

Combined Step 2 & 3 Sediment & Stormwater Management Plan Review Checklist

DATE RECEIVED: _____ PROJECT NUMBER: _____

PROJECT NAME: _____

General Information:

1. _____ Completed application signed by the owner, review fee, one set of plans and reports, and a completed checklist must be submitted for review. Electronic plan and report program files (i.e., AutoCAD, Microstation, DURMM, HydroCAD, and/or equal/similar) shall be transmitted upon agency request.
2. _____ Provide a copy of the notice to DeIDOT, a municipality, or a private entity (i.e., neighboring Homeowner's Association) for the intent to discharge or connect to their stormwater system. The notice shall indicate the proposed condition and that any comments regarding the discharge shall be returned within 30 calendar days, and if no comments are received than consent to discharge is assumed. If directly copied on the notice, indicate the date of the notice and the reviewer copied: _____.
3. _____ Hydraulic and Hydrology computations shall reflect the proposed site conditions.
4. _____ All plans should be submitted on 24" x 36" (minimum) sheets unless otherwise approved.
5. _____ When two (2) or more sheets are used to illustrate the plan view, an index sheet is required, illustrating the entire project on one (1) 24" x 36" (minimum) sheet.
6. _____ Provide a north arrow on all plans.
7. _____ All plan views, cross-sections, profiles, and structural details shall be to a defined scale.
8. _____ Provide a scale bar for all plan views.
9. _____ Provide names of adjacent property owners on all plans.
10. _____ Provide existing and proposed contours based on NAVD 88 vertical datum at one (1) foot intervals (2 foot intervals can be provided for offsite drainage information based on the latest Lidar information).
11. _____ For small projects less than ½ acre of disturbance, provide existing and proposed elevations based on NAVD 88 vertical datum on a fifty-foot grid system. Include high and low points.
12. _____ Locate the site in NAD83 horizontal datum.
13. _____ Provide a copy of the Site Plan(s) and Grading Plan(s) as prepared for the local approval agencies for review and informational purposes.
14. _____ Provide a copy of the preliminary Record Plan as prepared for the local landuse approval agency for review and informational purposes.
15. _____ All detailed plans submitted for review shall be prepared, signed, dated and sealed by a Licensed Professional in the State of Delaware.
16. _____ Provide the Sediment and Stormwater Management plans in the following order and title (sheet list to appear on the Coversheet, and each plan sheet shall be respectively titled):
 - a. _____ Coversheet and General Notes
 - b. _____ Overall Construction Site Phasing Plan (if applicable)
 - c. _____ Overall Pre-Construction Site Stormwater Management Plan (if applicable)
 - d. _____ Pre-Construction Site Stormwater Management Plan #X
 - e. _____ Overall Construction Site Stormwater Management Plan (if applicable)
 - f. _____ Construction Site Stormwater Management Plan #X
 - g. _____ Construction Site Details and Notes (including the Sequence of Construction)
 - h. _____ Overall Post Construction Stormwater Management Plan
 - i. _____ Post Construction Stormwater Management Plan, Facility #X

- j. _____ Overall BMP Contributing Drainage Area Plan (To be included in final Stormwater Report)
 - k. _____ BMP Contributing Drainage Area Plan (To be included in final Stormwater Report)
 - l. _____ Pre-Developed Subarea Limit of Disturbance Drainage Area Plan (To be included in final Stormwater Report)
17. _____ For final approval, the following items shall be submitted:
- a. _____ Completed NOI and associated fee must be submitted to DNREC.
 - b. _____ Provide a copy of the recorded permanent easement when a stormwater facility or outfall is located outside of the property boundary.
 - c. _____ Provide a wetland permit when construction of a stormwater facility will impact State and/or Federal wetlands.
 - d. _____ Provide an approval letter from the DNREC Drainage Section for any encroachment or change in runoff discharge to an existing tax ditch or adjacent right-of-way.

Coversheet:

18. _____ Project Header:
- a. _____ Project Name (and Phase, if applicable; to duplicate in the title block on each sheet).
 - b. _____ Title of Plan Set: Sediment and Stormwater Management Plans (to duplicate in the title block on each sheet)
 - c. _____ Project Location (including watershed, hundred, town, county, etc., as applicable).
 - d. _____ Project tax map identification number(s).
19. _____ Legend indicating plan symbols and lines, including but not limited to, soils, drainage area information, grading and site information.
20. _____ Provide a vicinity map with a scale appropriate to project size, and indicate the site boundary within the map. The map shall be no smaller than 4"x4" in size and shall clearly indicate at least one intersecting road.
21. _____ Project Notes:
- a. Parcel Data:
 - i. _____ Project tax map identification number(s)
 - ii. _____ PLUS Number (if applicable)
 - iii. _____ DNREC Sediment and Stormwater Program [or relevant Delegated Agency] Number
 - iv. _____ Site Address (or Nearest Intersecting Street and Distance between)
 - v. _____ Latitude and Longitude State Plane coordinates, with approximate geographical location (ie, Benchmark #1, Northeast Site Corner, etc). Provide in degree decimal format (XX.XXXXXX, -XX.XXXXXX).
 - vi. _____ Existing Site Area
 - vii. _____ Proposed Site Area
 - viii. _____ Existing Wetland Area
 - ix. _____ Proposed Condition (ie, number of lots, total building square footage, etc)
 - x. _____ Proposed Discharge Location(s)
 - xi. _____ Proposed Total Limit of Disturbance per Discharge Location
 - b. Contact Data:
 - i. Contact Name, Title: _____ Owner _____ Developer _____ Designer _____ Agency
 - ii. Company/LLC: _____ Owner _____ Developer _____ Designer _____ Agency
 - iii. Full Street Address: _____ Owner _____ Developer _____ Designer _____ Agency

- iv. Phone Number: _____ Owner _____ Developer _____ Designer _____ Agency
22. _____ Include a signed Owner's Certification that states "I, the undersigned, certify that all land clearing, construction and development shall be done pursuant to the approved plan and that responsible personnel (i.e., Blue Card Holder) involved in the land disturbance will have a Certification of Training prior to initiation of the project, at a DNREC sponsored or approved training course for the control of erosion and sediment during construction. In addition, I grant the DNREC Sediment and Stormwater Program and/or the relevant Delegated Agency the right to conduct on-site reviews, and I understand my responsibilities under the NPDES Construction General Permit, as referenced on this Coversheet." This must be signed in ink on each plan submitted or on an original reproducible. Include the owner's name and title printed under the signature line.
23. _____ If during the SAS review meeting it is determined that a wetland delineation is required onsite, include a Wetland Certification, signed in ink, stating the site has been examined to both State and Federal requirements. The following shall be used unless an alternate has been approved: "This property, tax map #XXX, has been examined by [company name] for the presence of Waters of the United States, including wetlands (Section 404 and Section 10), State subaqueous lands and State regulated wetlands as established by the reviewing agencies in the form of manuals, policies and procedures in place at the time that the investigation was conducted. The wetland information contained in this plan set is in accordance with this criteria [or, There were no wetlands found within the subject property], per State JD #XXX and/or Army Corps JD #XXX [as applicable]."
24. _____ Include a signed Licensed Professional Certification that states "I hereby certify that this plan has been prepared under my supervision and to the best of my knowledge complies with the applicable state and local regulations and ordinances." This shall be signed in ink or an original reproducible. Include the Licensed Professional's name and title printed under the signature line.
25. _____ Include the following Standard Sediment and Stormwater Construction Notes:
- a. _____ "The DNREC Sediment and Stormwater Program must be notified in writing five (5) days prior to commencing with construction. Failure to do so constitutes a violation of the approved Sediment and Stormwater Management Plan."
 - b. _____ "Review and or approval of the Sediment and Stormwater Management Plan shall not relieve the contractor from his or her responsibilities for compliance with the requirements of the *Delaware Sediment and Stormwater Regulations*, nor shall it relieve the contractor from errors or omissions in the approved plan."
 - c. _____ "If the approved plan needs to be modified, additional sediment and stormwater control measures may be required as deemed necessary by DNREC or the Delegated Agency".
 - d. _____ "Following soil disturbance or redisturbance, permanent or temporary stabilization shall be completed for all perimeter sediment controls, soil stockpiles, and all other disturbed or graded areas on the project site within 14 calendar days unless more restrictive Federal requirements apply."
 - e. _____ "All erosion and sediment control practices shall comply with the *Delaware Erosion and Sediment Control Handbook*, latest edition."
 - f. _____ "At any time a dewatering operation is used, it shall be previously approved by the Agency Construction Site Reviewer for a non-erosive point of discharge, and a dewatering permit shall be approved by the DNREC Well Permitting Branch."
 - g. _____ "Approved plans remain valid for 3 years from the date of approval."

- h. _____ "Post construction verification documents are to be submitted to the DNREC Sediment and Stormwater Program [or, the relevant Delegated Agency] within 60-days of stormwater management facility completion."
- i. _____ "Approval of a Sediment and Stormwater Management Plan does not grant or imply a right to discharge stormwater runoff. The owner/developer is responsible for acquiring any and all agreements, easements, etc., necessary to comply with State drainage and other applicable laws."
- j. _____ "The Notice of Intent for Storm Water Discharges Associated with Construction Activity under a NPDES General Permit for this project is #_____ (to be filled in once received). At any time the ownership for this project changes, a Transfer of Authorization or a Co-Permittee Application must be submitted to DNREC. The permittee of record shall not be relieved of their responsibilities until a Notice of Termination has been processed by DNREC."
- k. _____ "The owner shall be familiar with and comply with all aspects of the NPDES Construction General Permit associated with the project, including, but not limited to, performing weekly site inspections during construction and after rain events, and maintaining written logs of these inspections."
- l. _____ "Before any earthwork or excavation takes place, the contractor shall call Miss Utility at 811 or 1.800.282.8555 at least 48 hours prior to construction, to have all existing utilities marked onsite."
- m. _____ "The contractor shall at all times protect against sediment or debris laden runoff or wind from leaving the site. Perimeter controls shall be checked daily and adjusted and/or repaired to fully contain and control sediment from leaving the site. Accumulated sediment shall be removed when it has reached half of the effective capacity of the control. In addition, the contractor may need to adjust or alter measures in times of adverse weather conditions, or as directed by the Agency Construction Site Reviewer."
- n. _____ "Best available technology (BAT) shall be employed to manage turbid discharges in accordance with requirements of 7. Del.C. Ch 60, *Regulations Governing the Control of Water Pollution*, Section 9.1.02, known as Special Conditions for Stormwater Discharges Associated with Construction Activities, and Department policies, procedures, and guidance."
- o. _____ "Documentation of soil testing and materials used for temporary or permanent stabilization including but not limited to soil test results, seed tags, soil amendment tags, etc. shall be provided to the Department or Delegated Agency to verify that the permanent or temporary stabilization has been completed in accordance with the approved plan. The Department or Delegated Agency may require additional soil testing and reapplication of permanent or temporary stabilization in accordance with specifications provided in the *Delaware Erosion and Sediment Control Handbook*, or alternative measures that provide functional equivalency.
26. _____ Provide a list of all sheets and their corresponding sheet number for all Sediment and Stormwater Management Plans.
27. _____ Provide a minimum 3"x5" clear area for an approval stamp on the right third of the coversheet.

Drainage Area Plans:

The drainage area plans shall provide a graphic portrayal of the information that is contained within the DURMM worksheets. .

28. _____ Overall BMP Contributing Drainage Area Plan
- a. _____ Provide only for sites that cannot be shown in their entirety at the maximum scale of 1"=100'.
 - b. _____ Provide the type and location of Stormwater BMP(s) including the BMP drainage area boundary.
 - c. _____ Provide the total area of each sub-drainage area.
 - d. _____ Provide a summary table indicating the sub-areas and their respective point of analysis, total area, and RCN.
29. _____ BMP Contributing Drainage Area Plan
- a. _____ Provide a plan correlating to the Contributing Area RCN worksheet (post development model for the entire drainage area) for each subarea (subareas may be combined onto the same sheet, so long as they are clearly distinguishable).
 - b. _____ Provide soils mapping on the plan, using the latest NRCS soil information, with a general description of each soil.
 - c. _____ Indicate the LOD and the OLOD contributing areas, separated per their respective land cover and soil type classification. Provide the area of each designation.
 - d. _____ Provide a legend indicating the various land covers per soil type classification (a hatch shall be provided for each type of land cover; i.e. grass-B soils, impervious-D soils).
 - e. _____ Provide a summary table indicating the sub-areas and their respective point of analysis, total area, and RCN.
 - f. _____ Indicate the location, type and sizing information for each BMP including a representative cross section.
 - g. _____ Show the Tc path for the area outside the LOD as used in the OLOD worksheet.
 - h. _____ Show the Tc path for any other areas that require further analysis using other H&H software.
30. _____ Pre-Developed Subarea Limit of Disturbance Data Plan
- a. _____ Provide a plan correlating to the Pre-Developed LOD information requested in the LOD worksheet (location of woods/meadow and impervious conditions within the LOD per sub-area prior to disturbance) for each subarea (subareas may be combined onto the same sheet, so long as they are clearly distinguishable).
 - b. _____ Provide soils mapping on the plan, using the latest NRCS soil information, with a general description of each soil.
 - c. _____ Indicate the areas of woods/meadow and impervious condition per soil type classification. Provide the area of each designation.
 - d. _____ Provide a legend indicating the various land covers per soil type classification (a hatch shall be provided for each type of land cover; i.e. grass-B soils, impervious-D soils).
 - e. _____ Provide a summary table indicating the sub-areas and their respective point of analysis, total area, and RCN.
31. _____ Any additional hydraulic or hydrologic computations that are required to show compliance with the *Delaware Sediment and Stormwater Regulations* may require additional drainage area or watershed plans (i.e., to satisfy the Cv and Fv requirements). These plans are not prescribed, but shall follow similar guidelines, clearly indicate the parameters used within the calculations, and be contained within the plan Sediment and Stormwater Management Plan set.

Stormwater Management Report:

32. _____ Provide information in the report in the following order:

- a. _____ Coverpage
 - b. _____ Table of Contents
 - c. _____ Site Narrative:
 - i. _____ Introduction
 - ii. _____ Existing Conditions describing the drainage patterns, landuse(s), and existing features. Include 2007 site aerial, 2007 Land Use Land Cover mapping, and photos of the site conditions and at all discharge locations.
 - iii. _____ Existing Soils description per the NRCS Web Soil Survey including the hydrologic soil group; and soil testing results from on-site soil testing.
 - iv. _____ Post Development Conditions, including summary of the proposed development, the proposed drainage system, indication of why the standards or performance approach was utilized, methods for RPv, Cv, and Fv compliance, requests for waivers and/or offsets, etc.
 - v. _____ Construction Site Conditions, describing methods to prevent sediment and pollution discharge and illicit transportation.
 - vi. _____ Conclusion
(Note: It is not the objective to provide in depth information on practices that might change in the future due to the preliminary state of the submittal. The narrative can be elaborated for future submittals once the design becomes finalized; however, the intent of the construction and post construction practices should be described, indicating how the site will be handled with any potential concerns documented.)
 - d. _____ DURMM computations and a schematic of the drainage subareas and stormwater practices
 - e. _____ Additional hydraulic and hydrologic computations, such as supporting calculations for either the standards or performance based approach for the Cv and Fv events. Detailed information subject to change
 - f. _____ Supplementary Construction Site computations (i.e., temporary sediment basin sizing, anti-seep collar sizing, forebay sizing, etc). *[Provide place holder for future information; does not need to be included for Preliminary submittal]*.
 - g. _____ Soil report(s) including boring locations and log reports.
 - h. _____ Appendix containing any supplemental information (information previously included within the Stormwater Assessment Study report does not need to be duplicated).
33. _____ Provide drainage calculations for the RPv, Cv, and Fv events using the latest DURMM model and other approved H&H software as required.
34. _____ All inputted data must be supported by surveys, Lidar information, photos, aerials, maps, etc. and shall be referenced in the report and/or drainage area plans. Information previously included within the Stormwater Assessment Study submittal is acceptable and does not need to be duplicated, though shall be referenced accordingly.
35. _____ The storm duration for computational purposes shall be the 24-hour rainfall event, unless otherwise specified. For projects south of the Chesapeake and Delaware (C&D) Canal, the Delmarva Unit Hydrograph shall be used.
36. _____ The pre-development condition shall be based off of the 2007 aerial photography and the Land Use Land Cover overlay mapping provided by the State of Delaware, through Stormwater Assessment Study GIS Web Application. This may not directly correlate to current site conditions if the landuse has changed; however, the 2007 landuse shall be used regardless even if more or less conservative than the current landuse.

37. ____ The pre-development condition shall be computed assuming that all existing land uses in the site that are to be developed are in good hydrologic condition.
38. ____ Provide sizing information for the BMP(s) to be used and show they meet sizing guidelines according to section 3.06.2 Post Construction Stormwater BMP Standards and Specifications of the Technical Document.
39. ____ Provide BMP capacity information for any detention practices to be used.

Construction Site Stormwater Management Plans:

40. ____ Overall Construction Site Phasing Plan:
- a. ____ Provide only when the site has more than one limit of disturbance. Projects must be phased so that no more than 20 acres are disturbed at any one time. Grading of the next phase cannot proceed until temporary or permanent stabilization of the first 20-acre section is accomplished.
 - b. ____ Clearly indicate the extents of each phase in relation to the site plan (no existing or proposed grading).
 - c. ____ Indicate the location of the detailed sheets by matchline and page number reference.
 - d. ____ Provide a summary/legend for the limit of disturbance areas, indicating their total disturbed acreage and the lots, buildings and/or stormwater facilities that are included within the limit of disturbance.
41. ____ For **all** of the subsequent Pre-Construction and Construction Site Stormwater Management Plans include the following:
- a. ____ Provide the "limit of disturbance" line(s).
 - b. ____ Include the total disturbed acreage on the plan if an Overall Phasing Plan has not been included.
 - c. ____ Existing contours shall be provided a minimum of 100' beyond the limit of disturbance. LiDAR 2' contours are acceptable for off-site areas.
 - d. ____ State and Federal wetlands must be accurately delineated.
 - e. ____ All streams and drainage ways must be delineated.
 - f. ____ The National Flood Insurance Program 100 Year Flood Zone must be delineated.
 - g. ____ Show the project benchmark and identify the elevation and datum.
42. ____ Overall Pre-Construction Site Stormwater Management Plan (if required, as determined at the SAS review meeting):
- a. ____ Provide only for sites that cannot be shown in their entirety at the maximum scale of 1"=100'.
 - b. ____ Include the entire site boundary in an existing conditions plan view (ie, site boundary, existing contours, wetlands, treelines, existing structures/utilities to remain or to be removed, etc).
 - c. ____ Indicate the location of all perimeter controls, stockpile locations, sediment trapping facilities, and other construction stormwater management controls needed for demolition and bulk grading (i.e., silt fence, stabilized construction entrances, temporary swales, inlet protection for existing inlets, sediment basins, etc).
 - d. ____ Indicate the location of the detailed sheets by matchline and page number reference.
 - e. ____ Provide a Legend for all of the construction site lines and symbols used within the Pre-Construction Plan (ie, silt fence, limit of disturbance, temporary berm, etc). The lines and symbols should be as specified in the *Delaware Erosion and*

Sediment Control Handbook, latest edition. If an Overall plan is not needed, provide the legend on the singular Pre-Construction Site Stormwater Management Plan.

43. _____ Pre-Construction Site Stormwater Management Plan (if required, as determined at the SAS review meeting):
- a. _____ Provide for all sites at a maximum scale of 1" = 100'.
 - b. _____ Include the entire site boundary in an existing conditions plan view (ie, site boundary, existing contours, wetlands, treelines, existing structures/utilities to remain or to be removed, etc).
 - c. _____ Indicate the location of all perimeter controls, stockpile locations, sediment trapping facilities, and other construction stormwater management controls needed for demolition and bulk grading (i.e., silt fence, stabilized construction entrances, temporary swales, sediment basins, etc).
 - d. _____ Provide detailed labels and specifications for the controls utilized (i.e. "Data to be Provided" or "Data" blocks from the Delaware Erosion & Sediment Control Handbook, latest edition, details).
44. _____ Overall Construction Site Stormwater Management Plan:
- a. _____ Provide only for sites that cannot be shown in their entirety at the maximum scale of 1"=100'.
 - b. _____ Clearly indicate all of the construction stormwater management controls for the site in relation to the site's grading and stormwater facilities.
 - c. _____ Indicate the location of the detailed sheets by matchline and page number reference.
 - d. _____ Provide a Legend for all of the construction site lines and symbols used within the plan set (ie, silt fence, limit of disturbance, inlet protection, etc). The lines and symbols should be as specified in the *Delaware Erosion and Sediment Control Handbook*, latest edition. If an Overall plan is not needed, provide the legend on the singular Construction Site Stormwater Management Plan.
45. _____ Construction Site Stormwater Management Plan(s):
- a. _____ Provide for all sites at a maximum scale of 1" = 100'.
 - b. _____ Clearly indicate all of the construction stormwater management controls for the site in relation to the site's grading and stormwater facilities.
 - c. _____ Provide detailed labels and specifications for the controls utilized (i.e. "Data to be Provided" or "Data" blocks from the Delaware Erosion & Sediment Control Handbook, latest edition, details).
 - d. _____ Locate all utilities, construction staging areas, geothermal well-fields, and any/all other areas that construction equipment will traverse or disturb. These areas must be within the limit of disturbance and be provided with appropriate construction site controls.
46. _____ For ***all*** Pre-Construction and Construction Site Stormwater Management Plans locate ***and*** label all construction site stormwater control practices on the plans as previously mentioned. The following shall be included, unless supporting evidence of why they are not necessary is addressed in the revised Stormwater Management Report. The list is not exhaustive and the construction site design shall include any/all control practices contained within the *Delaware Erosion and Sediment Control Handbook*, or others as approved by DNREC, that are necessary to prevent sediment and pollution discharge from the site.

- a. _____ An approved perimeter control shall be placed downslope of all disturbed areas (or surrounding "flat areas") to protect against sediment laden runoff from leaving the site or entering non-disturbed areas. It should be placed parallel to the contours and keyed perpendicular to the contours at the limits to prevent sediment from washing around the ends. Locate and denote the type with any specifications.
- b. _____ Reinforced and/or super silt fence should be utilized in areas of steep slopes and/or adjacent to sensitive areas such as wetlands, streams, and drainage ways.
- c. _____ Orange safety fencing shall be provided around all infiltration areas and noted that no heavy construction equipment shall traverse the future infiltration area.
- d. _____ Orange safety fencing is recommended to be placed around the drip line of all preserved trees.
- e. _____ Soil stockpile areas must be delineated for each phase of construction. Locate stockpiles on areas with little or no slope. Stockpiles must be surrounded with an approved perimeter control.
- f. _____ Locate a stabilized construction entrance(s) for each phase of construction, and provide appropriate measures to ensure traffic utilizes the entrance (ie, keying silt fence up to the entrance).
- g. _____ Sediment traps and basins shall be utilized as appropriate and sized to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete. These structures must be located at the base of the drainage area. The following information is required: top of slope elevation, bottom elevation, outlet elevation, dimensions, proposed volume, required volume, type of trap or basin, a minimum 2:1 length to width ratio and contributing drainage area. Include details, cross-sections and specifications. This information can be combined with the facility's Post Construction Stormwater Management Plan as appropriate.
- h. _____ Specify the location, DNREC denoted type, and an example product for all stabilization practices, including any treatments, seeding, mulching and/or matting, both temporary and permanent.
- i. _____ Erosion control matting is required on slopes of 3:1 or greater and in areas of concentrated flow. Specify the DNREC denoted type, with an example product, and the location of the matting.
- j. _____ Channel interruptions are required in all swales, ditches and channels, with velocities greater than 2 ft/sec. Locate and denote the type with any specifications.
- k. _____ Provide steep slope interruption by use of straw wattles, coir logs, etc. Locate and denote the type with any specifications.
- l. _____ Provide appropriate inlet protection for all catchbasins and culvert inlets. Locate and denote the type with any specifications.
- m. _____ Diversions must be used to direct run-off into traps. When sediment laden stormwater is directed to traps and basins by closed pipe systems, temporary diversions must be used to direct stormwater to traps and basins until closed pipe systems are operational. Locate and denote the type with any specifications.
- n. _____ Outlet protection is required at all points of discharge from pipes, channels and spillways. Locate and provide details, cross-sections and specifications, including d50 stone size, stone depth, outlet dimensions and type of geotextile fabric.
- o. _____ All stone, with the exception of check dams, must be underlain with a geotextile fabric, or approved equivalent practice. Geotextile fabric specifications must be

provided for various applications, with the DNREC denoted type and an example product.

- p. _____ Provide a location a concrete washout station and construction staging areas, including dumpster(s). Note that if the locations are to be moved, it shall be approved in writing by the Agency Construction Site Reviewer.

Construction Site Details and Notes:

47. _____ Specify whose responsibility it will be to maintain and repair all erosion and sediment control and stormwater management practices during construction and utility installation.
48. _____ Specify what stabilization measures shall be initiated if dust control becomes a problem.
49. _____ Provide the volume of any spoil or borrow material.
50. _____ Provide a detailed sequence of construction, and at a minimum include the following activities:
- a. _____ pre-construction meeting;
 - b. _____ clearing and grubbing for those areas necessary for installation of perimeter controls;
 - c. _____ construction of perimeter controls;
 - d. _____ remaining clearing and grubbing;
 - e. _____ road grading;
 - f. _____ grading for the remainder of the site,
 - g. _____ utility installation;
 - h. _____ stormwater facility construction;
 - i. _____ final grading, landscaping or stabilization;
 - j. _____ removal of sediment control practices.
51. _____ Include the following specific items as appropriate within the Sequence of Construction:
- a. _____ “Notify the DNREC Sediment and Stormwater Program [or relevant Delegated Agency] in writing at least five (5) days prior to the start of construction. Failure to do so constitutes a violation of the approved Sediment and Stormwater Management Plan.”
 - b. _____ “Prior to any clearing, installation of sediment control measures or grading, a pre-construction meeting must be scheduled and conducted with the Agency Construction Site Reviewer. The landowner/developer, contractor, and Certified Construction Reviewer are required to be in attendance at the pre-construction meeting; the designer is recommended to attend.”
 - c. _____ “All perimeter controls are to be reviewed by the Agency Construction Site Reviewer and approved prior to proceeding with further site disturbance or construction.”
 - d. _____ “The contractor shall at all times protect against sediment or debris laden runoff or wind from leaving the site. Perimeter controls should be checked daily and adjusted and/or repaired to fully contain and control sedimentation on the site. Accumulated sediment shall be removed when it has reached half of the effective capacity of the control. In addition, the contractor may need to adjust or repair measures in times of adverse weather conditions, or as directed by the Agency Construction Site Reviewer.”
 - e. _____ “Notify the person responsible for stormwater system construction review at least three (3) days prior to the start of the stormwater system construction; stormwater facilities must be reviewed throughout their construction.”

- f. _____ "Erosion and sediment control devices should be removed only after work in an area has been completed and stabilized, with written approval from the Agency Construction Site Reviewer."
 - g. _____ "Prior to commencing a new phase of construction, the contractor shall receive approval from the Agency Construction Site Reviewer that the previous phase has been sufficiently stabilized."
 - h. _____ "The termination of the Construction General Permit will require submission and acceptance of the Post Construction Verification Documents, including final stabilization throughout the site, all elements of the Sediment and Stormwater Management Plan implemented, and acceptance of the final Operation and Maintenance Plan."
52. _____ Provide details and specifications for all erosion and sediment control management practices used. All details shall be from the *Delaware Erosion and Sediment Handbook* (any unusual practices must be approved for use by the Department). The following details must be incorporated:
- a. _____ Stabilized Construction Entrance
 - b. _____ Perimeter Control (i.e., Silt Fence, Temporary Berm, etc)
 - c. _____ Temporary and Permanent Seeding and Stabilization
 - d. _____ Sediment Trapping (i.e., Inlet Protection, Sediment Basins, etc)
 - e. _____ Site Pollution Prevention including Concrete Washout
 - f. _____ Dewatering Practice(s)
 - g. _____ Individual Lot Control (for residential use only)
 - h. _____ All other applicable details to the site.
53. _____ Provide the "Data to be Provided" for all Erosion and Sediment Control practices having design data criteria. The data should be provided in the corresponding detail, or a note should be provided to refer to the relevant chart for the information.

Post Construction Stormwater Management Plan

54. _____ Provide an Overall Post Construction Stormwater Management Plan indicating the location and identification of all stormwater facilities in relation to the proposed site and the existing and proposed grading.
- a. _____ The National Flood Insurance Program 100 Year Flood Zone must be delineated.
 - b. _____ Show project benchmark and identify elevation and datum.
 - c. _____ The plan shall indicate any easements, rights-of-way, and/or demarcation of where public maintenance responsibility ends and private maintenance begins throughout the stormwater and drainage system, and clearly distinguish who is responsible for the maintenance in each area.
55. _____ Provide a detailed Post Construction Stormwater Management Plan per facility clearly showing the proposed construction and specifications, including:
- a. _____ Plan view of the facility indicating any/all: benches, inlets, outlets and their associated elevation; seed and stabilization type and locations; cross-section locations; grading of the facility; forebays; subsurface testing boring locations; etc. The maximum scale of facility shall be 1" = 30'.
 - b. _____ Cross-section view of the facility to a defined scale, indicating any/all: benches; water surface elevations; depth of construction; location of liners or underdrains; slopes; structures and/or pipes; seed and stabilization type and locations; embankment specifications; existing and proposed grade; fill locations; etc.

- c. _____ Cross-section view of the principal spillway to a defined scale, including the entire length of the discharge pipe, indicating any/all: water surface elevations; location of liners; slopes; phreatic lines; structure details; embankment specifications; anti-seep collar location(s); crossings; outfall details; existing and proposed grade; etc. Extend the view to include the opposite side of any outfall ditch, and location of any wetlands, as applicable.
- d. _____ Cross-section views of the emergency spillway(s) to a defined scale, both through the width and length of the spillway, indicating any/all: water surface elevations; location of liners; slopes; embankment specifications; stabilization specifications; outfall details; existing and proposed grade; etc. Extend the view to include the opposite side of any outfall ditch, and location of any wetlands, as applicable.
- e. _____ Plan and section views to a defined scale for any structures within the facility including any/all construction specifications, inverts, water surface elevations, etc.
- f. _____ Notes and specifications for the facility, including, but not limited to, seed and stabilization type and locations, de-watering specifications, groundwater/subsurface information, construction information and facility specific information (i.e., type of liner, biosoil, stone, etc.).
- g. _____ If the vegetation within the facility is used for quality management purposes, a separate Landscape Plan shall be prepared indicating the species type, number and planting locations, and be signed by a licensed Landscape Architect in the State of Delaware.
- h. _____ The plan shall indicate any easements, rights-of-way, and/or demarcation of where public maintenance responsibility ends and private maintenance begins within or around the facility, and clearly distinguish who is responsible for the maintenance in each area.
- i. _____ Provide directional stormwater flow arrows for all existing and proposed channels, pipes, etc.
- j. _____ Provide details, cross-sections and specifications (including appropriate channel lining, type of vegetation, or type of stabilization) for any diversions, ditches, swales, etc., not classified as a facility but are being proposed or accepting discharge.
- k. _____ All stormwater designs shall be in accordance with standards developed and/or approved by the DNREC Sediment and Stormwater Program.
- l. _____ Maintenance set aside areas for disposal of sediments removed from stormwater management facilities that provide a forebay must be provided. Set aside areas shall accommodate at least 2% of the stormwater management facility volume to the elevation of the 2 year storage volume elevation, maximum depth of the set aside volume shall be one foot, and the slope of the set aside area shall not exceed 5%.
- m. _____ Include in the agency submittal any design checklists for the specific type of facility as provided by DNREC.
- n. _____ Provide a Sequence of Construction specific to the facility, indicating the methods for excavation, construction of structures or other controls, stabilization, dewatering, temporary or permanent sediment controls, etc.
- o. _____ Provide Operation and Maintenance (O&M) notes and/or details (if more than one sheet is required per facility, then the O&M requirements shall all be combined on the same sheet). Including the below statements and requirements shall satisfy the Operation and Maintenance Plan requirements for this stage of plan review

(once the facility is constructed, a full Operation and Maintenance Plan shall be prepared and include the post verification construction drawing.

- i. _____ "The DNREC Sediment and Stormwater Program and/or the relevant Delegated Agency reserves the right to enter private property for purposes of periodic site reviews."
- ii. _____ "The DNREC Sediment and Stormwater Program [or the relevant Delegated Agency] shall be notified within 30 business days if the property ownership is transferred to a new person or entity."
- iii. _____ "The DNREC Sediment and Stormwater Program and/or the relevant Delegated Agency may seek enforcement action against any owner deemed negligent in fulfilling the Operation and Maintenance requirements of the *Delaware Sediment and Stormwater Regulations*."
- iv. _____ "The DNREC Sediment and Stormwater Program [or, the relevant Delegated Agency] shall be contacted if a concern arises regarding a stormwater management facility, before any non-routine maintenance, or if modifications to the facility are desired."
- v. _____ "Any design modifications made to the stormwater system shall require the creation of a new Post Construction Stormwater Management Plan and/or Operations and Maintenance Plan, with approval of the plan(s) by the DNREC Sediment and Stormwater Program [or the relevant Delegated Agency]."
- vi. _____ "For all stormwater easement areas (i.e., access, maintenance, or offsite) and the minimum 10-foot wide accessways to all stormwater facilities and their structural components, regular mowing shall be performed to keep the grass 6" or less; no trees or shrubs shall be planted, and any found growing shall be removed; and no permanent structures, such as fences or sheds, shall be located within the easement or accessway."
- vii. _____ "Trees shall not be planted, and shall be removed if found growing, on and within 15 feet of all pond embankments, on pond slopes or safety benches, and within 10 feet of structural components, such as pipe inlets."
- viii. _____ "When the facility is excavated to remove accumulated sediment, the disposal area shall be permanently stabilized so that it does not recreate an erosion problem. Any material taken off-site shall still be utilized or disposed of in an approved DNREC manner."
- ix. _____ "Before any earthwork or excavation takes place, the contractor shall call Miss Utility at 811 or 1.800.282.8555 at least 48 hours prior to construction, to have all existing utilities marked onsite."
- x. _____ Include the O&M notes specified for the type of facility proposed, as per Appendix 5.01.1 and/or section 3.06.2 Post Construction Stormwater BMP Standards and Specifications of the Technical Document.
- xi. _____ Include any facility specific routine or non-routine maintenance, and/or operational requirements not listed in the above-mentioned standard requirements for the type of facility. May include, but is not limited to any mowing, sediment removal, pipe inspections, watering, re-seeding/planting, trash removal, etc
 1. _____ The notes shall indicate the frequency of the maintenance inspections.

2. ____ Any O&M specifications for proprietary systems must be included on the plans.
 3. ____ Any details necessary to complete the O&M procedures must be included.
56. ____ For stormwater management practices incorporating infiltration, the following apply:
- a. ____ Infiltration practices designed to handle runoff from impervious parking areas must maintain a separation distance of 100 feet from domestic wells and 150 feet from public wells from their periphery.
 - b. ____ Infiltration practices greater than three feet deep shall be located at least 20 feet from basement walls. Any infiltration practice shall be located at least 10 feet from a building structure.
 - c. ____ Areas draining to these practices must be stabilized and vegetative filters established prior to runoff entering the system. If individual lot construction is to drain towards an already established infiltration area, the facility shall be protected with perimeter controls around the top of bank.
 - d. ____ The infiltration practice shall be designed to drain completely within 48 hours.
 - e. ____ The bottom of the infiltration practice shall be at least three feet above the seasonal high water table, unless a BMP specification indicates otherwise.
 - f. ____ Infiltration practices are limited to soils having a field tested infiltration rate of at least 1 inch per hour; the design infiltration rate shall be half of the field tested infiltration rate. Onsite soil borings and textural classification must be done to verify site conditions and seasonal high water table, this information must be submitted with the plan.
 - g. ____ Infiltration practices shall not be installed in fill material.

Note: For any language that contains "[for the relevant Delegated Agency]", the preparer shall substitute the name of the appropriate Delegated Agency in place of the DNREC Sediment and Stormwater Program. For example, if the Sussex Conservation District is the Delegated Agency for the project, the checklist item "I am to notify the DNREC Sediment and Stormwater Program [or the relevant Delegated Agency]" would be prepared as "I am to notify the Sussex Conservation District". Any "and/or" statements shall remain as prescribed. For example, "I grant the DNREC Sediment and Stormwater Program and/or the relevant Delegated Agency" can be copied verbatim, and grants either agency the right to enter the property as may become necessary throughout the duration of the project.