

**Nassau County
Department of Public Works**

Drainage Requirements



**Commissioner
Raymond A. Ribeiro, P.E.**

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Introduction:

The recently enacted Phase II Storm Water Regulations requires all municipalities in Nassau County to prepare and implement a Storm Water Management Program. A major component of the County's Storm Water Management Program is the drainage requirements set by the Department of Public Works for the development of Subdivisions. This comprehensive document includes the drainage requirements for street grading and drainage and the requirements for erosion and sediment control. The office that completes this review and also manages the County's Storm Water Management Program for the Department is the Water Resources Engineering Section. Any questions concerning the process or the drainage requirements can be directed to this office at (516) 571-6985.

Background:

In 1953 New York State enacted legislation under Section 334-a of the Real Property Law, subsequently amended, which requires a Developer proposing the creation of residential housing in Nassau County to file subdivision maps in the County Clerks Office. Item 1 states "It shall be the duty of every person or corporation, excepting church cemetery corporations attached to a religious parish within the county of Nassau, who as owner or agent of real property situated in the county of Nassau, subdivides the same into lots, plots, blocks, sites, or units for sale to the public, regardless of whether they are offered or conveyed by lot, plot or block designations, unit (or shares in a cooperative corporation), or by metes and bounds, prior to such offering of such lots, plot, blocks, sites or units for sale, to file or cause to be filed in the office of the clerk of Nassau County a map or maps of such real property." Under exceptions -Subsection (a) states "where real property is subdivided into not more than four lots, plots, blocks, sites or units that apply to applicable planning and zoning regulations or ordinances of the city, town or village, as the case may be, and such subdivision does not involve the laying out of a street, the owner or agent may make a written application to the Planning Commission or Planning Authorities having justification for a waiver of the filing requirements hereunder upon forms supplied to the appropriate Planning Commission."

The 1953 New York State legislation established criteria associated with the filing subdivision maps. The Department of Public Works' review process is outlined Under Item 7 of said Real Property Law "The Planning Commission or Planning Authorities having jurisdiction shall not approve any such map until the Commissioner of Public Works of Nassau County has endorsed thereon a statement that he has approved plans for grades of the streets, avenues, roads or highways shown on such map, and the drainage thereof. The Commissioner of Public Works may require that separate and distinct plans for the grading and drainage be prepared. Such plans shall show sufficient data to enable the Commissioner of Public Works to determine the accuracy thereof. He may require any changes in grades or plans, which he deems necessary to make such grades, and plans conform with any general or comprehensive plan adopted for the County, or to serve the best interests of the County as a whole. Upon his approval of plans for the grades and drainage for the streets, avenues, roads, or highways shown on such map he shall endorse such approval on the plans submitted to him, or as they shall have been

revised, and shall file same in his office, and shall file a print thereof in the office of each Planning Authority having jurisdiction. He shall further endorse on the map submitted to the Planning Authority for approval a statement that he has approved the grades and drainage for the streets, avenues, roads, or highways shown thereon, in accordance with the detailed plans on file in his office.”

As a result of the New York State legislation, the Nassau County Board of Supervisors enacted Ordinance No. 157-1953 amending Ordinance No. 48 adopted May 27, 1946 entitled “An Ordinance regulating the subdivision of land under the jurisdiction of the Nassau County Planning Commission, pursuant to the Real Property Law of Nassau County, the County Government Law of Nassau County, the Nassau County Administrative Code and amendments to said laws.” Under the 1946 Ordinance, the Planning Commission established standardized requirements to be followed by Developers concerning the preparation of subdivision maps and established criteria to be incorporated into the layout of plans for construction of proposed developments within Nassau County and as amended. It is the responsibility of each Developer to adhere to the conditions set forth within the “Regulations for the Subdivision of Land” as established by the Planning Commission and approved by Ordinance by the Nassau County Board of Supervisors and its successor the Nassau County Legislature.

The Planning Commission as part of the “Regulations for the Subdivision of Land” established under Nassau County Ordinance No. 157-1953 has instituted the following:

Section III – “General Requirements for the Subdivision of Land” - Subsection A. Streets
The Commissioner of Public Works is given the authority of to set requirements to be met by developers in conjunction with the preparation of plans submitted to the Department of Public Works for the approval of Street Grading, Drainage, and the protection of Nassau County’s interests as may be effected as a result of the development of said property.

Section VII – “Penalties” Item 7 states “ The Planning Department or Planning Authorities having jurisdiction shall not approve any such map until the Commissioner of Public Works of Nassau County has endorsed thereon a statement that he has approved the plans for grades of the streets, avenues, road, or highways shown on such map, and the drainage thereof.”

The Commissioner’s approval will be granted only when the Developer or the Engineer as agent for the Developer submits plans, which meet the requirements of the Department of Public Works.

Process:

Preliminary Subdivision Plans are to be forwarded to the Department of Public Works for review in the following manner. In Unincorporated areas or within three hundred (300) feet of an Unincorporated area, the Developer or an Engineer acting as agent shall submit plans to the Planning Commission for distribution to the various Units of the Department of Public Works for review. In Incorporated areas such as Cities and Villages, plans are to be delivered to the Division of Engineering’s Water Resources Engineering Section. It

is the responsibility of Water Resources Engineering Section to coordinate distribution of the preliminary plans to the various units of the Division of Engineering. Four paper sets of the subdivision plans are to be forwarded for review by the Division as part of each submission.

It is the responsibility of each Unit of the Division of Engineering to review the plans included with each submission and make comment. These comments are forwarded to either the Nassau County Planning Commission or the Water Resources Engineering Section and returned to the Developer or Engineer for inclusion as part of subsequent submissions. However, it is the right of the Developer or Engineer to discuss these comments with the reviewer before modifying the plans.

When it is determined that all comments have been addressed, each unit within the Division of Engineering will advise either the Nassau County Planning Commission or the Water Resources Engineering Section. The appropriate coordinator will request one set of original mylar plans to be forwarded to them for distribution to the Department of Public Works for approval and signoff by the Commissioner. When the Department has approved the subdivision plan, they will be returned to the Planning Commission or the Water Resources Engineering Section for return to the Developer or Engineer. It is the responsibility of the Developer or Engineer to return one set of signed set mylar and one set of paper plans to the Department of Public Works for its records.

Fees for review:

Under Ordinance No. 171-1991 the Nassau County Board of Supervisors established “A fee to be charged by the Department of Public Works for the review of subdivision maps requiring the approval of street and highway grades and drainage by the Commissioner of Public Works” and as amended. In addition, under Ordinance 204-2001 “Amending Ordinance No. 76-2000 Section 7 (fees for Sub-Division Plan Review and Re-submission) a fee was established for the review of subdivision plans resubmitted by Developers or Engineers with the intent to satisfy the Department of Public Works’ criteria and as may be amended.

A check in the amount of \$2028.00 shall be remitted with the initial submission and a \$213.00 check will be required with each resubmission including the review and approval of original Mylars submitted to the Department of Public Works. Checks are to be made payable to the Nassau County Treasure. It is the responsibility of the Developer or Engineer to submit applicable review fees at the time of submission.

General Drainage Requirements:

The Department of Public Works has enacted Drainage Criteria to protect the interests of the residents of Nassau County, which is based upon good Engineering Practice. Accordingly, the Commissioner has established requirements to be met by Developers in conjunction with the review of plans submitted to the Department of Public Works proposing the development of land for either residential housing or commercial development. The Water and Waste Water Engineering Unit of Division of Engineering is responsible for the review of the onsite drainage, roadway grading, erosion and sedimentation control plan, and general site-specific conditions proposed as part of the subdivision plans. It is the Unit's responsibility to determine if the Developer's plans have addressed the specifics of the criteria set forth by the Commissioner and to return comments to be addressed in subsequent submissions. It is responsibility of the Developer or the Engineer to address said comments or be prepared to explain why comments cannot be addressed to the satisfaction of personnel of the Water and Waste Water Engineering Unit. When it has been determined the mutual interests of all parties are in compliance, the Division will advise the Commissioner that the plans for the proposed subdivision meet the drainage requirements of the Department of Public Works and will make its recommendation for approval.

SPDES General Permit (GP-02-01) Compliance:

In March of 2003 the Federal Government enacted mandates under Phase II of the Clean Water Act, Section 402 for Storm Water Discharges from Construction Sites involving the disturbance of one or more acres of land, SPDES General Permit GP-02-01, according a Notice of Intent (NOI) to be filed with the New York State Department of Environmental Conservation. It is the responsibility of Developer or Engineer to determine if the project falls within the requirements of this program. If it is determined a NOI is required, the Developer or the Engineer will be responsible for including measures required by compliance within the plan documents submitted for review by the Department of Public Works. The following note is also to be included on the plans:

“I certify that I have read or have been advised of the permit conditions and believe I understand them. I am aware of the requirements of the SPDES General Permit No. 02-01 for Storm Water Runoff from the construction activity and will comply with the preparation of a Notice of Intent (NOI), Sedimentation and Erosion Control Plan and Storm Water Pollution and Protection Plan.”

If the Engineer determines a NOI is not required for the site proposed for development, the engineer shall notify Nassau County in writing of the non-jurisdictional determination to be included in the file records.

New York State General Municipal Law:

Where a proposed subdivision abuts a Nassau County roadway, stream, property or other County maintained facility, after the issuance of Department subdivision approval and prior to the commencement of construction the Developer or Engineer shall submit a 239F Application Plan Review as required under Section 239K of the New York State General Municipal Law establishing Regulations for the Control of Development and amended to 239F. The Developer shall be responsible for meeting all of the requirements set forth under the General Municipal Law as required for the proposed subdivision as set forth under Section 239F.

Miscellaneous Permits:

Where construction includes work within Nassau County road right-of-ways or if connections to Nassau County drainage systems were approved as part of the review, the Contractor hired by the Developer will be responsible for obtaining Roadway Opening Permits or Drainage Connection Permits as may be applicable prior to the initiation of work.

Plans Submitted for review:

Plans submitted for review to the Department of Public Works for its review shall consist of a Plot Plan suitable for filing in the County Clerks Office, Grading and Drainage Plans, Erosion and Sedimentation Control Plan and Roadway Profile Plans where applicable.

Plot Plan:

The Plot Plan shall delineate the limits of the property proposed for development defined by bearing and distances. Each individual lot defined within this property shall also be delineated by bearing and distance. Where properties are proposed for development for the purpose of selling Cooperatives, Condominiums or Townhouse Units, these Cooperative, Condominium or Townhouse Units may not require delineation for individual units on the Plot Plan.

The Plot Plan shall be separate from the General Subdivision Plans. Spaces shall be provided on the Plot Plan for the approvals by the Department of Public Works, the Nassau County Health and the Planning Authority holding jurisdiction over the development for the property and any other approvals required by the Planning Authority. These approvals are required for the filing of the map in the County Clerks Office.

Grading and Drainage Plan:

The Drainage Plan shall include both existing and proposed topographic information plotted at 2' interval for the property proposed for development and immediate surrounding area. Additional information may be requested to assess if any contribution from areas outside the subdivision property contributes runoff to the site proposed for

development. The property shall not be regraded for the purpose of directing site runoff to offsite areas.

The Drainage Plan shall show all means of collecting property runoff whether by means of catch basins, area drains, swales, roof drains or other collection devices. The Drainage Plan shall also show adequate information for the analysis of the drainage system directing runoff to collection areas including location of such devices on the Comprehensive Drainage Plan. Additional information to be provided shall include the types of drainage structures to be installed on the site, inlet elevations, pipe inverts, pipe sizes and gradients. Applicable drainage details are to be shown on separate sheets of the Subdivision Plans. For any subdivision proposing the creation of a storm water basin or basins, a separate plan shall be included for each delineating the proposed configuration and is to include all details of structures or devices proposed for directing and storing runoff, location and details pertaining to plant screenings and fence details. The Storm Water Basin plan shall show the proposed high water mark utilized in determining the storage proposed for that basin. The plans shall show locations of all Drainage Reserve Areas proposed for the storage of runoff including shape elevations and contours for the assessment of storage capacity. The Drainage Plan shall also include all calculations pertaining to the assessment of the storage requirement for the subdivision on the plans. Where requested additional information may be request to justify the assumptions concerning flows from outside areas, flow capacities for specific pipe diameters and storage of runoff.

Erosion and Sedimentation Control Plan:

The Erosion and Sedimentation Control Plan shall include details to be enacted during construction to prevent or limit the migration of sediments from the site as a result of construction practices. The plan shall also include details showing the protection measures to be utilized to prevent sediment contamination of any onsite or applicable offsite drainage structures. The methods proposed shall conform to the “New York State Stormwater Management Design Manual” and the “New York Standards and Specifications for Erosion and Sedimentation Control”. The institution and enactment of these measures during construction is solely the responsibility of the Developer.

Roadway Profile Plan:

The Roadway Profile Plan, for subdivisions where roads are proposed, shall include proposed stations, gradients and pertinent data necessary to define any proposed vertical curves including overall length. Drainage structures and interconnecting pipes are to be plotted corresponding to the information shown on the Drainage Plan. All information pertaining to the roadway drainage system is to be included, such as pipe sizes, gradients and inverts, surface grades for structures and applicable location associated with roadway stations. Other information may be included if it assists in the analysis.

Drainage Criteria:

Onsite Drainage Storage Requirement:

Developers are responsible for providing storage for eight (8) inches of runoff from the subdivision's tributary area, whether contributed from onsite or offsite sources, in conjunction with relevant Engineering factors. The storage can be provided through construction of Storm Water Basins, Drainage Reserve Areas, installation of Drywells, or by other storage devices deemed acceptable by the Department of Public Works. The volume storage requirement is to be determined utilizing the following formula:

$$\text{Volume} = A \times C \times 8"/12"$$

A = Tributary Area in square feet

C = Runoff Coefficient determined

The Engineer representing the Developer shall provide the following information to Nassau County for the analysis of the Storage Requirement:

- 1) Tributary Map including contour information
- 2) Tributary Area Calculations
- 3) Runoff Coefficients for property

Waiver of Storage Requirement:

The Department of Public Works is aware that conditions may exist which could affect the potential of providing the storage required by Nassau County's review. A waiver of the storage requirement can be requested. A letter outlining the hardship is to be forwarded to the Water Resources Engineering Unit for consideration. The letter shall include the following information:

- 1) Volume storm water runoff to be retained onsite.
- 2) Destination of storm water overflow from subdivision's property.
- 3) Municipality responsible for accepting the overflow.
- 4) Justification for the failure to meet the County's storage requirement.

Should proposed subdivision direct overflow runoff into water bodies under the jurisdictional control of the New York State Department of Environmental Conservation, the Developer will be required to forward a copy of any permits required by that agency pertaining to that overflow.

The Water Resources Engineering Section will evaluate the information submitted and will consider the request. However, Developers are responsible for providing the maximum amount of storage the site permits in an effort to attain the Department of Public Works eight (8) inch requirement.

Where the Department of Public Works concurs with the hardship and site overflow affects Nassau County facilities, the Developer will be subject for the payment of

compensation to Nassau County. For waiver where the on-site storage is less than eight (8) inches but is five (5) inches or greater, there will be no fee. However, if the volume provided under the design is less than the storage five (5) inches of runoff from the tributary area, the Developer is responsible for paying compensation to Nassau County for the difference. The fee is assessed to compensate Nassau County for the added maintenance cost to be incurred as a result of accepting responsibility for the maintenance of the site overflow associated the stricter control of runoff mandated by Federal Regulations enacted under Phase II of the Storm Water Discharge Program and as may be amended. Where sites overflow solely to facilities maintained by Municipalities other than Nassau County, the Developer shall be responsible for providing the storage of runoff, which satisfies that Municipality's requirement. A letter from the Municipality holding jurisdiction shall be forwarded to the Water and Waste Water Engineering Unit stating the Municipality is willing to accept the overflow runoff as part of its Storm Water Protection Plan prior the Department of Public Works concurrence to any reduction in the County's eight (8) inch storage requirement. The Department will not approve any waiver for less than two (2) inches of storage on site.

Drainage Plan Review Requirements:

General Requirements:

1. Plot Plan showing metes and bounds of subdivision property and individual lots to be offered for sale. The Plot Plan shall be Stamped and Signed by a Licensed Surveyor or Licensed Professional Engineer.
2. Drainage Plan containing sufficient information to determine if the Department of Public Works drainage requirements have been met. The Drainage Plan is to be Stamped and Signed by a Licensed Professional Engineer.
3. A 5"x 5" box is to be provided for the Department of Public Works approval stamp on the Plot Plan and Grading and Drainage Plan.
4. The Plot Plan and Grading and Drainage Plan shall have a Key Map showing the general location of the proposed Subdivision.
5. Minimum scale for Plot Plan and Drainage Plan shall be 1" = 100'.
6. A north arrow shall be included on Plot Plan and Grading and Drainage Plan.
7. The Plot Plan and Grading and Drainage Plan shall provide consistent information.
8. Roadway Profile Plan is to be included for Subdivisions proposing the creation of new roads both public and private. The Profile Plan is to be laid out on a scale of 1" = 40' horizontal and 1" = 4' vertical or 1" = 20' horizontal and 1" = 20' vertical.
9. Roadway Profile Plan grades shall be defined by centerline elevations, water line grades or top of curb grades. Plan(s) shall denote proper designation.
10. Drainage Plan and Roadway Profile Plan shall show locations of proposed drainage structures and proposed drainage pipe. Information shall be consistent.
11. Drainage structures, pipe diameters and inverts are to be identified on Roadway Profile Plan.

12. Elevations shall conform to Nassau County's Datum. A note is to be placed on plans.
13. Drainage Plan shall include existing and proposed contour elevations set at 2' increments.
14. Drainage Structures are to conform to Nassau County Standards as set forth in the Nassau County 1964 Standard Specifications for Construction of Highways and Bridges and the Standard Sheets for the Construction of Highways and Bridges or as has been or may be modified. A note is to be place on the plans.
15. The Plans shall contain appropriate notes designating dedication of roadways, easements, conservation areas, storm water basins, drainage reserve areas, or other applicable easements.
16. Subdivision plans proposing the development of private roads shall require a note of dedication to Homeowners Association on plans for roadways and drainage. The following note is to be included on the plans:

“The street(s) have been ‘Value Reflected’ against all lots in the Subdivision so that such land is not individually taxed after filing of map.”

17. Minimum Drainage Easements shall be 10' in width.
18. Location of sanitary sewers and utilities are to be shown on Plot Plan or separate Sewer Plan.
19. Test Hole(s) are required at proposed storm water storage site(s). A member of the Water and Waste Water Engineering Unit is to be on site to witness the results of test hole(s). The test hole log information is to be included on the Grading and Drainage Plan in subsequent plan submissions with location(s) labeled on plan.
20. Proposed improvements on Nassau County road shall conform to the County of Nassau Department of Public Works 1964 Standard Specifications for the Construction of Highways and Bridges and the Standard Sheets for the Construction of Highways and Bridges or as may be amended.
21. Roadways located adjacent to the subdivision property under the jurisdictional control of Nassau County are to be labeled Nassau County Road.
22. Approvals, where applicable, shall be required from New York State Department of Transportation, New York State Department of Conservation, or other other Authorities as might be required by the site. It is the responsibility of the Engineer acting agent for the Developer to determine if an approval is required from any agency having interest. Copies of approvals or permits required by these Authorities are to be forwarded to the Water and Waste Water Engineering Unit.
23. A letter is required from the Municipality holding jurisdiction or from other Municipalities within 300' of the subdivision property proposed for development stating that the plans have been reviewed and there is no objection to the project.
24. All areas regulated by the New York State Department of Environmental Conservation shall be defined on the Drainage Plan.

25. Nassau County Health Department Approval or Waiver of drainage is required.

Drainage Pipe:

1. The pipe shall be of sufficient diameter and set at an appropriate gradient to accommodate the flow determined by the requirements of the tributary area.
2. Minimum size pipe on County roads shall be 18" for collector systems. 15" pipe will be allowed for crossover from single unit catch basins. For drainage to be installed on proposed roadways, the Municipality holding jurisdiction can waive the 18" diameter requirement.
3. Minimum cover over drainage pipe is 2.0'.
4. The grade for same diameter pipe is not to be flattened after steep gradients.
5. Maximum velocity in pipes is 12 FT/Sec.
6. Minimum velocity in pipes is 2.5 Ft/Sec.
7. Maximum pipe gradient is to be 6%
8. Minimum pipe gradient is to be 0.2%
9. Inverts of pipes at catch basin are to be located at a sufficient depth to provide no conflict with the catch basin's deck.
10. A minimum spacing of 10' is required between drainage pipes and water supply lines.

Manholes:

1. Maximum distance between manholes shall be 350'.
2. Maximum height of a Type "1" manhole is 10'.
3. Manholes greater than 10' depth shall be Type "2"
4. Differential distance between inverts for drop manholes shall be no more than 2-1/2 times the diameter of the inlet pipe.

Catch basins:

1. The maximum tributary area for a Type "A or B" catch basin is 4.5 acres.
2. The maximum tributary area for a Type "C or D" catch basin is 9.0 acres.
3. Flow through catch basins are to be Type "B or D"
4. Catch basin inlet elevations are to be shown on Drainage Plan and Profile Plan.
5. Maximum depth of catch basins is 10'.
6. Catch basins located on roadways with gradients greater than 5% require the basin to be recessed. An additional basin is to be located 20' downgrade of recessed basin. A detail of recessed basin is to be included in plans.
7. Catch basins to be relocated as a result of subdivision requirements may require the existing catch basins be converted to manholes. A conversion detail is to be included on plans.
8. A detail is required showing modifications of existing catch basins.

Roadway Grades:

1. Proposed roadway gradients are to be shown on Drainage Plan and Profile Plan.
2. Maximum roadway gradient is 10%, but a 12% maximum gradient will be allowed if letter of approval is received from the Municipality accepting dedication of roadway.
3. Minimum roadway gradient is 0.5% for asphalt pavements. The gradient can be reduced to a 0.3% gradient with the installation of combined concrete curb and gutter along roadway.
4. Maximum gradient around a cul-de-sac is 3% unless requirement waived by the Municipality holding jurisdiction.
5. Maximum grade across an intersection shall be 2.5% for a distance of 50' either side of the intersection.
6. Minimum stopping sight distance is 200' on minor road.
7. Minimum stopping sight distance is 275' on collector streets.
8. Minimum length for a vertical curve shall be 40'.
9. A vertical curve is required where a transition of gradient is 0.8% or greater. Roadway Profile Plan shall include PVI and PVC stations and elevations.
10. The length of vertical curves shall be proposed so that the gradient of the road at any point shall not be less 0.5%.
11. Typical roadway section is to be shown on plans.
12. Roadway and Drainage grades are to be shown at 50' intervals or as be defined by contour delineation.
13. Any restoration work to be completed on a County road requires a Pavement Restoration Detail.
14. Grades shall be shown along water line of existing roadways where proposed subdivision runoff will impacts these facilities.

Erosion and Sedimentation Control:

Erosion and Sedimentation Control Plan:

The Developer as part the site development is responsible for the installation and maintenance of erosion and sedimentation control measures necessary to prevent the transportation of sediments to off-site areas. The subdivision plans shall include an Erosion and Sedimentation Control Plan as part of the submission for review. Actual erosion and sedimentation control measures are to be delineated to address field condition to be encountered during the various phases of construction. The Erosion and Sedimentation Control Plan shall include details showing the intended measures to be employed during construction to meet the requirements of this section. The specific methods and materials employed in the installation and maintenance of erosion control measures shall conform to the “New York State Stormwater Management Design Manual” and the “New York Standards and Specifications for Erosion and Sedimentation Control”.

Erosion Control Measures shall include the following” *

1. The proposed erosion control show on the plan shall be installed prior to the start of construction. Additional erosion control may be necessary, based upon field conditions that may develop as construction progresses and as may be required by the local jurisdiction.
 - a. Existing vegetation to remain shall be protected and remain undisturbed.
 - b. Clearing and grading shall be scheduled so as to minimize the size of exposed areas and length of time that areas are exposed.
 - c. The length and steepness of cleared slopes shall be minimized to reduce runoff velocities and quantities.
 - d. Runoff shall be diverted away from clear slopes.
 - e. Sediment shall be trapped on site.

Specific methods and materials employed in the installation and maintenance of erosion control measures shall conform to the “New York State Guidelines for Urban erosion and Sedimentation Control”.

2. Sedimentation barriers (silt fence, hay bales or approved equal) shall be installed prior to any grading work along the limits of disturbances and shall be maintained for the duration of the work. No sediment from the site shall be permitted to wash onto adjacent properties or roads. Where sedimentation barriers are required adjacent to streams, ponds or tidal areas, the silt fence is to be supported by a temporary metal post and chain link fence. (3)
3. Graded and stripped areas and stockpiles shall be kept stabilized through the
4. use of temporary seeding or sod as required. Seed mixtures shall be in accordance with the Soil Conservation Service recommendations.

5. Soils stockpiled on individual lot as a result of excavation for foundations shall be placed to increase the distance these soils must travel to reach the drainage system.
6. Drainage inlets installed as part of the project shall be protected from sediment buildup through the use of sedimentation barriers, sediment traps, etc., as required.
7. Proper maintenance of erosion control measures is to be performed as indicated by the periodic inspection after a rainfall event totaling 0.5 inches of rainfall or greater or during a 14-day inspection program occurring throughout the period of the construction. Maintenance measures include, but are not limited to cleaning of sediment basins or traps, cleaning and repair of berms and diversions and cleaning and repair of inlet protection.
8. Appropriate means shall be used to control dust during construction. A stabilized construction entrance shall be maintained to prevent soil and loose debris from being tracked onto local roads. In addition, a water source is to be maintained adjacent to this entrance for the purpose of washing debris from truck tires. The construction entrance shall be maintained until the site is permanently stabilized.
9. Sediment barriers and other erosion control measures shall remain in place until upland disturbed areas are permanently stabilized.
10. All 1:2 and 1:3 slope areas will be protected against erosion during construction and permanent ground cover shall be such that erosion will be prevented. Necessary measures shall include, but not be limited to, hay bales, silt fence, silt trap/basins, jute mesh, anchored straw mulch, hydroseeding, sod, etc. and shall be maintained for the duration of the construction as well as following the completion of construction until such time that the proposed plantings have become acclimated/established as determined by the authority holding jurisdiction. (1)

The plans shall also address the following environmental issues the developer shall be responsible for addressing during construction: *

1. Pollution prevention measures to be instituted to prevent litter, construction chemicals, and construction debris from becoming pollutant sources in storm water discharges from the site.
2. Provide a description of the method of storing waste materials on-site and a description of controls to be employed to reduce pollutants from these materials including storage practices to minimize exposure of materials to storm water with a spill prevention and response plan.
3. The installation portable sanitary system or a system established in a field office trailer is to be maintained throughout the term of the project.
4. All soils stockpiled on the site for future use shall be covered to limit Dust Pollution and run off of fines with rain.
5. Site clearing wood chips to be stockpile for mulch shall be stockpiled in an area away from proposed construction and surrounded by silt fencing.
6. The Contractor shall be responsible for keeping adjacent roadway free of debris washed from the construction site. A street sweeper shall be employed to remove all soil and debris from roadways as often may be required.

7. All construction debris shall be removed from site within the same day or kept in a manner to prevent it from leaving the site with storm runoff or blown from the site by winds.
8. All refuse shall be placed within a covered container for future disposal.
9. The Contractor shall be responsible for the disposal of all excess concrete dumped on the site. Furthermore, the Contractor shall designate a location for washing delivery trucks. This area is to be configured to insure that wash water does not runoff the site to either private property or public roadways. Subsequent to the completion of concrete activities, this area is to be excavated and material to be removed from the site. Suitable soils are to be brought to restore this area. (2)
10. The Contractor shall be responsible for installing catch basin inserts into any and all County owned catch basins connected to positive drainage systems, which are located adjacent to the project area or located within 100' of the project area. It is the responsibility of the Contractor to maintain these inserts during the period of the construction in accordance with manufacturer's recommendation. At the end of all site work including the development of individual sites, new media is to be installed and the devices are to be dedicated to Nassau County. The Units are required to have an 80% Total Suspended Solids Removal or as maybe specified in the New York State Design Manual. However, if it is determined that the catch basins lying within these limits do not connect to positive systems and function solely as leaching basis, the Contractor will be responsible for cleaning each at the conclusion of all site work. This does not prevent the County from issuing a request to clean these facilities if it has been determined that the contractor's activities have adversely affected their normal function. (3)

Storm Water Treatment Devices:

For subdivisions where overflow runoff from the property's tributary area enters directly into streams, tidal waters, or roadway drainage systems, such water shall be routed through onsite treatment devices in conformance with "The New York State Storm Water Design Manual". A note is to be included on the Drainage Plan designating maintenance responsibility for the proposed devices.

Requirements for Drainage Storage Facilities:

Drywells:

1. Excavations for drywells shall extend to a depth where a minimum of 6' of good leaching material occurs.
2. Bottoms of drywells shall be a minimum of 2' above ground water.
3. Drywells are to be installed with a 3' collar consisting of appropriate graded leaching material acceptable to the Municipality holding jurisdiction.
4. The maximum depth of drywells and/or diffusion wells is 25'. If suitable leaching material does not occur within the 25' the excavation shall extend 6' into suitable material and the hole shall be backfilled with graded material to the proposed bottom elevation of the drywell.
5. A drywell and/or diffusion well detail is required on plans.
6. The minimum spacing between drywells shall be 10' between outside walls.
7. For Condominiums, Cooperatives, and Townhouses roof drains shall be directed into drywells separate from site drainage unless downspouts are to be located on outside of building(s). If site conditions prevent the installation of separate drywells for roof drains, a note is to be placed on the Drainage Plan stating the downspouts are to be located on exterior of building(s).
8. Floor drains and Trench drains require their own drywells.
9. No storage considerations will be allowed for domed sections.
10. No storage credit is allowed for percolation.
11. Where drywells are proposed within individual lots a note is to be included on the Drainage Plans stating the property owner or Home Owners Association is responsible for the maintenance of these structures.

Drainage Reserve Areas:

1. Drainage Reserve Areas shall be dedicated either to an individual homeowner or to the Homeowners Association to be incorporate for the developed property as may be applicable. A note of dedication is to be included on the plans. Depending on site soil conditions, a drywell may be required.
2. Maximum depth of Drainage Reserve Areas is 4'. Where Drainage Reserve Areas extend beyond 30" in depth, a 5' wide Aquatic Berm is to be provided at a level 2' below the anticipate High Water Mark.
3. Overflow between Drainage Reserve Areas is to be a minimum of 1' lower than the roadway grade adjacent to it.
4. No fill is to be place on the site for the purpose of constructing a Drainage Reserve Area.

Storm Water Basins:

1. Storm Water Basins are to be constructed in conformance with the applicable sections of the "County of Nassau Department of Public Works 1964 Standard Specifications for the Construction of Highways and Bridges" as subsequently amended and the "County of Nassau Department of Public Works Standard Sheets for the Construction of Highways and Bridges.

2. Storm Water Basin's side slopes are to be graded 1 on 2.
3. Storm Water Basins shall be constructed with two levels. The lower level is to be two foot deeper for the purpose of acting as a sedimentation settling area. The transition slope between the two areas is to be graded 1 on 3 between tiers.
4. Drainage pipes connected to Storm Water Basins shall outfall into the lower sedimentation area of the basin.
5. Drainage pipes which outfall into Storm Water Basins require a headwall conforming to the detail shown in the Nassau County Standard Drawings.
6. The minimum size pipe to outfall into a Storm Water basin is 24".
7. The maximum gradient for pipes that outfall into storm water basins is 2%.
8. Sluiceways are to be constructed in conformance to the details shown (see detail).
9. Maintenance access ramps shall be 12' wide and constructed at an 8% grade from top of berm to bottom of basin. The maximum allowable ramp grade is 10% with Nassau County's approval. The ramp is to be tilted with the inside edge constructed 6" higher than the elevation of the side-slope side opposite it.
10. Where proposed, the minimum turning radius for ramps shall be 25'.
11. No topsoil is to be placed on side-slopes.
12. A 6' high chain link fence with its bottom anchored in a 2' deep curb is to be constructed around the perimeter of the basin with a 16' wide access gate located near the vicinity of the maintenance ramp both conforming to Nassau County Standards.
13. A planting screen consisting of approved evergreen trees a minimum 6' in height shall be planted along the perimeter of the Storm Water Basin. The trees shall be planted in conformance with Nassau County Standard requirements.
14. Berms (distance between fence and top of slope) shall be 10' or 13' wide and one foot higher at top of slope than at the fence to prevent erosion.
15. The fence and plant screening around the basin shall be placed in accordance with the following format:
 - a. On Street fronts, the fence shall be placed 5' inside the storm water basin's property line, with an adjacent 10' berm. The 5' outside the fence is for planting.
 - b. On sides abutting property of others, the fence shall be placed 2' inside the storm water basin's property line, with an adjacent 13' berm. The planting is to be located on the inside of the fence.
 - c. On side abutting property of developer (builder of the storm water basin), fence shall be located 2' inside the storm water basin property with an adjacent 10' berm. A 5' planting strip shall be located outside the basin's property line with planting located at the center of the strip.
14. A planting detail is to be included on the plans showing the applicable configuration proposed for the Storm Water Basins.
15. No fill is to be placed for the purpose of creating a Storm Water Basin.
16. Elevation of anticipated high water is to be shown on Storm Water Basin Plan.

17. Access to Land Locked Storm Water Basins shall be provided through a 20' strip from the street to the basin's entrance be include as part of the basin property.

Retention Ponds:

1. Nassau County will not accept dedication ponds constructed for the purpose of storm water retention. A note is to be included on the Drainage Plan dedicating maintenance responsibility for the Retention Pond to the Home Owners Association.
2. Retention Ponds proposed for aesthetic value without a surrounding fence will require the construction of a 5' wide aquatic shelf located 1' below the pond's established water level.
3. The pond is to be designed to allow the anticipated storage to be renewed as a result of percolation between storm events.
4. Fill is not to be used for the purpose of creating storage.
5. The minimum size pipe to outfall into the pond is 24".
6. Pipes directing flow to drywells or diffusion wells for restoration of storage retention shall be back pitched away from the Retention Pond at a maximum gradient of 2%.
7. The plans shall include all details relevant to the construction of the retention pond.

Linear Leaching Chambers:

1. Nassau County is aware that manufacturers claim storage in granular bedding material installed with units as part of hard storage. The storage claimed for the proposed bedding material is to be substantiated by an approved testing laboratory. The results are to be forwarded to the Water Resources Engineering Section for consideration. The results will be reviewed before acceding to claimed storage. A note is to be added to the detail for this unit stating the tested material is required.
2. Bottom of bedding material shall be a minimum of 2' above ground water.
3. A manufacturer treatment units is to be installed to intercept contaminates before dispersing runoff into storage units.

Note: No consideration will be given to Storm Water Storage plans proposing an anticipated percolation loss as a substitute for volume storage in the drainage calculations.

The Water Resources Unit is willing to consider new technologies proposed for storage. Prior to approval of new technologies, the Developer or Engineer shall provide manufacturer information for consideration.

Drainage Related Fees:

General:

In July of 2002 the Department of Public Works requested approval from the Office of the County Executive to enact certain fees associated with relaxing storage requirements imposed upon Developers in conjunction with the construction of subdivisions. It is the Department of Public Works belief that Developers obtain a substantial benefit as a result of the relaxed “onsite storage requirement” with out providing any corresponding compensation to the County for the increased storm water loading of its drainage system.

Within the same period, the Department of Public Works also requested approval from the Office of the County Executive to enact a fee for Storm Water Basin Dedication to offset the maintenance costs incurred by the County as a result of accepting dedication of Storm Water Basins from Developers. The Department of Public Works receives no benefit from the assumption of ownership of dedicated Storm Water Basins and by accepting these properties; a burden is borne by the Department of Public Works for the resulting cost of maintaining these facilities. The Department of Public Works proposed the creation of a fee to reimburse Nassau County for the cost it incurs as a result of accepting the routine maintenance of the dedicated basins.

In July of 2002 the proposals received approval from the Office of the County Executive. These fees were subsequently put before the Nassau County Legislature as part of Ordinance 124-2002 “Fixing certain fees to be charged by the County Clerk, Civil Service Commission, Board of Elections, Fire Commission, Planning Commission, Treasurer, Police Department, Department of Public Works, and the Coordinating Agency for Spanish Americans”. On October 21, 2002 the Legislature approved the Ordinance received approval.

Fee for the Waiver of Storm Water Retention Requirements:

Under Ordinance 124-2002 the Nassau County Legislature approved a fee of \$10,000.00 per every 1,000 Cubic Feet of storage deferred to Nassau County. The Commissioner of Public Works has established criteria under which Developers are required to pay Compensation to Nassau County. The Commissioner has set a threshold of 5" of runoff from the tributary area as the point Developers would be responsible for payment compensation to the County for the deficiency of not reaching the Department’s standard. For a waiver were the on-site storage is less than 8" but greater than 5" there is no fee. Therefore, the Developer would be responsible for providing compensation for the difference between what is provided for under the design and the 5" of storm water runoff. If the Developer chooses to pay the compensation, the following comment is to be included on the plans:

“The Developer will pay a fee of _____, to the Nassau County Treasurer as compensation for a partial waiver of Drainage Requirements, Upon approval of this subdivision for Nassau County agreement to accept maintenance responsibility for site overflow.”

Fee for Dedication of Storm Water Basins:

Under Ordinance 124-2002 the Nassau County Legislature approved a fee of \$50,000.00 to be paid to the Nassau County Treasurer for acceptance of dedication of Storm Water Basins as payment in compensation for the first ten years of maintenance assumed by the Department of Public Works. The following note is to be added to the Storm Water Basin Plan:

“The Developer agrees to pay a storm water dedication fee in conformance with the requirements on Nassau County Ordinance No. 124-2002.” * (2)

The following details should be included to plans where applicable:

1. Drywell detail
2. Drainage Reserve Areas
3. Catch basin
4. Manhole
5. Area drain
6. Recessed catch basin detail
7. Swale cross-section
8. Cross-section of retaining wall at highest application
9. Conversion of catch basin to manhole detail
10. County Road Pavement Restoration
11. Fence and gate
12. Inlet structures for Storm Water Basins and Drainage Reserve Areas
13. Sluiceway detail for storm water basin
14. Storm Water Basin Planting Screen

Other applicable details required to define the drainage system are to be included.

- Note: The Subdivision Requirements will be subject to a yearly review to determine if modification of the criteria is required.

Revised: (1) February 2005; (2) February 2006; (3) January 2007

Nassau County Department of Public Works

Under Section 239-F of the General Municipal Law, the Nassau County Department of Public Works is obligated to review plans proposing the development or modification of private property adjacent to Nassau County roads, property or easements. The review is conducted to determine whether the proposed development may have an impact upon any County facility. It is the responsibility of the Water Resources Unit of the Department's Division of Sanitation and Water Supply to review the plans for proposed onsite drainage.

In accordance with Phase II of the Federal Storm Water Regulations Nassau County must implement measures to reduce the impact of storm water discharges. These measures include limiting and controlling storm water runoff from private properties where site overflow would enter the County's drainage system. To this end the Department of Public Works shall require proposed property improvements to include facilities sufficient to provide for the retention/storage of eight (8) inches of storm water runoff as determined by the site's tributary area and in conjunction with relevant engineering factors.

The County is aware that site conditions may adversely affect the property's ability to provide eight (8) inches of on-site storage. However, it is the developer's responsibility to provide the maximum amount of storage that the site permits in an effort to satisfy the County's requirement. If the eight (8) inch storage requirement cannot be met, a letter of hardship outlining the circumstances which limit on-site storage and a request "waiver of storage requirement" can be forwarded to Nassau County's Water Resources Unit as part of the 239-F submission. The Water Resources Unit will consider the request based upon the information supplied.

Where developers fail to meet the Department of Public Works storage requirement and pass to the County the burden for increased storm water management and system maintenance, the developers shall pay a one-time fee to provide compensation to Nassau County for its increased responsibilities.

For a waiver request where onsite storage is less than eight (8) inches, but equal to or greater than five (5) inches, there will be no fee. For a waiver of storage requirement, which will be less than five (5) inches, the fee will be calculated (as per Ordinance 124-2002), based upon the difference between five (5) inches of on-site storage and the proposed on-site storage design capacity. In no instance shall the proposed on-site storm water storage capacity be less than two (2) inches.

A letter requesting a of Waiver of Storage Requirement shall be included with the plan submission. The letter shall include the following information:

1. Volume of storm water to be retained on site.
2. Destination of storm water overflow from the site.
3. Municipality responsible for receiving the anticipated overflow.
4. Justification for the failure to meet Nassau County's storage requirement.

Nassau County Ordinance No. 124-2002 has established a fee of \$10,000.00 for each 1,000 cubic feet of storage capacity, or as prorated, that is deferred to Nassau County in lieu of on-site storage. Should the developer's letter of hardship be acceptable, the developer shall be responsible for providing compensation to Nassau County per the terms of Ordinance 124-2004 for the increased storm water management and maintenance responsibilities. A note shall be included on the plans stating the following, "The developer shall pay a fee for a waiver of drainage requirement, in the amount of _____, to the Nassau County Treasurer, upon approval of the 239-F."

Drainage Requirements for 239F Review

Onsite Storage of Storm Water

Residential Properties:

New construction and existing site redevelopment: Plans are to provide for eight (8) inches of storage for the site. The developer or the designer is encouraged to utilize low impact development techniques in addition to the traditional methods for onsite storage. A waiver will be required when less than the eight (8) inches of onsite storage is provided for under the design.

Additions to existing buildings: The plans shall indicate that storm water runoff from proposed improvements shall have no impact upon County roads and drainage facilities.

Commercial Properties:

New construction: Plans shall provide for eight (8) inches of onsite storm water storage for the site. A waiver of drainage requirement is to be requested when less than the eight (8) inch of storage is provided for under the design. If overflow impacts another municipality, a letter is to be forwarded from that municipality stating they are willing to accept the runoff.

Redevelopment of existing properties: For the redevelopment of site with the following degrees of work:

1. Reclassification of property – no change to any structures or to the property.
2. Curb cuts on County roads – no change to structures.
3. Aesthetic improvements to property – installation of signs and garden planting areas.
4. Modification of a site - minor changes to property
5. Additions to existing buildings or modifications to properties – size of improvement can vary, but the portions of property are unchanged.

For classifications 1–3 submittals: No onsite storm water storage improvements will be required.

For classification 4 submittals: The developer shall provide for eight (8) inches of storage for storm water runoff for that portion of the property disturbed for new construction or replacement in kind.

For classification 5 submittals: Where the redevelopment and / or disturbance for replacement in kind is equal to or greater than twenty-five (25) percent of the current developed site, the whole site will be required to meet the eight (8) inch storage requirement. Where redevelopment is less than twenty-five (25) percent of the current site, the developer shall install additional storage for eight (8) inches of runoff from the portion of the property redeveloped.

Existing Connections to Municipal Storm Water Systems: Where a 239F site plan review identifies an existing connection, either prior approved or not, between onsite drainage and a Nassau County drainage system, it is the responsibility of the developer to obtain a Drainage Connection Permit. The conditions of the permit will include best management practices to reduce and/or eliminate adverse impacts to the Nassau County drainage system from sediments, floatables, and petroleum products. If a connection is identified between the onsite drainage and another municipality's drainage system, a letter approving the connection will be required.

Waiver of Drainage Requirement: Where site development fails to meet the County's eight (8) inch storage requirement, the developer is required to submit a request for a waiver from the onsite storage requirement. The request shall include the following:

1. Justification for the failure to meet the County's requirement.
2. The anticipated storm water storage to be retained onsite.
3. The destination of the storm water overflow.

* Developers are required to include sedimentation and erosion control measures as part of the plan submission. Developers are encouraged to employ new technologies as may become available to employ "Best Management Practices" to collect and treat storm water runoff. The County for its part will be open to discussion regarding alternate methods of attaining the site storage requirement.

Revised: August 31, 2004, October 27, 2004