

**ADOPTED March 21, 2017: Resolution # 2017-20**  
**1<sup>st</sup> AMENDED April 18, 2017: Resolution # 2017-20A**

# **PLUMSTED MUNICIPAL UTILITIES AUTHORITY**

## **RULES AND REGULATIONS**

**GOVERNING APPROVAL OF SEWER LATERAL CONNECTIONS  
INTO THE SYSTEM OF THE AUTHORITY, APPROVAL OF  
SEWER EXTENSIONS TO THE EXISTING SYSTEM, SEWER  
SYSTEMS IN SUBDIVISIONS, AND THE REGULATION AND  
DISCHARGE OF INDUSTRIAL WASTES TO SAID SYSTEM**

## **TABLE OF CONTENTS**

	PAGE NO.
ARTICLE 1	DEFINITIONS.....1
ARTICLE 2	GENERAL REQUIREMENTS .....6
	1. Use of Public Sewers Required.....6
	2. Building Sewers and Connections .....7
	3. Sewer Connection Financial Incentive Program.....9
ARTICLE 3	APPLICATIONS .....12
	1. General.....12
	2. Application for Approval of Building Sewer Permit.....12
	3. Application for Determination of Service/ Preliminary Approval.....12
	4. Application for Final Approval.....13
	5. Approvals .....15
ARTICLE 4	SEWER SYSTEM STANDARDS (GENERAL SPECIFICATIONS) .....18
	1. Design Requirements .....18
ARTICLE 5	CONSTRUCTION SPECIFICATIONS.....20
	1. Excavation and Earthwork.....20
	2. Pipe and Pipe Laying .....23
	3. Manholes.....32
	4. Building Connections.....34
	5. Special Structures.....35
	6. Pumping Station(s) and Force Mains.....36
ARTICLE 6	STANDARDS FOR ACCEPTABLE WASTES .....44
	1. Prohibited Waste.....44
	2. Pre-Treatment Requirements for Industrial Wastes.....45
	3. Admission of Industrial Wastes into the Sewage Collection System .....46
	4. Measuring Volume of Effluent .....49
	5. Time and Method of Payment.....50
	6. Violations and Penalties.....50
	7. Revisions.....52
ARTICLE 7	CONSTRUCTION REQUIREMENTS.....53
ARTICLE 8	ACCETANCE OF NEW SANITARY SEWER

	SYSTEM BY THE AUTHORITY .....	55
ARTICLE 9	SERVICE CHARGE AND CONNECTION CHARGE (ESU SCHEDULE) .....	57
ARTICLE 10	ADMINISTRATION AND ENFORCEMENT .....	60
	1. Administration .....	60
	2. Adoption of Additional Rules and Regulations .....	60
	3. Liens for Sewer User Rates and Other Charges: Filing and Collection of Liens .....	60
	4. Access .....	60
	5. Penalties .....	60
ARTICLE 11	EFFECTIVE DATE.....	61

#### FIGURE 1- PHASE 1 – PROPOSED SANITARY SEWER COLLECTION SYSTEM LAYOUT

#### APPENDIX A – CONSTRUCTION DETAILS

#### EXHIBITS – APPLICATION FORMS

- APPLICATION FOR BUILDING SEWER PERMIT
- APPLICATION FOR DETERMINATION OF SERVICE/PRELIMINARY  
APPROVAL
- APPLICATION FOR FINAL APPROVAL

#### SCHEDULE OF FEES

## **Article 1 Definitions**

Unless the context specifically and clearly indicates otherwise, the meaning of terms and phrases used in this Ordinance shall be as follows:

Act or “the Act”. The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. section 1251 et seq.

Approval AUTHORITY- Shall mean the Plumsted Municipal Utilities Authority.

ABNORMAL INDUSTRIAL WASTES — Any Industrial Wastes having a Suspended Solids content or BOD appreciably in excess of that normally found in Sanitary Sewage. For the purposes of this Ordinance any Industrial Wastes containing more than 300 ppm of Suspended Solids, or having a BOD in excess of 250 ppm, shall be considered an Abnormal Industrial Waste regardless of whether or not it contains other substances in concentrations differing appreciably from those normally found in Sanitary Sewage.

BILLING UNIT — includes, as applicable, each of the following: a "Commercial Establishment," a "Dwelling Unit," an "Industrial Establishment" and an "Institutional Establishment."

BIOCHEMICAL OXYGEN DEMAND ("BOD") - an abbreviation for ("Biochemical Oxygen Demand") means the quantity of oxygen, expressed in parts per million ("ppm"), utilized in the biochemical oxidation of organic matter, under standard laboratory procedure for five days at twenty degrees centigrade. The standard laboratory procedure shall be that found in the latest edition of Standard Methods.

BUILDING DRAIN - the part of the lowest horizontal piping or drainage system or discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the Building Sewer, beginning five (5) feet outside the outer face or wall of the building.

BUILDING SEWER — the extension from the sewage drainage system of any structure to the Sewer Lateral of a Sewer.

CHLORINE REQUIREMENT - shall mean the amount of chlorine, in parts per million by weight, which must be added to sewage to produce a specific residual chlorine content, or to meet the requirements of some other objective, in accordance with procedures set forth in Standard Methods.

COMMERCIAL ESTABLISHMENT — Any room, group of rooms, building or enclosure used or intended for use in the operation of one business enterprise for the sale and distribution of any product, commodity, article or service or used or intended for use for any social, amusement, religious, educational, charitable or public purpose and containing plumbing facilities for kitchen, toilet or washing facilities.



**CONNECTION FEE** — shall mean a separate capital contribution charge imposed as a fair share payment towards the cost of the existing system by a new customer, or existing customer with a change in use or expansion that could result in increased sewage flow to the Authority's system. The Connection Fee shall be established by the Authority and recomputed in accordance with N.J.S.A. 40A:26A-11.

**DEVELOPMENT** - a group of dwellings, houses, condominiums, apartments, etc. Often of similar design constructed as a unified community typically by a real estate developer.

**DWELLING UNIT** — Any room, group of rooms, house trailer or other enclosure occupied or intended for occupancy as separate living quarters by a family or other group of persons living together or by persons living alone.

**EQUIVALENT SERVICE UNIT** - also identified as "ESU," shall mean a single family dwelling unit or the equivalent based on an average flow of 69,000 gallons per year.

**IMPROVED PROPERTY** — any property upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure Sanitary Sewage and/or Industrial Wastes shall be or may be discharged.

**INDUSTRIAL ESTABLISHMENT** — Any room, group of rooms, building or other enclosure used or intended for use, in whole or in part, in the operation of one business enterprise for manufacturing, fabricating, processing, cleaning, laundering or assembling any product, commodity or article or from which any process waste, as distinct from Sanitary Sewage, shall be discharged.

**INDUSTRIAL WASTES** — Any solid, liquid or gaseous substance or water borne wastes or form of energy rejected or escaping in the course of any industrial, manufacturing, trade or business process or in the course of the development, recovery or processing of natural resources, as distinct from sanitary sewage.

**INSPECTION FEE** — a fee assessed by the PMUA to reimburse the PMUA for the cost to have a representative of the PMUA inspect each connection to the Sewer Lateral.

**INSTITUTIONAL ESTABLISHMENT** — any room, group of rooms, building or other enclosure which does not constitute a commercial establishment, a dwelling unit, or an industrial establishment.

**LATERAL** — That part of the sewer system extending from a sewer to the curb line or, if there shall be no curb line, to the property line or, if no such lateral shall be provided, then "lateral" shall mean that portion of, or place in, a sewer which is provided for connection of any building sewer.

**MULTIPLE UNIT** — Any improved property in which shall be located more than one billing unit.

## NATIONAL STANDARD PLUMBING CODE - NSPC

**OWNER** — Any person vested with ownership, legal or equitable, sole or partial, of any improved property.

**PARTS PER MILLION ("ppm")** shall mean a weight-to-weight ratio; the parts-per-million value multiplied by the factor 8.345 shall be equivalent to pounds per million gallons of water.

**PERSON** — Any individual, partnership, company, association, society, corporation, trust, governmental body, political subdivision, municipality, municipality authority or other group or entity.

**pH** — The logarithm to the base 10 of the reciprocal of the hydrogen ion concentration expressed in moles per litre. It shall be determined by one of the acceptable methods described in Standard Methods.

**PMUA** – Shall mean the Plumsted Municipal Utilities Authority designated by the Township to administer and enforce these regulations.

**PROMISSORY NOTE** – A document containing, related to, or having the nature of a promise.

**SANITARY SEWAGE** — Normal water-carried household and toilet wastes discharged from any improved property.

**SANITARY SEWER** - shall mean a sewer that conveys sewage or industrial wastes or a combination of both and into which storm, surface, and ground waters or unpolluted industrial wastes are not intentionally admitted.

**SEWAGE COLLECTION SYSTEM** - shall mean the wastewater collection system owned and operated by the PMUA for the purpose of collecting wastewater within the Township.

**SEWAGE TREATMENT PLANT** - shall mean the Township's wastewater treatment plant and any other facility or facilities operated for the purpose of treating wastewater either by the Township, the PMUA or by any other party so designated.

**SEWER** — Any pipe, main or conduit constituting a part of the Sewer System used or usable for sewage collection purposes.

**SEWER LATERAL** - Any pipe or conduit designed or intended to conduct wastewater from any Building Sewer to the Sewer.

**SEWER SERVICE AREA** – as designated and approved by Ocean County in its approved Wastewater Management Plan.

**SEWER SYSTEM** — All facilities, including without limitation the Sewage Collection System and the Sewage Treatment Plant, for collecting, transporting and/or treating wastewater by, for or on behalf of the Township.

**SHALL** - is mandatory, may is permissible.

**STANDARD METHODS** - means the most recent edition of "Standard Methods for the Examination of Water and Wastewater" as published by the American Public Health Association.

**STORM SEWER** - shall mean a sewer that carries storm, surface and ground water drainage but excludes Sewage and Industrial Waste.

**STREET** - shall mean and include any street, highway, road, lane, court, alley and public square.

**SURCHARGE** - shall mean the extra charge in addition to the service user rate which is levied on those persons whose wastes are greater in strength than the concentration values established as representative of normal sewage.

**SUSPENDED SOLIDS** — Solids that either float on the surface or are in suspension in water, Sanitary Sewage, Industrial Wastes or other liquids, and which are removable by laboratory filtration. The quantity of suspended solids (TOTAL SUSPENDED SOLIDS, or "TSS") shall be determined by one of the acceptable methods described in Standard Methods.

**TOWNSHIP** — The Township of Plumsted.

**TOXIC SUBSTANCES** - shall mean any poisonous substance, including but not limited to copper, cyanide, and chromium ions.

**UNPOLLUTED WATER OR WASTE** — Any water or waste containing none of the following: Emulsified grease or oil; acid or alkali; phenols or other substances imparting taste and odor to receiving waters; toxic or poisonous substances in suspension, colloidal state or solution; obnoxious or odorous gases. It shall contain no more than 10,000 ppm of dissolved solids of which not more than 2,500 ppm shall be as chloride and not more than 10 ppm each of suspended solids and BOD. The color shall not exceed 50 ppm. Analysis for any of the above mentioned substances shall be made in accordance with Standard Methods.

**WASTEWATER** - shall mean Sanitary Sewage or Industrial Wastes or any combination thereof.



## **Article 2 General Requirements**

### **Section 1. Use of Public Sewers Required.**

A. The owner of any improved property located in the Township which is adjoining or adjacent to or whose principal building is within 200 feet of the Sewer System, shall connect such property to the Sewer System, in such manner as the PMUA may require, within one (1) year after notice to do so, for the purpose of discharge of all Wastewater from the property, subject to such limitations and restrictions as shall be established by the PMUA from time to time.

B. The owner of any improved property located within the Township's approved Sewer Service Area which is adjoining or adjacent to or whose principal building is within 200 feet of the Sewer System and where the septic or cesspool system is failing as a result of a determination by either the Township Construction Official or the Ocean County Health Department, where the property in question is being sold, where new construction is proposed or where the property is publicly owned, shall be required to immediately connect such property to the Sewer System after notice to do so, for the purpose of discharge of all Wastewater from the property, subject to such limitations and restrictions as shall be established by the PMUA from time to time.

C. All Wastewater from any property connected to the Sewer System shall be conveyed to the Sewer, subject to such limitations and restrictions as shall be established herein or as otherwise established by the PMUA from time to time.

D. No person shall place, deposit or permit to be placed or deposited upon public or private property within the Township any Wastewater in violation of these rules and regulations.

E. No person shall discharge or permit to be discharged to any natural outlet within this Township any Wastewater in violation of these rules and regulations, except where suitable treatment has been provided and approved by the Township and PMUA.

F. No septic system or cesspool shall be used or maintained at any time upon any property which has been connected or which shall be required to be connected to a Sewer. Every such septic system or cesspool in existence shall be abandoned in place and shall be cleansed and filled at the expense of the owner of such property under the direction and supervision of the Township Construction Official or Ocean County Health Department and any such septic system or cesspool not so abandoned and/or cleansed and filled shall constitute a nuisance. Any such nuisance may be abated as provided by law, at the expense of the owner of such property.

G. No septic system or cesspool at any time shall be connected with a Sewer.

H. The notice by the PMUA to make a connection to a Sewer shall specify that such connection shall be made within one (1) year from the date such notice is given or six(6)

months as provided for in Section 3 below. The notice may be given at any time after a Sewer is in place which can receive and convey Wastewater for treatment and disposal from the noticed property. The notice shall be served upon the owner of the property by personal service, by regular or registered mail or by such other method as at the time may be provided by law.

I. No basement floor drain shall be permitted to be connected to the Building Sewer, except where it can be shown to the satisfaction of the PMUA's engineer that the connection is absolutely necessary for conveyance and treatment of Wastewater not influenced by clear or extraneous sources of unpolluted water.

J. All new construction or existing structures undergoing renovations involving replacement of such fixtures and fittings shall comply with the following water conservation standards for plumbing fixtures and fittings:

(1) for sink and lavatory faucets, maximum flow shall not exceed 2.2 gallons per minute when tested in accordance with the 2015 National Standards Plumbing Code (NSPC) Section 7.6.2 ; and

(2) for shower heads, maximum flow shall not exceed 2.5 gallons of water per minute when tested in accordance with the 2015 NSPC Section 7.10.2; and

(3) for water closets and associated flushing mechanisms, maximum volume shall not exceed an average of 1.6 gallons per flush when tested in accordance with the hydraulic performance requirements of the 2015 NSPC Section 7.4.2 ANSI A112.19.2M; and

(4) for urinals and associated flushing mechanisms, maximum flow shall not exceed 1 gallon of water per flush when tested in accordance with the hydraulic performance requirements of the 2015 NSPC Section 7.5.2; and

(5) the performance standards of this Section 1, Subsection J. shall not apply to fixtures and fittings such as emergency showers, aspirator faucets and blowout fixtures that, in order to perform a specialized function, cannot meet the standards of Subsection J 1 thru 4.

## **Section 2. Building Sewers and Connections.**

A. All connections to a Sewer shall be made in strict conformance with PMUA Rules and Regulations.

B. Except as otherwise provided, each property and/or building shall be connected separately and independently to the Sewer through a Building Sewer. Grouping of more than one property or building on one Building Sewer shall not be permitted, except under special circumstances and for good cause shown, and then only after special permission of the PMUA is granted, in writing, and subject to such rules, regulations and conditions as may be prescribed by the PMUA.

C. All costs and expenses of construction of a Building Sewer and all costs and expenses of connection of a Building Sewer to a Sewer, including testing, shall be borne by the owner of the property or building to be connected; and such owner shall indemnify and

save harmless the Township and PMUA from all loss or damage that may be occasioned, directly or indirectly, as a result of construction of a Building Sewer or of connection of a Building Sewer to a Sewer.

D. A Building Sewer shall be connected to a Sewer at the place designated by the PMUA and where the Sewer Lateral is provided. The invert of a Building Sewer at the point of connection shall be at the same or a higher elevation than the invert of the Sewer lateral. A smooth, neat joint shall be made, and the connection of a Building Sewer to the lateral shall be made secure and water-tight.

E. If the owner of any property who receives from the PMUA a notice to connect their property to the Sewer System fails to make such connection, as required, the PMUA will assess a per diem fine as specified by Township Ordinance and such action by the PMUA shall be enforceable in the Municipal Court. .

F No Building Sewer shall be covered until it has been inspected and approved by the PMUA, Township Construction Office or Ocean County Health Department. If any part of a Building Sewer is covered before being inspected and approved, it shall be uncovered for inspection at the cost and expense of the owner of the property to be connected to the Sewer.

G. Every Building Sewer shall be maintained in a sanitary and safe operating condition by the owner of the property.

H. Every excavation for a Building Sewer shall be adequately safeguarded to protect persons and property from damage and injury. Streets, sidewalks and other public property disturbed in the course of installation of a Building Sewer shall be restored in a manner satisfactory to the PMUA or Township Construction Office, at the cost and expense of the owner of the property being connected.

I. If any person fails or refuses, upon receipt of written notice from the PMUA, to remedy any unsatisfactory condition with respect to a Building Sewer, within sixty (60) days of receipt of notice or such shorter notice as the PMUA shall provide, the PMUA may refuse to permit such person to discharge sanitary Wastewater into the Sewer System until such unsatisfactory condition shall have been remedied to the satisfaction of the PMUA.

J. The PMUA may adopt, from time to time, additional rules and regulations it deems necessary and proper relating to connections with a Sewer and the Sewer Collection System, which additional rules and regulations, to the extent appropriate, shall be construed as a part of the PMUA Rules and Regulations.

K. Any Building Sewer constructed in conformance with the PMUA Rules and Regulations and installed prior to the enactment of the Rules and Regulations shall be tested in conformance with the requirements of the PMUA Rules and Regulations. Upon inspection and evaluation, the PMUA, in its reasonable discretion, shall determine

whether the Building Sewer is sufficiently compliant with the PMUA's requirements. If the Building Sewer is not compliant, the owner of the property shall remedy any unsatisfactory condition as required by this Section.

### **Section 3. Sewer Connection Financial Incentive Program**

A. To assist owners of improved property in Phase 1 of Plumsted Township's designated Sewer Service Area, there is established a Sewer Connection Financial Incentive program to be administered by the PMUA as follows:

(1) The sewer connection fee of \$1,500.00 shall be waived for owners of property located in Phase 1 of Plumsted Township's designated Sewer Service Area (see Figure 1) provided the sewer connection is completed within six (6) months of notice of availability of sewer by the PMUA.

(2). To financially assist owners of improved property in Phase 1 with the actual on-site cost to decommission the septic or cesspool system and alter the internal and external household plumbing to connect to the Township's sewer system as documented by an invoice from a licensed contractor, the PMUA may establish or may cause to be established a Loan Assistance Incentive Program (LAIP) upon receipt of funding from the Township to do so.

(3) To be eligible to receive financial assistance, the following criteria must be met:

(a) the property is an existing, improved single-family or multifamily residential dwelling, public building or commercial property as of the date the WWTP and collection system is operational.

(b) the property is on a septic or other on-site private sewage disposal system, is not connected to the sewer and the property has sewer available as provided by the notice from the PMUA.

(c) the owner of the property agrees to connect the property to the sewer within six (6) months of the notice by the PMUA of sewer service availability.

(4) The application for LAIP funds shall be made on the form provided by the PMUA.

(5) The loan terms and conditions shall be as follows:

(a) the loan will be structured as a promissory note.

(b) the term of the loan shall not exceed 30 years, commencing at the time the property is connected to the sewer.

(c) the loan will bear no interest.

(d) the loan will be secured by an interest in the property. The property interest may take the form of a lien, a deed of trust, or such other instrument as may be acceptable to the PMUA.

(6) the loan will require payment to the Township of the outstanding balance upon the sale, including an Estate Sale, refinancing of the property or insurance settlement.



(7) all LAIP funds disbursed shall be paid directly to the service provider as provided for in A (8) herein. The service provider shall be registered with the Township and be fully licensed, insured and capable of performing the required work.

(8) The number of and amount of loans shall be limited by the available funds. Priority shall be given to applicants in Phase 1 of the Sewer Service Area (see Figure 1). The amount of funds provided to the applicant shall be at the discretion of the PMUA and shall be periodically determined by the PMUA by Resolution. The amount of the loan shall be initially determined as follows:

(a) The PMUA will pay to the service provider up to \$4,000 for sewer connections up to 150 lineal feet and up to \$6,000 for connections up to 250 lineal feet. All costs must be documented and determined by the PMUA to be within accepted industry standards for such work. The PMUA, in its discretion, may reduce, reject or request additional documentation regarding a particular expense to support the provider's invoice. Eligible costs include the following:

- (1). the decommissioning of the septic or cesspool system in place, including any necessary site restoration costs.
- (2). the internal and external plumbing required to connect to the Township system expressed in the cost per lineal foot including any site restoration costs.
- (3). A permit or inspection fee required and directly related to the connection tie in.

(4). Where the PMUA's engineer determines it necessary and more cost effective to install a grinder pump to pump the waste directly to the Township's sewer connection, the cost for the grinder pump can be included.

Note: The wastewater collection system has been designed with sufficient depth to serve the first floor of the improved property only. The cost to property owners where basement plumbing fixtures will require these fixtures to be pumped to their gravity lateral are not included.

(9) The PMUA shall not approve a LAIP loan unless the applicant has signed a loan agreement providing that:

- (a) the Township shall have a secured interest in the form of a lien, deed of trust or other document on the affected property in an amount equal to the amount of the loan.
- (b) the applicant shall have and keep in force fire and casualty insurance on the affected parcel in a sufficient amount to protect the interest of the Township and PMUA. Proof of insurance shall be provided to the PMUA with the application. In the event of cancellation, the PMUA is to be so notified sixty (60) days in advance.
- (c) The obligations pursuant to this section shall become due and payable in full to the Township upon the earliest of the following dates:

i. upon the sale, including estate sale, or refinancing of the property or receipt of an insurance settlement which is the subject of this loan. The refinancing of the property where only a lower interest rate is applied for is excluded.

ii. upon the death of the applicant; except that a surviving family member may elect to continue the loan provided they are living on and continue to live on the property;

iii. upon the condemnation of the affected property by a public or private body exercising eminent domain power.

(d) the amount of the loan will be due and fully payable within thirty (30) years if the property is sold or refinanced or where there has been a receipt of an insurance settlement which is not fully reinvested into the property as provided for herein prior to the expiration of thirty (30) years from the connection date. If the property has not been sold, refinanced or an insurance settlement has not been received within thirty (30) years of the connection date, the loan shall be forgiven on the thirtieth (30 th) anniversary of the connection.

(e) each loan executed pursuant to this section shall be recorded by the PMUA for the Township with the Ocean County Clerk.

## **Article 3 Applications**

**Section 1. General** The initial treatment capacity of the wastewater treatment plant (WWTP) of 0.220 million gallons per day (MGD) will be reserved for owners of improved or vacant property within Phase 1 of the PMUA's Sewer Service Area depicted to be sewerred (see Figure 1). Once service to this area is completed or nearly completed and flow at the WWTP has been established, if there is unused capacity, or should the PMUA expand the capacity of the WWTP to 0.330 MGD, the PMUA will consider expanding service to other owners of property adjacent to the Phase 1 service area or other areas within the Sewer Service Area the PMUA has approved. No development outside of the approved Sewer Service Area can or will be considered for service.

### **Section 2. Applications for Approval of Building Sewer Permit**

Owners of existing residential or multi-family dwellings, public buildings or commercial establishments in the Phase 1 Sewer Service Area and who are required to connect, or who are not required to connect but desire to connect, need only submit to the PMUA the Application for Approval of Building Sewer Permit along with the required information (Exhibit A). All work must be completed by a New Jersey licensed and registered plumber or contractor unless otherwise approved by the PMUA engineer and be in accordance with other required permits. The design and installation of the connection shall be in accordance with the minimum requirements of Article 4, Section 4.

All other applications for sewer service shall follow the requirements of Article 3, Section 3 and Section 4 below.

### **Section 3. Application for a Determination of Service/Preliminary Approval**

Applications for a Determination of Service for single family dwellings, multi-family dwellings, public development, minor/major subdivisions or site plans and for variances that are within the PMUA's Sewer Service Area but outside the Phase 1 service area shall be submitted to the PMUA for a determination as to whether an individual septic system will be permitted or whether connection to the Township's system will be required. If service is not available to the project at the time of application to the PMUA, the development may be approved with a minimum condition that connection to the Township's system will be required within six (6) months of notice from the PMUA that sewer service is available and further that the septic system will be properly decommissioned in place in accordance with existing Township, County or State regulations.

The Application for Determination of Service/Preliminary Approval, included as Exhibit B, shall be submitted along with two (2) copies of the application submitted to the Township Land Use Board and shall include a plot plan, a general location plan and

sketch plan showing streets, lots, the tax lot number and block, and the location of the nearest existing sanitary sewer.

In addition to the above, a flow estimate for the proposed site shall be submitted for review.

Maximum map size of all plans shall not exceed 24"x 36".

An application fee in accordance with the existing Fee Schedule at the time of application shall accompany each application. An applicant will not be given consideration before filing an application and application fee with the Authority.

A minimum of four weeks shall be allowed for review of and for action by the Authority. The Authority reserves the right to request additional information before taking action on the application.

In the instance of an application for a new single family or duplex dwelling or where the flow from the proposed development does not exceed 69,000 gallons per year, if connection to the Township's system is required, the applicant may submit the application and other information required for a Building Sewer Permit (Exhibit A). All work must be completed by a New Jersey licensed and registered plumber or contractor unless otherwise approved by the PMUA engineer and be in accordance with other required permits. The design and installation of the connection shall be in accordance with the minimum requirements of Article 5, Section 4.

#### **Section 4. Application for Final Approval**

- (a) For all other development, if connection to the Township's sewer system is required as a result of a Determination of Service review by the PMUA, the applicant must submit an Application for Final Approval (Exhibit C) together with the two (2) copies of the application to the Plumsted Township Land Use Board and the supporting data included herein.

To receive consideration the application must be accompanied by the proper application fee for review in accordance with the existing Fee Schedule at the time of application.

1)

Application for final approval (Exhibit C) must be submitted at least thirty (30) days prior to the date upon which action by the Authority is desired.

Applications are to be signed by the owner or owners or by a proper official of the Company, or, if signed by an authorized agent, shall be accompanied by a certified copy of the authorization.

The supporting data accompanying the application shall include the following:

##### **Engineer's Report**

A complete engineer's report, setting forth the basis for design, shall be submitted to the Authority for each project. It shall include:

- (1) Description of geographic area to be served.

- (2) Existing and predicted population of areas to be served.
- (3) Terrain data in sufficient detail to establish general topographic features of the area to be served, but at minimum, a topographic map with two (2) foot contour intervals.
- (4) Minimum and maximum grades proposed (minimum grade for eight (8") inch diameter sewer is 0.40 percent). Each manhole should have a 0.1 ft. drop.
- (5) Pumping stations required.
- (6) Intended use of the proposed improvements and the characteristics of sewage expected from such use.
- (7) The effect of the proposed sewerage facilities on existing or proposed sewerage systems.
- (8) The estimated daily flow.
- (9) Description of materials and construction specifications for the project.
- (10) A preliminary cost estimate approved by the Authority Engineer.
- (11) Soil borings to a point at least 5' below the proposed pipe invert may also be required.
- (12) In areas where groundwater conditions will be encountered, deeper borings may be required and recommendations for dewatering shall be included.
- (13) Any other information which would affect design and use of the sewerage system, or may be requested by the Authority Engineer.

#### General Map of the Entire Project

A general map, having a scale of 1" = 100' of the entire project shall be furnished showing sewers, pumping stations, proposed inverts, lateral locations, rim elevations, and proposed first floor elevations.

#### Project Plans

Plans shall be of uniform size, 24" x 36", with a 1/2" border on top, bottom and right side, and (for purpose of binding), a 2" border on the left side. Three (3) sets of plans shall be submitted. The project plans shall show the following:

(1) Existing and proposed contours (at a contour interval no less than 2 feet); existing and proposed streets; surface elevations at all breaks in grade and street intersections, outline of tributary areas; boundary lines; title; lot and block; date and scale. Plans shall also show existing and proposed utilities, storm sewers and detention basins, streams, boring locations, first floor elevations. They shall include details of manholes, laterals, cleanouts, pump stations, bedding, road repair, cradles, etc. Project plans shall also include profiles having existing and proposed grades along the centerline of the sanitary sewer, all utility and storm sewer crossings, and other information that may be necessary to review the system, as determined by the Authority Engineer.

#### (2) Symbols

Sewers to be built now and to be connected later shall be shown by solid and dashed lines respectively. Existing sanitary sewers shall be shown by special designation. All topographical symbols and conventions shall be the same as the ones of the United States Geological Survey.

#### (3) Elevations

All permanent bench marks of New Jersey Coast and Geodetic Survey shall be shown. Elevations of street surfaces shall be placed outside the street lines. The

elevations of sewer inverts, shown at street intersections, ends of lines and at changes of grades, shall be written parallel with the sewer lines and between the street lines and shown on the plan and profile view. The elevations of street surfaces shall be shown to the nearest 0.1 foot, the sewer inverts to the nearest 0.01 foot. Sufficient benchmarks should be permanently established in the area based on USGS Sea Level Datum.

(4) Distances, Grades and Sizes

Distances and stationing between manholes, grades in decimal, sewer size and material shall be shown on the plans. Arrows shall show the direction of flow. House lateral locations shall be shown by station, with a cleanout located at the property line.

- (5) Traffic Safety Plan where a street opening permit is required or as may be required by the PMUA or Township Construction Official.

Specifications

Complete specifications for construction of the project sewerage system shall be prepared and submitted with final (John to address) applications. Specifications must also be submitted. Reference to specifications submitted with past projects is unacceptable.

## **Section 4. Approvals**

General

Approval by the PMUA is subject to and conditioned upon further approval and issuance of permits including the State of New Jersey Department of Environmental Protection, Army Corps of Engineers, local Planning/Zoning Board approvals, and obtaining necessary easements and all other permits required by Local, State or Federal Governments having jurisdiction. The applicant shall obtain permits for all stream crossings, wet lands and/or encroachments from the N.J. Department of Environmental Protection. Permits to construct sewers and/or other structures within the right-of-way limits of State, County and Municipal roads and all railroads must be secured and paid for by the applicant. Copies of executed permits and easements must be filed with the Authority prior to the start of construction.

The applicant must secure all necessary approvals from any utilities involved prior to final approval from the PMUA.

(1) Preliminary Approvals shall automatically expire upon the expiration of two (2) years from the date Preliminary Approval is granted (unless Final approval is obtained during the two-year period). The expiration is subject to any extensions which may apply pursuant to N.J.S.A. 40:55D-136.1 et. seq. the permit Extension Act of 2008.

(2) Final Approvals shall automatically expire upon the occurrence of any of the following:

- (a) the expiration of three years from the date Final Approval is granted by the Authority if, at the time of expiration of the time period, all approved connections have not been made and/or all connection fees due have not been paid in full; the expiration is subject to any extensions which may apply pursuant to N.J.S.A. 40:55D-136.1 et. seq. the permit Extension Act of 2008.
- (b) the withdrawal of the Planning Board/Zoning Board application;
- (c) the rendering of decision by any court which, in whole or in part, overrules or declares null and void any Planning Board, Authority, or other required approval.

(3) Capacity at the treatment plant shall be reserved for an applicant only for the period of time after Final Approval has been granted. Any reservation of capacity shall expire simultaneously with the expiration of Final Approval.

### Requirements

After Final Approval is granted, the following must be provided to the Authority before the commencement of construction can begin:

- (1) Proof of all permits and easements received by the applicant.
- (2) Posting the Performance Bond in compliance with the Municipal Land Use Law (MLUL).
- (3) Applicant deposits, with the Authority, ten percent (10%) of the approved estimated cost of sewer construction, which deposit shall be used to reimburse the Authority for expenses incurred by the Authority for administration (2%) and inspection (8%) of the construction of approved sewer facilities.
- (4) Providing at least three (3) working days' notice to Authority Engineer before the start of construction.
- (5) Insurance Certificate.

The Applicant must submit to the PMUA certificates of insurance satisfactory to the PMUA. Certificates of insurance must have the following minimum limits:

Employer's Liability	\$1,000,000
Bodily Injury and Liability	\$1,000,000
Property Damage Liability	\$1,000,000
Automobile Liability	\$1,000,000

Workman's Compensation required by the laws of the State of New Jersey

The required certificates of insurance shall name the "PMUA, its engineers, consultants and employees "as additional insured "with respect to any and all claims arising out of the work being performed by the Applicant under PMUA Project # X." The certificates of insurance must be approved as to form and content by the PMUA Attorney.

The PMUA may waive Automobile Liability and/or Workman's Compensation if the Applicant demonstrates to the satisfaction of the PMUA that such requirement is not needed. At their discretion, the PMUA may require that such insurance coverage be provided by the Applicant's contractors and/or subcontractors, if applicable.

The insurance requirement shall cease upon release of the performance guarantee.

THE INSURANCE COVERAGE SHALL CONTAIN THE FOLLOWING CLAUSE:

### **INDEMNIFICATION**

To the fullest extent permitted by law, **APPLICANT** shall indemnify and hold harmless **Plumsted Municipal Utilities Authority** and Engineer and their agents and employees from and against all claims, damages, losses and expenses including but not limited to attorney's fees arising out of or resulting from the performance of the work,

provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefore and (b) is caused in whole or in part by any negligent act or omission of **APPLICANT**, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

In any and all claims against the **Plumsted Municipal Utilities Authority** or Engineer or any of their agents or employees by any employee of **APPLICANT**, any Subcontractor, any other person or organization directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under the first paragraph of this subsection shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for **APPLICANT** or any such Subcontractor or other person or organization under workers or workmen's compensation acts, disability benefit acts or other employee benefits acts.

This indemnification shall not apply to claims against the Engineer and/or the Engineer's Subconsultant's, agents or employees arising out of: a) preparing, approving, or failing to prepare or approve, maps, drawings, opinions, reports, surveys, change orders, designs or specifications; b) giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

Insurance requirements for non-domestic waste discharges will be subject to determination by the Authority at the time of application.

At any time as the Authority shall determine that the amount of money held on deposit for a particular developer and/or subdivider is not sufficient to pay inspection and administration fees, the Authority shall notify the developer and/or sub divider of the deficiency in his account and the developer and/or sub divider shall be required to deposit such additional sums as set forth by the Authority within a period of ten (10) days from the date of notification received.

Any deviations from approved plans or specifications affecting location, profiles, sizes, flow, materials, method of construction, capacity, and operation of any part or parts of the proposed or existing sewerage system must be submitted in writing to the Authority for approval prior to making such changes or deviations. Written approval must be obtained from the Authority before the change or deviation is made.

All construction work shall start at the downstream location of the proposed sewage facilities unless authorized by the Authority Engineer.



## **Article 4 Sewer System Standards (General Specifications)**

These Specifications are minimum acceptable standards for sanitary sewer systems in developments, subdivisions, and industrial and commercial projects lying within the jurisdictional area of the PMUA, or connecting to the PMUA system, including the connections from main sewers to the point of connection to the building outlet. Typical drawings are included to illustrate requirements and are of equal force and effect.

Drawings and specifications shall be submitted in advance for approval by the PMUA, in accordance with the PMUA procedures described in the preceding portion of this section. Drawings shall include plans, profiles, and details prepared by a Professional Engineer, licensed as such by the State of New Jersey. No deviation from these documents shall be permitted without prior approval of the PMUA Engineer. Ambiguities and inconsistencies in the specifications shall be referred to the Applicant's Engineer for clarification. Approval of the NJDEP is required and approval of the PMUA is expressly conditioned thereon.

### **Section 1. Design Requirements**

Sewer system flow shall be one (1) directional, with no loops. Sewers shall be sloped in accordance with the minimum requirements of the NJAC &:14A-23 and shall coordinate with the overall PMUA system.

Sanitary sewer manholes, when located within the municipal right-of-way, shall be at or near the centerline of the paved roadway, with a ten-foot (10') minimum from the edge of the pavement. Sanitary sewer mains shall be a minimum of fifteen feet (10') from the right-of-way line. When sanitary sewer mains are located less than fifteen feet (10') from the right-of-way line, an easement shall be provided to maintain ten feet (110') clearance on either side of the sanitary sewer main.

All lots within the subdivision shall be sewerred, and adjacent properties shall be taken into consideration when preparing the sewer layout. All sewers shall be extended to the development limits for future extension or access. All Applicants shall make provisions for connections from adjacent lots or properties owned by others as required by the PMUA.

All sanitary sewers must be designed on a separate storm/ sanitary system plan. All water from roofs, cellars, streets, and any other areas must be excluded. Use of the sanitary system for the discharge of sump pumps or foundation drains is strictly prohibited. No by-passes which allow raw sewage to be discharged from sewers shall be permitted.

All sanitary sewers shall be designed to carry four (4) times the average flow

Sewers and force mains shall be designed to flow with a minimum velocity of not less than two feet (2') per second and a maximum velocity of ten (10') feet per second at full flow based on Kutter's Formula with  $n = 0.010$  for PVC pipe and  $n = 0.013$  for other pipe material. Inverted siphons shall be designed for a minimum velocity of three (3) feet per second and a maximum velocity of six (6) feet per second.

Materials used in the construction of sewers, force mains, and shall be as follows:

Gravity sewers shall be reinforced concrete pipe, cement-lined ductile iron pipe or PVC sewer pipe.

Force mains shall be PVC, HDPE or cement-lined ductile iron pipe as required by the PMUA.

Inverted siphons shall be constructed of cement-lined ductile iron pipe or other approved material and shall consist of a minimum of two pipes with provisions for flushing. Flow control gates shall be provided in the chambers.

## **Article 5 Construction Specifications**

### **Section 1. Excavation and Earthwork**

#### **A. Limits of Excavation**

Excavation shall be made to approve grades as shown on the construction details and shall be of sufficient width for forming the pipe joints. Trench widths shall be selected so that the backfill will not exceed the safe load on the pipe. In all cases, the trench sides shall be vertical from the bottom to 12 inches above the top outside diameter of the pipe. In general, the widths of pipe trenches shall be as shown on the construction details. Trench bottoms shall be trimmed by hand to provide firm bedding. Blasting for rock excavation will be permitted only on approval of methods and in compliance with applicable State and local regulations.

#### **B. Trench Support**

The Applicant shall furnish, put in place, and maintain such trench support as necessary to support the sides of the excavations and to prevent movement which could in any way injure the work or diminish the working spaces sufficiently to delay the work. Trench support shall be constructed as necessary for the protection of the work and for the safety of personnel and shall comply with the safety precautions outlined in the Code of Federal Regulations as required by the Federal Occupational and Safety Health Act of 1970 (OSHA) or latest edition. Sheeting shall be of a material that will not split while being driven. Sheeting and bracing shall conform to the requirements of the "Construction Safety Code" of the Bureau of Engineering and Safety of the New Jersey Department of Labor and Industry. The Applicant shall have sole responsibility for safety measures at the job site.

#### **C. Dewatering**

When groundwater elevations are noted to be more than two feet above the trench, such that it may result in groundwater levels above the pipe bed, the Applicant shall submit a dewatering plan for review and approval prior to construction.

The Applicant shall provide, operate, and maintain satisfactory facilities and equipment, including well points with which to collect and pump all water entering excavations or other parts of the work, to suitable places for disposal. All excavations shall be kept free of water to a point two feet below the inverts to prevent flooding and flotation until the work or structure to be built therein is completed and will not be damaged by the rising water level. Water shall be discharged through pipe or gutters, or any other suitable artificial means to catch basins, watercourses or ditches in such a manner as to avoid interference with business, pedestrian, and vehicular traffic and so as to prevent damage to property. Necessary precautions to prevent siltation of streams and watercourses will be required. In no case shall water be permitted to rise into or flow through a completed sanitary sewer.

Dewatering facilities and operations shall comply with all State and Federal laws and regulations governing the activity, including but not limited to, noise control, and discharge of pumped water.

#### D. Foundation Material

Foundation material used for pipe and manhole bedding shall be NJDOT Type I-5 material or broken stone. NJDOT Type I-5 material shall be used under dry and suitable bedding conditions. The gradation of Type I-5 material is as follows:

<u>U. S. Standard Sieve Size</u>	<u>Percent Finer By Weight</u>
2"	100
3/4"	70 - 100
No. 4	30 - 80
No. 50	10 - 35
No. 200	5 - 12

Said materials shall be accurately levelled to required grades, and where required shall be compacted by tamping or other approved means.

Broken stone shall be used where wet or unsuitable bedding conditions exist, or when existing trench bottom is clay, and shall be clean, hard aggregate as approved by the Engineer. PVC pipe shall be placed on broken stone foundation in accordance with the standard detail. Stone shall be New Jersey Department of Transportation - Coarse Aggregate Size No. 57 and shall have the following gradation.

<u>U. S. Standard Sieve Size</u>	<u>Percent Finer By Weight</u>
1-1/2"	100
1"	95 - 100
1/2"	25 - 60
No. 4	0 - 10
No. 8	0 - 5

The stone bedding material shall be accurately levelled to required grades, and shall be compacted by tamping or other approved means. After compaction, the surface of the stone bedding material shall be roughly shaped to receive the pipe. Spaces shall be hollowed out to clear pipe bells so as to provide for maximum bearing.

#### E. Backfill

All backfill shall consist of a suitable selected and approved earth generally from storage of approved excavated soil, free from rejected organic matter, boggy or peaty material, humus or other unsuitable material such as silt, rubbish, waste, ashes or cinders. If sufficient suitable material for backfill is not available from the excavated material, as determined by the Engineer, the Applicant shall procure elsewhere a sufficient quantity of suitable material and shall furnish and place such material. No frozen earth shall be used for backfill, and all rocks larger than six (6) inches in the largest dimension shall be removed from acceptable earth and backfill. Unsuitable or excess backfill material shall be promptly removed from the site or spoiled where directed.

When sanitary sewer is installed within existing state or county roads, the Applicant shall comply with the proper regulatory agency(s) requirements.

#### F. Placing and Compacting Backfill

Backfill shall be placed to the slopes, grades, and elevations required. Backfill shall be compacted, in an approved manner to a density at least equal to that of the adjacent undisturbed soil, so as to avoid future unequal settlement.

No backfill shall be placed until the structure has been inspected in place and approved. Backfilling shall be carried out as soon as possible after such approval. Trenches shall be backfilled under the pipe haunches, around the pipe and to a point at least twelve inches (12") over the top of the pipe. Material shall be placed in six inch thick (6") layers in a manner that will not disturb or damage the pipe.

Each layer shall be levelled and thoroughly compacted by tamping to ninety-five percent (95%) Modified Proctor Density as determined by latest ASTM Specification D-1556. Where the material is sufficiently granular in nature to permit satisfactory drying and written approval is given by the PMUA Engineer, compaction of each layer by puddling or water jetting may be permitted. In all cases the filling shall be carried up evenly on both sides of the pipe.

In all improved streets, both existing and proposed, backfill between a plane twelve inches (12") above the top of the pipe and three feet (3') below the road surface shall be placed in successive 12 inch (12") layers. Each layer shall be thoroughly compacted by approved methods and devices to obtain ninety percent (90%) of its Modified Proctor Density in accordance with latest ASTM Specification D-1556. From this point to the bottom of the road surface, a minimum 95% Proctor Density is required. When the proposed sewer is installed in an existing street, the Applicant is responsible for providing a qualified soil technician onsite to perform compaction testing to verify proper compaction is achieved. Additionally, the Applicant is required to obtain the necessary road opening

permits from the municipality and, during construction, provide for appropriate traffic control.

In easement rights-of-way and paper streets, backfill between a plane twelve inches (12") above the top of the pipe and the finished surface grade need not be placed in successive layers. However, backfill shall be compacted or consolidated to obtain ninety percent (90%) Modified Proctor density. Settlement shall be kept to a minimum and proper grade shall be restored if such settlement might occur.

## **Section 2. Pipe and Pipe Laying**

### **A. Ductile Iron Pipe**

Ductile iron pipe shall be centrifugally cast in metal or sand-lined molds to latest ANSI/AWWA Designation A21.51/C-151 specifications. The joint shall be of a type that employs a single elongated grooved gasket to affect the joint seal, such as U.S. Pipe and Foundry Company's "Tyton Joint," James B. Clow and Sons, Inc., "Bell-Tite," or approved equal, conforming to latest ANSI/AWWA Designation A21.11/C-111. Pipe shall be furnished with flanges where connections to flange fittings are required and conform to latest ANSI/AWWA designation C115/A21.15. Flanged pipe shall be Class 53 (minimum). The outside of the ductile iron 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 latest ANSI/AWWA Designation A 21.4/C-104.

Ductile iron pipe used for sanitary force main shall be Class 52.

### **B. Reinforced Concrete Pipe**

Reinforced concrete pipe shall conform to the requirements of latest ASTM Designation C-76. Concrete pipe strength required shall be dependent on method of installation and depth of trench and shall be in accordance with the manufacturer's recommendation. Three (3)-edge bearing method tests for crushing strength shall be made as required by latest ASTM Designation C-76.

Joints shall conform to the latest requirements of ASTM Designation C-361.

All pipe and fittings shall receive, if required, protective lining consisting of two (2) shop coats of asphaltic paint equal to Inertol No. 49 as manufactured by Inertol Company, Inc. The total dry film thickness shall not be less than four (4) mils.

### **C. Plastic Pipe - PVC**

Plastic pipe and fittings shall be polyvinyl chloride bell and plain end sewer pipe equal to that manufactured by CertainTeed Corporation. Plastic pipe and fittings shall conform to ASTM D3034 latest revision, with a wall thickness designation of SDR-35 (minimum) or shall conform to ASTM F679, F789, F794, or F949 with a designated pipe stiffness of PS-46. 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 Class 12454-B in accordance with Specifications for Rigid Polyvinyl Chloride Compounds and chlorinated Polyvinyl Chloride Compounds, ASTM Designation D-1784, latest edition.

The pipe shall be capable of carrying a trench load equal to twenty-five feet (25') of cover. Under conditions of maximum cover, the pipe shall be adequate to maintain a factor of safety of two (2) against collapse.

Pipe joints shall be of the bell and spigot type conforming to latest ASTM F-477 and D-3212. Gaskets shall be lubricated with a product purchased from the pipe manufacturer.

Polyvinyl chloride pipe used for sanitary force main shall meet the requirements and standards set forth by AWWA C900 .

#### D. High-Density Polyethylene (HDPE) Pipe

Pipe shall be manufactured from a PE 3408 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material shall meet the specifications of ASTM D3350-02 with a minimum cell classification of PE345464C. Pipe O.D. sizes 4" to 24" shall be available in both steel pipe sizes (IPS) and ductile iron pipe sizes (DIPS). Pipe O.D. sizes 26" to 54" shall be available in steel pipe sizes (IPS). Pipe shall have a manufacturing standard of ASTM D3035 and be manufactured by an ISO 9001 certified manufacturer. The pipe shall contain no recycled compounds except those generated in the manufacturer's own plant from resin of the same specification from the same raw material. The pipe shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.

Butt fusion fittings shall be in accordance with ASTM D3261 and shall be manufactured by injection molding, a combination of extrusion and machining, or fabricated from HDPE pipe conforming to this specification. All fittings shall be pressure rated to provide a working pressure rating no less than that of the pipe. Fabricated fittings shall be manufactured using a McElroy Datalogger to record fusion pressure and temperature. A graphic representation of the temperature and pressure data for all fusion joints made producing fittings shall be maintained as part of the quality control. The fitting shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.

Electrofusion Fittings shall be PE3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02 and be the same base resin as the pipe. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055.

**FLANGED AND MECHANICAL JOINT ADAPTERS:** Flanged and Mechanical Joint Adapters shall be PE 3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02 and be the same base resin as the pipe. Flanged and mechanical joint adapters shall have a manufacturing standard of ASTM D3216. All adapters shall be pressure rated to provide a working pressure rating no less than that of the pipe.

Mechanical restraint for HDPE may be provided by mechanical means separate from the mechanical joint gasket sealing gland. The restrainer shall provide wide, supportive contact around the full circumference of the pipe and be equal to the listed widths. Means of restraint shall be machined serrations on the inside surface of the restrainer equal to or greater than the listed serrations per inch and width. Loading of the restrainer shall be by

a ductile iron follower that provides even circumferential loading over the entire restrainer. Design shall be such that restraint shall be increased with increases in line pressure.

Serrated restrainer shall be ductile iron ASTM A536-80 with a ductile iron follower; bolts and nuts shall be corrosive resistant, high strength alloy steel.

The restrainer shall have a pressure rating of, or equal to that of the pipe on which it is used or 150 PSI whichever is lesser. Restrainers shall be JCM Industries, Sur-Grip or approved equal.

Nominal Size	Restraint Width	Serrations per inch
4", 6"	1-1/2"	8
8" 10 & 12"	1-3/4"	8

Pipe stiffeners shall be used in conjunction with restrainers. The pipe stiffeners shall be designed to support the interior wall of the HDPE. The stiffeners shall support the pipe's end and control the "necking down" reaction to the pressure applied during normal installation. The pipe stiffeners shall be formed of 304 or 316 stainless steel to the HDPE manufacturers published average inside diameter of the specific size and DR of the HDPE. Stiffeners shall be by JCM Industries or approved equal.

#### E. Pipe Laying and Installation

All pipe and fittings shall be installed to the lines and elevations shown or ordered, and in accordance with the manufacturer's recommendations.

Suitable tools and equipment shall be used for proper handling, storing, and laying pipe, lifting hooks or bars shall not be inserted therein. Each pipe and fitting shall be checked for defects and injuries as laying proceeds. Imperfect pipe materials shall be rejected and removed from the work. Pipe found to be defective after laying shall be removed and replaced by undamaged material.

The interior of all pipes shall be cleaned of dirt, and other deleterious materials, and kept clean, as the next section of pipe is laid. During the progress of the work, the exposed ends of the pipes shall be provided with approved temporary covers fitted to the pipe, in order to prevent material from entering the pipe.



Where pipe must be cut to fit as closing pieces, such cuts shall be evenly and squarely made in a workmanlike manner with approved equipment. Injury to linings or coatings shall be satisfactorily repaired.

Where mechanical joint, Tyton, or Ring-Tite fittings are used, the Applicant shall furnish and install concrete thrust blocks, tie rods or other approved means for preventing movement. Joints must be thoroughly brushed with a wire brush to remove all loose rust or foreign material. Soapy water must be brushed over the joint surfaces and over the gasket. Bolts shall be tightened uniformly, using only torque-limiting wrenches to avoid over-stressing the bolts. Boltheads, nuts, and other unpainted surfaces shall be coated with two (2) heavy applications of black asphaltum varnish.

For HDPE pipe installation, the following techniques shall be followed:

(1) Butt-Fusion - Sections of polyethylene pipe shall be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The butt fusion joining will produce a joint weld strength equal to or greater than the tensile strength of the pipe itself. All field welds shall be made with fusion equipment equipped with a McElroy Data Logger. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records.

(2) Sidewall Fusion - Sidewall fusions for connections to outlet piping shall be performed in accordance with HDPE pipe and fitting manufacturer's specifications. The heating irons used for sidewall fusion shall have an inside diameter equal to the outside diameter of the HDPE pipe being fused. The size of the heating iron shall be ¼ inch larger than the size of the outlet branch being fused.

(3) Mechanical - Bolted joining may be used where the butt fusion method cannot be used. Flange joining will be accomplished by using a HDPE flange adapter with a ductile iron back-up ring. Mechanical joint joining shall be accomplished using either a molded mechanical joint adapter or the combination of a Sur-Grip Restrainer and Pipe Stiffener as manufactured by JCM Industries, Inc. Either mechanical joint joining method shall have a ductile iron mechanical joint gland.

(4) Other - Socket fusion, hot gas fusion, threading, solvents, and epoxies shall not be used to join HDPE pipe.

All pipe shall be laid on a layer of foundation material in accordance with approved details. Where concrete cradles are used to support the pipe, foundation material will not be required. No solid blocking will be permitted under pipe. Joints shall be made in accordance with the recommendations of the manufacturer, and shall be watertight.

## F. Testing

### (1) Low Pressure Air Test for Gravity Mains

After completing backfill of a section of wastewater line, the Applicant shall, at its expense, conduct a Line Acceptance Test using low pressure air. The Applicant shall furnish all labor, material and equipment necessary for the testing. The test shall conform to the Uni-Bell Plastic Pipe Association Recommended Practice UNI-B-6, "Low Pressure Air Testing of Installed Sewer Pipe."

If the sewer line fails the air test, the Applicant shall, at its own expense, determine the source of leakage and shall then repair or replace all defective materials and/or workmanship prior to acceptance by the PMUA

Omit Table 1



## (2) Testing for Vertical Deflection in Gravity Mains

All sanitary sewers from manhole to manhole shall be lamped for alignment. The Applicant's contractor shall pass a device through the pipe that will check for excessive vertical deflection. A pipe that has deflected more than 7% of its diameter has deflected excessively. The test shall be conducted a minimum of thirty (30) days after installation and only after all other utilities have been installed above the sanitary sewer and at a minimum the base course of the road has been laid.

The deflection device or mandrel for checking the deflection shall be provided by the Applicant's contractor. Details of the deflection device or mandrel shall be submitted to the PMUA's engineer for approval, prior to its use and shall be fabricated and based on the following table:

Pipe Size	Mandrel Size (in.)	I.D. (in.)	O.D. (in.)
8"	7.48	7.92	8.400
10"	9.40	9.90	10.500
12"	11.19	11.78	12.500
15"	13.70	14.42	15.000
18"	16.53	17.62	18.701
21"	19.60	20.78	22.047
24"	22.21	23.38	24.803

The deflection device shall be pulled through the sanitary sewer pipe using only the force of one (1) man without the aid of any devices other than the rope/chain attached to the deflection device.

Should any test section of the pipe fail to meet the testing criteria, the Applicant's contractor shall, at his own expense, locate and replace defective pipe section until specified criteria are met.

## (3) Infiltration and Exfiltration Test

With approval of the PMUA Engineer, an Infiltration/Inflow test may be used in lieu of the low pressure air test. Upon completion of the sewer and manholes, and other appurtenances, the Applicant shall dewater the sewer and conduct a satisfactory test to measure infiltration for at least 24 hours. The Applicant shall construct such weirs or means

of measurement as required to enable proper infiltration testing. The rate of infiltration shall not exceed 100 gallons per mile of sewer per 24 hours per inch diameter of sewer. There shall be no gushing or spurting streams entering the sewer. The Applicant shall be held responsible for the satisfactory water tightness of the line and shall affect repairs to ensure same and then shall make additional tests of the infiltration until same conforms to the requirements given herein.

The tests shall be conducted on lengths of sewers of not to exceed 2,000 linear feet, unless otherwise determined by the PMUA Engineer. The rate of infiltration for each section shall not exceed the unit rates given above.

In the event that the groundwater level is lower than the top of the pipe, an exfiltration test shall be substituted for the infiltration test. It is the Applicant's responsibility to determine the groundwater elevations at the time of testing. Same can be accomplished by means of sight tubes within the manhole.

The exfiltration test shall be conducted between manholes. The pipe shall be filled with clean water and additional water introduced to raise the level two feet above the top of the pipe in the upstream manhole. The Applicant shall furnish all water required for exfiltration tests. The quantity of water to maintain this level is to be measured. The test shall be maintained for a four (4) hour period. The rate of exfiltration shall not exceed one-hundred (100) gallons per inch of pipe diameter per mile of sewer per twenty-four hours. The Applicant shall be held responsible for the satisfactory water tightness of the line and shall satisfactorily repair all joints or other parts not sufficiently watertight, and then shall make additional tests of the exfiltration, until the exfiltration conforms to the requirement given herein.

#### (4) Testing of Ductile Iron Force Mains

Pressure pipe shall be hydrostatically tested in accordance with latest AWWA Standard C-600, Section 4. All necessary plugs, caps or valves for testing shall be installed and suitably braced. The pipe shall be slowly filled with water and all air exhausted. After the pipe is entirely filled with water, the pressure shall be slowly increased to 150% of the operating pressure at the point of testing, but not less than 125% of the normal operating pressure at the highest point. The pressure shall be maintained at test pressure for two (2) hours, with leakage and pressure measurement made continuously during this time period. Any make-up water used shall be measured and the amount recorded. The Applicant shall supply outlets, valves, to make provision for expelling all air from the pipe prior to test. No installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD\sqrt{P}}{133,200}$$

Where: L = Allowable leakage, in gallons per hour

S = Length of pipe tested, in feet

D = Nominal diameter of the pipe, in inches

P = Average test pressure during leakage test, in psi (gauge).

If the pressure cannot be maintained without the addition of excessive water, the leak or leaks shall be located and repaired. The hydrostatic test shall be repeated until leakage within the specified limit is achieved. All exposed pipe shall be thoroughly inspected during the test and any source of visible leakage, cracked or defective pipe or fittings replaced.

After leaks are repaired, the trench shall be backfilled. The Applicant shall make provisions for supplying water for the test.

All water from hydrostatic testing shall be disposed of by a method to be submitted to and approved by the PMUA Engineer.

#### (5) Testing of PVC Force Mains

PVC pressure pipe shall be hydrostatically tested in accordance with latest AWWA C-605 standards. All necessary plugs, caps or valves for testing shall be installed and suitably braced. The pipe shall be slowly filled with water and all air exhausted. After the pipe is entirely filled with water, the pressure shall be slowly increased to 150% of the operating pressure at the point of test, but not less than 125% of the normal operating pressure at the highest point. The pressure shall be maintained at test pressure for two (2) hours, with leakage and pressure measurement made continuously during this time period. Any make-up water used shall be measured and the amount recorded. The Applicant shall supply outlets, valves, to make provision for expelling all air from the pipe prior to test.

No installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{ND\sqrt{P}}{7,400}$$

Where: L = Allowable leakage, in gallons per hour

N= Number of Joints in the length of pipeline tested

D= Nominal diameter of the pipe, in inches

P= Average test pressure during leakage test, in psi.

If the pressure cannot be maintained without the addition of excessive water, the leak or leaks shall be located and repaired. The hydrostatic test shall be repeated until leakage within the specified limit is achieved. All exposed pipe shall be thoroughly inspected during the test and any source of visible leakage, cracked or defective pipe or fittings replaced.

After leaks are repaired, the trench shall be backfilled. The Applicant shall make provisions for supplying water for the test.

All water from hydrostatic testing shall be disposed of by a method to be submitted to and approved by the PMUA Engineer.

#### (6) Testing of HDPE Force Mains

Gravity flow pipelines shall be tested to the requirements and specifications of ASTM F 1473. For continuous pressure systems where test pressure limiting components or devices

have been isolated, or removed, or are not present in the test section, the maximum allowable test pressure is 1.5 times the system design pressure at the lowest elevation in the section under test. If the test pressure limiting device or component cannot be removed or isolated, then the limiting section or system test pressure is the maximum allowable test pressure for that device or component. For any test pressure between 1.0 and 1.5 times the system design pressure, the total test time including initial pressurization, initial expansion, and time at test pressure shall not exceed eight (8) hours.

#### (7) Video Inspection

Prior to release of the performance guarantee, the PMUA, at the discretion of the Commissioners and PMUA Engineer, may require all sanitary sewer mains to be flushed jetted, or otherwise cleaned, then inspected by TV cameras with VHS videotape or DVD discs provided to the PMUA. Said jetting and TV inspection will be witnessed by the PMUA Engineer or its representative and work shall be performed by a contractor specializing in said work according to generally acceptable standards. Additionally, a mandrel test shall be performed on all gravity lines installed by the Applicant as part of the Development to show that these gravity lines have not deflected. The cost associated with the TV inspection and the pulling of a mandrel through the installed gravity lines shall be determined by the PMUA and be borne by the Applicant.

### **Section 3. Manholes**

Manhole barrels shall be a minimum of four (4) feet in diameter when serving sewers 24-inches or less in diameter, and shall be a minimum of five (5) feet in diameter when serving sewers greater than 24-inches in diameter.

Manholes shall be precast concrete or concrete block. Precast concrete riser sections, bases, manhole cones or flat slab tops, shall conform to latest ASTM Designation C-478. Where manholes are precast, the base and first section shall be monolithically cast. Excavation and earthwork shall be as previously specified.

For manholes in areas subject to flooding, the Riser-Wrap® Heat-Shrink & Sealing System as manufactured by Pipeline Seal & Insulator, Inc. shall be provided. The Riser-Wrap shall be installed as per the manufactures requirements.

Concrete block shall be coated with two (2) coats of Portland cement mortar. Precast concrete or concrete block shall be sealed with two (2) coats of acceptable waterproofing tar, asphalt, polyplastic alloy, or epoxy paint.

Rubber "O" ring gaskets for joints shall conform to the requirements for rubber gaskets, as specified under the latest ASTM Designation C-443, and shall be made with round rubber gaskets and shall be installed in accordance with the manufacturer's recommendations. Joints shall be watertight.

Special details are provided on the Construction Detail Sheets for drop manholes with invert differences exceeding two feet (2') and for shallow manholes where the grade-to-invert depth is less than six feet, (6').

The channels of all manholes shall be formed to the same size and shape as the pipes they connect to, or as ordered. Changes in diameter shall be made gradually and evenly. Special care shall be taken to form channels that will provide the best hydraulic conditions for

smooth flow; steel trowel finish shall be provided. Slopes shall be provided on the benches adjacent to the channels, or as ordered.

Manholes, prior to being placed in final location, shall have cast-in place flexible rubber manhole sleeve or boot for jointing sewer pipe to the manhole. PVC pipe to manhole seal shall be by a rubber gasket conforming to latest ASTM C-443, cast integrally in manhole wall. Gasket shall be "A-lok" rubber gasket, as manufactured by A-lok Corporation, or approved equal. Connection of PVC pipe to manhole by grouting shall not be permitted.

A flexible joint shall be placed within four feet (4') of the manhole wall, as shown on the construction detail sheets.

Between manholes, pipe shall be straight and at uniform grade. Spacing shall not exceed 400 feet.

#### (1) Manhole Appurtenances

Manhole frames and covers shall be of the best quality close-drained gray iron casting conforming to the requirements of latest ASTM Designation A 48, Class 30B.

Frames and covers shall be machined to insure a non-clattering fit. Manhole frames shall be set to grade on a full bed of mortar. The castings shall be free from faults, sponginess, cracks, blowholes, and other defects affecting their strength.

Standard manhole frame and cover shall be Campbell Foundry Company Pattern No. 1203B with flow seal gasket.

Locking type frame and cover Campbell Foundry Company, Pattern No. 1487 with a flat neoprene gasket shall be provided on manholes located in easements. A watertight manhole frame and cover shall be used on manholes located within the 100 year flood boundary or in areas subject to street or surface flooding. Frame and cover shall be Pattern No. 6545 with a flat neoprene gasket as manufactured by Campbell Foundry Company. Cover shall be provided with non-penetrating pick holes.

At manholes located in easement areas frames shall be bolted to cone section of manhole.

Aluminum manhole rungs shall be extruded alloy of the step drop front design, equal to the Aluminum Company of America, Type 6061-T6. The rungs shall be installed in line vertically at twelve inch (12") vertical spacing.

Manhole rungs may also be constructed of copolymer polypropylene plastic with steel reinforcement equal to that manufactured by M.A. Industries, Inc., Peachtree City, GA.

#### (2) Painting

The exterior and interior of manholes shall be coated as shown on the construction details. . The coatings shall be applied in accordance with the manufacturer's recommendations.

#### (3) Existing Manhole Connection

Connections to existing manholes shall be made by coring an opening in the manhole wall with an approved core drilling machine. A flexible connector shall be installed in the cored opening. The connector shall be as manufactured by Link - Seal, or an approved equal.



Channels shall be chipped and roughened, and then finished with cement mortar to provide the best hydraulic conditions for smooth flow. The existing manhole shall be rehabilitated by a cleaning and applying a water proofing system. The waterproofing shall consist of two (2) coats of “Sikagard 62” epoxy coating, manufactured by Sika Corporation, USA.

#### **Section 4. Building Connections**

The PMUA's jurisdiction over sewer connections shall extend to the cleanout in any location acceptable to the PMUA. Connections from the cleanout to the building shall meet the applicable plumbing code and any maintenance and/or repair to the sewer lateral is the responsibility of the property owner.

##### **Laterals**

From the street sanitary sewer to the curb, the Applicant has the option of furnishing the following types of house connections:

SDR235 PVC pipe or

ductile iron pipe

Wye connections shall be used at the junction of the house connection and street sanitary sewer. Watertight plugs or caps shall be furnished at all dead ends. Plastic plugs will not be allowed unless mechanically fastened so as to permit infiltration/exfiltration tests.

Bends in house connection lines shall be made using standard fittings. A riser with cleanout at grade shall be used at the point terminating PMUA jurisdiction.

The Applicant shall mark the location of the end of each house connection in a suitable and approved permanent manner. Exact location and depth, referenced to a permanent marker shall be shown on as-built drawings for any temporary dead ends. Each location shall be checked by the PMUA's Engineer, and the final as-built drawings shall be submitted to the PMUA's Engineer for approval prior to final acceptance.

At locations where centerline of the house connection at the sewer main would be more than ten feet (10') below the surface, Applicant shall install deep house connection. Deep house connections shall be constructed in accordance with Standard Construction Details.

No individual house connections shall be installed into an existing PMUA owned force main.

No gravity laterals shall be connected to any PMUA force mains.

No more than one (1) individual house connection shall be allowed into an existing PMUA owned manhole.

In the event that a proposed building requires the installation of a single ejector pump system to pump sewage up to an elevation that allows a connection into an existing or proposed gravity sanitary sewer, the force main for the ejector system shall terminate into a cleanout structure located one-foot (1') behind the curb such as a conventional connection. Flow from this point will be conveyed via a four inch (4") or six inch (6") diameter lateral to the sewer main located in the street or easement.

### Disconnection of Existing Lateral

When an Applicant proposes to disconnect an existing lateral connection from the PMUA's collection system, it shall first give the PMUA written notice. The PMUA shall have a PMUA employee present to inspect the disconnection, which shall terminate one foot (1') behind the curb. For the existing lateral connections to be properly abandoned, the Applicant or his contractor shall provide a cap that renders the remaining branch connection watertight. Any future re-connection into the PMUA's collection system shall conform to the current Rules and Regulations of the PMUA.

### Cleanouts

PVC cleanout assembly shall be a minimum of Schedule 40 with solvent weld joints. Solvent cement used in PVC cleanouts shall conform to ASTM D 2564, latest addition. There shall be a transition coupling, as shown on the detail, between the SDR 35 lateral piping and the cleanout assembly. The use of a flexible adaptor for the transition coupling (Fernco) is prohibited. The cleanout plug shall be installed with non-setting pipe dope to facilitate testing and future removal of the plug.

In the event a sewer lateral and cleanout are located within an easement, the cleanout shall be located two feet (2') within the boundary of the easement and shall be provided with a monument box, Campbell pattern 4155 or approved equal.

## **Section 5. Special Structures**

Information on stream crossings or other special structures shall be submitted for approval in preliminary form, before detailed drawings are prepared, or equipment is ordered. Grease traps, sand traps or other special appurtenances may be required for special conditions. Advance approval of the New Jersey Department of Environmental Protection may be required.

### Grease Traps/Interceptors

Grease, oil and sand interceptors (grease traps/interceptors) shall be provided when, in the opinion of the PMUA, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand, or other ingredients harmful to or which result in increased operation and maintenance costs of the PMUA's sewage collection system or treatment plant facilities. When grease traps/interceptors are required by the PMUA, Applicants are required to bear additional responsibilities. Grease Traps/Interceptors must be used accordingly as required in this Section and Article 5, Section 3 of the Rules and Regulations.

The size and type of each Grease Trap/Interceptor shall be based on the expected volume and rate of discharge from each individual facility required to install such unit under these regulations. The design (size and type) of interceptors shall be in accordance with current edition of the National Plumbing Code Standards and shall be subject to approval from the PMUA.

Where applicable, as determined by PMUA, a water flow control device shall be installed along with the interceptor to ensure the capacity of the interceptor is not exceeded.

Grease Traps/Interceptors shall be installed in locations outside of the proposed facility that allow for the best operation (effectiveness) and are accessible for maintenance. Interceptors shall be located to receive only wastewater containing harmful ingredients (i.e., grease, sand, oil, etc.) and shall be positioned so that the temperature of the wastewater is

reduced to the maximum extent possible prior to discharge to the unit. No sanitary facilities shall be connected to the interceptors. Additionally, a sampling port shall be installed along the buildings lateral upstream of the downstream manhole or connection. A copy of the Operation and Maintenance manual for all grease traps/interceptors shall be submitted to the PMUA after approved by the municipality's plumbing code official.

#### Maintenance Requirements for Grease Traps/Interceptors

Grease Traps/Interceptors shall be maintained in efficient operating condition by regular removal of accumulated grease, scum, oil, or other floating substances, and solids deposited on a scheduled determined by PMUA.

Owners or operators of the premises where grease traps/interceptors are located shall clean and maintain said grease trap/interceptor system in accordance with these Rules and Regulations. As a condition to Approval, Applicant shall provide proof, upon request by the PMUA, that the grease traps/interceptors are being maintained. Furthermore, grease traps/interceptors may be inspected without notice by the PMUA not less than twice annually. All maintenance and repair records shall be posted on the premises and available at all times to PMUA personnel. In addition, the PMUA may provide educational pamphlets and/or materials to Applicants.

### **Section 6. Pumping Station(s) and Force Mains**

#### Pumping Station(s) Overview

Pumping station(s) may be of the dry well type or of the submersible pump type.

All raw sewage shall be screened before pumping. Comminutors may be approved in lieu of screens and shall be provided with acceptable by-pass.

A minimum of two (2) pumps shall be installed, each capable of handling the total peak flow for a minimum ten (10) year period. A third identical pump, or its cash equivalent as determined by the PMUA Engineer, shall be provided to the PMUA at its discretion and direction as a spare unit. If more than two pumps are used, their capacities shall be such that upon the failure of the largest pump, the remaining pumps will be capable of handling the 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 and as determined by the PMUA Engineer. Shut off valves shall be provided on suction and discharge piping, and shall be flanged or otherwise removable. Check valves shall be provided on all discharge pipes.

Dry wells shall be deep enough to maintain a suction head at starting. The minimum internal dimensions of the dry well shall be ten feet (10') 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/maintenance duties are required in enclosed areas, forced ventilation shall be provided with a minimum capacity of 30 air changes per hour as required for intermittent ventilation. The size of the wet well shall be such that maximum pump cycle is ten minutes when flow is at the average dry weather rate. The wet well must also be large enough to allow five (5) minutes to elapse between successive pump starts. The floors of the wet well shall slope at least 45 degrees toward the pump suction. The pump suction shall terminate with a 90 degree 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 acceptable cathodic protection.

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

An auxiliary source of power shall be provided for electrically driven pumps. The auxiliary power shall be diesel or natural gas operated and shall be 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 stored aboveground.

All pumping stations shall be located in areas that are not subject to flooding or shall be protected against flooding and shall be accessible by motor vehicle. Each pumping station must be on a lot or easement meeting minimum standards of applicable Municipal, County, State agencies, and the PMUA. The plans and specifications must include provisions for lawns, shrubbery, eight inch (8") thick paved drive and four inch (4") thick concrete walk. Proper drainage shall be provided on-site preventing any drainage across the access driveway that may result in ponding or freezing. The entire property must be surrounded by an eight (8) foot vinyl coated chain link fence with an entrance at least twelve feet (12') in width.

The pumping station shall be provided with an alarm system compatible with the PMUA's existing System. The performance specification for this system can be obtained from the PMUA.

Adequate light, ventilation, heat, and fresh water supply with hose outlets shall be provided for all stations. No connections between freshwater and sewage pumps or pipes are permitted. Potable water supply shall be protected by an approved backflow prevention device.

Complete repair tools and accessories, or their cash equivalent as determined by the PMUA Engineer, shall be provided with the pumping station at the PMUA's discretion and direction. In the event that the PMUA requires repair tools and accessories (as opposed to their cash equivalent), such tools and accessories shall be capable of lasting for a period of not less than fifteen (15) years and shall include, but not be limited to, the following:

- Spare pump
- Pump parts for each size and type of pump:
  - Impeller
  - Seals and gaskets
  - Bearings
  - Wear rings
  - Hoisting cable
- Grinder parts
  - Motor
  - Cutters
  - Drive coupling and two inserts
- Sliding screen (used when grinder out for service)
- Level controller
- Fuses and indicator lights

Force main velocities shall be two feet per second (2 fps) minimum 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 acceptable cleanout manholes, if necessary

Detailed operational costs of the pumping station must be submitted with the Applicant's Engineer's estimate.

The PMUA Engineer's review shall be limited to establishing that the design of the pumping station/force main submitted by the Applicant for review conforms to the minimum requirements of the PMUA as embodied in these Rules and Regulations. Problems encountered by the Applicant during the construction of any approved pumping station/force main shall be addressed by the Applicant's Engineer with any proposed modifications submitted to the PMUA Engineer for review and approval prior to their implementation.

#### Pumping Station Design Standards

Additional pumping station and force main design standards and data required to be submitted to the PMUA for review are provided below:

##### (a) General

1) Provide pump design report in accordance with NJDEP Statutes and/or 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 (TDH)

System curve

Pump selection

Wet well sizing

Cycle time

Proposed on/off levels

Anti-flotation calculations

Structural calculations for manhole top slab

Odor control design

2) Provide soils information/report to include a full geotechnical report and analysis, foundation recommendations, expected ground water conditions, water table depths and seasonal high water depths.

3) Provide required OSHA safety and warning signage.

4) Pumping stations to be taken over and operated by the PMUA are to be on lot(s) owned by PMUA (fee simple title).

5) Prior to PMUA assuming responsibility for operation and maintenance, the following must be completed or supplied:

- Administrative requirements as outlined in PMUA Rules and Regulations
- Pumping station must operate successfully during the ninety (90) day trial period
- Four (4) copies of O&M Manual (see outline) and as-builts
- Testing of all equipment in presence of PMUA Engineer
- Instruction for operation and maintenance of all equipment in presence of PMUA personnel. Four (4) hours minimum training required. Scheduling of instruction shall be coordinated through the PMUA Engineer at least five (5) days prior to scheduled training date. Training shall not be performed the same day as the start-up and testing of the station. Applicant is responsible for providing a schedule of training at least 48 hours in advance.
- Certification of the Backflow preventor which is to occur during the 90-day trial operation by the PMUA. The Applicant will be responsible for all costs related to this certification.
- Spare units, or their cash equivalent as determined by the PMUA Engineer.

(b) Mechanical

1) Pumps may be dry pit or submersible and shall be capable of passing a 3 inch (3") solid. Impellers shall be epoxy coated.

2) Valve pit required to house force main discharge valves; provide appropriate drainage of pit. The valve pit shall be sufficiently sized to provide access for routine maintenance.

3) Gate valves shall be resilient seat type.

4) Provide pumping station by-pass connection in the manhole or in valve pit. Connection to include gate valve and blind flange.

5) Provide pressure gauge on pump discharge.

6) For pumping stations with a capacity greater than 250 GPM (Gallons per minute) - a magnetic flow meter with isolation valves shall be provided (Fischer and Porter or approved equal).

7) Screening shall be by:

- Stainless Steel trash basket up to 249 GPM pumps.
- Comminutor over 250 GPM pumps.

8) Where odor control is required, provide for Bioxide injection at the wet well.

9) Brackets, chains, etc., in wet well shall be stainless steel.

10) Provide davit where required for equipment removal at wet well. Length of wire rope shall be sufficiently sized to lift equipment at maximum reach of davit.

11) Provide hoist at wet well and comminutor pit for personnel retrieval (DBI SALA or equal Model 3400108 winch with 8002003 davit arm, 8004032 fixed base).

12) Provide "ladder-up" device or grab bars for all underground utility structures. All equipment shall be shown to scale on detail on design drawings. Verify working positions of cable or rope by manufacturer.

(c) Building

- 1) A building for generator and controls may be required.
- 2) Exterior finishes to be maintenance-free, i.e., vinyl siding, brick or decorative concrete block. Wrap any exposed wood in vinyl covered aluminum.
- 3) Roof shall have a minimum of 4:12 slope and utilize metal roofing shingles.
- 4) Concrete aprons required at all doors.
- 5) Potable water to site is required.
- 6) Provide floor drains where necessary.
- 7) When a Bioxide storage tank is provided indoors, the proper spill containment shall be provided around the tank with adequate floor drains. Aluminum grating shall be utilized in the containment area to allow the top of the containment curb to be flush with the top of grating.
- 8) A Backflow Preventor must be provided and certified acceptable by the local water company. It shall be installed according to the latest National Plumbing Code Standards. Backflow Preventor must be certified operational during the 90-day trial period of operation for the pumping station.
- 9) Provide non freeze hose bib or yard hydrant for washdown.
- 10) Provide architectural drawings, including: Floor plan, building elevations, building and/or wall sections; door, louver, lintel schedules; materials, including manufacturer and model number; interior water piping; dimensions and specifications.

(d) Electrical/Ventilation

- 1) Generator shall be housed in building. Generator shall be installed in a dedicated room acoustically treated as necessary to reduce noise in any other room below 80 dBA.
- 2) "Critical" grade muffler required, including exercise timer, incoming volt meter and ammeter.

The installed emergency generator shall be designed with all necessary appurtenances to achieve federal, state, county and local regulatory agency requirements ordinances and standards associated emissions, measured at the exhaust stack.

The installed emergency generator and appurtenant systems shall conform to all federal, state (N.J.A.C. 7:29), county and local regulatory agency requirements, ordinances and standards for noise, as measured at the pumping station property line with the generator operational.

Generator shall be sized to start one pump while all others are running. Use of a day tank for fuel delivery is not acceptable.

Maximum 20 % voltage dip

- 3) Storage tanks shall have secondary containment and shall be installed aboveground.
- 4) Calculations required:
  - Generator sizing, fuel tank sizing, if applicable
  - Louver sizing
  - Fan sizing
  - Duct sizing

Heater sizing

Service size

Lighting analysis

Fault Current Analysis

5) A telemetry system utilizing compatible with existing plant system and satisfactory to the PMUA Engineer. Specifications are available from the PMUA.

6) Analog level sensor (pressure transducer) with high and low level alarms.

7) Single float emergency backup system with pump-down timer.

8) Submersible pumps shall be removable without having to break cable seal.

9) Site lighting on a pole fixture or on a building.

10) Security alarm for all doors.

11) Incandescent lighting shall not be used.

12) Site lighting is required (switchable with override timer and photocell).

13) Buildings shall be heated.

14) Locks shall be keyed as required by PMUA.

15) Electric services shall be 3-phase for stations with pumps larger than 3/4 HP.

16) Conduit in classified areas must be PVC coated RMC.

17) Transfer switch must have overlapping switched neutral.

18) Drawings to be provided:

One line diagram

Equipment layout (to scale)

Panel schedules

Equipment lists

Conduit layout

Alarm Riser Diagram

19) Provide non-resettable elapsed time meters for pumps and comminutors.

20) The following Alarms/Status indications are required to be reported from the pump station to the PMUA (if applicable to design of the pump station):

- Generator Failure
- Normal Power Failure
- Pump Failure (separate alarm for each pump)
- Wetwell High Level
- Wetwell Low Level
- Security (Illegal Entry)
- Station Fire/High Temperature
- Common Alarm
- Comminutor Failure
- Control System Failure
- Flooded Pump Room



Note: Provisions shall be made to the generator such that the switch in the “off” position will generate a Generator Failure alarm.

(e) Site

- 1) Pumping station property shall be surrounded with 8-foot (8') high vinyl coated chain link fence with an entrance at least twelve feet (12') in width.
- 2) Detailed grading and all utilities on pumping station lot shall be shown on the plans.
- 3) Unpaved areas to one foot outside fence shall be covered with six inches (6") of bluestone over weed control fabric.
- 4) Access drive shall be paved with six inch (6") DGA, four (4") base course and two-inch (2") surface course.
- 5) Jet truck access to the station shall be provided.
- 6) Chambers to be set a minimum of six inch (6") above grade.
- 7) Pumping station site shall be landscaped and screened.
- 8) All drawings and details to be submitted to scale.
- 9) Property must be conveyed to the PMUA if the PMUA is to take over and operate the pump station.

(f) Force Main

- 1) DIP, PVC or HDPE shall be used for force mains.
- 2) Surface location markers and tracer wire are required. Tracer wire shall be insulated 10 gauge, 600 volt solid copper wire as manufactured by Tracer Wire Products, Inc. of Fresno, CA or approved equal.
- 3) When sanitary sewer force mains are installed within an easement or off the side of a roadway, its location shall be marked with flexible markers as manufactured by Flex Stake, Fort Myers, Florida or approved equal. The utility markers shall be provided in the color yellow and with labels designating the underground utility as a pressurized sewer or sanitary force main.
- 4) No more than one force main shall be connected to another force main.
- 5) No gravity laterals shall be connected to any PMUA force mains.
- 6) Owner shall be responsible for all maintenance and repairs associated with private pump station force mains. Owner shall also be responsible for required mark-outs and permits, including but not limited to road opening permits.
- 7) Air release or combination air vacuum release valves shall be provided at high points. Provide a minimum of one foot (1') clearance from the top of the air release valve to roof of the slab.
- 8) Cleanout manholes shall be provided at low points.
- 9) When designing the pump station and its force main, use a “C” factor of 135 for PVC pipe and 110 for DIP. A “C” factor of 135 shall be used for force mains designed with HDPE pipe.
- 10) All force mains shall be constructed as per standard specifications the Rules and Regulations.

(g) Operation and Maintenance (O&M) Manual

The following is to serve as a typical Table of Contents for a PMUA Pumping Station(s) O&M Manual. It represents the minimal items to be included in the manual and is not to serve as an exhaustive list. Similar information for any equipment installed in the pumping station(s) other than that listed is also required.

## 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/equipment, indicating manufacture name, model, capacity/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/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 an as-built one line diagram.
  - 4.0 Complete set of approved shop drawings
  - 5.0 List of local vendors for equipment supplied
- (h) All information must be contained within three (3) ring binder(s).

## **Article 6 Standards for Acceptable Wastes**

### **Section 1. Prohibited Waste**

A. No person shall discharge or cause to be discharged into the Sewer System any storm water, surface water, spring water, water from swimming pools, ground water, roof runoff, subsurface drainage, building foundation drainage, uncontaminated cooling water or unpolluted industrial process wastes, cellar drainage or drainage from roof leader connections or waste from floor drains from automotive or other facilities.

B. No person shall discharge or cause to be discharged into the Sewer System any steam exhaust, boiler, blow-off, sediment, drip, or any pipe carrying or constructed to carry hot water, acid, germicide, grease, gasoline, naphtha, benzene, fuel, oil or any other inflammable or explosive liquids, solids or gas substance detrimental to the sewer System.

C. Except as otherwise provided herein, no person shall discharge or cause to be discharged into the Sewer System any effluent having any of the following characteristics:

(1) Wastes containing liquids, solids or gases which by reason of their nature or quality may cause fire, explosion, or be in any other way injurious to persons, property or the structures of the Sewer System.

(2) Wastes having a temperature in excess of 104° F. or less than 32° F.

(3) Wastes having a pH lower than 5.0 or higher than 9.0, or having any corrosive property capable of causing damage or hazards to structures, equipment, or personnel of the Sewer System. The PMUA may require any Person discharging industrial wastes into the Sewage Collection System to install and maintain, at his own expense, in a manner approved by the PMUA, a suitable device to measure and record continuously the pH of the industrial wastes so discharged.

(4) Wastes containing any noxious or malodorous gas or substance which either singly or by interaction with other wastewater, in the opinion of the PMUA, is likely to create a public nuisance or hazard to life or property or to prevent entry into sewerage structures for their maintenance and repair.

(5) Wastes containing ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, hair, chemical or paint residues, greases, lime slurry or viscous material of such character or in such quantity that, in the opinion of the PMUA, may cause an obstruction to the flow in the Sewer System or otherwise interfere with the proper operation of the Sewer System. The maximum permissible concentration may vary, depending upon the size and flow of particular parts of the system.

(6) Wastes containing insoluble, non-flocculent substances having a specific gravity in excess of 2.65 ppm.

(7) Wastes containing soluble substances in such concentrations as to cause the specific gravity of the waste to be greater than 1.1 ppm.

(8) Wastes containing more than 30 ppm by weight of fat, tar, oil or grease.

(9) Wastes containing more than 10 ppm of any of the following gases: hydrogen sulfide, sulfur dioxide, nitrous oxide, or any of the halogens.

(10) Wastes containing gases or vapors, either free or occluded, in concentrations toxic or dangerous to humans or animals.

(11) Wastes containing toxic substances in quantities sufficient to interfere with the biochemical processes of sewage treatment works or that will pass through the sewage treatment works and exceed state, federal or interstate requirements for the discharge of effluent into the receiving stream.

- (12) Wastes containing any toxic radioactive isotopes without a special permit.
- (13) Wastes containing BOD in excess of 250 mg/l.
- (14) Wastes containing TSS in excess of 300 mg/l.
- (15) Reserved. Waste containing any of the following substances in solution or in suspension, in concentrations exceeding those shown in the following table:

## **Section 2. Pre Treatment Requirements for Industrial Wastes**

To comply with the objectives of the Clean Water Act, this Section sets forth uniform requirements for Users of Publicly Owned Treatment Works for the PMUA and enables the Authority to comply with all applicable State and Federal laws, including the Clean Water Act (33 United States Code {U.S.C.} section 1251 et seq.) and the General Pre-Treatment Regulations (Title 40 of the Code of Federal Regulations {CFR} Part 403.

A. Where the PMUA deems necessary, the owner of any property discharging effluent into the Sewer System shall install suitable pre-treatment facilities acceptable to and approved by the PMUA.

(1) Prior to construction of any pre-treatment facility, plans, specifications and any other pertinent information relating to proposed facility shall be submitted for approval of the PMUA. Construction of any such facility shall not be commenced until after approval thereof, in writing, by the PMUA.

(2) Any such pre-treatment facility shall continuously be maintained, at the expense of the owner, in satisfactory operating condition; and the PMUA shall have access to any such facility at reasonable times for purposes of inspection and testing.

B. Nothing contained in this Section shall be construed as prohibiting any special agreement or arrangement between the PMUA and any person whereby effluent of unusual strength or character may be admitted into the Sewage Collection System by the PMUA, either before or after preliminary treatment.

C. Any person discharging industrial wastes to the Sewage Collection System having a BOD in excess of 250 ppm shall pay a strength of waste surcharge in an amount equal to the product of the actual volume of wastes in thousand gallons per quarterly billing period, discharged to the Sewage Collection System and the "BOD surcharge" rate which shall be established by the PMUA by Resolution.

D. Any person discharging industrial wastes to the Sewage Collection System having a suspended solids concentration in excess of 300 ppm shall pay strength of waste surcharge in an amount equal to the product of the actual volume of wastes in thousand gallons per billing period, discharged to the Sewage Collection System and the "suspended solids surcharge" rate which shall be established by the PMUA by Resolution.

E. In the case of industrial wastes containing substances or materials which can be treated by the PMUA only with extra care and costs and where neither surcharge stated above shall apply, the PMUA reserves the right to accept such industrial wastes only after a study of the same has been made and a formula for surcharge and regulations applicable to such discharge have been made.

F. All surcharges provided for in this Section will be in addition to the user rates and charges otherwise provided for in these Rules and Regulations.

G. The strength of any industrial wastes shall be determined monthly, or more or less frequently, at the PMUA's sole discretion, by samples taken at a sampling point agreed to by the PMUA and the person discharging the wastes. The frequency and duration of the sampling period shall be such as, in the opinion of the PMUA, will permit a reasonably reliable determination of the average composition of the said wastes. Samples shall be collected by a representative of the PMUA in proportion to the flow of waste and composited for analysis in accordance with Standard Methods. Except as herein provided, the strength of the waste as found by analysis shall be used for establishing any applicable surcharge or surcharges. However, the PMUA, if it so elects, may accept the results of routine sampling and analysis by the person discharging the wastes in lieu of making its own samplings and analysis.

### **Section 3. Admission of Industrial Wastes into the Sewage Collection System**

A. No person shall discharge or cause to be discharged into the Sewage Collection System any industrial wastes except upon application to the PMUA and upon receipt of a written permit therefore from the PMUA.

B. In the event that any industry contemplates operation within the area served by the PMUA, the industry must seek approval from the Authority. Application shall be made directly to the Authority, in writing, for the discharge of wastes other than domestic sewage into the system. The application shall give in detail the type of waste to be discharged and the proposed methods of pre-treatment, if needed. The Applicant shall state the nature and the quantity of wastes and submit bacteriological and chemical analyses for study by the Consulting Engineer of the Authority. The Authority's Engineer will review such application and give his written opinion as to whether the information submitted with the application is adequate or not. If the wastes to be discharged cannot meet the requirements and conditions outlined in these Rules and Regulations, the pre-treatment of such wastes will be necessary.

C. When required by the PMUA, any person who proposes to discharge industrial wastes into the Sewage Collection System shall construct and thereafter properly maintain, at his own expense, a suitable control manhole and such other devices as may be approved by the PMUA to facilitate observation, measurement and sampling of industrial wastes discharged to the Sewage Collection System. Any such control manhole shall be constructed at an accessible, safe, suitable and satisfactory location and in accordance with plans approved by the PMUA prior to commencement of construction.

D. Any industrial establishment discharging sanitary sewage and/or industrial wastes into the Sewage Collection System shall notify the PMUA, in writing, at least ten (10) days prior to any change in the method of operation which will alter the characteristics and/or volumes of wastes being discharged into the Sewage Collection System.

E. When required by the PMUA, grease, oil and/or sand interceptors shall be provided by the owner of any food service establishment, commercial, institutional and/or industrial establishment and any grease haulers doing business within the designated sewer service area of Plumsted Township, for the proper handling of liquid wastes containing grease in excessive amounts or any inflammable wastes, sand or other harmful constituents as follows:

(1) The grease trap or interceptor shall be of a type and capacity in conformance with the New Jersey Uniform Construction Code and shall include treatment of microorganisms. All plans submitted for approval shall be signed by a licensed engineer.

(2) For existing facilities, the grease trap or interceptor can be maintained and operated provided they are found to be in good operating condition. The PMUA may require an existing facility to install a new grease interceptor or trap if the facility does not have a grease trap or interceptor, if the facility is remodelled which requires a plumbing permit, if the facility is sold or otherwise goes through a change of ownership; if the facility is contributing grease in quantities sufficient to cause stoppages or that will require increased maintenance on the WWTP, if the facility has an irreparable or defective grease trap or the facility does not have plumbing connections to a grease interceptor or trap in compliance with plumbing codes.

(3) Each facility shall maintain adequate maintenance records of all grease traps or interceptors. Maintenance information shall include, but not be limited to, date and time of the maintenance, estimated gallonage removed, any defects of or repairs made, changes in operation or wastewater characteristics, receipts, invoices or other records of service or repairs as well as any other relevant information. The record book shall be available for review upon request.

(4) Each facility shall be responsible for pumping, cleaning and maintenance of its grease trap or interceptor and shall utilize a grease hauler who is registered by PMUA and, in addition, is registered, permitted or licensed to do so by any other federal, state or local authority. The grease hauler will be required to obtain an initial registration with the PMUA within sixty (60) days of the enactment of these Rules and Regulations and then to register with the PMUA every three (3) years thereafter. Enforcement against a grease hauler found to be in non-compliance with this Section shall be corrected within ten (10) calendar days of receipt of the NOV. The grease hauler will be required to describe how the violation occurred, verification that the violation has been corrected and assurance that steps will be taken to prevent re-occurrence of the violation. Registration revocation may result or the registration may be modified, suspended or revoked if it is found the grease hauler provided any falsification of any information, there are repeated violations or otherwise fails to comply with this section.

(5) Pumping services shall include the complete removal of all contents, including floating material, grey water, bottom sludge and solids from the interceptor. In the case of an interceptor, grey water may be it shall be the responsibility of the grease hauler to inspect the grease trap or interceptor during, or immediately after the pumping procedure to ensure the interceptor or trap is clean and all fittings and fixtures inside the interceptor are in working condition and functioning properly. If the interceptor is not working properly, the grease hauler shall notify the owner and the PMUA in writing and include a sufficient description of the malfunction.

(6) Each facility shall have its grease trap or interceptor pumped when one of the following conditions exist: (1) when the settled solid layer exceeds the invert of the outlet pipe, or (2) when the total volume of captured grease and solid material displaces more than twenty-five (25) percent of the capacity of the interceptor, or (3) when the interceptor is not retaining or capturing oils and greases.

(7) Grease traps and interceptors shall be inspected by a registered inspector as necessary to assure compliance with this section.

(8) Wastes removed from a grease trap or interceptor shall be disposed at a facility permitted and licensed to receive such wastes and shall not be returned to any grease trap or interceptor unless in the case of a grease interceptor where the use of a two compartment truck where the compartments are fully separate with their own valve system so there is no

cross contamination between the grey water with the solids and the grease the grey water may be re – introduced provided the grease concentrations do not exceed 400 mg/l.

(9) Alternative grease removal devices or technologies or additives used for the purpose of grease reductions, including the use of microorganisms, are permitted provided they are approved by the Township. Approval by the Township may be given subject to a demonstration the alternative technology or additive will work and advance, written permission is obtained from the Township. Permission to use alternate devices or technologies or additives may be withdrawn by the Township at any time.

(10) Applicants shall pay a fee to the PMUA for each Grease Trap/Interceptor based on its size, type, and design as set forth in the PMUA Rate Schedule.

(11) Where it is determined a grease trap or interceptor is not working and is in need of repair, the Authority will provide a Notice of Violation (NOV) to the Owner stating the nature of the violation. The Owner shall have seven (7) days to comply with the NOV. If the deficiencies were noted in a previous inspection and have been corrected, there shall be no charge for the re-inspection. If the deficiencies have not been corrected, a re-inspection fee shall be charged. A violation related to the lack of proper cleaning and maintenance of grease trap shall be completed with twenty four (24) hours of the NOV. Repairs and replacement of a grease trap or interceptor shall be done in a reasonable time of the Owner's receipt of the NOV and as determined by the Township Inspector. Any costs for sampling fees the Township Inspector deems necessary for the protection of the treatment system shall be charged to the facility. If the facility is non-compliant, Township may pursue one or more of the following sanctions: (1) pump the grease interceptor and/or trap and seek reimbursement for the costs from the Owner of the facility; (2) assess further inspection fees as appropriate; (3) terminate wastewater service to the facility; or (4) refer the matter to any other enforcement agencies or seek other remedies as deemed necessary to enforce compliance.

F. The PMUA, in its sole discretion, may require industrial establishments having large variations in rates of waste discharge to install suitable regulating devices for equalizing waste flows to the Sewage Collection System.

G. The PMUA reserves the right to refuse connection to the Sewage Collection System, or to compel discontinuance of the use of the Sewage Collection System, for deleterious industrial wastes, or to require pre-treatment and equalization of flow of such wastes in order to prevent harmful or adverse effect upon the Sewer System. The design, construction and operation of such pre-treatment and flow equalization facilities shall be made at the sole expense of the person discharging said wastes and subject to the approval of the PMUA.

H. In general, any industrial wastes that may cause any of the following effects will be considered harmful to the Sewer System:

(1) Chemical reaction either directly or indirectly with the materials of construction of the Sewer System in such a manner as to impair the strength or durability of any structures.

(2) Mechanical action that will destroy any sewerage structures.

(3) Restriction of the hydraulic capacity of any sewerage structures.

(4) Restriction of the normal inspection or maintenance of sewerage structures.

(5) Danger to public health and safety.

(6) Obnoxious conditions harmful to public interest.

I. Any person discharging wastewater to the Sewage Collection System shall:

(1) Permit the employees or authorized representatives of the PMUA to enter upon the property at reasonable times for the purpose of making such tests of the wastewater and

making such inspections of any facility discharging said wastewater as the PMUA may deem necessary or appropriate.

(2) Make analyses of the discharge or discharges to the Sewage Collection

System at intervals required by the PMUA to ensure that the restrictions on the nature or composition of the discharge is met; furnish to the PMUA the results of such tests; promptly investigate all complaints made by the PMUA as to the nature or composition of the wastes discharged; and take steps promptly to exclude, or reduce to acceptable limits, waste which may overload or adversely affect the proper and efficient operation of the Sewer System or otherwise violate the limits imposed by the PMUA.

All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in these standards shall be determined in accordance with the latest edition of "Standard Method for the Examination of Water and Wastewater," published by the American Public Health Association, or as approved by NJDEP and USEPA, and shall be determined at the control meter chamber provided, or upon suitable samples taken at said meter chamber. In the event that no special meter chamber has been required, the control manhole shall be considered to the nearest downstream manhole in the PMUA's sanitary sewer to the point at which the user's sewer is connected.

The PMUA and the agents of Ocean County, the NJDEP and USEPA shall have the right to enter the premises of all industrial, commercial or residential users for inspection and observation of on-site waste treatment facilities and the measuring, testing and the collection of samples from any component thereof, as well as the inspection of residential plumbing systems.

(3) Be solely responsible for any damages which occur to the Sewer System that is attributable to wastes discharged by said person in excess of the limits imposed by the PMUA or provided by separate agreement with the PMUA.

J. The PMUA reserves the right to discontinue service to persons discharging wastewater to the Sewer System upon the happening of any one or more of the following conditions:

(1) Upon notice of a violation of any federal, state, county or municipal law, rule, regulation or ordinance relating to the discharge of effluent attributable to the effluent of said person. The PMUA shall notify the person of discontinuance of service based upon such violation.

(2) If the effluent discharged exceeds the concentration limitations imposed by the PMUA.

(3) If the effluent discharged causes any damage whatsoever to the Sewer System.

(4) Service may be resumed upon the correction of any such deficiency.

#### **Section 4. Measuring Volume of Effluent.**

This Section shall be applicable whenever it is necessary under these Rules and Regulations for the PMUA to calculate the volume of effluent discharged into the Sewage Collection System.

A. The person discharging effluent shall install a meter or other measuring device approved by the PMUA on the connection to the Sewage Collection System. The readings from such meter or measuring device shall be used as the measure of discharge of effluent in computing surcharges.



B. Meters or other measuring devices (i) shall be furnished and installed, in accordance with specifications of the PMUA, by the owner of the improved property at his expense, (ii) shall be under the control of the PMUA and (iii) may be calibrated, tested, inspected or repaired by the PMUA whenever the PMUA deems it necessary or convenient to do so. The owner of the improved property shall be responsible for the maintenance and safekeeping of any meter or other measuring device, and all repairs thereto shall be made at the expense of the owner, regardless of the reason therefore.

C. The PMUA shall be responsible for reading all meters or other measuring devices, and the same shall be accessible to the PMUA at all reasonable times.

## **Section 5. Time and Method of Payment.**

A. Sewer rates or charges imposed by this Section shall be payable quarterly. Sewer user rates or charges shall cover services to be furnished during each quarter immediately following the billing date.

B. Sewer rates or charges shall be due and payable within ten (10) calendar days after the billing date. If payment is not received by the due date, the PMUA may add an additional sum of five percent (5%) to the bill. Whenever service to any property shall begin after the first day or shall terminate before the last day of any billing period, sewer user rates or charges for such period may be prorated equitably, if appropriate, for that portion of the billing period during which such property was served by the Sewer System.

C. Every owner of a property connected to the Sewage Collection System initially shall provide the PMUA with and thereafter shall keep the PMUA advised of his/her correct address. Failure of any person to receive quarterly bills for sewer rates or charges shall not be considered an excuse for non-payment, nor shall such failure result in an extension of the period of time during which the bill shall be payable.

## **Section 6. Violations and Penalties**

### **A. Violations/Fines**

In the event of any violation of the Rules and Regulations, or of any improper or unauthorized use of any portion of the PMUA sewer system by any user, the following penalties may be imposed upon the user in the discretion of the PMUA:

1) Discontinuation of sewer service at the property where the violation occurs, until the violation is corrected;

2) Violation of the Rules and Regulations, excepting grease, oil, and sand interceptor sections:

A monetary penalty of up to fifty dollars (\$50.00) per day for each violation or improper or unauthorized use as established by Municipal Ordinance. Such violation shall be enforceable in the Municipal Court of Plumsted Township.

3) Violations of grease, oil, and sand interceptor sections of the Rules and Regulations:

Pursuant to the Rules and Regulations, grease, oil and sand interceptors must be installed as deemed necessary by the PMUA. The release of grease or oil into the system in amount exceeding 100 mg/l shall result in the following monetary penalties:

101-200 mg/l = \$100 per day

201-300 mg/l = \$200 per day

301-400 mg/l = \$300 per day

401-500 mg/l = \$400 per day

501-600 mg/l = \$500 per day

Fines shall increase at the rate of \$100 per day for each additional 100 mg/l.

Pursuant to the Rules and Regulations, grease traps/interceptors must be maintained on a schedule to be determined by the PMUA, and records of maintenance must be kept by the user. Failure to perform maintenance or to keep maintenance records, or falsification of maintenance records shall be subject to a monetary penalty of up to \$100.00 per violation. In the case of a continuing violation, each scheduled maintenance which is not performed, or each incident of falsification, shall be deemed a separate violation.

Pursuant to the Rules and Regulations, a grease trap/interceptor must be installed as deemed necessary by the PMUA and National Plumbing Code. A violation of this provision shall be subject to a monetary penalty of up to \$200.00 per violation, in addition to any applicable fines.

All premises in which a grease trap/interceptor is located, or in which, in the opinion of the PMUA, a grease trap/interceptor should be installed, shall be available for inspection by the PMUA or its designated agent. A refusal to permit inspection of said premises by the owner or tenant of the premises shall be subject to a monetary penalty of up to \$200.00 per violation. Each such refusal shall be deemed a separate violation.

In the case of continuing violation, each day of violation shall be deemed a separate violation. In the case of a violation involving more than one property, each property involved shall be deemed and separate violation.

The penalties imposed in this section shall be cumulative to the penalties described in other sections of these Rules and Regulations and to the other remedies afforded to the PMUA by statute.

#### B. Payment of Fines

1) All fines shall be paid within fifteen (15) days from the date that the Owner is notified in writing of the violations charged and the fine to be imposed. In the event that any person wishes to contest the violation or the fine imposed, the person aggrieved must file with the PMUA within fifteen (15) days of receipt of notification of the violation and fine, a written notice that the violation and fine shall be contested. A hearing shall thereafter be scheduled before the PMUA at which time the Commissioners or its designee as well as the person aggrieved or its attorney, may present evidence regarding either the violation or the fine imposed. The fine, if any, imposed by the PMUA after the hearing shall be paid within fifteen (15) days after the person aggrieved receives written notice of the decision of the

PMUA.

2) In the event that the fine is not paid as required under these Rules and Regulations, the PMUA shall have the discretion to terminate all sewer services to the user and to declare all agreements or contracts with the user null and void and of no force and effect.

## **Section 7. Revisions**

A. The Rules and Regulations set forth shall be reviewed by July 1<sup>st</sup> of each year and may be revised, amended or supplemented from time to time with approval by the Commissioners. Before enactment of any such changes, the PMUA shall give due notice to each industrial user allowing sufficient time for the users to express their views on the proposed changes.

B. Title II of the Federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. 1251, does provide for:

(1) Consistence with requirements under National Pollutant Discharge Elimination System Permit treatment standards, pre-treatment for industrial wastes, etc.

It is expressly intended for PMUA users to meet all USEPA Grant requirements as set forth in the aforesaid Act.

## **Article 7 Construction Requirements**

The PMUA or its authorized representative will make an inspection of all work. No construction shall be undertaken without notice of at least three (3) working days to the PMUA Engineer, and without prior approval of the drawings and specifications and prior satisfaction of the requirements in these Rules and Regulations. Work which is found faulty shall be removed and properly replaced on the orders of the PMUA Engineer. The PMUA Engineer may stop the work if it is not being properly performed. Costs of inspection and connection shall be charged as required by the Rules and Regulations of the PMUA.

### **A. Pre-Construction Conference**

After Application approval and when all Application requirements and conditions are complete, all Applicants shall attend, prior to the start of construction, a pre-construction conference with the PMUA. Each and every Applicant shall demonstrate to the satisfaction of the PMUA Engineer and PMUA Attorney that it has satisfied all approval requirements and conditions as described in Article 2, Section 4.

### **B. Permits and Fees**

The Applicant, at its own cost and expense, shall obtain all necessary permits for performing the work. All fees and charges of the Township and the PMUA shall be paid in accordance with the existing Municipal Ordinance and the PMUA Rules and Regulations. No work may be started unless all required fees have been paid, and performance guarantees have been submitted, and approved, and all required permits (Federal, State, County, and Municipal) obtained and copies provided to the PMUA.

For NJDOT Road Opening/Utility Permits, the Applicant and/or his Contractor shall pay all appropriate fees as required in order to obtain said permits. The form shall be executed with PMUA as the Applicant, however, the Applicant and/or his Contractor shall assume full and total liability/responsibility for compliance with any and all provisions of said Permit, including the five (5) year Maintenance Bond required by State law (as opposed to the two (2) year bond required by PMUA).

### **C. Shop Drawings**

Prior to construction, each and every Applicant shall submit shop drawings for all material to be installed during construction. The PMUA Engineer must approve of all shop drawings before construction is to commence. Construction specifications and details identifying proper materials shall be submitted by the Applicant to the PMUA during the Application process.

### **D. Record Drawings**

Record Drawings or "As-builts" plans as required herein shall be submitted to the PMUA after completion of the work and prior to the connection of the first ESU and the release of the Performance Guarantee; said as-built plan must have the approval of the PMUA Engineer and shall contain all information as approved by the PMUA Engineer. The Applicant shall submit to the PMUA one (1) digital and two (2) paper copies. The approved as-built drawing shall also be provided on diskette or compact disc in AutoCAD .DWG or DXF format.

#### **(1) Geographic Information Systems (GIS) Requirement**

In addition to providing sanitary sewer as-built information in AutoCAD format, the PMUA will require that all sanitary sewers including, but not limited to, manholes, sewer

mains, sewer laterals, cleanouts, pumping station(s), force mains, air release manholes, cleanout manholes, and flow meters be located by Global Positioning System (GPS) device with sub-meter accuracy and collected data imported into a Geographic Information System (GIS) program equal to ArcView GIS Version 9.1 or greater. Either geodatabase format or shape files are acceptable file formats. All relevant information regarding the sanitary sewer installation and accessories such as elevations (MH rim, pipe invert, pipe depth, etc.), pipe type, pipe diameter, slope, shall be included in the database structure of the GIS file.

## (2) Force Mains

The Applicant shall provide the PMUA with accurate as-built drawings of any force mains installed. To achieve the most accurate location of the force main, the PMUA will require the following process in preparing and finalizing as-built drawings for force mains:

After construction, the Applicant that installed the force main shall forward to the PMUA the record information prepared by the Applicant's engineer for the preparation of as-built drawings.

Once the as-built drawings are prepared, the Applicant (at its own expense) shall hire a third party to verify the location of the force main as shown on the as-built drawings utilizing the tracer wire and, if necessary, ground penetrating radar or similar technologies. This verification shall be performed in the presence of a representative of both the PMUA and the PMUA Engineer's office.

The Applicant shall provide the PMUA with a certification that the as-built drawing of the force main is accurate.

## **Article 8 Acceptance of New Sanitary Sewer System by the Authority**

### **A. General**

Use of a sewerage system may not be made until the Authority has approved the completed sewerage facilities, and the operation permit has been received from the N.J. Department of Environmental Protection. Where the applicant connects to an existing sewer system, the Authority may approve portions of the sewer system. If the applicant uses or permits others to use portions of the sewer system by occupancy of buildings or otherwise before the Authority approves such use, the applicant shall be charged at a rate of \$.020 per gallon for all such illegal flow, based on quantity of flow as determined by the Authority.

### **B. Approval of Completed Sewerage System**

Approval of completed sewerage system shall be granted only after:

(1) Completion of all proposed work in accordance with the approved application, the construction permit, and the rules and regulations to the satisfaction of the Authority.

(2) The applicant gives the Authority title to all lands, easements, sewer structures and appurtenances.

The applicant posts a Maintenance bond in the form approved by the Authority in accordance with the bonding requirements of the New Jersey Municipal Land Use Law.

(3) The applicant pays the permissive use fees, if applicable

(4) The applicant submits satisfactory as-built drawings

(5) The applicant must perform prior to release of the Maintenance Bond, an inspection of the interior of sewers via a TV camera pulled through the line. A CD, or DVD of the inspection to be provided to PMUA for its record

(6) The applicant submits to the Authority written approval of all other agencies, authorities, etc. which must be obtained by the applicant.

(7) All items on the following checklist shall be submitted to the Authority for review:

- i. Deed.
- ii. A copy of the filed subdivision or site plan map
- iii. Easements for all lines on property (private), together with subdivision maps showing easement thereon.
- iv. Metes and bounds description
- v. All warranties from manufacturers of equipment
- vi. Title policies for the fee titles and easements
- vii. All surveys for plant site and easements.
- viii. Bill of Sale for all equipment and lines
- ix. Releases from the Following: materialism, suppliers, contractors, labourers, lending institutions.
- x. Affidavits of Title for land, easements and equipment's and recitation thereon that everything conveyed to the authority been paid for in full.
- xi. Assignment to the authority for all performance and maintenance bonds
- xii. As-built plans

- xiii. Maintenance Bond for developer to Authority
- xiv. All of the above to be conveyed to the authority free and clear of all liens, encumbrances, debts and claims.
- xv. Corporate resolution authorizing conveyance as above.

## **Article 9 Service Charge and Connection Charge (ESU Schedule)**

It is the policy of the PMUA to charge sewer service and connection fees for connection to its system following the rates set forth in the current PMUA rate schedule. Every Property Owner connected to the PMUA system shall be required to pay a service charge in accordance with the current user rates and a connection charge in accordance with the current ESU Schedule at the current rate. The PMUA Engineer shall attribute the appropriate amount of ESUs to each Application. Unless otherwise waived, the connection charge shall be paid by the Property Owner to the PMUA before the issuance of a Building Permit and/or Certificate of Occupancy. Unless otherwise waived, in the case of an existing residence or commercial property which is to tie into the sanitary sewer, the connection charge shall be paid before the actual physical connection is made. Calculation of connection charges is based upon a formula in accordance with N.J.S.A. 40:14B-22. The connection charge shall be calculated annually after the end of each fiscal year by the PMUA's Executive Director and verified by the PMUA's independent auditors or other independent verification agent and subject to a public hearing in accordance with N.J.S.A. 40:14B-23. Service charges will be reviewed by the PMUA in conjunction with the annual budget process or as needed. Changes in service charges will be made subject to a public hearing in accordance with the applicable statutes.

In the event that a Property Owner does not pay its service and/or connection charges when due, the PMUA reserves the right to enter upon such parcel and cause any connection or connections leading directly or indirectly to or from the utility system to be cut and shut off until such service charge and any subsequent service charge with regard to such parcel and all interest accrued thereon shall be fully paid to the PMUA.

Additionally, when a Property Owner does not pay its service and/or connection charges when due, a lien will be placed onto such parcel and be superior and paramount to the interest in such parcel of any Owner, lessee, tenant, mortgagee or other person except the lien of municipal taxes and shall be on a parity with and deemed equal to the lien on such parcel of the municipality where such parcel is situate for taxes thereon due in the same year and not paid when due. Applicants are advised that, pursuant to N.J.S.A. 40:14B-46, the PMUA may recover attorney's fees and costs in any action to recover unpaid service and/or connection charges.

In the event that the use of a property changes such that the total ESU value for that property increases, the Property Owner shall pay the appropriate additional service charge for the revised number of ESUs. The Property Owner shall also pay the appropriate additional connection charge for the revised number of ESUs if a new physical connection is required. The additional service and/or connection charges assessed shall be those in effect at the time of the change of use.

### **SERVICE UNIT DEFINITION**

A service unit is defined as the discharge of an estimated 69,000 gallons of sewage flow per year. Where a service unit is less than one (1), the service shall be rounded up to the nearest whole number. Unless otherwise approved or specifically noted otherwise below, sanitary sewer average daily flow (ADF) shall be estimated utilizing NJDEP 7:14A-23.3, "Project Flow Criteria".

A service unit shall be defined as follows:

- (1) A residential dwelling with kitchen and/or sanitary facilities:



- (a) Single family dwelling unit.
  - (b) Multi-family dwelling (each unit).
  - (c) Mobile Home (does not include transient or camp grounds).
  - (2) Residential dwellings without kitchen facilities shall be defined as one-half a service unit for each unit.
    - (a) Hotel.
    - (b) Motel.
    - (c) Boarding House.
    - (d) Cottage.
    - (e) Tourist cabin.
  - (3) Churches, Fraternal Organizations, Service Organizations, Public Buildings and Schools. Each separate church, fraternal organization, service organization, public building and schools shall in the minimum equal one service unit.
  - (4) Commercial  
For all uses not covered as set forth above, with the exception of industrial, each separate commercial establishment shall in the minimum equal one service unit.
  - (5) Industrial  
Each separate industrial establishment shall in the minimum equal one unit.
  - (6) Fees for all users, other than residential, shall be based upon water flow estimate as provided for herein and shall be estimated by the Authority at the time of filing an application to connect to the Authority's facilities, in accordance with the Rules and Regulations of the Authority.
- Such ESU schedule is subject to be amended, supplemented or changed by the PMUA. Any applicant whose proposed use is not set forth in the aforementioned schedule may make a written request to the PMUA for a determination of the correct number of ESU's.

#### General Terms

- (1) Any existing structure within two-hundred (200) feet of PMUA sewerage facilities, which can be connected by a gravity sewer, shall be connected from the nearest point of connection to the PMUA system to the Applicant's property line.
- (2) The Owner is responsible for maintaining the house connection in a safe and watertight condition from the building to the point of connection with the PMUA cleanout. If the Owner fails to maintain the house connection, the PMUA reserves the right to disconnect the house connection. Reconnection of same would be at the Owner's expense.
- (3) No Owner shall disconnect a house connection to undertake construction or renovation activities without first notifying the PMUA to allow inspection of the disconnection. The PMUA shall provide the Applicant with an original and one (1) copy a "demolition permit letter" which acknowledges the proper disconnection. The Applicant shall keep the original demolition permit letter for its records and submit the copy to the Municipal Building Inspector when applying for a Building Permit. The Municipal Building Inspector shall not issue a Building Permit without being presented with a copy of the PMUA's demolition permit from the Owner.
- (4) No person shall make connection of roof downspouts, sump pumps, exterior foundation drains, area-way drains or other sources of surface runoff or ground water to a house connection or building drain which is in turn connected directly or indirectly to a facility of the PMUA.
- (5) A Certificate of Occupancy will not be issued by the Municipal Body until notified by the PMUA that connection fees have been paid and connection has been made and approved.
- (6) All owners of multiple units (commercial, residential or industrial) shall be obligated to pay all sewer charges.

(7) Should there be a need for the PMUA to redeposit a returned check the customer shall be charged an administration charge in the amount of twenty dollars (\$20.00), which charge shall become part of the service charges of the said customer and shall be added to its outstanding bill at the time.

(8) Pursuant to N.J.S.A. 40:14B-41 et seq., the PMUA will furnish to the Tax Collector of Plumsted a certified statement containing a list of properties, their respective owners, and the amount of charges and interest thereon which are in arrears and have become and remain liens against said properties.

The Tax Collector is requested and authorized to include said properties in the next tax sale and is authorized to do any and all things necessary and proper to effect enforcement of the PMUA's liens as the same would be done for the enforcement of Municipal Liens for real estate taxes.

(9) No connection will be permitted to the facilities of the PMUA until payment of all connection fees are paid in full to the PMUA.

In unique circumstances where the PMUA finds that the purpose behind the Municipal and County Utilities Authority Law, N.J.S.A. 40:14B-1, et seq. seq. are being furthered, the PMUA may consider a waiver of a portion of the total connection fees due for a particular project when it is deemed in the public interest to do so in order to alleviate pollution or such other condition which may be deleterious to the public health or public welfare.

## **Article 10 Administration and Enforcement**

### **Section 1. Administration.**

The provisions of these Rules and Regulations shall be administered by the Plumsted Municipal Utilities Authority (PMUA). In administering same, the PMUA and their duly authorized representatives shall have all of the powers and duties conferred upon them by applicable law.

### **Section 2. Adoption of Additional Rules and Regulations.**

The PMUA may adopt, from time to time, such additional rules and regulations as it deems necessary and proper in connection with use and operation of the Sewer System.

### **Section 3. Liens for Sewer User Rates and Other Charges; Filing and Collection of Liens.**

Any sewer user and other charges which are delinquent may be filed as a lien against the property connected to and served by the Sewer System, which lien shall be filed and collected in the manner provided by law for the filing and collecting of municipal claims. Nothing contained in this Section shall preclude the PMUA from exercising any other remedy available to it for collection of any monies owed to the PMUA.

### **Section 4. Access**

The PMUA shall have the right of access at reasonable times to any part of an improved property served by the Sewer System, and any meters used for purposes of inspection, measurement, sampling and testing and for performance of other functions relating to service rendered by the PMUA in connection with the Sewer System.

### **Section 5. Penalties**

Any person, firm or corporation who shall violate any provisions of these Rules and regulations, including the owner or occupant of any real property located within Plumsted Township and connected to the PMUA sewer system, may be charged in the Plumsted Township Municipal Court for violations of Municipal Ordinances.

## **Article 11 Effective Date**

These Rules and Regulations shall become effective immediately following adoption and publication of the adopting Resolution as may be amended and as provided by law.

Figure 1

Phase 1 – Proposed Sanitary Sewer Collection System Layout



APPENDIX A  
CONSTRUCTION DETAILS





1. ENCASUREMENT TO BE CONSTRUCTED WHEN VERTICAL CLEARANCE UNDER WATER SYSTEM OR STORM SEWER IS 18" OR LESS, OR WHEN HORIZONTAL CLEARANCE BETWEEN SANITARY SEWER AND WATER MAIN AT THE SAME ELEVATION IS LESS THAN 10".
2. CONCRETE TO BE N.J.D.O.T. CLASS C.
3. FULL ENCASEMENT TO BE USED AT ALL TIMES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. ENCASEMENT SHALL EXTEND A MINIMUM OF TEN FEET (10') ON EITHER SIDE OF CROSSING.

N.I.S.



N.T.S.



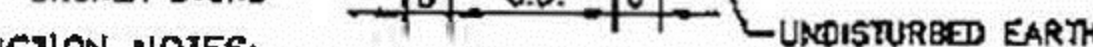
1. DETAIL SHOWS CONSTRUCTION OF A "BRANCH CONNECTION" AND OF TWO DIFFERENT TYPES OF "LATERAL HOUSE CONNECTION". TYPE OF CONNECTION IS AT CONTRACTOR'S OPTION.
2. SIZE OF LATERAL TO BE AS SHOWN ON THE PLANS OR AS DIRECTED, 4" MINIMUM.
3. CLEAN-OUTS IN DRIVEWAYS SHALL BE COVERED WITH A MONUMENT BOX - CAMPBELL PATTERN NO. 4155 OR EQUAL

## M.T. 35



N.T.S

1. THE DESIGNS HEREIN RENDERED ARE INTENDED TO COMPLY WITH THE NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP), IN CASE OF UNINTENTIONAL DEVIATION AND/OR OMISSIONS NJDEP AND REGULATIONS WILL CONTROL.
2. THE CONTRACTOR SHALL CALL FOR ALL UTILITIES TO BE MARKED OUT PRIOR TO THE START OF CONSTRUCTION TO INSURE THAT THEIR FACILITIES WILL NOT OETER THE COURSE OF CONSTRUCTION.
3. THE OWNER WILL SECURE ALL NECESSARY PERMITS FROM MUNICIPAL, COUNTY OR STATE AGENCIES PRIOR TO THE START OF CONSTRUCTION.
4. ALL WORK SHALL CONFORM TO THE ABOVE MENTIONED PERMITS INCLUDING BACKFILL, PAVEMENT REPAIR, AND CONSTRUCTION PROCEDURES.
5. ALL CONCRETE AS NOTED IN THE APPURTENANT DESIGNS SHALL BE 3,000 PSI AS SPECIFIED, OR AS SHOWN OTHERWISE.
6. ALL LATERAL LOCATIONS TO BE DETERMINED IN FIELD.
7. SANITARY SEWER MAINS TO BE AS SHOWN.
8. MINUA PORTION OF CONNECTION SHALL TERMINATE WITH CLEANOUT, BETWEEN CURB AND SIDEWALK OR ONE FOOT (1') OUTSIDE PROPERTY LINE.
9. ALL SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE "RULES AND REGULATIONS" AND "STANDARD CONSTRUCTION DETAILS" OF THE PMUA
10. ELEVATIONS INDICATED HEREON ARE BASED ON USC & GS DATUM (SHOW BENCH MARK REFERENCE AND ESTABLISHED BENCH MARK ON PROJECT).
11. ANY ADJUSTMENTS OR REPAIRS TO EXISTING SANITARY FACILITIES DAMAGED AS A RESULT OF CONTRACTOR'S OPERATIONS SHALL BE MADE AT THE CONTRACTORS EXPENSE AND SHALL BE SUBJECT TO REVIEW, INSPECTION, APPROVAL AND ACCEPTANCE BY THE AUTHORITY ENGINEER.



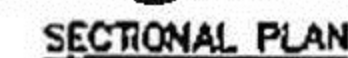
1. TO BE USED IF AND WHERE DIRECTED BY ENGINEER, IF SEWER DEPTH IS TEN FEET OR MORE.
2. THIS IS A TYPICAL SCHEME FOR DEEP HOUSE CONNECTIONS, DEPENDING ON TYPE OF PIPE MATERIAL, A COMPARABLE SCHEME SHALL BE USED AND THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS FOR APPROVAL.
3. SIX INCH (6") CONNECTION SIMILAR: MAINTAIN MINIMUM CONCRETE ENCASEMENT SIX INCHES (6") THICK.
4. ONE (1) HOUSE PER DEEP HOUSE CONNECTION.

NIS



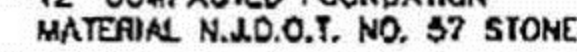
## M.Y.2

© COPYRIGHT 2014, T&M ASSOCIATES - ALL RIGHTS RESERVED. THE COPIES OR REUSE OF THIS DOCUMENT OR PORTIONS THEREOF, FOR OTHER THAN THE ORIGINAL PROJECT OR THE PURPOSE ORIGINALLY INTENDED, WITHOUT THE WRITTEN PERMISSION OF T&M ASSOCIATES IS PROHIBITED.

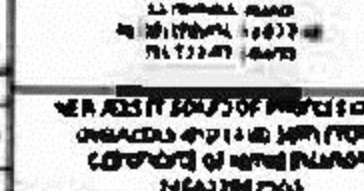


1. PRECAST MANHOLE SECTIONS TO BE 4' IN DIAMETER WITH LATEST ASTM DESIGNATION C-478, MINIMUM COMPRESSIVE STRENGTH TO BE 4000 PSI
2. FLEXIBLE RUBBER BOOT SHALL BE USED FOR CONNECTION OF PVC PIPE TO MANHOLE
3. PRECAST CHAMBERS SHALL NOT BE USED FOR SIZES GREATER THAN 45" POURED CONCRETE 12" RADIUS CHAMBERS SHALL BE CONSTRUCTED
4. WHEN DESIGN CALLS FOR REGULAR OR LOOSE MANHOLE FRAMING AND INSTALL CONCRETE SECTION WITH 24" OPENING FOR 30" DIAMETER, THE 24" OPENING FRAME AND COVER, INSTALL CONCRETE SECTION WITH 24" OPENING

143



N.T.5



## STANDARD CONSTRUCTION DETAILS











EXHIBITS

APPLICATION FORMS

# EXHIBIT A

PLUMSTED MUNICIPAL UTILITIES AUTHORITY

TOWNSHIP OF PLUMSTED, NEW JERSEY

## APPLICATION FOR BUILDING SEWER PERMIT

Date\_\_\_\_\_

The undersigned, being the \_\_\_\_\_ of the property  
(OWNER, OWNERS, AUTHORIZED AGENT)  
located at \_\_\_\_\_  
(NUMBER) (STREET)

Project Name\_\_\_\_\_ Block\_\_\_\_\_ Lot \_\_\_\_\_  
does hereby request a permit to install and connect a building sewer to serve the above location,  
which is owned by \_\_\_\_\_ who address is \_\_\_\_\_  
\_\_\_\_\_.

The proposed building connection will be installed on the \_\_\_\_\_ side of  
the street approximately \_\_\_\_\_ feet from \_\_\_\_\_ street.

The name and address of the Plumbing or other Qualified Contractor who will perform  
work is \_\_\_\_\_ License No. \_\_\_\_\_  
\_\_\_\_\_.

The proposed size of the building sewer is \_\_\_\_\_.

The proposed pipe material to be used is \_\_\_\_\_.

Drawings showing the plan and profile of the building sewer shall be attached to this  
form. The plan shall show the location of the building to be served, the alignment of the building  
sewer, cleanout-outs, distances from house to the curb, location of water supply lines and the  
minimum distance between the water supply line and building sewer. The plan shall also provide  
location and details regarding grease or oil/water interceptor facilities if applicable. The profile  
shall show elevations of the cellar floor, house drain, building sewer, existing ground over the  
building sewer, clean-outs and the curb line.

In consideration of the granting of this permit, the undersigned agrees to all the terms and  
conditions set forth on the reverse side of this application.

Signed \_\_\_\_\_  
(APPLICANT)

\_\_\_\_\_  
(ADDRESS OF APPLICANT)

Phone \_\_\_\_\_

AUTHORITY OFFICE:

Sewer connection fee paid as follows: \$ \_\_\_\_\_

Check # \_\_\_\_\_

Receipt # \_\_\_\_\_

Received By \_\_\_\_\_ Date \_\_\_\_\_

Inspected by PMUA

Date \_\_\_\_\_

Signed \_\_\_\_\_

PMUA ENGINEER

Application approved and permit issued.

Date \_\_\_\_\_

Signed \_\_\_\_\_

(PMUA Engineer)

INSPECTION:

Connection completed, inspected and approved \_\_\_\_\_

(PMUA Engineer)

Date \_\_\_\_\_

First Billing Date \_\_\_\_\_

First Billing Amount \_\_\_\_\_

Date Keyed into Computer \_\_\_\_\_

Connection Date \_\_\_\_\_

## **CONDITIONS**

1. The permit is issued under the express condition that every person acting under the same shall conform to the representations and conditions of the application therefore and shall accept and conform to and be governed by the ordinance(s) pertaining to sewers and the use thereof adopted by the Township of Plumsted , and all other pertinent laws, resolutions, ordinances, rules and regulations, schedule of fees and changes that exist now and that may be adopted in the future by the Township and for the Plumsted Municipal Utilities Authority.
2. The Plumsted Municipal Utilities Authority and its agents assume no responsibility that any representations in the application for this permit were correct and assume no responsibility for any information furnished or not furnished.
3. The owner of the property being served by the building sewer agrees to pay the sewer connection charge and the annual sewer service charge as established by the Plumsted Municipal Utilities Authority and to maintain at no cost or expense to the Township or Authority, that portion of the building sewer between the curb line and the walls of the building.
4. The applicant agrees to notify the Plumbing Inspector when the building sewer is ready for inspection and connection to the public sewer. No portion of the work shall be covered until the work has been inspected and approved by the Plumbing Inspector.
5. The owner agrees that he shall at all times indemnify and save harmless the Township and its officers, agents and servants, on account of any and all claims, damages, losses, litigations, expenses, counsel fees and compensation arising out of injuries (including death) sustained by, or alleged to have been sustained by the servants, employees or agents of the Township, or of the owner, any contractors employed by him or any subcontractor or material men, and from injuries (including death) sustained by or alleged to have been sustained by the public, any or all persons on or near the work, or by any other person or property, real or personal (including property of the Township), caused in whole or in part by the acts or omissions of the owner, and contractor employed by him or any subcontractor or material man or anyone directly or indirectly employed by them or any of them while engaged in the performance of any work covered by the permit and during any maintenance period specified in the aforementioned ordinance.
6. The applicant, before being issued a permit shall provide the Plumbing Inspector's office with satisfactory evidence of the following minimum insurance coverage on behalf of the owner and plumbing contractor to indemnify loss or injury proximately caused by the owner's and or his agent's negligence or failure to comply with any State or local laws and ordinance or regulation of the Sewerage Authority.
  - A. Manufacturers and Contractor's Public Liability and Property Damage Insurance in the minimum amount of:
    1. One person in any one accident, amount \$100,000.
    2. Three or more persons in any one accident, amount \$300,000.
    3. Property Damage in any one accident, amount \$25,000.
  - B. Completed Operations in the amount of \$25,000. This policy shall remain in force for a minimum period of one year after completion of the work.
  - C. Workman's Compensation Insurance – New Jersey Statutory.

Submission of evidence of the above insurance coverage will not be required in the event the owner performs the work himself as permitted by State Statutes. However, in that event the Owner assumes all liability for loss or injury due to his negligence or failure to comply with any State or local laws and ordinances or regulations of the Utilities Authority.

## EXHIBIT B

### APPLICATION FOR DETERMINATION OF SERVICE/PRELIMINARY APPROVAL

APPLICATION # \_\_\_\_\_ FILED \_\_\_\_\_

PLUMSTED MUNICIPAL UTILITIES AUTHORITY

PLUMSTED, NEW JERSEY

Application is hereby made for a determination as to whether a connection to the Township's comprehensive sewerage system is ~~required~~

1. Applicant's Name: \_\_\_\_\_

Applicant's Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email \_\_\_\_\_

2. Name and address of present owner (if other than No.1 above):

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

3. Interest of applicant if other than owner: \_\_\_\_\_

4. Check One: \_\_\_\_\_ Fee: \_\_\_\_\_

\_\_\_\_\_ Single Family Residence

\_\_\_\_\_ Multi – Family Residence

\_\_\_\_\_ Minor Subdivision or Site Plan

\_\_\_\_\_ Major Subdivision or Site Plan

\_\_\_\_\_ Other (Variance/Public)

Two sets of plans submitted to the Construction Office MUST accompany this application with payment. Checks can be made payable to the PMUA.

## EXHIBIT C

### APPLICATION FOR FINAL APPROVAL

Application No. \_\_\_\_\_ Date Filed \_\_\_\_\_

### PLUMSTED MUNICIPAL UTILITIES AUTHORITY PLUMSTED, NEW JERSEY

APPLICATION FOR THE FINAL APPROVAL OF SANITARY SEWERS AND APPURTENANCES IN THE TOWNSHIP OF PLUMSTED, COUNTY OF OCEAN, STATE OF NEW JERSEY. This application must be filed in duplicate with the Executive Director and accompanied by the required filing fee.

Application is hereby made for Approval for sanitary sewers and appurtenances.

1. Applicant's Name:

Address: \_\_\_\_\_ Phone \_\_\_\_\_

2. Name and address of present owner (if other than No.1 above):

Name: \_\_\_\_\_

Address: \_\_\_\_\_ Phone \_\_\_\_\_

3. Interest of applicant if other than owner:

4. Date of Application to the Plumsted Land Use Board: \_\_

5. Location of Project:

6. Tax Map Block: \_\_\_\_\_ Lot Nos.: \_\_\_\_\_

7. Name of Person who prepared the application:

Name \_\_\_\_\_ Profession \_\_\_\_\_

Address \_\_\_\_\_ Phone \_\_\_\_\_

8. Does applicant or owner agree to convey by deed to the Plumsted Municipal Utilities Authority easements to all areas on preliminary plans showing sewerage facilities and all rights to the sewerage facilities?



9. If sewers are required, will applicant post Performance and Maintenance Bonds?  
Yes      No
10.        Attach 2 black on white prints of your preliminary plans.
11. Attach 2 copies of your Engineer's Report.

Signature of Applicant\_\_\_\_\_

Make all checks payable to the Plumsted Municipal Utilities Authority.

---

(do not write below this line)

Date received and fee collected by Secretary

DATE\_\_\_\_\_FEE PAID\_\_\_\_\_

Recommendations of the Authority's Engineer

Action of the Plumsted Municipal Utilities Authority

Date\_\_\_\_\_Approved

Date\_\_\_\_\_Disapproved Reason

Date\_\_\_\_\_

Executive Director\_\_\_\_\_

## DRAFT

### SCHEDULE OF FEES

#### **Service Installation Fee for the Sanitary Sewer**

All service sizes required to be installed by the Plumsted MUA will be charged on a time and material basis.

#### **Connection Fee for the Sanitary Sewer System**

The initial Sewer Connection Fee to connect to the wastewater collection system represents payments of an amount which has already been paid by existing customers towards the retirement of debt service of the existing facilities. The initial Connection Fee will be calculated in accordance with N.J.S.A 40:14B – 21. The initial connection fee may be waived in accordance with Article 1, Section 3 of these Rules and Regulations.

Connection Permits issued by the PMUA are valid for one year from the date of issuance and may, at the discretion of the PMUA, be renewed without limitation subject to the applicant paying for any difference between the Connection Fee paid at the time of issuance or last renewal and the Connection Fee in effect at the time of renewal.

#### **Service Charges for the Sanitary Sewer System**

Each Equivalent Service Unit (ESU) is based on an average water consumption rate of 69,000 gallons per year and will be assessed a charge of \$ \_\_\_\_\_ per quarter. Where the ESU is less than (1), the service unit shall be rounded to the higher whole number.

#### **Fee for Inspection of the Sanitary Sewer System Connection**

Inspection Fee	\$ 50.00 for each connection
Re-inspection Fee	\$ 50.00 for each re-inspection
Property Occupant Transfer Fee	\$ 50.00 per request

#### **Permit Application Fees**

Application for Approval of Building Sewer	\$ 50.00
Application for Determination of Service	
New Single Family/Public Projects/Variances	\$ 50.00
Minor/Major Subdivisions/Site Plans	\$100.00
Industrial	\$100.00
Application for Approval: Review Fees	
Minor/Major Subdivisions	\$400.00 plus \$60.00 per lot
Minor/Major Site Plans/Industrial	\$400.00 plus .03/sq. ft. of building
Public	\$100.00 plus .03/sq. ft. of building

Where the review fees or inspection fees are exceeded or anticipated to be exceeded, the applicant shall make additional review fee deposits. No review or inspections shall be performed if sufficient funds for those reviews or inspections are not on deposit.

**Capping Sewer Laterals** \$200/lateral/occurrence

**Location of Sanitary Sewer Lateral** \$300/lateral/occurrence (within Two-Foot Radius of Triangulation)

#### **Code Violation Cost Recovery Charge**

\$50.00 Service Charge plus cost for parts and labor, as well as reimbursement to the Authority for any reasonable cost incurred for professional fees.

### **Illegal Sanitary Sewer Connection Code Violation Cost Recovery Charge**

Illegal Sanitary Sewer Connections in which storm water, sump pump, subsurface drainage, surface water, groundwater and/or roof runoff discharge is discharged into the sanitary sewer system shall be charged a \$500.00 Code Violation Cost Recovery Charge plus cost for parts and labor, as well as reimbursement to the Authority for any reasonable cost incurred for professional services because of the code violation.

### **Returned Check Fee**

A \$20.00 Service Charge for any check or other written instrument returned for insufficient funds. In addition, the Authority may require future payments to be tendered in cash, or by certified check, money order or cashier's check.

### **Toxic Pollutants**

Any user of the PMUA's sewer collection system which discharges pollutants that cause an increase in the cost to the PMUA for handling the user's discharge or results in additional sludge treatment costs shall be surcharged for the increased cost by the PMUA in addition to the quarterly service charge.

### **Strength of Sewage Characteristics**

Discharges which exceed the maximum strength sewage requirements established by the PMUA shall be surcharged for the amount of the excess strength times the unit costs as established by the PMUA in addition to the quarterly or annual charge.

### **Payments**

Service charges shall be due and payable on a quarterly basis. Late payments shall be charged an interest fee of 1 ½% per month on the first of the month following the due date on the unpaid balance until said payment and the interest thereon have been made. Said interest rate on unpaid service charges is mandated by N.J.S.A. 40:14B-41.

### **Industrial Cost Recovery**

In the event the applicant for sewer service is classified as an industrial user as defined by the U. S. Environmental Protection Agency, the applicant will be required to make additional payments conforming to an Industrial Cost Recovery System required by the U.S. Environmental Protection Agency.