

TOWNSHIP OF OCEAN SEWERAGE AUTHORITY
224 ROOSEVELT AVENUE
OAKHURST, NEW JERSEY 07755

**RULES AND REGULATIONS
GOVERNING APPLICATIONS TO THE
TOWNSHIP OF OCEAN SEWERAGE AUTHORITY
FOR THE CONSTRUCTION OF
SANITARY SEWER SYSTEMS
AND TREATMENT PLANTS
IN THE TOWNSHIP OF OCEAN**

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MEMBERS OF THE AUTHORITY

Dennis Galvin
Charles Theodora
David Miller
Adam Johnson
Brian Valentino

Chairman
Vice Chairman
Secretary/Treasurer
Member
Member

The rules, regulations and standards set forth in these pages may be revised, amended or supplemented from time to time by the Township of Ocean Sewerage Authority. Revisions will be documented by showing a different date at the bottom of the page. It is the owner's, applicant's or developer's responsibility to use the most current rules and regulations during the application process, construction and close-out of a project. All requests for revisions to these Rules and Regulations shall be made to the Executive Director of the Authority.

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1.0 DEFINITIONS AND ABBREVIATIONS

1.1 Definitions.

Unless the context specifically indicates otherwise, the meaning of the terms used in these Rules and Regulations shall be as follows.

Applicant shall mean Owner of the property, Builder or Developer making application to the Authority for review and approval of plans for sewerage or connection to the Authority's sewerage system. These terms shall be interchangeable.

As-built shall mean a record drawing of sewer facility installation after construction.

Authority shall mean the Township of Ocean Sewerage Authority, also referred to as TOSA.

Authority Engineer shall mean the consulting engineer appointed by the Authority to review all applications submitted for preliminary, tentative and final approval.

Biochemical Oxygen Demand (BOD) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at twenty degrees Celsius (20° C) expressed in milligrams per liter (mg/l).

Building Drain shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste or other wastewater drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five feet (5') outside the inner face of the building wall.

Building Sewer shall mean the extension of the building drain to the public sewer or the place of disposal.

Connection Fee shall be as defined in N.J.S.A.40:14A-8.

Contractor shall mean the party performing the sewer facility construction; may include the developer or owner.

Development Construction Costs Estimating Schedule shall mean a schedule adopted and updated from time to time by the Authority detailing the costs of various materials and services to be performed in the construction of sewerage systems.

Developer shall mean the person performing site improvements on behalf of the owner; see also Applicant and Contractor.

Domestic Sewage shall mean the normal waterborne fluid wastes from residences, limited to the waste from kitchens, bathrooms, water closets, lavatories and laundries.

Easement shall mean an acquired legal right for the specific use of land owned by others.

Garbage shall mean the animal and vegetable waste resulting from the handling, preparation, cooking and serving of foods.

House Connection shall mean that portion of the public sewer system which extends from the main in the street or easement to the property line, usually identified by a cleanout (also called service lateral).

Industrial Wastes shall mean the wastewater from industrial processes, trade or business as distinct from domestic or sanitary wastes or sewage.

May is permissive (see **Shall**).

Municipality shall mean the Township of Ocean, Monmouth County, New Jersey.

Normal Sewage shall have the same definition as Domestic Sewage.

Owner shall mean the individual with fee simple ownership of the land upon which a sewer connection is to be made to the Authority; see also Applicant.

Person shall mean any individual, firm, company, association, society, corporation or group.

pH shall mean the logarithm of the reciprocal of the hydrogen ion concentration. The concentration is the weight of hydrogen ions in grams per liter of solution. Neutral water has a pH value of 7.

Plant shall mean the Authority's facilities located at 224 Roosevelt Avenue, Township of Ocean, Monmouth County, New Jersey.

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 or in lieu of discharging or otherwise introducing such pollutants into the public sewer system. The reduction of or alteration may be obtained by physical chemical or biological processes, process changes or by other means except by dilution. Appropriate pretreatment technology includes control equipment, such as equalization tanks or facilities, for protection against surges or slug loadings that might interfere with or otherwise be incompatible with the public sewer system or treatment processes.

Properly shredded garbage shall mean the wastes from the preparation, cooking and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1/2") in any dimension.

Property shall mean the land upon which a sewer improvements or connection is to be made to the Authority.

Public Sewer shall mean a common sewer controlled by the Township of Ocean Sewerage Authority, a governmental agency or public utility.

Sanitary Sewer shall mean a sewer that carries liquid and water-carried wastes from residences, commercial establishments, institutions and industrial establishments together with quantities of ground, storm and surface water that are not admitted intentionally.

Service Unit (SU) shall mean a unit of charge established by the Authority, which is approximately equivalent to the average discharge from a single family detached home in the Township of Ocean; the unit is not precise but is based upon approximations of quantity and variability of discharge for various classes of system users, and encompasses the following:

- a. Each residential single family dwelling.
- b. Each residential single family apartment dwelling in multi-family buildings.
- c. Each school classroom, public or private.
- d. Each lodging accommodation in hotels and motels not including other primary, accessory or incidental uses on the property such as restaurants, cocktail lounges.
- e. Each commercial, industrial, professional, institutional, public or any other user establishment or business entity not mentioned or described in the preceding four definitions.

Sewage is; the preferred term is “wastewater”.

Sewer shall mean a pipe or conduit that carries wastewater or drainage water.

Sewer System shall mean the plants, structures and other real and personal property acquired, constructed or operated or to be acquired, constructed or operated by a sewerage authority including sewers, conduits, pipe lines, mains, pumping and ventilating stations, sewage treatment or disposal systems, plants and works, connections, and outfalls, compensating reservoirs, and other plants, structures, boats, conveyances, and other real and personal property and rights therein, and appurtenances necessary or useful and convenient for the collection, treatment, purification or disposal in a sanitary manner of any sewage, liquid or solid wastes, night soil or industrial wastes.

Sewerage Facilities shall mean the structures, equipment and processes required to collect, carry away and treat domestic and industrial wastes and dispose of the effluent; also known as Wastewater Facilities.

Shall is mandatory (see **May**).

Slug shall mean any discharge of water or wastewater which, in concentration of any given constituent or in quantity of flow, exceeds for any period of duration longer than fifteen

(15) minutes more than five (5) times the average twenty-four (24) hour concentration or flow during normal operations and may adversely affect the collection system or the performance of the wastewater treatment works.

Suspended Solids shall mean total suspended matter that either floats on the surface of, or is in suspension in, water, wastewater or other liquids, and that is removable by laboratory filtering as prescribed in the latest edition of “Standard Methods for the Examination of Water and Wastewater” of the American Public Health Association, Washington DC, and referred to as non-filterable residue.

System shall mean the pumping stations, pipes, mains and lines owned by the Authority which direct the sewage to the Plant.

Township shall mean the Township of Ocean, Monmouth County, New Jersey.

User shall mean any person delivering material into the System.

Wastewater shall mean the spent water of residences, commercial establishments, institutions and industrial establishments, and any groundwater, surface water or stormwater that may be present.

Wastewater Facilities shall mean the structures, equipment and processes required to collect, carry away and treat domestic and industrial wastes and dispose of the effluent; also known as Sewerage Facilities.

Wastewater Treatment Works shall mean an arrangement of devices and structures for treating wastewater, industrial wastes and sludge. Sometimes used as synonymous with “waste treatment plant”, “wastewater treatment plant” or “water pollution control plant.”

1.2 Abbreviations.

AASHTO shall mean the American Association of State Highway and Transportation.

ANSI shall mean the American National Standards Institute.

ASA shall mean the American National Standards Institute.

ASTM shall mean the American Society for Testing Materials.

AWWA shall mean the American Water Works Association.

DIP shall mean ductile iron pipe.

EPA shall mean the Environmental Protection Agency.

NJDEP shall mean the New Jersey Department of Environmental Protection.

NJDOT shall mean the New Jersey Department of Transportation.

PVC shall mean polyvinyl chloride.

TOSA shall mean the Township of Ocean Sewerage Authority.

2.0 APPLICATION PROCEDURE

2.1 Requirements.

a. Approval of sewerage facilities is required for all residential subdivisions, individual residential building lots and all non-residential developments including, but not limited to, schools, commercial buildings and industrial buildings, within the jurisdictional area of TOSA.

b. Any public agency requesting a reservation of capacity shall be permitted to request a reservation through a Preliminary Application. Typical projects shall include publicly owned and operated long term health care facilities which have received a certification of need from the New Jersey Department of Health; a hospital, a fire or police station or a public school or expansion of an existing New Jersey accredited private school. Tentative and Final Applications may be waived by TOSA.

Any reservation of capacity shall be for a period not to exceed one (1) year from the date of TOSA approval. If no subsequent application is submitted or no construction takes place during the one year period, the application must be reactivated. In order to reactivate an application, the Applicant must file a new Preliminary Application and pay the appropriate fees.

c. All Developers shall extend sewer lines or provide laterals to allow for gravity connections, if possible, for adjacent lots or properties owned by others as required by the Authority.

d. The sewerage facilities must meet standards and specifications of the Authority, all applicable ordinances of the Municipality, the municipality in which they are located, and all laws, rules and regulations promulgated by Federal, State and County agencies having jurisdiction.

e. The Developer shall obtain a copy of TOSA's Rules and Regulations together with all pertinent applications.

f. TOSA shall act on all complete Preliminary, Tentative and Final Applications within a sixty (60) day period from the date the Applications are certified complete by the Authority Engineer. No Applications, plans or supporting documents will be reviewed by the Authority's Engineer until the receipt of the required fees.

g. When fees for any of the application phases listed below equal or exceed \$5,000.00 in the aggregate, the Applicant must submit an IRS form W-9 to TOSA.

2.2 Preliminary Application.

A Preliminary Application shall be submitted to TOSA for the purpose of advising the Authority of impending development. In the event of a residential subdivision, this submission should be made simultaneously with the submission for classification to the Municipal Planning Board. The Preliminary Application shall be submitted in duplicate together with the fees set forth under these Rules and Regulations.

2.2.1 Preliminary Application Fee.

The Applicant shall submit a Preliminary Application Fee in the amount of Two Hundred Fifty Dollars (\$250) plus Ten Dollars (\$10) per Service Unit together with the Preliminary Application in duplicate prior to the Authority's Engineer reviewing the Application. In addition, the Applicant shall submit a design review fee escrow in the amount of One Thousand Dollars (\$1,000). In the event the Authority's Engineer's actual design review costs exceed the design review fee, the Applicant shall be responsible for the additional design review costs.

The Preliminary Application Fee is based on the number of Service Units. For residential development, the number of Service Units shall be equal to the number of residential housing units proposed. For non-residential development, the number of Service Units shall be determined by multiplying the square footage of the proposed buildings by 0.10 gallons and dividing the resultant product by three hundred (300) gallons.

2.2.2 Preliminary Application Requirements.

The following documents or items shall be submitted at a minimum for a Preliminary Application to be deemed complete (the Authority's Engineer may request additional documentation before declaring the Application complete):

:

- a. Two (2) copies of Preliminary Application Form (Exhibit A);
- b. Application Fee as computed in Section 2.2.1 above;
- c. Two (2) copies of Sketch Plat;
- d. Two (2) copies of General Location Plan;
- e. Projected flow estimate (both based on prior usage if applicable and in accordance with NJDEP flow criteria), number of proposed units and point of connection to the Authority's existing collection system; and
- f. Appropriate proofs that the Applicant is the legal or beneficial owner of the Property.

2.3 Tentative Application.

A Tentative Application shall be submitted to TOSA for the purpose of review by the Authority of proposed wastewater facilities to be constructed pursuant to the impending development. In the event of a residential subdivision, this submission should be made after classification to the Municipal Planning Board and simultaneously with the application for preliminary subdivision approval. The Tentative Application shall be submitted in duplicate together with the documents and fees set forth under these Rules and Regulations.

2.3.1 Tentative Application Fee.

The Applicant shall submit a Tentative Application Fee in the amount of Five Hundred Dollars (\$500) plus Ten Dollars (\$10) per Service Unit together with the Tentative Application in duplicate prior to the Authority's Engineer reviewing the Application. In addition, the Applicant shall submit a design review fee escrow in the amount of Two Thousand Dollars (\$2,000); if a pump station is proposed as part of the development, an additional One Thousand Dollars (\$1,000) design review fee escrow shall be paid with the Tentative Application. In the event the Authority's Engineer's actual design review costs exceed the design review fee, the Applicant shall be responsible for the additional design review costs.

The Tentative Application Fee is based on the number of Service Units. For residential development, the number of Service Units shall be equal to the number of residential housing units proposed. For non-residential development, the number of Service Units shall be determined by multiplying the square footage of the proposed buildings by 0.10 gallons and dividing the resultant product by three hundred (300) gallons.

2.3.2 Tentative Application Requirements.

The following documents or items shall be submitted at a minimum for a Tentative Application to be deemed complete (the Authority's Engineer may request additional documentation before declaring the Application complete):

- a. Two (2) copies of Tentative Application Form (Exhibit B);
- b. Application Fee as computed in Section 2.3.1 above;
- c. Two (2) copies of Sketch Plat, if revised since Preliminary Application;
- d. Two (2) copies of General Location Plan;
- e. Two (2) copies of General Map of Project (may be Site Plan or Subdivision Plan);
- f. Two (2) copies of plans and profiles for all proposed sanitary sewers;
- g. Two (2) copies of Engineer's Report;

h. Two (2) copies of overall sanitary sewer map showing the entire proposed new service area on a single sheet; and

i. If applicable, two (2) copies of preliminary plan for pumping stations.

2.4 Final Application.

A Final Application shall be submitted to TOSA for the purpose of review by the Authority of any changes to the proposed wastewater facilities to be constructed pursuant to the impending development. In the event of a residential subdivision, this submission should be made simultaneously with the application for final subdivision approval. The Final Application shall be submitted in duplicate together with the documents and fees set forth under these Rules and Regulations.

2.4.1 Final Application Fee.

The Applicant shall submit a Final Application Fee in the amount of Five Hundred Dollars (\$500) plus Ten Dollars (\$10) per Service Unit together with the Final Application in duplicate prior to the Authority's Engineer reviewing the Application. In addition, the Applicant shall submit a design review fee escrow in the amount of Three Thousand Dollars (\$3,000); if a pump station is proposed as part of the development, an additional Two Thousand Dollars (\$2,000) design review fee escrow shall be paid with the Final Application. In the event the Authority's Engineer's actual design review costs exceed the design review fee, the Applicant shall be responsible for the additional design review costs.

It should be noted that construction of the proposed wastewater facilities to be constructed pursuant to the impending development must commence within one (1) year of the Authority's approval of the Final Application. In the event construction does not commence within two (2) years of Final Application approval or any extensions of the Treatment Works Application, the approval of the Final Application will be rescinded and the Applicant will be subject to resubmitting a Final Application together with the appropriate fees.

2.4.2 Final Application Requirements.

The following documents or items shall be submitted at a minimum for a Final Application to be deemed complete (the Authority Engineer may request additional documentation before declaring the Application complete):

- a. Two (2) copies of Final Application Form (Exhibit C);
- b. Application Fee as computed in Section 2.4.1 above;
- c. Two (2) copies of Sketch Plat, if revised since Tentative Application;

- d. Construction cost estimate based on Development Construction Cost Estimating Schedule (Exhibit G);
- e. If applicable, two (2) copies of Treatment Works Application;
- f. If applicable, two (2) copies of CP-1 Form; and
- g. If applicable, two (2) copies of Final Subdivision Map.

2.5 Application Conditions.

TOSA's approval of Preliminary or Tentative Applications will not operate as a guarantee by the Authority of capacity to accept flow proposed by an Applicant. Only approval of a Final Application by the Authority and the payment of all application, review, escrow and connection fees will operate to guarantee capacity with the Authority to accept flow from the Applicant, provided construction commences within two (2) years of the Authority's approval of the Final Application.

Under no circumstances shall the Authority grant approval of the Final Application without the payment of all required fees. Furthermore, the Authority's approval of the Final Application shall be subject to the issuance of appropriate permits by the NJDEP.

If the Applicant makes any changes in the wastewater facilities after approval of the Final Application, the Applicant shall be required to pay additional design review costs for the Authority Engineer to review the changes.

These Rules and Regulations shall be considered the minimum requirements for the protection of the public health, safety and welfare. Any action taken by TOSA under these Rules and Regulations shall give primary consideration to the general health and welfare of the Township and the Authority's service customers. However, a Developer or Applicant may make an application, in writing, to the Authority for an opportunity to be heard with respect to any claim that literal enforcement of these Rules and Regulations is impractical or will exact undue hardship in which event, TOSA may permit such variance as may be reasonable and with the general purpose and intent of these Rules and Regulations. The hearing with respect to such application for relief shall take place within forty-five (45) days of the date upon which the application was submitted to the Authority, and shall be heard by a majority of the members of the Authority.

2.6 Additional Requirements after approval of Final Application.

After the Authority's approval of the Applicant's Final Application, the following items must be completed or submitted prior to the commencement of the construction of the impending development.

2.6.1 Developer's Agreement.

TOSA shall require the Applicant to enter into a Developer's Agreement where wastewater facilities constructed by the Developer are to become the property of the Authority, the Developer intends to connect into an Authority force main or the Authority determines, in its sole discretion, that a Developer's Agreement is necessary to protect the Authority's System. After execution, the Developer's Agreement shall be recorded in the Monmouth County Clerk's Office. In the event the Developer fails to comply with the terms and conditions of the Developer's Agreement, the Authority shall be entitled to such remedies as set forth in the Developer's Agreement.

2.6.2 Performance Guarantees.

Upon the adoption of a resolution granting approval of the Final Application and prior to the commencement of construction, the Applicant shall provide to the Authority a performance guarantee. The performance guarantee shall be either one hundred percent (100%) in cash or certified check or ten percent (10%) in cash and ninety percent (90%) in a performance bond issued by a surety company authorized to issue performance bonds in the State of New Jersey. The performance bond must be approved as to substance and form by the Authority's Attorney, and the Applicant shall pay the sum of two hundred fifty dollars (\$250) to cover the approval of the performance guarantee by the Authority's Attorney.

The amount of the performance guarantee shall be calculated based on One Hundred Twenty Percent (120%) of the total estimated cost of the project in accordance with N.J.S.A. 40:14B-77. When a performance guarantee is extended, it shall be subject to an adjustment in the amount based on the updated engineer's estimate of costs. All performance bonds shall be reviewed every two (2) years and shall be subject to adjustments in amount based on the Authority Engineer's estimate of costs.

The amount of the performance guarantee may be reduced by resolution of the Authority after portions of the wastewater facilities have been installed. If the required wastewater facilities have not been installed in accordance with the performance guarantee, the Authority shall have the right to pursue action against the performance bond for the cost of performing the installation properly.

The provisions of N.J.S.A. 40:55D-53 shall apply to the Authority's release of the performance guarantee, except that application for release of the performance guarantee shall be made to the Authority and the Authority Engineer. The performance guarantee will only be released after the Applicant has posted a maintenance guarantee as provided in Section.

2.6.3 Permits and Fees

The Applicant or the Contractor, at its own cost, shall obtain all necessary permits for performing the work approved in the Final Application. All fees and charges of TOSA and the Municipality shall be paid in accordance with existing ordinances and these Rules and Regulations. No work shall start unless the required fees have been paid, the performance

guarantees and insurance certificates have been submitted and approved, and all required permits are obtained and copies provided to TOSA.

For NJDOT road opening permits, the Applicant or the Contractor shall pay all required fees in order to obtain the permits. The permit form shall be executed with TOSA as the applicant; however, the Applicant or the Contractor shall assume full and total responsibility and liability for compliance with all provisions of the permit, including the posting of any required five (5) year maintenance bond.

2.6.4 Preconstruction Meeting.

Where necessary, the Authority Engineer shall hold a preconstruction meeting with the Applicant, Developer, the Contractor, the NJDEP and the NJDOT.

2.7 Individual Sewer Connection.

Owners of individual lots desirous of making connection to the Authority's existing collection system shall pay the current connection fee and inspection fee as adopted by the Authority.

3.0 DESIGN DRAWING REQUIREMENTS.

3.1 General Location Plan.

This Plan shall show the relationship of the proposed development to existing TOSA facilities and adjoining properties within two hundred feet (200'), both developed and vacant. This Plan is basically a key map and shall be drawn on a scale of 1"=1000' to be consistent with the Authority's Master Sewerage Plan.

3.2 Plans and Profiles.

3.2.1 A general map of the entire project area shall be submitted on a single twenty-four inches by thirty-six inches (24"x36") sheet. The map shall be drawn on a scale of 1"=200'. A schematic plan of all proposed sewers shall be indicated on this map and an index for all other plan sheets shall be shown.

3.2.2 Plans shall be of uniform size, twenty-four inches by thirty-six inches (24"x36"), with a half inch (1/2") border on the top, right and bottom and a two inch (2") border on the left side. Two (2) set of plans shall be submitted

3.2.3 Profiles shall show all manholes, siphons, pumping stations and elevations of stream crossings. Gradients and sizes of sewers, surface elevations and sewer inverts shall be shown at each manhole. Profiles shall be drawn to standard scale (horizontal 1"=5') and the scales shall be shown on each sheet. An index of street shall also be shown on each sheet. Profile sheets should be numbered consecutively.

3.2.4 Manhole Details. Details of manholes and siphons shall accompany the Plans. Details shall be drawn to standard scales to show clearly the nature of design. Details shall be in accordance with Exhibit I “Standard Construction Details”.

3.3 Specifications.

Complete specifications for the construction of the proposed wastewater facilities shall accompany the plans.

3.4 Shop Drawings.

Prior to the commencement of construction, the Applicant or the Contractor must submit shop drawings for all materials to be installed during the construction. The Authority Engineer must approval all shop drawings. Construction specifications and details identifying proper materials shall be submitted and approved as part of the Final Application review.

3.5 As-built Drawings.

As-built drawings are required to be submitted to the Authority after the completion of work and prior to the connection of the first Service Unit and the release of the performance guarantee. The as-built drawings shall be approved by the Authority Engineer and shall contain all information as shown in Exhibit H of these Rules and Regulations. One (1) mylar, two (2) paper copies and one (1) disc copy containing the drawing in AutoCad format are required to be delivered to the Authority.

4.0 CONSTRUCTION SPECIFICATIONS

All material used on the proposed wastewater facilities that will become the property of the Authority upon conveyance by the Applicant shall be manufactured in the United States of America, whenever available. The Applicant should refer to P.L.1982, c.107 of the State of New Jersey, effective date October 3, 1982 or the latest amendment thereto. All standard specifications referred to herein shall be the latest revision thereof at the time of approval of the Final Application.

4.1 Sewer Pipe.

Materials used in the construction of sewers, force mains and outfalls shall be as follows: gravity sewers shall be constructed of reinforced concrete, ductile iron pipe or PVC plastic pipe; inverted siphons, force mains and outfalls shall be constructed of ductile iron pipe unless otherwise permitted by the Authority; and sewer laterals shall be constructed of ductile iron or PVC pipe. Inverted siphons shall consist of a minimum of two (2) pipes with provisions for flushing. Flow control gates shall be provided in the chambers.

4.1.1 Reinforced concrete pipe

Reinforced concrete pipe shall meet the requirements of ASTM Designation C-76. Concrete pipe strength required shall be dependent on the method of installation and the depth of trench shall be in accordance with the manufacturer's recommendation. All pipe shall be a minimum of Class IV. Three-edge bearing method tests for crushing strength shall be made as required by ASTM Designation C-76. Joints shall conform to the requirements of ASTM Designation C-361.

4.1.2 Plastic pipe

Plastic pipe shall be polyvinyl chloride sewer pipe (PVC) with bell and spigot ends with O-ring rubber gasketed joints as specified herein. Plastic pipe and fittings shall conform to ASTM D 3034 with a minimum wall thickness designation of SDR 35. The average internal diameter shall be no less than the nominal diameter.

The plastic material from which the pipe and fittings are extruded shall be impact types of PVC, unplasticized having high mechanical strength and maximum chemical resistance conforming to Type I, Grade 1 of the specification for rigid polyvinyl chloride compounds, ASTM D 1784. The pipe shall be free from defects, bubbles and other imperfections in accordance with accepted commercial practice.

The adequacy of the gasketed joint shall be demonstrated, if required, by a test at the manufacturing plant in accordance with ASTM D 2444 for impact and ASTM C 2412 for Deflection and Pipe Stiffness. Rubber ring gaskets shall be manufactured in accordance with ASTM D 1869 and shall meet physical and chemical test requirements of federal specification ZZ-R-601a. The gasket shall be the sole element depended on to make the joint watertight.

The Applicant shall submit for approval, details of the pipes, joints, fittings and related materials which are intended to be used. The Applicant shall arrange for such tests as the Authority's Engineer may require sufficiently in advance so work will not be delayed. All costs associated with the performance of such tests shall be the responsibility of the Applicant.

The pipe shall be installed as specified in ASTM Designation D 2321. In no case shall less than a Class III material shall be used for bedding and haunching material unless approved in advance in writing by the Authority's Engineer. Particular attention should be given to the special requirements for installing pipe in unstable soil or excessive groundwater. Any additional cost for materials used under these trench conditions shall be the responsibility of the Applicant.

The maximum length of 4" PVC piping shall be twelve and a half feet (12.5'). Plastic riser pipe for cleanouts shall be PVC pipe. Monument boxes shall be provided in all paved areas or where required by the Authority's Engineer.

4.1.3. Ductile iron pipe.

Ductile iron pipe shall be centrifugally cast in metal or sand-line molds to ANSI A21.51-1976 (AWWA C151-76). The joint shall be of a type that employs a single elongated grooved gasket to effect the joint seal, such as United States Iron Pipe Company's Tyton Joint, James B. Clow and Sons, Inc., "Bell-Tite", or approved equal. Pipe shall be furnished with flanges where connections to flange fittings are required. DIP shall at a minimum be Class 51. The outside of the pipe shall be coated with a uniform thickness of hot applied coal tar coating and the inside shall be lined with cement in accordance with AWWA C 104. DIP shall be installed with Class C Ordinary Bedding.

DIP shall have a hydrogen sulfide/corrosion resistant interior lining suitable for sanitary sewer applications. Standard interior cement lined DIP will not be permitted.

4.1.4 Joints.

Joints for sewer pipes shall be as specified below:

Reinforced concrete pipe	Steel and rubber gasket equal to Interpace Specification SP-32
Ductile iron pipe	Equal to TYTON
Polyvinyl chloride pipe	Equal to FLUID-TITE

Flexible couplings, connectors and adaptors shall be equal to Fernco for low pressure piping.

4.1.5 Bedding.

a. Class C Modified Bedding shall be used for rigid pipe and shall be defined as that method of bedding sewers in which the sewer is bedded on approved granular material with ordinary care in an earth foundation shaped in undisturbed earth so as to fit at least one quarter (1/4) of the sewer diameter, and in which the remainder of the sewer is surrounded to a height of at least one half foot (1/2') above its top with approved granular materials, shovel placed and shovel tamped to completely fill all spaces under and adjacent to the sewer. All work shall take place under the general direction of a licensed engineer and with inspections by an approved inspector of the Authority's Engineer during the course of construction. The bedding shall conform to details shown in Exhibit I "Standard Construction Details".

b. Concrete Cradle Bedding is that method in which the lower part of the sewer exterior is bedded in Class B concrete, without reinforcement, having a minimum thickness under the pipe equal to one-fourth (1/4) its nominal internal diameter but not less than four inches (4"), and extending upward to a height equal to one-fourth (1/4) of the nominal inside diameter plus one-fourth (1/4) of the nominal outside diameter.

c. Concrete Encased Pipe Bedding is that method in which the entire sewer exterior is encased in three thousand (3,000) pound concrete or better, with a minimum coverage of six inches (6”) of concrete all around.

d. Flexible Pipe (PVC) Bedding requires the bedding directly under the pipe is required only to bring the trench bottom up to grade. The bedding should not be so thick or soft that the pipe will settle and lose grade. The purpose of the bedding is to provide a firm, stable and uniform support of the pipe. The bedding shall conform to details shown in Exhibit I “Standard Construction Details”.

4.1.6 Manholes

Manholes shall be provided at ends of sewer lines, at intersections and at changes of grade or alignment. Distances shall not exceed four hundred feet (400’) for eighteen inch (18”) pipe or less, or be greater than five hundred feet (500’) for larger pipe sizes. Where lateral sewers enter manholes and the difference in crown elevation between the incoming and outgoing pipes is equal to or greater than two feet (2’), drop pipes shall be provided and drop manholes shall be built. Manholes can be precast concrete, brick or concrete block coated with two (2) coats of Portland cement mortar and a seal coating of an acceptable waterproofing tar, asphalt or polyplastic alloy, with sufficient time allowed for proper bonding between seal coats.

If precast manhole barrels and cones are used, they shall be reinforced concrete pipe and fittings formed to ASTM specification C-478, with round rubber gasketed joints, conforming to ASTM specification C-361. Maximum absorption shall be eight percent (8%) in accordance with ASTM specification C-76. Shop drawings for all precast manholes and bases showing details of joints, reinforcement and pipe connections shall be submitted for the Authority’s Engineer’s review prior to construction.

Manhole frames and covers shall be of cast iron conforming to ASTM Specification A-48 Class 30 and be suitable for H-20 loading capacity. All manhole covers in rights-of-way or in remote areas shall be provided with a locking device. The letters “TOSA”, the year “20__” and the word “SANITARY SEWER” shall be cast integrally in the cover. Pickholes shall be the watertight type. Watertight and low profile frames and covers shall be utilized where applicable and shall conform to the applicable ASTM Specifications. Shop drawings for all frames and covers shall be submitted for the Authority Engineer’s review prior to construction.

Manholes shall be supplied with suitable adaptors for the various pipe materials used.

5.0 CONNECTION OR DISCONNECTION TO SYSTEM

5.1 Connection Fee.

Prior to connecting to the Authority’s System, a connection fee shall be payable to TOSA by the Developer or Owner prior to application to the Township for a building permit on vacant property. The connection fee shall be based on anticipated flows for the buildings to be

connected to the Authority's system using, but not restricted to, projected flow criteria contained in N.J.A.C. 7:14A-23.3 or by reference to existing flows for the proposed development, and computed in accordance with the current rate schedule adopted by the Authority. For existing dwellings abandoning septic tanks, payment of the connection fee shall be payable by the Owner prior to application to the Township for a plumbing permit for a connection to the Authority's sewer system.

5.1.1 Single family residences. The connection fee due in accordance with Paragraph 5.1 above shall be due and payable prior to the issuance of a building permit.

5.1.2 Multi-family residential developments and all non-residential development.

a. Fifty percent (50%) of the connection fee due in accordance with Paragraph 5.1 above shall be due and payable prior to the issuance of a building permit, and

b. Fifty percent (50%) of the connection fee due in accordance with Paragraph 5.1 above shall be due and payable prior to the issuance of a Certificate of Occupancy.

c. The amount of the connection fee due in accordance with Paragraph 5.1 above shall be determined as of the date of payment made under Paragraph 5.1.2a, and the payment on Paragraph 5.1.2b shall be determined as of the date of payment made under Paragraph 5.1.2a.

5.2 Disconnection.

In the event that an Owner desires to disconnect sewer service from the Authority's sewer system, the Owner shall file an Application for Disconnection (Exhibit D) with the Authority accompanied by a fee of Fifty Dollars (\$50). The disconnection must be for a period of not less than one (1) year. The Owner must provide the Authority with evidence that water service to the property has been discontinued. Once the disconnection has been approved by the Authority's staff, the Application for Disconnection shall be approved by resolution of the Authority. Following approval of the Application for Disconnection, the Owner shall not be subject to the annual service charge beginning on the first day of the month following the approval. If and when the Owner elects to connect to the Authority's System, the connection shall be inspected by the Authority's staff.

5.3 Demolition.

In the event a structure subject to a service charge is to be demolished, the Owner shall provide the Authority with a copy of the demolition permit issued by the Township. Beginning on the first day of the month following the issuance of the demolition permit until the first day following the issuance of a Certificate of Occupancy (temporary or permanent), the Owner shall not be subject to the annual service charge.

5.4 Inspection Fee.

For any inspection by the Authority's staff for a connection or a disconnection to the Authority's System, the Owner or Developer shall be responsible for a One Hundred Twenty-Five Dollars (\$125) inspection fee.

5.5 Owner Responsibility.

Notwithstanding anything to the contrary contained herein, the owner of property connected to the Authority's sewer system is responsible for the house lateral from the house to the Township's right of way. If a cleanout is installed at or within one foot (1') of the Township right of way, the Authority shall assume responsibility for the sewer line from the cleanout to the main. *If the Authority is called to inspect a problem on the property and the property does not have a cleanout installed at or within one foot (1') of the Township right of way, the Authority shall have no responsibility to address the problem until such time as the owner of the property installs a cleanout as indicated above and notifies the Authority of the installation.*

6.0 INSPECTIONS

6.1 Construction Inspection.

TOSA or its authorized representative will make inspection of all work. No construction shall be undertaken without at least two (2) working days notice to the Authority Engineer, and without prior approval of the drawings and specifications. Work which is found faulty or inconsistent with approved drawings and specifications shall be removed and properly replaced. The Authority Engineer may stop work if it is not being properly performed. The Applicant or Developer shall be responsible for the costs of inspection in accordance with these Rules and Regulations.

6.2 Inspection Fees.

After the Authority's approval of the Final Application and prior to the commencement of construction, the Applicant or Developer shall post with the Authority a cash deposit for inspection fees in an amount equal to the greater of Five Hundred Dollars (\$500) or five percent (5%) of the estimated construction costs.

Total anticipated inspection fees are estimated to be fifteen percent (15%) of the estimated construction costs. It is understood that the amount set forth in the paragraph above is to allow for the collection of an estimated amount of inspection fees and shall not be construed to be the actual total figure to be paid by the Applicant or Developer for inspection. The actual amount of inspection fees to be paid shall be that amount representing the actual time spent by the Authority Engineer in connection with the performance of the inspections.

7.0 PUMPING STATIONS

7.1 Pumping Station Overview.

Pumping stations may either be either of the dry well type or submersible type. Only comminutors shall be used, screens will not be approved.

All pump stations shall be located in areas that are not subject to flooding and are accessible by motor vehicle. Each pumping station must be located on a lot meeting the minimum standards of the Township, County and State agencies and the Authority. The plans and specifications must include provisions for lawns, shrubbery, an eight inch (8") thick paved drive and four inch (4") thick concrete walk. Proper drainage shall be provided onsite preventing any drainage across the access driveway that may result in ponding or freezing. The property shall be surrounded by a fence.

A minimum of two (2) pumps shall be provided, each capable of handling the total peak flow. If more than two (2) pumps are utilized, their capacities shall be such that upon the failure of the largest pump, the remaining pumps shall be capable of handling peak flows. All pumps and equipment shall be constructed of materials that are compatible with design conditions, including explosion-proof and damp-proof construction where required by the Authority Engineer. Shut-off valves shall be provided on suction and discharge piping, which shall be flanged or otherwise removable and check valves shall be provided on all discharge pipes.

An auxiliary source of power shall be provided for electrically driven pumps. The auxiliary power shall be diesel or natural gas operated and housed in a superstructure to conform to the neighborhood architecture. All diesel operated facilities shall be supplied with sufficient fuel storage for a twenty-four (24) hour operating period. Diesel fuel storage shall be aboveground.

Automatic sound alarms shall be installed independently of station power and shall give warning of high or low water levels, power failure or breakdown. Also, a vandal alarm compatible with those in use by the Authority shall be provided. A panel board shall be provided with indicator lights showing the cause of the alarm. Indicator lights shall be connected so that the light indicating the cause of the alarm shall remain bright/flashing until manually reset. These alarms shall be connected to a loud horn or bell outside the station and to the Township police station.

Adequate light, ventilation, heat and fresh water supply with hose outlets shall be provided for all pump stations. No connections between freshwater and sewage pumps or pipes shall be permitted. Potable water supply shall be protected by an approved reduced pressure backflow prevention device. Complete repair tools and accessories shall be provided with the pump station.

Force main velocities shall be a minimum of two feet per second (2 fps) at the average pumping rate. Properly designed air release valves shall be provided on high points of the force main. The force main shall be provided with cleanout manholes approved by the Authority Engineer.

The Authority Engineer's review shall be limited to determining that the design of the pumping station submitted by the Applicant conforms to the minimum requirements of the Authority as set forth in these Rules and Regulations. Problems encountered by the Contractor during the construction of any approved pumping station shall be addressed by the Contractor's or the Applicant's engineer with any proposed modifications submitted to the Authority Engineer for review and approval prior to implementation.

Detailed operational costs of the pumping station shall be submitted with the engineer's cost estimate.

7.1.1 Dry Well Type

Dry well shall be deep enough to maintain a suction head at starting. The minimum internal dimensions of the dry wells shall be ten feet (10') in diameter by ten feet (10') high. The dry and wet wells shall be completely separate and shall be provided with adequate ventilation, lighting and drainage. Sufficient space shall be provided in the dry well for the repair and removal of pumps and motors. Where operational or maintenance duties are required in an enclosed area, forced ventilation shall be provided with a minimum capacity of thirty (30) air changes per hour is required for intermittent ventilation. The size of the wet well shall be such that the maximum pump cycle is ten (10) minutes when flow is at the average dry weather rate. The wet well must be large enough to allow five (5) minutes to elapse between successive pump starts. The floors of the wet well shall slope at least forty-five degrees (45°) toward the pump suction. The pump suction shall terminate with a ninety degree (90°) flared elbow. The dry well shall be supplied with a sump pump, dehumidifier, heater, manlift and pressure transducer for flow control. All steel pumping stations shall be provided with cathodic protection approved by the Authority Engineer.

In dry well pumping stations exceeding one thousand (1,000) gallons per minute, electrical motors and power equipment shall not be installed in subsurface chambers. A solid wall between the wet well and dry well shall extend to ground level and equipment shall be housed above ground. The superstructure shall conform to the neighborhood architecture and shall be vandal-proof.

7.1.2 Submersible Type.

Submersible pumps shall be installed in the wet well. The design of the wet well shall be the same as the dry well pumping station. Pumps shall be equipped with a guide rail pipe and lifting chain and winch system and access floor doors of a sufficient size to permit quick removal and reinstallation of the pumps for service and repair.

7.2 Design Standards.

7.2.1 General.

The Applicant shall provide a pump design report in accordance with NJDEP statutes and regulations including, but not limited to, the following: average and peak

flow; potential future flow; force main sizing; static head, friction head, Total Dynamic Head; system curve; pump selection; wet well sizing; cycle time; proposed on and off levels; anti-floitation calculations; structural calculations for manhole top slab; and odor control design.

The Applicant shall provide soils information and report to include a full geotechnical report and analysis, foundation recommendations, expected ground water conditions, water table depths and season high water depths. The Applicant shall provide required OSHA safety and warning signage.

Any pumping station to be owned by the Authority shall be located on property owned by the Authority in fee simple ownership. The Developer shall provide a deed in fee simple to the Authority for the property on which the pumping station is located.

Prior to the Authority assuming responsibility for the operation and maintenance of a pumping station, the following must be completed or supplied to the Authority:

- a. Administrative requirements outlined in these Rules and Regulations.
- b. Pumping station has successfully operated for ninety (90) days during a trial period.
- c. Four (4) copies of an O & M Manual and two (2) paper copy as-built drawings and one (1) mylar As-built drawing.
- d. Successful testing of all equipment in the presence of the Authority Engineer.
- e. Instruction by the Contractor for the operation and maintenance of all equipment in the presence of Authority personnel; a minimum of four (4) hours training is required. Scheduling of the training shall be coordinated through the Authority Engineer's office at least five (5) days prior to the scheduled training date. Training shall not be performed on the same day as the startup and testing of the pumping station.
- f. Certification of the reduced pressure backflow prevention device which shall take place during the ninety (90) day trial operation period. The Contractor shall be responsible for all costs related to this Certification.

7.2.2 Mechanical.

Prior to the Authority assuming responsibility for the operation and maintenance of a pumping station, the following conditions must be satisfied. All equipment shall be shown to scale on detail of design drawings. The working positions of cable or rope shall be verified with the manufacturer.

- a. Pumps shall be capable of passing a three inch (3") solid. Impellers shall be epoxy coated.

- b. Valve pit shall be required to house force main discharge valves. The valve pit shall be sufficiently sized to provide access for routine maintenance, and it shall have appropriate drainage.
- c. Gate valves shall be resilient seat type.
- d. Provide pumping station by-pass connection in the manhole or in the valve pit. The connection shall include gate valve and blind flange.
- e. Provide a pressure gauge on the pump discharge.
- f. For pumping stations with a capacity greater than two hundred fifty gallons per minute (250 gpm), a magnetic flow meter with isolation valves shall be provided (Fischer and Porter or equal). A remote circular chart, totalizer must be provided by the same manufacturer.
- g. Odor control is required in all pump stations and must be provided by Bioxide injection at the wet well. Emergency eyewash and shower are required. Bioxide spillage containment shall be provided.
- h. Brackets, chains and other material in the wet well shall be stainless steel.
- i. Provide davit at wet well, comminutor and valve pit for equipment removal. The length of rope shall be sufficiently sized to lift equipment at maximum reach of davit.
- j. Provide hoist at wet well and comminutor pit for personnel retrieval.
- k. Provide “ladder-up” device or grab bars for all underground utility structures.

7.2.3 Building

Prior to the Authority assuming responsibility for the operation and maintenance of a pumping station, the following conditions must be satisfied.

- a. A fully enclosed building for the generator and its controls.
- b. A toilet when flow is greater than 250 gpm, or the station is located in an isolated area.
- c. A slop or utility sink.
- d. Exterior finishes shall be maintenance-free (vinyl siding, brick or decorative concrete block). Any exposed wood shall be wrapped with vinyl covered aluminum.

- e. The roof shall have a minimum 4:12 slope and utilize metal roofing shingles.
- f. Concrete aprons at all doors.
- g. A reduced pressure backflow prevention device installed according to the latest National Plumbing Code Standards and certified by the local water company.
- h. A non-freeze hose bib or yard hydrant for washdown.
- i. Architectural drawings including floor plan; building elevations; building or wall sections; door; louver; lintel schedules; materials, including manufacturer and model number; interior water piping; dimensions and specifications.
- j. Site lighting, switchable with override timer and photocell.
- k. Locks shall be keyed as required by TOSA.
- l. Heat in pumping station.

7.2.4 Electrical and Ventilation.

Prior to the Authority assuming responsibility for the operation and maintenance of a pumping station, the following conditions must be satisfied.

- a. Electric service shall be 3-phase for pumping station with pumps larger than 3/4 horsepower.
- b. Conduit I classified areas must be PVC coated RMS.
- c. Non-resetable elapsed time meters for pumps and comminutors.
- d. Drawings to be provided: one line diagram, equipment layout to scale, panel schedules, equipment lists, conduit layout and alarm riser diagram.
- e. The following alarms and status indicators are required to be reported from the pumping station through the SCADA system: normal power failure, generator failure, pump failure (separate alarm for each pump), wet well high level, wet well low level, security (illegal entry), smoke, station fire or high temperature, common alarm, comminutor failure, control system failure, flooded pump room, generator run, pump run (separate indicator for each pump). When the generator switch is in the “off” position it shall create a generator failure alarm.

f. Forced ventilation is required for all wet wells and dry wells that are classified as a confined space. Ventilation shall occur with thirty (30) air changes per hour intermittently or twelve (12) air changes per hour continuously.

g. Lighting and ventilating shall start automatically when hatches are opened. Incandescent lighting shall not be used.

h. A telemetry system compatible with the existing communication system used by the Authority; specifications will be provided by the Authority.

i. Analog level sensor, pressure transducer, with high and low level alarms.

j. Single float emergency backup system with pump-down timer.

k. Explosion-proof lighting in wet well and comminutor chamber.

l. Security alarm for all doors and hatches.

7.2.5 Generator.

The generator shall be housed in a building, or in a dedicated room acoustically treated to reduce noise in any other room below 80dBA. A “Critical” grade muffler shall be required including exercise timer, incoming volt meter and ammeter. The Transfer Switch must have overlapping switched neutral. When the Switch is in the “off” position it shall create a generator failure alarm.

The generator shall be designed with all necessary appurtenances to meet federal, state, county and local regulatory agency requirements, ordinances and standards associated with emissions measured at the exhaust stack. The generator and appurtenances shall conform to all federal, state (NJAC 7:29), county and local regulatory agency requirements, ordinances and standards for noise measured at the pumping station property line with the generator operational.

The generator shall be sized to start one pump while all others are running. There shall be a maximum twenty percent (20%) voltage dip.

Storage tanks for diesel fuel shall have secondary containment and shall be installed aboveground. Use of a day tank for fuel delivery shall not be accepted.

Calculations shall be provided for the following: generator sizing, fuel sizing (if applicable), louver sizing, fan sizing, heater sizing, duct sizing, service size, lighting analysis and fault current analysis.

7.2.6 Site

Detailed grading and all utilities on the pumping station property shall be shown on the plans. All drawings and details submitted shall be to scale. The site shall contain the following improvements:

- a. An eight foot (8') vinyl-coated chain link fence with a minimum fifteen foot (15') entrance.
- b. Unpaved areas to one (1) foot outside the fence shall be covered with six inches (6") of bluestone over weed control fabric.
- c. Access drive shall be paved with six inch (6") base course and two inch (2") surface course.
- d. Access drive shall be sized for jet truck entry and turnaround.
- e. Chambers (valve chamber and wet well) to be set a minimum of six inches (6") above grade.
- f. Landscaping and screening.

7.2.7 Force Main.

The following shall apply to the force main:

- a. DIP or PVC shall be used, with a "C" factor of 110 for DIP and 135 for PVC.
- b. Surface located markers and tracer wire required. Tracer wire shall be insulated 10 gauge, 600 volt solid cooper wire as manufactured by Tracer Wire Products, Inc. of Fresno, CA or approved equal.
- c. No more than one force main shall be connected into another force main.
- d. Air release or combination air vacuum release valves shall be provided at high points; a minimum of one foot (1') clearance from the top of the air release valve to the roof of the slab shall be provided.
- e. Cleanout manholes shall be provided at low points.

7.3 Shop or Working Drawings

Prior to construction, the Contractor shall submit for approval shop or working drawings of concrete reinforcement, materials fabricated specially for this project and materials for which drawings are specifically requested. The drawings shall show the principal dimensions and construction details. When it is customary to do so, or when the dimensions are of particular importance, the drawings shall be certified by the manufacturer or a New Jersey

licensed engineer as correct for this project. No material shall be purchased or fabricated for equipment or other features until the Authority Engineer has approved the shop or working drawings. No work shall be done upon any part of a structure, the design or construction of which is dependent upon the features for which approval is required until such approval has been given.

Five (5) copies of all shop drawings must be submitted to the Authority at the time of Final Application. The approval of shop or working drawings will be general and shall not relieve the Applicant from the responsibility for the design and dimensions necessary for proper fitting and construction of the work.

7.4 As-built Plans.

After construction and before final acceptance by the Authority, the Applicant shall furnish the Authority one (1) reproducible plan in ink, acceptable to the Authority Engineer, and three sets of black on white prints of each drawing showing all sewer facilities. The As-built plan shall contain all information shown in Exhibit H.

7.5 O & M Manual.

The following is a typical Table of Contents for a TOSA pumping station O&M Manual. It represents the minimal items to be included in the Manual and shall not be considered an exhaustive list. Similar information for any equipment installed in the pumping station not listed below is also required. All information must be contained in a three ring binder.

1.0 PUMPING STATION DESCRIPTION

1.1 Detailed design criteria, service area, population served, volume calculations, pump sizes, capacities, proposed future upgrades.

1.2 Pumping station component and equipment indicating manufacturer name, model, capacity and rating

1.2.1 Pumps

1.2.2 Motors

1.2.3 Pressure / Transducer System

1.2.4 Valves

1.2.5 Heaters, Fans, Blowers

1.2.6 Backflow Prevention Devices

1.2.7 Odor Control System

1.2.8 Hoists and Winches

1.2.9 Force Main Pressure Gauge

1.2.10 Electrical System, Generator, Transfer Switch (include one-line diagram and ladder control diagram), control Panels, PLC, Copy of Computer/PLC Program

1.2.11 Motor Control Center

1.2.12 Telemetry System

2.0 Four (4) copies of detailed O&M Manuals, including system operation, parts list, troubleshooting recommendations, suggested preventive maintenance/spare parts and warranties.

3.0 Complete set of as-built drawings, including force main (on- and off-site), all utilities, plan and section drawings of the pumping station and valve chamber, and as as-built one line diagram

4.0 Complete set of approved shop drawings

5.0 List of local vendors for equipment supplied

8.0 TREATMENT PLANTS

The Authority must be contacted prior to submitting any application which includes the construction of a treatment plant.

Treatment plants should be located at a minimum of one thousand feet (1,000') from the nearest dwelling or other building. Exceptions to this rule may be made depending on the type of treatment to be used, but in no case will a treatment plant be permitted less than two hundred fifty feet (250') from the boundary line of the treatment plant property.

Treatment plant plans and specifications must include provisions for lawns, shrubbery, paved roads and sidewalks and the entire property must be surrounded by an eight foot (8') vinyl-coated chain link fence with a minimum fifteen foot (15') entrance for trucks and a separate entrance for pedestrian use.

Detailed estimates of operating and maintenance costs for the proposed treatment plant must be submitted with the engineer's estimate.

9.0 APPROVAL OF PLANS BY STATE AGENCIES

Approval of the plans by the New Jersey State Department of Environmental Protection shall be obtained by the Applicant before the Authority's final approval. The Applicant shall obtain permits for all stream crossings or encroachments from the NJDEP. Permits to construct sewers or other structures within the right-of-way limits of the Township, County and State roads and all railroads shall be obtained and paid for by the Applicant.

The Applicant shall secure any necessary clearance from any public utilities affected by the construction. The Applicant shall request a mark-out of all existing utilities and shall supply the Authority with copies of the written request.

The Authority Engineer will review with the Authority's staff all applications being forwarded to the NJDEP. The Applicant shall certify that the plans and specifications being submitted to these agencies are the same as the plans and specifications reviewed by the Authority and approved by resolution.

10.0 INSPECTION OF SEWERAGE SYSTEMS DURING THE COURSE OF CONSTRUCTION

10.1 General.

All construction of sewerage systems shall be under the jurisdiction of the Authority Engineer. He shall enforce compliance with the approved plans and specifications. He shall have the authority to order the discontinuance of work in the event of non-compliance with plans and specifications or these Rules and Regulations.

The Applicant shall give four (4) business days' notice to the Authority and the Authority Engineer prior to the construction of sewers at any time during the construction of the project. The Applicant shall submit a progress report to the Authority Engineer at the end of each month together with the total cost of construction to the end of the month.

The Applicant shall provide the Authority and the Authority Engineer with the name of the occupant, the street address and the lot and block number of every connection made during the month and the date of connection. No sewer connections shall be made to a street main, whether pressure tested or not, except under the supervision and inspection of an Authority representative or the Authority Engineer. When a section of sewer has been pressure tested, then all individual house connections must be pressure tested under a ten foot (10') head of water and found tight from the point of connection at the main to the lowest cleanout in the house. This cleanout shall be at least eight inches (8") above the basement floor elevation.

10.2 Testing.

All sewers shall be subjected to either an exfiltration or infiltration test. Exfiltration tests (air test) shall be conducted in lieu of infiltration tests when the pipe has been laid above the ground water level. The tests shall be performed between two (2) manholes or as otherwise directed by the Authority Engineer and shall include all related sewerage facilities, including the house connections. The Contractor shall furnish all labor, material and equipment necessary for the testing.

Prior to air testing, the section of pipe to be tested shall be flushed and cleaned of sand and other foreign matter. The test shall be conducted on a section of pipe from manhole to manhole; the section of pipe to be tested will be isolated by installing a plug at each end of pipe at the manholes, at the ends of all branches, laterals and wyes. All plugs shall be braced securely. The plugs at each end of the pipe at the manholes shall have provision for connecting an air hose. One end of the air hose will be connected to the plug and the other to a portable air compressor with pressure regulators and gauges used to control the rate at which air flows to the test section and to monitor air pressure in the pipe. Air shall be supplied to the pipe section to be tested, and monitored so the pressure inside the pipe does not exceed 5.0 psig. When pressure reaches 4.0 psig, the air supply shall be throttled to maintain the internal pressure between 4.0 psig and 3.5 psig for at least two (2) minutes. This allows time for the temperature of the air to come to equilibrium with pipe walls. After the temperature has been allowed to stabilize for two (2) minutes, the Contractor shall disconnect the air supply and allow pressure to decrease to 3.5 psig. At 3.5 psig, the Contractor shall start a stop watch to determine the time required for

pressure to drop to 2.5 psig. The time required for a loss of 1.0 psig at an average pressure of 3.0 psig shall be used to compute the rate of air loss.

The following table shall be used to determine the maximum allowable time for pressure to drop 1.0 psig for various pipe sizes.

<u>Pipe Size (inches)</u>	<u>Time</u>
6	2 minutes, 15 seconds
7	3 minutes, 18 seconds
8	3 minutes, 57 seconds
10	4 minutes, 43 seconds
12	5 minutes, 40 seconds
15	7 minutes, 5 seconds
18	8 minutes, 30 seconds

The infiltration test shall be performed on lines that are at or below the existing ground water level. The rate of infiltration shall not exceed one hundred (100) gallons per mile per twenty-four (24) hours per inch of diameter of sewer. There shall be no gushing or spurting streams entering the sewer. The Applicant shall be responsible for the satisfactory water-tightness of the line and shall satisfactorily repair all leaks and perform additional tests subject to the Authority Engineer’s approval.

The infiltration test shall be conducted on sections of sewers of a maximum two thousand (2,000) line feet of street mains, trunks or interceptors.

When using PVC plastic piping, the allowable deflection shall not exceed five percent (5%). Measurements shall be made using a “Go-No-Go” device where necessary in the sole opinion of the Authority Engineer.

To test force mains, the Contractor shall fill the pipe with water in such a manner as to expel all air. The Contractor may test pipe either as a whole or in sections as approved by the Authority Engineer. The pipe shall then be subjected to a pressure test of 150 psi for a two (2) hour period. Any leaks or defective joints shall be satisfactorily repaired or replaced, and the test repeated until the line shows no leakage.

Allowable exfiltration or infiltration shall not exceed one hundred (100) gallons per mile per twenty-four (24) hours per inch of diameter of sewer. Any pipe, joint or other part of the constructed sewer exhibiting exfiltration or infiltration in excess of the permissible limit shall be repaired or removed and replaced before proceeding with construction.

11.0 USE OF THE SEWER SYSTEM

11.1 Use of Sewer by Authority.

During construction and before final acceptance, the Authority shall have the right to use any portion of the sewer system completed without waiving its right to order correction of any defects in the system.

11.2 Illegal Use of System.

Use of the sewer system for the discharge of sump pumps or drainage from cellar drains, leaders, downspouts, drainage tile, developer's cellar pits or pumping out septic tanks or septic tank trucks is strictly prohibited.

11.3 Grease Interceptor.

11.3.1 Installation.

a. A grease interceptor ("grease trap") shall be provided at all restaurants, office buildings and other locations where food is being prepared and oil and grease have the capability of entering the Authority's collection system. The interceptor or trap shall be of a type and capacity approved by the Authority in compliance with the applicable Plumbing Codes and these Rules and Regulations. The interceptor or trap shall be located outside the building it serves as close to the fixture as practical. The interceptor or trap shall be sized for the maximum discharge to be expected during peak operating periods. The interceptor or trap shall be preceded by a flow control device to prevent the interceptor or trap from exceeding its design capacity. The interceptor or trap shall be installed at a location where it is readily accessible for maintenance by the Owner and inspection by the Authority. The interceptor or trap shall either be a commercial steel manufactured unit specifically for grease interception or a concrete chamber. If the unit is a steel manufactured unit, it should be installed underground in a separate concrete chamber. If a concrete chamber is proposed, it shall be a double compartment type. The minimum size interceptor or trap shall be 1,000 gallons, unless the Authority specifically approves an alternative type and/or size unit.

b. Installation of grease interceptors or grease traps on plumbing, to be retrofitted, within existing buildings shall be reviewed on a case-by-case basis. Units manufactured by AGI or approved equal may be acceptable if a hardship, as determined by the Authority, exists.

11.3.2. Sizing the unit. Grease interceptors or grease traps shall be sized based on the criteria in Section 6 of the National Standard Plumbing Code or by "Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Date" of the Plumbing and Drainage Institute, Standard PD-1 -- G101. Design calculations and plans shall be submitted to the Authority for approval. The interceptor or trap shall have a retention capacity of not less than two (2) pounds of grease for each gallon per minute of peak flow. The submitted information must include design plans showing the location of the unit, the materials and dimensions and a proposed maintenance schedule.

11.3.3 Construction.

a. Generally, the grease interceptor or grease trap shall be made of pre-cast concrete, completely assembled. However, very large interceptors or traps may be field-constructed.

b. Grease interceptors or grease traps shall be buried so as to intercept the building sewer. The interceptor or trap must be level, located where they are easily accessible for cleaning, and close to the wastewater source. Efficient removal of grease is very important and, therefore, a two-chamber interceptor or trap shall be used which has a primary (grease-separating) chamber and a secondary (grease-storage) chamber. The interceptor or trap shall be placed as close as possible to the source of wastewaters, where wastewaters are still hot, to permit the removal by means of an adjustable weir of the separating grease at the surface of the first chamber and conveyance of the grease to the separate secondary chamber, where it accumulates, cools and solidifies.

c. The inlet, outlet and baffle fittings shall be of a typical "T" design with a vertical extension of twelve inches (30 cm) from the tank floor and reaching well above the water line.

d. To allow for proper maintenance, manholes to finished grade shall be provided. The manhole covers shall be of gas-tight construction and be designed to withstand expected loads.

11.3.4 Maintenance.

a. All grease interceptors or grease traps require periodic maintenance and cleaning. Generally, each interceptor or trap should be cleaned on a weekly or monthly basis. Existing interceptors or traps of limited capacity may require cleaning on a daily basis. The use of enzymes or other chemicals to attempt to keep the grease in suspension shall not be used. The use of these compounds results in depositing the grease further downstream from the interceptor or trap. Any blockages caused by the illegal use of enzymes or other chemicals not on the Owner's property shall be removed by the Authority and the Owner shall be responsible for the cost.

b. The Owner of a grease interceptor or grease trap shall provide the Authority with a report at least quarterly showing evidence to the Authority that the interceptor or trap has been cleaned on a regular basis, and shall be available for inspection by the Authority during an inspection of the interceptor or trap. This evidence may include a contractor for yearly cleaning and evidence the contract is in force, or an invoice for each cleaning event. If during its inspection of the interceptor or trap the Authority finds that the interceptor or trap is not being properly maintained and grease is entering the Authority's collection system, the Owner will be responsible for the cost to clean the Authority's collection system affected by the grease. If there is continued evidence of lack of maintenance of an interceptor or trap, the Authority reserves the right to disconnect the Owner from the Authority's collection system. All costs to disconnect and reconnect the Owner to the Authority's collection system will be the responsibility of the Owner.

c. The Authority shall have the ability to impose a fine up to one thousand dollars (\$1,000.00) on the Owner for each failure to provide a quarterly report to the Authority, or failure to provide evidence of regular maintenance to the Authority during an inspection of the interceptor or trap.

d. Failure to properly treat the grease shall result in a fine up to one thousand dollars (\$1,000).

12.0 ACCEPTANCE OF NEW SEWERS BY THE AUTHORITY

12.1 Completion of Structures.

After satisfactory completion of all structures proposed and prior to acceptance of new sewers by the Authority, the Applicant shall:

a. Furnish the Authority three (3) sets of prints of the As-built plans and one (1) set in reproducible form containing information as shown in Exhibit I “Standard Construction Details”. The As-built plans shall be approved by the Authority Engineer. After receipt of approved As-built plans, the Authority Engineer will certify the NJDEP form PWF / CF -1 and submit the form together with the approved As-built plans for a “Permit to Operate” to the New Jersey Department of Environmental Protection. No active service connections will be permitted by the Authority without the issuance of the “Permit to Operate” by the NJDEP.

b. Post a Corporate Surety Bond or Cash which shall be for a period of two (2) years from the acceptance of the improvements by the Authority in a sum equal to:

(1) Fifty percent (50%) of the final adjusted total cost of construction if such amount is twenty-five thousand dollars (\$25,000) or less;

(2) Thirty percent (30%) of the final adjusted total cost of construction if such amount is greater than twenty-five thousand dollars (\$25,000) but less than seventy-five thousand dollars (\$75,000); or

(3) Ten percent (10%) of the final adjusted total cost of construction if such amount is seventy-five thousand dollars (\$75,000) or more.

c. Complete all items on the Authority’s Check List (Exhibit E).

d. Furnish the Authority five (5) sets of O & M Manuals for the sewerage facilities constructed.

12.2 Receipt of Permit to Operate

Upon satisfactory completion of all the above items by the Applicant and receipt of the “Permit to Operate” from the NJDEP, the Authority shall:

- a. Release the performance guarantee provided by the Applicant;
- b. Accept title to all lands, easements, sewer structures and appurtenances;
- c. Operate and maintain the system thereafter; and
- d. Return unused monies remaining the Applicant's construction inspection escrow account.

13.0 REQUIREMENTS AS TO WASTE DISCHARGED INTO SEWERS

13.1 Requirements.

The Applicant shall conform with and abide by the minimum requirements of the Authority as presently enacted and as amended and supplemented from time to time.

13.2 Industrial Wastes.

Prior written approval shall be obtained from the Authority to discharge into the sewerage system wastes containing any of the following:

- a. A five (5) day BOD greater than two hundred fifty (250) mg/l;
- b. A suspended solids content greater than two hundred fifty (250) mg/l;
- c. A chlorine demand greater than twenty (20) parts per million;
- d. An average daily flow greater than four hundred (400) gallons per day; or
- e. Any quality of substances described in Section 14.4 "Prohibited Wastes".

Industrial users may, at the option of the Authority, be required to execute an individual contract with the Authority for sewerage service. The contract may contain special conditions relating to pretreatment, metering, sampling or additional requirements the Authority deems necessary and appropriate for the protection and proper operation of the System.

13.3 Pretreatment Metering and Sampling of Industrial Wastes.

Whenever necessary in the opinion of the Authority Engineer, the Applicant or User shall provide, at its sole expense, such facilities for pretreatment of industrial wastes as necessary to:

- a. Reduce five (5) day BOD to two hundred fifty (250) mg/l or less;

- b. Reduce suspended solids content to two hundred fifty (250) mg/l or less;
- c. Reduce objectionable characteristics or constituents to conform to the maximum limits permitted in these Rules and Regulations or other State or Federal regulations; and
- d. Insure equalization of discharge over a twenty-four (24) hours period to prevent temporary overloading of the Authority's Plant or System.

Whenever necessary in the opinion of the Authority Engineer, the Applicant or User shall provide, at its sole expense, a suitable meter and appurtenances for the observation, metering and sampling of waste material. Plans, specifications and all other pertinent information relating to proposed facilities for pretreatment, metering and sampling of industrial wastes shall be submitted to the Authority for approval, together with approvals from all governmental regulatory bodies having jurisdiction. Pretreatment, metering and sampling facilities shall be accessible to the Authority's authorized agents at all times. The Applicant may, at the option of the Authority, be required to transfer title to these facilities to the Authority in order to insure their proper operation and maintenance. Any new source Significant Industrial Users (SIU), as defined by N.J.A.C. 7:14A-1 et seq., shall obtain a State NJPDES/SIU permit prior to commencing discharge into the treatment works.

13.4 Prohibited Wastes.

Except as otherwise provided in these Rules and Regulations, no person shall discharge or cause to be discharged any of the following described wastes or waters into the Authority's System:

- a. Discharges containing BOD in excess of two hundred fifty (250) mg/l;
- b. Discharges containing suspended solids content in excess of two hundred fifty (250) mg/l;
- c. Any liquid or vapor having a temperature higher than one hundred fifty degrees (150°) Fahrenheit or sixty-five degrees (65°) Celsius;
- d. Any water or waste containing more than one hundred parts per million (100 ppm) of fats, oils or greases;
- e. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas, which by reason of its nature or quality may cause fire or explosion, or which in any other way may be injurious to persons, the sewer system or the Plant;

f. Any noxious or malodorous gas or substance which, either singly or by interaction with other wastes, shall be capable of creating a public nuisance or hazard to live or of preventing entry into any sewer or the Plant for maintenance and repair;

g. Any garbage, except properly shredded or ground garbage;

h. Any solid or viscous substance which shall be capable of causing obstruction of the flow in any sewer, or other interference with the property operation of the Plant or the System;

h. Any water or waste having a pH lower than five and a half (5.5) or higher than nine (9.0), or having any corrosive property capable of causing damage or hazard to structures or equipment of the Plant or System or to personnel engaged in the operation and maintenance thereof;

i. Any water or waste containing any substance which, in the opinion of the Authority, may harm either the Plant, the System, the sewerage treatment process or equipment; have an adverse effect on the receiving stream; cause violations of the State, Federal or other validly existing requirements; cause the sludge not to be acceptable for agricultural use; in any way interfere with the operations of the System; endanger human or animal life, limb, public property; or constitute a nuisance;

j. Any toxic radioactive isotopes unless written approval has been provided by the Authority; and

k. Wastewaters which contain toxics or other pollutants in amounts or concentrations that endanger public safety and physical integrity of the treatment works; cause violation of effluent or water quality limitations; or preclude the selection of the most cost-effective alternative for wastewater treatment and sludge disposal. Where any Federal standard applicable to a particular industrial subcategory is more stringent than limitations imposed under these Rules and Regulations for sources in that subcategory, the Federal standard shall supersede the limitation under these Rules and Regulations. Affected industrial users shall comply with the applicable standards by the compliance deadlines specified in 40 CFR 403.6(b). All industrial users subject to Federal Categorical Pretreatment Standards shall, at a minimum, comply with the reporting requirements contained in 40 CFR 403.12.

13.5 Non - Compliance.

Any User discharging waste into a sewer which fails to meet the minimum requirements for waste discharged into sewers shall be subject to being immediately disconnected from the Authority's System and shall reimburse the Authority for all costs and damages resulting from injury to the System and/or damage to the treatment process, including reasonable attorney fees.

14.0 COMPLIANCE WITH RULES AND REGULATIONS

The Applicant shall comply with all of the Rules and Regulations set forth herein. Failure to comply will result in a work stoppage directive by the Authority.

15.0 OTHER RESOLUTIONS, RULES AND REGULATIONS

Any other resolutions or rules and regulations previously adopted by the Authority which are inconsistent with these Rules and Regulations are hereby rescinded.