

## Permanent erosion and sediment control is required prior to final approval of most building permits

Upon completion of construction, all exposed ground surfaces must be permanently stabilized to protect soil, prevent erosion, reduce runoff velocity and minimize sediment loss.

To prepare for inspection of permanent erosion and sediment control measures (IVR inspection #210), remember that:

- **Approved plans must be provided on site** at the time of inspection and the site address must be clearly visible.
- **All required landscaping and trees must be installed as specified** on approved landscape or site plans. All ground disturbing work must be completed prior to installation of permanent erosion and sediment control measures.
- **All exposed soil must be stabilized with permanent erosion control**, such as mulch, compost, bark dust, gravel or sod. Straw is no longer an approved method of permanent erosion control.
- **Rain gutters and downspouts** must be installed and functioning to prevent splash erosion.
- **In seeded areas, grass or vegetation must cover at least 90 percent of exposed bare soil** to be considered permanent erosion control.
- **Until permanent vegetation is fully established**, seeded areas must be stabilized with tackifier, mulch, turf reinforcement mats or erosion control blankets. Seeding should be done by September 1 to establish adequate grass cover prior to the wet season.
- **Temporary erosion control measures**, such as sediment fences, should be removed when permanent measures are in place. Straw wattles and readily degradable products may be left in place.
- **Ditches or areas of concentrated flow** must be lined with rock, properly selected and installed geosynthetics, or similar materials to prevent scour. Use gravel or rock check dams across ditches to slow water velocity and filter runoff.
- **All paved surfaces must be clean.** Confine sediment during clean up activities so it does not enter the storm drain system or leave the project site.
- **Storm drain inlet filters must be removed** (after all clean up activities have been completed).
- **Rock energy dissipaters at pipe or channel outlets** are required to reduce the velocity of concentrated flows.

## Permanent erosion and sediment control on sloping sites

Drainage systems needed to prevent erosion or remove subsurface water from wet and steep slopes should be installed and functional prior to installation of soil stabilization measures.

### Retaining walls

Retaining walls are typically required for slopes exceeding a finished grade of 2H:1V. Approved plans must show all retaining walls that require a permit. Permits are required for retaining walls over four feet in height, measured from the bottom of the footing to the top of the wall, or for walls that will support a surcharge or sloped ground behind the wall.

### Benching and terracing

Slopes may be stair-stepped with benches or terraces to intercept and slow runoff velocity.

Combinations of vegetation and grade stabilization structures such as tiered planters, vegetated cribwalls or plantable gabions may be used to stabilize slopes against shallow mass movement, protect against erosion, and reduce sediment transport.

### Ground surface stabilization

Highly erosive or unstable soils may require reinforced soil retaining systems or armoring measures, such as cellular confinement systems, turf reinforcement mats, gabions, or rock revetments.

Hydraulic application of bonded fiber matrix may be required to protect slopes and facilitate germination of seed under adverse conditions.

Bioengineering measures such as live stakes, fascines and brush mattresses can provide aesthetic and habitat benefits, in addition to stabilizing soil.

### Erosion control blankets and netting

Erosion control blankets and jute netting must be inspected prior to covering with mulch or installing landscape plantings.

#### Blanket and netting inspection procedure

1. Request IVR inspection #210.
2. If the installation is acceptable, the #210 inspection will be partially approved.
3. Install permanent erosion control over the blankets or netting.
4. Request IVR inspection #210 upon completion of all permanent erosion control measures.

Groundcover landscaping may be planted through the netting or blankets. In most instances, netting must be covered with mulch until vegetation becomes fully established.

The netting or blankets must be selected and installed according to the manufacturer's instructions. Be prepared to provide product installation instructions and specifications at the time of inspection.

The ground surface and seedbed must be properly smoothed and prepared. Seed mix should be applied, preferably by hydroseeding with tackifier, before netting or blankets are installed. The netting or blankets must be securely trenched into the soil, overlapped according to the manufacturer's recommendations, and anchored to the ground with staples, stakes or fasteners.

Netting and blankets must conform to the contours of the ground surface. Use extra staples, stakes or fasteners where needed to obtain full ground contact. Inspect for undermining after storm events and promptly repair any erosion damage, and correct the cause to prevent future failures.





*Refer to the City of Portland  
Erosion Control Manual for additional details,  
available at either the Development Services Center  
or online at [www.portlandonline.com/bds](http://www.portlandonline.com/bds)*

Downspouts, retaining wall and bark dust help with erosion control.

## Paved Surface Clean Up

Using good construction management practices and effective erosion and sediment control throughout your project will minimize the need for post-construction clean up of streets, sidewalks, driveways and other paved surfaces.

1. Use brooms, shovels, mechanical sweepers (wet or vacuum to hold down dust), or similar equipment to remove as much material as possible.
2. Return collected material to the site and stabilize it with permanent erosion control measures, or dispose of it appropriately.
3. Use water flushing only after exhaustively using dry clean up methods. Direct flow back onto stable areas of the site, collect it with a wet vac, or pump it to a stable, vegetated area of the site.
4. Avoid flushing water to the storm sewer system. If no alternative is feasible, effective storm drain inlet filters (with curb inlet protection, if needed) must be in place. **Remove all storm drain inlet protection upon completion of clean up activities.**



Highly erosive or unstable soils may require reinforced soil retaining systems or armoring.



Use tiered planters to stabilize slopes, protect against erosion, and reduce sediment transport.

*Information is subject to change.*

## Helpful tips & information

**Bureau of Development Services**  
City of Portland, Oregon  
1900 SW 4th Avenue, Portland, OR 97201  
[www.portlandoregon.gov/bds](http://www.portlandoregon.gov/bds)

**General Office Hours:**  
Monday through Friday, 8:00 am to 5:00 pm  
BDS main number: 503-823-7300

**Permit Information is available at the following location:**  
Development Services Center (First Floor)  
For Hours Call 503-823-7310 | Select option 1  
Permitting Services (Second Floor)  
For Hours Call 503-823-7310 | Select option 4

**Site Development Services Hours**  
Monday - Friday, 7:30 am to 4:00 pm

**Important phone numbers**  
Main BDS Phone..... 503-823-7300  
Site Services..... 503-823-6892  
Site Services FAX..... 503-823-5433  
BDS Erosion Control Hotline ..... 503-823-0900  
24-hour Inspection Request Line..... 503-823-7000  
DSC Automated Information Line ..... 503-823-7310

Your inspector is your main BDS contact.  
Inspectors are usually in the office  
Monday through Friday, 7:30 to 8:00 am.

Your inspector is:

Phone# \_\_\_\_\_

### Pictured on cover

1. Before installation of permanent erosion control measures, required trees and landscaping must be in place.
2. Stabilize exposed soil with mulch or barkdust.
3. Use tiered planters to stabilize slopes.
4. Have erosion blankets or netting inspected before covering with mulch or plantings.
5. Gutters and downspouts prevent splash erosion.
6. Line ditches with rock to slow water velocity and filter runoff.

Visit our Web site  
[www.portlandoregon.gov/bds](http://www.portlandoregon.gov/bds)

## Permanent Erosion Control Measures



**Required on Commercial and Residential Construction Projects**



City of Portland Oregon  
Bureau of Development Services