

## STORMWATER PLAN REVIEW CHECKLIST

This Plan Review Checklist is for Design Professionals and has been developed to aid in the decision making for those who prepare Stormwater Pollution Prevention Plans (SWPPPs). Adjacent to the heading for most sections are references from the corresponding portion of the NPDES General Permit for Stormwater Discharges from Construction Activities (SCR100000), which was issued on October 15, 2012. SWPPP Preparers should not utilize this checklist as a substitute for the language in the permit and should review the permit itself for more information on each specific requirement. The permit may be found at:

<http://www.scdhec.gov/environment/water/swater/docs/CGP-permit.pdf>

In the space provided please, indicate the location and page number(s) where each item below can be found in your SWPPP or supporting calculations. If an item is not applicable, put N/A.

\*DHEC Revised Items for the 2013 CGP in Red

\*\* Town of Bluffton and 2017 SMS4 Permit Items in Green

Project Information: Project Name: \_\_\_\_\_

Checklist Completed by:

Printed name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Contact Information Phone #: \_\_\_\_\_ Email: \_\_\_\_\_

Comprehensive SWPPP/On-Site SWPPP Checklist

Comprehensive SWPPP = Plans + Engineering Report + On-Site SWPPP

### 1. SUBMITTAL INSTRUCTIONS

#### A. NOI, STORMWATER SURETY, MAINTENANCE AGREEMENTS AND MAINTENANCE PLANS

- i. Original Signature of individual with signatory authority for the applicant according to requirements set forth in R.61-9.122.22 (see Appendix C)
- ii. All NOI items completed and answered
- iii. Stormwater surety estimate – to be provided towards the end of plan review (see Town of Bluffton Watershed Management website –Plan Review).
- iv. Permanent Maintenance Agreements are required under Sections 4.3 B and C of the Construction General Permit.
- v. Maintenance Plan – for non-traditional stormwater management and water quality devices, (Town of Bluffton ordinance covers maintenance plan requirements for stormwater ponds).

- vi. Permanent Maintenance Plans are required under Section 4.3 D of the Construction General Permit. B.

B. COPIES OF PLANS AND CALCULATIONS

- i. Plans must be stapled together!
- ii. All pages bound; no loose pages
- iii. Registered engineer's signed and dated seal
- iv. Engineering Firm's Certificate of Authorization seal
- v. Submit one set of printed plans, and one PDF set.
- vi. Submit one bound set of the C-SWPPP.
  - 1. The preferred method is a 3 ring binder so that corrections can be inserted without re-printing the entire submittal. We must have one complete set at final review.
- vii. The C-SWPPP consists of the Engineering Report plus the On-site SWPPP and plans.
- viii. C-SWPPP Supporting documentation tabbed (e.g., On-site SWPPP, Engineer's Certification Statement, Narrative, Maps, drainage area maps, CN and TC calculations, Pre-Development hydrology, Post-development hydrology, sedimentology, water quality, energy dissipater calculations, stable channels, storm sewer calcs.) and pages numbered (no loose pages)
  - 1. Construction Site Plans must meet Section 3.2.9 of the CGP. The Limits of Disturbance (LOD) should be included on the plan sheets. BMP symbols must be from the SC DHEC BMP manual. Please use SCDHEC BMP details when available as this speeds the review process. The plans should include a Construction Sequence that meets the requirements of 3.2.3. Plans should include grading, drainage and BMP detail sheets.
  - 2. The design, inspection and maintenance of Best Management Practices (BMPs) described in the CSWPPP must be prepared in accordance with good engineering practices and at a minimum should be consistent with the requirements and recommendations contained in the current edition of the SCDHEC Stormwater BMP Handbook. The SCDHEC BMP Handbook is designed to provide guidance to planners, developers, engineers and contractors on the proper selection, installation and maintenance of BMPs (2012 CGP Section 3.2.6 B)

C. C-SWPPP ORDER (Suggested order to speed review process)

- i. Narrative
- ii. Maps

- iii. Discussion of wetlands, buffers, non-stormwater discharges and TMDL/303D compliance.
- iv. BMP summaries/tables
- v. Engineering Report
- vi. Appendices
- vii. Log Sheets Stormwater Management and Sediment and Erosion Control Plan Review Checklist For Design Professionals Revised July, 2017
  - 1. Please use a three ring binder to bind your C-SWPPP. This allows you to insert and delete pages during the review process without preparing an entirely new report.

2. PROJECT NARRATIVE (3.2.1) Location in C-SWPPP: \_\_\_\_\_

- A.  Engineer's Certification Statement (Town of Bluffton)
- B.  Scope of project outlined, including a brief description of pre- and post-development conditions.
- C.  Function of the project.
- D.  Identification of prior uses of the site or potential sources of pollution (for example known groundwater contamination).
- E.  Proposed Non-stormwater discharges.
- F.  Summary and summary table of pre- and post-development flows (at least 2- and 10-year, 25 year and 100 year, 24-hour storm events).
- G.  Existing and potential flooding problems in the surrounding area described
- H.  Summary (including a list of anticipated pollutants and how the proposed treatment method will address water quality) of Construction and post-construction water quality. For construction pollutant controls, you must demonstrate 80% trapping efficiency. Soil testing for proper nutrient (phosphorous and nitrogen) application is recommended as a BMP for nutrient and chlorophyll A control.
- I.  All new development and re-development sites which disturb greater than or equal to one acre (including projects that disturb less than one acre that are part of a LCP) must design, install, implement and maintain stormwater control measures that approximate pre-development conditions to the Maximum Extent Practicable and protect water quality (2014 SMS4 permit Section 4.2.5.2.1)
- J.  The narrative must describe how the design of the proposed stormwater control structures approximates pre-development conditions to the maximum extent practicable, (MEP). (2014 SMS4 Permit Section 4.2.5.2.1)
- K.  The narrative must describe how the project will ensure long-term maintenance of control structures. (2014 SMS4 permit Section 4.2.5.2.2)
- L.  For post-construction, demonstrate how proposed post-construction water quality BMPs will protect water quality.



Stormwater Management and Sediment and Erosion Control Plan Review Checklist For Design  
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- A.  Extra plan sheet showing impacts to navigable water and description of activity included if S.C. Navigable Waters (SCNW) crossing and separate SCNW permit has not been obtained for all activities

Note: For NOIs initially submitted to MS4s /delegated entities, if project has SCNW crossing and if separate SCNW permit has not been obtained for this crossing, then this item will be reviewed by S.C. DHEC before NPDES coverage will be granted.

8. WATERS OF THE STATE, INCLUDING WETLANDS (3.2.4.C) Location in C-SWPPP:\_\_\_\_\_

- A.  Delineation of all waters of the State (WoS), including wetlands, shown and labeled on plans (delineation not required if a 100-ft undisturbed buffer can be maintained between the WoS and all land-disturbing activities)
- B.  Additional, separate plan sheet that shows all WoS on the site and the impacted areas with a description of the activity(s), whether it is permanent or temporary, and any other relevant information.
- C.  If impacts to WoS, outlined areas of impacts and labeled that no work can begin in this area until all necessary USACOE permits, SCDHEC 401 Certifications, and Critical Area Permits (Coastal Zone only) have been obtained and are effective.

Note: If there are proposed impacts to WoS, then it is advised that you contact USACOE (866-329-8187) and/ or S.C. DHEC Water Quality Certification, Standards & Wetlands Programs Section (803-898-4300) to determine additional requirements before submitting the Notice of Intent (NOI).

Note: If WoS are to be impacted, work cannot be performed in these designated areas until all necessary permits have been acquired

Note: If a USACOE permit is required for construction of or access to a temporary or permanent stormwater management structure, NPDES permit coverage cannot be granted until the USACOE permits and S.C. DHEC 401 Section certifications are obtained.

9. BUFFERS – SEE GUIDANCE DOCUMENT (3.2.4.C)Location in C-SWPPP:\_\_\_\_\_

- A.  Select Compliance Option A, B, or C and provide appropriate documentation
- i.  Double row of silt fence provided in all areas where a 50' undisturbed buffer cannot be maintained between the disturbed area and the WoS
- ii.  Minimum 10' maintenance buffer provided between last row of silt fence and WoS; or, if buffer not provided, then statement from P.E. on plans indicating how silt fence will be installed and maintained without impacts to WoS
- iii.  When impacting buffers, per SCDHEC you must include a surface water protection plan.
- B.  Ensure discharges into a buffer zone are non-channelized and non-concentrated to prevent erosion, and first treated by the construction site's sediment and erosion controls
- C.  Ensure any velocity dissipation measures implemented within a buffer zone comply with 3.2.4.C.III. (d)

10. TMDL/ 303d IMPAIRED WATERBODIES (3.2.12) Location in C-SWPPP: \_\_\_\_\_
- A.  List the nearest S.C.DHEC Water Quality Monitoring Station (WQMS) that the site's stormwater discharges drain to and the waterbody on which it is located:  
\_\_\_\_\_
  - B.  Qualitative and quantitative assessment (described in Section 3.4C of SCR100000 and SCR 030000 4.2.4.5 (f) iv), if nearest WQMS listed on the current 303(d) List of Impaired Waters and if site's stormwater construction discharges contain the pollutant of impairment and if site disturbs 25 or more acres
  - C.  Careful evaluation of selected BMPs and their ability to control the pollutant of concern for projects that disturb less than 25 acres. (2017 SMS4 permit SCR 0300004.2.4.5 f iii)
  - D.  Pollutants of concern include TURBIDITY, BIO (Macroinvertebrate), TP (Total Phosphorus), TN (Total Nitrogen), and Chlorophyll-A.
  - E. Link to Water Quality Information Tool and Instructions:  
<http://gisweb01.dhec.sc.gov/water/Stormwater.html?mode=1/>
  - F.  If Approved TMDL developed for nearest WQMS and if site's stormwater construction discharges contain the pollutant of impairment, show that measures and controls on SWPPP met assumptions and requirements of TMDL (may need to contact Watershed Manager for assistance)
  - G.  For TURBIDITY, BIO (Macroinvertebrate) – document that BMPs reduce sediment load by meeting 80% sediment removal efficiency. Additional measures include stabilization, and limiting clearing and grading. For TP (Total Phosphorus), TN (Total Nitrogen), and Chlorophyll-A consider inclusion of BMPs to reduce nutrient load. This could include limited clearing and grading, and soil samples to determine nutrient requirements for grassing
  - H.  For Fecal Coliform (FC) - this may include location of porta-johns and waste receptacles

Note: To ensure sufficient Water Quality Monitoring Stations are selected to assess all of the identified parameters for construction stormwater, include monitoring stations that contain assessments for the first twelve parameters. Some stations only assess one parameter and should not be relied upon for the entire 303(d)/TMDL assessment for construction stormwater discharges. In addition, nutrients and/or chlorophyll A must be assessed in lakes/reservoirs

11. NON-STORMWATER DISCHARGES (3.2.11) Location in C-SWPPP: \_\_\_\_\_
- Please identify any proposed non-stormwater discharges. Only allowable non-stormwater discharges as defined in SCR100000 and SCR 030000 and Town of Bluffton UDO 5.10.5(B) can be discharged.

12. FLOW CONTROL (3.2.10) Location in C-SWPPP: \_\_\_\_\_

- A.  Control stormwater volume and velocity within the site during construction to minimize erosion within the site
  - B.  Control stormwater rates and volume at outlets during construction to minimize erosion to downstream channels and stream banks
13. BMP SUMMARIES AND TABLES TO COMPLY WITH Section 3.2.2, 3.2.5, 3.2.6 and 3.2.10 of the CGP. Location in C-SWPPP: \_\_\_\_\_

For reviewing purposes, it is prefer that this section be submitted in table format. The table might have the following headings, Topic, BMP, and Plan and/or Appendix Reference. For assistance with the section, you may find the Sources of Pollution Table 2.1-A found in the SCDHEC SWPPP template and the attached Special Construction Operation and Waste Management BMPs from DHEC's BMP Field Manual. These BMPs could work in an On-Site SWPPP similar to a standard BMP detail does on construction site plans.

## ENGINEERING REPORT

14. HYDROLOGIC ANALYSIS (3.2.8.A.II) Location in C-SWPPP: \_\_\_\_\_
- A.  Pre- and post-developed hydrologic analysis calculations for the 2-, 10-year 25 and 100 yr., 24-hour storm events at each outfall point
  - B.  Drainage area maps that clearly correspond to the calculations (pre- and post-development)
  - C.  Pre and post developed CN analysis.
  - D.  Pre and post developed TC calculations. Calculated using TR55 with a maximum sheet flow of 100 ft. Depict flow paths on the drainage area map.
  - E.  Analysis points for comparing runoff rates and the total drainage area analyzed do not change from pre- to post-development, although the immediate drainage areas contributing to each analysis point might shift.
  - F.  Post-development discharges less than pre-development discharges for each outfall point for the 2, 10, and 25. Note Stormwater engineer may waive up to 1 cfs.
  - G.  Analysis performed using SCS 24-hour storm (Rational method is not acceptable)
  - H.  Rainfall data from South Carolina DHEC Storm Water Management BMP Handbook (BMP Handbook) used in all calculations.

Note: The curve number for open water, marshes, etc. should be 98.

15. DETENTION ANALYSIS/DESIGN (3.2.8.A.III) Location in C-SWPPP: \_\_\_\_\_
- A.  Analysis
    - i.  Pond routing using a volume-based hydrograph for the 2, 10, 25 and 100-year, SCS 24-hour storm event (Drain: Edge, ICPR, HEC-1, SedCAD,

- HYDRAFLOW, etc. perform full pond routings; TR55 does not perform a full pond routing; rational method cannot be used)
- ii.  Hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications of the proposed land-disturbing activity, with and without the detention structure (results of analysis will determine the need to modify the detention design or eliminate the detention requirement—see note 2 below)
  - iii.  Inputs and outputs from analysis program
    - 1.  Summary table of the peak inflows, peak outflows, discharge velocities, and maximum water surface elevations (WSE) for the 2, 10, 25 and 100 year, 24-hour storm events for each detention structure
  - iv.  Stage-storage-discharge relationship for the outlet structure of each detention structure
  - v.  Pond data sheet.
  - vi.  If a rating curve for the outlet structure must be generated externally from the analysis program (Drain: Edge, HEC-1, etc.), data and equations used to rate the outlet structure
  - vii.  As-built of existing detention pond if the site drains to an existing detention pond (see below)

Note: SedCAD users please refer to the memo regarding the input of outlet structures. If using Sedcad you must input a TC calculated by TR55.

#### B. Design

- i.  Detail of outlet structure and cross-section of the dam/ berm or pond bank, including elevations and dimensions that correspond to the calculations
- ii.  Orifice constructability should be considered (do not specify orifice diameters with increments of less than ¼")
- iii.  Small orifices (those less than 3") are prone to clogging
- iv.  Maximum WSE for the 10-year storm event below the emergency spillway with 0.5-ft of freeboard between maximum WSE for the 10-year storm and the emergency spillway
- v.  Maximum WSE for the 100-year storm event below the embankment with 0.5-ft of freeboard between maximum WSE for the 100-year storm and the embankment
- vi.  Dewatering time calculations for the 10-year storm event
- vii.  The 100-year storm event must be safely discharged through the pond.
- viii.  Bottom of all detention and retention ponds graded to have a slope of not less than 0.5%



- ix.  Permanent maintenance access to all permanent detention structures (easements may be needed for structures surrounded by lots)
- x.  Infiltration systems designed in accordance with S.C. Reg. 72-307.C(11) [specify how items a-j have been addressed]
- xi.  **Low Impact Development measure, bioretention cells, infiltration, and other post-construction practices should be installed only after the drainage area to these practices has been stabilized**

Note: Emergency spillways should not be built on fill slopes. **If constructed on fill slopes must provide satisfactory compaction tests as part of as-built certification.**

- xii.  DHEC recommends a maximum slope of 3:1 on pond embankments to allow for ease of maintenance.
- xiii.  DHEC recommends installation of sediment forebay at each outfall into the detention/ sediment basin.

#### 16. SEDIMENTOLOGY & SEDIMENT BASIN/TRAP DESIGN (3.2.8.IV AND 3.2.6.A.II)

Location in C-SWPPP: \_\_\_\_\_

- A.  **Provide a drainage area map outlining the area contributing to sediment basins, traps, and rock sediment dikes.**
- B.  Trapping efficiency calculations showing that all sediment basins/ traps are capable of achieving a sediment trapping efficiency of at least 80% for the 10-year, 24-hour storm event, if more than 10 disturbed acres drain to a common point (stream, lake, etc.)
- C.  Sediment basins provide storage for the 10-year, 24-hour storm event for disturbed conditions or 3600 ft<sup>3</sup> / acre draining to the basin, if more than 10 disturbed acres drain to a common point (stream, lake, property line, etc.)
- D.  Sediment traps may only be used for drainage areas of less than 5 acres
- E. Sediment trap storage calculations, showing that 1800 ft<sup>3</sup> / total acre draining to each trap is provided below the spillway.
- F.  For sediment traps provide peak outflow, q<sub>po</sub>, calculations; the 10-year, 24-hour storm event for construction conditions cannot overtop the trap's spillway
- G.  Sediment basins and traps designed for total area draining to them
- H.  **Curve Number for construction analysis needs to reflect construction/ disturbed conditions. Curve Numbers for newly-graded areas are:**
  - i. Hydrologic Soil Group "A": 77
  - ii. Hydrologic Soil Group "B": 86
  - iii. Hydrologic Soil Group "C": 91
  - iv. Hydrologic Soil Group "D": 94
- I.  Drainage area map outlining the area draining to each basin/trap. Copies of figures used to determine V<sub>15</sub> (SV-1) and trapping efficiency (ST-1, SB-1, SB-2), if

Design Aids from BMP manual are used to determine trapping efficiencies. Design Aids from the BMP Manual are not appropriate for BMPs designed in series and modeling is required in those instances. When the soil type is A/D, B/D or C/D, the chart for high water tables must be used to calculate sediment trapping efficiency for sediment ponds in the Coastal Zone.

- J.  When multiple D<sub>15</sub> values exist for an area, use the soil type with the smallest D<sub>15</sub> for the appropriate depth to determine the settling velocity, V<sub>15</sub>. Do not use an average D<sub>15</sub>.
- K.  Sediment basins must dewater via an outlet structure that pulls water from the surface. Options for this include skimmers and flashboard risers. Surface dewatering is not required for traps.
- L. Provide skimmer type and skimmer sizing calculations.
- M.  Porous baffles must be provided in sediment basins
- N.  Forebays must be installed, unless infeasible
- O.  Public Safety should be taken into consideration as a factor in design of sediment basins. Alternative BMPs must be utilized where construction site limitations would preclude a safe design
- P.  Silt fence only used in areas with drainage areas of less than ¼ acre per 100 LF of fence and not used in areas with concentrated flows.
- Q.  Clean-out stake, marked at ½ the designed sediment storage depth, provided in all sediment basins/ sediment traps.

Note: Consult the SCDHEC BMP Handbook and the Bluffton Stormwater Design Manual for information on the design of these and other devices.

Note: The Design Aids in the SCDHEC BMP Handbook cannot be used to determine trapping efficiencies for structures in series. If the flow for the 10-year, 24-hour storm for construction conditions overtops the structure or the structure's spillway, then the Design Aids cannot be used.

Note: SedCAD users please refer to the memo regarding the input of outlet structures.

#### 17. PERMANENT WATER QUALITY REQUIREMENTS (3.2.8.A.IV) Location in C-SWPPP: \_\_\_\_\_

- A.  All new development and re-development sites which disturb greater than or equal to one acre (including projects that disturb less than one acre that are part of a LCP) must design, install, implement and maintain stormwater control measures that approximate pre-development conditions to the Maximum Extent Practicable and protect water quality (2017 SMS4 permit Section 4.2.5.2.1)
- B.  Permanent water quality addressed (all new development projects)
  - i.  Wet ponds designed to catch the first ½" of runoff from the entire area draining to the pond and release it over at least a 24-hour period. Must have a fresh water source for wet ponds.

- ii.  Dry ponds designed to catch the first 1" of runoff from the entire area draining to the pond and release it over at least a 24-hour period
  - iii.  Infiltration Practices designed to accept, at a minimum, the first 1" of runoff from all impervious areas and designed in accordance with S.C. Reg. 72-307.C(11) [specify how items a-j have been addressed]
  - iv.  For areas not draining to a pond or infiltration practice, show how permanent water quality requirements were addressed
- C.  Water quality orifices should be a size that is conducive to proper operation and maintenance. Orifices less than 3" in diameter are prone to clogging
- D.  Waters of the U.S./State are not used for permanent water quality control (alternative means of treatment must be used if an existing pond is to be used for water quantity control).

Note: Other non-traditional stormwater controls such as Bioretention areas, constructed wetlands, etc. may be used. Consult the BMP Handbook for information on the design of these devices.

Note: Pre-fabricated or proprietary treatment devices are approved on a case-by-case basis if adequate removal efficiency can be demonstrated. Provide pollutant removal efficiency data, preferably from a third-party testing company. Type of system selected should be based on the ability to remove the pollutants of concern in that area/situation (bacteria, hydrocarbons, etc.).

18. CONVEYANCE MEASURES AND STABLE CHANNELS (3.2.6.A.III) Location in C-SWPPP: \_\_\_\_\_

- A.  All channels and diversion ditches able to handle the 25-year storm event with non-erosive velocities of less than 5 feet per second during construction (use appropriate CN for disturbed areas) and post construction (if velocity exceeds 5 ft/s, then permanent measures to reduce the velocity to a non-erosive rate must be provided)
- B.  Bypass channels and diversions must be able to handle the 100 year storm event.
- C.  Stabilization of conveyance channels is to be completed within 7 days of channel construction.
- D.  Rock check dams or sediment tubes provided in temporary diversions as necessary.
- E.  Installation detail for erosion control blanket (ECB) or turf reinforcement matting (TRM) if ECBs or TRMs to be used.
- F.  Temporary conveyance channels should be utilized to divert concentrated stormwater flows from running onto and within the disturbed area.

19.  RIPRAP APRON ANALYSIS Location in C-SWPPP: \_\_\_\_\_

20.  STORM SEWER SYSTEM ANALYSIS Location in C-SWPPP: \_\_\_\_\_

21.  AS-BUILTS (3.2.8.A.VI) Location in C-SWPPP: \_\_\_\_\_

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- A.  Provided for all previously approved detention ponds that will receive flows from new construction
- B.  Prepared by a South Carolina Licensed Land Surveyor
- C.  Grades/ contours/ depths for pond
- D.  Elevations and dimensions of all outlet structures, including:
  - i.  Pipe and orifice inverts and diameters
  - ii.  Weir elevations and dimensions
  - iii.  Riser dimensions and elevations
  - iv.  Emergency spillway dimensions and elevations
  - v.  Locations and inverts for all pipes discharging into the pond
  - vi.  Dimensions of discharge riprap aprons
  - vii.  If the elevations or dimensions of the structures listed above do not match those used in the approved plans, certification statement signed by the project's Registered Engineer indicating that the pond, as built, will function within all applicable standards provided [new analysis of the pond (routing) may be necessary]
  - viii.  **As-built certification form(s).**

Note: As-built survey and /or analysis must be submitted and accepted by the Town of Bluffton before Notice of Termination (NOT) is accepted by SCDHEC.

**22. PERMANENT STORMWATER MANAGEMENT STRUCTURE and/or WATER QUALITY DEVICE MAINTENANCE AGREEMENT AND PLAN (CGP Section 4.3. B, C and D) (UDO 5.10.4A-C) Location in C-SWPPP: \_\_\_\_\_**

- A.  Signed agreement from the responsible party accepting ownership and maintenance of the structure
- B.  **If maintenance responsibility is transferred after NPDES coverage is granted, an updated agreement should be submitted with the Notice of Termination**
- C.  Description of maintenance plan to be used
- D.  Schedule of maintenance procedures (e.g., every 6 months)
- E.  Detailed or manufacturer-specific maintenance items for proprietary control devices (oil-water separators, etc.), underground detention structures, exfiltration systems and non-traditional stormwater controls (constructed wetlands, bioretention, etc.)

## PLANS SETS

**23. CONSTRUCTION SEQUENCE (3.2.3) Location in C-SWPPP: \_\_\_\_\_**

- A.  **Construction Sequence should accurately reflect the nature and timing of construction activities for the site.**

- B.  Sequence should begin with the installation of perimeter controls and end with the removal of sediment and erosion control measures once the site has been finally stabilized.
- C.  Sequence should address any necessary diversion measures to divert off-site stormwater.
- D.  Sequence should address any inspections necessary for as-built certification of stormwater management structures and water quality devices.
- E.  Address conversion of any temporary sediment control structures to permanent measures (i.e., conversion of a sediment basin to a permanent detention basin).
- F.  Sequence should reflect implementation and transition between each phased plan (see Item 10 below).

24. PHASED SEDIMENT & EROSION CONTROL PLANS (3.2.9) Location in CSWPPP: \_\_\_\_\_

- A.  Phased Sediment and Erosion Control Plans are not required when land-disturbance is 5 acres or less
- B.  For land-disturbance between 5 and 10 acres, a two-phased stormwater management and sediment and erosion control plan is required for all non-linear projects. Each phase must be shown on a separate plan sheet. Plans should address the transition between phases.
  - i.  Phase 1 – Initial Land Disturbance – Must include perimeter sediment and erosion control BMPs required prior to initial/ mass clearing and other appropriate BMPs needed to maintain compliance with the permit. On some sites, this may include appropriate BMPs for demolition of existing structures. Where demolitions occurs a demolition sequence should be included.
  - ii.  Phase 2 – Stabilization - Sediment and erosion control BMPs required during the remainder of grading and construction. Must also include appropriate BMPs for stabilization – grassing, inlet protection, etc.
- C.  For land-disturbance greater than 10 acres, a three-phased stormwater management and sediment and erosion control plan is required for all non-linear projects. Each phase must be shown on a separate plan sheet. Plans should address the transition between phases.
  - i.  Phase 1 – Initial Land Disturbance – Must include perimeter sediment and erosion control BMPs required prior to initial/ mass clearing and other appropriate BMPs needed to maintain compliance with the permit. On some sites, this may include appropriate BMPs for demolition of existing structures. Where demolitions occurs a demolition sequence should be included.

- ii.  Phase 2 – Construction - Sediment and erosion control BMPs required during the majority of grading and construction activities.
- iii.  Phase 3 – Stabilization - Sediment and erosion control BMPs required near the completion of the construction project. Must also include appropriate BMPs for stabilization – grassing, inlet protection, etc.

25. INLET PROTECTION (3.2.6.A.II(a) and (b)) Location in C-SWPPP: \_\_\_\_\_

- A.  Provided at all inlets (existing and proposed)
- B.  Inlet protection details provided for pre-paving and after roadways have been paved.
- C.  Steel posts and buried fabric shown for filter fabric inlet protection.

Note: Hay bales are not acceptable.

Note: SCDHEC recommends that an inlet not have more than one (1) acre draining to it.

26. ENERGY DISSIPATORS/ OUTLET PROTECTION (3.2.10) Location in CSWPPP: \_\_\_\_\_

- A.  All outlets stabilized with appropriately sized riprap apron or other structure
- B.  Riprap detail shows apron dimensions, installation shape and depth and stone sizes for each pad or each pipe diameter
- C.  Geo-textile fabric installed beneath all riprap

Note that appropriate outlet protection and energy dissipation is also required for post-construction

27. SLOPES AND/ OR EMBANKMENTS (3.2.6.A.III(e) and 3.2.10) Location in C-SWPPP: \_\_\_\_\_

- A.  All slopes stabilized
- B.  Minimize Disturbance to Steep Slopes (3H:1V) or greater
- C.  Divert concentrated flows around steep slopes using slope drains or temporary diversions
- D.  Utilize appropriate measures to prevent erosion (erosion control blankets, surface roughening, terracing, etc.) Provide an installation detail on the plans for erosion control matting and turf reinforcement matting.
- E.  Slope drains designed in accordance with the SCDHEC BMP Handbook
- F.  Slope drains provided where concentrated flows discharge onto a fill slope

Note: Measures, in addition to grassing or hydro seeding, include synthetic or vegetative matting, diversion berms, temporary slope drains, etc.

Note: If retaining walls or fill slopes are to be constructed at the downstream property line, SCDHEC recommends a 10' buffer to allow for construction and maintenance. If a 10' buffer is not provided, then provide permission from the adjacent property owner for possible land-disturbing activities on his property.

28. UTILITY LINES Location in C-SWPPP: \_\_\_\_\_

- A.  Limits of disturbance include areas necessary for installation of all utilities (cable, electrical, natural gas, water and sewer), as appropriate
  - B.  For instances where the location of cable, electric, and natural gas has not been determined at the time the SWPPP is developed, SWPPP preparer may include a note that the installation of these is to be within the permitted limits of disturbance and that installation outside of these areas will require a modification to the permit
  - C.  Inlet protection provided at all existing inlets that receive flows from the disturbed areas; also add this as a note on the plans
  - D.  For all utility lines crossing WoS, narrative and detail showing sediment and erosion control measures provided on plans.
  - E.  Construction entrances to be provided at all locations where construction traffic accesses a paved roadway
29. DISCHARGE POINTS (3.2.6.A.III) Location in C-SWPPP: \_\_\_\_\_
- A.  Storm drainage or pond outfalls carried to an existing drainage outfall such as a pipe, ditch, etc.
  - B.  No new point discharges onto adjacent property where there was not a point discharge previously, unless written permission from the adjacent property owner is provided
  - C.  Level spreaders, plunge pools, etc. provided when the proposed outlet is near the property line and not directed to an existing outfall, such as a creek or ditch
  - D.  Twenty (20)-foot minimum buffer is provided between the property line and the discharge point
  - E.  Outlets shall not discharge on fill slopes

Note: This requirement also applies during construction.

30. SITE PLANS CHECKLIST:

- A.  Location map with site outlined on first plan sheet (map should have enough detail to identify Surface Waters of the State within 1 mile of the site)
- B.  North arrow and scale
- C.  Property lines and adjacent landowners' names
- D.  Legend (should include all stormwater BMP symbols)
- E.  Owner Certification Statement located on the title page: "I \_\_\_\_\_ certify that the land disturbing activity will be accomplished according to the plan accepted by the Town of Bluffton and SCDHEC." "I \_\_\_\_\_ acknowledge as the property owner and person ultimately responsible for the land disturbing activity at this site and the right of the Town of Bluffton or SCDHEC to conduct on-site inspections."

- i.  A table placed on the first sheet (title sheet) depicting the total site area, disturbed area, linear feet of public streets to be accepted by the Town of Bluffton, import/export estimate, receiving stream, ultimate receiving stream, and developed impervious area by parcel number.
- F.  Registered engineer's signed and dated seal
- G.  Engineering Firm's Certificate of Authorization seal
- H.  If the SWPPP has been developed by a Registered Professional Engineer, Registered Landscape Architect or Tier B Land Surveyor, the following statement must be included on the site plans:

"I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000."
- I.  Existing and proposed contours for entire disturbed area
- J.  Scale and contour interval suitable for plan review without magnification.
- K.  Limits of disturbed area
- L.  Locations of off-site material, waste, borrow, or construction equipment storage areas, excluding roll-off containers (Note: Some off-site disturbed areas may require a separate application for NPDES coverage)
- M.  Location and identification of any stormwater discharges associated with industrial activity (not construction)
- N.  Location of Concrete Washout and other Pollution Prevention Measures. Pollution Prevention measures should include provisions for spill/leak prevention and response, list of DHEC prohibited discharges, methods to minimize the exposure of building materials, fertilizers, pesticides, sanitary waste, etc. to stormwater and treatment for vehicle and wheel wash water. (2017 SMS4 permit Section 4.2.4.4.3)
- O.  Easements
- P.  Utility plans
- Q.  Silt fence with metal posts.
- R.  For subdivisions – provide an individual lot control detail.
- S.  Ponds fenced if required will have a 4ft. fence with gates for maintenance access if required.
- T.  Design of stormwater ponds and location of stormwater management and quality structures shall be sufficient to provide safe access by workers and equipment for routine and non-routine maintenance of the pond bottom, slopes and stormwater management/quality structures. Maintenance access routes to



stormwater ponds and structures shall lie within dedicated storm sewer easements.

- U.  If wells or septic tanks are present, please add the following notes to the plan sheets, “Well must be abandoned by a well driller licensed in the state of South Carolina. A copy of the well abandonment form that is submitted to DHEC must also be submitted to the Town of Bluffton Watershed Management Division.” “Septic tanks must be pumped by a licensed septic tank hauler and a copy of the trip ticket must be submitted to the Town of Bluffton, Stormwater Division.”
- V.  Temporary and permanent control measures (provide details of all sediment and erosion control measures used; make sure the label or legend on the plans matches the name on the detail)

Note: Maintenance requirements for each BMP should be listed on the detail. Note: Please use SCHEC BMP Handbook details were available. If details from the BMP Handbook are used, then the inspection frequency must be changed to be in accordance with the CGP (see Standard note 3).

**31. ON-SITE SWPPP APPENDICES – Per the CGP the Onsite SWPPP must contain the following:**

- A.  Narrative
- B.  Maps
- C.  SCDHEC – CGP
- D.  NOI
- E.  NPDES Coverage letter Local approvals – grading permit, encroachment permit, floodplain permit, etc.
- F.  US ACOE Approvals, 401 Certifications and Jurisdictional Determinations
- G.  Contractor Certifications – (must be signed by an officer of the company)

**32. RECORDKEEPING LOGS – Per the CGP the Onsite SWPPP must contain the following logs:**

- A.  Inspection Log
- B.  Rainfall Log
- C.  Pre-construction meeting Log
- D.  Contractor and subcontractor Log
- E.  SWPPP Modification Log
- F.  SWPPP Soil Stabilization Log