Chapter 4
Best Management Practices Design

Introduction

This chapter provides detailed information for best management practices (BMPs) commonly used for the control of erosion and sediment on active construction sites. Practices for erosion and sediment control will be installed in accordance with an approved site plan. (Chapter 3 provides information on developing an erosion and sediment control plan, and Appendix D provides examples of such plans.) The plan should list the sequence of construction activities. Each construction activity contributing to erosion of soil or changes in sediment-laden runoff should have an appropriate practice or practices to control erosion, sediment, and runoff. Minimizing the area exposed to erosion at any one time can significantly reduce erosion and sediment occurrence on the site.

Proper installation and maintenance of structural and vegetative practices approved in the site plan will be considered essential for compliance with the plan or associated permit. This chapter includes practice design standards and construction specifications along with applicable drawings. Design limitations are provided to maintain design integrity, safety, and purpose of the practices.

Purpose of BMP Manual

The purpose of this manual is to assist designers, developers, owners, contractors, and local officials in determining what stormwater regulations apply to their situation, what the BMP to meet those regulations might be, and how to then design and maintain that particular erosion and sediment control BMP. It is intended to provide the competent design professional with the information necessary both to properly meet the minimum requirements of Mississippi's stormwater programs and to be able to design a stormwater BMP that meets the water quality objectives. However, it does not cover every aspect of the civil engineering and structural design necessary for proper BMP system design and construction, nor does it cover every site situation that may occur, or every possible erosion and sediment control solution. The design professional is responsible for the design and construction of a properly functioning BMP that meets all of the applicable regulations, including the water quality objectives, and that considers all the unique conditions of an individual site. Where the designer determines that conformance with this manual would create an unreasonable hardship or where an alternative design may be more appropriate, alternative designs, materials, and methodologies will be considered on a case-by-case basis.

This manual is meant to supplement (not supplant) Mississippi's stormwater regulations by explaining the BMPs that will be allowed and their design criteria, in an easy-to-understand manner. In addition, local communities are free to adopt more stringent requirements than those presented in this manual. In general, if any part of this manual lists requirements different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human or environmental health, safety, and welfare, shall control.

There are figures, example calculations, operation and maintenance items, etc., used throughout this manual. The intention is to provide the reader with visual assistance in device functions, siting, and concepts, as well as guidance on designing, operating, and maintaining specific BMPs. The figures, example calculations, operation and maintenance items, etc., will not represent the proper solution for every situation, and they may contain items that may not exactly fit the requirements listed in the section. The user of this manual must look at these items and use his or her professional judgment as to their proper use in a specific situation (however, any variance from a requirement must be clearly indicated). In the event of a conflict or inconsistency between the text of this manual and any heading, caption, figure, illustration, table, map, etc., the text shall control.

Also used throughout this manual is the phrase “design professional.” This phrase is a generic title for a qualified, registered, Mississippi professional engineer, surveyor, soil scientist, or landscape architect, performing services only in his or her area of competence. Other individuals may be authorized as a “design professional,” if they can demonstrate proper knowledge and ability to MDEQ.