

RULES AND REGULATIONS
AND
CONSTRUCTION SPECIFICATIONS AND STANDARDS
OF THE
GREENSVILLE COUNTY WATER AND SEWER AUTHORITY
GREENSVILLE COUNTY, VIRGINIA

PART I
RULES AND REGULATIONS

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PART I
RULES AND REGULATIONS

SECTION 1 GENERAL CONDITIONS.

1.1 INTRODUCTION.

The purpose of this publication is to establish and furnish information on the rules, regulations, and construction requirements which have been adopted by the Greenville County Water and Sewer Authority of Greenville County, Virginia in accordance with Section 15.1-1239 to Section 15.1-1270, inclusive, of the Code of Virginia of 1950 and which are applicable to the public water and sanitary sewerage facilities now existing or which may in the future be under the jurisdiction of the Greenville County Water and Sewer Authority. This publication establishes the rates, rules, and regulations which govern the use of the public water and sanitary sewerage facilities and provides the standards and specifications to which all planning, construction, and connection of these utilities shall conform when such utilities are proposed for use of residential, business, commercial, or industrial purposes within the Jurisdictional Area of the Greenville County Water and Sewer Authority.

Inquiry for information or clarification of any item herein pertinent to other matters concerning these facilities shall be directed to the Director, Greenville County Water and Sewer Authority, 1781 Greenville County Circle, Emporia, Virginia 23847.

1.2 VALIDITY.

If any sections, subsections, sentence, clause, or phrase of these Rules and Regulations is for any reason held to be invalid, such decision shall not affect the validity of any other part of the Rules and Regulations which can be given effect without such invalid part or parts.

No statement or obligation contained in this publication shall be construed to interfere with any additional requirements which may be imposed by County Ordinances, Commonwealth of Virginia, Virginia Department of Environment Quality, or the State Health Department. The Authority may revise these Rules and Regulations as may be required by majority vote of the Authority members.

In the event of any variance between the rules, regulations, and specifications in this publication and applicable rules, regulations, and specifications of the State Department of Environmental Quality or the State Health Department, it shall be understood that any such rules, regulations, and specifications of said State agencies shall prevail unless more rigid requirements are dictated by these regulations

1.3 DEFINITIONS.

Unless the context specifically indicates otherwise the meaning of terms used herein shall be as follows:

- A. “Shall” is mandatory; “may” is permissive, or conditional.
- B. “County” shall mean the County of Greensville, Virginia.
- C. “Board” shall mean the Board of County Supervisors, the governing body of Greensville County, Virginia.
- D. “Authority” shall mean the Greensville County Water and Sewer Authority.
- E. “Jurisdictional Area” shall mean the territory included within the boundaries of the Greensville County Water and Sewer Authority and in which the Authority has been authorized to provide and regulate existing and future water and/or sanitary sewerage facilities.
- F. “City” shall mean the incorporated City of Emporia, Virginia.
- G. “Premise” shall mean any building or group of buildings, or any tract, lot or parcel of land upon which buildings are to be constructed which is or may be served by the facilities of the Authority.
- H. “Person” shall mean any individual, firm, partnership, corporation, association, society, group, and unit of local, state or federal government.
- I. “Owner, Developer, or Subdivider” shall mean any person, firm partnership, corporation, association, society or group owning or having an interest, whether legal or equitable, sole or partial, in any premise or tract, lot or parcel of land which is or may be in the future developed or subdivided.
- J. “Non-Potable or Raw Water” shall mean water classified as unsuitable for human consumption.
- K. “Potable or Finished Water” shall mean water classified as suitable for human consumption.
- L. “Water Main or Water Line” shall mean a pipe or conduit for transmission or distribution of potable or finished water.

- M. “Water Filtration Plant” or “Water Treatment Plant” shall mean any arrangement of devices and structures used for the treatment and/or purification of non-potable or raw water.
- N. “Water Works” or “Water Facilities Improvements” shall mean all facilities for the treatment and/or purification of non-potable or raw water and the transmission, pumping, and distribution of potable or finished water.
- O. “Domestic Wastes” shall mean the water-carried liquid or solid wastes which are derived principally from residential dwellings and commercial buildings.
- P. “Industrial Wastes” shall mean the water-carried liquid or solid wastes from institutional establishments and industrial plant processes as distinct from domestic wastes.
- Q. “Wastewater” or “Sewage” shall mean any combination of domestic and industrial wastes together with any groundwater, surface water or storm water that may be present.
- R. “Sewer” shall mean a pipe or conduit for the collection and transmission of sewage or wastewater.
- S. “Wastewater Treatment Plant” or “Sewage Treatment Plant” shall mean any arrangement of devices and structures used for the treatment of sewage or wastewater.
- T. “Sanitary Sewerage Facilities” shall mean all facilities for the collection, pumping, transmission, treatment, and disposal of sewage or wastewater.
- U. “Facilities of the Authority” shall mean any and all component and pertinent parts of the entire utility system of the water and sanitary sewerage facilities under the jurisdiction of the Greenville County Water and Sewer Authority, such as water mains and their appurtenances, water storage tanks, filtration or treatment facilities and pumping station, sewers and their appurtenances, sewage pumping stations and treatment plants, including these items and others now constructed, installed, operated or maintained by the Authority, or any which may be approved and accepted in the future as additions or extensions of the systems.
- V. “Residential Equivalents” or “Single Family Residential Equivalents” shall provide a basis of water consumption or sewage discharge to which all other classes of user are to be compared. Subject to revisions, a residential equivalent is considered to have an average water consumption of 250 gallons per day at the time of this writing.

- W. “Bimonthly” shall mean once every two months.
- X. “ASTM” shall mean the American Society for Testing and Materials.
- Y. “BOD” (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen used in the biochemical oxidation of organic matter under standard laboratory procedure in five days at 20 degrees C., expressed in milligrams per liter.
- Z. “Categorical Pretreatment Standard of Categorical Standard” shall mean any regulation containing pollutant discharge limits promulgated by the EPS in accordance with Section 307(a) and 307(c) of the Act, which apply to specific category of industrial users which appear in 40 CFR Chapter I, Subchapter N, Parts 405 - 471.
- AA. “Discharger” shall mean person or persons, firm, company industry or other similar sources of wastewater who introduce such into the POTW.
- BB. “Easement” shall mean an acquired legal right for the specific use of land owned by others.
- CC. “EPA” shall mean the United States Environmental Protection Agency.
- DD. “Existing Source” shall mean any source of discharge, the construction or operation of which commenced prior to the publication of proposed categorical pretreatment standards which will be applicable to such source if the standard is thereafter promulgated in accordance with Section 307 of the Act.
- EE. “Industry” shall mean any industrial establishment, mill, factory, tannery, paper or pulp mill, mine, coal mine, colliery, breaker or coal processing operations, quarry, oil refinery, boat, vessel, and each and every other industry of plant or works the operation of which produces industrial wastes or other wastes or which may otherwise alter the physical, chemical or biological properties of any state waters.
- FF. “Garbage” shall mean the solid animal or vegetable wastes resulting from the domestic or commercial handling, storage, dispensing, preparation, cooking and serving of foods.
- GG. “Indirect Discharge” shall mean the introduction of (nondomestic) pollutants into the POTW from any nondomestic source regulated under Section 307(b) (c) or (d) of the Act.

- HH. “Institutional” shall mean a public or non-profit place that provides education, care or confinement of inmates, mental patients or other disabled or handicapped person.
- II. “Interference” shall mean an inhibition or disruption of the POTW, its treatment processes or operations, or its sludge of any requirement of the POTW’s VPDES permit, including those discharges that prevent the use or disposal of sludge by the POTW in accordance with any federal or state laws, regulations, permits or sludge management plans.
- JJ. “Director” shall mean the Manager of the Authority’s Wastewater System(s) or an authorized designee.
- KK. “New Source” shall have the same meaning as provided in 40 CFR Part 403.3(k) (1990).
- LL. “VPDES” shall mean Virginia Pollutant Discharge Elimination System permit program, as administered by the Commonwealth of Virginia.
- MM. “pH” shall mean the logarithm of the reciprocal of the hydrogen concentration expressed in grams per liter of solution as determined by Standard Methods.
- NN. “Pollutant” shall mean any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, medical waste, chemical waste, industrial waste, biological materials, radio active material, heat, wrecked or discharged equipment, rock, sand, cellar dirt, agricultural and industrial waste, and certain characteristics of the wastewater (i.e. pH, temperature, TSS, turbidity, color, BOD, COD, toxicity, odor).
- OO. “POTW” (denoting Publicly Owned Treatment Works) shall mean any sewage treatment works that is owned by a State or municipality. Sewers, pipes, or other conveyances are included in this definition only if they convey wastewater to a POTW providing treatment.
- PP. “Pretreatment” shall mean the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to discharge to the Authority’s treatment works.
- QQ. “Pretreatment Standard” shall mean any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act, which applies to Industrial users.

- RR. “Residential User (Class I)” shall mean all premises used only for human residency and which is connected to the treatment works.
- SS. “Sanitary Wastewater” shall mean wastewater discharged from the sanitary conveniences of dwellings, office buildings, industrial plants, or institutions.
- TT. “Significant Industrial User” shall be defined as follows:
1. Has a process wastewater flow of 25,000 gallons or more per average work day; (Excludes sanitary, non-contact cooling and boiler blowdown wastewater.)
 2. Contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW;
 3. Is subject to categorical pretreatment standards; or,
 4. Has significant impact, either singularly or in combination with other significant dischargers, on the treatment works or the quality of its effluent.
- UU. “Slug Load” shall mean any discharge at a flow rate or concentration which could cause a violation of the prohibited discharge standard in Section 2.7-E of this ordinance or any discharge of a nonroutine, episodic nature, including, but not limited to, an accidental spill or a non-customary batch discharge.
- VV. “Standard Methods” shall mean the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, Water Pollution Control Federation and American Water Works Association.
- WW. “State” shall mean the Commonwealth of Virginia.
- XX. “Storm Sewer” shall mean a sewer for conveying storm, surface, and other waters, which is not intended to be transported to a treatment works.
- YY. “Surface Water” shall mean:
1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 2. All interstate waters, including interstate “wetlands”;
 3. All other waters such as inter/intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or

could affect interstate or foreign commerce including any such waters:

- a. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or,
 - c. Which are used or could be used for industrial purposes by industries in interstate commerce.
4. All impoundments of waters otherwise defined as surface waters under this definition;
 5. Tributaries of waters identified in paragraphs 1-4 of this definition;
 6. The territorial sea; and
 7. "Wetlands" adjacent to waters, other than waters that are themselves wetlands, identified in paragraphs 1-6 of this definition.
- ZZ. "Suspended Solids" shall mean the total suspended matter that either floats on the surface of, or is in suspension in, water or wastewater as determined by Standard Methods.
- AAA. "Toxics" shall mean any of the pollutants designated by Federal regulations pursuant to Section 307 (a) (1) of the Act.
- BBB. "User" shall mean a source of wastewater discharge into a POTW.
- CCC. "Act" shall mean the Federal Clean Water Act, 33. U.S.C. 1251 et seq.
- DDD. "Ground Water" shall mean any water beneath the land surface in the zone of saturation.
- EEE. "Pass-Through" shall mean the discharge of pollutants through a POTW into State waters in quantities or concentrations which are a cause in whole or in part of a violation of any requirement of the POTW's VPDES permit, including an increase in the magnitude or duration of a violation.
- FFF. "User Permit" shall mean a document issued by the POTW to the User that permits the connection and/or introduction of wastes into the treatment works under the provisions of this Ordinance.
- GGG. "Service Area" shall include all of the land area as defined by the Jurisdictional Area, plus those areas within other Jurisdictions in which the Authority has been authorized to provide service.

1.4 ADMINISTRATION.

Except as otherwise provided herein, the Director of the Authority's treatment works shall administer, implement, and enforce the provisions of this Ordinance.

1.5 INSPECTIONS.

A. The Director, his designee or authorized State or Federal officials, bearing the proper credentials and identification, shall be permitted to enter all premises where an effluent source or treatment system is located at any reasonable time for the purposes of inspection, observation, measurement, sampling and/or copying records of the wastewater discharge to ensure that discharge to the treatment works is in accordance with the provisions of this Ordinance.

B. The Director, bearing proper credentials and identification, shall be permitted to enter all private property through which the Authority holds an easement for the purposes of inspection, observation, measurement, sampling, repair, and maintenance of any of the Authority's treatment works lying within the easement. All entry and subsequent work on the easement, shall be done in full accordance with the terms of the easement pertaining to the private property involved.

C. While performing any necessary work on private properties referred to in Section 1.5 A and B above, the Director shall observe all safety and occupational rules established by the owner or occupant of the property and applicable to the premises.

1.6 VANDALISM.

No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance or equipment which is a part of the Authority's treatment works. Any person who violates this section shall be guilty of a misdemeanor and, upon conviction, is punishable by a fine in an amount not to exceed TWO HUNDRED FIFTY DOLLARS (\$250.00).

1.7 SERVICE AREA.

A. The entire area located within the municipal boundaries of Greensville County, Virginia, and expressly including that portion of Greensville County which is located within the incorporated Town of Jarratt.

B. That portion of the Town of Jarratt which is located within Sussex County.

C. Those portions of Sussex County which are located adjacent to the Town of Jarratt and which are currently served by utility lines of the Greensville County Water and Sewer Authority.

D. All areas of Sussex County which may hereafter be served by newly constructed utility lines of the Greensville County Water and Sewer Authority.

SECTION 2 WATER & SEWER SERVICES.

2.1 POLICY.

A. The Owners of all residential dwellings, commercial buildings, industrial plants, institutional establishments, structures and properties used for human occupancy, business, employment, recreation or other purposes, presently existing or constructed subsequent to the passage of these Rules and Regulations and located within the Jurisdictional Area of the Authority and abutting on any street, alley, right-of-way, or easement in which there is located an Authority owned public water main and/or sanitary sewer at a distance not greater than 200 feet from such houses, buildings or properties, shall be required to: (1) request water and/or sewer service by application to the Authority on a prescribed form, (2) install suitable toilet, drain and other disposable liquid wastes facilities therein and (3) connect such facilities directly with the public sewer or water facility. No person shall receive free service. Upon application approval and the payment of the prescribed connection fee, the Authority will inspect all service line connections.

B. EXCEPTIONS TO MANDATORY CONNECTIONS.

1. Water Non-User. Notwithstanding any other provisions of the Code of Virginia or of these Rules and Regulations, those persons owning property which is served by an existing “approved” domestic supply of potable water shall not be required to discontinue the use of same. Applicants for non-user classification shall provide proof of the potability of their independent water sources by meeting the following two tests: (a) written proof that a water sample taken within the last twelve months has been found acceptable by the Virginia Department of Health bacteriological test and (b) written proof that the well has been inspected and found acceptable by the Virginia Department of Health within the last twelve months. Owners of such property may make application for a non-user exemption and a waiver of compliance with the requirements of Section 2.1.A of these Rules and Regulations; however, the exemption shall not apply until an application therefore is properly submitted and approved. Persons granted a non-user exemption shall be required to pay the appropriate connection fee and a monthly non-user service charge which shall be equal to the sum of the following:

$$\text{Minimum monthly service charge} \times \frac{\text{annual debt service}}{\text{total annual operating cost and debt service}}$$

Should a non-user for whatever reason become a regular water consuming customer of the Authority; a non-user exemption will not be granted thereafter.

2. Sewer Non-User. Notwithstanding any other provisions of the Code of Virginia or of these Rules and Regulations, those persons owning property which is served by an existing approved septic system shall not be required to discontinue the use of same. Applicants for non-user classification shall provide proof of their approved septic system by meeting the following test: written proof that their septic system has been inspected and found acceptable by the Virginia Department of Health within the last twelve months. Owners of such property may make application for a non-user exemption and a waiver of compliance with the requirements of Section 2.1.A of these Rules and Regulations; however, the exemption shall not apply until an application therefore is properly submitted and approved. Persons granted a non-user exemption shall be required to pay the appropriate connection fee and a monthly non-user service charge which shall be equal to the sum of the following:

$$\text{Minimum monthly service charge} \times \frac{\text{annual debt service}}{\text{total annual operating cost and debt service}}$$

Should a non-user for whatever reason become a regular sewer customer of the Authority; a non-user exemption will not be granted thereafter.

3. Economic Hardship. Notwithstanding any other provisions of the Code of Virginia or of these Rules and Regulations, any person owning or occupying real property on which the residence is not served by a toilet, drain or other disposable liquid waste facilities and which owner or occupant would suffer “economic hardship”, may make application for an exemption and waiver of Section 2.1.A of these Rules and Regulations. “Economic hardship” shall mean the applicant for an exemption shall meet the following tests: such applicant is a “lower income person” within the meaning of Title I of the Housing and Community Development Act of 1974, as amended, and of the regulations promulgated thereunder; such applicant provides proof that he/she has made application for a subsidy (whether in the form of a grant, subsidized interest loan, or otherwise) to pay the costs necessitated by compliance with Section 2.1.A., and that such application has been refused. Such waiver shall not apply until an application therefore has been duly submitted and approved, but upon the granting of such waiver such

owner or occupant shall not be required to make any payment for sewerage service.

4. If, upon the completion of a gravity sewer extension or project, it is determined that an existing structure cannot attach to the gravity system without the installation of a pump station, the structure will not be considered as being within the mandatory connection zone as defined by these Rules and Regulations. Accordingly, the property owner will not be liable to pay a sewer connection fee as required by the Rules and Regulations nor will there be any monthly fee due from the property owner. If, in the future, the customer elects to connect onto the sewer system, it will be the customer's responsibility to purchase, connect, and maintain the pump station, pay the sewer connection fee, if required, and abide by the Authority's Rules and Regulations as any other customer. Any structures built after completion of a sewer project, shall not be eligible for the sewer usage exception as described above.
- C. The Developer of any new subdivision or commercial or industrial site intended for any of the purposes indicated in Article (A), or any combination thereof, and located where an Authority owned public water facilities and/or sanitary sewerage facilities are available, shall be required to: (1) obtain one copy of the Rules and Regulations and Construction Specifications and Standards of the Greenville County Water and Sewer Authority, and acknowledge in writing, the receipt of same, prior to submitting an application; (2) request public water and/or sewer service and utility construction authorization by application to the Authority; and (3) upon receipt of notification of application approval, design and construct, in accordance with these Rules and Regulations and Construction Specifications and Standards, all necessary water facilities including both service connections and meters and/or all necessary sanitary sewerage facilities including service connections within his subdivision or development at his own expense.

Subsequent to the approval of such construction, the new facilities may become the property of the Authority when service is provided.

- D. The Developer of any new subdivision or commercial or industrial site, where the facilities of the Authority are inadequate in size or not readily available, shall be required to request both public water and sewer service by application to the Authority. The Authority will notify the Developer, within thirty (30) calendar days of receipt of the application, as to whether or not the services requested can be provided. If it is determined that the services can be made available within a reasonable period of time, then the Developer shall comply with Section 2.1.C.

Where construction of water main or sewers is deemed to be either necessary, feasible or advisable to connect the applicable systems of the subdivision or development to the suitable facilities of the Authority, the financial responsibility, location and details of such construction shall be determined in conference by the Developer and Authority. Any and all agreements so established shall be acknowledged in writing by both the Developer and the Authority. Each proposed item of construction shall be a separate matter for discussion and agreement, and shall be in accordance with the Construction Specifications and Standards. All prescribed connection fees must be paid before connection will be made.

Regardless of the decision to participate in the development, the plans and specifications of any proposed central water and sewerage system referred by the County Board of Supervisors to this Authority and within the Authority's Jurisdiction with the potential of serving more than five residents or any premise or premises equal to five residential equivalents shall be in conformance with these Rules and Regulations and Construction Standards and subject to approval of the Authority and subsequent construction inspection by the Authority.

Subsequent to the approval of such construction, the new facilities may become the property of the Authority when service is provided.

- E. The Authority shall not be required to extend its mains across private property for the purpose of providing any service which may be desired except under mutually acceptable arrangements to defray the related installation or construction costs.

No future service commitment will be made by the Authority to an applicant in an area where adequate flow and pressure is not provided by the system.

Applicants for service to areas of unusual or difficult field conditions requiring booster pumping, additional storage or facilities not herein provided for, shall be individually advised of procedures necessary to obtain approved services.

Nothing contained in these Rules and Regulations shall be construed to omit or prevent the Authority from extending or supplementing its facilities whenever it is determined that circumstances so warrant.

2.2 DEDICATED FACILITIES.

- A. NEW SYSTEMS. If the potential exists that the initial connections to the water and sewerage system is insufficient to support the operation and maintenance cost incurred by the Authority, the developer or owner shall

provide such guarantees in the form of sureties or other negotiable instruments as agreed by both parties, to insure support of the operation and maintenance cost until sufficient connections are supporting the systems.

The builder, developer, or contractor shall install the water/sewerage facilities system, including meters, all to the standards, specifications, and subject to approval of the Authority and at the sole expense of said developer.

During progress of the work the members of the Authority or their authorized Engineers, inspectors, or others who are directly concerned with the work shall have access to the locations of construction for the purpose of establishing to their satisfaction that the projects are being constructed to the Authority's requirements and in accordance with approved plans and specifications.

After completion of the facilities and on written request of the developer or owner responsible for the construction, the Authority shall make a final comprehensive inspection of the completed projects and shall be satisfied as to conformance to plans and specifications before accepting the facilities to become a part of the public utilities system of the Service Authority.

Upon approval of the water/sewer system so installed and acceptance of the same with all connection charges paid in full and operation and maintenance guarantees, the developer shall deed, convey, dedicate, and turn over the system, components, land title, and easements connected therewith to the Authority in good and sufficient form, free of encumbrances.

Upon compliance with the above, the Authority shall thereafter supply, maintain, service, and operate said system and collect all fees from said system, and user charges, according to its existing rates and schedules as amended. However, no connection charges will be made to those lots that the developer has paid the connection fee provided the building permit is issued within ten years of the acceptance of the system by the Authority.

- B. EXISTING SYSTEMS. Where the Authority has acquired by deed from a private source, by grant, the dedication, a water or sewer treatment and distribution system to which existing customers and users are connected at the time of acquisition, no further charge for tap, connection, or hookup shall be made to said existing consumers or users. Provided, however, the foregoing shall not preclude the assessment or levy of fees for resumption of sewer or water service in the event service is discontinued due to

nonpayment of accounts, change or customer account, misuses, deficiencies, or damage to the entire system, or any part thereof.

Under circumstances as set forth above, a tap or connection charge shall be made and assessed and collected by the Authority in advance of the service supply of sewer or water, to any consumer or user requiring service to a site not previously served. Such charge shall be computed according to the “notification period” connection charge of the Authority in effect at the time of connection. No tap or connection shall be made and no service commenced unless the work is done in compliance with all Authority requirements and regulations and subject to Authority inspection and approval.

Where, as of the date of the adoption of this policy by the Authority, a builder, developer, or contractor has at some prior time installed a water/sewer system to serve customers and has begun to serve the same, either in whole or part of the capacity of said system, and does request the Authority to take over, maintain, and operate said water/sewer system, the following shall apply:

1. Builder, developer, or contractor shall, with said request, deliver to the Authority all engineering plans, as-built drawings, specifications, etc. relating to said system.
2. The Authority shall inspect the water/sewer system plans and upon approval, but not before, may accept the same provided such system is in accordance with these Rules and Regulations, and Construction Standards, for future operation, maintenance, and supply, provided that builder/developer shall grant, deed, or dedicate all title to real and personal property, easements, etc., therein, free of encumbrances, and in addition to meet Authority standards and pay over to the Authority by certified or cashier’s check a sum equal the established “notification period” connection fees multiplied by the number of lots which may be potential customers of the existing system according to the Authority and Department of Environmental Quality standards and regulations. Potential customers shall be those vacant lots adjacent to the existing water/sewer lines.

Furthermore, if the initial connections to the water and sewerage system is insufficient to support the operation and maintenance cost incurred by the Authority, the developer or owner shall provide such guarantee in the form of sureties or other negotiable instruments as agreed to by both parties to insure support of the operation and maintenance cost until sufficient connections are supporting the systems.

The Authority will, from acceptance and payment of the fee as set forth above, operate, maintain, and service the system collecting all fees and charges henceforth.

C. WATER AND SEWER LINE EXTENSIONS.

1. General. Where a developer, builder, contractor, or persons require water/sewer line extension or expansion of existing facilities, the following shall apply:

Said applicant shall, at the time of filing, file therewith a preliminary detail statement of plans, specifications, potential number of customers, route, long term expansion plans and any other matters deemed to be helpful to the Authority. Upon preliminary approval, parties making such request shall deposit the amount of any connection fees and expenses as required, together with proof of financial responsibility and such other information as may be requested by the Authority in order to secure estimates for the overall project cost.

Extensions of existing lines shall be at the expense of the applicants or jointly of the applicants and Service Authority. The cost of such extensions shall be determined as follows:

- a. Should the applicants design and perform the construction themselves, either with their personnel or by contractor, the cost to the applicants shall be that actual construction cost for lines of sufficient size to serve the proposed customers' plus any applicable notification period connection fees and any cost incurred by the Authority. These additional costs generally will involve plan review, inspection, easement recordation and outside consultants and attorney's fees.
- b. The additional construction cost for lines of sizes greater than those required to serve the customers and as determined necessary by the Authority's Engineers shall be borne by the Authority. The minimum size line considered necessary to serve any customer shall be six inch for water and eight inch for sewer.
- c. Similar policies shall apply to other required improvements such as but not limited to pumping stations, pretreatment and sampling facilities, and flow metering devices.
- d. The Authority's Engineering Department will provide preliminary engineering services for the construction of

onsite public water and sewer facilities. The services will be provided at no cost to the developer and will include:

- (1) meeting to discuss the project;
- (2) conducting a field inspection of the proposed site;
- (3) reviewing the developer's subdivision layout and topographic information;
- (4) utilizing the developer's information to determine the alternatives available to provide service;
- (5) consulting with the developer on the best services alternative; and,
- (6) producing a preliminary cost estimate for the project.

The cost analysis will include a detailed construction cost analysis including the type, quantity, and unit prices of proposed appurtenances and an estimate of other costs including engineering, inspection, property acquisition, permits/fees, and contingency.

The engineering, contract administration, and field inspection fees will be waived for minor extensions. The Authority will provide a prompt determination on which projects meet minor extension criteria.

The Authority will reduce the developers project cost by applying all connection fees toward the construction cost of the water and sewer extensions.

Other incentives may be negotiated on a case-by-case basis.

Where the applicants elect and have caused the Authority to extend lines to areas to be served and normal connection charges, as revised from time to time, are deemed insufficient to support such extension, the Authority will require a Contributions-in-Aid of construction for users of such extension. The additional contribution shall be applicable to all original applicants and shall be spread proportionately between them.

The additional contribution shall be determined by considering the potential connection resulting from such extensions, the costs of such extensions, the costs of maintenance of such extensions, available financing to the Authority, the public need for such facility, and such other matters as the Authority may deem pertinent. The methodology for determining such a contribution shall be as follows:

The Gross Annual Revenues from the subscribers shall be estimated based upon flows or Single Family Residential Equivalents. From that amount shall be subtracted the subscribers cost of water or sewage treatment and the subscriber's cost of operation and maintenance expressed on a unit basis of flow or number of connections. The resultant will be Net Revenues available for Debt Service. Depending upon the prevailing financial terms available to the Authority an annual debt service is determined. The level of debt that Net Revenues will support can then be determined by dividing the Net Revenues by the Debt Service. The amount of the Contributions-in-Aid of Construction for each subscriber is then determined by subtracting from the Total Project Cost (including engineering, interest, legal, administration of 10%, etc.), the total Connection Charges and the Level of Debt to be financed and that resultant divided by the number of original subscribers. Expressed mathematically as:

- a. Gross Annual Revenues – Annual Cost of Water/Sewage Treatment – Annual Cost of Operation and Maintenance – Net Annual Revenue Available for Debt Service.
- b.
$$\frac{\text{Net Annual Revenue}}{\text{Annual Debt Service}} = \text{Level of Debt Net Revenues will support.}$$
- c. Total Contribution-in-Aid of Construction = Total Project Cost – Connection Charges – Level of Debt supported by Net Revenues.
- d.
$$\frac{\text{Total Contribution-in-Aid of Construction}}{\text{Number of Original Subscribers}} = \text{Contribution Per Connection}$$

Adjustments shall be made if the project cost shall exceed or be less than the bid; or if additional subscribers make application within and until ninety days of the construction period.

Any of the foregoing shall be subject to actual contract and approval by the Authority at the time of request on a case by case basis. Provided further that approval by the Authority shall be contingent upon availability of facilities, supply and financing.

2.3 APPLICATION FOR SERVICES.

- A. Application for services will be available at the Greensville County Water and Sewer Office, 1781 Greensville County Circle, Emporia, Virginia during normal business hours. These prescribed forms shall be completed and submitted to the Authority at least seven days before a new connection is desired to be made.

The Authority will furnish one copy of these Rules and Regulations and Construction Specifications and Standards at no cost, on a bona fide request. Additional copies may be supplied by the Authority, at a cost of ten dollars (\$10.00) per copy.

The Authority shall accept, review and render decision on all applications for public water and/or sanitary sewer service to the premises described in the application from any persons who are owners, legal representatives of the owners, or tenants of land within the Jurisdictional Area.

- B. Applications for water and/or sewer services for existing or proposed new individual or multiple residential dwellings, commercial buildings, industrial plants, institutional establishments, structures and properties shall be made in duplicate on a form prescribed and furnished by the Authority for the purpose of such application. Each form shall be accompanied by any measurements, maps, drawings or other such data that will clearly establish and indicate the physical location within the Jurisdictional Area of the premise for which the application is submitted. If the proposed or physical location of the available service(s) is known, it (they) shall be indicated on the same map, drawing or data submittal. Drawings shall have a minimum scale of one inch equal 100 feet.

If the application is for the provision of water and/or sewer service to a property which does not abut a service facility of the Authority, then the following shall be provided by the applicant:

1. A statement signed by the applicant which sets forth the names of all owners of the real property which is located between the property to which service is requested, and the facility of Authority to which the connection is to be made.
2. Proof of recordation of a Deed of Easement by which each such owner conveys to the applicant(s) an easement authorizing the necessary utility lines to traverse the property of said deed which bears the deed book and page number of recordation, or a copy of the executed, notarized deed together with a recording receipt evidencing recordation of the original thereof. Each such easement

shall follow title the term of ownership of the current owner(s), but also each successor in title thereto.

Applicants for industrial establishments shall also submit with their application complete written information regarding plant location, type of industry, raw and finished products, approximate magnitude of utility requirements, types of industrial wastes to be discharged, proposed facilities for pretreatment of industrial wastes, and any other data pertinent to the industry's utility requirements.

- C. Where construction of water and/or sanitary sewerage facilities is required of a Developer or Owner by Subsection 2.1., Article B, the related application shall be accompanied by:
1. Four legible prints of the record plat of the development area or subdivision or applicable section thereof, which bear the approval of the Board of County Supervisors.
 2. Four sets of detailed plans showing accurate plan and profile design drawings, the proposed water mains, and/or sewers and the location, design and the indication of all appurtenances and accessories. It is preferable that such drawings show on the same sheet, the plan and profile design of the contiguous sections of new streets or easements and proposed water and/or sewer facilities as well as the location of any other existing or proposed underground or buried utilities. These plans, and all subsequent revisions thereof, shall be properly sealed and signed by a Professional Engineer registered in the Commonwealth of Virginia.
 3. If any facilities other than piping and its appurtenances are proposed by the Applicant or required by the Authority for the complete and satisfactory operation of the proposed facilities, such as water storage or pumping equipment, sewage pump stations, or other like equipment, materials and construction of such facilities. These plans and specifications, and all subsequent revisions thereof, shall be sealed and signed by a Professional Engineer registered in the Commonwealth of Virginia.
- D. Where construction of water and/or sanitary sewerage facilities is required by a Developer or Owner by Subsection 2.1., Article C. or is proposed by a Person owning or legally representing the Owner of a premise not classified as being the development of a new subdivision, or section thereof, the related application shall be accompanied by all items of Article C.

- E. The Authority in conjunction with its Engineer shall review and approve, or reject, prepared plans and/or specifications for all projects for developing, extending or constructing water mains, and/or sanitary sewers, and all pertinent connections, structures and accessories thereto within the Jurisdictional Area, prior to any construction of such projects.

The Authority reserves the right to approve, revise and request additional data, design or other information or to disapprove any service application or plans pertinent thereof, as the opinion or best interest of the Authority and the County may dictate. If for example, it is determined that it is not economically feasible or would jeopardize continued service to present customers, then no additional service applications would be approved.

- F. CONNECTION PERMIT.

- 1. No person shall uncover, make any connections with, use, alter, or disturb any water or wastewater sewer without first obtaining a written permit from the Director.
- 2. There shall be two (2) classes of permits for connections to the Authority's treatment Works & Treatment Facilities.

CLASS	I	-	residential
CLASS	II	-	industrial

In all cases, the owner shall make application for a permit to connect to the Authority's treatment works on a form furnished by the Authority. The permit application shall be supplemented by water/wastewater information required to administer this Ordinance.

- G. CONFORMANCE TO APPLICABLE CODES.

The connection of a building sewer into a treatment works shall conform to the requirements of the building and plumbing code or other applicable requirements of the Authority, or the procedures set forth in appropriate specifications of the Commonwealth of Virginia Sewerage Regulations, Uniform Building Code of Virginia, and American Society of Testing Materials. The connections shall be made gastight and watertight and verified by proper testing. Any deviation from the prescribed procedures and materials must be approved in writing by the Director before installation.

- H. CONNECTION INSPECTION.

The applicant for utility service shall notify the Director when such utility connection is ready for inspection prior to its connection to the Authority's facilities. Such connection inspections and testing as deemed necessary by the Director shall be made by the Director.

2.4 DISPOSITION OF APPLICATIONS.

- A. On receiving the application, as previously described in Subsection 2.2., Article B., the Authority will approve, with or without revisions or disapprove the application, so marked to indicate the decision of the Authority, and return one copy of each of the submitted items to the Applicant.

The Applicant receiving a returned application marked "Approved with Revisions", shall conform strictly with the notations indicated thereon by the Authority.

- B. On receiving applications as previously prescribed in Subsection 2.2., Articles C. or D., the Authority will review all data, design, plans and/or specifications and indicate thereon any revisions, additions, changes or deletions, as is considered necessary in order that the proposed construction shall conform to the standards and best interest of the Authority. One marked set of the submitted items shall be returned to the Applicant.

After receiving the returned submittal items, the Applicant shall prepare revised plans and/or specifications to conform with such revisions indicated by the Authority and submit four sets of the revised items to the Authority.

On receipt of the revised items, the Authority shall check them for conformity with the initially marked revisions. If satisfactory, one of the revised sets of plans and/or specifications shall be returned to the Applicant with written approval for construction.

- C. In the event that an Applicant desires to deviate from the plans and/or specifications which have been approved by the Authority for construction, or to make any changes or revisions therein, the applicant shall submit a written request to the Authority stating the reasons for his request. Revised plans, specifications and other substantiating data, shall accompany the request in such manner, form and quantity as was required for the original application.

The procedure for all parties concerned with processing any such request for deviation from, or changes and revisions in the initially approved plans

and/or specifications for construction shall be the same as stipulated for the original application for the project.

2.5 CONSTRUCTION REQUIREMENTS.

A. GENERAL. The construction of any public water or sanitary sewerage facilities and their appurtenances and accessories, including, but not limited to, all materials, workmanship and procedures, within the Jurisdictional Area shall be in strict accordance with:

1. The final approved set (or revised set) of plans and specifications returned to the applicant;
2. The Construction Specifications and Standards established and adopted by the Authority; and,
3. All applicable State and Local ordinances governing such construction.

During progress of construction, the authority members or their authorized Engineers, inspectors or representatives who are directly concerned with the project shall have access to the locations of construction for the purpose of establishing to their satisfaction that the project is being constructed in accordance with the three items, stipulated above.

B. AS-BUILT PLANS. After completion of construction of the facilities from approved plans and/or specifications the Developer or Owner responsible for the construction shall prepare as-built plans, based on accurate, field-obtained information, to show actual conditions of the finished construction. The as-built plans shall be revisions to, and permanently indicate changes on the original tracings or master sheets from which were made the plans and/or specifications.

The as-built plans show, but may not be limited to, the following:

1. Water Main Construction.
 - a. Scale accuracy location in plan, of the main and all installed fittings, such as elbows, tees, crosses and reducers, and all cradle, encasements, or special construction.
 - b. Exact measurement to show positive location of all valve boxes, blind or blank-flanged fittings and plugged terminals of mains.

The measurement taken for these positive locations shall be taken from at least two reasonably adjacent and available, fixed and permanent objects or reference points such as fire hydrants, centers of sanitary or storm sewer manhole casting covers, corners or extended lines of buildings, power or telephone poles, etc.

2. Sewer Construction.

- a. Scale accuracy location of manhole invert and top casting elevations and numerical notation of the exact elevations of same as determined by field survey after construction.
- b. Scale accuracy indication of lengths and grades of lines between manholes and numerical notation of the exact lengths and grades, as determined after construction.
- c. Scale accuracy location of concrete cradle, encasement, or special construction.

3. Water Pump Stations, Sewage Lift Stations and Building Structures.

- a. As-built plans and specifications shall accurately indicate all approved deviation from or changes in location or type of equipment installed and material used.
- b. Complete listings of the name of the manufacturer of all operating equipment installed, together with model or style numbers, ratings, pump curves capacities, and other pertinent information shall be provided as part of the as-built plans for the project.
- c. At least three complete sets of shop drawings and operation and maintenance manuals of all operating equipment, and all Certificates of Inspections, Approvals, Warranties and Guarantees of Equipment, Materials and Installations thereof, required by the project specifications which were approved by the Authority, shall be provided as a part of the as-built plans on the project.

C. FINAL INSPECTIONS. At the completion of any construction project of water or sanitary sewerage facilities, the Developer or Owner responsible for construction shall notify the Authority in writing that the project has been completed. A Professional Engineer registered in the Commonwealth of Virginia shall seal and sign a letter of certification stating that the facilities have been constructed in accordance with the

approved plans and specifications and with these Rules and Regulations and Construction Specifications and Standards. The Developer's or Owner's letter of notification shall be accompanied by the Engineer's letter of certification, all as-built plans as required by Article B. above, final specifications and other such data and addenda relative thereto as may be required by the Authority.

On receipt of such notification of completion and as-built plans, and on written request of the Developer or Owner responsible for the construction, the Authority shall make a final comprehensive inspection of the completed facilities, including detailed examination of conformance of the work with the approved plans and/or specifications, alignment of sewers, infiltration, leakage, workmanship, operation of equipment, and other related items to the satisfaction and best interest of the Authority.

The Developer or Owner or a responsible representative shall accompany the authorized agent of the Authority and shall furnish whatever labor as may be necessary to conduct the final inspection.

Deficiencies which are found to exist during the inspection shall be pointed out to the Developer or Owner's representative. Subsequent to the inspection, the Developer or Owner will be furnished, in writing, a summary of the deficiencies found and corrections which are required. On notification that all such deficiencies have been corrected, the Authority will reinspect all corrected work prior to approval of the facilities.

D. APPROVAL OF NEW CONSTRUCTION.

1. The Authority will approve newly constructed water and sanitary sewer service facilities on satisfaction of the following conditions:
 - a. That all requirements of the foregoing Articles A, B, and C have been fulfilled.
 - b. That, in the case of water mains, physical disconnection, by actual removal of any connecting mains, has been made from any and all other private systems.
 - c. That all matters relative to specific contracts between the Developer or Owner and the Authority are in order.
 - d. That payment has been made by the Developer or Owner for all fees relative to applications and inspections.
 - e. That an explicit understanding between the Developer or Owner and the Authority that the developer or Owner shall

be responsible and obligated to correct any deficiencies in construction or materials occurring during a period of one year from the date when service is initially provided by the authority. This condition shall be stipulated in a written guarantee prepared and signed by the Developer or Owner and submitted to the Authority.

2. The aforementioned written guarantee also shall constitute an irrevocable agreement between the Developer or Owner responsible for construction and the Authority and the Board of County Supervisors indemnifies the Authority and the Board of County Supervisors and any of their officers, agents, servants and employees against all responsibilities, all claims and all liabilities incurred by the Developer or Owner for all things done or furnished in connection with this work.
3. Acceptance of the newly constructed facilities, when approved by the Authority, will be made in writing to the Developer or Owner responsible for the construction.

2.6 USE OF WATER FACILITIES.

- A. PRESSURE AND CONTINUITY OF SUPPLY. The Authority will strive to provide, but cannot guarantee, a sufficient or uniform pressure, or an uninterrupted supply of potable water. Therefore, customers are cautioned to maintain a sufficient water storage where an absolutely uninterrupted supply must be assured, such as for steam boilers, domestic hot water systems, gas engines, etc.

Where the water pressure is lower than desired, the customer may install at his own expense a tank and/or booster pump as approved by the Authority. Where the water pressure exceeds 80 psi the customer should install at his own expense a proper pressure regulating device to reduce the water pressure as required by the Building Officials Code Administrators (BOCA) codes. The Authority reserves the right to require the Owner or customer to adjust, modify or remove from the premises any quick opening or closing valve or other device, the operation of which results in any unreasonable fluctuation in the pressure of the system.

It is the intention of the Authority to give advance notices of any circumstances which necessitates the interruption of the water supply; however, such notice shall be considered a courtesy rather than an accident, for the purpose of making connections, alterations, repairs, changes or for other reasons at any time. Therefore, Owner's or customer's buildings must have internal facilities and/or plumbing fixtures which will not be damaged if water mains are shut off without notice.

The Authority will keep a record of high priority customers who have a critical need for uninterrupted service. Should the Authority have adequate time to give notice of service interruption these customers will be notified first.

The Authority may restrict the use of its potable water to reserve a sufficient supply for fire protection or other emergencies wherever the public welfare may require it. The Authority shall have sole discretion in determining such emergencies.

- B. PUBLIC FIRE HYDRANTS. The use of public fire hydrants shall be restricted to the consumption of water for the extinguishment of fires. Water from any public fire hydrant shall not be used for construction purposes, sprinkling streets, flushing sewers or gutters, or for any other purpose, unless specifically permitted by the Authority for a particular circumstance. To withdraw water for other purposes, an agreement approved by the Greenville County Water and Sewer Authority must be completed. Upon written request, the Authority will install supplemental public fire hydrants at the sole expense of any interested person.

The Authority shall not be responsible for nor considered in any manner to be insurer of persons or property against injury, loss or damage by fire, water, failure to supply water or pressure, or any other cause whatsoever.

- C. SERVICE CONNECTIONS. Each individual, residential dwelling, commercial building, institutional establishment and industrial plant shall be served through at least one meter except as herein specified. The following units shall require separate meters:

1. individual trailers not in trailer courts
2. rental apartments attached to other structures
3. any businesses attached to residential dwellings
4. churches and parsonages

Typical multiple units that may be served by a single master meter are: hotels, motels, and trailer courts. The Authority shall consider each service application in regards to metering requirements.

Improper meter functioning shall be handled as follows: upon notification from the concerned customer, the Authority shall test the meter for accurate performance once a year. If the meter is found to function properly, additional request during that year for accuracy test will be done

for charge of ten dollars (\$10.00). If the meter is determined to be defective the Authority will assume all associated costs and make adjustments as necessary.

1. Cut off valves. All services shall be provided with cut off valves on owner's premises so that, when necessary, water may be stopped by the customer without opening the meter box. Whenever a service not having such a cut off valve needs repairing, such valve shall be provided before the water is again turned on. See Appendix 1.

D. CROSS CONNECTION AND BACKFLOW PREVENTION. An approved backflow prevention device shall be installed on each service line to a customer's water system where in judgment of the Authority or the Department of Health a health, pollutional, or system hazard to the waterworks exists. All authority customers shall comply with any ordinance concerning cross connection as adopted by the Board of county Supervisors and this Authority and as amended from time to time.

No consumer shall install or maintain any connection whereby water from an auxiliary water system may enter the Authority's waterworks or consumer's water system unless the auxiliary water system and the method of connection and use of such system shall have been approved by the Authority and by the Department of Health. The cross connection of any toxic or poisonous material to an Authority customers domestic water system is strictly prohibited without the permission of the Authority.

The Authority, or its representatives, shall have the right to enter the premises of any customer for the purpose of inspecting all connections, pipe, and plumbing fixtures at any time necessary.

1. An approved backflow prevention device shall be installed on each service line to a consumer's water system serving premises where the following conditions exist, except as noted in Item g. below.
 - a. Premises having an auxiliary water system, unless such auxiliary system is accepted as an additional source by the Authority and the source is approved by the Department of Health.
 - b. Premises on which any substance is handled in such a manner as to create an actual or potential hazard to a waterworks (this shall include premises having sources or systems containing process fluids or waters originating from a waterworks which are no longer under the control of the Authority).

- c. Premises having internal cross-connections that, in the judgment of the Authority or the Department of Health may not be easily correctable of intricate plumbing arrangements which make it impracticable to determine whether or not cross-connections exist.
 - d. Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey.
 - e. Premises having a repeated history of cross-connections being established or re-established.
 - f. Premises having fire protection systems utilizing combinations of sprinklers, fire loops, storage tanks, pumps, antifreeze protection, or auxiliary water (fireloops and sprinkler systems with openings not subject to flooding, and containing no antifreeze or other chemicals, no storage, or auxiliary sources will not normally require backflow prevention).
 - g. Premises having booster pumps connected to the waterworks shall be equipped with a low pressure cut-off device to shut off the booster pump when the pressure in the waterworks drops to a minimum of 10 psi gauge.
 - h. Other premises specified by the Department of Health when cause can be shown that a potential cross-connection hazard not enumerated above exists.
2. An approved backflow prevention device shall be installed on each service line to a consumer's water system serving, but not necessarily limited to, the following types of facilities:
- a. Hospitals, mortuaries, clinics, nursing homes.
 - b. Laboratories.
 - c. Piers, docks, waterfront facilities.
 - d. Sewage treatment plants, sewage pumping stations, or storm water pumping stations.
 - e. Food and beverage processing plants.
 - f. Chemical plants, dyeing plants.
 - g. Metal plating industries.
 - h. Petroleum processing or storage plants.
 - i. Radioactive materials, processing plants or nuclear reactors.
 - j. Car washes.

- k. Lawn sprinkler systems, irrigation systems.
- l. Fire service systems.
- m. Slaughter houses and poultry processing plants.
- n. Farms where the water is used for other than household purposes.
- o. Others specified by the Authority and/or the Department of Health when reasonable cause can be shown for a potential backflow or cross-connection hazard.

E. DISCONTINUATION OF WATER SERVICE. Five days after written notification the Authority may discontinue service for any of the following reasons. Notice will be delivered by regular first class mail to the last known address of the customer of record.

- 1. For the nonpayment of any accounts for water supply for water service or for any fee or charge accruing under these Rules and Regulations and the effective Schedule of Rates and Charges.
- 3. For molesting or tampering by the customer, or others with the knowledge of the customer, with any meters, connections, service pipe, curb cock, seal, fixture, or any other appliance of the Authority controlling, regulating or protecting the customer's water supply.
- 4. A water customer's service will be discontinued upon receipt of notification from a political subdivision, with which the Authority has a contractual agreement to discontinue service, due to a customer's failure to pay prescribed sewer charges. Water service will be renewed only upon subsequent notification from the political subdivision to do so.
- 5. Water service may be denied or discontinued if a required backflow prevention is not installed when such is required or if the device has been bypassed or removed or if a cross-connection exists on the premises.

Discontinuing the supply of water to a premise for any reason shall not prevent the Authority from pursuing any lawful remedy for the collection of monies due from the customer.

When water service to a customer has been terminated for any of the above reasons, other than temporary vacancy of a premise, it will be renewed only after the condition, circumstances, or practices which cause the water service to be discontinued are corrected to the satisfaction of the Authority and upon payment of all charges due and payable by the customer in accordance with

these Rules and Regulations and the effective Schedule of Rates and Charges.

Renewal of service will be the same day if conditions, circumstances, or practices which caused the water service to be discontinued are corrected prior to 4:30 p.m. If after 4:30 p.m. renewal of service will be the following work day.

2.7 USE OF SANITARY SEWERS.

- A. It shall be unlawful for any person to place, deposit, or permit to be deposited in any condition that may be considered as an unsanitary or unhygienic manner on public or private property within Greenville County, or in any area under the jurisdiction of said Authority, any human or animal excrement, garbage, or other objectionable waste.

User shall not introduce any pollutants into the treatment works which will pass through or interfere with the operation or performance of the treatment facilities.

Except as hereinafter provided, or under conditions specifically approved and detailed in writing by the Authority, no person shall discharge or cause to be discharged into any public sanitary sewer any of the following described waters or wastes.

1. Liquid or vapor having a temperature higher than 40 C.
2. Water or waste which contains more than 100 milligrams per liter of fats, wax, grease or oils.
3. Gasoline, benzene, naphtha, fuel oil, motor oil, or other flammable or explosive liquids, solids or gases.
4. Rain, storm, surface, ground or cooling water, subsurface drainage, or roof runoff.
5. Garbage, ashes, cinders, sand, mud, straw, metal shavings, glass, rags, feathers, tar, plastics, wood, paunch manure, or any other solid or viscous substances to the extent that they may cause obstruction to the flow in sewers or any other interference with the proper operation of the sewer system.
6. Water or waste having a pH lower than 5.5 or higher than 9.0 or having any other corrosive property to the extent that it may cause damage, interference with proper operation, or constitute a hazard to structures, equipment, or personnel.

7. Water or waste containing a toxic or poisonous substance to the extent that it may injure or interfere with any sewage treatment process, constitute a hazard to humans or animals or create any hazard in water receiving the effluent of the treatment plant.
8. Noxious or malodorous gas or substance to the extent that it may create a public nuisance.
9. Sewage septic tank contents, provided however that the Authority may allow the discharge of such wastes and may impose specific charges for the handling and treatment of such wastes.
10. Any garbage, particularly that which results from preparation, cooking, and dispensing of food which has not been properly shredded.
11. Any waters or wastes containing Suspended solids (S.S.) or Biochemical Oxygen Demand (B.O.D.) in excess of 300 parts per million or containing any unusual Chemical Oxygen Demand (C.O.D.) or chlorine requirements in such quantities as to constitute a significant load on the Sanitary Sewerage Facilities.
12. Wastes of domestic, industrial, commercial, garbage or other origin discharged into the system and which have characteristics, such as but not limited to excessive discoloration and unusual volume or concentration, that add unduly to the cost of maintenance and operation. Such wastes will be subject to surcharges as described hereinafter.
13. Any waters or wastes containing strong acid, iron, pickling wastes, or concentrated plating solutions whether neutralized or not.
14. Any waters or wastes containing unusual concentrations of iron, chromium, copper, zinc and similar objectionable or toxic substances.
15. Any waters or wastes containing unusual concentrations of phenols or other taste or odor producing substances, particularly those which exceed limit requirements of the State, Federal or other public agencies having jurisdiction for such discharge.
16. Any radioactive wastes or isotopes of such half-life or concentration which may exceed limits established by applicable State or Federal regulations.

17. Any waters or wastes containing substances which are not amenable to treatment or reduction by the wastewater treatment processes employed, or are amenable to treatment only to such degree that the wastewater treatment plant effluent cannot meet the applicable discharge permit requirements.
18. Constitute a rate of discharge or substantial deviation from normal rates of discharge, ("slug discharge"), sufficient to cause interference in the operation and performance of the treatment facilities;
19. No user shall ever increase the use of process 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 Federal Categorical Pretreatment Standards, or in any other pollutant-specific limitation developed by the Authority or State.

- B. Grease, oil, and sand traps shall be provided when in the opinion of the Authority they are necessary for the proper handling of liquid wastes containing such ingredients or any other of a flammable or harmful nature except that such interceptors may not be required for private living quarters or dwelling units.

All grease, oil, and sand traps shall be of a type and capacity approved by the Authority. They shall be of substantial construction, watertight, and equipped with easily removable covers which when bolted in place shall be gas and watertight.

All grease, oil and sand traps shall be maintained by the Owner at his expense in continuously efficient operation at all times.

- C. The discharge or proposed discharge into the public sewers of any water or wastes resulting from any industrial or manufacturing process, product of comparable activity shall be subject to the review and approval of the Authority.

When necessary, in the opinion of the Authority, the Owner of any such industrial or manufacturing establishment shall provide, at his expense, such preliminary treatment of his industrial waters or wastes as may be required to remove objectionable characteristics or constituents or to satisfy any other condition which the Authority considers advisable.

Plans and specifications and any other pertinent information relating to required or proposed preliminary treatment facilities shall be submitted for

the review and approval of the Authority. Construction of such facilities shall not commence until approved in writing by the Authority.

- D. Customers who install at their own expense an approved measuring device to determine the actual volume of wastewater being discharged into the sewers may be allowed a reduction in their sewer service charge, provided the discharge volume is substantially less than their related consumption of public water.

Customers using private water supplies may be required to install at their own expense an approved measuring device to determine the actual volume of wastewater being discharged into the sewers.

E. ACCIDENTAL DISCHARGES (SLUG LOAD).

1. Each user shall provide protection from accidental discharge of prohibited materials or other substances regulated by this Ordinance. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner or user's own cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the Authority for review, and shall be approved by the Authority before construction of the facility. No user who commences contribution to the POTW after the effective date of this ordinance shall be permitted to introduce pollutants into the system until accidental discharge procedures have been approved by the Authority. Review and approval of such plans and operating procedures shall not relieve the user from the responsibility to modify the user's facility as necessary to meet the requirements of this Ordinance. In the case of accidental discharge, it is the responsibility of the user to immediately telephone and notify the POTW of the incident. The notification shall include location of discharge, type of waste, concentration and volume, and corrective actions.
2. Within five (5) days following an accidental discharge, the user shall submit to the Director a detailed written report describing the case of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage, or other liability which may be incurred as a result of damage to the treatment works and treatment facility, fish kills, or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties, or other liability which may be imposed by this article or other applicable law.

3. A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees who to call in the event of a dangerous discharge. Employers shall insure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

F. COSTS OF DAMAGE. If the drainage or discharge from any establishment causes a deposit, obstruction, or damage to any of the Authority's treatment works or treatment facility, the Director shall cause the deposit or obstruction to be promptly removed or cause the damage to be promptly repaired. The cost for such work, including materials, labor, and supervision shall be borne by the person causing such deposit, obstruction, or damage.

2.8 INDUSTRIAL/COMMERCIAL DISCHARGES.

A. INFORMATION REQUIREMENTS.

1. All industrial dischargers shall file with the Authority wastewater information deemed necessary by the Director for determination of compliance with this Ordinance, the Authority's VPDES permit condition, and State and Federal law. Such information shall be provided by completion of a questionnaire designed and supplied by the Director and by supplements thereto as may be necessary.
2. Where a person owns, operates or occupies properties designated as an industrial discharger at more than one location, separate information submittals shall be made for each location as may be required by the Director.
3. Information and data on an Industrial User obtained from reports, questionnaires, permit applications, permits and monitoring programs and from inspection shall be available to the public or other governmental agency without restriction unless the User specifically requests and is able to demonstrate to the satisfaction of the Authority 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 person furnishing a report, the portions 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 to this Ordinance, the Virginia Pollutant Discharge Elimination System (VPDES) Permit, State Disposal System Permit and/or the Pretreatment Programs; provided, however, that

such portions of a report shall be available for use by the State or any state agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

Information accepted by the Authority as confidential, shall not be transmitted to any governmental agency or to the general public by the Authority until and unless a ten (10) day notification is given to the User.

B. USER PERMITS.

1. All significant industrial users proposing to connect to or to contribute to the treatment works shall obtain a User Permit before connecting to or contributing to the treatment works. All existing significant industrial users connected to or contributing to the treatment works shall obtain a User Permit within one hundred eighty (180) days after the effective date of this Ordinance.
2. Significant Industrial Users required to obtain a permit shall complete and file with the Authority an application in the form prescribed by the Authority. Existing significant industrial users shall apply for a Permit within thirty (30) days after the effective date of this Ordinance, and proposed new significant industrial users shall apply at least ninety (90) days prior to connecting to or contributing to the treatment works. In support of the application, the user shall submit, in units and terms appropriate for evaluation, the following information:
 - a. Name, address and location (if different from address);
 - b. SIC number according to the Standards Industrial Classification Manual, Bureau of the Budget, 1987, as amended;
 - d. Wastewater constituents and characteristics including, but not limited to, those mentioned in Section 2.7 of this Ordinance as determined by a reliable analytical laboratory; sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to Section 304(f) of the Act and contained in 40 CFR, Part 136, as amended;
 - e. Average daily and peak wastewater flow rates, including daily, monthly and seasonal variations, if any;

- f. Site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;
- g. Description of activities, facilities and plant processes on the premises including all materials which are or could be discharged;
- h. The nature and concentration of any pollutants in the discharge. A statement identifying the applicable pretreatment standards and requirements, and a statement regarding whether or not the pretreatment standards are being met on a consistent basis and if not, whether additional O&M and/or additional pretreatment is required for the User to meet applicable Pretreatment Standards; and,
- i. If additional pretreatment and/or O&M will be required to meet the Pretreatment Standards, the shortest schedule by which the User will provide such additional pretreatment. The completion date in this schedule shall not be later than the compliance date established for the applicable Pretreatment Standard.

The following conditions shall apply to this schedule:

- (1) The schedule shall contain increments of progress 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 Pretreatment Standards (e.g., hiring an engineer, completing preliminary plans, completing final plans executing contract for major components, commencing construction, completing construction, etc.).
- (2) No increments referred to in paragraph i. shall exceed nine (9) months.
- (3) No 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 Director including, as a minimum, whether or not it complied with the increment of progress to be met

on such date and, if not, the date on which it expects to comply with this increment of progress; the reason for delay, and the steps being taken by the User to return the construction to the schedule established. In no event shall more than one (1) year elapse between such progress reports to the Director.

- j. Each product produced by type, amount, process or processes and rate of production;
 - k. Type and amount of raw materials processed (average and maximum per day);
 - l. Number of type of employees, and hours of operation of plant and proposed or actual hours of operation of pretreatment system;
 - m. Any other information as may be deemed by the Authority to be necessary to evaluate the user permit application.
3. Permit Conditions. User Permits shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, user charges and fees established by the Authority. Permits may contain the following:
- a. The unit charge or schedule of user charges and fees for the wastewater to be discharged to a community sewer;
 - b. Limits on the average and maximum wastewater constituents and characteristics; (Permits must contain this item.)
 - c. Limits on average and maximum rate and time of discharge or requirements for flow regulations and equalization;
 - d. Requirements for installation and maintenance of inspection and sampling facilities;
 - e. Specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types and standards for tests and reporting schedule;
 - f. Compliance schedules;

- g. Requirements for submission of technical reports or discharge reports. See Section 2.7, C of this Article.
 - h. Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by the Authority, and affording the Authority access thereto;
 - i. Requirements for notification of the Authority for any new introduction of wastewater constituents or any substantial change in volume or character of the wastewater constituents being introduced into the treatment works;
 - j. Requirements for immediate notification of slug discharges;
 - k. Other conditions as deemed appropriate by the Authority to ensure compliance with this Ordinance;
 - l. Statement of applicable remedies.
4. User Permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date. The User shall apply for permit reissuance a minimum of one hundred eighty (180) days prior to the expiration of the User's existing permit. The terms and conditions of the permit may be subject to modification by the Authority during the term of the permit as limitations or requirements as identified in Section 2 are modified or other just cause exists. The User shall be informed of any proposed changes in his permit at least thirty (30) days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.
5. User Permits are issued to a specific User for a specific operation. A User Permit shall not be reassigned or transferred or sold by the User to a new owner, new user, different premises, or a new or changed operation without the approval of the Authority. Any succeeding owner or user shall also comply with the terms and conditions of the existing permit in the interim prior to the issuance of the respective new permit.

SECTION 3 SCHEDULE OF RATES AND CHARGES

3.1 GENERAL.

All charges applicable to a service shall be charges against the owner and customer of record, although the applicant for such services may have been another person. Charges begin with the use of the water meter, its reactivation, granting a non-user exemption or the sewer service connection. These charges end upon notice to discontinue.

Customers are responsible for furnishing their correct address to the Authority. Failure to receive bills will not be considered an excuse for nonpayment, nor permit an extension of the date when the account will be considered delinquent. Bills for water service are mailed monthly and shall be due and payable in full when rendered. Checks, money orders, etc., shall be made payable to the Greenville County Water and Sewer Authority and all payments shall be mailed to or made at the Greenville County Water and Sewer Office, or at such other places as may be officially designated. There shall be no abatement of the minimum charges, in whole or in part due to the extended absence of the customer unless service has been discontinued at this request.

The Authority may establish special rates and may enter into contract with any person, political subdivision or public body for the wholesale or retail sale of water, the provision of any unusual water service, or the provision of any sanitary sewerage provided, however, that the rates and charges to be applied there are fair and equitable. The actual cost of providing such services, the terms of any trust agreement under which bonds were issued to pay for any part of either system, the requirements of any related Grantor, and the effective length of such a service contract shall be accounted and taken into consideration.

Any damage to the facilities of the Authority shall be paid for by the responsible party or parties.

3.2 WATER SERVICE.

The following rates and charges for water service shall be applicable within the service areas and Jurisdictional Area of the Authority.

A. CONNECTION CHARGE. All applicants for water service shall be subject to the payment of a connection charge at the time of application for such service. The connection charge will be refunded, without interest, if the service application is disapproved or denied.

The purpose of the connection charge is to defray the cost of installation of service connection from the distribution main in the street to the property line and to defray, in part, the cost of installing the water system, including the storage facilities, transmission and distribution mains, pumping stations, house connections, meters and appurtenances.

The following rates and charges for water service on existing water line shall be applicable for structures and lots located on public rights-of-way up to 50 feet and being located within the service areas and Jurisdictional Area of the Authority. For those structures located on rights-of-way greater than 50 feet, the following connection fees or the actual cost of installing the service lateral to the property line, which ever is greater will be charged.

1. Residential. Residential connection charges are based on the installation of a 5/8 x 3/4 inch meter per service connection.

- a. Single Family Residential.

- (1) During Notification Period, per unit \$480.00
 After Notification Period, per unit \$960.00

Installment Contract – the Authority may allow an installment contract to pay Connection charges in no more than ten (10) equal monthly payments. The interest rate on such installment is six (6) percent.

- (2) Within new residential subdivisions in which the developer or sub-divider constructs the water system complete, including service connections and meters at his expense, per unit \$480.00

- b. Multi-Family Dwellings.

Includes, but not limited to, Condominiums, Duplexes, Townhouses, Apartments, Apartment Houses, Cooperatives, etc. being served from one master water meter.

- (1) For first dwelling unit:
 During Notification Period, per unit \$480.00
 After Notification Period, per unit \$960.00

- (2) For each additional one bedroom dwelling unit:
 During Notification Period, per unit \$168.00
 After Notification Period, per unit \$336.00

- (3) For each additional two bedroom dwelling unit:
 During Notification Period, per unit \$240.00
 After Notification Period, per unit \$480.00

- (4) For each additional three or more bedroom dwelling units:
 During Notification Period, per unit \$336.00
 After Notification Period, per unit \$672.00

- (4) For single buildings with one hundred or more dwelling units, the connection charge shall be negotiated and shall under no circumstances be less than \$23,040.00

c. Mobile Homes and Mobile Home Parks.

Being served from one master water meter.

- (1) Single trailer:

During Notification Period, per unit	\$480.00
After Notification Period, per unit	\$960.00

- (2) Trailer Courts, for each of the first 10 lots:

During Notification Period, per unit	\$312.00
After Notification Period, per unit	\$624.00

- (3) Trailer Courts, larger than 10 lots:

The charge will be based on 85 percent of the total potential number of lots; if the resultant is a fraction it will be raised to the next highest whole number.

d. Notification Period.

The notification period referred to in this section shall be 90 days following the issuance through public notice of such period by the Authority. Generally the notification period will commence following the completion of construction of the particular system.

e. Residential Facility Fee

Each residential customer connecting to an existing water main will pay a Residential Facility Fee in addition to the stated connection fee. \$400.00

- 2. Commercial, Industrial and Institutional. The minimum connection charge for any commercial business establishment shall be \$960.00, except that during a notification period, the minimum connection fee shall be \$480.00. The minimum connection charge for any industrial or institutional establishment shall be \$960.00, except that during a notification period the minimum connection fee shall be \$480.00. Connection charges for all commercial, industrial and under the following schedule, will be determined by the Authority based on latest available data pertaining to water demand or usage as established by the State agencies or approved source. The connection charge shall

be based on single family residential equivalents being served through one meter.

- a. Motels and Motor Court, per unit \$210.00
During Notification Period, per unit \$105.00

- b. Restaurant and/or Eating Establishments,
on Interstate highway or interchange,
per seat \$288.00
During Notification Period \$144.00

Not on Interstate highway or interchange,
per seat \$76.80
During Notification period, per seat \$38.40

- c. Drive-In Restaurants. One parking space shall be equivalent to two (2) seats. Seats inside the building will be considered separately and charges according to proceeding schedule.

- d. In the event the restaurant is combined with a retail store, the connection charge shall be based on each separate operation.

- 3. The above stated rates and charges are based upon the installation of a 5/8 x 3/4 inch water meter at each service connection. Should a larger size meter be required or requested by any customer, the additional cost to the customer shall be determined by the Authority based upon the additional cost incurred by the Authority plus fifteen percent for administration cost.

B. SERVICE CHARGE. All water service customers shall be subject to the payment of a minimum monthly service charge. A service active for less than one month's billing period shall be subject to the minimum rate, or the metered rates, whichever is larger. No abatement of the monthly minimum service charge shall be made for leaks or for water wasted by improper or damaged service pipes or fixtures owned by the customer.

Owner-Occupied Structures: Prior to connection, applicant (of owner/occupied structures or tenant occupied structures when the owner accepts responsibility for the payment of the monthly bill) shall make a deposit equal to the proposed service charge for two months. The deposit shall be held in escrow, and the amount held in escrow shall bear no interest. Upon refund of such deposit, the Authority shall be permitted to deduct from the deposit any amount then owed from the applicant who is entitled to the refund, and the Authority shall be required to refund only the excess, if any, by which the deposit exceeds the amount then owed from the applicant. Applicant may request a refund at any time, which request shall be granted if, and only if, one of the following conditions is determined by the Authority to exist:

1. Service has been terminated at the request of the applicant.
2. Service has been terminated by action of the Authority, and pursuant to its Rules and Regulations.
3. Twelve (12) months have elapsed from the date of deposit by the applicant, and through the preceding twelve months the applicant has submitted all payments due to the Authority when due.

During the first week of May and November of each year, the Authority shall, without need of application, review the records of any applicant from whom the Authority has received the deposit required hereunder. If that review reveals that the deposit of any applicant was made more than twelve months prior to said review by the Authority, and that during the immediately preceding twelve months all amounts due from the depositor to the Authority have been paid in full when due, then the Authority shall refund to the depositor the deposit held by it, but subject to its right to make deductions there from as aforesaid.

Where a customer will be a water and sewer customer both, a deposit will be collected for two months for the higher utility bill and not for both.

Rental Structures: Prior to connection, the applicant (tenant) shall make a deposit equal to the proposed service charge, penalty and applicable consumer utility tax for three months plus the disconnection charge. The deposit shall be held in escrow, and the amount held in escrow, shall bear no interest. The Authority shall be permitted to deduct from the deposit any amount then owed from the applicant who is entitled to the refund, and the Authority shall be required to refund only the excess, if any, by which the deposit exceeds the amount then owed from the applicant. Applicant may request a refund at any time, which request shall be granted if, and only if, one of the following conditions is determined by the Authority to exist:

1. Service has been terminated at the request of the applicant.
2. Service has been terminated by action of the Authority, and pursuant to its Rules and Regulations.

The property owner will be notified within thirty (30) days of a tenant's delinquency in paying a bill.

For a complete listing of deposit charges, refer to GCWSA administrative office.

Right of Offset: Any deposit submitted by any applicant for service from the Authority, whether for sewer service or water service or any overpayment of connection fees or other fees, may thereafter be refunded in accordance with the Authority Rules and Regulations. However, at the time Authority is considering making a refund to any applicant, it shall be entitled to a "right of offset". Before approving such a refund to any applicant, the Authority's agent shall determine whether there are any delinquent amounts

owed from such applicant to the Authority. In the event of such delinquent accounts, then the refund which would otherwise have been made to the applicant shall first be used towards payment of the delinquent accounts, and for the purpose, the entire refund which would otherwise have been made may be applied in full, if necessary towards payment of the delinquent accounts.

1. Residential User. Minimum fee of \$16.77 per month for up to 3,000 gallons of water per month, plus an additional \$5.59 for each 1,000 gallons per month used in excess of 3,000 gallons.
2. Commercial User. Commercial water service charges shall be based on the actual water consumption and on a rate of \$5.87 per 1,000 gallons up to 1,000,000 gallons per month. No bill shall be rendered for less than the minimum monthly service charge of \$17.66 per month. Service charges for consumption exceeding 1,000,000 gallons per month shall be determined by the Authority and adjusted from time to time to cover as a minimum all capital and operational and maintenance expenses as incurred by the Authority.

Industrial User. Industrial water service charges shall be based on the actual water consumption and on a rate of \$5.87 per 1,000 gallons up to 1,000,000 per month. No bill shall be rendered for less than the minimum monthly service charges of \$17.66 per month. Service charges for consumption exceeding 1,000,000 gallons per month shall be \$4.83 per 1,000 gallons and adjusted from time to time to cover as a minimum all capital and operational and maintenance expenses as incurred by the Authority.

Institutional User. Institutional water service charges shall be based on the actual water consumption on a rate of \$6.33 per 1,000 gallons up to 1,000,000 gallons per month. No bill shall be rendered for less than the minimum monthly service charge of \$18.99 per month. Service charges for consumption exceeding 1,000,000 gallons per month shall be \$5.24 per 1,000 gallons and adjusted from time to time to cover as a minimum all capital and maintenance expenses as incurred by the Authority.

3. Non-user Service Charge. Those residential, commercial, industrial and institutions having been granted a non-user exemption shall not be required to discontinue the use of its potable water supply but shall be required to pay a non-user service charge. The monthly non-user service charge shall be calculated by dividing the total debt service cost by the total budgeted operating and total debt service costs multiplied time the residential equivalent minimum monthly service charge. The non-user service charge is subject to annual review and change.

4. The purpose of the above charges is to defray all other costs of providing water facilities, including transmission, distribution, storage and treatment, including repayment of moneys borrowed to acquire or construct the water system, operation and maintenance, renewals, replacements and extensions, as well as costs incurred in clerical and bookkeeping activities, and meter reading as required for each service.
5. Billing. Bills for water service shall be rendered monthly to each water customer unless established otherwise by the Authority.
6. Grace Period and Penalty.
 - a. Bills are due when rendered. The grace period of the payment of all service charges shall be thirty calendar days. At the expiration of this time, service will be discontinued by the Authority. After twenty calendar days of the bill being rendered, a penalty of ten percent (10%) will be applied to the bill.
 - b. Upon reapplication for service and upon payment of a service charge of sixty dollars (\$60.00) and the past due amount and penalty, service shall be reinstated.
 - c. In all cases where there are past due charges due the Authority, the owner of record and customer of record of the property shall be held responsible or liable for payment of these outstanding accounts.
 - d. Partial payments. The Rules and Regulations permit installment payments of past due accounts when such accounts fall within the following category and when the responsible party agrees to sign an installment contract as drawn up by the County Attorney.
 - e. A fee of thirty dollars (\$30.00) will be charged for all returned checks.
 - f. Delinquent Accounts Service may be reinstated upon reapplication for service and upon payment of a service charge of sixty dollars (\$60.00) as referred to in 3.2-6-b and the past due amount and penalties being set up for payment by entering into agreement (installment contract).

Only one installment contract per account can be in effect at any given time, when entered into pursuant to paragraph f above and only up to a ten (10) month duration.

C. ACCOUNT CHARGE. All applicants for water service shall be subject to the payment of an account charge. Twenty-five dollars (\$25.00) will be assessed against each new service, new non-user service or transfer of service, to defray the cost incurred in clerical and bookkeeping activities.

D. METER RELOCATION CHARGE. If a customer requests the relocation of a meter, the charge assessed shall be a minimum of one hundred dollars (\$100.00) plus the applicable connection fee from Article (a), Item 1, 2 or 3.

E. FIRE PROTECTION SERVICE. A fire protection service charge shall be assessed against the political subdivision in which the Authority's water system is constructed. Its purpose is to defray some of the cost of installing water mains, reservoirs and fire hydrants of sufficient size to provide fire protection service within the project service areas and to all properties adjacent to the system. The annual service charge shall be computed on the basis of two hundred fifty dollars (\$250.00) per fire hydrant. Bills for fire protection service shall be rendered annually at the beginning of each fiscal year to the respective political subdivision and its governing body.

F. FILLING OF SWIMMING POOLS. If a customer request the filling of a swimming pool from a hydrant:

1. The service charge assessed shall be two hundred dollars (\$200.00) plus the cost of water at the prevailing rate.
2. Pools will be filled only during regular working hours, Monday through Friday.

G. DISCONNECTION CHARGE AND RECONNECTION CHARGE. In the event a structure temporarily becomes vacant for a period of time, the Owner or customer of record may request that service be discontinued only until the structure is occupied again. The charge for disconnection of service shall be thirty dollars (\$30.00) to cover the personnel and bookkeeping cost. Upon reapplication for service and payment of a sixty dollar (\$60.00) service charge and any past due amounts, service shall be reinstated.

1. Service Charge. If water is turned off at customer's request for any reason or if a service call is made due to a customer's request and the problem which exist is the responsibility of the customer a thirty dollar (\$30.00) service fee will be charged. Re-Reads are excluded from this policy.

H. ENFORCEMENT OF CHARGES AND FEES.

1. Only those persons who have been granted a non-user exemption shall be classified as such. All those remaining, having been sent a notification letter; shall be classified as users. The failure to apply for service constitutes a regular user status.

2. In the event the physical connection is not made at the expiration of the notification period, the balance of the connection fee is then due and payable to the Authority the same as if the connection had been made.
3. The minimum service charge, either user or non-user applicable to the property, as if the physical connection had been made, shall begin to accrue as of the expiration of the notification period and shall be payable the same as if such connection had been made as of that date and service was rendered.
4. The notification period referred to in this section shall be 90 days.

3.3 SANITARY SEWERAGE SERVICE.

The following rates and charges for sanitary sewerage service shall be applicable within the service areas and Jurisdictional Area of the Authority.

A. CONNECTION CHARGE. All applicants for sewer service shall be subject to the payment of a connection charge at the time of application for such service. The connection charge will be refunded, without interest, if the service application is disapproved or denied.

The purpose of the connection charge is to defray the cost of installation of service connection from the collector sewer in the street to the property line and to defray, in part, the cost of installing the sewerage system, including the interceptors, collection system, service connections and other appurtenances such as pumping and treatment facilities.

The following rates and charges for sewer service on existing sewer lines shall be applicable for structures and lots located on public right-of-way up to fifty feet (50') and no more than six (6) feet deep being located within the service areas and Jurisdictional Area of the Authority. For those structures located on rights-of-way greater than fifty feet (50') or sewer mains deeper than six (6) feet the following connection fees or the actual cost of installing the service lateral to the property line, whichever is greater will be charged.

1. Residential. Residential connection charges are based on the installation of 5/8" x 3/4" meter per service connections.

a. Single Family Dwellings.

- | | | |
|-----|--|------------|
| (1) | During Notification Period, per unit | \$660.00 |
| (2) | After Notification Period, per unit | \$1,320.00 |
| | Installment Contract – the Authority may allow an installment contract to pay connection charges in no more than ten (10) equal payments. The interest rate on such installments is six (6) percent. | |
| (3) | Within new residential subdivisions in which the developer or sub-divider constructs the sewerage system complete, including house service connections, at his expense, per unit | \$660.00 |

b. Multi-Family Dwellings. Includes, but not limited to Condominiums, Duplexes,

Townhouses, Apartments, Apartment Houses,
Cooperatives, etc.

- (1) For first dwelling unit:

During Notification Period, per unit	\$660.00
After Notification Period, per unit	\$1,320.00

- (2) For each additional one bedroom dwelling unit:

During Notification Period, per unit	\$231.00
After Notification Period, per unit	\$462.00

- (3) For each additional two bedroom dwelling unit:

During Notification Period, per unit	\$330.00
After Notification Period, per unit	\$660.00

- (4) For each additional three or more bedroom dwelling unit:

During Notification Period, per unit	\$462.00
After Notification Period, per unit	\$924.00

- (5) For single buildings with one hundred or more dwelling units, the connection charge shall be negotiated and shall under no circumstances be less than \$33,000.00

c. Mobile Homes and Mobile Home Parks.

- (1) Single trailer:

During Notification Period, per unit	\$660.00
After Notification Period, per unit	\$1,320.00

- (2) Trailer Courts, for each of the first 10 lots:

During Notification Period, per unit	\$429.00
After Notification Period, per unit	\$858.00

- (3) Trailer Courts, larger than 10 lots:

The charge will be based on 85 percent of the total potential number of lots; if the resultant is a fraction, it will be raised to the next highest whole number.

d. Notification Period. The notification period referred to in this section shall be 90 days following the issuance through public

notice of such period by the Authority. Generally the notification period will commence following the completion of the construction of the particular system.

- e. Residential Facility Fee. Each residential customer connecting to an existing sewer main will pay a Residential Facility fee in addition to the stated connection fee. \$835.00

2. Commercial, Industrial and Institutional. The minimum connection charge for any commercial business establishment shall be \$1,320.00, except that during a notification period, the minimum connection fee shall be \$660.00. The minimum connection charge for any industrial or institutional establishment shall be \$1,320.00, except that during a notification period the minimum connection fee shall be \$660.00. Connection charges for all commercial, industrial and institutional establishments, which are not readily classified under the following schedule, will be determined by the Authority based on latest available data pertaining to water demand or usage as established by the State agencies or approved source. The connection charge shall be based on single family residential equivalents being served through one meter.

- a. Motels and Motor Court, per unit \$288.00
During Notification Period, per unit \$144.00
- b. Restaurant and/or eating establishments.
On interstate highway or interchange, per seat \$396.00
After Notification Period, per unit \$198.00

Not on interstate highway or interchange, per seat \$105.60
During Notification Period, per seat \$52.80
- c. Drive-In Restaurant. One parking space shall be equivalent to two (2) seats. Seats inside the building will be considered separately and charged according to preceding schedule.
- d. In the event the restaurant is combined with a retail store, the connection charge shall be based on each separate operation.

B. SERVICE CHARGE. All sewer service customers shall be subject to the payment of a monthly minimum service charge. A service active for less than one month's billing period shall be subject to the same payment. No abatement of the monthly minimum service charge shall be made for any reason.

Owner-Occupied Structures: Prior to connection applicant (of owner/occupied structures or tenant occupied structures when the one accepts responsibility for the payment of the monthly bill) shall make a deposit equal to the proposed service charge for two months. The deposit shall be held in escrow, and the amount held in escrow shall bear no interest. Upon refund of such deposit, the Authority shall be permitted to deduct from the deposit any amount then owed from the applicant who is entitled to the refund, and the Authority shall be required to refund only the excess, if any, by which the deposit exceeds the amount then owed from the applicants. Applicants may request a refund at any time, which request shall be granted if, and only if, one of the following conditions is determined by the Authority to exist.

1. Service has been terminated at the request of applicant
2. Service has been terminated by action of the Authority, and pursuant to its Rules and Regulations.
3. Twelve (12) months have lapsed from the date of deposit by the applicant, and throughout the preceding twelve months the applicant has submitted all payments due to the Authority when due.

During the first week of May and November of each year, the Authority shall, without need of application, review the records of any applicant from whom the Authority has received the deposit required hereunder. If that review reveals that the deposit of any applicant was made more than twelve months prior to said review by the Authority, and that during the immediately preceding twelve months all amounts due from the depositor to the Authority have been paid in full when due, then the Authority shall refund to the depositor the deposit held by it, but subject to its right to make deductions there from as aforesaid.

Where a customer will be a water and sewer customer both, a deposit will be collected for two months for the higher utility bill and not for both.

Rental Structures: Prior to connection, the applicant (tenant) shall make a deposit equal to the proposed service charge, penalty and applicable consumer utility tax for three months plus the disconnection charge. The deposit shall be held in escrow, shall bear no interest. The Authority shall be permitted to deduct from the deposit any amount then owed from the applicant who is entitled to the refund, and the Authority shall be required to refund only the excess, if any, by which the deposit exceeds the amount then owed from the applicant. Applicant may request a refund at any time, which request shall be granted if, and only if, one of the following conditions are determined by the Authority to exist:

1. Service has been terminated at the request of the applicant.
2. Service has been terminated by action of the Authority and pursuant to its Rules and Regulations.

The property owner will be notified within thirty (30) days of a tenant's delinquency in paying bill.

For a complete listing of deposit charges, refer to the Office Procedural Manual.

Right of Offset: Any deposit submitted by any applicant for service from the Authority, whether for sewer service or water service or any overpayment of connection fees or other fees, may thereafter be refunded in accordance with the Authority Rules and Regulations. However, at the time the Authority is considering making a refund to any applicant, it shall be entitled to a “right-of-offset”. Before approving such a refund to any applicant, the Authority’s agent shall determine whether there are any delinquent amounts owed from such applicant to the Authority. In the event of such delinquent accounts, then the refund which would otherwise have been made to the applicant shall first be used towards payment of the delinquent accounts, and for the purpose, the entire refund which would otherwise have been made may be applied in full, if necessary towards payment of the delinquent accounts.

1. Residential. Residential sewer service charges shall be based upon the actual water consumption whenever possible. The minimum monthly sewer service charge shall be \$32.03 per unit for the first 4,000 gallons for all residential categories previously described. Thereafter, the supplemental charge shall be based upon a rate of \$6.41 per 1,000 gallons. No bill will be rendered for less than the minimum service charge of \$32.03 per month.
2. Commercial User . Commercial sewer service charges shall be based upon the actual water consumption whenever possible. The minimum monthly sewer service charge shall be \$37.36 per unit for the first 4,000 gallons. Thereafter, the supplemental charge shall be based upon a rate of \$7.47 per 1,000 gallons. No bill will be rendered for less than the minimum service charge of \$37.36 per month. Service charges for consumption exceeding 1,000,000 gallons per month shall be determined by the Authority and adjusted from time to time to cover as a minimum all capital and operational and maintenance expenses as incurred by the Authority.

Industrial User. Industrial sewer service charges shall be based upon the actual water consumption whenever possible. The minimum monthly sewer service charge shall be \$37.36 per unit for the first 4,000 gallons. Thereafter, the supplemental charges shall be based upon a rate of \$7.47 per 1,000 gallons. No bill will be rendered for less than the minimum service charge of \$37.36 per month. Service charges for consumption exceeding 1,000,000 gallons per month shall be \$6.79 per 1,000 gallons and adjusted from time to time to cover as a minimum all capital and operational and maintenance expenses as incurred by the Authority.

Institutional User. Institutional sewer service charges shall be based upon the actual water consumption whenever possible. The minimum

monthly sewer service charge shall be \$40.39 per unit for the first 4,000 gallons. Thereafter, the supplemental charges shall be based upon a rate of \$8.29 per 1,000 gallons for usage less than 1,000,000 gallons per month. Service charges for consumption exceeding 1,000,000 gallons per month shall be \$9.31 per 1,000 gallons and adjusted from time to time to cover as a minimum all capital and operational and maintenance expenses as incurred by the Authority.

3. Non-User Service Charge. Those residential, commercial, industrial and institutions having been granted a non-user exemption shall not be required to discontinue the use of its approved septic system but shall be required to pay a non-user service charge. The monthly non-user service charge shall be calculated by dividing the total debt service cost by the total budgeted operating and total debt service costs multiplied times the residential equivalent minimum monthly service charge. The non-user service charge is subject to annual review and change.
4. Premises not discharging the entire volume of wastes into the sewer will be allowed a reduction in charge provided the customer installs, at his expense, a meter or meters, or other positive means of measurement, satisfactory to the Authority, of the volume either discharged or not discharged into the sewers. Customers using private water supplies may be required to install, at their own expense, a meter or other device for determining the volume of sewage discharged into the sewers.
5. Surcharge Requirements. Wastes of domestic, industrial, commercial, or other origin discharged into the system and which have characteristics that add unduly to the cost of maintenance and operation of the sanitary sewerage facilities of the Authority or adversely affect their performance shall be surcharged into keeping with such special rates as shall be appropriate and adopted by the Authority.

Where operations which are subject to surcharge are of an abnormal or unusual type, the surcharge shall be assessed based on the normal characteristics of wastes from such operations as available from industrial, chemical or engineering texts or where otherwise indicated by the Authority. The Authority may make or require to be made, at the customer's expense, such tests as will provide an adequate basis for the surcharge to be assessed.

The Authority may make or require to be made, at the customer's expense, such tests as will provide adequate basis for any surcharge to be made.

6. Pre-treatment before discharge or elimination of the discharge may be required if in the opinion of the Authority the type of waste and/or the manner of discharge is such as to be detrimental to the Sanitary Sewerage Facilities of the Authority.
7. The purpose of the above charges is to defray all other costs of providing sewerage facilities, including collection, treatment, and disposal for domestic, commercial and industrial establishments, including repayment of moneys borrowed to acquire or construct the sewerage system, operation and maintenance, renewals, replacements and extensions as well as costs incurred in clerical and bookkeeping activities, and meter reading as required for each service.
8. Billing. Bills for sewer service shall be rendered monthly to each sewer service customer unless established otherwise by the Authority.
9. Grace Period and Penalty.
 - a. Bills are due when rendered. The grace period for the payment of all service charges shall be 30 calendar days. At the expiration of this time, service shall be discontinued by the Authority. After 20 calendar days of the bill being rendered, a penalty of ten percent (10%) will be applied to the bill.
 - b. Upon reapplication for service and upon payment of a service charge of sixty dollars (\$60.00) and the past due amount and penalty, service shall be reinstated.
 - c. In all cases where there are past due charges due the Authority, the Owner of record and customer of record of the property shall be held responsible or liable for payment of these outstanding account.
 - d. A fee of thirty dollars (\$30.00) will be charged for all returned checks.

C. ACCOUNT CHARGE. All applicants for sewer service shall be subject to the payment of an account charge. Twenty-five dollars (\$25.00) for each new service or transfer of service to defray the cost incurred in clerical and bookkeeping activities will be assessed against each service customer.

D. SEWER CLEANOUT CHARGE. If a customer request the relocation of a sewer cleanout, the charge assessed should be a minimum of one hundred dollars (\$100.00) plus the applicable connection fee from 3.3-A-1, 2 or 3.

E. ENFORCEMENT OF CHARGES AND FEES.

1. If application for service is approved by the Authority and either full connection fee paid or a deposit has been received during the notification period it is mandatory that such service be utilized.
2. In the event the physical connection is not made at the expiration of the notification period, the balance of the connection fee is then due and payable to the Authority the same as if the connection had been made.
3. The minimum service charge applicable to the property, as if the physical connection had been made, shall begin to accrue as of the expiration of the notification period and shall be payable the same as if such connection had been made as of that date and service was rendered.
4. The notification period referred to in this section shall be 90 days.

ENFORCEMENT.

A. HARMFUL CONTRIBUTIONS. The Authority may suspend the wastewater treatment service and/or a User Permit when such suspension is necessary. In the opinion of the Authority, in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or welfare of person, to the environment, causes Interference to the treatment facilities or causes the Authority to violate any condition of its VPDES Permit.

Any person notified of a suspension of the wastewater treatment service and/or the User Permit shall immediately stop or eliminate the contribution. In the event of a failure of the person to comply voluntarily with the suspension order, the Authority shall take such steps as deemed necessary including immediate severance of the sewer connection and/or the seeking of legal and equitable relief in the Circuit Court, to prevent or minimize damage to the wastewater treatment facilities or endangerment to any individuals. The Authority shall reinstate the User Permit and/or the wastewater treatment service upon proof of the elimination of the non-complying discharge. A detailed written statement submitted by the User describing the causes of the harmful contribution and the measures taken to prevent any future occurrence shall be submitted to the Authority within fifteen (15) days of the date of occurrence.

B. REVOCATION OF PERMIT. The User who violates the following conditions of this Ordinance, or applicable State and Federal regulations, is subject to having his permit revoked in accordance with the procedures of Section 3 of this Ordinance for:

1. Failure of a User to factually report the wastewater constituents and characteristics of his discharge;
2. Failure of the User to report significant changes in operations, or wastewater constituents and characteristics;
3. Refusal of reasonable access to the User's premises for the purpose of inspection or monitoring; or,
4. Violation of conditions of the permit.

C. NOTIFICATION OF VIOLATION. Whenever the Authority finds that any User has violated or is violating this Ordinance, User Permit or any prohibition, limitation of requirements contained herein, the Authority may serve upon such person a written notice, a plan for the satisfactory correction thereof shall be submitted to the Authority by the User.

D. LEGAL ACTION. If any person discharges sewage, industrial waste or other wastes into the Authority's treatment works contrary to the provisions of this Ordinance, applicable Federal or State Pretreatment Requirements, or any order of the Authority or if any industrial user refuses access to the Director or his designee for purposes of inspection, the Authority's Attorney may commence an action for appropriate legal and/or equitable relief in the Circuit Court.

E. PENALTIES. The Director shall have the authority to assess on any user who is found to have violated an Order of the Director or who failed to comply with any provision of this Ordinance and the orders, rules, regulations and permits issued hereunder a penalty of \$1,000.00 per day violation. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense.

PART II
CONSTRUCTION SPECIFICATIONS
AND STANDARDS
FOR WATER FACILITIES

SECTION 4 GENERAL REQUIREMENTS.

4.1 GENERAL.

All installations shall be in strict accordance with the Building Officials Code Administrators (BOCA) codes, the Virginia Department of Health, Water Works Regulations, adopted June 1977, and the Greenville County Water and Sewer Authority, "Rules and Regulations and Construction Specifications and Standards."

No deviation from the Rules and Regulations and Construction Specifications and Standards and construction details approved by the Authority shall be allowed, unless specifically authorized in writing by the Authority.

Although constructed as parcels or sub-systems, all water mains and related facilities of all proposed developments shall be approved on the basis of their functional integration with the Authority's total water system.

4.2 MINIMUM SIZES.

- A. The minimum size of water mains where fire protection is to be provided or required shall be six inch interior diameter. Water mains not sized to carry fire flows shall not be connected to fire hydrants.
- B. All water distribution piping shall be capable of providing an instantaneous demand flow of three (3) gallons per minute per connection at a minimum pressure of twenty (20) pounds per square inch (psi). Pipes of lesser diameter may be used in the following instances:
 - 1. When the run is less than 600 feet but more than 300 feet, three inch (3") interior diameter pipe may be used.
 - 2. Except for individually metered services, two inch (2") interior diameter pipe shall be the absolute minimum acceptable size, and its use shall be restricted to short dead end runs not to exceed three hundred feet (300') and serving not more than six (6) domestic or residential users.

3. The Authority reserves the right to determine the size of any proposed water main that will be accepted into the system.

4.3 MINIMUM COVER.

All water mains shall be provided with a minimum of not less than 36 inches of earth cover measured from established finished grade to the top of the pipe to prevent freezing.

4.4 SEPARATION OF WATER MAINS AND SANITARY SEWERS.

- A. GENERAL. There shall be no physical connection between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any sewage or polluted water into the potable water supply. No water supply or distribution pipe shall pass through or come in contact with any part of a sewer manhole. Further no water supply line shall be installed closer than ten feet (10') horizontally to septic tanks and thirty feet (30') to septic tank tile lines. It shall be well recognized that water supply lines and structures shall be kept remote from any existing sewers.

PARRALLEL INSTALLATION. Water mains shall be laid at least ten feet horizontally, barrel to barrel, from a sewer or sewer manhole. Where local conditions prevent a horizontal separation of ten feet, the water main may be laid closer to a sewer provided that the bottom of the water main is at least 18 inches above the top of the sewer. Where this vertical separation cannot be obtained the sewer shall be constructed of cast iron mechanical joint pipe and shall be pressure tested in place to 5 psi without leakage prior to backfilling.

- C. CROSSING. Water mains crossing sewers shall be installed with a separation of at least 18 inches between the bottom of the water main and the top of the sewer. Where located conditions prevent a vertical separation, sewers passing over or under water mains shall be constructed of cast iron mechanical joint pipe and shall be pressure tested in place to 5 psi without leakage prior to backfilling. Water mains passing under sewers shall, in addition, be protected by providing a vertical separation of at least 18 inches between the bottom of the sewer and the top of the water main. Adequate structural support for the sewers shall be provided to prevent excessive deflection of the joints and settling on or breaking the water main. Further, the length of the water main shall be centered at the point of the crossing so the joints shall be equidistant and as far as possible from the sewer.

SECTION 5 CONSTRUCTION SPECIFICATIONS.

5.1 GENERAL PROCEDURES.

- A. Hydraulic analyses shall be computed for all proposed service areas; main size design shall be based on full area development. Prior to the construction of any water system, the Owner or Developer shall submit to the Authority for review and approval four sets of all necessary construction data. Such construction data shall consist of the plans, specifications, easements, submittals of materials and other appropriate information as deemed necessary by the Authority.

All water mains shall be looped whenever possible. All systems and sub-systems shall be designed to eliminate cross connections and back siphonage. Where unavoidable dead ends occur, they shall be provided with a fire hydrant or an adequate sized blow-off assembly for flushing purposes. No flushing device shall be directly connected to any sewer or nonapproved piping system.

- B. Pipe, fittings, valves, hydrants and accessories shall be loaded and unloaded by lifting with hoists to avoid shock or damage. Under no circumstances shall such be dropped. Pipe shall not be skidded or rolled against pipe already on the ground. Pipe shall be handled so that the coating and lining shall not be damaged. Damaged items shall be either repaired or replaced at the discretion of the Authority.

The water main shall be laid and maintained to the required lines and grades with fittings, valves, hydrants and accessories set at the required locations as indicated on the approved plans for the project. All valve and hydrant stems shall be set plumb. Wherever obstructions not shown on the plans are encountered during progress of the work and which interfere to such an extent that an alteration in the plans is required, the Authority or its authorized representative shall be advised and approval given before such alterations are put into effect.

- C. All pipe shall be installed according to the manufacturer's recommendations as approved by the Authority. No pipe shall be laid in water, or when, in the opinion of the Authority, trench conditions are unsuitable.
- D. Only those pipe materials as approved by AWWA except for Asbestos-Cement shall be used.

5.2 INSTALLATION.

- A. EXCAVATION. Excavation of whatever substance may be encountered shall be performed to the dimensions and depths specified or shown on the Applicant's approved drawings. Ledge rock, boulders and large stones shall be removed to provide a clearance at least six inches below and on each side of all pipe, valves and fittings for pipes 24 inches in diameter or less, and nine inches for pipe larger than 24 inches in diameter. The specified minimum clearances are the minimum clear distances which will be permitted between any part, projection or joint of such rock, boulder or stone.

In the event that unstable material is encountered at or below the excavation depth, the Authority shall be notified. Such materials shall be furnished as an ordinary and integral part of excavation and backfill. If excavation of any nature has been made deeper than necessary, then a layer of #57 stone shall be placed to secure a firm foundation for pipe.

- B. TRENCHING. The trench shall be dug so that the pipe can be laid to the alignment and depth required and it shall be excavated not more than 200 feet in advance of the complete pipe laying operation. The width of the trench shall be ample to permit the pipe to be laid and jointed properly and the backfill to be placed and thoroughly compacted in accordance with the plans and specifications. Trenches shall be of such extra widths when required as will permit the convenient placing of timber supports, sheeting and bracing and handling of special fittings. Bell holes shall be provided at each joint to permit proper joint construction and inspection. In no case shall the pipe bells be used to support the body of the pipe.
- C. DRAINAGE. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly. Trenches shall be kept dry while pipe is being laid.
- D. BACKFILL. Clean earth, sand, crushed stone or other material approved by the Authority shall be used for backfill. Material suitable for backfill shall be selected, deposited and compacted to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly hand tamped around the pipe in 6 inch layers up to a level at least one foot above the top of the pipe. Backfilling shall be carried out simultaneously on both sides of the pipe.

The remainder of the backfill shall be deposited and compacted by mechanical tampers except in areas where paving is to be placed over the backfilled trench. In these areas, compaction shall achieve a density of at

least 95 percent of the maximum density as determined by the American Association of State Highway and Transportation Officials' (A.A.S.H.T.O.) Method T-180.

- E. PIPE INSTALLATION. Stockpiled pipe materials shall be handled by mechanical equipment and placed to avoid interference with traffic and the trenching operation.

Adequate supports shall be provided for all pipes. The bottom of the trench shall be carefully shaped to the curvature of both the bell and barrel of the pipe. A continuous and uniform bedding shall be provided in the trench for all pipe so that the pipe barrel bears on and is supported by undisturbed ground at every point between bell holes. Trenching below the specified grade shall be backfilled with #57 stone and thoroughly compacted. The finished subgrade shall be prepared accurately by means of hand tools. Where excavation is made in rock or boulders the subgrade shall be made by backfilling with crushed stone or clean selected soil which shall be thoroughly compacted.

Before the pipe is lowered into the trench, each section of pipe shall be thoroughly inspected for defects and shall be swabbed or brushed out to insure that no dirt or foreign material gets into the finished main. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in line.

When installing pipe in the trench, proper implements, tools and facilities satisfactory to the Authority and as recommended by the material manufacturer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, valves, fittings and hydrants and accessories shall be carefully lowered into the trench piece by piece by means of derricks, ropes, slings, or other suitable tools or equipment in such a manner as to prevent damage to water main materials and any protective coatings and linings. Lifting equipment shall be satisfactorily rated to handle the pipe and fittings required. Under no circumstances shall water main materials be dropped or dumped into the trench.

During the laying operation no debris, tools, clothing or other materials shall be placed in the pipe and the trench shall be kept free of water. Before jointing the pipe, all lumps, blisters, excess coating material, oil or foreign material shall be removed from the bell and spigot ends of the pipe and fittings shall be kept fully closed by a test plug to prevent earth, water, or other substances from entering the pipe.

Pipe shall be laid true to line and grade and shall be joined together such that the completed pipe will have a smooth invert. After placing a length of pipe in the trench, the spigot end shall be centered in the open bell of

the pipeline and the pipe pushed home with a bar. THE USE OF LIFTING AND HYDRAULIC EQUIPMENT TO MAKE PIPE JOINTS SHALL BE SPECIFICALLY PROHIBITED.

All joints shall be watertight and any leaks or defeats discovered shall be immediately repaired to the satisfaction of the Authority. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned and the pipe properly re-laid. Any superfluous material inside the pipe shall be flushed or removed by means of an approved follower or scraper after joints are made. Installations of fittings and pipe joints shall be in strict accordance with the manufacturer's recommendations.

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 or lining and so as to leave a smooth end at right angles to the axis of the pipe. Only qualified and experienced workmen shall be used on this work. The flame cutting of pipe by means of an oxacetylene torch shall not be allowed.

Wherever it is necessary to deflect pipe from a straight line either in the vertical or horizontal plane to avoid obstructions or plum stems, or where long-radius curves are permitted, the amount of deflection allowed shall not exceed that required for satisfactory joining of the pipes, as specified by American Water Works Association (AWWA) Specification and the manufacturer's recommendations. If the specified or required alignment requires deflections exceeding those recommended, the Developer or contractor shall provide bends as approved by the Authority.

Road crossings shall be installed in accordance with the requirements of the Virginia Department of Highways and Transportation, which governs the method and materials of such construction. The Owner shall obtain the necessary permit prior to actual installation.

Roadways and driveways, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other improvements on public or private property which have been damaged or removed in excavating, shall be restored to conditions equal to or better than existed prior to construction. Materials for roadways, alleys, or driveways shall be compacted to at least 95 percent of the maximum density as determined by the A.A.S.H.T.O. Method T-180. The cost of this compaction and furnishing new materials shall be at the expense of the Owner or Developer.

The site restoration of the entire construction area shall be finished in a neat and uniform condition acceptable to the Authority.

5.3 FITTINGS AND ACCESSORIES.

- A. All tees, bends, plugs, caps and fire hydrants shall be substantially braced, blocked, and/or anchored to prevent any movement by providing adequate reaction backing. This backing shall be 2500 psi concrete. Backing shall be placed between solid undisturbed earth and the fitting to be anchored shall be so placed that pipe and fitting joints will be accessible for repair.
- B. Required thrust blocks shall be as delineated in the Standard Details. The type of fitting maximum pressures and type of soil in the thrust area shall be subject to the review and approval of the Authority.
- C. Where thrust blocking is not feasible due to the soil conditions, a harnessing detail for each type of intended application shall be submitted for the approval of the Authority. A special dead-man block with a harness arrangement is recommended.

5.4 VALVES AND HYDRANTS.

- A. GENERAL. Hydrants and valves shall have the interiors cleaned of all foreign matter before installation. Stuffing boxes shall be tightened and the hydrants or valve shall be inspected in opened and closed positions to see that all parts are in working condition.
- B. VALVES AND VALVE BOXES. All valves shall be provided with valve boxes. Extension boxes and the necessary wrench with extension handles shall be provided where necessary due to the depth of the valve. Valves and valve boxes shall be set plumb with the valve boxes centered directly over the valve operators. After being correctly positioned, earth fill shall be carefully tamped around the valve box to a distance of at least four feet on all sides of the box or to the undisturbed trench face if less than four feet. Before installing any valve, care shall be taken to see that all foreign material is removed from the interior of the barrel and the valve operated to see that all parts are in working condition. Valves shall be installed at 1,500 foot maximum spacing along the pipeline and at all intersections of streets and roads for controlling the flow in the pipe network.

If possible, valves and valve boxes shall be located outside the area of existing or proposed paved roads and streets. In off-street areas, they shall be set and adjusted so that the covers are exposed and flush with the finished grade. Where valves and valve boxes are or will be located within paved areas, they shall be set and adjusted so that the cover is exposed and flush with the finished surface. If the paved surfaces are renewed or replaced by the Developer or Owner after the related water system has been approved and accepted by the Service Authority, but while such paved areas or streets are still the obligation of the Developer

or Owner, the valve boxes therein shall be re-adjusted relative to the elevation of the finish surface.

No water main shall terminate under a concrete gutter, and, wherever possible to avoid, no valves shall be located under a concrete gutter.

- C. HYDRANTS. In general, fire hydrants shall be a minimum of 5-1/4 inches in size and shall be located at street intersections and at the ends of long dead-end streets. The maximum distance between fire hydrants shall be 800 feet. Unless the location of hydrants is specifically indicated otherwise, they shall be located so that the valve and hydrant are located beyond the ditch line. Roadways with right-of-ways less than 50 feet wide may require easements for the installation.

All attempts shall be made to place fire hydrants in areas that do not have high ground water levels. Fire hydrants located in a high groundwater area will require the weep hole on the hydrant to be plugged and note made on the plans as such.

The hydrant shall be set upon a slab of stone or concrete not less than four inches thick and fifteen inches square. The back of the hydrant opposite the pipe connection shall be firmly blocked against the vertical face of the trench with a cast-in-place 2500 psi concrete thrust block to prevent the hydrant from blowing off the line. Bridle rods and rod collars shall also be used. Bridle rods and rod collars shall be not less than 3/4 inch diameter stock and shall be protected by a coat of bituminous paint. Not less than seven cubic feet of crushed stone shall be placed around the base of the hydrant to insure proper drainage.

The pipe connecting the hydrant to the water main shall be a nominal size of 6 inches and equipped with a valve and valve box. Hydrants shall be set with the invert of the pumper connection 18 inches above finished grade, with the pumper connection facing the street. The connecting pipe will have the same depth of cover as the distributing mains. The backfill around hydrants shall be thoroughly compacted to the grade line.

5.5 SURFACE WATER CROSSINGS.

- A. ABOVE WATER CROSSING. Where a water main crosses above surface water, the pipe shall be adequately supported, completely insulated to protect it against damage from freezing accessible for repair or replacement and above the level of a 100 year flood and any floating debris it may carry.
- B. UNDER WATER CROSSINGS.

1. The water main pipe shall be of special construction, having flexible watertight joints. The pipe material used shall be subject to the Authority's approval. In some instances, the Owner or Developer may be required to install the pipe in a concrete encasement as graphically indicated in the Construction Standards.
2. Valves shall be provided at both ends of the water crossing so that the section can be isolated for tests or repair. The valves shall be easily accessible and not subject to flooding.
3. Sample taps shall be available at each end of the crossing and at a reasonable distance from each side of the crossing. Permanent taps shall be made for testing and locating leaks.

5.6 ROAD CROSSINGS.

Crossings under roads shall be installed in accordance with the details shown and with the requirements of the Virginia Department of Highways and Transportation. Crossings shall be accomplished prior to construction of adjacent sections of the project.

Steel pipe casings shall be installed by either boring or jacking the casing beneath the roadbed of primary roads. The Contractor should make every effort to insure successful completion of bored road crossings through the use of test holes, pilot drill holes, etc.

Casing pipe required for bored installations shall be uncoated steel with 3/8 inch walls and 36,000 psi yield strength. Casing pipe sections shall be continuously welded at joints as the casing is advanced. Where open-cut crossings are permitted, casing pipe must be installed. Casing pipe for service connections, if required, shall be a minimum of Schedule 40 steel.

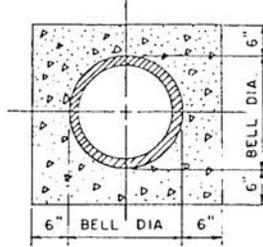
SECTION 6 CONSTRUCTION STANDARDS.

6.1 GENERAL REQUIREMENTS.

The following standards delineated by graphical details shall be applicable to the construction of all water facilities improvements within the Jurisdictional Area of the Authority. Deviations from these standards shall require written approval from the Authority.

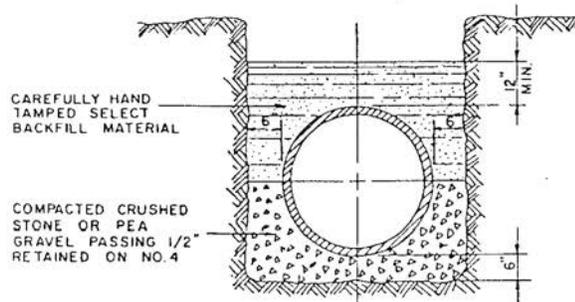
6.2 STANDARD DETAILS.

PLATE	I	CONCRETE ENCASEMENT AND GRANULAR BEDDING AND BACKFILL MATERIAL
PLATE	II	THRUST BLOCKS
PLATE	III	CONCRETE ANCHOR
PLATE	IV	SPECIAL ROAD CROSSING
PLATE	V	PIPE SKID AND BORED CROSSING
PLATE	VI	BLOW OFF ASSEMBLIES
PLATE	VII	AIR RELEASE ASSEMBLY (MANUAL)
PLATE	VIII	AIR RELEASE ASSEMBLY (AUTOMATIC)
PLATE	IX	VALVE AND VALVE BOX INSTALLATION
PLATE	X	FIRE HYDRANT SETTING
PLATE	XI	SERVICE CONNECTION AND METER BOX



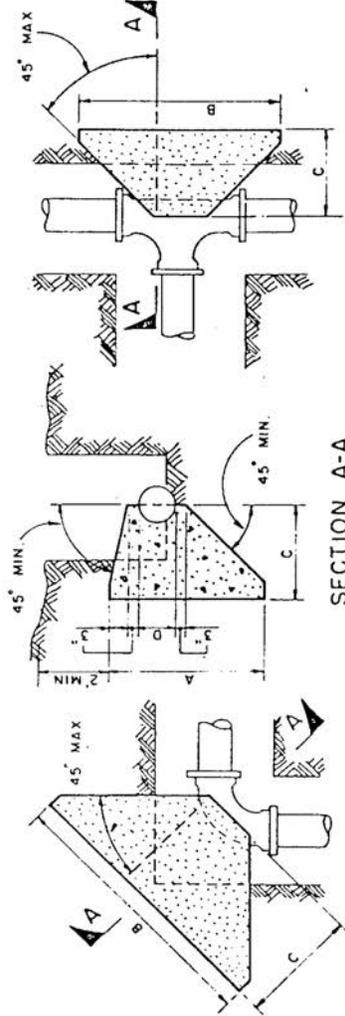
NOTE
 REINFORCING MAY BE REQUIRED
 IN SOME LOCATIONS.

CONCRETE ENCASEMENT



**GRANULAR BEDDING
 AND BACKFILL MATERIAL**

USE WHERE DIRECTED

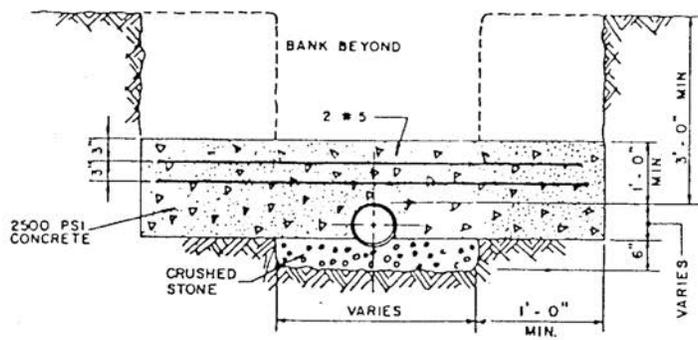
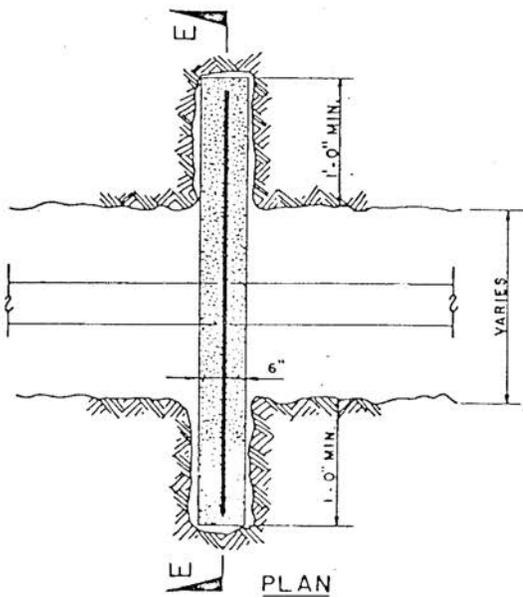


PIPE SIZE	TEE OR DEAD END			90° BEND			45° BEND			22 1/2° B 11 1/4° BENDS		
	A	B	C	A	B	C	A	B	C	A	B	C
6"	1'-6"	2'-0"	1'-6"	2'-0"	2'-0"	2'-0"	1'-0"	2'-0"	1'-0"	1'-0"	1'-0"	1'-0"
8"	2'-0"	2'-6"	1'-6"	2'-6"	3'-0"	2'-0"	2'-0"	2'-0"	2'-0"	1'-0"	2'-0"	1'-0"
10"	2'-0"	4'-0"	2'-0"	3'-0"	4'-0"	2'-0"	2'-0"	3'-0"	2'-0"	1'-6"	2'-0"	1'-6"
12"	3'-0"	4'-0"	2'-0"	3'-0"	5'-6"	2'-6"	2'-6"	3'-6"	2'-0"	2'-0"	2'-6"	1'-6"

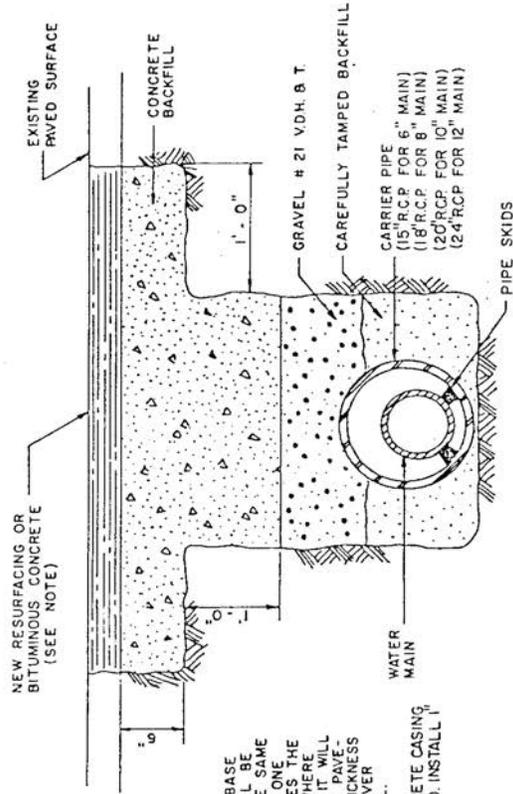
NOTE
VERTICAL BENDS WILL REQUIRE
BLOCKS TO BE TIED TO FITTINGS

NOTE
CONCRETE SHALL NOT BE
POURED ON JOINTS,
LIMITING FLEXIBILITY.

THRUST BLOCKS



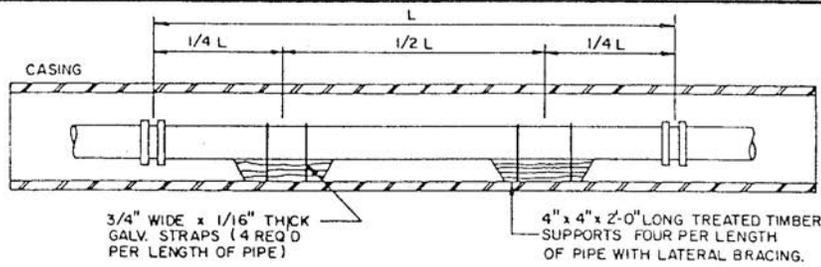
CONCRETE ANCHOR



NOTES

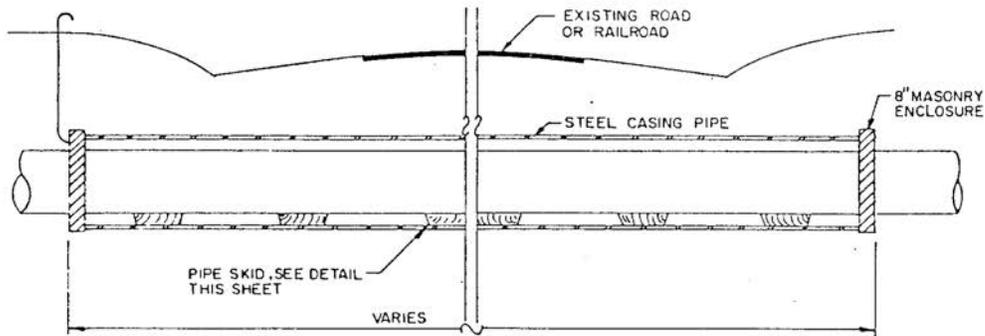
1. WHERE AGGREGATE BASE IS IN PLACE, IT WILL BE REPLACED WITH THE SAME AND ONE WATERING ONE DEPT. IN PLACE WHERE SURFACE IS PAVED. IT WILL BE REPLACED WITH PAYEMENT OF EQUAL THICKNESS AND APPEARANCE OVER CONCRETE BACKFILL.
2. BOTH ENDS OF CONCRETE CASING PIPE TO BE ENCLOSED. INSTALL 1" SCH 40 AIR VENT.

SPECIAL ROAD CROSSING



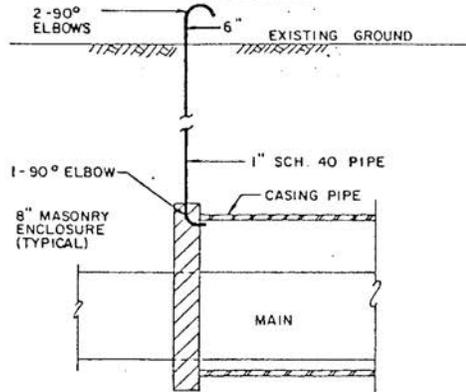
PIPE SKID

NOT TO SCALE



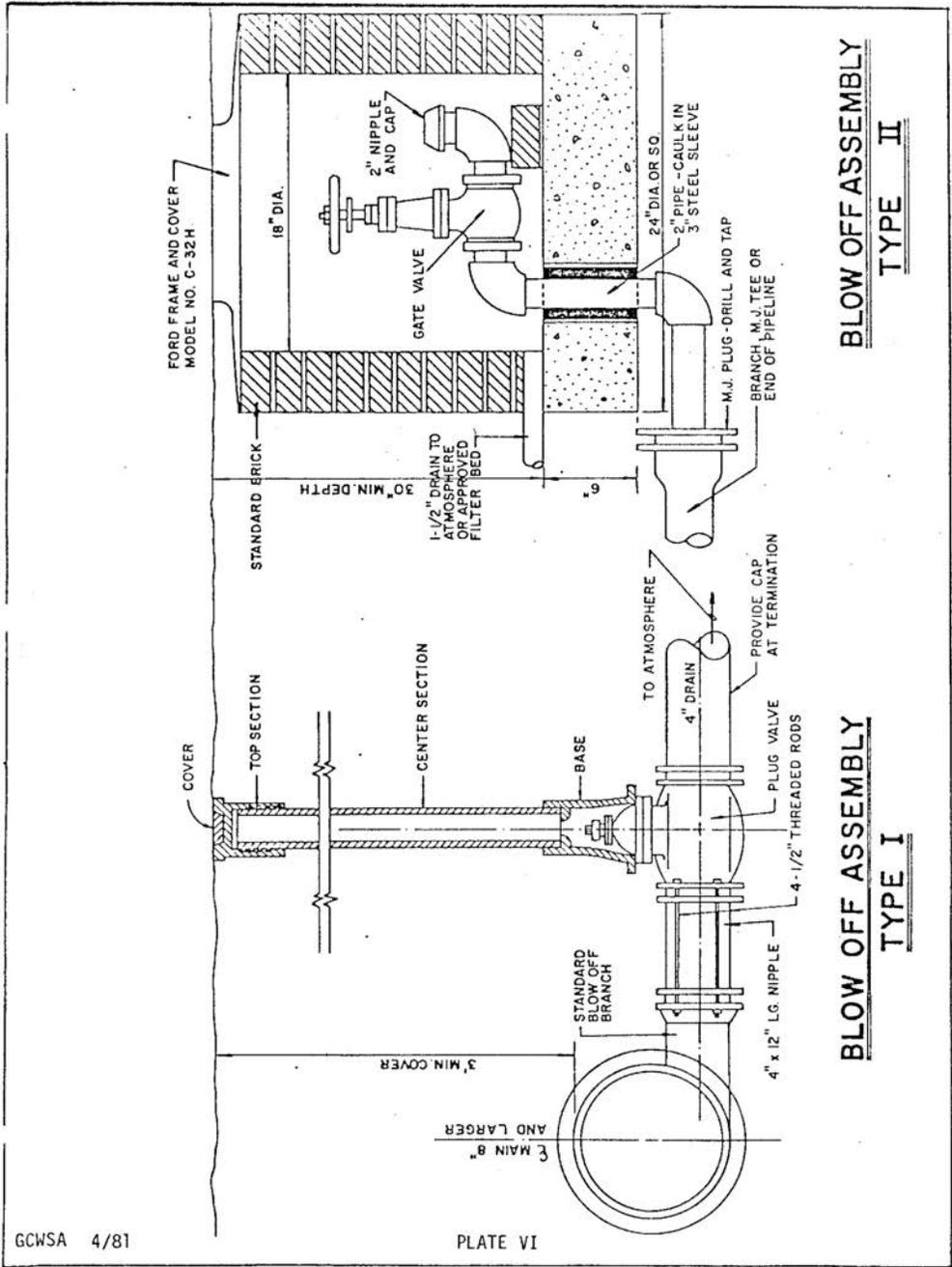
BORED CROSSING

NOT TO SCALE



DETAIL A

NOT TO SCALE

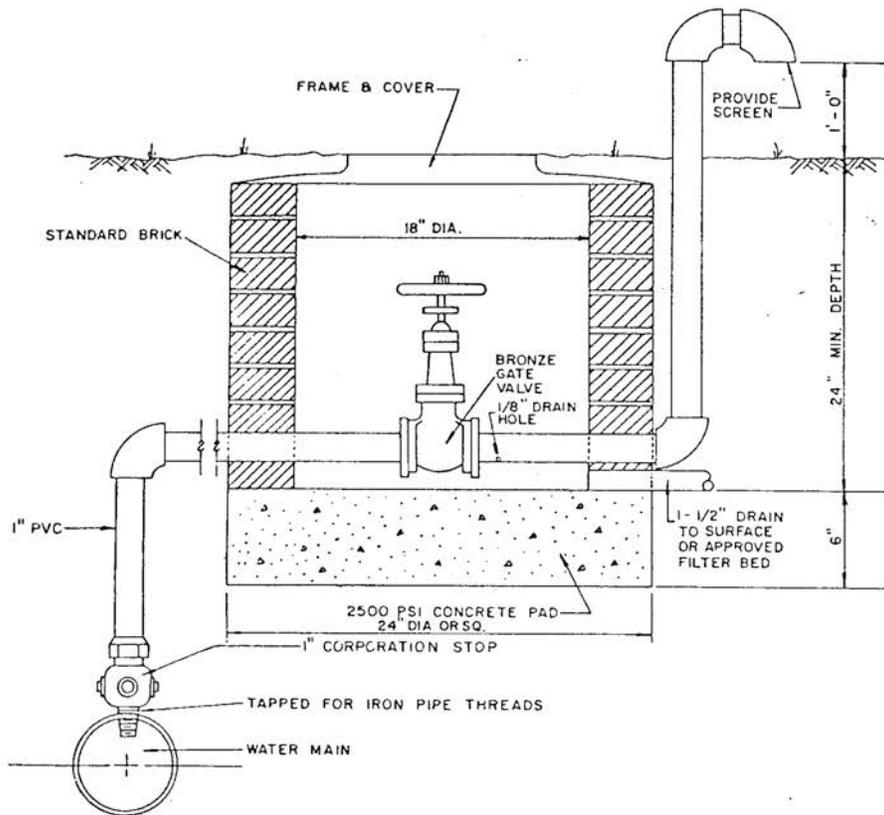


**BLOW OFF ASSEMBLY
TYPE II**

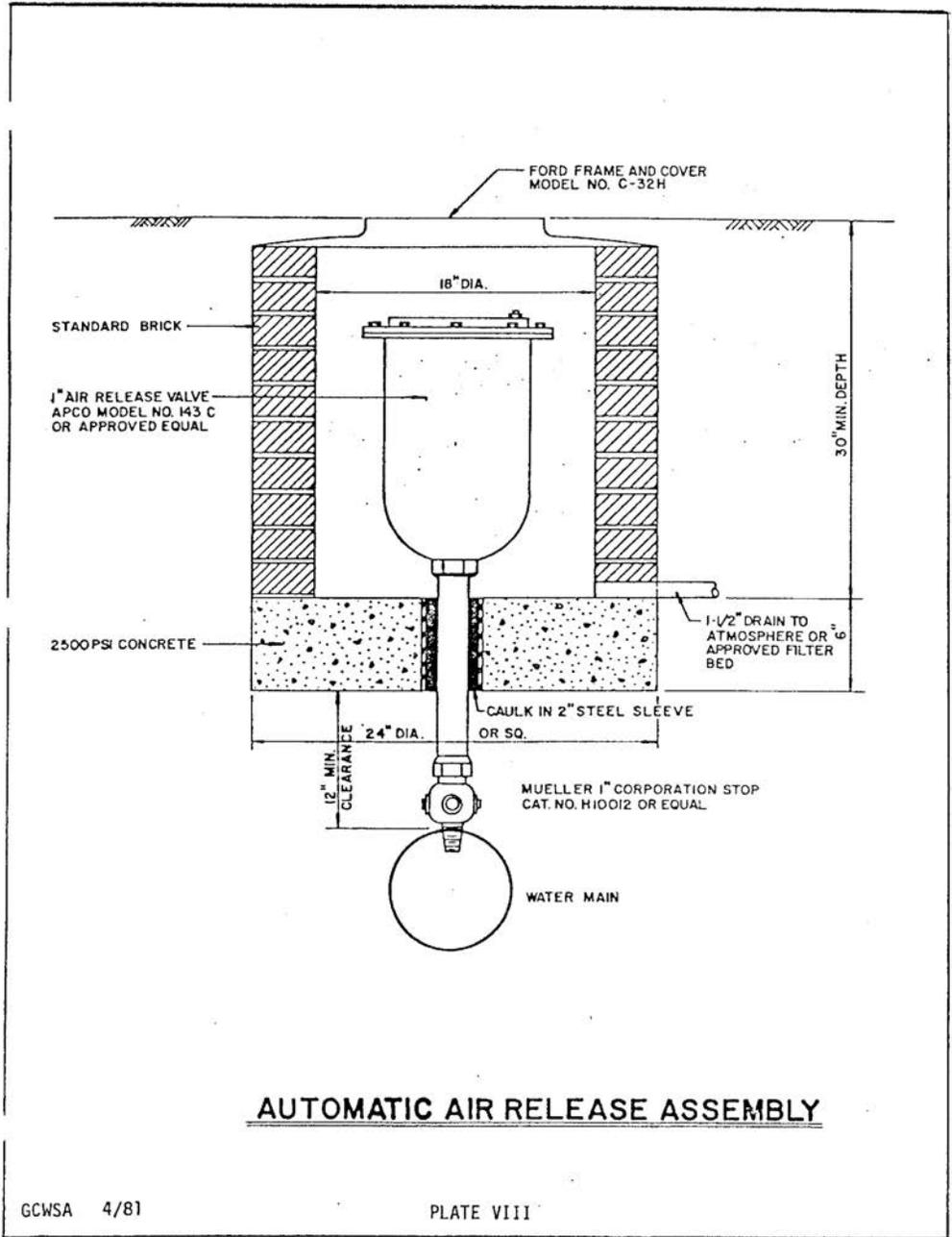
**BLOW OFF ASSEMBLY
TYPE I**

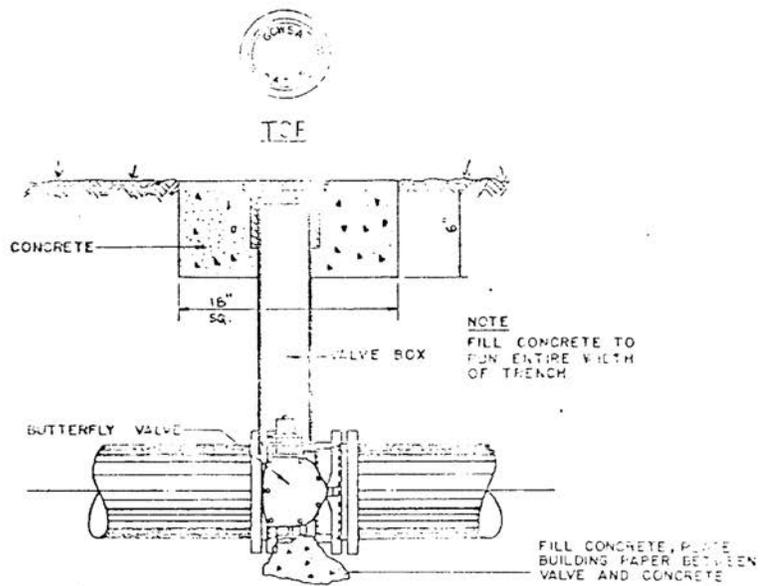
GCWSA 4/81

PLATE VI

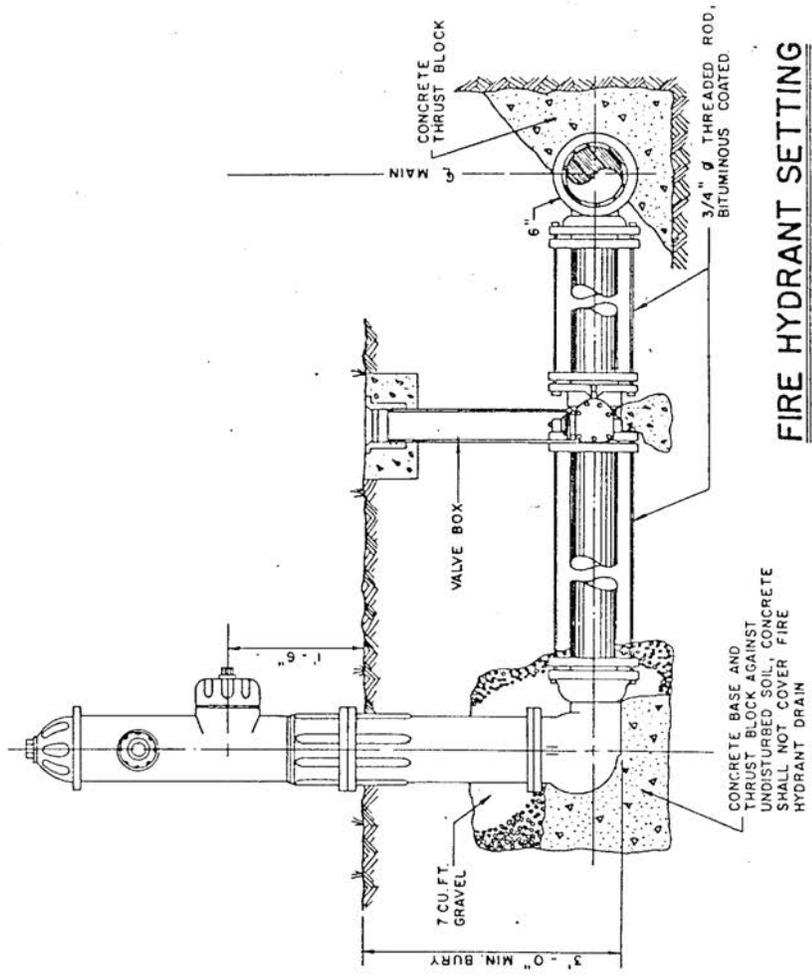


AIR RELEASE ASSEMBLY





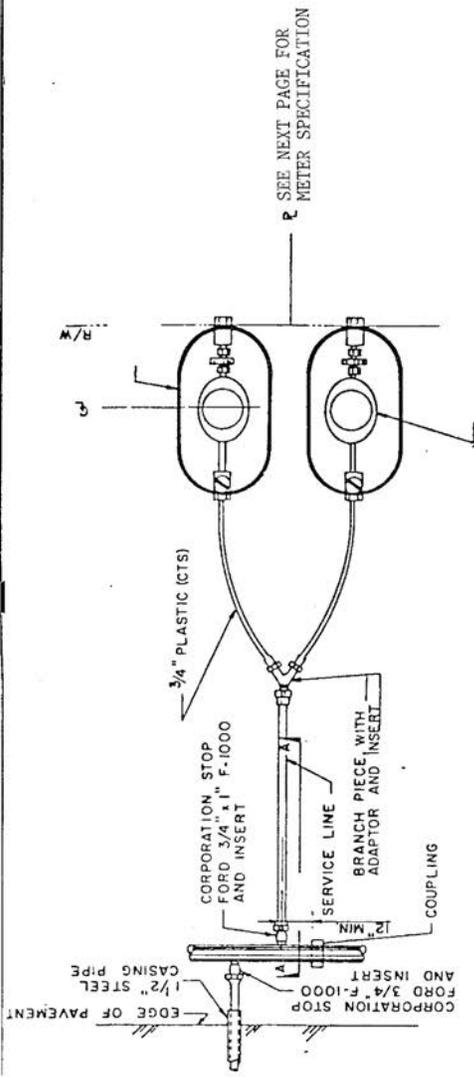
VALVE BOX INSTALLATION
AND VALVE SETTING



FIRE HYDRANT SETTING

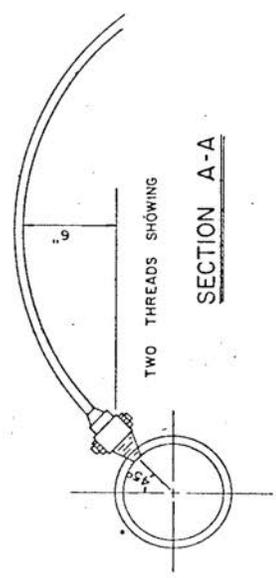
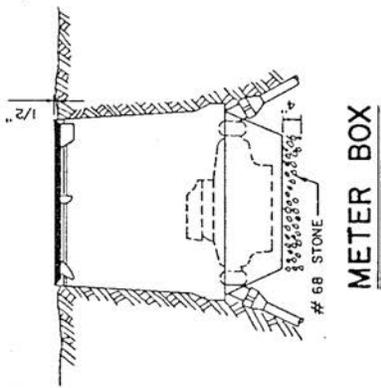
GCWSA 4/81

PLATE X



NOTE
SERVICE TUBE SHALL BE 3/4"
FOR SINGLE METER INSTAL-
LATION, AND 1" FOR DOUBLE
METER INSTALLATIONS.

SERVICE CONNECTION



Meter Specification

Meter Box:

Carson Industries
#1419-18 (plastic)

Meter Box Extension:

Carson Industries
#1419-6 Ex (plastic)

Meter Box Top:

Sigma Inc
#RCL 528 Metal with 1 7/8" hole

Setter:

Ford V72 - 9W - 4133 (3/4")
V74 - 10W - 4133 (1")

Above products available from:

Hughes Supply in Colonial Heights, Virginia
804-520-5480

Meter:

Ammco Touch Read
C-700 with encoder register reading in US gallons

SECTION 7 MATERIALS.

7.1 GENERAL.

Pipe size, type, joint, and class shall be designated on the plans or specified elsewhere. Unless otherwise approved in writing by the Authority, or as specifically indicated on plans approved by the Authority, all pipe, fittings and accessories shall be as delineated in this section.

7.2 WATER MAIN SERVICE PIPE.

- A. CAST IRON PIPE. Cast iron pipe shall be centrifugally cast manufactured in accordance with ANSI Specification A21.6 or A21.8. Cast iron pipe shall be cement-mortar lined inside in accordance with ANSI Specification A21.4-74. Cement for the mortar shall be Type II Portland Cement. The standard seal coat of bituminous material shall be applied to the exterior and interior of the pipe.

Joints for cast iron pipe shall be one of the following:

1. Rubber Gasket (Push_On) Type Joint. Rubber gasket type joints shall be manufactured in accordance with ANSI Specification A21.11-72 and designed to lock against displacement without caulking. The gasket shall be a resilient rubber of heavy section, high durometer, and single molded and shall be installed in accordance with the pipe manufacturer's recommendations. The gasket lubricant shall be a nontoxic, tasteless, odorless grease that will not support bacteria. Each gasket lubricant container shall be labeled with the trade name and the pipe manufacturer's name.
2. Mechanical Joint. Standard mechanical joints shall be manufactured in accordance with ANSI Specifications A21.11-72 (AWWA Specification C111-72). The mechanical joint bolts shall be a U.S. Standard size, high strength, corrosion resistant steel alloy with hexagon nuts.

Fittings shall be manufactured of cast iron and shall be in accordance with the requirements of ANSI Specification A21.10-71. Fittings shall be compatible with the pipe and shall provide at least equal resistance to internal and external loads on the pipe. The lining and coating of the fittings shall be as specified for the pipe.

- B. DUCTILE IRON PIPE. Ductile iron pipe shall be centrifugally cast pipe manufactured in accordance with ANSI Specification A21.51. Joints shall be as specified for cast iron pipe.

- C. AWWA POLYVINYL-CHLORIDE PIPE. Pipe shall be manufactured in accordance with AWWA Specification C900 to cast iron pipe outside diameter dimensions and be approved by Underwriters Laboratories. Class 100 pipe shall meet the requirements of DR 25 and Class 150 pipe shall meet the requirements of DR 18. Joints shall consist of an integral wall section with solid cross section rubber gasket conforming to ASTM Designation D-1869. Pipe shall be clearly marked to show class, size, manufacturer's name and NSF-PW symbol. Fittings for Polyvinyl-chloride pipe shall be mechanical joint cast iron.

A detectable tape identifying PVC Water main with the words "CAUTION: WATER MAIN BURIED BELOW" shall be installed 18 inches below grade in the same trench for purposes of positive identification and location. The tape shall be Terra Tape D (standard color blue for portable water) as manufactured by Griffolyn Co., Inc. or approved equal.

- D. GALVANIZED STEEL PIPE. Galvanized steel pipe shall conform to Federal Specification No. WW-P-404a.
- E. COPPER PIPE. Copper pipe for service connections shall be Type K and shall be used with standard water works fittings.
- F. THERMOPLASTIC TUBING. Thermoplastic tubing shall conform to ASTM Designation D-2737 and shall be Class 160, NSF-PW for drinking water. Tubing shall have a uniform wall thickness and dimensions such that it can be adapted for use with standard water works flare or compression type fittings. Tubing shall be clearly marked to show class, size, manufacturer's name and NSF-PW symbol. Tubing shall be used for service piping only.

7.3 CORPORATION AND CURB STOPS.

- A. CORPORATION STOPS. At each service connection and where directed by the Authority or its Engineer, corporation stops of sufficient size with straight couplings as manufactured by Mueller Company, Ford Meter Box Company, Inc., or approved equal, shall be furnished and installed. The corporation stop shall be taped into the main at an approximate angle of 45 degrees from vertical. The materials and installation of corporation stops shall comply with all the applicable AWWA Specifications. The corporation stops shall be graphically indicated in the Construction Standards.

- B. BRANCH PIECES. There shall be on all double service connections Branch Pieces No. Y44-243 with adapter and insert as manufactured by Ford Meter Box Company, or approved equal.

7.4 VALVES AND VALVE BOXES.

- A. BUTTERFLY VALVES. Butterfly valves shall be cast iron, rubber seated, tight-closing type and shall be in accordance with AWWA Specification C504-74, Class 150B. The valves shall be suitable for buried service. All valve ends shall be mechanical joint conforming to ANSI Specification A21.11-72. (AWWA Specification C111-72).

All valves shall use full Class 150B underground service operator torque rating throughout entire travel. Butterfly valves shall include traveling nut or worm gear operator with standard AWWA operating nut opening by turning left. The valve operator shall be sealed, gasketed, lubricated for underground service and completely suitable for its particular application.

- B. CHECK VALVES. Check valves larger than 1-1/2 inches shall be the swing-check type. Designated for 150 psi working pressure with a suitable opening for cleaning without disconnecting from the pipeline. The valve shall be all bronze or cast iron body with bronze or brass trim and a disc face of bronze or brass. Check valves for major pump station shall be electrically operated. Check valves 1-1/2 inches or smaller shall conform to AWWA Specification C506-69.
- C. GATE VALVES. Gate valves two inches and smaller shall be inside screw, solid bronze, tapered seat, and double disc construction for 250 psi working pressure. The valves shall be suitable for the service required. Two-inch and larger valves shall be Resilient Wedge Gate Valves meeting all requirements of AWWA Specification C509-80 and designed for bubble-tight closure at 200 psi working pressure. The valves shall be the non-rising stem type. Valves for buried service shall be mechanical joint with a standard AWWA operating nut opening by turning left.
- D. VALVE BOXES. Valve boxes shall be installed for all valves which are buried beneath finished grade elevation. Valve boxes shall be an adjustable cast iron enclosure with a flared base and of a suitable size for the applicable valve. The cover or head shall be round and shall have the word "WATER" cast upon it.

7.5 AIR RELEASE VALVE AND BLOW-OFF ASSEMBLIES.

- A. AIR RELEASE VALVE ASSEMBLIES. Air release valve assemblies shall be installed at high points in the line or where required otherwise.

Each assembly shall be one of the following types as directed by the Authority or its Engineer:

1. Manual. Each assembly shall consist of an approved one inch corporation stop, a riser pipe of suitable length, a one inch gate valve in accordance with Sub-section 7.4, Article C of this section.
2. Automatic. Each assembly shall consist of an approved one inch corporation stop, a riser pipe of suitable length, and a one inch air release valve equal to Valve and Primer Corporation, APCO Model No. 143C. A one inch ball valve shall be installed as shown in the construction standards to allow servicing of the Air Release Valve.

The air release valve assembly enclosure or chamber shall have a cast iron frame and cover equal to Ford Meter Box Company, Incorporated Catalog No. C32H.

- B. BLOW-OFF ASSEMBLIES. Blow-off assemblies shall be installed at all pipe dead ends and low points in the line or where otherwise required. The blow-off assembly pipework and valving shall be appropriately sized and shall conform in all respects to the applicable portions of these Construction Specifications.

The blow-off assembly enclosure or chamber shall have a cast iron frame and cover equal to Ford Meter Box Company, Catalog No. C32H. The two types of assembly enclosures shall be as graphically indicated in the Construction Standards. In no instance shall the drain or the outlet be connected to a sanitary sewer.

- C. Neither the air release valve assembly nor the blow-off assembly shall be installed under pavement subject to vehicular traffic.

7.6 HYDRANTS.

- A. Hydrant assemblies shall conform to the latest specifications for valves and traffic model hydrants of the American Water Works Association, shall be approved by the State Inspection Bureau and the National Board of Fire Underwriters, and shall be equal to or better than the existing hydrants on the system.
- B. The hydrants shall be dry barrel, non-flooding, traffic model, frost-proof and AWWA Compression type with waste orifices for draining the hydrant when the valve is closed. The hydrant shall be equipped with a barrel safety flange and a valve stem safety coupling so that neither the barrel nor the stem will break if struck by a vehicle or other object. The

hydrants shall be designed for 150 psi working pressure and 300 psi test pressure. The main valve shall be removable from above ground.

- C. Hydrants shall be preceded in line by an approved valve. The hydrants shall have a six inch mechanical joint inlet and main valve opening of 5-1/4 inches minimum. Hydrants shall be equipped with two 2-1/2 inch hose connections and one 4-1/2 inch pumper connection with National Standard threads. Hose nipples shall be bronze or non-corrosive metal and the nipple caps shall be securely chained to the barrel. The direction of opening shall be left and be cast on the head of the hydrant. The hydrant shall be painted with one coat of zinc chromate primer and two finishing coats of the color safety yellow. Any deviation from this color requires approval by the Authority.

7.7 METERS AND METER BOXES.

- A. METERS. All services shall be metered for the indication of water consumption in gallons. The register shall have straight reading dials with a maximum indication of the initial dial of 10 gallons and a maximum capacity of 1,000,000 gallons. Each register shall be completely encased, hermetically sealed, and of a frost-protective design. Each meter shall have an arrow on it to indicate the direction of flow and shall have the manufacturer's serial number stamped on the register lid.

The meter shall be a "C-700 Touch read" as manufactured by AMMCO or approved equal and shall conform to AWWA Specification C700-64, and shall be sized as follows:

Peak Rate of Flow (GPM)	Size of Meter
20	5/8" x 3/4"
50	1"
100	1-1/2"
160	2"
320	3"
500	4"
1000	6"

- B. METER BOXES AND SETTERS. Standard boxes appropriately sized for meter access complete with covers. Carson Industrial # 1419-18 plastic with Sigma Inc. RCL 528 metal top with 17/8" touch pad hole, Ford model V72 – 9W-4133 copper setter (if in traffic area concrete or cast iron box and lid must be substituted).

SECTION 8 TESTS AND DISINFECTION.

8.1 TESTS.

Tests shall be made on all sections of pipe throughout the entire project and shall be conducted only in the presence of the Service Authority or its authorized agent. Tests shall be made between adjacent valves.

Care shall be taken to insure that the entire test run of pipe is securely braced and blocked against thrust when pressure is applied. All thrust blocks must be completely set and approved. All pipe must be firmly supported and weighted down by partial backfill soil on top.

All water for testing purposes shall be potable water and procured and paid for by the Owner or Developer or his Contractor. Prior to testing, the pipe shall be filled slowly and carefully with water from the nearest practical source, or by other approved methods. Under normal atmospheric pressure the pipe shall be allowed to soak for a minimum period of 24 hours. All entrapped air shall be expelled. The Owner, Developer or Contractor shall provide all the apparatus or other accessories necessary to conduct the tests.

The completed piping shall be subjected to a hydrostatic pressure test equal to the rated working pressure of the pipe. This pressure shall be maintained for two hours. If any leaks are detected all pipe, joints, valves and fittings in the test section shall be examined.

Defective material disclosed as a consequence of the tests shall be removed and replaced by sound material at the Developer's expense. Any joint showing visible leakage shall be made airtight. The test shall be repeated until its results are satisfactory to the Authority or its authorized agent.

8.2 DISINFECTION.

During the course of the work, all reasonable precautions shall be taken to protect the pipe interiors, fittings, and valves against contamination, when pipe laying is not in progress all openings in the pipeline shall be closed by watertight plugs.

The water main shall be closed and flushed prior to disinfection with a sufficient flow to produce a flushing velocity of at least 2.5 feet per second. Finished water shall be flushed through the system until no traces of foreign matter are visible. This water shall be discharged or wasted only at points specifically designated by the Authority.

The new pipeline shall be disinfected by chlorination in accordance with AWWA Specification C601-68. The disinfection agent of the chlorine solution shall be sodium hypochlorite solution, Grade D, conforming to Federal Specification O-S-602b, dry hypochlorite equal to "HTM" as manufactured by Olin Chemical Co., or liquid chlorine. Liquid chlorine shall be used only when suitable equipment is available and only under the direct supervision of a properly trained and equipped specialist approved by the Authority.

The chlorine solution at any point in the line, shall have a minimum concentration of 50 parts per million (ppm) or 50 milligrams per liter (mg/l) and shall be applied to the system at a constant, measured rate by pumping in accordance with the continuous feed method, AWWA Specification C601-68, Sub-section 7.1. Finished water from an approved source shall be made to flow at a constant, measured rate into the new pipeline. The two rates shall be properly proportioned so the chlorine concentration in the pipeline is maintained at a minimum of 50 ppm available chlorine. To insure that this concentration is maintained the chlorine residual shall be measured at regular intervals in accordance with procedures described in the current edition of Standard Methods and AWWA Specification M12.

Chlorine application shall not cease until the entire main is completely filled with solution. The chlorinated water shall be retained in the system for at least 24 hours, during which time all valves and hydrants shall be operated in order to disinfect the appurtenances. At the end of the 24 hour period, the pipeline water shall contain not less than 25 parts per million chlorine throughout the entire pipeline. After the specified retention period, the chlorinated water shall be flushed from the main until the residual chlorine concentration is no higher than that prevailing in the existing system or less than .20 parts per million.

After final flushing and before the water main is placed in service, a pair of samples will be collected 24 hours apart at a distance of no more than 2,000 feet along the water line. No hose or fire hydrant shall be used in the collection process. All samples will be collected in a sterile container containing sodium thiosulphate and delivered to a certified laboratory. The disinfection and sampling process will continue until all results are acceptable.

Pipe, taps and fittings used at connections to the existing system shall be thoroughly disinfected before installation. Excavation for such connections shall be kept free from water until the connection is completed, and extreme care shall be exercised to prevent contamination of the pipe and connection fittings. The inside of the existing pipe within 3 feet of the point of connection shall be disinfected by spraying with solution containing not less than 200 ppm of chlorine immediately before connection is made. If at any time the water in the existing piping becomes contaminated, this piping shall be disinfected as specified for new piping, back to the nearest gate valve or valves, or beyond those points as necessary to include all contaminated piping.

The complete disinfection process and methods followed, especially if materially different from those specified, shall be in accordance with the directives of the Virginia Department of Health, and all methods employed shall meet with this approval. Definite instructions as to the collection and shipment of the samples shall be requested from the Department of Health and shall be followed explicitly. Final approval of the bacterial examination shall be received from the Department of Health prior to placing the new pipeline into operation.

PART III
CONSTRUCTION SPECIFICATIONS
AND STANDARDS FOR
SANITARY SEWERAGE FACILITIES

SECTION 9 GENERAL REQUIREMENTS.

9.1 GENERAL.

- A. All installations shall be in strict accordance with the Building Officials Code Administrators (BOCA) codes, the Virginia Department of Health and State Water Control Board, Sewerage Regulations, effective February 1977 and the Greenville County Water and Sewer Authority, "Rules and Regulations and Construction Specifications and Standards."
- B. No deviation from the Rules and Regulations and Construction Specifications and Standards approved by the Authority shall be allowed, unless specifically authorized in writing by the Authority.
- C. Sewers shall be designed and constructed to achieve total containment. Sewers shall be designed for the estimated ultimate tributary population with an upper limit consisting of the 50-year population growth projection, excepted when considering parts of the line that can be readily increased in capacity. Consideration and referral shall be given to the Feasibility Study, Greenville County, dated April, 1979.
- D. Sewers shall remain fully operational during 25-year flood/wave action. Sewers and their appurtenances located along streams shall be protected against the normal range of high and low water conditions, including the 100-year flood/wave action.
- E. Although constructed as parcels or sub-systems, all sewers and related facilities of all proposed developers shall be approved on the basis of their functional integration with the Authority's total sanitary sewerage facilities.

9.2 MINIMUM SIZES, SLOPES AND VELOCITY.

- A. SIZES. The minimum size of gravity sewers shall be eight inches interior diameter, except for service laterals which shall be four inches interior diameter.

The minimum size of sewer force mains shall be four inches interior diameter, except for grinder pumps.

- B. SLOPES AND VELOCITIES. All gravity sewers shall be designed and constructed with uniform slope between manholes and to give mean velocities when flowing full, of not less than two feet per second, based on Manning’s Formula using a “n” value of 0.013. The following are the minimum slopes which shall be provided, however, slopes greater than these are desirable:

Minimum Size (Inches)	Minimum Slope (Ft./100 Ft.)
8	0.40
10	0.28
12	0.22
14	0.17
15	0.15
16	0.14
18	0.12
21	0.10
24	0.08
27	0.067
30	0.058
36	0.046

For force mains at pumping capacity, a minimum self-scouring velocity of two feet per second shall be maintained, unless flushing facilities are provided. A velocity of eight feet per second shall not be exceeded.

Gravity sewers and force mains on 20 percent slope or greater shall be anchored securely with concrete anchors or approved equal. Minimum anchorage shall be as follows: (a) not over 36 feet center to center on grades from 20 percent; (b) not over 24 feet center to center on grades from 35 percent to 50 percent; and, (c) not over 16 feet center to center on grades exceeding 50 percent.

9.3 MINIMUM COVER.

All gravity sewers and force mains shall be provided with a minimum cover of not less than thirty-six inches of earth cover, measured from established finished grades to the top of the pipe.

Any sewer installed in a street and having less than three feet of cover from finished grade to the top of the pipe shall be encased in six inches of concrete.

9.4

MANHOLE AND CLEANOUT LOCATIONS.

A manhole shall be constructed at every change in alignment, grade, or pipe size. The maximum distance between manholes shall be 400 feet for sewers 15 inches or less and 500 feet for sewers 18 inches to 30 inches. No house connection shall be made into any manhole without prior approval of the Authority. A cleanout shall be constructed at the edge of the road right-of-way or easement. Laterals which are greater than 100 feet in length shall have cleanouts installed as designated by the Authority. All sewer lines 8 inches or larger shall terminate with a manhole.

9.5

LOCATION OF SEWER LINES.

As a general rule, sewer lines shall be placed in the street right-of-way. This may not be feasible on right-of-way width of less than 50 feet or in other unusual situations. In such cases, a utility easement of not less than ten (10) feet in width shall be provided for all lines on private property. For interceptors the easement shall be twenty (20) feet in width.

Separation of sewers from water lines shall adhere to the conditions of Section 4.4 of these Construction Standards with the additional provision that no sewer may be located within 50 feet of a drinking water well Class I and II. Where wells of a lesser class are encountered in addition to the required 50 foot separation any sewer line installed between 50 and 100 feet of the well shall be constructed of AWWA-approved water pipe and no manholes can be located within 100 feet of these wells.

SECTION 10 CONSTRUCTION SPECIFICATIONS.

10.1 GENERAL PROCEDURES.

Construction of all sanitary sewers and appurtenances in the Jurisdictional Area shall be in accordance with these specifications and standards, unless specific deviation therefrom is authorized, in writing by the Authority. Construction shall also conform to the plans and specification data submitted by the Owner or Developer and approved by the Authority. The Authority shall insist that good workmanship and standard sewer construction principles apply in the work so that the finished project may qualify for final inspection and acceptance into the overall sewerage system.

Prior to the construction of any sanitary sewer, the Owner or Developer shall submit to the Authority for review and approval four sets of all necessary construction data. Such construction data shall consist of the plans, specifications, cut-sheets, easements, submittals of materials and other appropriate information as deemed necessary by the Authority. All pipe shall be installed in accordance with the manufacturer's recommendations as approved by the Authority. No pipe shall be laid in water, or when, in the opinion of the Authority, trench conditions are unsuitable.

If any deviation is contemplated in location, line, or grade of any sewer, masonry structure, or accessory from that shown on the plans approved by the Authority, details of the proposed deviation shall be submitted to the Authority for their review and approval before the changes are constructed.

10.2 INSTALLATION.

- A. EXCAVATION. Excavation of whatever substance may be encountered shall be performed to the dimensions and depths specified or shown on the Applicant's approved drawings. Ledge rock, boulders, and large stones shall be removed to provide a clearance at least six inches below and on each side of all pipe and fittings for pipes 24 inches in diameter or less, and twelve inches for pipe larger than 24 inches in diameter. The specified minimum clearances are minimum clear distances which will be permitted between any part, projection, or joint of such rock, boulder, or stone.

In the event that unstable material is encountered at or below the excavation depth, the Authority shall be notified. Such materials shall be removed and replaced with suitable material approved by the Authority which shall be furnished as an ordinary and integral part of excavation and backfill. If excavation of any nature has been made deeper than necessary, than a layer of #57 stone shall be placed to insure a firm foundation for the pipe.

Excavated material shall not interfere with public travel. Rock or other materials undesirable for backfill shall be removed from the construction site and properly disposed of by the Owner or Developer.

- B. TRENCHING. The trench shall be dug so that the pipe can be laid to the alignment and depth required and it shall be excavated not more than 200 feet in advance of the complete pipe laying operation. The width of the trench shall be ample to permit the pipe to be laid and jointed properly and the backfill to be placed and thoroughly compacted in accordance with the plans and specifications. Trenches shall be of such extra widths when required as will permit the convenient placing of timber supports, sheeting and bracing, and handling of special fittings. Bell holes shall be provided at each joint to permit proper joint construction and inspection. In no case shall the pipe bells be used to support the body of the pipe.
- C. DRAINAGE. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly in such manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid.
- D. BACKFILL. Clean earth, sand, crushed stone, or other material approved by the Authority shall be used for backfill. Material suitable for backfill shall be stockpiled near the construction site. Backfill material shall be selected, deposited, and compacted to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly hand tamped around the pipe in 6 inch layers up to a level at least one foot above the top of the pipe. Backfilling shall be carried out simultaneously on both sides of the pipe.

The remainder of the backfill shall be deposited and compacted by mechanical tampers except in areas where paving is to be placed over the backfilled trench. In these areas the backfill shall consist of mechanically compacted materials as directed by the Authority. Compaction shall achieve a density of at least 95 percent of the maximum density as determined by the American Association of State Highways and Transportation Officials (A.A.S.H.T.O.) Method T-180.

- E. PIPE INSTALLATION. Pipe and fittings for underground piping shall be strung out along the route of construction. The pipe shall be placed to avoid interference with traffic and the trenching operation. The pipe shall be handled by mechanical equipment.

Adequate support shall be provided for all pipes. A continuous and uniform bedding shall be provided in the trench for all buried pipe so that

the pipe barrel bears on and is supported on undisturbed ground at every point between bell holes. Trenching below the specified grade shall be backfilled with approved material and thoroughly compacted. The finished subgrade shall be prepared accurately by means of hand tools. Where excavation is made in rock or boulders the subgrade shall be made by backfilling with stone or clean selected soil which shall be thoroughly compacted. Only Class A, B or C bedding as specified in WPCF Manual of Practice No. 9 shall be permitted.

When installing pipe in the trench, proper implements, tools, and facilities satisfactory to the Authority and as recommended by the material manufacturer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, and accessories shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, slings or other suitable tools or equipment in protective coatings and linings. Under no circumstances shall such materials be dropped or dumped into the trench.

The pipe may be laid in a manner best adapted to securing speed and good results; however, the method of pipe laying and jointing shall be in accordance with the manufacturer's recommendations and shall be approved by the Authority. Damaged or unsound pipe or fittings shall not be accepted. Gravity sewers shall be constructed with straight alignment between manholes.

Rubber gasket, "O" ring type joints shall be laid true to line and grade and shall be jointed together such that the completed pipe will have a smooth invert. After placing a length of pipe in the trench the spigot end shall be centered in the open bell of the pipe previously laid and the pipe pushed home with a bar. **THE USE OF LIFTING AND HYDRAULIC EQUIPMENT TO MAKE PIPE JOINTS SHALL BE SPECIFICALLY PROHIBITED.** The trench pipe interface shall be shaped to the curvature of both the bell and barrel of the pipe. The trench shall be kept free of water while the work is in progress. The ends of the pipe shall be brushed clean so that proper joints can be made. As the work progresses the interior of the pipe shall be cleared of dirt, cement, or other superfluous material. The exposed end of all pipe shall be fully closed to prevent earth, water, or other substances from entering the pipe at all times. Should dirt or other materials enter the previously installed pipe, the pipe shall be immediately cleaned with care taken to preserve any coatings. Gravity sewer pipe shall be laid on standard bedding in accordance with the standard details. Where mechanical joints are specified for ductile or cast iron pipe and fittings, the joint shall be thoroughly coated with lubricant, the gasket and gland properly positioned, bolts inserted and diametrically opposite bolts drawn up until all bolts are tight. All bolts shall be tightened with a torque wrench set at 55 pounds.

Pipe cutting shall be accomplished with a mechanical cutter or a saw in a manner that will not damage the pipe. Ends of cut pipe shall be beveled to prevent damage to gaskets, fittings, etc.

All bends, tees, plugs and dead ends of pipe for force mains or gravity sewers shall be substantially braced or blocked in the direction of the flow and/or anchored to prevent any movement by providing adequate reaction backing. This backing shall be a thrust block of 2500 psi concrete. The backing shall be placed between solid undisturbed earth and bear solidly against the pipe. All fittings to be braced, blocked and/or anchored shall be placed so that the pipe and fitting joints will be accessible for repair. Required bearing areas shall be determined by the Owner's or Developer's engineers based on pipe size, type fitting, maximum pressures, and type of soil in the thrust area, all subject to the review and approval of the Authority.

Materials for roadways, alleys, or driveways shall be compacted to at least 95 percent of the maximum density as determined by A.A.S.H.T.O. Method T-180.

The site restoration of the entire construction area shall be finished in a neat and uniform condition acceptable to the Authority. All areas must be restored to a condition as good or better than what previously existed.

10.3 MANHOLES, CLEANOUTS AND ACCESSORIES.

A. MANHOLES.

1. General. Prior to the construction of any sanitary sewer, the Owner or Developer shall place adequate line and grade stakes and shall also set stakes and furnish grades so that all manhole tops can be set to finish grade, all in accordance with the approved plans. Additionally, cut sheets with 50 foot stations must be provided to the Authority prior to the start of construction.

All manholes shall have an extended concrete base slab constructed of Class A4 reinforced concrete with a minimum compressive strength of 4000 psi at 28 days and shall be in accordance with Section 12. The base slab shall be a minimum of 12 inches thick. The manhole shall have a minimum wall thickness of five inches.

Invert channels shall be constructed in all manholes. Invert channels shall be smooth and semicircular and shall conform to the inside of the adjacent sewer section. Changes in channel size shall be gradual. The floor of the manhole outside the invert shall be

smooth and shall slope toward the channel at one to two inches per foot.

Manholes that receive a force main shall do so with the force main centerline horizontal with an invert elevation which will ensure a smooth flow transition to the gravity section. In no case shall the force main enter the manhole more than one foot above the flow line. The interior of the manhole shall be coated with a bituminous finish.

2. Precast Concrete Manholes. Precast concrete manholes shall be of the extended base type and be constructed in accordance with these specifications and standards and in conformance with the approved plans. The walls of the manholes shall have a minimum thickness of 5" and be constructed of Class A4 reinforced concrete with a minimum compressive strength of 4000 psi at 28 days in accordance with Section 12. Manhole sections shall be tongue and groove with an "O" ring rubber gasket at each joint conforming to ASTM Designation C-443.

The lowest manhole section shall be placed in the precast base slab in such a manner to provide the greatest amount of bond and to prevent infiltration and exfiltration. The interior of all the joints shall be completely filled with an approved cement mortar. Insert holes for the required sewers shall be made in the manhole sections during the manufacturing operation and shall conform to the actual minimum diameters required to properly seal the connection. Flexible connectors comprised of rubber boots and stainless steel straps shall be furnished and installed at each insert hole, as manufactured by Kor-N-Seal, Interpace, or approved equal.

Manholes shall be carefully made and shall have no honeycombs or other deteriorated surfaces. All surfaces shall be smooth. All lifting holes shall be filled flush with an approved mortar upon completion of the setting. Standard manhole steps shall be securely placed in position in the manhole sections during the manufacturing of the sections.

The uppermost section of the precast manhole shall be tapered to a minimum interior diameter of two feet as indicated in the standard details. The intermediate straight sections shall be either three or four feet in length. The length of the lower sections shall be three times the wall section, and in no case shall it be less than two feet.

3. Frames and Covers. All frames shall be securely anchored to the related structures and shall be installed so that the cover shall be

exposed and flush with the street surface. If street surfaces are renewed or replaced by the Developer or Owner after the sewer system has been approved and accepted by the Authority, but while such streets are still the obligation of the Developer or Owner, the frames and covers therein shall be re-adjusted to proper location relative to new street surfacing. The frame and cover of manholes or cleanouts located in sodded or other off-street areas shall be so installed that the covers shall be exposed and either flush or above the immediate surface as deemed advisable by the Authority.

4. Connections to Existing Manholes. Pipe connections to existing manholes shall be made in such manner that the finished work will conform as nearly as practical to the essential, applicable requirements for new manholes, including all necessary concrete work, cutting and sloping.
- B. ACCESSORIES. Air relief valves shall be constructed at the necessary high points in the force main to relieve air locking, as deemed necessary by the Authority and as indicated in the Construction Standards.

Any other sewerage structures or appurtenances necessary for the proper completion of the project shall be constructed as directed by the Authority or its Engineer.

10.4 SPECIAL CROSSINGS.

- A. STREAM CROSSINGS. Where stream crossings are required in sewer construction, the pipe shall be ductile iron, mechanical joint pipe of the same size interior diameter as the pertinent sewer, or the next larger in ductile iron if an equal size pipe is not available. A minimum of one foot of cover over the crown of the sewer shall be provided where the natural bottom of the stream is rock and three feet of cover where the bottom is other materials.

Aerial stream crossings shall be installed within steel casing of a size sufficient to freely slide the carrier pipe. Casing pipe shall be bituminous coated steel with 3/8 inch walls and 36,000 psi yield. Casing pipe sections shall be continuously welded at joints and supported by concrete piers embedded within the stream banks.

All stream crossings shall be installed in accordance with the recommendations of the Authority and its Engineer and the approved plans for the construction project. Stream crossings must be tested in place and show zero leakage. Provisions for such test shall be incorporated in the design.

- B. HIGHWAY AND RAILROAD CROSSINGS. Where required, crossings under highways shall be installed in accordance with the requirements of the Virginia Department of Highways and Transportation. Crossings of railroads shall be installed in accordance with the requirements of the Railroad Company. Encased crossings shall be accomplished prior to the construction of adjacent sections of the project. Safety precautions will be required while performing the crossing work.

Horizontal boring, jacking of pipe or, tunneling under pavement shall be done only upon prior written approval by the Authority. The Owner or Developer shall submit a detailed schedule of operation indicating the exact method and equipment to be used. Only workmen skilled in this class of work shall be employed on it.

Casing pipe or tunnel liner, as required, shall be installed beneath the roadbed. If obstructions require relocation of the casing, the unfinished cavity shall be filled with 2500 psi concrete placed by pneumatic pump. The cavity between the casing and the fill shall be pneumatically grouted.

The sewer pipe shall be installed in the casing with proper care exercised to insure that the pipe sections remain completely joined. Upon completion and testing of sewer, the ends of the casing shall be closed as directed by the Authority or its Engineer.

10.5 SERVICE CONNECTIONS.

Pipe between the sewer and the property line shall conform to the applicable sections of these specifications and standards and in no case shall be less than four inches inside diameter. Only materials approved by the Authority may be used from the property line to the building. All pipe from the sewer to the building shall be laid to a grade of not less than 1/4 inch per foot.

All connections and wyes which are for future use shall be capped as directed by the Authority. No pipe shall be cut for service connections except as approved by the Authority. The ends of pipe which enter sewer lines shall be nearly cut to fit the inner face of the pipe. When directed, such cutting shall be done before the pipes are built in. No service connections shall be made into any manholes.

Wyes for service connections shall be installed where indicated on the approved plans. Wye and service connections shall be installed in conformance with these Construction Standards. Each service lateral shall terminate at the property line with a standard cleanout.

SECTION 11 CONSTRUCTION STANDARDS.

11.1 GENERAL REQUIREMENTS.

The following standards delineated by graphical details shall be applicable to the construction of all sanitary sewerage facilities improved within the Jurisdictional Area of the Authority. Deviations from these standards shall require written approval from the Authority.

11.2 STANDARD DETAILS.

PLATE XII	STANDARD GRAVEL BEDDING AND MANUAL AIR VENT
PLATE XIII	STANDARD MANHOLES TYPE A AND TYPE B
PLATE XIV	STANDARD MANHOLE FRAME AND COVER
PLATE XV	CONCRETE ENCASEMENT AND CAP
PLATE XVI	SERVICE CONNECTIONS
PLATE XVII	CLEANOUT
PLATE XVIII	CONCRETE ANCHOR
PLATE XIX	AUTOMATIC AIR RELEASE ASSEMBLY
PLATE XX	PIPE SUPPORT AND BORED CROSSING

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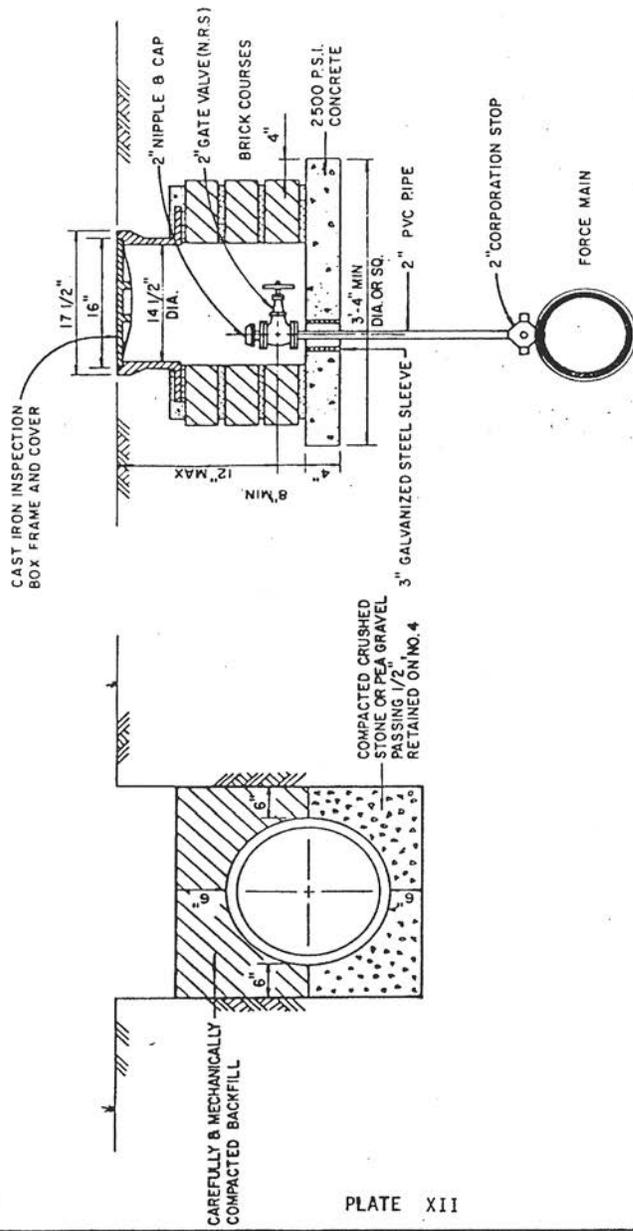


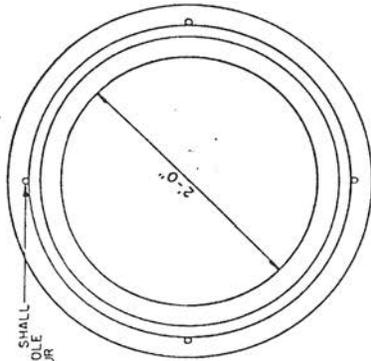
PLATE XII

STANDARD GRAVEL BEDDING

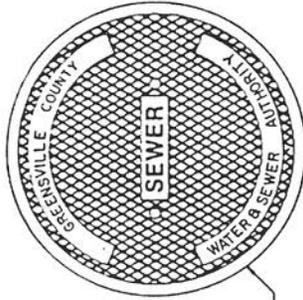
MANUAL AIR VENT

MANHOLE FRAMES AND COVERS SHALL BE SIMILAR TO DESIGN NO B-7032 BY RICHARD FOUNDRY CORP. OR APPROVED EQUAL.

NOTE: MANHOLE FRAME SHALL BE FASTENED TO MANHOLE WITH A MINIMUM OF FOUR 1/2" DIAMETER BOLTS.

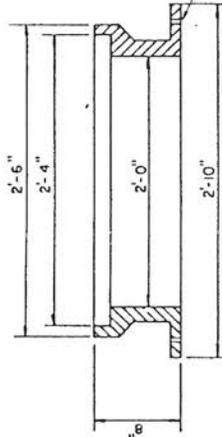


FRAME-PLAN

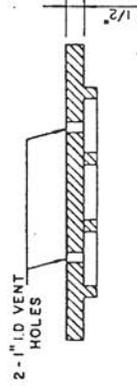


COVER-PLAN

NOTE: MANHOLE BELOW 25 YEAR FLOOD LEVEL SHALL USE WATERPROOF FRAME AND COVER



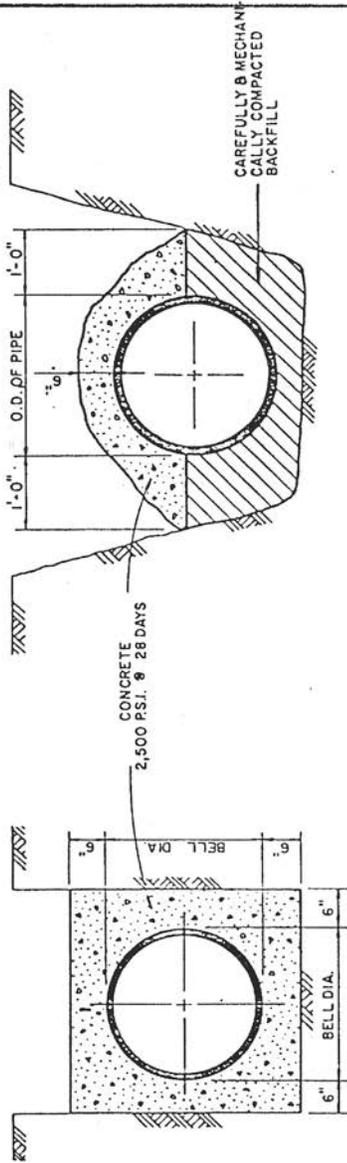
FRAME-SECTION



COVER-SECTION

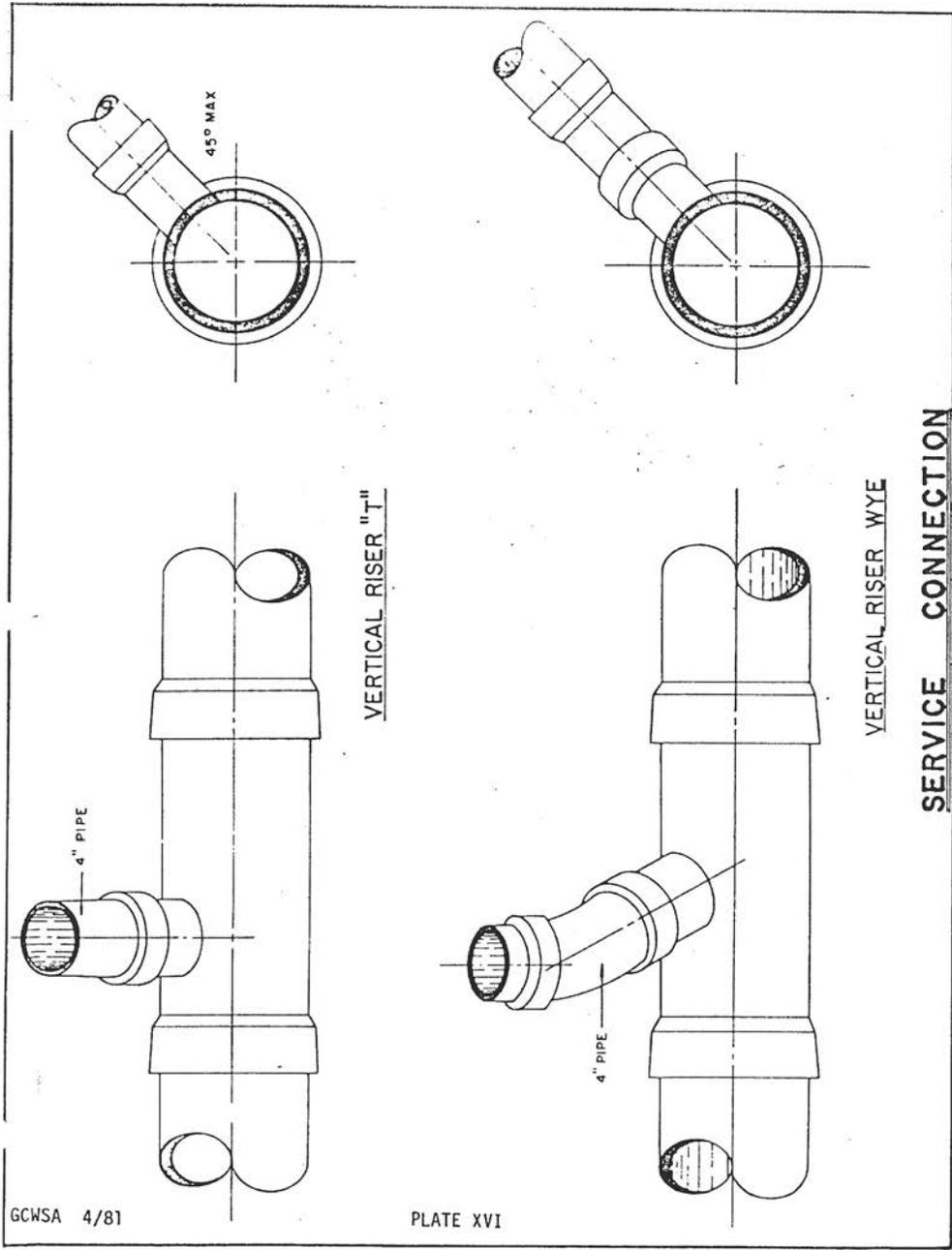
STANDARD MANHOLE FRAME AND COVER

NOTE:
CONCRETE ENCASEMENT AND CAP SHALL BE PLACED
WHERE INDICATED OR DIRECTED BY THE AUTHORITY
OR ITS ENGINEER.



CONCRETE ENCASEMENT

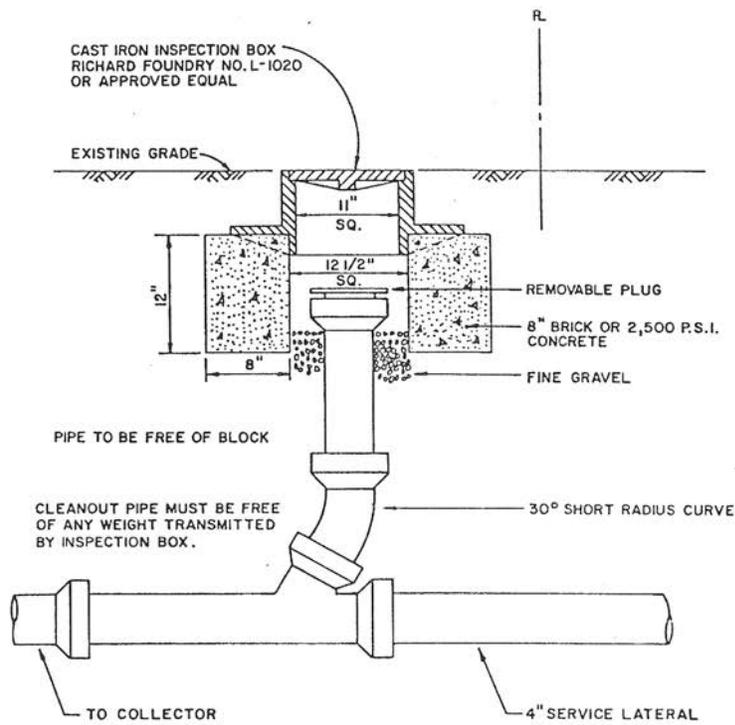
CONCRETE CAP



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PLATE XVI

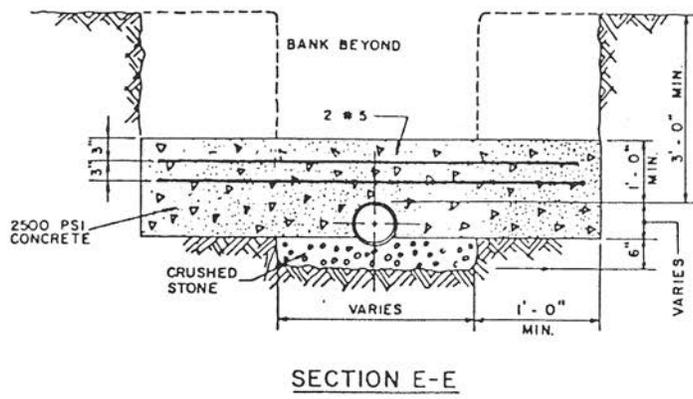
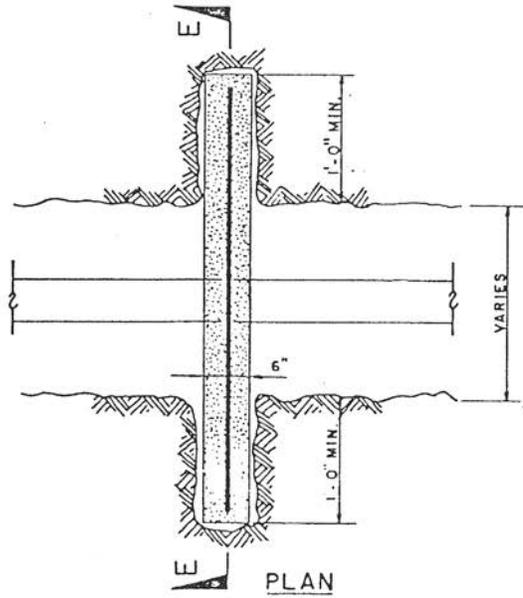
SERVICE CONNECTION



CLEANOUT

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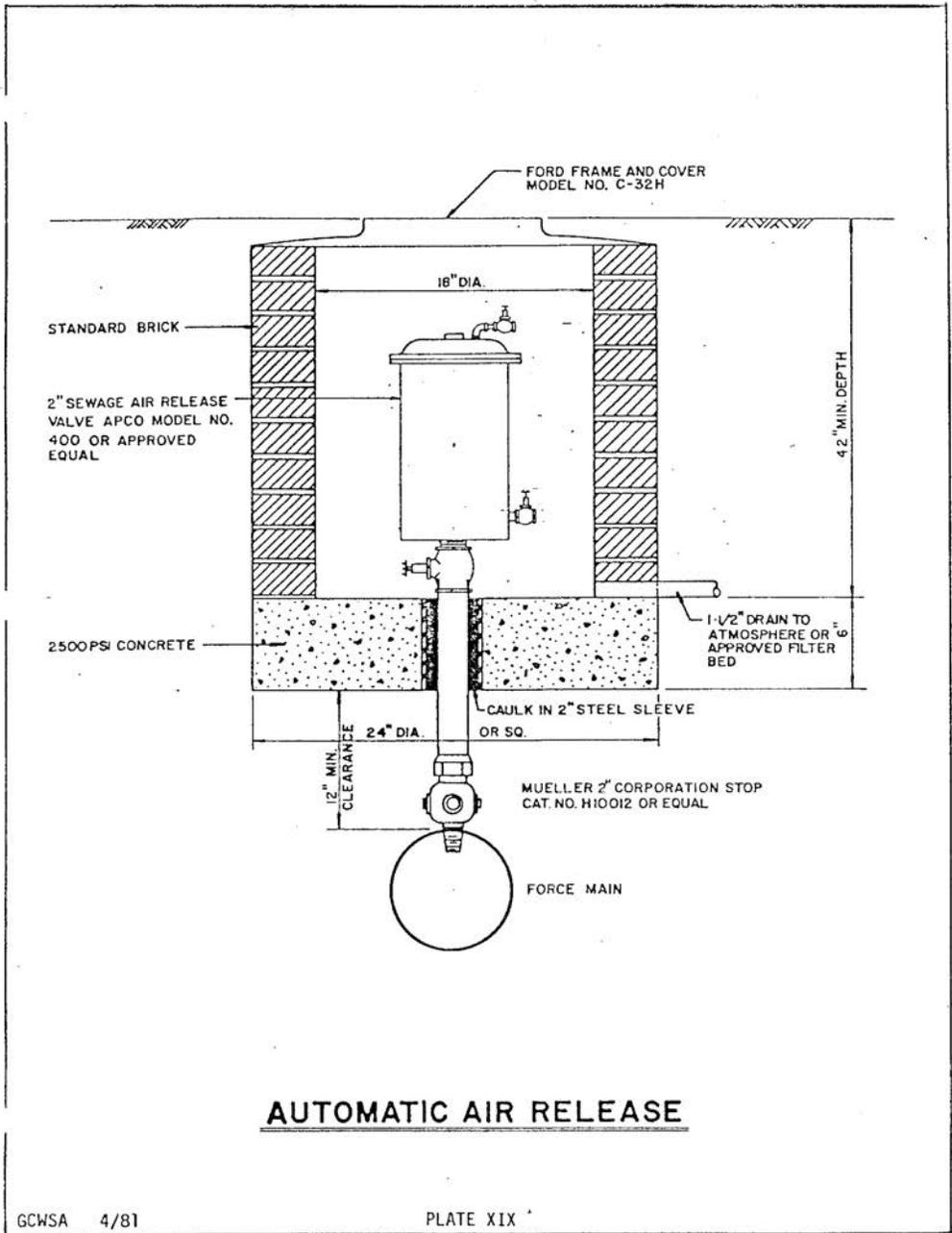
PLATE XVII

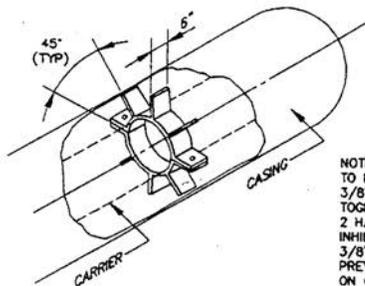


CONCRETE ANCHOR

GCWSA

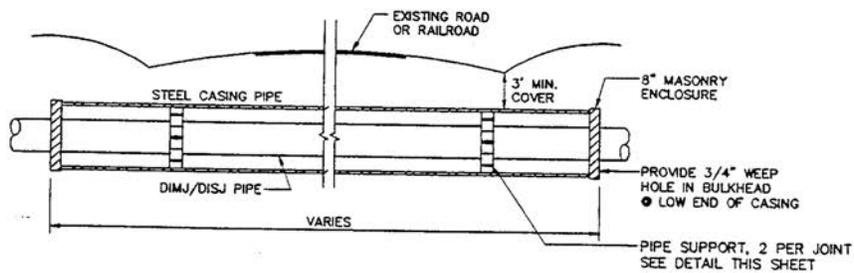
PLATE XVIII





NOTE:
 TO BE FABRICATED IN 2 HALVES
 3/8" THICK 6" WIDE STEEL BOLT
 TOGETHER W/ 2 - 3/8" BOLTS.
 2 HALVES TO BE PRIMED WITH RUST
 INHIBITOR AND FINISHED COATED.
 3/8" SET SCREWS MAY BE USED TO
 PREVENT SKID RING FROM SLIPPING
 ON CARRIER.

PIPE SUPPORT



BORED CROSSING

SECTION 12 MATERIALS.

12.1 GENERAL.

Pipe size, type, joint and class shall be designated on the plans or specified elsewhere. Unless otherwise approved in writing by the Authority, or as specifically indicated on the plans approved by the Authority, all pipe, fittings, and accessories shall be as delineated in this section.

All pipe used for force mains shall be of the pressure type with pressure type joints.

12.2 SEWER LINE AND SERVICE PIPE.

All pipe shall be one of the following:

- A. CAST IRON PIPE. Cast iron pipe shall be centrifugally cast and manufactured in accordance with ANSI Specification A21.6 (AWWA C106) or A21.8 cast iron pipe for gravity sewers shall be coated inside and outside with a bituminous material of either coal tar or asphalt base in accordance with ANSI Specification A21.51. Cast iron pipe for force mains shall be cement-mortar lined in accordance with ANSI Specification A21.4. Cement for the mortar shall be Type II Portland Cement. The standard seal coat of bituminous material shall be applied over the cement lining. The standard exterior coating of the bituminous material shall be applied to both gravity sewer and force mains.

Mechanical joints and push-on joints shall be manufactured in accordance with ANSI Specification A21.11 (AWWA C111). Gaskets shall be furnished by the pipe manufacturer. Cast iron pipe with flanged joints shall be manufactured in accordance with ANSI Specification A21.14.

Fittings shall be manufactured in accordance with ANSI Specification A21.10. All fittings shall be cement-mortar lined inside in accordance with ANSI Specification A21.4. The coatings of the fittings shall be as specified for the pipe.

- B. DUCTILE IRON PIPE. Ductile iron pipe shall be centrifugally cast and manufactured in accordance with ANSI Specification A21.41. Coatings, joints and fittings shall be as specified for cast iron pipe.
- C. POLYVINYLCHLORIDE PIPE. Pipe for gravity sewers shall be manufactured in accordance with ASTM Designation D3034 and shall meet the requirements for SDR 35. Joints shall consist of an integral wall section with a solid cross section rubber gasket conforming to ASTM Designation D-1869. Minimum "pipe stiffness" (F/Y) at five percent (5%) after deflection shall be 46 psi when tested in accordance with

ASTM D-2412. The maximum allowable deflection shall be five percent (5%) after backfill has reached ninety-five percent (95%) compaction. PVC pipe for force mains shall be in accordance with AWWA C900.

12.3 MANHOLES, CLEANOUTS, AND ACCESSORIES.

- A. GENERAL. All manholes on one project shall be constructed of the same materials; all cleanouts on one project shall be constructed of the same materials.
- B. CONCRETE. Structural concrete shall be used for the construction of foundation slabs and special structures. All concrete shall be in accordance with Sub-section 12.4 of these specifications.
- C. WATERPROOFING. The waterproofing material shall be Bitumastic No. 50 or approved equal.
- D. FRAMES, COVERS, AND STEPS. Frames and covers shall be the best quality gray iron, cast in accordance with ASTM Designation A48-56. Castings shall be sound, true to form and thickness, sand blasted clean and machined on all bearing surfaces. Castings shall receive one coat of black asphaltum paint prior to delivery to the job site. Steps shall be polypropylene coated smooth steel rod.

Watertight manhole covers are to be used whenever the tops may be subject to flooding. As a minimum watertight covers are to be used to the elevation of the 50 year flood/wave action.

- E. PRECAST CONCRETE MANHOLES. Precast concrete manholes shall be the extended base type and shall be constructed of reinforced concrete.

Rubber gaskets shall be the round "O" ring type conforming to ASTM Designation C-443.

Flexible connections for pipe jointing at the manhole shall be comprised of rubber boots and stainless steel straps equal to the connectors manufactured of Kor-N-Seal, Interpace, or approved equal. The waterproofing material shall be Bitumastic No. 50 or approved equal.

12.4 CONCRETE.

- A. GENERAL REQUIREMENTS. All work shall comply with the "Building Code Requirements for Reinforced Concrete", ACI 318, latest edition.
- B. MATERIALS.

1. Concrete. Unless otherwise indicated on the drawings, concrete for structures shall be proportioned and mixed in accordance with the Road and Bridge Specifications, Virginia Department of Highways and Transportation dated January 1, 1978, General Use Concrete, Class A-3, Table II-15, Section 219, Concrete for Miscellaneous Purposes, such as fill concrete, thrust blocks, concrete encasement, etc., shall have a 28-day strength of 2500 psi. The mix proportions and test dated for this concrete shall be submitted by the Contractor for approval by the Authority. All concrete shall be made with Type II Portland Cement manufactured in accordance with ASTM C-150.
 2. Steel Reinforcement. All reinforcement bars shall be deformed new billet steel conforming to ASTM A615-40. Bars shall be formed to the dimensions indicated by the drawings.
 3. Wire Reinforcement. Welded wire fabric shall conform to ASTM Designation A185.
 4. Curing Compound. Curing compound shall conform to ASTM Designation C309, Type 2.
 5. Joint Filler. Expansion joint material shall be performed and shall conform to AASHTO M213.
 6. Joint Sealant. All concrete joints shall be prepared and sealed with "Colma Joint Sealer" as manufactured by Sika Chemical Corporation, W.R. Grace Joint Sealer, or equal.
 7. Waterstops. Flexible waterstops shall be manufactured from Virginia polyvinylchloride plastic compound. Properties of polyvinylchloride used shall conform to Corps of Engineers Specification CRD-C572. All waterstops shall be capable of withstanding a head of water equal to the depth of installation or 30 feet, whichever is greater.
- C. SLUMP. Slump shall be from two to four inches and will be determined in accordance with ASTM Method C143. Samples for slump determination will be taken from the concrete during placement in the forms.
- D. TESTING. The 28-day concrete compressive strengths will be verified during the progress of the work by testing standard concrete cylinders. The Owner shall furnish the necessary labor, molds, and facilities for taking the samples and handling and storing the cylinder at the site of the

work. The making, curing, and testing of specimens will be in accordance with ASTM Method C31 and C39. For the first 24 hours after molding, the cylinders shall be kept moist in a storage box constructed and located so that its interior air temperature will be between 60 and 80 degrees F. At least three cylinders will be required for each 40 cubic yards of concrete placed or for each item of work. Should the cylinder specimens fail to meet the specified strength, sample cores may be cut from the suspect concrete at the Authority's direction. Concrete shall be deemed acceptable if these cores test at 85 percent design strength. If not, a load test shall be performed as outlined by ACI 318. All core testing shall be performed at the Owner's expense. If still unsatisfactory, any necessary support and remedial work shall be furnished by the Owner's Contractor.

- E. FORMS. All concrete shall be formed unless directed otherwise. Forms shall be true to line and grade and shall be mortar tight. All exposed joints, edges, and external corners shall have 3/4 inch chamfer. Forms shall be of wood, plywood, or steel. Form design shall be subject to approval, but the adequacy of ties, supports, bracing and shoring to support the imposed live and dead loads, etc., shall remain the responsibility of the Developer. Embedded wall ties shall be set 1-1/2 inches from exposed concrete surfaces. The heights of form for each vertical lift shall not exceed ten feet (10') unless indicated on the drawings. Forms for continuous surfaces shall be fitted over the completed surface to assure alignment and to prevent leakage of mortar. Before placing reinforcement steel the contact surfaces of forms shall be cleaned and coated with a nonstaining form oil. Temporary openings shall be provided at the base of column and wall forms to facilitate cleaning just prior to concrete placement.

Embedded items such as anchor bolts, frames curb angle, conduit, pipe sleeves, and openings shall be carefully located and securely anchored in the forms.

Forms for columns, walls, sides of beams, and other members not supporting the weight of the concrete may be removed 36 hours after placing of concrete. Supporting forms for beams, girders, and slabs shall remain in place until the concrete has reached its 28-day strength.

- F. CONSTRUCTION JOINTS. Construction joint surfaces shall be thoroughly cleaned before placement of concrete. All laitance, coatings, stains, debris, and other foreign material shall be removed from the surface before the new concrete is deposited. Waterstops and shear keys shall be provided at construction joints. Joints in metal waterstops shall be brazed, welded or soldered. Joints in rubber waterstops shall be vulcanized. Waterstops shall be installed so as to form a continuous watertight seal in each joint. Construction joints will not be permitted

within two feet of design water level on wetted surfaces. Shear keys shall be installed for ease of removal of the form. Blockouts for pipe sleeves, if approved by the Authority, shall be provided with keyway and waterstops and shall be detailed as a plug.

- G. PLACING REINFORCEMENT. Steel reinforcement bars shall be placed in accordance with the approved detail drawings and shall be supported by concrete blocks or galvanized metal bar chairs. Reinforcement shall be free from loose rust, mill scale, oil, grease, and other coatings that would destroy bond. Reinforcement shall be held securely in place to prevent dislocation during concrete placement.

- H. DELIVERY OF CONCRETE. Concrete mixing equipment and methods shall be subject to approval. Each load shall be accompanied by a ticket showing mix design, mix starting time, and batch weights. The maximum time between introduction of cement into the concrete ready-mix truck and discharge into the forms shall be two hours where the temperature is less than 80 degrees Fahrenheit and 1-1/2 hours above 80 degrees Fahrenheit. Any deviation from the mixing time and the truck ticket information required shall be cause for return of the concrete without use in the forms.

Concrete manufactured at the job site shall be subject to the requirements of the aforesaid Road and Bridge Specifications.

- I. PLACEMENT OF CONCRETE. Concrete placing equipment and methods shall be subject to approval. All surfaces, forms, etc., shall be thoroughly cleaned of debris, dirt, wood chips, etc., and shall be thoroughly dampened prior to placement. Concrete shall not be placed under water. Cement sand grout in mix proportions of one to three by weight shall be placed to a depth of one inch at all contact surfaces between old and new concrete. The maximum free fall of concrete during placement shall be six feet. Placement at greater heights than six feet shall be accomplished by chutes, slides, or other approved methods. Concrete shall be placed so as to avoid formation of cold joints between successively deposited layers. Concrete shall be placed in the dry and placement will not be permitted during adverse weather conditions. To prevent segregation, the concrete should be deposited in approximately horizontal layers of twelve to eighteen inches as near as possible to its final position.

- J. VIBRATION. All concrete shall be consolidated with high frequency, internal, mechanical vibrating equipment supplemented by hand spading and tamping. Vibrators shall be designed to operate with the vibratory element submerged in the concrete and shall have a frequency of not less than 7,000 impulses per minute when submerged. Adequate numbers of sufficiently powered vibratory units shall be furnished at all times to

properly consolidate the concrete. Vibrations of forms and reinforcement shall not be permitted. Vibrators shall not be used to transport the concrete in the forms. Where concrete is placed in more than one lift, the vibrator shall penetrate the previous lift to prevent the formation of cold joints.

- K. PLACING CONCRETE IN COLD WEATHER. Except on specific authorization, concrete shall not be placed when the temperature is below 40 degrees Fahrenheit shall include the method to be used to provide concrete at 55 degrees and to maintain a temperature of 60 degrees during the seven-day curing period. Placing and curing of concrete during cold weather shall conform to ACI 306. Materials for heating concrete shall be on site and in proper working order prior to placing concrete.

- L. REPAIR OF SURFACE DEFECTS. Surface defects shall be repaired immediately after form removal. Honeycombed and other defective concrete shall be removed down to sound concrete. A 1:1 sand-cement bonding grout shall be brushed into the surface; then a stiff patching mixture of the same proportions as the concrete, except coarse aggregate, shall be applied to the defective area. The patching mixture shall be thoroughly consolidated and struck off slightly higher to allow for shrinkage, then finally finished one hour later. The patch shall be kept damp for seven days.

- M. SURFACE FINISH. Concrete surfaces not treated architecturally shall be finished as follows. Exposed wall surfaces shall be rubbed immediately after form removal and completion of all patching. Surfaces shall be wetted and rubbed with carborundum brick or other abrasive until a uniform color and texture are produced. No additional cement grout shall be used other than that paste drawn from the green concrete by the rubbing process.

Floor slabs shall receive a steel trowel finish. The surface shall be initially float finished after the mix has hardened sufficiently to permit proper operation of a power-driven float. Power troweling and hand troweling shall complete the slab finished which shall be free of trowel marks, uniform in texture and appearance and shall be true within ¼ inch in ten feet, determined by a ten-foot straight edge placed anywhere on the slab. All concrete floors, unless noted otherwise, shall be treated with a floor hardener of Masterplate, as manufactured by Master Products Company, or Hydroment as manufactured by USM Corporation, or approved equal.

Stair treads and other surfaces requiring a nonslip finish shall be finished with a wood float. Aluminum oxide abrasive aggregate particles shall be spread on the surface at a rate of 1.25 pounds per square foot and floated to a uniform granular finish.

- N. PROTECTION AND CURING. Concrete shall be protected adequately from injurious action by the sun, rain, flowing water, frost and mechanical injury, and shall not be allowed to dry out for seven days after placing. Curing shall be accomplished by water curing or by application of curing compound, except that compound shall not be used on surfaces to be rubbed, or where its appearance would be objectionable or where additional concrete is to be placed. Vertical wall forms shall be kept continuously wet while the forms are in place.

SECTION 13 FIELD TEST.

13.1 FIELD TEST.

- A. GENERAL. The Owner or Developer shall conduct infiltration, exfiltration, and/or air tests as directed by the Authority or its Engineer. Tests shall be performed on each completed segment of the sewer, not to exceed one thousand feet in length. All labor, equipment and material for the tests shall be furnished by the Owner or Developer. Tests shall be conducted only in the presence of the Authority or its Engineer.

Leakage into the sewer shall not exceed 100 gallons per inch of nominal diameter per day per mile for any section including manholes and never exceed 4,800 gpd/mile. In the event that leakage exceeds the stated allowance in any section tested, the Owner or Developer shall make such repairs to the line, manholes or appurtenances as may be necessary to comply with the leakage allowance and to satisfy the Authority.

- B. INFILTRATION TEST. The Owner or Developer shall thoroughly saturate the trench or excavation with water, after placement of backfill and shall carefully measure the flow of water at the nearest downgrade manhole. Three series of measurements shall be made at not less than one hour intervals, and the results shall be reduced to an average infiltration rate, and then applied to the 24 hour period. The infiltration test shall be allowed only when it can be proven that the hydrostatic head outside the pipe is a minimum of four feet above the pipe for the entire test length.

- C. AIR TEST. The Owner or Developer shall plug the pipe and shall conduct a low pressure air test to determine the acceptability of the completed work. The air testing equipment shall be Air-Lock, as manufactured by Cherne Industrial, Incorporated, or approved equal. All air used shall pass through a single control panel. Individual air hoses shall be used from control panel to pneumatic plugs; from control panel to sealed line for introducing low pressure air; and, from sealed line to control panel for continually monitoring the air pressure rise in the sealed line.

Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe tested. The plug shall resist internal test pressures without requiring external bracing or blocking. Plugs shall be tested prior to installation in the pipe run. A joint of pipe shall be sealed at both ends with the plugs at 25 psig. The sealed pipe shall then be pressurized to 5 psig. The plugs shall withstand this pressure without bracing or movement.

The tested pneumatic plugs shall be placed in the pipe at each manhole and inflated to 25 psig. Low pressure air shall be introduced into this

sealed pipe until a pressure of 4 psig plus the pressure of the ground water over the pipe is registered. This pressure shall stabilize for two minutes. After stabilization to a minimum pressure of 3.5 psig (plus water, pressure, if any), the air hose from the control panel to the air supply shall be disconnected. The portion of sewer tests shall be deemed acceptable if the time required for the pressure to fall one pound is not less than that shown in the following tabulation for the respective pipe sizes.

Pipe Diameter (Inches)	Time (Minutes)
4	4
6	6
8	8
10	10
12	11
15	15
18	17
21	20
24	23

If air testing is employed, the manholes shall be tested by exfiltration not to exceed 1/2 gallon per hour.

13.2 FORCE MAINS.

- A. GENERAL. The completed piping shall be subjected to a hydrostatic pressure test equal to the rated working pressure of the pipe or a pressure of at least fifty percent (50%) above the design operating pressure whichever is higher. This pressure shall be maintained for two hours. All pipe, joints, valves and fittings in the test section shall be examined.

Defective material disclosed as a consequence of the tests shall be removed and replaced by sound material at the Owner's or Developer's expense. Any leakage shall be corrected. The test shall be repeated until its results are satisfactory to the Service Authority or its Engineer.

Procedures as outlined in Sub-Section 8.1 shall be adhered to in testing the force main.

PART IV
APPENDIX

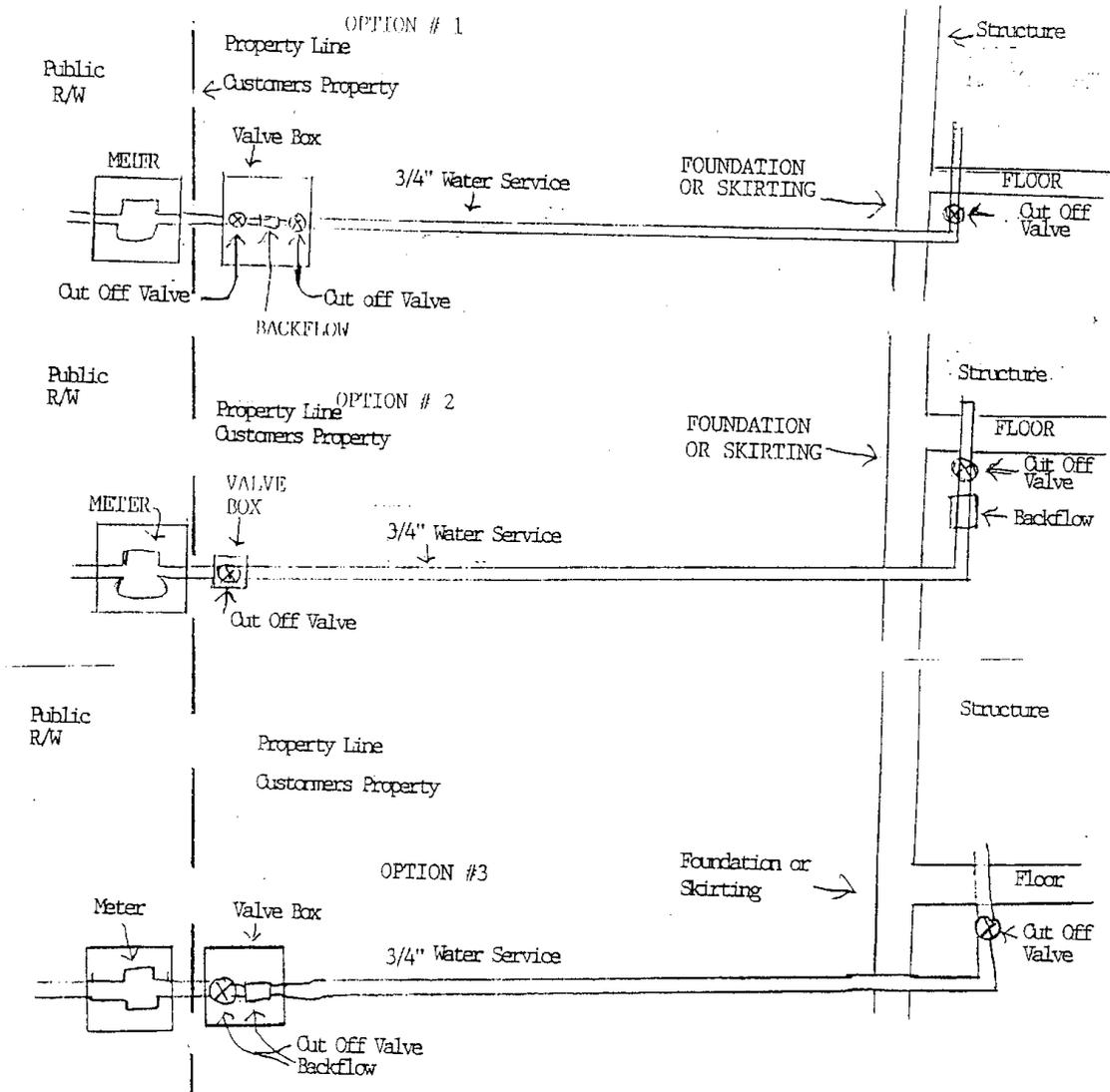
SECTION 14 APPENDIX.

APPENDIX 1: Acceptable Location for Installing Customer Cutoff Valves & Backflow Preventers.

APPENDIX 1

ACCEPTABLE LOCATIONS FOR INSTALLING CUSTOMER CUTOFF

VALVES AND BACKFLOW PREVENTERS



The valve at the meter should be located as close to meter as possible. The Building code requires a valve before entering the structure. Option #2 provides this and provides easier access to test the backflow in the future. A customer must have a cutoff valve before and after the backflow prevention device.

PART V

INDUSTRIAL DISCHARGES

SECTION 15 TABLE OF CONTENTS.

PURPOSE

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RESPONSIBLE OFFICIALS & TIME FRAMES

- APPENDIX A: Model of Violation Letter
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- APPENDIX D: Enforcement Terms
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- APPENDIX I: Survey Form
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- APPENDIX K: Industrial User Baseline Monitoring Report

PURPOSE

The purpose and scope of this document is to provide compliance with Federal Regulation 40 CFR 403.8 (f)(5), State Regulation VR 680-14-01, Part VII, Section 7.7 and Virginia Pollutant Discharge Elimination System (VPDES) permit.

The document also provides the Greenville County Water & Sewer Authority an effective means of responding to industrial user instances of noncompliance in an efficient and timely manner.

The document provides the Industrial User with advance information as to the Authority's response to instances of noncompliance both minor and major.

ENFORCEMENT RESPONSE PLAN
Greenville County Water & Sewer Authority

Updates:

April 2002	New Inspection report form (GCWSA Form)
April 2002	Revised Industrial User Inventory
April 2002	Revised Notice of Violation Form (NOV)
April 2002	New Inspection/Audit Form

ENFORCEMENT RESPONSE PLAN

SAMPLING, MONITORING AND REPORTING

<u>NON-COMPLIANCE</u>	<u>CIRCUMSTANCES</u>	<u>ACTION</u>
Failure to sample, monitor or report (routine reports, BMR's).	Isolated or infrequent.	Phone call and written notice of violation.
Failure to sample, monitor report or notify.	IU does not respond to letters, does not follow through on verbal or written agreement or frequent violation-SNC.	Administrative Order.
Failure to notify of effluent limit violation or slug discharge.	Isolated or infrequent. No know effects.	Phone call and written notice of violation.
Failure to notify of effluent limit violation or slug discharge.	Frequent or continued violation-SNC.	Meeting followed by a Consent Order
Failure to notify of effluent limit violation or slug discharge.	Known environmental or POTW damage results-SNC.	Judicial action and Penalties.
Minor sampling, monitoring or deficiencies (computational or typographical errors).	Isolated or infrequent.	Phone call and written notice of violation corrections to be made on next submittal.
Major or gross sampling, monitoring or reporting, deficiencies (missing information, late reports).	Isolated or infrequent.	Written notice of violation.
Major or gross reporting deficiencies.	Continued. Remains uncorrected 30 days or more-SNC.	Administrative order.

COMPLIANCE SCHEDULES (Construction Phases or Planning)

<u>NON-COMPLIANCE</u>	<u>CIRCUMSTANCES</u>	<u>ACTION</u>
Reporting false information.	Any instance-SNC.	Request for Criminal investigation. Judicial action.
Missed interim date.	Will not cause late final date or other interim dates	Written notice of violation.
Missed interim date.	Will result in other missed interim dates. Violation for good or valid cause.	Written notice of violation.
Missed interim date.	Will result in other missed interim dates. No good or valid cause-SNC.	Written notice of violation and administrative order.
Missed final date.	Violation due to force majeure (strike, act of God, etc.)	Show cause order.
Missed final date.	90 days or more outstanding. Failure or refusal to comply without good or valid cause.	Administrative order.
Failure to install monitoring equipment.	Continued-SNC.	Administrative order to begin monitoring and installation of equipment within minimal time.

EFFLUENT LIMITS

NON-COMPLIANCE

CIRCUMSTANCES

ACTION

Exceeding final limits (categorical local or prohibited).	Infrequent or isolated minor violations.	Written notice of violation.
Exceeding final limits.	Infrequent or isolated major violations exceed the limits by TRC of a single effluent limit.	Written notice of violation and administrative order.
Exceeding final limits.	Violation(s) that are SNC.	Administrative order.
Exceeding interim limits (categorical or local).	Without known damages.	Written notice of violation.
Exceeding interim limits.	Results in known environmental or POTW damage-SNC.	Administrative order.
Reported slug load.	Isolated without known damage.	Administrative order.
Reported slug load.	Isolated with known interference, pass-through, or damage-SNC.	Administrative order.
Reported slug load.	Recurring-SNC.	Judicial action.
Discharge without a permit or approval.	One time without known environmental or POTW damage.	Administrative order.
Discharge without a permit or approval.	One time that results in environmental damage or continuing violation-SNC.	Administrative order.
Discharge without a permit or approval.	Continuing violation with known environmental or POTW damage-SNC.	Judicial action and penalty. Request for criminal investigation. Disconnect from sewer.

NON-COMPLIANCE DETECTED THROUGH INSPECTIONS OR FIELD INVESTIGATIONS.

<u>NON-COMPLIANCE</u>	<u>CIRCUMSTANCES</u>	<u>ACTION</u>
Minor violation of analytical procedures.	Any instance.	Written notice of violation.
Major violation of analytical procedures.	No evidence of intent.	Written notice of violation.
Major violation of analytical procedures.	Evidence of negligence or intent-SNC.	Administrative order.
Minor violation of permit condition.	No evidence of negligence or intent.	Written notice of violation and immediate correction required.
Minor violation of permit condition.	Evidence of negligence or intent-SNC.	Administrative order.
Major violation of permit condition.	Evidence of negligence or intent-SNC.	Administrative order and judicial action and penalty.

RESPONSIBLE OFFICIALS AND TIME FRAMES

<u>RESPONSES</u>	<u>RESPONSIBLE OFFICIAL(S)</u>	<u>TIME FRAMES</u>
Written notice of Violation	Pretreatment Coordinator to Superintendent	2-4 days
Administrative Order	Superintendent to Director of Public Utilities to Authority Attorney	30-60 days
Judicial Action and Penalties	Authority Attorney to Courts	60-90 days
Request for Criminal Investigation	Pretreatment Coordinator to Superintendent to Director of Public Utilities to Authority Attorney	30 days
Show Cause Order	Superintendent to Director of Public Utilities to Authority Attorney	30 days
Consent Order after Meeting with Industry	Authority Attorney	30-60 days

**NOTICE OF VIOLATION
INDUSTRIAL MONITORING PROGRAM**

Company _____

Address _____

Date _____

Dear

Laboratory test results show that your facility was in violation for the following parameter(s):

Date of Violation

Sample Point	Parameter	Limit	Test Results

You are required to submit to the Director of the Greenville County Water & Sewer Authority a detailed report within five (5) working days of receipt of this notice as to why the violation(s) occurred, what has been done to correct the violation(s), and, what will be done to prevent future occurrences.

If you should have any questions, please do not hesitate to contact James L. Warf at (434) 348-4205.

Sincerely,

K. David Whittington, Director
Greenville County Water & Sewer Authority

**GREENSVILLE COUNTY WATER & SEWER AUTHORITY
INDUSTRIAL PRETREATMENT PROGRAM INSPECTION REPORT**

A. GENERAL INFORMATION

Industry Name _____

Permit # _____

Site Address _____

Correspondence Address _____

Name of Receiving POTW _____

Date of Inspection _____

Participants	Name	Title	Phone

Reviewer _____

SD Contract _____

POTW Representative _____

Other _____

Yes No Is the SD subject to categorical pretreatment stds?
If Yes, list standards and applicable subcategories. _____

Type of operation or products and applicable Standard Industrial Classification (SIC) code(s). _____

Date the industry was established on site. _____

Number of employees per shift. _____

Total daily flow of industrial waste. _____

Total daily flow of sanitary waste. _____

YES NO Are the sanitary and industrial wastewater streams combined?

YES NO Prior to wastewater treatment?

YES NO Prior to connection to the POTW sanitary sewer?

Sketch or attach a schematic of all wastewater discharge lines which combine to flow to the POTW system. Superimpose this schematic on a site plan or floor plan of the facility, if possible.

B. INDUSTRIAL PROCESSES AND PRETREATMENT

Describe the basic industrial process and any constituent unit operations. Include auxiliary or utility processes, such as boiler or cooling tower blowdown and heating or cooling systems which discharge to the POTW. Sketch or attach a block process flow diagram, noting which process steps generate wastewater. Indicate which of these wastewater streams receive some form of pretreatment. Have shell-and-tube condensers been considered for replacement of any contact barometric condensers?

List pollutants at the plant, categorized as follows: (1) Pollutants that come into direct contact with the water that is discharge to the POTW; and, (2) Pollutants that do not come into direct contact, but have the potential to enter through spills, malfunctions, etc.

- | | |
|-----|-----|
| (1) | (2) |
| (1) | (2) |
| (1) | (2) |
| (1) | (2) |

YES NO Does the facility have any air pollution control equipment which generates wastestreams?

If Yes, describe the flow rate, composition and the discharge method and location.

YES NO Is the facility a RCRA Hazardous Waste Generator (either through the basic process or residuals from treatment processes)?

YES NO Has the POTW notified the industry of RCRA obligations?

Describe the methods for handling, storing and disposing of solid and/or hazardous waste residuals. (Include the name and address of any contract haulers).

Describe the pretreatment facility used by the facility. If the system has multiple process steps, provide a block diagram indicating the treatment steps and their sequence. Attach copies of vendor specifications and drawings and actual operating data, if these are available.

Is the treatment facility properly operated and maintained? (Pertinent characteristics to check might include operators, availability of standby power, alarm systems, operations and maintenance manuals, calibration of control instrumentation and disposal of sludges and any routing of liquid return from sludge dewatering equipment.)

C. SAMPLING

YES NO Does the facility have a control manhole for sampling access?

If Yes, where is it located? (If possible, note the location on the wastewater discharge schematic in Section A of this checklist). _____

YES NO Does such a manhole provide access to a wastestream that is “end-of-pipe” for the industry before discharge to the POTW?

YES NO Is this wastestream a combined process wastestream?

YES NO If Yes, are the wastestreams combined prior to pretreatment?

YES NO If the industry has several wastestreams regulated by categorical standards, are other safe locations available that are appropriate for sampling at the end of these processes?

YES NO Are flow metes and pH meters properly calibrated?

Date of last calibration _____

If there is not a safe and practical alternative to sampling a combined wastestream, accurate flow rates for the regulated process streams and any dilution flows must be obtained from the industry and recorded here. Dilution flows include sanitary waste, noncontact cooling water, boiler blowdown and other process wastestreams which are exempt from categorical pretreatment standards. [Note whether dilution flows tie into the process wastestream before or after any pretreatment.] _____

YES NO Has the industry identified any specific hazards at the sampling location(s)?

If so, what are they and have the POTW personnel been notified of such? _____

YES NO Does the industry perform chemical analyses required for self-monitoring “in-house”?

If No, record the name and business address of any contracted private laboratory.

D. SPILL PREVENTION

Describe spill control methods used by the industry. Does it have a Spill Prevention Control and Countermeasures (SPCC) Plan? Is there a past history of spills that were not contained? _____

YES NO Are diked chemical storage areas of sufficient size and in proper structural condition to provide for containment of their contents?

YES NO Are chemical storage areas located in close proximity to floor drains?

If Yes, do the floor drains discharge to the sanitary or storm sewer? _____

YES NO Are employees informed of the need to keep unauthorized chemicals out of the sanitary sewer?

If Yes, by what means? _____

Are chemical or wastewater pumps totally sealed, or are shafts sealed with packing or mechanical seals? If packing is used, where is leakage directed? _____

E. If the industry is subject to Electroplating, Electronic or Metal Finishing Standards, has it submitted a Solvent/Toxic Organic Management Plan? Has there been any change to the contents and conditions outlined by the plan? _____

F. RECORDS

YES NO If the industry is subject to categorical pretreatment standards, did it submit a Baseline Monitoring Report (BMR) with the required contents to the Control Authority?

If No, briefly explain the reason for not doing so or list any deficiencies in the content of the BMR? _____

YES NO If categorical, has the industry submitted the 90-day compliance report, and does it submit the required semi-annual self-monitoring reports?

If No, briefly explain. _____

If Yes, do the reports address the sampling parameters required by the categorical pretreatment standards? YES NO

YES NO Is the industry on a compliance schedule for the installation of any technology required to meet the applicable pretreatment standards?

If Yes, note the progress of the industry in following this schedule. _____

YES NO Are records available for at least three (3) years?

YES NO Does the industry submit all monitoring data performed in accordance with 40 CFT 136 to the POTW in its periodic compliance report?

INVENTORY OF INDUSTRIAL USERS

ENFORCEMENT TERMS

ABSOLVE - To excuse; to free from an obligation or the consequences of guilt or liability.

ADMINISTRATIVE ACTION (a fine or order) – An enforcement action authorized by the Control Authority’s legal authority which is taken without the involvement of a court.

ADMINISTRATIVE FINE – A punitive monetary charge unrelated to actual treatment costs which is assessed by the Control Authority rather than a court.

ADMINISTRATIVE ORDER – A document which orders the violator to perform a specific act or refrain from an act. For example, the order may require users to attend a show cause meeting, cease and desist discharging, or undertake activities pursuant to a compliance schedule.

ADMISSIBLE EVIDENCE – Evidence which can be presented in court.

AFFIDAVIT – A sworn statement in writing under oath before an authorized magistrate or officer.

APPROVAL AUTHORITY – EPA or States with an EPA-approved pretreatment program. The Approval Authority is responsible for approval and oversight of Control Authority pretreatment programs, including an evaluation of the effectiveness of local enforcement.

ARBITRARY OR CAPRICIOUS ALLEGATION – An assertion that a decision or action taken by the Control Authority was unreasonable or not founded upon sound judgment.

BURDEN OF PROOF – The duty of proving a disputed assertion or charge in court.

CEASE AND DESIST ORDER – An administrative order directing an industrial user to immediately halt illegal or unauthorized discharges.

CHAIN-OF-CUSTODY – A written record of sample possession for all persons who handle (collect, transport, analyze, dispose of) a sample, including names, dates, times and procedures followed.

CIVIL LITIGATION – A lawsuit filed in a civil court. If the court rules that the defendant industrial user violated the law the court may impose civil penalties, injunctions or other equitable remedies and/or cost recovery.

CIVIL PENALTY – A punitive monetary award granted by a court to the Control Authority against a noncompliant industrial user.

COMPLIANCE ORDER – An administrative order directing a noncompliant industry to achieve or restore compliance by a date specified in the order.

COMPLIANCE SCHEDULE – A schedule of required activities (also called milestones) necessary for an industrial user to achieve compliance with all pretreatment program requirements.

CONSENT DECREE – A court supervised settlement agreement, the violation of which may be considered contempt of court.

CONSENT ORDER – An administrative order embodying a legally enforceable agreement between the Control Authority and the noncompliant industrial user designed to restore the user to compliance status.

CONTROL AUTHORITY – The entity directly administering and enforcing pretreatment standards and requirements against industrial users. For purposes of this manual, the Control Authority is an approved local POTW program.

CRIMINAL INTENT – A state of mind which is a necessary element of all crimes. Criminal intent may be general (intent to perform an act) or specific (intent to break a law).

CRIMINAL NEGLIGENCE – Negligence of such a character, or occurring under such circumstances, as to be punishable as a crime (such as a flagrant and reckless disregard of the safety of others or willful indifference to the injury likely to follow).

CRIMINAL PROSECUTION – A criminal charge brought by the Control Authority against an accused violator. The alleged criminal action may be a misdemeanor or a felony and is defined as willful, negligent, knowing, and/or intentional violations. A court trial-by-jury is generally required and upon conviction, punishment may include a monetary penalty, imprisonment, or both.

DEFENDANT – The party against whom relief or recovery is sought.

DEPOSITION – A discovery device by which one party addresses verbal questions to the other party or to a witness for the other party. Depositions are conducted under oath outside the courtroom, usually in the office of an attorney. A transcript is made of the deposition which may be used as evidence at trial.

DETERRENT VALUE – A threat of reprisal which is sufficient to discourage the industrial user from future violations.

DISCOVERY – A variety of pretrial devices used by one party to obtain relevant facts and information about the case from the other party.

DOUBLE JEOPARDY – The prohibition against a second prosecution after a trial for the same offense.

ENABLING LEGISLATION – A state law or charter which creates and empowers a Control Authority.

FELONY – A crime punishable by imprisonment for greater than one year (depending on State law).

FEES – A schedule of charges imposed to recover treatment costs (not punitive in nature).

FINE – A punitive monetary charge for a violation of the law. Often used synonymously with “penalty”, although the term “fine” generally implies the use of administrative rather than civil (judicial) procedures.

GOOD FAITH EFFORT OR PROGRESS – Prompt and vigorous pollution control measures undertaken by the discharger which shows that extraordinary efforts (not a “business-as-usual” approach) have been made to achieve compliance.

GRAND JURY – A body of citizens whose duties consist of determining whether probable cause exists that a crime has been committed, and whether an indictment should be returned against a named defendant.

INADMISSIBLE – Evidence not allowed to be presented in court.

INDICTMENT – A written accusation of criminal conduct by a grand jury.

INJUNCTION, INJUNCTIVE RELIEF – A court order which restrains or compels action by the industrial user.

INTERROGATORIES – A discovery device consisting of written questions submitted by one party to the other party or witness.

JUDICIAL ACTION OR CASE – An enforcement action that involves a court. (The action may either be civil or criminal in nature.)

JURISDICTION – The extent of authority of a government entity’s power to make and enforce laws.

LEGAL AUTHORITY – The source of a Control Authority’s jurisdiction and regulatory powers.

LIBEL SUIT – A suit against a person who is responsible for a written statement that allegedly conveys an unjustly unfavorable impression of another person.

LITIGATION – An enforcement action brought in a judicial (court) forum.

MISDEMEANOR – A crime punishable by imprisonment of less than one year (depending on State law).

NOTICE OF VIOLATION – A Control Authority document notifying an industrial user that it has violated pretreatment standards and requirements. Generally used when the violation is relatively minor and the Control Authority expects the violation to be corrected within a short period of time.

NPDES (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM) – A permit system for the direct discharge of pollutants into U.S. waterways.

PENALTY – A monetary or other punitive measure, usually associated with a court action. For purposes of this manual, the term is used synonymously with fine.

PLAINTIFF – A person or organization seeking remedy from a court. For purposes of this manual, the plaintiff is the Control Authority.

PLEA BARGAIN – An agreement between a prosecuting attorney and a criminal defendant whereby the defendant pleads guilty to a lesser charge and/or a reduction of sentence in exchange for cooperation in investigating or prosecuting the crime (e.g., waiving a trial).

PRIORITY POLLUTANTS – A list of 126 pollutants established by EPA and considered hazardous to the environment and to humans.

PROPRIETARY INFORMATION – Information about a commercial chemical, product or process which is considered to be confidential business information or a trade secret by an industrial user because if divulged, the information could put the industrial user at an unfair competitive disadvantage with competitors in the same industry.

PUBLICLY OWNED TREATMENT WORKS OR POTW – A system of conveyances and treatment for sewage and industrial wastes. Also refers to the government officials responsible for operation and maintenance of the collection system or treatment plant and the administration of the pretreatment program.

REPORTABLE NONCOMPLIANCE – Criteria for identifying when a Control Authority should be reported in the NPDES Quarterly Noncompliance Report for failure to implement its approved pretreatment program.

REQUEST FOR ADMISSION – A discovery device where a written statement of fact concerning the case is submitted to the adverse party and which that party is required to affirm or deny. Those statements that are admitted will be treated by the court as having been established and need not be proved at trial.

REQUEST FOR PRODUCTION – A discovery device which requests the opposing party to produce some document or thing which may tend to resolve an issue in dispute in the case.

EXAMPLE CONSENT ORDER

DIVISION WASTEWATER SERVICES

GREENSVILLE COUNTY WATER & SEWER AUTHORITY

IN THE MATTER OF)
)
) DIRECTOR OF AUTHORITY
) ADDRESS
NAME OF INDUSTRY)
ADDRESS)
)

CONSENT ORDER

WHEREAS, the Greenville County Water & Sewer Authority pursuant to the power, duties and responsibilities vested in and imposed upon Director by provisions of the Authority's Rules and Regulations, have conducted an ongoing investigation of [Industry] and have determined that:

1. The GCWSA owns and operates a wastewater treatment plant which is adversely impacted by discharges from industrial users including [Industry], and had implemented a pretreatment program to control such discharges.
2. [Industry] has consistently violated the pollutant limits in its wastewater discharge permit as set forth in Exhibit I, attached hereto.
3. Therefore, to ensure that [Industry] is brought into compliance with its permit limits at the earliest possible date, IT IS HEREBY AGREED AND ORDERED, BETWEEN [INDUSTRY] AND THE DIRECTOR FOR THE GREENSVILLE COUNTY WATER AND SEWER AUTHORITY, THAT [Industry] shall:
 - a. By (date), obtain the services of a licensed professional engineer specializing in wastewater treatment for the purpose of designing a pretreatment system which will bring [Industry] into compliance with its wastewater discharge permit.
 - b. By (date), submit plans and specification for the proposed pretreatment system to the Authority for review.
 - c. By (date), install the pretreatment system in accordance with the plans and specifications submitted in item b above.

- d. By (date), achieve compliance with the limits set forth in Exhibit I.
 - e. [Industry] shall pay \$1,000 per day each and every day it fails to comply with the schedule set forth in items a-d above. The \$1,000 per day penalty shall be paid to the Treasurer of the Authority within five (5) days of being demanded by the Greenville County Water & Sewer Authority.
4. In the event [Industry] fails to comply with any of the deadlines set forth, [Industry] shall, within one (1) working day after expiration of the deadline, notify the Authority in writing. This notice shall describe the reasons for [Industry]’s failure to comply, the additional amount of time needed to complete the remaining work, and the steps to be taken to avoid future delays. This notification in no way excuses [Industry] from its responsibility to meet any later milestones required by this Consent Order.
 5. Compliance with the terms and conditions of this Consent Order shall not be construed to relieve [Industry] of its obligations to comply with its wastewater discharge permit which remains in full force and effect. The Authority reserves the right to seek any and all remedies available to it under Section _____ of the Authority Sewer Use Ordinance for any violation cited by this Order.
 6. Violation of the Consent Order shall constitute a further violation of the Authority Rules & Regulations and subjects [Industry] to all penalties described by Section _____ of the Rules & Regulations.
 7. Nothing in this Consent Order shall be construed to limit any authority of the GCWSA to issue any other orders to take any other action which it deems necessary to protect the wastewater treatment plant, the environment or the public health and safety.

[INDUSTRY]

Date

Name

GCWSA

Date

Name
Director
Address

EXAMPLE SHOW CAUSE ORDER

DIVISION WASTEWATER SERVICES

GREENSVILLE COUNTY WATER & SEWER AUTHORITY

IN THE MATTER OF)	
)	
)	DIRECTOR OF AUTHORITY
)	ADDRESS
NAME OF INDUSTRY)	
ADDRESS)	
)	

LEGAL AUTHORITY

The following findings are made and order issued pursuant to the authority vested in the Superintendent of Public Utilities, under Section _____ of the GCWSA’s Sewer Use Ordinance. This Order is based on findings of violation of the conditions of the wastewater discharge permit issued under Section _____ of the GCWSA’s Sewer Use Ordinance.

FINDINGS

1. [Industry] discharges nondomestic wastewater containing pollutants into the sanitary sewer system of the GCWSA (thereafter, “Authority”).
2. [Industry] is a “significant industrial user” as defined by Section _____ of the Authority’s Sewer Use Ordinance.
3. [Industry] was issued a wastewater discharge permit on (date), which contains prohibitions, restrictions, and other limitations on the quality of the wastewater it discharges to the sanitary sewer.
4. Pursuant to the ordinance and the above-referenced permit, data is routinely collected or submitted on the compliance status of [Industry].
5. This data shows that [Industry] has violated its wastewater discharge permit in the following manner:
 - a. [Industry] has violated its permit for copper and zinc in each sample collected between January 1988 and January 1989, for a total of 24 separate violations of the permit.
 - b. [Industry] has failed to submit a periodic compliance report due March 31, 1989.

- c. All of these violations satisfy the Authority's definition of significant violation.

ORDER

Therefore, based on the above findings, [Industry] is hereby ORDERED to:

1. Appear at a meeting with the Superintendent of Public Utilities to be held on (date), at 2:00 p.m., in room 211 of the Greenville County Government Center.
2. At this meeting, [Industry] must demonstrate why the Authority should not pursue a judicial enforcement action against [Industry] at this time.
3. This meeting will be closed to the public.
4. Representatives of [Industry] may be accompanied by legal counsel if they so choose.
5. Failure to comply with this Order shall also constitute a further violation of the Authority's Sewer Use Ordinance and may subject [Industry] to civil or criminal penalties or such other appropriate enforcement response as may be appropriate.
6. This Order, entered this ____ day of _____, _____, shall be effective upon receipt by [Industry].

GCWSA

Name
Superintendent of Public Utilities
Address

EXAMPLE SHOW CAUSE ORDER

DIVISION WASTEWATER SERVICES

GREENSVILLE COUNTY WATER & SEWER AUTHORITY

IN THE MATTER OF)	
)	
)	DIRECTOR OF AUTHORITY
)	ADDRESS
NAME OF INDUSTRY)	
ADDRESS)	
)	

LEGAL AUTHORITY

The following findings are made and order issued pursuant to the authority vested in the Superintendent of Public Utilities, under Section _____ of the GCWSA’s Sewer Use Ordinance. This Order is based on findings of violation of the conditions of the wastewater discharge permit issued under Section _____ of the GCWSA’s Sewer Use Ordinance.

FINDINGS

1. [Industry] discharges nondomestic wastewater containing pollutants into the sanitary sewer system of the GCWSA (thereafter, “Authority”).
2. [Industry] is a “significant industrial user” as defined by Section _____ of the Authority’s Sewer Use Ordinance.
3. [Industry] was issued a wastewater discharge permit on (date), which contains prohibitions, restrictions, and other limitations on the quality of the wastewater it discharges to the sanitary sewer.
4. Pursuant to the ordinance and the above-referenced permit, data is routinely collected or submitted on the compliance status of [Industry].
5. This data shows that [Industry] has violated its wastewater discharge permit in the following manner:
 - a. [Industry] has violated its permit for copper and zinc in each sample collected between January 1988 and January 1989, for a total of 24 separate violations of the permit.
 - b. [Industry] has failed to submit a periodic compliance report due March 31, 1989.

- c. All of these violations satisfy the Authority's definition of significant violation.

ORDER

Therefore, based on the above findings, [Industry] is hereby ORDERED to:

1. Within 24 hours of receiving this Order, cease all nondomestic discharges into the Authority's sanitary sewer. Such discharges shall not recommence until such time as [Industry] is able to demonstrate that it will comply with its current permit limits.
2. Failure to comply with this Order may subject [Industry] to having its connection to the sanitary sewer sealed by the Authority and assessed the costs therefore.
3. Failure to comply with this Order shall also constitute a further violation of the Authority's Sewer Use Ordinance and may subject [Industry] to civil or criminal penalties or such other appropriate enforcement response as may be appropriate.
4. This Order, entered this ____ day of _____, _____, shall be effective upon receipt by [Industry].

GCWSA

Name
Superintendent of Public Utilities
1781 Greensville County Circle
Emporia, VA 23847

Greensville County Water & Sewer Authority
1781 Greensville County Circle
Emporia, VA 23847
Phone (434) 348-4205

APPLICATION FOR INDUSTRIAL USER DISCHARGE PERMIT

Section A – General Information

A.1. Company name, mailing address and telephone number:

A.2. Location address of production or manufacturing facility:

A.3. Name, title and telephone number of person authorized to represent this firm in official dealings with the Authority:

A.4. Alternate person to contact concerning the information provided herein:

A.5. Identify the type of business conducted (auto repair, machine shop, electroplating, warehouse, painting, printing, meat packing, food processing, etc.)

A.6. Provide a brief narrative description of the manufacturing, production or service activities your firm conducts:

A.7 Standard Industrial Classification Number(s) (SIC Code) for your facility:

A.8. This facility generates the following types of wastes (Check all that apply):

	Average Gallons per Day		
1. <input type="checkbox"/> Domestic wastes (restrooms, showers, etc.)	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
2. <input type="checkbox"/> Cooling water, non-contact	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
3. <input type="checkbox"/> Boiler/Tower blowdown	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
4. <input type="checkbox"/> Cooling water, contact	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
5. <input type="checkbox"/> Process	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
6. <input type="checkbox"/> Equipment/Facility Washdown	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
7. <input type="checkbox"/> Air Pollution Control Unit	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
8. <input type="checkbox"/> Storm water runoff to sewer	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
9. <input type="checkbox"/> Other	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
Total A.8.1 – A.8.9	_____		

A.9. Wastes are discharged to (check all that apply):

	Average Gallons per Day		
<input type="checkbox"/> Sanitary sewer	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
<input type="checkbox"/> Storm water	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
<input type="checkbox"/> Surface water	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
<input type="checkbox"/> Ground water	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
<input type="checkbox"/> Waste haulers	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
<input type="checkbox"/> Evaporation	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
<input type="checkbox"/> Other	_____	<input type="checkbox"/> estimated	<input type="checkbox"/> measured

Provide name and address of waste hauler(s), if used.

A.10. Is a Spill Prevention Control and Countermeasure Plan prepared for the facility?

YES NO

Section B – Facility Operation Characteristics

B.1. Total number of employees _____ Number of shifts _____

B.2. Employees on Shift 1 _____ Hrs of Shift _____ Workdays _____
Employees on Shift 2 _____ Hrs of Shift _____ Workdays _____
Employees on Shift 3 _____ Hrs of Shift _____ Workdays _____

*****NOTE: The following information in this section must be complete for each product line.

B.3. Principal product produced:

B.4. Raw materials and process additives used:

B.5. Production process is:

- Batch _____ % Batch
 Continuous _____ % Continuous
 Both

B.6. Hours of operation: _____ a.m. to _____ p.m. continuous

B.7. Is production subject to seasonal variation? YES NO

B.8. Are any process changes or expansion planned during the next three years?

- YES NO

If yes, explain below:

Additional product line information should be explained on a separate sheet.

Section C – Wastewater Information

C.1. If your facility employs processes in any of the industrial categories or business activities listed below and any of these processes generate wastewater or waste sludge, place a check beside the category or business activity (check all that apply).

a. Industrial Categories

- | | |
|---|--|
| <input type="checkbox"/> Adhesives and Sealants | <input type="checkbox"/> Nonferrous Metals Manufacturing |
| <input type="checkbox"/> Aluminum Forming | <input type="checkbox"/> Ore Mining and Dressing |
| <input type="checkbox"/> Auto and other Laundries | <input type="checkbox"/> Organic Chemicals |
| <input type="checkbox"/> Battery Manufacturing | <input type="checkbox"/> Paint and Ink Formulating |
| <input type="checkbox"/> Circuit board Manufacturing | <input type="checkbox"/> Pesticides Chemicals |
| <input type="checkbox"/> Coal Mining | <input type="checkbox"/> Petroleum Refining |
| <input type="checkbox"/> Coil Coating | <input type="checkbox"/> Pharmaceutical Manufacturing |
| <input type="checkbox"/> Copper Forming | <input type="checkbox"/> Photographic Equipment and Supplies |
| <input type="checkbox"/> Electric & Electronic Components | <input type="checkbox"/> Plastics & Synthetic Materials |
| <input type="checkbox"/> Electroplating and Electroless Plating | <input type="checkbox"/> Plastics Processing |
| <input type="checkbox"/> Explosives Manufacturing | <input type="checkbox"/> Porcelain Enameling |
| <input type="checkbox"/> Foundries | <input type="checkbox"/> Printing and Publishing |
| <input type="checkbox"/> Gum and Wood Chemicals | <input type="checkbox"/> Pulp, Paper, and Paperboard |
| <input type="checkbox"/> Inorganic Chemicals | <input type="checkbox"/> Rubber |
| <input type="checkbox"/> Iron and Steel Manufacturing | <input type="checkbox"/> Soaps & Detergents |
| <input type="checkbox"/> Leather Tanning and Finishing | <input type="checkbox"/> Steam Electric Power Generating |
| <input type="checkbox"/> Mechanical Products | <input type="checkbox"/> Textile Mills |
| <input type="checkbox"/> Metal Finishing | <input type="checkbox"/> Timber Products |

b. Other Business Activity

- Dairy Products
- Slaughter/Meat Packing/Rendering
- Food/Edible Products Processor
- Beverage Bottler

C2. Pretreatment devices or processes used for treating wastewater or sludge (check as many appropriate)

- | | |
|---|---|
| <input type="checkbox"/> Air flotation | <input type="checkbox"/> Reverse Osmosis |
| <input type="checkbox"/> Centrifuge | <input type="checkbox"/> Screen |
| <input type="checkbox"/> Chemical precipitation | <input type="checkbox"/> Sedimentation |
| <input type="checkbox"/> Chlorination | <input type="checkbox"/> Septic Tank |
| <input type="checkbox"/> Cyclone | <input type="checkbox"/> Solvent separation |
| <input type="checkbox"/> Filtration | <input type="checkbox"/> Spill protection |
| <input type="checkbox"/> Flow Equalization | <input type="checkbox"/> Sump |
| <input type="checkbox"/> Grease or oil separation, type _____ | <input type="checkbox"/> Biological treatment, type _____ |
| <input type="checkbox"/> Grease trap | <input type="checkbox"/> Rainwater diversion or storage |
| <input type="checkbox"/> Grit removal | <input type="checkbox"/> Other chemical treatment, type _____ |
| <input type="checkbox"/> Ion Exchange | <input type="checkbox"/> Other physical treatment, type _____ |
| <input type="checkbox"/> Neutralization, pH correction | <input type="checkbox"/> Other, type _____ |
| <input type="checkbox"/> Ozonation | <input type="checkbox"/> No pretreatment provided |

C.3. If any wastewater analyses have been performed on the wastewater discharge(s) from your facilities, attach a copy of the most recent data to this questionnaire. Be sure to include the date of the analysis, name of the laboratory performing the analysis, and the location(s) from which the sample(s) were taken (attach sketches, plans, etc., as necessary).

C.4. Priority Pollutant Information: Please indicate by placing an “x” in the appropriate box by each listed chemical whether it is “Suspected to be Absent”, “Known to be Absent”, “Suspected to be Present”, or “Known to be Present” in your manufacturing or service activity or generated as a by-product.

CHEMICAL COMPOUND		Known Present	Suspected Present	Known Absent	Suspected Absent	Known or Suspected Concentration/day
I.	METALS & INORGANICS	()	()	()	()	_____
1.	Antrimony	()	()	()	()	_____
2.	Arsenic	()	()	()	()	_____
3.	Asbestos	()	()	()	()	_____
4.	Beryllium	()	()	()	()	_____
5.	Cadmium	()	()	()	()	_____
6.	Chromium	()	()	()	()	_____
7.	Copper	()	()	()	()	_____
8.	Cyanide	()	()	()	()	_____
9.	Lead	()	()	()	()	_____
10.	Mercury	()	()	()	()	_____
11.	Nickel	()	()	()	()	_____
12.	Selenium	()	()	()	()	_____
13.	Silver	()	()	()	()	_____
14.	Thallium	()	()	()	()	_____
15.	Zinc	()	()	()	()	_____
II	PHENOLS & CRESOLS					
16.	Phenol(s)	()	()	()	()	_____
17.	Phenol, 2-chloro	()	()	()	()	_____
18.	Phenol, 2, 4-dichloro	()	()	()	()	_____
19.	Phenol, 2, 4, 6-tri-chloro	()	()	()	()	_____
20.	Phenol, pentachloro	()	()	()	()	_____
21.	Phenol, 2-nitro	()	()	()	()	_____
22.	Phenol, 4-nitro	()	()	()	()	_____
23.	Phenol, 2, 4 -dinitro	()	()	()	()	_____
24.	Phenol, 2, 4-dimethyl	()	()	()	()	_____
25.	m-Cresol, p-chloro	()	()	()	()	_____
26.	o-Cresol, 4, 6-dinitro	()	()	()	()	_____

	CHEMICAL COMPOUND	Known Present	Suspected Present	Known Absent	Suspected Absent	Known or Suspected Concentration/day
III.	MONOCYCLIC AROMATICS (EXCLUDING PHENOLS, CRESOLS AND PHTHALATES)					
27.	Benzene	()	()	()	()	_____
28.	Benzene, chloro	()	()	()	()	_____
29.	Benzene, 1, 2-dichloro	()	()	()	()	_____
30.	Benzene, 1, 3-dichloro	()	()	()	()	_____
31.	Benzene, 1, 4-dichloro	()	()	()	()	_____
32.	Benzene, 1, 2, 4-trichloro	()	()	()	()	_____
33.	Benzene, hexachloro	()	()	()	()	_____
34.	Benzene, ethyl	()	()	()	()	_____
35.	Benzene, nitro	()	()	()	()	_____
36.	Toluene	()	()	()	()	_____
37.	Toluene, 2, 4-dinitro	()	()	()	()	_____
38.	Toluene, 2, 6-dinitro	()	()	()	()	_____
IV.	PCBs & RELATED COMPOUNDS					
39.	PBC-1016	()	()	()	()	_____
40.	PBC-1221	()	()	()	()	_____
41.	PBC-1232	()	()	()	()	_____
42.	PBC-1242	()	()	()	()	_____
43.	PBC-1248	()	()	()	()	_____
44.	PBC-1254	()	()	()	()	_____
45.	PBC-1260	()	()	()	()	_____
46.	2-Chloronaphthalene	()	()	()	()	_____
V.	ETHERS					
47.	Ether, bis (chloromethyl)	()	()	()	()	_____
48.	Ether, bis (2-chloroethyl)	()	()	()	()	_____
49.	Ether, bis (2-chlorosopropyl)	()	()	()	()	_____
50.	Ether, 2-chloroethyl vinyl	()	()	()	()	_____
51.	Ether,4-bromophenyl phenyl	()	()	()	()	_____
52.	Ether,4-chlorophenyl phenyl	()	()	()	()	_____
53.	Bis(2-chloroethoxy)methane	()	()	()	()	_____
VI.	NITROSAMINES & OTHER NITROGEN-CONTAINING COMPOUNDS					
54.	Nitrosamine, dimethyl	()	()	()	()	_____
55.	Nitrosamine, diphenyl	()	()	()	()	_____
56.	Nitrosamine, di-n-propyl	()	()	()	()	_____
57.	Benzidine	()	()	()	()	_____
58.	Benzidine, 3, 3-dichloro	()	()	()	()	_____
59.	Hydrazine, 1, 2-diphenyl	()	()	()	()	_____
60.	Acrylonitrile	()	()	()	()	_____

	CHEMICAL COMPOUND	Known Present	Suspected Present	Known Absent	Suspected Absent	Known or Suspected Concentration/day
VII.	HALOGENATED ALIPHATICS					
61.	Methane, bromo-	()	()	()	()	_____
62.	Methane, chloro-	()	()	()	()	_____
63.	Methane, dichloro	()	()	()	()	_____
64.	Methane, chlorodibromo	()	()	()	()	_____
65.	Methane, dichlorobromo	()	()	()	()	_____
67.	Methane, tribromo	()	()	()	()	_____
68.	Methane, trichloro	()	()	()	()	_____
69.	Methane, trichlorofluoro	()	()	()	()	_____
70.	Methane, dichlorodifluoro	()	()	()	()	_____
71.	Ethane, 1, 1-dichloro	()	()	()	()	_____
72.	Ethane, 1, 2-dichloro	()	()	()	()	_____
73.	Ethane, 1, 1, 1-trichloro	()	()	()	()	_____
74.	Ethane, 1, 1, 2-tetrachloro	()	()	()	()	_____
75.	Ethane, 1, 1, 2, 1-tetrachloro	()	()	()	()	_____
76.	Ethane, hexachloro	()	()	()	()	_____
77.	Ethene, chloro	()	()	()	()	_____
78.	Ethene, 1, 1-dichloro	()	()	()	()	_____
79.	Ethene, trans-dichloro	()	()	()	()	_____
80.	Ethene, trichloro	()	()	()	()	_____
81.	Ethene, tetrachloro	()	()	()	()	_____
82.	Propane, 1, 2-dichloro	()	()	()	()	_____
83.	Propane, 2, 4-dichloro	()	()	()	()	_____
84.	Butadiene, hexachloro	()	()	()	()	_____
85.	Cyclopentadiene,hexachloro	()	()	()	()	_____
VIII	PHTHALATE ESTERS					
86.	Phthalate, di-c-methyl	()	()	()	()	_____
87.	Phthalate, di-n-ethyl	()	()	()	()	_____
88.	Phthalate, di-n-butyl	()	()	()	()	_____
89.	Phthalate, di-n-octyl	()	()	()	()	_____
90.	Phthalate, bis(2-ethylhexyl)	()	()	()	()	_____
91.	Phthalate, butyl benzyl	()	()	()	()	_____
IX.	POLYCYCLIC AROMATIC HYDROCARBONS					
92.	Acenaphthene	()	()	()	()	_____
93.	Acenaphthylene	()	()	()	()	_____
94.	Anthracene	()	()	()	()	_____
95.	Benzo (a) anthracene	()	()	()	()	_____
96.	Benzo (b) fluoranthene	()	()	()	()	_____
97.	Benzo (k) fluoranthene	()	()	()	()	_____
98.	Benzo (ghi) perylene	()	()	()	()	_____
99.	Benzo (a) pyrene	()	()	()	()	_____

CHEMICAL COMPOUND		Known Present	Suspected Present	Known Absent	Suspected Absent	Known or Suspected Concentration/day
100.	Chrysene	()	()	()	()	_____
101.	Dibenzo (a, n) anthracene	()	()	()	()	_____
102.	Fluoranthene	()	()	()	()	_____
103.	Fluorene	()	()	()	()	_____
104.	Indeno (1, 2, 3-cd) pyrene	()	()	()	()	_____
105.	Naphthalene	()	()	()	()	_____
106.	Phenanthrene	()	()	()	()	_____
107.	Pyrene	()	()	()	()	_____
X.	PETICIDES					
108.	Acrolein	()	()	()	()	_____
109.	Aldrin	()	()	()	()	_____
110.	BHC (Alpha)	()	()	()	()	_____
111.	BHC (Beta)	()	()	()	()	_____
112.	BHC (Gamma) or Lindane	()	()	()	()	_____
113.	BHC (Delta)	()	()	()	()	_____
114.	Chlordane	()	()	()	()	_____
115.	DDD	()	()	()	()	_____
116.	DDE	()	()	()	()	_____
117.	DDT	()	()	()	()	_____
118.	Dieldrin	()	()	()	()	_____
119.	Endosulfan (Alpha)	()	()	()	()	_____
120.	Endosulfan (Beta)	()	()	()	()	_____
121.	Endosulfan Sulfate	()	()	()	()	_____
122.	Endrin	()	()	()	()	_____
123.	Endrin aldehyde	()	()	()	()	_____
124.	Heptachlor	()	()	()	()	_____
125.	Heptachlor epoxide	()	()	()	()	_____
126.	Isophorone	()	()	()	()	_____
127.	TCDD (or Dioxin)	()	()	()	()	_____
128.	Toxaphene	()	()	()	()	_____

Section D – Other Wastes

D.1. Are any liquid wastes or sludges from this firm disposed of by means other than discharge to the sewer system? () YES () NO

If YES, complete items 2 and 3.

If NO, skip remainder of Section D.

D.2. These wastes may be described as:

Estimated Gallons or Pounds/Year

- | | | |
|--------------------------|----------------------------------|-------|
| <input type="checkbox"/> | Acids and Alkalies | _____ |
| <input type="checkbox"/> | Heavy Metal Sludges | _____ |
| <input type="checkbox"/> | Inks/Dyes | _____ |
| <input type="checkbox"/> | Oils and/or Grease | _____ |
| <input type="checkbox"/> | Organic Compounds | _____ |
| <input type="checkbox"/> | Paints | _____ |
| <input type="checkbox"/> | Pesticides | _____ |
| <input type="checkbox"/> | Plating Wastes | _____ |
| <input type="checkbox"/> | Pretreatment Sludges | _____ |
| <input type="checkbox"/> | Solvents/Thinners | _____ |
| <input type="checkbox"/> | Other Hazardous Wastes (specify) | _____ |
| | _____ | _____ |
| | _____ | _____ |
| <input type="checkbox"/> | Other Wastes (specify) | _____ |
| | _____ | _____ |
| | _____ | _____ |

D.3. For the above checked wastes, does your company practice:

- on-site storage
- off-site storage
- on-site disposal
- Off-site disposal

Briefly describe the method(s) of storage or disposal checked above.

Section E – Signatory Page

Note to Signing Official: In accordance with Title 40 of the Code of Federal Regulations Part 403, Section 403.14, information and data provided in this questionnaire which identifies the nature and frequency of discharge shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2. Should a discharge permit be required for your facility, the information in this questionnaire will be used to issue the permit.

This is to be signed by an authorized official of your firm after adequate completion of this form and review of the information by the signing official.

I have personally examined and am familiar with the information submitted in this document and attachments. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported herein, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment.

Signature of Official

Date

SURVEY FORM

Significant Discharger
VA Department Environmental Quality
Regulation No. 6, PART VII

**SURVEY OF SIGNIFICANT DISCHARGER OR OTHER WASTE
DISCHARGED TO THE THREE CREEK WASTEWATER TREATMENT PLANT
PUBLICLY OWNED PRETREATMENT WORKS (POTW)**

Note: Refer to attached instructions when answering questions below.

TITLE: _____

A. DISCHARGE INFORMATION

1. Permits held _____

2. YES NO Does this establishment discharge “industrial waste” (1) or “other waste(s)” (2) to the POTW?

3. Name of facility discharging wastes to the POTW.

Name of owner of the facility. _____

Name of operator of the facility. _____

4. Address of the facility. _____

Address of owner. _____

Address of operator. _____

5. Telephone number of facility. _____

Telephone number of owner. _____

Telephone number of operator. _____

6. Name and telephone number of person completing this form.

(1) **“Significant Discharger Waste” means liquid or other wastes resulting from any process of industry, manufacture, trade or businesses, or from the development of any natural resources.**

(2) **“Other Waste” means decayed wood, sawdust, shavings, bark, lime, garbage, refuse, ashes, offals, tar, oil, chemicals, and all other substances, except industrial waste and sewage, which may cause pollution in any waters.**

B. ACTIVITY INFORMATION

1. Type of industry, manufacture, trade or business.

2. Standard Industrial Classification Code, (available from Standard Industrial Classification Manual), principal product or service and average rate of production.

SIC Code

Provide Four-Digit Industrial Code	Product or Service Provided	Average Rate of Production (Monthly-Weekly-Daily)
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. General description of industrial/trade activities and/or plant processes on the premises.

4. Describe any waste handling and/or pretreatment facilities.

5. Flow measurements of each discharge.

SIC Code	Activity	Daily Flow Average	(Gallons/Day) Maximum
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

C. INDUSTRIAL WASTE(S) AND OTHER WASTE(S) DISCHARGED.

1. Industrial Processes	Description	Waste Discharge No.
_____	_____	_____
_____	_____	_____
_____	_____	_____

2. a. Regulated Process	Categorical Pretreatment Standard
_____	_____
_____	_____
_____	_____
_____	_____

b. Type of Discharge _____ Continuous _____ Intermittent

c. Discharge Point Description

SIC Code	Discharge Points (describe receiving system)
_____	_____
_____	_____
_____	_____
_____	_____

d. SIC Code	Days Per Week (Circle)	Months
_____	S M T W T F S	_____
_____	S M T W T F S	_____
_____	S M T W T F S	_____
_____	S M T W T F S	_____
_____	S M T W T F S	_____

e. Average flows for Intermittent Discharges

Waste Discharge Number	Frequency (Average # of discharge Occurrences Per day	Duration (Average # of hours/day the discharge is operating	Discharge Quantity (Average volume per day discharge - gallons	Estimate(E) or Measurement (M)

f. Average flows for Intermittent Discharges

Waste Discharge Number	Frequency (Average # of discharge Occurrences Per day	Duration (Average # of hours/day the discharge is operating	Discharge Quantity (Average volume per day discharge - gallons	Estimate(E) or Measurement (M)

g. Average flows for Continuous Discharges

Waste Discharge Number	Frequency (Average # of hours per day the discharge is operating)	Average Daily Flow (gallons per day)	Maximum Daily Flow (gallons per day)	Estimate(E) or Measurements (M)

Describe the methods used for flow measurement and/or flow estimation in C.2.e. and C.2.f. above.

3. Presence of Toxic Substance - TABLE 1

Indicate by waste discharge number(s) beside each substance if it is present in the discharge(s) to the sewerage system or treatment works.

Analysis Results
ug/l

Acenaphthene
Acenaphthylene
Acrolein
Acrylonitrile
Aldrin
Alpha-endosulfan
Alpha-BHC
Aluminum, total
Anthracene
Antimony, total
Arsenic, total
Asbestos
Barium
Benzene
Beta-endosulfan
Benzidine
Benzo (a) anthracene
Benzo (b) pyrene
3,5-benzoflouranthene
Benzo(ghi) perylene
Benzo (k) flouranthene
Beryllium, total
Beta-BHC
Bis (2-chloroethoxy) methane
Bis (2-chloroethyl) ether
Bis (2-shloroisopropyl) ether
Bis (2-ethylhexyl) phthalate
Boron
Bromide
Bromoform
4-bromophenyl phenyl ether
Butylbenzyl phthalate
Cadmium
Carbon tetrachloride
Chlordane
Chlorine, total residual
Chlorobenzene

Chlorodibromomethane
Chloroethane
2-Chloronaphthalene
2-Chlorophenol
p-Chloro-M-Cresol
4-Chlorophenyl phenyl ether
2-Chloroethyl vinyl ether
Chloroform
Chromium, total
Chrysene
Cobalt, total
Color
Copper, total
1,3 – Cis-dichloropropylene
Cyanide, total
Dibenzo (a,b) anthracene
Delta – BHC
4,4 – DDT
4,4 – DDE
4,4 – DDD
Dieldrin
1,2 – Dichlorobenzene
1,3 – Dichlorobenzene
1,4 – Dichlorobenzidine
Dichlorobromomethane
1,1 – Dichloroethane
1,2 – Dichloroethane
1,1 – Dichloroethylene
2,4 – Dichlorophenol, 2 – Dichloropropane
1,2 – Dichloropropylene
Diethyl Phthalate
Dimethyl Phthalate
2,4 – Dimethylpheno Di-N-butyl phthalate
Di-N-butyl Phthalate
2,4 – Dinitrotoluene
2,6 – Dinitrotoluene
Di-N-octyl phthalate
1,2 – Diphenylhydrazine
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethylbenzene
Fecal coliform

Analysis Results
ug/l

Fluoranthene
Fluorine
Fluoride
Gamma – BHC
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno (1,2,3 – cd) pyrene
Isophorone
Iron, total
Lead, total
Manganese, total
Magnesium, total
Mercury, total
Methyl Bromide
Methyl chloride
Methylene chloride
Molybdenum, total
Naphthalene
Nitrobenzene
N-nitrosodimethylamine
N-nitrosodi-N-propylamine
N-nitrosodiphenylamine
Nickel, total
Nitrate – Nitrite
Nitrogen, total organic
2 – Nitrophenol
4 – nitrophenol
Oil and Grease
PCB – 1016
PCB – 1221
PCB – 1232
PCB – 1242
PCB – 1248
PCB – 1254
PCB – 1260
Pentachlorophenol
Phenol
Phenols, total
Phenanthrene

Analysis Results
ug/l

Phosphorus, total
Pyrene
Radioactivity
Selenium, total
Silver, total
Sulfate
Sulfide
Sulfite
Surfactants
1, 1, 2, 2 – Tetrachloroethane
Thallium, total
Tin, total
Titanium, total
Toluene
Toxaphene
1, 2, 4 – trichlorobenzene
Toluene
1, 2 – trans-dichloroethylene
1, 2 – trans-dichloropropylene
1, 1, 1 – trichloroethane
Trichloroethylene
2, 4, 6 – trichlorophenol
Vinyl chloride
Zinc, total

4. Presence of Hazardous Substances - TABLE 2

Indicate by circling name whether substance is present in the discharge(s) to sewerage systems or treatment works. Also indicate waste discharge number beside circled substances.

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captain
Carbaryl
Carbofuran

Carbon disulfide
Chlorpyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2, 4 – D (2, 4 – Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2, 2 – Dichloropropionic Acid
Dichlorvos
Diethylamine
Dimethylamine
Dinitrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethanolamine
Ethion
Ethylenediamine
Ethlyenedibromide
Formaldehyde
Furfural
Guthion
Isoprene
Isopropanolamine didecylberzenesulfanate
Kelthane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methylmercaptan
Methylmethacrylate
Methylparathion
Mevinphos
Mexacarbate
Monoethylamine
Monomethylamine
Naled
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfanate

Phosgene
 Propargite
 Propyleneoxide
 Pyrethrins
 Quinoline
 Resorcinol
 Strontium
 Strychnine
 Styrene
 2, 4, 5 – T (2, 4, 5 – Trichlorophenoxy acetic acid)
 TDE (Tetrachlorodiphenylethane)
 2, 4, 5 – TP [2-(2, 4, 5 Trichlorophenoxy) (propanoic acid)]
 Trichlorofan
 Triethylamine
 Trimethylamine
 Uranium
 Vanadium
 Xylene
 Xylenol
 Zirconium
 Other*

*Material listed in 40 CFR Part 116 (Designation of Hazardous Substances) known to be present.

5. Wastewater Present of Characteristics - TABLE 3

Present

Algicides*
 Ammonia
 Biochemical Oxygen Demand (BOD 5)
 Calcium
 Chemical Oxygen Demand (COD)
 Chloride
 Dyes (organic)*
 Dyes (inorganic)*
 Flammable liquids
 High temperature (80 degrees F)
 Organiz Nitrogen
 PH (standard units)
 Potassium
 Sodium
 Total Suspended Solids
 Turbidity (Jackson Units)
 Others**

* Specify substance or compound, in space provided below, where possible trade names should be accompanied by a listing of chemical constituents.

**Other waste substances

SAMPLE PERMIT

Greensville County Water & Sewer Authority
1781 Greensville County Circle
Emporia, Virginia 23847

Permit No.

In accordance with all terms and conditions of the [GCWSA} conveyance system Rules and Regulations and in accordance with any applicable provisions of Federal or State law or regulation;

Permission is Hereby Granted to:

Industrial Facility
Name and Address

SIC No.:
Significant User
Non-Categorical

Telephone Number

For the contribution of Industrial Wastewater into the Authority Conveyance system in compliance with the Authority’s treatment regulation, any applicable Federal or State law or regulation and in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions as set forth herein.

This permit is based on information provided in the permit application which, together with the following conditions and requirements, is considered a part of this permit.

This permit is not transferable.

Effective Date:
Expiration Date:

Executive Director
Greensville County Water & Sewer Authority

Date

Part I – Wastewater Discharge Limitations

The Industrial User (IU) shall comply with the effluent limitation as referenced below (maximum for any one day Mg/l).

<u>Pollutant</u>	<u>PCC</u>		<u>Sample Type</u>
	<u>Final Limits</u>	<u>Frequency</u>	
	<u>Daily Maximum</u>		
Cadmium	0.25	Semi-Annual	8 Hr. Composite
Chromium	1.92	Semi-Annual	8 Hr. Composite
Copper, Total	4.95	Semi-Annual	8 Hr. Composite
Lead, Total	2.54	Semi-Annual	8 Hr. Composite
Nickel, Total	3.78	Semi-Annual	8 Hr. Composite
Zinc, Total	3.60	Semi-Annual	8 Hr. Composite
TSS	300	Semi-Annual	8 Hr. Composite
BOD5	300	Semi-Annual	8 Hr. Composite
Total Phosphorous	NL	Semi-Annual	8 Hr. Composite
pH Maximum	9.0	Semi-Annual	Grab
pH Minimum	5.5	Semi-Annual	
Total Chlorides	600	Semi-Annual	8 Hr. Composite
Fats, Wax, Grease, Oil	100	Semi-Annual	Grab
TDS	1800	Semi-Annual	8 Hr. Composite

PCC – Pollutant concentrations regulated by the municipal authority.

NL – No limitation, monitoring required.

In addition, all other effluent limitation and general discharge prohibitions set forth in the GCWSA Rules and Regulations and all applicable Federal and State limitation shall be met.

Part 2 – Sample Site

Part 3 – Self Monitoring

All monthly test results shall be submitted on or before the first day of the following month.

[Industrial User Name] will self-monitor semi-annually for the following parameters:

Composite Samples

Total Cadmium
Total Chromium
Total Copper
Total Lead
Total Nickel
Total Zinc
TSS
BOD5
COD
Total Phosphorous
Total Chlorides

Grab Samples

pH
Fats, Wax, Grease and Oil

The test results for the January – June semi-annual period are due June 30 and the July – December semi-annual period are due December 31.

The above chemical analysis shall be in accordance with procedures as defined in 40 CFR Part 136.

The Industrial User is required to submit the self-monitoring reports to:

Director
Greensville County Water & Sewer Authority
1750 East Atlantic Street
Emporia, VA 23847

The reports shall include:

1. Sample date(s)
2. Sampled location
3. Name of Person sampling
4. Type of sample (grab, composite)
5. Method of collection
6. Date of analysis
7. Person (or lab) performing the analyses
8. Average flow in gallons per day (GPD)

The self-monitoring reports must be signed by a responsible corporate official, company president, vice-president or administrator or their designee. The IU must within thirty (30) days of permit effective or modification date submit a letter to the Director of the Greensville County Water & Sewer Authority with the name and title of the signee of self-monitoring reports. Letter must be from a responsible corporate official, president, vice-president or administrator.

In the event of a violation of a permit parameter, the IU must:

1. Notify the Director at the Greensville County Water & Sewer Authority within twenty-four (24) hours of the IU becoming aware of the violation. This notification may be oral with a detailed written report to be filed within five (5) days.
2. Immediately resample for three (3) consecutive days for the violated parameter and submit the test results within thirty (30) days.

The IU shall retain and preserve for no less than three (3) years any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sample and chemical analyses made by or in behalf of the user in connection with its discharge.

All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by Greensville County Water & Sewer Authority.

Department of Environmental Quality (DEQ) or U. S. EPA shall be retained and preserved by the IU until all enforcement activities have concluded and all period of limitation with respect to any and all appeals have expired.

It is also the responsibility of the Industrial User to:

1. Immediately notify the Authority of slug loadings, accidental spills or potential problems which could violate any of the prohibited discharge standards, whether or not such violations actually results, with written notification discussing circumstances and remedies to be submitted to the Authority within five (5) days of the occurrence.
2. Notify the Authority in writing a minimum of thirty (30) days prior to the introduction of new wastewater pollutants or any substantial change in the volume of characteristics of the wastewater into the Authority conveyance system for treatment. Formal written approval by the Director of the Authority for treatment is required prior to introduction.
3. Provide formal written notice within thirty (30) days of substantial changes of a long-term nature to any manufacturing process or wastewater characteristics or flows.

Part 4 – Right of Entry

The Industrial User shall allow authorized representatives of the Greenville County Water & Sewer Authority to:

1. Inspect the facilities of the permittee to ascertain whether the provisions of the permit and/or ordinance are being met.
2. Have access to and copy at reasonable hours any records required to be kept under the terms and conditions of this permit.
3. Have ready access at all times at all parts of the premises for the purpose of inspection and/or sampling in the performance of any of their duties.
4. Set up on the permittee's property such devices as are necessary to conduct sampling or metering operations.

Reasonable hours in the context of inspection and sampling includes any time the IU is operating any process which results in a process wastewater discharge to the Authority sewerage system. The GCWSA representative will contact the person in charge for the right of entry purposes.

Part 5 – Standard Conditions

1. **Dilution** – No IU shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as partial or complete substitute for adequate treatment to achieve compliance with the limitation contained in this permit.
2. **Proper disposal of Pretreatment Sludge and Spent Chemicals** – Disposal of sludge and spent chemical generate shall be done in accordance with Section 504 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.
3. **Confidential Information** – Except for data determined to be confidential by the Authority’s Rules & Regulations, all reports required by this permit shall be available for public inspection at the office of the Director of the Authority. Effluent data shall not be held confidential.
4. **Signatory Requirements** – All reports required by his permit shall be signed by a principal executive officer of the IU, or his/her designee.
5. **Permit Violation** – Each Industrial User must meet all the limits of its permit at all times. If the results to self-monitoring reports or GCWSA conducted monitoring show that permits are being violated, the permit holder will be notified and must within five (5) days of such notification, forward a written report to the Authority indicating that the violation has been corrected or indicating what action is being taken to correct the violation and when it can be corrected. Permit violations also include failure to self monitor, failure to submit reports and data, failure to submit required reports within the required time period.
6. **Permit Suspension** – Should permit violations continue uncorrected, or should the nature of a discharge be such that, in the Director’s judgment, the safety or health of the public or the safety of the Authorities wastewater system or receiving water are placed in jeopardy, the Director may suspend the Industrial User’s permit at which time all wastewater flow must stop until all deficiencies are corrected to Authority’s satisfaction.

7. **Revocation of Permit** – The permit issued to the IU by the GCWSA may be revoked when, after inspection, monitoring or analysis it is determined that the discharge of wastewater to the sanitary sewer is in violation of Federal, State, or Local Laws, ordinances, or regulations. Additionally falsification or intentional misrepresentation of data or statement pertaining to the permit application or any other required reporting form, shall be cause for permit revocation.

Wastewater flow must stop and will not be accepted again until a new acceptable application is received and a new permit is issued.

8. The GCWSA may seek civil or criminal penalties and injunctive relief for noncompliance with these regulations by the Industrial User.
9. If a permit violation is found to be directly or indirectly responsible for damage to any sewers or to any part of the GCWSA wastewater system, the Director of GCWSA may recover from the violation the repair or excess cost incurred by GCWSA.
10. **Falsifying Information or Tampering with Monitoring Equipment** – Knowingly, making false statement on any report or other document required by this permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under criminal laws of the County, as well as being subjected to civil penalties and relief.
11. **Modification or Revision of the Permit** –
 - a. The terms and conditions of this permit may be subject to modification by the GCWSA at any time as limitations or requirements as identified by the GCWSA Rules and Regulations are modified or other just cause exists.
 - b. This permit may also be modified to incorporate special conditions resulting from the issuance of a special order.
 - c. The terms and conditions may be modified to incorporate any new or revised Federal, State, and Local pretreatment standards or requirements.
 - d. A change in any condition in either the Industrial User or the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge.

- e. Information indicating that the permitted discharge posed a threat to the Authority's collection and treatments system, GCWSA personnel or the receiving waters.
- 12. **Severability** – The provisions of this permit are severable, and if the provisions of the permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.
- 13. **Reapplication for a Permit** – The permittee shall submit an application for issuance of this permit at least ninety (90) days before the current permit expires.
- 14. **Property rights** – The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Federal, State, or Local regulations.
- 15. **Proper Operation and Maintenance of Pretreatment and Monitoring Facilities** – The Industrial User is required to operate and maintain its facilities and monitoring equipment with proper diligence.
- 16. **Limitation of Permit Transfers** – The discharge permit cannot be transferred to another party, and is valid only for the company and facility to which it is issued.
- 17. **Duty to Mitigate** – The Industrial User must undertake all reasonable measures to mitigate the duration and severity of any violation of the permit.
- 18. **Duty to Comply** – By discharging to the Authority's Conveyance & Treatment System under the permit, the Industrial User has a duty to comply with its provisions.
- 19. **Analytical Methods** – The Industrial User's analytical procedures must be in accordance with 40 CFR Part 136.
- 20. **Additional Discharge Testing** – If the Industrial User conducts any testing on the facility discharge that is not included in the permit, the IU shall report the results to the Director of GCWSA.

21. **Operating upsets** – Any permittee that experiences an upset in its operations that cause the facility to be in a state of temporary noncompliance with the provisions of this permit shall inform the GCWSA at (434) 634-6094 or (434) 348-5220 pager. These numbers are available twenty-four (24) hours per day.

A written follow-up report of the upset shall be filed by the permittee with the GCWSA within five (5) days.

The report shall contain:

- a. Description of the upset, the cause(s) thereof and the upset's impact on the permittee's compliance status;
- b. Duration on noncompliance, including exact dates and times of noncompliance, and if not corrected the anticipated time noncompliance is expected to continue; and
- c. All steps taken to reduce, eliminate and prevent recurrence of such an upset.

The report must also demonstrate that the treatment facility was operated in a prudent and workmanlike manner.

A documented and verified operating upset shall be affirmative defense to any enforcement action brought against the permittee for violation attributable to the upset event.

22. **Annual Publication** – A list of all Industrial Users which were in significant noncompliance with applicable pretreatment requirements proceedings during the twelve (12) previous months shall be annually published by the GCWSA in the largest daily newspaper within its service area. Publication of the list shall be made in January of each year. Accordingly, the permittee is apprised that noncompliance with this permit may lead to an enforcement action and may result in publication of its name in an appropriate newspaper in accordance with this section.
23. **Civil and Criminal Liability** – Nothing in this permit shall exclude criminal penalties for noncompliance under the GCWSA.
24. **Prohibited Discharge** – No Industrial User shall discharge:
- a. Any pollutant(s) which cause pass through or interference at the Publicly Owned Treatment Works (POTW).

- b. Pollutants which create a fire or explosion hazard in the POTW including, but not limited to wastestreams with a closed cup flashpoint of less than 104°F or 40°C using test methods specified in 40 CFR 261.21.
 - c. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.5 unless the works is specifically designed to accommodate such discharges.
 - d. Solids or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference.
 - e. Any pollutant, including oxygen demanding pollutants (BOD, etc) released in a discharge at a flow rate and/or pollutant concentration which will cause inference with the POTW.
 - f. Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in case head in such quantities that the temperature at the POTW exceeds 40°C (104° F).
 - g. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through.
 - h. Pollutants which result in the presence of toxic gases, vapor or fumes within POTW in a quantity that may cause worker health and safety problems.
 - i. Any trucked or hauled pollutants except at discharge points designated by the POTW.
25. Significant Noncategorical Industrial Users shall submit to the Authority (GCWSA) at least once every six (6) months (on dates specified by the Authority) a description of the nature, concentration, and flow of the pollutants required to be reported by the Authority. These reports shall be based on sampling and analysis performed in the period covered by the report, and performed in accordance with the techniques described in 40 CFR Part 136 and amendments thereto. Where 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, or where the Administrator determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analysis shall be performed by using validated analytical procedures, including procedures suggested by the POTW or other person, approved by EPA.

26. Notification of changed discharge. All Industrial Users shall promptly notify the GCWSA in advance of any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which the Industrial User has submitted initial notification under 40 CFR 403.12 (p).
27. (1) The Industrial User shall notify the POTW, the EPA Regional Waste Management Division Director, and State hazardous waste authorities in writing of any discharge into the GCWSA of a substance, which if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge (contains, batch, or other). If the Industrial User discharges more than 100 kilograms of such waste per calendar month to the extent such information is known and readily available to the Industrial User. An identification of the hazardous constituents contained in the wastes, an estimation of the mass concentration of such constituents in the wastestream discharge during the calendar month, and an estimation of the mass of constituents in the waste stream expected to be discharged during the following twelve (12) months. All notification must take place within 180 days of the effective date 403.12 (p). Industrial Users who commence discharging after the effective date of this rule shall provide the notification no later than 180 days after the discharge of the listed of characteristic hazardous waste.

Any notification under this paragraph need be submitted only once for each hazardous waste discharged. However, notifications of changed dischargers must be submitted under Item 26. The notification requirement in this section does not apply to pollutants already under the self-monitoring requirement of 40 CFR 403.12(b), (d), and (e)

(2) Dischargers are exempt from the requirements of Item (1) of this section during a calendar month in which they discharge no more than fifteen (15) kilograms of hazardous wastes, unless the wastes are acute hazardous wastes as specified in 40 CFR 261.30 (d) and 261.33 (e). Discharge of more than fifteen (15) kilograms of new acute hazardous waste in a calendar month, or of any quantity of acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e), requires a one-time notification. Subsequent months during the Industrial User discharges more than such quantities of any hazardous waste require additional notification.

(3) In the case of any new regulation under Section 3001 of RCRA (Resource Conservation and Recovery Act) identifying additional characteristics of hazardous waste or listing any additional substance as a

hazardous water the Industrial User must notify the POTW, the EPA Regional Waste Management Waste Division Director, and State hazardous waste authorities of the discharge of such substance within ninety (90) days of the effective date of such regulations

(4) In the case of any notification made under Item (1) of this section, the Industrial User shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it was determined to be economically practical.

28. **Reopener Clause**

(1) This permit may be reopened and modified to incorporate any new or revised requirements that may be in a National Categorical Pretreatment Standard as promulgated by the United States Environmental Protection Agency (U.S. EPA).

(2) This permit may be reopened and modified to incorporate any new or revised requirements resulting from the reevaluation of local limits by the Authority GCWSA.

(3) This permit may be reopened and modified to incorporate any new or revised requirements that may be developed by the Authority as are necessary to ensure POTW compliance with applicable sludge management requirements promulgated by the U.S. EPA under 40 CFR Part 503 or any other Federal Regulations.

29. **Right of Appeal** – The permittee may petition to appeal the terms of this permit within thirty (30) days of this notice. This petition must be in writing; failure to submit a petition for review shall be deemed to be a waiver of the appeal. In its appeal, the permittee must indicate the provision objected to, the reason for the objection, and the alternative condition that it seeks to be placed in the permit.

30. **Flow Measurements** – If flow measurement is required by this permit, the appropriate flow measurement devices and methods consistent with approved scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type with a maximum deviation of less than ten percent (10%) from true discharge rated throughout the range of expected discharge volumes.

Greensville County Water & Sewer Authority
1781 Greensville County Circle
Emporia, Virginia 23847

Tel: (434) 348-4213
Fax: (434) 348-4257

INDUSTRIAL USER BASELINE MONITORING REPORT (BMR)

Instructions: Please complete this form in as much detail as possible. Include additional information on attached sheets as necessary. Return completed form to Greensville County Water & Sewer Authority, 1781 Greensville County Circle, Emporia, Virginia 23847; Attention: Superintendent of Public Utilities

1. COMPANY INFORMATION

A. Legal Name: _____

Mailing Address: _____

B. Facility Name: _____

Location: _____

C. Names of Owner (s): _____

D. Name of Operator: _____

E. Facility contact (provide the name, title and phone number of designated person to contact if additional information is necessary):

F. Total number of employees: _____ Number of shifts: _____

Employees on Shift 1 _____ Hrs. of shift _____ Days _____

Employees on Shift 2 _____ Hrs. of shift _____ Days _____

Employees on Shift 3 _____ Hrs. of shift _____ Days _____

Employees on Shift 4 _____ Hrs. of shift _____ Days _____

G. Number of months in operation _____

H. Provide the name of the publicly owned treatment works (POTW) that receives the wastewater discharges from this facility (if the facility is not connected to a sewerage system, describe where wastewater is discharge).

Greensville County Water & Sewer Authority

2. NATURE OF OPERATION

A. List Raw Materials Used: _____

B. List Chemicals Used: _____

C. Describe Manufacturing or Service Activities Conducted and the Final Product:

D. Summarize Each Regulated Process:

Process Description	Production Rate	Pretreatment Standard Category	Subpart	SIC Code

3. WASTEWATER FLOW

A. Total Plant Flow in Gallons Per Day (gpd). Average _____ Max _____

B. Individual Process Flows in Gallons Per Day (gpd)

Regulated Process	Average Flow Rate GPD	Maximum Flow Rate GPD	Type of Discharge (batch, continuous, none)

3. B. (cont.)

Unregulated Process	Average Flow Rate GPD	Maximum Flow Rate GPD	Type of Discharge (batch, continuous, none)

C. Provide on a separate sheet:

- 1) A schematic drawing of flow chart for each regulated process that generates wastewater
- 2) A schematic drawing showing all wastewater flows (regulated and unregulated, location of any treatment systems, and sampling locations.

4. **NATURE AND CONCENTRATION OF POLLUTANTS**

A. Analysis of Regulated Flows

The industrial user must perform sampling and analysis of the effluent from all regulated processes (after treatment, if applicable). Provide the analytical data for the regulated processes in the space provided below. Attach additional sheets if necessary. Only those pollutants specifically regulated by the applicable category need be reported.

Regulated Process: _____

	pH	TSS	TS	BOD	COD			
Mg/l								
Max.								
Average								
Mg/l								
Max.								
Average								

4. A. (cont.)

Sample Location: _____

Sample Type: (composite samples are required except where not feasible): _____

Number of Samples and Frequency Collected: _____

Analytical Methods Used: _____

B. Analysis of Total Plant Flow (if appropriate)

An Industrial User may sample and analyze that total plant flow and calculate an equivalent concentration limit using the combined waste stream formula if regulated process flows are mixed with other lows prior to treatment and/or sampling. Record the analytical results for all regulated pollutants below. Record the calculated concentration limits as well as the actual measured concentrations.

MEC – Maximum Equivalent Concentration (derived through the combined waste stream formula)

AEC – Average Equivalent Concentration (derived through the combined waste stream formula)

AMMC – Actual Measured Maximum Concentration

AMAC – Actual Measured Average Concentration

Mg/l									
MEC									
AEC									
AMMC									
AMAC									

Sample Location: _____

Sample Type: _____

Number of Samples and Frequency Collected: _____

Analytical Methods Used: _____

5. **WASTEWATER TREATMENT**

Briefly describe any and all wastewater treatment utilized (show treatment system location in relation to process flows on schematic drawing required by Questions 3.C.) _____

6. **ENVIRONMENTAL CONTROL PERMITS**

Describe all environmental control permits held by or for the facility:

Describe Title of the Permit	Permit Number	Issuing Agency	Expiration Date

7. **COMPLIANCE CERTIFICATION**

A. Is the facility meeting applicable categorical pretreatment standards on a consistent basis?

YES	NO
-----	----

B. If no, do you require:

1) Additional operation and maintenance (O&M) to achieve compliance?

YES	NO
-----	----

2) New or additional pretreatment facilities to achieve compliance?

YES	NO
-----	----

C. If additional O&M or new or additional pretreatment will be required to meet categorical pretreatment standards on a consistent basis, attach a schedule on a separate sheet projecting increments of progress indicating dates for the commencement and completion of major events leading to compliance with the standard. **NOTE:** The final compliance date in this schedule shall not be later than the compliance date for the applicable pretreatment standard. Written progress reports are required within 14 days of each of the compliance dates specified in the compliance schedule.

8. **SIGNATORY REQUIREMENT**

I certify under penalty of law that I have personally examined and am familiar with the information in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information.

NAME _____ SIGNATURE _____

DATE _____