

Request To Construct Low Pressure Sanitary Sewer

Description: Prior to construction of a new or modification of an existing sanitary sewer, approval must be secured from the Westchester County Department of Health. This section applies to low-pressure sewer systems.

Applicable Codes: Chapter 873, Article XXII, Section 873.2202 of the Laws of Westchester County.

Fees: Chapter 873, Article XXI, Sections 873.2114 and 873.2115 of the Laws of Westchester County.

Submittal:

1. One (1) original form “DEC Application for Approval of Plans for a Wastewater Disposal System” (BSP-5) with all items completed. This form must bear the original signature of the applicant.
2. One (1) Chapter 20 “Design of Sewers” form with all items completed.
3. One (1) original Engineer’s Report bearing the engineer’s original signature and seal. This report must provide a narrative of the scope, details and specifications of the project and must include flow calculations for sewer pipe sizing.
4. A minimum of three (3) sets of construction plans, (one (1) set will be retained by the Department)
5. Design and construction must be in accordance with latest versions of Recommended Standards for Wastewater Facilities (Ten State Standards) and NYSDEC standards as applicable.

Plan Contents:

1. Location Map.
2. Plan view – scale.
3. Profile view – scale.
4. Water main and storm sewer crossings must be shown on both profile and plan views.
5. The distances from the proposed sewer to water mains/storm sewers must be identified on both profile and plan views.
6. Horizontal and vertical separations between water mains and storm sewers must be illustrated showing conformance with Section 38.3 of the Recommended Standards for Wastewater Facilities, 2004 Edition or latest edition.
7. Manhole and pipe joint details, including details of pipe connections to existing sewers must be provided.
8. Material of construction for pipes and manholes must be stated on the plans. Trenching, pipe bedding, and backfill details must also be provided.
9. Sewers shall be laid deep enough to prevent freezing, usually three feet below finished grade.
10. Minimum pipe velocity is 2 fps when flowing full. If the flow is expected to be less than 2 fps the municipality must acknowledge this fact and accept responsibility for frequent inspection and maintenance.
11. There shall be a note indicating that there are no wells within 25 feet of the

sanitary sewer.

12. All plans submitted for approval must bear the professional engineer's original stamp and original signature on each sheet and be prepared pursuant to Title VIII, Article 145, Section 7209 of the New York State Education law.

Engineering Report

1. Explain why a low-pressure sanitary sewer system was chosen instead of conventional gravity sewers with a common pump station.
2. Explain the design basis. The design must be consistent with the manufacturer's recommendations, the EPA Design manual, and the 1988 DEC Intermediate Standards.
3. Any deviations from the above standards or these recommendations must be clearly explained.

Design Considerations

Pump Size/Pump Velocity

1. The design must achieve a minimum velocity of 2 fps at least once per day.
2. The minimum pipe diameter is 2".
3. The design must consider the velocity, maximum flow, and pump head loss.
4. Branch analysis must be tabulated clearly showing which homes are in each zone.

Pump/Pump Chamber

1. Centrifugal or semi-positive displacement.
2. Pump rate – 11 gpm usually for each pump.
3. TDH must be calculated at maximum flow.
4. Duplex or simplex; duplex preferred for other than single-family home operation. If simplex, overflow storage should be provided.
5. Minimum wet well capacity of 70 gallons.
6. Tank must be corrosion resistant, non-buoyant, with integral controls.
7. Power failure and operation following an extended power outage must be considered.
8. Outside tank location is preferred; minimum 10 feet from house with locking cover.
9. Service lines 1 ¼ inch minimum with shut off valve.
10. Provide check valve on pump discharge line.
11. Audio/visual alarm must be provided.

Pipe Layout

1. Sufficient depth to protect against freezing.
2. Minimum clean out interval of 400 – 500 feet on straight runs; also at intersections and pipe size changes. Provision must be made for system flushing.
3. Air release valves at high points and isolating valves must be provided.
4. Force main should terminate at bottom of manhole.
5. Force main to be pressure tested at 1½ times operating pressure; minimum test pressure of 50 psi for 2 hours.

Ownership/O&M Issues

1. Municipality must own the lines.
2. Municipality should own the pumps; if not, provide justification as to why not.
3. Must guarantee 24-hour repair time cycle.
4. Spare pumps to be provided at ratio of 1 for every 8 to 10 operating pumps.

Issuance of Completed Works Approval for a Low Pressure Sewer

Description: Prior to the activation of a new or modified low-pressure sewer, approval must be secured from the Westchester County Department of Health.

Applicable Codes: Chapter 873, Article XXII, Section 873.2204 of the Laws of Westchester County.

Fees: Chapter 873, Article XXI, Section 873.2115 of the Laws of Westchester County.

Submittal: The submittal shall be forwarded to the staff engineer who reviewed the project for construction approval.

When requesting approval of completed works pursuant to the above provisions, the following list serves as the minimum requirements:

1. A minimum of two (2) copies of "As Built" plans (one (1) copy will be retained by the Department) bearing the original signature and seal of the Professional Engineer supervising construction. This plan must reflect all changes from the original plan by "Bubbling" these changes. Note: all deviations from the original plan approval must have received Health Department approval prior to submission for completed works.
2. Acceptable leakage test results must be submitted for review.

The Professional Engineer supervising construction must provide a certification letter bearing an original seal and signature including leakage test results and "As Built" plans. Such letter shall provide a statement that the undersigned has supervised construction and witnessed the leakage testing and shall also include a statement that there are no construction changes from the original Department approval. In the event that construction changes do exist, these changes must have received prior Department approval, and this certification letter must acknowledge said approval and reflect said changes.