

May 2010

Community
Development

Single Family Residential Erosion and Sediment Control Standards



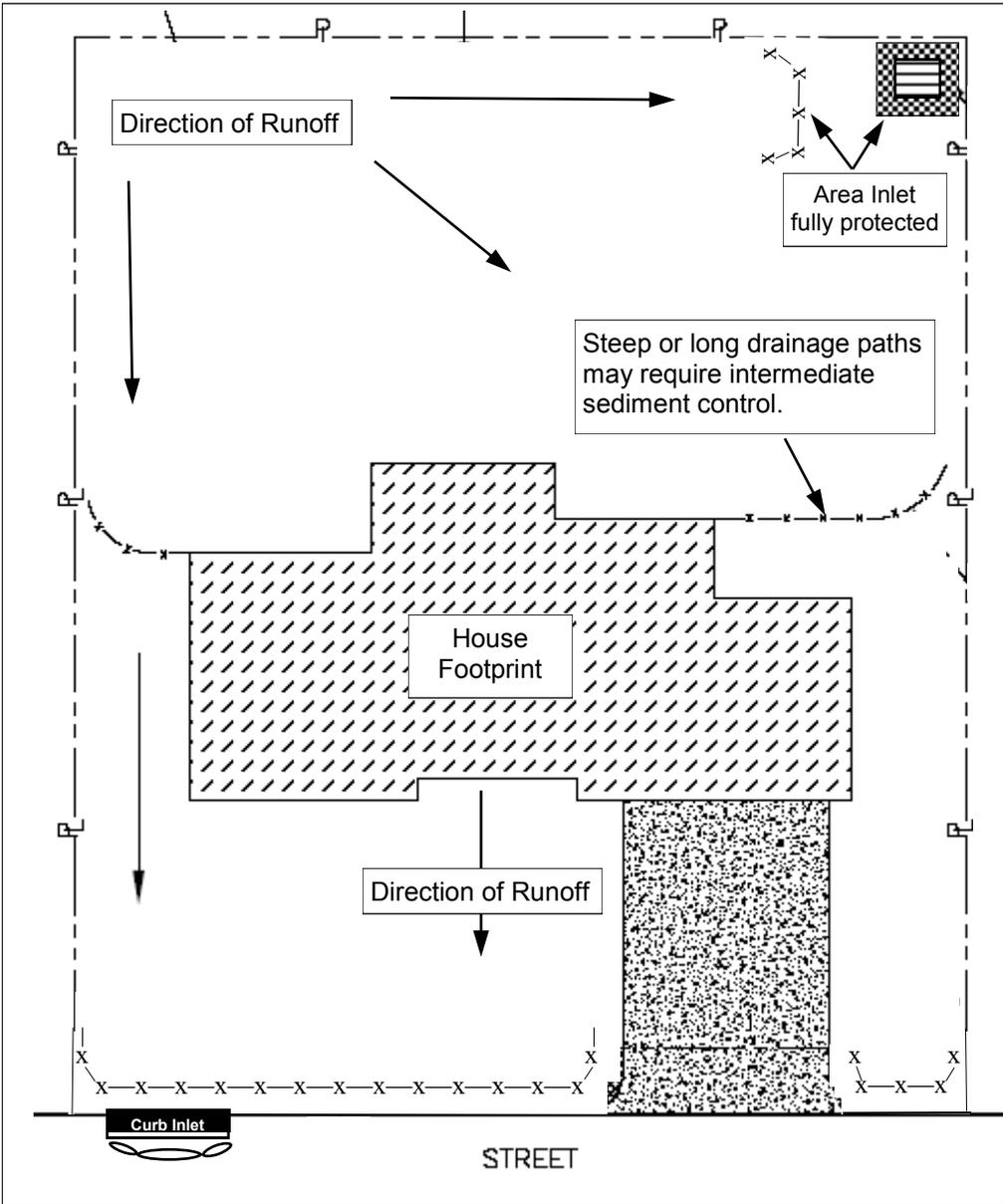
This booklet contains standard plans and procedures appropriate for typical residential building construction; it is not intended to address all circumstances. The primary objective is perimeter control with best management practices (BMPs) being utilized to minimize erosion and prevent sediment from leaving the site. Additionally, since Leawood streets are conduits for stormwater, it is important to keep mud and sediment off the streets. The building permit holder is responsible for ensuring that adequate BMPs are in place and functioning until the construction project is brought to a close.

A Stormwater Pollution Prevention Plan (SWPPP) may be in effect for your lot in accordance with the subdivision's Construction Stormwater Permit issued by the State of Kansas. Check with the developer of the subdivision to complete an Individual Lot Certification (ILC) as required by the State of Kansas and to obtain a copy of the SWPPP, as you may be responsible for that portion of the permit that affects your lot.

When reviewing this standard against your construction project, always keep in mind the intent of the standard: "to minimize erosion and prevent sediment from leaving the site." Failure to comply is a violation of Leawood's Erosion and Sediment Control 15-525 through 15-544 as well as federal and state regulations and could result in a substantial fine. Failure to comply may also result in damage to adjacent property, damage to the city's storm sewer system and contribute to the polluting of streams, lakes and rivers. If you have any questions or concerns, please contact Codes Administration at 913-339-6700, ext. 170. We are committed to helping all involved with the implementation of these construction procedures.

Single Family Lot Erosion and Sediment Control Plan

This sample plan represents a typical single family lot. Users of these standards must make their own assessment (or seek professional advice) as to the conditions and drainage patterns of individual sites. These conditions should determine the selection and location of appropriate BMPs.



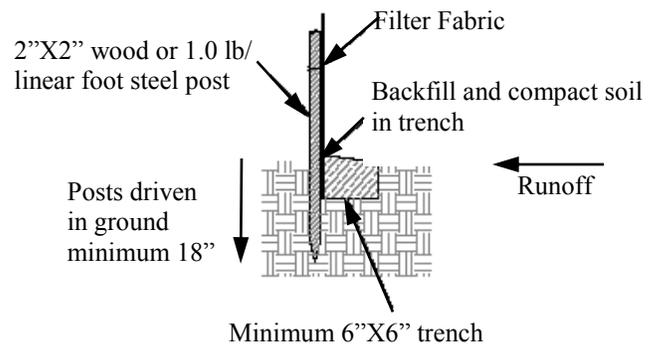
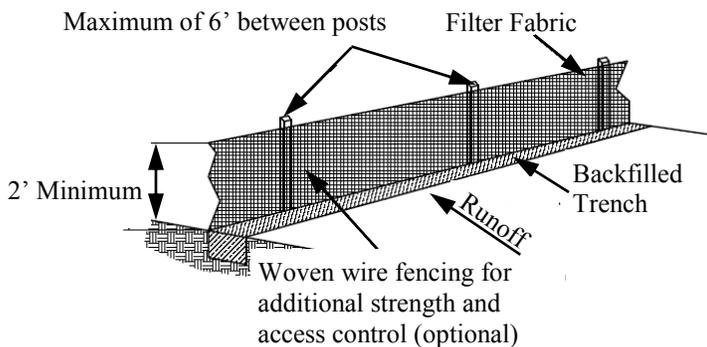
- x—x—x—x— Sediment Control (Silt Fence, Wattles, Rolled Erosion Control Product, Grass Buffer, etc)
- Lot Access
- Direction of Surface Water Runoff
- Area Inlet with Grass Buffer
- Curb Inlet with Filter Protection

NOTE: Once sidewalk is installed, BMPs shall be moved to the back of the sidewalk to prevent sediment from reaching the sidewalk.

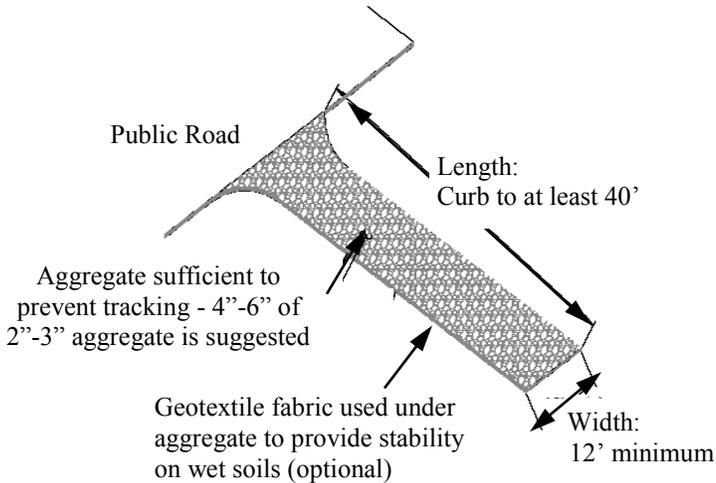


Silt Fence (Sediment Fence)

- Turn ends of sediment fence uphill to capture runoff.
- Overlap to next stake when joining two sections.
- Remove sediment to maintain capacity and reduce stress on fence.



Lot Access



Wattles or Logs

Straw wattles or logs are designed for low surface flows. Being more porous than straw bales, they allow water to pass through, reducing the risk of undercutting or end cutting, while still filtering out sediment.



Products should be installed per manufacturer's recommendations with care taken to tightly butt ends of adjoining wattles together (do not overlap). Ends shall be turned uphill to pond runoff. Remove sediment when it reaches 1/2 the height of the wattle and replace any torn, collapsed or damaged wattles.

Rolled Erosion Control Products

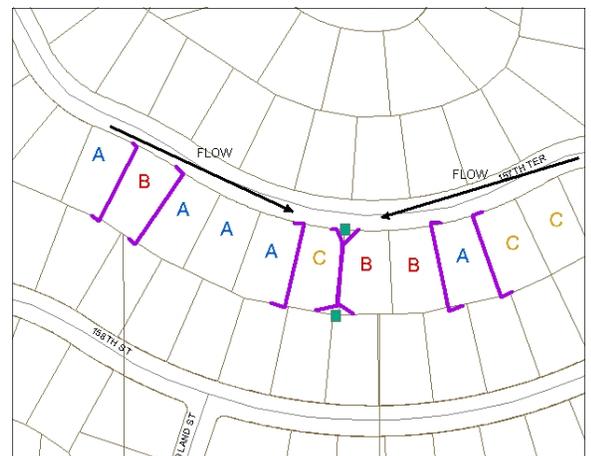
Rolled erosion control products (RECP), often called mats or blankets, can be used to stabilize the soil and filter runoff. RECP require no special equipment for installation and can be installed in all weather conditions.



The product should be installed according to the manufacturer's specifications with special attention to proper anchoring with staples or stakes. Grass seed placed under the RECP will grow up through the RECP, establishing a more permanent buffer for erosion and sediment control.

Perimeter Control

Perimeter controls are required to prevent sediment from leaving your property. If a permit holder owns two or more consecutive lots, perimeter control may be installed at the most downhill location to prevent sediment from eroding onto adjoining lots. A single lot or a series of adjoining lots should be evaluated for the discharge point(s) and appropriate controls installed at those points.

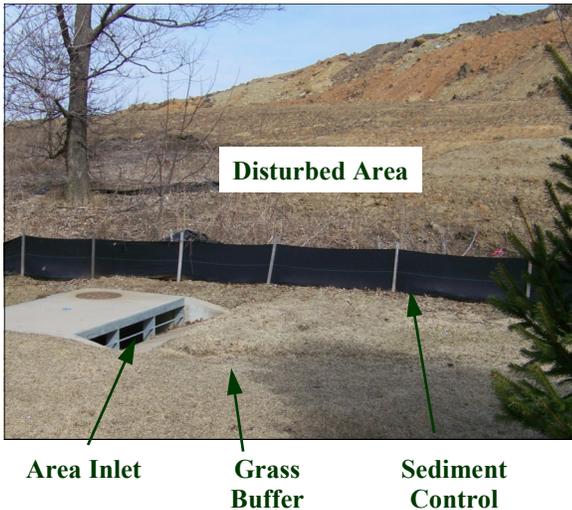


Inlet Protection

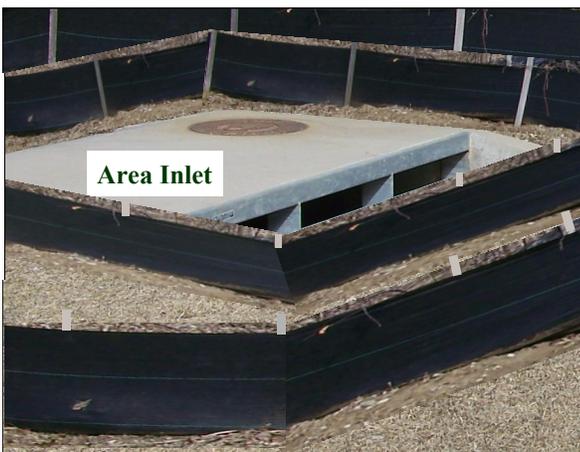
Area Inlet:

When construction starts on a lot that is contiguous to an area inlet, the permit holder shall ensure that the inlet is protected and perimeter control installed between the inlet and the edge of disturbed area.

Inlet protection shall include a minimum 10' grass buffer around the entire inlet. Any area disturbed or without adequate vegetation within buffer shall be sodded or seeded and covered with erosion control blanket.



As an alternative to a 10' grass buffer, the area inlet can be double wrapped with silt fence. The silt fence should completely enclose the inlet, with the first wrap tight against the inlet and the second 5 feet from the first.



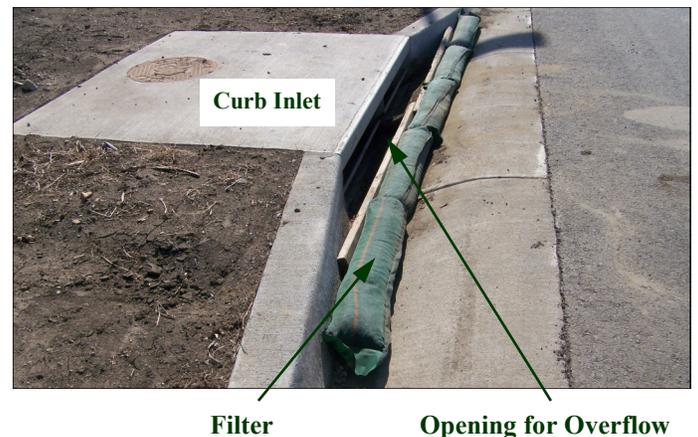
Double wrap of silt fence 5' apart

Regular maintenance of all inlet BMPs is critical to prevent localized flooding and to prevent sediment from entering the stormwater system.

Curb Inlet:

Filters placed in front of curb inlets remove sediment by ponding water around the inlet. Installation shall only be in locations where temporary ponding and sediment do not create a safety hazard or cause property damage.

Inlet filters shall be installed as a second line of defense, with proper BMPs installed upstream to limit the amount of sediment reaching the street. Filters may consist of non-biodegradable bags filled with 1/2" to 1" clean gravel or manufactured products (Gutter Buddy, Filter Sox, etc). Installation shall ensure the filter extends beyond each end of inlet opening, with an opening at the top for overflow and no gaps evident between bags or against curb. Sand bags may be used at ends to seal gaps and hold filter in place.



Grass Buffers and Mulch



Maintaining a strip of existing vegetation or using sod to create a buffer will reduce erosion and filter sediment. A complete covering of mulch can also protect the soil from erosion and can be installed when weather prohibits the installation of other BMPs. These practices work well in conjunction with other perimeter controls or in small areas such as the right-of-way between the curb and sidewalk.

Adjacent Lots

Building permit holders who disturb land adjacent to their permitted building sites must:

1. Install erosion and sediment control on those lots
2. Remove any construction materials and re-stabilize the disturbed areas with sod or permanent seeding and mulch.

Land disturbance of adjacent lots will be noted as a condition for the Final Certificate of Occupancy (CO) for the permitted lot. This condition will need to be resolved before a CO is issued for the permitted lot. This condition can be “satisfied” if construction starts on the adjacent lot prior to a CO being issued.



Stockpiles

Stockpiles should not be located near the street or adjacent property lines. All stockpiles must be either stabilized, covered or have sediment control installed around the base of the pile.



Inactive Sites

Permitted building sites found to be inactive may be required to stabilize all disturbed areas with permanent vegetation.

Other Pollutants



- ▶ Trash and debris are to be contained so as not to blow or wash into the stormwater system.
- ▶ Concrete washout is to be disposed of in a designated concrete washout area.
- ▶ Waste water from paint, drywall, stucco or masonry is not to enter the stormwater system or be disposed of where it can eventually wash into the system.
- ▶ Paint, fuel and other chemicals are to be properly stored. Any spills must be immediately cleaned up and properly disposed of.
- ▶ De-watering of trenches, foundations or other excavated areas is to be done so as not to deposit sediment offsite or cause erosion. A filter bag, sediment basin or vegetated area may be used to filter sediment before discharging from site.



More information can be found at the City's website at www.leawood.org under Public Works Department, Stormwater Pollution.

Compliance Checklist

Best Management Practice (BMP)



Inlet Protection – BMPs are in place and functioning for both area inlets and curb inlets along street. Maintenance includes removal of sediment following each rain event and replacement of failing materials. Do not allow sediment to enter inlet during maintenance.

Perimeter Controls – BMPs are installed along back of curb and along the lot line of adjacent properties which are downhill and receive runoff from permitted lot. Following sidewalk installation, BMPs are moved to the back of sidewalk to prevent sediment from reaching the sidewalk. BMPs are maintained to ensure proper function, including repair or replacement of torn, degrading, missing or otherwise ineffective materials. Remove sediment deposits as necessary to provide adequate protection.

Lot Access – Required for each individual lot. A surface suitable for parking and unloading that prevents the tracking of mud and rock onto the street is installed. A minimum of 6” of 3/4” or larger aggregate is suggested. All vehicles that access the lot shall use the construction entrance. Restrict other access if necessary to prevent tracking onto the street.

Stockpiles – Stockpiles are protected to prevent sediment from reaching the street and adjacent properties. Stockpiles are located away from street and property lines.

Intermediate Control - Long or steep drainage paths have intermediate or interior BMPs installed to help slow the flow of runoff. Failure of perimeter controls due to the force of runoff often determines the need for intermediate controls.

Other Pollutants - Dewatering is done in such a manner as not to deposit sediment offsite or cause erosion. Trash and debris are contained. All waste water, including concrete washout, is properly disposed of. Materials and chemicals are properly stored.

Contractor Responsibilities

1. The building permit holder is responsible for the installation and on-going maintenance of all lot-specific erosion and sediment control BMPs. Lot access, inlet protection and perimeter control shall be installed prior to any land disturbance. Additional perimeter, intermediate and stockpile protection shall be installed immediately after wall inspection and backfilling.
2. Inspection frequency shall be whatever is deemed necessary to ensure the BMPs are functioning as designed. In addition, city ordinance requires that an inspection be conducted within 24 hours of a rain event of ½ inch or more. Problems noted during any inspection shall be corrected within 7 days unless otherwise noted by building inspector.
3. Once construction has commenced, the permit holder is responsible for the maintenance of BMPs protecting area inlets on or adjacent to their lots, as well as curb inlets along the street frontage. It is critical that sediment not be allowed to reach the storm sewer system.
4. The lot access provides a place for parking vehicles off-street and an area where materials can be off-loaded. The intent of this requirement is to provide a stable surface for access and parking where mud and other debris are not likely to be tracked onto the street. Proper maintenance of the entrance is required until such time as a permanent driveway can be installed. Entry to the lot shall be restricted to the lot access.
5. During the entire construction process the permit holder is responsible to ensure that mud, dirt, rocks and other debris are not allowed to erode or be tracked onto city streets and sidewalks. Should any mud or other debris find its way to the street, the contractor shall take immediate steps to have it removed.

Erosion & Sediment Control Inspections - City

1. Building inspectors will normally inspect BMPs in conjunction with routine inspections. Inspections will ensure proper placement and installation of BMPs as well as continued maintenance.
2. The first inspection will occur at the time of the footing inspection. Standard items to be checked at this time are inlet protection, lot access and perimeter control. If BMPs are not installed correctly or in the proper location, the requested inspection will be denied.
3. It is anticipated that by the time the ground rough plumbing inspection is requested, backfilling of the foundation will have been completed and all BMPs, including additional perimeter, stockpile and intermediate controls will have been installed. The requested inspection will be denied if the permit holder has failed to install or maintain the proper BMPs.
4. There will be situations that fall outside of the norms. Building inspectors will be available to discuss BMPs for any lot and the sequencing for installation.