

**A. GENERAL**

Erosion control measures such as silt fence, inlet filters and soil stabilization blankets and matting, incorporated into underground pipeline construction projects, help prevent and control erosion and sedimentation as a result of the construction activities. Measures to prevent sediment from entering the storm sewer system, drainage ways, creeks, ponds, lakes and other conveyances of storm water should be considered prior to beginning construction. Furthermore, measures that prevent sediment from flowing into streets and adjacent property should be considered prior to beginning construction.

**B. SILT FENCE**

Purpose: To decrease the velocity of sheet flows and low to moderate channel flows, and intercept and detain small amounts of sediment from disturbed areas of limited extent in order to prevent sediment from leaving the construction site.

Conditions Where Applicable:

- Below disturbed areas subject to sheet and rill erosion.
- Where the size of the drainage area is no greater than one-fourth of an acre per 100 feet of silt fence length, the maximum slope length behind the barrier is 100 feet, and the maximum slope gradient behind the barrier is 50% (2:1).
- In minor swales or ditch lines where the maximum contributing drainage area is no greater than one acre and flow is not greater than 1 cfs.
- Silt fence shall not be used in areas where rock or some other hard surface prevents the full and uniform depth anchoring of the barrier.

Installation:

**NOTE:** Refer to **Figure 1** for silt fence installation detail.

Trench Method:

1. Install posts every 6' along the line of the proposed silt fence. Posts shall be installed slightly angled upslope and shall be imbedded a minimum of 16" into the ground.
2. Excavate a 4" wide by 4" deep trench on the upslope side of the posts
3. Fasten the fabric securely to the upslope side of the posts using three zip ties evenly spaced in the upper 6" of the fabric. A continuous length of fabric shall be used to construct the fence. When joints are unavoidable, the fabric shall be spliced together only at a support post with a 6" minimum overlap and secured to the post with zip ties spaced to prevent a breach of the fence. The fabric shall extend a minimum of 6" into the trench and shall extend between 24" and 30" above grade.

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4. Staple the fabric to the bottom of the trench then backfill the trench and compact the soil over the fabric in the trench.

### Slice Method:

1. Using appropriate equipment designed for the installation of silt fencing; slice the silt fence into the soil along the proposed line. A continuous length of fabric shall be used to construct the fence. When joints are unavoidable, the fabric shall overlap a minimum of 6" at the joint. The fabric shall extend a minimum of 6" into the soil and shall extend between 24" and 30" above grade.

2. Compact the soil at the slice to ensure proper embedment of the silt fence.

3. Install posts every 6' along silt fence such that the silt fence is on the upslope side of the posts. Posts shall be installed slightly angled upslope and shall be imbedded a minimum of 16" into the ground.

4. Fasten the fabric securely to the posts using three zip ties evenly spaced in the upper 6" of the fabric. A post shall be installed at all joints in the silt fence. The fabric shall be spliced together at the support post with a 6" minimum overlap and secured to the post with zip ties spaced to prevent a breach of the fence.

### Maintenance and Removal:

1. Inspect silt fence(s) at least once a week and within 24 hours after each rain event.

2. Remove accumulated sediment once it reaches a level of 1/2 the height of the silt fence. Removed sediment shall be placed in a suitable location and in a manner that minimizes further erosion.

3. Repair or replace decomposed, damaged, or otherwise ineffective silt fence within 24 hours after discovery.

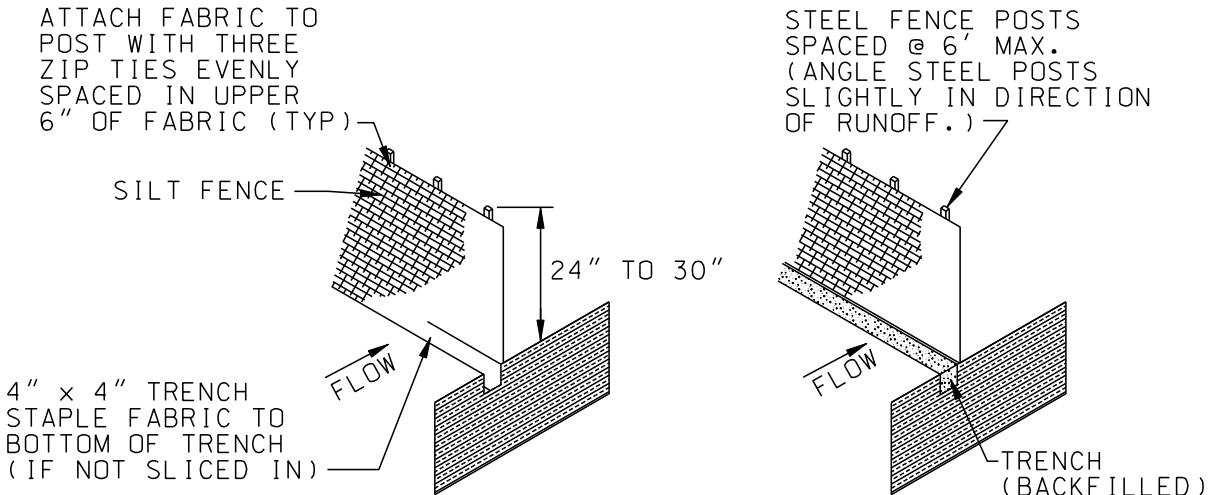
4. Pay close attention to end runs and undercutting during inspections. If such develop, make repairs or alterations immediately.

5. Do not remove silt fence until upslope areas have been stabilized. Stabilized shall be defined as an established stand of perennial vegetation with a density of 80%. Sediment deposits that remain when the fence is removed shall be dressed to conform to the existing grade, prepared, and seeded. Removed silt fence material shall be properly disposed of or, if in good condition, salvaged.

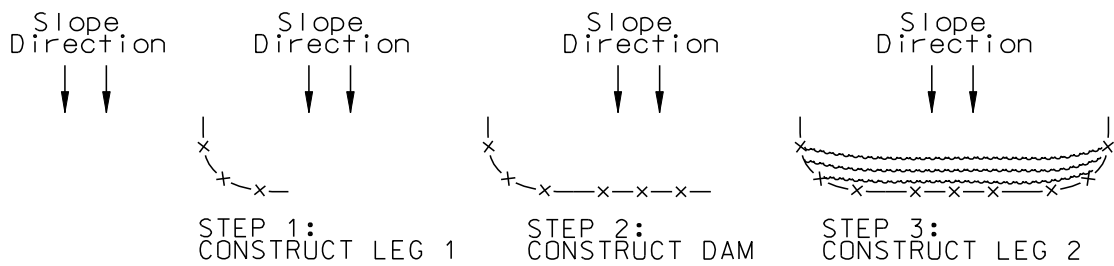
**NOTE:** *These installation requirements represent minimum installation requirements and do not replace the filter fabric manufacturer installation recommendations that may exceed these requirements.*

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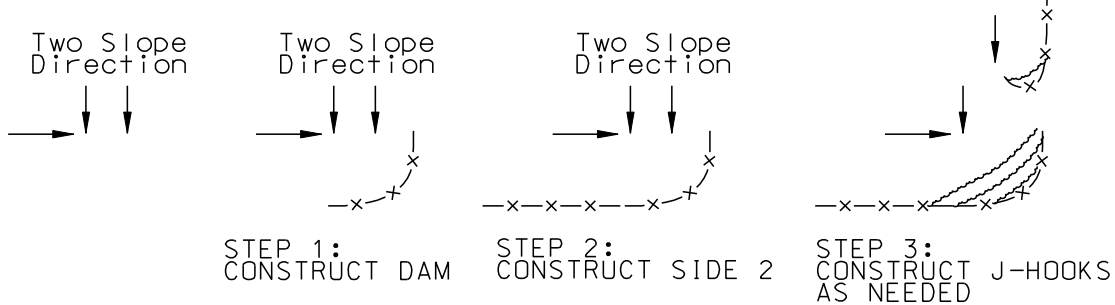
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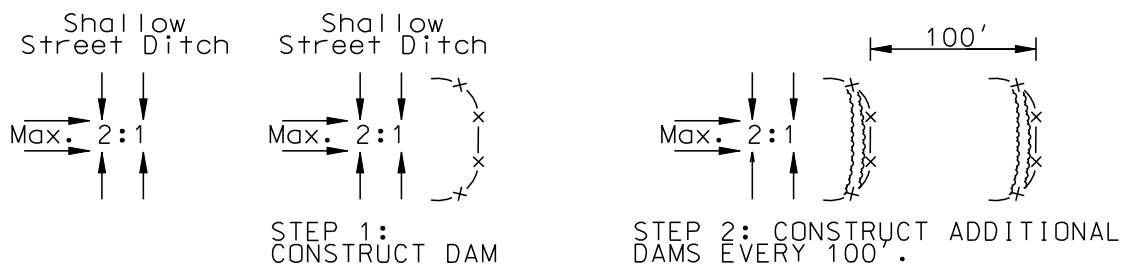
ONE SLOPE SILT FENCE CONSTRUCTION



TWO SLOPE SILT FENCE CONSTRUCTION



SHALLOW STREET DITCH SILT FENCE CONSTRUCTION



**FIGURE 1. Silt Fence Installation Details**

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### **C. STORM DRAIN INLET PROTECTION**

Purpose: To prevent sediment from entering storm sewer systems.

Conditions Where Applicable:

- Curb inlets.
- Area Inlets

Installation of Curb Inlet Filters:

Install curb inlet filters to effectively filter sediment without choking or plugging the inlet to be protected. Install filters to provide bypass or overflow openings to allow the inlet to receive storm water and avoid flooding during intense runoff. Refer to **Figure 2** for a typical installation of a curb inlet filter.

Maintenance and Removal of Curb Inlet Filters:

1. Inspect curb inlet filters at least once a week and within 24 hours after each rain event.
2. Remove accumulated sediment. Removed sediment shall be placed in a suitable location and in a manner that minimizes further erosion.
3. Any repairs shall be conducted immediately. When the porosity of the filter is restricted by sediment, replace or clean the filter to restore the original installation function.
4. Do not remove the filter until the remaining drainage area has been stabilized. Stabilized shall be defined as an established stand of perennial vegetation with a density of 80%. Sediment deposits that remain when the sock is removed shall be removed and placed in a suitable area where it will not erode and cause sedimentation problems. Removed filters shall be properly disposed of or, if in good condition, salvaged.

Installation of Area Inlet Silt Fence Barrier

**NOTE:** Refer to **Figure 3** for a detail of a typical area inlet barrier installation.

1. Install posts evenly around the perimeter of the inlet a maximum of 3' apart. Posts shall be imbedded a minimum of 18" into the ground.
2. Excavate a 1' deep trench around the projected perimeter of the outside face of the posts.
3. Cut a piece of fabric to length that will provide for a continuous barrier without joints. Wrap the fabric on the outside face of the posts. Secure the fabric to the posts using three zip ties evenly spaced in the upper 6" of the fabric. Fabric ends shall overlap a minimum of 6" at a support post and secured to the post with zip ties spaced to prevent a breach of the fence. The lower 12" of the fabric shall extend into the trench.

**NOTE:** The barrier shall be installed in such a manner that any resultant ponding of storm water will not cause inconvenience or damage to adjacent areas or structures. It may be necessary to build a temporary dike on the down-slope side of the structure to prevent bypass flow.

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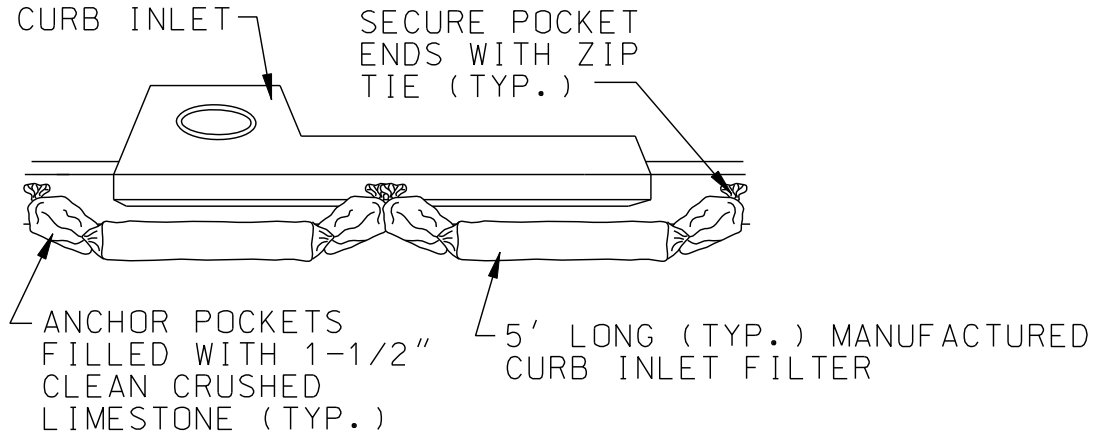
4. Backfill the trench and compact the soil over the fabric in the trench.

Maintenance and Removal of Area Inlet Silt Fence Barriers:

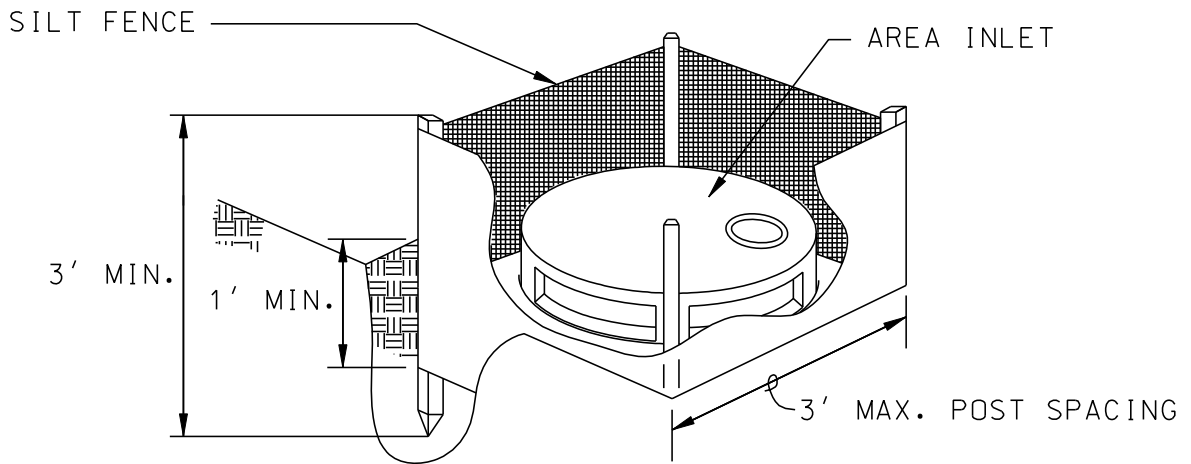
1. Inspect area inlet barriers at least once a week and within 24 hours after each rain event.
2. Remove accumulated sediment once it reaches a level of  $\frac{1}{2}$  the height of the silt fence. Removed sediment shall be placed in a suitable location and in a manner that minimizes further erosion.
3. Repair or replace decomposed, damaged, or an otherwise ineffective barriers within 24 hours after discovery.
4. Pay close attention to undercutting during inspections. If such develop, make repairs or alterations immediately.
5. Do not remove the barrier until the remaining drainage area has been stabilized. Stabilized shall be defined as an established stand of perennial vegetation with a density of 80%. Sediment deposits that remain when the barrier is removed shall be dressed to conform to the existing grade, prepared, and seeded. Removed barrier material shall be properly disposed of or, if in good condition, salvaged.

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**FIGURE 2.** Typical curb inlet filter installation detail.



**FIGURE 3.** Typical area inlet silt fence barrier installation detail.

**D. SOIL STABILIZATION BLANKETS & MATTING**

Purpose: To aid in controlling erosion on critical areas by providing a climate that protects young vegetation and promotes its establishment.

Conditions Where Applicable:

- Short steep slopes.
- Stream banks.
- Shallow ditches (road ditch).
- Other areas where the topography would promote a high erosion hazard.
- Areas where wind may prevent standard mulching to stay in place until vegetation becomes established.

Installation:

1. After final grading, prepare a friable seedbed relatively free from clods and rocks more than 1 ½” in diameter and any foreign material that will prevent uniform contact of the blanket/matting with the soil.
2. Plant seed, fertilize, and apply necessary soil amendments (i.e. lime). **NOTE:** *If a jute mesh blanket/matting is being used, apply ½ the seed after laying the blanket/mat.*
3. Lay the blanket/matting per **Figure 4**. The blanket/matting shall lay loosely on the soil. Do not stretch it. Upslope ends of the blanket/matting shall be buried in an anchor slot. Edges of adjoining blankets shall overlap a minimum of 2”. Staples shall be placed per the staple plan in **Figure 4**. Install check slots as required. Install junction slots when joining a new roll of material to the previous roll. Terminal folds shall be constructed at all blanket/matting terminations.
4. After installation, check that the blanket/matting is in uniform contact with the soil, all lap joints are secure, all staples are driven flush with the ground and all disturbed areas have been seeded.

Maintenance:

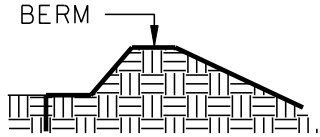
Inspect blankets/matting periodically after installation and after every rain event to check for erosion and undermining until vegetation is established. Repair failed, undermined, or otherwise ineffective blankets/matting immediately.

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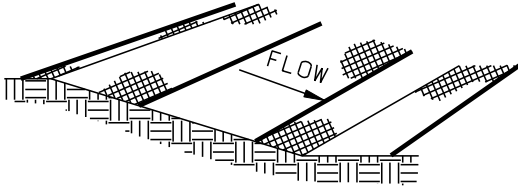
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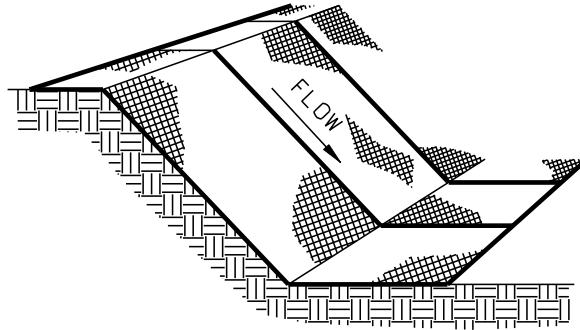
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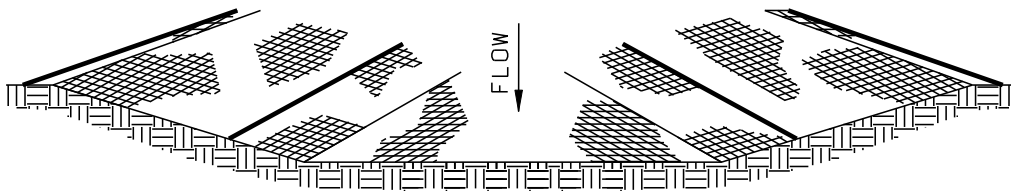
BERM - WHERE THERE IS A BERM AT THE TOP OF THE SLOPE, EROSION CONTROL BLANKETS SHALL BE BROUGHT OVER THE BERM AND ANCHORED WITH AN ANCHOR SLOT BEHIND THE BERM.



SHALLOW SLOPES (4:1 AND FLATTER) EROSION CONTROL BLANKETS MAY BE APPLIED ACROSS THE SLOPE



STEEP SLOPES (STEEPER THAN 4:1) EROSION CONTROL BLANKETS SHALL BE APPLIED PARALLEL TO THE DIRECTION OF FLOW DOWN THE SLOPE.



DITCHES - EROSION CONTROL BLANKETS SHALL BE APPLIED PARALLEL TO THE FLOW WITHIN THE DITCH. USE CHECK SLOTS AS REQUIRED. AVOID JOINING MATERIAL IN THE MIDDLE OF THE DITCH IF AT ALL POSSIBLE.

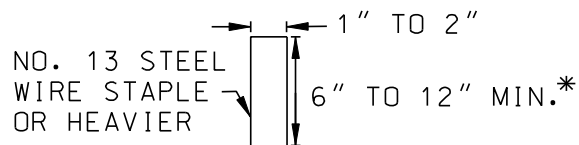
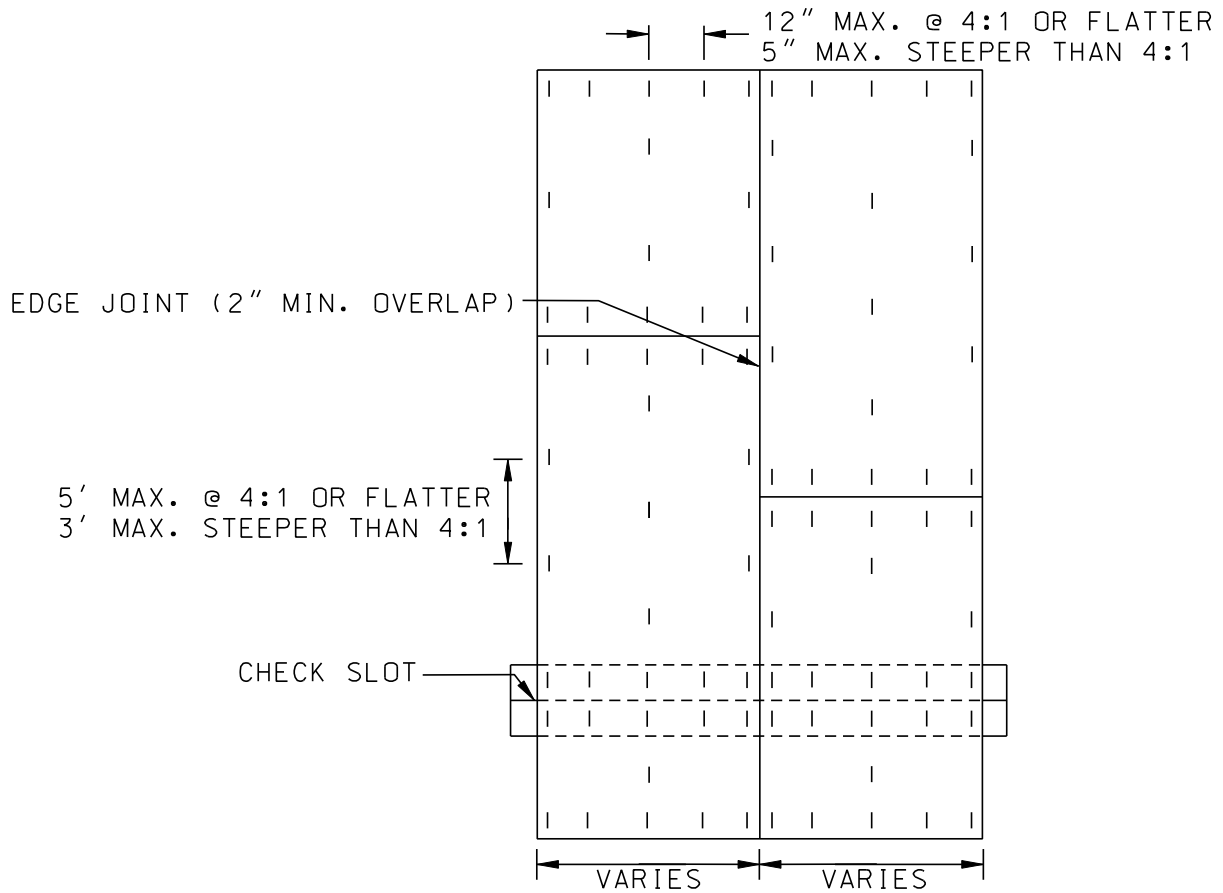
TYPICAL EROSION CONTROL BLANKET/MATTING ORIENTATION DETAIL

**FIGURE 4.** Soil stabilization blanket/matting detail.



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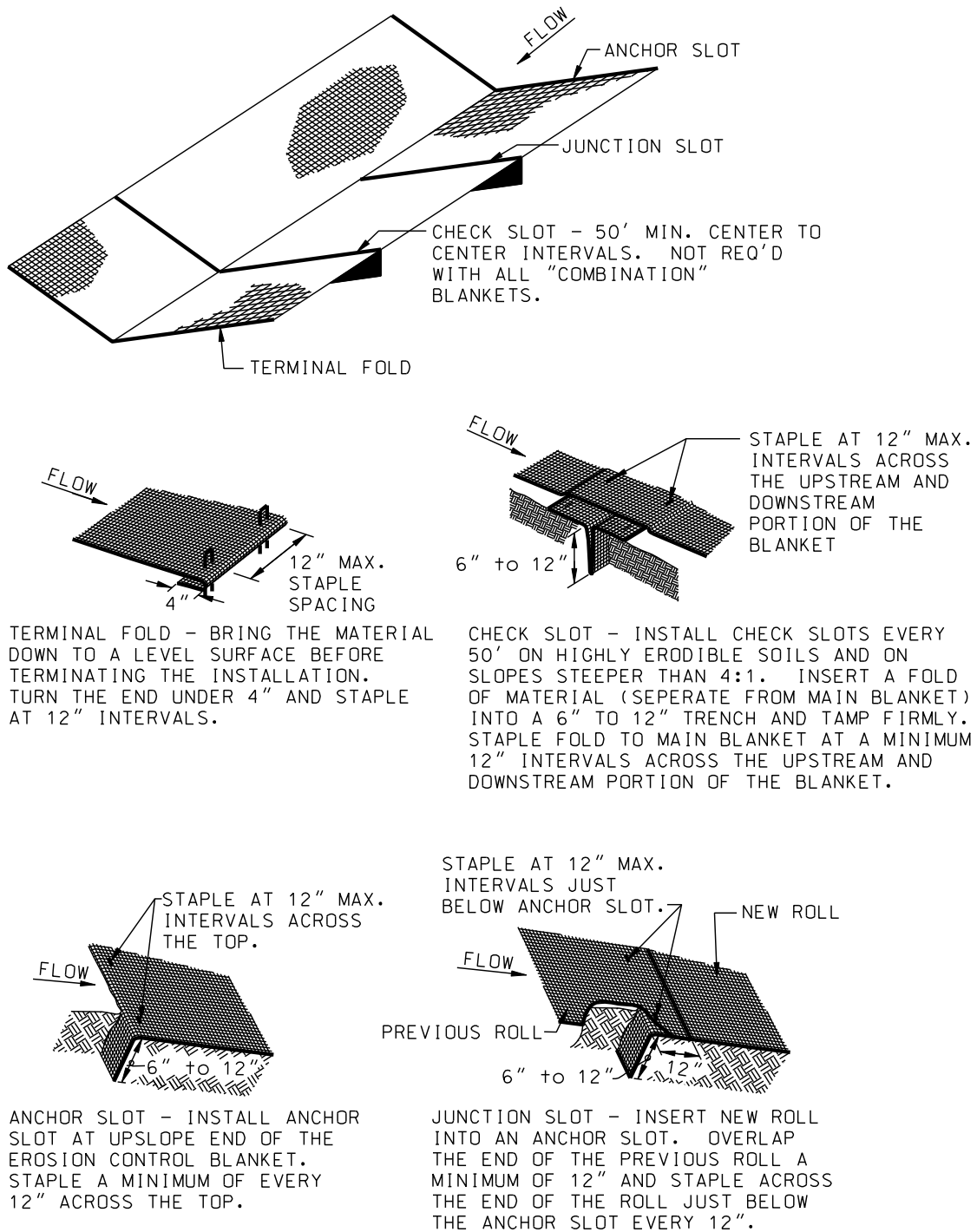
\*12" MIN. LENGTH FOR SANDY SOILS  
6" MIN. LENGTH FOR OTHER SOILS.  
NOTE: 200 STAPLES REQUIRED PER 100 SQ. YDS. OF MATERIAL.

EROSION CONTROL BLANKET/MATTING STAPLE PLAN

**FIGURE 4 (Cont.).** Soil stabilization blanket/matting detail.

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EROSION CONTROL BLANKET/MATTING INSTALLATION DETAIL

**FIGURE 4 (Cont.).** Soil stabilization blanket/matting detail.