien on and against the property served, and any such lien may be foreclosed in the same manner as provided by the laws of Colorado for the foreclosure of mechanics' liens. Pursuant to C.R.S. Ann. 30-20-402(1)(f), as amended, and other applicable authorities, Gunnison County reserves the right to seek and award of reasonable attorney fees and other costs of collection in any legal or other action the County deems necessary to collect any unpaid fees, rates, tolls, penalties and interest.

4.17 Request for Reconsideration of Charges; Hearing.

Any user that disputes a charge imposed by the District must file, within 10 days of receiving notice of such charge, a written request with the District for reconsideration of the charge. The District shall provide a written response within 30 days of receiving such request.

SECTION 5. CONNECTION TO THE DISTRICT

5.1 Use of Sewers Required

The owner(s) of all houses, buildings or properties used for human occupancy, employment, recreation or other purposes, situated within the District and abutting on any street, alley, sewer easement or right-of-way in which there is located a public sanitary or combined sewer within 400', is hereby required, at their expense, to install suitable toilet facilities therein, and to connect such facilities directly with the sewer system in accordance with the provisions of these Rules and Regulations within 90 days after date of official notice to do so. The deadline to connect such facilities as a result of an assessment project shall be within 30 days after the sewer is in operation and/or accepted by the governmental agency having jurisdiction over the sewer. All extensions and connections shall be in accordance with the practices and conditions hereinafter contained.

5.2 District's Power to Compel Connection

Unless otherwise agreed to by the Board, the owner(s) of all buildings, businesses or other premises situated within the District where domestic or industrial wastes or wastewater are generated, stored, or treated shall be required, at the owner(s) expense, to install suitable wastewater facilities therein and to make application for and to connect such facilities directly with the sewer system for the protection of the health, safety and welfare of the inhabitants and visitors of the District in accordance with the provisions of these Rules and Regulation, within 20 days after written notice is sent by registered mail to do so, provided that the public wastewater main is within 400' of the owner's property line, pursuant to § 31-15-709(1)(b), C.R.S.

If such connection is not commenced within such period and completed with reasonable diligence, the District may thereupon make such connection, and the property owner shall be liable for all expenses incurred by the District for the completion of the connection, including any unpaid connection rates, tolls and charges. The District shall also have a first and prior lien on the property for such amounts.

If a service line must cross another person's property in order to connect to the sewer system at the point designated by the District, and the owner is unable to obtain the easement(s) required for such service line, the District may, in its discretion, initiate proceedings to acquire such



easement(s). All costs incurred by the District in the prosecution of such proceedings including, without limitation, the amount determined to be payable as just compensation, reasonable attorney's fees, engineering and surveying fees, appraisal fees and expert witness fees, shall be paid by the owner of the property to be connected. The amount required to be deposited with the court in order for the District to obtain possession of the property included with the easement(s) shall be paid at that time by the owner of the property to be connected. The District shall have a first and prior lien on the property to be connected for all such amounts.

5.3 Connection to Sewer System

Connection to the sewer system must conform to these Rules and Regulations, Gunnison County Construction Standards, the *current Colorado Plumbing Code as amended and adopted by the Colorado State Plumbing Board*, and any applicable state and federal regulations. It is a State of Colorado requirement for new construction and properties deemed to have failing septic systems and within 400' of a main, connect to the District.

Each tap must be connected to the sewer system separately except: that a single-family residential dwelling and a single ADU located on a single lot may use 1 tap to connect to the sewer system with District approval. For planned developments, a private collection system engineered and designed to collect the planned development's sewage may use 1 tap to connect to the sewer system with District approval. In such case, the UIF and SC shall be calculated in accordance with the adopted fee schedule. Once connected to the sewer system pursuant to District authorization, no user shall discharge or allow to be discharged any wastewater except by a direct service connection to a District sewer main.

5.4 New Tap Connections

Any applicant for sewer service from the District shall pay the full cost of design, construction, and inspection of all connections, including but not limited to any necessary easements, rights-of-way, and permits from county, state or other governmental agencies, as are required for the District to provide service and to connect the applicant to the District's existing sewer system, unless otherwise provided by the District.

5.5 Sewer Improvements

Applicants within the area to be served by and, if necessary, included within the District must pay all costs associated with providing sewer service to the area, including their proportionate share of costs for enlarging or extending facilities within the District. Unless otherwise agreed to in writing, an applicant's share of costs of extending a main line shall be determined by dividing the total cost to construct the line by the number of lots in the area to be served.

5.6 Tap Transfer

No taps shall be transferred from one location or structure to another location or structure.

5.7 Discharge of Sewage

All sewage shall be discharged to sanitary sewers and all connections shall be authorized connections only. No person, entity or user shall discharge any sewage from any premises within the District into or upon any stream, water course, drainage channel, ditch, pond, lake, lagoon or public property or into any drain, cesspool, or storm sewer without first obtaining a permit.



5.8 Storm Water

Storm water and pumped ground water shall be routed out of the area via storm water and natural drainage systems wherever possible. Storm Water shall not be discharged into sanitary sewers.

5.9 Hazardous Waste

Any user that discharges into the sewer system a substance which, if otherwise disposed of, would be a hazardous waste as set forth in 40 CFR Part 261, shall comply with the requirements in 40 CFR Section 403.12(P).

5.10 Existing Sewer Lines

Existing sewer lines serving subdivisions which have subsequently been included within the District may be connected when they are found, upon examination and/or testing by the District to meet all the requirements of these Rules and Regulations. In the event that such requirements are not met for extensions of sewer lines, for reasons of public health, the District may make the necessary improvements and recover the costs thereof from the users connected to the faulty sewer line. Such costs may include, without limitation, attorney's fees, survey mapping, and replacement of any part of an existing facility. The District shall have a first and prior lien on the property of the users connected to the faulty sewer line for such costs.

5.11 Temporary Disposal Facilities

The District may permit the user to install temporary disposal facilities, provided that the user's case complies with all of the following conditions:

- 5.11.1 The sewer system is more than 400' from the user's property line.
- 5.11.2 Extension to the sewer system would create an unreasonable financial burden on the user.
- 5.11.3 A temporary private disposal system must be constructed in compliance with all applicable state and county health department requirements.
- 5.11.4 The user agrees by written agreement to extend a line to connect to the sewer system at a time and/or upon conditions agreed to between the District and the user. Such connection will require no additional UIF other than as provided above (unless required by a change in use).
- 5.11.5 The facility complies with the LUR.

5.12 Unauthorized Use

No unauthorized person shall uncover, make any connection with or opening into, use, alter or disturb the sewer system, or any portion thereof, without first obtaining written permission from the District.

5.13 Acceptance of Sewer Improvements by the District

When the sewer improvements within the area to be served and, if necessary, included within the District have been completed and approved by the District, all such facilities (excluding service lines) and any easements shall be conveyed to the District as described in Section 5. After initial acceptance of such facilities, the District shall operate and maintain the facilities at the expense of the District, subject to the 2-year warranty period described in Section 5; however, the District shall not forfeit any of its legal rights to collect reimbursement costs and other revenues from



users of the facilities. No connection to a new sewer main shall be permitted until the District has accepted the improvements.

5.14 District Not Responsible for Service Lines

Each user shall be responsible for constructing and maintaining the entire length of its service line to the tap at the main. Leaks, clogs, breaks, root intrusion, damage from the user, or missing, inadequate, or incorrect cleanouts in the service lines shall be repaired by the user within 72 hours from the time of notification of such condition by the District. Physical damage to service lines in the public right-of-way such as pipe crushing, boring through, or other damage shall be repaired by the person or entity that caused the damage.

5.15 District Not Responsible for Privately-Owned Wastewater Facilities

All privately-owned wastewater facilities, including but not limited to privately-owned sewer mains and privately-owned sewage lift stations are the responsibility of the user. The District shall have no responsibility or liability of whatsoever kind or nature for the design, construction, operation, maintenance or replacement of any such private facilities. If the District reviews the plans and specifications for any privately-owned facilities, the District does so for the limited purpose of assuring compatibility with the sewer system. By conducting such a review, the District shall not be deemed to have assumed any duty or responsibility for the sufficiency or adequacy of the design, operation, maintenance, or replacement of any privately-owned wastewater facilities.

5.16 Connection to Property Not in the District

The District may provide sanitary sewer service outside the District's service area upon request and at the sole discretion of the Board. In every case where the District furnishes such service, the District shall be paid pursuant to a service contract with the user. Such user shall be required to pay all rates, tolls and charges applicable to property within the District, an out-of-District service charge, and any costs incurred by the District to serve the user's property.

5.17 Dormant Accounts

Residential accounts are not eligible for inactive or dormant status. Commercial accounts are eligible for dormant status during seasonal closures only if closure dates are submitted to the District in writing in advance and there is 100% closure of the facility during that period. Opening during closed dates may result in payment of the SC for the entire closure period and a 2-year suspension of eligibility for dormancy status.

5.18 Voluntary Termination of Sewer Service

A user may request a voluntary termination of service and that the District "void" the tap providing such service. Voiding of a tap shall not be approved in favor of a less beneficial sewer treatment or management system. Any such action will be at the discretion of the District and in accordance with these Rules and Regulations, as well as applicable county and state regulations. If such a termination is accepted, the following conditions shall apply:

- 5.18.1 All current and past due rates, tolls and charges must be paid.
- 5.18.2 Any connection to the system that is to be "voided" or terminated shall be, at the sole expense of the user, capped at the property line and the remaining service line must be demonstrably watertight. All work relating to the disconnection and capping shall be inspected by the District.



5.18.3 If the user desires to reconnect the “voided” tap to the sewer system following the disconnection, the user must make a formal application with the District and remit to the District all applicable rates, tolls, and charges in effect at the time the reconnection application is requested.

SECTION 6. APPLICATION AND PERMITTING PROCEDURES

The procedures and guidelines for construction and acceptance of proposed wastewater collection systems within the District are the Gunnison County Land Use Resolution (LUR) and the following Rules and Regulations are the following procedures.

6.1 Extension of Sewer Collection Facilities; Individual Connections

No individual connections shall be made to the sewer system without the expressed written authorization of the District Manager. No person shall construct a sewer main or service line to be connected to the sewer system without:

- 6.1.1 Having made formal application to the Utility Manager for approval.
- 6.1.2 Having complied with all requirements and regulations of the Board, the Community Development Department, and Public Works.
- 6.1.3 Having received written authorization from the Utility Manager, or their designee to construct said main or line.

Any applicant for sewer service from the District shall pay the full cost of design, construction, and inspection of all extensions, exclusive of sewage treatment facilities, but including necessary easements, rights-of-way, and permits from County, State or other governmental agencies, as are required to provide service by the District and connect the applicant to the District's existing system, unless otherwise provided by the District.

6.2 Application Procedure

When a user requests sewer service, one of the following requirements must be met:

- 6.2.1 The parcel is within the District’s service area; or
- 6.2.2 If the parcel is not within the District’s service area, the user must make a request to the Board for a boundary change through the inclusion process or request out-of-District service pursuant to Section 5.16 of these Rules and Regulations.

All applicants seeking to connect to the sewer system shall make a formal application in writing in such form as the District may require. Prioritizations for applicant’s connections will be considered in chronological order based on the date of the submitted request. Applications will be approved by the District if connection to the sewer system is feasible, practical, and desirable for the District. All service connections shall be at the permittee’s expense, shall comply with all applicable provisions of this section and all applicable District standards and specifications, and shall be subject to all applicable rates, tolls and charges established by the District.

The procedures for each category are as follows:

- 1) Taps. The applicant of an approved tap must have service lines installed. The user is responsible for all costs that may be incurred by the District to complete the



installation, including but not limited to excavation, road repair, line locates, inspection, and materials. A sewer model may be required to determine if the collection system is able to accept the additional flows as determined by the District. The Utility Department must receive a receipt of the Utility Investment Fee payment notice from the county Finance Department before construction may begin.

- 2) Subdivision Taps. The applicant of taps for a subdivision shall submit plans in a form satisfactory to the District that are detailed enough to determine the location of service required, number of taps required at full buildout, and physical features that may affect service, together with the plan review charge set forth in Section 4.10 of these Rules and Regulations. A sewer model will be required to determine if the collection system is able to accept the additional flows.
- 3) Multiple Taps (Other Than a Subdivision). More than 1 tap may be purchased from the District if the purchase is for use on dwellings and structures that do not fall into the subdivision category. The determination of the limit on the number of taps that shall be sold to any given location without that location being deemed a subdivision shall be made by the District. A sewer model will be required to determine if the collection system is able to accept the additional flows.

6.3 Submission of Sewer Extension Plans to District

Prior to the initiation of construction by any applicant proposing to construct sewage collection facilities within a specific subdivision or development under Section 5 of these Rules and Regulations, the applicant shall submit construction plans and specifications to the District for review and approval, together with the plan review charge set forth in Section 4.10 of these Rules and Regulations. Such plans shall conform to the sewer design standards and specifications of the District.

No sewers shall be constructed within the District's jurisdiction until final plans and specifications have been approved in writing by the District. No sewers shall be accepted by the District or placed into operation unless they have been inspected and approved by the Inspector and it is determined that such sewers meet all requirements set forth in the sewer design and construction standards established by the District.

No excavation shall be started until all required permits and easements have been obtained.

6.4 Preliminary Design Plans

Upon preliminary approval, the plans along with the necessary revisions and comments by the District shall be returned to the developer. The developer shall incorporate the necessary revisions and return 1 set of plans with the design engineer's professional stamp and one most recent AutoCAD compatible electronic copy to the District for final review and approval. All drawing sets to be used for construction must have the design engineer's professional stamp and have the approval signature from the Inspector.

6.5 Right of Way Permits/Road Cut Permits

Any work in the Right of Way or the removal of pavement, sidewalks, driveways, or curb and gutter shall be performed only after all permits required by the Gunnison County and/or State are obtained. The contractor shall rebuild the road-base in accordance with applicable town, county or state regulations on excavation, backfill, compaction and restoration of service, including the



Gunnison County Road and Bridge Standards. All excavation for all service lines shall be adequately guarded per the Manual of Uniform Traffic Control Devices so as to protect the public from hazard. Streets, sidewalks, parkways and other public and private property disturbed in the course of the work shall be restored to original condition or in a manner satisfactory to the District and any governmental entity or agency having jurisdiction over the surface or subsurface. No lines shall be covered until inspected as provided herein. Lines shall be covered or barricaded when no work is being performed.

6.6 Service Connection Permit Required

No person other than District personnel or other persons authorized by the District shall undertake maintenance and repair work on, uncover, open into, make service connections with, use, alter or disturb any portion of the sewer system or manhole covers without first obtaining written permission from the District.

6.7 Cancellation of Permits

The District reserves the right, in its sole discretion, for cost-related, lack of capacity, or other reasons, to deny any connection application, including connection or main line extension permits, at any time prior to connection to the sewer system.

6.8 Denial of Application for Service

The Board retains, in the Board's sole discretion and judgment, the right to deny an application for a connection permit when the granting of the application would not be in the best interests of the District or its residents and property owners. The factors that the Board may consider, not by way of limitation, include:

- 6.8.1 Whether sufficient District resources are available and will be available in the future to serve the development or construction proposed for the property;
- 6.8.2 The impact of the proposed service has a negative impact on the District's existing sewer system, transmission, and storage facilities;
- 6.8.3 The economic effect that the approval of the application would have on the District, its residents and property owners;
- 6.8.4 Whether the granting of the application would adversely affect the public health, welfare and safety of the District's residents and property owners; and
- 6.8.5 Other factors related to the request to provide such service.

There may be factors and aspects of an application that are unique to that application and are not recited above, and the Board retains the right to consider all factors related to an application and decide based thereon.

6.9 Line Extension Agreements (LEA)

Any time an applicant funds an extension of a sewer line or trunkline that will benefit property owners who are not currently receiving sewer service from the District, the applicant may be eligible for reimbursement from the property owners who will benefit from such extension, by and through execution of an LEA. Parties to the LEA shall be the District and any contributor to the cost of constructing the extension. The LEA shall contain all conditions and details of the reimbursements to the developer of the extension.



6.10 New Trunkline Development

When developing a new trunkline, it is the District's policy to accomplish the following tasks in the sequence indicated:

- 6.10.1 The District receives request from developer to build a new trunkline.
- 6.10.2 The developer funds an engineered capacity study on the sewer system.
- 6.10.3 The District analyzes known and anticipated flows from the proposed trunkline's contributing basin.
- 6.10.4 The District determines the size and alignment of the proposed trunkline.
- 6.10.5 The developer bonds for design and construction with the District.
- 6.10.6 The District authorizes the design and construction of the line extension.
- 6.10.7 Ownership is transferred to the District and the District accepts the trunkline into its system as described in Section 5.13.

6.11 Reimbursement When the District Participates in a Trunkline Extension

If the Board determines that it is in the best interest of the District to participate in the funding of a trunkline extension, the District may reimburse 100% of its contribution prior to any reimbursement to other participants in the funding of such line. However, in such event, the time within which the other participants may be entitled to reimbursements shall be 10 years from the date on which the District's contribution has been refunded.

6.12 Oversizing Reimbursement When Required by the District

Line oversizing is determined to occur whenever the District requires a trunkline being built to be of a greater diameter than that required to meet the needs of the development for which the trunkline is being built. The increase in the diameter of the pipe from the development's required size and the size required by the District is the oversized amount. This oversizing is normally required if and when a trunkline will serve other developments than that for which it is originally designed.

If the District requires a trunkline to be oversized and/or participates in a trunkline extension that is oversized, it shall be the policy of the District to pay for the cost of the oversizing.

If a developer pays for the oversizing of a trunkline without District participation, the developer may be eligible for reimbursement pursuant to a Line Extension Agreement, as further described in Section 6.9 of these Rules and Regulations.

6.13 Sewage Flow Measuring Instrument

Whenever, in the opinion of the District, the estimated expected amount of sewage produced does not accurately reflect the actual amount of influent produced by the user, the District may, in its sole discretion, elect to require the user to rent or purchase and install a suitable sewage flow measuring instrument. The user will be charged for sewage flow as indicated by the instrument for a set period of time or until flows reduce to the expected level.



6.14 Contractor Requirements

Any contractor that performs construction, maintenance or other services on District-owned equipment, property, easements or rights-of-way that are the responsibility of the District shall provide the District with the following documents and comply with the following requirements:

- 6.14.1 Certificate of insurance specifying liability coverage and naming the District as an additional insured.
- 6.14.2 Certificate of insurance specifying Workers Compensation coverage.
- 6.14.3 Where needed or required, OSHA-approved safety equipment and the proper number of personnel required for the safe operation of such equipment shall be utilized at all times. Examples include but are not limited to accessing manholes, open cut trenches and electrical cabinets.
- 6.14.4 Developers and contractors shall ensure that all work performed under their supervision is performed in accordance with OSHA standards. Developers and contractors shall be liable for any failure to comply with OSHA standards that results in any enforcement or compliance action or in injury or death to any person performing work under the developer and contractor's supervision.
- 6.14.5 Installer License issued by Gunnison County, as well as comply with any other requirements of Gunnison County.

SECTION 7. SANITARY SEWER DESIGN SPECIFICATIONS

7.1 General

7.1.1 Purpose

The purpose of the specifications section is to set forth the general criteria for the construction of sanitary sewer mains and appurtenances within the District service area. Any deviation from these specifications must be supported by documentation submitted to and approved by the District. The basis of design for all sewer projects shall comply with the Gunnison County Construction Standards as adopted.

7.1.2 Design Plans

New designs shall include consideration of providing service for the entire tributary area to the outfall point of the proposed section of sewer.

All plans for construction of new systems, extensions to new areas, or replacement of sanitary sewers and appurtenances must be submitted for review and approval by the District. The plans shall be designed by, or under the direct supervision of, an engineer licensed in the State of Colorado.

7.1.3 Flow Estimating

The following guidelines may be used for rough estimation of development sewer demands:

New sewer systems shall be designed on the basis of 100 gallons per day per capita. Minimum residential population density is computed using 2.7 persons per



household/residence. For a residential development, use the housing density of single-family homes per acre with 70% of the total acres being developed. For non-residential development, use the expected flow from the identified type of use based on AWWA standards.

7.1.4 Combined Sewers

Combined sewers are not permitted. Storm water and underdrains must be completely separated and isolated from the sanitary sewer system so there is no combination of the flows. No storm, sump pump, ground water, or other drains that are not sanitary sewage shall be intentionally introduced into the sewer system

7.1.5 Roadways and Easements

Where sewer mains are installed in roadways or easements they will ordinarily be located in the center unless otherwise approved. If a limited width easement is to be shared for water and sewer lines, appropriate offsets must be made to ensure a 10' horizontal separation is possible.

7.1.6 Potable Water Crossings

Sewer lines that parallel potable water lines shall be subject to approval by the District and/or other utility owner. In all cases, suitable backfill or other structural protection will be provided to preclude settling and/or failure of the adjacent or perpendicular crossings as described in the Gunnison County Construction Standards.

7.2 Design Criteria

7.2.1 Capacity Considerations

If required, the applicant shall be responsible to provide a sewer system hydraulic model that incorporates, but is not limited to, the following: Sewer capacities shall be designed for the estimated maximum population in a specific drainage area or area to be served. Consideration should be given to the maximum anticipated capacity of institutions, industrial parks, etc. Where future parallel sewers are planned, economic and engineering analysis of alternatives shall accompany initial permit applications.

In determining the required capacities of sanitary sewers, the following factors shall be considered:

- (a) Maximum hourly domestic sewage flow;
- (b) Additional maximum sewage or wastewater flow from non-residential dischargers;
- (c) Inflow and groundwater infiltration estimates;
- (d) Topography of area;
- (e) Location of existing pump stations;
- (f) Depth of excavation; and
- (g) Other factors determined by the District



7.3 Sewer Depth

In general, sewers should be sufficiently deep to receive sewage from basements and to prevent freezing; the typical minimum cover depth shall be 6' (feet), as measured from crown of pipe to ground surface. Where pipe has less than 6' of cover, provisions shall be made to protect pipe from impact, loading and freezing. Buoyancy of sewers shall be considered, and flotation of the pipe shall be prevented with appropriate construction where high groundwater conditions are anticipated.

7.4 Gravity Flow Design Criteria

7.4.1 Gravity Pipe Sizing

No gravity sewer main shall be less than 8" (inch) in diameter. Service lines from residences or other facilities to the District gravity sewer can be 4" or 6".

7.4.2 Gravity Pipe Slope

All gravity sewers shall be designed and constructed to give mean velocities, when flowing full, of not less than 2 feet per second utilizing the Manning's formula. Slope shall also not exceed a slope encouraging a velocity of greater than 10 feet per second.

7.4.3 Gravity Pipe Materials

All pipe materials and fittings shall meet the minimum requirements of ASTM D3034, SDR 35, latest revision for sizes up to 15" or shall meet ASTM F679, PS46 for sizes 18 and larger. Pipe stiffness for all pipe sizes shall be tested in accordance with ASTM D2412. Pipe shall be subjected to drop impact tests in accordance with ASTM D2444.

The design criteria above are only applicable for sewer pipe installations at less than 20' of depth. For installations greater than 20' in depth, use SDR 26 and PS 115 rated materials.

7.4.4 Steep Slope Considerations

Where sewers are to be installed on prevailing slopes in excess of 20% grade, anchors shall be provided per engineering recommendations.

7.5 Force Main Design Criteria

Installation of new lift stations shall be avoided where it is reasonably possible to convey flow by gravity. If the installation of a lift station is shown to be necessary, the design shall be reviewed and approved by the Utility Department. Residential lift stations shall not be the responsibility of the District. All lift stations under district control shall include a SCADA system compatible with the District's existing architecture and provisions for standby power; the minimum provision for standby power shall be a transfer switch to allow connection of a generator, permanent generator installation may be required. All lift stations must be reviewed by a Colorado licensed engineer and CDPHE.

7.6 Inverted Siphons

Inverted siphon designs should be avoided where technically feasible. If no alternative design is possible, inverted siphons will require District review and approval. The design must be prepared by a licensed engineer and provide for a minimum velocity of 3 feet p



second under average flow conditions. All Siphons must be reviewed by a Colorado licensed engineer and CDPHE.

7.7 Service Connections

7.7.1 Service Line Sizing

Single-family residence service lines shall be SDR 35 gasketed 4" (inch) PVC. Multifamily and commercial services shall be sized based on the fixture count. All sanitary sewer service connections shall be a minimum of 4" diameter.

7.7.2 Location and Alignment of Service Lines

Sanitary sewer service lines shall be constructed on the shortest and straightest route possible. At no time shall the service line be closer than 5' to the side property line, and no service line may be constructed through or in front of any adjoining property, nor shall sewer services be connected directly into manholes, without District approval. When possible, the service line shall be located toward the low side of the lot. Service lines are not to be located in concrete areas or under driveways where possible. Water and sewer service lines must follow CDPHE regulations for separation and guarding.

7.7.3 Sump Connections Prohibited

Connecting a basement drain or pump to the sewer system is prohibited.

7.7.4 Service Stub-Outs

Service stub-outs shall be extended at least 10' into property and shall be plugged with a watertight cap.

Adjacent to the end of the service stub-out, a green fiberglass marking post (carsonite) or green painted 4X4 post shall be placed in a vertical position prior to backfilling with the tracer wire attached to it a minimum of 12" above grade. The contractor shall take measurements of distances from manholes to indicate location of service taps. This information will be conveyed to the drafter of the as-builts or to County staff. Sewer mains shall be laid through manholes at the end of cul-de-sacs to serve future development if needed. No lots shall be serviced by a manhole stub out. No sewer mains shall end with a cleanout. All mains shall end with a manhole.

7.8 Oil, Grease, and Grit Interceptors

Commercial and industrial users shall install appropriate interceptors for their respective needs to prevent conveyance of wastewater laden with excessive quantities of oil, grease, or grit. All interceptor units/designs shall be reviewed and approved by the District before construction, and the installation approved by the plumbing and/or building inspector.

The District reserves the right to inspect grease traps and interceptors at any reasonable time to ensure proper installation, maintenance, and cleaning. If it is determined that the maintenance or cleaning required to maintain operability of any oil, grease, or grit interceptor is not occurring, the District can compel the cleaning of the device immediately. If the District determines that its public collection system has been impacted, the owner is responsible for all remediation.

All grease traps and interceptors must meet the requirements of the current *Colorado Plumbing Code*.



7.8.1 Grease Traps and Interceptors for Food Service Facilities

All new or remodeled food service facilities, including but not limited to restaurants, bakeries, cafes, stores, churches, coffee shops, and other public meeting spaces, shall install and/or maintain an appropriately sized grease trap or interceptor. Sizing and design justifications shall be submitted for District review and approval.

7.8.2 Other Oil, Grease, and Grit Interceptors

Appropriate interceptors shall be required for all non-food service facilities that discharge significant quantities of oil, grit, or grease. These types of businesses include car washes and vehicle maintenance facilities. Sizing and design justifications must be designed by an architect or engineer and shall be submitted for District review and approval.

7.8.3 Notice, Failure to Comply

In the event that the provisions of this Article are violated, an authorized District official may cause to be served upon the owner, occupant or person in control of the property, either personally, by certified mail, or by posting on the premises, a notice requiring the owner or tenant to restore the functionality of the oil, grease, or grit interceptor within seventy-two (72) hours of such notice. The notice shall also state that failure to comply may result in the District affecting repairs and assessing costs and fines against the premises in violation.

SECTION 8. CONSTRUCTION OF SANITARY SEWERS

8.1 General

8.1.1 Details of Construction

All sanitary sewer construction within the sewer system and all service line construction connecting to the sewer system and repairs to existing facilities within the District shall be completed in accordance with these Rules and Regulations, District-approved plans, and/or the District's construction specifications as described in Gunnison County Construction Standards or as determined by the Board.

SECTION 9. ADDITIONAL PROHIBITIONS

9.1 False Statements

Making or filing with the District any statement, report or application which the person making or filing same knows or has reasonable cause to know is false or substantially inaccurate, or omitting any material fact in connection with such statement, report or application when the omission thereof leaves the remainder of the information given misleading or substantially inaccurate shall be a violation of these Rules and Regulations.

9.2 Tampering

Bypassing, breaking, damaging, destroying, removing, uncovering, altering, defacing or otherwise tampering with any portion of the sewer system, obstructing the flow of wastewater in the sewer system, or obstructing access to District facilities shall be a violation of these Rules and Regulations.



9.3 Right-of-Way/Easement Interference

Placing any prohibited plant or structure within the boundaries of any District right-of-way or easement shall be a violation of these Rules and Regulations.

9.4 Access to the Sewer System

Opening any manhole or entering any portion of the sewer system without authorization shall be a violation of these Rules and Regulations.

9.5 Infiltration

Knowingly permitting roof infiltration, storm runoff, or groundwater to enter the sewer system shall be a violation of these Rules and Regulations.

9.6 Escape of Wastewater or Sanitary Sewer Overflows (SSO's)

Permitting wastewater to escape from the sewer system shall be a violation of these Rules and Regulations.

9.7 Failure to Report

Failing to report damage to or alteration of any District facility, or any foreign materials or obstruction in the flow of wastewater in any District facility, shall be a violation of these and other County Rules and Regulations.

9.8 Failure to Notify of Use Changes

Failure to notify the District of any use change resulting in the need for a grease or sand interceptor, swimming pool permit, increased volume permit or any other significant process change shall be a violation of these Rules and Regulations.

9.9 Violation of Stop Work Order

Performing or continuing to perform any work in violation of a stop work order shall be a violation of these Rules and Regulations.

9.10 Failure to Provide Record Drawings

Failure to furnish record drawings of taps as installed shall be a violation of these Rules and Regulations.

SECTION 10. EFFLUENT DISCHARGE REGULATIONS

10.1 Effluent Discharge Policy

This section sets forth uniform requirements for direct and indirect contributors to the sewer system. The objectives of this section are as follows:

- 1) To regulate the collection of wastewater, so as to provide for maximum public benefit in regard to the health, safety and welfare of the residents of the District.
- 2) To prevent the introduction of pollutants into the District wastewater system which will interfere with the operation of the system or contaminate the resulting sludge.



- 3) To prevent the introduction of pollutants into the District wastewater system which will pass through the system, inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system.
- 4) To improve the opportunity to recycle and reclaim from the systems.
- 5) To provide for equitable distribution of the cost of the District wastewater system.

10.2 No Unauthorized Discharge

Discharging or otherwise putting wastewater into the sewer system without District authorization, or discharging or putting any foreign materials or wastewater into the sewer system, shall be a violation of these Rules and Regulations.

10.3 General Discharge Prohibitions

No user shall contribute or cause to be contributed, directly or indirectly, any harmful waste, pollutant or wastewater in violation of these Rules and Regulations that will interfere with the operation or performance of the sewer system. These general prohibitions apply to all users of the sewer system whether or not the user is subject to National Categorical Pretreatment Standards or any other national, state, or local pretreatment standards or requirements.

A user shall not contribute the following substances to the sewer system:

- 1) Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the sewer system or to the operation of the sewer system. At no time shall 2 successive readings on an explosion hazard meter at the point of discharge into the system or at any point in the system be more than 5% nor any single reading over 10% of the Lower Explosive Limit of the meter. Prohibited materials include, but are not limited to: gasoline, kerosene, fuel oil, mineral oil, naphtha, benzene, toluene xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides and any other substances which the District, the state, or the EPA has determined is a fire hazard or a hazard to the sewer system.
- 2) Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities such as, but not limited to grease, garbage with particles greater than 1/2" in any dimension, paunch manure, bones, hair, hooves, hides or fleshing, whole blood, feathers, ashes, cinders, sand, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas, tar, asphalt residues, residues from refining, or processing of fuel, lubricating oil, or waste lubricating oil, mud, glass grinding or polishing wastes, cement concrete, plaster, gravel, hay, lime slurry or sludge, paint or chemical residues.
- 3) Any wastewater having a pH less than 6.0 or greater than 9.0 or any other corrosive property capable of causing damage or hazard to structures or equipment of the sewer system or to employees of the District.
- 4) Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to interfere with any wastewater treatment



process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the sewer system, to contaminate the sludge of the sewer system, or to exceed the limitation set forth in a Categorical Pretreatment Standards. A toxic pollutant shall include but not be limited to any pollutant identified pursuant to Section 307 (a) of the Act.

- 5) Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair or for sampling or monitoring.
- 6) Any substance which may cause the sewer system or any other product of the sewer system such as residues, slurries, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case shall a substance discharged to the sewer system cause the sewer system to be in noncompliance with sludge use or disposal criteria. Guidelines or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act, or state criteria applicable to the sludge management method being used.
- 7) Any substance that will cause the sewer system to violate any permit or standard of the receiving system quality standards.
- 8) Any wastewater having a temperature that will inhibit biological activity in the sewer system resulting in interference, but in no case wastewater with a temperature at the introduction into the sewer system which exceeds 40 degrees Celsius or 104 degrees Fahrenheit.
- 9) Any pollutants, including but not limited to oxygen demanding pollutants and BOD, released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the sewer system.
- 10) Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by applicable state or federal regulations.
- 11) Any wastewater that causes a hazard to human life or creates a public nuisance.
- 12) A slug load having a flow rate or containing concentrations or quantities of pollutants that exceed for any time period longer than 15 minutes more than 5 times the average 24-hour concentration, quantities, or flow during normal operation.
- 13) Any wastewater that creates a fire or explosion hazard in the publicly-owned sewer system, including but not limited to, waste streams with a closed cup flashpoint of less than 60 degrees Centigrade or 140 degrees Fahrenheit, using the test methods specified in 40 CFR 261.21.
- 14) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass-through.
- 15) Any wastewater that results in the presence of toxic gases, vapors or fumes within the sewer system in a quantity that may cause worker health and safety problems.



- 16) Any trucked or hauled pollutants, including but not limited to, commercial, industrial or domestic generated wastes, except at points designated by the District.

10.4 Categorical Pretreatment Standards

Upon the promulgation of the categorical pretreatment standard for a particular industrial subcategory, developed pursuant to federal statutes or regulations, the categorical pretreatment standard, if more stringent than limitations imposed herein, shall immediately supersede the limitations imposed herein.

10.5 Other Requirements

State requirements and limitations on discharges shall apply in any case where they are more stringent than federal requirements and limitations or those contained herein. The District's limitations or requirements on discharges shall apply in any case where they are more stringent than state or federal requirements or limitations.

10.6 City Treatment

The Agreement with the City shall apply to all connections, discharges, construction, and treatment related to this sewer system.

10.7 District Right of Revision

The District reserves the right to revise limitations or requirements on discharges to the sewer system if deemed necessary.

10.8 Dilution

No user shall ever increase the use of water, or in any way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the categorical pretreatment standards, or in any other specific pollutant limitation developed by the District or state.

10.9 Accidental Discharges

Each user shall provide protection from the accidental discharge of materials or substances regulated herein. Facilities to prevent accidental discharge of such materials or substances shall be provided and maintained at the users cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the District for review, and shall be approved by the District before construction of the facility.

All existing users, when directed by the District, shall complete facilities and procedures in accordance an Accidental Discharge plan. No user who commences contribution to the sewer system after the effective date hereof shall introduce wastewater into the system until accidental discharge facilities and procedures have been approved by the District. Review and approval of such plans and operating procedures shall not relieve the user of the responsibility to modify the facility as necessary to meet the requirements hereof.

In the case of an accidental discharge, it is the responsibility of the user to immediately notify the District of the incident. The notification shall include the location of discharge, the type of waste the concentration and volume of the discharge, and the corrective actions already taken.

Within 5 days following an accidental discharge, the user shall submit to the District a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the industrial user of any



expense, loss, damage, or liability which may be incurred as a result of damage to the sewer system, fish tolls, or any other damage to persons or property, nor shall such notification relieve the industrial user of any fines, charges, or other liability which may be imposed under these Rules and Regulations or other applicable law.

A notice shall be permanently posted on the commercial user's bulletin board or other prominent place, advising employees to call the District at (970) 264-4151 in the event of an accidental discharge. Employers shall insure that all employees, who may cause such accidental discharge to occur, are advised of the emergency notification procedure.

10.10 Special User Agreement

Nothing contained in this section shall be construed as prohibiting special written agreements between the District and any other person allowing industrial waste of unusual strength or character to be admitted to the sewer system, provided said user compensates the District for any additional costs of treatment. No such agreement may permit any discharge prohibited in these Rules and Regulations without Board approval.

10.11 Bypass

All industrial users shall comply with the requirements concerning bypass as set forth in 40 CFR, Section 403. 17.

10.12 Non-critical Wastewater Discharge Permit

No person shall cause or allow the discharge of wastewater into the sewer system without a wastewater discharge permit except as follows:

- 1) Domestic users who have received District service connection permit or tap.
- 2) Industrial users who are non-critical industrial users, as determined by the District, and have received a District service connection permit or tap.

A discharge permit for swimming pool wastewater shall be required in all cases.

10.13 Critical Wastewater Discharge Permit

No person shall cause or allow a categorical industry to connect to the sewer system unless such industry shall have obtained a wastewater discharge permit before connecting to or discharging into the sewer system.

10.13.1 Permit Application

Users required to obtain a wastewater discharge permit shall complete and file an application in the form prescribed by the District. Proposed new critical industries shall apply at least 90 days prior to the proposed connection to, or contribution to, the sewer system. In support of the application, the user shall submit, in units and terms appropriate for evaluation, at a minimum the following information:

- 1) Name, address and location of discharge (if different from the mailing or office address);
- 2) Standard Industrial Classification (SIC) and a list of any environmental control permits held by or for the facility.
- 3) Wastewater quantity and quality.



- 4) Time(s) and duration of discharge.
- 5) Average daily and peak wastewater flow rates, including daily, monthly, and seasonal variations, if any.
- 6) Site plan, floor plans, mechanical and plumbing plans and details to show all sewer piping, sewer connections, and appurtenances by size, location and elevation. If deemed necessary by the District such plans shall provide for separate systems for handling sanitary wastes and industrial wastes.
- 7) Description of activities, facilities, and plant processes on the premises, including all materials which are or could be discharged.
- 8) Where known, the quantity and specific nature of any pollutants in the discharge which are limited by any District, state or federal standards or requirements. If additional pretreatment or operation and maintenance will be required to meet the District, state or federal standards and requirements, the schedule by which the user will provide such additional pretreatment shall be submitted for review and approval. The type of pretreatment or operation and maintenance shall be reviewed by the District. The compliance date in this schedule shall not be later than the compliance date established for the applicable standards and requirements. The following conditions shall apply to this schedule:
 - (a) The schedule shall contain increments of progress not to exceed 6 months in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable standards and requirements; and
 - (b) Not later than 14 days following each date in the schedule and the final date for compliance, the user shall submit a progress report to the District including, as a minimum, whether or not user complied with the increment of progress to be met on such date and, if not, the date of which it expects to comply with this increment of progress, the reason for delay, and the steps taken by the user to return the construction to the schedule established.
- 9) A statement of certification as set forth in 40 CFR, Section 403.6 and signed by the authorized representative of the industrial user.
- 10) Any other information as required by the District to evaluate the permit application. After evaluation and acceptance of the data furnished, the District may approve the application.

The applicant shall have 10 business days from the date of notification to file written objections with the control authority to any permit conditions. The control authority may, but shall not be required to, schedule a meeting with the applicant's authorized representative within 10 business days following receipt of the applicant's objections and attempt to resolve disputed issues concerning permit conditions. If the applicant files no objections to permit conditions proposed or if subsequent agreement is reached



concerning same, the control authority shall issue a wastewater discharge permit to the applicant with such conditions incorporated.

10.13.2 Permit Modification

Upon promulgation of additional categorical pretreatment standards and within the time prescribed thereby, the wastewater discharge permit of a user subject to such standards shall be revised as required to comply with any part thereof which is stricter than existing standards or conditions of the permit. Where a user, subject to categorical pretreatment standards, has not previously submitted an application for a wastewater discharge permit, the user shall apply for a wastewater discharge permit within 30 days after promulgation of the applicable categorical pretreatment standard. Any user with an existing wastewater discharge permit shall submit to the District, within 30 days after such promulgation, the information required by Section 10.13.1 8) and 9). In addition to the foregoing, the terms and conditions of the permit shall be subject to modification by the District during the term of the permit as limitations or requirements are modified or other just cause exists. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance as determined by the District. The District reserves the right to require any industrial user to install and maintain pretreatment system and require it be operated by a state certified industrial wastewater plant operator if the system is of complicated design as determined by the District or shows a degree of non-compliance in meeting discharge limits.

10.13.3 Permit Conditions

Wastewater discharge permits shall be expressly subject to all provisions of this section and all other applicable regulations, rates, tolls and charges established by the District.

Permits may be conditioned upon the following:

- 1) Limits on the average and maximum wastewater constituents and characteristics.
- 2) Limits on average and maximum rate and time of discharge or requirements for flow regulations and equalization.
- 3) Requirements for installation and maintenance of inspection and sampling facilities.
- 4) Specifications for monitoring programs which may include sampling, locations, frequency of sampling, number, types and standards for tests and reporting schedules.
- 5) Compliance schedules.
- 6) Requirements for submission of technical reports or discharge reports.
- 7) Requirements for maintaining and retaining records relating to wastewater discharge as specified by the District and affording District access thereto.
- 8) Requirements for notification of the District of any new introduction of wastewater constituents or average volume being introduced into the sewer system.



- 9) Requirements for notification and control of non-routine, episodic discharges, including but not limited to, accidental spills or non-customary batch discharges.
- 10) Requirements for separate systems to handle sanitary and industrial wastewater, such that in the event that the user's industrial wastewater is or could cause an interference or a potential interference with the sewer system, that the industrial wastewater could be served preventing discharge into the sewer system but still allowing the users sanitary wastewater to discharge into the sewer system.
- 11) Any other conditions as deemed necessary by the District in order to enforce the provisions of this section.
- 12) Effluent limits based on applicable general pretreatment standards, categorical pretreatment standards, local limits, and state and local law.
- 13) Self-monitoring, sampling, reporting, notification and record keeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency and sample type, based on the applicable general pretreatment standards in 40 CFR Section 403, categorical pretreatment standards, local limits, and state and local laws.
- 14) Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule, such schedules may not extend the compliance date beyond federal guidelines.

10.13.4 Permit Duration

A wastewater discharge permit shall be issued for a period of 3 years from the date of issue. The user shall apply for a new permit with completed wastewater discharge permit application(s) within a minimum of 90 days prior to the expiration of the user's existing permit. Any permit may be suspended or revoked for failure to comply with the requirements of this section.

10.13.5 Permit Transfer Prohibited

A wastewater discharge permit shall not be sold, traded, assigned, transferred, or sublet. Any new industrial user must obtain a wastewater discharge permit regardless of whether a permit previously existed for the same premises.

10.14 Compliance Date Report

Within 90 days following the date for final compliance with applicable standards or requirements, any industrial user subject to federal, state or District standards and requirements, shall submit to the District a report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by such federal, state or District standards and requirements and the average, minimum and maximum daily flow and times for wastewater limited by such standards and requirements. The report shall state whether applicable standards or requirements are being met on a consistent basis and, if not, what additional operation and maintenance or pretreatment is necessary to bring a user into compliance with the applicable standards or requirements. This statement shall be signed by an authorized



representative of the industrial user and certified by a professional engineer registered in the state.

10.15 Periodic Compliance Reports

Any industrial user subject to a federal, state, or District standards or requirements shall submit to the District during the months of June and December, unless required more frequently in the permit or by the District, a report indicating the nature and concentration of pollutants in the wastewater which are limited by such standards or requirements. In addition, this report shall include a record of all daily flow which, during the reporting period, exceeded the average daily flow reported in Section 10.13.

The District may impose mass limitations on industrial users which are using flow equalization to meet applicable federal, state or District standards or requirements, or in other cases where the imposition of mass limitations are appropriate. In such cases, the report required by this subsection shall also indicate the mass of limited pollutants in the wastewater of the user. These reports shall also contain the result of sampling and analysis of the discharge, including production and mass of pollutants contained therein which are limited by the applicable standards and requirements.

10.16 Spill Management Plan

The District will evaluate, at least once every 2 years, whether each significant industrial user needs a plan to control slug discharges. For purposes of this subsection, a slug discharge is any non-routine, episodic by nature, including but not limited to, an accidental spill or a non-customary batch discharge. The results of such activities shall be available to the approval authority upon request. If the District decides that a spill management plan is needed, the plan shall contain, at a minimum, the following elements:

- 1) An ongoing inventory of the types and quantities of pollutants used or stored by the industrial user.
- 2) A diagram of the process and storage location(s) at the facility.
- 3) A diagram of the location(s) of the floor drains to sanitary or storm sewers.
- 4) A description of the measures used to prevent discharge to sanitary or storm sewers.
- 5) An outline of the spill prevention procedures followed by an industrial user.
- 6) If the District deems it to be necessary, procedures to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment measures for containing toxic organic pollutants (including solvents), treatment and disposal methods, and/or measures and equipment for emergency responses. The existence of a management plan does not relieve the discharger from fines, charges, or other liabilities which may be imposed in the event of violations of these Rules and Regulations or other applicable laws.



10.17 Signatory Requirements

The reports required by Sections 10.13 and 10.14 shall include a statement of certification as set forth in 40 CFR Section 403-6 and signed by the authorized representative of the industrial user

10.18 Monitoring Inspections

Where required pursuant to this Section or pursuant to terms and conditions of the wastewater discharge permit, the user shall provide and operate, at his expense, monitoring equipment and facilities sufficient to allow inspection, sampling, and flow measurement of the user's sewer systems.

The monitoring equipment and facilities shall be situated on the user's premises or such other location as approved by the District. There shall be ample room in or near such monitoring manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the user and accessible to the District at any time.

The District may randomly sample and analyze the effluent from industrial users and conduct surveillance activities in order to identify, independent of information supplied by the industrial users, occasional and continuing noncompliance with pretreatment standards, and inspect and sample the effluent from each significant industrial user at least once a year pursuant to 40 CFR Section 403.8(f)(2)(v).

Whether constructed on public or private property, the sampling and monitoring equipment and facilities shall be provided in accordance with the District's requirements and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by the District unless another date is specified in the wastewater discharge permit.

The District may inspect the equipment and facilities of any user at any time during normal business hours to ascertain whether they comply with applicable ordinances, rules, and regulations. In the case of an emergency, the District may cause such inspection to occur at any time. Occupants of premises where wastewater is created or discharged shall allow the District its representative entry for purpose of inspection, sampling, records examination, records copying, or the performance of any other rights or responsibilities under this section. The District, state, and EPA shall have the right to set up on the user's property such devices as are necessary to conduct sampling inspection, compliance monitoring, or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with its security force/system so that upon presentation of suitable identification, personnel from the District, state and EPA will be permitted to enter, without delay for the purposes of performing their specified responsibilities.

In the event a duly authorized representative or agent of the District is refused admission for an purpose, the District may cause sewer service to the premises in question to be suspended until the District's representative or agent has been afforded reasonable access to the premises and sewer system to accomplish the inspection or sampling.

All measurements, tests and analysis of the characteristics of wastewater to which reference is made herein shall be determined in accordance with 40 CFR 136 or, where not addressed in accordance with procedures established by the EPA pursuant to Section 304 (h) of the Act (33



U.S.C. Section 1314(h)), or with any other test procedures approved by the EPA Administrator. In the event that no special facility has been required, the point of inspection shall be the downstream manhole in the sewer system nearest to the point at which the service line is connected to the sewer system. All measurements, tests, and analysis, and all sampling shall be at the expense of the user.

10.19 Pretreatment

Users shall provide necessary wastewater treatment as required to comply herewith. Any equipment and facilities required to pre-treat wastewater to a level in compliance with this section shall be provided, operated and maintained at the user's expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the District for review, and shall be approved in writing by the District before construction of the facility. The review of such plans and operating procedures will in no way relieve the user from the responsibility of modifying the facility as necessary to produce wastewater in compliance with the provisions of this section. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to the District and approved prior to the user's initiation of the changes.

10.20 Food Preparation Establishments

All food preparation establishments, whether existing or of new construction, shall be required to install an approved grease interception device, also referred to as a grease trap or interceptor, that is connected to all drains from the kitchen, food preparation, and dishwashing areas. Fixtures to be connected include but are not limited to garbage disposals (grinders), scullery sinks, pot and pan sinks, dishwashing machines, soup kettles and floor drains located in areas where grease containing materials may exist. All waste shall enter the interceptor through the inlet pipe only.

The size, type and location of each interceptor shall be designed by a Colorado licensed architect or engineer and have local health department approval, if required, before being approved by the District. All interceptors for grease and heavy solids shall be so designed and located as to be readily accessible for cleaning and shall have a water seal of not less than 6". Interceptors may not be installed in any part of a building where food is handled or served. The location of the interceptor shall be approved by the District and shall be shown on the approved building plan. No interceptors shall be located in drive-through driveways or next to main entrance ways unless approved by the District prior to construction. The size of the interceptor shall be based on the maximum number of meals served during the maximum or peak periods of the day (breakfast, lunch, or dinner).

Cleaning and maintaining the interceptor in efficient operating condition shall be the user's responsibility and expense. All interceptors shall be cleaned at a minimum interval of once every 6 months or whenever it becomes full, whichever event occurs first. The District may inspect any interceptor at any time without prior notice to the user. If the District's inspection indicates that the interceptor requires pumping or repairs, the District can require the user to have these services performed immediately, or the District can perform or cause such services to be performed at the sole expense of the user.

The District will require that all users having interceptors provide evidence of all cleaning and maintenance performed to the interceptors at the time of the District's inspection. This evidence shall be in the form of copies of invoices and any other documentation relating to the service performed.



Bypassing or failing to have, use, or maintain a grease or sand interceptor to District standards shall be a violation of these Rules and Regulations.

10.21 List of Non-Complying Users

The District will maintain a list of users in significant noncompliance with applicable pretreatment requirements in accordance with definitions and regulations as set forth in 40 CFR Section 403.8. All records relating to compliance with applicable standards or requirements shall be made available to officials of the EPA or approval authority upon request, subject to any limitations contained in state statutes.

10.22 Confidential Information

Information and data on a user obtained from reports, questionnaires, permit applications, permits and monitoring programs and from inquiries shall be available to the public or other governmental agency without restriction pursuant to the Colorado Open Records Act, § 24-72-201, *et seq.*, C.R.S, unless the user specifically requests and is able to demonstrate to the satisfaction of the District that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the user. When requested by the user furnishing a report, and such request is approved by the District, the portion of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related hereto, National Pollutant Discharge Elimination System (NPDES) permit, or applicable standards or requirements. Moreover, such portions of the report shall be available for use by the District or any Federal or State agency in judicial review or enforcement proceedings involving the user furnishing the report.

Information accepted by the District as confidential, shall not be transmitted to any government agency by the District until and unless a 10-day written notification is given to the user by certified mail or personal service.

If the user believes that the District's findings are in error, the user may elect to appeal such findings in accordance with Rule 106(a)(4) of the Colorado Rules of Civil Procedure.

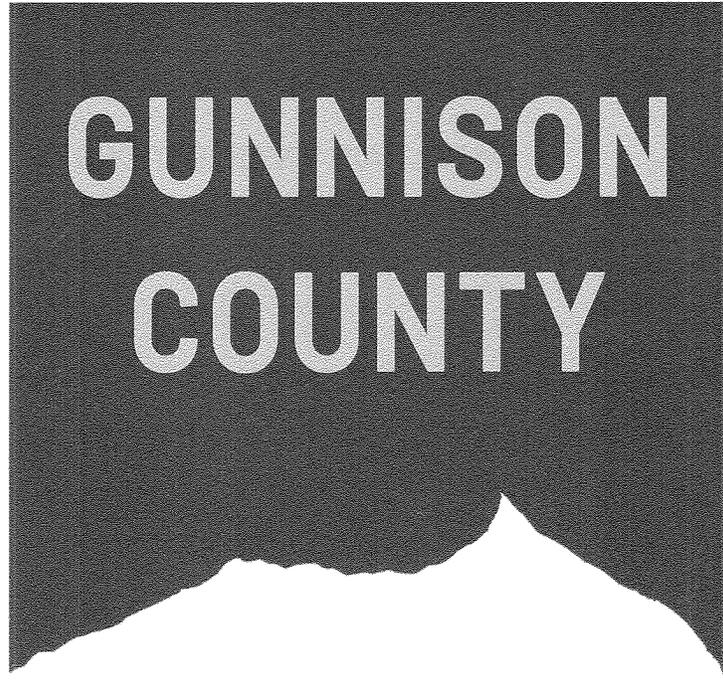
10.23 Disconnection or Cessation of Discharge

In the event an industrial user intends to cease to discharge from a regulated process or plans to disconnect from the wastewater system, the District must be notified not less than 30 days prior to any action by the industrial user. The notification shall provide a closure management plan that includes the following information, as a minimum:

- 1) Date of planned disconnect or cessation of discharge.
- 2) Methods of disposal of regulated process tanks, chemicals, sludges, plating wastes, cleaning solutions and other pollutants.
- 3) Methods of cleaning tanks, barrels, or other vessels containing regulated pollutants.
- 4) Names of carriers, copies of manifests and the ultimate disposal site(s) of the regulated pollutant and the EPA permit numbers for the transportation of the wastes, if a permit is required.

EXHIBIT B

**CONSTRUCTION STANDARDS
FOR THE GUNNISON COUNTY
WATER AND SEWER
DISTRICT**



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- 5) Name of contact person to be contacted during closure and upon completion, the industrial user shall be responsible for all discharges to the wastewater system and shall not be disconnected until the District has determined that the industrial user has disposed of the regulated wastes in a proper and safe manner and has requested termination of the discharge permit in writing.

10.24 Specific Pollutant Limitations

Every user of the sewer system must meet the following standards of the District with respect to the daily maximum concentration for the following Pollutant/Pollutant Property Concentration/ Daily Maximum In mg/L:

- 10.24.1.1 Arsenic/0.6300
- 10.24.1.2 Cadmium/0.1100
- 10.24.1.3 Chromium (iii)/3 0000
- 10.24.1.4 Copper/3.3800
- 10.24.1.5 Lead /0.6900
- 10.24.1.6 Mercury/0.0007
- 10.24.1.7 Molybdenum/0.5200
- 10.24.1.8 Nickel/3.9800
- 10.24.1.9 Selenium/0.2800
- 10.24.1.10 Silver/0.4300
- 10.24.1.11 Zinc/2.6100

Note: pH units shall remain between 6.0 and 9.0.

10.25 Sampling Schedule for Critical Industries

Critical industries must monitor and then enter into a sampling schedule as required by the District. The District sampling and analysis shall also be made as determined by the District. The District shall also provide a schedule showing specific pollutants limitations.

SECTION 11. ENFORCEMENT

11.1.1 Generally

Any user found in violation of any of the provisions of these Rules and Regulations shall be subject to any or all of the administrative procedures, orders, charges and other remedies, as authorized by these Rules and Regulations, as deemed necessary and appropriate under the circumstances by the District Manager and/or the Board, as applicable. In addition, any user in violation of any of the provisions of these Rules and Regulations may also be prosecuted pursuant to applicable local, state and federal laws.

11.2 Notice of Violation

Whenever the District finds that a user has violated or is violating any of the provisions of these Rules and Regulations, or any order or permit issued hereunder, or the terms of a right-of-way,



easement or other agreement between the District and the user, or if any rates, tolls or charges imposed under these Rules and Regulations become delinquent, the District Manager may serve upon the user a written notice stating the nature of the violation and providing a reasonable time, not to exceed 30 days, for the satisfactory correction thereof. Such notice shall be served personally, or by registered or certified mail (return receipt requested) to the billing or street address of the user. Such notice shall specify the amount and nature of charges imposed against the user, if any. A meeting with the District Manager may be scheduled at the request of the user or the District Manager to discuss the violation and/or satisfactory correction schedule. Such meeting shall not serve as an extension of the thirty-day deadline for correction of a violation.

11.3 Show-Cause Hearing

Upon a finding by the District Manager that a user has failed to correct a violation in accordance with Section 11.2 of these Rules and Regulations, whether with or without a meeting with the District Manager, the District Manager may order such user to show cause to the District why an enforcement action should not be taken. A notice shall be served on the user, specifying the time and place of a hearing to be held regarding the violation, and directing the user to show cause why an order should not be made directing an enforcement action against the user. The notice of the hearing shall be served personally, or by registered or certified mail (return receipt requested) to the billing or street address of the user at least 10 days before the hearing. Service of process may be made on any agent or officer of a corporation. The show-cause hearing shall be conducted in accordance with Section 11.5 of these Rules and Regulations.

11.4 Notice of Appeal

Any user desiring to appeal any order or determination of the District shall file a written notice of appeal with the District within 10 days of such order or determination. Such notice or appeal shall set forth the nature of the order or determination being appealed, the date of such order or determination, the reason for the appeal, and shall request a hearing before the Board.

On receipt of a notice of appeal, the District shall set the appeal for hearing at the next regularly scheduled Board meeting, if such meeting is at least 7 business days following receipt of the notice of appeal, otherwise for the next meeting thereafter. Notice of the time, date, and place for the hearing shall be served personally, or by registered or certified mail (return receipt requested) to the billing or street address of the user filing the notice of appeal. The Board may continue the hearing as it deems necessary, without further notice.

11.5 Conduct of Hearings

The Board shall conduct the hearing and, in doing so, shall act as a quasi-judicial body. The user and the District shall each have the opportunity to present evidence and arguments in support of their positions and shall have the right to be represented by an attorney, if they so desire. The Board may affirm, reverse, or modify the order or determinations previously made. The findings and decision of the Board shall be mailed to the user.

Any party to the hearing aggrieved or adversely affected by an order of the District may appeal such order to the District Court in and for the County of Gunnison, pursuant to Rule 106(a)(4) of the Colorado Rules of Civil Procedure.

11.6 Compliance Order

If it is determined that a violation has occurred following the show-cause hearing, the District Manager may issue a compliance order to the offending user setting forth any reasonable and



appropriate requirements to address the noncompliance, which may include, without limitation, suspension or termination of service, installation of pretreatment technology, and additional self-monitoring practices. If the user fails to cure a non-conformity by the time specified in the compliance order, the District may perform the work or have the work performed at the expense of the user.

11.7 Consent Orders

As an alternative to issuing a compliance order, the District Manager is hereby authorized to enter into a consent order that establishes an agreement between the District and the offending user for voluntary compliance. A consent order will include specific action to be taken by the user to correct the non-compliance within a time period specified by the consent order.

11.8 Emergency Suspension Order

Notwithstanding any other provision of these Rules and Regulations, the District may immediately suspend service without prior notice or a show-cause hearing if any actual, threatened or proposed discharge immediately and substantially endangers individual health, safety or welfare, the general public or the environment, or may cause interference or damage to District facilities. Any such emergency suspension order shall become effective immediately, and any person notified of such suspension shall immediately stop or eliminate all discharge of wastewater. The District is also authorized, in such severance of the sewer connection, to prevent or minimize danger or property damage.

11.9 Injunctive Relief

The District may petition the District Court in and for the County of Gunnison for injunctive relief from any act or omission by any user that violates these Rules and Regulations, or which otherwise jeopardizes the property or health of any person or the District.

11.10 Denial of Permits

The District may decline to reissue a permit to any user who has failed to comply with the provisions of these Rules and Regulations or any order or previous permit issued hereunder unless such user first files with it a satisfactory bond, letter of credit or other suitable guarantee payable to the District in a sum determined by the District to be necessary to achieve consistent compliance.

11.11 Reinstatement of Suspended Service

The District shall not reinstate service that has been suspended until the following requirements have been satisfied:

- 11.11.1 The person requesting reinstatement has paid any applicable disconnection and reconnection charges, all costs and expenses incurred by the District in connection with the suspension, and any and all other amounts then due to the District.
- 11.11.2 The person requesting reinstatement has submitted proof of elimination of the violation to the District Manager.
- 11.11.3 The person requesting reinstatement has submitted, and the District Manager has approved, a plan to prevent future violations.

If deemed necessary to prevent danger, property damage or interference with the sewer system, the District Manager may order a user to provide pretreatment, flow rate control, suitable access



facilities (e.g., a manhole or vault) and periodic sampling, testing, and reporting of the quality and quantity of wastewater being discharged prior to reinstating service.

Any notice or order issued under this section shall be served personally, or by registered or certified mail, (return receipt requested) to the billing or street address of the user.

11.12 Grounds for Termination of Service

Service shall be terminated, and not merely suspended, if any of the following occurs:

- 11.12.1 The Utility Manager issues a compliance order directing termination of service;
- 11.12.2 The tap is revoked;
- 11.12.3 The connection providing such service was not authorized when made;
- 11.12.4 The service was suspended at least 2 times within the preceding 5 years as a consequence of the acts or omissions of the same user.

Service that is terminated pursuant to this Section may not be reinstated unless the user applies for new service.

11.13 Stopping or Eliminating Discharge upon Suspension or Termination of Service

Any user notified of a suspension or termination of service shall immediately stop or eliminate discharge of any and all wastewater from the property affected by such order on the effective date of the suspension or termination. The District may take such steps as deemed necessary to enforce the suspension or termination order, including but not limited to a physical interruption of service. Failure to stop or eliminate the discharge of wastewater from property affected by an order suspending or terminating service to such property shall be a violation of these Rules and Regulations.

11.14 Civil Fine Pass-Through

In the event that a user discharges pollutants which cause the District to violate a condition of a permit held by the District, and if the District is fined by a state or federal agency for such violation, such user shall be liable for the total amount of the fine assessed against the District.

11.15 Remedies Cumulative

The remedies available to the District under these Rules and Regulations and under the laws of the State of Colorado shall be deemed to be cumulative, and the utilization by the District of any single such remedy or combination thereof shall not preclude the District from utilizing any other remedy or combination thereof.

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GUNNISON COUNTY
CONSTRUCTION STANDARDS

SECTION 100	GENERAL SPECIFICATIONS
SECTION 200	GENERAL EARTHWORK SPECIFICATIONS
SECTION 300	SANITARY SEWER SPECIFICATIONS
SECTION 400	WATER MAIN SPECIFICATIONS

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GUNNISON COUNTY

GENERAL SPECIFICATIONS

SECTION 100

I. SCOPE:

These specifications including material specifications and construction requirements are for all construction within Gunnison County right-of-way and in other areas under Gunnison County areas of jurisdiction or ownership.

These specifications are the minimum requirements for materials and construction and may only be modified by written approval of the Gunnison County. These specifications are intended to work in harmony with the District Rules and Regulations and the County Land Use Resolution.

II. DEFINITIONS AND ABBREVIATIONS:

Wherever the following words, phrases or abbreviations appear in these specifications, they shall have the following meanings:

Gunnison County: Gunnison County, Colorado.

Utility Manager: The Water and Sanitation Utility Manager, Gunnison County, Colorado, or an authorized representative acting on behalf of Gunnison County.

Engineer: The engineer assigned by the Public Works Director to a specific project.

Inspector: It can be the Utility Manager, the assigned Engineer, or an authorized representative acting on behalf of Gunnison County, at the site of the work.

Utility: The Gunnison County Water and Sewer District of Gunnison County, Colorado and all other utilities.

Public Improvements: The term "public improvements" includes public facilities and shall refer to the construction, installation, development or extension of the public water and / or sanitary sewer system.

Easement: See Gunnison County Land Use Resolution.

Sanitary Sewer: Conduits and related appurtenances employed to collect and



carry off water and waste water to a suitable point of final discharge.

Structures: Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, end walls, buildings, sewers, service pipes, under drains, foundation drains, fences, swimming pools and other features which may be encountered in the work and not otherwise classed herein.

Base Course: Use Gunnison County Road & Bridge Standards

Subbase: Use Gunnison County Road & Bridge Standards

Subgrade: The supporting structures on which the pavement and its special under courses rest.

Whenever the words, "as directed", "as required", "as permitted" or words of like meaning are used, it shall be understood that the direction, requirements or permission of the Utility Manager is intended. Similarly, the words "approved", "acceptable", "satisfactory" shall refer to approval by the Utility Manager.

Whenever references are made to standard specifications, methods of testing materials, codes, practices and requirements, it shall be understood that the latest revision of said references shall govern unless a specific revision is stated. Wherever any of the following abbreviations appear, they shall have the following meaning:

- AASHTO - American Association of State Highway Transportation Officials
- ASTM - American Society for Testing and Materials
- AWWA - American Water Works Association
- CDOT - Colorado Department of Transportation
- OSHA- Occupational Safety and Health Administration

III. RESPONSIBILITY OF THE GUNNISON COUNTY:

1. Authority of the Utility Manager:

The Utility Manager shall have the authority on behalf of Gunnison County to



ascertain that all design and construction of facilities is equal to or better than the minimum requirements set forth in these specifications. The Utility Manager shall have the additional authority to assign an inspector to check any and all work, including all materials to be incorporated in the work, excavation, bedding, backfill, and all construction methods and practice.

2. Authority of the Inspector:

Inspectors are assigned to assist the Contractor in complying with these specifications. They have the authority to reject defective materials, or inferior materials and defective workmanship until such time as the Contractor shall correct the situation in question, subject to final decision by the Utility Manager.

IV. RESPONSIBILITY OF THE CONTRACTOR:

1. Notice Before Beginning Work:

The Contractor shall notify the Gunnison County Utility Manager at least twenty-four (24) hours before beginning any construction. If for any reason work should stop on a project during any stage of construction for a period of more than twenty-four (24) hours, it is the responsibility of the Contractor to notify the Gunnison County Utility Manager at least twenty-four (24) hours prior to any resumption of work on the project. If the Contractor intends to work extended shifts, double shifts, or hours other than the normal workday of Gunnison County personnel, he shall notify the Gunnison County Utility Manager at least twenty-four (24) hours prior to such extension, except in the event of an emergency. Failure to provide notification may provide sufficient cause for suspension of the project.

2. Traffic Control:

The Contractor shall be required to provide adequate construction signing, flagmen, barricades, etc., to warn vehicular and pedestrian traffic of work in progress and divert traffic as may be required during the course of construction. All signing shall conform to the Manual of Uniform Traffic Control Devices and shall be subject to the approval of the Traffic Control Supervisor. When specifically authorized by the Traffic Control Supervisor, portions of the streets shall be allowed to be closed to traffic for construction. However, the Contractor shall make every attempt to keep the time of closure to such streets to a minimum. It shall be the responsibility of the Contractor to notify the Fire Department, Police



Department and Ambulance Service twenty-four (24) hours prior to the closure of any street. In addition, for all work within State of Colorado highway rights-of-way the Contractor shall submit a traffic control plan to the CDOT Traffic Engineer for review.

3. Rejected Materials:

All materials installed shall be free of defects of manufacture. Any defective or damaged materials found in the construction or on the construction site shall be marked and removed from the site. In the event the Contractor fails to remove rejected materials from the construction site within a reasonable length of time, the Utility Manager may arrange for such removal at the expense of the Contractor.

4. Familiarity of Specification:

It shall be the responsibility of the contractor to read and fully comply with all the provisions of these specifications and all laws and regulations that apply to local and state agencies.

5. Maintenance of Site:

The cleanup and restoration of grounds shall be a continuous process from the beginning of construction to final completion of the work. The Contractor shall keep the work site free from the accumulation of debris and waste material caused by the work.

Immediately after the construction activity or major portion thereof is complete the area shall be cleaned and restored to the original grade and condition. All fences shall be replaced to the same elevation and alignment and restored to a condition equal to or better than that at the beginning of construction.

6. Public Relations and Notifications:

The Contractor shall carry on the work in such manner as to cause as little inconvenience as possible to the public, particularly to occupants of property along the project, as is consistent with good workmanship. They shall notify occupants at least twenty-four (24) hours in advance of proposed work that may block entrances or otherwise cause undue difficulty to occupants of property affected and shall restore such entrances to usable condition as soon as possible. The Contractor, Subcontractors and employees shall at all times be courteous to the



public while engaged upon this work.

The Contractor shall notify all business managers and residents affected by the interruption of utilities and other services caused by the work. Such notice shall be given at least twenty-four (24) hours prior to the interruption of service. Notice shall be given for the interruption of domestic water, irrigation water, sewer, trash pickup, mail delivery and changes in access to property.

Notifications may be verbal or in written form if the business manager or resident cannot be located. Water services shall not be discontinued for more than two (2) consecutive hours without special written permission from the Utility Manager.

Where trees, hedges, shrubs, or other ornamental plantings or structures within the construction limits are not designated to be protected or saved, the Contractor shall notify the owner of the property fronting the plantings or structures in question, not less than two (2) calendar days prior to their removal. This notification shall include allowing the property owner an option to transplant the plantings or relocate structures fronting his property onto his property instead of having the Contractor remove them. The Contractor shall bid the project based on assuming responsibility for all removals. This notification requirement is intended as a positive public relations action. All notifications described and required in this section are considered as incidental to the Work and will not be measured or paid for separately.

7. Protecting and Relocating Utilities:

It is the responsibility of the Contractor to provide for the protection of all structures and utilities including pipes, fences or similar items. Colorado 811 must be contacted before any and all work.

In the event of a break in an existing water main, gas main, sewer or underground cable, the Contractor shall immediately notify the responsible official of the organization operating the utility interrupted and shall lend all possible assistance in restoring services.

The Contractor shall bear the entire expense of repairing or replacing any utilities or structures disturbed or damaged during construction.

Unless otherwise specified in the Contract Documents, all utility relocations will be the responsibility of the utility companies; the Contractor shall be responsible for coordinating the relocation work with the Utility Companies and shall bear any reasonable and customary cost associated with the work.

8. Safety and Protection:

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- (1) All employees on the job and other persons who may be affected thereby,
- (2) All work and all materials or equipment to be incorporated therein in storage on or off site and,
- (3) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavement, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. The Contractor shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection.

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GUNNISON COUNTY

GENERAL EARTHWORK SPECIFICATIONS

SECTION 200

I. SCOPE

The purpose of this Earthwork Specification is to set forth the criteria to be used for all construction within the rights-of-way and in any other areas of jurisdiction or ownership of Gunnison County. Work shall include but not be limited to: Surface Removals, Excavation, Dewatering, Trenching Embankment, Bedding and Backfill for all utilities, structures and roads.

II. MATERIALS:

1. Fill Material:

- A. On-site: All on-site material suitable for STRUCTURAL BACKFILL shall be soil or soil-rock mixture which is free from frozen material, organic matter and other deleterious substances. It shall contain no rocks or lumps over eight (8) inches in greatest dimension. Wet material from the excavation shall be removed from the site and replaced with imported material.
- B. Imported: Pit Run: Shall be well graded eight (8) inch minus material, meeting the requirements of "A" above, with less than 20 percent by weight passing the No.200 sieve and a liquid limit not greater than 35 percent.
- C. Other Materials: Other materials may be selected by the Contractor subject to the approval of the inspector, or his authorized representative.
- D. Bedding Material: Shall be 3/4" washed rock, with a minimum of 4" below pipe and 6" above pipe and on each side of the pipe, and shall be well graded.
- E. Subbase - Course Aggregate: Aggregates shall be crushed stone, crushed slag, crushed gravel or natural gravel which conforms to the requirements of AASHTO M147. Aggregate



shall meet the grading requirements in the Classification Table below. The type used shall be specified on the plans or special provisions. The liquid limit (LL) shall be as shown in the table and the plasticity index (PI) shall not exceed 6 when the aggregate is tested in accordance with AASHTO T89 and T90, respectively.

- F. Base Course Aggregate: Colorado Department of Transportation Class 6 Aggregate Base Course
- G. Select Backfill Material may be either CDOT Class 6 Aggregate Base Course or Granular Bedding Material.
- H. Flow-Fill:

Ingredients

Lbs./C.Y.

Cement (0.45 sack)	42
Water (39 gallons)	325 (or as needed)
Coarse Aggregate (Size no. 57)	1700
Sand (ASTM C-33)	1845

III. INSTALLATION:

- A. Roadway Excavation and Grading:

This work shall consist of excavation, disposal, shaping or compaction of all material encountered within the limits of the roadway in close conformity with the lines, grades and typical cross sections shown on the plans or as directed by the inspector.

- B. Clearing:

Excavation and grading for street improvements and paving projects shall include removal of trash, rubbish and low lying vegetation in the construction area. All vegetation and objects designated to remain shall be protected from injury or defacement.

- C. Grubbing:

All vegetation such as trees, stumps, hedges, shrubs, brush, heavy sod, heavy growth of grass, decayed vegetable matter, rubbish and



other unsuitable material within the area of excavation or upon which embankment is to be placed shall be stripped or otherwise removed to a depth of 3 inches. All such materials shall be separated from suitable topsoil and backfill material, and hauled to a disposal site secured by the Contractor.

Except in areas to be excavated, stump holes and other holes from which obstructions are removed, shall be backfilled with suitable material and compacted in accordance with these specifications.

D. Stripping:

Stripping shall consist of removing unsuitable overburden material before removal of other material for use in the roadway. All areas to be graded and all embankments or fill areas under paved slabs shall be stripped.

E. Excavation:

After all clearing, grubbing and stripping has been done, excavation of every description and of whatever materials encountered within the grading limits of the project shall be performed. All suitable excavated materials shall be transported to and placed in embankments or fills within the limits of the work.

The excavation and embankments for the roadway and ditches shall be finished to reasonably smooth and uniform surfaces. Variation from the subgrade plane shall not be more than 1 inch of soil. Excavation operations shall be conducted so that material outside of the limits of slopes will not be disturbed, but all cuts shall be made to subgrade a minimum of 1 foot outside the proposed edge of paving slab or curb. Prior to beginning grading operations in any area, all necessary clearing and grubbing in that area shall have be performed. The Contractor shall not excavate beyond the dimensions and elevations established, and material shall not be removed prior to the staking.

If excavation to the finished graded section encounters a subgrade or slopes of spongy material, vegetable matter or trash pockets, the inspector may require the Contractor to remove the unsuitable materials and backfill to the finished graded section with suitable material. The inspector may designate as unsuitable those soils or materials that are in his judgment detrimental to the finished roadway. All unsuitable material shall be disposed of outside the construction area.



F. Shouldering and Miscellaneous Work:

The Contractor shall deposit sufficient suitable earth between curb and sidewalks, or property lines, so that when smoothed and consolidated in final deposition, it will provide a uniform smooth slope from top of curb to the adjacent sidewalk or property line. All broken concrete, trash and debris shall be removed before any fill is placed back of curb. In case excavation is necessary to accomplish the above purpose, the Contractor shall make such necessary excavation, and he shall leave the parking area so filled or excavated free from all trash and debris.

The Contractor shall set all manholes, water boxes or other service boxes, 4" below finished grade on gravel roads and 1/2" below finished grade on asphalt roads. This work will be considered as part of the grading.

G. Embankments:

Embankment construction shall consist of constructing roadway embankments, including preparation of the areas upon which they are to be placed; the construction of dikes; the placing and compacting of approved material within project areas where unsuitable material has been removed; and the placing and compacting of embankment material in holes, pits and other depressions within the project area. Only approved materials shall be used in the construction of embankments and backfills.

Free running water shall be drained from the material before the material is placed. Rocks, broken concrete or other solid materials more than 6 inches in greatest dimension shall not be placed in embankment areas less than 1 foot deep as measured from the subgrade. Materials up to about 150 pounds in weight may be placed at the base of fills over 3 feet deep measured from the subgrade. All fill material shall be free from roots, organic material, trash and frozen material.

When an embankment is to be placed and compacted on hillsides, or when new embankment is to be compacted against existing embankments, or when embankment is built one-half width at a time, the slopes that are steeper than 4:1 when measured longitudinally or at right angles to the roadway shall be continuously benched over those areas where it is required as the work is brought up in layers. Benching shall be well keyed and



where practical a minimum of 8 feet wide. Each horizontal cut shall begin at the intersection of the original ground and the vertical sides of the previous cuts. Material thus cut out shall be re-compacted along with the new embankment material at the Contractor's expense.

Embankment material shall be placed in horizontal layers not to exceed 8 inches in loose depth and compacted prior to placing each following layer.

When pipe is to be installed in areas requiring fills or embankments, the embankment or fill shall be completed a minimum of one (1) foot above the top of the pipe to be installed, prior to trenching and installation of the pipe.

The Contractor shall add moisture to or dry by aeration each layer as may be necessary to meet the requirements for compaction. Materials shall not be placed in embankments or fills when the moisture content exceeds 5% above or is 3% below optimum moisture content for that material. Under roadways and extending 1 foot beyond proposed curb line measured perpendicular from the centerline embankments shall be compacted for the entire depth of the fill to a density of not less than 90% maximum density except the top three feet which shall be compacted to at least 95% maximum density as defined by ASTM D698.

H. Trench Excavation:

1. Surface Removals and Topsoil Preservation

The Contractor shall remove surface materials and obstructions only to the widths necessary for excavation of the trench. All fences, landscaping and structures not designated for removal shall be protected or, if moved, restored to their original condition after construction is complete.

Removal of concrete curbs, gutters, sidewalks and driveways shall be along existing joints or neatly cut lines.

Where excavation is required under paved areas, the pavement shall be cut in such a manner as to effect a smooth, straight cut edge and as a vertical face six (6) inches minimum beyond the trench wall. All vegetation,



concrete, asphalt and other refuse removed from the construction limits shall be separated from suitable topsoil and backfill material, and hauled to a disposal site secured by the Contractor.

Clean topsoil suitable for final grading shall be stripped, stockpiled separately in approved locations and restored to the surface after the trench is backfilled evenly. Where excavation is in a lawn covered area the sod shall be cut and removed and replaced after trench filling so as to promote regrowth. Where sod is disturbed the contractor shall resod with like grass at his own expense.

2. Stockpiling Excavated Material:

Excavated material shall be piled in locations that will not endanger the work, create traffic hazards or obstructed sidewalks and driveways. Fire hydrants, valve boxes, manholes and other utility access points shall be left unobstructed until the work is complete.

Gutters and other water courses shall not be obstructed unless other provisions are made for runoff and street drainage.

All surplus material and excavated material unsuitable for backfilling shall be removed from the site and disposed of in areas secured by the Contractor.

3. Trenching:

Trenches shall be excavated to the width necessary to permit the pipe to be laid and jointed properly and backfill materials placed and compacted as required. Where conduit is to be installed outside of existing pavement and pipes have an inside diameter of 33 inches or less, the trench shall be excavated at pipe level a minimum of 16 inches wider than the outside diameter of the pipe so that a clear space of not less than 8 inches is provided on each side of the pipe.

For pipes having an inside diameter of 36 inches or greater, the trench shall be excavated at pipe level a minimum of 24 inches wider than the outside diameter of the pipe so that a clear space of not less than 12 inches is provided on each



side of the pipe. Wherever it is necessary to exceed these limits, approval of the inspector shall be obtained and a provision shall be made for the additional load imposed on the pipe. When sheeting is used, the widths indicated above shall be measured to the inside dimension between the sheeting.

a. Bracing and Sheeting of Trenches:

All trenches shall be properly braced, sheeted or otherwise supported to provide safe working conditions and protection of the Work, workers and adjacent property.

Bracing and sheeting shall conform to the recommendations in the Occupational Safety and Health Standards for Construction (OSHA). A trench box or trench shield may be used in lieu of sheeting and bracing as permitted by OSHA. Unless otherwise approved, all trench support materials shall be removed in a manner that will prevent caving of the sides and movement or other damage to the pipe.

b. Trenches with Sloping Sides:

When working conditions and right-of-way width permit, trenches may be excavated with sloping sides in accordance with OSHA requirements.

Where trenches with sloping sides are permitted, the slopes shall not extend below a point 12 inches above the top pipe.

4. Pavement Removal:

All removed pavement and excavations made in Gunnison County Roads shall require a road cut permit obtained from Public Works prior to excavation and be replaced at the Contractor's expense.

5. Excavation below Grade:

Where the excavation is carried beyond or below the line and grades shown on the plans or staked, the Contractor shall, at his own expense, refill and compact all such



excavated space with suitable granular material.

6. Over excavating For Rock:

When bedrock or boulders are encountered in the trench bottom or loose, stony soil where there is the possibility of pipe being subjected to "point" contacts, the trench shall be over excavated a minimum of 6 inches. The over excavated material shall be replaced with inspector-approved material (3/4" washed rock).

If blasting is required for rock excavation, all work with explosives shall conform to Federal and State Laws, and OSHA rules and regulations. Any damage caused by blasting shall be repaired by the Contractor at his expense.

7. Unstable Trench Bottom:

Where the excavation is found to consist of organic matter or any other material that the Inspector determines to be unsuitable for supporting the pipe, the trench shall be excavated to an additional depth as directed by the inspector and replaced with an approved granular stabilization material. The inspector shall determine suitability of materials to be used.

8. Removal of Water:

Trenches shall be kept free of water during pipe laying operations by draining, pumping or other approved methods. The water level shall be maintained below the trench bottom throughout the placement of bedding, pipe laying, joining and backfilling operations. The dewatering shall be carried out so that it does not destroy or weaken the strength of the soil under or alongside the trench. Water shall be disposed of in a suitable manner without damage to adjacent property or without being a menace to public health and convenience. Under no circumstances shall trench water be discharged into sanitary sewers. The method of disposal of trench water shall be approved by the inspector.

9. Bedding and Shaping Trench Bottom:

All trenches shall be excavated to at least 4 inches below the



pipe grade and backfilled to grade with 3/4" washed rock as bedding material. The bedding material shall be hand shaped and graded until the trench bottom is uniform and free from rocks, bumps, and depressions. A coupling or bell hole shall be dug at each pipe joint with sufficient length, width and depth to permit assembly of the joint and provide a minimum clearance of 2 inches between the coupling and the trench bottom. Washed 3/4" rock bedding shall be the minimum acceptable bedding for all pipe.

If in the opinion of the engineer the pipe is subjected to unusual loading Class A - Concrete Arch bedding may be required. The Contractor shall provide an analysis the load conditions and the bedding required if directed by the Inspector.

Refer to the Standard Drawings for bedding details.

10. Backfilling Pipe and Structures:

Unless otherwise specified or approved by the inspector, all backfill material shall be placed with moisture-density control in accordance with the typical trench detail shown on Gunnison County Standard Drawings. All backfill material shall be adjusted to within 3 percent of the optimum moisture content prior to its placement in the trench. Jetting or water soaking trenches to achieve compaction of the backfill will not be permitted except when: (1) soil sample tests show that the backfill and excavated trench materials consist of gravel or other granular material having less than 15 percent by weight passing on No. 200 sieve; and (2) the engineer has given written approval prior to water soaking.

During initial backfilling, the Contractor shall take all necessary precautions to prevent movement or distortion of the pipe or structure being backfilled. Pipe haunching material shall be placed and compacted in even lifts on both sides of the conduit to 6 inches above the top of the pipe. Above the bedding and haunching material, earth backfill material shall be placed full width in uniform layers not more than twelve inches thick. Each layer shall be compacted to the required density with approved mechanical or hand tamping equipment.



Concrete structures shall not be backfilled until the concrete and mortar therein has attained a minimum compressive strength of 2000 psi and can sufficiently support the loads imposed by the backfill. Select backfill shall be placed simultaneously on all sides of the structure in layers approximately 12 inches thick. Each layer shall be compacted to not less than 95 percent of the maximum dry density determined in accordance with AASHTO T-99.

11. Compacting Backfill Material:

Backfill material in trenches shall be compacted to at least 90 percent of maximum density except for the top 3 feet of the trench under existing or proposed roads or structures which shall be compacted to at least 95 percent of maximum density. Maximum density shall be defined by ASTM D698. All approved backfill material shall be adjusted to within 3 percent of the optimum moisture content prior to its placement.

12. Backfilling With Flow-Fill

At the Contractors option Flow-Fill meeting the requirements set fourth in the Materials portion of this specification may be used in lieu of compacted backfill in pipeline trenches and around structures only. Compaction testing of trench backfill will not be required if material meeting the above requirement is use



I. PIPE BORING AND JACKING

1. DESCRIPTION

- A. This section covers the furnishing and installation of casing pipe by boring or jacking.
- B. Reference Drawing 200-4.

2. QUALITY ASSURANCE

- A. Design Criteria
 - 1. Specified thicknesses for pipe and casing are based upon the superimposed loads and not upon the loads which may be placed on the pipe as a result of jacking operations.
 - 2. Provide increased pipe strength necessary to withstand jacking loads.
- B. Requirements of Regulatory Agencies
 - 1. Obtain the necessary permits from the appropriate jurisdiction.
 - 2. Obtain bonds or indemnity required by the permits for protection against damage and interference with traffic and service by construction activities.

3. SUBMITTALS

- A. Certification: Submit manufacturer's certification that materials meet referenced standards.
- B. Shop Drawings: Submit manufacturer's drawings and specifications on the materials.

4. ALTERNATIVES

- A. Request for substitution of "reject" or used pipe in lieu of new pipe may be made with written approval. Used pipe shall be clean, free from heavy corrosion, patches, cuts and holes, and shall be straight and true in centerline alignment and circular in cross section. Pipe shall in all other respects meet the requirements specified for new pipe. Acceptance of all pipe shall be at the discretion of the District Engineer.

5. CASING PIPE

- A. Smooth Steel Pipe
 - 1. Minimum Yield Point: 35,000 psi.
 - 2. Wall Thickness: Minimum allowable.

<u>Diameter, inches</u>	<u>Thickness, inches</u>
24 inch or smaller	0.250
30	0.250
36	0.312

3. Ends: Beveled for field welding.
4. Exterior Coating: Coal tar enamel, AWWA C203, Section 2.

6. ACCESSORIES

- A. Casing Seals
 1. Materials: High density rubber with stainless steel strap.
 2. Manufacturer: Pipeline Seal and Insulator Co., Model W, or equal.
- B. Casing Chocks
 1. Materials: Stainless steel casing chock
 2. Manufacturer: Pipeline Seal and Insulator Company, Model 4810, or equal.
- C. Bands: Stainless steel straps.

7. CASING INSTALLATION

- A. General
 1. Install the casing by jacking or tunneling through the earth.
 2. Open trench excavation shall not be permitted where boring or jacking is specified.
 3. Remove earth displaced by the casing through the interior by hand, by auger, or other acceptable means.
- B. Smooth Steel Pipe
 1. Provide adequate equipment to insure a smooth, continuous and uniform casing with no exterior voids.
 2. Weld each section of pipe with a full penetration butt weld around the entire circumference of the joint to form a continuous conduit capable of resisting all stresses, including jacking stresses.

8. CARRIER PIPE INSTALLATION

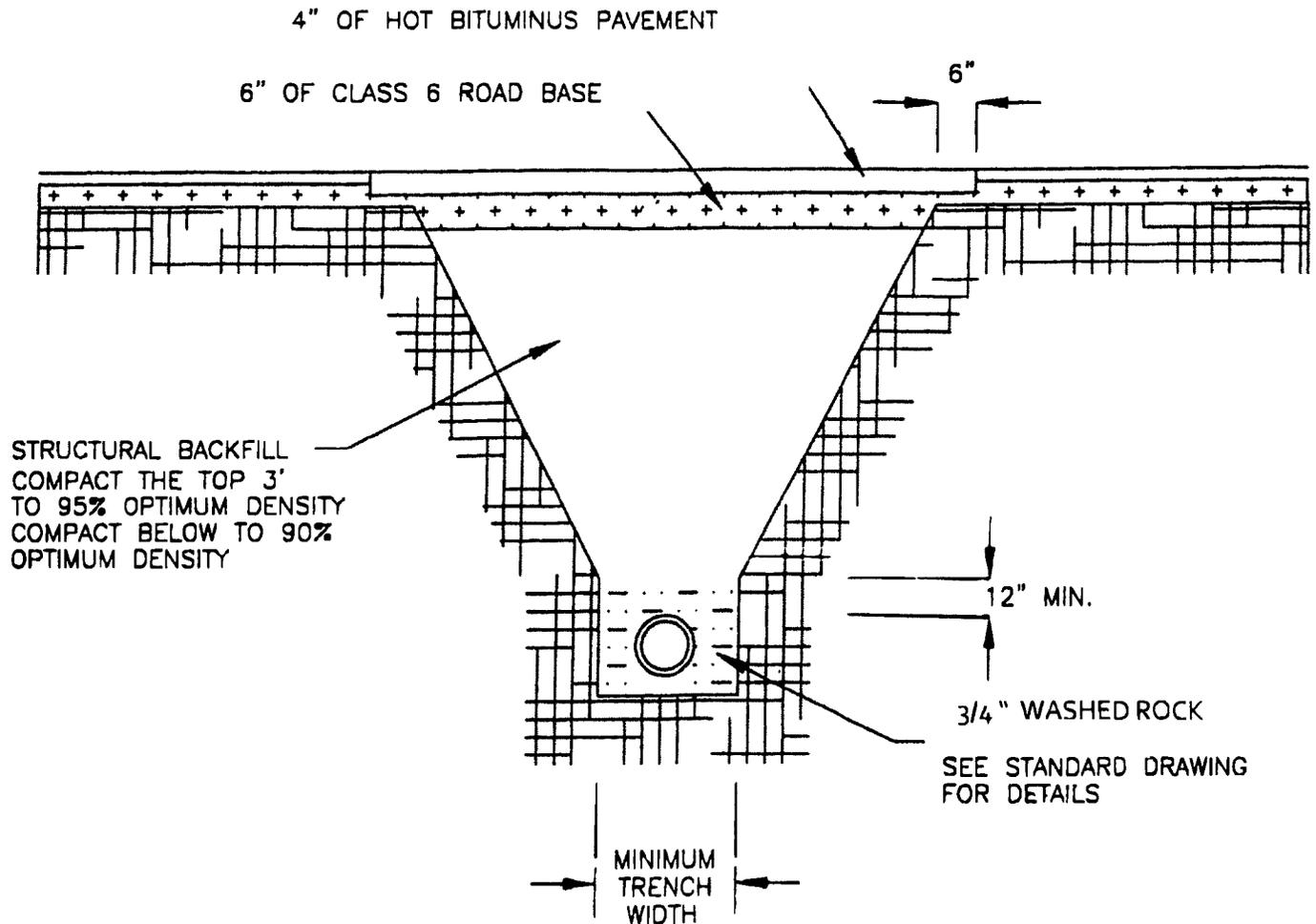
- A. Install pipe in accordance with the applicable pipe specification sections.
- B. Attach 3 pipe chocks to each pipe length with a maximum spacing of 6 feet and insert carrier pipe. Reference Drawing 200-4.
- C. Seal the ends of the casing with casing seals.

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STANDARD TRENCH DRAWING



TRENCH WIDTH NOTES:

1. INSIDE DIAMETER PIPE < 33" ALLOW 8" MIN. EACH SIDE OF PIPE
2. INSIDE DIAMETER PIPE > 36" ALLOW 12" MIN. EACH SIDE OF PIPE
3. TRENCH WIDTHS SHALL NOT BE WIDENED BEYOND THESE LIMITS BELOW THE TOP OF THE PIPE.

PAVEMENT PATCHING NOTES:

1. EXISTING PAVEMENT TO BE CUT STRAIGHT 6" FROM THE EDGE OF THE TRENCH
2. IF THE ADJACENT PAVEMENT IS DISTURBED IT SHALL BE RECUT TO A NEAT LINE AND REPLACED.
3. MINIMUM PATCH THICKNESS IS 4" OR MATCHING EXISTING WHICHEVER IS GREATER.
4. MINIMUM PATCH THICKNESS ON U.S. HIGHWAY 50 IS 6"
5. PATCHING SHALL BE COMPLETED WITHIN 48 HOURS OF COMPLETION OF BACKFILL
6. IF HOT BITUMINOUS PAVEMENT IS NOT AVAILABLE COLD PATCH SHALL BE USED. COLD PATCH SHALL BE REPLACED WITH HOT BITUMINOUS PAVEMENT AS SOON AS IT IS AVAILABLE.

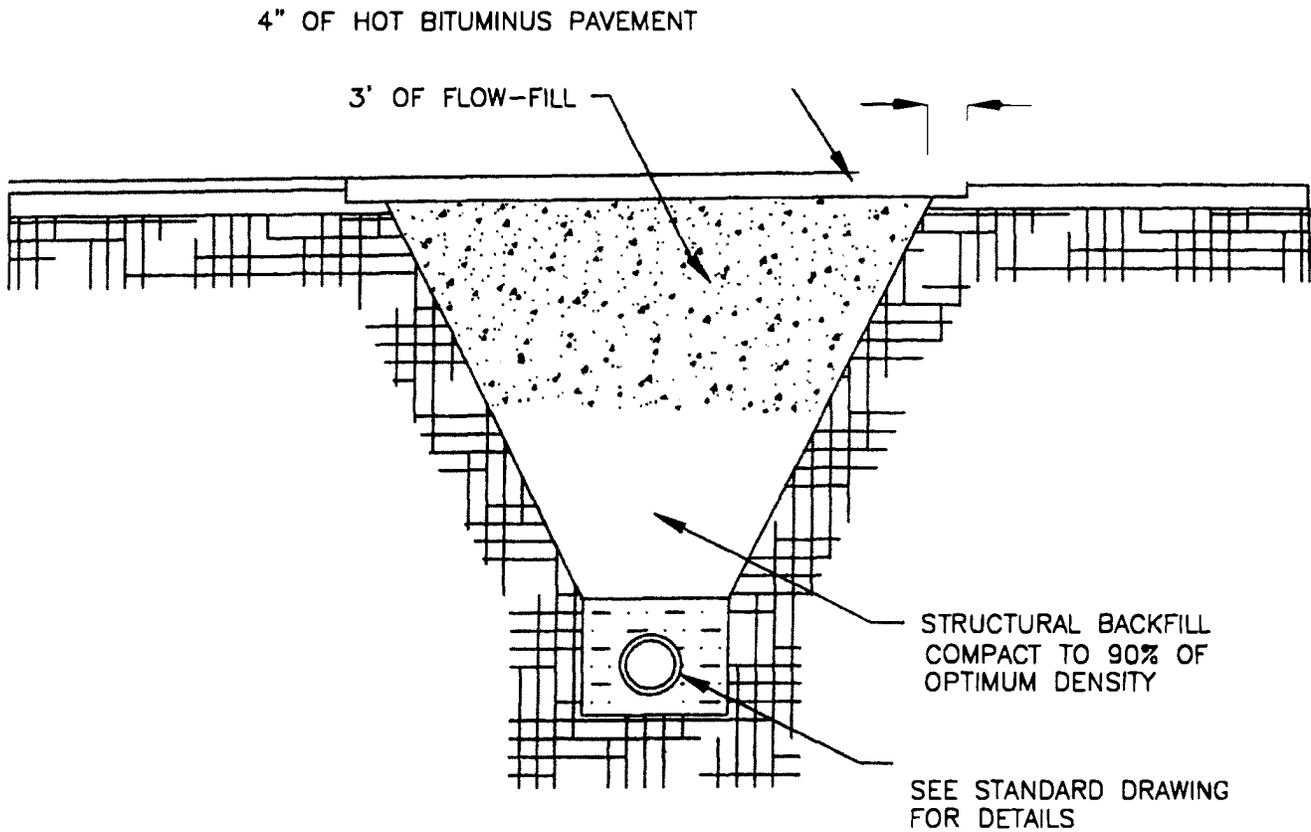
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FLOW-FILL BACKFILL DRAWING



SEE STANDARD TRENCH DRAWING FOR TRENCH WIDTH AND PAVEMENT PATCHING REQUIREMENTS.

EXCEPT:

IF HOT BITUMINOUS PAVEMENT IS NOT AVAILABLE THE TRENCH MAY BE FILLED LEVEL TO THE ADJACENT PAVEMENT WITH FLOW-FILL. THE TOP 4" SHALL BE REPLACED WITH HOT BITUMINOUS PAVEMENT AS SOON AS IT IS AVAILABLE.

COMPACTION TESTING NOT REQUIRED WITH THIS DRAWING

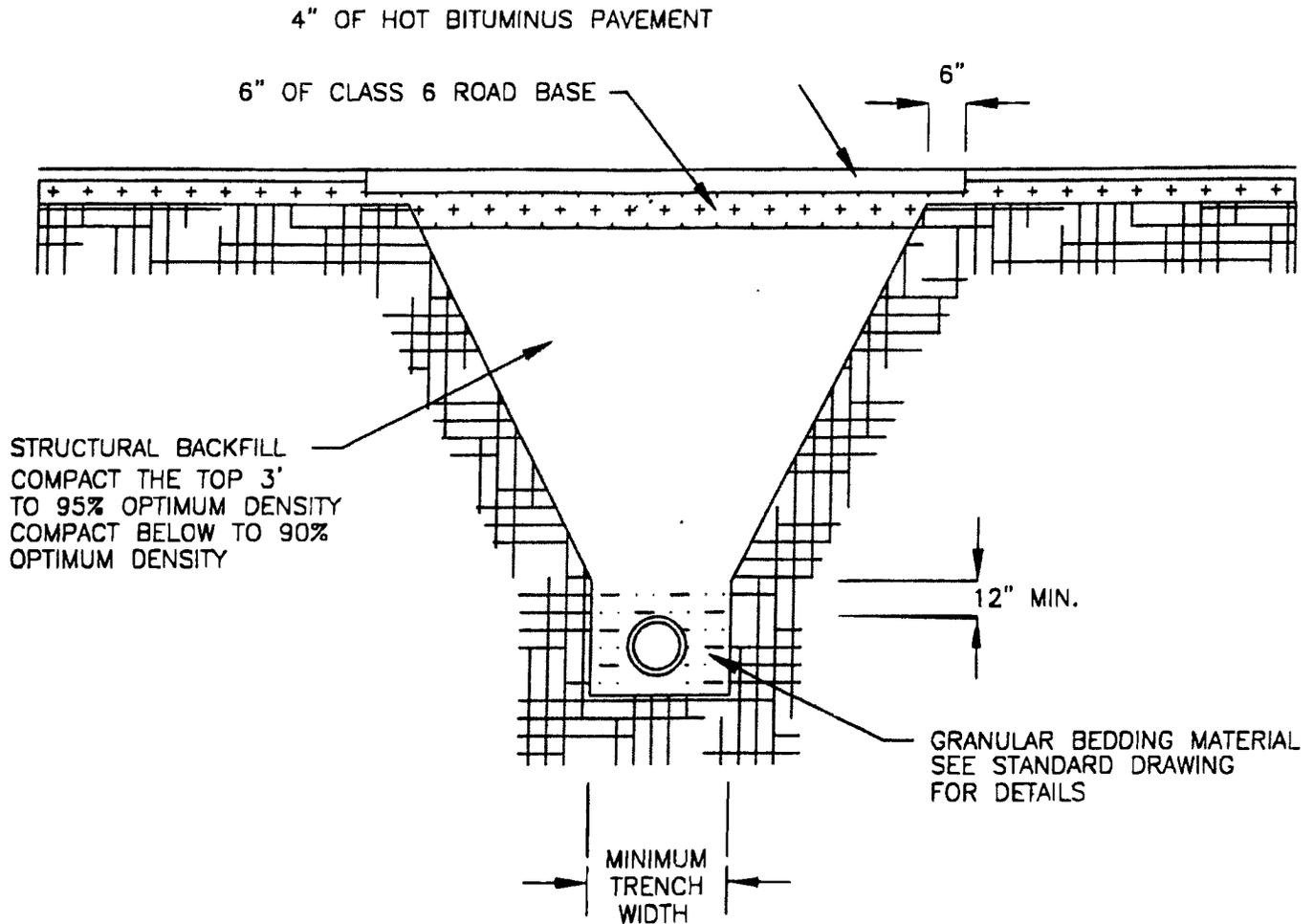
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STANDARD TRENCH DRAWING



TRENCH WIDTH NOTES:

1. INSIDE DIAMETER PIPE < 33" ALLOW 8" MIN. EACH SIDE OF PIPE
2. INSIDE DIAMETER PIPE > 36" ALLOW 12" MIN. EACH SIDE OF PIPE
3. TRENCH WIDTHS SHALL NOT BE WIDENED BEYOND THESE LIMITS BELOW THE TOP OF THE PIPE.

PAVEMENT PATCHING NOTES:

1. EXISTING PAVEMENT TO BE CUT STRAIGHT 6" FROM THE EDGE OF THE TRENCH
2. IF THE ADJACENT PAVEMENT IS DISTURBED IT SHALL BE RECUT TO A NEAT LINE AND REPLACED.
3. MINIMUM PATCH THICKNESS IS 4" OR MATCHING EXISTING WHICHEVER IS GREATER.
4. MINIMUM PATCH THICKNESS ON U.S. HIGHWAY 50 IS 6"
5. PATCHING SHALL BE COMPLETED WITHIN 48 HOURS OF COMPLETION OF BACKFILL
6. IF HOT BITUMINOUS PAVEMENT IS NOT AVAILABLE COLD PATCH SHALL BE USED. COLD PATCH SHALL BE REPLACED WITH HOT BITUMINOUS PAVEMENT AS SOON AS IT IS AVAILABLE.

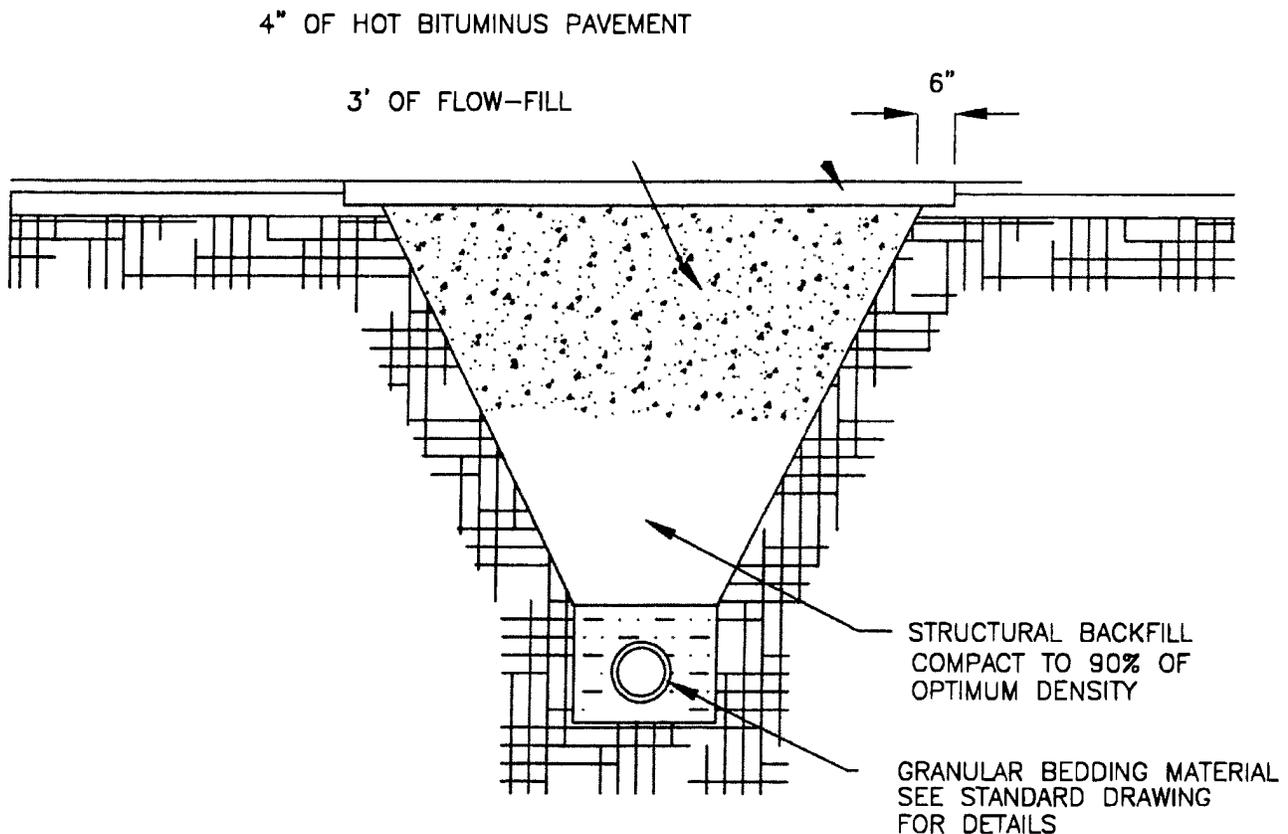
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FLOW-FILL BACKFILL DRAWING



SEE STANDARD TRENCH DRAWING FOR TRENCH WIDTH AND PAVEMENT PATCHING REQUIREMENTS.

EXCEPT:

IF HOT BITUMINOUS PAVEMENT IS NOT AVAILABLE THE TRENCH MAY BE FILLED LEVEL TO THE ADJACENT PAVEMENT WITH FLOW-FILL. THE TOP 4" SHALL BE REPLACED WITH HOT BITUMINOUS PAVEMENT AS SOON AS IT IS AVAILABLE.

COMPACTION TESTING NOT REQUIRED WITH THIS DRAWING

DRAWING 200-2

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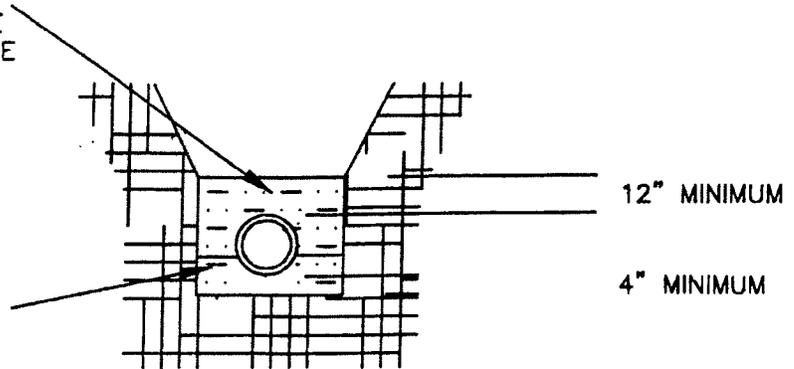
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PIPE EMBEDMENT DRAWING

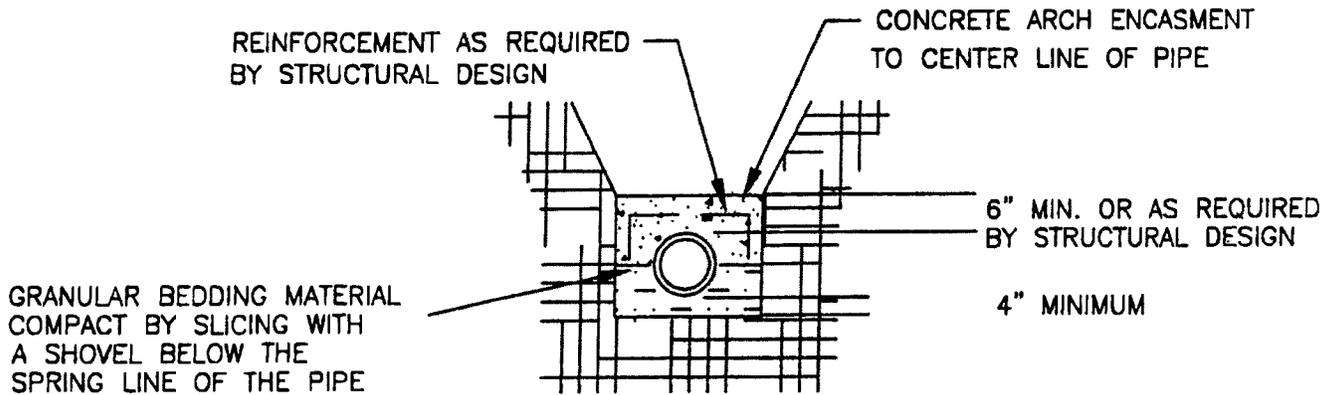
GRANULAR BEDDING MATERIAL
COMPACT BY SLICING OR
VIBRATORY COMPACTOR ABOVE
THE SPRING LINE OF THE PIPE

GRANULAR BEDDING MATERIAL
COMPACT BY SLICING WITH
A SHOVEL BELOW THE
SPRING LINE OF THE PIPE



CLASS B EMBEDMENT DRAWING

GRANULAR BEDDING MATERIAL SHALL BE PLACED IN 6" MAX. LIFTS



CLASS A EMBEDMENT DRAWING CONCRETE ARCH ENCASEMENT

DRAWING 200-3

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GUNNISON COUNTY
SANITARY SEWER SPECIFICATIONS
SECTION 300

I. SCOPE:

The purpose of the Sanitary Sewer Specification is to set forth the criteria to be used in the construction of sanitary sewer mains and appurtenances for approval and acceptance by Gunnison County.

All sanitary sewer mains shall be constructed using a pipe with a minimum nominal inside diameter of eight (8) inches.

All excavation and backfill shall conform to the General Earthwork Specification and as shown on the Standard Details of this section.

II. MATERIALS:

1. Rigid Poly Vinyl Chloride Pipe (PVC) & Fittings:

General: All PVC pipe shall meet the requirements of ASTM Designation D3034 "Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings", latest revision. The maximum allowable length per section of pipe from bell to spigot shall not exceed 20 feet.

Wall Thickness: The wall thickness of all PVC pipe shall meet ASTM Designation D3034: SDR 35 or better.

Joints: Pipe joint assemblies shall be bell and spigot with an O-ring rubber gasket, for main line and service lines.

Acceptance: In addition to any deficiencies covered by ASTM D3034, PVC which has any of the following visual defects will not be accepted:

- A. Improperly formed pipe such that the pipe intended to be straight has an ordinate, measured from the concave side of the pipe, exceeding 1/16 inch per foot of length.
- B. Pipe which is sufficiently out-of-round to prohibit proper jointing.
- C. Improperly formed bell and spigot ends.



requirements of ASTM C-150, Type II. Fine aggregate shall consist of well graded, natural sand having clean, hard, durable, uncoated grains, free from organic matter, soft or flaky fragments or other deleterious substances. The fine aggregate shall be thoroughly washed and shall be uniformly graded from coarse to fine with a minimum of 95% passing a number 4 sieve and a maximum of 7% passing a number 100 sieve. All mortar shall be fresh for the work at hand. Mortar that has begun to set shall be thrown away.

- E. Cement: All cement used in concrete and mortar shall conform to ASTM Designation C-150, Type II.
 - F. Aggregate: Aggregate shall conform to Standard Specifications for Concrete Aggregates ASTM Designation C33.
3. Encasements: Concrete for encasements shall have a minimum cement content of 5 sacks per cubic yard and a maximum water content of 6 gallons per sack of cement and shall have a minimum compressive strength of 2500 psi in 28 days.

III. INSTALLATION:

1. Grade Stakes: The Developer's Engineer shall provide grade stakes for all sewer main installation. These stakes shall locate the main both horizontally and vertically. All manholes shall be staked for centers, line, and elevation.

Other methods of maintaining alignment, such as the use of laser beam equipment or surveying equipment are acceptable.

2. Pipe: Pipe shall be installed at the depths and location shown on the drawings and shall be a minimum of 6 feet from top of pipe to existing or proposed finish grade which ever is lower. No rocks larger than 2 inches in diameter will be permitted within 1 foot of the pipe. Sufficient handwork will be necessary around the bell so that the pipe will have a firm bearing from end to end. This will ensure that the weight of the pipe and backfill will be carried on the body of the pipe and not concentrated on the bell. All adjustments to line and grade must be made by scraping or filling under the body of the pipe. Wedging or blocking of the bell of the pipe will not be permitted. Bedding shall be as specified in the General Earthwork Section 200 of these specifications.

Sewer mains or service lines shall not be installed at less than six (6) foot below finished grade without the permission of the inspector. The type and



amount of insulation over the pipe shall be approved by the inspector.

The pipe shall be laid upgrade from structure to structure, with bell end upgrade. All main sewer pipe shall be pushed past the guide mark and to the shoulder of the bell (properly seated).

3. Manholes: Manholes shall be constructed at the locations and to the elevations indicated on the drawings. Manholes shall be so constructed so as to form a circle in a horizontal plane.

Bedding material shall be 1 1/2" washed rock for all manhole bases to a depth of one foot.

The internal diameter of 4 foot manhole barrels shall be maintained to a distance of not more than 4 feet below finished grade. From that point, the manhole barrel shall be tapered to the 24 inch internal diameter for 4 foot diameter manholes, as shown on the standard drawings for this section.

The internal diameter of 5 foot manhole barrels shall be maintained to a distance of not more than 5 feet below finished grade. From that point, the manhole barrel shall be tapered to the 24 inch internal diameter for 5 foot diameter manholes shown on the standard drawings for this section.

The internal diameter of 6 foot manhole barrels shall be maintained only a distance of 6 feet - 6 inches above the manhole base. Then reduce the barrel to an internal diameter of 5 feet to a distance not more than 5 feet below the finished grade. From that point, the manhole barrel shall be tapered to a 24 inch internal diameter. The manhole barrels shall be tight at all joints.

The cone section shall not extend closer than 8 inches and not more than 16 inches from the top of the manhole cover. Precast concrete adjustment rings shall be used on top of the cone to support and adjust the manhole frame to the required final grade.

The horizontal joints between precast manhole sections shall be sealed with preformed bitumastic material and plastered and troweled smooth, inside, with Portland Cement mortar. The mortar shall be not less than 5/8 of an inch in thickness over the joint and shall extend at least 4 inches either side of the joint. The joint between the manhole base and the lowest precast section shall be grouted, inside and outside.

Where the sewer main enters the manhole, necessary measures shall be taken to prevent any infiltration of groundwater into the system as shown on



the Standard Drawings of this section. Connections to precast manholes may be made with a continuous circular connector cast into the manhole wall. Connectors shall be acceptable to the inspector.

The horizontal joints between precast manhole sections shall be sealed with preformed bitumastic material and plastered and troweled smooth, inside, with Portland Cement mortar. The mortar shall be not less than 5/8 of an inch in thickness over the joint and shall extend at least 4 inches either side of the joint. The joint between the manhole base and the lowest precast section shall be grouted, inside and outside. For manholes in groundwater the exterior shall be water proofed in some fashion.

Where the sewer main enters the manhole, necessary measures shall be taken to prevent any infiltration of groundwater into the system as shown on the Standard Drawings of this section. Connections to precast manholes may be made with a continuous circular connector cast into the manhole wall. Connectors shall be acceptable to the inspector.

4. **Precast Bases:** The pipe shall not extend more than 1 inch inside the manhole wall.

Concrete inverts shall be placed in the bases conforming to the requirements of the cast-in-place manhole base requirements for changes in direction and size.

Prior to placing the precast base the subgrade shall be level and at the correct elevation for the connecting pipe. No wedging or blocking of the base will be allowed.

5. **Connections to Existing Manholes:** Sewer pipe connection to existing manholes where there is no existing pipe stubbed out shall be made in such a manner that the finished work will conform as nearly as practicable to the essential requirements specified for new manholes. The Contractor shall break out as small an opening in the existing manhole as necessary to insert the new sewer pipe. The existing concrete foundation bench shall be shaped to the cross-section of the new pipe in order to form a smooth continuous invert similar to what would be formed in a new concrete base. Cement grout shall be used as necessary to smoothly finish the new invert and to seal the new line so the junction is watertight.

6. **Outside Drop Manholes:** Whenever the elevation difference between the incoming sewer invert and the invert of the manhole is equal to or greater than 24 inches, an outside drop shall be indicated on the drawings and shall be constructed as shown.



The diameter of the drop shall not be less than the diameter of the sewer main. This specification for outside drops shall apply equally to any service line where it enters a manhole.

Construction of outside drops shall be in accordance with the Standard Drawings of this section.

7. Encasements: Prior to placing the concrete for cradles or encasements, temporary supports consisting of concrete blocks or bricks shall be used to support the pipe in place. Not more than 2 supports shall be used for each pipe length, one adjacent to the shoulder of the bell and the other near the spigot end.

No encasements shall be poured until the inspector has inspected and approved the pipe to be encased and its supports.

8. Relationships Between Water Lines and Sanitary Sewers: Lines shall mean all water or sewer lines including mains, laterals and service lines. When a water and sewer line are within 10 feet horizontally (centerline distance) of each other and the sewer line is above or less than 18 inches (clear distance) below the water line, the portion of the sewer line within that area shall:

- A. Be constructed of approved waterline pipe and joints (Ductile Iron Cement mortar lined pipe conforming to AWWA C 151),
- B. Be constructed of SDR 35 PVC sewer pipe with all joints and pipe within 10 feet of the water line encased in concrete that is a minimum of 6 inches thick centered on the crossing pipe or,
- C. A designed protection system subject to the review and approval of the inspector.

In all cases, suitable backfill or other structural protection shall be provided to preclude the settling or failure of both pipes.

Crossings of sewer and water lines shall not be at an angle less than 45 degrees unless approved by the inspector.

See the Standard Drawings of this section.

9. Service Line Taps: Service taps into sewer mains shall use a factory flow wye referenced in Section II. If a saddle tap is used: Holes for the saddle tap connection shall be made by a mechanical hole cutter and shall be full diameter of the service line. Holes shall be de-burred and carefully beveled.

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to provide a smooth hole shaped to conform to the fitting.

See Section II. Materials of this section.

Service connections shall point to 10 o'clock or 2 o'clock and shall not be installed vertically to the main line and be in the top 1/4 of the main. Also the service line shall point either perpendicular to the direction of flow or in the direction of the main line flow.

Sewer mains or service lines shall not be installed at less than six (6) foot below finished grade without the written permission of the inspector. The type and amount of insulation over the pipe shall be approved by the inspector. All service lines shall have a tracer wire.

See the Standard Drawings of this section.

Any service line installation that crosses an irrigation ditch shall be isolated from the ditch so that flow from the ditch will not enter the sewer line trench and guarded from damage from ditch maintenance activities. The installation and materials shall be approved by the inspector.

Clean outs shall be installed at the property line and within 5' of building being served. If the distance from the building clean out to the county main line exceeds 100' then additional clean outs will need to be added so that the distance between any two clean outs is not greater than 100'. Minimum requirements include flow wye with flow direction toward Gunnison County's sewer main and a removable gasketed 4' sewer cap.

VI. SEWER PIPELINE TESTING:

1. Testing Pipelines: All pressure and leakage testing shall be performed by the Contractor under direct control of the Engineer or an approved independent laboratory.
2. Testing Sanitary Sewers: The testing of sanitary sewers for acceptability shall include the following tests:
 - A. Exfiltration of water or exfiltration of air under pressure - by Contractor.
 - B. Infiltration of water - by Utility Department Sewer Camera.
 - C. Deflection of thermoplastic pipe - by Contractor.
 - D. Lamping - by Contractor's Engineer.

- 3. Exfiltration Tests: An exfiltration or leakage test shall be performed on all newly constructed sanitary sewers. The Contractor will determine whether the test will be made with water or air pressure and shall furnish all labor, tools and equipment necessary to conduct the test.

The exfiltration test will not be considered valid without the presence of the Engineer or his representative throughout the test.

- A. Exfiltration of Water Test: The length of pipeline to be tested shall be limited so that the pressure on the lower end of the test section does not exceed 6 feet of water column. The test section shall be sealed off from the remaining pipeline with watertight plugs inserted in the pipes at the end manholes. The Contractor shall fill the pipe to the test level with potable water at least 24 hours prior to conducting the test. The test level shall be at least 18 inches above the top of the pipe opening in the upper manhole or 18 inches above the ground water table, whichever is higher.

Throughout the test period of at least 1 hour, the water level shall be maintained at the test level and all water added shall be accurately measured. If the exfiltration rate exceeds 0.15 gallon per inch of nominal pipe diameter per hour per 100 feet of pipe length, the leaks shall be located and repaired at the Contractor's expense, and the pipeline retested until the leakage is within the allowable limits.

- B. Air Leakage Test: If the Contractor chooses to test for exfiltration with air pressure, the testing shall be in accordance with ASTM C 828. The ends of the test section shall be sealed at the manholes with pneumatic plugs. One of the plugs provided shall have 2 taps. 1 tap will be used for introducing air into the pipeline through suitable valves and fittings so that the input air may be regulated. The second tap shall be fitted with valves and fittings to accept a pressure gauge to monitor the internal pressure of the sewer pipe.

The pressure gauge shall meet the following minimum specifications:

- Size. 4 1/2 inch diameter
- Pressure range. 0 - 15 psi
- Figure intervals 1 psi increments
- Smallest Intervals. 0.05 psi
- Pressure tube. Bourbon tube or diaphragm

Procedure: Connect the pressure gauge and air control equipment to the proper fittings and slowly apply air pressure. Pressurize the pipe line to 4.0 psig and throttle the air supply to maintain between 4.0

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and 3.5 psig for at least 2 minutes in order to allow equilibrium between air temperature and pipe walls. During this time check all plugs for leakage. If plugs are found to leak, bleed off air, tighten plugs and repressurize the pipeline. After the temperature has stabilized, allow the pressure to decrease to 3.5 psig. At 3.5 psig begin timing to determine the time required for pressure to drop to 2.5 psig. The time, in seconds, for the air pressure to decrease from 3.5 psig to 2.5 psig should be greater than the minimum test time shown in the following table.

MINIMUM TEST TIME FOR VARIOUS PIPE SIZES

Nominal Pipe Size, in.	T (time) Min/100 ft.	Nominal Pipe Size, in.	T (time) Min/100 ft.
4	0.3	21	3.0
6	0.7	24	3.6
8	1.2	27	4.2
10	1.5	30	4.8
12	1.8	33	5.4
15	2.1	36	6.0
18	2.4	39	6.6
		42	7.3

If the air test fails to meet the above requirements, the leaks shall be located and repaired at the Contractor's expense and the pipeline retested until the leakage is within the allowable limits.

In areas where the ground water level is above the pipe, the hydrostatic pressure of the ground water above the pipeline shall be determined and added to all test pressures.

4. **Infiltration of Water:** If the sewer line is in an area where the water table is a minimum of 18" above the pipeline's highest point, the contractor may conduct an infiltration test. The infiltration of ground water will be measured with special made weirs which will be inserted in the pipeline at manholes where flow is present. The infiltration rate shall not exceed .15 gallons per inch pipe diameter per day per 100 foot of sewer line. If the infiltration exceeds this flow rate, the leaks shall be located and repaired at the Contractor's expense.

Infiltration tests shall be completed prior to placing new sewer lines in service.

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5. Deflection Testing for Plastic Pipe:

All PVC sewer lines will be tested for excess deflection by the Contractor. The maximum allowable deflection of flexible pipe shall not exceed seven and one-half percent (7 1/2%) of the base inside diameter as established in ASTM D 3034. The following values from ASTM D 3034 shall apply:

Nominal Pipe Size, In.	Base Inside Diameter In.	Mandrel Diameter In.
6	5.4	5.31
8	7.665	7.09
10	9.563	8.84
12	11.361	10.51
15	13.898	12.86

The deflection test will be performed by pulling a mandrel up-grade through the pipe from manhole to manhole. Where deflection is found to be in excess of allowable testing limits, the Contractor shall excavate to the point of excess deflection and remove the deflection by recompacting around the pipe or other approved method. After backfilling, the line shall then be retested for deflection. If the line has failed to return to its original size (inside diameter) the deflected pipe shall be replaced by the Contractor at his expense.

5. Lamping Test:

Lamping will be performed on all sanitary sewer pipes by an Engineer. In order to pass the lamping test, 3/4 of the pipe circle shall be observed both vertically and horizontally between manholes.

6. Sewer Camera Video Work:

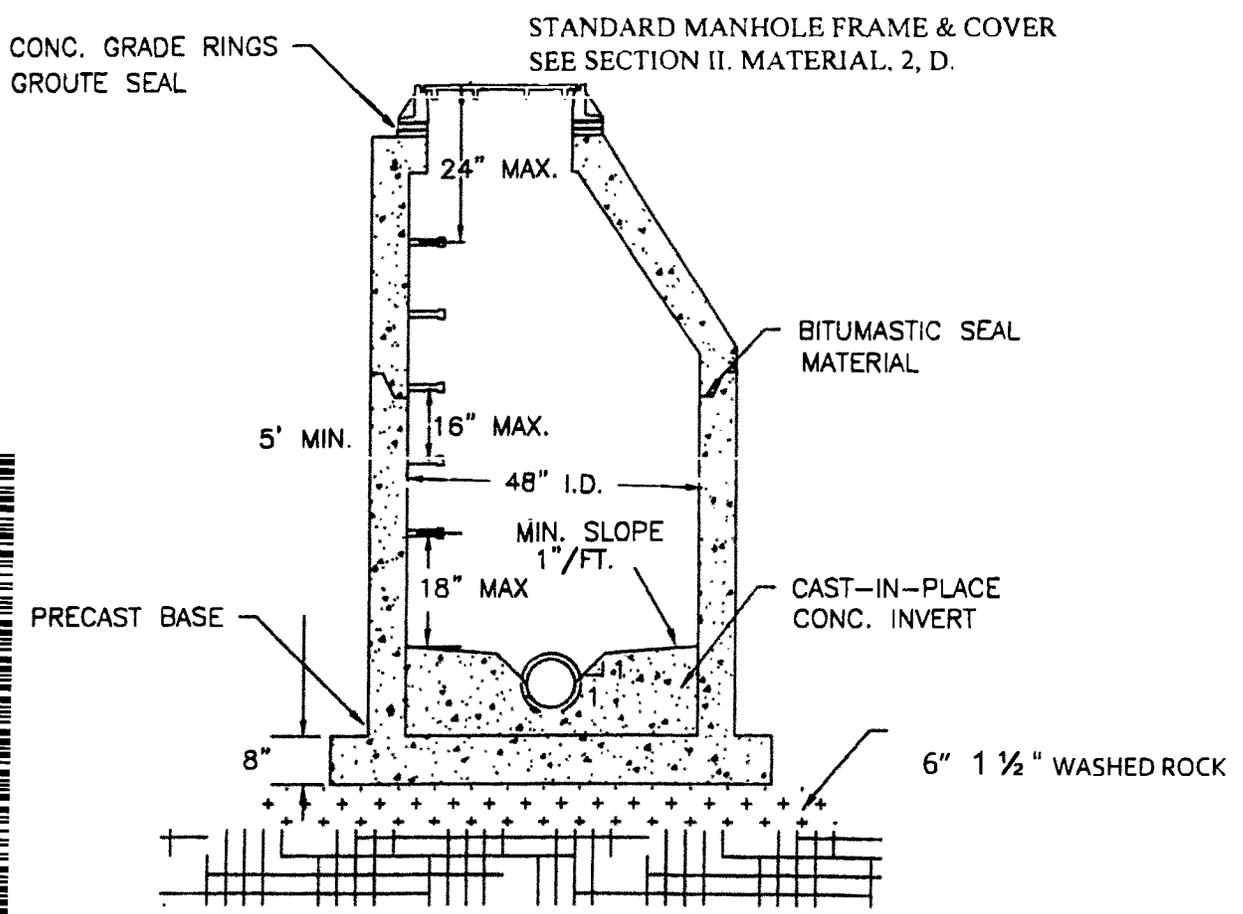
Additions of main sewer lines to the current Gunnison County Collection System will require final sewer camera video before being accepted by Gunnison County. Any major defects will be subject to repair before being accepted by Gunnison County.



STANDARD MANHOLE DRAWING

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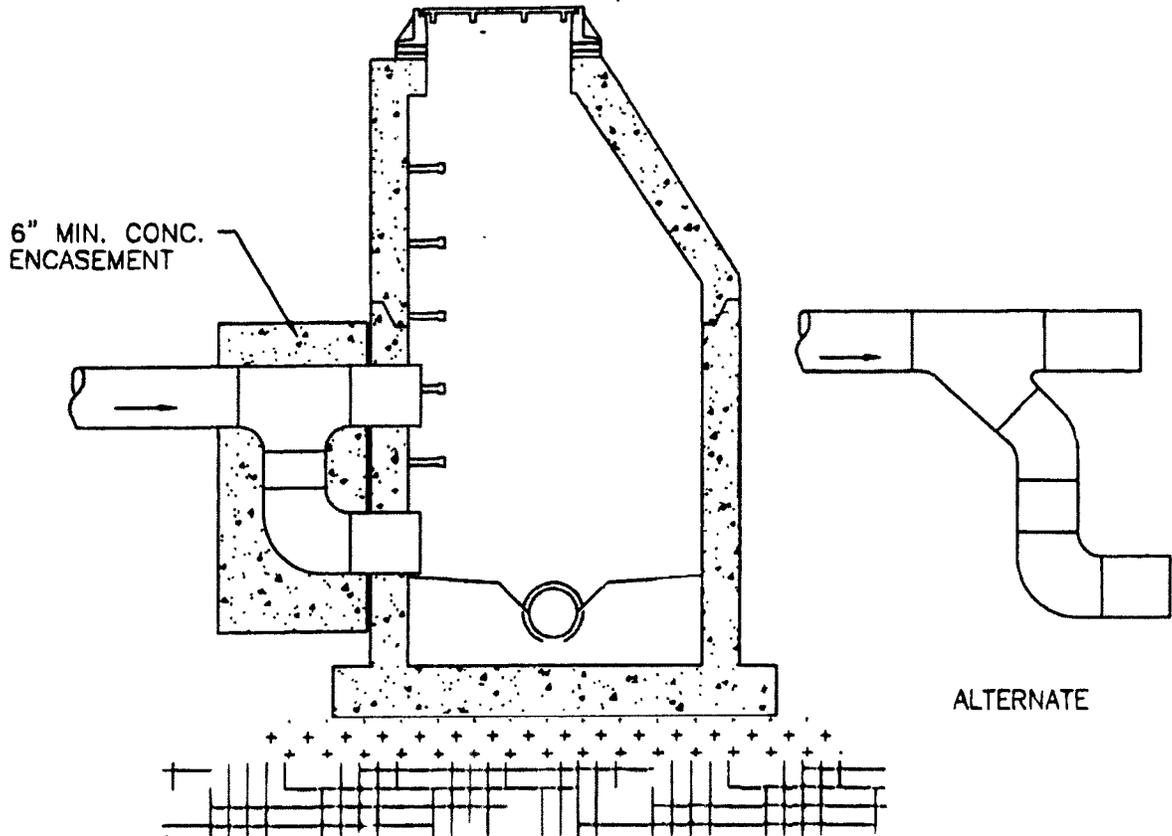


MANHOLE NOTES

1. MANHOLE RISER BARREL PIPE , CONES, FLAT TOPS AND GRADE RINGS SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 OR AASHTO M-199.
2. ALL CEMENT USED IN MORTAR, CONCRETE BASES, GRADE RINGS, BARREL SECTIONS, CONES, AND FLAT TOPS FOR SANITARY SEWERS SHALL BE TYPE IV OR MODIFIED TYPE II PORTLAND CEMENT WITH LESS THAN 5% TRICALCIUM ALUMINATE.
3. FOR PIPE SIZES GREATER THAN 24" DIAMETER 60" DIAMETER MANHOLE REQUIRED.
4. FOR CAST-IN-PLACE BASES INVERT AND BASE SHALL BE POURED MONOLITHIC. THE TOTAL THICKNESS AS MEASURED FROM THE PIPE INVERT SHALL BE 8" MIN.
5. A BITUMASTIC SEAL AND GROUT ARE REQUIRED BETWEEN CAST-IN-PLACE BASES AND PRECAST BARREL SECTIONS.
6. MANHOLES LESS THE 5' DEEP SHALL HAVE FLAT TOPS.



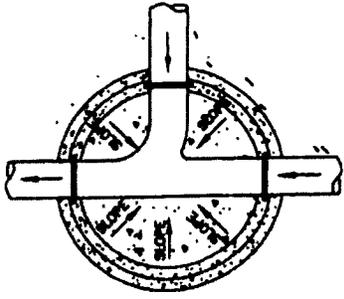
STANDARD DROP MANHOLE DRAWING



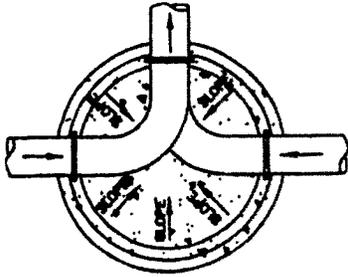
NOTES:

1. REFER TO STANDARD MANHOLE DRAWING FOR DIMENSIONS NOT SHOWN.
2. INCOMING SEWER SHALL NOT BE LOCATED WITHIN 1' OF THE MANHOLE STEPS.
3. DROP MANHOLES ARE REQUIRED WHEN THE SEWER ENTERS THE M.H. 2'-0" OR MORE ABOVE THE LOWEST INVERT OF THE MAN HOLE.

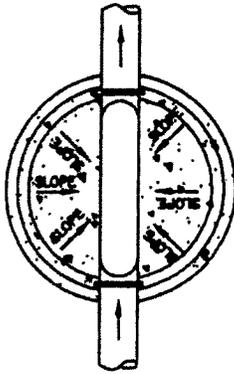
STANDARD MANHOLE INVERT DRAWING



"T" JUNCTION



"Y" OR 90° JUNCTION



CONTINUOUS PIPE

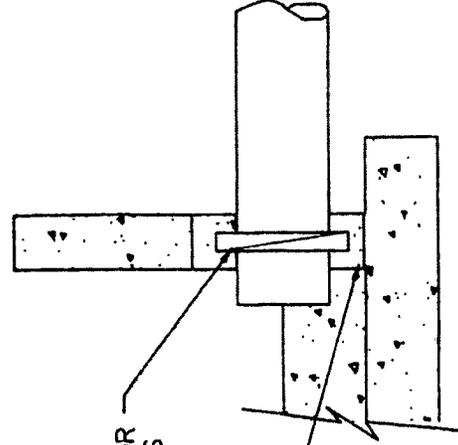
CAST-IN-PLACE BASE

1. WHERE NO CHANGE IN ALIGNMENT IS REQUIRED LAY PIPE THROUGH BASE.
2. AFTER POURING BASE REMOVE 3' +/- OF CROWN OF PIPE.

PRECAST BASE

1. EXTEND PIPE 1" +/- PAST FACE OF MANHOLE WALL.

PIPE ENTRANCE



BITUMINOUS WATER STOP OR FOR CAST-IN-PLACE BASES CIRCULAR CONNECTOR

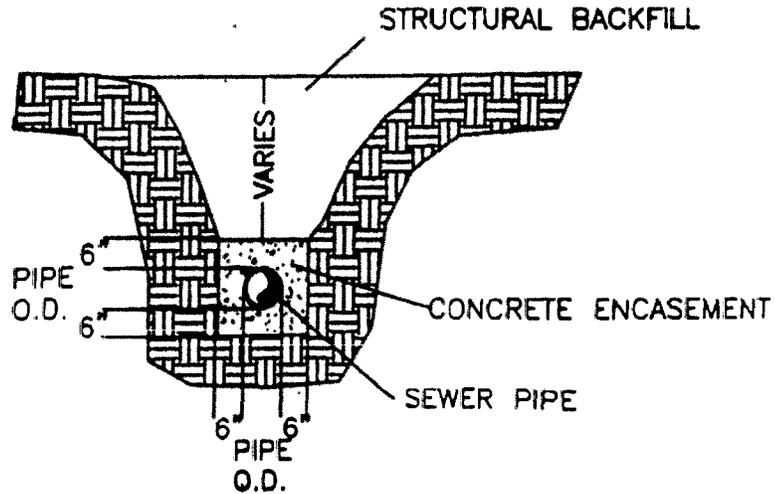
2" ANNULAR SPACE FOR WATER STOP AND GROUT IF CIRCULAR CONNECTORS ARE NOT USED.



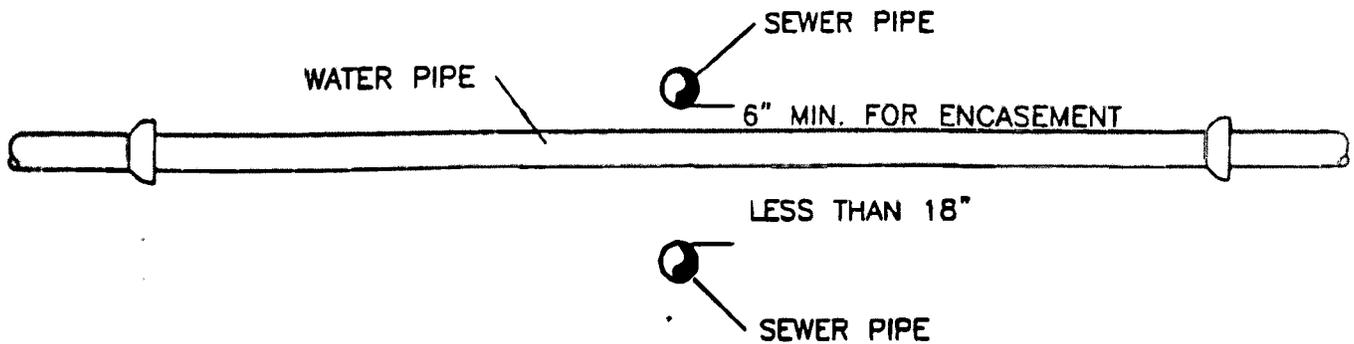
SANITARY SEWER – WATER PIPE CROSSING

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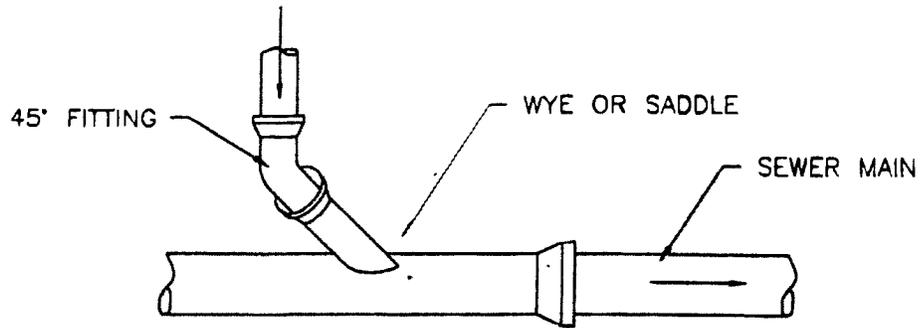
CONCRETE ENCASEMENT



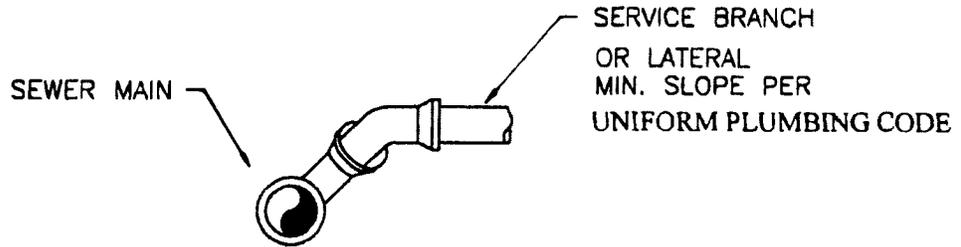
PIPE CROSSING

NOTE:
IF THE SEWER PIPE IS ABOVE THE WATER PIPE
OR IF THE SEWER PIPE IS LESS THAN 18" BELOW THE WATER PIPE
THE SEWER PIPE MUST BE CONCRETE ENCASED TO PROTECT THE WATER PIPE.
SEE SPECIFICATION SECTION 500 OR 600 FOR PROTECTION REQUIRED.
PROTECTION MUST EXTEND A MINIMUM OF 10' EACH WAY FROM THE CROSSING

SERVICE CONNECTIONS

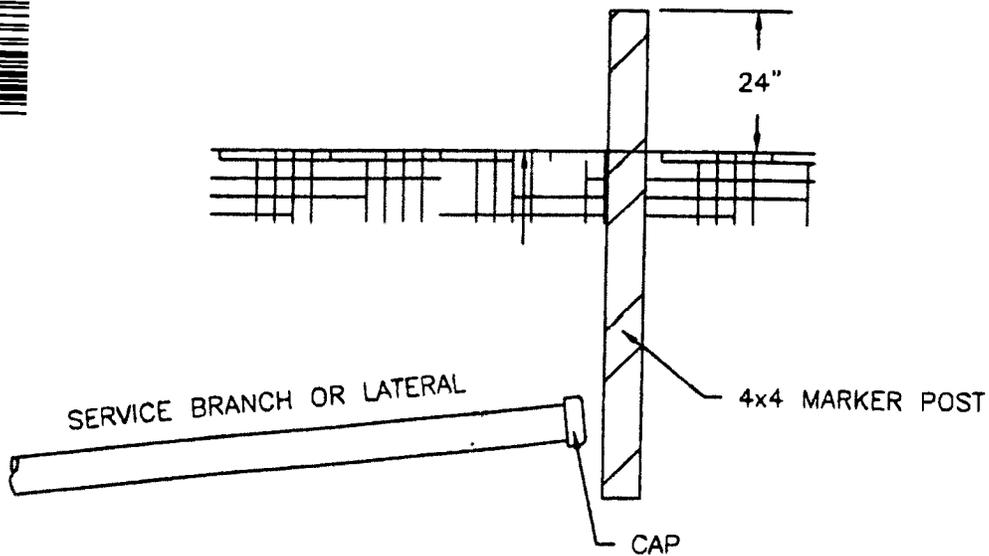


"Y" TYPE PLAN



"T" TYPE ELEVATION

SEWER SERVICE MARKER



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GUNNISON COUNTY

WATER MAIN SPECIFICATIONS

SECTION 400

I. SCOPE:

The purpose of the Water Main Specification is to set forth the criteria to be used in the construction of water mains for approval and acceptance by Gunnison County.

All water mains shall be a minimum of 6 inches in diameter.

All excavation, embankment and backfill shall conform to the General Earthwork Specifications and as shown on the Standard Drawing of this section.

II. MATERIALS:

1. Pipe: Ductile iron pipe for water mains shall conform to the AWWA C-151, thickness class 52. Ductile iron pipe shall be cement lined per AWWA C-104.
2. Joints: Ductile iron pipe joints shall be mechanical, push on or restrained push-on joints conforming to AWWA C-111.

Gaskets shall be of neoprene or other synthetic rubber material.

Restrained push-on joints:

American "Lok-Fast" or "Lok-Ring",
CLOW "Super-Lock"
US Pipe "Lok-Tyton" or "Lok-Tyte"
Griffin "Snap-Lock".

Restrained Glands:

EBBA Iron model No. 1100 series

3. Fittings: Fittings shall be ductile-iron conforming to AWWA C153, pressure Class 350, mechanical joint conforming to AWWA C-111 with appropriate gaskets for the connected pipe.
4. Bonding Straps: Bonding straps shall be de-oxidized copper conforming to ASTM-B 152-58 D.H.P., a minimum of 1 1/4 inch wide by 1/8 inch thick and of sufficient length to attach to each pipe.



Bonding may be accomplished using Cad Weld method for ductile pipe with a minimum wire requirement of #4 BSD Copper.

5. Valves & Valve Boxes:
 - A. Gate Valves: Gate Valves shall be in accordance with AWWA Standard C509, equal to the class of pipe being used, with mechanical joint ends. All valves shall be equipped with a nonrising stem and standard 2 inch square wrench nut. Stems will provide "O" ring dirt seal and pressure seal packings. All zinc bolts shall be replaced with stainless steel bolts.
 - B. Butterfly Valves: Butterfly valves shall be Engineer approved and shall conform to AWWA Standard C504.
 - C. All valves shall open counter-clockwise (Open Left).
 - D. Valve Boxes: Valve boxes will be provided for each valve, such boxes to be buffalo-type, 2 or 3 piece with extension as required. Shafts will be not less than 6 inches in diameter and will be capped with a standard flush-type lid weighing not less than 10 pounds and marked "Water".
6. Fire Hydrants: Fire Hydrants shall be in accordance with AWWA Specification C-502 and shall be Waterous 51/4" Pacer Fire Hydrant or equivalent. All hydrants shall be installed with adjustable grade device.
7. Encasements & Thrust Blocks: Concrete for encasements or thrust blocks minimum compressive strength of 2500 psi in twenty-eight (28) days.
8. Appurtenances:
 - A. Pipe: Three (3) inch and larger shall conform to paragraph 1 of this Specification. Pipe 2 inch or smaller shall be Type K copper or HDPE (High Density Polyethylene). All service lines shall not be less than one inch.
 - B. Joints: Three (3) inch and larger shall conform to paragraph 2 of this Specification. Joints 2 inch and smaller shall be compression.
 - C. Fittings: Three (3) inch and larger shall conform to paragraph 3 of



this Specification. Fittings 2 inch and smaller shall be compression.

D. All service lines shall be HDPE (high density polyethylene) with a minimum of 1" line size or copper with a minimum of 1" line size. The service line shall be bedded in 3/4" washed rock from the corporation stop and or curb valve to the foundation. All lines shall include a tracer wire.

9. Corporation Stops:

1 inch - Materials to be approved by Gunnison County.

Larger than one inch - Materials to be approved by Gunnison County.

10. Curb Valves & Stops: Material to be approved by Gunnison County.

11. Curb Boxes: Materials to be approved by Gunnison County.

12. Service Saddles: Mueller Ductile Iron, Service Saddles H105 Series double strap.

III. INSTALLATION:

1. Pipe: Pipe shall be installed a minimum of 6 foot from top of pipe to existing or proposed grade which ever is lower.

General: All pipe and fittings shall be carefully lowered into the trench by means of a hoist, ropes or other suitable tools or equipment in such a manner as to prevent damage to the water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench. All pipe and fittings shall be carefully examined for cracks or other defects immediately before installation in final position. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. During laying operations, no debris, tools, clothing or other material shall be placed in the pipe. As each length of pipe is placed in the trench, the spigot end shall be centered in the bell and the pipe forced on and brought to correct line and grade. Precautions shall be taken to prevent dirt from entering the joint space.

At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means approved by the inspector. If

water is in the trench, the plug shall remain in place until the trench is pumped completely dry.

Where pipe is laid on a grade of 10% or greater, the laying shall start at the bottom and shall proceed upward with the bell ends of the pipe upgrade. The cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe and so as to leave a smooth end at right angles to the axis of the pipe. No pipe shall be laid when in the opinion of the inspector trench conditions are unsuitable.

2. Bonding Strap: A bonding strap shall be installed across each joint in the water line to provide metal to metal continuity. Bonding straps shall be attached at each end by means of magnesium weld or other approved method.
3. Valves: Valves shall be set and joined to pipe in the manner specified for cleaning, laying and joining pipe. Valves shall be installed where shown on the drawings. In instances where the valve is to be installed adjacent to the Tee or Cross Fitting, there shall be at least an 18 inch section of pipe but never more than a 36 inch section of pipe between the valve and the fitting. Valves shall have the interior cleaned of all foreign matter before installation. Valves shall be inspected in the open and closed positions to insure that all parts are in working condition.
4. Valve Boxes: Valve boxes shall be provided for all valves. Valves 10 inches and larger shall be provided with a bonnet. Valve boxes will be centered and plumb over the wrench nut of the valve with the box cover flush with the level of the finished grade or such level as may be directed by the Engineer. Upon completion of backfill around the valve box, a 4 x 4 inch timber shall be placed vertically next to each valve box, exposed portion of which shall be above finished grade of the subgrade.
5. Fire Hydrants: Fire Hydrants will be mounted at the grade elevation and location designated by the Utility Department. An appropriately sized Class 150 auxiliary valve with mechanical joint ends shall be required with each hydrant and installed at the location designated by the designing Engineer.

Hydrant drainage in pervious soil shall be provided at the base of the hydrant by placing coarse gravel or crushed stone from the bottom of the trench to at least 6 inches above the water opening (weep holes) in the hydrant and to a distance of 1 foot around the elbow.

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Hydrant drainage in clay or other impervious soil shall be provided by a drainage pit 2 feet in diameter and 3 feet deep excavated below the hydrant and filled compactly with coarse gravel or crushed stone under and around the elbow of the hydrant and to a level of 6 inches above the water opening (weep holes).

6. Thrust Restraints: All plugs, tees, valves, bends and hydrants or a change in direction of 10 degrees or more shall be provided with Thrust Restraints.
 - A. Thrust Blocks: Concrete Thrust Blocks shall be placed between the solid ground of the trench wall and the fitting. The backing shall be so placed that the pipe and fitting joints will be accessible for repair. Plastic "cloth" shall be placed between the fitting and concrete. Unless a design is provided by a Registered Professional Engineer Thrust Blocks shall be as shown in Standard Drawings of this section.
 - B. Restrained Joint Pipe: Unless a design is provided by a Registered Professional Engineer pipe shall be Restrained each direction from a plug, tee, bend, hydrant or change of 10 degrees or more as shown in Standard Drawings of this section.

7. Encasements: Prior to placing the concrete for cradles or encasements, temporary supports consisting of concrete blocks or bricks shall be used to support the pipe in place. Not more than 2 supports shall be used for each pipe length, one adjacent to the shoulder of the bell and the other near the spigot end.

No encasements shall be poured until an inspector has inspected and approved the pipe to be encased and its supports.

8. Water Taps and Services: Water taps and services shall be a minimum of 6 feet from top of pipe to existing or proposed finish grade which ever is lower. A bonding strap shall be installed on all pipe 3 inches and larger. Service lines and taps on the water main may be installed to the property line at the time of main construction.

1 inch service taps shall be direct taps.

For one inch service taps follow Muller's recommendation for minimum size water main for direct tapping.



No two inch taps allowed, must use three inch DIP, or larger.

Three inch and larger services shall use ductile iron pipe and fittings.

Each one inch and service line shall be machine tapped and connected to the water main through a brass corporation stop. The main shall be tapped at the spring line of the pipe, and the stop must be turned so that the T-handle will be on top.

9. Relationships Between Water Lines and Sanitary Sewers:

Lines shall mean all water or sewer lines including mains, laterals and service lines.

When a water and sewer line are within 10 feet horizontally (centerline distance) of each other and the sewer line is above or less than 18 inches (clear distance) below the water line, the portion of the sewer line within that area shall:

- A. Be constructed of approved waterline pipe and joints (Ductile Iron Cement mortar lined pipe conforming to AWWA C-151.
- B. Be constructed of SDR 35 PVC sewer pipe with all joints and pipe within 10 feet of the water line encased in concrete that is a minimum of 6 inches thick centered on the crossing pipe or,
- C. A designed protection system subject to the review and approval of the Gunnison County's Utility Department.

In all cases, suitable backfill or other structural protection shall be provided to preclude the settling or failure of both pipes.

Crossings of sewer and water lines shall not be at an angle less than 45 degrees unless approved by the inspector.

See the Standard Drawings of this section.



IV TESTING:

1. Testing Pressure Pipelines: Water mains shall be tested for pressure and leakage in accordance with these Specifications and AWWA Standard C-600.

The Contractor shall furnish all labor, equipment, tools, water and other incidental items required to conduct the tests. Test results will not be considered valid without the presence of an inspector throughout the test.

No pressure testing shall be performed until all thrust blocks have been placed and cured for at least 7 days, and the pipeline backfilled adequately to prevent any movement or lifting of the pipe. Pavement or other permanent surfaces shall not be placed until all pressure and leakage tests are satisfactorily completed.

2. Test Pressure: The test pressure for all pipes shall be double the maximum operating pressure as determined by the inspector at the lowest elevation of the test section, but shall be a minimum of 150 psi at any elevation in the test section.
3. Filling: The pipeline shall be filled with potable water at least 24 hours before being subjected to the hydrostatic pressure test. Each section of pipeline shall be filled slowly and all air expelled by means of taps at points of highest elevation.

4. Leakage:

The specified test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the inspector. No pipe installation will be accepted if the leakage for the section of line being tested is more than the rate calculated using the following formula:

$$L = \frac{ND\sqrt{P}}{7400}$$

- Where:
- L = Allowable leakage in gallons per hour
 - N = Number of joints in length pipeline tested
 - D = Nominal diameter of pipe in inches
 - P = Average test pressure in psi gauge

Leakage is defined as the quantity of water to be supplied to the section of



pipeline being tested, which is necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

5. Disinfection of Waterlines: After completion of pressure testing and prior to being placed into service, all new water mains and repaired portions or extensions of existing mains shall be chlorinated by the Contractor in accordance with AWWA Standard C-601.
 - A. Preliminary Flushing: Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have entered the pipe. If a hydrant was not installed at the end of the main, then a 2 1/2 inch tap shall be installed in order to flush the line.
 - B. Form of Applied Chlorine: Chlorine shall be applied by one of the methods described in AWWA C-601, subject to approval by the Engineer. If AWWA C-601 section 5 is utilized - Tablet Method - then flushing will take place after chlorination.
 - C. Point of Application: The prepared point of application of the chlorinating agent is at the beginning of the pipeline extension or any valved section of it, and through a corporation stop inserted in the pipe. The water injector for delivering the chlorine-bearing water into the pipe should be supplied from a tap made on the pressure side of the gate valve controlling the flow into the pipeline extension. Alternate points of application may be used when approved or directed by the inspector.
 - D. Preventing Reverse Flow: Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. Check valves may be used if desired.
 - E. Retention Period: Treated water shall be retained in the pipe at least twenty-four (24) hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least twenty-five (25) mg/1.
 - F. Chlorinating Valves and Hydrants: In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent and under normal operating pressure.
6. Final Flushing and Testing: Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the

replacement water throughout its length shows upon test a chlorine residual of less than one (1) mg/l.

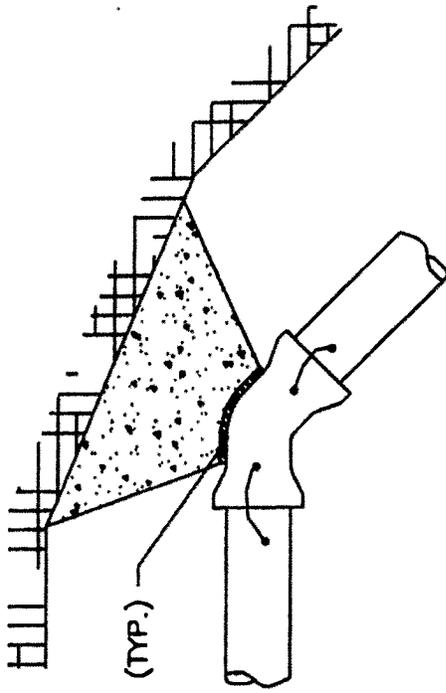
7. **Bacteriologic Tests:** After final flushing, and before the water main is placed in service, bacteriologic tests shall be preformed in accordance with AWWA C-601.

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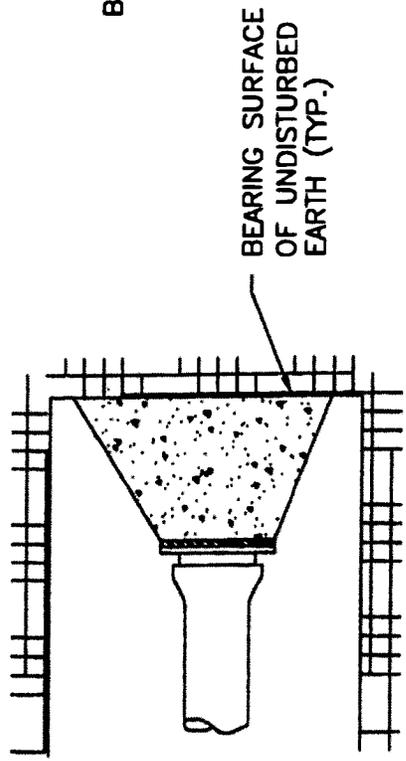
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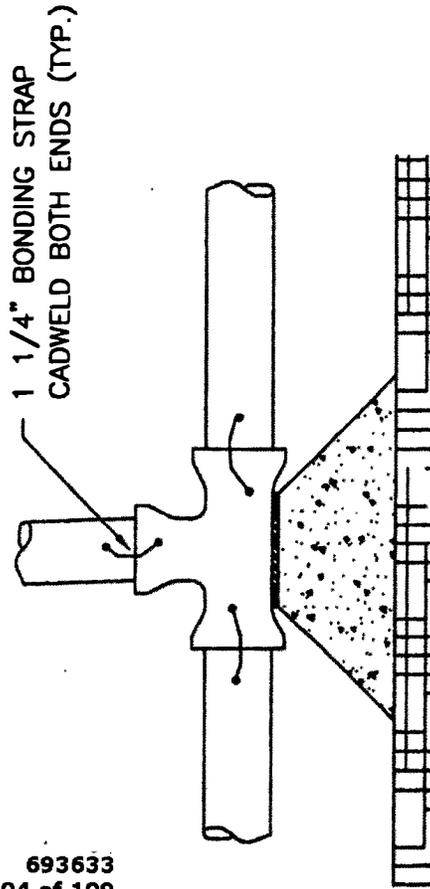
THRUST BLOCK DRAWING



11-1/4", 22-1/2", 45" OR 90" BENDS



DEAD END



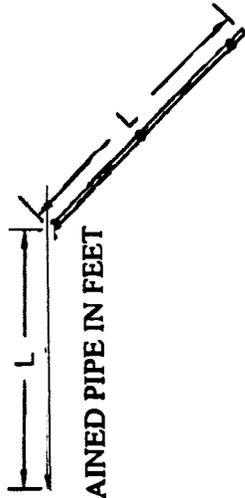
TEE & CROSS W/ DEAD END

NOTES:

1. ALL FITTINGS REQUIRING THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE BOND BREAKER MATERIAL.
2. CONCRETE SHALL NOT BEAR ON BOLTS OF MECHANICAL JOINT FITTINGS.
3. PIPE AND FITTINGS MAY BE EITHER MECHANICAL JOINT OR PUSH ON JOINT.



RESTRAINED PIPE DRAWING



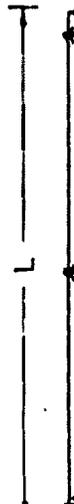
L = LENGTH OF RESTRAINED PIPE IN FEET

11-1/4", 22-1/2", 45° OR 90° BENDS



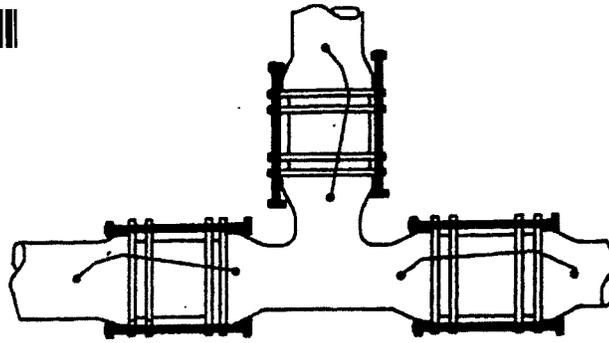
DEAD END

L = LENGTH OF RESTRAINED PIPE IN FEET

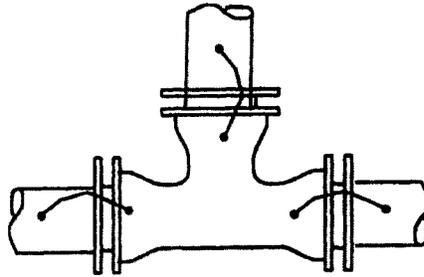


- NOTES:
1. ALL NEW PIPE SHALL BE RESTRAINED JOINT PIPE.
 2. BONDING STRAPS SHALL BE INSTALLED AT ALL PIPE JOINTS AND AT ALL FITTINGS.
 3. ALL FITTINGS SHALL BE MECHANICAL JOINT & RESTRAINED.
 4. RESTRAINING GLANDS MAY BE USED WHEN CONNECTING TO EXISTING PIPE.
 5. FITTING DETAILS ARE TYP. FOR ALL FITTINGS.

TEE & CROSS W/ DEAD END



MECHANICAL JOINT FITTING W/
 TIE ROD RESTRAINT



MECHANICAL JOINT FITTING W/
 RESTRAINING GLAND

BEARING AREAS (IN SQ. FT.)					
SIZE (IN.)	BENDS				
	90°	45°	22-1/2°	11-1/4°	TEES, DEAD ENDS, AND CROSS W DEAD END BRANCHES
3	1.0	0.6	0.3	-	0.7
4	1.8	1.0	0.5	-	1.3
6	4.0	2.2	1.1	0.5	2.8
8	7.1	3.8	2.0	1.0	5.0
10	11.1	6.0	3.0	1.5	7.8
12	16.0	8.6	4.4	2.2	11.3

AREAS GIVEN IN TABLE ARE BASED UPON INTERNAL STATIC PRESSURE OF 100 PSI AND A SOIL BEARING CAPACITY OF 1000 LBS/S.F. LENGTHS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

F = ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS. / ACTUAL TESTED SOIL CAPACITY IN THOUSANDS OF LBS.

TABLE FOR RESTRAINED PIPE

RESTRAINED LENGTH (IN FT.)					
SIZE (IN.)	BENDS				
	90°	45°	22-1/2°	11-1/4°	TEES, DEAD ENDS, AND CROSS W DEAD END BRANCHES
3	7	3	2	1	12
4	10	4	2	1	18
6	16	6	3	2	27
8	21	9	4	2	38
10	26	11	5	3	48
12	31	13	6	3	58

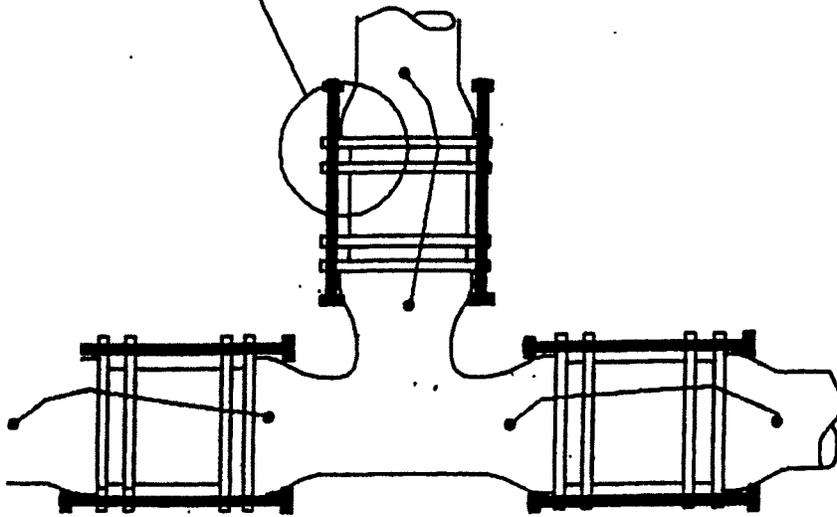
LENGTHS GIVEN IN TABLE ARE BASED UPON INTERNAL STATIC PRESSURE OF 100 PSI THE PIPE FULLY BEDDED AND THE TRENCH NOT BACKFILLED.

LENGTHS FOR ANY PRESSURE MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

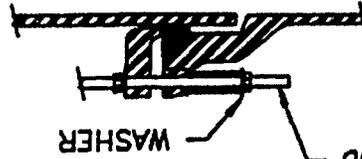
F = ACTUAL SPECIFIED TEST PRESSURE IN PSI / 100 PSI



TABLE FOR TIE ROD RESTRAINT



STEEL PIPE SPACER SHAPED TO FIT BACK OF FLANGE
SPACER SIZE = B



THREADED TIE ROD
SIZE = A

TIE ROD RESTRAINT

PIPE SIZE (IN.)	A TIE RODS DIA.	B SPACER NOM. SIZE	C SPACER LENGTH	NO. OF RODS REQ.
3	5/8"	3/4"	2.5"	2
4	5/8"	3/4"	2.5"	2
6	5/8"	3/4"	2.5"	2
8	5/8"	3/4"	2.5"	2
10	5/8"	3/4"	2.5"	4
12	5/8"	3/4"	2.5"	6

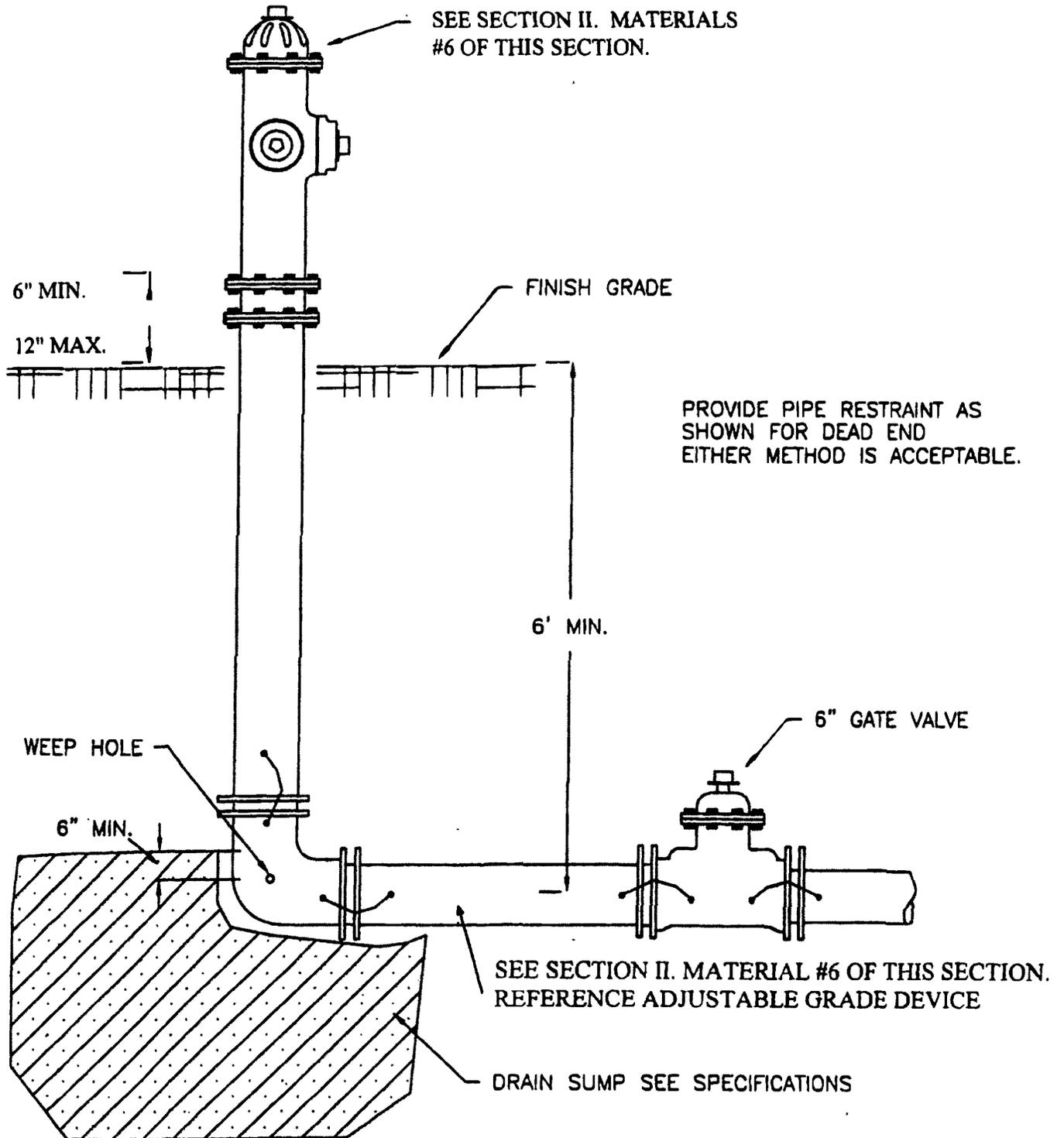
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NOTES:
1. ALL TIE RODS, WASHERS AND SPACERS SHALL BE COATED WITH COAL TAR PAINT.
2. TABLE IS BASED ON 150 PSI TEST PRESSURE.
3. OTHER METHODS OF CONNECTING THE RODS SHALL BE ACCEPTABLE TO THE ENGINEER.



STANDARD FIRE HYDRANT DRAWING

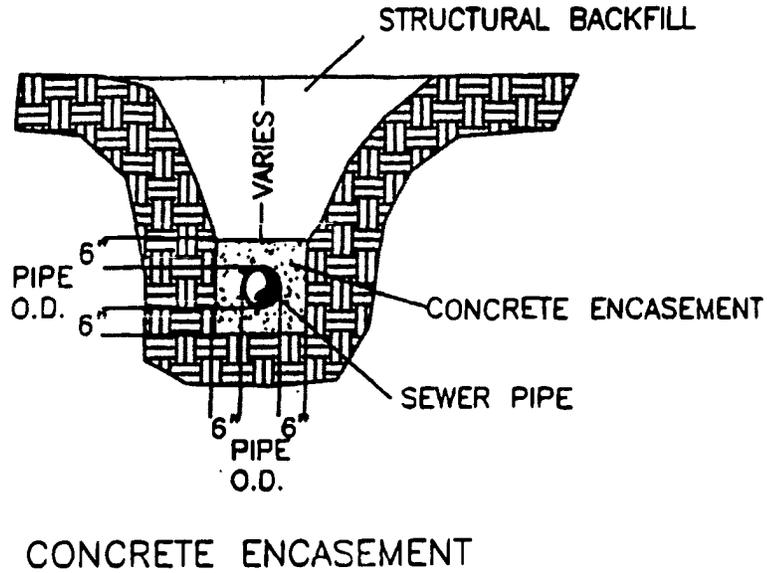


DRAWING 400-5

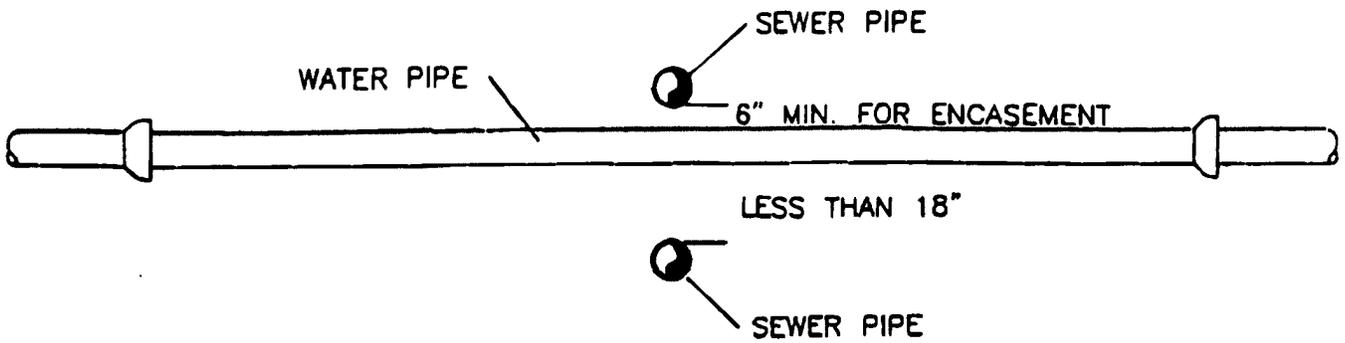
SANITARY SEWER – WATER PIPE CROSSING

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CONCRETE ENCASEMENT



PIPE CROSSING

NOTE:
IF THE SEWER PIPE IS ABOVE THE WATER PIPE
OR IF THE SEWER PIPE IS LESS THAN 18" BELOW THE WATER PIPE
THE SEWER PIPE MUST BE CONCRETE ENCASED TO PROTECT THE WATER PIPE.
SEE SPECIFICATION SECTION 500 OR 600 FOR PROTECTION REQUIRED.
PROTECTION MUST EXTEND A MINIMUM OF 10' EACH WAY FROM THE CROSSING.