

SEWER USE REGULATIONS

DEERFIELD BOARD OF SEWER COMMISSIONERS  
TOWN OF DEERFIELD, MASSACHUSETTS

## TABLE OF CONTENTS

<b>SECTION 1: GENERAL</b> .....	<b>3</b>
SECTION 1A: APPLICABILITY & AUTHORITY .....	3
SECTION 1B: DEFINITIONS .....	4
SECTION 1C: BUILDING SEWERS AND CONNECTIONS .....	6
SECTION 1D: USE OF PUBLIC SEWER .....	12
SECTION 1E: ADDITIONAL REGULATIONS .....	18
SECTION 1F: QUALITY CONTROL .....	18
SECTION 1G: INDUSTRIAL WASTEWATER .....	20
<b>SECTION 2: EARTHWORK REQUIREMENTS</b> .....	<b>21</b>
SECTION 2A: CLEARING AND GRUBBING .....	21
SECTION 2B: EARTH EXCAVATION AND BACKFILL .....	21
SECTION 2C: EXCAVATION BELOW NORMAL GRADE .....	23
SECTION 2D: ROCK AND BOULDER EXCAVATION .....	24
SECTION 2E: PAVED ROADWAY REHABILITATION .....	24
<b>SECTION 3: PIPE REQUIREMENTS</b> .....	<b>27</b>
SECTION 3A: P.V.C. SEWER PIPE .....	27
SECTION 3B: CEMENT LINED DUCTILE IRON SEWER PIPE .....	28
SECTION 3C: INSTALLATION OF SEWER PIPE .....	28
SECTION 3D: SEWER SERVICE CONNECTIONS .....	31
SECTION 3E: PROXIMITY TO WATER MAINS .....	32
SECTION 3F: MANHOLES .....	32
SECTION 3G: FINAL SEWER TESTS .....	36
<b>SECTION 4: OPERATION OF LAW</b> .....	<b>41</b>
SECTION 4A: PROTECTION FROM DAMAGE .....	41
SECTION 4B: POWERS AND AUTHORITY OF INSPECTORS, AGENTS, OR DESIGNEES .....	41
SECTION 4C: PENALTIES .....	42

## SEWER USE REGULATIONS

### **REGULATIONS GOVERNING THE USE OF PUBLIC SEWERS AND DRAINS, SEWAGE DISPOSAL, THE INSTALLATION AND CONNECTION OF BUILDING SEWERS, AND THE DISCHARGE OF WATERS AND WASTES INTO THE PUBLIC SEWER SYSTEM; AND PROVIDING PENALTIES FOR VIOLATIONS THEREOF; IN THE TOWN OF DEERFIELD, FRANKLIN COUNTY, COMMONWEALTH OF MASSACHUSETTS.**

Be it ordained and enacted by the Board of Sewer Commissioners (Board) of the Town of Deerfield, Commonwealth of Massachusetts (Town), as follows:

#### SECTION 1: GENERAL

##### **SECTION 1A: APPLICABILITY & AUTHORITY**

1. These specifications govern all sewer construction within dedicated public ways, Town easements and construction within private subdivisions, and are issued under the authority given to the Board under [Chapter 150 Sewers](#) of the Town's Bylaws.
2. These specifications also apply to sewer work completed by Town employees, by virtue of its adoption as a standard by the Board.
3. When so stated in the contract, these specifications shall govern the work of private contractors doing work under contract to the Town.
4. These specifications shall govern the work of private contractors doing work within the Town rights-of-way and/or easements.
5. These specifications shall govern the work of all private contractors doing work for developers, contractors, etc. in streets and easements which shall later be accepted by the Town as Town ways.
6. All sewerage system project designs shall be in accordance with Commonwealth of Massachusetts, Department of Environmental Protection (MassDEP) and industry standards as well as the specifications set forth in these Regulations.
7. All plans for new sewerage systems, extensions and changes to existing systems must be submitted for review and approval by MassDEP and the Town.
8. These specifications shall govern all Sewers constructed on public or private property.
9. These specifications shall govern the installation of service connections. No service connections can be completed and approved until inspected by a duly authorized Board representative.

## SECTION 1B: DEFINITIONS

Unless specifically indicated in these Regulations, the meaning of terms used shall be as follows:

1. Abbreviations – The following abbreviations shall have the designated meanings:

ASTM - American Society of Testing Materials  
BMP - Best Management Practice  
BMR - Baseline Monitoring Report  
BOD - Biochemical Oxygen Demand (5-day)  
CFR - Code of Federal Regulations  
CIU - Categorical Industrial User  
COD - Chemical Oxygen Demand  
DEP - Massachusetts Department of Environmental Protection  
EPA - United States Environmental Protection Agency  
gpd - Gallons per day  
IU - Industrial User  
l - Liter  
mg - Milligrams  
mg/l - Milligrams per Liter  
NPDES- National Pollutant Discharge Elimination System  
NSCIU - Non-Significant Categorical Industrial User  
POTW - Publicly Owned Treatment Works (owned & operated by the Town of Deerfield)  
RCRA - Resource Conservation and Recovery Act  
SIC - Standard Industrial Classification  
SIU - Significant Industrial User  
SNC - Significant Noncompliance  
SWDA - Solid Waste Disposal Act, 42 U.S.C. 6901, et. seq.  
TSS - Total Suspended Solids  
U.S.C. - United States Code  
WPCF – Water Pollution Control Federation

2. Applicant shall mean the property owner, or authorized agent, or Contractor, requesting approval to discharge wastewater into the municipal facilities or a new connection to the wastewater system.
3. Board and/or its designee shall mean the Board of Sewer Commissioners of the Town of Deerfield or any agent or officer duly authorized to act in its place, including the Superintendent of Sewers, recognized as the Superintendent of Public Works.
4. Board of Health shall mean the Board of Health of the Town of Deerfield or any agent or officer duly authorized to act in its place, including the Superintendent of Sewers, recognized as the Superintendent of Public Works.

5. Building Drain shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from sanitary or approved waste inside the walls of the building and conveys it to the building sewer, ending ten (10') feet outside the inner face of the building wall.
6. Building Sewer shall mean the extension from the building drain to the public sewer or other place of disposal, also called house connection.
7. Contract Drawings shall be the construction drawings which have been approved by the Superintendent of Public Works, or their appointed representative signed "approved" and on file.
8. Contractor shall be the party doing the construction: either a private contractor or Town of Deerfield Employees, as the case may be.
9. Easement shall mean an acquired legal right for the specific use of land owned by others.
10. Infiltration is water other than wastewater that enters a sewer system from the ground from sources including, but not limited to, defective pipes, pipe joints, pipe connections, and manholes.
11. Industrial Wastes shall mean the wastewater from industrial processes, trade, or business as distinct from domestic or sanitary wastes.
12. Inspector shall mean the Board of Sewer Commissioners of the Town of Deerfield or any agent or officer duly authorized to act in its place, including the Superintendent of Sewers, recognized as the Superintendent of Public Works, Chief Wastewater Treatment Plant Operator, or Plumbing Inspector.
13. Person shall mean any individual, firm, company, association, society, corporation, or group.
14. POTW shall mean Publicly Owned Treatment Works, owned and operated by the Town of Deerfield.
15. Private Sewer shall mean a gravity or low-pressure collection system operated on private property that ultimately connects into the public sewer.
16. Public Sewer shall mean a common sewer controlled by the Town of Deerfield.
17. Sanitary Sewer shall mean a sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities of ground, storm, and surface waters that are not admitted intentionally.

18. Sewer A main, pipe, lateral, or other conduit located in a street, highway, alley, right-of-way or easement that carries wastewater from residences; commercial buildings; industrial plants, and institutions; equivalent to “Sanitary Sewer”.
19. Slug shall mean any discharge of water, sewage, or industrial wastes which, in concentration of any given constituent or in quantity of flow, exceeds for any period a duration longer than fifteen (15) minutes, more than five (5) times the average twenty-four (24) hour concentration of flows during normal operation.
20. Town shall mean the Town of Deerfield, Massachusetts or any duly authorized officer, agent or representative of the Town of Deerfield.
21. Unpolluted Water is water of quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sewers and wastewater treatment facilities provided.
22. Wastewater or Sewage shall mean the spent or used water of the community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and stormwater that may be present.
23. Wastewater Facilities shall mean the structures, equipment, and processes required to collect, transport, carry away and treat domestic and industrial wastes and dispose of the effluent.
24. Wastewater Treatment Works shall mean an arrangement of devices and structures for treating wastewater, industrial wastes, and sludge. Sometimes used as synonymous with “Wastewater treatment plant” or “wastewater treatment facility” or “Water Pollution Control Plant”.

## **SECTION 1C: BUILDING SEWERS AND CONNECTIONS**

### **1. PROHIBITIONS**

No unauthorized person shall uncover, make any connections with or opening into, use alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Board or their duly authorized representative(s). Any person proposing a new discharge into the sewage works or a substantial change in the volume or character of pollutants that are being discharged into the sewage works shall notify the Board or its duly authorized representative at least forty-five (45) days prior to the proposed change or connection in order to obtain approval.

**No person shall break, cut or remove any pipe of the Public Sanitary Sewer or make or cause to be made any connection to said Sewer except through the connection branches provided for that purpose unless, in another manner, approved by the Board or its duly authorized representative(s).**

Building Sewers shall only be installed and connected during normal working hours of the Town. Emergency working hours may be approved in writing by the Board or its duly authorized representative(s).

No industrial wastewater shall be discharged into the Town of Deerfield sewer system without provision of an industrial wastewater discharge sewer connection permit.

## **2. STREET OPENING & TRENCHING PERMITS:**

In addition to the specific Sewer Connection Permit clauses herein, excavation work in the Town of Deerfield public right-of-way requires approval by the Chief of Police and the Superintendent of Public Works, or their respective designees. After receiving approval, the applicant shall apply for a Highway Obstruction/Excavation License from the Town of Deerfield. Applicants must also obtain a permit prior to the creation of a trench on public and/or private property in accordance with [Chapter 82A](#) of the Massachusetts General Laws, as codified in section 14.00 of title 520 of the Code of Massachusetts Regulations

## **3. SEWER CONNECTION PERMITS:**

### **a. Permits**

There are three classes of Sewer connections permits:

- (i) Residential connection permits
- (ii) Business / Commercial connection permits
- (iii) Industrial wastewater discharge sewer connection permits

### **b. Applications**

(i) Sewer Connection Permit Applications: Applications shall be made on the pre-approved Town of Deerfield Sewer Connection Permit Application form only. Completed applications shall be forwarded to the Superintendent of Public Works for review and approval. The permit application shall be supplemented by any plans, specifications or other information considered pertinent in the judgement of the Superintendent of Public Works. Permit and inspection fees for connection permits shall be paid to the Town when an application is filed.

(ii) Plumbing Inspection Permit: The Applicant shall also apply for a Plumbing Inspection Permit for the purpose of having the Plumbing Inspector, or the Inspector's designee, review the interior of the property to assure that all sanitary codes are being complied with when connection to the municipal system is accomplished.

## **4. PERMIT LIMITS**

Lapse: For any permit, if said permit is granted, the permit shall be valid for no more than one hundred and eighty (180) calendar days from the date of issue. If the project does not substantially commence within this time period, the permit shall become invalid and a new permit shall be obtained prior to construction.

## **5. PERMIT AND INSALLATION COSTS**

### **a. Connection Costs**

Sewer Connection Charges shall be set and adopted by the Board.

### **b. Installation Cost and Indemnification**

Costs incidental to the connection of the Building Sewer to the Public Sewer and inspection by the Department of Public Works shall be borne by the property owner or owners of the building. In either case, the owner shall indemnify the Town from any loss or damage that may directly or indirectly be caused by the installation and connection of the Building Sewer.

### **c. User Fees**

The Board may from time to time establish just and equitable user fees for the use of Public Sewers and the Wastewater Treatment Works. This user fee shall be paid by every Person with a connection to the Public Sewer system.

## **6. INTERCEPTORS**

Interceptors required by the Superintendent of Public Works, Health Agent, or Board of Health must be furnished, installed, maintained, cleaned, and repaired at the sole expense of the property owner or owner of the building. Such interceptors are required when, in the judgment of the Superintendent, Agent, or Board, they are necessary to properly intercept and retain disposable wastes containing excessive amounts of grease, flammable liquid waste, sand, grit, or other potentially harmful substances. These requirements do not apply to private living quarters or dwelling units.

All interceptors must be of a type and capacity approved by the Superintendent of Public Works. They shall be installed so as to be readily and easily accessible for inspection, cleaning, and maintenance.

Pursuant to 248 CMR 10.00 (Uniform State Plumbing Code), interceptors are mandatory for all fixtures and equipment that discharge grease-laden or other harmful waste into the sanitary drainage system.

Grease interceptors and traps must conform to all applicable requirements of the Board of Health regulations, Title 5, and other relevant provisions of 248 CMR 10 and local health regulations.

## **7. INDUSTRIAL WASTEWATER**

See Section 1H: Industrial Wastewater (intentionally omitted).

## **8. SEPARATE BUILDING SEWERS REQUIRED**

A separate and independent Building Sewer shall be provided for every building; unless otherwise approved by the Board. In cases where 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, courtyard, or driveway, the Building Sewer from the front building may be extended to the rear building and the whole considered one Building Sewer, if approved by the Board. The Town will not assume any responsibility for damages caused by any such connection.

## **9. CONNECTION TO THE BUILDING DRAIN**

Whenever possible, the Building Sewer shall be brought to the building at an elevation which allows for four (4') feet of cover to the top of pipe. In buildings in which the building drain is too low to permit gravity flow to the Public Sewer, wastewater shall be lifted by an approved means and discharged to the Building Sewer. Lifting devices shall be installed and maintained by and shall be the sole responsibility of the Owner with no liability assumed by the Town.

The Building Sewer shall be insulated appropriately for protection from frost if a four-foot depth is not achievable. The Building Sewer shall be laid at uniform grade and in straight alignment insofar as possible. All changes in direction shall be made with manholes or cleanouts subject to the approval of a duly authorized Board representative(s). No Building Sewer shall be laid parallel to and within five (5) feet of any bearing wall. Construction and materials shall conform to the specifications outlined in the permit.

All building connections shall have the building drain exit the building at approximately the same elevation and location that the current septic system pipe exits the building, unless specifically requested otherwise by the Board or their designee.

## **10. PROHIBITED CONNECTIONS**

No Person shall connect roof downspouts, exterior foundation drains, sump pumps, areaway drains, garage drains or other sources of surface runoff or groundwater to a Building Sewer which discharges to a sanitary sewer. Upon confirming the existence of a prohibited connection, the owner will be notified and given ten (10) days to secure a contractor and to make the necessary repairs. Should the violator fail to follow through within the given time period, a fine may be levied for each day thereafter in accordance with the penalty provisions provided for herein.

## **11. METHOD OF PIPE INSTALLATION AND BACKFILLING**

**a. General** - All pipes shall be laid in accordance with Appendix A.

The connection of the Building Sewer into the Public Sewer shall conform to the requirements of the building and plumbing code or other applicable rules and regulations of the Town, or the procedures set forth in current specifications of the A.S.T.M and WPCF Manual of Practice No. 9.

All pipe shall be made gas tight, watertight and laid according to Section 3 of these Regulations. No blocks or stones shall be used to support the pipe. In instances where groundwater may back up into the basement, a well-compacted backfill seal may be placed around the building drain at the building.

When water is present in a trench, a sump of crushed stone shall be constructed, and water shall be pumped at all times. The trench shall be kept dry at all times during construction. During pipe installation, when work is not in progress, the open ends of the pipe shall be closed with temporary watertight plugs or by other approved means.

All joints between pipes of different materials shall be made with pre-molded gasket joints approved by the Board or its designee.

The connection of the Building Sewer into Public Sewer shall be made at the “Y” or “T” branch if available at a suitable location. If no branch is available, a connection may be made by tapping the existing sanitary sewer by an approved method as approved by the Board. Cutting the connection into the pipe by hand is prohibited.

Backfill shall be installed as outlined at the discretion of the Superintendent of Public Works.

**b. Method of Construction** – The size, slope, alignment, materials of construction of a Building Sewer and the methods to be used in excavating, placing of the pipe, jointing, testing and backfilling the trench, shall all conform to the requirements of the Building and Plumbing Code or other applicable rules and regulations of the Town of Deerfield. In the absence of code provisions or in amplification thereof, the materials and procedures set forth in appropriate specifications of the ASTM and WPCF Manual of Practice No. 9 shall apply, except that only the following pipe may be used.

- A. Ductile Iron Pipe
- B. Polyvinyl chloride (PVC) sewer pipe SDR35
- C. Low pressure sewer fused HDPE

All joints shall be tight and waterproof. Pipes installed on fill or unusable ground shall be cast-iron or ductile iron pipe except that nonmetallic material may be accepted if laid on suitable concrete bed or cradle as approved by the Board or its duly authorized representative(s).

## **12. NOTIFICATION AND INSPECTION OF WORK**

The applicant for the Building Sewer permit shall notify the Chief of Police and the Superintendent of Public Works at least five (5) working days prior to the start of an approved installation. The applicant must notify the Superintendent of Public Works a second time when the Building Sewer is ready for inspection and connection to the Public Sewer. The applicant shall connect all sanitary sewer discharges to the Building Sewer. All connections shall be made in the approved manner; no caps and/or plugs are to be removed without explicit orders, and under the direct supervision of the Superintendent of Public Works. The existing septic tanks must be pumped, crushed and filled, then inspected by Superintendent of Public Works before any approval can be granted. No backfilling of any trench shall be made without the approval of the Superintendent of Public Works.

Changes to the building drain shall be inspected by the Plumbing Inspector or his designee, to ensure compliance with all applicable plumbing code requirements.

### **13. PROTECTION OF PUBLIC AND PROPERTY**

Pursuant to Town Bylaw [Chapter 200 Streets and Sidewalks](#), excavations for Building Sewer installations shall be adequately guarded with safety warning signs, cones, and/or lights (flashing) in or around barricades (subject to Federal Guidelines Manual on Uniform Traffic Control Devices). Whenever a road or way is reduced to one-lane traffic, a police detail is required, subject to approval by the Chief of Police and/or Superintendent of Public Works, to protect the public from hazards. The use of flag person(s) may be substituted; all flag persons must be outfitted with day-glo orange vests or straps and day-glo orange flags; at night reflectorized vests or straps must be worn.

A street opening permit shall be obtained from the Town at least five days prior to the start of the project except under emergency conditions as determined by the Town, Superintendent of Public Works, and approved by the Chief of Police. At no time shall any firm or public utility reroute, detour or close any Town street, road or way unless approved by the Chief of Police and the Superintendent of Public Works. Except in the case of an emergency, when it is necessary to close off a street, applicant shall notify Dig Safe (811) no later than twenty-four (24) hours in advance.

Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the Superintendent of Public Works.

### **14. REPORTING OF PROHIBITED SUBSTANCES FOUND IN SEWER**

Any individual or entity performing work on the sewer system shall submit a full written report to the Board within twenty-four (24) hours if prohibited substances, as defined in Division 5 of Section 1D, are discovered in the sewer during the course of such work.

### **15. PROPER VENTING REQUIRED**

No building shall be connected to a Public Sewer system unless said building has a vent line extended to a point above the roof, properly vented according to building and plumbing codes.

### **16. PERFORMANCE STANDARD**

Applicants shall agree to perform work according to all rules, regulations and conditions of the Board prior to any work done in the Town. Contractors shall be fully insured and shall indemnify the Town against any and all claims, liabilities, or actions for damages incurred in, or in any way connected with, the performance of the work on the building drain or sewer, or by reason of any acts of omission in the performance of said Contractor's work. The Board reserves the right to authorize and allow only approved Contractors to perform work on building drains and sewers.

### **17. VARIATIONS FROM REGULATIONS**

Any variation from these regulations of the Town shall receive the approval of the Board of Sewer Commissioners before implementation.

### **18. WASTEWATER METERING**

In the event a user is not connected to the public water supply, but is connected to the Public Sewer, said user shall install and maintain a water meter, at the user's expense, from which the Town may monitor the use of the Sewer. The type of meter and the method of installation shall be in conformance with the standards of the relevant water supply district.

For properties without a water meter, the Town will estimate water usage and apply the sewer rate for billing. Estimated water usage will be calculated using the average bill of the same property classification and billing period in the prior fiscal year. This provision shall become effective July 1, 2026.

## **SECTION 1D: USE OF PUBLIC SEWER**

### **1. CONNECTION TO PUBLIC SEWER**

The owners of all houses, buildings, or properties used for human occupancy, employment, recreation or other purposes, situated within the Town and abutting any street, easement, or right-of-way in which there is now located or may in the future be located and available, may hereby be required by the Board (acting under Title 5, 310 CMR, SEC, 15.02) at his/her expense to connect such sanitary facilities as exist with the proper public sewer in accordance with the provisions of the Town By-Laws Chapter 150.

Additionally, persons with failed cesspools or septic systems with access to the public sewer system shall be required to connect to the proper Public Sewer within a period of time determined by the Board or upon sale or transfer of the property.

All applicants, applicants' heirs, devisees and assigns agree to abide by all rules and regulations, present and proposed, as set forth herein and those of the Superintendent of Public Works.

### **2. APPROVAL OF DISCHARGES**

No person shall discharge or be the cause of any discharged wastes, sewage, or industrial wastes in any manner or method without proper treatment subject to approval by the Superintendent of Public Works.

### **3. DISPOSAL OF UNPOLLUTED WATERS PROHIBITED**

In addition to those discharges set forth in Section 1C, Division 10, no person shall discharge, or cause to be discharged any stormwater, groundwater, cellar or garage floor drainage, roof runoff, subsurface drainage, uncontaminated cooling water, unpolluted process waters, exhaust from steam engines, or blow-off from boilers to the sanitary sewer.

#### **4. DISCHARGE METHOD SPECIFIED**

Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated storm sewers, or to a natural outlet approved by the Superintendent of Public Works. Industrial cooling water or unpolluted process waters may be discharged, on approval of the Superintendent of Public Works, to a storm sewer or natural outlet.

#### **5. PROHIBITED WASTES**

No person shall discharge or cause to be discharged any of the following described waters or wastes to any Public Sewers:

- a. Any gasoline, benzene, naphtha, fuel oil, crude oil, lubricating oils, flammable or explosive liquids, solids, or gasses, or any other oils or gasses of hydrocarbon or petroleum origin.
- b. Any waters or wastes containing toxic or poisonous solids, liquids, or gasses in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the sewage treatment plant.
- c. Any water or waste having a pH lower than 5.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment and personnel of the sewage works.
- d. Solid or viscous substances in quantities or of such a size capable of causing obstruction of the flow in Public Sewers, or other interference with the proper operation of the sewage works such as, but not limited to, ash, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, rubber, latex, unground garbage, whole blood, paunch manure, hair and fleshing's, entrails, paper dishes, cups and milk containers, abrasive materials, etc., either whole or properly shredded by garbage grinders.

#### **6. CONTROLLED WASTES**

No person shall discharge or cause to be discharged the following described substances, materials, waters, or wastes if, in the opinion of the Board or a duly authorized representative, such wastes can harm either the Public Sewers, sewage treatment process, or equipment, have an adverse effect on the receiving stream; or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming an opinion as to the acceptability of these wastes, the Board will give consideration to such factors as the quantities of subject wastes in relation to flow and velocities in the Public Sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant and other pertinent factors. The controlled substances are:

- a. Any liquid or vapor having a temperature higher than one hundred fifty degrees (150<sup>0</sup>F), (65<sup>0</sup>C).
- b. Any water or waste containing fats, wax, grease or oils of vegetable or animal origin, whether emulsified or not, in excess of 100 mg/l or containing other substances which may solidify or

become viscous at temperatures between thirty-two degrees (32<sup>0</sup>F), and one hundred fifty degrees (150<sup>0</sup>F), (0<sup>0</sup>C and 65<sup>0</sup>C). The use of chemical or physical means (such as temperature variation, emulsifying agents, or mechanical mixers) to bypass or release fats, oils, and greases into the Public Sewer system is prohibited.

c. Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of three-fourths (3/4) horsepower (0.76 hp metric), or greater, shall be subject to the prior review and approval of the Board or their duly authorized representative.

d. Any waters or wastes containing strong acid iron pickling wastes, or concentrated plating solutions whether neutralized or not.

e. Any waters or wastes containing iron, chromium, copper, zinc, any similar objectionable or toxic substances, or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite sewage at the Sewage Treatment Plant exceeds the limits established by the Board or MassDEP for such materials.

f. Any waters or wastes containing phenols or other taste or odor producing substances, in such concentrations exceeding limits which may be established by the Board or the Authority, as necessary, after treatment of the composite sewage to meet the requirements of the state, federal or other public agencies or jurisdiction for such discharge to the receiving waters.

g. Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits which may be established by the Board in compliance with applicable state and federal regulations.

h. Any waters or wastes having a pH in excess of 9.5.

i. Materials which exert or cause:

i. Unusual concentrations of inert suspended solids (such as, but not limited to, fullers earth, lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

ii. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).

iii. Unusual BOD, chemical oxygen demand, or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment plant.

iv. Unusual volume of flow or concentration of wastes constituting slugs, as defined in Division 1 –Section 1B.

j. Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment process employed or are amenable to treatment only to such degree that the sewage

treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge of the treatment plant.

## **7. DECISIONS OF THE BOARD**

If any waters or wastes are discharged or are proposed to be discharged to the Public Sewers, which contain the substances or possess the characteristics enumerated in Section 6 above entitled Controlled Wastes and which, in the judgement of the Superintendent of Public Works may have deleterious effect upon the sewage works, processes, equipment or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the authority may:

- a. Reject the wastes.
- b. Require pretreatment of an acceptable condition for discharge to the Public Sewers.
- c. Require control over the quantities and rates of discharge, and/or treatment of said fluids.
- d. Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges.

If the Superintendent of Public Works permits the pretreatment or equalization of waste flow, the design and installation of the plants and equipment shall be subject to the review and approval of the Superintendent of Public Works and subject to the requirements of all applicable federal, state and local codes, ordinances and by-laws.

## **8. MAINTENANCE OF PRETREATMENT FACILITIES**

When preliminary treatment of flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at and at the owner's expense. Any pretreatment facilities must conform to all applicable requirements of the Board of Health regulations, Title 5, and other relevant provisions of 248 CMR 10 and local health regulations.

## **9. CONTROL MANHOLES**

When required by the Board, the Owner of any property serviced by a Building Sewer carrying industrial wastes shall install a suitable control manhole, together with such necessary meters and other appurtenances, in the Building Sewer to facilitate observation, sampling, and measurement of the wastes. Such manhole, when required, shall be accessible and safely located, and shall be constructed in accordance with plans approved by the Board or duly authorized representative(s). The manhole shall be installed by the Owner, at the owner's expense, and shall be maintained by the owner so as to be safe and accessible at all times. The Town shall have access to the control manhole at all times.

## **10. WASTEWATER SAMPLING**

All measurements, tests, and analysis of the characteristics of water and wastewater which reference is made in these Regulations shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health

Association, and shall be determined at the control manhole provided, or upon suitable samples taken at said control manhole. In the event that no special manhole shall be considered to be the nearest downstream manhole in the Public Sewer to the point at which the Building Sewer is connected, sampling shall be carried out by customarily accepted methods to reflect the effect of the constituents upon the Sewage Works and to determine the existence of hazards to life, limb and property.

### **11. MONITORING OF DISCHARGE REQUIRED**

All industrial and commercial users discharging into a Public Sewer shall perform such monitoring of their discharges as the Superintendent of Public Works may reasonably require, including installation and use of the maintenance monitoring equipment, keeping records and reporting the results of such monitoring to the Superintendent of Public Works. Such records shall be made available upon request by the Superintendent of Public Works, the Board and/or to other agencies having jurisdiction over discharges to the receiving waters.

### **12. NOTICE OF ACCIDENTAL DISCHARGE REQUIRED**

Any person responsible for, or becoming aware of the discharge to Public Sewer, accidental or otherwise, of any prohibited substance or of any sludge as defined herein, shall report the same immediately by telephone to the Superintendent of Public Works and Chief Wastewater Treatment Plant Operator so that necessary precautions can be taken to minimize any harmful impact to the system. The event shall be followed, within 15 days of the date of occurrence, by a detailed written statement to the Board describing the causes for the accidental discharge and the measures being taken to prevent future occurrence. Such notification will not relieve users of liability for any expenses, loss or damage to the Town's sewerage system or for any fines imposed by the Town.

Business, commercial, and industrial users shall inform their employees of the existence of these regulations and at least one copy shall be permanently posted on the user's bulletin board. Each user shall permanently post a notice advising employees who in their organization are designated as the responsible individual for compliance with these regulations and who should be notified of any accidental discharges in violation of these regulations.

### **13. REGULATION OF WASTE RECIEVED FROM OTHER JURISDICTIONS**

If another municipality, or user located within another municipality, contributes wastewater to the POTW, the Board shall enter into an Intermunicipal Agreement with the contributing municipality to ensure that discharges from other entities outside of its jurisdictional boundaries are regulated at minimum to the same extent as those within. Prior to entering into such an agreement, the Board or its designee shall request the following information:

- a. A description of the quality and volume of wastewater discharged to the POTW by the contributing municipality;
- b. An inventory of all Users located within the contributing municipality that are discharging to the POTW, specifying type of user; and
- c. Such other information as the Board or its designee may deem necessary.

#### **14. INTERMUNICIPAL AGREEMENT**

An intermunicipal agreement, as required by Division 13 above, shall contain the following standard conditions:

- a. A requirement for the contributing municipality to submit an updated and current user inventory on at least an annual basis;
- b. Limits on the nature, quality, and volume of the contributing municipality's wastewater at the point where it discharges to the POTW;
- c. Requirements for monitoring the contributing municipality's discharge;
- d. A provision specifying remedies available for breach of the terms of the intermunicipal agreement.

#### **15. COMMERCIAL AND INDUSTRIAL USERS LOCATED WITHIN A CONTRIBUTING MUNICIPALITY**

The intermunicipal agreement, as required by Division 13 above, shall contain the following standard conditions for commercial and industrial users located within a contributing municipality:

- a. A requirement for the contributing municipality to adopt a sewer use bylaw and accompanying regulations which is at least as stringent as the Town of Deerfield bylaw and these Regulations.
- b. Commercial and Industrial wastewater from a User located in a contributing municipality shall meet the requirements of these regulations and the Deerfield Industrial Pretreatment Program when so promulgated.
- c. If a User located in a contributing municipality meets the criteria for a significant or categorical Industrial User, that municipality shall develop an Industrial Pretreatment Program in accordance with Federal Regulations. If such a program is developed, Deerfield shall have the right to inspect Industrial Users, and to review and approve Industrial Pretreatment Limits for those Users to the same extent as permitted hereunder.
- d. A provision specifying which pretreatment implementation activities, including individual wastewater discharge permit issuance, inspection and sampling, and enforcement, will be conducted by the contributing municipality; which of these activities will be conducted by the Board or its designee; and which of these activities will be conducted jointly by the contributing municipality and the Board or its designee;
- e. A requirement for the contributing municipality to provide the Board or its designee with access to all information that the contributing municipality obtains as part of its pretreatment activities;
- f. A provision ensuring the Board or its designee access to the facilities of users located within the contributing municipality's jurisdictional boundaries for the purpose of inspection, sampling, and any other duties deemed necessary by the Board or its designee; and
- g. A provision to allow Deerfield the right to take action to enforce the terms of the contributing municipality's Bylaws and Regulations or to impose and enforce Pretreatment

Standards and Requirements directly against dischargers in the event the contributing jurisdiction is unable or unwilling to take such action.

## **SECTION 1E: ADDITIONAL REGULATIONS**

1. Any sewer connection over one hundred (100) feet in total length shall require a cleanout for individual dwellings and a manhole for multiple connections. All cleanouts or manholes must meet the specifications included in these Regulations. When cleanouts are installed, a LeBaron LA0910 cover or approved equal, will be used. The cover will be brought to finished grade, will have appropriate lettering, and installed according to specifications. Waterproof covers shall be installed on manholes in low areas or areas subject to flooding.
2. Garages and other establishments where gasoline is used shall not have floor drains connected to the common sewer. Grease, gasoline, oil or any other substance shall be disposed of in a safe manner and not into the sanitary system or drainage system.
3. All necessary easements for sewer connections shall be obtained by the property owner and recorded in the Registry of Deeds or Land Court. All easements for utilities across lots or centered on rear or side lots shall be provided and recorded in favor of the Town of Deerfield where necessary in accordance with [Chapter 197 Public Roads](#).
4. The cost of installing, cleaning, maintaining, repairing or replacing any particular sewer connection shall be paid by the property owners connected to said sewer system, up to the property line in a public way. The Town assumes liability when located in the public way.
5. Whoever violates any of the provisions of these regulations shall be punished according to existing Town By-Laws Chapter 150, state and/or federal laws for each offense.
6. These regulations may be rescinded or modified or added to by the Board at any time when, in their opinion, such action is in the best interest of the Town of Deerfield.

## **SECTION 1F: QUALITY CONTROL**

### **1. INSPECTION POWERS OF THE BOARD OF SEWER COMMISSIONERS**

The Board and any duly authorized representative(s) bearing proper identification, shall be permitted to enter, at reasonable times, all properties connected with the Public Sewers for the purposes of inspection, observation, measurement, sampling and testing, all in accordance with the provisions of these regulations. They may inquire into any processes, including metallurgical, chemical, oil refining, ceramic, paper, plating, or other industrial activity, that contribute waters or wastes to the Public Sewers but shall not order or demand information concerning any patented process or trade secret beyond that necessary to determine the kind, source and amount of sewage discharge from an industrial or commercial plant to the Public Sewer.

The Superintendent of Public Works is authorized by the Board to inspect all construction conducted and materials furnished. Such inspection may extend to all or any part of the work, and to the preparation or manufacture of the materials to be used. In case of any dispute arising between the Contractor and the Superintendent of Public Works as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject material or suspend the work until the question at issue can be referred to and decided by the Board or its designee. The Superintendent of Public Works shall not be authorized to revoke, alter, enlarge, relax or release any requirements of these specifications nor to approve or accept any portion of the work, nor to issue instructions, contrary to the Plans and Specifications.

The Superintendent of Public Works shall in no case act as a foreman or perform other duties for the Contractor or interfere with the work by the Contractor. Any advice which the Superintendent of Public Works may give to the Contractor shall in no circumstances be construed as binding to the Board or its designee or the Town in any way.

## **2. INSPECTION OF THE WORK**

The Contractor shall not bury any pipes or casings or other appurtenances except in the presence of the Superintendent of Public Works or the Superintendent's designee. To this end, proper notice shall be given to the Superintendent of Public Works by the Contractor of the time and place such work is to be undertaken. Any work which is done when the Superintendent of Public Works or the Superintendent's designee is not present, or which is done contrary to the direction of the Superintendent of Public Works, shall be considered unauthorized and shall not be accepted. The Contractor shall remove and replace such work to the satisfaction of the Superintendent of Public Works when directed to do so. Such work satisfactorily replaced will then be accepted.

## **3. EROSION CONTROL**

The Contractor shall take due precautions to minimize the run-off of pollution substances such as silt, clay, fuels, oils, bitumen, calcium chloride and any other polluting materials harmful to humans, fish or other life into the waters of the Commonwealth of Massachusetts. Stormwater Management and erosion and sedimentation control shall be consistent with the DEP's Stormwater Regulations and the Town of Deerfield's Stormwater Regulations as may be amended.

## **4. DUST CONTROL**

Dust control shall be provided when deemed necessary by the Board or its designee so as to prevent damage and nuisance to adjacent property owners and public streets. The means of dust control may include the use of water, calcium chloride or other approved methods.

## **5. TRAFFIC CONTROL**

When specified in the Street Opening Permit (obstruction/excavation permit), Police details shall be paid by the Applicant.

Nothing contained herein shall be construed as relieving the Contractor of any responsibilities for protection of persons and property. Nothing contained herein shall be construed as relieving the Contractor of any responsibilities for obtaining all required local, state and federal permits required to complete the work.

## **SECTION 1G: INDUSTRIAL WASTEWATER**

**\*\*This Section Intentionally Omitted\*\***

## **SECTION 2: EARTHWORK REQUIREMENTS**

### **SECTION 2A: CLEARING AND GRUBBING**

#### **1. SCOPE OF WORK**

Clearing and grubbing within the public way shall be carried out where necessary. The Contractor will be allowed to remove only the trees and brush that are absolutely necessary for construction operations, and the Contractor must abide by M.G.L. Chapter 40 Section 15C on any roads designated as scenic. The Contractor shall be expected to save as many trees as is possible. Restoration of the site to its natural preexisting condition, including stabilization or re-vegetation of the site as necessary to minimize erosion shall be done in such a manner so as to satisfy the Tree Warden or Superintendent of Public Works.

#### **2. CLEARING**

Clearing shall consist of felling, cutting and the satisfactory and legal disposal of trees, brush and other vegetation, downed timber, and rubbish.

If landowners desire the timber or small trees, the Contractor shall cut and neatly pile it in 4-ft. lengths for removal by the landowner; otherwise, the Contractor shall dispose of it by hauling away or chipping. No burning shall be permitted.

#### **3. GRUBBING**

Grubbing shall be carried out where trees have been felled, and shall consist of the removal and disposal of stumps, including all roots larger than 3-in in diameter to a depth of 18-in. below ground surface and within a 3 ft. radius of the trunk.

### **SECTION 2B: EARTH EXCAVATION AND BACKFILL**

#### **1. SCOPE OF WORK**

This section includes, except as elsewhere provided, trenching for pipe laying, and appurtenances, including drainage, sheeting and bracing, backfilling, disposal of surplus material and restoration of trench surfaces in the public way or easements.

#### **2. SHEETING AND BRACING**

The Contractor shall furnish, put in place, and maintain sheeting and bracing if required to support the sides of the excavation and prevent loss of ground which could damage or delay the work or endanger adjacent structures.

### **3. DRAINAGE**

The Contractor shall furnish all materials and equipment and perform all incidental work required to install and maintain the drainage system he proposes for handling any ground water or surface water encountered. The Contractor must alter his drainage methods if, in the opinion of the Superintendent of Public Works, the trench bottom is unsatisfactory.

### **4. BACKFILLING**

As soon as practicable after the pipe has been laid, jointed, properly bedded (and tested, if required) backfilling shall begin and thereafter be prosecuted expeditiously.

Sand or  $\frac{3}{4}$  minus stone, which is free of other foreign material, shall be carefully placed to a depth of 1 ft. over the top of the pipe.

When the pipes are laid cross-country, the remainder of the trench shall be filled with approved material.

Wherever a loam or gravel surface exists prior to cross-country excavations, it shall be removed, conserved, and replaced to the full original depth. In some areas, it may be necessary to remove excess material during the cleanup process, so that the ground may be restored to its original level and condition. If the Contractor prefers not to store loam or topsoil, he may replace it with loam or topsoil of equal quality and quantity.

When the pipes are laid in streets, the trench above the 1ft. of selected material above the pipe shall be backfilled with suitable material in layers not to exceed 3 ft. and thoroughly compacted by mechanical equipment. The last 1 ft. shall be backfilled with compacted bank-run gravel unless the Superintendent of Public Works directs an increase.

Fragments of ledge and boulders not greater than 6 inches in. diameter may be used in trench backfill providing that the quantity, in the opinion of the Board or its designee, is not excessive. Rock fragments shall not be placed until the pipe has at least 2 ft. of earth cover. Small stones and rocks shall be placed in thin layers alternating with earth to insure that all voids are completely filled. Large masses of filling shall not be dropped into the trench in a manner to endanger the pipe.

Bituminous paving shall not be placed in the backfill. Frozen material shall not be used under any circumstances.

All road surfaces shall be groomed immediately after backfilling. Dust control measures shall be employed at all times to the satisfaction of the Board or its designee.

## **SECTION 2C: EXCAVATION BELOW NORMAL GRADE**

### **1. SCOPE OF WORK**

If, in the opinion of the Board or its designee, the material at or below the normal grade of the bottom of the trench (6" below grade of pipe bottom) is unsuitable for foundation, it shall be removed to the depth as directed by the Board or its designee and replaced by screened-gravel or as specified below.

### **2. EXCAVATION AND BACKFILLING**

Excavation and backfilling below grade shall conform to all applicable provisions under Section 2B, including the requirements for sheeting and bracing and maintaining the trench.

### **3. FILL**

Normally fill shall be screened gravel, as specified under Section 2D, however, if the material at the level of trench bottom consists of fine sand, sand and silt or soft earth which may work into the screened gravel notwithstanding effective drainage, the subgrade material shall be removed to the extent directed and the excavation refilled with coarse sand or a mixture graded from coarse sand to fine pea stone, to form a filter layer preserving the voids in the gravel bed of the pipe. The Board or its designee, before placement, shall approve the composition and gradation of gravel. Gravel shall be placed in 6-in. layers thoroughly compacted.

### **4. EXCAVATION WITHIN PUBLIC WAYS**

A permit shall be obtained from the Department of Public Works before any excavation can begin within any town-accepted street. The work shall be performed in accordance with the permit.

### **5. GRAVEL FILL**

#### **Scope of Work**

Screened gravel shall be used for bedding pipe, as replacement material for ordered excavation below grade and as gravel cushion in ledge excavation. Bank run gravel may be used for the roadway sub-base under the pavement, replacement of unsuitable material and for similar uses. The Superintendent of Public Works may order the use of gravel for purposes other than those specified if, in their opinion, such use is advisable.

#### **Bank-run Gravel**

Bank-run gravel shall consist of hard, durable stone and coarse sand, essentially free from frost, frozen lumps, loam and clay, uniformly graded and containing no stone having any dimension greater than 3-in. The grading of sizes and material shall be such that the gravel may be thoroughly consolidated.

25 to 70% shall pass the No. 4 sieve and not more than 12% of the material passing the No. 4 sieve shall pass the No. 200 sieve.

### **Screened Gravel**

Screened gravel conforming to ASTM C33 stone size No. 67 shall consist of hard, durable, round particles of proper size and gradation, and it shall be free from sand, loam, clay excess fines, and deleterious materials. The size of the particles shall be uniformly graded gravel such that not less than 100 per cent of the particles will pass a 3/4-in sieve and not more than 5 percent will pass a No. 4 sieve. Quality and gradation shall be acceptable to the Superintendent of Public Works.

## **SECTION 2D: ROCK AND BOULDER EXCAVATION**

### **1. SCOPE OF WORK**

This section includes the excavation, disposal and replacement of rock and boulders.

### **2. DEFINITIONS**

Rock excavation shall mean rock which, in the opinion of the Superintendent of Public Works, requires drilling and blasting for its removal.

Boulder excavation shall mean boulders exceeding 1 cu. yd. in volume, which can be excavated without blasting.

### **3. BLASTING**

All blasting operations shall be conducted in full compliance with all laws of the State, local ordinances, and regulations and with all possible care to avoid injury to persons and property.

### **4. DISPOSAL AND REPLACEMENT OF ROCK**

Rock and boulders exceeding 3 inches in diameter shall not be used for backfilling. Excavation where rock is removed shall be backfilled with acceptable surplus excavation or borrow.

## **SECTION 2E: PAVED ROADWAY REHABILITATION**

### **1. GRAVEL SUB-BASE**

Backfilling of trenches in streets shall be as specified in Section 2B. The top of the trench shall be backfilled with 1 ft. of bank-run gravel as specified in Section 2D. The gravel shall be thoroughly compacted to the satisfaction of the Superintendent of Public Works.

### **2. CUTTING AND REMOVING PAVEMENT**

The Contractor shall remove only as much existing pavement as necessary to do the work. Where excavations are to be made in paved surfaces, he shall cut the pavement ahead of the excavation by sawing before breaking the pavement within the excavated limits for removal. All pavement

shall be cut by sawing. Sawing and removal shall be done so as to produce clean, uniform, vertical edges without damage to the remaining pavement. Pavement removed shall not be mixed with other excavated material but shall be disposed of away from the site of the work before the remainder of the excavation is made. The Contractor is responsible for the removal and disposal of the old pavement.

### **3. GRADING**

- a. The applicant shall employ at his own expense an engineer or land surveyor to set all lines and grades in a manner satisfactory to the Superintendent of Public Works. The applicant shall obtain all required permits from the Department of Public Works.
- b. The entire area within the right-of-way lines shall be cleared and grubbed of all stumps, brush, roots, boulders, and like material. All material shall be removed to a minimum of 15 1/2 inches depth below the finished grade of the roadway or filled to a subgrade parallel to the finished grade. (Refer to Table 3.)
- c. All unsuitable material below the subgrade shall be removed and shall be replaced by material conforming to the Standard Specifications.
- d. If required by the Superintendent of Public Works at the design or construction phase, the developer shall have a groundwater study performed by a Registered Geotechnical Engineer, who shall make recommendations as to the requirement, location and spacing of an adequate system of underdrains to remove groundwater from the subgrade of subdivision streets. Such underdrains shall be installed and tested at the time of construction of the streets and all installation shall be subject to approval of the Superintendent of Public Works.
- e. Before the gravel base course is installed, the sub-base shall be shaped to conform to the proposed cross section of the road and shall be compacted in layers not exceeding 12 inches in depth except the last layer shall not exceed 4 inches in depth.
- f. Where fill is required, it shall be placed in layers not deeper than 12 inches and shall be compacted as specified herein.

### **4. BINDER COURSE**

- a. The binder course shall be Class I bituminous concrete base course, Type I-1, furnished and installed in accordance with the MassDOT Standard Specifications.
- b. In lieu of feathering the pavement around castings, the structures must be set at the same height as the binder course and reset at the time of placement of the wearing course.
- c. The construction of bituminous concrete pavement shall terminate November 15 and shall not be resumed prior to April 1 except as determined in writing by the Superintendent of Public Works.

d. The temperature of the mixture, within a tolerance of plus or minus 15 degrees Fahrenheit (F), when delivered to the site, shall be governed by the temperature of the base upon which the mix is placed in accordance with the Standard Specifications.

e. When the air temperature falls below 50 degrees F, extra precautions shall be taken in drying the aggregates, controlling the temperature and compacting the mixture.

f. The mixture shall be placed only upon approved surfaces that are clean from foreign materials and are dry.

g. No mixture shall be placed unless the breakdown and intermediate rolling can be completed by the time the material has cooled to 170 degrees F and provided that the density of the completed pavement attains at least 95 percent of the laboratory compacted density.

## **5. WEARING COURSE**

The wearing course shall be Class I, bituminous concrete pavement, Type I-1, furnished and installed in accordance with the MassDOT Standard Specifications.

## **6. CURBING**

a. Slope-face granite edging shall be used for median strips and islands only.

b. Vertical granite curbing shall be VA-4; slope-face granite edging shall be Type VB as specified in the MassDOT Standard Specifications.

## **7. DRIVEWAY APRONS**

Driveway aprons shall be paved in the same manner as, and in the same thickness of, the street, and carefully graded to provide the unimpeded flow of runoff along the gutter.

## **SECTION 3: PIPE REQUIREMENTS**

### **SECTION 3A: P.V.C. SEWER PIPE**

#### **1. POLY VINYL CHLORIDE PIPE (P.V.C.)**

All P.V.C. pipe and fittings shall conform to the most recent requirements of ASTM Specifications for Type PSM Poly Vinyl Chloride (P.V.C.) Sewer Pipe and Fittings.

P.V.C. Pipe conforming to Designation D-3034 shall be SDR-35 or greater.

P.V.C. Pipe conforming to Designation F-789 shall be PS-46 or greater. All P.V.C. Pipe shall have elastomeric gasket joints which shall conform to ASTM Specifications for sewer pipe joints using elastomeric seals designation D-3212. Manufacturer's certificate of compliance shall be furnished to the Superintendent of Public Works prior to installation. Methods of shipping and storage on site shall be such as to avoid injury to the pipe. Damaged pipe shall be rejected and removed from the job. Solvent cement joints shall not be allowed.

Minimum "pipe stiffness" (F/y) at 5% deflection shall be 46 psi for all sizes when tested in accordance with ASTM Method of Test D-2412, "External Loading Properties of Plastic Pipe by Parallel Plate Loading".

Each length of pipe in compliance with this specification shall be clearly marked at intervals of 5 feet or less. Pipe conforming to designation D3034 shall be marked with the manufacturer's name or trademark, nominal pipe size, the P.V.C. cell classification (i.e. 12454-B), the legend "Type PSM SDR-35 P.V.C. Sewer Pipe," and "ASTM D-3034". Pipe conforming to Designation F-789 shall be marked with the manufacturer's name or trademark, the P.V.C. cell classification (i.e. 12164-B), Modulus Indicator (i.e. T-1, T-2, or T-3), the legend "PS-46 P.V.C. Gravity Sewer Pipe," and "ASTM F-789".

P.V.C. pipe used for force main shall conform to ASTM D-2241 and D-1784 (Class 12454-B) and safety factor of 2.5 shall be used for pressure rating determination with a standard dimension ratio (SDR) no higher than 26.

#### **2. P.V.C. FITTINGS**

Wye branches and bends shall have elastomeric gasket joints, and conform to "ASTM D-3034" (SDR-35 only) or ASTM F-789. They shall be manufactured and furnished by the pipe supplier (or approved equal) and have bell and spigot joints compatible with that of the pipe.

Each fitting in compliance with this specification shall be clearly marked with manufacturer's name or trademark, nominal size, material designation "P.V.C.", "PSM" (for SDR-35 only), and "ASTM D-3034" or "ASTM F-789". All fittings shall be either SDR-35 or PS-46 and shall be the same as the pipe being used.

#### **3. JOINTS FOR P.V.C. PIPE**

Joints shall be of the bell and spigot type with a gasket as previously specified. No solvent joints are permissible. Manufacturer's instructions shall be followed.

#### **4. ALLOWABLE DEFLECTION**

A maximum of 7 1/2% deflection in the pipe diameter will be allowed. Deflection shall be measured as the reduction in the vertical diameter of the pipe.

### **SECTION 3B: CEMENT LINED DUCTILE IRON SEWER PIPE**

#### **1. CEMENT LINED DUCTILE IRON PIPE**

Cement lined ductile iron pipe and fittings shall conform to ANSI Standards A21.50 and A21.51. Cement-mortar lining shall be double thickness and conform to ANSI A21.4. Manufacturer's certificate of compliance shall be furnished to the Superintendent of Public Works prior to installation. Methods of shipping and storage on site shall be such as to avoid injury to the pipe. Damaged pipe shall be rejected and removed from the job site.

Cement lined ductile iron pipe and fittings shall be Class 50, unless otherwise noted on the plans.

Each length of pipe shall be marked with the manufacturer, trade name, and class.

#### **2. CEMENT LINED DUCTILE IRON FITTINGS**

Fittings shall conform, to ANSI A21.11 and shall be of the same class and type as the pipe on which they are used.

#### **3. JOINTS FOR CEMENT LINED DUCTILE IRON PIPE**

Joints shall be rubber gasket oil resistant joints of the push-on type in conformance with ANSI AWWA C-111 (A21.11). Manufacturer's instructions shall be followed.

### **SECTION 3C: INSTALLATION OF SEWER PIPE**

#### **1. PIPE HANDLING**

The Contractor shall arrange for the delivery of the pipe sections at approved locations in the vicinity of that portion of the Sewer line in which the pipe sections are to be laid. To this end, he shall do such work as is necessary for access and for delivery of the pipe. Pipes shall be stored in an approved, orderly manner so that there will be a minimum of re-handling from the storage area to the final position in the trench and so that there is a minimum of obstruction and inconvenience to any kind of traffic.

Deliveries shall be scheduled so that the progress of the work is at no time delayed and also so that large quantities of pipe shall not be stored for excessive lengths of time in crowded locations or in locations where large storage areas might be considered objectionable. Storage of pipe will

be restricted to approved or permitted areas. PVC pipe shall be protected from sunlight during storage.

The spigot end of all pipes shall be stored on a block to prevent damage. The bell or groove end of each length of R.C. pipe shall be placed in storage on a block to prevent damage. Care shall be taken that the lengths do not roll together.

Each pipe section shall be handled into its position in the trench in such manner and by such means as the Superintendent of Public Works approves as satisfactory, and these operations will be restricted to those considered safe for the workmen and such as to cause no injury to the pipe or to any property.

The Contractor will be required to furnish slings, straps and/or approved devices to provide satisfactory support of the pipe when it is lifted from delivery areas to the trench shall be restricted to operations which can cause no injury to the pipe units.

The pipe shall not be dropped from trucks or into the trench.

The Contractor shall have on the Job-site with each pipe-laying crew all the proper tools to handle and cut the pipe. The use of hammer and chisel, or any other method, which results in rough edges, chips and damaged pipe, shall be prohibited.

Damaged pipe coating and/or lining shall be restored before installation is approved or directed by the Superintendent of Public Works.

## **2. CONTROL OF ALIGNMENT AND GRADE**

The location of the pipe, manholes, and other appurtenances shall be established in accordance with the contract drawings. Benchmarks shall be established along the route of the pipeline at convenient intervals for use in checking the pipe and manhole invert and other elevations throughout the project.

The Contractor may use a laser beam to assist in setting the pipe provided he can demonstrate satisfactory skill in its use.

The use of string levels, hand levels, carpenters levels or other relatively crude devices for transferring grade or setting pipe will not be permitted.

## **3. PREPARATION OF PIPE BEDDING**

As soon as excavation has been completed to proper depth, as shown on the permit conditions, a layer of bedding material shall be placed to the elevation necessary to bring the pipe to grade and compacted. It shall be the Contractor's responsibility to control any water in the trench below the pipe invert. If directed by the Superintendent of Public Works, the Contractor shall place concrete, clay or other impermeable material in the bedding at intervals to prevent horizontal movement of

the groundwater which might induce settling of the bed, or make it difficult to handle water in the trench.

#### **4. LAYING PIPE**

Each pipe length shall be inspected for cracks, defects in coating or lining, and any other evidence of unsuitability.

Pipe shall be laid in the road and at no time shall water in the trench be permitted to flow into the Sewer.

The pipe shall then be laid on the trench bedding as shown on the permit conditions, and the spigot pushed home. Jointing shall be in accordance with the manufacturer's instructions and appropriate ASTM Standards, and the Contractor shall have on hand for each pipe-laying crew, the necessary tools, gauges, pipe cutters, etc., necessary to install the pipe in a workmanlike manner. Pipe laying shall proceed upgrade with spigot ends pointing in the direction of flow, unless otherwise approved by the Superintendent of Public Works.

Blocking under the pipe will not be permitted except where a concrete cradle is proposed, in which case pre-cast concrete blocks shall be used.

After the pipe has been set to grade, additional bedding material shall be placed in 6-inch layers up to the spring line of the pipe. Tamping bars shall be carefully employed to assure compaction of the bedding under the lower quadrants of the pipe.

After this, the bedding material shall be carefully placed in 6-inch layers to a depth of 12 inches over the crown of the pipe. Each layer shall be thoroughly compacted with mechanical equipment. Care shall be taken that the equipment does not damage the pipe.

At this point, the pipe shall be checked for line and grade and any debris, tools, etc., shall be removed.

If inspection of the pipe is satisfactory, the Contractor may then refill or backfill the remainder of the trench in accordance with the Standard Trench Section.

At any time that work is not in progress, the end of the pipe shall be suitably closed to prevent the entry of animals, earth, etc.

At the end of each day's work or at intervals of no more than 200 feet of pipe, the Superintendent of Public Works, with the Contractor, will inspect the pipe for alignment with lamps or mirrors. Unsatisfactory work shall be dug up and re-installed to the satisfaction of the Superintendent of Public Works.

## **5. COVER OVER PIPE**

Pipe shall have five feet of cover measured to finish grade of the street. Pipe to be hand-covered one foot with sand or stone free gravel and compacted and tamped around pipe to give good support and protection.

In case of any excavations in swamp or when unsuitable material is encountered, the Contractor shall replace the same with a good material to provide proper support and alignment of the pipe line. Trench backfill shall be suitable material taken from the excavation, approved common borrow or gravel hauled in. No mud, frozen earth, stones larger than eight inches or other objectionable material is to be used for refilling.

### **SECTION 3D: SEWER SERVICE CONNECTIONS**

#### **1. MATERIALS**

Materials for private house services, wye branches, and chimneys shall be of the same material and quality as that for the public Sewer. Concrete for encasement shall be Class A (3000 psi) concrete.

#### **2. INSTALLATION**

Installation shall be as shown on the approved permit. House services shall not be connected directly to manholes, unless otherwise approved by the Superintendent of Public Works. The opening of the house service, wye branch, or chimney shall be plugged with a suitable watertight cap or plug.

The minimum size for a residential building sewer shall be 4 inches and commercial building sewer shall be 6 inches.

The minimum slope for the Building Sewer shall be  $\frac{1}{4}$  inches per foot, unless otherwise approved by the Superintendent of Public Works.

Before backfilling, the Contractor shall notify the Inspector and Superintendent of Public Works so that he may make the necessary measurements to locate the opening later. In addition, an approved ferrous rod or pipe shall be placed over the plugged opening at the property line, extending to within 2 inches of the final ground surface.

### **3. SADDLE CONNECTIONS**

On reinforced concrete, and cement lined ductile iron sewers, saddle connections may be installed in lieu of wye branches using cast iron branch connections conforming to ASTM A-48, Class 50. These connections shall be fastened by a stainless steel strap, stainless steel nuts and bolts, and watertight gasket between the main pipe and the fitting, and shall have a rubber gasket providing a watertight seal with the service pipe. Holes shall be made only in a manner recommended by the pipe manufacturer and approved by the Board or its designee. The hole in the main must be the full diameter of the inside of the fitting to prevent obstructing the flow. The entire connection must be watertight.

Saddles may not be used on PVC sewer.

### **SECTION 3E: PROXIMITY TO WATER MAINS**

Should construction operations reveal or expose a waterline main or service running approximately parallel and less than 10 feet horizontally from the proposed Sewer installation and where it is not practicable to relocate the Sewer, the applicant will be required to coordinate with the Superintendent of Public Works and the appropriate Water District, and/or other utilities. At a minimum, the following methods of protection must be employed:

If five (5) feet of horizontal separation cannot be achieved, the Sewer shall be encased in concrete, as shown on these drawings; or else, ductile iron pipe of the same size shall be utilized. Appropriate manufactured fittings shall be employed to adapt the iron pipe to the contract Sewer pipe.

- a) Whenever the waterline crosses over the new Sewer with less than 18 inches of separation, the Sewer pipe for a distance of 9 feet on each side of the waterline shall be class 52 ductile iron pipe. Appropriate manufactured fittings shall be employed to adapt the iron pipe to the contract Sewer pipe.
- b) As an alternative, the waterline may be raised, if feasible, to achieve the required separation. Should the waterline in either situation be at or below the sewer elevation, the waterline or the Sewer must be relocated to achieve 10-ft. horizontal separation or 18-inches vertical separation.

### **SECTION 3F: MANHOLES**

#### **1. GENERAL**

The work covered by this section includes the furnishing of all plant, labor, equipment, appliances, and materials, and performing all operations in connection with the satisfactory installation of manholes, and all incidental work, complete, in strict accordance with the specifications and applicable drawings and permit details approved by the Superintendent of Public Works.

The Contractor shall provide the Superintendent of Public Works with shop drawings of all precast material and a description of all methods of jointing he proposes to use on this portion of the contract.

It is the intention of these specifications that the manhole, including all component parts, have adequate space, strength and leakproof qualities considered necessary for the intended service. Space requirements and configurations shall be as shown on the drawing. Manholes may be an assembly of pre-cast sections with or without steel reinforcement, with approved jointing.

In any approved manhole, the complete structure shall be of such material and quality as to withstand loads of 8 tons without failure and prevent leakage in excess of one gallon per day per vertical foot of manhole, continuously for the life of the structure. A period generally in excess of 25 years is to be understood in both cases. It is further intended that any pointing of joints shall be accomplished after leakage tests have been satisfactorily completed.

## **2. DESCRIPTION**

Manholes shall be constructed at the locations, to the elevations, and in accordance with notes and details show on the drawings as well as the permit.

Manholes shall be as shown on the permit and shall conform to the following:

- a) Barrels and cone sections shall be pre-cast reinforced or nonreinforced concrete.
- b) Base sections shall be monolithic to a point 6" above the crown of the incoming pipe, and shall be pre-cast reinforced concrete or precast non-reinforced concrete.
- c) Horizontal Joints between sections of pre-cast concrete barrels shall be of an overlapping type and, shall, in general, depend for watertightness upon an elastomeric or mastic-like sealant.
- d) Pipe to manhole joints shall depend for water-tightness upon either an approved non-shrinking mortar, elastomeric sealant, or elastomeric, rubber, sleeve with watertight Joints at the manhole opening and pipe surfaces.
- e) Cone sections shall be eccentric.
- f) There shall be no manhole steps.
- g) All pre-cast sections and bases shall have the date of manufacture and the name or trademark of the manufacturer impressed or indelibly marked on the inside wall.

## **3. MATERIALS**

Pre-cast concrete barrel sections, cones, and bases shall conform to ASTM C-478 except as may be otherwise shown on the permit.

Manhole frame and cover shall provide a 30" diameter clear opening. The cover shall have the letter "S" or the word Sewer in 3" letters cast into the top surface. Covers shall have two lift holes, 180 degrees apart, on the perimeter.

The castings shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sandholes, and defects of every nature, which would render them unfit for the service for which they are intended. Contact surfaces of covers and frame seats shall be machined at the foundry, before shipment to prevent rocking of covers in any orientation.

All castings shall be thoroughly cleaned and subject to a careful hammer inspection.

Castings shall be at least Class 30 conforming to the ASTM Standard Specification for Gray Iron Castings, Designation A48.

Before being shipped from the foundry, castings shall be sandblasted and given two coats of coal-tar-pitch varnish, applied in a satisfactory manner so as to make a smooth coating, tough, tenacious, and not brittle or with any tendency to scale off.

#### **4. INSTALLATION OF MANHOLE BASES AND SECTION**

Pre-cast bases shall be placed on a 6" layer of compacted bedding material as described below. The excavation shall be properly de-watered while placing bedding material and setting the base or pouring concrete. Waterstops shall be used at the horizontal Joint of cast-in-place manholes.

Inlet and outlet stubs shall be connected and sealed in accordance with the manufacturers recommended procedure, and as shown on the permit , or cast integrally with the cast base.

Barrel sections and cones of the appropriate combination of heights shall then be placed, using manufacturers recommended procedure for sealing the horizontal Joints, and as shown on the permit or the remaining barrel of the manhole shall be cast above the base.

A vacuum test shall then be made.

Following satisfactory completion of the vacuum test, the frame and cover shall be placed on the top or some other means of preventing accidental entry by unauthorized persons, children, animals, etc., until the Contractor is ready to make final adjustment to grade.

Bedding Material shall consist of crushed stone and/or natural stone graded to the following specifications:

100% passing	1"	screen
90-100% passing	3/4"	screen
20- 55% passing	3/8"	screen
0-10% passing	#4	sieve
0- 5% passing	#8	sieve

#### **5. BRICK MASONRY**

This section applies to brick masonry, for the shelf, invert, and grade adjustment.

Brick: The brick shall be sound, hard, and uniformly burned brick, regular and uniform in shape and size, of compact texture, and satisfactory to the Board or its designee. Brick shall comply with the ASTM Standard Specifications for Sewer Brick (made from clay or shale), Designation C32, for Grade SS, hard brick.

Rejected brick shall be immediately removed from the work site.

Mortar shall be composed of Portland cement, hydrated lime, and sand, in the proportions of 1 part cement to 1/2 part lime to 4 1/2 parts sand, (by volume). The proportion of cement to lime may vary from 3-:1/4 for hard brick to 1:3/4 for softer brick, but in no **case shall** the volume of sand exceed three times the sum of the volume of cement and lime.

Cement shall be Type II Portland cement conforming to ASTM C-150, Standard specifications for Portland Cement.

Hydrated lime shall be Type S conforming to the ASTM Standard Specification for Hydrated Lime for Masonry Purposes, Designation C207.

Sand shall consist of inert natural sand conforming to the ASTM Standard Specifications for Concrete (Fine) Aggregates, Designation C33 as follows:

**Grading:**

<u>Sieve</u>	<u>Percent Passing</u>
3/8	100 %
4	95-100%
8	80-100%
16	50-85%
50	10-30%
100	2 -10%
Fineness Modulus	2.3 -3.1

Laying Brick: Only clean bricks shall be used in brickwork for manholes. The brick shall be moistened by suitable means, as directed, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.

Each brick shall be laid in a full bed and joint of mortar without requiring subsequent grouting, flushing, or filling, and shall be thoroughly bonded as directed.

Curing: Brick masonry shall be protected from too rapid drying by the use of burlap bagss kept moist or by other approved means, and shall be protected from the weather and frost, all as required.

## **6. SETTING MANHOLE FRAMES AND COVERS**

Manhole frames shall be set with the tops conforming accurately to the grade of the pavement or finished ground surface or as indicated-on the drawings. Frames shall be set concentric with the top of the masonry and in a full bed of mortar so that the space between the top of the manhole masonry and the bottom flange of the frame shall be completely filled and made watertight. A thick ring of mortar extending to the outer edge of the masonry shall be placed all around and on the top of the bottom flange. The mortar shall be smoothly finished and have a slight slope to shed water away from the frame.

A minimum of 8" and a maximum of 12" of brick and mortar shall be allowed for grade adjustment.

## **SECTION 3G: FINAL SEWER TESTS**

### **1. GENERAL**

Work Included:

- i. Final Sewer testing work includes the performance of testing and inspecting each and every length of Sewer pipe and each Item of appurtenant construction.
- ii. Perform testing at a time approved by the Superintendent of Public Works, which may be during the construction operations, after completion of a substantial and convenient section of the work, or after the completion of all pipe-laying operations.
- iii. Provide all labor, pumps, pipe, connections, gauges, measuring devices and all other necessary apparatus to conduct tests.

### **2. PERFORMANCE**

#### **a. General**

- i. All "sewers", manholes, appurtenant work, in order to be eligible for approval by the Board or its designee, shall be subjected to tests that will determine the degree of watertightness, horizontal and vertical alignment, and deflection (P.V.C. sewers only).
- ii. Thoroughly clean and/or flush all Sewer lines to be tested, in a manner and to the extent acceptable to the Board or its designee, prior to initiating test procedures.
- iii. Perform all tests and inspections only under the direct supervision of the Superintendent of Public Works.
- iv. Perform Testing by test patterns determined or approved by the Superintendent of Public Works.
- v. Remedial Work:
  - Perform all work necessary to correct deficiencies discovered as a result of testing and/or inspections.
  - Completely re-test all portions of the original construction on which remedial work has been performed.
  - Perform all remedial work and re-testing in a manner and at a time approved by the Board or its designee.

b. Leakage Tests (Gravity Sewers):

- i. Test all gravity Sewer lines for leakage by conducting low pressure air tests conforming to ASTM C828 after the installation of house service fittings and leads and after completely backfilling the Sewer line trench.
- ii. Equipment:
  - a. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected.
  - b. Pneumatic plugs shall resist internal test pressures without requiring external bracing or blocking.
  - c. All air used shall pass through a single central panel.
  - d. Connect 3 individual hoses:
    - From the control panel to the pneumatic plugs for inflation.
    - From the control panel to the sealed sewer line for introducing the low pressure air.
    - From the sealed sewer line to the control panel for continually monitoring air pressure rise in the sealed line.
- iii. Groundwater Conditions:
  - a. In areas where groundwater exists, and at the time of installing the sewer line, install a 1/2 inch diameter capped pipe nipple, approximately 10 inches long, through the manhole wall on top of one of the Sewer lines entering the manhole.
  - b. Immediately prior to performing the line acceptance test, determine the groundwater by removing the pipe cap, blowing air through the pipe nipple into the ground to clear it, and then connecting a clear plastic tube to the nipple.
  - c. Hold the tube vertically and measure the height in feet. Divide this height by 2.3 to establish the pounds of groundwater pressure to be added to the air pressure test readings. (Example: Height of water is 11 1/2 feet, added groundwater pressure is 5 psig, minimum air pressure is 2.5 psig; therefore, the total minimum acceptable pressure is 7.5 psig).
- iv. Testing Pneumatic Plugs:
  - a. Seal test all pneumatic plugs prior to using them in the actual test.
  - b. Lay one length of pipe on the ground and seal both ends with the pneumatic plugs to be tested.
  - c. Pressurize the sealed pipe to 5 psig.
  - d. The pneumatic plugs are acceptable if they remain in place without bracing.
- v. Testing Sewer Pipeline:
  - a. After the trench has been backfilled, the sewer pipe cleaned and the pneumatic plugs checked, place the plugs in the sewer line at each manhole and inflate them.
  - b. Introduce low-pressure air into the sealed sewer pipeline until the air pressure reaches 4 psig greater than the average groundwater pressure.
  - c. Allow a minimum of 2 minutes for the air pressure to stabilize to a minimum of 3-5 psig greater than the ground-water pressure.

- d. After the stabilization period, disconnect the air hose from the control panel to the air supply.
- e. The pipeline will be acceptable if the pressure decrease is not greater than 1/2 psig in the time stated in the following table:

<u>Pipe</u>	<u>Diameter (inches)</u>	<u>Time (minutes)</u>
	4	2.0
	6	3.0
	8	4.0
	10	5.0
	12	5.5
	14	6.5
	15	7.0
	16	7.5
	18	8.5
	20	9.5
	21	10.0
	24	11.5
	27	12.5
	30	14.0
	36	17.0

- vi. Testing Force Mains:
  - a. Force mains shall be tested in accordance with Section 4 of American Water Works Association Standard C600 "Installation of Cast Iron Water Mains", at a pressure equal to 150% of the design operating total dynamic head.
- vii. Test Results:
  - a. If the installation fails the low pressure air test, determine the source of leakage.
  - b. Repair or replace all defective materials and/or workmanship and repeat low pressure air test.

c. Deflection Tests (P.V.C. Sewers Only)

- i. Test all P.V.C. Sewer lines for deflection by conducting deflection tests using a rigid "Go-No Go" deflection gauge made as recommended by Johns-Manville or by an approved deflectometer.
- ii. The acceptance limit for deflection tests of installed PVC Pipe Designation D-3034 and F-789, 4"-15" diameters, shall be 7 1/2% of the average inside diameter of the pipe. A test shall be conducted after a minimum of 30 days following their installation.
- iii. Go-No Go Device
  - a. Pull a line through the pipe with which to pull the Go-No Go device using one of the following methods.
    - (1) Attach the pull line to the nozzle end of a hydro cleaner before the cleaning cycle starts. As the hose is pulled through the line, it will carry the pull line to the next manhole where it can be tied off.

- (2) A parachute device can be blown through the line with a lightweight string attached. The pull line can then be attached to the string and pulled manually through the line.
    - (3) If water is available, a lightweight string can be floated through the pipe. The pull line can then be attached to the string and pulled manually through the line.
  - b. Attach a pull line to each end of the device to facilitate removal if an obstruction is encountered.
  - c. Pull the gauge through the line by hand using a smooth and easy motion.
  - d. If an obstruction is encountered, pull lightly to see if the gauge will clear the obstruction.
  - e. If the gauge will not clear the obstruction, record the distance from the manhole and pull the gauge back out.
- iv. Repair or replace all defective materials and/or workmanship and repeat the deflection test on the repaired line.

d. Alignment Tests (Gravity Sewers):

- i. Perform tests for the correctness of horizontal and vertical alignment on each and every length of gravity sewer pipeline between manholes.
- ii. Beam a source of light, acceptable to the Superintendent of Public Works, through the pipeline and directly observe the light in the manhole at the opposite end of each test section.

e. Inspection of Appurtenant Installations:

- i. Completely inspect, at a time determined by the Superintendent of Public Works all manholes and inlets to ascertain their compliance with the Drawings and Specifications.
- ii. Provide access to each manhole and inlet and check the following characteristics:
  - a. Shape and finish of invert channels,
  - b. Watertightness and finish of masonry structures,
  - c. Location, type, and attachment of stops,
  - d. Elevation and attachment of frames, covers, and openings
  - e. Pattern and machining of covers, and
  - f. Drop connection arrangements.

f. Manhole Leakage Tests

- i. Test manholes prior to backfilling, mortaring joints, and installing the bench and inverts.
- ii. A vacuum pressure test may be carried out to the following criteria:
  - a. Initial vacuum gage test pressure shall be 10" Hg. Test hold time for a 1" Hg. pressure drop to 9" Hg shall be:
    - At least 2 minutes for 10 feet deep manholes;
    - At least 2-1/2 minutes for 10-15 feet deep manholes; and
    - At least 3 minutes for 15-25 feet deep manholes.

- b. If the pressure drop exceeds the above limits the unit shall be repaired and re-tested and if a unit fails to meet a 1" pressure drop in 1 minute, the unit shall be water tested per (1) or (2) above.
- iii. Correct all leakage by reconstruction using new materials. Using leadwool, expanding mortar and other repair methods shall not be permitted.
- iv. As an alternative, perform an exfiltration test by plugging all pipes and other openings and filling the manhole with water to the top of the cone section. After 15 minutes, if there is no visible leakage (no water visibly moving down the surface of the manhole) the manhole shall be considered watertight and backfilling may proceed. Any visible leakage into and out of manholes shall be considered unsatisfactory.

g. Re-testing Approved Lines

- i. Prior to the final acceptance of any sewer lines, the Board or its designee may require re-testing of up to 10% of all lines installed when more than 30 days have lapsed from the time of initial testing or, if in the opinion of the Superintendent of Public Works, sufficient reason exists to suspect settling has occurred.
- ii. If, during such re-testing, any lines are found to exceed the 7.5% maximum deflection, the Superintendent of Public Works may require all lines to be re-tested.

**SECTION 4: OPERATION OF LAW**

**SECTION 4A: PROTECTION FROM DAMAGE**

**1. PROHIBITED ACT**

No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the sewer works. Any person violating this provision shall be subject to charges of disorderly conduct or the Penalties as herein below stated.

**2. TRESPASS**

No unauthorized person shall enter or remain in or upon any land or structure of the sewer works. Any person violating this provision shall be subject to charges of trespass or the Penalties as herein below stated.

**SECTION 4B: POWERS AND AUTHORITY OF INSPECTORS,  
AGENTS, or DESIGNEES**

**1. PERMISSION FOR INSPECTION**

Duly authorized employees of the Town bearing proper credentials and identification shall be permitted to enter, at reasonable times, all properties for the purposes of inspection, observation, measurement, repair, maintenance, sampling, and testing in accordance with the provisions of this ordinance. Authorized representatives shall have no authority to inquire into any metallurgical, chemical, oil, refining, ceramic, paper or other industrial activity beyond that having direct bearing on the kind and source of discharge to the Public Sewers, watercourses, natural outlets or facilities for sewage treatment.

**2. REQUIREMENTS TO OBSERVE SAFETY RULES**

While performing the necessary work on private properties referred to as under the powers and authority of inspectors in "Permission for Inspection", the duly authorized representatives shall observe all safety rules applicable to the premises established by the person, and the person shall be held harmless for injury or death to the Town employees, and the Town shall indemnify the person against loss or damage to its property by Town employees and against liability claims and demands for personal injury or property damage asserted against the person and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the person to maintain safe conditions as required herein.

**3. AUTHORITY IN EASEMENTS ACQUIRED BY THE TOWN**

The members of the Board, the Board or its designee and other duly authorized representatives of the Town bearing proper credentials and identification shall be permitted to enter upon all private properties through which the Town holds a duly acquired easement for the purposes of, but not

limited to, inspection, observation, measurement, sampling, repair maintenance, and testing of any portion of the sewage works lying within said easement. All entries and subsequent work, if any, on said easement, shall be done in full accordance with the terms of the duly acquired easement pertaining to the property involved.

## **SECTION 4C: PENALTIES**

### **1. WRITTEN NOTICE OF VIOLATION**

Any person found to be violating any provision of this Ordinance shall be served by the Town with written notice stating the nature of the violation and providing time limits as stated herein for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.

### **2. PENALTY FOR CONTINUED VIOLATION**

Any person who shall continue any violation beyond the time limit provided for penalties in the “Written Notice of Violation”, shall be fined in accordance with Town of Deerfield Bylaws [Chapter 123 Noncriminal Disposition](#) and/or Chapter 150 Sewers.

Each day in which any such violation shall continue shall be deemed a separate offense. If the violation continues, the Board shall direct Town Counsel to seek an injunction in the Superior Court of the Commonwealth of Massachusetts requiring the offender to cease all violations. Any violation which includes the failure of the user to pay the User Fee or other Fee assessed hereunder may be enforced in accordance with G.L. c. 83 §16B and which may include committing said amounts outstanding to lien or termination of service to the user all in accordance with said statute or policies adopted by the Board.

### **3. LIABILITY**

Any person violating any of the provisions of this ordinance shall become liable to the Town for any expense, loss or damage occasioned by the Town by reason of such offense.

### **4. INVALIDATION OF SECTION**

The invalidity of any section, clause, sentence, or provision of these Regulation shall not affect the validity of any other part of these Regulations which can be given effect without such invalid part or parts.

### **5. CHANGES IN REGULATION**

The Board may from time to time, add to, delete from, change or clarify any of these regulations. Any request for amendment of these regulations must be submitted in writing, with the reasons therefor, to the Board for its approval. Said amendment shall be in force only after its passage, approval, recording and publication as provided by the law.

## **6. FORCE AND EFFECT**

These regulations shall be in full force and effect from and after its approval and recording with the Town Clerk.

**PASSAGE**

Passed and adopted by the Board of Sewer Commissioners of the Town of Deerfield,  
Commonwealth of Massachusetts on the day of December 3, 2025 by the following vote:

Board of Sewer Commissioners

J. David M. [Signature]  
T. J. [Signature]  
C. B. [Signature]

Aye

Aye

Aye