2014 Required Improvements, Engineering Design Standards, and Standard Details

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SECTION 100 – GENERAL PROVISIONS, REQUIREMENTS, AND COVENANTS

Section 101 – General Provisions
The design of developments and municipal improvements shall comply with the laws, ordinances, rules and regulations set forth in this section including but not limited to the following:

1. The provisions of 65 ILCS municipal code, as amended from time to time
2. The Village of New Lenox's Comprehensive Plan and Official Map.
3. The Village of New Lenox's Ordinances:
    a. Zoning Ordinance
    b. Subdivision Ordinance
    c. Storm water Management Ordinance
    d. Development in Flood Plain Areas Ordinance Standards
4. The Village Technical Standard Details as amended from time to time.
5. All state of Illinois and Will County applicable rules and regulations.

Section 102 - Minimum Standards and Specifications
All construction of improvements covered by this Article shall be in accordance with, and materials used shall be in compliance with, the methods and materials required in the appropriate sections of the latest editions, amendments or revisions of the following:

1. All applicable Village Ordinances, Standards, Specifications and Details, most recent edition, as adopted.
2. "Standard Specification for Road and Bridge Construction", Most Recent Edition, Illinois Department of Transportation (IDOT);
3. "Manual for Uniform Traffic Control Devices for Streets and Highways", Most Recent Edition, U.S. Department of Transportation, Federal Highway Administration;
4. "A Policy on Geometric Design of Highways and Streets", Most Recent Edition, American Association of State Highway and Transportation Officials;
5. "Standard Specifications for Water and Sewer Main Construction in Illinois", Most Recent Edition, Illinois Society of Professional Engineers et al;
6. "Illinois Design Standards for Sewage Works", I.E.P.A., Division of Water Pollution Control;
7. "Technical Policy Statements", I.E.P.A., Division of Public Water Supply;
8. "Recommended Standards for Water Works', Great Lakes Upper Mississippi River Board of State Sanitary Engineers ("10 States Standards".)
9. "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois", the Urban Committee of the Association of Illinois Soil and Water Conservation Districts, ("Green Book");
10. "Standards and Specifications for Soil Erosion and Sediment Control", I.E.P.A. ("Yellow Book");
11. "U.S. Soil Conservation Service Field Engineering Handbook";
12. Illinois Department of Transportation Design Manual.
13. American National Standard Practice for Roadway Lighting (ANSI/IES RP-8, Latest Edition);
14. The National Electric Code (NEC, NFPA 70, Latest Edition)

15. Recommended Standards for Wastewater Facilities (Wastewater Committee of The Great Lakes – Upper Mississippi River, Board of State and Provincial Public Health and Environmental Managers)

Where standards are not specifically set forth, improvements shall comply with standards established by the Village Board.

Section 103 – Required Improvements
The following improvements shall be provided as part of the development of a proposed development:

1. Street pavement structure improvements shall be bituminous concrete flexible type pavement consisting of the following;
    a. Concrete curb and gutters
    b. Stable and compacted subgrade
    c. Base and sub-base course, as required.
    d. Bituminous concrete binder and surface courses for flexible type pavement
2. Portland cement concrete type street pavement (Special situations)
3. Portland cement concrete sidewalks;
4. Street and private parking lot lighting;
5. Landscaping and trees;
6. Street signs and pavement markings;
7. Any traffic safety installation such as guard railing, etc;
8. Public utilities for telephone, electric, cable, television, and natural gas;
9. Site and lot grading;
10. Storm Sewer Systems and Sump Pump Drainage System;
11. Storm Water Storage and Management;
12. Erosion Control;
13. Sanitary Sewer System; and
14. Water Distribution System

Section 104 – Oversized Design
Where required in the overall planning as evidenced by the Village's Master Plan for water, sewer or streets, or the Official Village Plan, the subdivision improvements shall be designed and constructed in accordance with the community's anticipated needs. An agreement between the Developer and the Village may be made allowing the Developer to recapture added construction costs resulting from an increased design capacity beyond that necessary for the immediate subdivision. This shall apply but not be limited to: collector sewers, lift stations, disposal facilities, wells, pumping facilities, water mains, storage tanks, culverts, storm sewers, and streets.

Section 105 – Offsite Improvements/Existing Infrastructure Modifications
If its determined that any existing infrastructure including, but not limited to, water distribution systems, sanitary sewers or other wastewater treatment facilities, storm sewers or other storm water management facilities, roads and curbs and gutters, which

may be situated either in part or entirely off site, are inadequate to facilitate a proposed development when one hundred (100) percent built-out, then improvements to any one or more or all of such facilities will be required.

Section 106 – Public Utilities
All utility lines for telephone, electric service and cable television shall be placed underground entirely throughout a development area. Said conduits or cables shall be placed within easements or dedicated public ways, in a manner which will not conflict with the other underground services. Further, all transformer boxes shall be located so as not to be unsightly or hazardous to the public. The utility lines shall be parallel to and not less than eighteen (18) inches from the property lines. Corner property markers shall not be disturbed by the installation of utility lines. The developer shall coordinate with Com Ed and provide to the Village a marked up copy of the utility plan with the proposed electrical utility locations.

Section 107 – Boundary, Lot, Right of Way line, and Benchmark Monumentation:

Section 107.01 – Permanent Concrete Monument Locations
Permanent concrete monuments shall be placed at all corners, changes in bearing of the exterior boundary and at such other points shall be required to enable ready establishment of lines with in the subdivision as indicated in the Village Ordinances and as provided by 765 ILCS 205

Section 107.02 – Permanent Concrete Monument Composition
Permanent concrete monuments shall be of concrete having a six (6) inch minimum diameter with one (1) number 4 vertical bar in its center, and be at least thirty-six (36) inches in length. Monuments shall be set flush with adjacent ground.

Section 107.03 – Iron Rod Monuments
Iron pipe monuments not less than ¾- inch diameter and 36 inches in length shall be set at all lot corners and all other required points not marked by permanent concrete monuments. The iron pipes shall be set flush with the finished ground elevation.

Section 107.04 – Permanent Benchmarks
A minimum of one permanent benchmark shall be established for each 50 acres, or fraction thereof, subdivided, at a location designated by the Village Engineer. This monument shall be of concrete with minimum dimensions of six inch diameter, and shall be 72 inches long, with a brass plate securely fastened to the surface. On the brass plate shall be inscribed the number and elevation of the benchmark.

Section 107.05 – Acceptance
After construction of all improvements and before final acceptance by the Village, the Developer shall replace or verify the existence of all monuments and markers.

Section 108 – Easements

Section 108.01 – Utility Easements
Easements for the installation, operation and maintenance of utilities shall be provided as follows:

1. Along all boundary lines of the subdivision having a width of not less than ten (10) feet.
2. Along all back lot lines having a width of not less than ten (10) feet.
3. Along all front lot lines having a width of not less than five (5) feet.
4. Along side and front lot lines where required. Easements for water, sanitary sewer, and storm sewer lines shall have a minimum width of ten (10) feet or shall be based upon three quarters (3/4) the depth of the utility. Separate and exclusive easements for water sanitary and storm sewer are required. Easements for electrical, street lighting, telephone, cable television and gas shall have a minimum width of ten (10) feet on each side of the respective lot lines.
5. On abutting lots, back of lot lines and side lot lines easements shall be provided on each side of the lot line at the minimum width specified above.
6. Utility easements shall be laid out so as to provide continuity from block to block.
7. On wooded sites, utility easements shall be located and be of sufficient width so as to minimize environmental damage.
8. Utility easements and any easement provisions to be incorporated into the final plat or in the deed documents shall be reviewed and approved by the utility companies responsible to furnish the proposed services. Also, the wording of the utility easement certificate on the final plat shall be approved by the Village Engineer.

Section 108.02 - Drainage and Storm water Management Easements
Easements for the installation, operation and maintenance of Drainage and Storm water Management Facilities shall be provided as follows:

1. Drainage easements shall be provided at the side and rear of all lots to accommodate drainage from each lot. Unless otherwise specified, the width of drainage easements shall be not less than ten (10) feet wide along each rear lot line (totaling 20 feet).
2. Where a subdivision is traversed by a watercourse, drainage-way, channel or stream, or other body of water, appropriate dedications or easements, with adequate width to accommodate observed, computed, or anticipated Stormwater drainage through and from the development, shall be made. The width of the easement or dedication shall be dependent on the area of land drained by the watercourse and shall allow access for construction and maintenance equipment. In general the easement shall conform substantially with the lines of the watercourse and shall include the flood plain, where applicable, plus an additional area not less than twenty (20) feet wide adjoining both edges of the flood plain.
3. All permanent storm water management facilities for a development shall be protected by easements or dedications for drainage and shall permit ingress and egress for maintenance. All side lot lines shall have a minimum ten (10) foot

easement on each lot. All lot lines adjacent to non-subdivided lands shall have a twenty (20) foot easement for drainage and utilities.

4. No construction of structure, dams, embankments or channels (except as indicated on the improvement plans) and no planting of trees, shrubbery or other vegetation, which hinder the flow of water of otherwise inhibit the intended purposes, shall be allowed within any drainage or Stormwater management facility easement. In the event the area with in such easement is obstructed, reshaped, regarded or restricted for uses other than as intended or as shown on the improvement plans, the Village will cause to have any alterations corrected at the expense of the party or parties causing said obstruction, restriction, regrading, or alteration.
5. Where possible drainage easements shall be separate and distinct from utility easements.
6. Drainage and storm water management easements shall be adequately maintained so as to provide for removal of accumulation of vegetation, silt, debris or other material that may interfere with the flow characteristics of drainage-ways or the essential features of retention or detention facilities.

Section 108.03 – Pedestrian Way Easements
Easements or dedications shall be provided for pedestrian ways where deemed appropriate by the Village Planning Commission. Pedestrian way easements shall be maintained to permit their continued use. Reference Section 602.04 of this guideline for specifics.

Section 108.04 – Line of Sight Easements at Intersections
At all intersections, line of sight easements shall be granted to the Village to protect clear sight distance. Unobstructed visibility between two feet and six feet above the height of the paved surface of the access road must be maintained at all intersections. To maintain this visibility, no shrubs or other landscape material which will reach a mature height greater than two feet shall be permitted within ten feet of the right-of-way of a major arterial, or five feet from the right-of-way of a lesser roadway, for a distance of 40 feet from the right-of-way intersection. Trees are not allowed in these critical visibility areas.

Section 109 – Preservation of Natural Features

Section 109.01 – General
Due regard shall be given to the preservation of natural features within a proposed development, such as large trees, water courses, historical and similar community assets, which, if preserved, will add attractiveness and value to the property. The Developer shall take every precaution required to preserve said natural features in the planning and construction of said development.

Section 109.02 – Preservation of Existing Trees
When parcels proposed for development include trees measuring six (6) inches in caliper or larger, a tree preservation and protection plans shall be prepared and submitted to the Village for review and approval, and shall include the following:

1. Show the location, size, condition, and species of all existing trees within the construction zone and within thirty (30) feet of proposed construction, which are six (6) inches in caliper or larger.
2. Identify all existing trees, six (6) inches in caliper or larger, proposed to be removed.
3. Means and methods to be used to protect and preserve trees designated to be saved.

Section 109.03 – Evaluation of Existing Trees
The ability to save existing trees on the site shall be evaluated by the Developer and the Village to determine which trees shall be saved, and which trees may be removed for one or more of the following reasons:

1. To provide essential grade changes.
2. To provide for surface water drainage and utility installations.
3. To locate proposed structures without causing unreasonable economic hardship.
4. To observe good forestry practices, i.e., the number of healthy trees that they parcel will support.
5. That poses a safety hazard to pedestrian or vehicular traffic, or threatens to cause disruption of public services.
6. That poses a safety hazard to buildings, both existing and proposed.
7. That is diseased or weakened by age, storm, fire or other injury.
8. That are willows, silver maples, or other fast-growing softwood trees determined by the Village to be short lived or of poor quality.

All existing trees determined to be saved shall be identified on the preservation and protection plan and shall be preserved and protected during construction of the development

Section 109.04 – Tree Replacement
In the event that a tree identified for preservation is destroyed or damaged during construction, such tree shall be replaced with a tree that is at least the same size caliper as the tree removed, or be replaced with smaller trees, each with a minimum caliper of two and one-half (2-1/2) inches, as measured six (6) inches above grade, which add up to the caliper of the original tree. The species of the tree to be replaced shall comply with respective Village Ordinances.

Section 109.05 – Other Tree Preservation Requirements
Approval of a development plan shall be withheld until all of the information required by this section of the Ordinance has been submitted, and the evaluation of existing trees on the subject property has been completed by the Village.

The Village shall, at its discretion, have the right to retain a professional tree consultant/forester to review tree preservation plans and to submit a written report to the Village. All expenses incurred by the Village for the use of the tree consultant shall be reimbursed by the Developer.

The Village shall have the right to inspect the subject property at any time during the construction process, in order to verify that the Developer and contractor have protected trees in accordance with the approved tree preservation plan.

Section 110 – Section Parking
Any off-street parking improvements required to be constructed as part of the proposed subdivision improvements shall be in accordance with the requirements of the Zoning Ordinance of the Village of New Lenox. Depth and width of all lots shall be adequate to provide off-street parking and loading spaces as required by the Zoning Ordinance.

Section 111 – Mailboxes
The United States Postal Service requires all new subdivisions provide community/gang mailbox units. Said mailbox units shall be placed within easements or dedicated public ways, in a manner which will not conflict with the other underground services. The location of these mailbox units will be determined during the design of the subdivision. Further, all mailbox units shall be located so as not to be unsightly or hazardous to the public. Corner property markers shall not be disturbed by the installation of mailbox units.

SECTION 200 – GRADING, STORMWATER MANAGEMENT, WETLANDS, AND EROSION CONTROL

Section 201 – Grading
The site shall be graded such that a situation of positive drainage is created to convey surface water runoff to inlets, catch basins, manholes, or storm water management facilities in such a fashion that no greater than eight (8) inches of ponding occurs in any location through out the development.

Section 201.01 – Parcel Drainage
The parcel drainage shall be designed to flow away from the top of the foundation. Storm water being directed to the side yard of the parcel shall be directed into a formed drainage swale, having a minimum slope of two percent (2%) and a maximum slope of seven percent (7%). Side yard swales shall have side slopes of 6:1 or less. In the event that conditions dictate that some parts of the lot be higher than the structure foundation, the grading plan must show specific drainage configurations for the parcel specifying that all drainage is to be directed to flow away from the foundation in an acceptable manner.

Back lot line swales shall be graded to a positive outlet or inlet structure at a minimum flow line slope of one percent (1 %) and shall have side slopes of 6:1 or less.

Construction and work such as walkways, driveways, landscaping or any structure shall be installed so that the construction of same will not interfere with drainage. All sidewalks, driveways, patios and other flat work shall be at an elevation relative to the foundation wall so that water will drain away from the structure on all sides and off the lot in a manner which will provide reasonable freedom from erosion and permanently pocketed surface water.

The flow from off-site tributary areas that are tributary to an intermittent stream or overflow route that must pass through the parcel must be identified and flow routes designed in such a way to adequately convey the flow of all surface water for a 100-year storm frequency without damage to adjoining structures.

All overflow routes for the 100-year storm and for accumulated storm water runoff from several lots or from off-site catchment areas must be accounted for. The total width of the flow route shall be entirely contained within an easement for drainage purposes.

On-site channels shall be design to accommodate the necessary flow for the design event.

Section 201.02 – Retaining Walls
Retaining walls over the height of 30 inches will be required to be designed by an Illinois Licensed Structural Engineer.

Retaining walls over the height of 30 inches within 15 feet of a pedestrian walkway will require railing extending not less than 10 feet beyond the limits of the walkway. Retaining walls over the height of 30 inches within 15 feet of a parking lot and parking lot drive aisle will require a guardrail or a combination of 9 inch tall barrier curb and railing.

Retaining wall details (cross-section, materials, color, and height) must be submitted to Engineering and Planning Departments for review, and ultimate Village Board approval. Also, retaining wall railing and guardrail details (cross-section, materials, color, and height) must be submitted to Engineering and Planning Departments for review, and ultimate Village Board approval.

Section 202 – Storm Water Management Facilities

Section 202.01 – General Requirements

The requirements for Storm Water Management calculations can be found in Chapter 38, Article III of the Village Ordinance.

Storm water management facilities may be of Wet Bottom or Dry Bottom design methodology. The preferred methodology will be determined by the Village Engineer.

If the Detention Basin is to be transferred to the New Lenox Park District, the design shall adhere to the Village requirements, as well as, the New Lenox Park District's requirements. Requirements can be obtained directly from the Park District.

Detention Basins shall be constructed using compacted earth and the use of retaining walls is not permitted unless otherwise approved by the Village Engineer.

A minimum of one (1) foot of freeboard shall be provided between the high water elevation and the top of the basin, except at the overflow weir.

Minimum side slopes for wet and dry bottom basin shall be five horizontal to one vertical (5:1)

The overflow weir shall be designed to provide adequate capacity for the peak 100-year flow for the entire upstream tributary area at a flow elevation of 12 inches across the weir.

The rim elevations shall set an elevation that will allow the necessary 100-year flow to reach the 100-year outlet restrictor.

The restrictor structure shall be placed in a location where it is accessible for maintenance during the design event. Plate restrictors are prohibited unless otherwise approved by the Village Engineer.

The restrictor shall be located to reduce short-circuiting the proposed pond.

Section 202.02 – Wet Bottom Detention Basins

The following are the minimum requirements for Wet Bottom Detention Basin design:

1. The pond depth shall be a minimum of ten (10) feet deep over twenty-five percent (25%) of the surface area of the pond. The minimum depth shall not be less than five (5) feet.

2. A ten (10) foot safety ledge shall be provided at an elevation two feet below the normal water level (NWL).

3. Finished surface restoration including shoreline protection shall be provided including, but not limited to, rip-rap with fabric mat or reinforced mat with turf grass from the safety ledge to three (3) foot above the NWL, or aquatic and emergent vegetation across the entire safety ledge to the HWL with signs prohibiting mowing on each lot. The developer must contact the Village Engineering department for verification of installation of the shoreline protection.

4. Aerators must be provided in all wet bottom basins.

Section 202.03 - Dry Bottom Detention Basin
The following are the minimum requirements for Dry Bottom Detention Basin design:

1. Dry Bottom Detention Basins shall be constructed at a minimum slope across the bottom of the pond equal to one percent (1%).

2. Dry bottom detention basins shall be provided with a subsurface low flow drainage system constructed within the pond slopes that will connect directly from the last upstream drainage structure prior to the pond to the upstream side of the restrictor structure. The low flow drainage system shall be constructed of a minimum ten (10) inch diameter RCP storm sewer in order to accommodate the discharges from the sump pump collection system within the subdivision in the absence of a rainfall event. Under no circumstances will concrete channels be allowed.

Section 202.04 – Restrictor Structure
The restrictor structure shall be a minimum of six (6) feet in diameter and shall be provided with two (2) Type 1 frames and lids, which will be installed on each side of the precast steel reinforced concrete weir wall. Steps shall be provided on both sides of the weir wall.

The weir wall shall be a precast steel reinforced concrete wall that shall be installed within the restrictor structure. Under no circumstances will a poured in place weir wall be permitted. The weir wall shall be a minimum of four (4) inches thick with the top of the wall set at the two (2) year high water elevation for the basin.
The two (2) year restrictor shall be an orifice restrictor within the weir wall and the one hundred (100) year restrictor shall be a tube restrictor in the outlet storm sewer pipe as indicated in the Village's Standard Details. The restrictor pipes shall be located on the downstream side of the outlet structure. In subdivisions less than ten (10) acres in size, the two (2) year orifice restrictor shall be drilled directly through the precast steel

reinforced concrete weir wall at the proposed diameter. The use of steel plate restrictors bolted to the weir wall shall not be permitted in subdivision less than ten (10) acres is size.

Section 202.05 – Outlet Erosion Control
Necessary erosion control measures in the vicinity of the overflow weir are required to protect against flow from the 100-year event.

Downstream erosion control measures and calculations shall be provided corresponding to the release velocity through the proposed restrictor.

Section 203 – Wetlands
A report of a site investigation, and if required, a copy of the request for Jurisdictional Determination shall be submitted to the Village during the Preliminary Plat process.

If wetlands are present all requirements, as specified in Chapter 38, Article IV of Village Ordinance, shall be followed.

Section 204 – Storm Water Pollution Prevention Plan

Section 204.01 – General
All construction sites that are required to file for coverage under the National Pollutant Discharge Elimination System (NPDES) general or individual permit for storm water discharges from construction site activities shall have a Storm Water Pollution Prevention Plan (SWPPP) that meets the requirements of the current NPDES Permit No. ILR10 including management practices, controls, and other provisions at least as protective as the requirements contained in the Illinois Urban Manual (latest version).

The SWPPP should be provided in a 3 ring binder format supplemented with the engineering plans. This format facilitates the changes and additions that are often necessary to appropriately manage the SWPPP.

The Soil Erosion and Sediment Control Plan shall designate a series of practices which shall be implemented either at the direction of the permittee or the permittee's representative on site or at the direction of the Administrator should an inspection of the site indicate a deficiency in soil erosion and sediment control measures.

The Soil Erosion and Sediment Control Plan for all disturbed areas included with the SWPPP shall include the location, type, and details of all required site soil erosion and sediment control measures, and shall show any proposed ground cover areas such as seeding, sodding, etc. A detailed construction phasing plan shall be provided, including the sequence of grading activities and the sequence for the implementation of temporary soil erosion and sediment control measures for each construction phase. Initial sediment and erosion control measures to be installed prior to stripping existing vegetation or mass grading shall also be indicated on the plans.

A maintenance schedule for each soil erosion and sediment control measure used shall be indicated on the plan. At a minimum, the applicant and/or their designee shall inspect all soil erosion and sediment control measures on site once every seven calendar days and within 24 hours of the end of a one-half inch or greater rainfall event and any required repairs shall be made to keep these measures functional as designed. All repairs and modifications shall be reviewed by the Administrator or his/her designee.

Methods for conveying flows through the site during construction shall be indicated on the plans along with the location of the 100-year overland flood route. These conveyance routes shall be accommodated with the necessary temporary and permanent erosion and sediment control measures to reduce velocity and erosion and to protect the downstream conveyance. The expected 2-year and 10-year runoff rates from all off-site areas draining into the site shall be identified on the plan.

A separate plan shall also include a description of final stabilization and vegetation measures and the identification of a responsible party to ensure post-construction maintenance.

The SWPPP shall also include guidance regarding the control of waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

Section 204.02 – Storm Water Pollution Plan Requirements

The SWPPP shall be submitted for review during the final engineering review process. The SWPPP shall be in a 3 ring binder format, or similar, with the supplemental engineering plans sheets folded and inserted into the binder or a notice in the binder of the location of the official supplemental plan sheets. Once approved, the binder and all supplemental information shall be kept on the construction site at all times until final vegetation has been established.

The following applicable items should be included as part of the SWPPP:

1. Engineering Plans Sheets:
    a. Erosion Control and Sediment Control (EC/SC) Plan, Details and Specifications.
    b. Grading Plan
    c. Utility Plan
    d. Landscaping Plan
    e. Paving Plan
2. Certifications Statements
    a. Owner
    b. Engineer
    c. Construction Manager
    d. General Contractor
    e. **All** Subcontractors who enter the site.

3. Stormwater Management Report/Plan Summary
4. Geotechnical Soils Report/Survey
5. Onsite Contact Information
6. Illinois Environmental Protection Agency (IEPA) ILR10 General Permit
7. Notice of Intent (NOI)
8. Notice of Coverage Letter from IEPA
9. Blank Incident of Non Compliance (ION) forms
10. Blank Notice of Termination (NOT) forms
11. Blank Inspection forms
12. IEPA Sanitary Sewer Permit
13. IEPA Water Main Permit
14. Village of New Lenox Site Development Permit
15. Erosion and Sediment Control Inspector Information

Any information that is not available at the time of review shall have a space indicating the document that is to be submitted once available. All applicable documents shall be provided in the SWPPP prior to the start of construction.

In the event that there is a change of ownership, contractor, inspector, etc. the IEPA and the Village shall be immediately notified and provided with the appropriate documentation of the revised information.

SECTION 300 – STORM SEWER AND SUMP PUMP DRAIN SYSTEMS

Section 301 – General
The standards and requirements found in this section are for the materials and construction of storm sewer and sump pump drain systems with in the Village of New Lenox, Illinois. **All materials must be American made.**

Section 302 – Materials
The following shall be the permitted materials for the storm sewer and sump pump drain systems:

Section 302.01 – Pipe:

1. Storm Sewer:
    a. Public Storm Sewer
        i. Reinforced concrete pipe (ASTM C76) with rubber ring gaskets joints (ASTM C443). Pipe class must be equal to or greater than the requirements of Article 550.03 of the IDOT Standard Specification except that the minimum allowable pipe class shall be Class III
        ii. Reinforced concrete elliptical pipe, (ASTM C507) with rubber ring gasket joints (ASTM C443). Pipe class must be equal to or greater than the requirements of Article 550.03 of the IDOT Standard Specification except that the minimum allowable pipe class shall be Class III
    b. Private Storm Sewer
        i. Reinforced concrete pipe and concrete elliptical pipe. Pipe class must be equal to or greater than the requirements of Article 550.03 of the IDOT Standard Specification.
        ii. High Density Polyethylene (HDPE) Pipe, Corrugated exterior Smooth wall interior conforming to AASHTO M294, Type S or ASTM F2306 with bell and socket joint provided with manufacturer installed gasket conforming to ASTM F477 and ASTM D3212. <u>This pipe material must be submitted for approval for use by the Village Engineer. Each project shall be considered on an individual basis.</u>

2. Sump Pump Drain:
    a. Public Sump Pump Drain
        i. Poly Vinyl Chloride (PVC) Pipe SDR 35 (ASTM D-3034)
    b. Private Sump Pump Drain
        i. Poly Vinyl Chloride (PVC) Pipe SDR 35 (ASTM D-3034)

Section 302.02 – Structures:

1. Inlet, Catch Basin, Manhole:
    a. Public Inlet, Catch Basin, Manhole
        i. Precast Reinforced concrete (ASTM C478) – 5” wall thickness minimum.
    b. Private Inlet, Catch Basin, Manhole

i. Precast Reinforced concrete (ASTM C478) – 3" wall thickness minimum.

Section 302.03 – Trench Backfill:
All trenches for reinforced concrete pipe storm 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. Recycled concrete materials may be substituted for natural stone provided that the recycled material originates from an IDOT approved source and conforms to the gradation of CA-7

All trenches for HDPE pipe storm sewers falling under or within five (5) feet of proposed or existing paved surfaces, or structures shall be backfilled with granular material in accordance with the manufacture's specification and approved by the Village Engineer.

Section 303 – Design Requirements

Section 303.01 – General
An adequate system of storm water drainage shall be constructed and installed, consisting of pipes, storm water detention facilities, tiles, swales, manholes, inlets and other necessary facilities that will adequately drain the subdivision and protect roadway pavements and buildings from flooding. The storm water drainage system shall be in compliance with Village's Storm Water Management Ordinance, the Standard Details, and all other applicable ordinances enacted by the Village and subject to the approval by the Village Engineer.

A Field Tile Study indicating the existing location of all field files within the proposed development shall be provided. All upstream field tile shall be terminated at a storm sewer structure and incorporated into the proposed storm sewer system. All field tile that is to be taken out of service shall be removed using approved methods and plugged with a clay plug at the exterior boundary of the development.

Computations for the storm sewer system for on-site and off site drainage shall be presented with the final plat for approval. These computations shall include a plan and analysis of the existing downstream conveyance from the site discharge location to the nearest downstream tributary water way. The existing subsurface or surface drainage system shall be evaluated with regard to existing capacity or capability to properly convey the low flow groundwater and site runoff storage facility release without damage to downstream structures and land use on adjacent properties. If the outfall subsurface or surface drainage systems prove to be inadequate, it will be necessary to modify the existing systems or construct new systems which will not conflict with the existing systems and will not impact the existing agricultural land use. Existing subsurface systems shall only be used with extended detention design.

Whenever any stream or important surface drainage course is located in any area which is being subdivided, the subdivider shall reserve an adequate drainage right-of-way as determined by the Village and the Illinois Department of Transportation, Division of

Water Resources along each side of the stream for the purpose of widening, deepening, sloping, improving, or protecting the stream.

The storm sewer system shall be designed in accordance with the Storm water Management Ordinance using a ten (10) year storm frequency or other methods approved by the Village Engineer. Culvert design and capabilities shall be determined according to the Illinois Department of Highways Standard Design Methods using a twenty-five (25) year storm frequency.

Section 303.02 – Storm Sewer System
The Storm Sewer System shall be designed for the 10-year event using the Modified Rational Method. Hydraulic Grade Line (HGL) calculations shall be included that provide two feet of freeboard between the 10-year HGL and the proposed rim elevations for all structures within the system.

The minimum allowable pipe size shall be twelve (12) inches for the entire storm sewer system. Ten (10) inch storm sewer shall be permitted in the subsurface low flow drainage system only.

The minimum velocity under design conditions shall be two (2) fps and the maximum velocity under design conditions shall be ten (10) fps.

Provide vertical and horizontal clearance between water main and storm sewer in accordance with "Standard Specifications for Water and Sewer Main Construction in Illinois". Every attempt must be made to place water over sewer.

The storm structure configuration shall be constructed in the following scenario: Inlet to Catch Basin to Manhole to discharge location.

Storm structure with three or more pipes connected must be a minimum of four (4) feet in diameter.

The maximum diameter of a curb line structure is two (2) feet in diameter and the depth from rim to invert cannot exceed four (4) feet.

Storm Structures that are four feet or larger in diameter must have steps and a minimum 24 inch diameter opening in the casting.

Flared end sections shall conform to the IDOT detail and shall be installed with galvanized steel grates. Rip-Rap shall be installed around all flared end sections per the Urban Manual. Alternatives to rip-rap may be submitted on a case by case basis.

All existing drain tiles encountered on site shall be connected to the proposed storm sewer system at a storm sewer structure.

Storm sewer structures shall be provided at every other lot corner in the rear yard of all

proposed developments. These structures shall be either an inlet or manhole. Structures with sumps will not be allowed unless otherwise approved by the Village Engineer.

IDOT Type 8 storm sewer grates are not permitted.

The storm sewer system shall be televised after the completion of the storm sewer, Commonwealth Edison and Nicor installations and prior to issuance of the first certificate of final occupancy.

Section 303.02 – Sump Pump Drain System

A sump pump collection system that meets the requirements of the Village of New Lenox Standard Details shall be provided in the front yards of all proposed residential developments. The sump pump collection system shall extend from the front of each building lot to the storm sewer system and include storm structures and/or cleanouts for maintenance purposes. Sump pump service lines from the house to the connection point shall be 4-inches in diameter and shall connect directly to the sump pump transmission sewer at a 4-inch tee or at an adjacent storm sewer structure. Sump pump services lines for respective lots shall not cross adjacent lots prior to connection to the sump pump transmission sewer. Neither sump pump transmission sewers nor service lines may be placed under roadway pavement.

The sump pump drainage system shall be subject to the approval of the Village Engineer and shall be designed in accordance with the Standard Details. The design shall be completed to avoid 90° bends. In lieu of 90° bends, two 45° bends shall be used with a minimum separation of one foot between each bend.

The sump pump collections system shall be sized as follows:

1. Single sump pump service line connections into structures can be made in isolated locations using a four (4) inch pipe.

2. Two to four combined services shall utilize a minimum six (6) inch diameter sump pump transmission pipe.

3. A maximum of ten combined services shall utilize a minimum eight (8) inch diameter sump pump transmission pipe.

Trunk lines shall be installed a minimum of thirty (30) inches below the top of curb and follow the curb line for grade.

The trunk lines shall be installed two (2) feet behind the front property line.

The sump pump drain sewer shall be televised at the time of final inspection for acceptance of the development.

The use of bends within the sump pump drain sewer shall be minimized to aid in the televising of the sump pump transmission sewer prior to final acceptance of the subdivision.

Section 304 – Construction Requirements

Section 304.01 – Pipe Bedding

1. Concrete Pipe
   Granular Pipe bedding material or granular cradle shall be required on all storm sewers installed within 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 the spring-line of the pipe. The backfilled material shall meet the IDOT gradation of CA 7. (See Detail 4)

2. HDPE Pipe
   All trench preparation procedures, pipe bedding material, and trench backfill material should be in accordance with the pipe manufacture's specifications.

Section 304.02 – Pipe Cover
All storm sewer pipes shall have a minimum cover of thirty six (36) inches cover. All sump pump drain trunk and service lines shall have a minimum cover of thirty (30) inches.

Section 304.03 – Handling of Pipe
Storm sewer and sump pump drains 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 Village. Methods of construction conducive to the damage of the pipe shall be corrected when called to the attention of the contractor.

Section 304.04 – Structures
All structures without sumps shall be proved with a cast in place concrete fillet to provided a smooth flow between pipe sections (See Detail 3, 24)

Manholes and Catch Basins, Type A are to be constructed with steps and a cone or flat top assembly with the opening rotated as necessary to achieve optimal casting alignment.

Section 304.05 – Adjustments
When structure adjustments are necessary, they will be performed with a maximum of two (2) adjusting rings with a maximum total height of 12"

Adjusting rings shall be reinforced concrete for heights greater than three (3) to a maximum of twelve (12) inches. Adjusting rings of a height equal to or less than three (3) inches shall be preformed rubber.

If an adjustment is to be made to match a slope, preformed rubber tapered rings must be used.

Section 305 – Permit/Acceptance

Section 305.01 – Open Cutting of Pavement
Open cutting of pavement is not allowed unless approved by the Village Board.

Section 305.02 – Storm Sewer Acceptance

1. Reinforced Concrete Pipe Storm Sewer being dedicated to the Village of New Lenox. Prior to acceptance, the reinforced concrete pipe storm sewer must be cleaned and operational. The storm sewer system shall be televised after the completion of the storm sewer, Commonwealth Edison and Nicor installations but prior to issuance of the first certificate of final occupancy.

   A copy of the video tape for the televising of the storm sewer shall be delivered to the Public Works Department.

2. Reinforced Concrete Pipe Storm Sewer being privately owned and maintained:
   Prior to acceptance of the private reinforced concrete pipe storm sewer, the developer will provide a letter certifying that the private storm sewer was installed in accordance with the approved plans.

3. HDPE Pipe Storm Sewer:
   All HDPE pipe shall be deflection tested in accordance with Article 31-1.11B(4) of the "Standard Specifications for Sewer and Water Construction in Illinois", latest edition. The deflection of the pipe shall not exceed 5.0% of the base internal diameter. The testing shall occur 120 days following installation of the final pipe or following the completion of the sites fine grading, whichever occurs first. In no circumstance shall testing be completed sooner than 30 days following installation of the last pipe. In the event of a failure of the deflection test, the pipe run in which the failure occurred must be retested. The retest shall not be completed sooner than 30 days following the repair.

Section 305.03 – Sump Pump Collection System Acceptance
Prior to acceptance the storm sewer must be cleaned and operational. The sump pump drain sewer shall be televised at the time of final inspection for acceptance of the development and copy of the video tape for the televising of both the sump pump drain system shall be delivered to the Public Works Department.

SECTION 400 – SANITARY SEWER SYSTEM

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.

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^{o}	45^{o} 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.

SECTION 500 – WATER DISTRIBUTION SYSTEM

Section 501 – General

The standards and requirements found in this article are for materials and construction of water mains within the Village of New Lenox, Illinois. Specific references made herein for manufactured materials such as pipe, hydrants, valves, and fittings refer to designations for American Water Works Association (AWWA) or to the American National Standards Institute (ANSI). All water main materials shall be made in the USA and identified as such on the material.

Section 501.01 – Specifications

Theses specifications cover pipe and fittings and items normally used for water distribution systems. Special considerations will be covered with the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, except as modified herein. In cases of conflict between standards, the more restrictive standard shall apply, as determined by the Village Engineer.

Section 501.02 – Start of Construction

Water main construction shall not start before acquiring and IEPA Construction Permit.

Section 502 – Materials

Section 502.01 – Pipe

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

1. Ductile Iron water main conforming to AWWA C151, thickness class 52 in conformance with AWWA C150 and provided with push on joints conforming to AWWA C111 with rubber gaskets. All pipe shall be cement lined and in conformance with AWWA C104.

Section 502.02 – Fittings

All fittings shall conform to AWWA C110 and be constructed of ductile iron with cement lining conforming AWWA C104.

Section 502.03 – Valves

Only the following valves are approved for use in the Village of New Lenox.

2. For valves twelve (12) inches and less, Gate Valves manufactured by Mueller, or East Jordan Iron Works C515 conforming to AWWA C509 with mechanical joint fittings and MEGA-LUG retainer glands manufactured by EBAA Iron, Tyler TUF Grip or Ford Wedge Action Retainer, each with Duratron Sac-Nuts installed according to the table on Detail No. 14.
3. For valves greater than twelve (12) inches, Pratt Butterfly Valves conforming to AWWA C504 with mechanical joint fittings and MEGA-LUG retainer glands manufactured by EBAA Iron, Tyler TUF Grip or Ford Wedge Action Retainer, each with Duratron Sac-Nuts installed according to the table on Detail No. 14.

Section 502.04 –Fire Hydrant
Fire hydrants shall be East Jordan Iron Works hydrants (w/PE gland shoe and valve attached), provided with a 6" East Jordan Iron Works auxiliary gate valve conforming to AWWA C509 with an East Jordan Iron Work Valve Box and Valve Box Stabilizer. (See Detail No. 11 and 12)

Section 502.05 – Valve Vault
Valve Vaults shall be precast reinforced concrete conforming to ASTM C478 provided with extrudible preformed plastic gaskets at all joints and an East Jordan Iron Works 1050A frame and cover with "Village of New Lenox" and Water cast into the cover. (See Detail No 14)

Section 502.06 – Pressure Connection
Pressure connections for watermain shall be made through a gate valve that complies with Section 502.03 of the Village Standard and a Mueller ductile iron tapping sleeve of the appropriate dimension. A valve vault that complies with Section 502.05 of the Village Standard shall house the pressure connection. Pressure connections shall be made only in the presence of an authorized Village of New Lenox representative. (See Detail No. 13)

Pressure connections of equal size to the source main, also known as size on size, are typically not acceptable. These type of connections shall be reviewed on a case by case basis.

Section 502.07 – Sampling Station
Water Sampling Stations shall be manufactured by The Kupferle Foundry Company, Model Number Eclipse #88-SS Sample Station Extreme Cold Climate w/ Traffic Breakaway or an approve equal. The material shall be the stainless steel. (See Detail No. 16)

Section 502.08 – Water Service
The following items shall be provided for each water service in the Village of New Lenox:

1. Service Pipe shall be copper type K conforming with ASTM B88, with Flared fittings
2. Allowable diameter service line sizes shall be 1", 1 ½", and 2".
3. Corporation stops shall be as follows:

	Ford	AY McDonald	Mueller
1"	FB8600-4	4701-B	B-25000
1 ½"	FB8600-6	4701-B	B-25000
2"	FB8600-7	4701-B	B-25000

4. Curb stops shall be as follows:

	Ford	AY McDonald	Mueller
1"	B22-444M	6104	B-25124
1 ½"	B22-666M	6104	B-25124
2"	B22-777M	6104	B-25124

5. Service boxes for a one (1) inch service shall be one of the following:
    a. Mueller H-10300
    b. Ford EM2
6. Service boxes for a services greater than one (1) inch shall be one of the following:
    a. Mueller H-10304

Services greater than or equal to one and one half (1-1/2) inches in diameter shall require saddles with two (2) SAC Nuts per saddle. The saddle shall be an epoxy coated ductile iron body with stainless steel straps. The saddle shall be either Smith Blair model 317 or JCM model 404.

Section 503 – Design Requirements

Section 503.01 – Water Distribution System:

The minimum water main diameter for public water main systems shall be eight (8) inches.

Dead end water mains are not permissible, except in cul-de-sacs as referenced later within this document.

The water distribution system shall be extended to farthest limit of property and looped to an existing system (unless directed otherwise in writing by Village Engineer).

Pressure taps are required for all connections to the existing water distribution systems unless otherwise directed in writing by the Village Engineer.

Fire Hydrants shall be spaced at a maximum separation of 350 feet measured along the proposed water main.

Fire hydrants and main line valves shall be installed adjacent to one another within ten (10) feet of the adjacent lot line extended.

Hydrant locations, dimension to the back of the nearest curb, final grade ring elevation. Hydrants shall be placed a minimum of three (3) feet behind the back of curb.

Hydrants shall not be placed in locations where utility crossings require a hydrant depth in excess of seven (7) feet.

A Sampling Station shall be provided for every development. The sampling station shall be staked for location and grade prior to construction.

Horizontal and vertical separation requirements shall be provided in conformance with IEPA regulations.

Proposed water mains within cul-de-sacs shall not be looped and shall be extended to the end of the cul-de-sac and terminated following the auxiliary valve and fire hydrant. The fire hydrant shall be thrust blocked as indicated in the Village's standard detail.

At locations of water main stubs for future connections, a fire hydrant shall be provided immediately before a gate valve and followed by a twenty (20) foot section of water main with the applicable plug and thrust-blocking. A 2" flushing hydrant maybe required at the end of the stub.

The location of the proposed water main 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 water main shall not be located within the rear or side yards of any proposed lot unless directed by the Village Engineer.

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 water service for future connections. A meter vault shall be installed on the future stub and all tap-on fees shall be paid by the developer.

Water valves shall be provided so that the maximum services affected by service loss in the event of a main break will not exceed 15 units. In addition, sufficient valving shall be provided to ensure that no more than three valves are necessary in order to isolate a section of water main.

Sixteen inch and larger mains shall include restrained joint pipe for three pipe lengths from each mechanical joint bend.

Section 503.02 – Water Service
Water services shall not exceed one hundred (100) feet in length from the water main to the buffalo box. Splices within the water services shall not be permitted.

Section 504 – Construction Requirements

Section 504.01 – Depth of Cover
Unless otherwise shown on the plans or indicated in the Special Provisions, all pipe shall be installed with a minimum of five and one half (5-1/2) feet of ground cover, measured from the proposed grade to the top of the pipe. In areas subject to subsequent excavation or fill, the mains shall be laid to the grades shown on the plans.

Section 504.02 – Pipe Foundation
The trench shall have a flat bottom conforming to the grade to which the pipe is laid. The pipe shall be laid on sound aggregate bedding, no less than four (4) inches in depth, true to grade and shall have a firm bearing for the full length of pipe. Any part of the trench excavated below grade shall be corrected with trench backfill material and thoroughly compacted. Once installed the pipe shall be bedded in aggregate to a depth of six inches above the pipe. Aggregate bedding shall conform to IDOT gradation CA 7.

Section 504.03 – Handling of Pipe
All pipe shall be handled in such a manner as will prevent damage to the pipe or coating. Damaged pipe and other accessories shall be rejected and replaced to the satisfaction of the Village Engineer. No chains shall be used during the installation of the proposed water main. Any pipe that is scratched during installation shall be sprayed with a dialectric undercoating paint. The methods of handling shall be corrected to prevent further damage when called to the attention of the contractor.

The pipe and fittings shall be inspected by the contractor for defects while suspended above grade.

Dirt or other foreign materials shall be prevented from entering the pipe or pipe joint during the handling or laying operations and any pipe or fitting that has been installed with dirt or foreign material in it shall be thoroughly cleaned. At times when pipe laying is not in progress, and at the end of each working day, the open ends of the pipe shall be closed by a water tight plug to ensure absolute cleanliness inside the pipe. The plugs shall not be removed until the trench has been dewatered to the satisfaction of the Village Engineer.

Section 504.04 – Connections to Existing Mains
Prior to connecting to the existing water main, the location of connection needs to be visually inspected and approved by a representative of Village of New Lenox Public Works. The visual inspection will verify that the connection point is free of all obstructions such as bell joints, mechanical joints, storm sewer, sanitary sewer, gas, electric, and other dry utilities. Pressure connections of equal size to the source main, also known as size on size, are typically not acceptable. These type of connections shall be reviewed on a case by case basis.

A representative from the Village of New Lenox Public Works department must be present at all connections to existing water mains. Connection to existing water mains shall be accomplished without interruption to service. Pressure tapping saddles and valve are to be provided at the point of connection to the existing system. The material removed from the existing main, the "cookie" must be presented to the Village of New Lenox Public Works department representative following the completion of the tap. The connection shall be made in accordance with Standard Detail No. 13.

Section 504.05 – Electrical Continuity
All pipe fittings shall be connected so that electrical current flow will not be reduced. This shall be accomplished through the use of brass continuity wedges.

Section 504.06 – Utility Identification
A wood stake (4 inch by 4 inch by 8 foot) with not less than the top two (2) feet painted blue shall be installed next to each water vault, valve box, buffalo box, and at the end of each main 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 a "W" to identify the location of each water service stub and "WV" for water valve vaults. 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 505 – Filling, Disinfection, and Flushing

Water for all filling, testing and chlorinating shall be drawn from the Village's system at the proposed point of connection, using the Village's backflow prevention equipment. This equipment shall be available from the Village after a 48 hour prior notice. Equipment shall be returned to the Village immediately upon completion of the test, whether successful or not. The contractor shall be responsible for providing a two (2) inch flared corporation stop on the new main to connect with the Village's equipment.

A Flushing schedule shall be subject to the Village's Water Department's review and approval.

Water mains shall be flushed and then disinfected by dry gas feed of chlorine in conformance with Article 41-2.14 of the "Standard Specification for Water and Sewer Main Construction in Illinois", latest edition.

Chlorine shall be introduced into the new main through a two (2) inch corporation stop, the Village's RPZ, and an existing hydrant. If no hydrant is available; a second two (2) inch corporation stop on the existing main will be used.

Section 506 – Testing and Acceptance

Section 506.01 – Pressure Testing

New mains less than 16 inches in diameter -
Main shall be tested at a maximum pressure of 150 p.s.i. or to the maximum operation pressure of the valves, which ever is lower, for two (2) hours and shall not exceed the allowable leakage indicated by the "Standard Specification for Water and Sewer Main Construction in Illinois", latest edition.

New mains 16 inches in diameter and greater -
Main shall be tested at a maximum pressure of 125 p.s.i or to the maximum operating pressure of the valves, which ever is lower, for two (2) hours and shall not exceed the allowable leakage indicated by the "Standard Specification for Water and Sewer Main Construction in Illinois", latest edition.

In both instances the tests shall be performed in accordance with AWWA C600 and C603. If the mains to be tested include cast in place concrete thrust blocking, the test

must be performed a minimum of five (5) days after the installation of the thrust blocking.

Section 506.02 – Bacteriological Testing
Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremities until the replacement water throughout its length shows, upon test, a residual not in excess of that carried in the source of supply.

After flushing, water samples collected, at the rate prescribed by the IEPA, from the treated piping system shall show satisfactory bacteriological results. The bacteriological analysis must be performed by a laboratory approved by the Director of the Illinois Department of Public Health.

Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination procedure shall be repeated by the contractor until satisfactory results are obtained.

Section 506.03 – Acceptance
The water main shall be accepted after the following requirements have been met:

1. Written test results for the pressure test must be submitted to the Village Engineer. The original bacteriological test report must be submitted to the Village Engineer.
2. An approved inspection of the water main and its appurtenances has been conducted by the Village Department of Public Works. This inspection may require the hiring of a leak detection service by the developer.

SECTION 600 – PUBLIC ROADWAY SYSTEM

Section 601 – General

The following list of Standard Construction Documents defines the methods, materials, and testing to be utilized when designing and constructing roadway improvements. The sections in this specification are intended to define further particular elements of both design and construction of roadways in New Lenox, Illinois. The Village Engineer shall decide all questions that arise as to the interpretation of the specifications.

1. "Standard Specification for Road and Bridge Construction", latest edition, prepared by Illinois Department of Transportation (IDOT)
2. Supplemental Specifications and Recurring Special Provisions, latest editions and updates (IDOT).
3. Design Manual, latest edition (IDOT)
4. Construction Manual, latest edition (IDOT)
5. Soils Manual, latest edition (IDOT)
6. Highway Standards, latest edition (IDOT)
7. Manual on Uniform Traffic Control Devices, latest edition (Federal Highway Administration)
8. AASHTO Standards, latest edition

Section 601.01 – Protection of Right of Way Improvements

The developer and contractor shall have the responsibility to adequately protect the pavement and property, curb and gutter and other right of way improvements, whether newly constructed or existing, from any and all damage. Sufficient means shall be employed by the contractor to protect against such damage to the satisfaction of the Village Engineer.

Any new or existing improvements that are damaged shall be repaired or replace in a manner which is satisfactory to the Village Engineer.

The contractor and/or developer shall secure all necessary right to perform any work on private property not within the ownership right of the developer. The developer shall bear the sole responsibility for damages that may occur as a result of work performed under contracts that they initiate.

Section 602 – Design Requirements

Section 602.01 –Street Cross sections

Minimum required street cross sections have been developed for all streets with in the Village of New Lenox. Theses are given in Standard Detail Nos 32 through 37. The cross section for the arterial roadway is the minimum allowable. A pavement design shall be submitted for all Arterial road improvements for approval by the Village Engineer. Any variance from the Standard Details for the remaining roadways will not be allowed unless approved by the Village Engineer.

Section 602.02 – Horizontal Alignment

The design of residential streets shall be so laid out that their use by through traffic will be discouraged. In a residential development where a lot is at the intersection of a residential street and a collector or arterial, a "no access restriction" shall be noted on the final plat for the subdivision prohibiting the installation of driveways along the property line of the lot, which forms the line of the collector or arterial streets.

Roads shall be designed so that all deflection in horizontal alignment will be accomplished through segments of circular curves properly incorporated into the design. The minimum permitted centerline radii shall be as follows:

1. Collectors and arterial streets: 450 feet
2. All other streets: 250 feet

A tangent of at least 100 feet shall be introduced between two curves either one of which has a radius of 250 feet.

Street jog with center line offsets of less than 125 feet should be avoided unless otherwise approved by the Village Board.

Clear visibility, measured along the centerline of the street, shall be provided for at least 300 feet on all arterial streets, at least 200 feet on all collector streets, and at least 100 feet on all other streets, unless otherwise indicated by the Village Engineer. In some cases the Village Engineer reserves the right to request an Intersection Site Distance Study.

The design of intersection must show evidence that all street intersections and confluences encourage safe traffic flow.

Section 602.03 – Vertical Alignment

The minimum longitudinal pavement slope shall be 0.40%.

There shall be vertical curves at all locations where the algebraic difference exceeds 1.25%. The "K" values of the vertical curves shall meet the requirements of the intended design speed.

Section 602.04 – Cul-de-Sacs, "T" turnarounds and Block Length

The length of a street terminating in a Cul – de – Sac shall be measured along the centerline of the road from the center of the circle to the near right of way of the intersecting street and shall not exceed 500 feet for subdivisions with lots having less than 15,000 square feet, or 900 feet for subdivisions with lots having at least 15,000 square feet and no more than 35,000 square feet, and in and case shall the length exceed 1,200 feet.

Where there is a probability of extending a street beyond the present subdivision, a "T" turnaround should be considered, 20 feet wide by 30 feet in length on both sides of the street right of way. Driveways shall not be constructed on "T" turnarounds.

The maximum length of blocks permitted is 1,800 feet. Blocks over 800 feet may require crosswalk easements. Crosswalk easements not less than ten (10) feet in width shall be provided where deemed necessary by the plan commission at the approximate centers of the blocks. The use of additional crosswalk ways in any instance to provide safe and convenient access to schools, parks, or other similar destination may be recommended by the plan commission.

Section 602.04 – Overland Flow Path Locations
In locations where the roadway is at a low point and the indicated overland flow route is to be directed through the side yard the design shall be such that a maximum of eight (8) inches of ponding is allowed. The parkway shall be graded such that the overland flow route is accommodated. The sidewalk at these locations shall be constructed such that it does not impede the overland flow path. The developer shall construct a minimum of twenty lineal feet of sidewalk in all locations where an overland flow route is to cross the sidewalk.

Section 602.05 – Parkway Preparation and Restoration
All parkways within the street's right-of-way, which are to have a finished earth surface, shall be graded with topsoil and seeded or sodded.

All parkways between the sidewalk and curb shall be graded so as to have a minimum cross-drainage slope of four (4%) percent and a maximum cross-drainage slope of eight (8%) to the curb line except in situation as detail in Section 602.04.

Unsuitable soil, boulders, and other debris, including broken or excess concrete shall be removed from the parkway so as to provide an acceptable subgrade. Stumps shall be removed to a minimum of 12-inches below the proposed finished grade.

After the parkway subgrade has been prepared, acceptable topsoil material shall be placed to a minimum depth of six inches (6") and graded to proposed finish surface.

Section 603 – Flexible Pavement
All streets within Village limits shall be constructed of Flexible Pavement unless otherwise approved by the Village Engineer. The pavement of all streets and the material used shall comply with Standard Detail Nos. 32 – 39.

Section 604 – Curb and Gutter

Section 604.01 – Types
The types of curb and gutter allowed shall be either the barrier or mountable type as depicted in Standard Detail Nos. 27 and 28.

Section 604.02 – ADA Compatibility
Depressed curbs shall be provided at all intersection of sidewalk and roadway, as approved by the Village Engineer. Curb Joints shall not be allowed in the ADA walkways. The dimensions and locations shall comply with Detail No. 30.

Section 604.03 – Protective Treatment
All concrete curb, gutter, and sidewalks shall be cured in accordance with IDOT "Standard Specification for Road and Bridge Construction", latest edition. All provisions of Section 1020 shall be employed; in addition when membrane curing compounds are utilized they shall also be a type that provides a protective seal that is satisfactory to the Village Engineer. All membrane products shall be applied in accordance with the manufacturer's recommendations.

Section 605 – Roadway Lighting

Section 605.01 – General
This section is intended to further define the elements of both design and construction of street lighting and street light systems in New Lenox, Illinois. All work and equipment performed and installed under this section shall be governed and comply with the following specifications, manuals, and codes. The most current editions and all subsequent revisions and alterations for the specifications are required. The Village Engineer shall decide all questions that arise as to the interpretation of the specifications.

1. The Standard Specifications for Road and Bridge Construction, adopted by the Illinois Department of Transportation.
2. The Manual on Uniform Traffic Control Devices for Streets and Highways, and the Illinois Supplement to the National Manual on Uniform Traffic Control Devises adopted by the Illinois Department of Transportation.
3. The National Electrical Code
4. The National Electrical Safety Code
5. The Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines
6. ASTM Specification
7. AASHTO Standards

Material/product cut sheets shall be submitted to Village's Street Department for review and approval. The cut sheets shall include but are not limited to poles, luminaires, bases, foundations, wiring, cut off enclosures, control cabinets, fusing photo-electric sensor, etc.

Section 605.02 – Street Lighting Design
The Design of street lighting for streets under the jurisdiction of the Village of New Lenox shall meet or exceed the following requirements.

Street light shall be placed:

1. At each intersection
2. On each Cul-De-Sac, on the point where the tangent meets the circular outside of the Cul-De-Sac
3. At mid block locations. The spacing for mid-block street lights shall not exceed 400 feet.

Section 605.03 – Street Lighting Poles and Appurtenances.

Residential street lighting poles and appurtenances should be a follows (See Detail 43):

1. Poles: Centercon, Inc. Concrete Pole, model number MEO-7.5-112
2. Luminaire: See Detail 43
3. Bracket Arm: Centercon, Inc., Aluminum Davit Arm, model number MO-AD-8

Collector and Arterial street lighting poles and appurtenances should be as follows (See Detail 44):

1. Poles: Hapco, 31'-8" Aluminum light pole shaft, 8" bottom diameter, 4-1/2" top diameter, .188 wall thickness, 11" to 12" bolt circle, model number 880298-002
2. Luminaire: See Detail 44
3. Truss Arm: Hapco, 12' aluminum truss arm for 4-1/2" top pole, model number 80083-001
4. Breakaway base: Akron Foundry, 11" to 12" bolt circle, model number TB6-9
5. Foundation: Either a metal foundation complying with Article 1085.31 of the IDOT Standard Specifications or a cast in place reinforced concrete foundation complying with Article 836.03 of the IDOT Standard Specifications.

Decorative street lighting poles and appurtenances should be as follows (See Detail 45):

1. Poles: Sun Valley Lighting, 18'-0", 5" diameter, .188" wall thickness, model number 17-1070
2. Base: Sun Valley Lighting, 12" bolt circle, model number 1700
3. Luminaire: See Detail 45
4. Arm: Sun Valley Lighting, Cast and extruded aluminum arm, model number XPM-1

Section 605.04 – Electrical Cable, Conduit, and Cable Trench

All service distribution wiring shall be 2 - #6 copper stranded XLP-USE direct burial cables, except in locations of street crossings where 2 - #6 copper stranded XLP-USE

cables shall be provided in 2" unit duct. The conduit shall extend five feet beyond the curb or edge of pavement.

All cable and conduit shall be placed in a trench at a depth of not less than thirty (30) inches. The trench shall be backfilled with the original excavated material except in area located within five (5) feet of the back of curb. In such locations granular trench back fill meeting the gradation of CA 7 shall be used.

A four (4) inch wide yellow warning tape shall be installed over the street light cable at all locations where new cable is placed by the trench and backfill method. The warning tape shall be placed approximately one (1) foot below finished grade.

Section 606 – Material Testing

The testing of materials for improvements under the jurisdiction of the Village of New Lenox shall meet or exceed the following requirements.

Test Item	Test	Who Performs Test*	Number of Tests	Test Paid for By	Test Ordered By
Soil predesign (not required for residential streets)	IBR	SC	1 per 500 LF of Pavement, min 2 per location	Developer	Developer
	Proof roll	VE	Min of entire road, each lane of travel	Developer	Village
Subgrade	Stringline	VE	As Needed	Developer	Village
	Proof roll	VE	Min of entire road, each lane of travel	Developer	Village
Base	Stringline	VE	As Needed	Developer	Village
	General	VE	As Needed		
Concrete Curb and Gutter, Sidewalk	Strength	SC	1 Set (3 per set) for every 50 C.Y. min. 1 per pour.	Developer	Developer
	General Laydown	VE	1st day for each material until roll pattern established	Developer	Developer
Asphalt	Nuclear	SC	Min. of 4 sets of tests per day and location	Developer	Developer

*** SC = Soil Consultant, VE = Village Engineer**

All test performed shall be in accordance with the standards as set forth by the Illinois Department of Transportation.

The proof roll shall be performed using a full loaded 50,000 LB GVW, Tandem Axle, commonly referred to as a six wheeler. The developer or the developer's agent must provide the fully loaded vehicle.

The Village Engineer reserves the right to reject all materials that were not tested at the time of installation or order testing of the installed materials. The developer will be responsible for all cost incurred for testing and any restoration required due to the testing.

If any material fails to meet the minimum requirements, the developer shall remove and replace the failing material.

SECTION 700 – COMMERCIAL SITE DEVELOPMENT

Section 701 – General Design Criteria
This section covers the Village of New Lenox standards for site engineering for non-single family developments. Design elements that are incorporated into this section include parking areas, vehicular and pedestrian access, and drainage. Stormwater detention requirements are provided in Section 200 of this manual.

Section 702 – Site Access

Section 702.01 – Commercial Driveway Geometrics
Commercial driveways designed for one-way traffic flow shall not exceed 20 feet in width measured at the property line. Commercial driveways designed for two-way traffic flow shall have a minimum width of 24 feet and shall not exceed 35 feet in width measured at the property line. This width dimension is measured between the faces of curbs.

The minimum turning radius for commercial driveways, measured along the curb return, shall be 20 feet. A right-in/right-out driveway access should have a 50-foot radius, measured along the curb return.

The angle between the curb line of the street and the centerline of a full access driveway shall not be less than 60 degrees.

Section 702.02 – Commercial Driveway Safety Standards
No commercial driveways will be permitted into any parking lot or other facility that is designed in such a way as to make it necessary for exiting vehicles to back onto the street.

No driveway will be permitted into any facility that would require and/or allow a vehicle to drive or maneuver on the sidewalk area in any manner other than to cross it.

No driveway will be permitted for the purpose of allowing vehicles to park on the public right-of way.

In no case shall a driveway be constructed in such a way as to present a hazard to pedestrians or traffic on the public right-of-way.

In no case shall an object located within the right-of-way be permitted to obscure the vision of drivers of motor vehicles. Items in the right-of-way, within the required 30-foot sight triangle, shall be limited in height to no greater than 30 inches, and no less than 6 feet, including shrubs and tree branches.

Section 702.03 - Commercial Driveways on Arterial Streets
Any driveway onto an arterial street represents a potential impediment to traffic and/or a safety hazard. For this reason, access onto arterial streets shall be limited both in number of driveways and location, and may be granted only after review of the overall land development plan and traffic study for the project. Design criteria as established in this

section represent minimum standards. Where hardships are demonstrated, exceptions to the minimum standard will be considered on a project-by-project basis. The use of cross-access easements or frontage roads is preferable alternatives to additional driveways on arterial streets.

Section 702.03.01 - Minimum Spacing:
Driveways shall be located as far apart as practical. A minimum of 400 feet between centerlines of driveways on arterial streets (major and minor) should be sought.

Section 702.03.02 - Minimum Distance from Intersections:
Driveway placement should always be designed to maximize the distance from the nearest intersections. The driveway location will be dictated by the recommendations of an approved traffic study or as approved by the Village Engineer.

Section 702.04 – Commercial Driveways on Collector and Local Streets
Driveways on collector and local streets shall be located in accordance with the following:

1. The location of driveways shall be approved by the Village Engineer. Driveway locations and spacing shall be such that the impact to the traffic flow due to the vehicular movements into and out of the commercial development is minimized.

2. The distance from the end of the driveway curb cut to the nearest crosswalk shall not be less than 5 feet.

3. Where bus stops exist at locations where driveways are desired, the minimum allowable distance between driveways, measured at curb line of the street, shall be 40 feet.

4. At intersections where a separate right-turn lane exists, no driveway shall be constructed where the edge of the turning lane taper pavement is greater than 5 feet from the edge of the through pavement.

Section 703 – Parking Lots

Section 703.01 – Required Number of Parking Spaces
Refer to Chapter 106, Article VI of the Village Code.

Section 703.02 – Stall and Aisle Dimensions
Parking stall dimensions shall be a minimum of 9 feet wide and 18 feet in length with a minimum of 180 square feet in area.

Minimum drive aisle width for two-way traffic is as follows:

Parking Stall Length	Drive Aisle Width
Les s than 20’	26’
20’ and greater	24’

Section 703.03 – Parking Lot Island Requirements
Islands are required at the ends of all parking rows and at intermediate locations such that there are a maximum of twenty (20) stalls between islands. There shall be a minimum seven-foot wide (measured from back of curb) curbed planting island at the end of every parking row. The depth of the planting island shall be equal to the depth of the parking stall.

Parking lot islands shall be surrounded with a concrete barrier curb and gutter in accordance with Detail No. 28 or concrete barrier curb in accordance with Detail No. 29.

Section 703.04 – Parking Lot Pavement
All parking lots constructed in the Village of New Lenox must have a paved surface and a pavement cross section that is in accordance with the Commercial Pavement Cross-Section Detail (Detail No 41). Areas that are expected to receive only passenger vehicle traffic is to be constructed to the light duty pavement cross section. All other areas shall be constructed to the heavy duty pavement section.

The Developer will be responsible to provide and schedule material testing and construction observation for the construction of the parking lot pavement. The minimum testing to be completed shall be proof rolling of the subbase and subgrade, density testing of HMA pavement, HMA pavement yield verification, and concrete compressive strength test results.

Prior to the issuance of Certificate of Occupancy, the developer shall provide to the Village copies of all testing and construction observation reports that were preformed during construction for review.

Section 703.05 – Boundary Controls
All parking lots shall have 6-inch concrete barrier curb around the perimeter.

Section 703.06 – Drainage
Storm sewers that serve parking lots shall be designed to accommodate the 10-year storm event without surcharging out of the rim. The maximum depth of ponding in parking lots is eight (8) inches. This applies where parking lots are used for storm water detention and for other lots in the event that all storm sewers are blocked and surface overflows must be used to drain the lot.

All storm sewers, manholes, catch basins, and inlets shall meet the minimum requirements for materials set forth in Section 300 of this Manual.

Section 704 – Lighting ----

All commercial sites which must build and/or improve public roads are subject to the Village's lighting standards. Refer to Section 605 as a guide for those standards. All

other privately owned lighting improvements shall be reviewed and approved by the Village's Planning Department.

Section 705 – Pedestrian Access
All commercial sites shall be designed so that sidewalks or other delineated pedestrian routes are available to provide pedestrian access continuity between the public sidewalk adjacent to the site and the main entrance to the building.

Section 706 – Landscaping
Landscaping shall be in accordance with Chapter 106 Article IX of the Village of New Lenox Ordinance.

Section 707 – Barrier – Free Accessibility
All commercial sites shall comply with the accessibility requirements of the Illinois Accessibility Code and the ADAAG, as amended from time to time

To ensure compliance with the requirements referenced above, the following guidelines should be considered in the site design for new construction of commercial projects (and may not apply for additions, alterations, or historic preservation):

An accessible route should be provided from accessible parking and passenger loading zones to an accessible entrance in accordance with the most recent version of the Illinois Accessibility Code and the American Disability Act Accessibility Guidelines (ADAAG).

The cross slope of sidewalks should be kept at a minimum as necessary for drainage. This will make it easier for a person utilizing a wheelchair to move forward without veering left or right.

Sidewalks should be flush with grass areas on either side to help prevent wheelchairs from overturning should a wheel roll off the sidewalk.

Sidewalks should be 5 feet wide, minimum, to allow two wheelchairs to pass. In high pedestrian traffic areas sidewalks should be 8 feet wide.

Where passenger loading zones are provided, an adjacent access aisle should be provided where the sidewalks are flush with the pavement.

Entrance areas near the door should have a nearly flat area (allowing for proper drainage to avoid ponding and icing).

All power door pedestals with push plates should be clear of the door swing, typically 5 feet from the door.

Accessible entrances should be considered for secondary entrance points in addition to the main entrance.

Accessible parking stalls should be close to both the main and auxiliary entrances, to provide maximum access for persons with disabilities.

Accessible parking stalls should be constructed with minimal slopes which provides a nearly flat surface for wheelchairs and minimum slopes necessary for drainage.

Concrete wheel stops should not be used in accessible parking stall loading areas, which would obstruct the accessible route from accessible parking to an accessible entrance.

The sidewalk adjacent to accessible parking stalls should be flush with the pavement to provide an accessible route to an entrance.

Accessible parking spaces shall be appropriately designated through signage and striping. Signs shall be vertically mounted on a post or wall at front center of the parking space and posted in accordance to the most recent version of the Illinois Accessibility Code and the ADAAG.

708 – Private Improvement Construction and Testing Requirements

The developer shall be required to perform material test and construction observations of all private infrastructure improvements. The tests required and testing frequency shall be in accordance with Sections 300, 400, 500, and 600 of this manual. All test result shall be certified by an independent third party testing agency qualified to perform the test in which it is certifying.

Construction observations shall be performed at a frequency and duration in which the work that is being completed can be appropriately verified for compliance with the Village standard details. At minimum, observations should be performed on a daily basis while significant construction activity is occurring. Significant construction activity shall be considered as, but not limited to, sewer installation, subbase and subgrade preparation, paving operations, and concrete placement. All observation reports must be signed by a professional engineer licensed in the State of Illinois.

At the conclusion of construction and prior to the issuance of the Certificate of Occupancy, the developer shall provide to the Village copies of the applicable material testing reports and construction observation reports for review and approval. The developer shall also provide as built plans for all of the private improvements. Included with the as built plans shall be a written certification, signed by a professional engineer licensed in the State of Illinois, stating that all of the private infrastructure improvements have been installed according to the approved plans. In an instance where the private infrastructure improvements have not been installed according to the approved plans, attention shall be called to each instance and the Village will retain the right to review the change.

SECTION 800 – PROJECT DOCUMENTS

Section 800 – Project Documents

Section 800.01 – Intent
It is the intent of the following standards to provide for the thorough, relatively uniform presentation of pertinent development information by developers or others wishing to alter the present condition of real property. It is the intent of these standards to provide clear documentary evidence of what currently exists, what is proposed, what is constructed, and what all parties agree to. It is the intent of these standards to provide for the control of physical aspects of documentary material so that such material may be conveniently archived by the Village.

Section 800.02 – Applicability
These standards and specifications shall apply to the documentation for all subdivision and development activities within the Village and within the one and one-half (1-1/2) mile jurisdictional area surrounding the Village with the exception of architectural drawings having to do specifically with proposed buildings or like structures.

Section 800.03 – Document Specification and Standards

Documents shall conform to the following standards:

a. Documents that are primarily written, forms, correspondence, etc., shall be 8-1/2 by 11 inches except certain legal documents may be 8-1/2 by 14 inches.

b. Plats and plans shall be standard size sheets (approximately 24 by 36 inches) unless otherwise approved by the Village Engineer, Village Planner and/or Village Administrator.

c. Documents, plats, and plans that consist of more than one sheet shall be bound at the top or left side. Bound sheets shall have a margin of one to two inches on the bound side.

d. Certain incidental documentation such as letters of transmittal, receipts, etc., may vary from the above standards and specifications. Some of the sketches or other early drawing items required in the conceptual stage of a project may also vary from the above standards and specifications except that no conceptual stage documentation shall be smaller than 8 by 11 inches.

e. Documents that are 11 by 17 inches shall be folded to 8-1/2 by 11 inches.

f. Information conveyed by radio or telephone or otherwise verbally shall not be considered binding unless documentation is also provided. The intent of this provision is to encourage the conveyance of important information by documentation so each transaction is as clear and unambiguous as possible.

g. Documents conveyed through the use of facsimile transceivers are to be

considered as less binding than conveyance of original signature documents *by* mail or by hand delivery. Legal documents involving the Village shall all be original signature documents.

Section 801 – Final Improvement Plans

Section 801.01 – Intent
The improvement plan stage is for the purpose of accurately showing how the improvements will be constructed in order to conform to the layout and design objectives of the Preliminary Plan. As such, the improvement plan process is an extension of the Preliminary Plan process. Where conditions so warrant, the Village may require that portions of improvement plans be submitted during the preliminary plan review process in order to determine the land's suitability for the preliminary plan design. Any required off-site improvements and engineering studies shall be provided and paid for by the Subdivider upon request. Where the subdivision is to be developed in phases, and where soil and/or topographical conditions so warrant, the Village may require that improvement plans for the entire preliminary plan area be submitted prior to the construction of improvements.

Section 801.02 - Filing
Prior to the submittal of the final plat, the applicant shall ensure that they have complied with the Final Plat Checklist Requirements as indicated on the Planning and Zoning Check Sheet

Section 801.03 – Final Engineering Plans Content
Final engineering plans shall, as a minimum, consist of the following:

1. Title Sheet;

2. Project Specifications and General Construction notes;

3. Geometric Plan;

4. Grading Plan, which includes the street paving plan, all storm sewer lines and structures, storm water retention/detention facilities, erosion control measures, flood plain and wetland protection measures;

5. Master and Detailed Utility Plan, which shows all storm sewers, sump pump drain lines, sanitary sewers, water main and any other public utility lines with appurtenant structures;

6. Lighting Plans shall include the layout for lighting standards, underground conduits for pavement crossings, unit duct, and transformers and junction boxes for electrical utility for off-street parking lighting and/or public street lighting systems;

7. Street Plan and Profiles;

8. Intersection Grading Plan;

9. Construction Details - Most Current Edition;

10. Water main, sanitary and storm sewer profiles;

11. Landscaping plan including parkway trees;

12. Striping and Signage Plan;

13. Maintenance of Traffic Plan including traffic signage; and

14. Storm Water Pollution Prevention Plan.

Section 801.04 – Required Information
Each Plan Sheet shall include the following information:

1. A title block that includes the project name, job number, sheet title (Geometric, Grading, etc.), sheet number, date of preparation, and latest revision date;

2. North arrow and scales;

3. Additional general plan notes and legend as may be required; and

4. A reduced (not to scale) location map on the plan and profile sheets indicating the location of the respective plan and profiles to the overall proposed subdivision.

Section 802 – Title Sheet
The Title Sheet shall include the following information:

1. Subdivision name and unit number or phase number;
2. Location map;

3. Seal, signature, address, and phone number of the registered professional engineer who prepared the plans and the person or firm that prepared the topographic surveys;

4. Developer's name, address, and phone number;

5. Index of sheets;

6. Permanent benchmarks need to be established at a rate of one benchmark per fifty acres. A minimum of three (3) benchmarks, both permanent and temporary need to be indicated;

7. Dates of preparation and any revisions;

8. Index of Standard Details used;

9. The standard drainage certificate as required by the Illinois Plat Act; and

10. Standard legend.

11. The following note needs to be placed on the title sheet:

    The following documents will be required before receiving a Cert. of Occupancy:
    1. One (1) separate as-built grading plan
    2. One (1) Mylar copy of the complete construction set of plans with the as-built information incorporated and ***sealed by a registered professional engineer and the drainage certificate must be signed by the design engineer and the owner or the owner's attorney.***
    3. Three (3) paper copies of the complete construction set of plans with the as-built information incorporated and ***sealed by a registered professional engineer and the drainage certificate must be signed by the design engineer and the owner or the owner's attorney.***
    4. One (1) Mylar copy of the Final Recorded Plat.
    5. One (1) Digital copy of the paper space as-built plan set on compact disc. All sheets of the original approved construction plan set, modified as necessary, shall be included. The digital submittal shall be compatible with AutoCAD MAP 2004 on compact disc. Also, provide one (1) digital copy in pdf format.

Section 803 – Project Specifications and General Construction Notes
The Project Specifications and General Construction Notes shall include the following provisions:

1. All on-site and off site improvements shall be constructed in accordance with the requirements of the "Village of New Lenox";

2. Permits shall be obtained from all outside governmental agencies having jurisdiction;

3. All structure adjustments shall be accomplished in conformance with the most recent Village standard;

4. Existing field tiles encountered during construction shall be either integrated into the site drainage system, removed or plugged in a manner deemed appropriate by the Village Engineer;

5. The developer shall be responsible for all adjustments before and after final inspection, prior to final acceptance by the Village of New Lenox;

6. The Village must have forty-eight (48) hours notice prior to the initiation of construction activity;

7. The testing and sterilization of all new water distribution facilities shall be completed prior to making water service taps by an outside testing service;

8. Material specifications comply with Village standards and include:
    a. Paving base materials;
    b. Paving surface materials;
    c. Concrete materials;
    d. Pipe materials.

9. All restoration work in the public right-of-way subject to the specific approval of the Village Engineer;

10. Village Police Department, Fire District, School Districts and Administration shall be notified a minimum of forty-eight (48) hours prior to road or water main shutdowns. A copy of the Village Notification Sheet needs to be obtained from Village Hall;

11. Road closures and open cutting of pavement require Village Board approval;

12. Contractor shall contact JULIE (1-800-892-0123) prior to any excavation work (including Section, Township, and Range numbers of property with note); and

13. Contractor shall maintain pavement crossing cuts until final pavement restoration is complete and accepted by the Village Engineer.

Sanitary Sewer plans and specifications shall conform to the "Standard Specifications for Water and Sewer Main Construction in Illinois, Most Recent Edition" and Village Ordinances. If a conflict arises, the Village ordinances shall govern.

Water distribution plans and specifications shall conform to "Standard Specifications for Water and Sewer Main Construction in Illinois, Most Recent Edition" and Village Ordinances. If a conflict arises, the Village Ordinances shall govern.

Pavement, curb and gutter, sidewalks, and storm sewer shall conform to "IDOT Standard Specifications for Road and Bridge Construction, Most Recent Edition"

Section 804 – Geometric Plan
The Geometric Plan shall include the following information:

1. Site boundaries and lot layout. This information shall be a copy of the final plat indicating easements and dedications, reduced if required, without the certificates;

2. All necessary geometric data required to layout the proposed improvements;

3. Show all streets adjacent to and within one hundred feet (100') of project site;

4. Show all site access roadways and driveways within one hundred feet (100') of project site;

5. All necessary geometric data required to show existing and proposed easements;

6. Street right-of-way width;

7. Street centerline and radii and curve data;

8. Street pavement width;

9. Location of curb and gutter;

10. Intersection geometric data;

11. Parking lot dimensioning and data including: lot aisle widths, space dimensions, handicap space dimensions; loading berth dimensions, curb radii, angle of parking, throat width of drives, angle of driveway at street intersection;

12. Setback lines and distances for all proposed building, parking lots, etc;

13. Proposed building footprint outlines;

14. Non-residential site area in square feet:
    a. Office building area in square feet (if applicable);
    b. Warehouse building area in square feet (if applicable).

15. Building envelope;
    a. Distance to front lot line, rear lot line, interior side lot line, and exterior lot line (if applicable);
    b. Distance to all existing off-site buildings within one hundred feet (100') of the subject site.

Section 805 – Maintenance of Traffic Plan
Maintenance of traffic plans shall be provided that provides the proposed construction traffic route and all necessary detour plans for applicable off site work adjacent to proposed developments.

Section 806 – Erosion and Sediment Control Plan
The Storm Water Pollution Prevention Plan shall include the following information:

1. Initial sediment and erosion control measures to be installed prior to stripping existing vegetation or mass grading.

2. Construction Phasing, including the sequence of grading activities and the sequence for the implementation of temporary soil erosion and sediment control measures for each construction phase.

3. A maintenance schedule

4. Modification procedures

5. Hazardous material spill procedures

6. Method of conveying overland flow as well as the 100 year over land flow route. The 2 year and 10 year run-off rates from all off-site areas draining into the site shall be listed.

7. The final stabilization and vegetation measures as well as a description of the parties responsible for post-construction maintenance.

8. A location for the following information:

    i. sediment basin locations
    ii. sediment trap locations
    iii. diversion swale cross section and locations
    iv. silt fence location
    v. temporary seeding requirements and location
    vi. mulching
    vii. erosion control blanket
    viii. Chemical Storage Location
    ix. Port-o-Pottie Location
    x. Concrete Washout Location
    xi. Stockpile Location
    xii. Site Parking Plan
    xiii. Motor Pool Area for heavy equipment
    xiv. Rip Rap Details

Section 807 – Grading Plan
The Grading Plan shall include the following information:

1. Existing and proposed finished ground topography of site at one-foot (1') contour intervals extending for one hundred feet (100') onto adjacent properties. All site and any affected adjoining properties draining to or from the proposed site need to be indicated and all existing and proposed channels, swales, lakes, ponds, and structures with control elevations, slopes and cross-sections need to be provided.

2. The Grading plan shall be no smaller than one (1) inch to fifty (50) feet in scale.

3. All existing structures located and described.

4. All streets, driveways, parking lots, and other paved areas.

5. Longitudinal slope of parkways, sidewalks and driveways where required.

6. Locations of all trees exceeding six inches (6") in diameter.

7. Flood hazard and wetlands delineation.
    a. Floodway delineation.
    b. One hundred year floodplain delineation.
    c. Drainage watershed delineation.
    d. Wetlands and other flora areas delineation.
    e. Delineation of all major watercourses.

8. Curb and gutter, sidewalks.

9. Proposed retaining walls.

10. Storm and sump pump drainage appurtenances
    a. Number all storm sewer structures.
    b. Rim and invert grades and pipe sizes noted for all drainage structures.

11. All elevations including contours shall be referenced to USGS datum NAVD 88 and established from approved bench circuits. Benchmark coordinates need to be obtained from the Village G.I.S. Technician:
    a. Existing contours to be shown as light dashed lines.
    b. Proposed contours to be shown as heavy solid lines.

12. Spot elevations at break points, at all lot corners, foundation corners, top curb elevation at all property lines extended to curb line, drainage inlet structures, and at other ground control points.

13. A list of Special Foundation Opening Restrictions needs to be provided in a tabular format.

14. Proposed building pad location and existing building footprints with top of foundation elevations, foundation opening elevations, and, where applicable, garage floor elevations. Basement floor elevations for proposed building with walkout basement or lowest unprotected opening adjacent to flood hazard area.

15. Drainage arrows around all proposed building foundations, along lot lines, swales, ditches, and wherever else required to delineate surface drainage direction and pattern.

16. All overflow routes for the 100-year storm and for accumulated storm water

runoff from several lots or from off-site catchment areas must be clearly designated

17. Outline of the storage basin with finished contours at one-foot (1') intervals.

18. Typical cross-sections of storage basin showing the degree of side slopes, top of bank elevations, bottom elevations and proposed storage elevations.

19. A release structure with necessary details.

20. High and, where applicable, normal water storage elevation.

21. Calculated water storage volume in acre-feet.

22. Downstream erosion control measures, corresponding to the release velocity through the proposed restrictor.

23. The locations of all downstream detention facilities that will be affected by the proposed utility improvements shall be provided.

24. The locations of the existing downstream conveyance for which the proposed storm sewer is tributary shall be provided.

Section 808 – Master Utility Plan
The Master Utility Plan shall include the following information:

1. The location of all proposed and existing on-site and off-site water mains, sanitary sewers, storm sewers, and sump pump drain lines, gas lines, pipelines, cabled utilities, and all other private utilities and their appurtenant structures (hydrants, valves, manholes, etc), which shall be numbered for reference.

2. Show all streets, with curb and gutter line work and street names.

3. The scale of the Master Utility Plans shall not be smaller than one (1) inch equal to 100 feet.

Section 809 – Detailed Utility Plan
The Detailed Utility Plan shall include the following information:

1. The location and size of all proposed and existing on-site and off-site water mains, sanitary sewers, storm sewers, and sump pump drain lines, gas lines, pipelines, cabled utilities, and all other private utilities and their appurtenant structures (hydrants, valves, manholes, etc), which shall be numbered for reference.

2. The scale of the Detailed Utility Plans shall not be smaller than one (1) inch equal to fifty (50) feet.

3. The plan shall indicate size, slope, purpose, length, and type of material of all proposed utility lines.

4. Show all locations (preferably with shading) where granular trench backfill is required.

5. All existing structures, which require adjusting, reconstruction, or filling, shall be noted on plan.

6. Depict adjacent properties for proper utility and street match.

7. All Utility crossings shall be numbered. The utility crossing information shall be provided in tabular form indicating the proposed vertical separation between and the elevation of the top of the lower pipe and the bottom of the upper pipe for all proposed and existing utilities.

8. In locations where it is required to provide sanitary services constructed of water main quality pipe, the location must be clearly designated on the plans.

9. Locations of all existing drain tiles and how they will be connected to the proposed storm sewer system

10. The finished frame elevation and invert elevations shall be given for all structures. In addition, the station and offset for all structures shall be indicated.

11. The locations of all downstream detention facilities that will be affected by the proposed utility improvements.

12. The locations of the existing downstream conveyance for which the proposed storm sewer system is tributary.

13. All utility and drainage easements shall be indicated.

Section 810 – Lighting Plans
The Lighting Plan shall include the following information:

1. Light pole locations, heights, and spacing.

2. Location of existing light poles.

3. Control system and underground site wiring diagram specifying wire size, locations, and other materials.

4. The scale of the Lighting Plans shall not be smaller than one (1) inch equal to fifty (50) feet.

5. Typical installation section showing:
    a. Type of pole
    b. Bracket or arm
    c. Luminaire wattage type lamp and ballast provided
    d. Mounting height

Section 811 – Street Plan and Profile

The Street Plan and Profile shall include the following information:

1. Plan view of all proposed street and sidewalk improvements showing, but not limited to, street name, centerlines with stationing, right-of-way lines and widths, pavement outline and widths, sidewalks, curb and gutter, return radii, all storm sewers and other drain lines with structures, sanitary sewers, water mains, and, where applicable, shoulders and drainage ditches.

2. Plan view shall show all locations where granular trench backfill is required.

3. Centerline profile of existing ground line with elevations shown at fifty foot (50') intervals minimum.

4. Centerline profile of proposed pavement surface with grades, vertical curve data, and elevations shown at fifty-foot (50') intervals minimum.

5. Profile of all proposed storm sewers, sanitary sewers, water mains and other drain lines with structures within the plan view area showing pipe size, slope, length, type of material, and finished frame and invert elevations for structures.

6. Profile of all utility crossings where a grade conflict may occur.

7. Vertical Curves and PVI locations need to be indicated in the profile view and shall be provided with the necessary lengths, algebraic difference and necessary "K" Values.

8. Plan view scale shall be one (1) inch equal to fifty (50) feet minimum and profile scales shall be horizontal, same as plan and vertical, one (1) inch equal to five (5) feet.

Section 812 – Intersection Detail Plan

The intersection Detail Plan shall provide the following information for all intersections:

1. Spot grades at the following locations and intervals
    a. At the edge of pavement to along all curb radiuses at fifteen (15) foot intervals
    b. At any drainage break point within the limits of the intersection

c. Along the center line of all intersecting roadways at fifteen (15') foot intervals
d. At the edge of pavement at all drainage structures

2. Flow arrows indicating the intended direction of water run off.

The scale of this plan shall be twenty (20) feet equal to one (1) inch.

Section 813 – Striping and Signage Plan
The design engineer shall submit the respective Utility Plan sheets for the entire development prior to completion of the Striping and Signage Plan. The Public Works Department will assign the location of the street signage within the development and return the marked-up plan to the design engineer for incorporation within the improvement plans. The striping and signage shall be designed in accordance with the MUTCD manual as well as the IDOT standard details.

Section 814 – Sanitary Sewer Profile
Sanitary Sewer Profiles with existing and proposed ground elevations shown at fifty (50) foot intervals minimum shall be provided at the request of the Village Engineer. The profile scales shall be horizontal, same as the detailed utility plan and vertical, one (1) inch equal to five (5) feet.

Section 815 – Landscaping Plan/Parkway Tree, Berm & Buffer Plan
A Landscaping Plan, prepared by a qualified landscape architect shall be submitted and shall include trees to be preserved, screening where required, the restoration of site flora and other areas to be stabilized and enriched according to Village Ordinances and all other Village requirements. The Landscaping plan shall include a proposed parkway tree plan, which shall provide the general location of all trees adhering to the Village Ordinances for spacing requirements. A table that indicates the specific tree types and spacing shall be provided. Trees should be located to avoid conflicts with driveways, manholes, fire hydrants, street lights and all above ground appurtenances. A copy of the approved Landscaping Plan / Parkway Tree Plan shall be incorporated into the final plan set for the proposed subdivision.

Section 816 – Street Cross Section
Street Cross Section shall be provided at the request of the Village Engineer. The Street cross sections shall have a scale of one (1) inch equals twenty (20) feet horizontal and one (1) inch equals five (5) feet vertical. The cross sections shall be at intervals of fifty feet. Additional cross sections should be provided at driveway locations and intersections. Each cross section should show the following applicable information:

3. Full pavement section

4. The location of all proposed and existing utilities

5. Station, existing, proposed elevation

6. Transverse pavement slope and side slopes

Section 817 – Construction Details
All details shall be of type standard with the Village of New Lenox including but not limited to:

1. Manholes, inlets, catch basins, vaults

2. Standard utility structure covers

3. Standard valve and hydrant installation

4. Drainage structures

5. Concrete curb and gutter

6. Thrust block installation

7. Service connections

8. Typical Sections

Section 818 – Supporting Documents
The following supporting documents will be required at the time of submittal:

1. A detailed statement by the subdivider setting forth the nature, kind, character, and extent of all improvements that will be constructed within the subdivision, together with complete plans, profiles, and specifications clearly describing the same, with agreement to construct same in accordance therewith.

2. A statement by a professional engineer registered in the State of Illinois giving a detailed estimate of the total cost of construction for all proposed improvements. The estimate shall include a ten-percent (10%) Warranty Contingency and a fifteen-percent (15%) Construction Contingency of the total of the Engineer's Opinion of Probable Cost plus the Warranty Contingency.

3. Any and all documents as may be required by the Village of New Lenox to ensure that the dedication of all required rights of way and the granting of all required easements has or will be established.

4. Any covenants or other documents, which place certain restrictions on the use and development of the property and is, intended to be recorded with the Final Plat.

5. Five (5) completed copies of all permit application forms (IEPA, IDOT, IDOWR, etc.) required for construction of the proposed improvements.

6. Proof of compliance with all applicable impact fee ordinances.

7. Proof of compliance with all applicable ordinances.

8. Final studies, reports, drawings, and calculations for all proposed storm water sewers, drain lines, culverts, retention or detention storage basins, flood routing, and any other site storm water management facilities.

Section 819 – Letter of Credit

Improvements to proposed Park Sites require separate line items within the Engineer's Opinion of Probable Cost. All requests for reduction of letters of credits shall be presented in Microsoft Excel format and shall comply with the following:

1. A table indicating the estimated quantities and costs, the actual completed quantities, and the value of the remaining work to be completed shall be provided. The summary shall provide the following information and shall be sent to the Village Engineer, the Public Works Department and the applicable Consulting Engineer:
    a. Original construction cost (Including approved landscaping costs)
    b. Balance to complete
    c. Completed quantities to date
    d. Warranty Contingency (10%)
    e. Project Cost
    f. Construction Contingency (15%)
    g. The new Letter of Credit amount
    h. The current Letter of Credit amount
    i. The total amount of reduction requested

SECTION 900 – CONSTRUCTION AS-BUILTS

Section 901 – General
The submittal of the as-built drawings to the Village of New Lenox shall be made prior to the issuance of a Building Permit for residential developments and prior to the issuance of a Certificate of Occupancy for commercial developments. This submittal shall be in plan format (Model Space) at full scale (1:1) showing the entire development as well as a digital copy of the full As-Built Plan set (Paper Space) consisting of all pages, modified as required, of the originally approved construction plan set . In the case of multiple unit developments, the entire subdivision shall be submitted with the completion of each unit indicating the complete as-built conditions of the entire subdivision at the completion of the respective unit.

The as-builts plans shall be tied to the Village's coordinate system.

Section 902 – Required Information
The following is a list of allowable tolerances and required as-built information that shall be provided:

1. Locations of existing drain tile connections to the storm sewer shall be indicated.

2. Accurate utility crossing information shall be provided in tabular format providing the actual as-built separation between the as-built utilities.

3. Rough grading elevations shall be within +/- 0.3 feet of all spot elevations provided on the grading plans. Specifically these elevations shall adhere to the proposed plans at all easements, drainage swales and Public Rights of Way.

4. As-built rim elevations shall be within +/- 0.1 feet of the rim elevations provided on the proposed development plans.

5. Sanitary service stubs shall be located on the As-built drawings and shall be measured dimensionally from the nearest downstream sanitary manhole.

6. Water service stubs shall be located on the As-built drawings and shall be measured dimensionally from the nearest property corner for the respective lot.

7. Rim and invert elevations for all sanitary and storm structures shall be provided.

8. The locations of all sanitary services requiring riser assemblies shall be clearly designated on the plans and as-builts.

9. In locations where it is required to provide sanitary services constructed of water main quality pipe, the location must be clearly designated on the as-builts.

10. As-built locations of the sump pump collection system and cleanouts shall be provided.

11. The following information pertaining to the As-built Detention Basins shall be provided:

    a. A sealed statement shall be provided by the licensed professional design engineer indicating that the as-built volume of the pond has been verified.
    b. The actual High Water Elevation (HWL) shall be verified against the design calculations.
    c. The actual Normal Water Elevation (NWL) shall be verified against the design calculations.
    d. The emergency overflow elevation and outlet shall be verified to comply with the proposed design calculations.
    e. The two (2) year and one hundred (100) year restrictors shall be installed in placed and verified on the as-builts at the as-built elevations.

Section 903 – As-Built Submittal Format

Only one copy of the As-built plans shall be provided for review. Upon approval of the as-built submittal, the aforementioned information shall be provided to the Village in both electronic and paper format.

Section 903.01 – Approved As-Built Paper Format Submittal

The following information is the approved As-Built paper format submittal requirements:

6. Three (3) copies of the complete construction set of plans with the as-built information incorporated and sealed by a registered professional engineer and the drainage certificate must be signed by the design engineer and the owner or the owner's attorney.

7. One (1) separate as-built grading plan

8. One (1) Mylar copy of the complete construction set of plans with the as-built information incorporated and sealed by a registered professional engineer and the drainage certificate must be signed by the design engineer and the owner or the owner's attorney.

9. One (1) Mylar copy of the Final Recorded Plat and any other recorded documents and plats associated with the project such as easements.

Section 903.02 – Approved As-Built Electronic Format Submittal

The following information is the approved As-Built electronic format submittal requirements:

1. One (1) Digital copy of the as-built improvements, in model space on compact disc. The digital submittal shall be compatible with AutoCAD MAP 2004. The layer system shall be provided as follows:

a. The as-built storm sewer shall be placed on the layer GIS AB_STORM and all associated text shall be placed on the layer GIS AB_STORM_TEXT. The color associated with the layer shall be yellow.
b. The as-built sanitary sewer shall be placed on the layer GIS AB_SEWER and all associated text shall be placed on the layer GIS AB_SEWER_TEXT. The color associated with the layer shall be green.
c. The as-built water main shall be placed on the layer GIS AB_WATER and all associated text shall be placed on the layer GIS AB_WATER_TEXT. The color associated with the layer shall be blue.
d. The as-built parcel lot lines shall be placed on the layer GIS AB_PARCELS and all associated text shall be placed on the layer GIS AB_PARCELS_ TEXT. The color associated with the layer shall be black.
e. The as-built sump pump collection system shall be placed on the layer GIS AB_SUMP and all associated text shall be placed on the layer GIS AB SUMP_TEXT. The color associated with the layer shall be orange.
f. The as-built lighting system shall be placed on the layer GIS AB_LIGHTING and all associated text shall be placed on the layer GIS AB_LIGHTING_TEXT. The color associated with the layer shall be red.
g. The as-built multi-use path system shall be placed on the layer GIS AB_TRAIL and all associated text shall be placed on the layer GIS AB_TRAIL_TEXT. The color associated with the layer shall be brown.

2. One (1) Digital copy of the paper space as-built plan set on compact disc. All sheets of the original approved construction plan set, modified as necessary, shall be included. The digital submittal shall be compatible with AutoCAD MAP 2004 on compact disc. Also, provide one (1) digital copy in pdf format.

3. A monument(s) and/or benchmark shall be installed prior to project acceptance by the Village. This applies to all projects which meet the requirements for installing a permanent monument/benchmark. The monument/benchmark shall be constructed per Detail #51. The X and Y coordinates along with the elevation shall be submitted to the Village in letter format.

SECTION 1000 – STANDARD DETAILS

Detail No.	*Detail Description*
1	Catch Basin Type A
2	Catch Basin Type C
3	Inlet
4	Storm Sewer Installation
5	Sump Discharge Service Line
6	Casting Installation and Adjusting
7	Curb Inlets
8	Pipe Restrictor
9	Detention Pond Restrictor Structure No. 1
10	Detention Pond Restrictor Structure No. 2
11	Fire Hydrant
12	Fire Hydrant in Excess of 7’ Depth
13	Pressure Connection Valve Vault
14	Standard Valve
15	Thrust Block Installations
16	Water Sampling Station
17	Water Main Installation
18	Water Service
19	Drop Connection
20	Sanitary Manhole Pipe Connection
21	Sanitary Sewer Installation
22	Sewer Service for Sanitary Sewers
23	Casing Pipe
24	Manhole Type A
25	Typical Service Laterals
26	Bituminous Pavement Patching
27	Mountable Combination Concrete Curb & Gutter Type M-3.12
28	Barrier Combination Concrete Curb & Gutter Type B-6.12
29	Concrete Curb, Type B
30	Curb Ramps Accessible to the Disabled
31	Multi-User Path
32	Roadway Cross-Section – Typical Residential
33	Roadway Cross-Section – Multi-Family Street
34	Roadway Cross-Section – Collector
35	Roadway Cross Section – Minor Arterial
36	Roadway Cross Section - Arterial
37	Roadway Cross Section - Industrial
38	Concentric Cul-de-Sac
39	Typical Pavement Section at Cul-de-Sac Bubble
40	Commercial Entrance
41	Parking Lot Cross-Section
42	Sidewalk
43	Street Light - Residential

44 Street Light – Arterial
45 Street Light – Decorative
46 Breakaway Base
47 Concrete Foundation
48 Typical Conduit Installation
49 Street Lighting Notes
50 Subdivision Street Signs – 2 Sheets
51 Permanent Monuments