

Sediment Control and Environmental Site Design (ESD) Plan Review Checklist

This Checklist to be Completed by DPS

To the Design Professional:

This checklist is intended to provide guidance to you as you prepare your design plans. The items on this checklist are some of the items that will be reviewed by DPS staff. Please address all items and any additional comments provided on the plans and computations. Provide brief responses to Changemarks in the Applicant's Response Box in ePlans on the Workflow Information Page. You are not required to submit this checklist with your review submissions.

Please refer to [Sediment Control ePlans Submittal Requirements](#) prior to submitting plans for review:

Project Name: _____ **Designer/Contact:** _____

SC Permit No.: _____ **Email/Phone No.:** _____

SM File No.: _____ **Assigned to:** _____

Plan Type: _____

Checklist Legend:

- OK Complete/Acceptable
- INC Incomplete/Incorrect
- N/A Not Applicable
- TBD To Be Determined
- SC Sediment Control
- SWM Stormwater Management
- LOD Limit of Disturbance
- DA Drainage Area
- DAM Drainage Area Map
- ESD Environmental Site Design
- ESDv Volume associated with ESD measures
- SOC Sequence of Construction
- WSEL Water Surface Elevation
- ROW Right-of-Way
- SPA Special Protection Area
- WRTP Water Resources Technical Policy

<i>Submittal Date</i>	<i>Review Date</i>
_____	_____
_____	_____
_____	_____
_____	_____

SECTION A - Cover Sheet - Items that must be on first plan sheet

_____ 1. Title Block: Project name, property address and legal description (lots/blocks/subdivision, parcels, deed liber/folio, or other legal references.)

_____ 2. Project Scope/Name: Examples - Sediment Control and SWM for [project name], Sediment Control for Demolition and Sheeting and Shoring Only, Sediment Control for Rough Grading Only for [project name]. Road Projects: Street name(s) and station numbers.

_____ 3. Owner/Permit Applicant Information: Name, address, phone no., contact person and email.

_____ 4. DPS Approval Box: Lower right-hand corner with SC and SWM numbers filled in as applicable.

_____ 5. 2" X 3" Blank Space: For MCDPS approval (Batch Stamp), top middle of each sheet.

_____ 6. Vicinity Map: Site outlined and adjacent streets labeled.

_____ 7. “Related Required Permits” Table: Completed by the applicant. Address all listed permits and additional permits as needed for SC or SWM permit issuance or as requested by the reviewer.

_____ 8. “Tree Canopy Requirements Table”: Completed by the applicant. Projects that receive a M-NCPPC Forest Conservation Exemption are subject to the Tree Canopy Ordinance administered by MCDPS.

_____ 9. “Record Drawing Certification”: Complete as follows: provide Right-of-Entry Agreement recording information when applicable, and N/A when not. Check applicable as-built requirement box. If an Owner’s Signature is not required note N/A on the Owner’s Signature line.

_____ 10. “MCDPS Drainage Statement”: Completed and signed by design professional.

_____ 11. Sheet Index Table: Provide sheet numbers, corresponding electronic (ePlans) file name and sheet contents. Each sheet consecutively numbered: e.g. Sheet SC/SWM # of #. Identify sheet with the SOC. Index not needed for Individual Single-Family Lot plans.

_____ 12. Qualified Professional Seal and Signature: Seal of a Maryland Registered Professional Engineer (PE), Maryland Land Surveyor, Maryland Landscape Architect or Maryland Architect. Provide Digital Seal and Signature per State and County requirements. Seal only required to be on the first sheet. Provide date signed and expiration date. Plans requiring Small Pond or Dam Safety approval can only be sealed by a Maryland PE.

_____ 13. “Special Protection Area (SPA) Notice”: Completed for projects within a designated SPA.

_____ 14. MCDPS Approval Letters: SWM Concept approval letter(s), Preliminary and Final Water Quality Plan approval letter(s) and Phasing Agreement as applicable.

_____ 15. Property Information/General Notes: Property size in square feet, Zoning, MDE Watershed, and Use Class. SPA name and the proposed area of disturbance (LOD) within the SPA when applicable. Provide a listing of Lots/Blocks, Parcels, Outlots, Subdivision, and Public Roads covered by the permit. Identify Type of Development: Redevelopment or New Development. Redevelopment is any construction, alteration, or improvement that exceeds or equals 5,000 square feet of land disturbance and is performed on a site where the existing land use is commercial, industrial, institutional, or multifamily residential and existing imperviousness is greater than 40 percent.

SECTION B - Sediment Control - Plan Views

_____ 1. Scale: All plan views, profiles and sections . Use legible engineer’s scale appropriate for complexity of plan such as 1” = 30’ but never smaller than 1” = 50’. Include a bar scale to assist with future document reproduction. If reviewer cannot read the plans at the scale provided, it may be required to be resubmitted at an appropriate scale.

_____ 2. Property: Project’s property lines and ROW lines dark and clearly identified. Owner information shown for all adjacent properties. Delineate and label ROW to be dedicated when applicable. Include name of adjacent property owner(s).

_____ 3. North Arrow: On all plan views, including insets and larger scale plan views.

_____ 4. Existing Topography and Proposed Grades: Shown and clearly labeled. Show sufficient topography on adjacent properties to support the design including LOD’s and drainage impacts. As adjacent properties are typically not accessible by survey crews, utilize readily available public sources when off-site field topography is not available. Existing and proposed contours at 2’ intervals are typical. Sufficient spot grades to support drainage areas, divides and flow patterns. Label low points (LP) and high points (HP) with spot elevations.

_____ 5. Maximum Slopes on Residential Lots: Permanent cut and fill slopes constructed on residential lots may not exceed 3:1. Clearly label all 3:1 slopes.

_____ 6. Maximum Slopes on Non-Residential Properties: Permanent cut and fill slopes constructed on non-residential properties may not exceed 2:1. Clearly label all slopes that are between 2:1 and 3:1. For slopes between 2:1 and 3:1, a Planting Plan with low-maintenance ground cover to achieve *immediate* stabilization must be included as part of the plan set. Include Plant Table with plant names, quantity, sizing and spacing. Planting Plan must be sealed by Maryland Registered Landscape Architect.

_____ 7. Slope Benching: Shown and designed per MDE requirements and detail. Benching is required for slopes as follows: 2:1 slopes higher than 20 feet; 3:1 slopes higher than 30 feet and 4:1 slopes higher than 40 feet.

_____ 8. Existing Conditions: Show all existing improvements such as buildings, pavement, curb and gutter, sidewalks, storm drain (size and material), stormwater management facilities, water and sewer, dry utilities, and trees, etc. and identify with a legend and/or labels. Indicate if improvements are to remain, to be removed or to be abandoned in place. Show flow arrows on existing storm drain. For most projects a separate Existing Conditions Plan Sheet with SC is *not necessary* even if the project includes demolition, rough grading and rerouting of storm drain as an initial step. SC for initial demolition should be shown on the proposed improvements SC plan whenever possible and practical. It is rare that a project needs numerous "phased" SC plan views showing various stages of construction progressing. Instead the SOC should be used to identify the installation and removal of measures as the project progresses.

_____ 9. Proposed Improvements: Show all proposed improvements such as buildings, pavement, curb and gutter, sidewalks, storm drain (size and material), stormwater management facilities, water and sewer, dry utilities, and trees, etc. and identify with a legend and/or labels. Show building limits and outline and label limits of underground garages. Show flow arrows on proposed storm drain and SWM pipes. Label roads as public or private. Show and label all SWM measures on SC Plan. Clarify pervious and impervious surfaces. Do not show individual hardscape patterns on plan views. Show door locations and critical floor elevations. Do not show interior architectural layout unless critical to the review. Show all well, septic and geothermal wells with setbacks.

_____ 10. Easements: Show and label all existing and proposed easements, such as SWM, PUE's, PIE's, public and private Storm Drain, Forest Conservation and WSSC. Provide recording information if available.

_____ 11. USDA Soil Survey Information: Delineated and labeled with Map Units.

_____ 12. Limit of Disturbance (LOD): Delineate and label. LOD includes all disturbed area on the site, in the ROW and on adjacent properties. Stated square footages of LOD must match 1)Application, 2)Certification of the Quantities, 3)Tree Canopy Table and 4)LOD in SWM computations. Land-disturbing activity means any earth movement and land changes which may expose underlying soil and may result in soil erosion from water or wind or the movement of sediments into state waters or onto lands in the state, including tilling, clearing, grading, excavating, stripping, stockpiling, filling and related activities, and the covering of land surfaces with an impermeable material. If the LOD changes between reviews it is the design professional's responsibility to notify the reviewer at time of resubmission and discuss impacts which may include revisions to the application, fee and bond amount as already established at the time of initial submission.

_____ 13. SC Devices: SC design per MDE Standards and Specifications. Show all SC devices using *standard symbols as established by MDE* and provide SC legend on all SC plan views. Clearly highlight any proposed modifications to the details or special conditions. All sediment control practices must be within the LOD.

_____ 14. Stabilized Construction Entrance: Required for all projects, shown on SC plan view and mentioned in the SOC.

_____ 15. Drainage Divides for SC: Delineate and label existing and proposed drainage divides on SC plan view sheets when applicable to review of SC measures such as traps and basins.

_____ 16. Access, Stockpiling, Staging, and Storage: Access to LOD must be adequate and shown. Staging, material storage and stockpiling area(s) shown or noted to be on the site and within the LOD. Provide SC and slope benching as necessary.

_____ 17. Off-Site Drainage Areas: Off-site drainage areas draining towards the project's LOD shown and acreage noted on the SC plan view. Provide a smaller scale inset to support the acreage if necessary.

_____ 18. Environmental Features: Delineate and label environmental features that may impact SC and/or SWM such as stream valley buffers, steep slopes (>15%) and wetlands (including 25-foot buffer.)

_____ 19. 100-year Floodplain Delineation: Show and label the 100-year floodplain and 25-foot BRL for any drainage way with >30-acre drainage area. Note drainage area in acres and floodplain approving authority with number/panel as applicable for any location when concentrated flow from an area of > 30 acres exits a site.

SECTION C - Sediment Control - Required Elements

_____ 1. Overall SC Plan and Composite Key Sheet: *Required* for SC plans with more than one plan view. Overall view should show existing contours, proposed improvements and grades, SC and LOD as shown on the larger scale plan views.

_____ 2. Certifications: 1) Owner/Developer; 2) Design; 3) Quantities, completed, signed, and dated *with initial submission*.

_____ 3. MCDPS "Standard Sediment and Erosion Control Notes": Include on one SC plan sheet.

_____ 4. MDE SC Details: Include MDE details for all measures used on the project. Do not include any details that are not part of the design.

_____ 5. Sequence of Construction (SOC): Use the correct MCDPS "Standard Wording for Initial Steps of Sequence of Construction" as found on the website. The standard wording contains required initial steps as well as other general statements that must be in all SOC's. Design Professional must *expand sequence to fit the specific SC, SWM and construction elements for the project. For instance, instead of "install sediment control measures" list project specific SC measures to be installed at that step.* Do not include any steps in the Standard Wording that are not applicable. Include critical project steps and related installation and removal of SC measures so reviewer and SC inspector can ensure there is SC for all work including demolition and construction of SWM measures. Include a step for submission of SWM as-built to MCDPS for review and approval and/or executed Record Drawing Certification to the Sediment Control Inspector as final step as applicable. Clarify instances where steps must occur in a certain order (e.g. installation of segments of storm drain then constructing temporary outfall to a trap.)

_____ 6. Pre-Construction Meeting Attendance: M-NCPPC must be invited to the pre-construction meeting in step 1 of the SOC when required by their approval such as Final Forest Conservation Plan, Forest Conservation Exemption with Tree Save Plan or any other Tree Protection Plan approval. MCDEP must be invited to the pre-construction meeting (email SWInspections@montgomerycountymd.gov) when proposed work includes the removal of existing SWM measures.

_____ 7. MCDPS Floodplain District Permit: Required for disturbance or structures, including fences, within 100-year floodplain or buffer. Floodplain Delineation Study, when required must be approved before applying for a Floodplain District Permit so that square footage of impacted floodplain can be shown and quantified. SC Plan cannot be approved until the Floodplain District Permit is issued.

SECTION D - Sediment Control - General Items

_____ 1. MDE On-Site Concrete Washout Detail H-6: Include on all plans.

_____ 2. Placement of SC devices on Non-Single Family Lot Plans: SC measures must be placed a minimum of 20 feet away from existing or proposed building foundations.

_____ 3. Super Silt Fence on SC for Single Family Lot Plans: Any silt fence within 20 feet of a structure on a single-family lot engineered plan must be Super Silt Fence.

_____ 4. Filter Logs: Filter Logs are used to collect and filter sheet flow and can only be proposed in instances where the use of silt fence is not practical or may significantly damage tree roots. When use of Filter Logs is necessary, include in SOC, provide detail, show on plan and in SC legend. Specify filter log size and installation type.

_____ 5. Inlet Protection: Used only when it is not possible to divert runoff into a sediment trap or basin. Include installation in SOC with structure numbers as a step. MDE maximum DA's for type of inlet protection cannot be exceeded. Label drainage area in acres next to each inlet protection measure. Note Type A or B if applicable.

_____ 6. Asphalt Berms: Asphalt berms are placed on paving and used to direct runoff to sediment control measures. Include installation in SOC as a step.

_____ 7. 20-Acre Grading Limitation: Project sequence must comply with County's 20-acre grading unit limitation. Sequenced grading limits shown on plans and noted in SOC.

_____ 8. "MCPS SWM Maintenance Certification": Required for Montgomery County Public School projects.

____ _ 9. Off-Site Drainage: Address off-site drainage areas with MDE clean water diversion methods or with SC measures if they enter the LOD. Design must demonstrate in non-erosive outfall onto stable area.

____ _ 10. SC for Trap or Basin: The initial disturbance for construction of a trap or basin must be limited to what is required for installation and stockpiling. Principal spillway is to be constructed first and detailed in the SOC. Provide clean water diversion of runoff from uphill of the trap/basin construction disturbance. If the trap or basin is to be built in a location where there is existing base flow, provide a clean water diversion around the initial disturbance. SC must be provided and shown on the plan.

____ _ 11. Temporary Storm Drain Diversion: Show temporary diversions to traps, basins, and clean water diversions on SC plan view. Include profile on plan view sheet with pipe size, material, length, inverts, and slope. Include diversion installation and removal in the SOC.

____ _ 12. Storm Drain Flushing: Storm drain used to divert flow to a sediment trapping device must be flushed prior to trap removal. Include in SOC.

____ _ 13. Temporary Blocking: Temporary blocking of pipes or pipe openings in structures must be shown on the plan view and identified with a corresponding symbol in the legend. The SOC must address the timing of the installation of the blocking and removal with specific structure numbers noted. Temporary blocking is to be shown on the public or private storm drain profiles.

____ _ 14. Permission for Off-Site Impacts: Permission is required for any temporary or permanent off-site impacts including grading, placement of SC measures, and site access. The applicant must obtain the necessary letter of permission and place it on the plan. When permission is granted via a recorded document, place a note on the plan and reference recording information.

SECTION E - Sediment Traps and DPS Dewatering Devices

____ **PLACE N/A HERE IF THIS SECTION DOES NOT APPLY**

____ _ 1. Design Standards: Traps must be designed per Section G-1 of the MDE “2011 Standards and Specifications for Soil Erosion and Sediment Control” and any applicable DPS design guidance including, including WRTP-1 and WRTP-9.

____ _ 2. Trap Data: In table form with required information per MDE 2011 Standards and Specifications **Sections G-1-1**. Table MUST be placed on the same sheet as the plan view of the trap. At a minimum the information must include:

- Trap Number and Type
- Drainage Area (Initial and Final); Interim only when applicable
- Storage Volume Required and Provided (Wet, Dry, and Total)
- Elevations - Bottom, Dry Storage, Wet Storage, Cleanout (50% of wet storage), and Outlet
- Embankment height, width (minimum 4 feet) and elevation
- Bottom Dimensions
- Max Side Slopes for cut and fill

____ _ 3. Trap Plan View: To scale and on SC plan view sheet. Include:

- Trap Number and Type
- Existing contours and proposed grades
- Bottom and outlet elevations
- Bottom Dimensions
- Side Slopes labeled
- Trap inflow points with inflow protection specified (PSD’s required for DA’s greater than 3 acres.) Max area for RRP or GP is 10 acres
- Trap outflow points with outfall protection specified
- Minimum 42” Welded Wire Safety Fence (do not block inflows and outflows)
- Baffle Boards with dimensions and top elevation
- Located a minimum of 20 feet from existing or proposed building

____ _ 4. Inflow Points and Baffle Boards: Locate to maximize the flow distance to the outlet. Length to effective trap width ratio must be 2:1 or greater. Where a 2:1 effective length to width ratio between inflow and outflow cannot be obtained, baffles are required. Baffles are required when DA is > 3.0 ac. See Detail G-2-4 Baffle Boards.

_____ 5. Outflow Protection: Designed per MDE 2011 D-4 Standards and Specifications for Rock Outlet Protection. Provide project specific design information.

_____ 6. Pipe Outlet Traps (ST-I): DPS requires a separate dewatering device per "Guidelines for Sediment Control Dewatering Device Usage." *The maximum allowable drainage area to a Pipe Outlet Trap is 5 acres.* Dewatering Device design per "Guidelines for Sediment Control Dewatering Device Usage."

Plan must include:

- "Modified Pipe Outlet Sediment Trap ST-1 with Dewatering Device" detail
- Completed "Modified Dewatering Device for Sediment Traps, Sediment Basins, and Stormwater Management Ponds" detail. Specify outfall pipe size and material and method for watertight connection. Provide invert.
- Pipe outlet riser, barrel, trash rack and anti-vortex, base, and anti-seep collar details- materials, diameters, elevations, and dimensions
- Stable pipe outlet trap outfall - To scale. Outfall to existing ground/receiving stream (outlet protection specified) or profile to storm drain system. (Permit required if connecting to public system)
- Construction Specifications for C.9.7 Modified ST-1 Trap placed on plan
- Dewatering device with location, size, material, base, and watertight pipe connections

_____ 7. Stone/Rip Rap Outlet Traps (ST-II): Only permitted when it can be demonstrated that it is not practical to use an ST-I or ST-III trap. Specify and show weir length (must be > four time the DA in acres), outlet elevation at end of rip rap (ex. ground elevation stable trap outfall), weir crest (set at least one foot below the top of embankment) and top of embankment (no more than three feet above existing ground at weir location.) *The maximum allowable drainage area to a Stone/Riprap Outlet Sediment Trap is 10 acres.*

_____ 8. Rip Rap Outlet Traps (ST-III): Specify and show depth of outlet (a), bottom width of outlet (b), width of apron at end (1.5 times outlet width (b)), outlet elevation at end of rip rap (ex. ground elevation - stable trap outfall), outlet crest (at least one foot below the top of embankment), top of embankment (no more than three feet above existing ground at weir location), outlet depth (a) and width (b) and embankment height, width, and elevation. *The maximum DA to an ST-III trap without a DPS dewatering device is 10 acres.*

_____ 9. Rip Rap Outlet Trap (ST-III) with DPS Dewatering Device: When a dewatering device is added to an ST-III trap, the maximum drainage area can be increased to **15 acres**. Design using a required volume of 3600 cf per acre rather than the 5400 cf per acre. Provide 1800 cf per acre wet storage and 1800 cf per acre dry storage. Design per "Guidelines for Sediment Control Dewatering Device Usage."

Plan must include information required per Rip Rap Outlet Traps (ST-III) plus:

- Completed "Modified Dewatering Device for Sediment Traps, Sediment Basins, and Stormwater Management Ponds" detail. Specify outfall pipe size and material and method for watertight connection.
- Dewatering device with location, size, material, base, and watertight pipe connections
- Stable, non-erosive outfall to existing ground with outlet protection specified or outfall to storm drain system (provide profile)

_____ 10. Stable Trap Surface Outfall: Traps must outfall onto undisturbed land per the MDE details.

_____ 11. Dewatering/Draining Trap: Specify method for dewatering/draining the trap and include necessary MDE details (e.g., removable pumping station, etc.) Specify in SOC.

SECTION F - Sediment Basins and Dewatering Devices

_____ PLACE N/A HERE IF THIS SECTION DOES NOT APPLY

_____ 1. Design Standards: Basins must be designed per Section G-2 of the MDE "2011 Standards and Specifications for Soil Erosion and Sediment Control" and any applicable DPS design guidance including WRTP-1.

_____ 2. Basin Design Data Table G-6: Completed and placed on plan sheet.

- _____ 3. Basin Data: At a minimum the information must include:
- Basin Number
 - Drainage Area (Initial and Final); Interim if applicable
 - Storage Volume Required and Provided (Wet, Dry, and Total)
 - Elevations - Bottom, Dry Storage, Wet Storage, Cleanout (50% of wet storage), and Outlet
 - Distance between the top of riser and cleanout sediment elevation in feet and inches
 - Embankment height, width (minimum 4 feet) and elevation
 - Bottom Dimensions and Max Side Slopes for cut and fill
- _____ 4. Basin Plan View: To scale and on SC plan view sheet. Include:
- Basin Number
 - Existing contours and proposed grades
 - Principal Spillway riser and barrel with sizes and materials
 - Bottom, Emergency Spillway, and Outlet elevations
 - Bottom Dimensions
 - Max Side Slopes for cut and fill
 - Location of projection collar, filter diaphragm, and anti-seep collar as applicable
 - Basin inflow and outflow points with outfall protection specified (PSD's required for DA's greater than 3 acres) Max area for RRP or GP is 10 acres
 - Minimum 42" Welded Wire Safety Fence
 - Baffles Boards with dimensions and top elevation – (required when DA is > 3.0 ac.)
 - Located a minimum of 20 feet from existing or proposed building

- _____ 5. Cross Section Through the embankment and Principal Spillway: To scale and placed on the basin plan view when possible and to include:
- Constructed and settled top elevations
 - Riser and Barrel with sizes and materials
 - Location of projection collar, filter diaphragm, and anti-seep collar.
 - Trash Rack
 - Weir Elevation
 - Orifice Size and Invert
 - Max Side Slopes for cut and fill
 - Cutoff trench location, side slopes, dimensions, and material
 - All required WSEL's including safety storm
 - Embankment top width and elevation

_____ 6. Emergency Spillway: To scale profile and cross section.

_____ 7. MCDPS Dewatering Device: Design per "Guidelines for Sediment Control Dewatering Device

Plan must include information required per Rip Rap Outlet Traps (ST-III) plus:

- Completed Modified Dewatering Device for Sediment Traps, Sediment Basins, and Stormwater Management Ponds" detail. Specify outfall pipe size and material and method for watertight connection.
- Dewatering device with location, size, material, base, and watertight pipe connections
- Stable outfall to existing ground with outlet protection specified) or storm drain system

- _____ 8. Basin Details: as applicable including:
- Pipe connections
 - Riser Base
 - Method of Seepage Control
 - Trash Rack
 - Anti-Vortex Device
 - Outlet Protection including material, length, width, and slope (0%)

_____ 9. Embankment Height: Low Hazard Class per USDA NRCS.

_____ 10. Dam Breach: If Basin is to be converted to a pond, provide Dam Breach Analysis approval. Some basins may require MDE pond approval prior to approval of SC plans.

_____ 11. Dewatering/Draining: Specify method for dewatering/draining the basin and include necessary MDE details (e.g. removable pumping station, etc.). Specify in SOC.

_____ 12. Inflow Points and Baffle Boards: Locate to maximize the flow distance to the outlet. Length to effective basin width ratio must be 2:1 or greater. Where a 2:1 effective length to width ratio between inflow and outflow cannot be obtained, baffles are required. See Detail G-2-4 Baffle Boards.

_____ 13. Outflow Protection: To be designed per MDE 2011 D-4 Standards and Specifications for Rock Outlet Protection. Provide project specific information.

_____ 14. Stable Basin Outfall: Basins must outfall onto undisturbed land per MDE detail.

SECTION G - M-NCPPC Forest Conservation Approvals

_____ **PLACE N/A HERE IF THIS SECTION DOES NOT APPLY**

_____ 1. M-NCPPC Tree Protection Measures: SC plan sheets must show all tree protection measures approved by a Forest Conservation Plan, Forest Conservation Exemption Tree Save Plan, Simplified NRI/FSD/Tree Save Plan or any other such plan approved by M-NCCPC related to site trees. A project's sediment control LOD must comply with approved M-NCPPC requirements.

_____ 2. M-NCPPC Forest Conservation Exemption Approval: Place approval letter on SC Plan. Projects that receive a Forest Conservation Exemption ARE subject to Tree Canopy Requirement.

SECTION H - Private Storm Drain – Outfalls, Channels ,and Swales - Include items below in SC Plan Set

_____ **PLACE N/A HERE IF THIS SECTION DOES NOT APPLY**

_____ 1. Outfall Design: Outflow protection per MDE 2011 D-4 Standards and Specifications for Rock Outlet Protection. Provide cross section of rock outlet and plan view detail and specify Type (I, II or III.) Slope = 0%.

_____ 2. Outfall Plan, View and Profiles: For private storm drain outfalls demonstrating non-erosive release of runoff to an existing storm drain system, adequate receiving channel, or stable slope. Include topography for 100-feet below any outfall. Show rip rap with dimensions, size and class (d_{50} and MSHA), rip rap channel constructed depth and side slopes if applicable, slope of the last run of pipe. Q_{10} and non-erosive V_{10} .

_____ 3. Rip Rap Outfall Construction Details: Outfalls must be designed to conform to receiving channel/condition using MDE design specifications. Specify Rock Outlet Protection Type (I, II or III) Include existing and proposed grades, rip rap dimensions (with ranges when applicable), rip rap size and class (d_{50} MSHA class), channel side slopes, max and min. channel depth and Q_{10} depth of flow. Embedded depth of rip rap to be = $2.0 \times d_{50}$. Rip rap to be placed on specified filter fabric.

_____ 4. Engineered Channels and Swales: Plan views and profiles for channels and swales demonstrating non-erosive conveyance and outfall to an existing storm drain system, adequate receiving channel, or stable slope. Include existing and proposed grades, channel length, slope, side slopes, and bottom width.

_____ 5. Cross Sections for Construction: Channel cross section for construction. Bottom width, side slopes, minimum constructed depth, method of surface stabilization, Q_{10} WSEL, freeboard, Q_{10} , and non-erosive V_{10} .

_____ 6. Computations: Q_{10} and non-erosive V_{10} using input based on the design. When practical these can be placed directly on the plan and do not need to be in a separate report.

SECTION I - ESD Review Criteria

_____ **PLACE N/A HERE IF THIS SECTION DOES NOT APPLY**

_____ 1. Soil Reporting for Single-Family Lot Engineered Plans: Individual Single Family lots have unique testing requirements developed to accommodate these projects. Refer to "Soil Testing Guidelines for Stormwater Management Practices" for specifics. The submitted soil report should state that the testing/typing was done in conformance with DPS Guidelines. Test location(s) must be shown and labeled on the sediment control plan. The soil report must include information about auger refusal and presence of observed groundwater. The report must include a plot of the results of each test on the USDA Soil Classification triangle. Failure to provide this information with the initial submission will result in an incomplete review.

_____ 2. Soil Reporting for Non Single-Family Lot Engineered Plans: Report with results of Soil Infiltration Testing. See “Soil Testing Guidelines for Stormwater Management Practices” for specifics. Report should state that the testing was done in conformance with DPS Guidelines. Test location(s) must be shown on plans and labeled to match the report. Soil logs must include information about refusal, groundwater, and presence of fill soils. Geotech’s recommendations should be incorporated into the SC/SWM design as applicable. A complete Geotech Report must be uploaded with the sediment control review package. Failure to provide this information with the initial submission will result in an incomplete review.

_____ 3. USDA Hydrologic Soil Group Information: Plan view sheet from Web Soil Survey with site outlined. Soil map units delineated, labeled and noted. Table with Hydrologic Soil Groups for project’s Soil Units to support Target PE determination. Do not include unnecessary sheets from the Soil Survey in your submission.

_____ 4. ESD Design Requirements: All ESD measures designed in accordance with current MCDPS - Requirements and Guidance Documents.

_____ 5. ESD and SWM Computations: Place on a plan sheet for single family engineered lots. A separate report is acceptable for larger projects. Include: Target P_E and Target ESDv utilizing “Water Resources Technical Policy No. 5”. Computations for ESDv min, max and provided for each proposed ESD measure. Structural Computations per WRTP-6 and MDE guidance must be provided for calculation of required structural SWM (Chapter 3 practices) after ESD to the MEP has been met. When curb cuts are used to convey flow to a practice, provide necessary efficiency computations to support the number and width of the inflows into the ESD measure.

_____ 6. 10 Year SD conveyance system and ESD: Whenever possible, volume to be treated in an ESD should be flow split and sent to the measure with the 10-year storm continuing in the storm drain conveyance system. When not possible to split, provide computations to demonstrate safe conveyance of ten-year event through ESD measures. In some cases, for example in courtyards, it is necessary to demonstrate that overflow from a facility will have a safe route and will not flood buildings. Provide spot elevations and labels as necessary. Locating the 10-year conveyance pipes through or under ESD facilities should be avoided and will only be acceptable on a case-by-case basis when no other layout is possible and with approval from other affected agencies. 10-year conveyance pipes can never connect into perforated underdrain systems of a downstream ESD. They must be located outside of the facility. The Q_{10} WSEL must be contained within ESD facilities and the SWM Easement and cannot be permitted to flood surrounding areas. For example, the Q_{10} WSEL cannot back out of a curb cut and pond in an adjacent parking lot.

_____ 7. Impervious Surfaces: Gravel and decks are to be considered impervious surface for purposes of SWM computations. Alternative surfaces shall be considered to be impervious when calculating the project’s ESDv required.

_____ 8. Ponding and Storage Volume: Disregard mulch layer for ponding depth and when computing storage volume. Ponding and storage volume can only be credited over the surface area of the planting media and immediately adjacent side slopes.

_____ 9. Roof Drainage Plan for Single Family Lots: Include a diagram of the roof as an inset with square footages for each roof segment that drains to each downspout. Label the roof segment to indicate which ESD measures they drain to (e.g., to DW-4, to MB-6). Show and label downspouts on plan view and on inset. Provide other information as needed to demonstrate the roof drainage. When the roof drainage system is unusual, such as with some contemporary architecture with flat and terraced roof, it may be helpful to upload the roof plan and elevations from the building permit set.

_____ 10. Overall SWM Plan and Drainage Area Map: These can be combined on one view if practical and readable. Measures shown and labeled. DA’s to each SWM measure delineated and quantified in square feet – within the area if possible. Pervious and impervious surfaces clarified on plan view and square footage noted. Areas and percent impervious on DAM matches computations. USDA Soil Survey map units and hydrologic soil groups delineated on plan. When applicable to the type of project, add a note that “Condensate drains from HVAC systems are not permitted to drain into a SWM facility “on the DAM.

_____ 11. SWM Easements Delineated: *Show proposed delineations on initial submission for review.* Once delineation is approved by the reviewer, show on SWM plans views and Overall SWM Plan, DAM, and larger scale views. Easements must be sized to provide adequate area for access and long-term maintenance and inspection as well as potential reconstruction and should provide 10 feet around a measure whenever possible. Label the critical dimensions from measures to easement limits, especially in cases where 10 feet cannot be achieved. Easements limits must extend to a paved driveway or parking lot on common area or to a public ROW. Show existing SWM easements to be terminated with recording information when applicable. Failure to delineate easements may result in delay of plan approval because plans

cannot be approved until the SWM Easements are recorded. Since Easements place restrictions on future use of the affected areas, they should not be larger than needed as described above.

_____ _____ _____ 12. Scale: Plan view: Use large and legible engineer's scale appropriate for complexity of design. Sections: Use large and legible engineer's scale appropriate for complexity of design.

_____ _____ _____ 13. ESD Plan View: Plan view information dependent on ESD type but may include:

- Location, dimensions and surface square footage when applicable
- Existing and proposed grades with critical elevations including media surface
- Show critical setbacks with dimensions
- ESDv and Q10 WSEL delineated, and elevations noted
- Top and bottom of walls on either side
- All components shown and labeled with size and material when applicable. (e.g., underdrains, overflows, overdrains, and cleanouts, cleanout caps, etc.)
- Max. side slope
- Inflow points - location, size, dimensions, material, spot grades, inverts, and type (e.g., curb cut, roof drain)
- Inflow erosion preventing method - locations, material, size, dimension, and detail
- Adjacent conditions (parking, sidewalk, wall, building, etc.)
- Rooftops disconnect paths, slopes, lengths, and disconnect areas with widths, lengths and slopes
- Overflow path in cases where facility failure may result in destructive flooding
- Outline of structural footers
- SWM easement limits
- Fences and gates (min 12-foot opening for access) and other safety barriers

_____ _____ _____ 14. Sections: Information dependent on ESD type but may include:

- Existing and proposed grades
- ESDv and Q₁₀ WSEL delineated, and elevations noted
- Top and bottom of walls
- Dimension from top of wall to surface
- Freeboard
- Ponding depth in inches and elevation
- All components shown and labeled with size and material when not on Plan View. (e.g., underdrains, overflows, overdrains, and cleanouts, cleanout caps, etc.)
- Max. side slope
- Inflow points
- Adjacent conditions (parking, sidewalk, wall, building, etc.)
- Detailed cross sections for construction of bio-swales or grass swales.
- Structural walls, slabs, and footers
- Fences and other safety barriers
- Crossings with other utilities and storm drain
- SWM, Property and ROW limits delineated and labeled
- 10-year HGL
- Adjacent buildings with first floor elevations or garage slabs. Footers with elevations and dimensions when applicable with zone of influence. Requires coordination with DPS Building Permit.
- Adjacent existing and proposed utilities especially if within the SWM Easement. Show SWM Easement limits.

_____ _____ _____ 15. Profiles: Provide profiles of outfalls from facilities when not shown elsewhere.

_____ _____ _____ 16. Details and Specifications: Provide *project specific details* for all components of the ESD. Include, sizes, dimensions for overflow structures with tops, perforated and non-perforated pipes, cleanouts, rails, facility inflows, curb cuts, concrete flumes, etc. Except in the case of the drywell detail, do not use Example Details found in the MCDPS Guidance Document at Final Design. Provide project specific information per this checklist.

_____ _____ _____ 17. Material Specs and Standard Sections: Provide project specific material specification. It is not necessary to include DPS Guidance Document Sizing information.

_____ _____ _____ 18. MCDPS "Sand Specifications": Include for all measures that utilize sand.

_____ 19. References to Other Sheets: Notes on Plan views and Profiles referencing plan set location for details, material specs, landscaping, and structural details. (e.g. see Sheet No. ___ for [specified item].)

_____ 20. Safe Placement/WRTP-8: Horizontal and vertical design of measures to ensure safe placement of surface fed measures per WRTP-8. Critical elevations, slopes, and locations of adjacent vehicular and pedestrian improvements on plan views, profiles, and sections. Provide barriers (plan, section, detail) when warranted. Label critical dimensions to facilitate review such as top of wall to media inside a facility and ground to top of wall for access into a facility.

_____ 21. “Construction Inspection Check-off List” and Certifications: Include DPS Check-Off Lists for all practices.

_____ 22. Maximum Drainage Areas: All ESD measures designed at or below maximum drainage areas. Dry Wells sized to treat no more than 1000 sq. ft. each. Contiguous Permeable Pavement areas are limited to <10,000 square feet. Drainage Areas to Micro-bioretenention are limited to 20,000 sq. ft. See other MCDPS Design Guidance documents for other drainage area limitations.

_____ 23. Applicability: Dry Wells can only be used to treat roof runoff. Grassed Swales can only be used to treat roadways or driveways. See other MCDPS Design Guidance documents for other design limitations.

_____ 24. ESD Landscaping: All SWM measures that incorporate landscaping, including green roofs, grass swales, and bio-swales, require specific cover and landscape design, plant list, planting details, notes and seal and signature of a Maryland Registered Landscape Architect. Landscape plan view must show all appurtenances including pipes, overflow structures, inflow protection, etc. to ensure there are no conflicts.

_____ 25. Permeable Concrete: Include the following notes on the plan and in the SOC as noted below:

- Installation must be performed by a National Ready Mixed Association Certified Pervious Concrete Installer – note on plan with detail and stated in the SOC.
- All construction must be performed in accordance with America Concrete Institute Specification ACI 522 1-13 – note on plan with detail and state in SOC.
- Poured in place concrete must remain free from all light vehicular traffic, for a minimum of 7 days. Heavy vehicular traffic must be restricted for at least 10 days after placement.
- Post construction infiltration rates required for all surfaces must conform to ASTM C1701 for poured in place permeable concrete, or ASTM C1781 for permeable pavers. Infiltration rate and specific test locations must be submitted along with the Stormwater Management “As-built Plan.”
- Permeable pavement must be vacuum cleaned and paver joints refilled as necessary prior to final inspection.

_____ 26. Green Roof Plan, Sections and Details: Provide plan view with square footages to match the computations. Provide project specific section with all layers (depths and elevations.) Provide details for sidewalls, drains and any other elements of the Green Roof. Show elements as required by MDE (waterproofing, drainage, etc.) and reference the plans that spec’s them if not the SWM plan (e.g., waterproofing per architectural plans.) If used, specify proprietary system and provide manufacturer’s details and specification. If proprietary system includes pre-planted trays, include that information and provide the seal of a Maryland Registered Landscape Architect. Effective RCN’s for proprietary Green Roof products must be in accordance with MDE “Stormwater Design Guidance – Green Roofs (March 2018)”.

_____ 27. ESD Measures with Structural Elements (walls, boxes, etc.): Provide project specific plans signed by a qualified professional and designed for all conditions. Details to include pipe penetrations and rails as applicable. Some circumstances may require coordination with the Building Permit Group of DPS. Facilities need to be safe and stable when filled with media and when empty. Adjacent structures must be unaffected by maintenance or removal of SWM facilities. Retaining walls integral to the functioning of the SWM facility including storage and safe passage of the 10-year event are considered to be part of the facility and must be included in the plan set and contained within the SWM Easement. If facilities are to be precast, indicate on the plan and add note that shop drawings must be prepared, approved by the project engineer, and submitted to DPS plan reviewer for acceptance, utilizing standard precast checklist, prior to fabrication.

_____ 28. Flowsplitters: Include DPS standard detail (Diversion Structure Manhole Detail) with project specific information for each flowsplitter. Specifically call for out the installation of flowsplitter structures, by number, in the SOC and include a step that the contractor must verify the relationship between the invert of the flow splitter pipe and the invert of the overflow prior to backfilling around the structure. Include computations to support relative elevations for flowsplitter pipe size and invert versus 10-year out invert. When necessary, include computations to demonstrate safe conveyance of the 10-year through the flowsplitter and show the 10-year WSEL. Flowsplitters are part of the SWM system and must be within the SWM Easement.

_____ 29. Access to ESD through a Building: When access to the SWM measures requires building entry such as to a Green Roof or a Micro-bioretenion planter box on a terraced roof, the Green Roof Plan or DAM must show the location of the roof access and should include a note that states “Access for maintenance and inspection of the XXX shall be in accordance with the recorded Grant of Stormwater Management Easement and Right-of-Way and the Declaration of Covenants Inspection and Maintenance of Stormwater Management Systems.” When access to a green roof or any other facility requires a ladder on the roof, the ladder must be included in the building plans and must be provided per DPS Building requirements.

_____ 30. Access for Maintenance and Inspection of all ESD Facilities: Access from adjacent ground level to facilities must be reasonably wide and low as to facilitate practical maintenance and inspection by personnel. Where necessary utilize sections, plan view information or both to demonstrate practical access to the facilities. Access should not be dependent on the use of a ladder or other equipment. Label critical dimensions on appropriate plans to facilitate review such as top of wall to media inside a facility and ground to top of wall for access into a facility.

_____ 31. Other non-SWM ESD Measures: Any measures that are proposed solely to demonstrate compliance with Small Lot Drainage Bill 26-05 or any other municipality’s drainage policies must be shown and clearly labeled as “not a DPS stormwater management practice.” Measures must be within the LOD and have appropriate SC. These measures cannot be used to satisfy a project’s County SWM requirements and must be shown on the approved SC/SWM plan. If approvals of other measures occur after DPS has approved the SC/SWM plan, a formal revision will be required.

_____ 32. Easements and Agreements on Subdivided Property: Easements and Agreements must reference the subdivided property and cannot be placed on projects/properties before plats are recorded. Easements and Agreements are typically required to be recorded prior to plan approval and permit issuance.

_____ 33. Easements and Agreements for SWM measures: For **Single Family or Townhome Residential Lots where maintenance will solely be the responsibility of the individual property owner** (such as individual lot with drywells) – Submit correct, completed, and executed “Grant of SWM Right-of-Way and Maintenance Agreement” to reviewer for approval prior to recordation. Note: Single Family Lots owned by LLC’s and Corporations utilize a modified document.

For All other SWM measures to be maintained by HOA, Condo association, etc. – Once limits are approved by the reviewer, submit correct, completed, and executed "Grant of SWM Easement and Right-of-Way and Declaration of Covenants Inspection/Maintenance of SWM System" incorporating the required exhibits for approval prior to recordation.

Notes: Some projects will require both Agreements and Easements/Covenants. Typically, SWM in the County ROW will be maintained by the County and do not require easements. If terminations of SWM Easements are required, they must be prepared and processed for approval concurrently with the new easements. Templates for all documents can be found on the County’s Department of Environmental Protection website.

SECTION J - Builder’s Sediment Control Plans (For transfer of SC and SWM responsibilities to a Builder /Permittee for a lot or parcel after issuance of the original permittee/developer’s permit)

_____ **PLACE N/A HERE IF THIS SECTION DOES NOT APPLY**

_____ 1. Requirements: Plans prepared and processed per “Builders Sediment Control Plan Requirements” guidance document, including plans with updated title blocks identifying lots and blocks or other property designations covered under the Builder’s permit. Builders Name, Address, Contact Name, phone and email.

_____ 2. Developer/Builder Sediment Control Transfer Agreement: completed, executed and a copy placed on first sheet of the SC plan. See very specific information regarding parties that are required to sign the agreement.

_____ 3. Certifications: Owner/Developer; 2) Design; 3) Quantities, completed, signed by new owner and on plan.

_____ 4. Lots Included in Builder’s SC Plan: Subject lots clearly delineated, and all plan ownership references revised for new owner.

_____ 5. On-Lot SC and SWM: All design and plan requirements with computations for subject lot(s). All applicable SC and SWM details, materials specs, Inspector Check-off Lists and certifications and any other information as required.

_____ 6. Sequence of Construction: For work to be done under the Builder's Plan. Include submission of as-built or Record Drawing Certification for on-lot SWM as appropriate.

SECTION K - Special Protection Areas – Plans subject to a Water Quality Plan

_____ PLACE N/A HERE IF THIS SECTION DOES NOT APPLY

_____ 1. Disturbed Area for BMP Monitoring Fee: Provide square footage, when applicable.

_____ 2. Other information: as required for SPA's (e.g., impervious percentage cap, proposed impervious percentage, etc.)

SECTION L - Transfer of Ownership Plans (to transfer all work associated with an already issued permit from one permittee to another permittee – administrative action not requiring technical review of measures)

_____ 1. Updated Information: New owner/permittee information name, address, contact, phone, and email. New signatures on certifications, etc. as applicable. Plans updated for any DPS requirements enacted after the original approval dates (e.g., Right-of-Entry Agreement, Drainage Statement, etc.)

SECTION M - Tree Canopy Requirements (When planting trees for Tree Canopy compliance)

_____ 1. Trees: Show and label Tree Canopy trees, Growing Zone (400 sq.ft.) and Planting Zone per Executive Regulation 22- 13. Zones shown to scale. For projects where the trees will be planted in an area that is not otherwise disturbed as part of the development, the LOD does not need to be expanded to include the tree planting areas.

_____ 2. Trees Planted to Satisfy M-NCPPC Requirements: Trees planted in order to meet a specific M-NCPPC requirement such as Significant Tree Replacement or other requirements associated with a Forest Conservation Exemption or any other plan approved by M-NCPPC related to site trees can be counted towards meeting the Tree Canopy Requirements when the species proposed is from the DPS "Approved Shade Tree List." Only M-NCPPC can approve a revision, such as a species substitution or new location for a tree to be planted, to a plan that they have approved.

_____ 3. Details and Notes: MCDPS "Tree Planting Detail for Balled and Burlap Nursery Stock" and "Standard Tree Canopy Notes" on plan.

_____ 4. Species: Specify specific shade tree species to be planted MCDPS "Approved Shade Tree List."

SECTION N - Roadside Trees Protection (Impacts to trees in the MC and MSHA Rights-of-Way)

_____ 1. ROW Trees: Show existing trees in the ROW adjacent to the property and ROW trees within 50 feet of the LOD to either side of the property. Provide species, size and Critical Root Zone and tree protection measures on the SC plan to match Roadside Tree Protection Plan. SOC must include the requirement to bring a copy of the approved Roadside Tree Plan to the Pre-construction meeting. Expand legend as needed.

_____ 2. ROW Tree Impacts and Protection: SC Plan shows trees to be removed, trees to be planted, tree protection measures and LOD per the approved Roadside Tree Protection Plan.

SECTION O - Small Lot Drainage (Lots less than 15,000 square feet)

_____ 1. Demonstrate compliance with Bill 26-05 - Drainage on Small Lots: If specific grading is required to achieve compliance (such as a swale to keep runoff on the lot and direct it to a public ROW and not an adjacent private lot) then the plan must include a note identifying those areas on the plan.

SECTION P - Supporting Documents/ Drawings/ Other Approvals

1. Recorded Right-of-Entry and SWM Easements and Terminations: Recorded prior to plan approval.
2. Structural Computations: To support the design of structural components of the SWM design. Submit a copy of the computations signed and sealed per the guidance for Qualified Professional contained in this checklist. Structural plan sheets in the sediment control plan set must include a complete Structural Certification. Include DPS Concrete Specifications on plan.
3. Sediment Control Computations/Report: When required to support SC design, signed and sealed.
4. Private and Public Storm Drain Plans: Copy of the storm drain plans to be used by contractor, to check consistency with the sediment control and SWM plans.
5. Adequacy of Downstream Public Storm Drainage Systems: Provide documentation from the approving authority (DOT, DPS - ROW, SHA) that the downstream public storm drainage system is adequately sized for the development. Downstream system includes inlets, piped systems, culverts and roadside swales.
6. Roof Drainage Plan and Plumbing Riser Diagram for Commercial, Industrial or Multi-Family Residential: Copy of roof drainage plan view with square footages to show/support/match DA's on SWM DAM including Drain, downspout or runnel locations. The engineer must confirm that the plumbing plans match and support the SWM plan's roof drain locations, inverts, and materials. Note: HVAC condensation lines may not drain into ESD measures.
7. Wetlands/Waterways Permit: When these permits are required, copies of permits must be submitted prior to DPS approval of plans. Related Required Permits Table must be completed with permit information.
8. Approved Roadside Tree Protection Plan: Applicable approved sheet(s) as approved by DPS ROW Section for confirmation that the plan matches the SC plan.
9. M-NCCPC Approvals: As applicable, Approved Preliminary Plan with Resolution, Site Plan with Opinion, Forest Conservation Plan or Exemption must be received prior to plan approval. All proposed work in conformance with other approvals.
10. MCDPS Floodplain District Permit (FPDP): The Floodplain District Permit will be issued immediately prior to approval of the Sediment Control plans.
11. Water Quality Plan Pre-Application Minutes: Submit a copy of the approved pre-application meeting minutes for projects in SPA's.
12. SWM Waiver: Provide zoning for single family lot waivers. For all other uses provide site's percent imperviousness and percentage of Target PE achieved.
13. Parks Department Plan Approval: Plan signed by Parks prior to DPS approval - for work on M-NCPPC property or work on land to be dedicated.
14. MSHA Plan Approval: Plan signed by MSHA prior to DPS approval – for project's that include MSHA reviewed SWM measures. Approved MSHA SWM sheets must be included in the DPS SC/SWM set with a note that they are not reviewed, approved, permitted or inspected by DPS.
15. WSSC Plan Approval: Required for any house connections crossing Bio Swales. Prior to DPS plan approval.
16. Other Information: As required or as requested.

Notes:
