January 2022

ENGINEERING DIVISION
Town of Lexington, Massachusetts

201 Bedford St
Lexington, MA 02420
(781) 274-8305

John Livsey, P.E.
Town Engineer

WATER, SEWER & DRAIN REGULATIONS AND SPECIFICATIONS

Noncompliance with these regulations and direction from the Engineering Division staff will result in inability to obtain permits and/or removal from drainlayer list.

General Work Rules:

- No work shall be started before 7:00 a.m.
- No inspections shall be done on Saturday or Sunday or Holidays observed by the Town of Lexington
- **All water and sewer construction work must be done by a Town of Lexington Licensed Drainlayer**
- All underground pipe work must be inspected by the Engineering Division prior to being backfilled
- Inspections shall be requested from the Engineering Division between 8:00 a.m. and 1:00 p.m. by calling (781) 274-8305. 48 hours' notice is required to schedule inspections
- A Water and/or Sewer Connection Permit must be issued before work is started
- All requirements of Town of Lexington Health Department Septic Tank Abandonment Regulations must be complied with.
- A Water and/or Sewer Connection Permit will be issued only to Town of Lexington Licensed Drainlayers
- Where work will be done in a public way, a Right of Way Excavation permit must be obtained.
- A trench permit must be obtained for this type of work. The Contractor must identify a "Competent Person" who understands and can enforce OSHA excavation requirements and Commonwealth trench excavation law and regulations.
- All fire suppression systems connected to the Town of Lexington water system shall be subject to the approval of the Engineering Division.
- Water and Sewer testing shall be done by a third party and witnessed by Engineering Inspector.
- Work must comply with these regulations and specifications as well as MassDOT specs for Highways & Bridges (latest edition) and Town's supplemental Division II specs.
- If an inspection was not performed at the time of installation, the Engineering Division may require re-excavation of the buried utility at no expense to the Town.
- Erosion controls are required. These can include but are not limited to 12-inch compost-filled erosion control socks, catch basin silt sacks, and a stone construction exit. Please see our Erosion Control Details and Regulations.

Fees:

Water, Sewer or Drain Connection Permit

- First 50’ $100.00
- Each additional foot $0.30

Previous Charge (Fee for sewer stub previously installed by Town from main to property line)

- Only applies to some properties, if applicable charge is available by address at DPW.

Betterment or Charge in Lieu of Betterment (Fee for construction of the sewer main)
Only applies to some properties, if applicable fee is calculated by Engineering Division.

Residential Sewer Service Connections:

Min. pipe size	6”
Pipe material	PVC
Min. Pipe thickness	SDR 35
Min. pipe size when more than one structure is served	8-inch
Min. cover over pipe	4-feet
Min. pipe slope	2%; ¼” per ft.
Max. pipe slope	12%; or as determined by Engineer
Min. horizontal separation from water service	10 feet
Min. horizontal separation from gas, electric & other utilities	5 feet
Pipe bedding	¾” Stone; 6” below to top of pipe
Min. vertical distance at crossing below water service	18 inches
Max. distance between cleanouts:	100’
Max. bend without cleanout	22°
Max. depth of cleanout (deeper requires a manhole)	5 feet
Min. size of cleanout	6”
Cleanout at building exterior	Required 10’ out
Manhole at junction of 2 services	Required
Max. length of service without manhole	200 feet
Max. bend without manhole	45-degree
Min. distance between bends	10 feet
No 90-degree bends	
Min. manhole inner diameter outside Town ROW	2’-6”
6” Service connection to vitrified clay Town main	Wye or Inserta Tee
6” Service connection to asbestos cement Town main	Wye, Saddle or Inserta Tee
8” Service connection to Town main	Manhole
Buried traceable warning tape	Provide warning tape in trench 2-feet above pipe
Design sketch	Required
Professional Engineer design for service length > 250’	Required
Certified “As-Built” plan for service length > 250’	Required
Pressure Test for Service Length > 250’	Required

Notes:

1. For new sewer services all underground piping from the structure to the property line must be brought to Town Standards and comply with the State Plumbing code within 10’ of the building.
2. For Sewer Service Renewal or Repair the existing services shall be brought to current Town standards.
3. **Existing clay services shall be replaced to the main in the street with connection details approved in advance by the Town Engineer and/or their designee.** Asbestos Cement services may be left in place unless otherwise required by the Engineering Division.
4. All sewer services shall be video inspected prior to reconnection. The completed video inspection must be submitted to the engineering division for review at the time of permit application. The video recording must be in a digital format and stored on USB drive or uploaded to the Town’ online permitting system. It will be at the Town’s discretion if improvements and/or replacements will be required on the existing sewer line.
5. Sewer services must not connect directly into any manhole without prior approval from the Engineering Division.
6. Applicants proposing to make connections that cross over other parcels must furnish proof that the proper easements have been obtained and obtain approval from engineering division.

7. See ASTM F1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air; and Uni-Bell, UNI-B-6 Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe.
8. Tie cards must be created showing ties to any new manholes, ferncos, cleanouts, and bends to permanent structures such as house corners, manholes or fire hydrants. Ties shall also measure depth and note material types. These tie cards must be clearly legible and measured to the nearest inch and provided to the Engineering Division. Inaccurate or undelivered tie cards may result in removal from the Drainlayer's List.

Sewer Pump & Force Main Connections:

Approval by Engineering Division	Required
Professional Engineer design	Required
Certified "As-Built" plan	Required
Min. cover over pipe	4'-6"
Flushing manhole(s)	As Required By Engineering Division
Min. pipe diameter	2"
Pipe material	SDR 21 PVC
Layout	No 90-degree bends
Buried traceable warning tape	Provide warning tape in trench 2-feet above pipe

Notes:
1. Pumps are only allowable if a gravity solution is not feasible or practicable.

Extension of Town Sewer Main:

Min. pipe diameter	8"
Pipe material	PVC
Min. pipe thickness	SDR 35
Pipe bedding	¾" Stone; 6" below pipe to top of pipe
Max. distance between manholes	300'
Min. cover over pipe	4'-6"
Min. design flow velocity	2 fps
Design by Professional Engineer	Required
"As-Built" Plan	Required
Video Inspection	Required
Pipe Deflection Test	Required: 7 ½% max
Manhole Vacuum Test	Required: 10" Hg for 1.5 min (0-10' manhole) 10" Hg for 3 min (10'-20' manhole)
Pressure Testing	Required: 4psi for 8 minutes, 8" line
Min. horizontal separation from water main	10'
Min. distance below water main at crossing	18"
Buried traceable warning tape	Provide warning tape in trench 2-feet above pipe
Sewer manhole frame & cover	EJIW 0MA211000040 or Approved Equal. The word SEWER in 2-inch, flat face, gothic letters shall be cast into the cover.

Residential Water Service Connections:

Min. cover over pipe	4'-6"
Pipe bedding	Sand; 6" below to 6" above top of pipe
Tubing material	Type K Copper
Min. tubing diameter	1"
Buried traceable warning tape	Provide warning tape in trench 2' above pipe
Min. Horizontal Separation from Sewer Service	10'
Min. Distance **Above** Sewer Service at crossing	18"
Min. Horizontal Separation from gas, electric & other utilities	5'
Curb Stops	**Open right** ball valves rated 300 psi Cambridge Brass or Approved Equal
Corporations	Ball valve type rated to 300 psi AWWA approved
Service boxes	Slide type, Buffalo style
Unions	Full lengths of line should be used before adding unions

Notes:

1. For Water Service Renewal or Repair the existing services shall be brought to current Town standards to the extent possible. For existing services of material other than copper or less than 1" this shall mean replacement of the service from the structure to the curb stop and replacement of the curb stop and service box.
2. **Existing iron services must be replaced to the main and the Contractor must notify the Water and Sewer Division.**
3. **If the Contractor encounters a lead service from the main to the curb box they must notify the Water and Sewer Division.**
4. 1" Service Taps shall be performed by the contractor or hired subcontractor.
5. Where an existing service is being replaced to the main or relocating the existing service, the old service shall be capped at the main.
6. Services taps greater than 1" will require a saddle and are subject to the approval of the Engineering Division.
7. Proposals for greater diameter pipe must provide documentation of need for larger service.
8. Tie cards must be created showing ties to the service box and any unions to permanent structures such as house corners, manholes or fire hydrants. Ties shall also measure depth and notice material types. These tie cards must be clearly legible and measured to the nearest inch and provided to the Engineering Division. Inaccurate or undelivered tie cards may result in removal from the Drainlayer's List.
9. All taps on water main must have a minimum of three feet (3') of separation between each tap.
10. **Services may not be pulled**. All work must be open trench.

Extension of Town Water Main:

Min. pipe diameter	8”
Pipe material	Metallic Zinc coated Cement Lined Ductile Iron
Min. pipe thickness	Thickness Class 52
Bedding	Sand; 6” below pipe to 12” above crown
Gate Valves	Open Right 200 psi resilient wedge AWWA approved
Hydrants	American Darling B-84-B-5 Style, all stainless stem rods and bolts, factory coated black/white paint, see Town specification
Valve Box Top	Heavy duty; 2” recessed top flange; manufactured by Quality Water Products or approved equal
Valve Box Lid	Heavy duty; solid interface between lid and top without fluted or scalloped design; manufactured by Quality Water Product or approved equal
Valve box base section	Belled type
Valves and fittings	Secured with mechanical joint with restraint
Max. bend	45-degree
Thrust Block	Must be provided in design documents. Poured concrete, mechanical joint with restraint, push on restrained joint, or approved equal
Buried traceable warning tape	Provide warning tape in trench 2 feet above pipe
Design by Professional Engineer	Required
“As-Built” Plan	Required
Pressure Test performed by Third Party	200 psi for 2 hours (AWWA Standards)
Bacteria Test performed by Third Party	Required (AWWA Standards)

All taps on water main must have a minimum of three feet (3’) of separation between each tap.

Domestic Drain Connections:

Approval by Engineering Division and Conservation Commission	Required
Pipe material (force main)	PVC or HDPE or Approved Equal
Min. pipe diameter (gravity)	8”
Min. cover over pipe (gravity)	2’-6”
Min. cover over pipe (force main)	4’-6”
Min. slope	1%
Pipe material (gravity connection)	RCP or PVC or Approved Equal
Pipe Thickness (gravity)	Class V or SDR 35
Plan Showing Elevations and Drainage Area	Required
Manhole at Connection to Town Main	Required

Extension of Town Drain:

Pipe material	RCP Class V
Min. pipe diameter	12”
Min. cover over pipe	2-6”
Min. design flow velocity	2 fps
Drain manhole cover	EJIW 0MA211000041 or Approved Equal. The word DRAIN in 2-inch, flat face, gothic letters shall be cast into the cover.
Catch basin frame with 3 flanged sides	EJIW 0MA554000005, 8-inch deep or Approved Equal.
Catch basin frame with 4 flanged sides	EJIW 0MA554000006, 8-inch deep or Approved Equal.
Catch basin grate	EJIW 0MA552000076 or Approved Equal. The words DUMP NO WASTE in ½-inch, letters shall be engraved into the edge of grate along one side.