

## **APPENDIX D - STANDARDS FOR MAPS AND DRAWINGS**

Only those typicals and details pertinent to the E&S Plan should be shown on the plan drawings. Each sheet should be clearly labeled "E&S Plan" or Erosion and Sediment Control Plan." Statements such as "Not for bidding" or "Not for Construction" may not be placed on these drawings. All maps and drawings included in the E&S Plan should be legible. All letters and numbers used on the plans should be readable without magnification. Symbols used should be readily distinguishable from each other, and clutter should be avoided. Information pertinent to the E&S plan as described below should be shown on the plan maps and drawings. All other information should be omitted.

The name of the plan designer along with his/her contact information should be provided.

All maps and drawings should be clearly labeled and dated. Revised maps should have the date of each revision shown. For permitted sites, 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 map is folded. Maps and drawings having revision dates more recent than the latest approval date will be assumed to be unapproved versions of the E&S plan.

At least one set of maps and drawings submitted to any agency for review should be full size. To facilitate review, it is recommended that linear projects submit a composite plan map showing the entire project, or major portions thereof, proposed contours, E&S BMPs, and staging or work area boundaries.

### **LOCATION MAPS**

A location map that shows the relationship of the project to municipal boundaries and major highways should be provided as part of every E&S plan. For all permitted sites, the location map should be reprinted or copied from the appropriate 7 ½ minute USGS quadrangle map(s). Where these maps are found to be lacking pertinent data, such as new roads, an additional location map (e.g. ADC street map) may be provided. The name(s) of the quadrangle(s) should be included on the location map. For non-permitted sites, any location map found to be inadequate to properly locate the site should be replaced by a photo copy of the USGS map. The location map should be included as an insert on the plan drawings.

### **SOILS MAPS**

Soil boundaries may be plotted on E&S plan maps. Where this option is chosen, care should be taken to avoid error due to enlargement of the soil map from which the boundaries are taken. An acceptable alternative is a legible photocopy of the appropriate soils map 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.

### **PLAN MAPS**

For the purposes of this section, "Plan Maps" should refer to those maps placed on sheets separate from the plan narrative. Each plan map should have a graphic scale, north arrow, a legend identifying all symbols used, and match lines if more than one sheet is required. Symbols may be identified by use of notes and arrows as long as this does not clutter or otherwise cause confusion. Match lines should identify the adjoining map(s). An overall map should be provided for projects having many adjoining plan maps showing how the individual plan maps fit together.

The scale of the plan map(s) must be large enough to clearly depict the topographic features of the site. Contours should be at an interval that will adequately describe the topography of the site. For permitted sites, 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,

such as for extremely steep or extremely gentle slopes. Smaller scale maps and greater contour intervals may be approved for pipeline and utility line projects where warranted. Existing contours should be dashed and lighter in shading than proposed contours. Proposed grading should be shown on the E&S plan map. Proposed contours should be solid and dark. Provide proposed contours for all basins, traps, and channels. At a minimum, contours should be labeled in 10 foot increments. It is recommended that closed contours be labeled as well.

All existing roadways, municipal boundaries, streams, watercourses, wetlands, other surface waters, Federal Emergency Management Agency (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 plan map(s). Perennial and intermittent streams (should be identified as such on the plan drawings. Each roadway should be identified, and stream names should be provided. Unnamed streams should be labeled "Unnamed tributary to..." Wherever soil maps indicate the presence of soils having major hydric components or hydric inclusions, a wetland determination should be conducted to find out if wetlands do in fact exist, unless current land use like a parking lot, shopping mall, etc. makes it obvious that no wetlands are present. Wherever it is determined that wetlands exist on site (or off-site but could be affected by the proposed earthmoving) a delineation should be conducted to establish their location and shape. Wetlands should be labeled in a manner consistent with the delineation report. Delineations older than 5 years should not be used on any new plan submittal unless agreed to by the reviewing agency.

The coverage of the map(s) should include sufficient surrounding area so that tributary drainage areas as well as receiving watercourses can be identified and evaluated for resistance to erosion. Where receiving watercourses are located beyond coverage of the plan maps, they may be identified on a USGS topographic map in the narrative or on the plan drawings.

The proposed limits of disturbance should be shown on the plan maps. All proposed earthmoving as well as all proposed E&S BMPs must be located within those boundaries. Any areas within those boundaries that are to remain undisturbed should be clearly delineated. Permitted sites should clearly show the permit boundaries. It cannot be assumed that the limits of disturbance or the property line is the permit boundary. Residential and commercial developments should show lot boundaries with the lot numbers indicated.

All proposed E&S BMPs, including but not necessarily limited to sediment barriers, silt fence, construction entrances, outlet protection, channels, basins, traps, and erosion control blankets, should be shown on the plan maps. Where projects are to be constructed in phases, maps for each phase that show the BMPs that will be present and functioning during that phase should be provided. Each BMP should be clearly labeled. These labels should be consistent with those used on the detail sheets and in the supporting calculations section of the narrative. Wherever channel dimensions or linings change, it should be clearly shown on the plan maps.

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 Construction Sequence.

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 plan map(s). Likewise, areas of special concern, such as potentially hazardous materials; areas that are prone to sinkholes, landslides, or mine subsidence; and resource areas that will be protected, such as natural drainage courses, riparian buffers, unusual geologic features, etc. must be clearly shown.

## PLAN DRAWINGS

Each bit of information a contractor will need in order to correctly install, operate, and maintain each of the proposed E&S BMPs should be placed on the plan drawings. This includes the construction sequence; plan notes (Appendix C); construction details and typical; seeding, mulching, and soil amendment specifications; and maintenance instructions. Information not needed by a contractor, such as supporting calculations or manufacturer's test data, should be placed in the narrative, but not on the plan drawings.

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, such as principal and emergency spillways, with the proposed outlet protection for both inflows and outlets. Other features such as clean-out stakes, and baffles — where needed — should also be shown. Other pertinent information should be shown on typical details such as those provided in this manual.

Any other E & S related structure or BMP (including but not limited to traps, outlet structures, etc.) requiring a scale drawing should 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 fencing, etc.) may be shown on typical drawings. This manual provides Standard Construction Details for many E&S BMPs. They may be placed on the plan drawings to meet this requirement. Care should be taken to include all pertinent data with the Standard Construction Details, including critical dimensions and elevations as well as accompanying notes and tables. The tables should be included where a particular BMP will be used in more than one location with differing specifications for each location. If, for whatever reason, it is necessary to alter a detail from this manual, the term "Standard Construction Detail" may not be used. All details, notes, and tables pertaining to a particular BMP should be located on the same drawing whenever possible. Where it is necessary to place additional information on another drawing, it should be placed on the next drawing, numbered sequentially.

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.

Since drawings are often reduced to half sizes for use in the field, the font size and type used should be such that it is still legible after reduction of the drawings to half size.