



NEW CASTLE COUNTY

**Engineering Checklists
Sediment and Stormwater Submission**

DEPARTMENT OF LAND USE
87 READS WAY, NEW CASTLE, DE 19720
PHONE: 302-395-5400 • FAX: 302-395-5443 • WWW.NCCDE.ORG

REV. 02/2018

Project Name:

Application Number:

Index of Sections submitted

Identify the number of stormwater practices by type included in this submission:

	Infiltration		Sheet Flow to Filter Strip or Open Space
	Bio-retention		Detention Practices
	Permeable Pavement Systems		Stormwater Filtering Systems
	Vegetated Roofs		Constructed Wetlands
	Rainwater Harvesting		Wet Ponds
	Restoration Practices		Soil Amendments
	Rooftop Disconnection		Proprietary Practices
	Vegetated Channels		Source Controls
	Afforestation		
	Infiltration (FEQ)		Bio-retention (FEQ)
	Rainwater Harvesting (FEQ)		Vegetated Channels (FEQ)
	Sheet Flow to Filter Strip or Open Space (FEQ)		Detention Practices (FEQ)
	Constructed Wetlands (FEQ)		Wet Ponds (FEQ)
	Afforestation (FEQ)		

*Provide the appropriate portions of the checklist that are applicable.

1.0 _____ STANDARD SUBMISSION REQUIREMENTS

Incomplete submissions will result in an “Incomplete Submission” Fee.

- 1.1 _____ Completed checklist signed, sealed and dated by a Delaware P.E. /P.L.S. (NCCC Chapter 12, Section 03.006)
- 1.2 _____ Completed DNREC Preliminary, Sediment and Stormwater Management Plan Review Checklist **or** Combined Steps 2 & 3 Sediment and Stormwater Management Plan Review Checklist
- 1.3 _____ Provide a 1.5”x3” (ht. by width) clear area for an approval stamp in the center right of each sheet.
- 1.4 _____ One copy of all necessary calculations signed, sealed and dated by a Delaware P.E. /P.L.S. (DSSR)
- 1.5 _____ One set of electronic plans submitted through ePlans in accordance with the NCC eServices Electronic Plan Review Submittal Standards
- 1.6 _____ Submit review fees, in accordance with NCCC Chapter 40 Appendix 2, as amended
 - 1.6.1 _____ Total acreage = _____ ac.
 - 1.6.2 _____ Total disturbed acreage = _____ ac @ fee per disturbed acre = \$ _____

Notes: Minimum fee required is based on 1 acre disturbance
Fee for total acreage required when disturbed area exceeds 80% of total acreage.

2.0 _____ STORMWATER DESIGN REPORT (in addition to those requirements listed in the DNREC Sediment and Stormwater Management Plan Review Checklist)

- 2.1 _____ Narrative
 - 2.1.1 _____ Table of contents
 - 2.1.2 _____ Discuss how natural detention/retention features are incorporated into design
 - 2.1.3 _____ Discuss the basis of all assumptions used for establishing values for CN, Tc, etc.
 - 2.1.4 _____ Comment upon compliance with DSSR, Article 22 of the NCCC Chapter 40 and NCCC Chapter 12. Identify any non-compliance and submit appropriate waiver requests
 - 2.1.5 _____ Summary of peak flow rates and volumes at site discharge point(s)
 - 2.1.6 _____ Hazard classification of ponds (NRCS Small Pond Code 378 or TR-60)
 - 2.1.7 _____ Specifics of foundation study provided in the sequence of construction to meet requirements of NRCS Small Pond Code 378 Design Criteria for Embankment Ponds
 - 2.1.8 _____ Methods used for pre- and post-development analysis (TR-55, TR-20 or other accepted methods)
 - 2.1.9 _____ Methods used for stage-storage and discharge calculations (account for tail water)
 - 2.1.10 _____ Methods used for Reservoir Routing
 - 2.1.11 _____ Software used for hydrologic, hydraulic and routing calculations
 - 2.1.12 _____ Drainage easements (methodology and rationale for defining easements) (NCCC Chapter 12, Section 04.005 and 05.006.A.6)
 - 2.1.13 _____ Culvert design/analysis (NCCC Chapter 12, Section 04.003)
 - 2.1.13.1 _____ Methodology and software used for design
 - 2.1.13.2 _____ Design storms (NCCC Chapter 12, Section 04.002.E)
 - 2.1.14 _____ Storm sewer design

- 2.1.14.1 _____ Design storm frequencies (25-year in sumps, 10-year otherwise). Provisions must be made to provide building protection and to safely convey the 100-year storm overland to the designated stormwater facility with the conveyance system credited with 50% of its design storm capacity (NCCC Chapter 12, Sections, 04.001.E, 04.002.E and 04.003)
- 2.1.14.2 _____ Methodology and software used for design
- 2.1.14.3 _____ Methodology and software used for hydraulic grade line analysis, including head and tail water assumptions to verify system capacity (NCCC Chapter 12, Section 04.003.C)
- 2.2 _____ Pre-Development Drainage Area Plan (Maximum scale 1-inch = 100-feet) All plan information shall be based on field verified topography whenever possible.
 - 2.2.1 _____ Delineation of area(s) draining to sump(s) with the extent of ponding and outlet defined (NCCC Chapter 12, Section 04.011.E)
- 2.3 _____ Post-Development Drainage Area Plan (Maximum scale 1-inch = 100-feet)
 - 2.3.1 _____ All items required for the pre-development drainage plan (See Checklist Section 2.2)
 - 2.3.2 _____ Proposed development
 - 2.3.3 _____ Show how off-site areas are collected and directed through/around the site (NCCC Chapter 12, Section 04.001)
 - 2.3.4 _____ Show proposed storm sewer with all catch basins, junction boxes and outlets with structure ID's labeled
 - 2.3.5 _____ Show all culverts with structures labeled
 - 2.3.6 _____ Show all existing drainage easements per deed search and all proposed easements (NCCC Chapter 12) (i.e.: storm sewer, stormwater maintenance, stormwater access, sanitary, drainage)
 - 2.3.7 _____ Demonstrate that the 100-year storm event can be conveyed to the SWM facility or site outfall without impacting structures and within all drainage easements (NCCC Chapter 12, Section 04.001.E)
- 2.4 _____ Inundation Plan and computations: Proposed development (include top of foundation for all buildings) (NCCC Chapter 12, Section 04.001.E)
- 2.5 _____ Calculations:
 - 2.5.1 _____ Stage-storage and discharge calculations, both composite and individual devices, within the outlet structure configuration. **Construction plans, include plan view of each facility, a detail of outlet structure(s) (if applicable), and emergency spillway (if applicable) with all dimensions and elevations.
 - 2.5.2 _____ Hydrograph time length shall extend 24 hours past the peak of the design storm events. All time steps (dt) shall be no greater than 0.05 hrs.
 - 2.5.3 _____ Calculations to justify sizing of fore-bays and sediment disposal areas
 - 2.5.4 _____ Calculations for saturation zone for embankments (phreatic line)
 - 2.5.5 _____ Chart used to determine number and size of anti-seep collars (DESCH)
 - 2.5.6 _____ Water surface profiles for establishing limits of floodplain (NCCC Chapter 40, Section 10.302)
 - 2.5.6.1 _____ Calculations for peak discharge (provide and justify all input data)
 - 2.5.6.2 _____ Cross sectional data and locations
 - 2.5.6.3 _____ Water surface elevations by appropriate hydraulic software, calculation or method. (Justify Manning's "n" values and the starting WSEL)

- 2.5.6.4 _____ Method of calibration for all flood studies
- 2.5.7 _____ Culvert design/analysis (NCCC Chapter 12, Section 04.003.D)
 - 2.5.7.1 _____ Peak discharge calculations for design storms and the 100 year storm
 - 2.5.7.2 _____ Specify and justify headwater and tailwater elevations, K values and all other assumptions
 - 2.5.7.3 _____ Design/analysis for the design storm and 100-year storm by appropriate culvert analysis software
 - 2.5.7.4 _____ Incorporate road or overflow profile
- 2.5.8 _____ Open Channel (NCCC Chapter 12, Section 04.001.B)
 - 2.5.8.1 _____ Engineering analysis and computations (NCCC Chapter 12, Section 04.001.B)
 - 2.5.8.2 _____ Outlet protection design for all outlets (DESCH 3.3.10)
 - 2.5.8.3 _____ Vegetated and lined channels designed using tractive force analysis per Design Guide 1 of DESCH 3.3.3 and 3.3.4)
- 2.5.9 _____ Closed Channel (NCCC Chapter 12, Section 04.001.C)
 - 2.5.9.1 _____ Computation design analysis with Gradeline analysis (NCC Chapter 12, Section 04.003)
 - 2.5.9.2 _____ Outlet protection design for all outlets (DESCH 3.3.10)
 - 2.5.9.3 _____ Off-street profiles provided on construction plans.
- 2.5.10 _____ Sediment Basin and Traps
 - 2.5.10.1 _____ Required dimensional data from the Standard Detail and Specifications (DESCH)
 - 2.5.10.2 _____ Provide a physical marker to indicate the depth of sediment accumulation for cleanout
 - 2.5.10.3 _____ Demonstrate that de-watering skimmer can drain sediment basin within 48 hours.
- 2.5.11 _____ Soils Analysis Report - include testing results, seasonal high water table elevation, and infiltration testing results (if, applicable).

3.0 _____ STORMWATER MANAGEMENT POND DESIGN

FACILITY ID _____

- 3.1 _____ Specify type of pond: excavation, embankment or TR-60 (Circle one) Compliance with NRCS Small Pond Code 378 or TR-60, as applicable (DSSR)
- 3.2 _____ Cross section of the dam through the principal spillway (include elevations for all elements to be shown in the cross section) (NRCS Small Pond Code 378)
 - 3.2.1 _____ Existing contours
 - 3.2.2 _____ Proposed contours (slopes no steeper than 3:1 inside, 3:1 outside, top width at least 6-feet, 10-feet wide if used for maintenance access) (NRCS Small Pond Code 378 and NCCC Chapter 12, Section 05.006.B.6)
 - 3.2.3 _____ Cutoff trench (bottom width and depth at least 4-feet; side slopes not steeper than 1:1) (NRCS Small Pond Code 378)
 - 3.2.4 _____ Impervious core top width, material, side slope and height (at least = 10-yr WSEL) (NRCS Small Pond Code 378)

- 3.2.5 _____ Outlet structure per the DSSR (size and elevation of all openings, trash rack, anti-vortex device, structural detail of the outfall and its foundation. Include all details with dimensions, elevations and material specs) (DSSR and NCCC Chapter 12, Section 05.006)
- 3.2.6 _____ Specify pipe diameter, material, length, slope and water tight couplings (RCP required for all embankment ponds, other materials may be specified for excavated ponds (NRCS Small Pond Code 378)
- 3.2.7 _____ Phreatic line (start at the permanent pool elevation for wet pond or the 10-yr WSEL for dry ponds and follow a 4:1 slope, label the saturated length)
- 3.2.8 _____ Anti-Seep Collars (provide details and specify material, size, spacing and location on pipe) (note NRCS Small Pond Code 378 specifications and DESCH)
- 3.2.9 _____ Bedding for concrete pipe (include detail) (NRCS Small Pond Code 378)
- 3.2.10 _____ Emergency spillway (1-foot above crest elevation of principal spillway) (NRCS Small Pond Code 378)
- 3.2.11 _____ Outlet protection (Provide plan and cross-sectional detail) (DESCH)
- 3.2.12 _____ Top of the dam (must be at least 1-foot above the design water depth in the spillway and 2-feet above for dams having drainage area greater than 20-acres) (constructed = design + 5% for settlement) (NRCS Small Pond Code 378)
- 3.2.13 _____ Water surface elevation for permanent pool and all design storms
- 3.2.14 _____ Inlet and outlet inverts of all pipes
- 3.2.15 _____ Means to drain the permanent pool or note that pumping is the means to drain
- 3.2.16 _____ Safety and aquatic benches (at least 10-feet wide)
- 3.2.17 _____ Seasonal high ground water table (SHGWT) is at least 3-feet below the bottom of a dry pond or is at or below permanent pool elevation of a wet pond. (NCCC Chapter 12, Section 05.006.B.4)
- 3.2.18 _____ Permanent pool is no deeper than 5-feet – minimum 3-feet deep over 50% of surface area (NCCC Chapter 12, Section 05.006.B.4)
- 3.3 _____ Profile of the dam through the centerline of embankment (NRCS Small Pond Code 378)
 - 3.3.1 _____ Existing and proposed ground
 - 3.3.2 _____ Top of the dam, constructed and settled
 - 3.3.3 _____ Location of emergency spillway
 - 3.3.4 _____ Top of the impervious core and bottom of the cut off trench
- 3.4 _____ Profile along centerline of the emergency spillway (NRCS Small Pond Code 378)
 - 3.4.1 _____ Existing ground
 - 3.4.2 _____ Inlet Control Level (L at least 16-feet) and outlet sections (DESCH 3.1.4)
 - 3.4.3 _____ Length and slope of the outlet channel
 - 7.4.4 _____ If emergency spillway is proposed in fill, provide details for structural spillway
- 3.5 _____ Plan View Requirements
 - 3.5.1 _____ Existing and proposed contours (1-foot intervals)
 - 3.5.2 _____ Label facility ID, drainage area to facility (acres), amount of impervious cover within drainage area (acres)
 - 3.5.2 _____ Location of test borings, with seasonally high ground water elevation specified
 - 3.5.3 _____ Type of soil (USGS classification) to be used in dam, core and cut off trench

- 3.5.4 _____ Inflow and outflow pipes with invert elevations, outlet channel and protection
- 3.5.5 _____ Emergency spillway and its outlet channel
- 3.5.6 _____ Fore-bays sized for minimum volume of 2% of 2-year runoff volume
- 3.5.7 _____ Sediment disposal area or note indicating off-site disposal to a permitted facility
 - 3.5.7.1 _____ Depth (maximum 1-foot)
 - 3.5.7.2 _____ Slope (maximum 5%)
- 3.5.8 _____ Stormwater management areas and all maintenance and access easements
- 3.5.9 _____ Minimum cross slope of 2% provided across bottom of facility (dry pond)
- 3.5.10 _____ Label facility ID, drainage area to facility (acres), amount of impervious cover within drainage area (acres)
- 3.6 _____ Plan Notes
 - 3.6.1 _____ Methods of achieving adequate compaction for construction of dams
 - 3.6.2 _____ Lift thickness
 - 3.6.3 _____ Degree of compaction
 - 3.6.4 _____ Method for compaction around and above barrel. Note on the plan that the Certified Construction Reviewer and the NCCDLU Engineer or Inspector shall receive copies of all material/compaction evaluation and/or testing.
- 3.7 _____ Inspection and Maintenance (Plan requirement)
 - 3.7.3 _____ Maintenance in accordance with New Castle County Drainage Code (NCCC Chapter 12, Section 12.06.001. B1)

4.0 _____ SEDIMENT AND STORMWATER INDEX PLAN

- 4.1 _____ Plan view of the entire site at a reasonable scale on one sheet showing limits of disturbance, Article 10 resources, project phasing, sediment controls by symbols, lot numbers, tax parcel numbers, street addresses, a north arrow and names of adjacent property owners
- 4.2 _____ Provide note on plan that specifies whose responsibility it will be to repair and stabilize erosion and sediment controls and stormwater management practices during construction, including areas disturbed by utility companies
- 4.3 _____ Provide note on plan that specifies whose responsibility it will be to inspect and perform maintenance and/or repairs of the stormwater management practices after construction
- 4.4 _____ Specify inspection schedule and procedure for inspection and maintenance of stormwater management practices
- 4.5 _____ General notes (see attached)

5.0 _____ PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN

- 5.1 _____ Identify any borrow areas for installation of pre-bulk controls and include those areas in limit of disturbance (NCCC Chapter 40, Section 22.210.C)
- 5.2 _____ Designate areas for future septic and infiltrative stormwater practices with orange safety fence or equivalent for protection during construction
- 5.3 _____ Provide stormwater calculations and analysis, assuming the site to be bare earth, at each discharge location for each pre-bulk control to demonstrate adequate downstream conveyance

5.4 _____ Plan Requirements

5.4.1 _____ Maximum scale 1-inch = 50-feet

5.4.2 _____ Delineation of all Article 10 Protected Resources (Note: For the protection of areas designated on the record plan to remain undisturbed, a minimum ten (10) foot wide buffer must be provided between any grading, sediment control practice, and/or structure and the area(s) designated to remain undisturbed.)

6.0 _____ CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN

6.1 _____ Phasing and cut and fill quantities by phase. Specify temporary stockpile location of excess cut and location from which fill will be obtained and transported. If designated cut or fill areas are on site, those areas must be included in phase

6.2 _____ Plan shall show all proposed lot bulk grading including pad grading for structures, major swales, and street grades. Plan shall not show proposed buildings or structures

6.3 _____ Transition from pre-bulk controls to post-bulk controls shall be consistent with specified phasing and reflected in the sequence of construction. Plan shall clearly address stabilization method and technique within specified period (i.e. 5 days)

6.4 _____ Attach portion(s) of open space with post-bulk phase and provide detailed information to complete open space with completion of post-bulk phase. All open space areas shall be permanently seeded.

6.5 _____ All berms and swales shall be stabilized by specified matting

6.6 _____ Plan Requirements

6.6.1 _____ North arrow

6.6.2 _____ Maximum scale 1-inch = 50-feet

6.6.3 _____ Delineation of all Article 10 Protected Resources (Note: For the protection of areas designated on the record plan to remain undisturbed, a minimum ten (10) foot wide buffer must be provided between any grading, sediment control practice, and/or structure and the area(s) designated to remain undisturbed.)

7.0 _____ GENERAL NOTES

7.1 _____ A pre-construction meeting (unless waived by New Castle County) must be held prior to commencing construction. Contact New Castle County Department of Land Use via email: permits@nccde.org to schedule meeting. Failure to do so constitutes a violation of the approved Sediment and Stormwater Management Plan.

7.2 _____ DNREC and New Castle County (NCC) personnel shall have the right to conduct on-site inspections of land disturbing activities.

7.3 _____ All pre-construction controls must be installed, stabilized, inspected by NCC prior to bulk grading, building permit issuance, or any utility installation on non-residential projects. Prior to this Pre-Bulk Inspection no disturbance may occur on-site other than to those areas necessary to establish the pre-construction erosion and sediment controls. Install the pre-construction controls pursuant to this plan. All perimeter sediment controls, including soil stockpiles, shall be vegetatively stabilized.

7.4 _____ Bulk grading of roadways, individual lots, sewer and storm utility installation must be completed, inspected, and approved prior to any building permit issuance, with the exception of model homes. Prior to scheduling the Post-Bulk Inspection, the site must be completely stabilized and fully compliant with the latest approved Sediment and Stormwater Management Plan.

7.5 _____ NCC shall release (after approval of the Post-Bulk Inspection) building permits for those lots which are not constrained by any temporary sediment control practices (which perform a

necessary function for a particular phase of construction) and on lot erosion and sediment controls have been established.

- 7.6_____ After the Post-Bulk Inspection, additional erosion and sediment controls will be required on individual lots under construction in order to prevent sediment from accumulating on any streets, in storm sewers or developed lots. These shall include silt fence and stabilized construction entrances for those lots under construction and any addition controls as deemed necessary by the CCR or NCC E&S Inspector.
- 7.7_____ Unless otherwise authorized by NCC, all work must be done in accordance with the latest approved Sediment and Stormwater Management Plan. If the approved plan needs to be modified, additional sediment and stormwater management practices may be required as deemed necessary by the New Castle County Department of Land Use. If NCC determines the approved plan to be deficient, that plan will be voided, the site issued a stop work order and the submission of a revised plan will be required for review and approval by NCC.
- 7.8_____ The CCR is responsible for inspecting the construction of any permanent stormwater management facility and submitting an appropriate inspection checklist, signed by a P.E., for certification of that work. If the sequence of construction calls for a permanent stormwater management facility to be installed as an element of the perimeter controls, that checklist and stormwater as-built will be required prior to building permit issuance.
- 7.9_____ All inspection reports from both the CCR and the County Engineer/Inspector shall be electronically submitted weekly to all parties included on the construction information sheet. These reports shall include a date by which all deficiencies must be resolved. Failure to resolve the deficiencies indicated on the inspection report by the given date may result in enforcement action considered appropriate by the Department.
- 7.10_____ The CCR and NCC Engineer/E&S Inspector must be notified 48 hours prior to all elements of site work which require inspection. Failure to provide the appropriate notification may result in the Contractor excavating sufficient material to verify construction in accordance with the approved Sediment and Stormwater Management Plan. Should any part of a stormwater management basin embankment need to be excavated the entire embankment must be reconstructed (if applicable).
- 7.11_____ Limits of disturbance must be delineated in the field. Total disturbed acreage = _____ ac. The Limits of Disturbance shall be clearly defined at all times during construction. (Break down per phase(s), if applicable).
- 7.12_____ Erosion and sediment control measures shall be inspected periodically and after each rainfall. Maintenance must be performed after each inspection as necessary. Any eroded areas shall be stabilized and any accumulated sediment shall be removed and disposed of according to plan.
- 7.13_____ Should questions arise regarding the maintenance of erosion and sediment control practices, the site contractor shall contact the consulting engineer expeditiously for technical assistance.
- 7.14_____ Upon receipt of two consecutive unsatisfactory CCR and/or NCC erosion and sediment control inspection reports, the site may be issued a stop work order and a show cause hearing scheduled.
- 7.15_____ The approved S&S Plan incorporates Pollution Prevention Practices listed under Standards and Specifications for Construction Site Pollution Prevention in the Delaware Erosion and Sediment Control Handbook, dated December 2003 and its revisions.
- 7.16_____ NCC shall not release building permits for those lots which are constrained by any temporary sediment control practices (i.e. sediment traps) and on which erosion and sediment controls have not been established.

8.0 GENERAL SEQUENCE OF CONSTRUCTION

- 8.1_____ Residential Plans: (Following is a template. All sequences of construction shall be site specific.)

PRIOR TO STARTING CONSTRUCTION:

1. CONTACT NEW CASTLE COUNTY (NCC) PERMITTING SECTION (302-395-5400) TO SCHEDULE A PRE-CONSTRUCTION MEETING. REVIEW THE EROSION AND SEDIMENT CONTROL PLANS AND STORMWATER MANAGEMENT PLANS PRIOR TO THE MEETING. DISCUSS ANY REVISIONS THAT MAY BE NECESSARY FOR THE PHASE.

PRE-BULK:

2. INSTALL STABILIZED CONSTRUCTION ENTRANCE(S).
3. DELINEATE THE LIMITS OF DISTURBANCE AND INSTALL PERIMETER SILT FENCE.
4. CLEAR AND GRUB **ONLY** THE AREAS REQUIRED TO INSTALL TEMPORARY SEDIMENT BASIN(S) _____ AND DIVERSION SWALE/BERM(S) _____.
5. INSTALL TEMPORARY SEDIMENT BASIN(S) _____ AND DIVERSION SWALE/BERM(S) _____. THE SEQUENCE OF CONSTRUCTION AND DETAILS FOR THESE FACILITIES CAN BE FOUND ON PLAN SHEETS _____.
6. REQUEST A PREBULK INSPECTION VIA E-MAIL TO THE NCC ENGINEERING SECTION. PRIOR TO REQUESTING THE INSPECTION, ALL ITEMS SHOWN ON THE PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN MUST BE COMPLETED, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

NOTE: ANY ITEMS NOT COMPLETED MUST BE AGREED UPON, IN WRITING, BY NCC PRIOR TO SCHEDULING THE INSPECTION.

7. ONCE THE PREBULK INSPECTION IS APPROVED, IN WRITING, BY A NCC INSPECTOR, BULK GRADING MAY BEGIN.

BULK GRADING:

8. CLEAR AND GRUB OVERALL AREA, NOT TO EXCEED 20 ACRES TO ANY COMMON DISCHARGE POINT.
9. ESTABLISH TOPSOIL STOCKPILE(S), INCLUDING INSTALLATION OF PERIMETER CONTROLS AND ACCESS POINT, IN ACCORDANCE WITH THE APPROVED PLANS. STABILIZE IMMEDIATELY IF NO WORK IS TO OCCUR WITHIN 14 DAYS AND/OR UPON COMPLETION OF WORK.
10. ROUGH GRADE REMAINING AREAS.
11. INSTALL ALL UTILITIES, INCLUDING STORM SEWERS, CATCH BASINS, WATER LINES ETC. SANITARY SEWERS MUST BE INSTALLED IN ACCORDANCE WITH SPECIAL SERVICES INSPECTIONS AND APPROVED PLANS. INSTALL INLET PROTECTION(S) IMMEDIATELY.
12. INSTALL CURB AND STONE BASE WITHIN ALL ROADWAYS. INSTALL INLET PROTECTION IN ACCORDANCE WITH THE APPROVED PLAN(S).

13. MODEL HOME PERMITS MAY ONLY BE RELEASED ONCE STONE ACCESS TO THE LOT HAS BEEN ESTABLISHED AND ALL UTILITIES WITHIN THE ROADWAY ARE INSTALLED.
14. FINAL GRADE AND PERMANENTLY STABILIZE OPEN SPACE AREAS IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLAN.
15. STAGING AND MATERIALS STORAGE AREA(S) MAY NOT OCCUR IN OPEN SPACE THAT HAS BEEN PERMANENTLY STABILIZED.
16. ANY STREAM RESTORATION AND RE-FORESTATION MUST BE COMPLETED PRIOR TO COMPLETION OF POST-BULK.
17. INSTALL OR CONVERT STORMWATER MANAGEMENT FACILITIES IN ACCORDANCE WITH THE STORMWATER FACILITY COMPLETION TABLE AND PER THE APPROVED POST CONSTRUCTION STORMWATER MANAGEMENT PLAN(S), WHERE APPLICABLE.
18. REQUEST FOR A POST-BULK INSPECTION MUST BE MADE VIA E-MAIL TO NCC ENGINEERING SECTION. PRIOR TO REQUESTING THE INSPECTION, ALL ITEMS SHOWN ON THE CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN MUST BE COMPLETED, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

NOTE: ANY ITEMS NOT COMPLETED MUST BE AGREED UPON, IN WRITING, BY NCC PRIOR TO SCHEDULING THE INSPECTION.

19. ONCE THE POSTBULK INSPECTION IS APPROVED, IN WRITING, BY A NCC INSPECTOR, HOME-BUILDING MAY BEGIN.
20. POST CONSTRUCTION VERIFICATION DOCUMENTATION FOR STORMWATER MANAGEMENT FACILITIES MUST BE SUBMITTED TO NCC FOR REVIEW WITHIN 60 DAYS OF FACILITY COMPLETION. FAILURE TO SUBMIT AS-BUILTS WITHIN THE REQUIRED TIME MAY RESULT IN WITHOLDING OF BUILDING PERMITS AND/OR ISSUANCE OF A VIOLATION.
21. OPEN SPACE REPORTS MUST BE ACCEPTED PRIOR TO 50 AND 75% OF BUILDING PERMIT ISSUANCE IN ORDER TO RELEASE ADDITIONAL PERMITS. OPEN SPACE REPORTS SHOULD BE SUBMITTED PRIOR TO THESE THRESHOLDS TO ALLOW FOR ADEQUATE TIME TO REVIEW THE SUBMISSION.
22. OWNERSHIP OF THE OPEN SPACE MAY BE TRANSFERED IN ACCORDANCE WITH ARTICLE 27 OF THE UNIFIED DEVELOPEMMNT CODE ONCE 50% OF BUILDING PERMITS HAVE BEEN ISSUED.

Sample Stormwater Facility Completion Table:

Facility ID#	Lots Served	Graded with Postbulk	Complete By (Contributing Lots Permits %)
IN1	1-25; 35-60; 62-67	No	60%
SW1	26-34; 61; 68-70	Yes	50%
BR1	71-101; 126-130	Yes	90%
ST1	102-125	Yes	50%

8.2 _____ Non-Residential Plans: (Following is a template. All sequences of construction shall be site specific.)

PRIOR TO STARTING CONSTRUCTION:

1. CONTACT NEW CASTLE COUNTY (NCC) PERMITTING SECTION (302-395-5400) TO SCHEDULE A PRE-CONSTRUCTION MEETING. REVIEW THE EROSION AND SEDIMENT CONTROL PLANS AND STORMWATER MANAGEMENT PLANS PRIOR TO THE MEETING. DISCUSS ANY REVISIONS THAT MAY BE NECESSARY FOR THE PHASE.

PRE-BULK:

2. INSTALL STABILIZED CONSTRUCTION ENTRANCE(S).
3. DELINEATE THE LIMITS OF DISTURBANCE AND INSTALL PERIMETER SILT FENCE.
4. CLEAR AND GRUB **ONLY** THE AREAS REQUIRED TO INSTALL TEMPORARY SEDIMENT BASIN(S) _____ AND DIVERSION SWALE/BERM(S) _____.
5. INSTALL TEMPORARY SEDIMENT BASIN(S) _____ AND DIVERSION SWALE/BERM(S) _____. THE SEQUENCE OF CONSTRUCTION AND DETAILS FOR THESE FACILITIES CAN BE FOUND ON PLAN SHEETS _____.
6. REQUEST A PERIMETER CONTROL INSPECTION VIA E-MAIL TO THE NCC ENGINEERING SECTION. PRIOR TO REQUESTING THE INSPECTION, ALL ITEMS SHOWN ON THE PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN MUST BE COMPLETED, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

NOTE: ANY ITEMS NOT COMPLETED MUST BE AGREED UPON, IN WRITING, BY NCC PRIOR TO SCHEDULING THE INSPECTION.

7. ONCE THE PERIMETER CONTROL INSPECTION IS APPROVED, IN WRITING, BY A NCC INSPECTOR, BUILDING PERMITS MAY BE ISSUED AND BULK GRADING MAY BEGIN.

BULK GRADING:

8. CLEAR AND GRUB OVERALL AREA, NOT TO EXCEED 20 ACRES TO ANY COMMON DISCHARGE POINT.
9. ESTABLISH TOPSOIL STOCKPILE(S), INCLUDING INSTALLATION OF PERIMETER CONTROLS AND ACCESS POINT, IN ACCORDANCE WITH THE APPROVED PLANS. STABILIZE IMMEDIATELY IF NO WORK IS TO OCCUR WITHIN 14 DAYS AND/OR UPON COMPLETION OF WORK.
10. ROUGH GRADE REMAINING AREAS.
11. INSTALL ALL UTILITIES, INCLUDING STORM SEWERS, CATCH BASINS, AND WATER LINES ETC. SANITARY SEWERS MUST BE INSTALLED IN ACCORDANCE WITH SPECIAL SERVICES INSPECTIONS AND APPROVED PLANS. INSTALL INLET PROTECTION(S) IMMEDIATELY.
12. INSTALL CURB AND STONE BASE WITHIN ALL PAVED AREAS. INSTALL INLET PROTECTION IN ACCORDANCE WITH THE APPROVED PLAN(S).
13. FINAL GRADE AND PERMANENTLY STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLAN.
14. STAGING AND MATERIALS STORAGE AREA(S) MAY NOT OCCUR IN AREAS THAT HAVE BEEN PERMANENTLY STABILIZED.
15. ANY STREAM RESTORATION AND RE-FORESTATION MUST BE COMPLETED PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
16. INSTALL OR CONVERT STORMWATER MANAGEMENT FACILITIES IN ACCORDANCE WITH THE APPROVED POST CONSTRUCTION STORMWATER MANAGEMENT PLAN(S), WHERE APPLICABLE.
17. POST CONSTRUCTION VERIFICATION DOCUMENTATION FOR STORMWATER MANAGEMENT FACILITIES MUST BE SUBMITTED TO NCC FOR REVIEW WITHIN 60 DAYS OF FACILITY COMPLETION. FAILURE TO SUBMIT AS-BUILTS WITHIN THE REQUIRED TIME MAY RESULT IN WITHOLDING OF BUILDING PERMITS AND/OR ISSUANCE OF A VIOLATION.

9.0 CERTIFICATION OF PROFESSIONAL ENGINEER / LAND SURVEYOR

I, the undersigned, hereby certify that I am a Professional Engineer / Land Surveyor registered in the State of Delaware and it is my opinion that, to the best of my knowledge, each element of this checklist was considered and addressed in accordance with all applicable regulations, codes, standards, guidelines and policies.

Signature and Seal of PE / PLS

Date

Submission of this Checklist does not relieve the Applicant from the responsibility to comply with all applicable regulations, codes, standards, guidelines and policies. The Department of Land Use reserves the right to revise this Checklist as the need arises.