

SECTION 400 – SANITARY SEWER SYSTEM

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Section 401 – General

The standards and requirements found in this article are for the materials and construction of sanitary sewers within the Village of New Lenox.

Section 401.01 – Specifications

These specifications cover pipe for sanitary sewers and service connections, sewer fittings, manholes and all appurtenances normally used for sanitary sewer collection systems. Special considerations will be cover in the detailed plans and special provisions covering the proposed construction. Sanitary sewers shall be installed in accordance with the “Standard Specifications for Water and Sewer Main Construction in Illinois”, latest edition, and applicable ordinances of the Village of New Lenox, except as modified herein.

Section 401.02 – Start of Construction

Sanitary sewer construction shall not start before acquiring an IEPA Construction permit number and an Illinois Pollution Control Board permit number.

Section 401.03 – Sanitary Sewers

All sanitary sewerage of domestic and other water borne wastes shall be collected and conveyed in a sanitary sewer pipe system to a point of discharge into an existing sanitary sewer system, Village of New Lenox interceptor, or sewage treatment plant. No sanitary sewerage shall be allowed to enter any storm sewer system or discharge onto the ground or into receiving streams without first being treated in accordance with Village, County, State, and Federal regulations.

Section 402 – Materials

Section 402.01 - Pipe

All sanitary sewer pipe materials shall conform to the latest applicable ANSI, ASTM, AWWA, AASHTO, or other nationally accepted standards. Only the following sanitary sewer pipe and joint materials are approved for use in the Village of New Lenox, Illinois.

1. Polyvinyl Chloride (PVC) pipe conforming to ASTM D3034 (SDR 26) with elastomeric gasket type joints conforming to ASTM F477 and ASTM D3212.

The Village reserves the right to require alternate sanitary sewer pipe and joint material as it deems necessary.

The name of the manufacture, class and date of issue shall be clearly identified on all sections of pipe. The contractor shall also submit bills of lading, or other quality assurance documentation when requested by the Village Engineer.

Section 402.02 – Manholes

1. Precast Reinforced Concrete Manholes meeting ASTM C478 provided with the following:
 - a. Cretex internal Chimney Seals
 - b. Rainstopper inserts:
 - i. Residential Development shall use Man Pan Brand inserts.
 - ii. Commercial Development shall use Parsons Brand inserts.
 - c. Water stop gaskets (See Detail 20)
 - d. Macwrap External joint sealing bands in accordance with ASTM C877 or approved equal.
 - e. An epoxy coating shall be required for internal, external, and force main effluent manholes. The coating shall be Raven 405 or approved equal for coating. The thickness of the coating shall be a minimum of 150 mil's. Please contact the Village's Sanitary Public Works Department for any questions, information, and approvals.

Section 402.03 – Bedding and Trench Backfill

All sanitary sewer pipes will be bedded in select granular material conforming to the gradation of CA 7.

All trenches for sanitary sewers falling under or within five (5) feet of proposed or existing paved surfaces, or structures shall be backfilled with select granular material conforming to the gradation of CA 7.

Section 403 – Design Requirements

Section 403.01 – Sanitary Sewer Collection System

The design of the sanitary sewer collection system shall comply with all IEPA Design Standards except as noted below:

1. The maximum length between manholes shall not exceed 400 feet.
2. The minimum allowable cover over public sanitary sewers shall be six feet.
3. Manholes are required at upstream ends of all pipes.
4. Manholes intended for future connections shall include one length of pipe, minimum, beyond the proposed structure.

5. The sanitary sewer system shall be extended to farthest limit of property (unless directed otherwise in writing by Village Engineer).
6. The minimum sanitary sewer slopes shall be 0.05% higher than the minimum self cleaning slope, except for interceptor sewers where minimum slope is required.. For example, the minimum self cleaning slope for eight (8) inch pipe is 0.40%. The proposed slope to be provided within the design shall be 0.45% except in the following instance:

8” Sanitary Sewer Minimum Slope Requirements	
Number of Taps	Minimum slope, in percent
Less than 3	1.00%
4	0.90%
5	0.80%
6	0.65%
7	0.50%
8	0.45%

7. The pipe material used shall be PVC, SDR 26 ASTM D3034:
8. Contact village engineer for information on Lift Station design and installation.

The plan shall conform to overall Village plans for any trunk lines, existing or proposed, which traverse the subdivision

Proposed sanitary sewer and sanitary sewer structures are not permitted within proposed roadways, sidewalks, curbs and gutter or driveways except for utility crossings. All sanitary sewer structures shall be located within ten (10) feet of the common lot lines extended.

The location of the proposed sanitary sewer shall be located a minimum distance of three (3) feet behind the back of curb and shall be centered between the back of curb and front of sidewalk. The proposed sanitary sewer shall not be located within the rear or side yards of any proposed lot unless directed by the Village Engineer.

Section 403.02 – Sanitary Sewer Service

Minimum service diameter shall be six (6) inches.

Minimum permissible slope shall be one percent (1%). Lower slopes shall be permitted for larger diameter pipes if the service will provide a minimum velocity of two (2) fps at average daily flow.

Riser assemblies shall be constructed with the following materials:

Service Riser Angle	
Less than 45°	45° and Greater
PVC, SDR 26, fittings and pipe.	Ductile Iron Fittings and pipe.

1. All PVC fittings and pipe shall comply with the requirements of ASTM D3034 and ASTM D3212.
2. All Ductile Iron components shall be provided with Protecto 401 coating.

All services shall be extended to five (5) feet inside of the property line for single family residential lots.

One service shall be provided for each residential / commercial unit.

All sanitary services shall have a minimum depth at the property line equal to four (4) feet.

In locations where the proposed development includes a park site to be transferred to the New Lenox Park District, the site shall be provided with a sanitary sewer service.

Section 404 – Construction Requirements

Section 404.01 – Depth of Pipe Cover

All pipe shall be laid to a minimum depth of six (6) feet measured from the proposed ground surface to the top of the pipe, unless specifically allowed otherwise in special circumstances by the Village Engineer.

Section 404.02 – Pipe Bedding

Granular pipe bedding, haunching and initial backfill material or granular cradle shall be required on all sanitary sewers installed in the Village of New Lenox. Granular pipe bedding shall be a minimum of four (4) inches. The trench shall be backfilled with granular material to a minimum of one (1) foot over the top of the pipe per New Lenox Standard Detail No. 21. Bedding, haunching, initial, and final backfill material shall conform to IDOT gradation CA 7.

Section 404.03 – Handling of Pipe

Sanitary sewer pipe shall be handled in a manner that will prevent damage. Damaged or defective material on the job site shall be rejected and replaced to the satisfaction of the City Engineer. Methods of construction conducive to the damage of sewer pipe shall be

corrected with called to the attention of the contractor. All pipe and fittings shall be examined by the contractor above grade before placement in the trench.

Section 404.04 – Laying of Pipe

Sanitary sewer pipe shall be laid true to line and grade as set forth in Section 31 paragraph 31-1.02 of the “Standard Specifications for Water and Sewer Main Construction in Illinois.” Dirt and other foreign material shall be prevented from entering the pipe or pipe joint during handling of laying operations.

Any pipe or fitting that has been installed with dirt or foreign material in it shall be cleaned and re-inspected. At times when pipe laying is not in progress, and at the end of each working day, the open end of the pipe shall be closed with a water tight plug to ensure absolute cleanliness inside the pipe. The Village Engineer may request mechanical cleaning (jet flushing) if necessary to ensure clean acceptable pipes, at the contractor’s expense.

Section 404.04 – Installing Pipe Through Casings

This work shall be in conformance with Section 20-2.19 of the “Standard Specification for Water and Sewer Main Construction in Illinois” except as modified in New Lenox Standard Detail No. 23.

Section 404.05 – Utility Identification

A wood stake (4 inch by 4 inch by 6 foot) with not less than the top two (2) feet painted green shall be installed next to each sanitary sewer manhole, clean-out, and at the end of each sewer stub and service stub. The wood stake shall be maintained in a plumb position until Village acceptance of the utility structures.

When newly poured curbs are installed the contractor shall use a Village approved stamp to indent the wet concrete with an “S” to identify the location of each sewer service stub and “SM” for sanitary manholes. If the developer and/or the contractor fail to indent the curbs as outlined above, the Village will then require that identification medallions or other symbols as approved by the Village Engineer be affixed to the curb.

Section 405 – Testing and Acceptance

All public sanitary sewers shall be pressure tested in accordance with Article 31-1.11B(3) of the “Standard Specifications for Sewer and Water Construction in Illinois”, latest edition, and deflection tested in accordance with Article 31-1.11B(4) of the “Standard Specifications for Sewer and Water Construction in Illinois”, latest edition. Deflection testing shall be done no sooner than 30 days after the pipe has been backfilled. No sooner than 30 days after sewers have been installed, they shall be inspected by close circuit color television to determine if any pipe installation defects have occurred, and to determine the location of services. One copy of the video tape and written inspection reports shall be furnished to the Village.

All private sanitary sewers, with a manhole to manhole connection, shall be pressure tested in accordance with Article 31- 1.11B(3) of the “Standard Specifications for Sewer and Water Construction in Illinois”, latest edition. One copy of the written inspection reports shall be furnished to the Village.

All Sanitary manholes (public and private) shall be tested for leakage by vacuum testing in accordance with ASTM C-1244. One copy of the written inspection reports shall be furnished to the Village.