

RULES AND REGULATIONS
OF THE
MILFORD SEWER DEPARTMENT



TOWN OF MILFORD, MASSACHUSETTS
BOARD OF SEWER COMMISSIONERS

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PREAMBLE

A set of Rules and Regulations regulating the use of public and private sewers; the installation and connection of building sewers; and the discharge of water and wastes into the public wastewater facilities and providing penalties for violations thereof:

WHEREAS, the federal government has enacted and amended the Federal Water Pollution Control Act now known as the Federal Clean Water Act (33 U.S.C. 1150 et seq.) and the Town of Milford desires to remain in compliance therewith, and

WHEREAS, the Commonwealth of Massachusetts pursuant to Massachusetts General Laws Chapter 83 and Section XI of Chapter 343 of the Acts of 1906, as amended, has vested powers in the Board of Sewer Commissioners, and

WHEREAS, the Town of Milford desires to ensure that the use of the public wastewater facilities operated by it will conform to the best sanitary engineering practices, and

WHEREAS, the Town of Milford desires to regulate the use of the public wastewater facilities operated by it:

NOW THEREFORE, BE IT ORDAINED and enacted by the Board of Sewer Commissioners of the Town of Milford, county of Worcester, state of Massachusetts, herein referred to as "BOARD", as follows:

ARTICLE I - DEFINITIONS

SECTION 1 - SPECIFIC DEFINITIONS

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

Act shall mean the Federal Clean Water Act, as amended.

ASTM shall mean the American Society for Testing and Materials.

BOD (denoting biochemical oxygen demand) shall mean the quantity of oxygen used in the biochemical oxidation of organic matter under standard laboratory procedure in 5 days at 20°C, expressed in milligrams per liter.

Board shall mean the Board of Sewer Commissioners of the Town of Milford, Massachusetts elected pursuant to Chapter 343 of the Acts of 1906.

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

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

COD (denoting 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.

Commercial User (Class II) shall include any property occupied by a nonresidential establishment not within the definition of an "Industrial User (Class III)," and which is connected to the wastewater facilities.

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

Director of Operations or Director shall mean the Director of Operations of the Town of Milford Sewer Department as appointed by the Board of Sewer Commissioners. In the absence of the Director of Operations, the Board or the Director, may appoint an authorized representative to act on their behalf.

Discharge Limitation any requirement, restriction or standard imposed by the Board, DEP or EPA on quantities, discharge rates, and concentrations of pollutants which are discharged to the public wastewater system.

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

EPA shall mean the United States Environmental Protection Agency.

Garbage shall mean the solid animal and vegetable wastes resulting from the domestic or commercial handling, storage, dispensing, preparation, cooking, and serving of foods.

Grease Trap shall mean an exterior watertight structure in which grease is separated from wastewater.

Groundwater shall mean water within the earth.

Industrial User (Class III) shall mean any nonresidential user identified in Division A, B, D, E, or 1 of the Standard Industrial Classification 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, or any substance(s) causing interference in the wastewater facilities.

Industrial Waste shall mean any liquid, gaseous or solid waste substance or combination thereof resulting from any process of industry, manufacturing, trade or business or from the development or recovery of any natural resources.

Interference shall mean inhibition or disruption of any sewer system, wastewater treatment process, sludge disposal system, or their operation, which substantially contributes to a violation of applicable discharge permits.

"May" is permissible, "shall" is mandatory.

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

NPDES shall mean National Pollutant Discharge Elimination System permit program, whether administered by the EPA or by the Town of Milford.

Owner shall mean the person or persons who legally own, lease, or occupy private property with wastewater facilities that discharge, or will discharge, to the Town's wastewater facilities.

Person shall mean any individual, firm, company, association, society, partnership, corporation, municipality, or other similar organization, agency, or group.

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

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 before discharge from the Town of Milford wastewater facilities.

Properly Shredded Garbage shall mean garbage that has been shredded such that all particles will be carried freely under flow conditions normally prevailing in the wastewater sewers, with no particle greater than 1/2 inch in any dimension.

Public Sewer shall mean a sewer in an accepted street or which all owners of abutting properties have equal rights, and is controlled by public authority.

Residential User (Class I) shall mean all premises used only for human residency and that are connected to the wastewater facilities.

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

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

Slug shall mean any discharge of water, sewage, or industrial waste which in concentration of any given constituent or in quantity of flow exceeds, for any period of duration longer than fifteen (15) minutes, more than five (5) times the average twenty-four (24) hour concentration of flows during normal operation.

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

Storm Drain shall mean a sewer for conveying storm, surface, and other waters that are not intended to be transported to a treatment facility.

Surface Water shall mean water that occurs when the rate of precipitation exceeds the rate at which water may percolate into the soil.

Suspended Solids shall mean the total suspended matter that either floats on the surface of, or is in suspension in, water or wastewater, as determined by 40 CFR 136.

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

Wastewater (or sewage) 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 Facilities shall mean the combination of wastewater sewers and treatment facilities.

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

Wastewater Treatment Facility shall mean the structures, processes, equipment, and arrangements necessary to treat the discharge wastewaters.

WPCF shall mean the Water Pollution Control Federation.

ARTICLE II - GENERAL PROVISIONS

SECTION 1 - PURPOSE

The purpose of the Rules and Regulations is to provide for the maximum possible beneficial public use of Milford's wastewater facilities through regulation of sewer construction, sewer use, and wastewater discharges; to provide for equitable distribution of the costs to operate, maintain and improve Milford's wastewater facilities; and to provide procedures for complying with the requirements contained herein.

SECTION 2 - SCOPE

(a) The definitions of terms used in these Rules and Regulations are found in Article I. The provisions of these Rules and Regulations shall apply to the discharge of all wastewater to facilities of the Town of Milford. These Rules and Regulations provide for use of Milford's wastewater facilities, regulation of sewer construction, control of the quantity and quality of wastewater discharged, wastewater pretreatment, equitable distribution of costs, sewer construction plans, issuance of wastewater discharge permits, minimum sewer construction standards and conditions, and penalties and other procedures in cases of violation of these Rules and Regulations.

(b) These Rules and Regulations shall apply to the Town of Milford and to persons outside Milford who are, by contract or agreement with Milford, users of Milford's wastewater sewers or wastewater treatment facilities.

SECTION 3 - ADMINISTRATION

Except as otherwise provided herein, the Director of Town of Milford Sewer Department shall administer, implement, and enforce the provisions of these Rules and Regulations.

SECTION 4 - NOTICE OF VIOLATION

Any person found in violation of these Rules and Regulations or requirement of a permit issued hereunder, may be served with a written notice stating the nature of the violation and providing a reasonable time limit for compliance. Any such notice shall be given in writing and served in person or by registered or certified mail. The notice shall be sent to the last address of the violator known to the Director. When the address is unknown, service may be made on the owner of record of the property involved. If satisfactory action is not taken in the time allotted by the notice, Section 5 of this Article shall be implemented.

If in the judgement of the Director, a violation may constitute a threat to structures, equipment, personnel or the public, the use of that connection to the Milford Wastewater Facilities may be immediately discontinued.

SECTION 5 - VIOLATIONS

(a) Any person who continues to violate any provision of these Rules and Regulations beyond the time limit, provided in Section 4 above, shall be subject to penalty provisions of Article IX of these Rules and Regulations for each day the violation continues and may be subject to disconnection from Milford's wastewater facilities.

(b) Each day or portion thereof a violation continues shall constitute a separate violation.

SECTION 6 - SERVICE CHARGES, FEES AND RELATED COSTS

(a) All service charges, fees and related costs payable under the provisions of these Rules and Regulations shall be as established by the Board and shall be paid to Sewer Department of the town of Milford.

(b) All service charges, fees and penalties collected under these Rules and Regulations shall be used for the sole purpose of constructing, operating or maintaining the wastewater facilities of Milford, or the retirement of debt incurred for same.

(c) All service charges, fees and related costs payable under the provisions of these Rules and Regulations are due and payable within thirty (30) days of mailing thereof. Unpaid charges shall become delinquent and shall be subject to penalty and interest charges as outlined in Article VIII of these Rules and Regulations.

(d) Additional fees necessary to effect changes and improvements to the wastewater facilities may be assessed to accommodate specific users or permits.

SECTION 7 - INSPECTIONS

(a) The Director and duly authorized representatives of the Board bearing proper credentials and identification, shall be permitted to enter properties at any reasonable time for the purposes of inspection, observation, measurement, and sampling of the wastewater discharge to ensure that discharge to Milford's wastewater facilities is in accordance with provisions of these Rules and Regulations.

(b) The Director and duly authorized representatives of the Board bearing proper credentials and identification, shall be permitted to enter all private property at reasonable times, through which Milford holds an easement for the purposes of inspection, observation, measurement, sampling, repair, and maintenance of any of Milford's wastewater facilities within the easement. All entry and any subsequent work on the easement shall be done in full accordance with the terms of the easement pertaining to the private property involved.

(c) While performing the necessary work on private properties referred to in Section 7(a) and (b) above, the Director shall observe all safety rules established by the owner or occupant of the property and applicable to the premises.

SECTION 8 - VANDALISM

No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment that is part of Milford's wastewater facilities. Any person who violates this section will be subject to a fine of up to \$5,000 (Five Thousand Dollars), per violation.

SECTION 9 - SEVERABILITY

A finding by any court or other jurisdiction that any part or provision of these Rules and Regulations is invalid shall not affect the validity of any other part or provision of these Rules and Regulations that can be implemented without the invalid parts or provisions.

SECTION 10 - AMENDMENTS

Public notice shall be given in accordance with applicable provisions of the Town bylaws and a public hearing will be held before adoption of any amendments of these Rules and Regulations.

ARTICLE III - USE OF THE WASTEWATER FACILITIES

SECTION 1. WASTEWATER DISCHARGES.

Wastewater discharges to Milford's wastewater facilities are not authorized unless approved in writing by the Director in accordance with these Rules and Regulations.

SECTION 2 - CONNECTION TO SEWER REQUIRED

The owner of any house, building, or property used for human occupancy, employment, recreation or other purposes under the jurisdiction of these Rules and Regulations and abutting on any street, alley, or rights-of-way in which there is or may be located a wastewater sewer connected to the wastewater facilities in the Town of Milford, is required at the owner's expense to install suitable toilet facilities therein and to connect such facilities directly to the proper sewer in accordance with the provisions of these Rules and Regulations, within ninety (90) days after date of official notice to do so provided the proper wastewater sewer is within one hundred (100) feet of the property line.

ARTICLE IV - CONNECTIONS AND SEWER EXTENSIONS

SECTION 1 - CONNECTION PERMIT

(a) No unauthorized person shall uncover, make any connection with or opening into, use, extend, alter, or disturb any wastewater sewer without first obtaining a written permit from the Board.

(b) There shall be four (4) classes of permits for connections to Milford's wastewater facilities: Class I - residential, Class II - commercial, Class III - industrial and Class IV - institutional/non-profit. In all cases, the owner shall make application for a permit to connect the Town's wastewater facilities on a special form furnished by the Director. The permit application shall be supplemented by wastewater information determined by the Director to be necessary to administer these Rules and Regulations. The Board shall be allowed a minimum of fourteen (14) days from the date of filing of an application for permit for review of the application. This review time may be increased when, in the opinion of the Board, more time is required. Permit fees and related costs are outlined in Article VIII of these Rules and Regulations and said fees shall be paid to the Sewer Department at the time the application is filed.

(c) A permit shall be valid only for the use and quantity of flow described in the Application. Any change in use of the building or any increase in the quantity of wastewater discharged from the building or any change in the character of the wastewater discharge from the building shall be considered a change of use. The owner or the owner's agent shall make application for a new permit for any change of use and shall pay the appropriate fee.

(d) A Class III industrial permit connection shall be valid for three (3) years. Application for renewal of a Class III permit shall be made a minimum of six (6) months prior to expiration of the permit.

SECTION 2 - CONNECTION COSTS

The costs and expenses incidental to the extension, installation and connection of sewers to Milford's wastewater facilities shall be borne by the owner. The owner shall indemnify Milford from any loss or damage that directly or indirectly may result from the installation of the building sewer.

SECTION 3 - SEPARATE CONNECTIONS REQUIRED

A separate and independent building sewer shall be provided for every building, except when one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court yard, or drive-way. In such cases, the building sewer serving the front building may be extended to the rear building and the whole considered as one building sewer. The Town of Milford assumes no obligation or responsibility for damage caused by or resulting from any single building sewer that serves two buildings.

SECTION 4 - EXISTING BUILDING SEWERS

Existing building sewers may be used for connection of new buildings only when they are found, after examination and testing by the Director, to meet the requirements of these Rules and Regulations.

SECTION 5 - SEWER CONSTRUCTION

The size, slope, alignment, construction materials, trench excavation and backfill methods, pipe placement, jointing, and testing methods used in the construction and installation of a building sewer and a sewer extension shall conform the Standard Specifications for Sewer Construction of the Board of Sewer Commissioners (Appendix D), to the building code and the plumbing code and all other applicable requirements of the Town of Milford. In the absence of specific code provisions or in amplification thereof, the materials and procedures set forth in appropriate specifications of the ASTM and WPCF shall apply. All connections shall be made gastight and watertight and verified by proper testing. Any deviation from the prescribed procedures and materials must be approved in writing by the Director before installation.

The Standard Specifications for Sewer Construction of the Board of Sewer Commissioners shall be considered a part of these Rules and Regulations. A copy is attached as Appendix D.

SECTION 6 - BUILDING SEWER ELEVATION

Whenever practical, the building sewer shall be brought to a building at an elevation below the basement floor. In buildings in which any building drain is too low to permit gravity flow to Milford's wastewater facilities, wastewater carried by such building drain shall be lifted or pumped by a means approved in writing by the Director and discharged to a building sewer which drains to the Milford wastewater facilities.

SECTION 7 - SURFACE RUNOFF AND GROUNDWATER DRAINS

(a) No person shall connect roof, foundation, areaway, parking lot, roadway, or other surface runoff or groundwater drains to any sewer that is connected to a wastewater treatment facilities unless such connection is authorized in writing by the Director.

(b) Except as provided in Section 7(a) above, roof, foundation, areaway, parking lot, roadway, or other surface runoff or groundwater drains shall discharge to natural outlets or storm drains.

(c) No floor drain in any building shall be connected to the wastewater facilities without the written approval of the Director. No floor drain in any service station, garage, auto body shop and the like shall be connected to the wastewater facilities.

SECTION 8 - CONNECTION INSPECTION

The applicant for a connection permit shall notify the Director when such connection is ready for inspection before its connection to Milford's wastewater facilities. Such connection and all testing, as deemed necessary by the Director, shall be made under the supervision of the Director or authorized representative. Minimum notice to the Director for an inspection shall be 24 hours.

SECTION 9 - EXCAVATION GUARDS AND PROPERTY RESTORATION

Excavations for building sewer installation shall be adequately guarded with barricades and lights to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the Town of Milford.

SECTION 10 - PROTECTION OF CAPACITY FOR EXISTING USERS

The Board may not issue a permit for any class of connection to Milford's wastewater facilities unless there is sufficient capacity not legally committed to other users in the wastewater sewers and treatment facilities to convey and adequately treat the quantity of wastewater that the requested connection will add to the system.

ARTICLE V: CONDITIONS TO USE THE WASTEWATER FACILITIES

SECTION 1 - UNCONTAMINATED DISCHARGES

All uncontaminated discharges of storm water, surface water, groundwater, roof runoff, subsurface drainage, or other waters not required to be treated in the treatment facility shall be made to storm drains or natural outlets designed for such discharges, except as authorized under Article IV, Section 7(a). Any connection, drain, or arrangement that will permit such waters to enter any other wastewater sewer shall be deemed to be in violation of this section and these Rules and Regulations.

SECTION 2 - GENERAL PROHIBITED DISCHARGES

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 facilities or the treatment process;
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 sludge from the treatment facility;
6. Cause a violation of any state or federal 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; or
10. Constitute a "slug" as previously defined.

SECTION 3 - SPECIFICALLY PROHIBITED DISCHARGES

No person shall discharge, or shall cause to be discharged, or shall allow to be discharged any substances, materials, waters or wastes which contain:

1. Gasoline, kerosene, naptha, benzene, toluene, ethylbenzene, xylene, ethers, alcohols, acetone, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, sulfides or any other substance which may be flammable or explosive;
2. Fuel oils, crude oils, lubricating oils or any other oils or greases of hydrocarbon or petroleum origin;
3. Ground, storm or surface waters, roof or surface runoff or subsurface drainage;
4. Noxious or malodorous liquids, gases or solids;
5. Radioactive wastes or isotopes of such half-life or concentrations which may exceed limits established by federal or state regulations;
6. Hazardous substances or wastes as defined in 310 CMR 30.00;
7. Mercury, PCP's, pesticides or herbicides;
8. Improperly shredded garbage;
9. Substances which produce excessive color, odor or turbidity;
10. Substances which are not amenable to treatment by the treatment facilities;

11. Septage or sludge from areas or haulers which have not received a permit; or
12. Toxic or objectionable metals or non-metals.

SECTION 4 - SPECIFIC DISCHARGE LIMITATIONS

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:

<u>Parameter</u>	<u>Maximum Daily Limitations</u>
Flow	Approved Connection Permit Flow
pH	between 5.5 and 10.0
BOD	200 mg/l
COD	400 mg/l
Total Suspended Solids	200 mg/l
Total Dissolved Solids	3,000 mg/l
Temperature	104°F
Oil and Grease	100 mg/l
Total Toxic Organics (Per EPA list)	2.13 mg/l
Total Petroleum Hydrocarbons	5 mg/l
Total BTEX (benzene, toluene, ethylbenzene & xylene)	0.1 mg/l
Benzene	0.005 mg/l

<u>Parameter</u>	<u>Maximum Daily Limitations</u>
Aluminum	2.0 mg/l
Antimony	10.0 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	3.38 mg/l
Lead	0.69 mg/l
Nickel	3.98 mg/l
Selenium	5.0 mg/l
Silver	0.43 mg/l
Zinc	2.61 mg/l
Total Metals	10.5 mg/l

Nothing in this Article shall be construed as preventing the Board from specifically limiting any other pollutant or parameter. The Board reserves the right to impose more stringent limitations or to revise current limitations as necessary.

SECTION 5 - FEDERAL CATEGORICAL PRETREATMENT STANDARDS

(a) No person shall discharge or cause to be discharged to any wastewater facilities, wastewaters containing substances in excess of the quantity prescribed by the applicable Federal Categorical Pretreatment Standard promulgated by EPA, except as otherwise provided in this section. Compliance with such applicable pretreatment standards shall be required upon connection to the Milford wastewater facilities.

(b) Upon application by a Class III user, the Director shall 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 EPA during the development of the pretreatment standard. Requests for and determinations of fundamentally different adjustments shall be in accordance with federal law.

SECTION 6 - SPECIAL AGREEMENTS

Nothing in this Article shall be construed as preventing any special agreement or arrangement between the Board and any user of the wastewater facilities, whereby wastewater of unusual strength or character is accepted into the system and specially treated subject to any applicable payments or user charges.

SECTION 7 - WATER AND ENERGY CONSERVATION

The conservation of water and energy shall be encouraged by the Director. In establishing discharge restrictions for industrial users, the Director shall consider already implemented or planned conservation steps revealed by the Class III user. At the Director's request, each industrial user shall provide pertinent information showing that the quantities of substances or pollutants have not been nor, will be, increased as a result of the conservation steps. After such a showing is deemed satisfactory, the Director may adjust the discharge restrictions, which have been based on concentrations, to reflect the conservation steps.

SECTION 8 - EXTERIOR GREASE TRAPS

(a) Exterior grease, oil and sand traps shall be provided for all restaurants, food establishments, and similar establishments or when, in the opinion of the Director, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any oil, sand or other harmful ingredients; except that such traps shall not be required for private living quarters or dwelling units. All traps shall be of a type and capacity approved by the Director, and shall be located as to be readily and easily accessible for cleaning and inspection.

(b) Exterior grease traps shall have a minimum depth of 4 feet and a minimum capacity of 1000 gallons, and shall have sufficient capacity to provide at least a 24 hour detention period for the kitchen flow. Kitchen flow shall be calculated in accordance with 310 CMR 15.00 (Title V). Grease traps shall be provided with a minimum 24 inch diameter manhole frame and cover to grade over both inlet and outlet.

(c) Grease traps shall be located on the lot so as to be accessible for servicing and cleaning and as far from building as practical. Grease traps shall be inspected monthly and shall be cleaned when the level of grease is 25 percent of the effective depth of the trap or at least every three months. The owner shall provide written evidence to the Director that all traps are being cleaned and inspected at least every three months. Failure to clean or furnish evidence of such cleaning shall be considered a violation of these Rules and Regulations.

ARTICLE VI - INDUSTRIAL DISCHARGES

SECTION 1 - INFORMATION REQUIREMENTS

(a) All Class III (Industrial) dischargers shall file with the Director all wastewater information deemed necessary by the Director for determination of compliance with these Rules and Regulations, Milford's NPDES permit conditions, and state and federal law. Such information shall be provided by completion of a questionnaire designed and supplied by the Director and by supplements thereto as necessary. Information requested in the questionnaire and designated by the discharger as confidential is subject to the conditions of confidentiality as set forth in Section 1(d) of this Article.

(b) A person who owns, operates, or occupies properties designated as a Class III discharger at more than one location shall submit separate information for each location as may be required by the Director.

(c) All applicants for a Class III connection permit shall submit a "Baseline Monitoring Report" which shall be prepared by a Registered Professional Engineer in accordance with the US E.P.A. "General Pretreatment Regulations for Existing and New Sources of Pollution" (40 CFR 403). The Director 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 was performed.

(d) The Director shall implement measures to ensure the confidentiality of information provided by a Class III discharger pursuant to these Rules and Regulations. In no event shall the Director disclose any claimed confidential information to any person without prior written notice to the owner and without providing the owner with the opportunity to protect such confidential information, including the right to seek judicial relief.

SECTION 2 - PROVISION FOR MONITORING

(a) When required by the Director, the owner of any property serviced by a building sewer carrying Class III wastewater discharges shall provide suitable access and necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurements of the wastewater. Such access shall be in a readily and safely accessible location and shall be provided in accordance with plans approved by the Director. The access shall be provided and maintained at the owner's expense to be safe and accessible at reasonable times. The access shall conform to the requirements contained in the Standard Specifications for Sewer Construction of the Milford Sewer Department.

(b) The Director shall consider such factors as the volume and strength of discharge, rate of discharge, quantities of toxic materials in the discharge, wastewater treatment facility removal capabilities, and cost effectiveness in determining whether access and equipment for monitoring Class III wastewater discharges shall be required.

(c) When the Director determines access and equipment for monitoring or measuring Class III wastewater discharges are not practicable, reliable, or cost effective, the Director may specify alternative methods of determining the characteristics of the wastewater's discharge that will, in the Director's judgment, provide an equitable measurement.

SECTION 3 - DETERMINATION OF WASTEWATER CHARACTERISTICS

(a) Measurements, tests, and analyses of the characteristics of wastewater to which reference is made in these Rules and Regulations, shall be determined in accordance with methods approved by the Director and shall comply with state and federal law. Sampling locations, times, durations, and frequencies shall be determined on an individual basis subject to approval by the Director. The discharger shall have the option to use, at his own expense, more complete approved sampling methods, locations, times, durations, and frequencies than specified by the Director. Any additional results beyond those required are also to be reported to the Director.

(b) Measurements, tests and analyses of the characteristics of wastewater required by these Rules and Regulations shall be performed by a qualified laboratory certified by the Commonwealth of Massachusetts to perform such tests.

(c) Monitoring of wastewater characteristics necessary for determining compliance with applicable pretreatment standards shall be conducted once every three (3) months, unless more frequent monitoring is required by the Director. More frequent monitoring will be required during initial start-up and operation of a new discharge or of a modified discharge.

(d) Monitoring of wastewater characteristics for any purpose other than determining compliance with pretreatment standards shall be conducted on a frequency deemed necessary by the Director.

(e) In determining the discharge characteristics, factors such as continuous, batch, or seasonal operation, as well as the information requirements of other provisions in these Rules and Regulations, shall be considered by the Director. The Director may obtain wastewater samples as required to verify the consistency of discharge characteristics.

(f) Fees for any given measurement, test, or analysis of wastewater required by these Rules and Regulations and performed by the Milford Sewer Department shall be the same for all classes of dischargers, regardless of the quantity or quality of the discharge, and shall reflect only direct cost. Costs of analyses performed by an independent laboratory at the option of the discharger shall be borne directly by the discharger.

(g) All costs for monitoring including but not limited to those for sampling and analysis, flow monitoring and professional engineering services shall be paid for by the discharger.

(h) Reports shall be furnished in a form approved by the Director and shall include as a minimum average and maximum daily flow, laboratory analysis, on line monitoring results and description of all alarms received.

ARTICLE VII - PRETREATMENT

SECTION 1 - WASTEWATERS WITH SPECIAL CHARACTERISTICS

(a) The Director will initially rely on the Federal Categorical Pretreatment Standards and Section 4 of Article V, to protect wastewater facilities or receiving waters; however, if any wastewater that contains substances or characteristics shown to have deleterious effect on the wastewater facilities, processes, equipment, or receiving waters, or that constitutes a public nuisance or hazard is discharged or proposed for discharge to the wastewater sewers, the Director may:

- Require pretreatment to a condition acceptable for discharge to the wastewater sewers,
- Require control over the quantities and rates of discharges,
- Require payment to cover added cost of handling and treating the wastewaters not covered by existing fees and charges,
- Require the development of compliance schedules to meet any applicable treatment requirements,

- Carry out all inspection, surveillance, and monitoring necessary to determine compliance with applicable pretreatment requirements,
- Obtain remedies for noncompliance by any user such remedies may include injunctive relief, the civil penalties specified in Article IX of these Rules and Regulations, or appropriate criminal penalties, or
- Reject the wastewater if scientific evidence indicates the discharge will create unreasonable hazards or have unreasonable deleterious effects on the wastewater facilities.

(b) When considering the above alternatives, the Director shall ensure that conditions of Milford's NPDES permit are met. The Director also shall consider the cost effectiveness and the economic impact of the alternatives on the discharger. If the Director allows the pretreatment or equalization of wastewater flows, the installation of necessary facilities shall be subject to the review of the Director.

(c) Where pretreatment 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.

SECTION 2 - COMPLIANCE WITH PRETREATMENT REQUIREMENTS

Persons required to pretreat wastewater in accordance with Section 1 above, shall provide a statement to be reviewed by an authorized representative of the user and certified by a qualified person. Such statement shall indicate whether applicable pretreatment requirements are being met on a consistent basis and, if not, describe the additional operation and maintenance or additional pretreatment needed for the user to meet the pretreatment requirements. If additional pretreatment or O&M will be required to meet the pretreatment requirements, the user shall submit a plan (including schedules) to the Director. The plan (including schedules) shall be consistent with applicable conditions of the Town's NPDES permit or other local, state or federal laws.

SECTION 3 - MONITORING REQUIREMENTS

Discharges of wastewater to Milford's wastewater facilities from the facilities of any user shall be monitored in accordance with the provisions of Article VI, Section 2 and 3 of these Rules and Regulations.

SECTION 4 - EFFECT OF FEDERAL LAW

If the federal government promulgates a regulation for a given new or existing user in a specific industrial subcategory that establishes pretreatment standards or revises existing pretreatment standards, such federal regulations shall immediately apply to that industrial use.

ARTICLE VIII - SERVICE CHARGES, FEES AND RELATED COSTS

SECTION 1 - WASTEWATER SERVICE CHARGE, FEES AND RELATED COSTS

Charges and fees for the use of the public wastewater facilities shall be based upon the actual use of such system or contractual obligations for use in excess of current actual use.

SECTION 2 - DETERMINATION OF SYSTEM USE

(a) The use of Milford's wastewater facilities shall be based on actual measurement and analysis of each user's wastewater discharge, in accordance with provisions of Article VI, Sections 2 and 3, to the extent such measurement and analysis are considered by the Director to be feasible and cost effective.

(b) Where measurement and analysis are not considered feasible each user's use of the facilities shall be determined by the quantity of water used, whether purchased from a public water utility or obtained from a private source, or by an alternative means as provided by Section (d) below.

(c) Since a residential user's (Class I) annual water use may include water which is not discharged to the sewer (such as swimming pool use and lawn watering), a residential user's wastewater discharge will be based on water used during the winter quarter (January, February and March).

A residential user's (Class I) wastewater discharge shall be calculated as follows:

The actual water use during the winter quarter shall be divided by the number of days in the quarter and then multiplied by 365.

(d) The Director, when determining actual use of Milford's wastewater facilities based on water use, may consider consumptive, evaporative, or other water use that results in a significant difference between a discharger's water use and wastewater discharge. Such water use shall be metered to determine actual use of the wastewater facilities. The type of meters used to measure such water uses and their installation shall be approved by the Director.

(e) Service charges for each class of user shall be as contained in Appendix A, "Schedule of Service Charges and Fees", attached.

SECTION 3 - FEES

All applications for connections to the Milford Wastewater Facilities shall be accompanied by the appropriate fee as contained in Appendix A "Schedule of Service Charges and Fees. Applications which are not accompanied by the appropriate fee will not be considered and will be returned to the applicant.

SECTION 4 - RELATED COSTS

All costs incurred by the Town of Milford in connection with administration and enforcement of these Rules and Regulations shall be reimbursed directly by the applicant or user to the company which provided the service to the Town. Such costs include but are not limited to the following:

- Inspections and monitoring
- Sampling and analysis
- Flow monitoring
- Internal televised inspection of pipes
- Professional engineering services
- Capital Improvements specific to the applicant/user
- Pretreatment program

The Board will obtain invoices for all such costs, review the invoices and forward them for direct payment by the applicant or user.

SECTION 5 - PROFESSIONAL ENGINEERING SERVICES

The Board regularly relies on the services of independent Registered Professional Engineers to assist in the following technical matters:

- Evaluation and review of connection permit applications and their supporting documentation.
- Review of records and monitoring reports submitted by dischargers.
- Review of plans and specifications for connections, sewer extensions and potential pretreatment facilities.
- Observation of construction.
- Preparation of record (as-built) drawings.
- Assistance on similar technical matters affecting the wastewater facilities.

The cost of providing these and similar professional engineering services on behalf of the Board shall be reimbursed directly by the applicant or user to the engineer providing the services, as directed in Section 4 of this Article.

SECTION 6 - PAYMENT

(a) All service charges and fees payable under the provisions of these Rules and Regulations shall be paid to the Sewer Department of the Town of Milford.

(b) All related costs incurred by the Town are payable directly to the company which provided the service to the Town.

(c) All services charges, fees and related costs payable under the provisions of these Rules and Regulations are due and payable within thirty (30) days of mailing thereof.

(d) Unpaid service charges, fees and related costs shall become delinquent and shall constitute a lien on the land affected thereby in accordance with the provisions of M.G.L. Chapter 83, Section 16A through 16F. Interest upon any balance remaining unpaid shall be charged in accordance with the provisions of M.G.L. Chapter 83, Section 16D.

SECTION 7 - PRIOR AGREEMENTS

Nothing contained herein shall be deemed to affect the current and/or any future agreements between the Towns of Milford and Hopedale relative to service charges, fees, and assessments.

ARTICLE IX - ENFORCEMENT

SECTION 1 - INSPECTION AND RIGHT OF ACCESS

(a) The Director and duly authorized representatives of the Board may inspect the property or facilities of any user (including facilities under construction) to ascertain compliance with these regulations. Owners or occupants on premises where wastewater is either generated or discharged shall allow ready access to properly identified Board representatives at all reasonable times during normal business hours and at other times when the Director reasonably suspects that a violation of these regulations may be occurring. The Director and duly authorized representatives of the Board shall be admitted to such parts of the premises as necessary to inspect, observe, measure, sample, and test such facilities that the Director reasonably believes may be contributing to a violation of these regulations.

(b) The Director, alone or in conjunction with other authorities, may conduct routine, periodic inspections of certain types of facilities including but not limited to restaurants, other food handling establishments, gas stations, and other entities that deal with petroleum products, and all Class III industrial users.

(c) When a user has security measures in force that require clearance before entry to the premises, the user shall make necessary arrangements to permit the Director or authorized representative to enter without undue delay to carry out their specific responsibilities.

(d) When an owner or user, after receiving reasonable notice from the Director, refuses to permit the properly identified representative of the Director to enter or have access to premises or facilities in accordance with this Section, the Director shall give written notice of its intent to terminate sewer service within 72 hours to such user. Such notice shall be given in accordance with regulations governing termination of service for reasons other than nonpayment and any subsequent termination proceedings shall conform to such regulations.

(e) The Board shall perform a governmental function for the benefit of the general public. The Board shall not be liable for any loss or damage as a result of the performance of such governmental function.

SECTION 2 - PENALTIES

In accordance with Massachusetts General Laws Chapter 83, Section 10, any person who violates any provision of these Rules and Regulations shall forfeit and pay to the Board civil penalties not exceeding Five Thousand Dollars (\$5,000) for each day of violation of such Rule or Regulation.

SECTION 3 - REIMBURSEMENT OF COSTS

Failure to comply with any portion of these regulations, or with any permit or order issued thereunder, shall be sufficient cause for the Board to levy on and collect from each violator any additional cost for expense, loss, or damage occasioned by such violation, including the cost of remedial or preventive actions taken by the Director pursuant to Section 5 below and all other related costs such as, but not limited to, those described in Article 8, Section 4 of these Rules and Regulations.

SECTION 4 - COSTS OF DAMAGE

If the drainage or discharge from any establishment causes a deposit, obstruction, or damage to any of the Town's wastewater facilities, the Director shall cause the deposit or obstruction to be promptly repaired. The cost for such work, including materials, labor, and supervision, shall be borne by the person causing such deposit, obstruction, or damage.

SECTION 5 - ENFORCEMENT ACTIONS

When the Director determines (a) that a violation of these regulations or any permit, or (b) any damage to the Town's wastewater facilities is threatened or has occurred, one or more of the following actions may be taken:

- (a) The Director may issue an order to cease and desist any such violation and may direct the violator to comply forthwith.
- (b) The Director may order the violator to take appropriate remedial or preventive actions.
- (c) The Director may take appropriate remedial or preventive actions.
- (d) The Director may require the violator to submit a detailed time schedule setting forth the specific proposed actions to prevent or correct a violation. The Director 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 Director deems appropriate.
- (e) The Director may issue an order directing the violator to pay to the Board penalties and costs in accordance with Sections 2 and 3 above.
- (f) The Director may take direct enforcement action by filing suit in any court of competent jurisdiction pursuant to the general laws or any other applicable statute or regulation.

ARTICLE X: ADMINISTRATIVE PROCEDURE

SECTION 1 - INFORMATION CONFERENCE

Whenever the Board denies, revokes, or modifies any form of permit or application; requires an owner or user to build or install any particular facility or device; issues a cease and desist order, a compliance order, or an implementation schedule; or assesses penalties or other charges for noncompliance with these regulations, any permit, or other lawful requirement, the Board shall promptly inform the owner or user to whom such action is addressed. Such notice shall be sent by certified mail and shall inform the addressee of his or her right to submit, within 14 days after the date of such notice, a written request for reconsideration of the Board's action. A request for reconsideration shall be addressed to the Director at the Board's main office and shall set further in detail the facts supporting it.

Upon receiving such a timely request for reconsideration, the Director or his designee shall schedule within 14 days an information conference with the entity making the request. Written notice of the conference date, time, and place shall be sent by first class mail to that entity. The Director or his designee shall rule in writing on the request for reconsideration within 14 days after completion of the conference.

SECTION 2 - RIGHT TO HEARING

A copy of the ruling on the request for reconsideration shall be mailed to the entity that submitted the request. The ruling shall be accompanied by a notice that such entity has the right to request in writing a hearing before the Board or its designated representative within 30 days.

SECTION 3 - NOTICE OF HEARING

Within 14 days of receiving a timely written request for a hearing, the Board shall schedule a hearing and shall mail to the entity that requested the hearing, written notice specifying the date, time, place, and subject matter of the hearing. The notice also shall state that the entity requesting a hearing has the right to be represented by legal counsel and to present evidence (in both documents and testimony) at the hearing.

SECTION 4 - HEARING AND RECORD DECISION

The documents and other evidence offered at the hearing shall constitute the hearing record. The hearing decision shall be based solely on the hearing record and shall be made within 30 days after the conclusion of the hearing. The decision shall be embodied in a written summary of the matters considered and the reasons for the determination made on each matter. The written decision shall be signed by the Board or its designated representative and mailed to the entity that requested the hearing.

ARTICLE XI - IMPORT OF REGULATIONS

SECTION 1 - REGULATIONS

No provision of these Rules and Regulations shall be deemed to contravene or render ineffective any valid regulation.

SECTION 2 - PRIOR REGULATIONS

All prior rules and regulations in conflict herewith are hereby repealed.

ARTICLE XII EFFECTIVE DATE

These Rules and Regulations are hereby approved and adopted by vote of the Milford Board of Sewer Commissioners this 12th day of August, 1992.

Milford Board of Sewer Commissioners

Joseph L. DeLuca, Chairman
Salvatore P. Cimino
James V. Melanson

APPENDIX B

Permit No. _____
Sewer Department Use

**TOWN OF MILFORD, MASSACHUSETTS
BOARD OF SEWER COMMISSIONERS**

**INDUSTRIAL WASTEWATER CONNECTION
PERMIT APPLICATION
(CLASS III)**

Section A - General Information

1. Company Name:

2. Facility Address:

3. Mailing Address:

4. Phone Number/Fax Number

5. Name & Title of Corporate Officer Signing Application

6. Name & Title of Facility Manager

7. Name & Title of Employee Responsible for Wastewater Discharge

8. Name of Consulting Engineer

9. Status of Application (New, renewal or change of use):

10. Name of Licensed Drain Layer: _____

Signature _____

Section B - Description of Operation

1. Type of Business:

2. Standard Industrial Classification (SIC) Code:

3. Principal product or service:

4. Briefly describe the operation and activities which take place at this facility:

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

6. Describe any special factors affecting operation (Seasonal production, scheduled shutdown, peak operation, batch operation, etc.):

7. Number of employees (Total and per shift):

8. List all raw materials used in the operation:

9. List any flammable, combustible or explosive substances which are stored, utilized or produced at this facility:

10. List any hazardous substances, as defined in 310 CMR 30.00, which are stored, utilized or produced at this facility:

11. Describe all measures which are taken to isolate those areas of the facility where the substances listed in 9 and 10 above are stored, utilized or produced. (In particular, list efforts to prevent the discharge of these substances to the sewer system):

12. 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:

Section C - Water Consumption and Usage

1. List the source (Milford Water Company, 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):

2. Describe any treatment of this water at this facility, including chemical addition:

3. Describe any methods which are employed at this facility to recycle and conserve water:

Section D - Wastewater Generation and Discharge

1. 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:

2. 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.)

3. List all other methods of wastewater disposal (direct discharge to the body of water or to ground, waste hauling service, etc.).

Section E - Wastewater Quality

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

Note: The Milford Board of Sewer Commissioners requires that an applicant for a Class III connection permit submit a "Baseline Monitoring Report" which shall be prepared by a Registered Professional Engineer in accordance with the U.S. E.P.A. "General Pretreatment Regulations for Existing and New Sources of Pollution" (40 CFR 403). The completed Baseline Monitoring Report shall be reviewed by the Manager of the facility from which the wastewater is discharged and the Manager 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".

2. Attach copies of the results of all analysis conducted on the wastewater (raw and pretreated) over the past two years.

Section F - Pretreatment

1. 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 Registered Professional Engineer, including detailed flow schematic and plans and specifications:

2. Describe the actual or anticipated efficiency of the pretreatment process in removing pollutants:

Section G - Certification

1. I hereby certify that we intend to adhere to all discharge limitations imposed by the Town of Milford and to the Rules and Regulations of the Milford Sewer Department and I understand that failure to adhere to all discharge limitations and to the Rules and Regulations of the Milford Sewer Department will be cause for the Town to revoke the connection permit and plug the connection to the Town's wastewater facilities:

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

Date

Signature of Official

Name and Title

APPENDIX C

Permit No.
Sewer Department Use

**TOWN OF MILFORD, MASSACHUSETTS
BOARD OF SEWER COMMISSIONERS**

**RESIDENTIAL OR COMMERCIAL WASTEWATER
CONNECTION PERMIT APPLICATION
(CLASS I or II)**

Section A - General Information

1. **Property Owner's Name:**

2. **Property Address:**

3. **Owner's Mailing Address:**

4. **Phone Number/Fax Number:**

5. **Name of Building Contractor:**

6. **Name of Licensed Drainlayer:**

Signature

7. **Name of Consulting Engineer:**

8. **Status of Application (New or change of use):**

9. **Type of Commercial Establishment (if applicable):**

Section B - Building Description and Plumbing Fixtures

1. Describe building (Single family residence, two family residence, apartment building, commercial building, etc.):

2. Total building size (Square feet):

3. Total number of bedrooms (If applicable):

4. Number of persons employed (If applicable):

5. Total number of plumbing fixtures:

a. Bathtubs	_____
b. Drinking Fountains	_____
c. Dishwashers	_____
d. Floor Drains	_____
e. Garbage Grinders	_____
f. Kitchen Sinks	_____
g. Lavatories	_____
h. Laundry Tubs	_____
i. Service Sinks	_____
j. Showers	_____
k. Urinals	_____
l. Water Closets	_____

6. Will food be served at this establishment?

If yes - seating capacity (Commercial applicants only) _____

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

7. Attach plans and specifications of proposed building and connection.

Section C - Certifications

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

1. To accept and abide by all Rules and Regulations of the Town of Milford Sewer Department.
2. To maintain the connection to the Town's wastewater facilities at no expense to the Town of Milford.
3. To furnish and install the connection in full accordance with the "Standard Specifications for Sewer Construction".
4. To notify the Director when the connection is ready for inspection prior to covering any portion of the work. (Minimum 24 hours notice).

Property Owner's Signature:

Date:

Connection Permit Fee Paid:

Payment Received by Town Treasurer:

Application Approved and Permit Issued by Director:

Date:

APPENDIX D

TOWN OF MILFORD, MASSACHUSETTS BOARD OF SEWER COMMISSIONERS

STANDARD SPECIFICATIONS FOR SEWER CONSTRUCTION

SECTION 1 GENERAL SPECIFICATIONS:

A. DEFINITIONS:

1. **"BOARD":** The Board shall be the Board of Sewer Commissioners of the Town of Milford, Massachusetts.
2. **"DEVELOPER":** The Developer shall be a person, partnership or corporation which owns the property to be developed and which desires to design and construct sanitary sewers and appurtenances in the Town of Milford.
3. **"ENGINEER":** The Engineer shall be employed by the Board and act entirely within the scope of the authority granted by the Board directly or through properly authorized agents.
4. **"CONTRACTOR":** The Contractor shall be a person, partnership or corporation which has been actively engaged in work of a similar nature and who has sufficient equipment, labor and resources to construct the proposed work. The Contractor shall be employed by the Developer and shall be responsible to him for the construction in accordance with the approved drawings.
5. **"DIRECTOR OF OPERATIONS":** The Director shall be the Director of Operations of the Town of Milford Sewer Department as appointed by the Board of Sewer Commissioners. In the absence of the Director, the Board or the Director (herein after referred to as Director) may appoint an authorized representative to act on their behalf.

- B. PLANS AND PROFILES:** The Developer shall provide plans and profiles of the proposed work, drawn by a Registered Professional Engineer, and using a scale of 40 feet to the inch horizontal and 4 feet to the inch vertical. Four (4) copies of plans and profiles of each street, or section thereof, will be submitted to the Board.
- C. CONFORMITY WITH PLANS:** No change in plans or profiles will be permitted without prior approval of the Director. The Developer shall construct the sewer and appurtenances in conformity with the plans and profiles, as approved, and in agreement with these specifications. The work shall be done under the observation of the Engineer or the Director. A pre-construction meeting with the Director, Engineer, Developer and Contractor in attendance, may be held prior to initiation of the work
- D. APPROVAL OF MATERIALS AND WORKMANSHIP:** All of the materials and workmanship employed on the project are subject to review and approval of the Engineer or the Director on behalf of the Board. The Developer shall submit five (5) copies of shop drawings or details of proposed equipment or method of installation for review and approval prior to ordering materials or initiating of the work.
- E. DEFECTIVE WORKMANSHIP OR MATERIALS:** Any portion of the work which is found to be defective or not in complete conformance with the approved plans or these Specifications shall be corrected by the Developer, at their expense, before the project is accepted by the Board.

Defective materials shall be removed from the work and from the job site as soon as notification is received from the Engineer or the Director.

- F. PERMITS:** The Developer, and his Contractor, shall conform with all federal, State and local laws, rules, and regulations. The Developer 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") of the proposed construction to enable them to mark out their pipes, conduits and other structures.
- G. INSPECTION BY DIRECTOR:** Inspection of the completed work may be performed by the Director, his authorized representative or the Engineer as determined by the Board.

- H. **ENGINEERING SERVICES:** The Engineering Services required by the Board for the project shall be paid for by the Developer. The Developer shall be required to execute an "Agreement for Engineering Services" with the Board and the Engineer. The Agreement shall outline the engineering services which will be provided by the Engineer for the Board. These engineering services may include but are not limited to the review of the Developer's project plans and materials submittals for the Board; the observation on behalf of the Board of the construction by the Developer of sewers and appurtenances; the preparation of record drawings of the completed sewer and appurtenances for the Board; and other services which the Board deems necessary to insure that the work is designed and constructed in accordance with these Standard Specifications and the Rules and Regulations of the Board.

Charges for all engineering services will be based on the hourly rates established in the Agreement. The Developer will be billed on a weekly or monthly basis directly by the Engineer and payment shall be made directly to the Engineer.

Engineering Field Services will require a minimum of 24 hours notification of start or cancellation of work, and no work shall proceed in the absence of the Engineer, without prior approval of the Director. The minimum charge for field services shall be four (4) hours.

- I. **INSURANCE:** Developers doing work hereunder shall maintain minimum insurance coverage as follows:

Bodily Injury	\$ 500,000 Each Person
	\$1,000,000 Each Occurrence
Property Damage Liability	\$ 500,000 Each Person
	\$1,000,000 Annual Aggregate

Certificates of Insurance, which are acceptable to the Board, shall be submitted to the Board prior to the commencement of the work. These certificates shall contain a provision to the effect that coverages afforded under the policies will not be cancelled unless at least thirty (30) days prior written notice has been given to the Board.

- J. **RECORD DRAWINGS:** The Developer shall furnish all data, which the Engineer or the Director determines is necessary, to prepare record drawings of the completed project for the Board.
- K. **NOTIFICATION:** The Developer shall notify the Director, the Engineer and all utility agencies at least 24 hours before the start of construction and before inspection of completed work.
- L. **GRADES & LAYOUT:** All roads and easement locations, through which any sewer is to be constructed, shall be at the proposed sub-grade elevation before the construction starts. The Developer shall be responsible for setting sewer grades and shall supply all engineering design, field layout, grades, supervision and data for the record drawings, as detailed above.
- M. **TESTING:** The Developer shall conduct all tests which are required by the Specifications and which may be required by the Engineer or the Director. All tests shall be conducted in the presence of the Engineer or the Director and at such time as is acceptable to the Engineer or the Director. The Developer shall also provide all manpower which is necessary to assist the Engineer or the Director in any visual inspections or tests which the Engineer or the Director may perform.
- N. **SUPERVISION BY DEVELOPER:** The Developer will supervise and direct the work of the Contractor. The Developer expressly accepts all responsibility for the means, methods, techniques, sequences and procedures of construction and the safety precautions and programs incident thereto. The Developer will employ and maintain on the work a qualified supervisor who shall have been designated in writing by the Developer as the Developer's representative at the site. The Supervisor shall have full authority to act on behalf of the Developer and all communications given to the Supervisor shall be as binding as if given to the Developer. The Supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work.

The Engineer or the Director will not be responsible for the construction means, methods, techniques, sequences, or procedures, of construction or the safety precautions and programs incident thereto.

SECTION 2 EXCAVATION AND BACKFILL:

A. EXCAVATION

1. GENERAL: The Developer 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 Engineer or the Director, and shall be of sufficient width to allow for thorough compaction of the refill material and for the inspection of the work.

2. SHEETING AND BRACING: The Developer 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 Engineer or the Director, that portion of the sheeting and bracing necessary to maintain the base fill material and the walls of the excavation during and after the backfilling process has been completed.

3. DEPTH OF TRENCH - EARTH: The bottom of earth trenches shall be excavated 4 inches below the barrel of the pipe to provide for granular bedding of the pipe as specified under Section 3.

4. DEPTH AND WIDTH OF TRENCH - ROCK: The bottom of rock trenches shall be excavated, a minimum of 6 inches below the barrel of the pipe, and a minimum of 9 inches clear on each side of the pipe.

5. LEDGE AND BLASTING: Where ledge is encountered, the Developer 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 made available to the Engineer or the Director for use in completing the Record Drawings.

The removal of the ledge shall be accomplished by licensed individuals and the Developer shall obtain the necessary permits before the blasting occurs. The handling, storage and use of explosives shall be in accordance with the requirements of Chapter 148, Section 10 to 27 inclusive - latest revisions of additions thereto of the General Laws of Massachusetts.

6. EXCAVATION IN PUBLIC WAYS: Trench excavation in existing public ways shall be subject to the requirements of the Milford Highway Department Rules and Regulations and Massachusetts Department of Public Works Standards. The Developer shall be fully responsible for obtaining all street opening permits and licenses which are required prior to the initiation of the work. Excavation in streets having an improved pavement shall be preceded by cutting the existing pavement so that pavement beyond the trench limits will not be disturbed. Before resurfacing, the edges of the pavement shall be inspected and re-cut if found to be broken or ragged. The Developer shall furnish all materials and do all the work necessary to restore the street to its original condition and pavement depth. This work shall be subject to inspection and approval of the Milford Highway Department and the Massachusetts Department of Public Works.

7. UNSUITABLE FOUNDATION MATERIAL: The Developer shall remove unsuitable foundation material under the pipe lines and refill the excavation with bank gravel, screened gravel or concrete, as ordered by the Engineer or the Director. Sheet piling, to contain the refill material, shall be furnished, installed and left in place at the order of the Engineer or the Director.

8. DEWATERING: Dewatering of the area in which work will be done, including pumping station sites, will be done by the Developer, using pumps of sufficient capacity to render the excavations dry enough to permit construction to proceed in conformity with the specifications. All water from dewatering operation shall be disposed of by the Developer in a manner which is acceptable to the Engineer or the Director.

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 Engineer or the Director has completed his observations.

2. MATERIALS AND PLACEMENT: The area below the pipe, and extending half way up both sides and to a point 6 inches above crown of PVC pipe, to the side limits of the trench as excavated, shall be backfilled with screened gravel and compacted as specified under pipe laying. The area below the pipe and extending to a point half way up the barrel of ductile iron pipe and to the side limits of the trench as excavated shall be backfilled with screened gravel and compacted as specified under pipe laying.

Material for remainder of backfill to a point 24-inches above the top of the pipe shall be selected borrow, from excavated material containing no large stones, loam, clay or other unsuitable substances. Selected borrow shall be placed in layers suitably tamped to the side limits of the trench as excavated. Material from a point 24 inches above the top of the pipe to a point 18 inches below sub-grade shall be ordinary excavated material, placed in layers, and thoroughly tamped. No rock fragment weighing more than 20 pounds will be permitted in this section of the backfilling. The top 18 inches of the trench in paved areas shall be filled with road grade bank gravel, which, when rolled in place, will form a suitable foundation for the base course of road surfacing.

The final 12 inches of the trench which is directly beneath the finished grade on unpaved surfaces shall be backfilled with 8 inches of bank gravel and 4 inches of loam. The bank gravel shall be thoroughly compacted with mechanical compacting equipment. All loam shall be approved by the Engineer or the Director. Final restoration of disturbed areas by seeding, sodding, mulching or other method shall be approved by the Engineer or the Director.

The Developer shall be fully responsible for the proper backfilling and compacting of all trench bedding and refill material. Alternate methods of consolidating the backfill material above the crown of the pipe such as water jetting or puddling will be considered and the method employed shall be approved by the Engineer or the Director.

SECTION 3 PIPE AND PIPE LAYING:

A. PIPE AND FITTINGS FOR MAIN SEWERS:

1. **POLYVINYLCHLORIDE PIPE:** Pipe and fittings for main sewer shall be polyvinylchloride (PVC) made by a manufacturer of established reputation, meeting the requirements of ASTM-D-3034, (latest revision), with a minimum pipe diameter to wall thickness ratio (SDR) of 35. Maximum pipe length shall be 13.0 feet. The elastometric ring, bell and spigot style joint shall meet the requirements of ASTM D3212 (latest revision). (Ductile iron, cement-lined sewer pipe may also be used in appropriate circumstances, if approved by the Engineer or the Director.)

B. PIPE AND FITTINGS FOR LATERAL SEWERS:

1. **POLYVINYLCHLORIDE LATERALS:** Pipe and fittings for laterals shall be polyvinylchloride (PVC) meeting the same requirements as for the main pipe. Fittings shall be molded, one piece construction, and a PVC cap, designed for use on a bell end of pipe, shall be required. All fittings and service pipe shall be of the same material as the main sewer.

C. FORCE MAINS

1. **DUCTILE IRON PIPE FORCE MAINS:** Force mains may be constructed using ductile iron pipe and fittings. Ductile iron pipe shall meet the requirements of ANSI A21.51 (latest revision) fittings shall meet the requirements of ANSI A21.10 (latest revision) and mechanical joints shall meet the requirements of ANSI A21.11, (latest revision).

2. **POLYVINYLCHLORIDE FORCE MAINS:** Force mains may be constructed using polyvinylchloride (PVC) pressure pipe meeting the requirements of ASTM D 1784, D2241 and Commercial standard PS 22, or latest revision thereto.

Pipe shall be pressure rated at 160 psi (SDR 26) or at 200 psi (SDR 21), and joints shall be elastometric ring, bell and spigot style, meeting the requirements of ASTM D3139, latest revision thereto.

3. DUCTILE IRON GRAVITY SEWERS: In areas where ductile iron gravity sewer pipe is required due to regulations or site conditions or when required by the Engineer or the Director, the Developer shall furnish and install appropriate class ductile iron pipe as approved by the Engineer.

Cast iron wyes, if available in the approved class of pipe, shall be furnished with appropriate fittings for the house lateral. A mechanical joint plug or cap shall be furnished and installed on the lateral inside the property line to allow testing of the sewer.

D. PIPE LAYING

1. LINES AND GRADES: The Developer shall provide such engineering services as may be required to ensure that the pipe lines are constructed in accordance with the approved drawings. Engineering services provided by the Developer shall include the establishment of lines and the setting of grades. Sewers which do not conform with the approved drawings shall be removed and relaid at the Developer's expense.

Laser Beam aligning equipment will be permitted if the Developer demonstrates that the equipment and operators can produce the required line and grade of the sewer to be constructed.

2. HANDLING AND STORAGE: All pipe shall be handled carefully to avoid injury to workmen, other structure, 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 and store all PVC pipe properly and in accordance with the pipe manufacturer's recommendations. All PVC pipe shall have a straight barrel. The deflection of the pipe prior to installation shall not exceed 1/16-inch per 2-foot length.

3. PIPE FOUNDATION: All pipe shall be laid on a stable foundation to prevent settlement. All material which is found to be unsuitable by the Engineer or the Director, if soft or unsatisfactory material is found at grade, shall be removed and replaced with other material as noted in these specifications.

4. BOTTOM OF TRENCH AND BEDDING: In general, the bottom of the trench shall be excavated to a depth of 4-inches below the bottom of the pipe barrel and a compacted granular bedding placed for pipe laying. The granular bedding shall be washed screened gravel or crushed stone, ranging in size from 1/2 to 3/4-inch. After the pipe has been set to line and grade, additional granular material, of the same size and characteristics as that which has been placed below the pipe, shall be lightly tamped in place to an elevation point 6" above the top of PVC pipe. This material and the granular material beneath the pipe, shall be placed the full width of the trench, as excavated, or to the inside surfaces of sheeting where required to contain the foundation material in soft trenches.

Similar bedding shall be provided in rock trenches except that there shall be 6-inches clear under the pipe surface and 9-inches clear on each side. Under no circumstances will the pipe be permitted to bear directly on rock. Granular bedding material shall be placed under all force mains, gravity mains and laterals regardless of the type of pipe.

5. EXCLUSION OF MUD OR DIRT: Care shall be taken by the Developer to exclude mud and/or water containing dirt from entering the pipe lines. Temporary plugs shall be installed and the Developer shall weight the pipes or backfill if inspection has been made, to prevent flotation from water in the trench.

6. CONCRETE CRADLES AND ENVELOPES: The Developer shall install a half section, or full envelope section, of concrete around the pipe when called for by design or if determined by the Engineer or the Director. All concrete cradles or envelopes shall be approved by the Engineer or the Director.

7. JOINTING: Polyvinylchloride (PVC) pipe shall be bell and spigot type joint, with elastometric ring supplied by pipe manufacturer. 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 insure that the pipe is in the correct position within the bell. Joints shall be "shoved home" using a wooden block and steel pry bar. Pullers, or other types of mechanical equipment which may split or deform the joint shall not be allowed.

Ductile iron pipe joints shall be mechanical or push-on bell and spigot type. The mechanical joint 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 75 foot lbs. The push-on bell and spigot pipe shall be furnished with o-ring gaskets.

8. HOUSE SERVICE CONNECTIONS: House service connections laterals shall be polyvinylchloride (PVC) SDR 35, with corresponding wye branch, sweep, and cap. Laterals shall be installed to a point extending beyond the sideline of the roadway layout and capped to allow testing prior to connection to the building. Laterals shall be laid in granular bedding, as specified for main sewer pipe, and the same backfilling procedures shall be followed throughout the installation.

Connections to the main sewer shall be made at a wye branch of the same manufacture as the pipe which was installed during installation of the main sewer. Ends of laterals shall be identified with a 2" x 2" wooden stake placed vertically with the top of stake 3" below the ground surface.

Use of cast iron saddles will be allowed only under certain conditions, such as relocation of connection, if approved by the Engineer or the Director. Wye saddles are recommended but tee saddles may be used if approved. Saddles shall be cast iron with rubber ring at the joint to the main, and manufactured specifically for the type of pipe to be used. The joint to the lateral pipe shall be rubber ring or boot with stainless steel clamps. Mortar joints will not be acceptable. The saddle shall be attached to main by the use of a wide band stainless steel strap and non-corrosive bolts. All holes for installation of the saddles shall be machine cut, using a shell cutter for the 6-inch diameter hole. The use of a hammer and chisel to make the 6-inch diameter opening will not be permitted.

Laterals will not be attached to the plumbing in adjacent buildings until a permit to connect has been issued by the Board. Permits to connect laterals to buildings shall not be issued until mains and laterals have been tested and accepted by the Director.

The Developer shall insure that all other permits required by the Town shall have been issued prior to connecting all house sewers to the main sewer. All connections from house sewers to the main sewer shall be performed in accordance with these Specifications and by licensed drainlayers.

9. CHIMNEYS: Chimneys shall be constructed at locations required by the depth of the sewer main and as determined by the Engineer or the Director. Chimneys shall be precast concrete sections which are specifically manufactured for this purpose.

Alternatively, chimney may consist of a PVC tee or 90° saddle, 45° PVC bend, PVC riser pipe with field cut end, a PVC adapter (PVC spigot to field cut end) and a 90° PVC elbow. The entire assembly shall be encased in Class B concrete and reinforced as required. A PVC tee may be substituted for the 90° PVC elbow, if the chimney is to serve two connections. Alternate methods of construction may only be used if approved by the Engineer or the Director.

10. FORCE MAINS: Force mains shall be ductile iron mechanical joint pipe, furnished and installed by the Developer, from the pump station to the point of discharge. Ductile iron pipe shall be Class 52, cement lined, tar coated and sealed, with compatible fittings installed with concrete thrust blocks.

In combination trenches, gravity sewer and force main, the force main shall be laid on a shelf excavated in the side of the trench with the main (gravity) sewer, with minimum a 4' - 6" cover. If, because of the depth of cut of the gravity sewer or because of the material encountered, the excavation of a shelf proves to be impractical, the Developer shall excavate separate, adjacent trenches for the two pipes.

Mechanical joints shall be made up using a torque wrench set at 75 foot pounds with the nuts and bolts tightened in an alternating sequence.

11. TESTING GRAVITY SEWERS: All ductile iron and PVC gravity sewers, including laterals to property lines, shall be air tested for leakage after backfilling and compaction to road sub-grade has been completed, and base course of bituminous concrete has been installed. The equipment and method used to conduct the air test will be subject to prior approval by the Engineer or the Director. The Developer shall furnish all labor and equipment for testing. No sewers will be accepted by the Board until all testing is completed to the satisfaction of the Engineer or the Director.

In general, a section between two manholes shall be isolated by inflatable plugs. Air shall be introduced into the pipe line to an internal pressure 4 PSIG greater than the average back pressure of the ground water, or an increase of .434 psi for each foot of water above the top of the pipe. After stabilizing the pressure at 3.5 PSIG minimum, the air line shall be disconnected, and the pressure drop, if any, observed. The line shall be termed acceptable if the time required, in minutes, for the pressure to decrease 1 PSIG is not less than 1 minute per inch of diameter.

If water table is 5 feet or greater above top of pipe at the time of the test, an infiltration test may be conducted. The Developer shall supply all weirs or other measuring devices required, and the allowable leakage shall not exceed 100 gallons per inch of diameter per mile of sewer per 24 hour period.

The Developer shall submit to the Engineer or the Director a record of the location and cause of each leak encountered, along with his method for replacement or repair, for approval, prior to completion of the work. A second test shall be made to determine the acceptability of the work.

In general, any pipe which fails the air test or infiltration test shall be replaced or repaired to the satisfaction of the Engineer or the Director.

12. CLEANING AND VISUAL INSPECTION: After laying of the pipe is completed between manhole sections, the interior of the sewer pipe line shall be thoroughly cleaned from construction debris or other foreign matter. The completed section of pipe shall be closed off by bulkheads at the outlet side of the manholes in a manner which is sufficient to prevent the wash of mud or dirt into the completed section of pipe line. Upon completion of the entire line the bulkheads shall be removed and all debris shall be removed from the pipe and manholes.

Prior to acceptance, the Engineer or the Director shall conduct a visual inspection of the pipe line and the Developer shall supply all materials and labor necessary for this inspection.

13. DEFLECTION TEST - PVC PIPE: All PVC pipe shall be checked for deflection after backfilling and compaction is complete, but at no time shall construction proceed further than 1000 linear feet from last section tested. The pipe line to be checked shall be thoroughly cleaned and plugged. A mandrell with an outside diameter which is 5% less than the inner diameter of the pipe shall be pulled through the pipe to check overall deflection. Any pipe through which a mandrell can not be pulled without extreme force shall be considered to have failed the test. Any pipe which has failed the test shall be excavated and replaced. The pipe shall then be retested after backfilling and compaction is complete.

14. LEAKAGE TEST - FORCE MAINS: Force main pipes shall be tested by slowly filling the line with water and expelling the air at the discharge end of the force main. The discharge end shall then be plugged and blocked and the pressure inside the force main raised to 30 lbs per square inch (or 15 lbs. per square inch higher than pump discharge pressure). The amount of water added to the pipe line, to maintain this pressure for 30 minutes, shall be metered and if the amount added exceeds one (1) gallon, the pipe shall be considered to have failed the test. The Developer shall locate the leak or leaks, and shall make the necessary repairs. The pipe shall then be retested until satisfactorily passed.

SECTION 4 MISCELLANEOUS STRUCTURES:

A. SUBMITTALS: The Developer shall submit to the Engineer or the Director four (4) copies of materials and method of construction of all miscellaneous structures which shall include, but not be limited by, the following: Lift stations, inverted siphons, culvert or stream crossings, railroad crossings, State highway encroachment, and drain sump manholes, monitoring manholes, grease traps and similar items.

B. EXTERIOR GREASE TRAPS: Grease, oil and sand traps, when required, shall have a minimum capacity of 1000 gallons, and shall have sufficient capacity to provide at least a 24 hour detention period for the kitchen flow. Kitchen flow shall be calculated in accordance with 310 CMR 15.02(13).

Grease traps 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 ground water 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 12 inches of the bottom of the tank. Tees shall be cast iron or Schedule 40 PVC and properly supported by a hanger, strap or other device.

Grease traps shall be installed on a level stable base that will not settle. Grease traps may be constructed of poured reinforced concrete or precast reinforced concrete. Grease traps shall be provided with a minimum 24-inch diameter manhole frame and cover to grade over the inlet and outlet. Grease traps shall be located on the lot so as to be accessible for servicing and cleaning. The invert elevation of the inlet of a grease trap shall be at least 2-inches above the invert elevation of the outlet. Inlet and outlet shall be located at the center line of the tank, and at least 12-inches above the maximum ground water elevation. Backfill around the grease trap shall be placed in such a manner as to prevent damage to the tank.

C. MONITORING MANHOLES: Monitoring manholes required for Class III wastewater discharges shall be precast concrete designed for H-20 loading and installed in full accordance with the detail drawing ("Precast Concrete Monitoring Manhole") attached to these Standard Specifications.

SECTION 5 BANK GRAVEL, SCREENED GRAVEL, ORDINARY BORROW:

A. BANK GRAVEL: Bank gravel shall be furnished and placed by the Developer 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.

B. SCREENED GRAVEL: Screened gravel shall be furnished and placed by the Developer as granular bedding material for the pipe lines and may be washed and graded bank run gravel or crushed stone ranging in size from 1/2-inch to 1-inch.

C. ORDINARY BORROW: Ordinary borrow shall be furnished and placed by the Contractor as trench refill material. It shall not contain stones larger than 20 pounds and shall be free from loam, clay, vegetation or other unacceptable material.

D. APPROVAL: Bank gravel, screened gravel, and ordinary borrow must be approved by the Engineer or the Director before incorporation into the work.

SECTION 6 MANHOLES

A. GENERAL DESCRIPTION:

1. PRECAST STRUCTURES: Manholes shall be constructed of reinforced precast concrete monolithic base sections, barrel sections and dome sections, and shall meet the applicable requirements of ASTM Specification C478-70T, latest revision. All manholes shall be designed for H-20 loading. Flat top sections may be substituted for dome sections if sufficient depth is not available and if approved by the Engineer or the Director.

2. PIPE CONNECTOR: Pipe to manhole connection shall be made with a flexible rubber boot and stainless steel clamp. The flexible rubber boot, pipe-to-manhole connector shall be installed during manufacture of 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. A continuous bead of silicone shall be applied to inside of boot at clamp location, prior to installation of pipe.

3. SECTION JOINTS: Joints between manhole sections shall be made with butyl rubber sealant compound.

4. BRICK: Red clay brick for constructing the table and the invert, and for adjusting castings to grade, shall be hard burned, and shall conform to ASTM C32 (latest revision). Cement bricks, blocks or soft red brick will not be allowed.

5. STEPS: Manhole steps shall be aluminum alloy 6061 T6, extruded, safety type, cast in place, 12-inches on center, in the barrel and dome sections. The portion of step imbedded in concrete, plus 2-inches, shall be coated with aluminum oxide.

6. FRAMES AND COVERS: Cast iron frames and covers shall be Milford Sewer Department Standard and shall meet the requirements of ASTM specification for Grey Iron Castings, Cast Iron Class 20. 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. The castings shall not vary more than five (5) percent from the specified weight.

The cast iron manhole frames and covers shall be carefully cleaned of all rust, dirt, and scale, and while free and clean from rust shall be given a full coat of coal-tar pitch varnish which is applied hot. The finish of the castings as delivered shall be satisfactory to the Engineer or the Director. Any rusted or uncovered surfaces shall be cause for rejection of the castings.

Manhole covers shall closely fit the frames with clearances as specified on the drawings. The underside of the cover and upper side of lip of frame must present parallel plane surfaces. At these points of contact, the frames and covers must be machined to prevent the covers from rocking in the frames. Covers shall bear evenly on the frames for the entire circumference, and be interchangeable with other frames. Covers shall be cast with spider web and S pattern.

Milford Sewer Department Standard frames and covers (Haley and Ward, Inc. Standard) shall be as manufactured by LeBaron Foundry Company, Model LT-101, Mechanics Iron Foundry Company, Model K 6004 or C.M. White Iron Works, Model R-258. In general, the frame and cover shall be eight (8) inches in height with a twenty-two (22) inch clear opening and shall weigh 440 pounds in total.

Watertight frames and covers shall be furnished for locations subject to flooding and as directed by the Engineer or the Director. Watertight frames and covers shall be as manufactured by LeBaron Foundry Company, Model LBW 268-2, Type BW, C.M. White Iron Works, or Mechanics Iron Foundry Company, or equal. In general, the frame shall be eight inches high with a twenty-two (22) inch clear opening and shall weigh 630 pounds in total. All frames and covers shall be furnished complete with interior cover, locking bar and sealed seating surfaces.

7. GRADE ADJUSTMENT: Red clay brick only shall be used for grade adjustment, with all joints completely filled with mortar. The inside and outside faces of the brick shall be covered with mortar and troweled smooth. The maximum height allowable for grade adjustment with brick masonry shall be twelve (12) inches.

B. INSTALLATION

1. BASE: Developer shall excavate to a depth of six (6) inches below bottom of manhole base, compact and fine grade, and install washed screened gravel sub-base material. Base section shall be placed to grade leveled. Pipe shall be installed and shall extend approximately one (1) inch inside interior wall. The clamps on the rubber boot shall be tightened and shall be mortar trowelled on the inside face of manhole at the pipe connection.

2. JOINTS: The joints between the base section and the 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 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(s) and dome section.

3. **GROUT:** All lift holes and interior manhole joints shall be filled with non-shrink grout and smoothed.

4. **BRICK AND MORTAR:** Inverts and table shall be constructed of hard burned, 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 inner diameter of the larger of the pipes entering the manhole wall. Bricks shall be laid in a full bed of mortar with push joints and all brick shall be thoroughly wet immediately before laying.

All mortar shall be made of one part of Portland cement and two parts of clean fine sand, well mixed and tempered. Water shall be clean and free from impurities. 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 retempered and used in the work.

The table shall be constructed at an elevation even with the top of 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 brick for tables shall be laid flat.

Frames shall be set upon a full bed of mortar, and mortar shall be brought up alongside of frame to provide a water tight joint.

5. **SPACING OF MANHOLES:** Maximum allowable distance between manholes shall not be greater than 250 feet.

- C. **DROP INLETS:** In general, the use of a drop inlet will only be approved if the Developer submits data justifying the necessity of a drop inlet rather than a direct inlet or where pipe slopes would exceed 6.0%. All drop inlets shall be subject to the approval of the Engineer or the Director. If approved, drop inlets shall be composite, precast type, integral with the precast manhole.

Alternatively, drop inlets may be constructed using tees and a section of pipe, which are the same size as the main, and all encased within Class B concrete. Concrete shall be placed upon the same sub-base material as the manhole. A brick masonry dam shall be constructed in the outlet of the upper pipe at the interior face of the manhole, and extend from the invert to three quarter (3/4) pipe.

- D. **APPROVAL AND TESTING:** All manholes delivered to the site shall be subject to the approval of the Engineer or the Director. Any rejected manhole shall be immediately removed from the site by the Developer.

All manholes shall be vacuum tested by the Developer. All testing shall be performed under the observation of the Engineer or the Director. The Developer 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 10 inches Hg shall be drawn. The test time shall be that time allowed for the pressure to drop from 10 inches Hg to 9 inches Hg. Maximum allowable test times shall be as follows:

<u>Manhole Depth</u>	<u>Maximum Test Time</u>
0 to 10 feet	1 Minute
10.1 to 15 feet	1 Minute 15 Seconds
15.1 to 25 feet	1 Minute 30 Seconds

Manholes which fail to meet the above allowable test times shall be repaired using methods approved by the Engineer or the Director. Manholes shall then be retested using the vacuum test. Following a second vacuum test failure, the manhole shall be repaired and tested using a water exfiltration method as determined by the Engineer or the Director.

SECTION 7 CONCRETE MASONRY:

- A. **CONCRETE MASONRY:** Concrete masonry shall be used for thrust blocking, foundation material, pipe cradles, half section or full section, manhole drop inlet or chimney encasement or as otherwise directed by the Engineer or the Director.

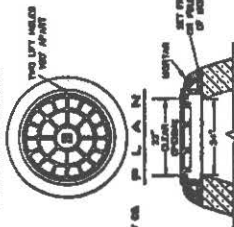
B. CONCRETE: Concrete shall be mixed using Portland cement, crushed stone and clean, hard sand with enough clean water to insure proper mixing. Concrete may be job mixed or ready mixed, a nominal 1:2.5:4 mix, and shall contain not less than 4.5 bags of cement per cubic yard.

C. STEEL REINFORCEMENT: Steel reinforcement indicated on Standard Sewer Construction drawing 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 depth of cover not less than two inches.

SECTION 8. BITUMINOUS CONCRETE RESURFACING:

A. TYPE I-1 BITUMINOUS CONCRETE shall be used to resurface trenches in existing public ways in accordance with the Town Highway Regulations and/or permits issued by State Highway authorities. Specific depths and details of composition of materials are to be agreed upon in the application for permit to open the public highway. The type and depth of base course and top course shall be as approved by the Milford Highway Department. The Developer shall recut the edges of the pipe trenches 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.

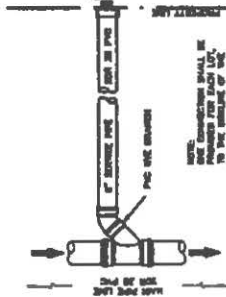
CAST IRON
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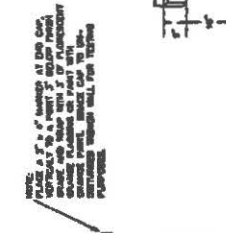
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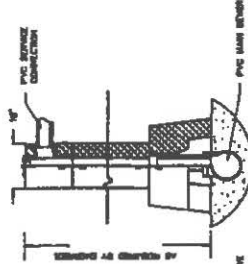
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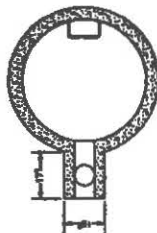


PLAN TYPICAL CHIMNEY PRECAST CONCRETE

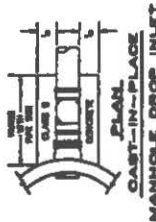
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SECTION TYPICAL CHIMNEY PRECAST CONCRETE

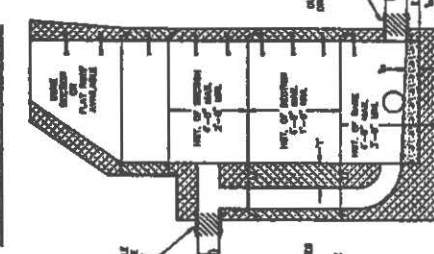
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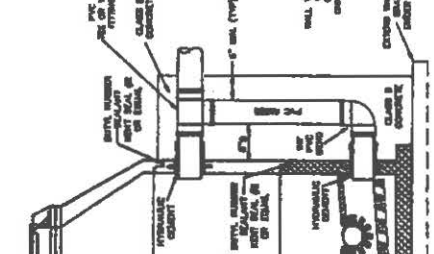
PLAN MANHOLE DROP INLET PRECAST CONCRETE



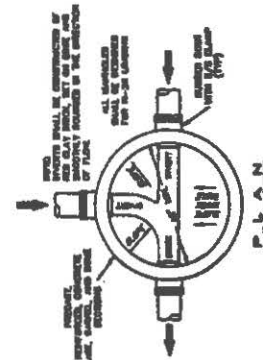
SECTION MANHOLE DROP INLET PRECAST CONCRETE



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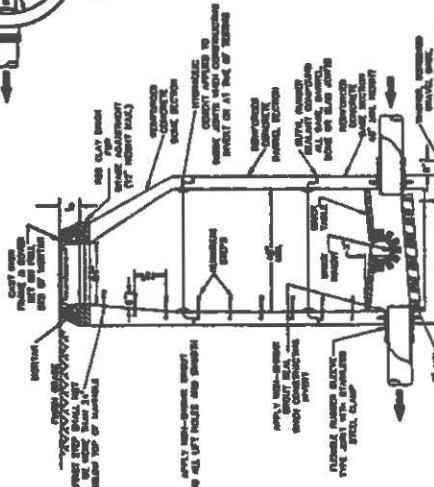


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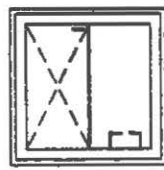
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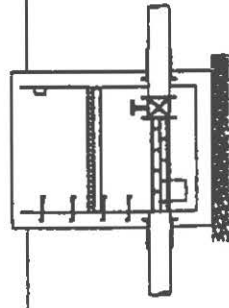


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JOHN E. O'CONNELL
No. 7330
CIVIL ENGINEER
STATE OF MASSACHUSETTS

DATE: 10/1/77
BY: JEO
FOR: B&W
PROJECT: 100-100-100

100-100-100

APRIL 3, 1996
BOARD OF SEWER COMMISSIONERS
MILFORD, MASSACHUSETTS

APPENDIX D

STANDARD SPECIFICATIONS FOR
SEWER CONSTRUCTION

REVISIONS

The following revisions to the above-referenced specifications are to be incorporated into all proposed work.

The following revisions shall be made to the Specifications:

1. Reference: SECTION 1 GENERAL SPECIFICATIONS, Page D-2, Article B, PLANS AND PROFILES. After first sentence insert the following:

Insert: "A key sheet which indicates the general location of the pipe and the direction of flow shall be provided on all projects which consist of more than one plan."

2. Reference: SECTION 1 GENERAL SPECIFICATIONS, Page D-4, Article L, GRADES & LAYOUT. At the end of the paragraph insert the following:

Insert: "No sewer shall be installed at a slope of less than 1% nor more than 8%."

3. Reference: SECTION 2 EXCAVATION AND BACKFILL, Page D-7, Article B, BACKFILLING, subsection B(2), MATERIALS AND PLACEMENT. At end of page insert the following:

Insert: "All pipes shall be insulated when final cover over the top of the pipe is less than four feet."

4. Reference: SECTION 3 PIPE AND PIPE LAYING, Page D-8, Article A, PIPE AND FITTINGS FOR MAIN SEWERS, subsection A(1), POLYVINYLCHLORIDE PIPE. At end of paragraph insert the following:

Insert: "Main sewers shall be a minimum of 8 inches in diameter."

5. Reference: SECTION 3 PIPE AND PIPE LAYING, Page D-8, Article B, PIPE AND FITTINGS FOR LATERAL SEWERS, subsection B(1), POLYVINYLCHLORIDE LATERALS. At end of paragraph insert the following:

Insert: "Laterals shall be a minimum of 6 inches in diameter."

6. Reference: SECTION 4 MISCELLANEOUS STRUCTURES, Page D-15, Article A, SUBMITTALS. At end of paragraph, insert the following:

Insert: "All details associated with miscellaneous structures shall be subject to the approval of the Director or the Engineer. All lift stations shall be provided with duplex pumping equipment."

7. Reference: SECTION 6 MANHOLES, Page D-16, Article A, GENERAL DESCRIPTION, subsection A(1), PRECAST STRUCTURES. At end of paragraph insert the following

Insert: "Manholes which are 10 feet or less in depth shall be a minimum of 4 feet in diameter. Manholes which are greater than 10 feet in depth shall be a minimum of 5 feet in diameter."

8. Reference: SECTION 6 MANHOLES, Page D-20, Article C, DROP INLETS. At end of first sentence in second paragraph insert the following:

Insert: "or screened gravel."

9. Reference: SECTION 6 MANHOLES, Page D-20, Article C, DROP INLETS. At end of second paragraph insert the following:

Insert: "Alternatively, drop inlets may be constructed inside manholes using tees and a section of pipe which are the same size as the main. Manholes with inside drop inlets shall be a minimum of 5 feet in diameter. All hardware used to fasten inside drop inlets to the manhole wall shall be stainless steel and subject to the approval of the Director or the Engineer."