THE METROPOLITAN DISTRICT

SANITARY SEWER SERVICE CONNECTION MANUAL

A manual of procedures and details for the installation of sanitary sewer service connections in the District service area.

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INTRODUCTION

This manual is for the installation of sanitary sewer service connections between The Metropolitan District existing main line sewer or property line and the building to be serviced. See Wastewater Design Manual for design and construction criteria, standards and procedures for main line sanitary sewers, storm sewers and drainage connections.

This manual has been prepared by The Metropolitan District to provide standards and procedures for the installation of sewer service house connections directly or indirectly connected to the District’s sanitary sewer collection system. It is created under the auspices of the Ordinances and Charter of the Metropolitan District, “the District”.

The purpose of this manual is to develop an understanding of how a sanitary service connection is executed following District procedures. These procedures include District review and approval of plans and specifications, drain layer eligibility requirements, a sewer connection permit and the construction inspection.

The District’s sanitary sewer system includes all of Bloomfield, East Hartford, Hartford, West Hartford, Newington, Rocky Hill, Wethersfield and Windsor. In addition the District has responsibility over certain storm drain systems within the City of Hartford.

District Sewer Ordinances require that a permit be obtained from the District before any person shall make any excavation for or construct, install, lay, repair, alter, replace, cap, abandon or remove any sewer connection or structure or other appurtenance in a public street or in private lands, which sewer is in any way connected, or discharges directly or indirectly to any public sewer of the District, or is intended at some future time to be so connected or so discharged.

This manual is comprised of four major parts: Part 1 - Standard Practices and Procedures; Part 2 – Design Standards; Part 3 – Sanitary Sewer Service Connection Installation Details; and Part 4 - Approved Materials for Sanitary Sewer Service Connection Installations. There are four Appendices: Appendix A – Application for Eligibility; Appendix B – MDC Bond Form; Appendix C – MDC Insurance Certificate; and Appendix D - MDC Sewer Connection Permit Form.
# SANITARY SEWER SERVICE

## CONNECTION MANUAL

Table of Contents

### Part 1  Standard Practices and Procedures

- **Section 1** Submission of Plans and Specifications
- **Section 2** Contractor’s Application, Bond and Insurance
- **Section 3** Safety
- **Section 4** Excavation
- **Section 5** Connection of Building Plumbing
- **Section 6** Inspection

### Part 2  Design Standards

- **Section 1** Construction - General
- **Section 2** Laying Pipe for Laterals and House Connections
- **Section 3** Joint between House Connection and House Plumbing
- **Section 4** Improper Discharge to Sewer
- **Section 5** Ground Water Seepage and Infiltration
- **Section 6** Sewer House Connection in Proximity to Water Service, Storm Drain or other Utility
Section 7  Oil/Grease Water Separator Tank Specifications
Section 8  Backwater Valve Requirements
Section 9  Guide to Plans for Swimming Pool Filter Backwash Drains to the Sanitary Sewer

Part 3  Sanitary Sewer Service Connection Installation Details

Part 4  Approved Materials for Sanitary Sewer Service Connections Installations

APPENDICES

Appendix A  Application for Eligibility
Appendix B  MDC Bond Form
Appendix C  MDC Insurance Certificate
Appendix D  MDC Sewer Connection Permit Form
PART 1

STANDARD PRACTICES AND PROCEDURES

Section 1 – SUBMISSION OF PLANS AND SPECIFICATIONS

a. Prior to the District issuance of a Sewer Connection Permit, plans and specifications must be submitted for review and approval to the MDC’s Customer Service Department at 60 Murphy Road, Hartford, Connecticut. The District will determine whether an existing main sewer needs to be extended or whether a sewer house connection as defined below or a water service connection is appropriate.

b. A main sewer extension is a public sewer sometimes constructed by developers but turned over to the District upon completion. A sewer lateral is any branch extending from the main sewer to the street line fronting the property. Main sewer extensions may be installed under a Developers Permit Agreement (DPA). The DPA manual is available on the following link (http://www.themdc.com/assets/uploads/files/engineering/Guidance%20Manual%20for%20Developers%20Permit%20Agreements-final%20August%202014.pdf). All DPA’s are managed through Engineering Services at 555 Main Street, Hartford, Connecticut 06142.

c. A sewer house connection is constructed by laying polyvinyl chloride (PVC) or ductile iron (DI) pipe from the wye at the sewer main to the building to be served. A sewer house connection shall be installed after applying for and issuance of a sewer house connection permit managed through the Customer Service Department, 60 Murphy Road, Hartford, Connecticut 06114.

d. When a sewer connection is proposed from any new building, a suitable plot plan must be submitted to the District. Such plan should have complete dimensions, the location of the lot on the public street, the location of the building on the lot, the house number, or the lot number, the metes and bounds of the lot and its location with respect to the nearest side street, the owner’s (not builder’s) name and address, the type of occupancy of the premises and number of family units to be served by the sewer connection. A copy of the deed to the property must be submitted with the plot plan.

In the case of a proposed sewer connection from an industrial building, commercial building, apartment house or any building other than a normal residential building or for parking areas for more than five cars, or in the case of intensification of existing uses, the District must be provided with a suitable plan of the proposed method of connections of sanitary sewage to the public sewer. Such plan must be submitted to the District prior to the time when the Sewer Connection Permit is needed in order to allow the District sufficient time to review the proposed installation. It should be noted that intensification of existing uses may result in additional assessment charges based on the Real Estate department review of the original property assessment and the intensified use.
e. Where the sewer may possibly be subjected to prohibited wastes, such as oil, grease, gasoline, sand, grit, etc., as shall be determined by the District, the plan must show the installation of an approved oil or grease separator and/or sand-grit trap on the sanitary plumbing. Plans and specifications of all industrial waste pretreatment facilities must be approved by the State of Connecticut Department of Energy & Environmental Protection prior to issuance of a Contractor’s Sewer Connection permit from the District. A State Department of Energy & Environmental Protection discharge permit must be issued prior to discharge of wastewater to the sanitary sewer system.

f. All plans must have the seal of a Connecticut licensed professional engineer or surveyor. Surveyors can stamp plans provided the only information is plot or location information. An Engineer’s stamp is required if the plan includes design or size information.

g. When making plans for new buildings or for parking areas for more than 5 cars in Hartford, or when making plans for intensification of existing uses, the Engineer is advised to check the latest planning and zoning ordinances of the City of Hartford regarding engineering design.

h. The Table 1 checklist included herein at the end of Part 1 has been developed to aid engineers, consultants and property owners in the preparation of sewer plans. The District must approve the plans prior to issuance of a Sewer Connection Permit for a Sanitary Sewer Connection to any new commercial or industrial building or residential apartment of more than three family units.

Section 2 – CONTRACTOR’S APPLICATION, BOND AND INSURANCE

a. In order to be permitted to install sewer connections to the District sanitary system, the Drain Layer Contractor shall submit a completed Application for Eligibility, Bond and Insurance, which information will be kept on file for future reference.

b. The Application for Eligibility form must indicate that applicants possess proper state licensing. A valid state license (P-1 or P-7) is required prior to obtaining a sewer connection permit. Authorized individuals representing the licensee are required to sign permit forms. See Appendix A.

c. Prior to the District approving and issuing any permit for sewer work, the licensed Drain Layer Contractor shall present the required permit for street excavation from the proper local and state authority and the Call-Before-You-Dig ticket number.

d. If the proposed sewer work is within the limits of any State Highway, the Drain Layer Contractor shall also present the required permit from the Connecticut State Department of Transportation before receiving the required sewer permit from the District.

e. The Contractor’s Bond shall be executed by the surety company’s agent, including the name of the contractor, name of responsible state licensee, name of surety and proper signatures. See Appendix B.
f. The Certificate of Insurance shall include coverage’s for General Liability with The Metropolitan District and State of Connecticut added as additional insured, Automotive Liability, Protective Liability in the name of The Metropolitan District (with the policy) and Workers' Compensation and Employers' Liability. The amount of insurance coverage shall meet the prevailing minimum requirements and be presented on the District's Certificate of Insurance. See Appendix C.

g. Sewer Connection Permits will only be issued once all forms are completed and approved by the District for eligibility, bond, insurance and after all assessment cost, if any, are paid or time payment plan and voluntary lien are completed by the property owner. See Appendix D.

Section 3 - SAFETY


b. The Drain Layer Contractor alone shall be responsible for the safety, efficiency and adequacy of its plant, appliances and methods, and for any damage or injury which may result from their failure or the improper construction, maintenance or operation.

c. The Drain Layer Contractor shall properly design and furnish all labor, materials, equipment, and tools necessary to completely construct the excavation support system, permanent or temporary, including sheet piling, trench shields (trench boxes), timber trench shoring, pneumatic/hydraulic shoring, steel sheeting or sheeting using other materials, sloping and benching. All of the proper materials and all equipment necessary to protect employees in excavations against cave-ins shall be furnished and installed. Also, all employees and the general public shall be protected from hazards related to the construction. Adequate support systems shall also protect people from equipment which might fall or roll into an excavation, utilities within or adjacent to the excavation or which is impacted by operations under the construction.

d. If, in the opinion of the District, the Contractor has failed to maintain a safe trench and work area, District forces shall refuse to enter the trench until safety concerns are satisfied. This requirement shall not in any way relieve the Contractor of complete responsibility and liability for maintaining a safe and adequate trench excavation at all times and at any depth.

Section 4 – EXCAVATION

a. Capped sewer wyes and laterals laid since about 1950 are usually marked with wood markers left in the ground extending from a point directly in front of the capped wye, or lateral to a point about four feet below the ground. These markers were placed to aid the Drain Layer Contractor in locating the point of connection more closely and thus avoid damage to the public sewer from excavating procedure.
b. The Drain Layer Contractor shall fully comply with the State of Connecticut Public Act No. 77-350 in regards to the proper notification to be given the Call-Before-You-Dig central clearinghouse prior to any excavation, discharging explosives or demolition and to all other actions concerning work near underground utility facilities. Proper notice may be given by calling 811, calling 1-800-922-4455, or applying online through the CBYD website. Excavators are reminded to read the previous section on safety.

Section 5 – CONNECTION OF BUILDING PLUMBING

The building plumbing pipe shall not be connected to the sewer house connection until the tight building plumbing is complete or until the length of building plumbing pipe under or through the foundation is tightly capped, or until the District is satisfied that the building plumbing, if not completed, is so constructed to prohibit the discharge of subsoil drainage, surface, or subsurface storm or muddy water from entering the sanitary sewer system. Note that the District does not inspect interior plumbing.

Section 6 - INSPECTION

a. Upon substantial completion of the work but prior to connection, the Drain Layer Contractor shall contact the Customer Service Center, 60 Murphy Road, Hartford 860-278-7850 x3703 to request an inspection. The drain Layer Contractor shall refrain from removing the cap or breaking into any existing pipe to make the connection or to commence laying pipe or building structures until the inspector gives his/her approval.

b. In general, inspectors will be available between the hours of 7:30 a.m. to 3:30 p.m. on Monday through Friday inclusive. Inspection outside the hours of a normal 5-day work week for scheduled or unscheduled work must be pre-approved. During the inspection, the Contractor shall have a transit on-site to demonstrate that the minimum grade as shown on the permit is met.

If an “emergency” condition exists, where a contractor must make repair immediately, the District Inspector will be dispatched. Under “emergency” conditions, the inspector must be at the work site prior to the sewer house connection pipe being opened. The Inspector will determine if the backup is an emergency situation. If it is determined that the repair must be made immediately, the District Inspector will inspect the repair. If the Drain Layer Contractor is relaying the entire sewer house connection on the owner’s part, the District Inspector will inspect the initial connection at the street line. The Drain Layer Contractor may continue to install the sewer house connection but must leave open the portion of the house connection that is connected to the house plumbing. The Drain Layer Contractor is to call the Command Center at 860-278-3600 at the opening of the following business day and request a final inspection. If the District Inspector determines that an emergency situation does not exist, then an after-hours inspection fee must be paid for inspection services.

c. Before making repairs, the Drain Layer Contractor shall ensure that the remaining connection in both directions is in good condition and free from obstruction.
d. After the cap is removed at the point of connection to the public sewer, the Drain Layer Contractor should make certain by probing, rodding, or by use of flashlight that the pipe from the capped end to the public sewer is in good condition and free from obstruction. If the lateral is found to be obstructed or in bad condition, the Drain layer Contractor should refrain from making any connection thereto until the district Inspector has advised further procedure.

e. After the District Inspector has approved the initial construction of the house connection pipe, under this section, the Drain Layer Contractor may complete the house connection pipe construction, but shall not backfill the area of trench around the joint with the building plumbing pipe and shall leave the pipe uncovered until such time as this joint has been finally inspected and approved by the District. Arrangements should be made, on site, between the District Inspector and the Drain Layer Contractor for the final inspection. If the connection is not approved, the Drain Layer Contractor shall make the necessary corrections and request further inspection.

f. Sewer connections serving buildings to be demolished or relocated shall be properly bulkheaded at the street line or other point approved by the District. This bulkheading must be done by a licensed Drain Layer Contractor under District permit prior to demolition of the building. A permit from MDC’s Customer Service Department at 60 Murphy Road, Hartford, Connecticut, is required for this work.
TABLE 1
SEWER CONNECTION CHECKLIST

Plan:

____  Drawn to scale using NAD83 datum for horizontal control and NAVD88 for vertical control.

____  Size, type of pipe and grade of existing public main sanitary sewer and/or combined sewer.

____  Type, location and elevation of wye, stub, lateral or other point of connection. Describe method of connection if opening not provided.

____  Pipe type, size, grade and cover of sanitary sewer house connection. Minimum pipe size is 6-inch ductile iron or plastic and 12-inch for reinforced concrete. Minimum grade is 1%. Plastic pipe shall be used for the sanitary sewer connection to an industrial building, in an industrial zone or where there are industrial wastes.

____  Size and flow line elevations of all cast iron or plastic plumbing pipes shown at point of connection with sanitary sewer house connection pipe (3 to 5 feet outside building foundation). All plumbing to a point 3 to 5 feet outside the foundation is under municipal jurisdiction.

____  Top of frame and flow line elevations of all structures shall be shown.

____  Pipe should be at an adequate depth and in a location which will clear other utility lines or structures.

Note: Depth of cover over all pipes should be shown. In an area where existing ground surfaces will be altered, such as new paved or lawn areas, cover shall be no less than 4 feet to finished grade. In an area already developed, the cover shall be reduced to a minimum of 3.5 feet and if reinforced concrete or ductile iron pipe is used the cover may be reduced 1 additional foot.

____  Pipe should be a minimum distance of 25 feet from any water well.

____  Trench restoration for possible rock, high ground water table or sheeting left in place in area of excavation?

____  Is building at a low elevation requiring sewage to be pumped and have approved plans and specifications been submitted?

____  No permanent structure encroachment on any District sewer, drain or water right-of-way.
_____ Is existing sewer in right-of-way on land of others where notification to owner is necessary?

_____ Does house connection cross private lands of others where right-of-way easement is required? If so, a legal agreement must be prepared and signed.

_____ Number of family units for all residential buildings. Owner and mailing address of property. Type of occupancy for all other buildings.

For Condominiums:

_____ Does each dwelling unit have separate sewer connection?

_____ Are multiple dwelling units connected to one sewer connection?

_____ Are dwelling units at various elevations?

_____ Is an alarm system required to warn in the event of a sewer backup?

For Apartments:

_____ Number of dwelling units noted for each building.

_____ Adequate layout and clean outs on plumbing and/or sewer line to provide accessibility for rodding.

_____ Is connection to be made to a swimming pool drain and/or pool filter backwash drain? If so, plans and specifications must be submitted to the District for approval.

For commercial, industrial or other buildings (such as automotive repair or washing, shops, gas stations, hospitals or convalescent homes, hotels, laundry facilities, machine shops, restaurants, schools, churches and club houses):

_____ Are there petroleum, oil, gasoline and grease wastes and is an approved oil-grease separator to be installed on all floor drains for proper pre-treatment and separation?

_____ Are there sand and grit wastes and is an approved sand trap to be installed on all floor drains for proper treatment and separation?

_____ Are there chemical or metal wastes and are there approved pre-treatment and separation facilities to be installed? Has the State Department of Energy & Environmental Protection approved a pretreatment permit?

_____ Are there kitchen grease wastes from dishwashers, pot sinks and any other drains subjected to objectionable kitchen waste and is an approved grease separator to be installed at an approved location for proper pre-treatment and separation?
Note: The separator shall be of adequate size and at a sufficient distance (25 feet +/-) away from the dishwasher to trap the hot grease wastes. If determined necessary by the District, the grease separator, for restaurants, cafeterias, snack bars and buildings with similar facilities, shall be installed on a separate plumbing line to a point at least 5 feet outside the building so that any additional installation of protective devices may be made if necessary.

The make, model and capacity of the separator should be noted.

_____ Plastic pipe only for sanitary sewers should be noted on the plan.

_____ Number of patient rooms shown on floor plans for all hospitals and convalescent homes.

_____ If required, have plans been approved by the State Department of Energy & Environmental Protection and/or Health Department?

_____ Other utilities are required to be shown on sewer plans. It is assumed during design that the engineer has avoided any conflict with other utility lines or structures.

_____ The District will determine if there is a monetary charge due and agreement necessary.

_____ Is main sewer approved for connections? _____active; _____capped

_____ Are town street and/or State highway excavation permits required for work within public streets?

_____ Is Drain Layer Contractor eligible for permits (license, bond and insurance)?

_____ Plans and specifications approved by Town Building and Health Department and State Department of Energy & Environmental Protection?
PART 2

DESIGN STANDARDS

Section 1 – CONSTRUCTION - GENERAL

a. The requirements established in this manual regulate the sizes, materials, methods, and workmanship to be used in the construction of sewer service connections and appurtenances connected or intended to be connected or intended to discharge, directly or indirectly, to any public sewer of the District, as provided in Section S3d of the Sewer Ordinances of The Metropolitan District.

b. These requirements are minimum requirements for the construction of sewer house connections but shall also apply to the construction of any sewer or portion of a sewer.

c. The District’s design standards for sewer service connections are included in several documents as follows:

   • The Wastewater Design Manual (need MDC website link when completed)
   • The MDC Standard Specifications (see below)
   • The MDC Sewer Standard Details (see Part 3).
   • The Approved Materials List (see Part 4).
   • Additional information presented below in this Part 2.

d. Standard Specification Sections that may be relevant to the design of sewer service connections include, but are not necessarily limited to, the following:

   • 02053, Removal and Disposal of Existing Pipe, Manholes and Appurtenances
   • 02200, Earthwork
   • 02202, Trench Refill
   • 02317, Underground Warning Tape
   • 02610, Sewer Testing and Cleaning
   • 02615, Ductile Iron Pipe for Sanitary Sewer
   • 02622, Polyvinyl Chloride Sewer Pipe
   • 02628, Pipe Repair Couplings
   • 02777, Sewer Service Lateral Rehabilitation
   • 02721, Laying Sewer and Drain Pipe

e. The following sections of this Part 2 present information about sewer service connection design to supplement the guidance in the other sources listed in “c” above.

Section 2 – LAYING PIPE FOR LATERALS AND HOUSE CONNECTIONS

a. Connection laterals shall be of 6-inch diameter or larger pipe, laid to grade and to the points ordered. Laterals will not be laid on a grade flatter than one percent, and will usually have 8-feet of cover at the curb or street line in most residential zones and 10-feet of covert at the curb in business zones.

b. House connections shall be laid shall be laid on an even-tamped foundation of course sand, or ¾-inch crushed stone except that when clay, wet, soft or silty soil conditions prevail, ¾-inch crushed stone shall be used for foundation of all pipe. The backfill shall be thoroughly compacted by tamping or other approved methods up to the spring line of the pipe (see also the relevant Standard Specifications).

c. Pipes larger than 6-inch diameter or pipes conveying storm water only, may be laid at a grade less than 1% only when specifically approved by Engineering & Planning.

d. If house connection depth is not sufficient to clear under other utilities, varying gravity flow grades shall be designed (not less than 1%) to pass over or under without touching said other utilities. If, on excavating for the sewer or sewer connection, the natural soil foundation is found to be soft, the soft soil shall be removed and not less than 4-inches of approved stone, processed stone or concrete, as required by the Engineering & Planning Department of the District, shall be placed in an approved manner for the pipe foundation.

e. In general, the Drain Layer Contractor shall maintain adequate cover to protect the pipe being installed from physical damage due to live loads or possible winter freezing. In an area where pavement and cultivated lawn already exist, such cover shall generally be no less than 3.5 feet; in an area not so developed or in an area where existing ground surfaces will be altered, such cover shall be no less than 4 feet in which case reinforced concrete or ductile iron pipe must be used as approved by the District.

f. Whenever the Drain Layer Contractor temporarily terminates the sewer connection outside the building, the open end of the pipe shall be fitted with an approved cap to prevent any drainage, storm or muddy water and debris from entering the public sewer and the Drain Layer Contractor shall arrange for inspection.

g. The Drain Layer Contractor and/or the plumber shall seal the opening under the footing with concrete suitably compacted between the cast iron soil pipe and the concrete footing and earth around the opening to prevent the backflow or seepage of surface water into the building.

Section 3 – JOINT BETWEEN HOUSE CONNECTION AND HOUSE PLUMBING

Connection of the sewer pipe with the cast iron soil pipe or PVC plastic schedule 40 plumbing pipe at the normal point just outside the building foundation shall be made with an approved
“O” ring gasket or “FERNCO” fitting. The District may limit the size and rate of grade of pipe, or limit the discharge in some other manner, if the proposed amount of said discharge from the individual house connection or lot drain may cause overloading of any part of the public sewer drainage system per Section S2e and S2f of the District Ordinances.

Section 4 – IMPROPER DISCHARGE TO SEWER

a. Until proper fixtures have been completed and tightly joined to a sewer house connection, no one shall allow, pump or discharge any water, wastes or other drainage to the sewer house connection or public sewer.

b. Any water in a trench or excavation shall be pumped or discharged to a gutter, catch basin or other proper drainage facility.

c. In the District towns, except in portions of Hartford, the public sewers are sanitary sewers for SANITARY SEWAGE only, and the construction, regulation and use of storm drains are generally within the jurisdiction of the town or State of Connecticut. Subsoil drainage and other clean waters may generally be disposed of in accordance with such town or state regulations. Connections to public storm drains in the towns require permission from the proper town authority and connections to any storm drain of the Connecticut State Department of Transportation, Bureau of Highways may be made only after permission from the proper State of Connecticut authority.

d. In Hartford, even though some District sewers are still combined sanitary and storm sewers, new connections shall be constructed in accordance with Section S3r of Sewer Ordinances as follows:

   “When any new building is erected in an area served by combined sewers or by separate sanitary and storm sewers under the jurisdiction of the District, separate connections shall be made from said building to said combined sewer, or to said separate storm and sanitary sewers; one such connection shall be limited to such wastes as are permitted in sanitary sewers, and the second connection shall be used to convey such other flows as are permitted in storm drains.”

Section 5 – GROUND WATER SEEPAGE AND INFILTRATION

a. Prevention of infiltration of subsurface and subsoil waters to the sanitary sewer system is always of great concern to the District. Many of the requirements of the District for pipe laying and jointing are intended to cause the construction of sewers that are reasonably watertight so as to minimize infiltration through joints or pipe defects, into the sewer.

b. The District may, when it deems it advisable, require a leakage test of the pipe and structures after the construction of any sewer or house connection regulated herein. This can be achieved using the hydraulic or air test method. Whether or not any leakage in the sewer or house connection constructed is in excess of the latest maximum rate called for in the District’s Standard Specifications, the Drain Layer Contractor shall repair or correct the construction, and stop the leakage, to the satisfaction of the District.
Section 6 – SEWER HOUSE CONNECTION IN PROXIMITY TO WATER SERVICE, STORM DRAIN OR OTHER UTILITY

a. The sanitary sewer connection and water service should generally be laid in separate trenches about 5 feet apart. If the Drain Layer Contractor requests that such pipes be constructed in the same trench because of special conditions, the sanitary sewer connection may be constructed in one excavated trench in accordance with the appropriate Sewer Standard Detail (see Part 3) or as may be approved by the District.

b. The sanitary sewer connection shall be constructed not less than 5 feet from any underground gas, electric or telephone service or as may be approved by the appropriate Public Utility Company.

c. Separate sanitary sewer and storm drain connections, in Hartford, may be constructed in the same trench provided a spacing of not less than 3 feet is maintained between the two pipes.

Section 7 – OIL/GREASE WATER SEPARATOR TANK SPECIFICATIONS

a. Each oil/water separator tank shall be constructed of:

   • Precast concrete or precast polymer concrete;
   • Other material(s) must be designed, constructed, installed and maintained in conformance with the Regulations of Connecticut State Agencies, Section 22a-44(d)-1(e);
   • Other material(s) resistant to corrosion and degradation for the concentrations of chemicals involved, and approved by the Department of Engineering and Planning.

b. Tank shall have a minimum capacity sufficient to pretreat the maximum daily flow proposed and no less than 1000 gallons.

c. The inlet extension to grade shall be provided with a vent line which extends 8 feet above finished grade and is properly secured to the building. The size of the vent shall be at least half the size of the outlet discharge line from the tank.

d. The inlet piping shall not include any sources of domestic sewage wastewater or stormwater.

e. The outlet pipe shall be at least the size of the inlet pipe or greater and at a minimum shall be 6-inches in diameter. Schedule 40 pipe or approved equal shall be used to bridge disturbed trench.

f. The outlet pipe shall be connected to the sanitary sewer.

g. If heavy piping, such as cast iron, is used, all piping must be structurally secured.
FOR CONCRETE TANKS ONLY

h. Interior of the tank shall be coated with an epoxy petroleum resistant sealant (ensure that the epoxy vendor states that the product will be resistant to gasoline, oil, and solvents). Exterior of the tank shall be coated with a waterproof foundation sealant, including the exterior top and bottom. Interior and exterior of the extensions to grade shall also be waterproofed.

FOR CONCRETE AND CONCRETE POLYMER TANKS ONLY

i. The tank shall have manholes with extensions to grade above the inlet and outlet piping. The extensions shall have steel frames and manhole covers. The manholes, extensions, and accesses to the tank shall be at least 36 inches in diameter.

j. The outlet piping shall utilize a tee-pipe on the interior of the tank. The tee-pipe shall be equipped with a stand pipe riser extending up to the extension to grade but no closer than 8-inches from the manhole cover. The tee-pipe shall extend 6 to 15-inches from the bottom of the tank.

k. If there is a structural seam, it must be located above the static liquid level of the tank, filled in with non-shrinking cement or water plug and coated with a waterproof sealant.

l. Voids between inlet and outlet piping of the tank and the tank itself shall be grouted with non-shrinking cement and coated with a waterproof sealant.

m. The concrete covers provided by the oil separator manufacturer must be permanently removed.

Section 8 – BACKWATER VALVE REQUIREMENTS

a. Sewage backups into homes, buildings or other facilities are caused by a variety of conditions, ranging from heavy rainfall runoff especially in combined sewer systems, to collapsed sewer house connections, and plugged main sewers.

One method of preventing such occurrences is to, depending on the situation, install backwater valves on basement fixtures, or directly inline with house connections. Foundation and gutter drains should be disconnected from cellar sumps and capped off. A sump pump should be installed and its discharge directed to the outside ground surface. (Note, however, that in the City of Hartford, it is not allowed to cut-and-cap existing drains or install a sump pump.) Backwater valves will minimize or completely stop sewer backups. Annual valve inspection and maintenance is vital to ensure proper operation of the valve for many years.

b. There are three documents which deal with the problem of surcharging of sewers and flooding of basements.
• The Public Health Code of the State of Connecticut
• The State of Connecticut Basic Building Code.

Each of these publications deals with the sewer back-up problem. The authorities require that the property owner provide adequate protection against the possibility of backflow or cellar flooding.

c. The State of Connecticut Public Health Code, Section 19-13-B45(s) states “Where a house drainage system may be subjected to backflow of sewage, suitable provisions shall be made to prevent its overflow in the building.”

d. The State Building Code, Section 1701.0 states “Backwater traps: when there is a possibility that a plumbing drainage system will be subject to backflow of sewage, suitable provisions shall be made to prevent overflow into the building”. The installation of the trap is the responsibility of the home owner.

e. The BOCA National Building Code, Section 1701.0 states “A backwater valve shall be installed where plumbing fixtures are subject to backflow from the public sewer”. Section P-1003.3 Location of backwater valves states “Backwater valves shall be installed so their working parts will be readily accessible for service and repairs”.

Section 9 – GUIDE TO PLANS FOR SWIMMING POOL FILTER BACKWASH DRAINS TO THE SANITARY SEWER

The following information will be required, in plan form, for review prior to the issuance of a permit:

a. Type of filter
   • Pressure Sand Filter or
   • Diatomaceous Earth Filter – A separator must be provided to prevent diatomaceous earth from entering the sewer system. Trash barrels must be provided in the pump room to dispose of this waste.

b. Filter size (capacity in sq. ft.).

c. Pump size (rate in cfs).

d. Sump and/or holding tank size (capacity in cu. ft.).

e. Size of outlet pipe or orifice from sump to sanitary sewer of plumbing shall be a maximum of 2-inch dia.

f. Size of drain pipe from pool main-drain to sump pit (normally 2-inch dia.).

g. 3-inch minimum air gap required between top of sump and inlet drain pipe.

h. Backwash rate (maximum 100 gpm).
i. Duration of backwash discharge.
PART 3

THE METROPOLITAN DISTRICT

SANITARY SEWER SERVICE CONNECTION INSTALLATION DETAILS

The Sanitary Sewer Service Connection Details are included on the MDC website (http://www.themdc.com/assets/uploads/files/engineering/MDC%20Project%20Manual%20January%202015.pdf) within the Sewer Standard Details and are intended to exhibit District approved installations for sewer service connections and their appurtenances. If deviations from the prescribed installation are necessary, approval must be obtained from the District prior to the installation. The referenced details are intended to supplement and amplify the District Material Standards.

INDEX (2015 VERSION)

S-1 SEWER TRENCH
S-2 SEWER TRENCH WITH STEEL SHEETING LEFT-IN-PLACE
S-5 SEWER SERVICE AND WATER SERVICE IN COMMON TRENCH
S-6 FOUNDATION SECTIONS IN LOWLANDS
S-7 PVC OR DI WYE BRANCH
S-8 SEWER SERVICE REPLACEMENT
S-9 SEWER SERVICE PRECAST CONCRETE CHIMNEY
S-10 TEE INSERT CONNECTIONS
S-12 WYE SADDLE CONNECTION TO RC PIPE
S-13 CLEANOUT AT GRADE
S-31 CONNECTIONS TO PRECAST CONCRETE STRUCTURES
S-33 EXISTING GAS AND WATER UTILITY CROSSING
S-34 PERMANENT WATER PIPE SUPPORT
S-35 CONCRETE ENCASEMENT
S-37 OIL WATER SEPARATOR
S-38 OUTSIDE GREASE SEPARATOR FOR KITCHEN WASTE LINES
S-39 GRIT COLLECTOR
PART 4

APPROVED MATERIALS FOR SANITARY SEWER SERVICE CONNECTION INSTALLATIONS

The Approved Materials for Sanitary Sewer Service Connection are included as part of the MDC Developers Permit Agreement Manual (http://www.themdc.com/assets/uploads/files/engineering/Guidance%20Manual%20for%20Developers%20Permit%20Agreements-final%20August%202014.pdf). If deviations from the prescribed materials are necessary, approval must be obtained from the District prior to the purchase and installation.
APPENDIX A

APPLICATION FOR ELIGIBILITY
APPLICATION FOR ELIGIBILITY FORM

The undersigned, having read and understood the terms of the construction manual, rules, regulations and ordinances of The Metropolitan District pertaining to the issuance of permits to drain layers, and to the laying of water services, sewers and drains, hereby requests eligibility for sewer connection and/or water service permits in the name indicated hereinafter and hereby agrees, for himself and partners, or for any corporation in whose name the license or permits is to be issued, to fulfill and be bound by all of the provisions of said construction manual, rules regulations and ordinances, and also to any amendments or additions thereto which may hereafter be made.

(Name under which permits will be issued)

(Business Address – Street and Town) (Business Telephone)

If business is a Partnership or Corporation, list below the owners partners principal officers and/or State Licensee:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Home Address</th>
<th>Home Telephone</th>
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Said applicant agrees to notify The Metropolitan District within 24 hours of any change in the employment status of the (partner, officer, associate, employee) listed herein, including persons empowered to sign applications and receive permits as listed on the reverse side.

Application is made for:

ELIGIBILITY FOR SEWER CONNECTION AND WATER SERVICE PERMITS
(for work on private sewers and drains & water services under STATE OF CONNECTICUT)

Signed ____________________________
(Name of Corporation of firm (Seal))

Issued to (Signed) ____________________________

Signed ____________________________
(Duly Authorized)

Witness ____________________________

Witness ____________________________

Witness
METROPOLITAN DISTRICT ACTION

It has been determined that satisfactory Insurance Certification and Bond covering the aforementioned applicant has been filed in this office and the named application has been found in order and accepted on:

_________________________  ____________________________
Date                                         Signed (for the MDC)

TO BE COMPLETED BY THE CONTRACTOR

Persons empowered to sign applications and receive permits for the aforementioned company: (Print or Type only)

_________________________

_________________________

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APPENDIX B

MDC BOND FORM
CONTRACTOR'S BOND NO. ____________

Know all Men by these Presents, that ................................................................. and/or
(Name of Firm, Partnership or Corporation)

................................................................. (Name of Responsible Individual State Licensee) ................................................................. (Title)

as principal, and ................................................................. as surety

are held and firmly bound unto THE METROPOLITAN DISTRICT, within its service area in the State of Connecticut, in the sum of Ten Thousand dollars ($10,000), lawful money of the United States of America to be paid to the said METROPOLITAN DISTRICT, its respective successors or assigns, for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed and Sealed and dated ...................... Conn., this ...... day of ......................, 19...

The condition of this Obligation is such, that whereas, the above bound principal has by The Metropolitan District and/or by the State of Connecticut been duly licensed as a Contractor in said District Service Area, said obligation shall be continuous subject to cancellation by said Surety by giving ninety (90) days notice in writing of its intention to so do.

Now, therefore, if the said ................................................................. shall well and truly keep and perform, during said term, all the terms and conditions of the ordinances, resolution, rules and regulations of The Metropolitan District, regulating the laying of sewers, drains, and appurtenances, sewer house connections, private drains, water mains, water services and appurtenances, and shall forever indemnify and save harmless THE METROPOLITAN DISTRICT and all its respective agents for or on account of any damages to property of any person or persons or any damage to the sewer or water system of THE METROPOLITAN DISTRICT in consequences of or resulting from any work performed by

said principal ................................................................. servants

or agents, or of, or from any negligence in guarding said work, or of, or from any act or

omission of said principal ................................................................. servants or agents until the expiration of the one year maintenance period after, work, under any permit issued, is complete; shall faithfully perform said work in all respects with the rules and regulations established by THE METROPOLITAN DISTRICT, and the terms of the permits that may be issued to him, and shall also pay all fines or penalties imposed upon him for violation of any such rules or regulation, then this obligation shall be of no effect; otherwise, it shall remain in full force and virtue.

Signed: ................................................................. (Individual State Licensee)

Signed: ................................................................. (Corporation or Firm)

Signed: ................................................................. (Surety Corporation)

By: ................................................................. Duly Authorized

Its: ................................................................. Its Duly Authorized Agent

Witnessed by: .................................................................

On: ................................................................. (Date)

(Corporate Seal of Surety)

On: ................................................................. (Date)
APPENDIX C

MDC INSURANCE CERTIFICATE
CERTIFICATE OF INSURANCE - THE METROPOLITAN DISTRICT

INSURED

THIS IS TO CERTIFY THAT THE POLICIES LISTED BELOW HAVE BEEN ISSUED, SUBJECT TO APPLICABLE TERMS, CONDITIONS AND EXCLUSIONS. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES INDICATED BELOW.

COMPANIES AFFORDING COVERAGE

PRODUCER

COMPANY A

COMPANY B

COMPANY C

MINIMUM INSURANCE REQUIREMENTS

BODILY INJURY AND PROPERTY DAMAGE

$1,000,000 EACH OCCURRENCE

$1,000,000 AGGREGATE

(Note: Certain projects, contracts or agreements may require higher or lower limits and/or require specific additional insurance coverages. See project, contract or agreement for additional information.)

COVERAGES

<table>
<thead>
<tr>
<th>CO LTR</th>
<th>TYPE OF INSURANCE</th>
<th>POLICY NUMBER</th>
<th>EFF. DATE (MM/DD/YY)</th>
<th>EXP. DATE (MM/DD/YY)</th>
<th>ALL LIMITS IN THOUSANDS</th>
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<td></td>
<td>General Liability</td>
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<td>Commercial General Liability</td>
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<td>Claims Made</td>
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<td>Per Project Agg. Limit End.</td>
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<td>Blanket Contractual</td>
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<td>The Metropolitan District and the State of Conn. added as additional insured</td>
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<td>Autism Liability</td>
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<td>Any Auto</td>
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<td>All Owned Autos</td>
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<td>Scheduled Autos</td>
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<td>Hired Autos</td>
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<td>Non-Owned Autos</td>
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<td>Excess/umbrella Liability</td>
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<td>Each Occur.</td>
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<td>Aggregate</td>
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<td>Workers' Compensation and Employers' Liability</td>
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<td>Statutory</td>
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<td>(Disease-Each Employee)</td>
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<td>Protective Liability</td>
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<td>In the name of the Metropolitan District Policy must be submitted.</td>
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<td>Bodily Injury &amp; Property Damage Each Occurrence:</td>
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<td>Aggregate</td>
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DESCRIPTION OF OPERATIONS

CERTIFICATE HOLDER
THE METROPOLITAN DISTRICT
555 MAIN STREET-PO BOX 800
HARTFORD, CT 06142-0600

IT IS AGREED THAT 30 DAYS' NOTICE OF CANCELLATION OR RESTRICTIVE AMENDMENT OF SAID POLICIES SHALL BE MAILED TO THE METROPOLITAN DISTRICT, AND IT IS FURTHER AGREED THAT ALL EARNED PREMIUM CHARGES FOR THE PROTECTIVE LIABILITY AND OTHER POLICIES WILL BE BILLED TO THE ABOVE NAMED PERSON OR FIRM.

AUTHORIZED REPRESENTATIVE
Insurance Requirements:

For License As Pipe Layer, Excavator Or Eligibility For Metropolitan District Permits:

Commercial General Liability: Limit of Liability not less than $1,000,000 each occurrence, $1,000,000 aggregate. MDC must be added as additional insured.

Automobile Liability: Limit of Liability not less than $1,000,000 combined single limit.

Workers’ Compensation: As required by Connecticut Law and Employer’s Liability with a limit of not less than $100,000/occurrence, $500,000 disease policy limit and $100,000 disease each employee.

Owner/Operator Note: A letter from your insurance agent attesting to the fact that W/C insurance is not mandatory and you elect not to carry it, will satisfy this requirement.

Protective Liability: For and in the name of the District with a minimum limit of liability not less than $1,000,000/occurrence and $1,000,000/aggregate.

All of the above requirements must be met prior to issuance of a permit.
APPENDIX D

MDC SEWER CONNECTION PERMIT FORM
SEWER CONNECTION PERMIT FORM

Work at ___________________________ Lot # ___________________________ on the ___________________________ side, in the town of ___________________________ Connecticut. between ___________________________ at premises owned by ___________________________ whose address is ___________________________.

Nature of work:  
- House Conn.:  
- Lot Drain, Catch Basin;  
- MAIN SEWER  
- Back Water Valve  
- NEW  
- REPAIR  
- Bulkhead;  
- Utility Drain;  
- Other ___________________________

Occupancy or Use:  
- Residential with ___________________________ family units;  
- Commerical  
- Industrial;  
- Other ___________________________

Public Sewer or Drain is:  
- SANITARY  
- Storm  
- Combined  

Only the following SEWAGE OR DRAINAGE is allowed to this connection:  
- Sanitary Sewage  
- Other ___________________________  
- Storm Drainage including surface and sub-soil water

Connection will be made with ___________________________.

Located ___________________________.

Special Conditions ___________________________.

Data from Plan # ___________________________ Required plans, submitted and approved_________________________.
Job Code: ___________________________ Contractor's State License # ___________________________.
Contract # ___________________________ Contractor's Insurance expires ___________________________.
Main Sewer Approved for Connection ___________________________ Street excavation permit # ___________________________.
Sewer Tributary to ___________________________ W.P.C.F.  
Call - Before - You - Dig # ___________________________.

□ Property Assessed for Sewer  
□ Outlet Charge Paid on ___________________________.
Deferred Assessment to become Due and Payble as Requested by Owner on ___________________________.
Sewer Connection Charge Agreement Signed by Owner on ___________________________.
Voluntary Sewer Lien Signed by Owner and initial Installment Paid on ___________________________.
Connection Charge Paid in Full on ___________________________.

Permit to be issued to ___________________________.

The undersigned agrees to perform under ordinances the work indicated.

Signed by ___________________________.

Permit Issued By ___________________________ Date ___________________________.
First Inspection ___________________________ Final Inspection ___________________________.
Called ___________________________ Called ___________________________.
To Inspect ___________________________ To Inspect ___________________________.
Final Inspection Approved on ___________________________ By ___________________________.

THE METROPOLITAN DISTRICT COMMISSION
HARTFORD, CT
Conditions of Permit

(A) This permit is issued under the express condition that every person acting under the same shall conform to the representations and conditions of the application therefore and the shall conform to and be governed by the ordinance pertaining to the sewers of The Metropolitan District adopted June 1950, including amendments thereto, and all other pertinent laws, resolutions, ordinances, rules and regulations of The Metropolitan District, of the State of Connecticut and its Highway Commission, and the city or town in which the proposed work is situated.

(B) This permit may be revoked at any time.

(C) This permit shall be maintained at the site of any work being done under its authority and shall be shown upon request of any authorized person.

(D) This permit does not authorize doing of any acts in, upon or to private property without the consent of the owner thereof. The duty of obtaining such consent and complying with the conditions thereof rests solely on the drain layer and those for whom he acts.

(E) This permit does not authorize any excavation in any public street, highway, or grounds, or doing any work therein or the placing of any obstruction therein. Specific permission for such shall be obtained from the proper official having charge thereof.

(F) The MDC and its agents assume no responsibility that any representations in the application for this permit were correct and assume no responsibility for any information furnished or not furnished.

(G) No sewer or appurtenance thereof may be cut into or connection made therewith, or any pipe laid, except in the presence of or under the direction of an inspector from the MDC. A minimum of 1 business day's notice must be given to the MDC Command Center for the scheduling an Inspector for your work site. For emergency excavations and normal inspection requests, please contact the Command Center at 860-278-7850 x 3600. Please allow for the permitting process the very next business day during an emergency.

(H) The Drain Layer agrees that he shall at all times indemnify and save harmless the District, any municipality included therein. The State of Connecticut and their respective officers, agents and servants, on account of any and all claims, damages, losses, litigation, expenses, counsel fees and compensation arising out of injuries (death) sustained by, or alleged to have been sustained by the servants, employees or agents of the District, or of any municipality included therein, or the State Of Connecticut, or the Drain Layer, any contractors employed by him or any subcontractor or material men, and from injuries (including death) sustained by or alleged to have been sustained by the public, any or all persons on or near the work, or by any person or property, real or personal (including property of the District), caused in whole or in part by the acts or omissions of the Drain Layer, any contractor employed by him or any subcontractor or material man or anyone directly or indirectly employed be them while engaged in the performance or any work covered by this permit and during any maintenance period specified in the aforementioned ordinance or by any other governmental agency.

(I) The Drain Layer and owner shall be responsible to see that only the type of wastes specifically permitted by this permit are allowed into the public sewer as a result of this permit.