## 8.2 Small Construction Site Controls

### Description

These are general pollution prevention practices appropriate for small projects or for construction done by separate builders, but which still is part of a larger common plan of development.

### Conditions Where Practice Applies

This standard applies most commonly to builders of single-family homes on lots that have been purchased from a land developer who, typically, has constructed roads and utilities. This standard also may be used for projects too small or short term to justify developing a plan defining specific pollution-control structures. Small short-term projects generally are an acre or less and do not last more than a few weeks.

### Planning Considerations

Single-family housing development creates a challenging condition for controlling sediment pollution during construction. First, during single-family residential development, the highest sediment pollution rates typically occur in the home-building phase. This is due to the intensity of activity and the fact that the drainage system is usually functional at this point. Second, it is difficult to determine who is responsible for erosion and sediment control as builders purchase lots from the land developer and as numerous contractors and subcontractors become involved.

The initial storm water pollution prevention plan can do much to reduce the amount of sediment pollution produced throughout single-family housing development. The control practices that can be used on a development-wide scale are much more effective than what

can be accomplished on individual lots. Sediment pollution can be significantly reduced if the initial plan is designed to remain in effect well into the building of individual homes. The initial sediment-control system of settling ponds, diversions, etc., should remain functional as far into the home-building phase as is feasible. The initial plan also should describe practices individual builders must implement on individual lots as is described in the following specifications.

## Design Criteria

**Implement the storm water pollution prevention plan.** In Ohio, a storm water pollution prevention plan (SWPPP) is required for any lot that is part of a development plan, which exceeds 1 acre of total disturbance. Although this practice describes that which applies to small lot building sites, the actual storm water pollution prevention plan may be included in a larger parcel plan, such as that for a residential subdivision. Generally the storm water pollution prevention plan includes all the drawings, notes and instructions needed to control erosion, capture sediment and control pollutants from storm water during and after construction and should convey to each lot owner or developer the responsibilities for controlling pollution from their portion of the development.

The following items should be located on a plan view or sample plan view of the lot:

- *Locations of surface water resources.* Streams or wetlands that are on the lot or nearby should be shown.
- *Areas to be marked off and left undisturbed.* This should include setbacks from wetlands or streams, the representative spread of the limbs of trees to be protected (dripline) or areas that will be left in vegetation and at the original grade during construction.
- *Limits of grading.* This is typically a line that represents a realistic extent of the work area on the lot.
- *Footprint of the building and site improvements.*
- *Sediment controls appropriate to the existing and future drainage of the lot.*
- *Location(s) of construction entrance.*
- *Locations of stockpiles for topsoil and excavated subsoil.*
- *Areas that will require temporary and permanent seedings.* While this area is largely the same as the limits of grading, the timing of seedings will be dependent on the timing of work on the lot and must be represented in the Construction Sequence.

### *Principles of pollution prevention on small building lots*

1. Leave pre-existing vegetation on the building lot for as long as construction operations allow.

   In many cases, portions of the lot will not undergo grading or construction operations and can be left indefinitely if they are adequately marked in the field. Provided these areas are well vegetated, they will limit the amount of sediment in runoff and may act as filter strips, treating runoff before it leaves the lot.

   Clearing shall be done so that only active working areas are bare. Combining existing vegetation, such as grass, with a sediment barrier such as a silt fence increases sediment control effectiveness and reduces the need for maintenance.

2. Temporary seed and/or mulch shall be liberally applied to areas, such as stockpiles and rough graded areas, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 21 days or more.

   Temporary seeding and mulch provides fast cover for bare soils to prevent erosion. Most small lots will present numerous opportunities to reseed temporary cover. Having seed and straw materials available prior to excavation or rough grading work stopping is key to good cover. Seedings made immediately after grading operations are typically the most successful. Soils that remain exposed and are first eroded will be more difficult area to establish grass cover.

   The Temporary Seeding practice in Chapter 7 (Stabilization) contains more information regarding seeding methods and amendments. Below are recommended seeding mixes and rates that should be incorporated into pollution prevention plans. Straw mulch should be applied at the rate of 90 pounds per 1000 square feet (approximate 2-3 bales).

Table 8.2.1 Temporary Seeding Species Selection

| Seeding Dates | Species | Lb./1000 ft2 | Lb/Acre |
|---|---|---|---|
| March 1 to August 15 | Oats<br>Tall Fescue<br>Annual Ryegrass | 3<br>1<br>1 | 128 (4 Bushel)<br>40<br>40 |
| | Perennial Ryegrass<br>Tall Fescue<br>Annual Ryegrass | 1<br>1<br>1 | 40<br>40<br>40 |
| | Annual Ryegrass<br>Perennial Ryegrass<br>Creeping Red Fescue<br>Kentucky Bluegrass | 1.25<br>3.25<br>0.4<br>0.4 | 55<br>142<br>17<br>17 |
| | Oats<br>Tall Fescue<br>Annual Ryegrass | 3<br>1<br>1 | 128 (3 bushel)<br>40<br>40 |
| August 16th to November 1 | Rye<br>Tall Fescue<br>Annual Ryegrass | 3<br>1<br>1 | 112 (2 bushel)<br>40<br>40 |
| | Wheat<br>Tall Fescue<br>Annual Ryegrass | 3<br>1<br>1 | 120 (2 bushel)<br>40<br>40 |
| | Perennial Rye<br>Tall Fescue<br>Annual Ryegrass | 1<br>1<br>1 | 40<br>40<br>40 |
| | Annual Ryegrass<br>Perennial Ryegrass<br>Creeping Red Fescue<br>Kentucky Bluegrass | 1.25<br>3.25<br>0.4<br>0.4 | 40<br>40<br>40<br>17 |
| November 1 to February 29 | Use mulch only or dormant seeding | | |

Note: Other approved species may be substituted.

3. Stockpiles created from basement excavation and grading shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched immediately.

4. Silt fence or other sediment barriers shall control sheet flow runoff from the building lot. These shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as sediment traps and inlet protection shall also be used as needed to control sediment runoff. Sediment control practices shall be inspected weekly after storm events, and maintained in good working condition.

   Sediment control practices are described in Chapter 6 along with their limitations. Sediment Controls should be appropriate to the amount and type of flow (sheet flow or concentrated) received, and their timing of installation. Sediment barriers such as silt fence or filter berms are most common, but more substantial controls such as sediment traps may be needed due to the size of the contributing drainage area or the need for a lower maintenance. Note that sediment barriers must be situated downstream of the work area, on the contour and perpendicular to the flow direction to be most effective. To increase the effectiveness of sediment controls, leave as much area as possible in vegetation. Besides limiting erosion, these areas slow runoff and increase the settling of soil particles in runoff.

   Inlet protection devices used on curb and yard inlets may not be considered sufficient if storm sewers and catch basins are not be completely installed prior to construction on the lot or if inlet protection devices are the only practice capturing sediment. Inlet protection may be sufficient, if the storm sewer system subsequently drains to a sediment pond or if additional sediment controls are placed upstream of the inlet on the lot.

5. Construction vehicle access shall be limited to one route, to the greatest extent practical. The access shall be gravel or crushed rock underlain with geotextile, typically applied to the driveway area. This provides a single access point for construction personnel, equipment and the delivery of materials in order to prevent tracking of mud onto streets and to maintain the integrity of other sediment controls on the lot. Further information and details regarding construction site entrances are available in Chapter 7.

6. Mud tracked onto streets or sediment settled around curb inlet protection shall be removed daily or as needed to prevent it from accumulating. It shall be removed by shoveling and scraping and shall NOT be washed off paved surfaces or into storm drains. Sediment cleaned from streets and control practices shall be placed where it will not be subject to erosion or concentrated runoff such as a level well-vegetated area where it is subsequently seeded.

Table 8.2.2 A Construction Sequence for Small Construction Sites

| Stage | Actions | Dates |
|---|---|---|
| *Mark off set aside areas* | 1. Fence naturally vegetated areas and the dripline of trees that will be maintained and protected during construction. | |
| *Install initial sediment and erosion controls* | 2. Install appropriate sediment controls to protect down-stream and adjacent areas. These are to be installed prior to grading and construction begins and includes practices such as sediment traps, sediment barriers(silt fence, filter socks and berms) and protection of catch basins with inlet protection. | |
| | 3. Install stone construction entrance prior to general grading or excavation or delivery of materials. | |
| *Prepare site and construct improvements* | 4. Remove topsoil and stockpile, seeding stockpile immediately upon completion. Install sediment controls as necessary. | |
| | 5. Grade site or excavate building foundation or basement. | |
| | 6. Temporary seed rough graded areas and maintain or repair sediment controls as needed. Maintenance includes the removal of sediment from streets and sediment controls. | |
| | 7. Construct the building and site improvements. | |
| *Final grading and stabilization* | 8. Complete land grading and shaping. Soils shall be roughly graded, followed by the spreading and grading of topsoil. Installation of roof drains and other drains to stable outlets should be completed at this time. | |
| | 9. Establish permanent vegetation. After reaching final grade elevations and leveling of topsoil, bare soils shall be stabilized with seed and mulch, sod or other permanent landscaping materials. | |
| | 10. Remove temporary sediment control practices once vegetation is established. | |

Specifications
for

# Small Construction Site Controls

1. Preexisting vegetation shall be retained on idle portions of the building lot for as long as construction operations allow. Clearing shall be done so only active working areas are bare.

2. Temporary seed and/or mulch shall be applied to areas, such as stockpiles and rough graded areas, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 21 days or more.

3. Stockpiles created from basement excavation and grading shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched immediately.

4. Silt fence or other sediment barriers shall control sheet flow runoff from the building lot. These shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as sediment traps and inlet protection shall also be used as needed to control sediment runoff. Sediment control practices shall be inspected weekly after storm events, and maintained in good working condition.

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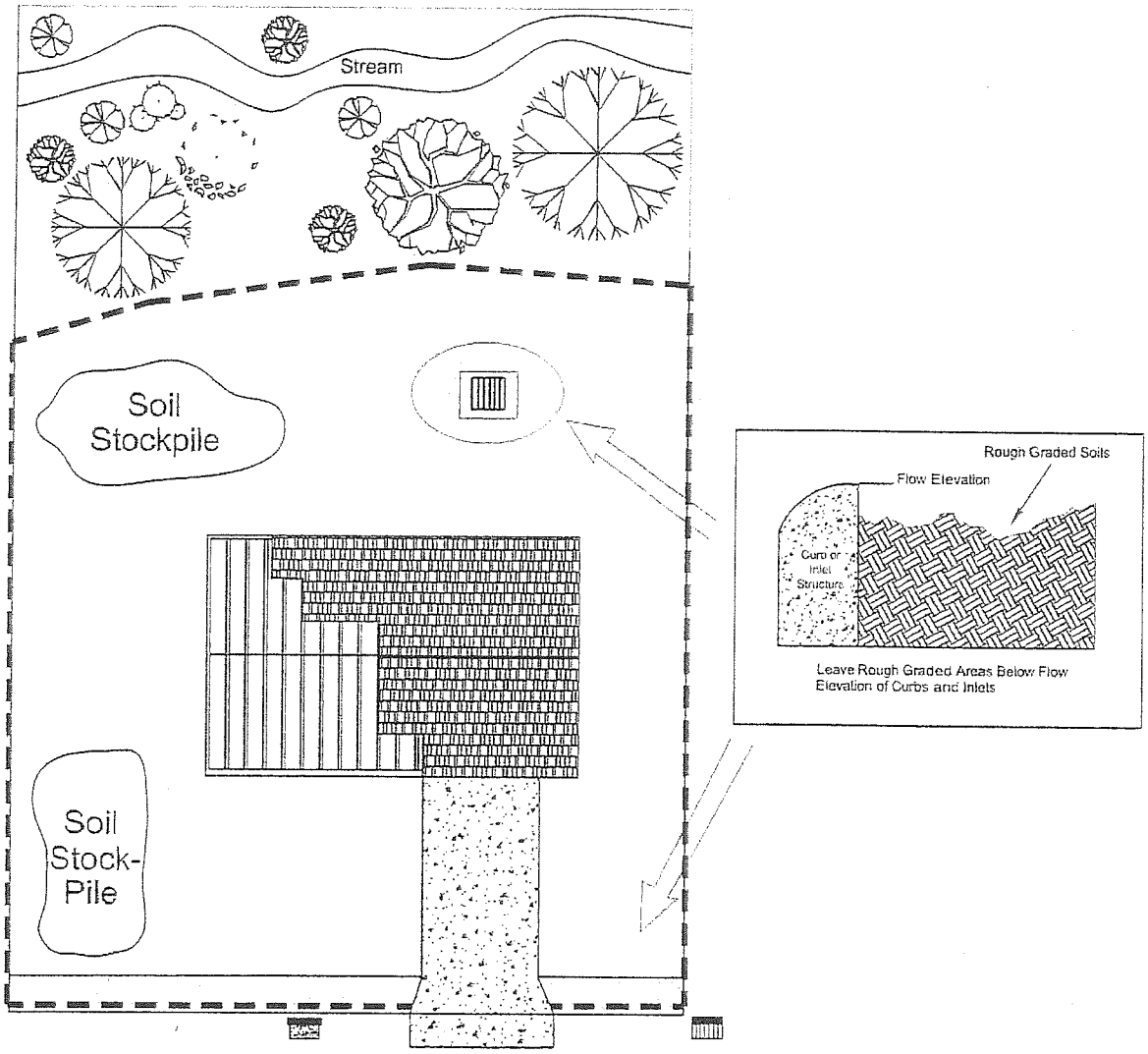


PLAN VIEW

- Temporary seeding and/or mulch applied to rough graded areas
- Construction Entrance gravel
- Rough grade areas to allow settling below grade elevation
- Storm Drain w/inlet protection
- Storm Drain without inlet protection
- Yard Drain w/ inlet protection
- Silt Fence
- Curb

- ALL WASTE & DUMPSTER CONTAINERS SHALL BE COVERED AT THE END OF THE WORK DAY
- ALL CONCRETE TRUCKS SHALL WASHOUT INTO VINYL CON CONCRETE BAG (OR APPROVED EQUAL)