

Staging and Scheduling

Description

Staging is dividing a construction area into two or more areas to minimize the area of soil that will be exposed at any given time. It is done to ensure that as much of the site as possible is stabilized.

Scheduling is a planning process which provides a basis for implementing other BMPs in a timely and logical fashion. In any one development, not all BMPs should be implemented at the same time.

Other Terms Used to Describe

Construction Sequence
Phasing
Sequencing

Pollutants Controlled and Impacts

Staging reduces the likelihood of soil erosion and off-site sedimentation by exposing an area for the shortest time possible. Scheduling reduces water quality impacts by ensuring that BMPs are implemented at the most appropriate time.

Application

Land Use

Use on all construction sites.

Soil/Topography/Climate

Staging and scheduling should be done in all areas, regardless of soil, topography and climate.

When to Apply

Staging and scheduling should begin during the planning phase and continue throughout the construction and stabilization phases. All BMPs which will be implemented on-site should be incorporated into the staging and scheduling process.

Where to Apply

Apply on all projects. This BMP is especially important in areas adjacent to watercourses and on steep slopes, or areas which are susceptible to heavy rains, snowmelt, or strong winds.

Relationship With Other BMPs

The implementation of all temporary and permanent best management practices should be coordinated via staging and scheduling until final stabilization of the site has been accomplished

Specifications

1. Divide the construction site into the number of areas which will be actively developed at any given time. Keep the area and duration of exposure to a minimum. Plan the development phases so that only areas which are actively being developed are exposed. All other areas should be left undeveloped or stabilized with temporary vegetation or mulch.
2. Develop a scheduling sequence for each staged area. The scheduling sequence should list each BMP which will be used on the area, and when the BMP will be implemented, and, if appropriate, when it will be removed. Follow the example given in the attached exhibit.

The Exhibit: The purpose of staging and scheduling is to install soil erosion and sedimentation control structures, as well as any stormwater structures, in a way which prevents pollutants from leaving the construction site. Exhibit 1 shows the construction sequence of a shopping center in southern Michigan. It is assumed that site plans have been developed. (A site plan should consist of a grading plan, soil erosion/sedimentation control plan, and stormwater control plan). This exhibit also assumes that a pre-construction meeting has taken place, and that MISS DIG has been contacted regarding underground utilities.

Step 1 is to install underground utilities. Step 2 is to stake building sites.

The next several steps should be taken **before** any grading or land clearing: use the Critical Area Stabilization BMP to protect areas prone to erosion; and install soil erosion/sedimentation control measures, including measures such as Diversions, Sediment Basins and silt fences (Filters). All such practices should be on the site plan.

Step 7 is Land Clearing and installing an Access Road.

Following land clearing, topsoil will be removed and stored in Spoil Piles.

Step 9 is grading the area using the Grading Practices indicated on the grading plan.

Next, the schedule calls for installing other temporary erosion control measures. This includes temporary seeding of all areas not under active development, possibly including storage piles.

The next several steps (11-14) are outlined in sequence for the shopping center structure.

Step 15 is establishing a final grade according to Grading Practices, and again, following the grading plan.

The next step is to install permanent stormwater structures, including vegetative controls such as permanent vegetation.

Step 17 calls for removing temporary structures such as silt fences, but **only after the area is stabilized**.

Step 18 is the **ongoing maintenance of all structures**.

Maintenance

Follow the maintenance procedures for each of the BMPs that are used in the construction process. See the individual BMPs.

Exhibits

Exhibit 1: An example Construction Schedule for a Subdivision. Detail CS-1, as modified from MDNR, Soil Erosion and Sedimentation Control Unit.

EXHIBIT 1
Sample Construction Schedule For A Shopping Center
SOIL EROSION AND SEDIMENTATION CONTROL IN
SOUTHERN MICHIGAN

CONSTRUCTION ACTIVITY

MONTHS

	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1. Install underground utilities			X	X									
2. Stake building sites		X	X	X									
3. Protect, stabilize critical areas using <u>Critical Area Stabilization</u>	X	X		X	X								
4. Identify and protect <u>Buffer/Filter Strips</u>	X												
5. Implement <u>Tree Protection</u> ; Install <u>Construction Barriers</u>	X												
6. Install erosion/sediment control measures (temp/perm.)													
a. <u>Diversions</u>	X		X										
b. <u>Sediment Basins</u>	X		X										
c. Other (Temp. Seeding, Silt Fence, etc.)	X	X	X	X	X								
7. Remove trees, shrubs, etc. using <u>Land Clearing</u> . Install <u>Access Road</u>	X	X											
8. Remove topsoil and store in <u>Soil Piles</u>	X	X											
9. Grade using proper <u>Grading Practices</u>	X												
10. Install other temporary erosion control measures													
a. <u>Seeding/Sodding/Mulching</u> Temporary-Stagging		X		X	X	X							
b. Other													
11. Excavate footings/basement		X	X	X	X						X	X	
12. Construct footings/foundations		X	X	X	X	X					X	X	
13. Construct superstructure			X	X	X	X	X	X	X	X	X		
14. Apply aggregate base to driveways, parking lots, etc.				X	X	X							
15. Final grade according to <u>Grading Practices</u>				X	X	X						X	
16. Implement permanent stormwater control measures:													
a. <u>Vegetative Controls</u>				X	X	X						X	X
b. Others													
17. Remove temp. struct. (upon comp. stabilization) or dormant seeding													X
18. Maintenance of all erosion/sediment measures	X	X	X	X	X	X	X	X	X	X	X	X	X

**APPROPRIATE BOXES TO BE
DATED BY APPLICANT FOR
APPROVED BY ENFORCING AGENCY**

Estimated Potential Soil Loss in Tons _____