CHAPTER 12, APPENDIX C

RECOMMENDED STANDARDS FOR E&SPC PLANS

12C.0 GENERAL

The Erosion and Sediment Pollution Control (E&SPC) Plans include both a set of drawings for construction and a technical narrative. The Department typically titles the drawings for construction the Erosion and Sediment Pollution Control Plans as discussed in 12C.1. The required E&SPC technical narrative is discussed further in 12C.2. The following guidance is a combination of PA DEP's recommendations for developing an E&SPC Plan, and PennDOT's standards and preferences. It is important to note, however, that preferences may vary between County Conservation Districts, and even PA DEP regional offices. Therefore, it is important to coordinate with the agency that will be reviewing the E&SPC Plan.

Standards in Publication 14M, Design Manual, Part 3, Plans Presentation, related to borders, title blocks, and general plan presentation must be applied. However, not all of the information pertinent to E&SPC Plans is described in Publication 14M, Design Manual, Part 3, Plans Presentation; complimentary information is described below.

All drawings included in the E&SPC Plan must be legible. Letters and numbers used on the plans must be readable. Symbols used should be readily distinguishable from each other, and clutter should be avoided. Drawings should be clearly labeled and dated. Revised drawings must have the date of each revision shown. Sufficient space should be provided on the top sheet for the approval stamp and signature of the reviewing agency. The location of this space should be such that the stamp and signature are visible when the drawing is folded.

At least one set of drawings submitted to any agency for review must be full size. To facilitate review, it is recommended that a composite work area plan (or roll map) be submitted in addition to the regular plans. The composite plan should show the entire project, or major portions thereof, with proposed contours, E&SPC BMPs, and staging or work area boundaries.

The name of the plan designer along with his/her contact information should be provided on the cover sheet, as well as in the narrative. Also provide the District's contact information on the cover sheet and in the narrative.

12C.1 PLAN DRAWINGS

Plan drawings contain all of the information that the contractor needs to build the project. Information not needed by a contractor, such as supporting calculations or manufacturer's test data, should be placed in the E&SPC narrative. In general, the plan drawings should contain:

- Cover sheet
- Detail sheets
- Plan sheets

The engineer responsible for the plan must place a black ink rubber stamp seal and his/her signature on the cover sheet. Either a black ink rubber stamp seal or a facsimile seal must be placed on all subsequent sheets.

Separate plans must be included for offsite borrow or disposal areas, if known, which are part of the project. If offsite borrow and disposal areas are not known, a general note should be added to the plan stating that the contractor must develop and obtain approval of a separate erosion E&SPC Plan for each work area not detailed in the plan located outside of the limits of disturbance. These drawings must include all information required on the main drawings.

A. Cover Sheet. At a minimum, the cover sheet of the drawing set should contain the following information:

- Title
• Call Before You Dig / PA One Call logo and serial number
• Location map (Type 10) with the limits of work identified, scale, and north arrow
• Sheet index
• Contact information of the County Conservation District (and PA DEP Regional Office for JPA2 projects) and District contact
• Name and contact information of the plan preparer

The General Notes and/or other supplemental information may also be included on the cover sheet if space is available.

B. Detail Sheets. Supplemental drawings include any notes, details, etc. that are integral to the overall E&SPC Plan. Each bit of information a contractor will need in order to correctly install, operate, and maintain each of the proposed E&SPC BMPs should be placed on the drawings. This includes:

1. General Notes. Refer to Appendix 12B, Recommended Notes for E&SPC Plans for a list of common general notes for E&SPC Plans.

2. Sequence of BMP Installation and Removal. The order in which E&SPC BMPs are installed and removed relative to the general sequence of construction activities is critical information. Each BMP should be clearly identified in the sequence. A general statement such as "Install perimeter BMPs, as shown" is not sufficient.

3. Maintenance Plan. It is recommended that maintenance information be placed near the detail for the BMP for which it is appropriate. However, a separate Maintenance Schedule should be provided specifying responsibility for conducting inspections, frequency of those inspections, general time frames for completing repairs, and instructions for disposing of sediment cleaned from the various BMPs.

4. BMP Details. A detailed plan view (drawn to scale) should be provided for each proposed sediment basin. This plan view should include proposed contours and show all points of inflow into the basin as well as all outlet structures (principal and emergency spillways) with the proposed outlet protection for both inflows and discharges. Other features such as clean-out stakes and baffles (where needed) should also be shown. Other pertinent information should be shown on typical details. Any other E&S related structure or BMP requiring a scale drawing must also be shown on a plan drawing with all critical dimensions indicated.

Other BMPs for which scale drawings are not required (e.g., channels, stabilized construction entrances, silt fence, etc.) may be shown on typical drawings. Chapter 12, Erosion and Sediment Pollution Control, and Publication 72M, Roadway Construction Standards, contain most of the typical details that will be needed for a project. However, if there is a particular BMP that PennDOT does not have a detail for, the PA DEP E&S Manual should be consulted for the appropriate measure. Note that if a detail from the PA DEP E&S Manual is used and it is necessary to alter the detail, the term "Standard Construction Detail" cannot be used. Care should be taken to include all pertinent data with the typical details, including critical dimensions and elevations as well as accompanying notes and tables. Tables should be included where a particular BMP will be used in more than one location with differing specifications for each location.

5. Temporary and Permanent Stabilization. The means for providing temporary and permanent stabilization should be included in the supplemental drawings. Typically, this can be addressed by placing the recommended seed mixes, fertilizer, mulch application, and provisions for stabilization during non-germinating periods.

6. Recycling and Disposal of Waste Materials. Instructions for how the contractor should dispose of or recycle waste materials (e.g., concrete, metal, rock, asphalt, etc.) must be provided on the plan.

7. Means to Address Soil Limitations. The means to address the identified soils limitations must be included on the drawings. For example, a note to use only certain areas as borrow areas for fill for sediment basins or traps, or special fertilization requirements for portions of the project, etc.

8. Index Map for Work Area Drawings. When the work area extends beyond a single plan sheet, provide a sketch of the overall project area showing the location of match lines or outlines of sheets.
C. Plan Sheets. Work area drawings are those plan sheets that contain planimetric and topographic information of the work area. Each plan drawing showing the work area must have a graphic scale, north arrow, a legend identifying all symbols used, and match lines (if more than one sheet is required).

The coverage of the work area drawings(s) must include sufficient surrounding area so that the maximum-during-construction drainage areas to all disturbed areas and BMPs can be shown. Where drainage areas are too large to be shown on the plan maps, such as offsite areas draining to diversion ditches, they should be indicated on the plan and depicted on the location map(s) in the narrative.

The scale of the plan map(s) must be large enough to clearly depict the topographic features of the site. Contours must be at an interval that will adequately describe the topography of the site. A scale of 1 inch equals 50 feet or less, with 2-foot maximum contour intervals should be used unless the reviewing agency agrees that another scale and/or contour interval is appropriate (e.g., extremely steep or extremely gentle slopes). Both existing and proposed grading contours must be shown on the plan. Existing contours should be dashed and lighter in shading than proposed contours. Proposed contours should be solid and dark.

All E&S features must be indicated by symbols and a legend of symbols provided on each page (refer to Publication 14M, Design Manual, Part 3, Plans Presentation, Chapter 13). Symbols may be identified by use of notes and arrows as long as this does not clutter or otherwise cause confusion. Match lines must identify the adjoining work area drawing(s). An overall map should be provided for projects having many adjoining plan maps to indicate how the individual plan maps fit together.

All existing roadways, municipal boundaries, streams, watercourses, wetlands, other surface waters, FEMA floodways, structures, utilities, and identifiable landmarks within or in close proximity (that could affect or be affected by the project) should be shown on the work area drawing(s). Each roadway should be identified, along with legal right-of-way lines and any temporary or permanent easements. Stream names must be provided, and unnamed streams should be labeled "Unnamed tributary to…" Wetlands should be labeled in a manner consistent with the delineation report.

All proposed improvements, such as roads, storm sewers, utilities, etc., must be shown on the plan. Station numbers should be provided for all proposed roadways, pipelines, major utility lines, and stream channel relocations. These station numbers should be consistent with any that are specified in the Sequence of BMP Installation and Removal.

The proposed limits of disturbance must be shown on the work area drawings. All proposed earthmoving as well as all proposed E&SPC BMPs must be located within those boundaries. Any areas within those boundaries that are to remain undisturbed should be clearly delineated. Permitted sites must also clearly show the NPDES permit boundaries. It cannot be assumed that the limits of disturbance or the property line is the permit boundary.

All proposed E&SPC BMPs (including erosion control blankets), waterways, and stormwater management facilities must be shown on the plans. Where projects are to be constructed in phases, plans for each phase (showing the BMPs that will be present and functioning during that phase) should be provided. Each BMP should be clearly labeled and consistent with those used on the detail sheets and in the supporting calculations section of the narrative. Whenever channel dimensions or linings change, it must be clearly shown on the plans.

Sites discharging to Special Protection Watersheds must meet stricter standards and specifications. Where only part of a project is tributary to such a watershed, that portion of the project should be clearly delineated on the plans. Likewise, areas of special concern, such as potentially hazardous materials; areas prone to sinkhole formation, landslides, or mine subsidence; and resource areas that will be protected (e.g., natural drainageways, riparian buffers, unusual geologic features, etc.) should also be shown.

12C.2 NARRATIVE

In general, the narrative should include the items listed in the following paragraphs. Details are provided for each.

A. Project Description. An overall description of the location and proposed construction activities should be provided in the narrative. For non-permitted projects, also describe the past, present, and proposed land uses. For
projects using the general NPDES permit, refer the reader to Section B of the NPDES NOI form. An example of the NPDES NOI form Section B is provided in Appendix 4B, *Sample Notice of Intent (NOI) Application Form*.

### B. Location Map.
A location map that shows the relationship of the project to municipal boundaries and major highways must be provided as part of every E&SPC Plan. The location map must be reprinted or copied from the appropriate 7½ minute USGS quadrangle map(s). The name(s) of the quadrangle(s) must be included on the location map. The location map must be included in the E&SPC narrative.

### C. Soils.
The preferred method of showing soils boundaries within the project area is to provide a legible photocopy of the appropriate soils map(s) from the NRCS website with the project outline clearly shown and identified. The locations of all proposed sediment basins and traps should also be shown on the map(s). These soil maps should be located in the E&SPC narrative. An acceptable alternative is to plot the soil boundaries on the E&SPC Plan drawings. When this option is chosen, care should be taken to avoid error due to enlargement of the soil map from which the boundaries are taken.

The types, depth, slope, and limitations (related to the proposed application) of the soils may be included in the narrative (preferred) or included on the drawings. Potential resolutions to each of the soil limitations that are noted should also be provided. Data on the physical characteristics of the soils, such as their texture, resistance to erosion, and suitability for intended use should be included in the narrative report. Hydric soils should also be identified. This information is available in soil survey reports, published by the USDA, Natural Resources Conservation Service (formerly Soil Conservation Service), in cooperation with the Pennsylvania State University College of Agriculture and others.

### D. Waters of the Commonwealth.
All streams in Pennsylvania are classified based on their designated and existing water uses and water quality criteria. Designated uses for Commonwealth waters are found in PA Code, Title 25, § 93.9a through § 93.9z. Existing uses of Commonwealth waters are usually the same as the designated use, except where information has been provided to or obtained by the PA DEP which indicates that a particular water body actually attains a more stringent water use than the designated use. Existing uses are protected pursuant to PA Code, Title 25, § 93.4a through § 93.4c. Names of stream receiving runoff from the project and their designated and existing water uses must be noted in the narrative.

### E. Description of E&SPC BMPs.
For non-permitted projects, describe the types of BMPs being used on before, during, and after earth disturbance activities. For permitted projects, refer the reader to Section 10 of the NPDES NOI form.

### F. Calculations.
The area draining to each BMP must be determined. In some instances the drainage area will increase or decrease as the site grading proceeds. In such cases, the maximum drainage area to the BMP must be used to determine the design capacity. If the runoff from a project area discharges to a stream that is classified for Special Protection, more stringent criteria are used to design the BMPs for that site.

The design (for E&S purposes) peak discharge rate and outlet velocity for each point source discharge from the project should be tabulated in the narrative.

Other BMP calculations that must be provided in the narrative include those for:

- Channels
- Sediment basins
- Sediment traps
- Outlet protection

Use of the Standard Worksheets in PA DEP's E&S Manual is highly recommended. Worksheets may be printed and completed by hand, or they can be scanned and completed electronically.