

Sewer Use Rules and Regulations

Orleans, Massachusetts



Board of Water and Sewer Commissioners

[April 17, 2024](#)[November 6, 2024](#)

Revision No. 34

This Page Intentionally Left Blank.

Table of Contents

Table of Contents	1
Introduction	8
Article I – Definitions and References	10
Section 1 - Definitions	10
Section 2 - References	19
Article II - General Provisions	22
Section 1 - Purpose	22
Section 2 - Scope	22
Section 3 - Sewer Service Areas	22
Section 4 - Sewer Service Area Modifications	22
Section 5 - Administration	23
Section 6 - Inspections	23
Section 7 - Inspection and Maintenance in Easements	23
Section 8 - User Charges and Fees	24
Section 9 - Flow Offset Fee, Reserve Capacity Fee, Privilege Fee and Compensatory Fee	24
Section 10 - Protection from Damage	26
Section 11 Easements	26
Section 12 - Severability	26
Section 13 - Amendments	26
Article III - Connection to the Wastewater System	27
Section 1 - Permission to Connect Required	27
Section 2 - Connection Required	27
Section 3 - New Developments or Redevelopments	27
Section 4 - Allocation of Flows	27
Section 5 - Connection Permit Application	27
Section 6 - Drain Layer's License	28
Section 7 - Hauler's License	29
Section 8 - Connection Costs	29
Section 9 - Connection Fees	29
Section 10 - Betterment Assessments	30
Section 11 - Related Costs	30
Section 12 - Professional Engineering/Legal Services – Not Used	30
Section 13 - Billing Period	30
Section 14 - Separate Service Connections Required	31
Section 15 - Existing Building Sewers	31

Section 16 - Installation Requirements	31
Section 17 - Service Connection Elevation	31
Section 18 - Inspection and Approval of Work	31
Section 19 - Excavations in or Near Public Property	32
Section 20 - Surface Runoff and Groundwater	32
Section 21 - Capacity of Existing Wastewater System	32
Section 22 - Installation of Service Connections	32
Section 23 - Maintenance and Repair of Service Connections	33
Section 24 - Appeals and/or Exemptions	33
Article IV - Conditions of Use of the Wastewater System	34
Section 1 - Uncontaminated Discharges	34
Section 2 - Storm Sewers	34
Section 3 - General Prohibited Discharges	34
Section 4 - Specifically Prohibited Discharges	34
Section 5 - Specific Discharge Limitations	36
Section 6 - Acceptance of Harmful or Potentially Harmful Wastewater	37
Section 7 - National Pretreatment Standards	38
Section 8 - Fats, Oils and Grease Traps/Tanks	38
Section 9 - Septage	40
Section 10 - Enforcement	41
Section 11 - Special Agreements	41
Section 12 - Appeals	41
Article V - Industrial Wastewater	42
Section 1 - Information Requirements	42
Section 2 - Provisions for Monitoring	42
Section 3 - Determination of Wastewater Characteristics	42
Section 4 - Termination of Disposal Authorization	43
Section 5 - Wastewaters with Special Characteristics	43
Article VI - User Charges and Fees	44
Section 1 - Establishment of User Charges and Fees	44
Section 2 - Determination of System Use	44
Section 3 - User Charges	44
Section 4 - Surcharges	44
Section 5 - Capital Improvement Fees	44
Section 6 - Billing Periods	44
Section 7 - Payment	45
Section 8 - Lien on Property or Other Remedies	45

Section 9 - Appeals and/or Exemptions	45
Article VII - Enforcement	46
Section 1 - Right of Access.....	46
Section 2 - Notice of Violation.....	46
Section 3 - Enforcement Actions	46
Section 4 - Penalties.....	46
Section 5 - Continued Violations.....	47
Section 6 - Vandalism.....	47
Section 7 - Right to a Hearing.....	47
Appendix A - Sewer Service Areas Maps	48
Appendix B - Sewer Service Area Expansion Application	52
Appendix C - Bill of Sale	60
Appendix D - Water Use Records.....	64
Appendix E - Fee Schedule.....	66
Appendix F - Residential and Commercial Wastewater Connection Permit Application.....	70
Section 1 - General Information.....	70
Section 2 - Building Description and Plumbing Fixtures.....	70
Section 3 - Consumption and Usage.....	71
Section 4 - Other Permits	71
Section 5 - Record Drawings	71
Section 6 - Certification.....	72
Appendix G - Industrial Wastewater Connection Permit Application	76
Section 1 - General Information.....	76
Section 2 - Description of Operations.....	76
Section 3 - Water Consumption and Usage.....	77
Section 4 - Wastewater Generation and Discharge	78
Section 5 - Wastewater Quality	78
Section 6 - Pretreatment.....	78
Section 7 - Certification.....	78
Appendix H - Standard Specifications for Sewer Design and Construction	82
Section 1 - Laws, Rules and Regulations.....	82
Section 2 - Plans and Specifications	82
Section 3 - Inspection and Testing	86
Section 4 - Applicant's Responsibilities	90
Section 5 - Excavation and Backfill	91
Section 6 - Pipe and Pipe Laying.....	93
Section 7 - Miscellaneous Structures	98

Section 8 - Bank Gravel, Screened Gravel, Ordinary Borrow, Crushed Stone and Processed Glass Aggregate	99
Section 9 - Manholes	100
Section 10 - Concrete	103
Section 11 - Bituminous Concrete	104
Section 12 - Miscellaneous Requirements	104
Section 13 - Pump Stations	104
Section 14 - Prefabricated Low-Pressure Sewage Pump Systems	118
Section 15 - Abandoning Existing On-Site Disposal Systems	119
Appendix I - Construction Details	120
Appendix J – Additional Allocated Wastewater Flow Application	137
Section 1 - General Information	137
Section 2 – Existing Building and Use Description	137
Section 3 – Proposed Building and Use Description	138
Section 4 - Consumption and Usage	139
Section 5 - Certification	140
Appendix K – Drain Layer’s Application (Sample)	143
Table of Contents	1
Introduction	5
Article I – Definitions and References	7
Section 1 – Definitions	7
Section 2 – References	16
Article II – General Provisions	19
Section 1 – Purpose	19
Section 2 – Scope	19
Section 3 – Sewer Service Areas	19
Section 4 – Sewer Service Area Modifications	19
Section 5 – Administration	20
Section 6 – Inspections	20
Section 7 – Inspection and Maintenance in Easements	20
Section 8 – User Charges and Fees	21
Section 9 – Flow Offset Fee, Reserve Capacity Fee, Privilege Fee and Compensatory Fee	21
Section 10 – Protection from Damage	22
Section 11 Easements	22
Section 12 – Severability	23
Section 13 – Amendments	23
Article III – Connection to the Wastewater System	24
Section 1 – Permission to Connect Required	24

Section 2 – Connection Required	24
Section 3 – New Developments or Redevelopments	24
Section 4 – Allocation of Flows	24
Section 5 – Connection Permit Application	24
Section 6 – Drain Layer’s License	25
Section 7 – Septage Hauler’s License	26
Section 8 – Connection Costs	26
Section 9 – Connection Fees	26
Section 10 – Betterment Assessments	27
Section 11 – Related Costs	27
Section 12 – Professional Engineering/Legal Services – Not Used	27
Section 13 – Billing Period	27
Section 14 – Separate Service Connections Required	28
Section 15 – Existing Building Sewers	28
Section 16 – Installation Requirements	28
Section 17 – Service Connection Elevation	28
Section 18 – Inspection and Approval of Work	28
Section 19 – Excavations in or Near Public Property	29
Section 20 – Surface Runoff and Groundwater	29
Section 21 – Capacity of Existing Wastewater System	29
Section 22 – Installation of Service Connections	29
Section 23 – Maintenance and Repair of Service Connections	30
Section 24 – Appeals and/or Exemptions	30
Article IV – Conditions of Use of the Wastewater System	31
Section 1 – Uncontaminated Discharges	31
Section 2 – Storm Sewers	31
Section 3 – General Prohibited Discharges	31
Section 4 – Specifically Prohibited Discharges	31
Section 5 – Specific Discharge Limitations	33
Section 6 – Acceptance of Harmful or Potentially Harmful Wastewater	34
Section 7 – National Pretreatment Standards	35
Section 8 – Fats, Oils and Grease Traps/Tanks	35
Section 9 – Septage	37
Section 10 – Enforcement	38
Section 11 – Special Agreements	38
Section 12 – Appeals	38
Article V – Industrial Wastewater	39

Section 1 – Information Requirements	39
Section 2 – Provisions for Monitoring	39
Section 3 – Determination of Wastewater Characteristics	39
Section 4 – Termination of Disposal Authorization	40
Section 5 – Wastewaters with Special Characteristics	40
Article VI – User Charges and Fees	41
Section 1 – Establishment of User Charges and Fees	41
Section 2 – Determination of System Use	41
Section 3 – User Charges	41
Section 4 – Surcharges	41
Section 5 – Capital Improvement Fees	41
Section 6 – Billing Periods	41
Section 7 – Payment	42
Section 8 – Lien on Property or Other Remedies	42
Section 9 – Appeals and/or Exemptions	42
Article VII – Enforcement	43
Section 1 – Right of Access	43
Section 2 – Notice of Violation	43
Section 3 – Enforcement Actions	43
Section 4 – Penalties	43
Section 5 – Continued Violations	44
Section 6 – Vandalism	44
Section 7 – Right to a Hearing	44
Appendix A – Sewer Service Areas Maps	45
Appendix B – Sewer Service Area Expansion Application	49
Appendix C – Bill of Sale	57
Appendix D – Water Use Records	61
Appendix E – Fee Schedule	63
Appendix F – Residential and Commercial Wastewater Connection Permit Application	67
Section 1 – General Information	67
Section 2 – Building Description and Plumbing Fixtures	67
Section 3 – Consumption and Usage	68
Section 4 – Other Permits	68
Section 5 – Record Drawings	68
Section 6 – Certification	69
Appendix G – Industrial Wastewater Connection Permit Application	73
Section 1 – General Information	73

Section 2 – Description of Operations	73
Section 3 – Water Consumption and Usage	74
Section 4 – Wastewater Generation and Discharge	75
Section 5 – Wastewater Quality	75
Section 6 – Pretreatment	75
Section 7 – Certification	75
Appendix H – Standard Specifications for Sewer Design and Construction	79
Section 1 – Laws, Rules and Regulations	79
Section 2 – Plans and Specifications	79
Section 3 – Inspection and Testing	83
Section 4 – Applicant’s Responsibilities	87
Section 5 – Excavation and Backfill	88
Section 6 – Pipe and Pipe Laying	90
Section 7 – Miscellaneous Structures	95
Section 8 – Bank Gravel, Screened Gravel, Ordinary Borrow, Crushed Stone and Processed Glass Aggregate	96
Section 9 – Manholes	97
Section 10 – Concrete	100
Section 11 – Bituminous Concrete	101
Section 12 – Miscellaneous Requirements	101
Section 13 – Pump Stations	101
Section 14 – Prefabricated Low-Pressure Sewage Pump Systems	115
Section 15 – Abandoning Existing On-Site Disposal Systems	116
Appendix I – Construction Details	117
Appendix J – Additional Allocated Wastewater Flow Application	137
Section 1 – General Information	137
Section 2 – Existing Building and Use Description	137
Section 3 – Proposed Building and Use Description	138
Section 4 – Consumption and Usage	139
Section 5 – Certification	140
Appendix K – Drain Layer’s Application (Sample)	143

Introduction

The Orleans Board of Water and Sewer Commissioners (Commission) held a public hearing on April 17, 2024 at the Orleans Town Hall and then and there adopted the following **Sewer Use Rules and Regulations** related to the connection of properties to the municipal sewer system and to the use, operation and administration of the municipal sewer system. These **Sewer Use Rules and Regulations** may be amended by the Commission as they deem necessary. However, any modification to these **Sewer Use Rules and Regulations** is subject to federal and state rules, regulations and funding programs including the State Revolving Fund (i.e., O'Leary Bill - 0 percent financing).

Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

_____	_____
Chair	Vice-Chair
_____	_____
Member	Member
_____	_____
Member	Member
_____	_____
Member	Associate Member
_____	_____
Associate Member	Date

This Page Intentionally Left Blank.

Article I – Definitions and References

Section 1 - Definitions

Unless the context of usage indicates otherwise, the meaning of the specific terms in these **Sewer Use Rules and Regulations** shall be as follows:

Acceptance shall mean the wastewater system is substantially complete in accordance with industry standards and all permit requirements and/or conditions have been completed and the wastewater system has been formally accepted by the Board of Water and Sewer Commissioners.

Act shall mean the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 United States Code 1251, et seq.

Agent Letter shall mean a letter of authorization that allows a third party to act on behalf of the person writing the letter. A power of attorney may also be required as deemed necessary by the commission.

Applicant shall mean any person, partnership, or corporation applying for a connection and approval to discharge wastewater into the Town's wastewater system. If Applicant is different from the Property Owner, the Applicant must receive a signature from the Property Owner and/or an Agent Letter from the Property Owner.

ASTM shall mean the American Society of Testing and Materials. When referenced it shall mean the latest edition/version of the specification.

Authority shall mean the Board of Water and Sewer Commissioners or their authorized representative.

Backflow Valve shall mean a valve located at the property line and installed by the property owner which is used to prevent wastewater backup from flowing from the Town's wastewater infrastructure into the building/structure located on the property.

Best Management Practices shall mean activities, process alterations or preventive maintenance which enable the user to comply with the provisions of these **Sewer Use Rules and Regulations** or any applicable Federal and/or State rules and regulations.

Board shall mean Board of Health of the Town.

BOD (biochemical oxygen demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure expressed in milligrams per liter as determined by Standard Methods.

Building Drain shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the sewer service connection at a point ten (10) feet outside of the inner face of the building wall.

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

Bypass shall mean the diversion of waste streams from any portion of a wastewater system.

Cleanout/Inspection Port shall mean a capped pipe or capped access point used to inspect and/or clean out blockages in the sewer or service connection. Refer to the cleanout detail located in Appendix I.

Code of Massachusetts Regulations (CMR) shall mean the canonical collection of regulations promulgated by various agencies of the Commonwealth of Massachusetts. It is the state counterpart to the national Code of Federal Regulations (CFR).

COD (chemical oxygen demand) shall mean the quantity of oxygen used in the chemical oxidation of organic matter with a strong chemical oxidant under standard laboratory procedure expressed in milligrams per liter as determined by Standard Methods.

Code of Federal Regulations (CFR) shall mean the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

Color shall mean the optical density at the visual wavelength of maximum adsorption, relative to distilled water. One hundred (100) percent transmittance is equivalent to zero (0) optical density.

Collection System shall mean pipes (gravity sewers and low-pressure sewers), pumping stations, force mains and service laterals for the purpose of collecting and conveying domestic wastewater, commercial and/or industrial or other wastewaters to the wastewater treatment facility.

Combined Sewer shall mean a sewer receiving both surface runoff and sewage.

Commercial User shall include any property occupied by an establishment which is not a residential property and not within the definition of an "Industrial User" and which is connected to the wastewater system.

Commission shall mean the Board of Water and Sewer Commissioners of the Town.

Commonwealth shall mean the Commonwealth of Massachusetts.

Cooling Water shall mean clean wastewater from air conditioning, industrial cooling, condensing and similar apparatus and from hydraulically powered equipment. In general, cooling water will include only water that is sufficiently clean and unpolluted to be discharged, without treatment or purification, into any natural open stream or watercourse without offense.

Compatible Pollutants shall mean wastewater constituents for which the Town's wastewater treatment facility was designed and/or is operated to adequately treat.

Composite Sample shall mean a combination of individual samples of wastewater taken at preselected intervals to represent the integrated composition of a wastewater stream. A minimum of eight (8) grab samples taken at equally spaced intervals throughout the monitoring period to coincide with periods of wastewater discharge shall constitute a composite sample.

Comprehensive Wastewater Management Plan (CWMP) shall mean the plan prepared by the Town to evaluate their current and future wastewater needs as amended and as may be subsequently modified by the Commission.

Consistent Removal shall mean the reduction in the amount of a pollutant or alteration of the nature of a pollutant by the wastewater treatment facility to a less toxic or harmless state in the effluent.

Contractor shall mean a person, partnership or corporation which has been actively engaged in work of a similar nature, and which has sufficient equipment, labor and resources to construct the proposed work, and which has obtained a valid drain layers license from the Commission. The Contractor shall be employed by the Applicant and shall be responsible to him/her for the construction in accordance with the approved plans.

Cost of Living Adjustment shall mean an adjustment of the construction cost of the wastewater infrastructure by use of the Engineering News Record (ENR) Index.

Department shall mean the Department of Public Works and Natural Resources of the Town or authorized representative.

Design Engineer shall mean the Engineer under contract with the Property Owner or Applicant and acting entirely within the scope of the authority granted by the Property Owner or Applicant, directly or through properly authorized agents. The Design Engineer shall be an appropriately licensed (for the work being designed) Professional Engineer registered in the Commonwealth of Massachusetts.

Director shall mean the Director of the Department of Public Works and Natural Resources, or authorized representative.

Discharge Limitation shall mean any requirement, restriction or standard imposed by the Commission, MassDEP or EPA on quantities, discharge rates and concentrations of pollutants which are discharged to the wastewater system.

Domestic Wastewater shall mean liquid wastes from sanitary conveniences from residential houses, apartments and condominiums including the kitchen, bathroom, laundry sources and/or other facilities containing human excrement and similar matter.

Drain shall mean a pipe or conduit for carrying wastewater or drainage within or appurtenant to a structure.

Drain Layer shall mean any person or contractor constructing, installing and/or repairing a sewer service connection on private property which is licensed by the Town and bonded to lay drains in the Town.

Dwelling Unit shall mean one (1) or more rooms intended as a single housekeeping unit for the use of one (1) or more individuals living together, and having cooking, sanitary and sleeping facilities. A "dwelling unit" does not include garages, sheds or accessory or additional structures, whether attached or unattached.

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

Engineer shall mean the Engineer (aka Department's Engineer) under contract with the Commission and/or Department and acting entirely within the scope of the authority granted by the Commission and/or Department, directly or through properly authorized agents.

EPA shall mean the United States Environmental Protection Agency.

Excessive Amounts or Concentrations of a Constituent of wastewater which in the judgment of the Department or Engineer: (a) will cause damage to the Town's wastewater system; (b) will be harmful to a wastewater treatment process; (c) cannot be removed in the Town treatment works to the degree required to meet the discharge permit; (d) can otherwise endanger life, limb or public property; or (e) can constitute a nuisance.

Fats, Oils, and Grease (FOG) shall mean organic polar compounds derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules that are used in, or are byproducts of, the cooking or food preparation process, and that turn or may turn viscous or solidify with a change in temperature or other conditions. These substances are detectable and measurable using analytical test procedures established in 40 CFR 136, as amended. All are sometimes referred to herein as "grease" or "greases".

- Indoor Passive Grease Trap: A passive grease trap installed inside a building designed to remove FOG from flowing wastewater while allowing wastewater to flow through it. Wastewater flows from the drain of the sink into the inlet side of the trap which must have a vented flow restrictor. As the wastewater slows and cools, the FOG hardens and floats to the top and the food solids (sludge) settle and sink to the bottom displacing the wastewater from the middle of the grease trap and into the sanitary sewer.
- Outdoor/Underground Grease Tank: A passive grease tank installed outside a building (having a minimum capacity of 1,000 gallons) designed to remove FOG from flowing wastewater while allowing wastewater to flow through it.
- For our purposes, Traps and Interceptors are interchangeable and devices which will be referred to as Grease Tanks. Grease trap requirements and sizing should follow 248 CMR - Board of State Examiners of Plumbers and Gas Fitters.

Food Grinder shall mean any device installed in the plumbing or sewage system for the purpose of grinding food waste and/or food preparation byproducts prior to disposing of in an onsite wastewater disposal system or wastewater sewer.

Food Service Establishment shall mean, but is not limited to, any facility preparing and/or serving food for commercial use or sale. This includes restaurants, cafes, lunch counters, cafeterias, hotels, hospitals, convalescent homes, factory or school kitchens, catering kitchens, bakeries, grocery stores with food preparation and packaging, meat cutting and preparation (excluding grocery stores with only food warming operations), meat packing facilities and other food handling facilities not listed above where fats, oil and grease may be introduced into the wastewater infrastructure, either directly or indirectly via haulers and cause line blockages and sewer overflows.

Federal shall mean the United States of America.

Garbage shall mean the solid animal and vegetable wastes from the domestic and commercial preparation, cooking and dispensing of food, and from handling, storage and sale of produce.

Grab Sample shall mean an individual sample, which is taken from a waste stream on a one-time basis without regard to the flow in the waste stream and without consideration of time.

Grease Trap shall mean a water tight structure located on a building sewer in which grease and oils are separated from other solid and liquid constituents or sewage and accumulated in accordance with 310 CMR 15.230.

Groundwater shall mean water that is located within the earth.

Groundwater Discharge Permit shall mean a permit issued to the Town for operation of the Wastewater Treatment Facility by the Massachusetts Department of Environmental Protection (the MassDEP) in accordance with the Massachusetts Clean Water Act (M.G.L. c.21, s.21-53) which was amended by Chapter 246 of the Acts of 1973.

Hauler shall mean any company and/or person who contracts for the pumping, transport, and legal disposal of septage and FOG and who has obtained a license to do so from the Town.

Hazard Communication Standard (HCS), also known as HazCom, Hazard Communication Standard (HCS), 29 CFR 1910.1200, as amended, is a U.S. regulation that governs the evaluation and communication of hazards associated with chemicals in the workplace. The HCS mandates that chemical manufacturers must communicate a chemical's hazard information to chemical handlers by providing a Safety Data Sheet (SDS).

Holding Tank Waste shall mean any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump trucks.

Industrial Discharge Permit shall mean a non-transferable written and duly signed document by the Town issued to all Significant Industrial Users (SIU) for a period not to exceed five years. This document shall contain, at a minimum, operational parameters, sampling requirements and schedules, discharge limitations, and statements of violation penalties.

Industrial Pretreatment Program shall prevent the discharge of pollutants to wastewater infrastructure which will interfere with the operations of the wastewater infrastructure or its use and disposal of municipal biosolids. The Industrial Pretreatment Program prevents the introduction of pollutants to the wastewater infrastructure that may pass through into rivers, lakes, and streams causing toxicity or other impacts. Implementation of the Pretreatment Program is defined at 40 CFR Part 403, as amended. These regulations describe the responsibility of the EPA, MassDEP, the Town and industrial users in protecting the wastewater infrastructure, biosolids, receiving waters, and worker health and safety.

Industrial User shall mean any nonresidential user identified in Division A, B, D, E or I of the Standard Industrial Classification (SIC) Manual. Class III also shall include any user that discharges wastewater containing toxic or poisonous substances as defined in Section 307 and Section 502 of the Clean Water Act and/or substance(s) causing interference in the wastewater system.

Industrial Wastes shall mean the liquid wastes and/or water-carried wastes from industrial manufacturing processes, trade or business not clearly included within the definitions of sanitary sewage, storm water or cooling water, even if emanating from a residence as distinct from sanitary wastewater.

Infiltration shall mean the water other than wastewater entering a sewer system, including service connections, from the ground or a water body, through such means as, but not limited to, defective pipes, pipe joint connections or manhole walls.

Inflow shall mean the water other than wastewater that enters a sewer system, including service connections, from such sources as, but not limited to, roof leaders, sump pumps, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections from storm sewers and combined sewers, catch basins, storm waters, surface runoff, or drainage.

Interference shall mean an inhibition or disruption of the wastewater treatment facility, its treatment process, treatment operation, effluent disposal, or sludge processes, use or disposal which is a cause in whole or in part of a violation of any requirement of the Town's Groundwater Discharge Permit.

Invert shall mean the bottom inside of the sewer pipe.

MassDEP shall mean the Department of Environmental Protection of the Commonwealth of Massachusetts.

MassDOT shall mean the Massachusetts Department of Transportation

Massachusetts Environmental Policy Act (MEPA) requires that state agencies study the environmental consequences of their actions, including permitting and financial assistance. It also requires them to take all feasible measures to avoid, minimize, and mitigate damage to the environment.

Massachusetts Environmental Policy Act Office is part of the Executive Office of Energy and Environmental Affairs (EEA). The office provides meaningful opportunities for public review of the potential environmental impacts of projects for which state agency action is required. The office serves the general public, state agencies, municipalities and project proponents.

Massachusetts General Laws (MGL) shall mean a codification of many of the statutes of the Commonwealth of Massachusetts.

May is permissible.

Medical Waste shall mean isolation wastes, infection agents, human blood and blood byproducts, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes, potentially contaminated laboratory wastes, dialysis wastes, medications, and pharmaceuticals as applicable.

National Pretreatment Standard shall mean any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307 (b) and (c) of the Act which applies to a specific category of Industrial Users.

Natural Outlet shall mean any outlet into a watercourse, pond, ditch, lake or other body of surface or ground water.

OSHA shall mean Occupational Safety and Health Administration.

Outfall Sewer shall mean any pipe or conduit for carrying treated or untreated wastewater to a point of final disposal.

Owner shall mean the person or persons who legally owns, leases or occupies private property with wastewater facilities that discharge, or will discharge, to the public wastewater system.

Pass Through shall mean the discharge of pollutants through the wastewater treatment facility into navigable water in quantities or concentrations which are a cause in whole or in part of a violation of any requirement of the Town's Groundwater Discharge Permit, including an increase in the magnitude or duration of a violation.

Person Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns. This definition includes all Federal, State, and local governmental entities.

pH shall mean the logarithm of the reciprocal of the hydrogen ion concentration expressed in grams per liter of solution with neutral pH = 7.0 as determined by Standard Methods. The concentration is the weight of hydrogen ions, in grams, per liter of solution.

Plumbing shall mean piping falling under the jurisdiction of the plumbing code, generally piping within a building and extending outside the building ten feet from the building wall.

Pretreatment shall mean the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to, or in lieu of, introducing such pollutants into the Wastewater Infrastructure. This reduction or alteration can be obtained by physical, chemical, or biological processes; by process changes; or by other means, except by diluting the concentration of the pollutants unless allowed by an applicable Pretreatment Standard.

Pretreatment Coordinator shall mean the individual designated by the Town to oversee the day-to-day implementation of the Industrial Pretreatment Program.

Pretreatment Requirement shall mean any substantive or procedural pretreatment requirement, other than a National Pretreatment Standard, applicable to Industrial Users.

Pretreatment Standard shall mean any regulation containing pollutant discharge limits promulgated by the EPA, MassDEP and/or the Town's Pretreatment Standards which shall include National Pretreatment Standards prohibited discharges and local limits.

Property Owner shall mean the person, as defined herein, who is the record title owner of the applicant's real property, as recorded in the Barnstable County Registry of Deeds and has authority to sign. .

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

Public Sewer shall mean the system of pipes used to convey wastewater from the private building sewer and service connection to the wastewater treatment facility. In addition, it shall mean every sewer laid in any land, easement, street or way, public or private, to which all owners of abutting properties have equal rights, and which is controlled and has been accepted by the Town. No sewer shall be deemed to be a public sewer unless it meets all of these criteria, even if such sewer is located in any land, street or way, public or private.

Pumping Stations

- Town Pumping Station shall mean a system designed to take the flow from a gravity sewer system and boost it to a higher elevation. The Town Pumping Station shall include, but not be limited to: (a) Wetwell with submersible pumps, piping, and level controls; (b) Valve Vault with Piping, Flow Meter(s) and Odor Control System; (c) Stand-by Generator; and (d) Control Pedestal with Control Panels, Transfer Switch, and SCADA System.
- Prefabricated Low-Pressure Sewage Pump System (complete factory-built and tested system of the wetwell/drywell type) designed to take the flow from the property and boost it into the Town's wastewater infrastructure (gravity sewer or low-pressure sewer). The System shall include, but not be limited to: (a) wetwell containing grinder pump(s) (semi-positive displacement type grinder unit) mounted in a high-density polyethylene (HDPE) basin and anti-siphon valve and check valve assembly; (b) drywell containing an electrical quick-disconnect, pump removal system and shut-off valve; and (c) electrical alarm/disconnect panel.

Record Drawings shall mean detailed drawings prepared upon completion of the wastewater infrastructure, sealed and certified by the Design Engineer which show actual construction and field dimensions, elevations, details, changes made to the construction drawings by modification, details which were not included on the construction drawings, and horizontal and vertical locations of underground utilities, which have been impacted by the utility installation.

- The Horizontal Datum used for Record Drawings shall be Massachusetts State Plane, Mainland Coordinate System (NAD83).

- The Vertical Datum used for Record Drawings shall be North American Vertical Datum of 1988 (NAVD88).
- Record Drawings shall be compatible with the Department's CAD System.
- Digital photographs of the site and wastewater infrastructure shall be submitted with the drawings.
- Include the following statement on the Record Drawings:

"I hereby certify that XXX Engineering has performed inspections of the sewer service connection at the subject property and has found that the installation is in substantial conformance with the approved plans and the Town of Orleans Sewer Use Rules and Regulations."

Residential User shall mean all premises used only for human residency and that are connected to the wastewater system.

Sanitary Sewer shall mean a sewer which carries wastewater and to which storm, surface and ground waters are not intentionally admitted.

Sanitary Wastewater shall mean wastewater discharged from the sanitary conveniences of dwellings, office buildings, industrial plants or institutions.

Supervisory Control and Data Acquisition (SCADA) shall mean a control system architecture comprising computers, networked data communications and graphical user interfaces for high-level process supervisory management as well as other peripheral devices like programmable logic controllers (PLC) and discrete proportional-integral-derivative (PID) controllers to interface with infrastructure components.

Safety Data Sheet (SDS) shall mean a standardized document that contains occupational safety and health data. SDS's typically include chemical properties, health and environmental hazards, protective measures, as well as safety precautions for storing, handling, and transporting chemicals.

Select Board as defined in Chapter 3, of the Charter of the Town of Orleans, as amended.

Septage shall mean the material removed from any part of an individual on-site wastewater disposal system.

Service Connection shall mean the extension from the building sewer which carries sanitary sewage to the Town's wastewater system. A service connection may also be called a building sewer, house sewer, or house connection.

Settleable Solids shall mean that fraction of suspended solids that will settle to the bottom of a cone-shaped container in a sixty (60) minute period as determined by Standard Methods.

Sewer shall mean a pipe or conduit that carries wastewater.

Sewer Assessment By-Law shall mean the current code pertaining to the rate or charge for the construction of the Wastewater Infrastructure set by a method(s) adopted by the Town.

Sewer Connection Regulations shall mean Chapter 185 Article XVII of the Board of Health Regulations.

Sewer Improvement Fee shall mean a fee established for the purpose of modifying the Town's wastewater system.

Sewer Service Areas shall mean the areas of the Town in which properties are abutting the existing wastewater system. Refer to Appendix A – Sewer Service Areas Maps.

Sewer Unit shall mean the unit of measure which the Commission shall use to assess the owners of land abutting the wastewater sewer installed by the Town based upon the uniform unit method. A single residential Sewer Unit shall be equal to fifty-five (55) gallons per day of water usage. The number of Sewer Units assessed shall be calculated in accordance with the Town's **Sewer Assessment By-Law**.

Shall is mandatory.

Significant Industrial User (SIU) shall mean any industrial user discharging into the Town's wastewater system that meets any of the following criteria:

- An Industrial User subject to National Pretreatment Standards; or
- An Industrial User that:
 - ✓ Discharges an average of twenty-five thousand (25,000) gpd or more of process wastewater to the Wastewater Infrastructure (excluding sanitary, noncontact cooling and boiler blowdown wastewater);
 - ✓ Contributes a process wastestream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the Town's Wastewater Infrastructure; or
 - ✓ Is designated as such by the Commission on the basis that it has a reasonable potential for adversely affecting the Town's Wastewater Infrastructure's operation or for violating any Pretreatment Standard or Requirement.
- The Commission may determine that an Industrial User subject to National Pretreatment Standards is a Non-Significant Categorical Industrial User rather than an SIU on a finding that the Industrial User never discharges more than one hundred (100) gallons per day (gpd) of total categorical wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater, unless specifically included in the Pretreatment Standard) and the following conditions are met:
 - ✓ The Industrial User, prior to the Commission's finding, has consistently complied with all applicable Pretreatment Standards and Requirements;
 - ✓ The Industrial User annually submits the certification statement required in Section 6.14 B of the Industrial Pretreatment Program Rules and Regulations [see 40 CFR 403.12(q), as amended], together with any additional information necessary to support the certification statement; and
 - ✓ The Industrial User never discharges any untreated concentrated wastewater.
 - ✓ Upon a finding that a User meeting the criteria in this section has no reasonable potential for adversely affecting the Wastewater Infrastructure's operation or for violating any Pretreatment Standard or Requirement, the Commission may at any time, on its own initiative or in response to a petition received from an Industrial User, and in accordance with procedures in 40 CFR 403.8(f)(6), as amended, determine that such User should not be considered an SIU.

Significant Noncompliance shall mean any user in violation of one or more of the following:

- Chronic violation of wastewater discharge limits defined here as those in which sixty-six (66) percent or more of all the measurements taken during a six (6) month period, by any magnitude, the daily maximum limit or the average limit for the same pollutant parameter.
- Technical Review Criteria (TRC) violations defined here as those in which thirty-three (33) percent or more of all the measurements for each pollutant parameter taken during a six (6) month period, by any magnitude, the daily maximum limit or the average limit multiplied by the applicable TRC (TRC = 1.4 for BOD, TSS, fats, oil and grease, and 1.2 for all other pollutants except pH).
- Any violation of a pretreatment effluent limit (daily, maximum of longer-term average) that the Town has determined has caused, alone or in combination with other discharges, interference or pass through, including endangering the health of the Town's personnel or the public at large.
- Any discharge of a pollutant that has caused imminent endangerment to human health or welfare or has resulted in the Town's exercise of its emergency authority under paragraph (f) (1) (vi) (B) of 40CFR 403.8, as amended, to halt such a discharge.
- Failure to provide, within thirty (30) calendar days after a compliance schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction or attaining final compliance.

- Failure to provide, within thirty (30) calendar days after the due date, required reports, such as baseline monitoring reports, ninety (90) calendar day compliance reports, periodic self-monitoring reports and reports on compliance with compliance schedule.
- Failure to adequately report any non-compliance.
- Any other violation or group of violations which the Commission determines will adversely affect the operation or implementation of the Town's pretreatment program.

Slug or Shock Discharges shall mean any discharge of water, wastewater or industrial waste that will interfere with the operation or efficiency of a wastewater treatment facility due to an excessive concentration of any given constituent or due to an excessive rate of flow in a reduced period of time or at intermittent intervals. Slug shall also mean any discharge of water, wastewater or industrial waste which contains a concentration of any given constituent or a rate of flow that exceeds more than five times the average twenty-four (24) hour concentration or flow during normal operation for any period of duration longer than fifteen (15) minutes.

Spill shall mean the release, accidental or otherwise, of any material not normally released in the Town's wastewater system, which by virtue of its volume, concentration or physical and/or chemical characteristics creates a hazard to the Town's wastewater system, its operation or personnel. Such characteristics shall include, but are not limited to, volatile, explosive, toxic, or otherwise unacceptable materials.

Standard Methods shall mean the latest edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the American Public Health Association, Water Environment Federation and American Water Works Association.

State shall mean the Commonwealth of Massachusetts.

Storm Drain shall mean a drain which carries storm and surface waters and drainage, but excludes wastewater and industrial wastes, other than unpolluted cooling water.

Substantial Completion shall mean a stage of a project or a designated portion of the project that is sufficiently complete, in accordance with the Contract Documents, so that the Town may use or occupy the project or designated portion thereof for the intended purpose.

Subsurface Sewage Disposal System (SSDS) shall be an onsite wastewater disposal system as defined by the State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage (310 CMR 15), as amended.

Superintendent shall mean the Director of the Department or his/her authorized representative.

Surface Water shall mean water that remains on the surface of the ground when the rate of precipitation exceeds the rate at which water percolates into the soil.

Total Suspended Solids (TSS) shall mean the total suspended matter that either floats on the surface of, or is in suspension in, water or wastewater, as determined by Standard Methods.

Title 5 (310 CR 15) shall mean the State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage (310 CMR 15), as amended.

Title 5 Flow shall mean the design flow of sanitary sewage from a building or buildings as defined by the State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage (310 CMR 15), as amended.

Town shall mean the Town of Orleans, County of Barnstable, Commonwealth of Massachusetts.

Toxics shall mean any of the pollutants designated by federal regulations pursuant to Section 307 (a) (1) of the Federal Clean Water Act.

Trench and Road Opening Permit shall mean the permit for work performed within the public right-of-way issued by the Department.

Trench Permit shall mean the permit for work performed not within a right-of-way issued by the Department, pursuant to MGL Ch. 82A Section 1 and 520 CMR 7.00, as amended.

User shall mean any person, inside or outside of the Town, who contributes, causes or permits the contribution of wastewater into the Town's wastewater system.

User Charge shall mean the charge levied on the users of wastewater system for the cost of operation and maintenance. This may also include some, or all, of the recovery of capital costs or the cost of replacement of equipment or material.

Wastewater shall mean a combination of liquid and water-carried wastes from residences, commercial buildings, industries and institutions, together with any groundwater, surface water or storm water that may be present.

Wastewater Infrastructure shall mean the combination of structures and conduits (public wastewater sewers, pumping stations, force mains, and wastewater treatment facilities) for the purpose of collecting, conveying, treating, neutralizing, stabilizing, disposing of domestic wastewater and/or industrial or other wastewaters.

Wastewater Sewer shall mean the structures, processes, equipment and arrangements necessary to collect and transport wastewaters to the wastewater treatment facility.

Wastewater Treatment Facility (WWTF) shall mean the structures, processes, equipment and arrangements necessary to treat the wastewaters discharged into the wastewater collection system prior to disposal.

Watercourse shall mean a channel in which the flow of water occurs, either continuously or intermittently.

Section 2 - References

MGL Chapter 83, Section 10 - Rules and regulations regarding use and connections.

248 CMR 10.00 - Commonwealth of Massachusetts Uniform State Plumbing Code.

248 CMR 1.00 – 10.00 - General provisions governing the conduct of plumbing and gas work performed in the Commonwealth of Massachusetts.

314 CMR 7.00 - Establishes the program whereby sewer system extensions and connections are regulated and permitted by the Division of Water Pollution Control of the Massachusetts Department of Environmental Protection.

314 CMR 12.00 - Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers.

310 CMR 15 – The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-Site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage.

Guidelines for the Design, Construction, Operation, and Maintenance of Small Wastewater Treatment Facilities with Land Disposal by MassDEP.

Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Surveys by MassDEP.

North American Industry Classification System (NAICS) by The Instituto Nacional de Estadística y Geografía (INEGI) of Mexico, Statistics Canada and the United States Office of Management and Budget, through its Economic Classification Policy Committee.

Process Design Manual: Land Treatment of Municipal Wastewater EPA 625/1-81-013 by EPA.

Standard Industrial Classification (SIC) by United States Department of Labor.

TR-16: Guides for the Design of Wastewater Treatment Works by New England Interstate Water Pollution Control Commission.

Wastewater Engineering: Treatment, Disposal, and Reuse by AECOM (Metcalf & Eddy).

Water Pollution Control Federation (WPCF) Manual of Practice No. FD-5 Gravity Sewer Design and Construction shall mean the document prepared by a joint task force of the American Society of Civil Engineers and the Water Pollution Control Federation, 1982.

Water Reuse: issues, Technologies, and Applications by AECOM (Metcalf & Eddy).

Wastewater Treatment Plant Design: Manual of Practice (MOP 8) by Water Environment Federation.

Note: Where reference is made to a rule and/or regulation, the most recent version shall apply.

This Page Intentionally Left Blank.

Article II - General Provisions

Section 1 - Purpose

- A. Pursuant to the provisions of Massachusetts General Laws Chapter 83, Section 10, the Commission hereby establishes these **Sewer Use Rules and Regulations**. The purpose of these **Sewer Use Rules and Regulations** is to provide for the optimum beneficial public use of the Town's wastewater system through regulation of sewer installation; connection; sewer use; wastewater discharges; inspection of public and private sewers; to justify and equitably distribute the costs to operate, maintain and improve the Town's wastewater system; and to provide procedures for complying with the requirements contained herein, including penalties for violations thereof.
- B. These **Sewer Use Rules and Regulations** set forth uniform requirements for users of the Town's Wastewater Infrastructure and enable the Town to comply with all applicable Federal and State laws including the Clean Water Act (33 United States Code §1251 et seq); the General Pretreatment Regulations (40 Code of Federal Regulations Part 403); Massachusetts General Laws (Chapter 21); and the Pretreatment Regulations promulgated at 314 CMR §2.00, 7.00, and 12.00.

Section 2 - Scope

- A. The definitions of terms used in these **Sewer Use Rules and Regulations** are found in **Article I Definitions and References**. The provisions of these **Sewer Use Rules and Regulations** shall apply to the discharge of all wastewater into the Town's wastewater system.
- B. These **Sewer Use Rules and Regulations** provide for the use of the Town's wastewater system, regulation of sewer construction, control of the quality and quantity of wastewater discharged, wastewater pretreatment, equitable distribution of costs, sewer construction plans, issuance of wastewater discharge permits, minimum sewer construction standards, conditions and penalties and other procedures in cases of violation of these **Sewer Use Rules and Regulations**.
- C. Additionally, these **Sewer Use Rules and Regulations** shall apply to all users of the Town's wastewater system, including those outside the Town who are users by permit, contract or other agreement with the Town.

Section 3 - Sewer Service Areas

- A. As part of the adoption of these **Sewer Use Rules and Regulations**, the Town has established Sewer Service Areas which in general consists of the properties abutting the existing wastewater system and the properties abutting proposed extensions as determined from the Department's approved planning documents. The Town quantified anticipated wastewater flows from the Sewer Service Areas based on water and wastewater records, Title 5 (310 CMR 15), and current zoning. Refer to **Appendix A – Sewer Service Areas Maps** of these **Sewer Use Rules and Regulations** for a figure showing the Sewer Service Areas.
- B. Properties located within the Sewer Service Areas are eligible for and are required to connect into the Town's wastewater system in accordance with these **Sewer Use Rules and Regulations** and any other applicable regulations.
- C. Properties not located within the Sewer Service Areas are not eligible for connection into the Town's wastewater system unless approved by the Commission

Section 4 - Sewer Service Area Modifications

- A. The Commission may alter the Sewer Service Area as necessary for the protection of the health and welfare of the public and for economic benefit to the Town.
- B. Applicants seeking to alter the Sewer Service Area may apply to the Commission to do so. Applicants must demonstrate the need and public benefit by providing supporting information. Refer to **Appendix B – Sewer Service Area Expansion Application** of these **Sewer Use Rules and Regulations**.

- C. A Public Hearing on the Sewer Service Area Modification application shall be held by the Commission. The Applicant shall notify all abutters located within 100 feet of the Sewer Expansion and Property Owners per Chapter 40B Provision in the Planning Notification two (2) weeks prior to the Public Hearing. In addition, the Applicant shall advertise the Public Hearing in a local newspaper with general circulation two (2) weeks prior the Public Hearing.
- D. If the Commission approves such adjustment, the Department will, if required, direct the applicant to file a Notice of Project Change in accordance with the Massachusetts Environmental Policy Act (MEPA).
- E. All costs and expenses for any Applicant seeking to alter the Sewer Service Area shall be the responsibility of the Applicant.
- F. If approved, the Applicant shall install all wastewater infrastructure components, including but not limited to, pipeline, manholes, service laterals, valves and fittings, located within rights-of-way and roadways.
- G. If approved, the Applicant shall be responsible for all operation and maintenance costs of the wastewater infrastructure located within the sewer area modification until transfer to the Town.
- H. If approved, the Applicant shall execute a Bill of Sale to transfer the wastewater infrastructure located within the sewer area modification within one (1) year of approval of the wastewater infrastructure by the Department or upon usage of the wastewater infrastructure whichever occurs first. Refer to Appendix C – Bill of Sale of these Sewer Use Rules and Regulations.

Section 5 - Administration

- A. Unless otherwise noted, the Commission and/or the Department shall administer, implement and enforce the provisions of these **Sewer Use Rules and Regulations**.

Section 6 - Inspections

- A. The Commission, the Department and/or their designee with appropriate credentials and identification, shall be permitted to enter properties at any reasonable time for the purposes of inspection, observation, measurement and sampling and testing of the wastewater discharge to ensure that the discharge to the wastewater system is in accordance with the provisions of these **Sewer Use Rules and Regulations**.
- B. The Commission, the Department and/or their designee shall have no authority to inquire into any processes including metallurgical, chemical, oil, refining, ceramic, paper or other industries beyond that point having a direct bearing on the kind and source of discharge to the Town's wastewater system.
- C. While performing the necessary work on private properties, the Commission, the Department and/or their designee shall observe all safety rules applicable to the premises. The Town shall indemnify to the extent permitted by law the owner of the premises against loss or for personal injury or property damage asserted against the owner of the premises and arising out of the inspection, except as such may be caused by negligence or failure of the owner of the premises to maintain safe conditions.

Section 7 - Inspection and Maintenance in Easements

- A. The Commission, the Department and/or their designee bearing proper credentials and identification, shall be permitted to enter all private properties through which the Town holds a duly recorded easement for the purpose of, but not limited to, inspection, observation, measurement, sampling, repairs and maintenance of any portion of the wastewater system lying within said easement. All entry and subsequent work, if any, on said easement shall be done in full accordance with the terms of the duly recorded easement pertaining to the private property involved.

- B. No landscaping, including but not limited to shrubs and trees, or structures, including but not limited to buildings, walls, other utilities and fences, shall be installed within the boundaries of any easement held by the Town. The property owner shall be fully responsible for the removal of any such landscaping or structures installed in violation of this section.

Section 8 - User Charges and Fees

- A. All user charges, fees and related costs payable under the provisions of these **Sewer Use Rules and Regulations** shall be established by the Select Board as further detailed in **Article VI – User Charges and Fees**. All current service charges and fees are outlined in **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.
- B. All service charges, fees and penalties accumulated under these **Sewer Use Rules and Regulations** shall be allocated solely for the purpose of constructing, operating, maintaining, repairing or improving the wastewater system, or eliminating debt incurred for the same.

Section 9 - Flow Offset Fee, Reserve Capacity Fee, Privilege Fee and Compensatory Fee

- A. The Fees shall be used by the Department to fund projects, including but not limited to, process evaluations, detection of extraneous flow (infiltration and inflow), inspection of system components and connections, sump pump detection and removal, engineering design and construction services, and other system improvements and /or upgrades to increase the Town's Wastewater Infrastructure capacity and/or efficiency.
- B. All properties receiving a Sewer Service Area expansion approval to connect into the existing wastewater system are responsible for a one-time Flow Offset Fee, ~~and~~ a one-time Reserve Capacity Fee, and a Privilege Fee paid to the Department at the time of application.

1. Flow Offsets – Collection System

- a. The Flow Offset Fee shall be based on ~~four (4) times 25% of~~ 25% of the proposed sewer design flow ~~in accordance with 314 CMR 12: Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works.~~
- b. Calculation of wastewater sewer design flows shall be based on one of the following as approved by the Commission:
 - 1) Documented facilities with at least two (2) years of water use data in Orleans;
 - 2) Documented similar facilities with at least two (2) years of water use data; or
 - 3) Sixty (60) percent of 310 CMR 15 – The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-Site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage.
- c. For the Downtown Service Area, the dollars per gallon value shall be determined by the final cost of the Contract No. 2019-02, Downtown Area Collection System and Pumping Stations divided by the Downtown Area Service Area Design Average Daily Flow at the WWTF identified in the Town's Groundwater Discharge Permit. The Flow Offset Fee shall be dollars per gallon plus a Cost Adjustment (ENR Construction Cost Index for Besten, MA20-City Average) calculated between the substantial completion date (March 2023) and the most recent ENR value at the time of application.
- d. For the Meetinghouse Pond Service Area, the dollars per gallon value shall be determined by the final cost of the Contract No. 2022-01, Meetinghouse Pond Area Collection System and Pumping Stations divided by the Meetinghouse Pond Service Area Design Average Daily Flow at the WWTF identified in the Town's Groundwater Discharge Permit. The Flow Offset Fee shall be dollars per gallon plus a Cost Adjustment (ENR Construction Cost Index for Besten, MA20-City Average) calculated between the substantial completion date and the most recent ENR value at the time of application.

2. Reserve Capacity – Treatment Facility

- a. The Reserve Capacity Fee shall be based on ~~four (4) times 25%~~ of the proposed sewer design ~~flow in accordance with 314 CMR 12: Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works flow.~~
- b. Wastewater Sewer design flows shall be based on one of the following as approved by the Commission:
 - 1) Documented facilities with at least two (2) years of water use data in Orleans;
 - 2) Documented similar facilities with at least two (2) years of water use data; or
 - 3) Sixty (60) percent of 310 CMR 15 – The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-Site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage.

e.c. For the Downtown Service Area, the dollars per gallon value shall be determined by the final cost of the Contract No. 2019-02, Downtown Area Collection System and Pumping Stations divided by the Downtown Area Service Area Design Average Daily Flow at the WWTF identified in the Town's Groundwater Discharge Permit. The Flow Offset Fee shall be dollars per gallon plus a Cost Adjustment (ENR Construction Cost Index for **Boston, MA20-City Average**) calculated between the substantial completion date (March 2023) and the most recent ENR value at the time of application.

Formatted: Indent: Left: 1.13", Hanging: 0.38", Numbered + Level: 1 + Numbering Style: a, b, c, ... + Start at: 1 + Alignment: Left + Aligned at: 0.75" + Indent at: 1"

f.d. For the Meetinghouse Pond Service Area, the dollars per gallon value shall be determined by the final cost of the Contract No. 2022-01, Meetinghouse Pond Area Collection System and Pumping Stations divided by the Meetinghouse Pond Service Area Design Average Daily Flow at the WWTF identified in the Town's Groundwater Discharge Permit. The Flow Offset Fee shall be dollars per gallon plus a Cost Adjustment (ENR Construction Cost Index for **Boston, MA20-City Average**) calculated between the substantial completion date and the most recent ENR value at the time of application.

3. Privilege Fee

- a. A Privilege Fee shall be defined in accordance with the **Sewer Assessment By-Law**.
- b. Calculation of the Privilege Fee shall be in accordance with the **Sewer Assessment By-Law**.

4.C. Compensatory Sewer Privilege Fee. ~~The Compensatory Sewer Privilege Fee applies when a property develops, or changes use in a way that exceeds the original number of sewer units used to determine its betterment assessment. This fee is calculated based on the value of the sewer unit and what that value would have been at the time of application for additional allocation~~

Formatted: Body Text, Justified, Indent: Left: 0.38", Hanging: 0.38", Numbered + Level: 1 + Numbering Style: A, B, C, ... + Start at: 1 + Alignment: Left + Aligned at: 0.75" + Indent at: 1", Adjust space between Latin and Asian text, Adjust space between Asian text and numbers, Tab stops: 0.5", Left + 0.75", Left + 1.5", Left + 2", Left + 3.38", Centered + 6.75", Right + Not at 1.13"

- 1. Undeveloped Property. In the situation where a betterment has been assessed to an undeveloped property based upon the number of sewer units required by Section D., paragraph 4 and paragraph 5 of the Sewer Assessment Bylaw and said property is ultimately developed to accommodate sewer units more than the number used for determining the betterment assessment, the Town shall assess a compensatory sewer privilege fee.
- 2. Developed Property. In the situation where a betterment has been assessed to a developed property based upon the number of sewer units required by the Sewer Assessment Bylaw, and the usage of said property is changed or increased, which results in a number of sewer units in excess of the number used for determining the betterment assessment, the Town shall assess a compensatory sewer privilege fee.
- 3. The compensatory sewer privilege fee shall be the increase in flow allocation over the betterment flow multiplied by the sewer unit value most recently established regardless of the property location and the collection system implementation phase. The increased flow allotment

shall be as approved by the Board. Payment shall be made prior to the issuance of approval by the Board of Water and Sewer Commissioners of the Town or its authorized representative.

Equation

Compensatory Sewer Privilege Fee = (Total Allocation Flow – Betterment Flow) x Sewer Unit Value

- 4.4. All rules and regulations governing the payment and method of payment related to betterment assessments, as designated in the Sewer Assessment Bylaw, and the Town's Sewer Use Rules and Regulations, as amended, shall apply.
5. The Commission is authorized to take any other action necessary or appropriate to accomplish the establishment and recovery of such betterment assessments.
- a. A Compensatory Sewer Privilege Fee shall be defined in accordance with the Sewer Assessment By-Law.
- b. Calculation of the Compensatory Sewer Privilege Fee shall be in accordance with the Sewer Assessment By-Law.

Formatted: Left, Indent: Left: 0.75", Hanging: 0.38", Numbered + Level: 1 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 1.38" + Indent at: 1.63", Tab stops: 1.13", Left + Not at 1.5"

Section 10 - Protection from Damage

- A. No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is part of the Town's wastewater system. Any person violating this provision shall be subject to immediate arrest and prosecution under the charge of malicious destruction to property, Chapter 266, Section 127 of the General Laws of the Commonwealth, or any other law, ordinance or By-Law that may be applicable.

Section 11 - Easements

- A. The use of lands acquired in fee or easement for sewer purposes shall be subject to the approval of the Department, the Commission and the Town.

Section 12 - Severability

- A. A finding by any court or other jurisdiction that any section, clause, sentence, part or provision of these **Sewer Use Rules and Regulations** is invalid shall not affect the validity of any section, clause, sentence, part or provision of these **Sewer Use Rules and Regulations** that can be implemented without the invalid section, clause, sentence, part or provision.

Section 13 - Amendments

- A. The Commission reserves the right to amend these **Sewer Use Rules and Regulations**, in accordance with Massachusetts General Laws Chapter 83, Section 10, in part or in whole, whenever it may deem necessary, after a duly advertised public hearing.

Article III - Connection to the Wastewater System

Section 1 - Permission to Connect Required

- A. Discharges to the wastewater system are not authorized unless approved in writing by the Department in accordance with these **Sewer Use Rules and Regulations**.
- B. No unauthorized person shall uncover, alter, disturb, open, use or make any connections to any public sewer or the wastewater system without first obtaining a written permit from the Department.

Section 2 - Connection Required

- A. Developed properties abutting the Town's Wastewater Infrastructure shall be required to connect in accordance with the Board of Health's Sewer Connection Regulations Chapter 185 Article XVII Section 144-153. Violation of this regulation is subject to a fine of \$200.00 for each violation.
- B. The owner of any structure to be constructed on an undeveloped property abutting the Town's Wastewater Infrastructure shall connect said building by a sufficient sewer to the common sewer prior to occupancy of the structure.

Section 3 - New Developments or Redevelopments

- A. The developer of a new development or redevelopment which abuts an existing sewer shall connect the new development or redevelopment into the Town's wastewater system, subject to Commission approval.
- B. The developer of a new development or redevelopment who wishes to extend an existing sewer to a new development or redevelopment into the Town's wastewater system may only do so:
 - 1. If there exists sufficient capacity within the Town's sewer system as determined by the Department; and
 - 2. If the developer fully complies with the requirements of Section 4 - Sewer Service Area Modifications of Article II – General Provisions.

Section 4 - Allocation of Flows

- A. Properties with a 3-year record of water use below the Sewer Unit flow are allowed up to a total of two times the Sewer Unit flow. All other properties are allowed their existing flow based on a similar 3-year record of water use per **Appendix D – Water Use Records**. Allocation for the Phase 1 Downtown Project only will be based on a 2-year record of water use representing February 2018 through January 2020.
- B. If a Property Owner would like to apply for additional flow, he/she would need to file an application (**Appendix J – Additional Allocated Wastewater Flow Application**) with the Commission for the additional flow. The Commission would base its decision to allow additional flow to a property on criteria including availability of capacity, economic development, payment of fees, etc.
- C. Additional flow may be approved on a case-by-case basis as determined by the Commission.
- D. A permit shall be valid only for the use approved in the application. Any change in use of a building and/or any change in the character of the wastewater discharged from a building shall be considered a change of use.
- E. The Property Owner shall complete an application for a new permit for any such change in use and shall pay the appropriate fee at the time the application is filed.

Section 5 - Connection Permit Application

- A. A property owner who desires to make, remove or repair an existing connection or the construction of any new pipe, extension or connection to the Town's Wastewater Infrastructure shall ensure work is performed by a drain layer licensed by the Department.

- B. There are two (2) applications for connection permits: one for residential and commercial service connections, and one for industrial service connections. Refer to **Appendix F – Residential and Commercial Wastewater Connection Permit Application** and **Appendix G – Industrial Wastewater Connection Permit Application** of these **Sewer Use Rules and Regulations**.
- C. The property owner shall complete a permit application supplemented by any plans, specifications or other information considered pertinent in the judgment of the Department. Permits will not be issued until the applicant has filed a layout plan showing, at a minimum, the location of existing service connection, building location, route of sewer service, water line, and existing septic system, and said layout has been approved by the Department and the Property Owner has received a permit from the Board to abandon the existing septic system.
- D. Permit and inspection fees, in accordance with **Appendix E - Fee Schedule** of these **Sewer Use Rules and Regulations**, shall be paid to the Town at the time the application is filed. The work authorized by the connection permit shall be accomplished by the permittee within the dates specified in the permit as determined by the Department or the permittee shall apply for a new permit and shall pay all permit fees. In no case will any permit fees be refunded.
- E. If the work under the permit is not completed within the dates specified in the permit as determined by the Department, a new permit must be obtained. The Applicant shall pay all Permit and Inspection Fees for the new permit. The Applicant may request an extension of the permit at least thirty (30) days prior to the expiration of the permit.
- F. Drain layers shall post surety in an acceptable format to the Department in the amount of the estimated cost to perform the work plus twenty-five (25) percent to assure the satisfactory completion of work. Proof shall be provided as part of the application for connection. The surety shall remain in full effect for a period of one (1) year after satisfactory completion of the most recent work performed in the Town by the drain layer. The drain layers shall repair or replace, without cost to the property owner or Town, any defects in the work or parts of the work furnished or built by him/her and any damage due to faulty workmanship on his/her part or due to faulty or imperfect material or equipment furnished by him/her, which defects or damage may appear within one (1) year from the date of completion of the work.
- G. Permits may be obtained at the office of the Department during their regular business hours. Fees for the permits shall be in accordance with **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.
- H. Record Drawings shall be submitted to the Department within 14 days of completion of the work to receive a Certificate of Compliance from the Board in accordance with 310 CMR 15.021.
- I. Violation of the requirements of these **Sewer Use Rules and Regulations** shall be cause for revocation of the permit.

Section 6 - Drain Layer's License

- A. Licenses to install a connection to the Town's wastewater system will be issued to experienced and competent contractors as determined by the Department. Drain Layer's Licenses are issued for a period of one (1) calendar year (January 1 through December 31) and must be renewed by the drain layer for each calendar year.
- B. Licenses may be obtained at the office of the Department during their regular business hours. Fees for the license shall be in accordance with **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.
- C. All applications for a drain layer's license shall be submitted to the Department with the following, as a minimum:
 - 1. A completed original application for a drain layer's license, which clearly demonstrates the experience of the Contractor in performing similar work.

2. Evidence of Insurance (insurance certificate)
 - a. The drain layer shall carry and maintain in effect during the entire implementation of the work, at his/her own expense, the following kinds and minimum amounts of insurance in a company or companies with A.M Best's Rating of "A" or better. Such insurance shall cover claims and suits which arise out of, or result from, the drain layer's execution of the work whether such execution be by the drain layer or by any subcontractor.
 - 1) Worker's Compensation as required by the Worker's Compensation Laws of the Commonwealth of Massachusetts and, in conjunction therewith, Employer's Liability with a limit of five hundred thousand dollars (\$500,000) per accident, or each employee for bodily injury by disease and policy limit.
 - 2) General Liability including, but not limited to, Bodily Injury, Personal Injury and Property Damage Liability, Contractual Liability insurance necessary to carry out the contractual obligation to proceed under the contract. Limit of liability of one million dollars (\$1,000,000) per occurrence.
 - 3) Automobile Bodily Injury and Property Damage Liability for all owned, non-owned and hired automobiles operated in connection with the performance of the contract. Limits of liability: Single limits of Property Damage and Bodily Injury of one million dollars (\$1,000,000) per accident.
 - 4) Additional insurance as may be required by the Town.
 - b. Certificates of Insurance acceptable to the Town shall be filed with the Department with the application. The Town and authorized representative shall be listed as additionally insured. These certificates shall contain a provision that coverage afforded under the policies will not be cancelled unless at least thirty (30) days prior written notice has been given to the Town.
 3. Surety in the amount of twenty thousand dollars (\$20,000) protecting the Town against damage to existing public roadways and property. An annual performance bond is required to be submitted to the Town in a form acceptable to the Town and in an amount determined by the Department.
 4. Evidence of required licenses (i.e., including, but not limited to, Commercial Driver's License, hydraulics licenses, etc.), issued by the Commonwealth of Massachusetts Department of Public Safety.
 5. References from at least three (3) other municipalities. Reference information shall include the name, address, telephone number and e-mail address of the Contact person.
- D. Violation of the requirements of these **Sewer Use Rules and Regulations** shall be cause for revocation of license.

Section 7 - ~~Septage~~ Hauler's License

- A. All ~~Septage~~ Haulers must be licensed by the Board.
- B. Violation of the requirements of these **Sewer Use Rules and Regulations** shall be cause for revocation to utilize the Orleans WWTF by the Commission.

Section 8 - Connection Costs

- A. All costs and expenses incidental to the installation, connection, repair and maintenance, abandoning the Subsurface Sewage Disposal System (SSDS), public and private property restoration, fees, insurance and the like of the service connection from the building drain to the Town's wastewater system and for sewer extensions shall be the responsibility of the applicant and/or property owner.

Section 9 - Connection Fees

- A. All applicants for a sewer connection permit shall pay a connection fee at the time the application is filed. Connection fees for each class of discharge shall be determined by the Select Board and may

be changed as the Select Board deems necessary. Current connection fees are presented in **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.

Section 10 - Betterment Assessments

- A. The owner of a property, located within the Sewer Service Area, abutting a way may be required to reimburse the Town a portion of the cost and expense for the installation of a public sewer by payment of a betterment assessment.
- B. The Betterment Assessment Process, Procedure, Values, etc. are determined by the Commission and approved by the Select Board and voted by Town Meeting. Please refer to the **Sewer Assessment By-Law** for all details and conditions for Betterments, Privilege Fees, Compensatory Sewer Privilege Fees, etc.

Section 11 - Related Costs

- A. All costs incurred by the Town in connection with administration and enforcement of these **Sewer Use Rules and Regulations** shall be reimbursed directly by the applicant or user to the Town. Such costs include, but are not limited to, the following:
 - 1. Inspections and monitoring;
 - 2. Sampling and analysis (including any sampling and analysis performed by the Town to monitor the strength and character of any wastewater discharged to the Town's wastewater system);
 - 3. Flow monitoring;
 - 4. Internal televised inspection of pipes;
 - 5. Pretreatment program;
 - 6. Capital improvements specific to the applicant or user; and
 - 7. Professional engineering/legal services.
 - 8. Evaluation and review of connection permit applications and their supporting documentation;
 - 9. Review of records and monitoring reports submitted by dischargers;
 - 10. Review of plans and specifications for connections, sewer extensions and potential pretreatment facilities;
 - 11. Observation of construction;
 - 12. Review of record drawings, and
 - 13. Assistance on similar technical matters affecting the wastewater facilities.
- B. The cost of providing these and similar professional engineering/legal services to the Department and related to the applicant's connection to the Town's wastewater system shall be determined by the Department. The applicant shall provide to the Department funds to cover the cost which will be placed into an escrow account by the Department. The funds shall be used by the Department to cover the cost of Professional Engineering/Legal Services. The Department will notify the applicant when the funds in the escrow account is reduced to twenty-five (25) percent. If the remaining funds are determined by the Department to be insufficient to cover the remaining costs, the applicant shall provide additional funds in an amount determined by the Department. Any unused funds will be returned to the applicant or user.

Section 12 - Professional Engineering/Legal Services – Not Used

Section 13 - Billing Period

- A. All Application Fees will be billed and paid at the time the application is filed.
- B. All Betterment Fees will be billed in accordance with the provisions of State law.
- C. All Professional Engineering and Legal Services will be billed on a monthly basis.

Section 14 - Separate Service Connections Required

- A. A separate and independent service connection shall be provided for every building, duplex unit, townhouse or condominium unit unless approved in writing by the Commission.

Section 15 - Existing Building Sewers

- A. Existing service connections may only be used for new buildings when they are found to meet all requirements of these **Sewer Use Rules and Regulations** and approved by the Department.
- B. It is the responsibility of the applicant to verify and meet this requirement.

Section 16 - Installation Requirements

- A. The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing and backfilling the trench, shall all conform to the requirements of the **Appendix H - Standard Specifications for Sewer Design and Construction** and **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**, as well as the building code, the plumbing code and other applicable rules and regulations of the Town and the Commonwealth of Massachusetts.
- B. The materials and procedures set forth in appropriate specifications of the Water Environment Federation (WEF), the American Water Works Association (AWWA) and the American Society of Testing Materials (ASTM) shall apply in the absence of specific Standard Specifications, code provisions or other rules or regulations of the Town or the Commonwealth of Massachusetts.
- C. The following are the basic requirements for building sewers. More specific requirements are contained in **Appendix H - Standard Specifications for Sewer Design and Construction** and **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**:
 - 1. The service connection pipe shall have a minimum nominal inside diameter of six (6) inches and shall be PVC, ductile iron or similar material subject to the approval of the Department;
 - 2. Pipe joints shall be of the factory-made compression type and shall be watertight and gas tight;
 - 3. All service connection pipes shall be laid to straight line and grade with a minimum pitch of two (2) percent (two foot per one hundred feet of length), unless otherwise approved, shall be bedded in crushed stone and shall be backfilled to prevent damage; and
 - 4. All service connections shall be installed with a cleanout/inspection port at the property line in accordance with the detail contained in **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.
- D. Upon connection to the municipal wastewater system, the existing Subsurface Sewage Disposal System shall be abandoned in accordance with the Board rules and regulations by a contractor licensed with the Board to do so.

Section 17 - Service Connection Elevation

- A. The service connection shall be installed at an elevation below the basement floor, whenever possible.
- B. The Department may allow, on a case-by-case basis, wastewater to be pumped by an approved means and discharged to the service connection from buildings in which the building drain is too low to permit gravity flow into the Town's wastewater system.

Section 18 - Inspection and Approval of Work

- A. The applicant for a connection permit shall notify the Department in writing a minimum of two (2) business days prior to commencing work on the installation or repair of any sewer pipes, manholes, service connection pipes or connections to the Town's wastewater system.
- B. The applicant for a connection permit shall notify the Department in writing and pay the inspection fee, a minimum of two (2) business days prior to when the service connection is ready for inspection

before its connection to the wastewater system. Inspections will only be made during the normal working hours of the Department.

- C. No backfilling of any pipes, manholes, service connection pipes or connections to the Town's wastewater system shall take place until the installation has been inspected and approved by the Department.
- D. The applicant shall conduct all testing required by **Appendix H - Standard Specifications for Sewer Design and Construction** of these **Sewer Use Rules and Regulations** and such testing, as deemed necessary by the Department, prior to acceptance of the work.
- E. All costs associated with all testing shall be the responsibility of the applicant.
- F. All costs associated with all inspections shall be the responsibility of the applicant in accordance with **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.

Section 19 - Excavations in or Near Public Property

- A. All excavations for service connections and sewers shall be adequately guarded with barricades and lights to protect the public from hazard. The applicant shall make separate application to the Department for all work in streets, sidewalks, parkways and other public property.
- B. All streets, sidewalks, parkways and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the Department.
- C. The applicant shall notify the Town of all work that may impact public property. The applicant shall comply with all requirements for protection of the public that the Town may deem necessary.

Section 20 - Surface Runoff and Groundwater

- A. No sanitary sewer shall be used to receive and convey or dispose of any storm or surface water, subsoil drainage, water seeping into buildings or excavations from soils or other underground sources, flows of natural springs or groundwaters, surplus from flowing wells, the discharge from roofs, roof conductors, yard drains, basement drains and sumps, or street or highway drains.

Section 21 - Capacity of Existing Wastewater System

- A. The Department may not issue a permit for new flows or an increase in flows to connect to the Town's wastewater system unless there is sufficient capacity within the Town's wastewater system that is not committed to other users of the Town's wastewater system to convey and adequately treat the quantity of wastewater that the proposed connection will add to the system.
- B. The Department may not issue a permit for an increase of flows from an existing connection to connect to the Town's wastewater system unless there is sufficient capacity within the Town's wastewater system that is not committed to other users of the Town's wastewater system to convey and adequately treat the quantity of wastewater that the proposed connection will add to the system.
- C. The Department may require the applicant to cover all costs related to the design, permitting and construction of upgrades and/or improvements to the wastewater system to accommodate the proposed connection.

Section 22 - Installation of Service Connections

- A. The owner, as defined herein, of the property connected to the sewer system is responsible for the installation of his/her service connection. Service connections may only be installed by drain layers who are licensed by the Town to perform such installation. All service connections shall be installed in full accordance with **Appendix H - Standard Specifications for Sewer Design and Construction** and **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.
- B. Backwater Valve Mandate
 - 1. All properties that abut a gravity sewer and which will flow by gravity into the gravity sewer shall install a backwater valve at the property line to prevent sewage backup into the property as a result of a plugged sewer system, excess volume in the system or groundwater flooding.

2. All properties that abut a low-pressure sewer and which will flow by force main into the gravity sewer shall install a clean-out/inspection port and a Low-Pressure Service Lateral Assembly.
 3. All properties that abut a low-pressure sewer and which will flow by force main into the low-pressure sewer shall install a Low-Pressure Service Lateral Assembly.
- C. No service connections are allowed to tie into force mains.

Section 23 - Maintenance and Repair of Service Connections

- A. The Department is responsible for all maintenance and repairs on main line sewers and service connections from the main line sewer to the point where the service connection meets the property line.
- B. The owner of the property connected to the sewer system is responsible for all maintenance and repairs on his/her service connection from the building to the point where the service connection meets the property line. Service connections may only be repaired by drain layers who are licensed by the Department to perform such repair.

Section 24 - Appeals and/or Exemptions

- A. Applicants may appeal to the Commission for exemption from, modification of, or reconsideration of any decision pertaining to assessments, fees, penalties and/or these **Sewer Use Rules and Regulations**
- B. Petition for abatement, filing, etc. shall be made in accordance with MGL Chapter 80, Section 5.
- C. The Commission shall render a decision within seventy (70) days of receipt of the appeal unless mutually agreed to be extended. If no decision is rendered, then the appeal is approved.

Article IV - Conditions of Use of the Wastewater System

Section 1 - Uncontaminated Discharges

- A. No person shall discharge or cause to be discharged:
 - 1. Any storm water, surface water, ground water from any source, including but not limited to, roof runoff, roof drains, sub-surface drainage and sump pumps to the Town's Wastewater Infrastructure.
 - 2. Any unpolluted industrial process water, including but not limited to, uncontaminated cooling water and drains from restaurant cooling water (refrigerators) to the Town's Wastewater Infrastructure.
 - 3. Any non-contact or uncontaminated contact cooling water or similar uncontaminated process waters to the Town's Wastewater Infrastructure.
- B. All such uncontaminated discharges shall be made to facilities designed by a Design Engineer registered in the Commonwealth of Massachusetts.

Section 2 - Storm Sewers

- A. No person shall discharge or shall cause to be discharged or shall allow to be discharged wastewater into any storm sewer system.

Section 3 - General Prohibited Discharges

- A. No person shall discharge or shall cause to be discharged or shall allow to be discharged any substances, materials, waters or wastes in quantities or concentrations, either singly or in combination with other substances, that will:
 - 1. Endanger life, limb or property;
 - 2. Harm persons, the wastewater system or the treatment processes;
 - 3. Cause corrosive damage or hazard to structures, equipment or persons;
 - 4. Interfere with, pass through or be otherwise incompatible with any treatment process;
 - 5. Adversely affect the ability to dispose of residuals from the treatment facility;
 - 6. Cause a violation of any Federal or State permit or water quality criteria;
 - 7. Constitute a nuisance;
 - 8. Create a fire or explosion hazard;
 - 9. Obstruct the flow or interfere with the operation of the wastewater facilities; and/or
 - 10. Constitute a "slug".

Section 4 - Specifically Prohibited Discharges

- A. No person shall discharge or shall cause to be discharged or shall allow to be discharged to the Town's wastewater system any substances, materials, waters or wastes which contain:
 - 1. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas;
 - 2. Any pharmaceuticals products;

3. Any waters or wastes having a pH lower than six (6.0) or greater than eight and one-half (8.5) after treatment or having any other corrosive property capable of causing damage or hazard to the treatment process, structures, equipment and personnel of the Town's wastewater system; quantity, either singly or by interaction with other wastes, to injure or interfere with any treatment process, constitute a hazard to humans or animals, create a public nuisance or create any hazard in the wastewater system or the receiving waters (surface or ground) of the wastewater treatment facility;
4. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the Town's wastewater system either whole or ground by garbage grinders such as, but not limited to:
 - a. Ashes and cinders;
 - b. Sand, gravel, tar and mud;
 - c. Straw, wood or other plant products;
 - d. Plastics, metal and glass;
 - e. Bags / wrappings and cardboard;
 - f. Band-aids and bandage wrappers;
 - g. Cleaning wipes;
 - h. Condoms;
 - i. Cotton balls, swabs and pads;
 - j. Dental floss and teeth whitening strips;
 - k. Disposable diapers, nursing pads, and baby wipes;
 - l. Facial and personal wipes, which are labeled flushable, but are not biodegradable;
 - m. Flammable or explosive substances;
 - n. Human and/or animal hair, fleshings, entrails and whole blood;
 - o. Kitty litter;
 - p. Expired and unused prescription and over-the-counter medications;
 - q. Mini and maxi-pads, tampons and applicators;
 - r. Motor oil, transmission fluids, anti-freeze and other toxic chemicals;
 - s. Needles and sharps;
 - t. Paper products – towels, dishes, cups;
 - u. Rags; and
 - v. Solvents, paints, turpentine, nail polish, polish remover.
5. Any waters or wastes containing toxic or poisonous solids, liquids or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any treatment process, constitute a hazard to humans or animals, create a public nuisance or create any hazard in the wastewater infrastructure or the receiving waters (surface or ground).
6. Any waters or wastes (including sludges) containing acid iron pickling wastes, or concentrated plating solutions whether neutralized or not;
7. Any liquid or vapor having a temperature higher than one hundred and fifty (150) degrees F;

8. Any water or waste containing fats, wax, grease or oils, whether emulsified or not, in excess of 100 mg/L or containing substances which may solidify or become viscous at temperatures between thirty-two (32) degrees F and one hundred and fifty (150) degrees F;
9. Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of three-quarter (¾) horsepower or greater shall be subject to the review and approval of the Department;
10. Any waters or wastes containing phenols or other taste or odor producing substances, in such concentrations exceeding limits which may be established by the Commission, as necessary after treatment of the composite wastewater, to meet the requirements of the State, Federal or other public agencies or jurisdictions for such discharge to the receiving waters (surface or ground);
11. Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Commission in compliance with applicable Federal or State regulations;
12. Unusual concentrations of inert suspended solids such as, but not limited to, Fullers earth, lime slurries and lime residues or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate);
13. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions);
14. Unusual BOD, COD or chlorine concentrations in such quantities as to constitute a significant load on the wastewater treatment facility that may cause effluent limitations to be exceeded;
15. Unusual volume of flow or concentration of wastes constituting "slugs";
16. Waters or wastes containing substances which are not amenable to treatment or reduction by the wastewater treatment processes employed, or are amenable to treatment only to such degree that the wastewater treatment facility's effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters (surface or ground); and/or
17. Any waters, wastes or sludges containing heavy metals including, but not limited to, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, nickel, tin, silver, gold, zinc, beryllium, mercury and selenium.

Section 5 - Specific Discharge Limitations

- A. No person shall discharge or shall cause to be discharged or shall allow to be discharged any water or wastes with parameters in excess of the following maximum daily concentrations or limitations:

Parameter	Maximum Daily Limitation
Flow	Approved Connection Permit Flow
pH	Less than 6.0 and greater than 8.5
BOD	270 mg/L
COD	400 mg/L
Total Suspended Solids	310 mg/L
Total Dissolved Solids	3,000 mg/L
Temperature	150°F
Fats, Oil and Grease	100 mg/L
Total Toxic Organics (per EPA list)	2.13 mg/L
Total Petroleum Hydrocarbons	5 mg/L

Parameter	Maximum Daily Limitation
Total BTEX (Benzene, Toluene, Ethylbenzene and Xylene)	0.1 mg/L
Benzene	0.005 mg/L
Aluminum	2.0 mg/L
Antimony	1.90 mg/L
Arsenic	0.5 mg/L
Barium	4.0 mg/L
Boron	5.0 mg/L
Cadmium	0.69 mg/L
Chromium, Total	2.77 mg/L
Copper	0.80 mg/L
Lead	0.69 mg/L
Nickel	2.50 mg/L
Selenium	5.0 mg/L
Silver	0.43 mg/L
Zinc	2.61 mg/L
Total Metals	10.5 mg/L

- B. Nothing in this Article shall be construed as preventing the Commission and/or Department from specifically limiting any other pollutant or parameter. The Commission and Department reserve the right to impose more stringent limitations or to revise current limitations as necessary.

Section 6 - Acceptance of Harmful or Potentially Harmful Wastewater

- A. If any waters or wastes discharged, or proposed to be discharged to Town's wastewater system contain the substances or possess the characteristics enumerated in Section 5 of this Article, and which in the judgment of the Department may have a deleterious effect upon the Town's wastewater system, processes, equipment or receiving waters (surface or ground), or which otherwise create a hazard to life or constitute a public nuisance, the Department may:
 1. Reject the wastes;
 2. Require pretreatment to an acceptable condition for discharge to the Town's wastewater system;
 3. Require control over the quantities and rates of discharge, and/or
 4. Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under the provisions of **Article VI – User Charges and Fees** of these **Sewer Use Rules and Regulations**.
- B. If the Department permits the pretreatment or equalization of waste flows, the design and installation of the treatment facilities and equipment shall be subject to the review and approval of the Department, and subject to the requirements of all applicable codes, ordinances, laws and the Town's discharge permits.
- C. The design of all pretreatment facilities shall also be prepared by a Design Engineer registered in the Commonwealth of Massachusetts. Further, such pretreatment installations must be consistent with the requirements of any Federal or State pretreatment permits issued to the industry.

Section 7 - National Pretreatment Standards

- A. No person shall discharge or cause to be discharged to the Town's wastewater system, wastewater containing substances in excess of the quantity prescribed by the applicable National Pretreatment Standard promulgated by the EPA, except as otherwise provided in this section. Compliance with such applicable pretreatment standards shall be required upon connection to the Town's wastewater system.
- B. Upon application by an industrial user, the Department may adjust any limitation or substances specified in the applicable pretreatment standards to consider factors relating to such users that are fundamentally different from the factors considered by the EPA during the development of the pretreatment standard. Requests for and determinations of fundamentally different adjustments shall be in accordance with federal law.

Section 8 - Fats, Oils and Grease Traps/Tanks

- A. All Food Service Establishments where food is prepared and/or where wastes contain FOG or any waste, sand or other harmful ingredients which can be discharged and are connected to the Town's wastewater system, shall be provided with an external grease tank with a minimum size of 1,000 gallons. Such devices shall not be required for private living quarters or dwelling units.
 - 1. All Grease traps and separators shall be of a type and capacity approved by the plumbing code and shall be located so as to be readily accessible for cleaning and inspection.
 - 2. All Grease tanks installed after the adoption of this regulation shall be in accordance with the provisions of Title 5 (310 CMR 15).
 - 3. The maximum amount of FOG discharged shall not exceed the value specified in these **Sewer Use Rules and Regulations**.
 - 4. Biological and/or chemical treatments are not permitted for use in Grease traps/tanks in the Town unless approved by the Board. It will be the responsibility of the establishment owner to provide adequate supporting documentation for review by the Department.
- B. Permits
 - 1. All Food Service Establishments in the Town that use, generate and/or store FOG will be required to hold a FOG Permit issued by the Department.
 - a. All Food Service Establishments must apply for a FOG Permit by the date cited on their approved sewer connection plans.
 - 2. All temporary Food ~~Service Establishments and events that use, generate, or store FOG will be required to have a written FOG management plan before a temporary food service permit will be issued by the Board~~ will not discharge FOG to the municipal sewer system without a FOG management plan approved by the Department.
- C. Maintenance and Inspections
 - 1. Grease tanks shall be inspected monthly and shall be cleaned when the level of grease is twenty-five (25) percent of the effective depth of the tank or at least every three (3) months, whichever is sooner. This enforcement action will be equivalent to the requirements under 310 CMR 15.351(2) (Title 5).
 - 2. The Food Service Establishment shall maintain an inspection and cleaning log at the property that includes, at a minimum, the date and time of the inspection, name of inspector, date and time of cleaning, name of Hauler, and notes/remarks. The Food Service Establishment shall provide written evidence to the [Board Department](#) that all Grease tanks are being cleaned and inspected at least every three (3) months.
 - 3. All Grease traps located within the Food Service Establishment must be inspected and cleaned at least once every 30 days ~~by a service provider licensed by the Orleans Board of Health~~. A

- log must be maintained on site including at a minimum: (a) Service Provider; (b) Company Name; (c) Date of Cleaning; and (d) Volume of Material Removed in Gallons.
4. Food Service Establishments that are closed for periods of time which exceed thirty (30) consecutive days are exempt from pumping and inspecting Grease tanks during those months which the Food Service Establishment is closed. Proof of temporary closure must be provided to the Department.
 5. Food Service Establishments which are intermittent in nature shall coordinate with the Department with regard to inspections and cleaning of Grease tanks.
 6. Food Service Establishments can petition the Commission to adjust the maintenance schedule for Grease tanks. The petition must be in writing and include six (6) months of maintenance reports and supporting documentation from a licensed ~~septic~~ Hauler or plumber with a detailed explanation for the adjustment to the cleaning frequency. Variances to the above stated maintenance schedule will be approved at the discretion of the ~~Board~~ Commission and reviewed on a yearly basis. The Board-Commission may specify additional FOG Management requirements as a condition of the approval.
- D. Food Service Establishment Owners and/or their representative staff, and Licensed Service Providers must attend the Introductory "FOG Control Meeting" to be conducted ~~jointly by the Board of Health, Board of Water and Sewer Commissioners and the Wastewater Infrastructure Contract Operator Department.~~
- E. All Food Service Establishments that have Grease traps must have proper FOG signage in accordance with State of Massachusetts Plumbing Code 248 CMR 10.09 (2m)(3).
- F. Spill and Cleanup Stations
1. All Food Service Establishments that handle FOG must have spill cleanup stations and/or kits with grease absorbent pads and/or cat litter or a similar product to clean up FOG spills and prevent (slip, trip and fall) injuries in the workplace.
 2. All Haulers shall be equipped to handle any spill and provide residual clean-up service at all times.
- G. All Food Service Establishments are required to have a contract with a licensed Hauler company ~~that is permitted with the Town.~~
1. All Haulers that service Grease tanks within the Town must complete a Grease Interceptor Service Report form. If the form is different from that supplied by the Department, it must contain the same information and must include the percent of FOG and solids in the tank and the condition of the tank. If pumping is not required at the time of inspection, a detailed inspection report must be provided along with the calculation information. This report must be filled out and submitted to the customer at the time of service. All manifests must be submitted to the Department within fourteen (14) days of a pumping service.
 2. All Hauler trucks that service Grease tanks will be required to have a Hauler Permit. Permitted Haulers will be issued a truck/trailer sticker for each truck permitted. This yearly sticker must be displayed on the truck/trailer at all times. ~~FOG~~ Haulers must provide a list of all FOG customers in the Town as part of the permit application and each permit renewal.
 3. All Haulers must have strict conformance to the FOG regulations for pumping and maintenance under the Commission's Sewer Use Rules and Regulations for systems on the Town's wastewater system and 310 CMR 15.351(2) (Title 5) for private SSDS. Failure to comply with these ~~Sewer Use Rules and Regulations may result in the loss of Permit for the year and repeat offenses can result in a permanent loss of Food Service Establishment permit at the discretion of the Board may result in a show-cause hearing with the Board.~~
 4. If a Hauler is found to be illegally discharging FOG under any Federal, State, or Local laws, this will result in the loss of all Hauler Permits indefinitely and the Hauler could also face criminal charges.

Section 9 - Septage

- A. Nothing contained in this **Article IV - Conditions of Use of the Wastewater System** shall preclude the acceptance by the Town of septage at the facilities designated by the Department to receive septage at the wastewater treatment facility. Septage will only be accepted from Haulers who are licensed by the Town to haul and dispose of septage at the Town Wastewater Treatment Facility. Septage may be disposed at the wastewater treatment facility for the fee in accordance with **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.
- B. The Town reserves the right to limit the quantities of septage that are disposed at the Town's wastewater treatment facility. Septage shall meet all the specific discharge limitations contained in Section 5 of this Article, with the exception of BOD, COD, FOG and Total Suspended Solids. However, the Department reserves the right to reject any septage that is determined to be of unusually high strength (i.e., greater than the design data for the Town's Wastewater Treatment Facility) with regard to BOD, COD, FOG and Total Suspended Solids.
- C. Solids from other wastewater treatment facilities, water treatment facilities and the like, outside of the Town of Orleans, will not be accepted unless otherwise approved by the Commission or its authorized representative.
- D. All costs associated with sampling and analysis of septage to determine its strength and characteristics shall be paid for by the Hauler.
- E. The following procedure shall be followed:
 2. Each Hauler shall have a proper septage collection and transportation license, issued by the Board effective January 1 of each year for disposal at the Orleans Wastewater Treatment Facility.
 3. All permits are issued by and payments are made to the Board.
 4. Each truck shall be equipped to meet the design criteria at the Town's wastewater treatment facility receiving area.
 - a. Three (3) sections at ten (10) feet each of six (6) inch flexible discharge hose. If smaller than six (6) inches, provide reducers for connection to the six (6) inch inlet pipe located on the Septage Receiving Station.
 - b. Camlock quick-disconnect fittings.
 - c. Shutoff valve at the discharge of the tank.
 - d. Safety Equipment - hardhat, gloves, safety glasses and steel toe work boots.
 5. The contents of each truck shall be transported in a manner that will not create a nuisance or a health hazard.
 6. Tanks shall be securely mounted on trucks. They shall be watertight and provided with a leak-proof cover and tight discharge valves.
 7. Tanks shall be provided with a vent constructed in a manner that will permit the escape of gas, but not the liquid contents of the tank.
 8. Suction or pressure hose shall be in good repair.
 9. Pumps shall be maintained in a condition that will prevent the leakage of septage.
 10. The Hauler shall be responsible for any damage done to or done by property or personnel participating in this program, stemming from activities related to occupying the Wastewater Treatment Facility for the purpose of disposing of septage.
 11. A Hauler's truck may be stopped at any time and inspected by any member of the Commission, Department and/or Board or their authorized representative.
 12. Operations at the Wastewater Treatment Facility will be per the Department's policies.

13. Failure of a Hauler to carry out the requirements of these **Sewer Use Rules and Regulations** shall be cause to revoke the permit to discharge.

Section 10 - Enforcement

- A. Any violation of this section will be addressed by the provisions contained in **Article VII – Enforcement of these Sewer Use Rules and Regulations.**

Section 11 - Special Agreements

- A. No statement contained in this Article shall be construed as preventing any special agreement or arrangement between the Department and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the Department for treatment, subject to payment thereof, by the industrial concern provided that such agreements do not contravene any requirements of existing Federal, State and Local laws and are compatible with any service charges and fees in effect.
- B. At no time shall any industrial or commercial user discharge pretreated effluent into the Town's wastewater infrastructure that exceeds half of the maximum daily limits of any metals as determined by current Federal, State and Local rules and regulations.

Section 12 - Appeals

- A. Failure to comply with these **Sewer Use Rules and Regulations** will result in re-inspection. Violators will be required to attend a joint Board and Commission hearing that may result in penalties and/or suspension or termination of a food permit.
- B. Applicants may appeal to the joint Board and Commission's decision pertaining to penalties and/or suspension or termination of a food permit.
- C. The joint Board and Commission shall render a decision within seventy (70) days of receipt of the appeal. If no decision is rendered, then the appeal is approved.

Article V - Industrial Wastewater

Section 1 - Information Requirements

- A. All dischargers of industrial wastewater shall file with the Department all wastewater information deemed necessary by the Department for the determination of compliance with these **Sewer Use Rules and Regulations**, the Town's Groundwater Discharge Permit conditions and Federal and State law. Such information shall be provided by the completion of the application contained in **Appendix G - Industrial Wastewater Connection Permit Application** of these **Sewer Use Rules and Regulations** and by supplements thereto as necessary.
- B. Information requested in the application and designated by the discharger as confidential is subject to conditions of confidentiality as implemented by the Department. The Department will not disclose any claimed confidential information to any person without prior written notice to the discharger and without providing the discharger with the opportunity to protect such confidential information.
- C. Significant Industrial User applicants for an industrial wastewater connection permit shall submit a "Baseline Monitoring Report" prepared by a Professional Engineer, registered in the Commonwealth of Massachusetts, in accordance with the U.S. EPA "General Pretreatment Regulations for Existing and New Sources of Pollution" (40 CFR 403, as amended). The Department may waive the requirement for a "Baseline Monitoring Report" in the case of an application for renewal of a permit when the applicant has submitted evidence that the quality of the wastewater has not changed substantially since the last Baseline Monitoring Report. A person who owns and/or operates properties designated as a discharger of industrial wastewater at more than one location shall submit separate information for each location as may be required by the Department.
- D. All applicants shall provide their Standard Industrial Classification (SIC) Code and/or North American Industry Classification System (NAICS) Code. Such information shall be provided by the completion of the application contained in **Appendix G - Industrial Wastewater Connection Permit Application** of these **Sewer Use Rules and Regulations** and by supplements thereto as necessary.

Section 2 - Provisions for Monitoring

- A. The owner of any property discharging industrial wastewater shall provide a monitoring access point acceptable to the Department on the service connection pipe outside the building with suitable access, necessary meters and other appurtenances to facilitate observation, sampling and measurement of the industrial wastewater.
- B. The monitoring access point shall be in a readily accessible location and shall conform to the requirements contained in the **Appendix H - Standard Specifications for Sewer Design and Construction** and **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**. Access to the monitoring access point shall be granted to the Department at all times.

Section 3 - Determination of Wastewater Characteristics

- A. All industries discharging into the wastewater facilities shall monitor their discharges as the EPA, the MassDEP and the Department may reasonably require, including installation, use and maintenance of monitoring equipment. The Department will determine the parameters that shall be monitored by the industrial discharger.
- B. The industrial discharger shall maintain records of his/her monitoring and shall report the results in writing to the Department within fourteen (14) calendar days of the end of every month or more frequently, as the Department may determine. Reports shall be furnished in a form approved by the Department and shall include, as a minimum, average and maximum daily flow, laboratory analyses, on-line monitoring results and description of all alarms received.

- C. More frequent monitoring will be required during initial start-up and operation of a new discharge or of a modified discharge and under such other circumstances as the Department may deem appropriate. All laboratory analyses shall be performed by a qualified laboratory that is certified by MassDEP and shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater". Monitoring locations, times, duration, frequencies and type shall be determined by the Department. The Department will consider such factors as continuous, batch or seasonal operation in determining the monitoring provisions for each discharger. The Department may obtain wastewater samples, as they deem necessary, to monitor the discharge.
- D. All costs for monitoring including but not limited to those for sampling and analysis, flow monitoring and professional engineering services shall be paid by the discharger.

Section 4 - Termination of Disposal Authorization

- A. Any industry held in violation of the provisions of these **Sewer Use Rules and Regulations** may have its disposal authorization terminated.

Section 5 - Wastewaters with Special Characteristics

- A. The Commission will initially rely on the National Pretreatment Standards and the limitations specified in Section 5 - Specific Discharge Limitations of **Article IV - Conditions of Use of the Wastewater System** of these **Sewer Use Rules and Regulations**, to protect the wastewater facilities or receiving waters.
- B. However, if any wastewater that contains substances or characteristics shown to have harmful effects on the wastewater facilities, processes, equipment or receiving waters, or that constitutes a public nuisance or hazard that is discharged or proposed for discharge to the wastewater system, the Department may:
 - 1. Require pretreatment to a condition acceptable for discharge to the wastewater facilities;
 - 2. Require control over the quantities and rates of discharges;
 - 3. Require payment to cover added cost of handling and treating the wastewaters not covered by existing fees and charges;
 - 4. Require the development of compliance schedules to meet any applicable treatment requirements;
 - 5. Carry out all inspections, surveillance and monitoring necessary to determine compliance with applicable pretreatment requirements;
 - 6. Obtain remedies for noncompliance by any user. Such remedies may include injunctive relief, the civil penalties specified in these **Sewer Use Rules and Regulations**, or appropriate criminal penalties; and/or
 - 7. Reject the wastewater if the Department determines that the discharge will create unreasonable hazards or have unreasonable deleterious effects on the wastewater system.
- C. When considering the above alternatives, the Department will first consider that conditions of the Town's Groundwater Discharge Permit will be met. If the Department allows the pretreatment and/or equalization of the wastewater, the design, installation and operation of necessary facilities shall be subject to the review of the Department. Where pretreatment and/or flow-equalizing facilities are provided or required for any wastewater, they shall be maintained continuously in satisfactory and effective operation at the owner's expense.

Article VI - User Charges and Fees

Section 1 - Establishment of User Charges and Fees

- A. All service charges, fees and related costs payable under the provisions of these **Sewer Use Rules and Regulations** shall be as established by the Select Board and Town Meeting upon recommendation from the Commission and shall be paid to the Town. All current service charges and fees are outlined in **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.
- B. All service charges, fees and penalties accumulated under these **Sewer Use Rules and Regulations** shall be allocated solely for the purpose of constructing, operating, maintaining, repairing, and/or improving the Town's wastewater system, and/or eliminating debt incurred for the same. All service charges, fees and related costs payable under the provisions of these **Sewer Use Rules and Regulations** are due and payable in full within thirty (30) calendar days of mailing thereof. Unpaid charges shall become delinquent and shall be subject to penalty and interest charges as outlined in these **Sewer Use Rules and Regulations**. Additional fees may be assessed to accommodate specific users or permits if changes and improvements to the wastewater system are necessary.

Section 2 - Determination of System Use

- A. Water sources shall include, but not be limited to, the Town's Water Department, other water utility and private water wells.
- B. Properties that utilize private water wells to provide potable water are required to install a water meter to be provided and installed by the Water Department for a fee (see current schedule of Water Department Rates and Fees) at the Applicant's expense which will be utilized to measure the actual quantity of water used. Plumbing, piping, associated work, and water meter shall be installed at the applicant's expense by a licensed plumber. Water Department personnel will inspect the installation of the water meter and install the cellular transmitter at the applicant's expense. There will be a meter reading fee per quarterly billing, charged by the Water Department (see current schedule of Water Department Rates and Fees).

Section 3 - User Charges

- A. The Select Board and Town Meeting will set user charges annually for each class of user (residential, commercial and industrial). User charges will be set by the Select Board and Town Meeting to recover costs associated with operation, maintenance, repair and improvement of the wastewater system.
- B. Current user charges are presented in **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.

Section 4 - Surcharges

- A. All persons discharging commercial or industrial wastes, septage or any wastes of unusual character or amount may be subjected to a surcharge in addition to any other user charges. The amount of surcharge shall reflect the additional cost incurred by the Department in repair, maintenance and operation of the wastewater system for transport and treatment of such wastes.

Section 5 - Capital Improvement Fees

- A. The Select Board and Town Meeting may set an appropriate fee as part of the annual user charge for capital improvements to the wastewater system as they deem necessary.
- B. Current Capital Improvement Fees are presented in **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.

Section 6 - Billing Periods

- A. All User Charges, Surcharges, and Capital Improvement Fees will be billed on a quarterly basis.

Section 7 - Payment

- A. All user charges shall be payable at the office of the Tax Collector at Town Hall or at other such locations as designated by the Commission.
- B. All user charges, surcharges and fees are to be paid within thirty (30) calendar days of the date of the bill. Interest will begin to accrue on the 31st day after the date of the bill on all charges, surcharges and fees that remain unpaid.

Section 8 - Lien on Property or Other Remedies

- A. All charges, surcharges and fees levied in accordance with these **Sewer Use Rules and Regulations** shall be a debt to the Town and shall be a lien on the property as per Town of Orleans Code, Chapter 94, Article V, Nonpayment of Fees and Taxes, or other remedies as determined by the Commission. If this debt is not paid within sixty (60) calendar days after it shall be due and payable, it shall be deemed delinquent and may be recovered by civil action in the name of the Town against the property owner and/or the occupant and shall be subject to all penalty and interest charges established by the Commission.
- B. Change of ownership and/or occupancy of premises found delinquent shall not be cause for reducing and/or eliminating these penalties.
- C. The Town may deny, revoke or suspend any license and/or permit or disconnect service for which a Property Owner, Applicant, drain layer and the like, who has neglected and/or refused to pay any fees, betterments and/or other municipal charges in accordance with Town of Orleans Code, Chapter 94, Fees, Article V, Nonpayment of Fees and Taxes, §94-6.

Section 9 - Appeals and/or Exemptions

- A. Applicants may appeal to the Commission for exemption from, modification of, or reconsideration of any decision pertaining to assessments, fees, penalties and/or these Sewer Use Rules and Regulations.
- B. Petition for abatement, filing, etc. shall be made in accordance with MGL Chapter 80, Section 5.
- C. The Commission shall render a decision within seventy (70) days of receipt of the appeal unless mutually agreed to be extended. If no decision is rendered, then the appeal is approved.

Article VII - Enforcement

Section 1 - Right of Access

- A. The Department or their authorized representative, with appropriate credentials and identification, shall be permitted to enter properties at any reasonable time for the purposes of inspection of the property to determine compliance with these **Sewer Use Rules and Regulations** and for the purposes of observation, measurement and sampling of the wastewater discharge to determine that the discharge to the wastewater system is in compliance with these **Sewer Use Rules and Regulations**.

Section 2 - Notice of Violation

- A. The Commission or the Department or their authorized representative will present a notice of violation to any person found in violation of these **Sewer Use Rules and Regulations**. The notice of violation will state the nature of the violation and the amount of penalty imposed by the Department and it will provide a time limit for compliance. The notice of violation will be in writing and will be served in person or by registered or certified mail. If mailed, the notice of violation will be sent to the last address of the violator known to the Department. If this address is unknown, service may be made on the owner of record of the property in violation.

Section 3 - Enforcement Actions

- A. When the Department determines that a violation of these **Sewer Use Rules and Regulations** or any permit is threatened or has occurred, or any damage to the wastewater system is threatened or has occurred, one or more of the following actions may be taken:
 1. The use of a connection to the wastewater system may be immediately terminated if the Department concludes that a violation may constitute a threat to the wastewater system, personnel or the public;
 2. The Department may issue an order to cease and desist any such violation and may direct the violator as follows:
 - (a) To comply either forthwith or in accordance with a time schedule set forth by the Department; or
 - (b) To take appropriate remedial preventive action in the event of a threatened violation.
 3. The Department shall require the violator to submit a detailed time schedule setting forth the specific proposed actions to prevent or correct a violation. The Department may issue an implementation schedule to the violator containing or modifying such specific actions and time schedule or requiring other actions within such time as the Department deems appropriate;
 4. The Department shall issue an order directing the violator to pay to the Town penalties and costs as described herein; or
 5. The Department may file suit in any court of competent jurisdiction pursuant to general laws or any other applicable statute or regulation.

Section 4 - Penalties

- A. Any person who violates these **Sewer Use Rules and Regulations** shall be served by the Town of Orleans with written notice stating the nature of the violation and providing a reasonable time limit, as determined by the Department, for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.
- B. Any person who shall continue any violation beyond the time limit provided is subject to penalties in the amount not exceeding five thousand dollars (\$5,000) for each violation and may be subject to disconnection from the wastewater infrastructure. Each day in which any such violation shall continue shall be deemed a separate offense.

- C. Any person violating any provisions of these rules and regulations shall become liable to the Town for any expense, loss, and/or damage occasioned the Town by reason of such violation.

Section 5 - Continued Violations

- A. Any person who continues to violate any provision of these **Sewer Use Rules and Regulations** beyond the time limit presented in the Notice of Violation shall be subject to additional penalties for each day that the violation continues and may be subject to disconnection from the wastewater system. A separate violation and penalties shall be issued each day or portion thereof that a violation continues.

Section 6 - Vandalism

- A. No person shall willfully damage, deface, uncover or tamper with any structure, appurtenance and/or equipment that are part of the Town's wastewater system. Any person found in violation of this section shall be subject to reimburse the Town the actual cost to restore said structure, appurtenance and/or equipment.

Section 7 - Right to a Hearing

- A. A User which has violated, or continues to violate, any provision of these Sewer Use Rules and Regulations, an individual wastewater discharge permit, or order issued hereunder, or any other requirement, may request to appear before the Commission and show cause why the proposed enforcement action should not be taken.
 - 1. Notice shall be served on the User specifying the following:
 - 2. Time and place for the meeting;
 - 3. The proposed enforcement action;
 - 4. The reasons for such action; and
 - 5. A request that the User show cause why the proposed enforcement action should not be taken.
- B. The notice of the meeting shall be served by registered or certified mail (return receipt requested) at least fourteen (14) calendar days prior to the hearing. Such notice may be served on any Authorized Representative of the User.
- C. A show cause hearing shall not be a bar against, or a prerequisite for, taking any other action against the User.

Appendix A - Sewer Service Areas Maps
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

This Page Intentionally Left Blank

Appendix B - Sewer Service Area Expansion Application
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

Name:

A. Name Requesting Sewer Service Area Expansion:

B. Property Address:

C. Mailing Address:

D. Telephone Number/Email/Cell Phone Number:

Check all boxes below marking any that are not applicable with "N/A". Incomplete forms will be returned.

Application made:

As an individual

As a government body (attach Certificate of Authorization Representative)

On behalf of an organization or association (attach Certificate of Authorization Representative, and By-Laws authorizing)

On behalf of multiple property owners (attach Certificate of Authorization Representative)

All properties approved for inclusion shall pay all associated fees and, where appropriate, any assessment covering all costs associated with sewer construction, including engineering, administrative, technical and legal review fees, financing charges and any other fees in effect at the time of the application.

A Public Hearing on the Sewer Service Area Modification application shall be held by the Commission. The Applicant shall notify all abutters located within 100 feet of the Sewer Expansion and Property Owners per Chapter 40B Provision in the Planning Notification two (2) weeks prior to the Public Hearing. In addition, the Applicant shall advertise the Public Hearing in a local newspaper with general circulation two (2) weeks prior to the Public Hearing.

Work under the permit must be completed within two years until the permit expires unless an extension is granted. If the Commission approves such adjustment, the Department will, if required, direct the applicant to file a Notice of Project Change in accordance with Massachusetts Environmental Policy Act (MEPA).

All costs and expenses for any Applicant seeking to alter the Sewer Service Area shall be the responsibility of the Applicant.

Evaluation Criteria

Section 1 – Adequate Capacity

Adequate capacity in Town's wastewater system must be available for the proposed additional flow.

A. Capacity within the existing infrastructure (pipelines, pump stations, and force mains) is available to meet the proposed additional flow as certified by the Department:

Yes No

B. Capacity at the existing wastewater treatment facility and effluent disposal locations is available to meet the proposed additional flow as certified by the Department:

Yes No

If either of the above is "No" the application is Disqualified. Please consult with the Department to discuss remedial action.

Section 2 – Supplemental Requirements

The applicant must attach to this application complete documents that are the basis of his/her answers.

A. Failed Septic System - Property must already be developed and have evidence of no feasible replacement. Property owner must demonstrate hardship related to the following conditions:

<u>Condition</u>	<u>Description</u>			
Soil Type	Property contains a majority of soils not suitable for on-site disposal per Title 5 (310 CMR 15).	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Groundwater	Between zero (0) to five (5) feet below surface of the property	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Wetlands	Wetlands within one hundred (100) feet of property	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

B. Land Use - Properties must be evaluated in accordance with the following zoning and land use conditions:

<u>Condition</u>	<u>Description</u>			
Lot size	Property is less than forty thousand (40,000) square feet	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Zoning	Property is less than or one hundred fifty (150) percent of minimum lot size	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Location	Property is located within two hundred fifty (250) feet of a Surface Water Body (fresh or salt)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

Compliance - A proposal that: (i) documents compliance with all of the above three criteria; (ii) demonstrates a threat to public health and welfare; and (iii) contains a comprehensive strategy to address a problem affecting more than two adjacent properties. Yes No N/A

I hereby certify under the penalties of perjury that this application is in all respects bona fide, fair and made without collusion or fraud with any other person and that the information is to the best of my knowledge true and complete. The word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

In addition, if said property or groups of properties are included into the Sewer Service Area, I hereby certify that I shall adhere to the Town's **Sewer Use Rules and Regulations** and I understand that failure to adhere to all discharge limitations and to the Town's **Sewer Use Rules and Regulations** will be cause for the Town to revoke the connection permit and plug the connection to the Town's wastewater system.

Signature of Applicant

Name

Title

Date

DO NOT WRITE BELOW THIS LINE – FOR OFFICIAL USE ONLY
TO BE COMPLETED BY THE DEPARTMENT

Application Complete: Yes No

Supporting Documentation Attached, Complete, and Adequate: Yes No

Application Fee Paid: Yes No

Connection Permit Fee Paid: Yes No N/A

Privilege Fee Paid: Yes No N/A

Compensatory Sewer Privilege Fee Paid: Yes No N/A

Flow Offset Fee Paid: Yes No N/A

Reserve Capacity Fee Paid: Yes No N/A

Drain Layer's License Valid: Yes No

Street Opening Permit Obtained: Yes No N/A

Trench Permit Obtained: Yes No N/A

State Highway Opening Permit Obtained: Yes No N/A

Condition	Approval	Signature	Date
Section 1			
Adequate Capacity	Department	_____	_____
Section 2			
Failed Septic System	Health Agent	_____	_____
Land Use	Planning Director	_____	_____
Special Consideration	Board of Water and Sewer Commission	_____	_____

We recommend the inclusion of the property or group of properties into the Sewer Service Areas.

We do not recommend inclusion the property or group of properties into the Sewer Service Areas.

If no, Why?

Signature of Department Staff

Signature of Board of Health Staff

Name of Department Staff

Name of Board of Health Staff

Title of Department Staff

Title of Board of Health Staff

Date

Date

Board of Water and Sewer Commissioners

Chair

Vice-Chair

Member

Member

Member

Member

Associate Member

Associate Member

Associate Member

Date

This Page Intentionally Left Blank

Appendix C - Bill of Sale
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

This Page Intentionally Left Blank

BILL OF SALE
Between the Town of Orleans, MA
and
[Add Name of Owner]

KNOW ALL PERSONS BY THESE PRESENTS that

1. [Add Name of Owner], a [Select Type of Business of Owner - Corporation, Partnership, Limited Liability Corporation], with a business address of [Add Owner's Address], hereinafter referred to as the "OWNER", and The Town of Orleans, Massachusetts, with a business address of 19 School Road, Orleans, MA 02653, hereafter referred to as the "TOWN", entered into an OWNER and TOWN Agreement titled [Add Agreement Name] dated [Add Date] hereafter referred to as the "Agreement";
2. As pursuant to the Agreement, following acceptance of the installed wastewater infrastructure consisting of [Select Type of Wastewater Infrastructure - collection system, pumping stations, force mains, low pressure sewers and service laterals] and appurtenances, the TOWN, acting through its Select Board, would acquire absolute title to said wastewater infrastructure, according to the TOWN approved drawings, where said wastewater infrastructure is installed pursuant to the Agreement, for the sum of one dollar (\$1.00);
3. That following acceptance of the installed wastewater infrastructure by the TOWN, through an act of its Select Board, the TOWN would acquire absolute title to easements, for the installation and maintenance of said wastewater infrastructure the sum of one dollar (\$1.00); and
4. Based upon said approvals by the TOWN, in consideration of one dollar (\$1.00) and other valuable consideration paid, OWNER does hereby bargain, sell, assign and deliver unto the wastewater infrastructure extending from [add description of wastewater infrastructure] and as shown of the drawings (add list of drawings) attached hereto as Exhibit A, such wastewater infrastructure collectively referred to as the "PROPERTY".

TO HAVE AND TO HOLD the property to the TOWN, its successors and assigns, unto their own use and benefit, and subject to the terms and conditions contained herein.

The property is conveyed with a one-year (1) warranty for all labor, equipment, parts, travel expenses, etc. necessary to repair and/or replace defective components of the wastewater infrastructure. In addition, the Property Owner shall provide a certification stating that the wastewater infrastructure is free and clear of all liens.

In accepting the Bill of Sale, the TOWN assumes all maintenance and repair and/or replacement obligations with the PROPERTY which obligations shall be performed in a prompt and diligent manner.

The TOWN agrees to indemnify, defend and hold harmless OWNER from any and all liability, loss, cost, damage or expense (including reasonable attorney's fees) which OWNER incurs in connection with any and all claims and demands which are asserted against OWNER by reasons of the TOWN's performing of the aforementioned maintenance, repair and/or replacement obligations or failure to perform or discharge any such obligation, arising from and after the date hereof.

AECOM Technical Services, Inc.
Pocasset, Massachusetts

Sewer Use Rules and Regulations – ~~April 17, 2024~~ November 6, 2024
Town of Orleans, MA

IN WITNESS WHEREOF, OWNER has caused these presents to be executed this _____ day of _____, _____.

OWNER - [Add Name of OWNER]

[Add OWNER's Authorized Agent]

[Add Title of OWNER's Authorized Agent]

State of: _____ County of: _____

Subscribed and sworn to before me this _____ day of _____

personally appeared _____ known to me, who being duly sworn, did depose

and save that he/she is _____ (Officer) of the OWNER above mentioned; that

the they executed the above Bill of Sale on behalf of said OWNER and that all of the statements contained therein are true, correct and complete.

Notary Public Signature _____

Notary Public Name _____

My Commission Expires _____

IN WITNESS WHEREOF, TOWN has caused these presents to be executed this _____ day of _____, _____.

TOWN - Town of Orleans, Massachusetts

Town Manager Name

Town Manager Signature

State of: _____ County of: _____

Subscribed and sworn to before me this _____ day of _____

personally appeared _____ known to me, who being duly sworn, did depose

and save that he/she is _____ (Officer) of the TOWN above mentioned; that

the they executed the above Bill of Sale on behalf of said TOWN and that all of the statements contained therein are true, correct and complete.

Notary Public Signature _____

Notary Public Name _____

My Commission Expires _____

Appendix D - Water Use Records
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

This Page Intentionally Left Blank.

Appendix E - Fee Schedule

Item	Remarks	Fee (USD)
Sewer Main Tap Application Fee	For up to 50 lf.	\$0.20 / ft, \$1,000.00 min
Drain Layer's License	Via Department	\$100.00 per year
Additional Allocated Wastewater Flow Application	Via Department	\$250.00 per application
Connection Permit Application Fee	Via Department	\$0.50 / gal / day (per Appendix D) or \$250.00 min. whichever is greater
Exist. Cut, Cap or Reconnect Permit Application	Via Department	\$50.00
Shutoff / Turn on for non-payment each	Via Department	\$100.00 during workday \$150.00 beyond normal workday
Septic System Abandonment Permit	Via Board of Health	Per Board of Health
Street Opening Permit	Via Department	Per the Department
State Highway Opening Permit	Via MassDOT	Per MassDOT
Trench Permit	Via Department	Per the Department
Septage	Via Department	\$0.10 / gallon
Inspections	Via Department	First Inspection \$50.00 per hour Minimum Charge = \$100.00 Additional Inspection(s) \$75.00 per hour Minimum Charge = \$150.00
Fixed Fee (billed quarterly)	Via Department	\$50.00 / quarter
Retail Rate	Via Department	\$8.00 / thousand gallons (kgal)
Flow Offset Fee	Via Department	TBD
Privilege Fee	Via Department	TBD
Demand Letter for Delinquent Balances	Via Department	\$10.00
Interest Rate on Unpaid Amounts	Via Department	14% per annum or as amended by MGL Chapter 60, Sect. 57C
Return Check Fee	Via Department	1% of check value, \$25.00 min. or as amended by MGL Chapter 60, Sect. 57A
Sewer Service Areas Expansion Application (Non-Single Family Home)	Via Department	\$1,500.00
Sewer Service Area Expansion Application (Single Family Home)	Via Department	\$250.00
Annual Haulers License	Via Board of Health	Per Board of Health

Item	Remarks	Fee (USD)
FOG Management Plan Submittal Fee	Via Department	\$500.00
Sewer Markout Fee	Via Department	\$40.00
Capital Improvement Fee	Via Department	TBD
FOG Permit	Via Department	Up to 2 Grease Tanks \$100.00 / year More than 2 Grease Tanks Additional \$50.00 / year for each Grease Tank over 2 Exemptions to FOG yearly fee: Seasonal mobile food service units
FOG Inspection	Via Department	First Inspection \$50.00 per hour Minimum Charge = \$200.00 Additional Inspection \$75.00 per hour Minimum Charge = \$500.00
FOG Violations	Via Commission	Failure to pump: 1 st Offense - \$100.00 2 nd Offense - \$1,000.00 3 rd Offense - \$2,000.00 4 th Offense - petition BOH to revoke food license Discharge Grease into Sewer: 1 st Offense - \$3,000.00 2 nd Offense - \$6,000.00 3 rd Offense – petition BOH to temp. suspend food license Tampering with Monitoring Device: 1 st Offense - \$1,000.00 2 nd Offense - \$2,000.00 3 rd Offense – petition BOH to temp. suspend food license Failure to Pay FOG fees: Petition BOH to suspend food license
Operation without FOG Management Plan and/or FOG Permit	Via Board <u>Commission</u>	<u>Up to</u> \$10,000.00 per year <u>Failure to comply with FOG management requirements: Petition BOH to suspend food license</u>

Notes:

- All sewer billing is based upon ninety-five (95) percent of the water meter readings. If a deduct meter is present, then the sewer bill is based upon one hundred (100) percent of the water meter readings. Deduct meters can be provided for a fee by the Water Department (See the current schedule of Water Department Rates and Fees). Plumbing, piping, associated work and water meter shall be installed at the applicant's expense by a licensed plumber. Water Department personnel will inspect

the installation of the deduct meter and install the cellular transmitter at the applicant's expense. There will be a meter reading fee per quarterly billing charged by the Water Department (See current schedule of Water Department Rates and Fees).

2. If the Department is unable to obtain a water reading, the sewer bill shall be based on a minimum usage of fifty (50) cu. ft. (374 gallons). Once an actual reading is obtained, the following sewer bill will be adjusted to reflect the actual water used.
3. Payments are due within thirty (30) calendar days after the date of the sewer bill.
4. All claims for adjustment of sewer bills shall be made in writing to the Department within thirty (30) calendar days after the date on the sewer bill.
5. As per the General Laws of the Commonwealth, Chapter 165, Section 11 - Whoever unlawfully and intentionally injures, or suffers to be injured, a water meter belonging to a city, town, district, or company engaged in supplying water, or prevents such meter from duly registering the quantity of water supplied through it, or hinders or interferes with its proper action or just registration, or attaches a pipe to a main or pipe belonging to a city, town, district or water company, or otherwise uses or causes to be used the water supplied by a city, town, district or company without the consent of the same, unless it passes through a meter set by such city, town, district or company, shall be punished by a fine of triple the amount of damages sustained thereby or one thousand dollars (\$1,000), whichever is greater or by imprisonment for not more than one year, or both. Damages shall include the value of the water and sewer used and the cost of labor and equipment repair and replacement.

This Page Intentionally Left Blank

Appendix F - Residential and Commercial Wastewater Connection Permit Application
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

Section 1 - General Information

- A. Property Owner's Name:

- B. Property Address:

- C. Owner's Mailing Address:

- D. Telephone Number/Email/Cell Phone Number:

- E. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Building Contractor:

- F. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Licensed Drain Layer:

- G. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Consulting Engineer*:

- H. Status of Application (new, renewal or change of use):

- I. Type of Commercial Establishment (if applicable):

Section 2 - Building Description and Plumbing Fixtures

- A. Describe building (single family residence, two family residence, apartment building, commercial building, etc.):

- B. Total building size (square feet):

- C. Total number of bedrooms (if applicable):

- D. Number of persons employed (if applicable):

E. Total number of plumbing fixtures:

1. Bathtubs and/or Indoor/Outdoor Showers
2. Exterior faucets
3. Urinals and/or Water Closets
4. Drinking Fountains
5. Dishwashers
6. Floor Drains
7. Oil/Water/Sand Separator
8. Garbage Grinders
9. Kitchen Sinks
10. Laundry Washers/Tubs
11. Service Sinks
12. Sump Pumps
13. Other

F. For commercial/institutional properties, will food be served at this establishment?

Yes No N/A

If yes – seating capacity (commercial applicants only) _____

Note: Exterior grease traps are required at all restaurants, food establishments and similar establishments.

G. Attach plans and specifications of proposed building and connection, prepared and stamped by the Design Engineer registered in the Commonwealth of Massachusetts.

Section 3 - Consumption and Usage

- A. Existing water usage records, if applicable
- B. Any additional estimated water consumption information and data

Section 4 - Other Permits

- A. Approved SSDS Abandonment Permit, if applicable.

Section 5 – Record Drawings

- A. Per 13 CMR 15.00, a Certificate of Compliance will not be issued until Record Drawings have been received by the Department. Record Drawings must be submitted within 14 days of the completion of work.

Section 6 - Certification

In consideration of the granting of this permit, the undersigned property owner agrees to the following:

- A. To accept and abide by all **Sewer Use Rules and Regulations** of the Town.
- B. To maintain the connection to the Town's wastewater system at no expense to the Town.
- C. To furnish and install the connection in full accordance with the **Appendix H - Standard Specifications for Sewer Design and Construction, Appendix I – Construction Details** of these **Sewer Use Rules and Regulations, and the plans approved by the Department.**

I hereby certify that I shall adhere to the Town's **Sewer Use Rules and Regulations** and I understand that failure to adhere to all discharge limitations and to the Town's **Sewer Use Rules and Regulations** will be cause for the Town to revoke the connection permit and plug the connection to the Town's wastewater system, upon completion of a hearing by the Board of Water and Sewer Commission.

Signature of Applicant

Signature of Property Owner

Name

Date

DO NOT WRITE BELOW THIS LINE – FOR OFFICIAL USE ONLY
TO BE COMPLETED BY THE TOWN

Application Complete: Yes No

Supporting Documentation Attached, Complete and Adequate: Yes No

Connection Permit Fee Paid: Yes No

Betterment Assessment Paid: Yes No N/A

Privilege Fee Paid: Yes No N/A

Compensatory Sewer Privilege Fee Paid: Yes No N/A

Flow Offset Fee Paid: Yes No N/A

Reserve Capacity Fee Paid: Yes No N/A

Water Meter on Site: Yes No

Drain Layers License Valid: Yes No

Street Opening Permit Obtained: Yes No N/A

Trench Permit Obtained: Yes No N/A

State Highway Opening Permit Obtained: Yes No N/A

Application Approved and Permit Issued by the Department: Yes No

If no, Why?

AECOM Technical Services, Inc.
Pocasset, Massachusetts

Sewer Use Rules and Regulations – ~~April 17, 2024~~ [November 6, 2024](#)
Town of Orleans, MA

Signature of Department Staff

Name of Department Staff

Title of Department Staff

Date

Permit Expiration Date

FOG Program Compliance Date for FSE

This Page Intentionally Left Blank.

Appendix G - Industrial Wastewater Connection Permit Application

**Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners**

Section 1 - General Information

- A. Company Name:

- B. Facility Address:

- C. Owner's Mailing Address:

- D. Telephone Number/Email/Cell Phone Number:

- E. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Building Contractor:

- F. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Licensed Drain Layer:

- G. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Consulting Engineer:

- H. Status of Application (new, renewal or change of use):

- I. Name and Title of Corporate Officer Signing Application:

- J. Name and Title of Facility Manager:

- K. Name and Title of Employee Responsible for Wastewater Discharge:

Section 2 - Description of Operations

- A. Type of Business:

- B. Standard Industrial Classification (SIC) Code and/or North American Industry Classification System (NAICS) Code:

- C. Principle product or service:

- D. Briefly describe the operation and activities which take place at this facility (attach additional pages if necessary):

- E. Describe the operating schedule (Days of operation, number of shifts, hours of operation, etc.):

- F. Describe any special factors affecting operation - seasonal production, scheduled shutdown, peak operation, batch operation, etc. (attach additional pages if necessary):

- G. Number of employees – total and per shift including seasonal variations (attach additional pages if necessary):

- H. List all raw materials used in the operation (attach additional pages if necessary):

- I. List any flammable, combustible or explosive substances which are stored, utilized or produced at this facility (attach additional pages if necessary):

- J. List any hazardous substances, SDS sheets, as defined in 310 CMR 30.00, which are stored, utilized or produced at this facility (attach additional pages if necessary):

- K. Describe all measures which are taken to isolate those areas of the facility where the substances listed in Item I and Item J above are stored, utilized or produced. In particular, list efforts to prevent the discharge of these substances to the sewer system (attach additional pages if necessary):

- L. Is there a "spill prevention plan" in effect for this facility (attach copy). If not, describe all measures which will be adopted to handle spills of these substances (attach additional pages if necessary):

Section 3 - Water Consumption and Usage

- A. List the source (Town of Orleans Water Department, private well or other source) and quantity (average and maximum flow in gallons per day and peak flow in gallons per minute) of all water utilized on site. Attach records of use if available (attach additional pages if necessary):

- B. Describe any treatment of this water at this facility, including chemical additions (attach additional pages if necessary):

- C. Describe any methods which are employed at this facility to recycle and conserve water (attach additional pages if necessary):

Section 4 - Wastewater Generation and Discharge

- A. List the source (sanitary, process, cooling, drain, etc.) and quantity (average and maximum flow in gallons per day and peak flow in gallons per minute) of all wastewater discharged to the sewer system. Attach records of discharge if available (attach additional pages if necessary):

- B. List the size, location, average daily flow and maximum daily flow of all connections to the sewer system: Note: The maximum daily flow listed will be considered the maximum daily permitted flow, if this application is accepted (attach additional pages if necessary):

- C. List all other methods of wastewater disposal - direct to the body of water or to ground, waste hauling service, etc. (attach additional pages if necessary):

Section 5 - Wastewater Quality

- A. Date that "Baseline Monitoring Report" was conducted on the wastewater generated at this facility (attach copy of report):

Note: The Department requires that an applicant for an industrial connection permit submit a "Baseline Monitoring Report" which shall be prepared by a Professional Civil Engineer, registered in the Commonwealth of Massachusetts, in accordance with the U.S. EPA "General Pretreatment Regulations for Existing and New Sources of Pollution" (40 CFR 403, as amended). The completed Baseline Monitoring Report shall be reviewed by the Manager of the facility from which the wastewater is discharged and the Manager of the facility shall certify in writing that "all sampling for the Report was performed under normal operating conditions at the Facility, particularly with regard to the quantity and characteristics of the wastewater which was generated during the sampling".
- B. Attach copies of the results of all analyses conducted on the wastewater (raw and pretreated) over the past two years.

Section 6 - Pretreatment

- A. Describe any proposed or existing pretreatment which this wastewater will receive prior to discharge. If this is a proposed process or a modification to an existing process, attach a copy of a design report prepared by a Professional Civil Engineer, registered in the Commonwealth of Massachusetts, including detailed flow schematic and plans and specifications (attach additional pages if necessary):

- B. Describe the actual or anticipated efficiency of the pretreatment process in removing pollutants (attach additional pages if necessary):

Section 7 - Certification

In consideration of the granting of this permit, the undersigned company official agrees to the following:

- A. To accept and abide by the Town's Sewer Use Rules and Regulations.
- B. To maintain the connection to the Town's wastewater system at no expense to the Town.
- C. To furnish and install the connection in full accordance with the Appendix H - Standard Specifications for Sewer Design and Construction, Appendix I – Construction Details of the Sewer Use Rules and Regulations, and the plans approved by the Department.

AECOM Technical Services, Inc.
Pocasset, Massachusetts

Sewer Use Rules and Regulations – ~~April 17, 2024~~ November 6, 2024
Town of Orleans, MA

I hereby certify that we shall adhere to all discharge limitations imposed by the Town and to the **Sewer Use Rules and Regulations** of the Department and I understand that failure to adhere to all discharge limitations and to the **Sewer Use Rules and Regulations** will be cause for the Town to revoke the connection permit and plug the connection to the Town's wastewater system.

The information contained in this questionnaire is familiar to me and to the best of my knowledge and belief is true, complete and accurate.

Signature of Corporate Officer

Signature of Applicant

Signature of Property Owner

Name

Title

Date

DO NOT WRITE BELOW THIS LINE – FOR OFFICIAL USE ONLY
TO BE COMPLETED BY THE TOWN

Application Complete: Yes No

Supporting Documentation Attached, Complete and Adequate: Yes No

Connection Permit Fee Paid: Yes No

Betterment Assessment Paid: Yes No N/A

Privilege Fee Paid: Yes No N/A

Compensatory Sewer Privilege Fee Paid: Yes No N/A

Flow Offset Fee Paid: Yes No N/A

Reserve Capacity Fee Paid: Yes No N/A

Water Meter on site: Yes No

Drain Layer's License Valid: Yes No

Street Opening Permit Obtained: Yes No N/A

Trench Permit Obtained: Yes No N/A

State Highway Opening Permit Obtained: Yes No N/A

Sewer Extension Permit Obtained: Yes No N/A

Application Approved and Permit Issued by the Department: Yes No

If no, Why?

Signature of Department Staff

Name of Department Staff

Title of Department Staff

Date

Permit Expiration Date

Appendix H - Standard Specifications for Sewer Design and Construction
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

Section 1 - Laws, Rules and Regulations

- A. General - The Applicant and the Contractor shall conform to all Federal, State and local laws, rules and regulations and these **Sewer Use Rules and Regulations**. The Applicant and the Contractor shall obtain all permits and licenses required by Federal, State or local governmental authorities and shall notify underground utility agencies (both public utilities and Dig Safe) to enable them to mark out their pipes, conduits and other structures.
- B. MassDEP Sewer Extension Permit - A Sewer Extension Permit shall be obtained from MassDEP for any project which adds more than fifty thousand (50,000) gallons per day of flow to the existing wastewater facilities, or which includes a pump station, or which will convey industrial waste. Application shall be made on MassDEP application forms and shall be accompanied by the required fee, to be paid to MassDEP by the Applicant. MassDEP requires that the Department review and approve such applications before they are submitted to MassDEP. The Department requires that the application be accompanied by the required plans and specifications as further described in these Standard Specifications.
- C. Sewer Connection Permits - A permit shall be obtained from the Department prior to installing any connection to the Town's wastewater system. Sewer Connection Permit applications shall be submitted to the Department and shall be accompanied by the required fee and a Street Opening Permit and/or Trench Permit, granted by the Department or the MassDOT, as applicable. The fees for Sewer Connection Permits shall be in accordance with **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations** and shall accompany the application.
- D. Street Opening Permit - A Street Opening Permit shall be obtained by the Applicant from the Department or the MassDOT, as applicable, before the Department will issue any permit for work which requires opening the surface of any Town or State road. The Applicant shall be responsible for paying all fees associated with a Street Opening Permit.
- E. Trench Permit - A Trench Permit shall be obtained by the Applicant from the Department before the Department will issue any permit for work to be performed not within a right-of-way. The Applicant shall be responsible for paying all fees associated with a Trench Permit.
- F. Septic System Abandonment Permit – A Septic System Abandonment Permit shall be obtained from the Board and submitted to the Department prior to Connection Permit issuance.

Section 2 - Plans and Specifications

- A. General – All sewers shall be designed according to professional engineering practices. Sewers shall be constructed in accordance with TR-16: Guides for the Design of Wastewater Treatment Works, 248 CMR 10.00: State Uniform Plumbing Code, and MassDEP regulations as amended from time to time. There shall be no construction on any portion of a project until a Sewer Extension Permit is obtained from the Town and/or MassDEP. In addition, no permit shall be issued by the Town, except in cases of emergency, to dig up or make an excavation until the Applicant files Dig Safe numbers with the Department and any other copies of the notices to public utility companies as required by MGL Chapter 82, Section 40.
- B. Submittals
 - 1. Eight (8) sets of plans and specifications, which fully describe the proposed project, shall be submitted to the Department for review and approval. Each plan, including the Title Page, shall be stamped and signed by the Design Engineer, registered in the Commonwealth of Massachusetts.

2. The plans shall include a title page, a locus map, a key sheet with north arrow, an index and a legend. Plans shall be drafted to a horizontal scale of 1-inch = 40-feet and a vertical scale of 1-inch = 4-feet or larger.
 - a. Wastewater Infrastructure (Public Property): 22-inch by 34-inch.
 - b. Service Connections (Private Property): minimum 11-inch by 17-inch, up to 22-inch by 34-inch, as appropriate.
 - c. All plans submitted must be fully legible.
 - d. Plans and profiles shall be black print on white background, no color-line work is permitted.
3. Plans shall include information on subsurface soil conditions and sufficient details on the system design to show that the design is appropriate for the conditions encountered.
 - a. Plan View
 - 1) Proposed sewers shall include a plan view indicating the location of the work to be completed and a profile located immediately below the plan view.
 - 2) Plan view shall include the following, as a minimum:
 - a) Location of the sewer, appurtenances and special structures;
 - b) Surface topography, shown at 1-foot intervals and accurate to 0.1 feet;
 - c) Horizontal Datum in US Survey Feet referenced to Massachusetts State Plane, Mainland Coordinate System (NAD83) and referenced to permanent benchmarks;
 - d) Property lines;
 - e) Existing septic system(s);
 - f) Existing portable water wells and/or irrigation wells;
 - g) Permanent and temporary easements;
 - h) Dwellings/buildings including street numbers, sill elevations and basement floor elevations;
 - i) Location of underground utilities and support structures for overhead utilities; and
 - j) Twenty (20) foot stationing along sewer main centerlines.
 - b. Profile View
 - 1) Proposed sewers shall include a profile view indicating the location of the work to be completed and a plan located immediately above the profile view.
 - 2) Profile view shall include the following, as a minimum:
 - a) Sewer elevation, grades and manhole rims and inverts;
 - b) Size, class, type and slope of pipe;
 - c) Location of special structures and appurtenances;
 - d) Ground surface along sewer centerline;
 - e) Repetition of the stationing shown on the plan view;
 - f) Dwellings/buildings including street numbers and sill and basement floor elevations;
 - g) Location of underground utilities where they cross the sewer;

- h) Vertical Datum in US Survey Feet referenced to the North American Vertical Datum of 1988 (NAVD88);
- i) Existing center line – fine black line weight;
- j) Proposed center line (if applicable) - bold line weight;
- k) Twenty (20) foot center line stationing; and
- l) Structure station offset locations.

4. Additional Plans

- a. Additional plans shall be furnished, as necessary, to show construction details, appurtenances, special structures and standard details. Wastewater pumping station plans, if necessary, shall include a site plan, existing and proposed contours, utilities, station location, fencing, driveways and sidewalks.
- b. Detail plans shall consist of plan views, elevations, sections and supplementary views that, together with the specifications and general layouts, provide the working information for the contract and construction of the works.
- c. Dimensions and elevations of structures, the location and outline form of equipment, location and size of piping, water levels and ground elevations shall also be shown.
- d. The following construction details (refer to **Appendix I - Construction Details**) as applicable per the Department:

Drawing	Detail Name
S-1	Typical Precast Concrete Sewer Manhole
S-2	Invert Table Plan
S-3	Orleans Standard Manhole Frame and Cover
S-4	Orleans Standard Bolted and Gasketed Manhole Frame & Cover
S-5	Inside Drop Inlets for PVC Sewers 12 Inch Dia. and Smaller
S-6	Gravity Sewer / Force Main Trench Detail
S-7	Typical Lateral Stub Connection
S-8	Gravity Service Clean-out / TV Inspection Port & Backwater Valve
S-9	Typical Water Crossing
S-10	Typical Lateral Stub Connection on Low-Pressure Sewer Main
S-11	Low-Pressure Service Connection to Gravity Stub
S-12	Low-Pressure Service Lateral Assembly
S-13	Grinder Pump Station Configuration
S-14	Sewer Force Main Thrust Block
S-15	Gravity Sewer Cleanouts
S-16	Mid-Level Platform

- e. Submit abandonment plan in accordance with Board rules and regulations.
5. Specifications – All construction specifications shall be in accordance with these **Sewer Use Rules and Regulations**.
- C. Conformity with Plans - No changes in plans, profiles or specifications will be permitted without prior approval of the Department. The Contractor shall construct the sewer and appurtenances in

conformity with the approved plans, profiles and specifications. The work shall be done under the observation of the Department and/or its authorized representative. A pre-construction meeting with the Department, Engineer, Applicant, and Contractor in attendance shall be held before material is ordered or work begins.

- D. Approval of Materials and Workmanship - All materials and workmanship employed on the project are subject to approval by the Department. The Applicant shall submit eight (8) copies of shop drawings and details of proposed materials, equipment, and method of installation for review and approval by the Department.
- E. Defective Workmanship or Materials - Unacceptable workmanship shall be corrected by the Contractor at his/her expense, before the work is accepted by the Town. Defective materials shall be removed from the work and from the job site as soon as written notification is received from the Department listing the unacceptable material. Such materials shall be replaced using acceptable materials.
- F. Record Drawings
 - 1. Upon completion of construction and within (14) days, the Design Engineer shall submit two (2) sets of draft record drawings to the Department for review and comments. The record drawings shall indicate on plans and profiles all manholes, pipes, wyes/tees, stubs, buried facilities, construction changes, construction ties to all components, rock profiles and any other appropriate details. The drain layer shall furnish all data, which the Department determines is necessary, to prepare record drawings of the completed project for the Department. The Department shall provide written comments to the drain layer who shall address all comments.
 - a. The Horizontal Datum used for Record Drawings shall be Massachusetts State Plane, Mainland Coordinate System (NAD83).
 - b. The Vertical Datum used for Record Drawings shall be North American Vertical Datum of 1988 (NAVD88).
 - c. Record Drawings shall be compatible with the Department's CAD System.
 - d. Digital photographs of the site and wastewater infrastructure shall be submitted with the drawings.

The Design Engineer shall revise the draft record drawings based on comments received from the Department.
 - 2. The Design Engineer shall provide six (6) sets of record drawings which shall be stamped, signed, and dated by the Design Engineer, registered in the Commonwealth of Massachusetts. In addition, the Design Engineer of record shall provide one (1) CD, thumb drive, flash drive, etc. or other transmission method acceptable to the Town, with the record drawing in CAD format (compatible with the Town's CAD system) and one (1) stamped set in PDF format.
 - 3. Types
 - a. Wastewater Infrastructure Extensions – The completed record drawings of the wastewater infrastructure (i.e., piping, manholes, tubing, conduits, wye/tee connections, fittings, cleanouts, and valves, etc.) shall show both a 40-scale plan view and a vertical scale of 1-inch = 4-feet at 22-inch by 34-inch in size, and as further detailed in the construction standards.
 - b. Service Connections – The completed record drawings of the Service Connection (i.e., piping, manholes, tubing, conduits, wye/tee connections, fittings, cleanouts, and valves, etc.) shall show a plan view at 40-scale or larger and a vertical scale of 1-inch = 4-feet at the Permit Application drawing size, as appropriate.
- G. Tie Cards and GPS Coordinates
 - 1. Tie Cards - Tie cards (8-1/2-inches by 11-inches) of the wastewater infrastructure and service connections such as, but not limited to, piping, manholes, tubing, conduits, wye/tee

connections, fittings, cleanouts, and valves, shall be fully dimensioned both horizontally and vertically, so that they can be located in the field. A minimum of three (3) ties shall be provided for each item requiring a tie. If, in the opinion of the Department and/or authorized representative, insufficient data is provided to properly locate the wastewater infrastructure, the drain layer shall uncover the buried utilities and perform the necessary measurements and provide updated tie cards to the Department.

2. GPS Coordinates for System Extensions- GPS Coordinates of wastewater infrastructure such as, but not limited to, piping, manholes, tubing, conduits, wye/tee connections, fittings, cleanouts, and valves, shall be fully dimensioned both horizontally and vertically, so that they can be located in the field. If, in the opinion of the Department and/or authorized representative, insufficient data is provided to properly locate the wastewater infrastructure, the drain layer shall uncover the buried utilities and perform the necessary measurements and provide updated tie cards to the Department.
3. No new Connection Permit applications will be approved by the Department from a Drain Layer or a Design Engineer until this requirement is fulfilled.
4. The wastewater infrastructure shall not be put into use until such time that the Department receives, reviews and approves the record plans, test reports and other documents required by these **Sewer Use Rules and Regulations** and items required as part of the issuance of the permit(s).

Section 3 - Inspection and Testing

- A. Inspection by Department - Inspection of the completed work will be performed by the Department. The Applicant shall notify the Department, the Engineer and all utility agencies at least two (2) working days before the start of construction and at least two (2) working days before the scheduled inspection of completed work.
- B. No work is to be backfilled until inspected by the Department. Non-inspected backfilled work will be required to be re-excavated for inspection prior to approval.
- C. Engineering Services
 1. Engineering services, if required by the Department for the project, shall be paid for by the Applicant. The Engineering Services Agreement shall outline the scope of work to be performed, which will be provided by the Engineer to the Department.
 2. These engineering services may include, but are not limited to, the review of the Applicant's project plans and materials submitted to the Department; the observation on behalf of the Department of the construction by the Applicant of sewers and appurtenances; the preparation of record drawings of the completed sewer and appurtenances for the Department; and other services which the Department deems necessary to ensure that the work is designed and constructed in accordance with these **Sewer Use Rules and Regulations**.
- D. Testing and Inspections
 1. Upon completion of the sewer main construction, including service connections to the sideline of the roadway layout and installation of the base course of bituminous concrete, the Applicant shall be required to conduct a pressure test, mandrel test and clean and televise the gravity lines, a vacuum test for manholes and a pressure test for force main in the presence of the Department, as detailed herein.
 - a. All equipment, labor, water, gauges, and the like for the testing of the force main shall be supplied by the Applicant.
 - b. The Applicant shall also provide resources to assist the Department in a visual inspection prior to final acceptance of the line.
 - c. A Commonwealth of Massachusetts certified testing company shall perform all required testing.

- d. Methods for repair and replacement of unacceptable construction or damaged material shall be submitted to the Department for approval prior to start of repair work.
 - e. All infrastructure must pass all required testing and inspections prior to allowing any flow.
2. Gravity Sewers
- a. After the sewer line, including service connections, has been completed, the trench has been backfilled and compacted to specification requirements, and manhole or joints showing noticeable streams or jets have been repaired and/or replaced, the Applicant shall perform all tests.
 - b. The Applicant shall furnish all labor, materials and equipment necessary so that testing can be accomplished at the times and locations the Department deems necessary.
 - c. Pressure Test
 - 1) Sewers not meeting the requirements stated herein shall be repaired as necessary by the Applicant.
 - 2) Low-Pressure Air Test. Utilize equipment specifically designed and manufactured for the purpose of testing sewer pipelines using low-pressure air. The equipment shall be provided with an air regulator valve or air safety valve so set that the internal air pressure in the pipeline cannot exceed eight (8) psig.
 - 3) The leakage test using low-pressure air shall be made on each manhole-to-manhole section of pipeline.
 - 4) Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be tested. Pneumatic plugs shall resist internal test pressure without requiring external bracing or blocking.
 - 5) All air used shall pass through a single control panel.
 - 6) Low-pressure air shall be introduced into the sealed line until the internal air pressure reaches four (4) psig greater than the maximum pressure exerted by groundwater that may be above the invert of the pipe at the time of the test. However, the internal air pressure in the sealed line shall not be allowed to exceed eight (8) psig.
 - 7) At least two (2) minutes shall be allowed for the air pressure to stabilize in the section under test. After the stabilization period, the low-pressure air supply hose shall be quickly disconnected from the control panel. The time required in minutes for the pressure in the section under test to decrease one (1) psig (greater than the maximum pressure exerted by groundwater that may be above the invert of the pipe) shall not be less than that shown in the following table:

Pipe diameter (inches)	Time (minutes)
6	4.0
8	5.0
10	6.5
12	7.5
14	9.0
15	9.5
18	11.5
Greater than 18	7.7 X Pipe Diameter (feet)

- 8) When the sewer section to be tested contains more than one size of pipe, the minimum allowable time shall be based on the largest diameter pipe in the section.
 - 9) Any defective work shown by this test shall be repaired/replaced by the Applicant. The Contractor shall locate the defective work and, after obtaining prior approval as to the method and materials from the Department, shall repair the defect until the line meets the test requirements.
- d. Allowable Pipe Deflection for Pipe
- 1) Pipe installed shall have a maximum deflection of five (5) percent at the time of testing. Such deflection is defined as the amount of vertical deformation (nominal inside diameter less the minimum vertical diameter when measured) multiplied by one hundred (100) and divided by the nominal diameter of the pipe.
 - 2) Upon completion of a sewer section, including the placement and compaction of backfill, and the cleaning of the sewer, measure the amount of deflection in all of the sewer lines. This testing shall be done by the use of a deflectometer, calibrated television or photography, or a properly sized "go, no go" mandrel or sewer ball. Pipe deflection testing shall not be performed until the pipeline has been under soil backfill for a minimum of six (6) months. The method of deflection testing shall have the written approval of the Department.
 - 3) All sewer lines with a deflection angle of greater than five (5) percent shall be repaired by re-bedding or replacement of the pipe by the Applicant.
- e. Visual Inspection
- 1) At the conclusion of the work and prior to backfill, all pipelines shall be visually inspected by the Department to ensure a straight alignment, proper grade, and without deflection.
 - 2) All pipelines which are not straight, at proper grade, or with deflection shall be removed and replaced by the Applicant.
- f. Pinky Ball Test
- 1) At the conclusion of the work, all pipelines shall be tested using a Pinky Ball as follows:
 - 1) Fill all tubs, sinks, etc. in structure;
 - 2) Install rubber ball into basement cleanout;
 - 3) Close the cleanout prior to proceeding to the next step; and
 - 4) Immediately flush all toilets and open drains to all tubs, sinks, etc.
 - 2) If ball is visually seen by the Department and/or authorized representative in closest downstream sewer manhole, the test has passed. If the ball is not seen, further investigation is required prior to approval of the system by the Department.
 - 3) Any defective work shown by this test shall be repaired/replaced by the Applicant. The Contractor shall locate the defective work and, after obtaining prior approval as to the method and materials from the Department, shall repair the defective until the line meets the test requirements
- g. Color Television Inspection
- 1) Upon satisfactory completion of all required testing and inspections, the Applicant shall complete a Color Television Inspection.

- 2) Gravity sewers and associated manholes shall be thoroughly cleaned by flushing with water or other means to remove dirt, stones, and other material. Prior to acceptance, all pipelines shall be inspected for cleanliness and to be sure no sandbags, broken pipe or other obstructions exist.
 - 3) The television camera used for the inspection shall be a 360-degree pan and tilt camera specifically designed and constructed for inspection of sewer lines.
 - 4) Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. The camera shall be operative in one hundred (100) percent humidity conditions and have a minimum of six (600) line-resolutions. Picture quality and definition shall be to the complete satisfaction of the Engineer and if unsatisfactory, the equipment shall be removed and replaced with equipment of satisfactory quality.
 - 5) The inspection shall be done one section at a time and the section being inspected shall be suitably isolated from the remainder of the sewer system as required.
 - 6) The camera shall be moved through the line in either direction at a uniform slow rate by means of cable winches located at manholes on each side of section being televised.
 - 7) Means of communications shall be set up between the two winches and the monitor control. Photographic pictures shall be taken of the television monitor when directed by the Department.
 - 8) The Applicant shall submit Color DVDs and a typed written report including television inspection logs for all work performed. These logs at a minimum should include:
 - a) Stationing;
 - b) Location of reference points;
 - c) Point of entry of service connections via a clock system;
 - d) Observed running leaks;
 - e) Observed continuously running service connections;
 - f) Bad joints;
 - g) Sags in pipes; and
 - h) Other evidence of potential problems.
 - 9) No TV inspections will be necessary for service lateral connections.
3. Force Mains
- a. Force mains and associate components shall be thoroughly cleaned by flushing with water or other means to remove dirt, stones, and other material. Prior to acceptance, all force mains shall be inspected for cleanliness and to be sure no sandbags, broken pipe or other obstructions exist.
 - b. Force mains shall be tested in the presence of the Department or their representative, by water to a pressure equal to two (2) times the total dynamic head of the pump to which the force main is attached, unless the test pressure is greater than the working pressure of the pipe. In that case the pipe shall be tested to the working pressure of the pipe. The Department shall provide the test pressure.
 - c. This pressure shall be held for a period of at least fifteen (15) minutes, allowing a maximum pressure drop of one (1) psi. If the maximum pressure drop exceeds one (1) psi, the pipe shall be considered to have failed the test.

- d. Any defective work shown by this test shall be repaired/replaced by the Applicant. The Contractor shall locate the defective work and, after obtaining prior approval as to the method and materials from the Department, shall repair the defective until the line meets the test requirements.
- 4. Low-Pressure Sewers
 - a. Low-Pressure Sewers and associate components shall be thoroughly cleaned by flushing with water or other means to remove dirt, stones, and other material. Prior to acceptance, all low-pressure sewers shall be inspected for cleanliness and to be sure no sandbags, broken pipe or other obstructions exist.
 - b. Low-pressure sewers shall be tested by the Applicant, in the presence of the Department, by water or air pressure equal to one hundred (100) psi. Testing shall conform to the requirements of AWWA Standard C600.
 - c. The pressure shall be held for a period of at least five (5) minutes, allowing a maximum pressure-drop of one (1) psi. If the maximum pressure drop exceeds one (1) psi, the pipe shall be considered to have failed the test.
 - d. Any defective work shown by this test shall be repaired/replaced by the Applicant. The Contractor shall locate the defective work and, after obtaining prior approval as to the method and materials from the Department, shall repair the defective until the line meets the test requirements.
- 5. Service Connections (Private Property)
 - a. Visual Inspection
 - 1) At the conclusion of the work and prior to backfill, all pipelines shall be visually inspected by the Department to ensure a straight alignment, proper grade, and without deflection .
 - 2) All pipelines which are not straight, proper grade, or with deflection shall be removed and replaced by the Applicant.
 - b. Low-Pressure Sewers
 - 1) Low-Pressure Sewers and associate components shall be thoroughly cleaned by flushing with water or other means to remove dirt, stones, and other material. Prior to acceptance, all low-pressure sewers shall be inspected for cleanliness and to be sure no sandbags, broken pipe or other obstructions exist.
 - 2) Low-pressure sewers shall be tested by the Applicant, in the presence of the Department, by water or air pressure equal to one hundred (100) psi. Testing shall conform to the requirements of AWWA Standard C600.
 - 3) The pressure shall be held for a period of at least five (5) minutes, allowing a maximum pressure-drop of one (1) psi. If the maximum pressure drop exceeds one (1) psi, the pipe shall be considered to have failed the test.
 - 4) Any defective work shown by this test shall be repaired/replaced by the Applicant. The Contractor shall locate the defective work and, after obtaining prior approval as to the method and materials from the Department, shall repair the defect until the line meets the test requirements.

Section 4 - Applicant's Responsibilities

- A. Grades and Layout - All roads and easement locations, through which any wastewater system is to be constructed, shall be at the proposed sub-grade elevation before the construction starts. The Contractor shall be responsible for setting grades and shall supply all engineering design, field layout, grades, supervision, and data for the record drawings as detailed above.

- B. Supervision by Contractor - The Contractor shall supervise and direct the work and shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor shall employ and maintain on the work a qualified supervisor or superintendent who shall have been designated in writing as the Applicant's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work. Neither the Department nor their Engineer is responsible for the construction means, controls, techniques, sequences, procedures or construction safety.
- C. Easements and Land
 - 1. Easements are required if public sewer lines are installed on private property. The easement shall be classified as a "utility" easement and shall be a minimum of twenty (20) linear feet wide unless otherwise determined by the Department. Any required easements must be secured by the Applicant in the name of the Town and recorded with the Registry of Deeds of Barnstable County.
 - 2. Land for pumping stations and other similar structures that will be gifted to the Town following acceptance by the Town, shall be sized with a minimum fifty (50) foot buffer around all sides of the structures unless otherwise determined by the Department. The land must be secured by the Applicant in the name of the Town and recorded with the Registry of Deeds of Barnstable County.
- D. The Applicant shall be responsible for ensuring that the record plans, test reports, and other documents required by these Sewer Use Rules and Regulations and items required as part of the issuance of the permit(s) are provided to the Department for review and approval.
- E. Fees - The Applicant shall be responsible for all fees associated with the work in accordance with **Appendix E – Fee Schedule** of these **Sewer Use Rules and Regulations**.

Section 5 - Excavation and Backfill

- A. Excavation
 - 1. General - The Contractor shall make all excavations in earth and rock necessary or incidental to construct the proposed work as shown on the approved construction drawings. All excavations shall be by open cut, except as otherwise permitted by the Department, and shall be of sufficient width to allow for thorough compaction of the refill material and for the inspection of the work.
 - 2. Health and Safety Regulations – All projects are subject to all the Health and Safety Regulations (CFR 29 Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974 and Occupational Safety and Health Administration's (OSHA) 29 CFR 1910.120, as amended.
 - 3. OSHA Training Certification – For all projects with an estimated cost of more than ten thousand dollars (\$10,000), the applicant shall sign and provide to the Department a certification noting that all employees that will work on the project have no less than ten (10) hours of OSHA-approved safety and health training.
 - 4. Sheeting and Bracing - The Contractor shall furnish and place such sheeting and bracing as may be required to properly perform the work and shall leave in place, if ordered by the Department, that portion of the sheeting and bracing necessary to maintain the base fill material and the walls of the excavation during the backfilling process and after it has been completed.
 - 5. Depth of Trench for Earth Excavations - The bottom of earth trenches shall be excavated six (6)-inches below the barrel of the pipe to provide for granular bedding of the pipe.

6. Depth and Width of Trench for Rock Excavations - The bottom of rock trenches shall be excavated twelve (12)-inches minimum below the barrel of the pipe and twelve (12)-inches minimum clear on each side of the pipe.
7. Ledge and Blasting
 - a. Where ledge is encountered in the excavation and must be blasted, a permit must be obtained from the Town's Fire Chief for the use of explosives.
 - b. The removal of the ledge shall be accomplished by licensed individuals and the Contractor shall obtain the necessary permits before blasting occurs. All blasting shall be done in accordance with the requirements of the Massachusetts Department of Public Safety and such other requirements as imposed by the Fire Chief.
 - c. All blasting must be done by a person licensed by the Massachusetts Department of Public Safety for this purpose.
 - d. Contractor shall provide the results of an independent pre-blast survey to the Department and Fire Department five (5) business days prior to any blasting activity on site.
 - e. The Contractor shall take accurate measurements relating the top surface of the ledge to the proposed invert of the pipe or the bottom of other structures. This information shall be recorded and shall be incorporated into the Record Drawings.
 - f. The handling, storage and use of explosives shall be in full accordance with all applicable Federal, State and Local laws.
8. Excavation
 - a. Trench excavation shall be subject to the requirements of the Department and the MassDOT, if applicable. Excavation in streets having an improved pavement shall be inspected and re-cut if found to be broken or ragged. The Contractor shall furnish all materials and do all the work necessary to restore the street to its original condition and pavement depth per the Street Opening Permit. The work shall be subject to inspection and approval by the Department.
 - b. Existing pavements shall be cut utilizing approved pneumatic cutting tools or wheel-type cutters. All excavations and obstructions shall be adequately barricaded and lighted at all times to protect the public from harm.
 - c. A temporary patch shall be laid at the end of the working day and/or as spelled out in the Street Opening Permit. Failure of the temporary patch shall be repaired within eight (8) hours of notification to do so.
 - d. The Drain Layer shall restore the permanent road surface within the time specified in the Street Opening Permit. If there is a failure to comply, the Town shall have the work accomplished, and the Drain Layer shall be liable for all debts incurred.
 - e. Power shovels, bulldozers, loaders, trucks and other equipment shall not be operated on or across sidewalks, berms, curbing, etc., until they have been properly protected from damage by planking or other approved means. All damage resulting from the Drain Layer's operations shall be repaired by the Drain Layer.
9. Unsuitable Foundation Material - The Contractor shall remove unsuitable foundation material under the pipelines and refill with bank gravel, screened gravel or concrete, as ordered by the Department. Sheeting, to contain the refill material, shall be furnished, installed and left in place at the order of the Department.
10. Dewatering - Dewatering of the area in which work will be done, including pumping station sites, will be done by the Contractor, using pumps of sufficient capacity to render the excavations dry enough to permit construction to proceed in conformity with the specifications. The Contractor is required to obtain any and all permits for their proposed dewatering

operations. All water from dewatering operation shall be legally disposed of by the Contractor in a manner which is acceptable to the Department.

B. Backfilling

1. General - The trenches and other excavations shall be backfilled as soon as possible after laying the pipe or the completion of other structures. No backfilling shall be done until the Department and/or authorized representative has inspected the work.
2. Materials and Placement for Pipe
 - a. The pipe shall be backfilled per the gravity sewer trench detail.
 - b. A suitable tracing tape shall be installed eighteen (18)-inches below finished grade along the entire length of the pipe.
 - c. Tracer wire shall be installed, centered, along the entire length of the sewer and services.
 - d. The Contractor shall be fully responsible for the proper backfilling and compacting of all trench bedding and refill material by mechanical tamping in nine (9) inch layers. Alternate methods of consolidating the backfill material above the crown of the pipe such as water jetting with jet pipes at least five (5) feet in length or puddling will be considered and the method employed shall be approved in writing by the Department.
3. Material used for backfilling shall be in accordance with **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.

Section 6 - Pipe and Pipe Laying

A. Gravity Sewer Pipe and Fittings

1. Polyvinyl Chloride Pipe (PVC)
 - a. Pipe and fittings shall be PVC made by a manufacturer of established reputation, meeting the requirements of ASTM D 3033 or D 3034, with a pipe diameter to wall thickness ratio (SDR) of 35. PVC pipe shall have a maximum pipe length of 13 feet and shall be furnished with a permanently bonded elastomeric ring, bell and spigot style joint, meeting the requirements of ASTM D 3212.
 - b. Wye Branches or Tees shall be of the class and type so as to be compatible with the pipe in which they are used.
 - c. PVC pipe for main sewers shall have a minimum inside diameter of eight (8)-inches, and PVC pipe for service connections and for chimneys shall have a minimum inside diameter of six (6)-inches. The Department reserves the right to increase the minimum pipe sizes. All PVC fittings shall be molded, one-piece construction.
 - d. For any installations in areas with shallow trenches (less than five (5) feet of cover) or deep trenches (greater than twenty (20) feet of cover), the applicant shall increase the structural capacity of the pipeline and provide the Department the applicable calculations prepared by a Professional Civil or Structural Engineer, registered in the Commonwealth of Massachusetts.
2. Underground Tape and Tracer Wire
 - a. Underground tape shall be a five (5) mil, three (3) inch wide silver metal detectable tape which permanently identifies the underground force main. The tape shall meet APWA requirements and use brown colored stripes with black print indicating "CAUTION GRAVITY SEWER BELOW".
 - b. Tracer wire shall be #12 AWG Copper Clad Steel, High Strength with minimum four hundred fifty (450) pound break load, with minimum thirty (30) mil HDPE insulation thickness.

B. Force Main Pipe and Fittings

1. Force Mains shall be Polyvinyl Chloride Pipe (PVC); couplings and fittings shall conform to ASTM 2241 with an SDR of 21 unless otherwise indicated by the Department. The pipe shall be homogeneous throughout and shall be free of visible cracks, holes, foreign material, blisters or other deleterious faults.
 2. Joints for PVC pipe shall be push-on joints using permanently bonded elastomeric ring joints conforming to ASTM F477. Such joints shall be installed in accordance with the pipe manufacturer's written instructions. Any joint which is not properly made, shows signs of leakage or is, in the opinion of the Department, defective in any way, shall be redone to the satisfaction of the Department.
 3. Fittings shall be of a class equal to or greater to the adjacent pipe.
 4. Underground Tape and Tracer Wire
 - a. Underground tape shall be a five (5) mil, three (3) inch wide silver metal detectable tape which permanently identifies the underground force main. The tape shall meet APWA requirements and use brown colored stripes with black print indicating "CAUTION FORCE MAIN BELOW".
 - b. Tracer wire shall be #12 AWG Copper Clad Steel, High Strength with minimum four hundred fifty (450) pound break load, with minimum thirty (30) mil HDPE insulation thickness.
- C. Low-Pressure Sewer Pipe and Fittings
1. Buried Polyvinyl Chloride (PVC) Pressure Sewer Pipe, couplings and fittings shall conform to ASTM 2241, with an SDR of 21. Joints for PVC pipe shall be push-on joints using permanently bonded elastomeric ring joints conforming to ASTM F477.
 2. Exposed PVC pressure sewer pipe inside of all flushing/drain manholes shall be Schedule 80 flanged pipe. This piping, fittings and valves shall be insulated and jacketed.
 3. Wyes shall be utilized for connection of low-pressure sewers at all intersections. All bends shall be forty-five (45) degrees or less.
 4. Pipe utilized for service connections shall be one-and-one-quarter (1-1/4)-inches in diameter and be manufactured of PVC. Service pipe shall conform to ASTM 2241, with an SDR of 21. Joints for PVC pipe shall be push-on joints using permanently bonded elastomeric ring gaskets.
 5. Service connection wye branches and/or tees shall be of the same material and of the same class and type so as to be compatible to the pipe they are used with. If wyes with a 1-1/4-inch branch and/or run size are not available in the material being used, the Contractor shall furnish and install 1-1/4-inch x 1-1/2-inch reducers and wyes with a 1-1/2-inch branch size or 1-1/2-inch x 1-1/2-inch wyes and 1-1/4-inch x 1 1/2-inch reducers (3) for each service connection.
 6. Pipe utilized for gravity service connections shall be six (6)-inches in diameter and be manufactured of PVC. PVC pipe shall conform to ASTM D3034, with an SDR of 35 or ASTM F789. Joints for PVC pipe shall be push-on joints using permanently bonded elastomeric ring gaskets.
 7. Gate valves shall be iron body, bronze mounted and have solid wedges. The valves shall be designed for one hundred fifty (150) psi working pressure and shall open left.
 8. The Contractor has the option of substituting SDR 11 HDPE I.P.S. butt fused pipe for the SDR 21 PVC gasketed pipe used for pressure main and services at no additional cost to the Owner. All couplings, fittings, adapters, valves, reducers, tees, and wyes shall be compatible with the type of pipe used. HDPE pipe shall be pressure rated for two hundred (200) psi and shall conform to ASTM D1248, ASTM D3350, ASTM D2239, and NSF-14. Compression fittings shall be stainless steel.
 9. Pipe and fittings using glued connections are not acceptable.
 10. Underground Tape and Tracer Wire

- a. Underground tape shall be a five (5) mil, three (3) inch wide silver metal detectable tape which permanently identifies the underground low-pressure sewer. The tape shall meet APWA requirements and use brown colored stripes with black print indicating "CAUTION LOW-PRESSURE SEWER BELOW".
- b. Tracer wire shall be #12 AWG Copper Clad Steel, High Strength with minimum four hundred fifty (450) pound break load, with minimum thirty (30) mil HDPE insulation thickness.

D. Pipe Laying

1. Line and Grade

- a. The Contractor shall provide such engineering services as may be required to ensure that the pipelines are constructed in accordance with the approved drawings. Engineering services provided by the Contractor shall include the establishment of lines and the setting of grades.
 - 1) All sewer mains shall be installed using laser beam aligning equipment.
 - 2) No sewer main shall be installed at a slope of less than a half (0.5) percent.
 - 3) All sewer lines and appurtenances shall be designed for H-20 loading, minimum.
 - 4) All manholes shall be of watertight construction.
 - 5) Bolted and gasket sewer manhole covers will be required within the one hundred (100) year flood plain, at all off-road locations, adjacent to any gutter lines, low points, and anywhere else deemed appropriate by the Department.
 - 6) No sewer connection shall be installed at a slope less than two (2) percent.
 - 7) No service connection shall be connected directly into a sewer main manhole unless the connection is 8-inch or greater in diameter.
 - 8) Pumping Stations
 - a) Pumping Stations will only be allowed when it has been proven to the Commission that no other alternate means of a gravity system is feasible as determined by the Department.
 - b) Pumping stations will be protected and operable during at least a one hundred (100) year storm and accessible during all weather conditions.
 - c) Buoyancy calculations for stations will be supplied for acceptance.
 - d) All Pumping Stations must be constructed utilizing similar materials, fittings, pumps, generators, alarms, etc. as currently utilized by the Department.
 - e) All construction aspects of the Pumping Station must be approved by the Department prior to its construction.
 - 9) Force mains will enter gravity-fed manholes, not more than two (2) feet higher than the invert out.
 - 10) Sewer manhole inverts must be constructed entirely of red sewer brick or a red brick table with a halved PVC pipe invert, per the details in **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.
 - 11) Deviations from line and grade in excess of one (1)-inch shall be cause for rejections of the installation.
- b. In general, sewer connections will not be allowed to have more than two (2) angle points, or a total angular deviation of one hundred eighty (180) degrees, unless granted variance by the Department. Clean-outs shall be installed at each deflection. Connections in excess of one hundred (100) linear feet in length are subject to review and other

- requirements as may be found necessary to assure a functional connection. The use of ninety (90) degree elbows is not allowed. Each connection shall have two (2) forty-five (45) degree elbows and a one (1) foot nipple and then a clean-out.
- c. Where practicable, when the common sewer is sufficiently deep, service connections shall be laid directly, without horizontal or vertical deflections from the building drain to the connection at the common sewer.
 - d. Tunneling will not be allowed unless special permission is granted in writing from the Department.
 - e. Connection made to the building plumbing system shall be upstream of any septic tank or cesspool.
 - f. Whenever possible, the connection should be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the Town's wastewater system, sanitary sewage carried by such building drain may be lifted by an approved means and discharged to the Town's Wastewater Infrastructure.
2. **Handling and Storage** - All pipe shall be handled carefully to avoid injury to workmen, other structures or to the pipe itself. Pipe or fittings damaged, for whatever reason, shall be removed from the job site immediately. Care shall be taken to stack the pipe properly and if stored for a period exceeding sixty (60) calendar days and exposed to the ultra violet rays of the sun, pipe shall be covered with canvas or other opaque material, and provision for the circulation of air beneath the covering shall be provided. Straight barrel PVC pipe deflection prior to installation is not to exceed one sixteenth (1/16) inch per two (2) foot length. All pipe not meeting this requirement shall be removed from the construction site.
 3. **Foundation** - All pipe shall be laid on a stable foundation to prevent settlement. If soft or unsatisfactory material is found at grade, it shall be removed and replaced with suitable material as described in these specifications.
 4. **Pipe Bedding** - In general, the bottom of the trench shall be excavated to a depth of twelve (12)-inches below the bottom of the pipe barrel and a compacted granular bedding placed for pipe laying. Bedding shall be in accordance with the **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**. After the pipe has been set to line and grade, additional bedding material, of the same size and characteristics as that which has been placed below the pipe, shall be lightly tamped in place to a point six (6)-inches above the barrel. This material, and the bedding material beneath the pipe, shall be placed the full width of the trench, as excavated, or to the inside surfaces of the sheeting which is required to contain the foundation material in soft trenches. Similar bedding shall be provided in rock trenches except that there shall be twelve (12)-inches clear under the pipe to the rock surface and eighteen (18)-inches clear on each side. Under no circumstance will the pipe be permitted to bear directly on the rock.
 5. **Exclusion of Mud and Dirt** - Care shall be taken by the Contractor to exclude mud and/or water containing dirt from entering the pipelines. Temporary plugs shall be installed and the Contractor shall weight the pipes or backfill if inspection has been made, to prevent flotation from water in the trench.
 6. **Concrete Cradles** - Where ordered or designed, the Contractor shall be required to place a half section, or full envelope section, of concrete around the pipe after the pipe has been set to line and grade. The section shall comply with **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.
 7. **Thrust Blocks** - Thrust blocking for various pipe diameters, including bends, plugs and tees is represented in the following tables:

**AREA OF BEARING FACE OF CONCRETE
THRUST BLOCKS IN SQUARE FEET**

Based on 250 PSI and 1.5 ton/ft² allowable soil bearing capacity

Pipe Size (inches)	1/4 Bend	1/8 Bend	1/16 Bend	Plug and Tees
4	6.0	2.9	2.3	4.5
6	6.0	2.9	2.3	4.5
8	6.0	2.9	2.3	4.5
10	9.6	5.2	2.3	6.7
12	13.3	6.7	3.7	9.6

**AREA OF BEARING FACE OF CONCRETE
THRUST BLOCKS IN SQUARE FEET**

Based on 150 PSI test pressure and
used in conjunction with mechanical joint restraints

Pipe Size (inches)	1/4 Bend	1/8 Bend	1/16 Bend	Plug and Tees
4	4.0	4.0	4.0	4.0
6	4.0	4.0	4.0	4.0
8	4.0	4.0	4.0	4.0
10	6.0	6.0	6.0	6.0
12	8.0	8.0	8.0	8.0

8. Jointing - Immediately prior to jointing, the spigot, bell and gasket shall be thoroughly cleaned and a lubricant applied, supplied by the pipe manufacturer. Extreme care shall be exercised during the jointing process, to ensure that the pipe is in the correct position within the bell. Pullers, or other types of mechanical equipment, shall not be allowed to avoid the possibility of splitting or deforming the joint. Ductile iron pipe joints shall be mechanical. The bell and spigot shall be washed clean and, after installing the rubber ring and gland, the bolts shall be tightened in alternating sequence with a torque wrench set at seventy-five (75) foot-pounds.
9. Service Connections
 - a. Service connections shall include a wye branch, sweep and cap. Service connections shall be installed to a point extending beyond the sideline of the roadway layout and capped to allow testing prior to connection of the structure. Service connections shall be laid in granular bedding, as specified for main sewer pipe, and the same backfilling procedures shall be followed throughout with a minimum cover of five (5) feet. Connections to the main sewer shall be by the installation of a wye of the same manufacturer as the pipe, installed during the installation of the main sewer. Use of saddles will not be allowed.
 - b. Ends of service connections shall be identified with a one (1)-inch metal stake placed vertically with the top of the stake three (3)-inches below the ground surface.
 - e. A suitable tracing tape shall be installed eighteen (18)-inches below finished grade along the entire length of the Connections.

- c. Service connections shall not be attached to the plumbing in the building until a permit to connect has been issued by the Department. Permits to connect service connections to buildings shall not be issued until mains and laterals have been tested and accepted by the Department.
10. Insulation - All main sewers and service connections with less than four (4) feet of cover over the pipe, or as directed by the Department or their Engineer, shall be insulated with a closed cell, rigid plastic foam insulation, meeting ASTM C578, Type IV and suitable for underground installation.
11. Chimneys - Chimneys shall be constructed at locations required by the depth of the sewer main and as approved by the Department or their Engineer. The chimney shall consist of a PVC tee or 90-degree saddle, 45-degree PVC bend, riser pipe with field cut end and a 90-degree PVC elbow. The entire assembly is to be backfilled with crushed stone.
12. Precast Concrete Chimneys - Precast concrete chimneys shall consist of a bridge section, intermediate section and top section. The bridge section will provide a gasket connection, which will move when settlement occurs. Bridge width is to be thirty-six (36)-inches for gravity sewer lines through fifteen (15)-inches and forty-eight (48)-inches for gravity sewer lines through eighteen (18)-inches and larger. The intermediate sections shall contain o-ring seals between precast sections and bolt-up brackets with nuts and bolts. The top section is to incorporate a PVC tee with a clean-out plug on top. Precast chimney installation is to comply with manufacturer's recommended instructions. The base section shall be set in a compacted stone bed and shall not make contact with the sewer main service fitting.
13. Drop Connections – Drop manhole connections shall be SDR 35 PVC pipe and fittings and shall conform to ASTM D3034.

Section 7 - Miscellaneous Structures

- A. The Contractor shall submit materials and method of construction for all miscellaneous structures of the proposed wastewater infrastructure including but not limit to the following: grease tanks, monitoring manholes and similar items.
- B. Grease Tanks
 1. Grease, oil and sand tanks, where required, shall have a minimum capacity of one thousand (1,000) gallons, and shall have sufficient capacity to provide at least a 24-hour detention period for kitchen flow. Kitchen flow shall be calculated in accordance with State Uniform Plumbing Code (248 CMR 10.00).
 2. Grease tanks shall be watertight and constructed of sound and durable materials not subject to excessive corrosion, decay, or frost damage, or to cracking or buckling due to settlement or backfilling. Tanks and covers shall be designed and constructed so as to withstand H-20 loadings. A tank installed in groundwater shall be weighted to prevent the tank from floating when it is emptied. The inlet tee shall extend to the mid depth of the tank. The outlet tee shall extend to within twelve (12)-inches of the bottom of the tank. Tees shall be cast iron or Schedule 40 PVC and properly supported by a stainless steel hanger or strap.
 3. Grease tanks shall be installed on a level, stable base that will not settle. Grease tanks may be constructed of poured reinforced concrete or precast reinforced concrete. Grease tanks shall be provided with a minimum twenty-four (24)-inch diameter manhole frame and cover to grade over the inlet and the outlet.
 4. Grease tanks shall be located on the lot so as to be accessible for servicing and cleaning. The invert elevation of the invert of a grease tank shall be at least two (2)-inches above the invert elevation of the outlet.
 5. The inlet and outlet shall be located at the centerline of the tank, and at least twelve (12)-inches above the maximum groundwater elevation. Backfill around the grease tank shall be placed in a manner so as to prevent damage to the tank.

- C. The design of the grease tanks shall be in accordance with the 248 CMR 10.00: State Uniform Plumbing Code and shall be prepared by a Professional Civil, Mechanical, or Sanitary Engineer registered in the Commonwealth of Massachusetts with experience in the design and installation of grease tanks. Monitoring Manholes - Monitoring manholes required for industrial wastewater discharges shall be precast concrete designed for H-20 loading and as specified herein.

Section 8 - Bank Gravel, Screened Gravel, Ordinary Borrow, Crushed Stone and Processed Glass Aggregate

- A. Sand – Sand shall be furnished and placed by the Contractor as trench electrical conduits and shall have particles with a diameter of between 0.074 and 4.75 millimeters and be free from loam, sharp angular gravel or cobbles clay, mud or other unacceptable materials.
- B. Bank Gravel - Bank gravel shall be furnished and placed by the Contractor as trench refill for roadway sub-base and shall consist of hard, durable stone and coarse sand free from loam, clay, mud or other unacceptable materials.
- C. Screened Gravel - Screened Gravel shall be furnished and placed by the Contractor as granular bedding material for the pipelines and may be washed and graded bank run gravel or crushed stone ranging in size from one-half (½)-inch to one (1)-inch.
- D. Ordinary Borrow - Ordinary borrow shall be furnished and placed by the Contractor as trench refill material. It shall not contain stones larger than fifty (50) pounds and shall be free from loam, clay, vegetation or other unacceptable material.
- E. Crushed Stone - Gradation and physical property requirements of crushed stone shall conform to ASTM C33, Coarse Aggregate Number 67. Crushed Stone shall be free from roots, vegetation, leaves, and other organic materials, and free of ice, snow, clay, frost, frozen soil particles and other fine or harmful substances.
- F. Processed Glass Aggregate (PGA) - In lieu Crushed Stone, the Contractor may utilize PGA for bedding of pipelines.
 - 1. PGA shall be manufactured from an approved supplier of crushed cullet. The material shall consist of recycled glass food or beverage containers free of debris such as paper, metals, fabrics, toxins, clay, loam, or other materials that would be associated with the glass recycling process. A maximum of five (5) percent mass of the material may be produced from china dishes, ceramics, plate glass or other glass products. Other glass products (i.e. fluorescent lights, video screens, automobile glass, lead crystal, etc.) shall not be incorporated into PGA.
 - 2. The material will have a nominal aggregate size of three-eighths (3/8) inch and meet the following gradation requirements.

Sieve Designation	Percent by Mass Passing
3/8 inch	100
No. 4	70-100
No. 8	35-88
No. 16	15-40
No. 50	4-12
No. 200	0-5

- 3. The percent wear as determined by the Los Angeles Abrasion Test, Class C or D will be a maximum of forty (40) percent.
- G. Approval - Bank Gravel, Screened Gravel, Ordinary Borrow, Crushed Stone and Processed Glass Aggregate must be approved by the Department or the Engineer before incorporation into the work.

Section 9 - Manholes

A. Materials

1. Precast Concrete Manholes
 - a. Manholes shall be installed at all changes in grade and alignment but not more than every three hundred (300) linear feet of pipe. Manholes shall be constructed of reinforced, precast concrete and shall include a monolithic base section, barrel section and either a dome section or a flat top section. Manholes shall meet the applicable requirements of ASTM C478 and be designed for H-20 loading.
 - b. Flat top sections may be substituted for dome sections if sufficient depth is not available and if approved by the Department or the Engineer.
 - c. All manholes shall be four (4) foot in inside diameter for pipe up to twenty-four (24)-inches in diameter unless the angle between two (2) pipes is less than one hundred twenty (120) degrees. In such cases a five (5) foot inside diameter manhole shall be used.
 - d. All manholes shall be five (5) foot in inside diameter for pipes less than thirty-six (36)-inches in diameter unless the angle between two (2) pipes is less than one hundred twenty (120) degrees. In such cases and when the size of the pipe is less than thirty-six (36)-inches a six (6) foot inside diameter manhole shall be used.
 - e. All manholes which incorporate an inside drop shall be one (1) standard manhole size larger than specified above.
 - f. Exterior surfaces of all precast manholes shall be given one shop coat of bituminous waterproofing.
 - g. All manholes delivered to the site must be approved by the Department or their Engineer. In general, reasons for rejection will include, but not be limited to, porous or cracked walls, mis-formed joints or pipe connectors which vary more than 1-inch from those indicated on the Contract Drawings. Rejected manholes shall be removed from the site by the Contractor.
2. Pipe Connection – Pipe-to-manhole connection shall be made with a flexible rubber boot and stainless-steel clamp. Pre-molded elastomeric sealed joints shall be A-Lok, Res-Seal, Press-Wedge II, Lock Joints Flexible Manhole Sleeve, Kor-N-Seal Joint Sleeve, or approved equal. The flexible rubber boot shall be installed during manufacture of the precast manhole sections and shall include a stainless-steel screw clamp designed specifically for use on the size and type of pipe utilized on the project.
3. Manhole Section Joints - Horizontal joints between sections of manholes, unless otherwise specified herein, shall be sealed with a self-sealing butyl rubber-based flexible joint sealant in rope form. Sealant material shall be Kent-Seal No. 2 as manufactured by Hamilton-Kent Mfg. Co., Kent, Ohio; C-S146 as manufactured by Concrete Products Supply Co. Div., Press Seal Gasket Corp., Fort Wayne, Indiana; Ram-Nek as manufactured by K.T. Snyder Co., Inc., Houston, Texas, or approved equal. Sealant shall be installed in accordance with the manufacturer's written instructions.
4. Brick - Red clay brick for table, invert and grade-adjusting courses shall be Type SS, new, whole, hard burned that conforms to ASTM C32. Cement bricks, blocks or soft red brick will not be allowed.
5. Steps - Manhole steps shall be copolymer polyethylene coated steel conforming to ASTM C478. All steps shall be safety type, drop front, cast in place, 1-inch diameter, 16 inches wide, and placed 12-inches on center, in the barrel and dome sections to within 12-inches of the top of the manhole. Steps shall be located directly under the access hatch opening. Metal items embedded in concrete shall be painted with a zinc chromate primer.

6. Frames and Covers
 - a. Cast iron frames and covers shall conform to the details in **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**. All castings shall be clean and without blow holes or sand holes or defects of any kind. Plugging or other stopping of holes will be cause for rejection. Castings shall not vary more than five (5) percent from the weight specified.
 - b. Cast iron manhole frames and covers shall be carefully cleaned of all rust, dirt, and scale, and coated. Any rusted or damaged surfaces shall be cause for rejection of the castings. Manhole covers must fit the frames and the underside of the cover and upper side of the lip of the frame must present parallel plane surfaces. The frames and covers must be machined at the points of contact to prevent the covers from rocking in the frames under traffic conditions. Covers shall bear evenly on the frames for the entire circumference and be interchangeable with other frames.
 - c. Standard frames and covers shall be Model No. 00211111 and Model No. 00211186, respectively, as manufactured by E.J. Group, Inc. Frames shall be eight (8)-inches in height with a twenty-four (24)-inch clear opening. No alternate frames and covers will be accepted.
 - d. Bolted and Gasketed frames and covers shall be Model No. 00211190W01y, as manufactured by E.J. Group, Inc. Frames shall be eight (8)-inches in height with a twenty-four (24)-inch clear opening, and gasket groove and neoprene gasket. No alternate frames and covers will be accepted.
7. Brick
 - a. Brick shall conform to ASTM C32 and shall be new, water struck, first quality, whole, sound brick.
 - b. For tables and inverts, Type SS shall be used with cement mortar (no lime).
8. Mortar - Mortar shall be composed of one-part Portland cement to two parts sand with 20 percent hydrated lime. Portland cement shall conform to the requirements of ASTM C150. Sand shall conform to the requirements of ASTM C144. Hydrated lime shall conform to the requirements of ASTM C207.
9. Water - Water shall be clean, fresh and free from organic matter, oil, acid, alkali, or deleterious substances.
10. Mid-Level Platform - All manholes with a depth of twenty (20) feet or greater from rim to invert shall have installed at the midpoint of the manhole a mid-level platform. The mid-level platform shall be installed in accordance with the details in **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.
11. Manhole Encapsulation System
 - a. All manholes shall be installed with an external manhole encapsulation system that seals:
 - (a) the interface between the precast concrete manhole and the frame and cover and (b) all manhole joints which are located below groundwater.
 - b. The manhole encapsulation system shall be designed to prevent leakage of water into the manhole and shall be either one of the following:
 - 1) The manhole encapsulation system shall be a heat shrinkable wraparound sleeve system and shall have an overall thickness of 0.100-inches with a minimum width of 12-inches. The manhole encapsulation shall be "Wrapid Seal Manhole Encapsulation System" as manufactured by Canusa, A Division of Shaw Pipe Resources or approved equal.

- 2) The manhole encapsulation system shall be a rubber sleeve made of EPDM (Ethylene Propylene Diene Monomer) rubber with a minimum thickness of sixty-five (65) mils with a minimum width of twelve (12) inches. Each unit shall have a two (2) inch wide mastic strip on the top and bottom edge of the rubber wrap. The mastic shall be non-hardening butyl rubber sealant, with a minimum thickness of one-quarter (¼) inch. The manhole encapsulation shall be "Infi-Shield Seal Wrap" as manufactured by Sealing System, Inc. or approved equal.
12. Carbon Odor Control Unit
 - a. Terminal discharge manholes and the next downstream manholes from force mains and/or pressure mains shall be provided with a compact, modular canister designed granular activated carbon odor control unit. The unit shall be designed to use the positive pressure generated inside the manholes to push the contaminated air up through the unit. The contaminated air shall be absorbed by the carbon, allowing clean air to vent through the manhole cover into the atmosphere.
 - b. One carbon spare odor control unit shall be provided for each manhole. Three spare carbon canisters/bags shall be provided for each manhole.
 - c. Carbon odor control units shall be Sweet Street as manufactured by Continental Carbon Group, Odoreater CC Manhole Insert as manufactured by Parson Environmental Products, Inc. or equal.
 13. Protective Coating
 - a. The interior surfaces (walls, floor and ceiling) of monitoring manholes, terminal discharge manholes and the next downstream manholes from force mains and/or pressure mains shall be coated with a high build epoxy.
 - b. Coating schedule to be as follows:
 - 1) Surface Preparation: CIP Concrete to be prepared per SSPC SP #13 Standard with ICRI CSP #5 profile.
 - 2) Lining System
 - a) Concrete Surfacers: Tnemec Series 218 Mortar-Clad at 1/16-inch thickness.
 - b) Finish: Series 434 PermaShield polyamine epoxy mortar at 125.0 mils dft.
- B. Installation
1. Base - The Contractor shall excavate to a depth of twelve (12)-inches below the bottom of the manhole base. The Contractor shall install washed screened gravel sub-base material, compact the sub-base and fine grade as necessary. The Contractor shall install the base section level and to grade. A bead of silicone caulking compound shall be installed in each flexible boot and all pipes shall be installed. Pipes shall extend approximately one (1)-inch inside the interior wall, clamps on the connector tightened and mortar troweled on inside face of manhole at each pipe connection.
 2. Joints - Joints between the base section and barrel section shall be brushed clean and a strip of butyl rubber shall be placed completely around the joint prior to placement of the barrel section. Once the barrel section has been placed, a timber shall be placed across the top of the dome and a controlled downward pressure shall be applied with the hydraulic excavating machine to complete the joint. The same method shall be used in making the joints between the remaining barrel section and dome section.

3. Brick and Mortar: Inverts and table shall be constructed of red clay brick with mortar joints. Care shall be taken in construction of brick inverts that the width of the invert shall be slightly larger than the inside diameter of the larger of the pipes entering the manhole wall. Bricks shall be laid on their side in a full bed of mortar with push joints and all brick shall be thoroughly wet immediately before laying. Mortar shall be made of one (1) part of Portland cement and two (2) parts of clean fine sand, well mixed and tempered. Sand and cement shall be first thoroughly mixed dry and only enough water added to make the mortar uniform and workable. No greater quantity of mortar is to be prepared than is required for immediate use and it shall be constantly worked until used. Any mortar that has once set, shall not be re-tempered and used in the work. The table shall be constructed at an elevation even with the top of the pipe and shall slope up toward sidewalls. Inverts shall be constructed in a manner to provide smooth flow through manholes with no sharp turns or projecting portions of brick. Brick for inverts shall be placed on edge and laid flat for table.
 4. Grout - All lift holes and interior and exterior manhole joints shall be filled with non-shrink grout and smoothed.
- C. Drop Inlets - In general, the use of a drop inlet will not be approved without submittal of data justifying the necessity of a drop inlet rather than a direct inlet or where pipe slopes would exceed six (6) percent. If approved, the Contractor shall construct the manhole drop inlets in full accordance with **Appendix I - Construction Details** of these **Sewer Use Rules and Regulations**. Drop inlets shall be constructed using a tee, with branch the same size as the main section pipe with one end field cut for grade adjustment, an elbow and a nipple, all backfilled with crushed stone. All drop inlet manholes shall be a minimum of five (5) feet in diameter.
- D. Testing
- a. All manholes shall be vacuum tested by the Contractor. All testing shall be performed under the observation of the Department or the Engineer. The Contractor shall be responsible for providing all labor and equipment required to complete the tests. Individual manholes shall be tested by plugging all inlet and outlet piping and placing an approved vacuum base at the top of the manhole cone section. An initial vacuum of ten (10)-inches of mercury shall be drawn. The test time shall be that time allowed for the pressure to drop from 10-inches of mercury to 9-inches of mercury.
 - b. Maximum allowable test times shall be as follows:

Manhole Depth	Minimum Test Time
Less than 10 feet	2 minutes
10 to 15 feet	2 minutes 30 seconds
Greater than 15 feet	3 minutes
 - c. Manholes which fail to meet the above allowable test times shall be repaired/replaced using methods approved by the Department or the Engineer. Repairs shall be made on the exterior of the manhole.
 - d. Manholes shall then be retested.

Section 10 - Concrete

- A. Concrete shall be used for thrust blocks, foundation material, pipe cradles (half section or full section) or as otherwise directed by the Department or the Engineer. Concrete shall be mixed using Portland cement, crushed stone and clean, hard sand with enough clean water to ensure proper mixing.

- B. Concrete may be job mixed or ready mixed, a nominal 1:2.5:5 mix, and shall contain not less than four and one-half (4.5) bags of cement per cubic yard. Steel reinforcement shall be deformed bars of approved type and structural quality free from dirt or rust and shall be bent as required and accurately placed with the depth of cover not less than two (2)-inches.

Section 11 - Bituminous Concrete

- A. Bituminous Concrete - Bituminous concrete shall be used to resurface trenches in existing public ways in accordance with the Department's Regulations and/or permits issued by Massachusetts Department of Transportation.
- B. Bituminous concrete shall be types, depths and details of composition of materials are to be as agreed upon in the Street Opening Permit or State Highway Opening Permit. Refer to **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations** which shows the minimum requirements.
- C. The Contractor shall recut the edges of the trench in approximately parallel lines, the edges shall be brushed clean and a coat of RS-1 shall be applied to act as a bonding agent.

Section 12 - Miscellaneous Requirements

- A. Miscellaneous general and technical requirements associated with the installation of sewers are as follows:
 - 1. Any Contractor extending the existing sanitary sewer system must extend such sewer line to the far end of his/her property line.
 - 2. Any extension to the existing sanitary sewer system, once connected and accepted by the Town becomes the property of the Town.
 - 3. Any extension to the existing sewer system which passes any intervening properties which abut the course of the extension must provide sewer laterals to the property lines of all such intervening abutters and meet such other installation and engineering conditions as may be imposed by the Department.

Section 13 - Pump Stations

- A. General
 - 1. Excavation and Backfill - In general, all excavated material, backfill and structures for pump stations shall conform to the following:
 - a. Any excavated materials containing foreign debris, stumps, boulders, trash and the like shall be disposed of and replaced with clean bank run gravel or other suitable material as approved by the Department or their Engineer.
 - b. No construction materials or demolition debris shall be buried on any pump station site.
 - c. All underground pipe shall be bedded in crushed stone in accordance with **Appendix I – Construction Details** of these **Sewer Use Rules and Regulations**.
 - d. All conduits shall be properly bedded in clean sand.
 - e. Backfill of all pipe trenches shall be compacted as specified herein.
 - 2. Wetwells - In general, all wetwells shall conform to the following requirements:
 - a. All buried structures used to contain or convey water or wastewater shall be fabricated of reinforced concrete with a minimum compressive strength of five thousand (5,000) psi and designed for H-20 loading. In general, reinforced concrete structures shall have a minimum wall thickness of five (5) inches and a minimum base thickness of six (6) inches.
 - b. Precast sectional units shall be sealed at each joint with butyl rubber sealant and certified to be watertight in accordance with ASTM C478-80.

- c. Any subsurface structure containing piping, pumps, valves, controls or appurtenances which may require service or inspection shall incorporate permanently installed steel-reinforced co-polymer or aluminum alloy ladder rungs or steps to allow for easy access. All rungs shall be in full accordance with ASTM C478-P11 specifications.
- d. All penetrations in the structure for the insertion of piping shall be sealed with Kor-N-Seal flexible pipe connection in accordance with ASTM C923, A167.
- e. Concrete fillets shall be installed in the bottom of all wetwells to inhibit solids collection.
- f. The minimum inside diameter of a circular wetwell shall be six (6) feet and a minimum length and width of any square or rectangular wetwell shall be six (6) feet by six (6) feet. The Contractor shall provide all engineering data which confirms the required minimum size of the wetwell along with the mass weight and volumetric dimensions of the structure to ensure that the station will not float at high groundwater levels.
- g. All piping in wetwells which conveys sewage shall be Class 53 ductile iron with Class 125 flanged joints. All valves and fittings shall also be ductile iron, Class 125 flanged with corrosion resistant coatings.
- h. Piping used for the air bubbler tube shall be stainless steel and shall be made accessible from the hatch for ease of cleaning or removal.
- i. Suction pipe terminations shall have the appropriate suction throat or suction elbow. Bare ended suction lines shall not be allowed.

B. Submersible Pump Stations

- 1. Design Criteria - The pump station shall be of circular precast reinforced concrete construction, complete with a minimum of two (2) submersible sewage motors, motor controls, electrical wiring and conduits, piping and valves, vents, liquid level sensor system, slide rails and lift-out assembly, entrance hatch and other necessary appurtenances.
 - a. Pump Station Wetwell
 - 1) The precast reinforced concrete pump station wetwell conform to the applicable requirements of ASTM C478. Wire fabric for reinforcement shall conform to the requirements of ASTM A185 and steel reinforcement shall conform to the requirements of ASTM A615 Grade 40.
 - 2) The precast reinforced concrete structure shall be designed for a hydrostatic head equal to the depth of the structure and shall be capable of withstanding an H-20 truck load. The precast manufacturer shall provide buoyancy calculations for wetwell assuming groundwater at the top of the wetwell.
 - b. Entrance Hatch(s)
 - 1) The access opening to the pump station wetwell shall have an entrance hatch mounted above the pumps. The size of the entrance hatch shall be as recommended by the pump manufacturer to allow removal of the pumps provided, and access to all other pump station wetwell equipment, but shall be a minimum of three (3)-feet wide by four (4)-feet long. The manufacturer shall guarantee proper operation and against defects in material or workmanship for a period of five (5) years.
 - 2) The hatch(s) shall be Type J and shall be equipped with a minimum of two hinges, with stainless steel pins, spring operators, and an automatic hold-open arm with release handle. All components of the hatch(s), except the hatch leafs and hatch frame, shall be Type 316 stainless steel. Hatch(s) shall be provided with recessed padlock hasp and padlock as manufactured by Corbin (No. 2863, 1/4W) or equal by Schlage (No. 912). Hatch(s) drain shall discharge into pump station wetwell. Hatch padlock and key set shall be coordinated with the Department.

- 3) A Safe-Hatch Fall-Through Prevention accessory (for each hatch) as manufactured by ITT Flygt, Trumbull, CT, or equal, shall be provided for each hatch. Size shall be coordinated between pump manufacturer and hatch manufacturer.
- c. Submersible Pumps and Rail Assembly
- 1) Pumps: Recessed impeller, vortex type, single-stage, centrifugal pumps. Driven as indicated in the Process Pump Schedule.
 - 2) Design and proportion all parts of pump specially adapted for the service specified and indicated.
 - 3) Pump Mounting: Provide type as indicated and specified.
 - 4) Mount each pump on a discharge elbow with discharging vertically.
 - 5) Pump Casing, Fronthead, Backhead and Lower Housing.
 - a) Materials shall be cast iron ASTM A48 Class 35 and meeting ASTM A532 Class IIIA or HC600 with a minimum 600 to 650 BHN.
 - b) Provide lifting devices on pump/motor assembly for handling constructed of Type 316 stainless steel.
 - c) Provide ribs or reinforcing if required to withstand the specified hydrostatic test pressure, to prevent deflection caused by hydraulic thrust and to support the motor.
 - d) Face and drill flanges of discharge connections in accordance with 125-lb ANSI/ASME B16.1 Class 125 Standard.
 - e) Where a rail pipe is required face and drill suction in accordance with 125-lb ANSI/ASME B16.1 Class 125 Standard.
 - f) Provide components with machined registered concentric shoulder fits for precision alignment. Equipment without registered fits is not acceptable.
 - g) Pumps with splitter vanes in casing are not acceptable.
 - 6) Impeller
 - a) Type: Recessed radial curved vane or cupped type solids handling single suction. Straight vane impellers are not acceptable.
 - b) Pump capable of passing a three (3) inch sphere size.
 - c) Material shall be Ni-Hard, ASTM A532 Class I, HC 600, or ASTM A532 Class IIIA minimum 650 BHN, or wear resistant hardened duplex stainless steel CD4MCu for pumps specified with Ni-Hard or High Chrome Iron Casing.
 - d) Taper fit or key-seat and hold impeller to shaft by a streamlined bolt or locknut capable of holding in event of motor reversal under full torque. Impeller fasteners: Type 416 stainless steel.
 - e) Statically and dynamically balance each impeller.
 - 7) Motors
 - a) Horsepower rating of motors: Not less than maximum brake horsepower requirements of pumps under any condition of operation specified and indicated without operating in the motor service factor.
 - b) Motor speed shall be a maximum of 1,800 RPM.
 - c) Enclosure shall be explosion proof, Class I, Division 1, Group D; UL Listed or FM Approved.

- d) Provide with ball or roller bearings. Provide vertical motors with at least one bearing designed for thrust with bearings. Provide bearing with a minimum B-10 life of 100,000 hours.
- e) Operate without overheating at the speeds specified.
- f) Service Factor: 1.15, with 1.0 inverter duty rating for pumps equipped with variable frequency motor controllers.
- g) Minimum Efficiency shall be achieved at 100 percent Load; 75 percent Load; and 50 percent Load.
- h) Rating: 460V, 3-phase, 60 Hertz.
- i) Insulation: Class H with Class B temperature rise, 40 degrees C ambient.
- j) Site Altitude: Less than 3,300 feet above sea level.
- k) Provide complete sealed electric submersible squirrel cage induction motors in accordance with the above and as specified herein.
- l) Provide all components housed in an air or oil filled cast-iron watertight electric submersible squirrel cage induction motor in accordance with the above and as specified herein.
- m) Insulate stator-winding and lead with moisture resistant Class F or Class H insulation for continuous duty in 40 degrees C rise liquids.
- n) Provide motor capable of ten (10) starts per hour at maximum speed.
- o) Motor shaft: Type 416 or Type 420 stainless steel or ASTM A576 Cr 1040 with Type 420 stainless steel sleeve. One-piece internal pump/motor shaft. Provide shaft of sufficient diameter that the ratio of the shaft overhand, distance from lowest bearing to the impeller hub, to the shaft diameter through the seal area not to exceed 2.5.
- p) Dynamically balance rotor to within NEMA vibration limits.
- q) All hardware: Type 316 stainless steel.
- r) Provide all cables of multi-conductor SOW-A, G-GC or W of sufficient length to extend from pump motor to a junction box. Cable size shall be in accordance with NEC specifications.
- s) Cable Entry
 - (1) Provide all power and control lead wires double sealed entering the motor in a method that prevents cable wicking.
 - (2) Provide the sealing system consisting of a rubber grommet to seal the cable exterior followed by interior epoxy seal.
 - (3) Provide each cable wire with a section of insulation removed to establish a window area of bare wire and each wire surrounded by epoxy potting material.
 - (4) Provide a cable strain relief mechanism as an integral part of this sealing system.
 - (5) Provide the cable sealing system capable of withstanding an external pressure test of 1,200 psi as well as a cable assembly pull test as required by UL or FM.
 - (6) Provide the cable entry rated by UL or FM for submerged operating depths to 85 feet.

- (7) Singular grommet or other similar sealing systems are not acceptable.
- t) Seals
 - (1) Provide two separate tandem-mounted mechanical seals with the upper and lower seals mounted to rotate in the same direction.
 - (2) Upper Seals - Provide seal completely immersed in an oil or glycol bath sealing the oil chamber and motor housing. Materials: Silicon carbide rotating and stationary faces.
 - (3) Lower Seals - Provide lower seal with mating faces immersed in the oil or glycol bath sealing the pump volute and oil chamber. Materials: Silicon carbide rotating and stationary faces. Provide a cover extending completely over the lower seal spring.
 - (4) Springs: Type 316 stainless steel.
 - (5) Elastomers: Viton.
- u) Moisture and Temperature Probes
 - (1) Provide two moisture detection probes to detect moisture in the seal and stator cavity measuring conductivity.
 - (2) Provide moisture detection panel and one-piece cable from pump to panel, see electrical drawings for panel location. Contractor to provide conduit and cable from pump to control panel.
 - (3) Provide sufficient length of cable to extend from the pump assembly to a junction box above top of wet well.
 - (4) Provide O-ring sealed plugged fill and drain inspection ports.
 - (5) Provide winding over temperature protection.
 - (6) Moisture detection to alarm, over temperature to shut down pumps, indicate condition and alarm.
 - (7) Provide NEMA 4X Type 316L stainless steel panel with moisture detection system.
 - (8) Bearings - Provide a minimum of two bearings permanently lubricated but capable of being regreased. Minimum B-10 bearing life of 100,000 hours.
- v) Provide all mating surfaces machined and fitted with O-rings. All fittings shall be metal to metal contact between each machine surface.
- w) Provide a Type 316 stainless steel or cast-iron lifting attachment capable of lifting the entire pump and motor assembly.
- x) Motors shall conform to UL or FM quality assurance specifications and be manufactured by an ISO-9001 company.
- 8) Discharge Base
 - a) Provide an ASTM A48 Class 35 cast iron discharge base assembly including a 90-degree elbow and base to support the entire weight of the pump and motor and to secure the lower end of the guide rails.
 - b) Provide base machined to receive sliding bracket of pump discharge.
 - c) Provide seat constructed of bronze or non-metallic O-ring that is self-cleaning, non-clogging and non-sparking UL LISTED or FM Approved explosion proof.

- d) Bolt to floor with Type 316 stainless steel anchors.
- 9) Guide Assembly
 - a) Provide Schedule 40 Type 316L stainless steel guide rails or Type 316 cables for each pump discharge assembly. Guide Rail: Pump manufacturer's standard size but not less than 2-inch diameter.
 - b) Provide Type 316L stainless steel intermediate supports for guide rails with a maximum spacing of 10 feet between supports.
 - c) Provide Type 316L stainless steel top guide rail retainer brackets to support the guide rails or cables. Bracket to be attached to top slab of wet well.
 - d) Provide Type 316 stainless steel chain of sufficient length, to reach from pump to top of wet well plus 10 feet and of strength for lifting pump and motor. Provide chain designed for attachment to lifting bail provided on motor and to the guide rail retainer bracket.
- 10) Hardware
 - a) Type 316 stainless steel.
- 11) Gauges
 - a) Provide gauges assemblies for discharge of each pump.
 - b) Discharge Gauges: Compound type with operating range with top limit above pump shutoff head at maximum pump speed. Scale: inches Hg to psi.
- 12) Shop Painting
 - a) Primer and Finish Paint: Shop apply to all exterior ferrous surfaces, high solids epoxy.
 - b) Ferrous surfaces which are not to be painted shall be given a shop applied coat of grease or rust resistant coating.
 - c) Provide additional shop paint coating for touch-up to all surfaces after installation and testing is completed and equipment accepted.
- 13) Shop Testing
 - a) Provide motor shop testing as follows:
 - (1) Conduct motor efficiency and power factor tests at full load 100 and 50, 75 percent load.
 - (2) Provide the following motor tests in accordance with ANSI/HP 11.6.: test motor integrity in a submerged condition; dry run no load test; motor electrical integrity test; and Moisture and temperature sensors integrity test.
 - b) Pump Tests
 - (1) Test pump casings under a hydrostatic head of at least 75 psi or 150 percent of rated shutoff head, whichever is greater. Test casing with pump assembled.
 - (2) Provide certified performance tests as specified herein for all pumps. Certified performance testing: run pump at full speed rating point for 60 minutes prior to start of any testing. Run full speed tests as follows: test pumps at the conditions specified and indicated and take not less than seven operating points between shut-off and run out. Test points must be at the conditions specified and indicated; take readings to

determine flow, differential pressure, rpm, horsepower, and wire to water efficiency; and operate each pump for not less than one hour and take readings to determine that the pump will operate as specified and indicated without cavitation at the specified minimum head condition with not more than the specified NPSH available. Testing of submersible pumps dry is not acceptable.

- c) Variable speed tests
 - (1) Conduct tests as specified above for full speed at reduced speeds except that tests for cavitation at run out are not required.
 - (2) Run one speed test at speed required to discharge the minimum rating point specified and indicated with one point of test at the minimum rating point.
 - (3) Run a second test at a speed approximately midway between full and minimum speed.
 - (4) Run addition tests for each reduced speed operating condition specified and indicated.
 - (5) Conduct additional tests running each pump at the minimum speed rating point for 4 hours and continuously record motor temperature. Pumps must be run submerged at LWL submergence.
 - (6) Factory tests on pumps using factory calibrated test drives.
 - d) Provide a minimum of 30 days written notice to the Engineer prior to shop testing.
 - e) Run all tests in accordance with the latest standards of the Hydraulic Institute and as specified.
 - f) Testing Acceptance Grade and Tolerances
 - (1) ANSI/HI 14.6 Acceptance Grade: 1U.
 - (2) Efficiency Tolerance: -0 percent.
 - (3) If pumps do not meet the tolerances specified, trim the impeller and retest until the specified results are obtained.
 - g) In the event that specified tests indicate that pump, motor, or variable frequency drive will not meet specifications, Department has the right to require additional complete witnessed tests for all pumps, motors, and variable frequency drives at no additional cost.
 - h) Repeat tests until specified results are obtained.
 - i) Correct or replace promptly all defects or defective equipment revealed by or noted during tests at no additional cost.
- 14) Wetwell Pipe Connections
- a) Premolded elastomeric sealed joints shall be used at the connections between the influent sewer pipes and pump station wetwell wall sections. Premolded elastomeric sealed joints shall be A-Lok, Res-Seal, Press-Wedge II, Lock Joints Flexible Manhole Sleeve, Kor-N-Seal Joint Sleeve, or equal.
 - b) For discharge force mains, wetwell vent, and force main drain installed submerged or below grade, solid sleeves and/or wall pipes shall be used for pipe/structure interface.

- c) For pipes installed non-submerged or above grade, the annular space shall be packed with jute and caulked flush at both ends with a polysulfide sealant.
- d. Control Panel
 - 1) General
 - a) The pump manufacturer shall provide a completely self-contained Duplex Motor Control Panel. The control panel shall provide short circuit and overload protection for each pump
 - b) A moisture sensing circuit shall be provided to detect water leakage into the cavity of the pump. The circuit shall latch through a contact, de-energize the motor, and energize a pilot light indicating a seal failure. A push-button shall be provided to reset the circuit after the seal failure has been corrected.
 - c) A motor over-temperature sensor shall be provided to detect abnormal and detrimental motor temperature, de-energize the motor, and energize a pilot light indicating temperature alarm. A push-button shall be provided to reset the circuit after the over-temperature condition has been corrected.
 - d) The control panel shall conform to National Electrical Manufacturer's Association (NEMA), Joint Industry Council (JIC), and National Electrical Code (NEC) specifications, and shall be Underwriters' Laboratories (UL) listed. The panel shall be factory wired and tested.
 - 2) Enclosure - The duplex motor controls and circuit breakers shall be housed in a NEMA 12 enclosure. The enclosure shall be constructed of fourteen (14) gauge steel with continuous seam welds. The controls shall incorporate a "dead front" type of installation. Finish shall be baked enamel; white inside, gray outside. A padlock hasp and padlock shall be provided. Hatch padlock and key set shall be coordinated with the Town.
 - 3) Circuit Breakers - A three pole main breaker sized to NEC requirements shall be provided. The circuit breaker shall be through the door operator interlocked to the enclosure so that the door cannot be opened with the circuit breaker energized. The operator shall be provided with an interlock defeat device which requires a hand tool to operate and shall be lockable in the off position. Circuit breaker shall be the thermal magnetic molded case type and shall have an interrupting rating of 10,000 amperes symmetrical.
 - 4) Starters - Each pump motor shall be provided with a NEMA-rated combination motor circuit protector and full voltage motor starter. Starter coils and contacts shall be easily replaceable with standard hand tools and without removing the starter from the panel. Starters shall be equipped with one ambient compensated quick-trip button to facilitate testing of the overload mechanism. Starters shall be furnished with a thermal overload protector, reset pushbutton and auxiliary contacts as required.
 - 5) Alternator - An electromechanical alternator shall be provided to alternate the lead pump duty between the two pumps on successive pump cycles. The alternator shall be a single device; alternator circuits comprised of two or more relays shall not be considered equal. A selector switch shall be provided to bypass the alternator and select either pump as the lead pump. The selector switch shall be as specified below.
 - 6) Selector Switches - A hand-off-automatic selector switch shall be provided for each pump. Selector switches shall be of oil-tight construction. Toggle switch types shall not be considered equal. Selector switch contacts shall be heavy duty, double-break, silver.

- 7) Relays - General purpose relays shall be three (300) volt industrial control type. Intrinsically safe relays shall be furnished for interconnection of each mercury float switch within the control panel.
- 8) Terminal Blocks - Terminal blocks shall be provided for all external connections to the control panel and for all connections between the component mounting plate and enclosure-mounted components to allow for easy removal of the component mounting plate if required for service. Terminal blocks shall consist of individual snap-together contact sections mounted on a common mounting channel. Terminal block sections shall have tubular screw contacts mounted in a nylon housing to resist breakage; phenolic or other rigid, brittle materials shall not be considered equal. Plain screw contacts requiring lugs to be installed on wires shall not be considered equal.
- 9) Control Circuit - The control circuit of the duplex motor control panel shall operate at 120 VAC and be fuse-protected. Tripping the circuit breaker of either pump shall not disable the control circuit.
- 10) Elapsed Time Meters - A non-reset meter shall be provided for each pump to indicate elapsed time of operation of the pump from 0 to 99,999.9 hours.
- 11) Indicating Lights – In addition to the aforementioned indicating lights, a green "pump running" light and red "pump off" light shall be provided for each pump. All indicating lights shall be LED type, oil-tight, press-to-test with colored lens and legend plate.
- 12) Programmable setpoints shall be available to the Town's SCADA System:

High-High Level	Low Level
High Level	Low-Low Level
Lead Pump On	VFD High Speed
Standby Pump On	VFD Low Speed
Lead Pump Off	Target Wet Well Level (Level Control Mode)
Standby Pump Off	

- 13) Alarm System
 - a) The control panel shall be furnished with an alarm system consisting of separate red indicating lights for each alarm condition, external flashing light, alarm lock-in relays, alarm acknowledge/silence push-button and reset button. Each individual alarm shall energize two auxiliary contacts. One of these auxiliary contacts shall illuminate the respective alarm light, the second shall be a spare. When the "acknowledge" push-button is depressed, the specific alarm light at the control panel will stop flashing but remain illuminated. The alarm light shall remain "steady" illuminated until the alarm condition is corrected and the reset push-button depressed.
 - b) Each alarm shall energize the external flashing light. When the "acknowledge/silence" pushbutton is depressed, the flashing light shall turn off.

- c) The following Status and Alarm Condition(s) shall be reported to the Town's SCADA System:

Status and Alarm Condition(s)	
Status	Pump On (Green) Pump Off (Red) Pump Speed Flow Wet Well Level Pump Not in Auto Pump Not Ready
Alarms	Wet Well Level High-High Wet Well Level High Wet Well Level Low Wet Well Level Low-Low Pump Overload Pump Motor High Temperature Pump Motor Moisture Pump Discharge Pressure High E-Stop Activated VFD Fault Level Instrument Fail

- 14) Name Plates – Name Plates shall be furnished and installed for all switches, control stations, motor starters, terminal cabinets, indicating lights, etc. to designate the equipment controlled and function. Nameplates shall be black and white laminated phenolic material having engraved letters approximately 1/8-inch high, extending through the black face into the white layer. Nameplates shall be attached to panels by self-tapping screws or rivets and shall be stainless-steel. A special nameplate shall be attached to the pump housing which shall contain identification of housing and bearing numbers.

- 15) Control panel shall be provided with a 115-volt, single phase, 60 Hertz utility GFCI outlet receptacle.

e. Pump Controls

1) Pump Operation

- a) The number of pumps is designed to handle the flow received at the station, with one (1) pump to handle the flow; and a second pump as standby.
- b) Provide continuous monitoring of the wet well level and raw sewage pump control. Monitoring in the wet well shall be via hydrostatic pressure level transducer with backup float switches.

- c) Alarms include low-level and high-level alarms for local and remote indication via the level transducer.
- d) Dedicated float switches detect high-high level and low-low level Status in the wet well. Alarms include low-low and high-high for local and remote indication via floats for backup control and alarming for the level transducer.
- e) The level instrument will continuously monitor the wet well level and transmit a variable level signal to the PLC. Upon a wet well "high" level condition or "low" level condition from the level transducer, a "critical" alarm shall be transmitted to the SCADA System.
- f) The level instrument will continuously monitor the wet well level and transmit a variable level signal to the PLC. Upon a wet well "high-high" level condition or "low-low" level condition from the level switch, a "critical" alarm shall be transmitted to the SCADA System.
- g) Operation in the "Auto" mode (at both the HMI and the LOA switch) shall be selected as either "On-Off" or "Level Control" selected by the Operator.
- h) On-Off Mode
 - 1) The operator will determine the pumps "On" and "Off" wet well level set-points.
 - 2) The duty pump will be put into service when the wetwell level reaches the predetermined "On" level.
 - 3) The standby pump will be put into service when the wetwell level reaches the predetermined "High" level.
 - 4) If the duty pump fails, the standby pump will be put in service.
 - 5) All pumps will shut off when the wetwell level reaches the predetermined "Off" level.
- i) Level Control Mode
 - 1) The operator will determine the pumps "On" and "Off" wet well level set-points.
 - 2) Variable Frequency Drives (VFDs) on each pump are controlled through the station's PLC logic (proportional control), which will automatically start and stop the pumps and adjust the pumping rate to match (as close as possible) the flow rate of incoming wastewater from the collection system.
 - 3) The PLC accomplishes the adjustments through the liquid level transducer in the wetwell. The more rapid the wet well fill time the faster or greater the pump rate.
 - 4) If the duty pump can't keep up with the incoming sewage flow then the PLC sends a signal to the second pump's VFD to bring it up to a speed and reduce the speed of the lead pump to a level, where the combined flow rate from both pumps matches that of the incoming wastewater flow.
 - 5) If either duty pump fails, the standby pump will be put in service.
 - 6) All pumps will shut off when the wetwell level reaches the predetermined "Off" level.

- j) At the end of the pump cycle, the pumps will automatically alternate unless the pump operates continuously. An automatic/manual software switch in the SCADA System will allow the operator to select whether the pumps alternate automatically.
 - k) In the event that the level transducer fails, the pumps shall start on high-high level and stop on low-low level from the level switches.
 - l) The pump's primary automatic controls shall also include multiple Status and Alarms, and operating interlocks as described below. The operators should be able to remove any pump from the operating sequence (due to pump maintenance or failure).
- 2) Level Sensors – High-High Level and Low-Low Level float-type switches, encapsulated within a solid polyurethane float ball shall be provided to operate the pumps and to detect high and low wetwell water levels in the wetwell. Level sensors shall be provided with individual float weights. A mounting bracket shall be provided near the access opening to allow adjustment of the pump control "On" and "Off" and alarm levels. Each float switch shall be furnished with cable lengths to suit the installation without splices (control panel is remotely mounted). A properly rated electrical cable shall connect the float switches to the control panel with no splices or terminations within the electrical junction box in the wetwell.
- f. Piping, Valves and Appurtenances
- 1) All piping in wetwells shall be Class 53 ductile iron with Class 125 flanged joints. All gate valves and fittings shall be cast or ductile iron, Class 125 flanged with corrosion resistant hardware.
 - 2) Ball Check Valve - Each pump shall be supplied with a vertically mounted, self-contained, full-flow ball check valve with ANSI 125-pound flanges. Valve body and cover shall cast iron. Ball shall be "sinking" type and coated with a vulcanized nitrile rubber. Valve shall be constructed so that the ball can be removed and replaced by unbolting and removing the cover without the need to remove the entire valve. Valve shall be Model 5087 as manufactured by ITT Flygt Corporation or approved equal.
 - 3) Wetwell Vent - Vent shall be ductile iron. Ductile iron pipe shall be grade 60-40-10, Class 52 "push on" or mechanical joint type. The 180-degree gooseneck shall be mechanical joint or flanged. Vent shall be provided with a stainless-steel bird screen. The top of the wetwell vent shall be provided with a Model CF6 Carbon Filter as manufactured by OSI (Orenco Systems Incorporated), 614 Airway Avenue, Sutherlin, Oregon 97479-9012, telephone 541-459-4449. The Carbon Filter shall be provided with all necessary bushings and adapters for connections to the top of the wetwell vent.
- g. Painting
- 1) The reinforced concrete pump station wetwell walls, floor and ceiling shall be coated with a high build epoxy as follows: First Coat - Tnemec Series 66, DFT 6.0 mils; and Second Coat - Tnemec Series 66, DFT 6.0 mils.
 - 2) Ferrous Metal Surfaces including all surfaces of items partially or fully submerged (interior and exterior) shall be coated with a high solid catalyzed epoxy as follows: Surface Preparation - SSPC-SP#10 Near White; First Coat - Tnemec Series 104, DFT 6.0 mils; and Second Coat - Tnemec Series 104, DFT 6.0 mils.

- 3) Ferrous Metal Surfaces shall be coated with a High Build Acrylic Polyurethane Enamel as follows: Surface Preparation - SSPC-SP#10 Near White; First Coat - Tnemec Series 90-97 (Tnemec-Zinc), DFT 2.5 mils; Second Coat - Tnemec Series 69 (H.B. Epoxoline II), DFT 4.0 mils; and Third Coat - Tnemec Series 74 (Endura-Shield IV), DFT 3.0 mils.
- 4) Galvanized and Non-Ferrous Metals shall be coated with a high solid catalyzed epoxy as follows: Surface Preparation - Solvent clean surfaces per SPC-SP #1; First Coat - Tnemec Series 69 (H.B. Epoxoline II), DFT 4.0 mils; and Second Coat - Tnemec Series 74 (Endura-Shield IV), DFT 3.0 mils.
- 5) Plastic (FRP) Piping shall be coated with a high build acrylic polyurethane enamel as follows: First Coat - Tnemec Series 69 (H.B. Epoxoline II), DFT 4.0 mils; and Second Coat - Tnemec Series 74 (Endura-Shield IV), DFT 3.0 mils.
- h. Manufacturer's Field Services and Training - Manufacturer's Field Services and Training shall be provided for installation and startup for a minimum of four (4) days (excluding travel time) at project site.
- i. Spare Parts - For each pump station, the following spare parts shall be provided for each size pump:
 - 1) One set of Mechanical Seals
 - 2) One O-Ring Kit
 - 3) One set of Wear Rings
 - 4) One box of Pilot Lights for Each size and Type Used
 - 5) One box of Fuses of Each Size and Type Used
 - 6) One Power Cable and Cable Connector Assembly
 - 7) One Lift Chain or cable
 - 8) All lubricating oils required for the first year of operation shall be provided for the pump station.
 - 9) For each Carbon Filter provided, six (6) carbon refill kits
- j. Warranty - The Contractor shall warranty all equipment and workmanship at the pump station for a period of five (5) years, commencing on the date of final acceptance of the station by the Department.
- k. Factory Testing - The pumps shall be given an operational test at the factory to check for excessive vibration, for leaks in seals, and for correct operation of the pumps. The pumps shall recirculate water for at least one (1) hour under simulated service conditions. Certified copies of all test procedures and results shall be provided to the Town for review and approval prior to shipment of the pumps.
- l. Field Testing
 - 1) The installed pumping station shall be field tested as a system using clean fresh water prior to the acceptance of raw wastewater to the station. All pumps shall be operated continuously at the design conditions for at least fifteen (15) minutes. All systems, controls, and sequences shall be operated and demonstrated as operating as approved. The Contractor shall perform all tests and shall be responsible for all necessary temporary connections, testing equipment and utilities and shall provide and dispose of all water used. The Contractor shall provide all water and fuel needed for this testing. A factory-trained pump manufacturer's representative, Department, and their Engineer shall be present for the testing of the station.

- 2) In addition to the above, each pump shall be operated continuously for two minutes and the following data shall be taken and submitted to the Engineer: Pump capacities; Voltage (available and during each pump operation); and AMPS (available and during each pump operation). The testing shall be repeated three (3) times for each pump and two (2) times with all pumps operating together in parallel.

C. Miscellaneous

1. Other miscellaneous requirements for pump station construction are as follows:
 - a. All pump stations shall be equipped with on-site backup power of sufficient capacity to run a minimum of two (2) pumps. The equipment shall start automatically in the event of a power outage and shall maintain the pumping ability of the station without operator intervention. All pump stations shall also include provisions in the discharge piping (bypass connection) for connection to a portable pump and/or provisions in the electrical equipment for connection to a portable generator.
 - b. A service receptacle shall be provided at each pump station. Outside receptacles shall be ground-fault protected.
 - c. The Department shall receive a minimum of four (4) copies of an operation and maintenance manual for the complete station including all pumps, compressors, controls (including wiring diagrams and schematics), generators, automatic transfer switches and the like prior to final acceptance of the station.
 - d. The following testing of the pump station shall be required prior to acceptance:
 - 1) Structure vacuum test – Contractor must maintain a minimum of 10-inches of mercury for a period of one minute for all wetwells, drywells and manholes associated with the sewer collection system and the pumping station.
 - 2) Pump hydraulic performance test – As per the Hydraulic Institute standards for field certification of pump performance and verification of pump certified curves. Testing is to be performed using clean water only and shall include but not be limited to flow, head, brake horsepower and wire to water efficiency.
 - 3) Electrical load test – To include testing of ventilation equipment, sump pumps, lighting, alarms and the like.
 - 4) Generator test – To be tested under simulated emergency conditions and full load.
 - 5) The testing of all equipment shall be conducted in the presence of the Department's authorized representative. All test results and inspection reports shall be provided to the Department prior to acceptance.
2. A complete set of record drawings shall be provided to the Department prior to acceptance of the station.
3. Inspection system checkout and start-up of the station equipment shall be provided by the equipment manufacturer with copies of all inspection and start up reports forwarded to the Department.
4. The Contractor shall warranty all equipment and workmanship at the installation for a period of five (5) years, commencing on the date of final acceptance of the station by the Department.
5. Pump Stations on Private Property
 - a. All pump stations on private property shall conform completely to the provisions of this section of the Standard Specifications and shall be owned and operated by the Applicant.
 - b. The Applicant shall submit a signed contract for regular maintenance of the private pump station to the Department at the time the application is submitted for review.

- 6. A force main shall not be connected into another force main.

Section 14 - Prefabricated Low-Pressure Sewage Pump Systems

- A. The Commission has standardized on the type of pumping system to be purchase, installed and operated and maintained by private property owners.
- B. Following a Request for Proposal process and associated Proposal evaluation, the Commission selected F. R. Mahoney & Associates using Environmental One Corp. as the manufacturer of the Low-Pressure Sewerage Pump Systems. F. R. Mahoney & Associates contact information is as follows:
- C. F. R. Mahoney & Associates (Exclusive New England Distributor for Environmental One Corp.)
273 Weymouth Street
Rockland, MA 02370
T: 781-982-9300
F: 781-982-1056
<http://www.frmahony.com>
- D. The Design Engineer should coordinate with F.R. Mahoney & Associates for the appropriate Low-Pressure Sewage Pump System for the property. Such coordination shall occur prior to the submittal of the permit application.
- E. In general, the Prefabricated Low-Pressure Sewage Pump Systems is a complete factory-built and tested system of the wetwell/drywell type designed to take the flow from the property and boost into the Town's wastewater infrastructure (gravity sewer or low-pressure sewer). The System includes, but not be limited to: (a) wetwell containing grinder pump(s) (semi-positive displacement type grinder unit) mounted in a high-density polyethylene (HDPE) basin and anti-siphon valve and check valve assembly; (b) drywell containing an electrical quick-disconnect; pump removal system and shut-off valve; and (c) electrical alarm/disconnect panel. Additional information can be found in the Property Owner's Guidebook which can be downloaded from the Town's Website at: <https://www.town.orleans.ma.us/DocumentCenter/View/2348/Orleans-MA--Property-Owners-Guidebook-PDF?bidId=>.
- F. As part of the Request for Proposal process, the proposal by F. R. Mahoney & Associates included a guaranteed, Lump Sum price for each component, identified in the table below, in May 2023 U.S. Dollars. The Lump Sum Prices will be adjusted for inflation by the percent increase in the ENR Construction Cost Index between May 2023 and the month in which each Purchase Order is issued.

Item	Description	<u>May 2023</u>	<u>March 2024</u>
		Price	
A.1.	Cost for Each Low-Pressure Sewerage Pump System, including control systems and all other necessary appurtenances. The cost shall include delivery and all other construction related services for the Low-Pressure Sewerage Pump Systems.		
A.1.1.	Model DH071-93 (Type A) Exterior, Simplex, System Capacity at 700 GPD and Wetwell Capacity of 70 Gallons	\$5,620.00	\$5,644.80
A.1.2.	Model DH151-93 (Type B) Exterior, Simplex, System Capacity at 1,500 GPD and Wetwell Capacity of 150 Gallons	\$6,145.00	\$6,172.12
A.1.3.	Model DH152-93 Exterior, Duplex, System Capacity at 3,000 GPD and Wetwell Capacity of 150 Gallons	\$11,890.00	\$11,942.47

Item	Description	May-2023 March 2024 Price
A.1.4.	Model IH-091 (Type D) Interior, Simplex, System Capacity at 700 GPD and Wetwell Capacity of 90 Gallons	\$4,842.00 \$4,833.23
A.1.5.	Model DH272-92 Exterior, Duplex, System Capacity at 5,000 GPD and Wetwell Capacity of 275 Gallons	\$25,460.00 \$25,572.35
A.1.6.	Model WH484-92 Exterior, Quadriplex, System Capacity at 7,000 GPD and Wetwell Capacity of 486 Gallons	\$29,150.00 \$29,278.63
A.2.	2 Year Warranty extended to 5 Years for Each Low-Pressure Sewerage Pump as part of base equipment package	\$1.00
A.3.	Cost for Each Engineered Stainless-Steel Service Lateral Component	\$270.88 \$272.08
A.4.	Cost for Each Pump Monitoring System	\$528.40 \$530.43
A.5.	Cost for Each Anti-Buoyancy Device Ballast for DH071	\$359.00 \$360.58
A.6.	Cost for Each Pump Core Replacement	\$2,490.00 \$2,500.99
A.7.	High Flood Configuration for Type A, Type B, and DH152	\$260.90 \$262.05
A.8.	Insulation Disc for Freeze Protection	\$75.00 \$75.33
A.9.	Remote Sentry – Alarm Unit in House Mounting	\$250.00 \$251.10

- G. F. R. Mahoney & Associates has identified several options and additional packages that homeowners may opt to purchase. Please refer to the Property Owner's Guidebook which can be downloaded from the Town's Website at: <https://www.town.orleans.ma.us/DocumentCenter/View/2348/Orleans-MA--Property-Owners-Guidebook-PDF?bidId=>.

Section 15 - Abandoning Existing On-Site Disposal Systems

- A. Upon connection of the building plumbing system to the common sewers, existing septic tanks and cesspools shall be abandoned.
- B. Contractor to abandon existing on-site sewer disposal system per the Board's requirements.

Appendix I - Construction Details
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

This Page Intentionally Left Blank

This Page Intentionally Left Blank

Appendix J - Additional Allocated Wastewater Flow Application
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

Section 1 - General Information

- A. Property Owner's Name:

- B. Property Address:

- C. Owner's Mailing Address:

- D. Telephone Number/Email/Cell Phone Number:

- E. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Architect (if applicable):

- F. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Applicant if different from Owner:

- G. Name, Address, Contact Name, Telephone Number, Cell Phone Number, and License Number of Consulting Engineer (if applicable):

- H. Type of Commercial Establishment (if applicable):

Section 2 - Existing Building and Use Description

- A. Describe Existing building (single family residence, two family residence, apartment building, commercial building, etc.):

- B. Total building size (square feet):

- C. Total number of bedrooms (if applicable):

- D. Number of persons employed (if applicable):

E. Total number of plumbing fixtures:

1. Bathtubs and/or Indoor/Outdoor Showers
2. Exterior faucets
3. Urinals and/or Water Closets
4. Drinking Fountains
5. Dishwashers
6. Floor Drains
7. Oil/Water/Sand Separator
8. Garbage Grinders
9. Kitchen Sinks
10. Laundry Washers/Tubs
11. Service Sinks
12. Sump Pumps
13. Other (attach a list of other)

F. Will food be served at this establishment? Yes No

If yes – seating capacity (commercial applicants only) _____

Note: Exterior grease traps are required at all restaurants, food establishments and similar establishments.

G. Attach floor plans of existing building with descriptions.

Section 3 - Proposed Building and Use Description

A. Describe Proposed building (single family residence, two family residence, apartment building, commercial building, etc.):

B. Total building size (square feet):

C. Total number of bedrooms (if applicable):

D. Number of persons employed (if applicable):

E. Total number of plumbing fixtures:

1. Bathtubs and/or Indoor/Outdoor Showers
2. Exterior faucets
3. Urinals and/or Water Closets
4. Drinking Fountains
5. Dishwashers
6. Floor Drains
7. Oil/Water/Sand Separator
8. Garbage Grinders
9. Kitchen Sinks
10. Laundry Washers/Tubs
11. Service Sinks
12. Sump Pumps
13. Other (attach a list of other)

F. Will food be served at this establishment? Yes No

If yes – seating capacity (commercial applicants only) _____

Note: Exterior grease traps are required at all restaurants, food establishments and similar establishments.

G. Attach floor plans of proposed building with descriptions.

Section 4 - Consumption and Usage

- A. Attach existing water usage records, if applicable
- B. Attach any additional existing water consumption information and data
- C. Requested proposed net increase in Allocated Wastewater Flow _____ (gallons per day).
- D. Attach documentation to describe how the net increase in Allocated Wastewater Flow was determined. Documentation needs to be certified by a Civil Engineer licensed in the Commonwealth of Massachusetts

Section 5 - Certification

In consideration of the granting of this permit, the undersigned property owner agrees to the following:

- A. To accept and abide by all **Sewer Use Rules and Regulations** of the Town.
- B. To maintain the connection to the Town's wastewater system at no expense to the Town.
- C. That all information submitted is accurate to the best of my knowledge.
- D. That all applicable fees per the **Sewer Use Rules and Regulations** and the **Sewer Assessment Bylaw** shall be paid prior to the issuance of this permit, prior to any proposed construction proceeding and prior to any increase in flows being added to the wastewater system.

I hereby certify that I shall adhere to the Town's **Sewer Use Rules and Regulations** and I understand that failure to adhere to all discharge limitations and to the Town's **Sewer Use Rules and Regulations** will be cause for the Town to revoke the connection permit and plug the connection to the Town's wastewater system, upon completion of a hearing by the Board of Water and Sewer Commission.

Signature of Applicant

Signature of Property Owner

Name

Date

DO NOT WRITE BELOW THIS LINE – FOR OFFICIAL USE ONLY
TO BE COMPLETED BY THE TOWN

Application Complete: Yes No

Supporting Documentation Attached, Complete and Adequate: Yes No

Application Permit Fee Paid: Yes No

Betterment Assessment Paid: Yes No N/A

Privilege Fee Paid: Yes No N/A

Compensatory Sewer Privilege Fee Paid: Yes No N/A

Flow Offset Fee Paid: Yes No N/A

Reserve Capacity Fee Paid: Yes No N/A

Water Meter on Site: Yes No

Application Approved and Permit Issued by the Department: Yes No

If no, Why?

Approved net increase in Allocated Wastewater Flow _____ (gallons per day)

Board of Water and Sewer Commissioners

Chair

Vice-Chair

Member

Member

Member

Member

Associate Member

Associate Member

Associate Member

Date

Signature of Department Staff

Name of Department Staff

Title of Department Staff

Date

Appendix K - Drain Layer's Application (Sample)
Town of Orleans, Massachusetts
Board of Water and Sewer Commissioners

This Page Intentionally Left Blank

Surety Bond:

- Surety in the amount of twenty thousand dollars (\$20,000) protecting the Town against damage to existing public roadways and property.

Proper Licensing to perform work:

- Please attach with this application evidence of required licenses (i.e., including but not limited to, Commercial Driver’s License, hydraulics licenses, etc.), issued by the Commonwealth of Massachusetts Department of Public Safety.

Septic Abandonment Work Licensing:

- If applicant plans on performing any septic tank abandonment work, attach Disposal System Installer License obtained via Orleans Board of Health.
- Check here if applicant does not intend to perform any septic abandonment work.

Municipal References:

Reference #1	Reference #2	Reference #3
Town or City: Click or tap here to enter text.	Town or City: Click or tap here to enter text.	Town or City: Click or tap here to enter text.
Contact Name: Click or tap here to enter text.	Contact Name: Click or tap here to enter text.	Contact Name: Click or tap here to enter text.
Contact Number: Click or tap here to enter text.	Contact Number: Click or tap here to enter text.	Contact Number: Click or tap here to enter text.
Contact Email: Click or tap here to enter text.	Contact Email: Click or tap here to enter text.	Contact Email: Click or tap here to enter text.

Applicable Equipment:

Equipment #1	Equipment #2	Equipment #3
Type: Click or tap here to enter text.	Type: Click or tap here to enter text.	Type: Click or tap here to enter text.
Make: Click or tap here to enter text.	Make: Click or tap here to enter text.	Make: Click or tap here to enter text.
Model: Click or tap here to enter text.	Model: Click or tap here to enter text.	Model: Click or tap here to enter text.
Year: Click or tap here to enter text.	Year: Click or tap here to enter text.	Year: Click or tap here to enter text.
Equipment #4	Equipment #5	Equipment #6
Type: Click or tap here to enter text.	Type: Click or tap here to enter text.	Type: Click or tap here to enter text.
Make: Click or tap here to enter text.	Make: Click or tap here to enter text.	Make: Click or tap here to enter text.
Model: Click or tap here to enter text.	Model: Click or tap here to enter text.	Model: Click or tap here to enter text.
Year: Click or tap here to enter text.	Year: Click or tap here to enter text.	Year: Click or tap here to enter text.

Drain Layer's License Fee:

An application fee of \$100 can be delivered to
the Office of the Director of Public Works:

40 Giddiah Hill Rd
Orleans, MA
02653

Sewer Use Rules and Regulations:

Once the application and attached documentation has been received, it will reviewed by the Orleans Board of Water and Sewer Commissioners. A representative of the department may reach out to schedule a visit to inspect proper equipment is available and in good working condition before submitting application to the board.

By signing this application, the applicant acknowledges that they have received a copy of the Town of Orleans Sewer Use Rules and Regulations and understands that any violation of the requirements of the Sewer Use Rules and Regulations shall be cause for revocation of license:

X

Applicant Signature

(For Water and Sewer Commissioner Use Only)

- | | |
|--|--|
| <input type="checkbox"/> \$100 License Fee received | <input type="checkbox"/> Surety Bond received and accepted |
| <input type="checkbox"/> Insurance documentation received and accepted | <input type="checkbox"/> References received and accepted |
| <input type="checkbox"/> Equipment inspected and satisfactory | <input type="checkbox"/> Disposal System Installer License Attached
(if applicable) |

Date License Issued: _____

License #: _____

Approved By: _____

This Page Intentionally Left Blank