Jefferson County, Alabama
Environmental Services Department

Standard Specifications for Sanitary Sewer Service Lines and Connections

Adopted November 10, 1999
Amended May 6, 2008 & November 6, 2012

Jefferson County, AL
Environmental Services Department

Standard Specifications for Sanitary Sewer Service Lines and Connections

Table of Contents

Section 3
Construction Specifications for Service Lines and Connections

Section 4
Material Specifications for Service Lines and Connections

Section 5
Testing and Inspection

Appendix
Standard Details

Standard Drawing No.		**Title**
4000		Standard Symbols and Abbreviations
4005		Illustration of Number of Service Lines Required for House, Garden Home, Townhouse, Patio Home, or Duplex
4010		Illustration of Number of Service Lines Required for Multi-Level Apartments and Condominiums
4015		Illustration of Number of Service Lines Required for Commercial Developments
4017		Illustration of Typical Service Line for a Restaurant
4020		Illustration of Service Line Requirements for Mobile Home Park
4025		Illustration of Availability of Sewers
4030		Ductile Iron Pipe & C-900 PVC Service Line Detail
4035		Schedule 40 PVC Service Line Detail
4040		Sewer Service Connection to an Existing 4" or 6" Stub-out
4050		Sewer Service Connection to Existing Ductile Iron Main with No Existing Lateral & Tapping is Required
4053	**(omitted)**	Sewer Service Connection to Existing C-900 PVC Main with No Existing Lateral & Tapping is Required
4055	**(omitted)**	Sewer Service Connection to Existing PVC Truss Main with No Existing Lateral & Tapping is Required
4060	**(omitted)**	Sewer Service Connection to Existing Vitrified Clay Main with No Existing Lateral & Tapping is Required
4065	**(omitted)**	Sewer Service Connection to Existing Concrete Main with No Existing Lateral & Tapping is Required
4070	**(omitted)**	Sewer Service Connection to Existing Concrete Pipe Greater than 24"
4075		Connecting Riser
4080		Manhole Service Connection
4085		Ductile Iron Pipe Bedding and Backfill Details
4090		C-900 PVC Pipe Bedding and Backfill Details
4091		Sanitary Sewer Cleanouts for C-900 PVC Service Lines
4093		Sanitary Sewer Cleanouts for DIP Service Lines
4100		Schedule 40 PVC Sanitary Sewer Cleanouts
4105		Detail of Mobile Home "P" Trap

Section 1
Policies and Procedures

1.0100 Purpose

1.0101 The purpose of this document is to assemble in one volume the Policies, Procedures, Standards, and Standard Details for sanitary sewer service lines and connections developed by the Jefferson County Environmental Services Department. These Standards have been developed to promote uniformity in the development of the sanitary sewer system. These Standards represent the recommended construction practices and procedures for sanitary sewer service lines and supersede any other standards that may currently be in use. Any special designs may be submitted and approved in writing on a case by case basis. **All sanitary sewer service line installations and/or repairs must be performed by a licensed and bonded plumber under the jurisdiction of Jefferson County and the State of Alabama.**

1.0102 Minimizing the quantities of infiltration and inflow that enter the sanitary sewer system and minimizing the possibility of sanitary sewer overflows is essential to the long term goals of the Environmental Services Department. Federal and State regulations require that all water entering the system must receive treatment in accordance with State permits before being discharged into streams and tributaries. Jefferson County has been obligated to spend a considerable amount of revenue to try to remove infiltration and inflow from the existing system. A major objective of these Standards is to prevent infiltration and inflow (I/I) into future service lines and connections.

1.0200 Applicability or Jurisdiction

1.0201 All sanitary sewer service lines, which connect to the County sanitary sewer system, shall be designed in accordance with all criteria established herein. All materials, construction, and testing of such facilities shall be in accordance with all Sections of this document and shall be subject to inspection by the County to insure compliance with the requirements contained herein.

1.0300 Definitions

1.0301 Wherever the words, forms, or phrases defined or pronouns used in their place occur in these Standards, or any document or instrument herein contemplated or to which these Standards apply, the intent and meaning shall be construed and interpreted as follows. Words not defined below shall have the meanings in Webster's Eleventh Collegiate Dictionary, as revised.

1.0302 ABBREVIATIONS: The following organizations are referred to in these Standards by abbreviations of their titles:

(a)	ANSI	American National Standards Institute
(b)	ALDOT	State of Alabama Department of Transportation
(c)	ASTM	American Society for Testing and Materials
(d)	AWWA	American Water Works Association
(e)	OSHA	Occupational Safety and Health Administration

1.0303 BACKFILL: Soil, rock, or other material used to replace, or the act of replacing, soil, rock, or other material removed during excavation and construction.

1.0304 COUNTY: Environmental Services Department of Jefferson County, Alabama.

1.0305 COUNTY SEWER CONSTRUCTION INSPECTOR: An authorized representative of the Sewer Construction Office of the Environmental Services Department of Jefferson County, Alabama assigned to observe and inspect the construction of main sewers, and in some cases the service line for conformance with these Standards.

1.0306 COUNTY SEWER SERVICE INSPECTOR: An authorized representative of the Sewer Permitting and Inspections Office of the Environmental Services Department of Jefferson County, Alabama assigned to observe and inspect the construction of all new service lines, repairs to existing service lines, connections, and disconnections for conformance with these Standards. The County Sewer Service Inspector does not observe and inspect the installation of the buildings internal plumbing. However, the County Sewer Service Inspector does obtain a fixture count to confirm fixtures installed against a Sewer Impact Permit.

1.0307 DIRECTOR: Director of the Environmental Services Department of Jefferson County, Alabama or his authorized agent.

1.0308 FILL: A soil or broken rock material used to provide the bulk required to raise the elevation of an area.

1.0309 FORCE MAIN: A pressurized sewer line intended to carry wastewater from a sewer pumping station to the point where it can flow by gravity.

1.0310 INFILTRATION / INFLOW (I/I): Infiltration shall mean the water entering a sewer system and service connections from the ground, through such means as, but not limited to broken or cracked pipes, defective pipe joints, improper connections, and manhole walls, etc. Inflow shall mean the water discharged into a sewer system including service lines, from such sources as, but not limited to: roof leaders; cellars, yard and area drains, foundation drains; cooling water discharges; drains from springs and swampy areas; cross connections from storm sewers; surface run-off, etc. The term Infiltration and Inflow (I and I) shall mean the total quantity of water from both infiltration and inflow without distinguishing the source.

1.0311 INTERNAL PLUMBING: Includes the wastewater collection pipes, drains, traps, and vents located within the building or under the building foot print to a terminal point of thirty (30) inches outside the building's foundation.

1.0312 JOURNEYMAN PLUMBER: Any person who engages in or works at the actual installation, alteration, repair and renovation of plumbing work and who possesses a current, valid and unrevoked Certificate of Competency issued by the Alabama Plumbers and Gas Fitters Examining Board as a Journeyman Plumber.

1.0313 MAIN SEWER: A pipe or conduit eight (8) inches or larger intended to carry wastewater. The pipe is located in a public easement or right-of-way. In other documents and publications, the smaller (8 or 10 inch) main sewers may be referred to as "lateral" sewers, "collector" sewers, "public" sewers; however the basic criteria is the same, i.e. any sewer pipe that is 8 inches in diameter or larger is a main sewer.

1.0314 MANHOLE: A junction structure from the ground surface to the sewer, which allows for changes in direction or grade and which is large enough to enable access for inspection and maintenance.

1.0315 MANHOLE INVERT: A formed channel along the bottom of the manhole constructed of cement mortar to direct and contain the wastewater flow from a pipe flowing into the manhole to a pipe flowing out of the manhole.

1.0316 MASTER PLUMBER: Any person in continuous and responsible charge of the installation, alteration, repair and renovation of plumbing work and who possesses a current, valid and unrevoked Certificate of Competency issued by the Alabama Plumbers and Gas Fitters Examining Board as a Master Plumber.

1.0317 MATERIALS: Any substance specified for use in the work and its appurtenances.

1.0318 OR EQUAL: Wherever a particular process, material, device, detail, or part is specified herein, followed by these words or by similar or equivalent expressions, such words or expressions shall be understood to mean and permit the use of another process, material, device, detail, or part that the Director shall determine is fully equal in suitability, quality, durability, performance, and in all other respects, to the process, material, device, detail, or part herein specified for such use, and is approved for such use in the work. The decision of whether a particular process, material, device, detail, or part is considered equal or not is at the discretion of the Director.

1.0319 OWNER: Any person, company, organization, or entity having a legal or equitable interest in a particular property and desires to connect a sanitary sewer service line to the County sanitary sewer system.

1.0320 PLUMBING CONTRACTOR: The person, firm, or corporation responsible for the installation, alteration, repair and renovation of plumbing work and service lines and employs a Master Plumber.

1.0321 PLUMBING FIXTURES: For the purpose of this Standard, a plumbing fixture is defined as any of the following: bathtub, shower unit, water closet, bidet, lavatory, urinal, sink, dishwasher, washing machine, garbage disposal unit, stubouts for plumbing fixtures, floor drain, drinking fountain, air conditioner condensate drain, sump pump or ejector, commercial kitchen sink, any miscellaneous connection not contained herein which the County determines should be classified as a plumbing fixture (such as commercial ice machines, photographic developing machines, autoclaves, etc.)

1.0322 PLUMBING INSPECTOR: An authorized representative of the Inspection Services Department of Jefferson County, Alabama or other municipality assigned to inspect any plumbing system and water service plumbing that may be installed inside of a building or structure and any outside service lines which do not connect to the sanitary sewer system.

1.0323 RIGHT-OF-WAY: A strip of land over which a sewer line, utility, or roadway is built. A right-of-way differs from an easement in the fact the utility has ownership of the strip of land.

1.0324 SADDLE: A fitting used to connect a service line to a main sewer line. The fitting is connected to the main sewer with stainless steel bands. The saddle allows connection of the service line at a 90 degree angle from the direction of flow of the main sewer. A saddle is used to connect to all existing sewer mains.

1.0325 SANITARY SEWER: A sewer intended to carry wastewater.

1.0326 SANITARY SEWER SYSTEM: All gravity sewer lines, manholes, force mains, pump stations, and appurtenances that convey wastewater to the County's wastewater treatment plants.

1.0327 SERVICE LINE: Any sanitary sewer line located outside the building structure, which connects the building's internal plumbing to the main sewer. Jefferson County recognizes 4" and 6" diameter sewer service lines for gravity installations and 2" diameter sewer service lines for force main installations. The County does not maintain the service line from the building to the main sewer.

1.0328 SERVICE LINE BOND: A bond with a surety, letter of credit, or cash to secure the County against damage to the County's main sewer during installation of the service line and to guarantee the work.

1.0329 SHALL: Shall is mandatory, may is permissive.

1.0330 STATE: The State of Alabama.

1.0331 STORM SEWER: A pipeline intended to carry rainfall, surface runoff, and/or subsurface waters. There is a distinct difference between storm sewers and sanitary sewers. Storm sewers exclude flow from domestic wastewater and industrial waste.

1.0332 STORM WATER: Rain water or any sort of runoff that does not come from sanitary sewers.

1.0333 STRAIGHT STACKING: The act of connecting to a **main sewer** at an angle greater than 60 degrees as measured from the spring line of the main. Straight stacking will only be allowed where the sanitary sewer service line connects to the main, as approved by the Sewer Permitting Office.

1.0334 STRUCTURES: Facilities such as bridges, culverts, catch basins, inlets, retaining walls, water lines, under drains, electrical ducts, manholes, lighting fixtures and poles, transformers, flexible and rigid pavements, buildings, vaults, and other manmade features that may be encountered in the work and not otherwise classified herein.

1.0335 STUB OUT: A portion of the service line extended from the main sewer and then capped or plugged for later use. A stub out is normally stopped at a curb line or property line.

1.0336 TAP: The actual connection or opening placed in the main sewer to allow the wastewater from the service line to enter the main sewer.

1.0337 TAPPING SLEEVE: A tapping sleeve is used only on existing ductile iron pipe. A fitting used to connect a service line to a main sewer line in situations where the installation of a saddle is not feasible. The body of the sleeve fitting extends around the circumference of the pipe and is held tight by threaded bolts and sealed with a compression gasket. The tapping sleeve allows connection of the service line at a 90-degree angle from the direction of flow of the main sewer.

1.0338 TEE: A fitting installed in line with the main sewer to allow connection of the service line at a 90 degree angle from the direction of flow of the main sewer. A connection to the main sewer **shall not** be made by using a wye type fitting, which would allow connection at a 45^0 angle.

1.0339 WASTEWATER: Any liquid containing waste matter originating from residences, commercial buildings, institutions, and industrial establishments together with any extraneous water that may be present, whether treated or untreated, which is discharged into or permitted to enter the County sanitary sewer system.

1.0400 Standard Reference Specifications

1.0401 All standard specifications referenced throughout these Standards are to be taken as the latest revision available.

1.0402 The following is a nonexclusive list of national standard specifications referenced in these Standards:

ANSI/AWWA

C104/A21.4	Cement-Mortar Lining for Ductile-Iron and Gray Iron Pipe and Fittings for Water.
C110/A21.10	Ductile-Iron and Gray Iron Fittings, 3-in.Through 48-in. for Water and Other Liquids.
C111/A21.11	Rubber Gasket Joints for Ductile-Iron and Gray Iron Pressure Pipe and Fittings.
C150/A21.50	Thickness Design of Ductile-Iron Pipe.
C151/A21.51	Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds for Water or Other Liquids.
C153/A21.53	Ductile-Iron Compact Fittings, 3-in. Through 12-in. for Water and Other Liquids.
C600	Installation of Ductile Iron Water Mains and Their Appurtenances
C-900	Polyvinyl Chloride (PVC) Pressure Pipe 4 inch through 12 inch with Addendum C-900-92
C907	Polyvinyl Chloride (PVC) pressure fittings 4 inch through 8 inch.

ASTM

A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
C33	Concrete Aggregates
C150	Portland Cement
D448	Standard Classification for Sizes of Aggregate for Road and Bridge Construction
D1599	Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
D1784	Specification for Rigid Poly (Vinyl Chloride) PVC Compounds and Chlorinated Poly (Vinyl Chloride) CPVC Compounds.
D1785	Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
D2321	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
D2412	Test Method for External Loading Properties of Plastic Pipe by Parallel Plate Loading.
D2564	Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems
D2665	Poly(vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
D2855	Making Solvent-Cemented Joints with Poly(vinyl Chloride) (PVC) Pipe and Fittings
D3139	Specifications for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
F477	Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
F610	Estimating the Quality of Molded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings by the Heat Reversion Technique

F656	Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings
F1336	Poly(Vinyl Chloride) (PVC) Gasketed Sewer Fittings

1.0403 Any reference in the ANSI/AWWA or ASTM Specifications to Owner or purchaser is to be interpreted as the County.

1.0404 The following is a list of other publications referenced in these Standards:

a. Jefferson County Standards for Construction of Commercial and Residential Sanitary Sewer Systems

b. Jefferson County Sewer Use Ordinance

c. Jefferson County Board of Health: On Site Sewage Disposal Regulations

1.0500 Availability of Sewers

In order to connect to the Jefferson County sanitary sewer system, a main sewer must be available to the property, which is to be connected. Available shall mean that a main sewer or manhole is located on the subject property or within an adjacent public easement or right-of-way and within the projected property lines as illustrated on Standard Drawing No. 4025. Service lines may not extend across adjacent private properties. Any exception or waiver of these requirements must be approved by the Director in writing.

1.0600 Number of Buildings per Service Line

The following is a description of the requirements for the number of buildings allowed to be served per service line or private force main. If a specific case is not covered by the conditions below, the owner or owner's agent must contact the Environmental Services Department Sewer Permitting and Inspections Office for a ruling.

1.) Single family dwellings, Houses, Garden homes, Townhouses, Patio homes, Duplexes

An individual service line shall be installed for each single family dwelling, house, garden home, patio home, and each unit of a townhouse or duplex as illustrated on Standard Detail No. 4005. Generally, once a service line exits from under the foundation of a building, the service line must extend directly to a main sewer with no further connections of other service lines. **This requirement is intended to minimize the number of infiltration and inflow causing joints and fittings. Waivers may be granted on a case by case basis based on site conditions or building configurations that makes the adherence to the policy unfeasible.** The main sewer shall be located in a public easement or right-of-way and be a minimum of eight (8) inches in diameter and approved, designed, and constructed in accordance with the Jefferson County Standards for Construction of Commercial and Residential Sanitary Sewer Systems.

2.) Multiple family dwellings, apartments, and condominiums

The County desires to limit the length of service line located outside of a building footprint, as well as, the number of connections to the 8-inch main. Thus, the County prefers that the plumbing for separate units of an apartment or condominium be connected together under the building footprint. However, an individual service line is required for each separate building. Once a service line exits from under the foundation of a building, the service line must extend directly to a main sewer with no further connections of other service lines. See Standard Detail No.4010. The main sewer shall be located within a public easement or right-of-way and be a minimum of eight (8) inches in diameter and be approved, designed, and constructed in accordance with the Jefferson County Standards for Construction of Commercial and Residential Sanitary Sewer Systems.

3.) Commercial Property

The County desires to limit the length of service line located outside of a building footprint, as well as, the number of connections to the 8-inch main. When a commercial building contains several plumbing fixtures which are located in different parts of the building, the County prefers the fixtures be connected together under or in the building foundation, in lieu of exiting from under the building at different locations. If all the plumbing cannot be connected under the building footprint, the County will allow service lines from the same building to be connected outside the building footprint provided the goal of minimizing the length of service line and the number of connections to the main is followed. An individual service line is required for each separate building. See Standard Detail No.4015 and 4017.

4.) Mobile Home Park

An individual service line is required for each separate mobile home or mobile home pad. The service line shall be ductile iron and extend directly from the mobile home pad to a minimum eight (8) inch main with no side connections or joining other service lines. See Standard Detail No. 4020. The main sewer shall be located within a public easement or right-of-way and shall be approved, designed, and constructed in accordance with the Jefferson County Standards for Construction of Commercial and Residential Sanitary Sewer Systems. All mobile home pad service lines shall be capped at the foundation pad with an approved permanent removable plug. The plug shall be connected to the service line with a chain to keep it from getting lost. If a mobile home is moved at any time, the connection shall be plugged.

A "P" Trap is required at the mobile home pad in accordance with Standard Detail No. 4105.

1.0700 Diameter of Service Line

All gravity flow service lines shall be 4 or 6 inches nominal diameter. Any larger diameter must be approved on a case by case basis by the Director in writing.

1.0800 Easement Requirement Policy

In most cases, a sanitary sewer line that is 8-inches or larger is considered a main sewer and is required to be located in a sanitary sewer easement dedicated to the County. Minimum easement width is twenty (20) feet, ten (10) feet each side of the sewer alignment. The County will be responsible for the maintenance of said sewer line.

If the potential peak wastewater flows from a building require an 8-inch or larger service line, the line will be considered a service line from the building to the first manhole, at which point it will be considered a main sewer. An easement is required for the main sewer beginning at the first manhole after the service line exits from under the building. The 8-inch service line from the building to the first manhole is not required to be in an easement or right-of-way. All 8-inch or larger service lines shall be approved by the County on a case by case basis based on justifiable calculations.

1.0900 Material of Service Lines in Public Right-of-Way or Easements

All service lines located in public street, highway, roadway or utility rights-of-way shall be ductile iron from the main sewer to the right-of-way line, at which point the service line may transition to C-900 PVC or Schedule 40 PVC if all requirements for its use are met.

1.1000 Material of Service Line in Mobile Home Parks

All service lines in a mobile home park shall be ductile iron from the mobile home pad to the main sewer.

1.1100 Connection to a Force Main

New connections to privately maintained force mains will not be allowed. Written approval for a connection to an existing publicly maintained force main must be obtained on a case by case basis based upon submittal of acceptable plans and calculations. Approval to connect to a force main is a two (2) phase process.

1. Written approval must be obtained to connect to the existing force main.
2. Plans and calculations of the connection must be approved. Plans and calculations will not be submitted until approval to connect is granted.

1.1200 Sewer Service Line Disconnects

Every sewer service line connection shall be considered permanent. Before a building is demolished, the Environmental Services Department requires the sewer service line be disconnected before any work commences. If a building is being torn down, relocated, or other reason, that would require the service line to be disconnected from the internal plumbing, the service line shall be disconnected as close to the main sewer as possible. The County prefers the disconnection to occur at the main sewer in accordance with Standard Detail No.4135. However, in some cases this is not feasible. If the main sewer is located under a roadway or sidewalk, the disconnection may occur outside the road or sidewalk provided that no defects are left in the remaining portion of the service line. In

such cases, the location of the disconnection will be determined by the Sewer Service Inspector on a case by case basis. A permit to disconnect and plug the sewer must be obtained and an inspection made by a County Sewer Service Inspector at the time of discontinuance. See Section 2.0306 for sewer disconnect permit fee.

1.1300 Repair or Replacement of Sewer Service Lines

In order to reduce infiltration and inflow, it is the policy of Jefferson County to require the property Owner to repair service lines that are found to be damaged and contributing to the volume of infiltration and inflow. If during the repair of an existing service line, the existing service is deemed unsuitable at the point of reconnection by the Sewer Service Inspector, the County shall require replacement of the service line up to a point where suitable material is found. If it is determined that there is not suitable material available for re-connection, the County shall require replacement of the entire service line from the main sewer to the building plumbing.

`1.1400 Removal of Storm Drain, Roof Drain, or Surface Water Connections

The Jefferson County Sewer Use Ordinance prohibits the connection of storm water, roof drainage, ground water, street drainage, cooling water, basement drainage, pool backwash water, or any other source of drainage water to the sanitary sewer system. If such connections are found, the property owner will be advised in writing and given 30 days to remove such connection. If the property owner does not comply with the disconnection request, all documentation will be turned over to the County Attorney's office for appropriate legal action.

1.1500 Alternate Construction Methods

These Standards represent the approved practices and procedures for construction of sanitary sewer service lines. Any special designs must be submitted and approved by the Jefferson County Environmental Services Department. The provisions of this Standard are not intended to prevent the use of any method of construction not specifically prescribed by this Standard, provided any such alternate has been approved and its use authorized by the Director. The Director shall approve any such alternate, provided he finds that the alternate for the purpose intended is at least the equivalent of that prescribed in this Standard in quality strength, effectiveness, durability, and safety and satisfies the objectives set out in Paragraph 1.0102. The Director shall require that sufficient evidence or proof be submitted to substantiate any claim that may be made regarding the alternate.

1.1600 Inspection Policy

All sewer service lines, connections, disconnections, and repairs to service lines that connect to the County sanitary sewer system shall be inspected, tested, and approved by a County Sewer Service Inspector in accordance with Section 4. The intent and desire of the County is that all sewer service lines be constructed in such a manner and under such supervision and inspection that the County may be assured that acceptable materials are used and that appropriate construction standards are observed resulting in the installation of a service line that minimizes the amount of infiltration and inflow.

1.1700 Amendments

1.1701 These Standards are subject to change, and interested parties are advised to verify with the Jefferson County Environmental Services Department that they are using the latest version of the published document. Updates to these Standards are available in the Environmental Services Department, Sewer Permitting and Inspections Office.

1.1702 Advisory Committee: An advisory committee shall be formed to review any proposed changes and provide input to the County Commission prior to the enactment of any changes.

1.1800 Miscellaneous

Any sewer connection circumstance which is not specifically covered herein shall be presented to the Director for approval. It is recommended the County be contacted prior to detailed design to discuss specific requirements.

Section 2

Permit Process

2.0100 Permits

2.0101 A permit from the Jefferson County Environmental Services Department is required for new sewer service lines and connections, repairs to existing service lines and connections, disconnections, and changes to buildings presently connected to the sewer system. There are two (2) distinct and different permits issued by the Environmental Services Department relating to sewer connections.

1.) Sewer Impact Permit

2.) Sewer Connection Permit

Both permits are required for new connections to the sanitary sewer system. Only a Sewer Impact Permit is required if the property is already connected to the sewer system and the work being performed is the addition of plumbing fixtures or restaurant equipment and/or seating and no work is required on the service line. The following sections discuss the requirements and application process for each permit.

The above referenced permits are required for connection to any portion of the County sanitary sewer system whether the area served is incorporated or unincorporated including all municipalities served by the County sanitary sewer system.

2.0200 Sewer Impact Permit

2.0201 When Not Required

If the building does not contain any internal plumbing, plumbing fixtures, or stubouts, then a Sewer Impact Permit is not required, prior to issuance of a Building Permit.

If the building contains plumbing, plumbing fixtures, or stubouts, and the Owner has applied for a permit for a septic tank from the Jefferson County Department of Health, then a Sewer Impact is not required, prior to issuance of a Building Permit.

2.0202 When Required

1.) If the building contains plumbing, plumbing fixtures, or stubouts and the Owner has not applied for a permit for a septic tank from the Jefferson County Department of Health, then an Impact Permit is required prior to issuance of a Building Permit.

2.) A Sewer Impact Permit is required if an existing building or home is presently on a septic tank system and the Owner desires connection to the County sewer system.

3.) A Sewer Impact Permit is required if an existing building or home is presently connected to the County sewer system and the Owner is installing additional fixtures that will discharge to the sewer system. A Sewer Connection Permit may not be required if no additional service line is required.

4.) A Sewer Impact Permit is required if a restaurant or lounge presently connected to the sewer system is adding seats. A Sewer Connection Permit may not be required in this case.

5.) A Sewer Impact Permit is required if a restaurant or lounge presently connected to the sewer system is changing ownership. There is no charge for the permit as long as the number of seats will not increase over the amount originally paid on the Sewer Impact Permit. A Sewer Connection Permit is not required in this case.

6.) A Sewer Impact Permit is required if a restaurant or lounge is added to a building presently connected to the sewer system.

7.) A Sewer Impact Permit is required if an industry presently connected to the sewer system is adding or changing a process that will increase the volume of flow or change the character of the waste discharged to the sewer system. A Sewer Connection Permit may not be required in this case.

2.0203 Filing Process

Each application for an Impact Permit, with the required fee, shall be filed with the Jefferson County Environmental Services Department, Sewer Permitting and Inspections Office on a form furnished for that purpose. The Sewer Impact Permit shall be obtained and signed by the owner or owner's agent. The Sewer Impact Permit shall be obtained prior to commencement of construction of any new building, addition to or remodeling of a building, or service line to an existing building if the Owner desires connection to the County sewer system. **If any fixtures or stubouts for fixtures are installed prior to a permit being obtained, the permit fee shall be double the amount per fixture as established in the Jefferson County Sewer Use Ordinance.**

2.0204 Sewer Impact Permit Fees

The appropriate fees will be calculated in accordance with the current version of the Jefferson County Sewer Use Ordinance.

2.0205 Time Limit of Permit and Refunds of Permits

The Sewer Impact Permit is valid for a period of two (2) years from the date of issuance. The owner must renew the permit after this time limit has expired in order to utilize the permit. There is no charge for renewal of a permit unless the amount of the Impact Fee has changed from the original permit.

An Owner may obtain a refund of an Impact Permit Fee in the following cases.

1.) If the Owner obtains an Impact Permit and the building is not constructed, a refund less a County administrative fee can be obtained. The Owner must furnish the County with the two (2) original copies of the Impact Permit, with receipt.

2.) If the Owner obtains an Impact Permit based on a certain number of plumbing fixtures and the number of plumbing fixtures installed is less than the number listed on the Impact Permit, then a refund less a County administrative fee can be obtained.

2.0206 Drawings

Owners of commercial developments are required to submit drawings in accordance with Section 2.0400 at the time of application for a Sewer Impact Permit.

2.0207 Right of Entry

The Owner or plumbing contractor shall make arrangements for the building or home to be open at the time of the inspection to allow the Sewer Service Inspector to count the number of plumbing fixtures indicated on the Sewer Impact Permit. Failure to make such arrangements shall cause future permits to be denied until such arrangements are made.

2.0300 Sewer Connection, Repair, or Disconnection Permit

2.0301 When Required

1.) A Sewer Connection Permit is required if a new building or home is to be connected to the County sewer system.

2.) A Sewer Connection Permit is required if an existing building or home is presently on a septic tank system and the Owner desires connection to the County sewer system.

3.) A Sewer Connection Permit is required if a repair or enlargement of an existing service line or connection is needed or required. A Sewer Impact Permit may not be required in this case. Please note that a site utility drawing may be necessary.

2.0302 Filing Process

The Sewer Connection Permit shall be obtained prior to starting any excavation for the installation or repair of a service line or connection. The Sewer Connection Permit shall be obtained by the Owner's plumber from the Jefferson County Environmental Services Department, Sewer Permitting and Inspections Office, and pay the appropriate fee. The fee shall be as indicated in Section 2.0306. The Sewer Connection Permit shall be obtained and signed by a Master Plumber or his duly authorized representative provided that a letter is on file with the County authorizing that person to be the representative for the firm. The plumbing company shall have a current Bond with the Jefferson County Commission, and be licensed by the State of Alabama.

2.0303 Disconnection Permit

Every sewer service line connection shall be considered permanent. Before a building is demolished, the Environmental Services Department requires the sewer service line be disconnected before any work commences. If a building is being torn down, relocated, or other reason, that would require the service line to be disconnected from the internal plumbing, the service line shall be disconnected as close to the main sewer as possible. The County prefers the disconnection to occur at the main sewer in accordance with Standard Detail No.4135. However, in some cases this is not feasible. If the main sewer is located under a roadway or sidewalk, the disconnection may occur outside the road or sidewalk provided that no defects are left in the remaining portion of the service line. In such cases, the location of the disconnection will be determined by the Sewer Service Inspector on a case by case basis. A permit to disconnect and plug the sewer must be

obtained and an inspection made by a County Sewer Service Inspector at the time of discontinuance. The fee shall be as indicated in Section 2.0306**.** If the demolition contractor damages the service line or main sewer, the contractor will be required to retain a licensed plumber or approved contractor to make the necessary repairs.

2.0304 Condition of the Permit

A Sewer Connection Permit issued shall be construed to be a license to proceed with the work and shall not be construed as authority to violate, cancel, alter, or set aside any of the provisions of this Standard, nor shall such issuance of a permit prevent the Director from thereafter requiring correction of errors in construction, or of violation of this Standard. Sewer connection permits may be issued for either new construction, or repair, but in all cases, both origin and terminal points of connection must exist for such an issuance. Requests for permits prior to the "plumbing rough stage" of a structure, or the activation of a sewer main/extension is prohibited. Any Sewer Connection Permit issued shall become invalid unless the work authorized has commenced within six months after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of six months after the time the work commenced; provided, that for cause, extensions of time for periods not exceeding six months each, may be allowed in writing by the Director; however, maximum number of extensions shall not exceed three (18 months).

2.0305 Bonding Requirements

Before the installation or repair of any sewer service line or connection to a main sewer, the Plumbing Contractor shall in addition to the required Master's Plumber's Certificate of Competency, have a business license issued by the Municipal, County, or State authority and shall also deposit with the County and continuously maintain a good and sufficient bond in the sum of five thousand dollars ($5,000.00) and made by a surety company duly authorized to do business in Alabama. Said bond shall be conditioned that the person, firm, or corporation, to be known as the Principal in said bond, shall faithfully observe all ordinances and laws of the County, including the sewer service line standards contained herein for connecting to main sewers, whether now or hereafter enacted, together with all rules and regulations established under the authority of said laws or ordinances; and shall perform in a workmanlike manner all work undertaken by said Principal in the installation of said service line and connection to the main sewer. Said bond shall also provide that it may be canceled by the surety by giving the Jefferson County Environmental Services Department thirty (30) days notice in writing prior to the date of cancellation. Said notice must be sent to: Sewer Permitting and Inspections Office Environmental Services Department, 716 Richard Arrington, Jr. Blvd North, Suite A300 Birmingham, Alabama 35203. Failure to comply with this section automatically revokes the business license of the said person, firm, or corporation.

2.0306 Sewer Connection Fees

Schedule of Sewer Connection Fees:	Prior to Installation	After Installation
Sanitary Sewer Connection Permit:	$50.00 each	$500.00 each
Sanitary Sewer Repair Permit:	$50.00 each	$500.00 each

Sanitary Sewer Tap Fees to Existing Sewers:

1. C-900 PVC, Concrete, PVC Truss or Vitrified Clay Mains: $150.00 each

   County provides saddle, labor, and materials for tap.

2. Ductile Iron Mains: $150.00 each

   County provides saddle, labor, and material for tap

Sanitary Sewer Disconnection Permit $25.00 each

Inspections:

The above fees include all required inspections, except additional inspections required due to faulty materials, poor workmanship, etc. If the County Sewer Service Inspector is required to make more than two (2) inspections because of faulty material, poor workmanship etc., the third inspection and each inspection thereafter shall be charged at $100 per inspection.

2.0400 Commercial Development Drawing Requirements

All developers of commercial, apartment, or mobile home projects are required to submit a plan view drawing of the service line to be installed. The drawing is not required for residential developments. The drawing shall be submitted at the time of applying for the Sewer Impact Permit. The drawings shall contain the following information and comply with the standards below.

1. Location of connection to the main sewer shall be shown. (Distance from an existing manhole)
2. Location and alignment of the proposed service line shall be shown.
3. Size and material of the proposed service line shall be shown.
4. Show location of pipe material changes.
5. Depth of cover noted. Profiles are not required.
6. Drawings shall be on 24"x 36" sheets.
7. Drafting media shall be of reproducible quality.
8. Drawings shall be in reproducible black or blue-black ink.
9. The minimum text height shall be 0.1 inch and shall be legible
10. Sheets shall be properly numbered.

11. Location and direction of flow of all existing sewers shall be indicated on the Drawings.
12. Direction of flow for each proposed service line shall be shown.
13. North arrow shall be provided on each sheet.
14. All storm sewers, drainage ditches, creeks, and utilities shall be shown.
15. If the sewer line crosses a property line, that line must be shown.
16. Cleanout locations shall be shown.

Before commencing construction of a service line for commercial developments, the plumbing contractor must obtain a set of Drawings approved and stamped by the Environmental Services Department. The approved stamped set of drawings are part of the plumbing contractor's inspection process and should be available on site at the time of inspection.

2.0500 Revocation of Permits

The County may revoke a permit issued under the provisions of this Standard, in case there has been any false statement or misrepresentation as to a material fact in the application or plans which the permit was based. In all cases permit fees shall not be refunded. The County may revoke a permit or approval in the event that any part of the construction of the service line is in violation of, or not in conformity with, the provisions of this Standard.

2.0600 Work Commencing Before Permit Issuance

Any person who commences any work on a service line before obtaining the necessary Sewer Connection Permit shall be subject to an additional payment of $500.00 to cover the actual cost of inspection.

Section 3
Construction Specifications for Service Lines and Connections

3.0100 Excavation

3.0101 Trench excavation or excavation for service lines and connections shall consist of the excavation necessary for the construction of the service line and appurtenances. It shall include clearing and grubbing where necessary, backfilling and tamping of pipe trenches and around structures, and the disposal of waste materials. The plumbing contractor shall comply with all federal, state, and local safety rules and regulations including those of OSHA. The County will not inspect for compliance with safety regulations, and disclaims any responsibility to ensure the safety of workers.

3.0102 The bottom of the trench shall be level in cross-section and shall be cut to the depth necessary to place the bedding and/or install the pipe to grade.

3.0103 To assure a minimum number of fittings, bends, joints, and transitions, the plumbing contractor shall make every effort to first locate the existing tees and stubouts prior to commencing excavation for the remaining portion of the service line.

3.0104 Bell holes for bell-and-spigot pipe shall be excavated at proper intervals so that the barrel of the pipe rests its entire length upon the bedding material or trench bottom. Bell holes shall be large enough to permit proper installation of joints in the pipe. Bell holes shall not be excavated more than 5 joints ahead of pipe installation.

3.0105 When muck, quicksand, soft clay, swampy, or other material unsuitable for foundations or subgrade is encountered, which extends below the limits of the excavation, such material shall be removed and replaced with foundation backfill and inspected by the County Sewer Service Inspector. In determining what material is unsuitable for foundations or subgrade, the County Sewer Service Inspector may consult with the County Sewer Construction Inspector. The plumbing contractor may employ the services of an engineer registered in the State of Alabama who is qualified to make such determinations and recommendations for the construction of acceptable bedding for the service line installation. Said final determination shall be made on a case by case basis at the time of the inspection.

3.0106 Rock encountered in trench excavation, which will not allow the service line to be installed at the minimum 1% slope, shall be removed for the overall width of trench and to a depth 4-inches below the bottom of the barrel of the pipe. The space below the barrel and bell of ductile iron or C-900 PVC pipe shall be filled with No. 57 or No. 67 stone; Schedule 40 PVC pipe shall be bedded in No. 57, No. 67, or No. 610 stone.

3.0107 Trench widths shall be a minimum of 16 inches to assure a sufficient area for placement of the pipe bedding material.

3.0200 Pipe Bedding

3.0201 A 4-inch cushion of No. 57, No. 67, or No. 610 Stone shall be provided under all Schedule 40 solid wall PVC sanitary sewer service lines; a 4-inch cushion of No. 57 or 67 stone shall be provided under all C-900 PVC sewer service lines; a 4-inch cushion of No. 57 or 67 stone shall be provided under ductile iron service lines when rock is encountered in the trench excavation. Pipe bedding material shall meet the requirements of Section 4 of these Standards. Pipe bedding shall be placed below the barrel of the pipe, across the full width of the trench.

3.0300 Pipe Installation

3.0301 Before commencing construction of a service line for a commercial development, the plumbing contractor must obtain a set of Drawings approved and stamped by the Jefferson County Environmental Services Department. A copy of the approved drawings must be on site during construction of the service line.

3.0302 The service line from the building to the main sewer shall be a minimum of four (4) inches nominal inside diameter. The service line shall be constructed in as straight a line as practical. Unnecessary bends or changes in direction will not be allowed.

3.0303 The service line shall be installed on a continuous positive grade at a minimum slope of 1%. The slope of the connecting riser may be greater if installed in accordance with Section 3.0800. The line shall not contain pockets or low places in the grade. At no time shall straight stacking of the sewer service line be allowed.

3.0304 Any 90^{o} horizontal turns required shall be as shown on Detail No. 4145.

3.0305 To assure a minimum number of fittings, bends, joints, and transitions, the plumbing contractor shall make every effort to commence construction at the existing main sewer and proceed up-grade towards the building to be connected. All bell and spigot pipe shall be installed with the bells upstream. Trench bottoms found to be unsuitable for foundations shall be undercut and brought back to grade with foundation backfill.

3.0306 Each piece of pipe and fitting shall be carefully inspected. No defective pipe shall be installed.

3.0307 PVC pipe shall be stored according to the pipe manufacturer's recommendations.

3.0308 Each joint of pipe shall be installed in such a manner that the County Sewer Service Inspector may easily read the ASTM stamping on the pipe.

3.0309 Each joint shall be installed so it will form a close concentric joint with adjoining pipe and so as to avoid sudden offsets or inequalities in the flow line.

3.0310 Water shall not be above the pipe bedding while pipe installation is in progress or before the trench has been backfilled. The plumbing contractor shall not open at one time more trench than his available pumping facilities are able to dewater. Movement of water that would tend to erode or affect the trench walls will not be allowed. Under no circumstances shall ditch water be allowed to drain into the existing main sewer.

3.0311 As the work progresses, the interior of all pipes in place shall be thoroughly cleaned. After each piece of pipe has been installed, it shall be carefully inspected and all earth, trash, rags, and other foreign matter removed from the interior.

3.0312 The sewer service line may be placed in the same trench as the water service line provided the following are met:

1. The bottom of the water service pipe, at all points, shall be at least 12 inches above the top of the sewer service line.
2. The water service shall be placed on a solid shelf excavated at one side of the common trench.
3. The water service installation must be permitted, inspected and approved by the Plumbing Inspector prior to any backfill operations.

3.0313 A cleanout shall be installed within thirty (30") inches of the building and at least once on each continuous run of 75 feet and at each change in horizontal or vertical direction greater than 45^{o}. Cleanouts within thirty (30") inches of the building may be constructed of Schedule 40 PVC in accordance with Standard Detail 4100. Cleanouts shall be constructed in accordance with Standard Details No. 4091, 4093, or 4100. No rubber cleanout plugs will be allowed.

3.0314 A Test Tee is required at the location indicated on the applicable Standard Detail.

3.0400 Joint Construction

3.0401 All pipe joints shall be wiped inside and out to remove all dirt, water, or other foreign matter so that their surfaces are clean and dry when the pipes are joined.

3.0402 Joints shall be installed according to all applicable manufacturer's specifications and recommendations.

3.0403 Any leaks or defects discovered after completion of work shall be repaired by cutting out the section and rejoining in a manner in compliance with these Standards. All pipes in place shall be carefully protected from damage until the backfilling operations have been completed. Any pipe which has been disturbed after jointing shall be removed, the joint cleaned and remade, and the pipe re-installed.

3.0404 Solvent cemented joints for Schedule 40 PVC pipe for gravity flow applications and force mains shall be made in accordance with ASTM D2855. The joint shall be cleaned and primed with purple primer cleaner and then solvent cemented using PVC cement. **Clear solvent cement and cleaner will not be allowed.**

3.0405 Listed below is the general procedure for assembling solvent cemented joints for Schedule 40 PVC solid wall pipe as per manufacturer's specifications.

1. Cut pipe square using miter saw, mechanical cut-off saw or plastic pipe wheel cutting tool.
2. Remove all burrs from end of pipe, both inside and outside, with knife, file or deburring tool. Chamfer (bevel) the end of the pipe 10 to 15 degrees.

3. Clean and dry the pipe and fitting of all dirt, moisture, and grease with a clean dry cloth.

4. Check dry fit of pipe and fitting by inserting pipe into fitting. With light pressure, pipe should go one half to one third of the way into the fitting hub without applying pressure.

5. Apply purple primer cleaner to PVC pipe and fitting surfaces using an applicator that is one half the pipe diameter. Apply a full even layer of cement to the outside diameter of the pipe first and then follow with the application of cement to the fitting socket. Apply a second full, even layer of cement to the outside diameter of the pipe again. Avoid puddling and excess cement in system.

6. Assemble parts quickly. Parts must be assembled while cement is still fluid. If assembly is interrupted, recoat parts and assemble. Push pipe fully into fitting hub until it contacts socket bottom. Give pipe a 1/4 turn. Hold pipe and fitting together until the pipe does not back out. Wipe off excess cement from junction of pipe and fitting with a clean rag.

7. The joint shall not be disturbed until it has initially set. The joint shall not be pressure tested until it has cured per manufacturer standards. The exact initial set times and curing times vary with temperature, humidity, and pipe size. See the charts below for minimum initial set times and curing times.

Minimum Initial Set Times		
Temperature Range in degrees Fahrenheit	Pipe Sizes 1½" to 3"	Pipe Sizes 4" to 8"
60 to 100	30 min	1 hour
40 to 60	2 hours	4 hours
0 to 40	6 hours	12 hours

Minimum Curing Time Before Pressure Testing				
Relative Humidity 60% or less*	Cure Time Pipe Sizes 1½" to 3"		Cure Time Pipe Sizes 4" to 8"	
Temperature Range in degrees Fahrenheit	Up to 180 psi	Above 180 to 315 psi	Up to 180 psi	Above 180 to 315 psi
60 to 100	2 hours	12 hours	6 hours	24 hours
40 to 60	4 hours	24 hours	12 hours	48 hours
0 to 40	16 hours	96 hours	48 hours	8 days

* For relative humidity above 60%, allow 50% more cure time.

3.0406 Plumbing contractors are referred to Section 4.00 "Material Specifications for Service Lines and Connections" for additional specifications regarding joints for specific types of pipe.

3.0500 Backfilling Trenches

3.0501 All service lines shall be visible for inspection. No backfilling of the service line trench shall be started until the service line has been inspected, tested, and approved by the County Sewer Service Inspector in accordance with Section 5. Upon said approval, the service line trench shall be immediately backfilled. No. 57, 67, or 610 stone shall be placed to 6 inches above all Schedule 40 PVC service lines and No. 57 or 67 stone 6 inches above all C-900 PVC service lines. Select backfill shall be placed to 6 inches above all ductile iron service lines and shall not contain any rocks, stones, or boulders, which might damage the pipe. The remainder of the trench backfill may be job excavated material. Care shall be taken to ensure that material under haunches of pipe is consistently placed, leaving no voids.

3.0502 All backfilling shall be done in such a manner as will not disturb or injure the pipe. Any pipe injured, damaged, or moved from its proper line or grade during backfilling operations shall be replaced or repaired, reinspected and then rebackfilled as herein specified.

3.0503 Backfill materials shall meet the requirements of Section 4.00 and shall be of the type indicated on Standard Drawings No. 4085 or 4090.

3.0504 Where pipe trenches are cut across or along paved streets, roadways, or alleys the plumbing contractor shall obtain approval and conform to the requirements of the local government entity responsible.

3.0600 Sewer Connections

3.0601 **No person, firm, corporation, or government entity shall connect to the Jefferson County sewer system unless said connection is made to an approved saddle, stub out, or tee provided for that purpose**. No additional tap will be allowed if there is an existing stubout or connection for a particular property, unless the existing stubout or connection is plugged in accordance with Standard Detail No.4135. **No taps or other openings shall be made in the Jefferson County sanitary sewer system other than machine-made taps made by the Jefferson County Environmental Services Department or by a contractor approved by the County in writing.** The actual tapping and connection to the existing County maintained sewer system shall be performed by the County unless written approval is obtained to use a contractor approved by the County. If connection to a sewer line 24 inches in diameter or larger is requested, approval shall be obtained from the Director in writing. Excavations for the sewer tap shall be made by the plumbing contractor and shall be sufficiently large to give ample working room for the tapping crew. The plumbing contractor is solely responsible for safety and conformance with any applicable safety regulations. The excavation shall be made completely around the circumference of the main sewer. If the County's tapping crew or County Sewer Service Inspector feels the excavation is unsafe, the plumbing contractor shall take the necessary measures to improve the trench conditions to the satisfaction of the County Sewer Service Inspector. The connection shall be left visible for inspection. No backfilling of the connection shall be started until the connection has been inspected and approved by the County Sewer Service Inspector. After approval of the

sewer connection, the excavation around the connection and around the main sewer shall be backfilled with No. 57 or 67 Stone to one (1) foot above the main sewer.

3.0602 Ductile Iron Pipe

1. Existing Ductile Iron Pipe

Connections to existing ductile iron sewer lines shall be made with a County approved sewer saddle per Paragraph 1.0324 to be installed by the County. The Plumbing contractor will then connect to the saddle with the required service line and a concrete collar poured around the connection. See Standard Detail No. 4050. The County will provide the saddle for all mains.

2. New Ductile Iron Pipe

Connections to ductile iron mains, which are under construction, shall be performed by installing a standard manufactured push-on joint tee. A ductile iron service line shall then be installed to the right-of-way or easement line.

3.0603 C-900 PVC

1. Existing C-900 PVC

Connections to existing C-900 PVC sewer mains shall be made with a County approved sewer saddle per Paragraph 1.0324 to be installed by the County. The plumbing contractor will then connect to the saddle with the required service line and a concrete collar poured around the connection. See Standard Detail No. 4050. The County will provide the saddle for all mains.

2. New C-900 PVC

Connections to C-900 PVC mains, which are under construction, shall be performed by installing a standard manufactured push-on joint tee. A ductile iron service line shall then be installed from the tee to the right-of-way or easement line.

3.0604 Existing PVC Truss Pipe

Connections to existing PVC Truss sewer mains shall be made with a County approved sewer saddle per Paragraph 1.0324 to be installed by the County. The plumbing contractor will then connect to the saddle with the required service line and a concrete collar poured around the connection. See Standard Detail No. 4050. The County will provide the saddle for all mains.

3.0605 Existing Vitrified Clay

Connections to existing vitrified clay sewer mains shall be made with a County approved sewer saddle per Paragraph 1.0324 to be installed by the County. The plumbing contractor will then connect to the saddle with the required service line and a concrete collar poured around the connection. See Standard Detail No. 4050. The County will provide the saddle for all mains.

3.0606 Existing Concrete Pipe

Connections to existing concrete sewer mains shall be made with a County approved sewer saddle per Paragraph 1.0324 to be installed by the County. The plumbing contractor will then connect to the saddle with the required service line and a concrete collar poured around the connection. See Standard Detail No. 4050. The County will provide the saddle for all mains.

3.0700 Manhole Connections

3.0701 Connection of a service line to a manhole is discouraged and written approval from the Director is required to connect. If approval is granted, the following procedures shall be followed:

1. The sewer service line invert shall match the top of the main entering the manhole, but no more than two (2) feet above the manhole invert. Where the diameter of the main entering the manhole is 30 inches, a connection to the manhole will not be allowed. See Standard Detail No. 4080.
2. The existing manhole shall be cored by a contractor approved by the County.
3. Connections to manholes shall not damage the manhole o-ring. If the core into the manhole is just below a manhole joint, the top of the core shall be, at a minimum 6 inches, below the outside joint.
4. The first ten (10) feet from the manhole connection back to the building shall be Class 52 ductile iron pipe.
5. A rubber boot shall be used at the connection (Kor-N-Seal Boot, or approved equal).
6. Non-shrinking grout shall be applied both inside and outside the manhole connection. (Bonsal or Water Plug)
7. An invert shall be formed inside the manhole if one does not exist. If a manhole invert exists, the service line must be brought into the manhole above the invert. See Detail No. 4080

3.0800 Connecting Risers

3.0801 A connecting riser may be allowed when necessary and shall be installed in accordance with Standard Detail No. 4075.

3.0802 Risers shall be installed from the connection at the main to the point of meeting the horizontal run coming from the building. Risers shall not be constructed on an angle exceeding 60 degrees as measured from the horizontal.

3.0803 Where connecting risers are attached to a tee, using pipe of dissimilar material, an approved coupling is required. A Class B concrete collar shall be required as shown on Standard Detail No. 4120.

3.0900 Creek Crossings and Above Ground Sewers

3.0901 Sewer service lines crossing streams or creeks shall be installed below the bottom of all ditches and creeks where possible, and shall be ductile iron pipe Pressure Class 350 and extend ten feet on both sides of the ditch or creek. See Standard Detail No. 4125. The service line shall be encased in concrete on all creek or ditch crossings. If the sewer service line must extend above the ground, prior approval from the County is required. All aerial sewers shall be ductile iron Pressure Class 350 and shall be restrained joint. If any support should become necessary, it shall be provided by forming and pouring concrete piers according to Standard Detail 4115.

3.0902 If an above ground service line is required across a drainage ditch, the plumbing contractor shall obtain written approval for the crossing from the appropriate governmental agency having jurisdiction of the ditch.

3.1000 Sewer Service Line Disconnects

Every sewer service line connection shall be considered permanent. Before a building is demolished, the Environmental Services Department requires the sewer service line be disconnected before any work commences. If a building is being torn down, relocated, or other reason, that would require the service line to be disconnected from the internal plumbing, the service line shall be disconnected as close to the main sewer as possible. The County prefers the disconnection to occur at the main sewer in accordance with Standard Detail No. 4135. However, in some cases this is not feasible. If the main sewer is located under a roadway or sidewalk, the disconnection may occur outside the road or sidewalk provided that no defects are left in the remaining portion of the service line. In such cases, the location of the disconnection will be determined by the Sewer Service Inspector on a case by case basis. A permit to disconnect and plug the sewer must be obtained and an inspection made at the time of discontinuance. The fee shall be as indicated in Section 2.0306.

3.1100 Private Sewer Service Pumps and Force Mains for Single Buildings or Residences

If a building's plumbing is unable to flow into a main sewer by gravity, an individual pumping system may be installed to lift the wastewater to the point where it can flow by gravity. **Connections of additional buildings or residences to the pump station or force main are prohibited.**

Private Sewer Service Pump Stations (outside of building footprint)

1. Use of an existing or new septic tank as a wet well is prohibited.
2. Holding tank or wet well shall be made of prefabricated fiberglass or plastic and shall be vented.
3. Holding tank shall be sealed with resilient gaskets so no subsurface or surface water can leak into the tank.
4. The County recommends, but does not require, a minimum 20 gallons per minute (gpm) grinder pump with a 2 HP motor for a single family dwelling.

5. An alarm system is required that will alert the owner if the level in the wet well rises above normal operating levels. The tank shall be large enough to allow storage of some wastewater during short power outages**. An alternate power source is recommended for all private sewer service pump stations and may be required in certain installations as determined by the Sewer Permitting and Inspections Office.**

Force Main

1. Private force mains must comply with the same excavation and backfilling requirements as defined in Section 3.
2. The force main shall be a minimum 2 inches in diameter.
3. The force main shall be made of C-900 PVC, Schedule 40 PVC, or ductile iron.
4. Joint construction shall conform to the requirements in Section 3.0400.
5. Pressure fittings and couplings must be used.
6. A gate valve, check valve and union must be installed on the force main, downstream of the pump, to facilitate pump replacement.
7. Prior to being approved and in conjunction with the inspection, the system must be fully operational and be observed in operation by the County Sewer Service Inspector.

3.1200 Grease Traps

All grease traps shall be designed and installed in accordance with the Grease Control Program Ordinance, adopted October 3, 2006 by the Jefferson County Commission. Please contact the Grease Control Coordinator at (205) 238-3878.

3.1300 Oil Separators/Removal Devices

Guidelines for design and approval of the installation of an oil separator/removal device shall be obtained from the Pretreatment Division of Barton Lab. Please contact the Industrial Pretreatment Control Officer at (205) 942-7404.

3.1400 Septic Tank Conversion

3.1401 When converting from a septic tank to the Jefferson County sewer system, the Owner and plumbing contractor shall be responsible for having the old septic tank pumped and filled according to the Jefferson County Board of Health On-Site Sewage Disposal Regulations. The Jefferson County Sewer Use Ordinance prohibits pumping the septic tank contents into the service line.

3.1402 The sewer service line and tap shall be installed prior to disconnecting a building from the septic tank.

3.1403 A Sewer Impact Permit and Sewer Connection Permit are required prior to connecting a building or home that is presently on a septic tank to the County sewer system. The plumbing contractor shall make arrangements for the building or home to be open at the

time of the sewer connection inspection to allow the County Sewer Service Inspector to count the number of fixtures listed on the Sewer Impact Permit.

3.1500 Mobile Home Service Line Plugging and "P" Trap

3.1501 All sewer service lines for mobile homes shall have a permanent removable plug on the service line at the mobile home pad. The plug shall be connected to the service line by a chain. In addition, a "P" Trap is required at the mobile home pad in accordance with Standard Detail No. 4105.

3.1600 Garbage Dumpster Drains and Garbage Can Washing Pads

3.1601 All dumpster and can washing areas which have hot and/or cold water outlets as required by the County Health Official will be required to have a drain in order to contain "run off" of contaminated water. Such drains will require that the dumpster, or can wash enclosure be both curbed and covered to prevent infiltration of rain, surface, or any other residual water. This drain shall further have a point of grease interception which may be a small unit within the pad, or where feasible, it may be routed through the main grease trap as administered by the Grease Control Program. Refer to section 3.1200.

3.1700 Pavement Replacement

3.1701 In replacing pavements and unpaved surfaces, the materials used and the construction methods shall comply with the applicable requirements of the standard specifications of the governing body having jurisdiction over the road or street.

3.1800 Work Within the Right-of-Way of Highways, Railways, or Streets

3.1801 In the event the sewer service line crosses, runs parallel to, or alongside any highway, county road, city street, or railroad rights-of-way, the contractor shall obtain a utility excavation permit from the governing body having jurisdiction.

Section 4

Material Specifications for Service Lines and Connections

4.1000
Pipe Materials

4.1100 General

4.1101 Gravity sanitary sewer service lines shall be constructed of ductile iron, C-900 PVC, or Schedule 40 PVC pipe, except as specified below. Force main sewer service lines shall be constructed of ductile iron, C-900 PVC, or Schedule 40 PVC pipe.

4.1102 Under the following conditions ductile iron sewer pipe shall be used and C-900 or Schedule 40 PVC not allowed:

1. In areas which have been filled and the proposed service line will be within the fill.
2. If the service line is placed in a shallow trench that is less than 18" in natural ground.
3. When the depth of the service line is greater than fourteen (14) feet.
4. When making a connection to a manhole.
5. When crossing over or under any storm drains, water mains, or gas mains.
6. When the sewer service line has less than eighteen (18) inches of permanent cover as measured from the top of pipe to the permanent cover. Bedding and backfill operations shall fully comply with the provisions of sections 3.0100 and 3.0200.
7. Within parking lots, streets, roadways, alleys, or driveways, etc. where the final permanent cover is less than thirty-six (36) inches as measured from the top of pipe to the permanent cover. Bedding and backfill operations shall fully comply with the provisions of sections 3.0100 and 3.0200.
8. When crossing any creek, stream, ditch, or any other natural or man made terrain feature, which carries or may carry storm water.
9. When spanning a discontinued septic tank.
10. Ductile iron may be required if deemed necessary by the County Sewer Service Inspector due to field conditions.
11. When the service line goes through casing pipe.

4.1200 C-900 PVC

4.1201 C-900 PVC pipe, for gravity and pressure sewer service lines shall be manufactured and tested in accordance with AWWA C-900 latest edition. Pipe dimensions for each nominal size shall be with Cast Iron equivalent (CI) outside dimension. The minimum thickness will be Dimension Ratio (DR) – 18 and Pressure Class – 150 psi.

4.1202 C-900 PVC pipe shall be solid wall with a minimum pipe stiffness of 264 psi when tested in accordance with ASTM D2412, Standard Test Method.

4.1203 All thermoplastic material shall be rigid poly vinyl chloride (PVC) plastic and meet or exceed the requirements of ASTM D1784, for a minimum cell classification of 12454-B.

4.1204 Each joint of pipe shall be marked on the barrel according to AWWA C-900 Marking Requirements.

A. Nominal size and outside diameter base

B. PVC

C. Dimension ration (18)

D. AWWA pressure class (PC 150)

E. AWWA (900) designation number

4.1205 C-900 PVC pipe shall be joined with integral bell push-on type gasketed joints. Each bell shall have an elastomeric gasket securely locked in place to prevent displacement during assembly.

4.1206 A list of approved manufacturer's of C-900 PVC pipe may be obtained from the Sewer Permitting and Inspections Office.

4.1207 Fittings for use with C-900 PVC pipe shall be one of the following types:

A. Injection molded Class 150 PVC fittings (AWWA C907) manufactured with gasketed joints and designed for use with pressure Class 150 AWWA C-900 pipes with cast iron outside diameter (CIOD).

1. Burst pressure test 755 psi minimum per ASTM D1599
2. Dimensional – The minimum wall thickness of the molded fitting body must be at least 125 percent of the wall thickness of Pressure Class 150 C-900 pipe of the same size. The wall thickness at any point in the bell must be equivalent to the same thickness determined by Dimension Ratio 18.
3. Fusion Test – Selected fittings must pass the acetone immersion test
4. Injection Molding Quality Test - Heat reversion test, ASTM F610 is performed at intervals to insure the PVC compound has properly fussed.
5. Gasket and injection molded PVC fittings shall be tested for stiffness, joint, performance and dimensional accuracy.
6. Test fittings for impact per ASTM F1336

7. Bells shall be gasketed joints per ASTM D3139
8. Gaskets shall conform to ASTM F477

B. Ductile iron fittings mechanical joint type, per AWWA C110.

C. Ductile iron compact fittings per AWWA C153.

4.1208 A list of approved manufacturer's of fittings to be used with C-900 PVC may be obtained from the Sewer Permitting and Inspections Department.

4.1300 Ductile Iron Pipe and Fittings

4.1301 Ductile iron pipe shall be centrifugally cast and manufactured and tested in accordance with ANSI/AWWA C151/A21.51. Minimum thickness classification shall be Pressure Class 350. Each pipe shall be hydrostatically tested before shipment to a minimum pressure of 500 pounds per square inch.

4.1302 All ductile iron pipes shall have a cement-mortar lining of standard thickness conforming to the requirements of ANSI/AWWA C104/A21.4 and a standard bituminous outer coating. Ductile iron fittings are required to have either a cement-mortar lining or an epoxy lining.

4.1303 Joints for ductile iron pipe shall be push-on type such as Fastite, Tyton, or Super Bell-Tite or approved equal. Joints shall be manufactured in accordance with ANSI/AWWA C111/A21.11.

4.1304 Ductile iron fittings shall be push-on type such as Fastite, Tyton, or Super Bell-Tite or approved equal. Ductile iron push-on fittings shall be manufactured and tested in accordance with ANSI/AWWA C153/A21.53. Where fittings are noted to be mechanical joint, they shall meet AWWA C110. Ductile iron fittings shall be designed for the same working pressure, laying conditions and cover as the pipe which is used. Joints shall be standard push-on joints and shall conform to ANSI/AWWA C111/A21.11.

4.1305 The joining of push-on joint ductile iron pipe shall be performed in accordance with ANSI/AWWA C600 Installation of Ductile Iron Water Mains and their Appurtenances.

Instructions for assembly of push-on joints may vary according to manufacturer. The procedure for joining pipe equipped with push-on joints must therefore be in accordance with instructions of the manufacturer of the joint furnished.

4.1306 For push-on ductile iron pipe the inside of the bell and the outside of the spigot end shall be thoroughly cleaned to remove oil, grit, excess coating, and other foreign matter. The circular rubber gasket shall be flexed inward and inserted in the gasket recess of the

socket. A thin coating of gasket lubricant shall be applied to either the inside surface of the gasket or outside surface of the spigot, or both. Gasket lubricant shall be as supplied by the particular manufacturer.

4.1307 A list of approved manufacturer's of ductile iron pipe and fittings may be obtained from the Sewer Permitting and Inspections Department.

4.1400 Schedule 40 Polyvinyl Chloride (PVC) Pipe and Fittings

4.1401 All Schedule 40 polyvinyl chloride (PVC) pipe and fittings, for gravity and pressure sewer service lines shall be manufactured from rigid PVC vinyl compounds with a minimum cell classification of 12454 as identified in ASTM D 1784.

4.1402 PVC Schedule 40 pipe shall be Iron Pipe Size (IPS) conforming to ASTM D 1785 and ASTM D 2665. PVC DWV fittings shall conform to ASTM D 2665.

4.1403 Pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. Pipe and fittings shall be manufactured as a system and be the product of one manufacturer.

4.1404 Solvent cement shall conform to ASTM D 2564; Primer shall conform to ASTM F 656.

4.1405 PVC pipe shall be stored according to the pipe manufacturer's recommendations. If defects are observed by the County Sewer Service Inspector, the defective pipe will be rejected and removed and shall be replaced with acceptable pipe.

4.1406 Manufacturers of Schedule 40 PVC pipe are required to submit a Technical Specification which confirms that their manufacturing process meets requirements as set forth by the American Society for Testing and Materials standards organization. Submittals should be forwarded to the Sewer Permitting and Inspections Office located at 716 Richard Arrington, Jr. Blvd. N, Suite A-300, Birmingham, AL 35203.

4.1407 A list of approved manufacturers of PVC Schedule 40 pipe and fittings may be obtained from the Sewer Permitting and Inspections Office.

4.1408 At no time will cell or foam core Schedule 40 PVC be authorized for use on sanitary sewer service lines.

4.2000

Pipe Bedding, Backfill and Foundation Backfill

4.2100 General

4.2101 Aggregates used for pipe bedding and backfill shall be either crushed limestone or crushed dolomite. The use of slag will not be allowed.

4.2102 Where reference is made to ASTM D448 No. 57 stone, No. 67 stone is acceptable. No other screening sizes are acceptable for ductile iron or C-900 PVC service lines. In no case is "crusher run" (unscreened gradations that include fine material) acceptable.

4.2103 No. 57, No. 67, or No. 610 stone is acceptable for Schedule 40 PVC service lines.

4.2200 Pipe Bedding

4.2201 Pipe bedding for C-900 PVC service lines and as required for ductile iron service lines, shall be a minimum of 4 inches crushed stone aggregate meeting the requirements of ASTM D448 No. 57 or 67. Pipe bedding for Schedule 40 PVC service lines shall be a minimum of 4 inches crushed stone aggregate No. 57, 67, or 610.

4.2202 Where concrete bedding is required by the County Sewer Service Inspector, the concrete shall be Class B conforming to the requirements of Section 4.4000.

4.2300 Backfill

4.2301 Backfilling of sanitary sewer service lines shall be accomplished using the specific backfill material specified in these Standards or in the Standard Details.

4.2302 Crushed stone aggregates used for backfilling ductile iron and C-900 service lines shall meet the minimum requirements for gradation as set forth by ASTM D448, No. 67 Stone. The County will allow No. 57 stone as a substitute for No. 67. The County will also allow No. 610 stone for Schedule 40 PVC service lines.

4.2303 Earth backfill shall consist of suitable native materials of low organic content. Stumps, roots, topsoil and other highly organic materials are not acceptable for use as backfill. Earth backfill shall not contain any rocks, stones or boulders that might be large enough to damage or endanger the service line. The decision regarding the suitability of a particular material for use as earth backfill will be at the sole discretion of the County Sewer Service Inspector.

4.2400 Foundation Backfill

4.2401 Foundation backfill is a term used to describe a coarse stone aggregate which shall be used to stabilize the bottom of the pipe trench prior to placement of pipe bedding material. Foundation backfill shall be a coarse gradation of either crushed limestone or crushed dolomite. The gradation of the stone to be used as foundation backfill shall be determined on a case by case basis as described in Section 3.0105.

4.3000

Non-Shrinking Grout Cement

4.3100 General

Non-shrinking grout cement shall be Bonsal Instant Hydraulic Cement, Thoro Waterplug, or any additional products as approved by Jefferson County Product Review Committee. No other products will be allowed. Please see the Sewer Permitting Office for a list of all approved manufacturers.

4.4000

Cast-in-Place Concrete

4.4100 General

4.4101 In general, Class A concrete shall be formed, reinforced concrete having a 28 day minimum compressive strength of 4,000 pounds per square inch. In general, Class B concrete shall be non-formed, non-reinforced concrete having a 28 day minimum compressive strength of 3,000 pounds per square inch.

4.4200 Concrete Components

4.4201 Concrete components shall conform to the minimum requirements of this Section.

4.4202 Aggregates shall be crushed limestone conforming to the requirements of ASTM C33, except as further specified herein. Crushed limestone for coarse aggregate shall consist of uncoated particles of sound, durable rock of uniform quality, without an excess of flat, elongated or laminated pieces. No surface, yellow or soft stone shall be permitted.

4.4203 Water used in concrete shall be potable water.

4.4204 Sand used in concrete shall be natural sand consisting of clean, hard, durable, uncoated grains.

4.4205 Cement used in concrete shall be "Portland Cement" conforming to the requirements of ASTM C150. Type I cement shall be used for thrust blocks and concrete encasement. Type V cement shall be used for manhole inverts or in locations where the concrete will come in contact with the wastewater.

4.4300 Reinforcing Material for Cast in Place Concrete

4.4301 Reinforcing bars shall conform to the requirements of ASTM A615. Reinforcing bars shall be grade 60 deformed bars.

4.5000

Improved Surface Replacement

4.5001 In replacing pavements and unpaved surfaces, the materials used and the construction methods employed by the plumbing contractor shall comply with the applicable requirements of the governing body having jurisdiction.

4.6000

Sanitary Sewer Service Line Rehabilitation

4.6001 Pipe lining is allowed in sanitary sewer service line applications in circumstances when open trenching is not feasible. Lining shall be utilized only in the rehabilitation of existing 4" and 6" sanitary sewer service lines. The current approved methods are Insituform "Inside-Out", NuFlow Lateral CIPP, and T-Liner Lateral Lining. Applicants must provide a video record of proposed repairs prior to repair permit issuance. Upon completion, lining work shall be approved by the Sewer Service Inspector upon satisfactory review of a camera inspection. The camera equipment must be provided by the plumbing contractor at the appointed inspection time. Usage of the pipe lining process in an unnecessary situation is strictly prohibited.

4.6002 Pipe bursting is allowed in sanitary sewer service line rehabilitation applications where neither open trenching, nor lining is feasible. Pipe bursting rehabilitation applications shall be approved by the Sewer Service Inspector using testing and inspection procedures as outlined in 5.0200. Utilization of pipe bursting must be approved by Jefferson County on a case by case basis.

Section 5

Inspection and Testing

5.0100 Inspection Procedures and Minimum Inspection Requirements

5.0101 The intent and desire of the County is that all sewer service lines that connect to the County sanitary sewer system be constructed in such a manner and under such supervision and inspection that the County may be assured that acceptable materials are used and appropriate construction standards observed that will result in the installation of a service line that minimizes the amount of infiltration and inflow. All sewer service lines, connections, repairs to existing lines, and disconnections will be inspected and approved by a County Sewer Service Inspector to insure compliance with all the requirements of this Standard. A representative from the company that obtained the Sewer Connection Permit shall be on site at the time of the inspection and hold, at a minimum, a Journeyman Plumbers card.

5.0102 The plumbing contractor shall give twenty-four (24) hours notice prior to needing an inspection. The current telephone number for sewer service lines and connection inspections is (205) 325-5801 or (205) 325-5138. The County will use its best efforts to notify the plumbing contractor when the Sewer Service Inspector is going to be late arriving on the job site. If an emergency situation occurs, the plumbing contractor shall call (205) 942-0681 to notify the County an inspection is needed.

5.0103 The following is a list of the minimum inspection requirements.

1. The plumbing contractor shall install the pipe bedding and service line in accordance with these Standards. All service lines, connections, repairs, and disconnections shall be visible for inspection. **No backfill shall be placed until the bedding and pipe placement has been approved by the County Sewer Service Inspector**. If any part of the service line has been covered without an inspection, the plumbing contractor shall uncover the pipe for inspection.
2. No concrete collars shall be poured around a connection until the joint or connection has been approved by the County Sewer Service Inspector.
3. Inspection shall be made of the pipe material, joints, alignment and grade, pipe bedding and other items to assure full compliance with these Standards.
4. Inspection shall be made of the complete pipe backfill until one (1) foot of material is placed over the pipe.
5. All testing required in this section shall be witnessed by the County Sewer Service Inspector.

5.0104 If the Sewer Service Inspector finds the work will not pass the required test or inspection due to faulty materials or workmanship, the plumbing contractor shall be required to make the necessary corrections and the work shall be re-inspected and retested. Where more than two (2) inspections are required due to faulty materials or poor workmanship, there

shall be an additional fee as provided for in Section 2.0306. Upon inspection and approval of the sewer service line, the plumbing contractor shall immediately backfill the trench.

5.0200 Testing

5.0201 Gravity Service Lines - For the purpose of testing a gravity sewer service line, it will be required that the sewer service line have a cleanout at the building and a test tee at the main sewer connection. Testing of the sewer service line shall consist of the following:

1.) The sewer service line shall be plugged at the test tee and filled with water at the cleanout at the building with a minimum of 10 feet of head. The water shall be kept in the system for at least fifteen (15) minutes before the inspection starts; the system shall then be inspected for leaks. Should the pipe and/or joints leak, the pipe shall be taken apart, cleaned, reinstalled, and retested.

2.) A wooden sewer ball, not smaller than ½" less in diameter than the inside diameter of the sewer line under test, shall be run from the building cleanout through to the test tee. The test ball shall roll through the service line without the necessity of rodding or assistance of any kind, other than the flushing of five (5) gallons of water. Should the test ball hang or become stopped for any reason, the portion of sewer in which the stoppage occurred shall be removed and replaced and the sewer re-tested.

3.) The slope of the sewer service line shall be tested by the use of a level. The minimum slope allowed is 1%.

5.0202 Pump Station and Force Mains - For the purpose of testing a pump station and force main, it will be required that the sewer service line have a test tee at the main sewer connection. Testing of the pump station and force main shall be hydrostatic and shall consist of the following:

1.) The pump shall be disconnected and the wet well shall be filled above the high alarm level to test required alarms.

2.) The pump shall be reconnected, started, and cycled at the standard working capacity until the force main is deemed full. The water shall be kept in the system for at least twenty (20) minutes during the inspection process so that the system can be inspected for leaks. Should the pipe and/or joints leak, the pipe shall be taken apart, cleaned, reinstalled, and retested.

No sewer shall be accepted until it has successfully passed the above described tests. Upon completion and acceptance of the sewer service line by the County Sewer Service Inspector, the pipe shall be properly covered and the ditch backfilled immediately. At no time will the trench be allowed to remain uncovered after acceptance by the County Sewer Service Inspector.

All tests and the backfilling of the trench must be carried out in the presence of the County Sewer Service Inspector.

5.0300 Removal of Unacceptable and Unauthorized Work

5.0301 All work which does not conform to the requirements of these Standards will be considered unacceptable.

5.0302 Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner.

5.400 Stop Work Orders

Upon notice from the County Sewer Service Inspector, work on any service line or connection that is being done contrary to the provisions of this Standard shall immediately cease. Such notice shall be in writing and shall be given to the Owner of the property, or to his agent, or to the person doing the work, and shall state the conditions under which work may be resumed. Where an emergency exists, the Sewer Service Inspector shall not be required to give written notice prior to stopping work.

APPENDIX