



**Erosion and Sediment  
Control Standards  
for  
Building Construction that  
Disturbs Less Than One Acre  
for  
Unincorporated Area of  
Johnson County**

**2008 Edition**

Standards for building construction projects that disturb less than one acre and do not require a Land Disturbance Permit.

## **Introduction**

This booklet contains standard plans and procedures sufficient for building construction projects in the unincorporated area that disturb less than one acre. Projects that disturb more than 1 acre, or are part of a subdivision or project that disturbs more than one acre must obtain a NPDES permit from the Kansas Department of Health and Environment (KDHE) and a Land Disturbance permit from Johnson County.

It is a violation of county regulations to allow harmful amounts of silt to enter a road ditch, gutter, stormsewer, stream, or to cross a property line. County regulations also require erosion and sediment control on all projects, and this booklet was developed to help provide guidance for single-family lot construction and other small projects disturbing less than 1 acre.

The plans and procedures provided in this booklet address typical locations. This booklet does not address all circumstances that can be encountered in a project. The primary objective on small projects is perimeter control by using Best Management Practices (BMPs) to minimize erosion and prevent sediment from leaving the site. When adapting these standard plans to your construction project, always keep in mind the intent is to minimize erosion and prevent sediment leaving the site. The typical drawings anticipate home construction, but are applicable to other types of building projects.

The building permit holder is responsible for ensuring that adequate BMPs are in place and functioning until the construction project is completed. The building permit holder is also responsible to the County for actions of all subcontractors and suppliers. This includes tracking of mud onto the street and other actions which may cause erosion, sediment, or damage to any BMPs.

In subdivisions, both the individual home builder as well as the subdivision developer have responsibilities for erosion and sediment control. The builder is generally responsible for BMPs on the builder's lot and for actions of workman, subcontractors, and suppliers. The subdivision developer will have a Land Disturbance Permit from Johnson County and an NPDES Permit from KDHE which makes the developer responsible for the overall subdivision and certain BMPs for that subdivision such as sediment basins and curb inlet protection.

## BEST MANAGEMENT PRACTICES

**BMPs** are the facilities and construction techniques used to control erosion and sediment on the project. Examples include, but are not limited to, sediment fence, bale checks, straw mat, temporary seeding and mulching, inlet protection, and construction staging.

## INSTALLATION SEQUENCING

### **Following is a typical sequence of activities on a small building project:**

- 1) **Inlet Protection** – If adjacent street has curb and gutter, install curb inlet protection at the first inlet downstream. If the curb inlet protection has been provided by the developer, ensure that it is working properly. Install protection around storm sewer area inlet on or near the property, if any.
- 2) **Protection of Adjacent Lots** – On urban density lots, install silt fence or other BMPs along the common lot line of adjacent sodded or seeded lots.
- 3) **Determine limits of disturbed area and install perimeter BMPs.** On large lots, flag area to be disturbed by grading, cutting, filling and utility installation. Flag limits of area to be disturbed to keep from unnecessarily disturbing land. Assess site drainage and pick a standard drawing of BMPs to use on this site. Install silt fence where water sheets off of the construction site.
- 4) **Grading/Excavating** - Install all perimeter BMPs prior to any grading or excavating activities.
- 5) **Stabilize Stockpiles** - Install BMPs to stabilize stockpiles of dirt or other erodible material to prevent sediment from reaching the street or breaching perimeter protection. This might include covering the stockpile, or additional silt fence around the stockpile.
- 6) **Temporary Construction Entrance** – A temporary construction entrance is required at the beginning of the grading process.
- 7) **Concrete Washout Area:** Normally in subdivisions there will be a concrete truck washout area provided. In rural areas the builder must establish a washout area. The area must be easily assessable to concrete trucks, and should be bermed on the uphill side to prevent entrance of surface water.
- 8) **Sanitary Facilities** – Prior to the footing inspection, employee sanitary facilities must be available within 500 feet.
- 9) **Backfill and Trash Facilities** – After the foundation is backfilled is a good time to check all BMPs and make adjustments for the new grade. Complete installation of all BMPs per the specified typical drawing, i.e., Type A, B, C, Large Lot, or Rural. Install trash dumpster after the foundation wall is backfilled.
- 10) **Housekeeping** – The site must be managed for solid and hazardous waste which includes: providing trash containers and regular site clean for proper disposal of scarp building material, product/material shipping waste, food containers, and cups; and providing containers and proper disposal for waste paints, solvents, and cleaning compounds. The site must have available toilets for proper disposal of sanitary sewage. The site also must have secondary containment for an fuel or liquid storage tanks to minimize the effects of a leak or spill.

11) **Maintenance** - The builder is responsible for maintaining and repairing all BMPs as needed throughout construction. Failure to have BMPs properly placed and maintained will delay required inspections for your building.

12) **Final Grading** - BMPs may be removed in order to complete final grading and sodding of the lot. If sodding of the lot is delayed, the builder or lot owner is required to maintain BMPs until the sod can be put down.

## BUILDER RESPONSIBILITIES

- 1) The builder is responsible for the on-going maintenance of all lot specific erosion and sediment control devices until the lot is sodded.
- 2) During construction the builder shall perform periodic inspections to ensure erosion and sediment control measures are functioning as designed. In addition to periodic inspections, an inspection shall be conducted after each rain event. Any problems noted during these inspections shall be corrected immediately.
- 3) Once construction has commenced, the builder is responsible for the maintenance of erosion and sediment control measures protecting inlets on their lots, as well as curb inlets along the street frontage. It is critical that sediment not be allowed to enter the storm sewer system.
- 4) The temporary construction entrance provides a place for parking vehicles off-street and a spot where material can be off-loaded. The intent of the requirement is to provide a stable surface for parking vehicles where mud and other debris is not likely to be tracked onto the street.
- 5) During the entire construction process the builder is responsible to ensure that mud, dirt, rocks and other debris are not allowed to enter onto streets and sidewalks, nor be tracked onto streets by construction vehicles.** Any mud or other debris on the street shall be removed by the builder.

### **Sediment Fence Maintenance (silt fence)**

- 1) Inspect sediment fences at least once a week and after each rain event. Make needed repairs immediately.
- 2) If the fabric of the sediment fence collapses, tears, decomposes or becomes ineffective, replace promptly.
- 3) Remove the sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid damaging or undermining the fence during cleanout.
- 4) The installation of utility service lines may damage the BMPs, and if not repaired by the utility contractor, shall be repaired by the builder.

## **INSPECTIONS - COUNTY**

### **Building Codes**

On projects with a building permit, Johnson County Building Codes inspectors may inspect erosion and sediment control measures in conjunction with routine inspections. Inspections will ensure that proper placement and installation of erosion and sediment control measures are in place. For any called-for inspection, the Building Codes inspector may note the condition of the BMPs and if the BMPs are not in place or not being properly maintained, the inspector may require the inspection be rescheduled.

The first BMPs inspection will ordinarily occur at the time of the footing inspection, and this is the primary inspection for BMPs. As noted in the general sequencing notes, standard items to be checked are: protection of adjacent lots, inlet protection, perimeter BMPs, stabilized stockpiles, temporary construction entrance, concrete washout area, and sanitary facilities. If BMPs are not installed in the correct location or not installed correctly, the footing inspection may be rescheduled.

It is anticipated that by the time of the called-for inspection after the foundation wall inspection backfilling of the foundation will have been complete and all erosion and sediment control measures will have been installed, including a trash dumpster.

On some projects there may be situations that fall outside of the conditions anticipated by the standard drawings. The Building Codes inspector can be consulted about these situations when on site doing a called-for inspection. The builder may be referred to the Public Works Department.

### **Public Works**

Johnson County Public Works is the principal department for enforcement of the erosion and sediment control regulations. The Building Codes Inspector may also issue citations for violations of County regulations related to erosion and sediment control. The Public Works inspector may make random visits to the site, and may issue citations for violations of county regulations related to erosion and sediment control. Common violations are:

1. Tracking of mud onto the public street or road.
2. Detrimental amount of silt crossing the property line or entering the storm drainage system
3. Failure to properly maintain BMPs.
4. Allowing litter other material to blow off site.
5. Failure to obtain a permit for work exceeding one acre of disturbed area.
6. Failure to maintain documentation on projects with a KDHE and County permit.

On construction projects there may be situations that fall outside of the standard drawings. The Public Works inspector will be available to discuss erosion and sediment control measures for any lot and the sequencing for installation. If a builder has questions or concerns, call Public Works at 913-715-8300 to arrange a site meeting with the Public Works Inspector.

## **CONSTRUCTION SPECIFICATIONS**

### **Temporary Construction Entrance**

Any required temporary construction entrance shall be constructed of 2-3 inch rock and shall be at least 24 feet wide and 50 feet long (unless length has to be less in urban density lots due to inadequate front yard). Thickness of the rock shall be adequate to support construction traffic and must be a minimum of six inches. The purpose of the temporary entrance is so delivery trucks, concrete trucks, and others can pull in and out of the site without tracking mud onto the road. The temporary construction entrance will occasionally need to be cleaned of accumulated mud and dirt.

### **Silt Fence**

- 1) Dig a trench at least 6 inches deep along the fence alignment.
- 2) Drive posts at least 18 inches into the ground on the downslope side of the trench. Space posts a maximum of 6 feet.
- 3) Fasten support wire fence to upslope side of posts, extending 6 inches into trench.
- 4) Attach continuous length of fabric to upslope side of fence posts. Try to minimize the number of joints. Avoid joints at low points in the fence line. Where joints are necessary, fasten fabric securely to support posts and overlap to the next post.
- 5) Place the bottom 1 foot of fabric in the 6 inch deep trench (minimum), lapping toward the upslope side. Backfill trench with compacted earth or gravel.

### **Curb Inlet Protection**

Use standard gravel filter bag arrangement for curb inlet protection. The bags are burlap or synthetic net about 24 inches long and 6 inches high. Bags are filled with 3/4 inch screened rock and placed around the inlet area with no evident gaps between the bags.

### **Area Inlet Protection**

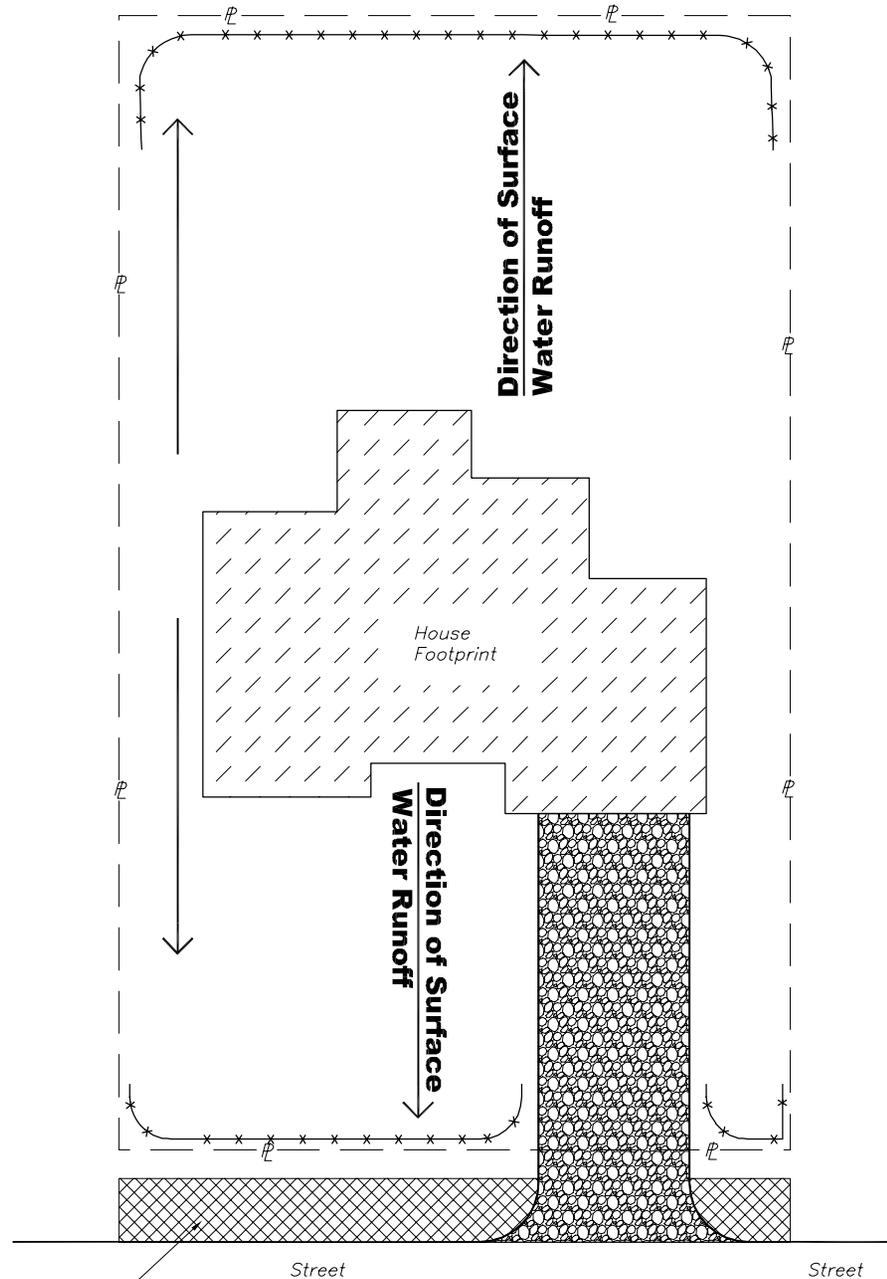
If the area inlet is complete, gravel filter bags as described above may be placed around the inlet. If the area inlet is not completed it may be necessary to use staked hay bales placed around the inlet. Hay bales should be tightly packed and staked down with at least two 2" x 2" x 4' stakes per bale.

Project Title	Bid Request No.	Sheet No.	Total Sheets
Erosion Control		1	1

Last Plotted By: Michael Moore

Last Revised: 8/22/2007

File Name: F:\STORMWTR\MPDES\_MSA\MCU #1\Norm's Ordinance\Storm Water Erosion Control Standards.dwg



\*Erosion Control Blanket

Street

Street

LEGEND

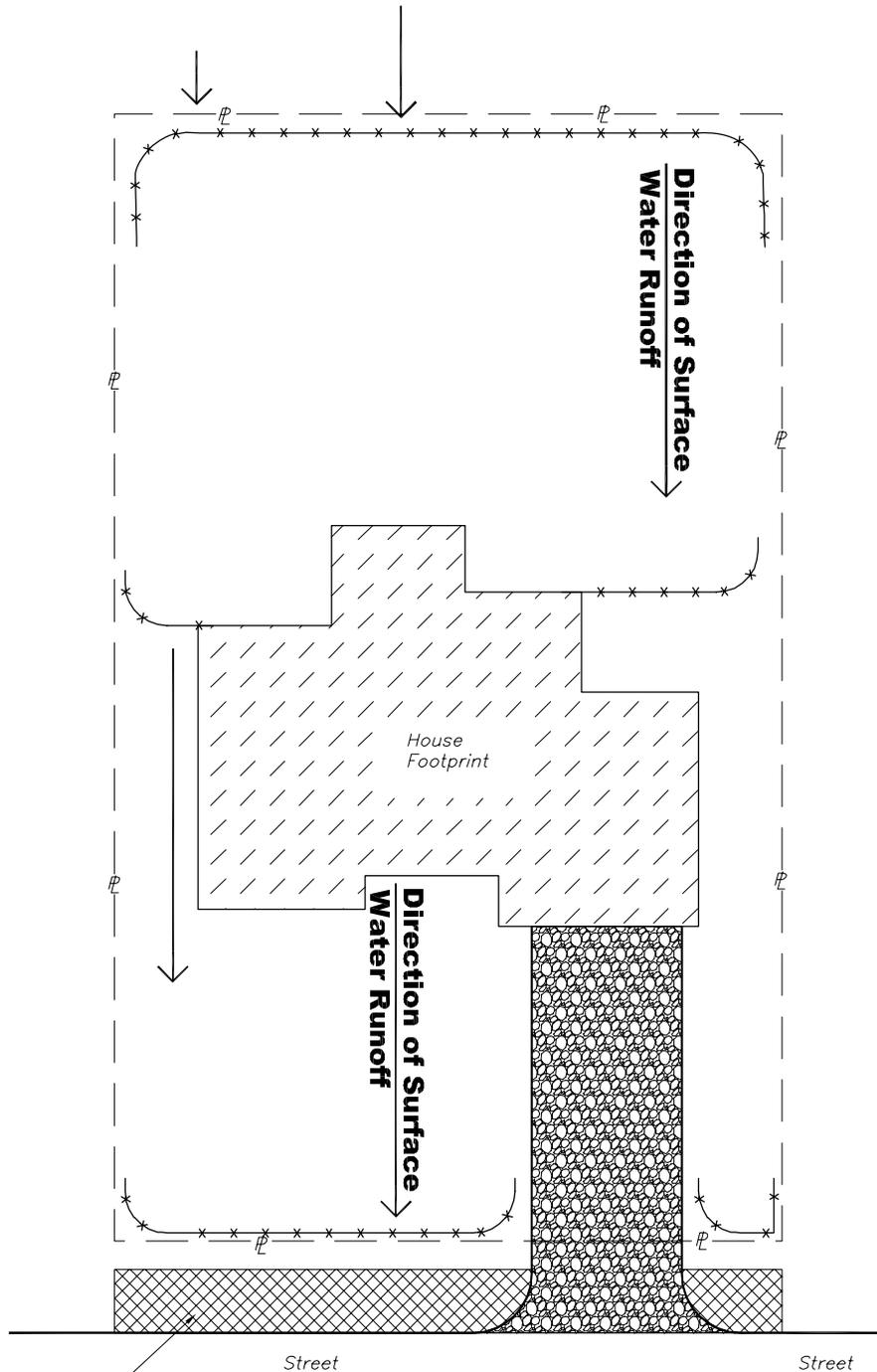
- Silt Fence**
- Gravel Construction Entrance**
- Direction of Surface Water Runoff**

NOTES

1. Silt fence to be placed at limits of disturbed area where surface water from construction site flows toward the silt fence. For sheet flow silt fence is not required if a grass filter strip exists and distance to the property line, drainage course or near edge of stream buffer exceeds 100 ft.
  2. On sites where surface water from construction site flows toward the street the silt fence is normally placed at the back of the ditch on ditch streets and at the curb on curbed streets.
  3. A state and county construction stormwater permit is required if disturbed area exceeds 1 acre. The time and expense of this permit can usually be avoided by carefully limiting site grading.
  4. Inspect erosion control after each rain to ensure that it is working, and make changes as needed to keep silt on site.
- \* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.

**JOHNSON COUNTY PUBLIC WORKS**  
 Typical Single Family  
 Erosion Control – Type A

Project Title	Bid Request No.	Sheet No.	Total Sheets
Erosion Control		1	1



\*Erosion Control Blanket

Street

Street

### LEGEND

- x — x — x — **Silt Fence**
-  **Gravel Construction Entrance**
-  **Direction of Surface Water Runoff**

### NOTES

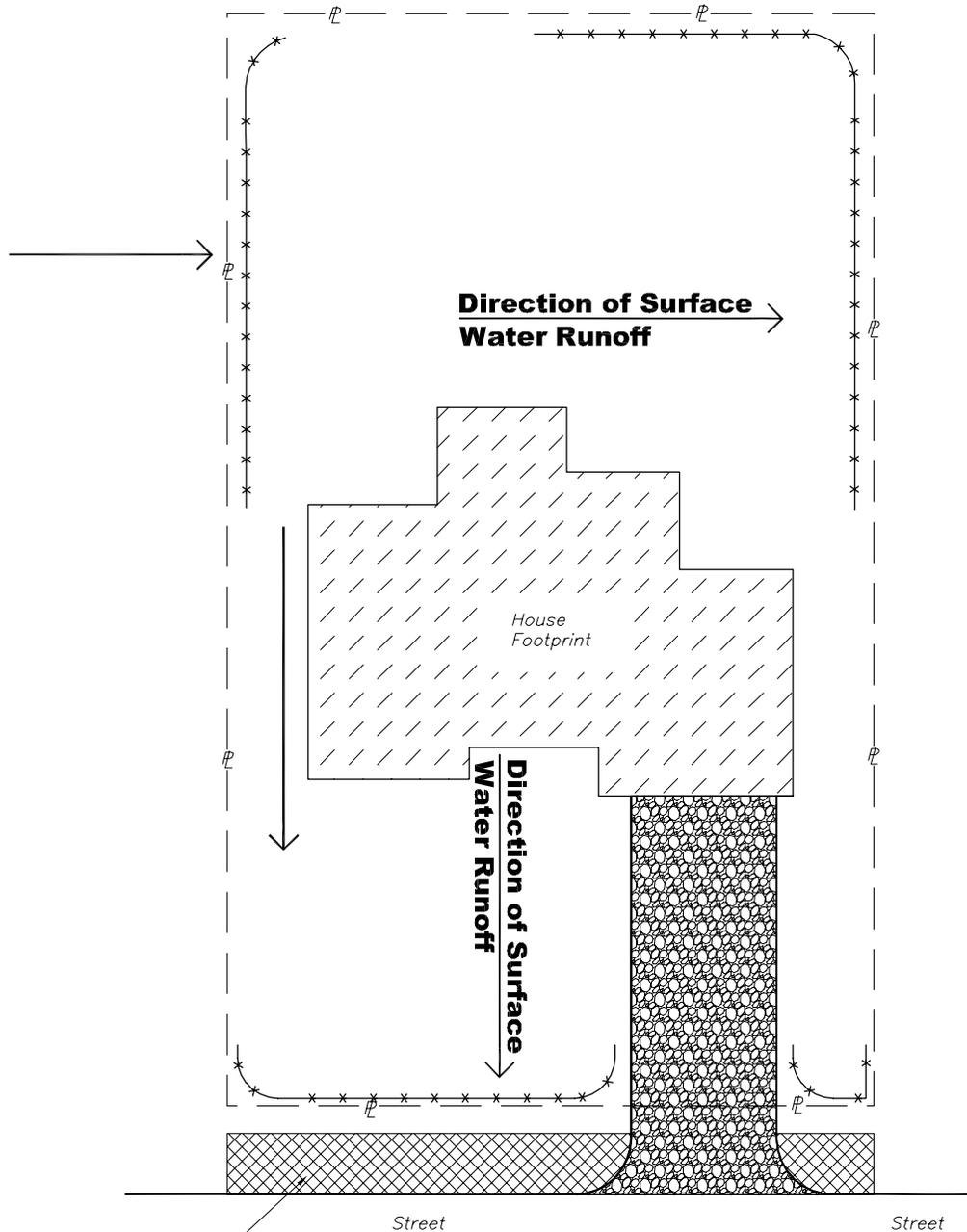
1. Silt fence to be placed at limits of disturbed area where surface water from construction site flows toward the silt fence. For sheet flow silt fence is not required if a grass filter strip exists and distance to the property line, drainage course or near edge of stream buffer exceeds 100 ft.
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  4. Inspect erosion control after each rain to ensure that it is working, and make changes as needed to keep silt on site.
- \* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.

Project Title	Bid Request No.	Sheet No.	Total Sheets
Erosion Control		1	1

Last Plotted By: Michael Moore

Last Revised: 8/22/2007

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\*Erosion Control Blanket

LEGEND

- x — x — x — **Silt Fence**
- Gravel Construction Entrance**
- ← **Direction of Surface Water Runoff**

NOTES

1. Silt fence to be placed at limits of disturbed area where surface water from construction site flows toward the silt fence. For sheet flow silt fence is not required if a grass filter strip exists and distance to the property line, drainage course or near edge of stream buffer exceeds 100 ft.
  2. On sites where surface water from construction site flows toward the street the silt fence is normally placed at the back of the ditch on ditch streets and at the curb on curbed streets.
  3. A state and county construction stormwater permit is required if disturbed area exceeds 1 acre. The time and expense of this permit can usually be avoided by carefully limiting site grading.
  4. Inspect erosion control after each rain to ensure that it is working, and make changes as needed to keep silt on site.
- \* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.

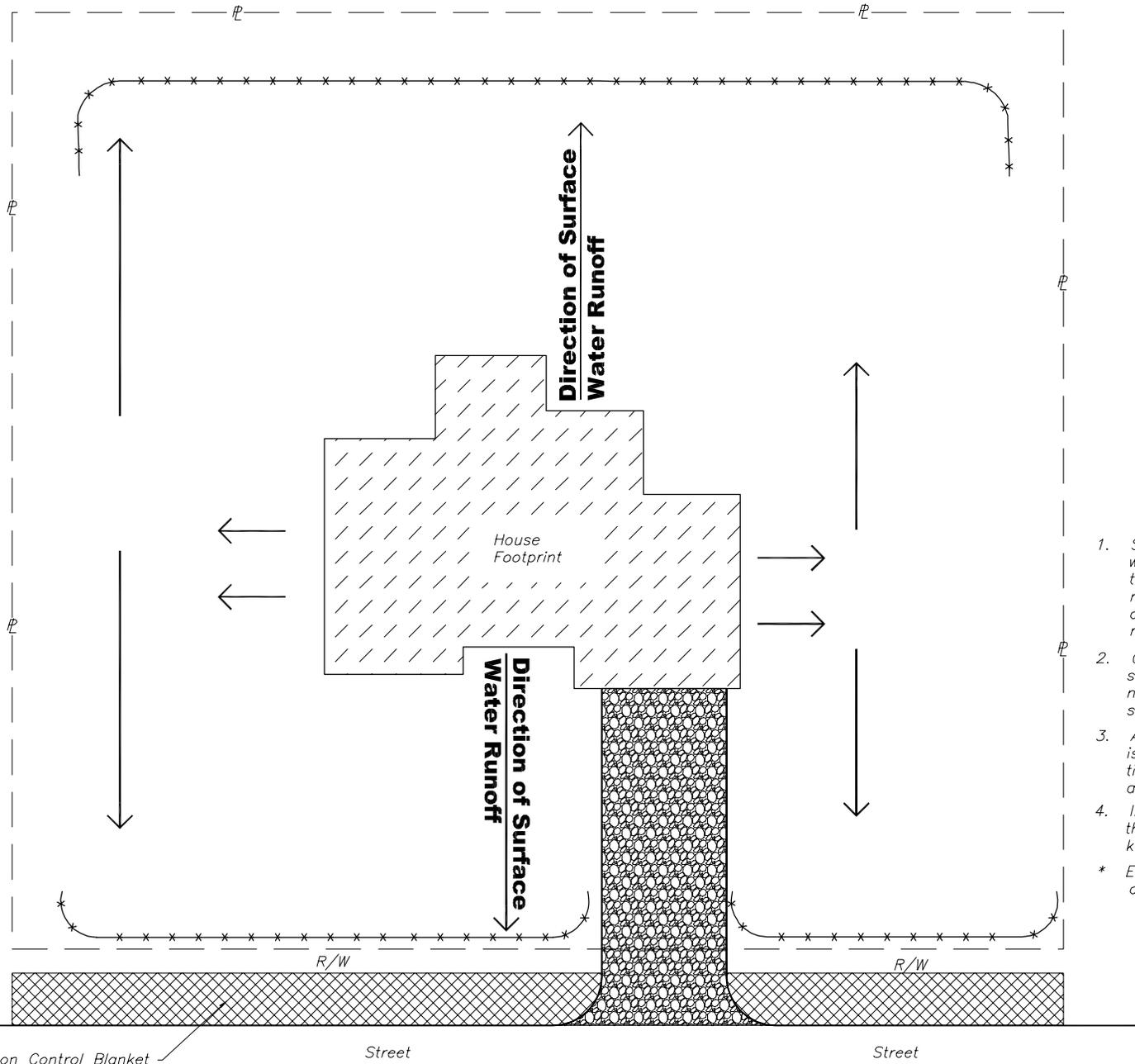
**JOHNSON COUNTY PUBLIC WORKS**  
 Typical Single Family  
 Erosion Control – Type C

Project Title	Bid Request No.	Sheet No.	Total Sheets
Erosion Control		1	1

Last Plotted By: Michael Moore

Last Revised: 8/22/2007

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**LEGEND**

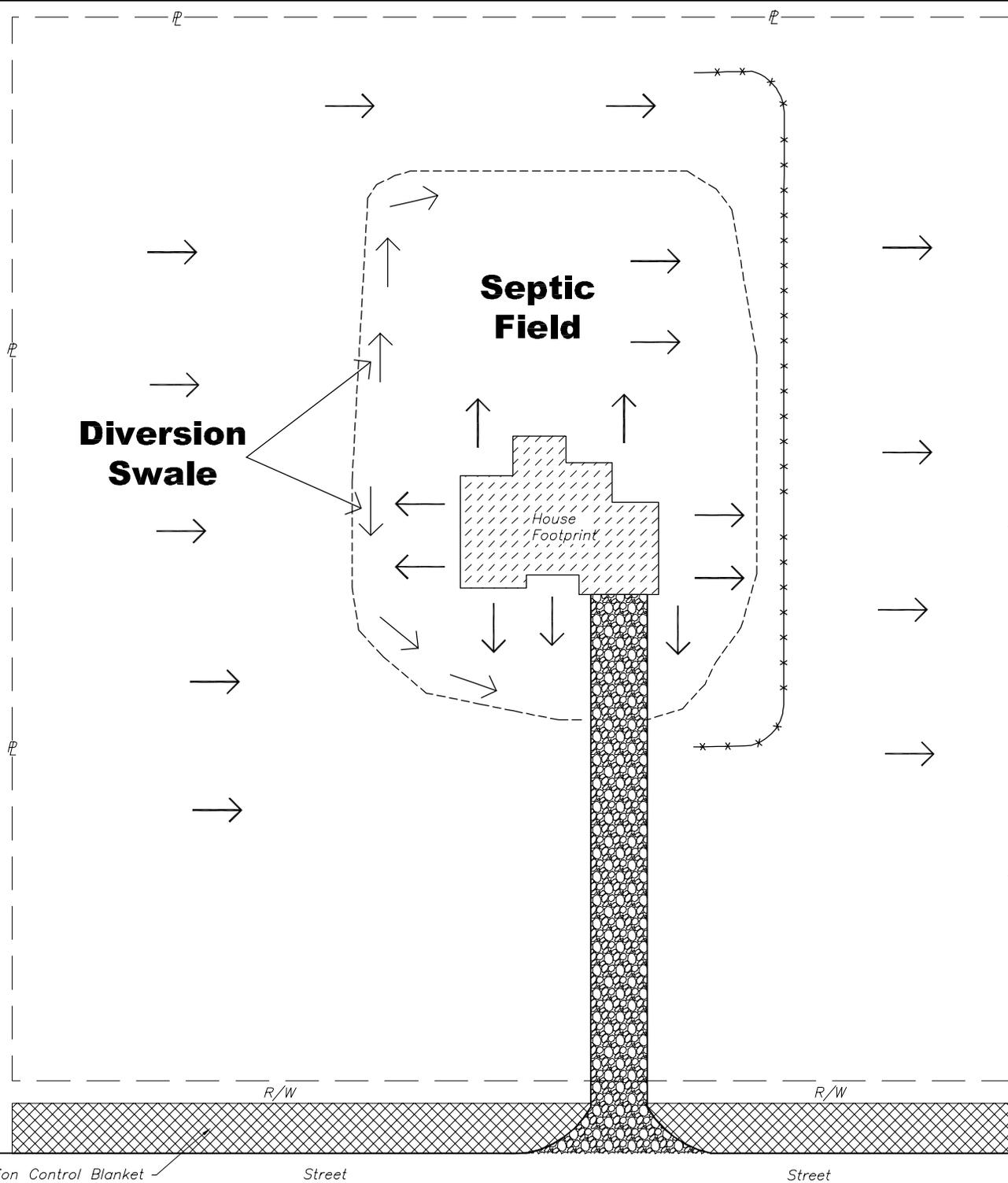
- x — x — x — **Silt Fence**
- Gravel Construction Entrance**
- ← **Direction of Surface Water Runoff**

**NOTES**

1. Silt fence to be placed at limits of disturbed area where surface water from construction site flows toward the silt fence. For sheet flow silt fence is not required if a grass filter strip exists and distance to the property line, drainage course or near edge of stream buffer exceeds 100 ft.
  2. On sites where surface water from construction site flows toward the street the silt fence is normally placed at the back of the ditch on ditch streets and at the curb on curbed streets.
  3. A state and county construction stormwater permit is required if disturbed area exceeds 1 acre. The time and expense of this permit can usually be avoided by carefully limiting site grading.
  4. Inspect erosion control after each rain to ensure that it is working, and make changes as needed to keep silt on site.
- \* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.

\*Erosion Control Blanket

Project Title	Bid Request No.	Sheet No.	Total Sheets
Erosion Control		1	1



**LEGEND**

- x — x — x — **Silt Fence**
- Gravel Construction Entrance or Permanent Driveway**
- ← **Direction of Surface Water Runoff**
- - - - - **Limits of Disturbed Area**

**NOTES**

1. Silt fence to be placed at limits of disturbed area where surface water from construction site flows toward the silt fence. For sheet flow silt fence is not required if a grass filter strip exists and distance to the property line, drainage course or near edge of stream buffer exceeds 100 ft.
  2. Where surface water flows toward construction site construct a diversion swale around disturbed area. Depending on amount of water prevent erosion with straw mats, bale checks or silt fence.
  3. A state and county construction stormwater permit is required if disturbed area exceeds 1 acre. The time and expense of this permit can usually be avoided by carefully limiting site grading.
  4. Inspect erosion control after each rain to ensure that it is working, and make changes as needed to keep silt on site.
  5. Provide a designated washout area for concrete trucks. Washout area should have stormwater diverted around the site.
- \* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.

\*Erosion Control Blanket Street

**JOHNSON COUNTY PUBLIC WORKS**  
 Typical Single Family  
 Erosion Control – Rural