



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

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

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Table of Contents

Introduction	3
Site Plan	4
Best Management Practices	4
Installation Sequencing	4
Building Permit Holder Responsibilities	5
Inspections-County	6
CONSTRUCTION SPECIFICATIONS	7
Temporary Construction Entrance	7
Silt Fence	7
Curb Inlet Protection.....	8
Area Inlet Protection.....	8
Streams, Drainage Ways & Drainage Easements.....	8

CLAY COUNTY, MISSOURI

PLANNING AND ZONING DEPARTMENT

INTRODUCTION

This booklet contains standard plans and procedures sufficient for building construction projects in the unincorporated area of Clay County that disturb less than one (1) acre. Land disturbance sites that disturb one (1) or more acres over the life of the project or are part of a larger common plan of development or sale that will disturb one (1) or more acres over the life of the project, must obtain a Land Disturbance (LD) Permit from Clay County, and also develop and implement a Storm Water Pollution Protection Plan (SWPPP) and obtain a Storm Water Permit from the Missouri Department of Natural Resources (MoDNR).

It is a violation of county regulations to allow harmful amounts of silt or other materials as defined by the Missouri State Operating Permit to enter a road ditch, gutter, storm sewer, stream, drainage way, drainage easement or 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 one (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 prevent erosion and minimize 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, which are attached, 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 Clay County for actions of all subcontractors and suppliers. This includes tracking of mud onto the street and/or other actions which may cause erosion, sediment, or damage to any BMPs.

In subdivisions, both the Building Permit Holder as well as the subdivision developer has responsibilities for erosion and sediment control. The Building Permit Holder is generally responsible for BMPs on the builder's lot and for actions of the workman, subcontractors and suppliers. The subdivision developer will have a SWPPP and Land Disturbance Permit required by the Missouri Department of Natural Resources (MoDNR) and a Land Disturbance (LD) permit from Clay County which makes the developer responsible for the overall subdivision and certain BMPs for that subdivision such as sediment basins and curb inlet protection.

SITE PLAN

The Building Permit Holder is responsible for the depiction of the anticipated land disturbance areas on the Plot Plan required for a Clay County building permit.

Those disturbance areas should include at a minimum the following: all structure construction areas, driveway and parking areas, utility work, landscaping and any other activity that falls within the definition of land disturbance, as set forth in the Land Development Code (LDC).

If any of these activities fall within a designated Federal Emergency Management Area (FEMA) Special Flood Hazard Area (SFHA) as established by the most current Flood Insurance Rate Map (FIRM) data, then a Clay County Floodplain Development Permit must be approved.

BEST MANAGEMENT PRACTICES (“BMPs”)

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 line, if any.
- 2) **Protection of Adjacent Lots** – When construction is within one-hundred (100) feet of the common lot line of adjacent sodded or seeded lots then installation of a silt fence or other BMPs is required.
- 3) **Determine limits of disturbed area and install perimeter BMPs** – On large and rural 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. Make an assessment of the site drainage and pick a typical drawing of BMPs (see attached Type A, B etc.) that best replicates the conditions found on the subject building 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 accessible 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 five-hundred (500) feet of construction.
- 9) **Backfill and Trash Facilities** – After the foundation is backfilled it would be a good time to check all BMPs and make adjustments for the new grade. Complete installation of all BMPs per a specified typical drawing, i.e., Type A, B, C, Large Lot, or Rural (see attached drawings). Install a trash dumpster or container(s) after the foundation wall is backfilled to take care of job site refuse.
- 10) **Housekeeping** – The site must be managed for solid and hazardous waste which includes: providing trash containers and regular site clean up for proper disposal of scrap 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 secondary containment for any fuel or liquid storage tanks to minimize the effects of a leak or spill.
- 11) **Maintenance** – The Building Permit Holder 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 or seeding of the lot. If sodding or seeding of the lot is delayed, the building permit holder is required to maintain BMPs until the area is **stabilized** by either sod or seed and mulch, or a release is signed transferring responsibility of BMPs to the property owner.

BUILDING PERMIT HOLDER RESPONSIBILITIES

1. A Plot Plan is required depicting all land disturbance areas and any designated Federal Emergency Management Area (FEMA) Special Flood Hazard Areas (SFHA) as established by the most current Flood Insurance Rate Map (FIRM) data.
2. The Building Permit Holder is responsible for the on-going maintenance of all lot specific erosion and sediment control devices until the lot is **stabilized** by either sod or seed and mulch.
3. During construction the Building Permit Holder 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.
4. Once construction has commenced, the Building Permit Holder is responsible for the maintenance of erosion and sediment control measures protecting inlets, drainage areas or streams 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, drainage areas or streams.
5. 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.

6. **During the entire construction process the Building Permit Holder 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 immediately removed by the Building Permit Holder.

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 immediately by the Building Permit Holder.

INSPECTIONS - COUNTY

On projects with a building permit, the Clay County Building Official 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 Official may note the condition of the BMPs and if the BMPs are not in place or not being properly maintained, the Building Official may require the inspection to 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 of the waterproofing and ground rough inspection and before backfilling of the foundation will have been completed erosion and sediment control measures will have been installed, including a trash dumpster or container(s).

When the final inspection is done and before a Certificate of Occupancy (CO) can be issued final grading, sod or seed and mulch stabilizing the disturbed area on the lot will need to be done, or a release signed transferring responsibility of BMPs to the property owner.

On some projects there may be situations that fall outside of the conditions anticipated by the standard drawings. The Building Official can be consulted about these situations when on site doing a called-for inspection.

The Planning and Zoning Department is the principal department for enforcement of the erosion and sediment control regulations. The Building Official or designee will make random visits to the site, and may issue fines for violations of County regulations related to erosion and sediment control. Common violations are:

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

On construction projects there may be situations that fall outside of the typical drawings (see attached). The Building Official or designee will be available to discuss erosion and sediment control measures for any lot and the sequencing for installation. If a Building Permit Holder has questions or concerns, call (816) 407-3380 to arrange a site meeting with a County official.

Any excavation in a County road right-of-way requires a permit from the Clay County Highway Department. For details, please contact the Clay County Highway Department at 407-3300.

CONSTRUCTION SPECIFICATIONS

Temporary Construction Entrance

Any required temporary construction entrance shall be constructed of 2-3 inch sized rock and shall be at least twenty-four (24) feet wide and fifty (50) feet long (unless length has to be less on lots due to inadequate front yard). Thickness of the rock shall be adequate to support construction traffic and must be a minimum of six (6) inches. The purpose of the temporary entrance is to allow for delivery trucks, concrete trucks, and others to pull in and out of the site without tracking mud into the road. The temporary construction entrance will occasionally need to be cleaned of accumulated mud or dirt.

Silt Fence

- 1) Dig a trench at least six (6) inches deep along the fence alignment.
- 2) Drive posts at least eighteen (18) inches into the ground on the downslope side of the trench. Space posts a maximum of six (6) feet.
- 3) Fasten support wire fence to upslope side of posts, extending six (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 one (1) foot of fabric in the six (6) inch deep trench (minimum), lapping toward the upslope side. Backfill trench with compacted earth or gravel.

Curb Inlet Protection

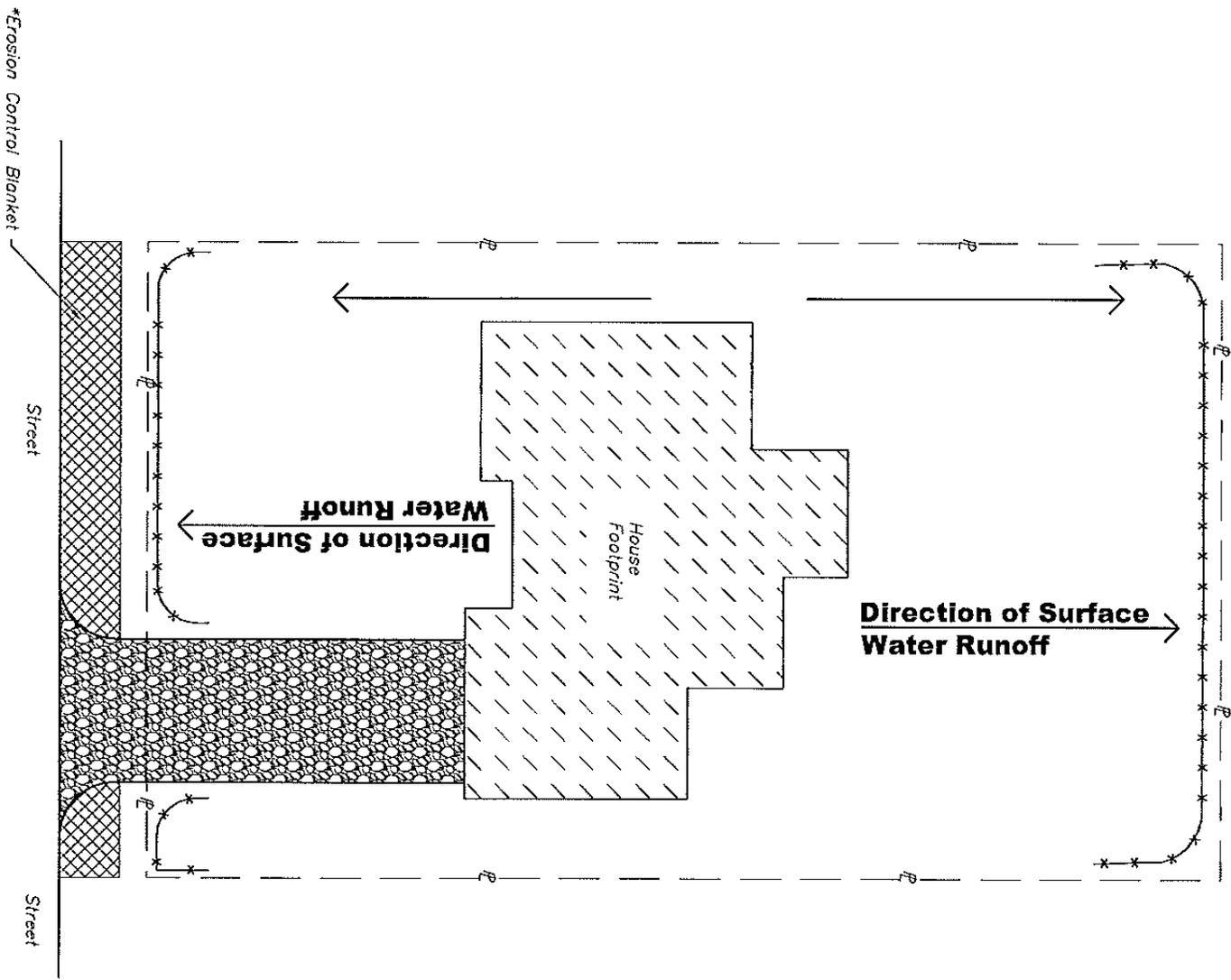
Use standard gravel filter bag arrangement for curb inlet protection. The bags are burlap or synthetic net about twenty-four (24) inches long and six (6) inches high. Bags are filled with $\frac{3}{4}$ inch screened rock and placed around the inlet area with no evident gaps between the bags.

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.

Streams, Drainage Ways & Drainage Easements

Flag streams (75' from centerline of creek), and drainage areas that flow to a stream on the property or adjacent property. 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 the site drainage and pick an attached typical drawing of BMPs (Type A, Type B, etc.) to use on this site. Install silt fence where water sheets off of the construction site.



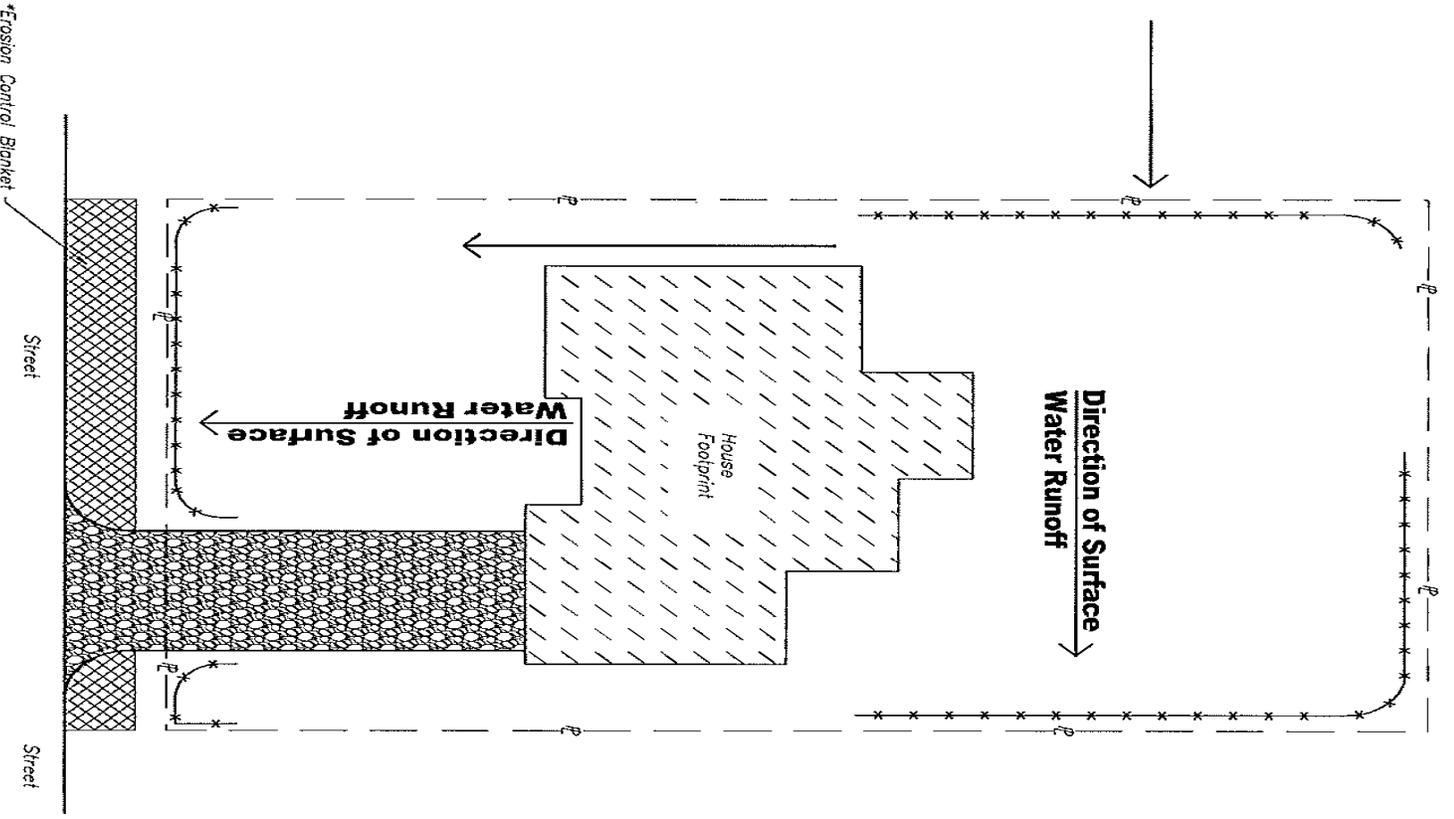
LEGEND

- *---*---*--- 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 75 feet.
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 Land Disturbance 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. Inspect erosion control after each rain to ensure that it is working, and make changes as needed to keep silt on site.
4. *

* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.

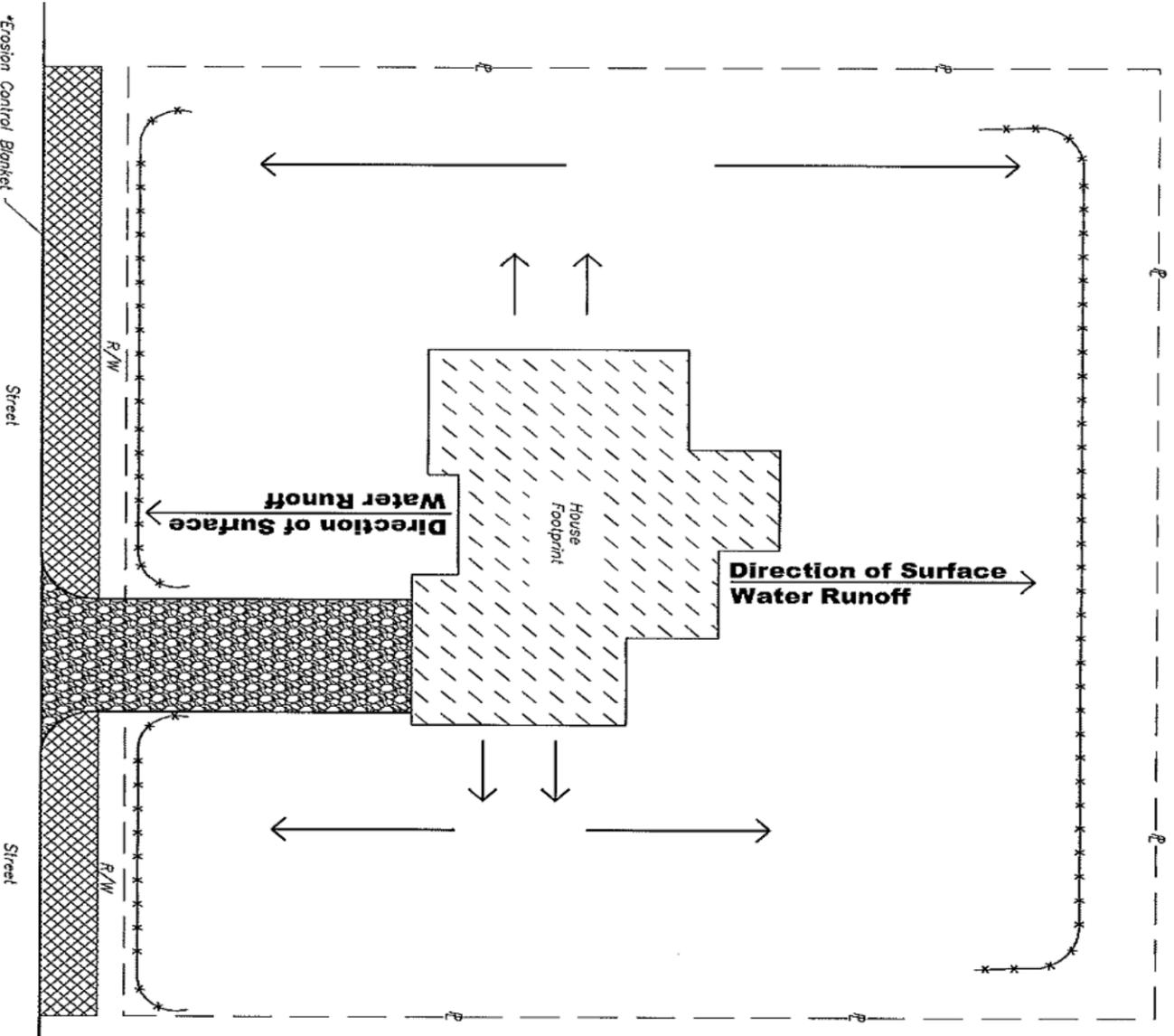


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- x — x — x — Silt Fence
- ▨ Gravel Construction Entrance
- ← Direction of Surface Water Runoff

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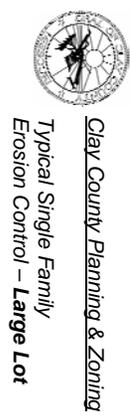
LEGEND

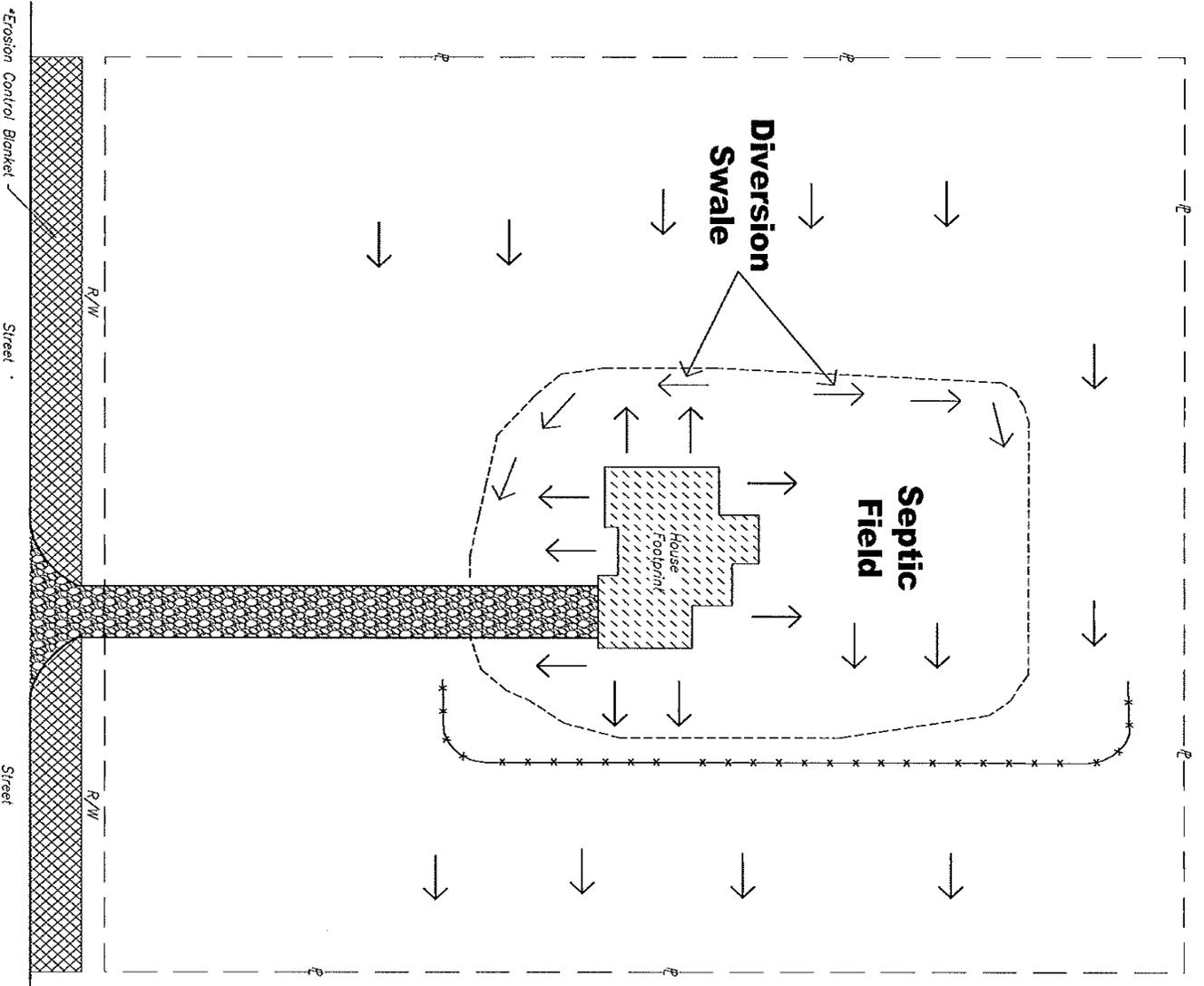
- x---x---x--- Silt Fence
- ▨ Gravel Construction Entrance
- ← Direction of Surface Water Runoff

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* Erosion control blankets are required for slopes 4% or greater, and optional for slopes less than 4%.





LEGEND

- *—*—*— 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 75 feet.
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 Land Disturbance 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. 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%.