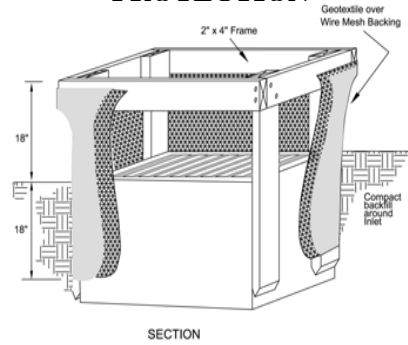
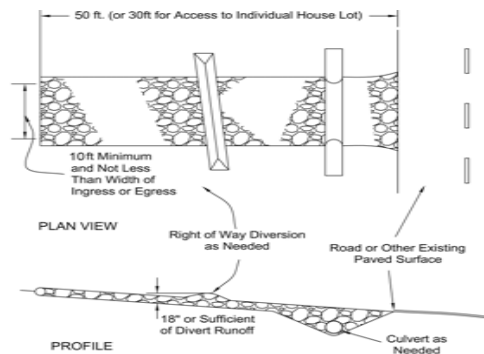


STORM DRAIN INLET PROTECTION



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Construct an earth dike on the down slope side to prevent by-pass flow. The top of the earth dike shall be at least 6 inches higher than the top of the frame. The earth around the inlet shall be excavated completely to a depth of at least 18 inches.
3. Space support posts evenly against the inlet perimeter a minimum of 3ft. apart and drive them about 1 1/2 ft. into the ground. The top of the frame shall be at least 6 inches below adjacent roads if ponded water would pose a safety hazard to traffic.
4. Cut enough filter fabric from a single roll to eliminate joints. Stretch tightly around the frame over wire mesh. Fasten securely.
5. Bury the bottom of the fabric at least 1 foot deep; then backfill and compact the backfill.
6. Cross brace the corners to prevent collapse.
7. Inspect and repair as needed and remove accumulated sediment after every storm.

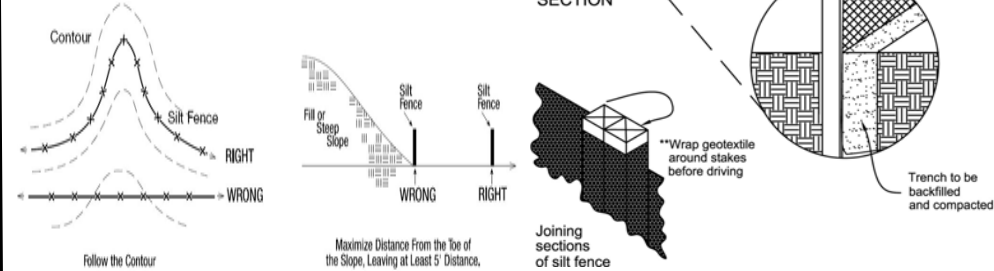
CONSTRUCTION ENTRANCE



1. ODOT # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.
2. The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 50 ft. (exception: apply 30 ft. minimum to single residence lots).
3. The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
4. The entrance shall be at least 10 feet wide, but not less than the full width at points where ingress or egress occurs.
5. To improve stability or if wet conditions are anticipated a geotextile shall be laid over the entire area prior to placing stone
6. A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.

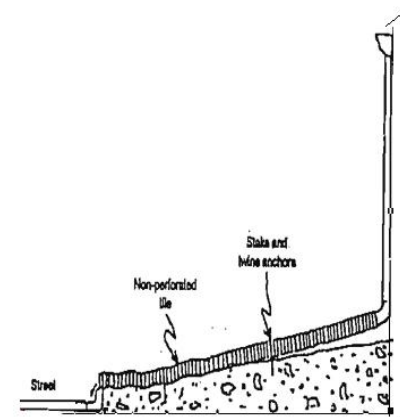
SILT FENCE

1. Silt fence shall be constructed before upslope land disturbance begins.
2. All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
3. Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
4. The height of the silt fence shall be a minimum of 16 inches above the original ground surface. The length of the fence posts shall be 32 inches long.
5. The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The silt fence shall be placed with the stakes on the down slope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. The trench shall be backfilled and compacted on both sides of the fabric.



TEMPORARY DOWNSPOUT EXTENDERS

1. Install extenders as soon as gutters and down-spouts are installed to prevent erosion from roof run-off.
2. Use non-perforated (unslotted) drainage tile.
3. Route water to a stable grassed or paved area or to the storm sewer.
4. Remove only after adequate vegetative cover is established.
5. Get approval from the City of Massillon Engineering Department before discharging water into a street.

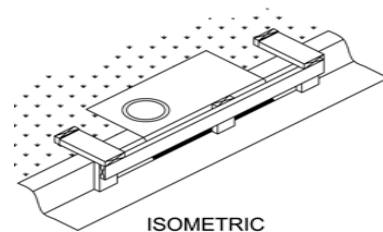
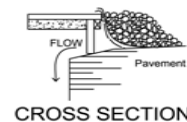


6. Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground.
7. Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

(Note: Silt fence has a life expectancy 6 months – 1 year, whereas straw bale barriers have a limited life of 3 months or less)

CURB INLET PROTECTION

1. Construct wooden frame using 2-by 4in. lumber. The end spacers shall be at least 1 ft. beyond both ends of the opening. The anchors shall be nailed to 2-by 4in. stakes driven on opposite side of the curb.
2. Install wire mesh in one continuous piece with minimum width of 30in. and 4ft. longer than the length of the inlet, 2ft. on each side.
3. Geotextile EOS of 20-40 sieve shall be the same size as wire mesh and be resistant to sunlight.
4. Wire mesh and geotextile should be formed to the concrete gutter and against the face of curb on both sides of the inlet and securely fastened to the frame.
5. Place 2in. stone over the wire mesh and geotextile to prevent water from entering the inlet under or around the geotextile.
6. Inspect and repair as needed and remove any accumulated sediments after every storm.



EROSION CONTROL FOR THE HOME BUILDER



Principles for Controlling Lot Erosion and Sedimentation

Soil erosion and the resulting sedimentation are a leading cause of water quality problems in Ohio. Every phase of a construction project has the potential of contributing significant quantities of 'sediment-laden runoff. Therefore, as a site is developed, all who are associated with the project must do their part to control erosion.

Why the Concern About Erosion and Sediment Control?

Water quality - Sediment is the number one pollutant, by volume, of surface waters in the state of Ohio. It impacts water quality by degrading the habitat of aquatic organisms and fish, by decreasing recreational value, and by promoting the growth of nuisance weeds and algae.

Local taxes - Cleaning up sediment in streets, sewers and ditches increases costs to local government budgets and subsequently to taxpayers.

Flooding - Sediment accumulation in ditches, streams, lakes, and rivers reduces their capacity, which can result in increased flooding.

Property values - Sediment deposits not only impair water quality but also damage property, thus reducing its use and value.

Erosion control is important on any building site regardless of its size. Usually, the principles and methods for controlling erosion and reducing off-site sedimentation are relatively simple and inexpensive. Here are four principles to be followed when developing a building site:

Evaluate site – Inventory and evaluate the resources on the lot before building. Location of structures should be based, in large part, on the lot's natural features. Identify trees that you want to save and vegetation that will remain during construction. Also, identify areas where you want to limit construction traffic. Where ever possible, preserve existing vegetation to help control erosion and off-site sedimentation.

Select and install practices – Determine the specific practices needed, and install them *before* clearing the site. Among the more commonly used practices are vegetative filter strips, silt fence, gravel drives, and storm water inlet protection.

Develop a maintenance program – Maintenance of all practices is essential for them to function properly. They should be inspected once a week and after each significant rainfall event. When a problem is identified, repair the practice immediately. Also, any sediment that is tracked onto the street should be scraped and deposited in a stable area. *DO NOT flush sediment from the street into the storm sewer system.*

Revegetate the site – Do so as soon as possible. Any area to be left bare for more than 21 days should be seeded immediately to a temporary cover of annual rye grass.

Construction Sequence Lot and Erosion Control Sediment

Step #1. Evaluate the Site.

Before construction begins, evaluate the entire site, marking for protection, any important trees and associated rooting zones, unique areas to be preserved, and vegetation suitable for filter strips, especially in perimeter areas.

Identify Vegetation To Be Saved –

Select and identify the trees, shrubs and other vegetation that you want to save.

Protect Trees and Sensitive Areas –

To prevent root damage, do not grade, burn, place top soil piles, or park vehicles near trees or in areas marked for preservation.

- Place plastic mesh or snow fence barriers around trees' drip line to protect the area below their branches.

Step #2. Install Perimeter Controls.

Identify the areas where sediment laden runoff could leave the construction site, and install perimeter controls to minimize the potential for off-site sedimentation. It's important that perimeter controls are in place before any earth moving activities begin.

Protect Down-Slope Areas – (with Vegetative Filter Strips)

- On slopes of less than 6%, preserve a 20-30 foot wide vegetative buffer strip around the perimeter of the property and use it as a filter strip for trapping sediment.
- Do not mow filter strip vegetation shorter than 4 inches.

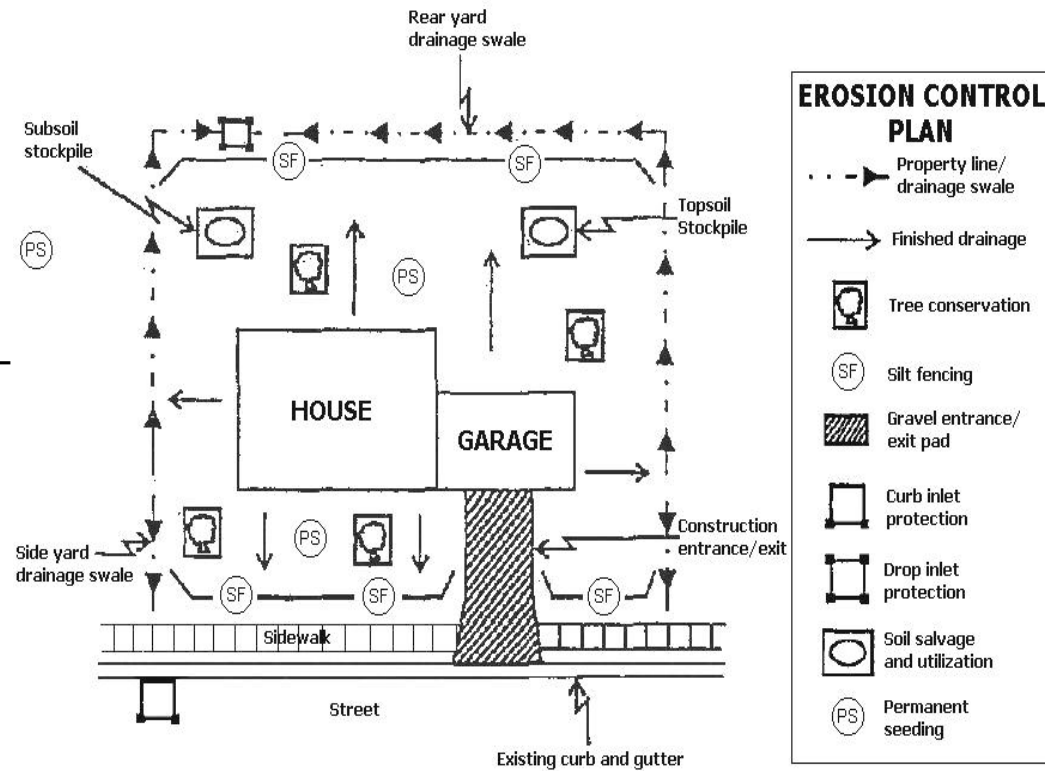
(With Silt Fence)

Use silt fencing along the perimeter of the lot's down slope side(s) to trap sediment.

(Install Gravel Drive)

- Restrict all lot access – to this drive to prevent vehicles from tracking mud onto the roadways (See Construction Entrance).

Example of Erosion & Sediment Control on a Building Lot



Notes: 1. Erosion/sediment control measures must be functional and be maintained throughout construction
2. Maintain positive drainage away from the structure(s)

Protect Storm Sewer Inlets –

- Protect nearby storm sewer curb inlets with stone-filled or gravel filled geotextile bags (See Curb Inlet Protection), or equivalent measures before disturbing soil.
- Protect on site storm sewer drop inlets with silt fence material (See Storm Drain Inlet Protection), or equivalent measures before disturbing soil.

Step #3. Prepare The Site For Construction.

Prepare the site for construction and for installation of utilities. Make sure all contractors (especially the excavating contractors) are aware of areas to be protected.

Salvage and Stockpile the Topsoil/Subsoil -

Remove topsoil (typically the upper 4-6 inches of soil material) and stockpile

- Remove subsoil and stockpile separately from the topsoil.

- Locate the stockpiles away from any down slope streets, driveway, branches, stream, lake, wetland, ditch, or drainage way.
- Immediately after stockpiling, temporarily seed the stockpiles with annual rye or winter wheat and/or place sediment barriers around the perimeter of the piles.

Step #4. Build The Structures and Install the Utilities.

Construct the home and install the utilities; also install the sewage disposal system, then consider the following:

Install Downspout Extenders -

- Downspout extenders are highly recommended as a means of preventing lot erosion from roof runoff. Add the extenders as soon as the gutters and downspouts are installed (See Down Spout Extenders).
- Be sure the extenders have a stable outlet, such as the street, sidewalk, or a well vegetated area.

Step #5. Maintenance

Maintain all erosion and sediment control practices until construction is completed and the lot is stabilized.

- Inspect the control practices a minimum of once a week and after each storm event, making any needed repairs immediately.
- Toward the end of each work day, sweep or scrape up any soil tracked onto roadways. *Do not flush areas with water.*
- By the end of the next work day after a storm event, clean up any soil washed off-site.

Step #6. Revegetate The Site.

Immediately after all outside construction activities are completed, stabilize the lot with sod, or seed and mulch.

Redistribute the Stockpiled Subsoil and Topsoil.

- Spread the stockpiled subsoil through grade.
- Spread the stockpiled topsoil to a depth of 4-6 inches over the rough graded areas.
- Fertilize & lime according to soil test results or recommendations of a seed supplier or a professional landscaping contractor.

Seed or Sod Bare Areas -

- Contact local seed suppliers or professional landscaping contractors or recommended seeding mixtures and rates.
- Follow recommendations of a professional landscaping contractor for installation and rates.
- Water newly seeded/sodded areas every day or two to keep the soil moist; soak to 2 inches. Less watering is needed once grass is 2 inches tall.

Mulch Newly Seeded Areas -

- Spread straw mulch on newly seeded areas, using 2 - 3 bales of straw per 1,000 square feet.
- On, flat or gently sloping land, anchor the mulch by crimping it 2 - 4 inches into the soil. On steep slopes, anchor the mulch with netting or tackifiers. An alternative to anchored mulch would be the use erosion control blankets.

Step #7. Remove Remaining Temporary Control Measures.

Once the sod and/or vegetation is well established, remove any remaining temporary erosion and sediment control practices such as:

- Downspout extenders. (or shorten to outlet onto the vegetated areas, allowing for maximum infiltration)
- Storm sewer inlet protection measures.

Building Lot Drainage

The best time to provide for adequate, lot drainage is before construction begins. With proper planning, most drainage problems can be avoided, and that is important because correcting a problem after it occurs is usually much more difficult and costly. Here's what it takes to ensure good lot surface and subsurface drainage.

Surface Drainage

Position the structure a minimum of 18 inches above street level. Divert storm water runoff away from the structure by grading the lawn to provide at least 6 inches of vertical fall in the first 10 feet of horizontal distance. Avoid filling in existing drainage channels and roadside ditches, since that could result in wetness problems on someone else's property and/or damage to adjacent road surfaces.

Subsurface Drainage

Provide an outlet for foundation or footer drains and for general lot drainage by using storm sewers (where permitted), or obtain drainage easements if you must cross adjoining properties. If you accidentally cut through an existing field tile, assume that it carries water even if it is currently dry; therefore, re-route it (using the same size field tile) around the structure, then reconnect it.

Reference Materials



Every building is unique and poses its own potential erosion hazards. In many instances, additional or alternative control methods may be necessary if the lot is:

- Adjacent to a creek, river, lake or wetland.
- Has slopes in' excess of 6%.
- Receives runoff from adjacent areas.
- Has more than one acre of disturbed ground.
- Poor soil conditions.

This pamphlet provides installation instructions on five of the more commonly used building site erosion control practices.

For information on other related practices, refer to the ODNR, Division of Soil and Water Conservation Handbook, "Rainwater & Land Development" – Ohio's Standards for Storm Water Management, Land Development & Urban stream Protection.

Ohio Utilities Protection Service



It is the responsibility of every developer, contractor and property owner to see that they are in compliance with all laws, regarding construction site erosion/sediment control.

