

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

<i>Section</i>	<i>Title</i>	<i>Page</i>
201	Grading .....	11
202	Stormwater Management Facilities .....	11
203	Wetland Areas .....	14
204	Stormwater Pollution Prevention Plan .....	14

### **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 in 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.