






### 4.3 SEDIMENT CONTROL PRACTICES FACT SHEETS (SMP)

Sediment Control Practices	SMP-01 Silt Fence
 <p>Symbol</p> 	
<p><b>Description</b></p>	<p>To detain sediment-laden water, silt fences are used to promote silt deposition behind the fence. These fences are made of filter fabric that has been entrenched, attached to support poles and occasionally supported by a wire fence. Silt fence is intended as a temporary sediment barrier and requires routine maintenance.</p> <p><b>Application</b></p> <ul style="list-style-type: none"><li>➤ Silt fence should be used in area accepting sheet flow conditions.</li><li>➤ Silt fence should <b>not</b> be used in ditch lines, streams, or other areas of concentrated flows.</li><li>➤ Silt fencing can be used along the downstream perimeter, below the toe of a cleared slope, upstream of sediment traps or basins, along streams and channels and around temporary spoil areas.</li></ul> <p><b>Design</b></p> <p>The design criteria for silt fence is as follows:</p> <ul style="list-style-type: none"><li>➤ Silt fencing should be installed along the contour. It should not be installed up and down slopes or around the perimeter of large construction sites unless accompanied by measures such as “J” Hooks or other methods.</li><li>➤ The length of silt fence is determined by the amount of run-off area. The minimum area should not exceed 0.25 acre per 100 linear feet of silt fence.</li><li>➤ Spacing of silt fence is variable depending on the slope of land draining to the fence. See Table SMP1-01 for spacing requirements.</li></ul>



**Design**

- Silt fencing must be installed only where water can pond. Specify silt fencing downgradient from bare soil areas with the ends turned up to prevent bypassing.
- Provide adequate setbacks from slope toe for routine maintenance and access.
- Silt fencing can be used where:
  - Non-concentrated sheet flow will occur
  - Protection of adjacent property or nearby surface waters is required
  - The size of the drainage area is no more than ¼ acre per 100 linear feet of silt fence
  - The maximum flow path length above the barrier is 100 feet for slopes less than 2 percent, and 50 feet for slopes up to 10 percent
  - The maximum slope gradient above the barrier is 2H:1V
  - Silt fencing can be used in flat, short swales (i.e. slope is less than 2 percent; length is less than 200 feet) that drain less than 2 acres, if silt fencing is spaced every 50 feet
  - Reinforced silt fence must be required when the contributing slope is longer than 100 feet and greater than 3 percent and the design life of the silt fence is greater than 6 months.

**Table SMP01-1. Silt Fence Spacing on Long Slopes**

<b>Land Slope</b>	<b>Max. Slope Distance</b>
3% - 5%	100 ft.
5% - 10 %	75 ft.
10% - 20%	50 ft.
20% - 50%	25 ft.

- Silt fences should be located where only shallow pools (i.e., 1.5 feet or less) can form. Their use is limited to situations in which sheet or overland flows are expected.
- Dig a trench on the contour at least 6 inches wide and 6 inches deep below the area to be treated, taking care to install J-hooks where flows will travel along the silt fence. Turn fence ends uphill to trap potential bypasses as needed.
- If posts are already attached to fabric, position the fencing so the posts are installed on the downhill side of the fabric. Drive posts to a depth of 1 foot below the bottom of the trench, against downslope trench wall for extra support. Posts for all silt fencing are spaced 6 feet apart.
- Push fabric into the trench, and spread fabric along trench bottom and sides; backfill the trench and compact the soil. A preferred installation technique is deep, easily-worked soils with minimal rock content involves static slicing of the fence into the ground with a chisel-plow implement such as the *Tommy Silt Fence Machine* or equivalent. The filter fabric is wire-tied directly to the posts with three diagonal ties.
- The height of a silt fence must be 18 inches minimum and 30 inches maximum. Sediment storage height and ponding height must not exceed 18 inches.
- Silt fences placed at the toe of a slope must be set at least 6 feet back from the toe to increase ponding volume and provide room for maintenance.



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| <b>Maintenance</b> | <ul style="list-style-type: none"><li>➤ Silt fences and filter barriers must be inspected weekly or every 14 days and after each storm of greater than one-half inch. Any required repairs must be made immediately.</li><li>➤ Sediment height not to exceed one-third the height of the fence.</li><li>➤ Perform required maintenance before a storm event.</li><li>➤ Remove fence when vegetation is established and any sediment stored behind the silt fence has been removed. Silt fences and other temporary controls must be removed before project close out.</li></ul>  |
| <b>Inspection</b>  | <ul style="list-style-type: none"><li><input type="checkbox"/> Silt fence has proper placement.</li><li><input type="checkbox"/> Inspect fence for proper installation and compaction by pulling up on the fence while kicking the toe of the fabric. If the fence comes out of the ground, do not accept the installation.</li><li><input type="checkbox"/> If there are long, linear runs of silt fence without J-hooks, do not accept the installation.</li><li><input type="checkbox"/> The last 6 feet of the silt fence is turned uphill and secured to the post.</li><li><input type="checkbox"/> Color band of the anchor trench is not visible.</li><li><input type="checkbox"/> Accumulated sediment does not exceed one third the height of the fence or 18 inches maximum.</li><li><input type="checkbox"/> If washaround or underwash occurs then fence should be reset.</li><li><input type="checkbox"/> The removed sediment must be spread and vegetated or otherwise stabilized so that it does not result in muddy runoff to nearby ditches or surface waters.</li></ul> |

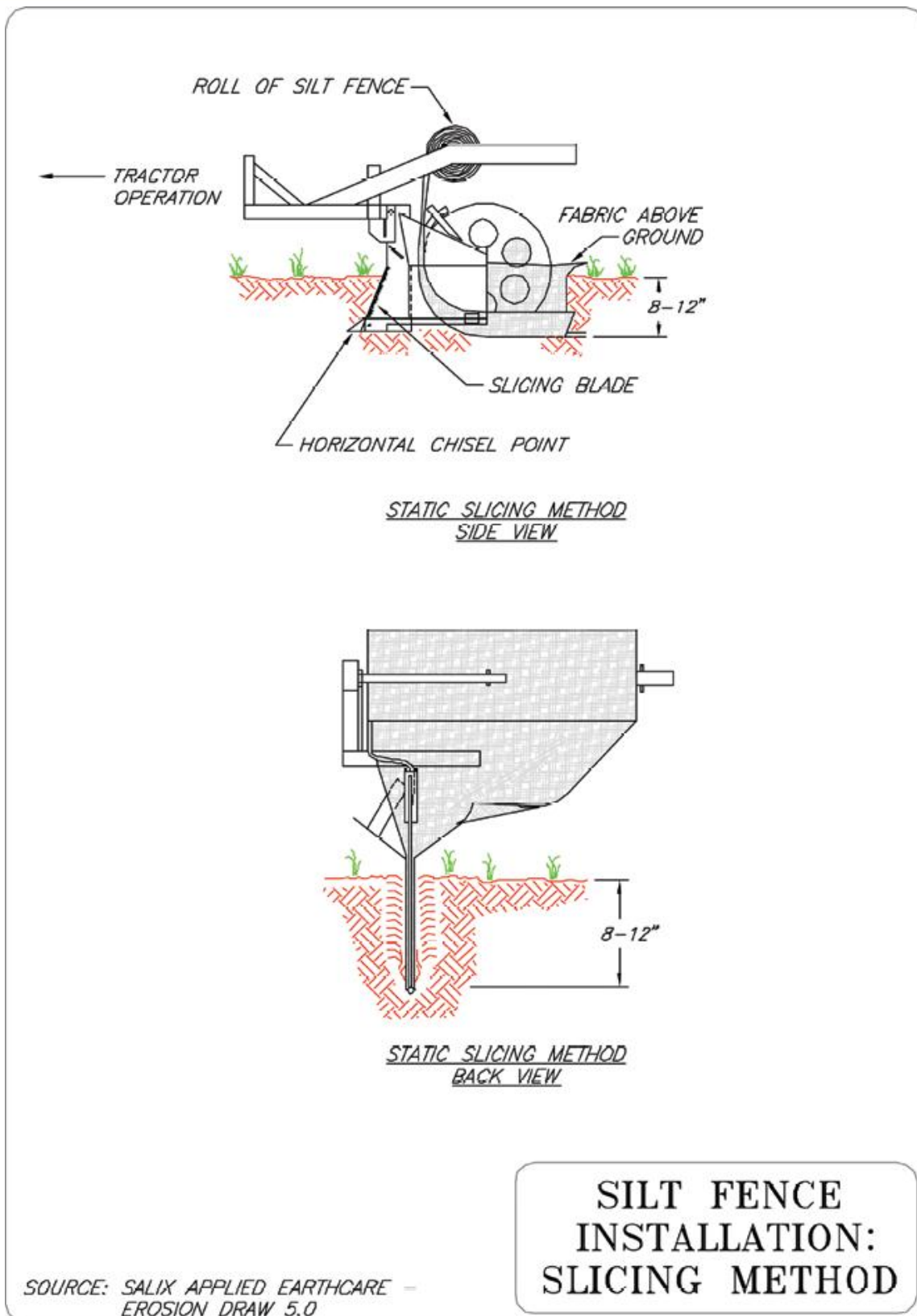
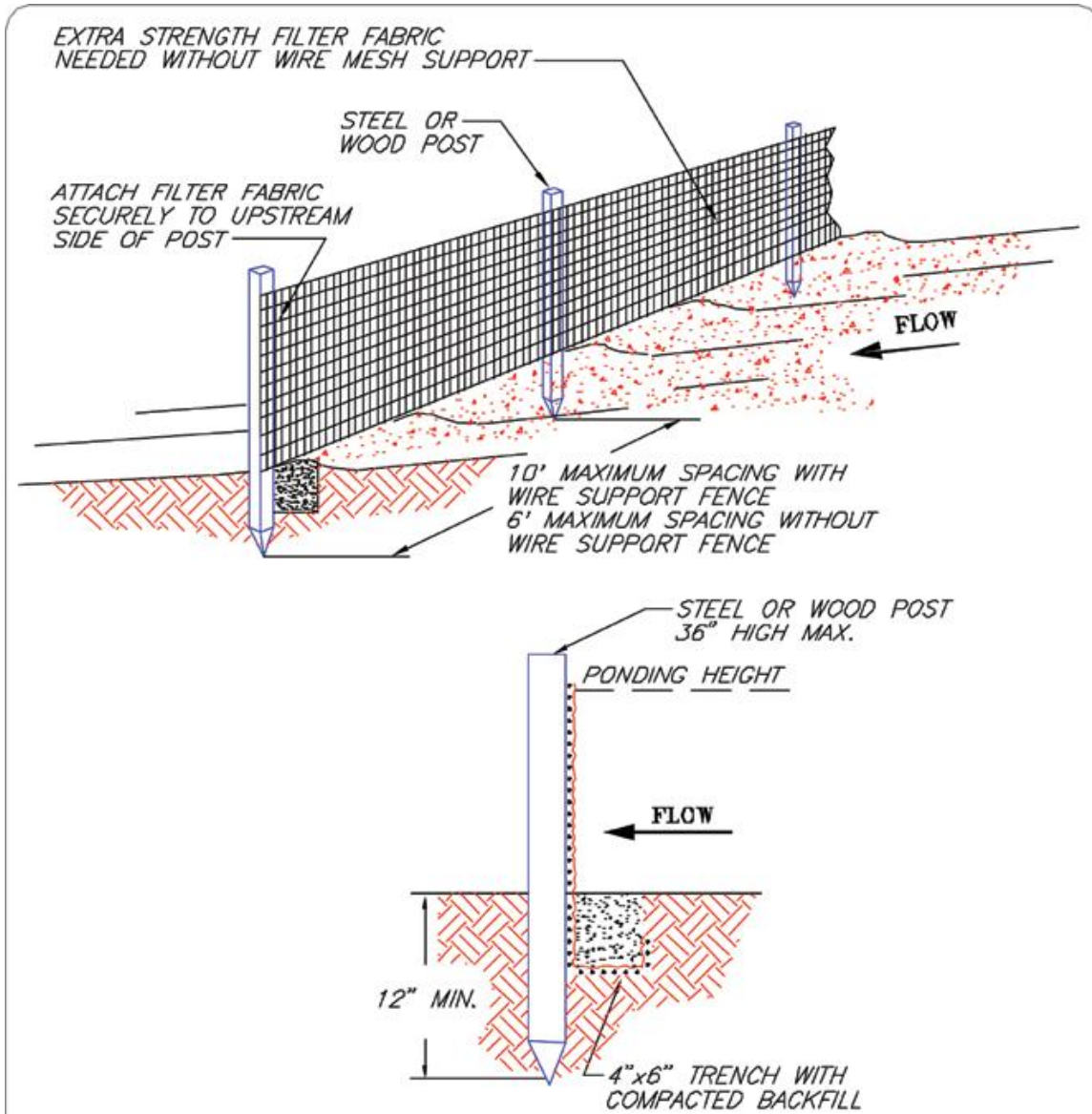


Figure EPP01-1. Silt Fence Installation – Slicing Method  
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**TRENCH DETAIL**

**NOTES:**

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

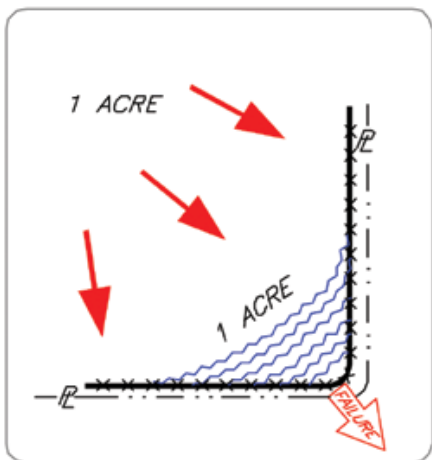
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NOT TO SCALE

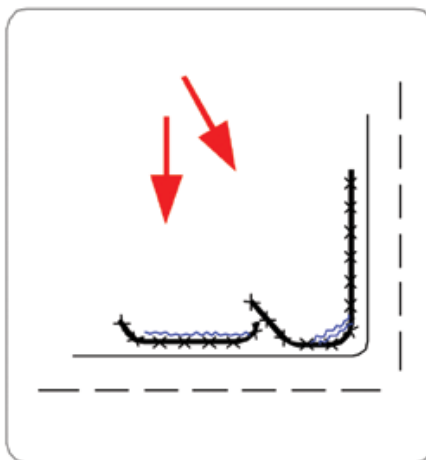
**SILT FENCE  
INSTALLATION:  
TRENCH METHOD**

Figure EPP01-2. Silt Fence Installation – Trenching Method

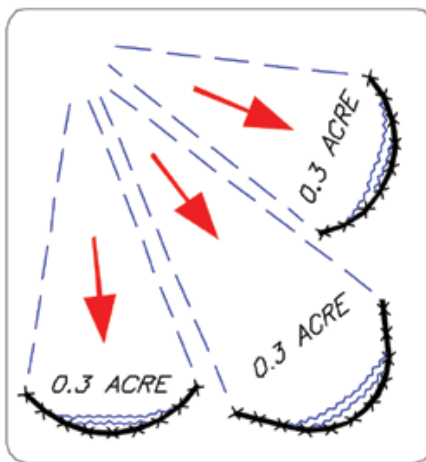
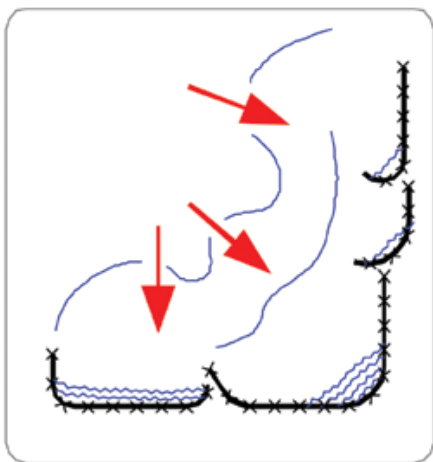
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*Incorrect* - Do Not layout "perimeter control" silt fences along property lines. All sediment laden runoff will concentrate and overwhelm the system.



*Correct* - Install J-hooks



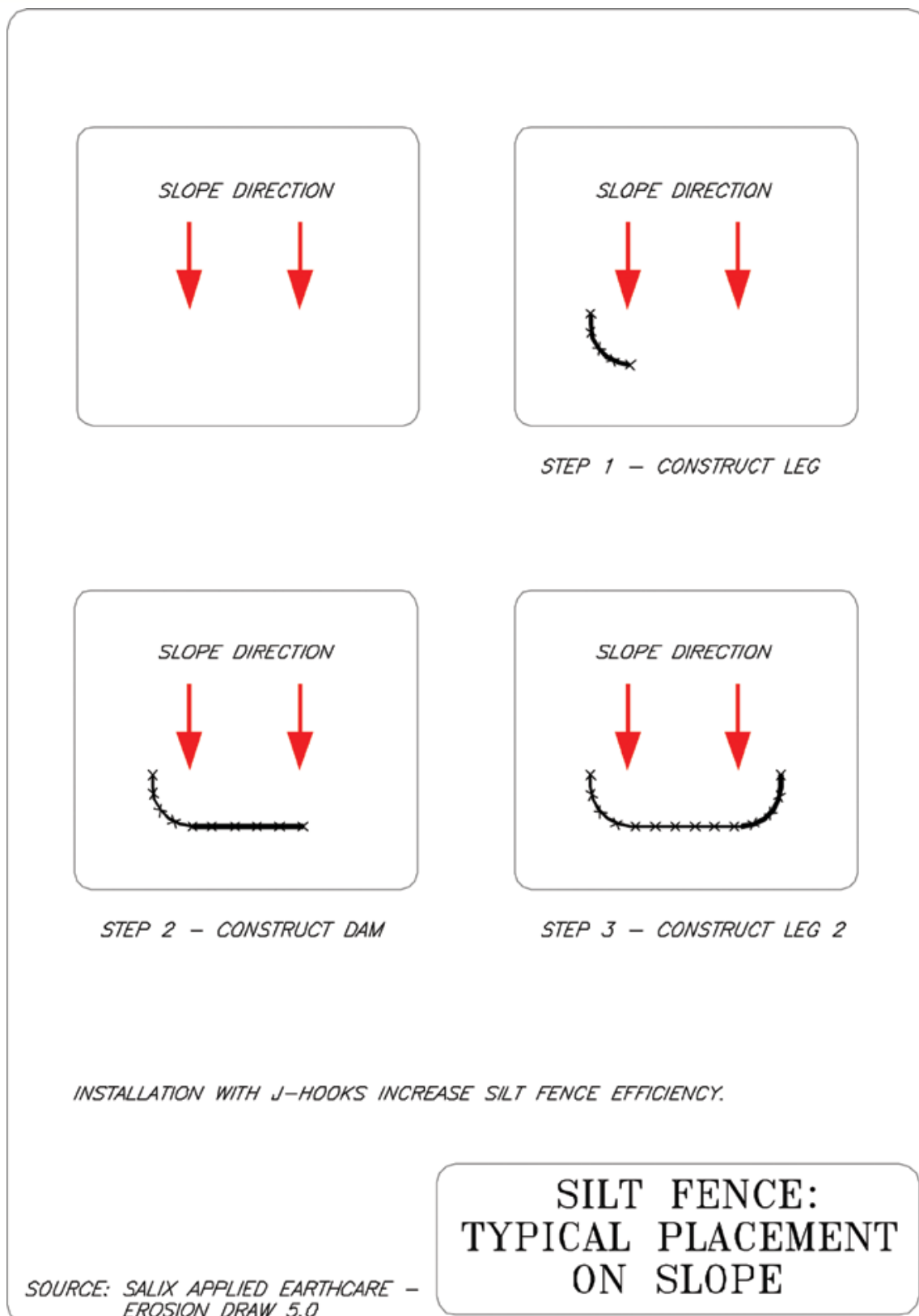
*Discreet segments of silt fence, installed with J-hooks will be much more effective.*

**SILT FENCE  
PLACEMENT FOR  
PERIMETER CONTROL**

SOURCE: SALIX APPLIED EARTHCARE -  
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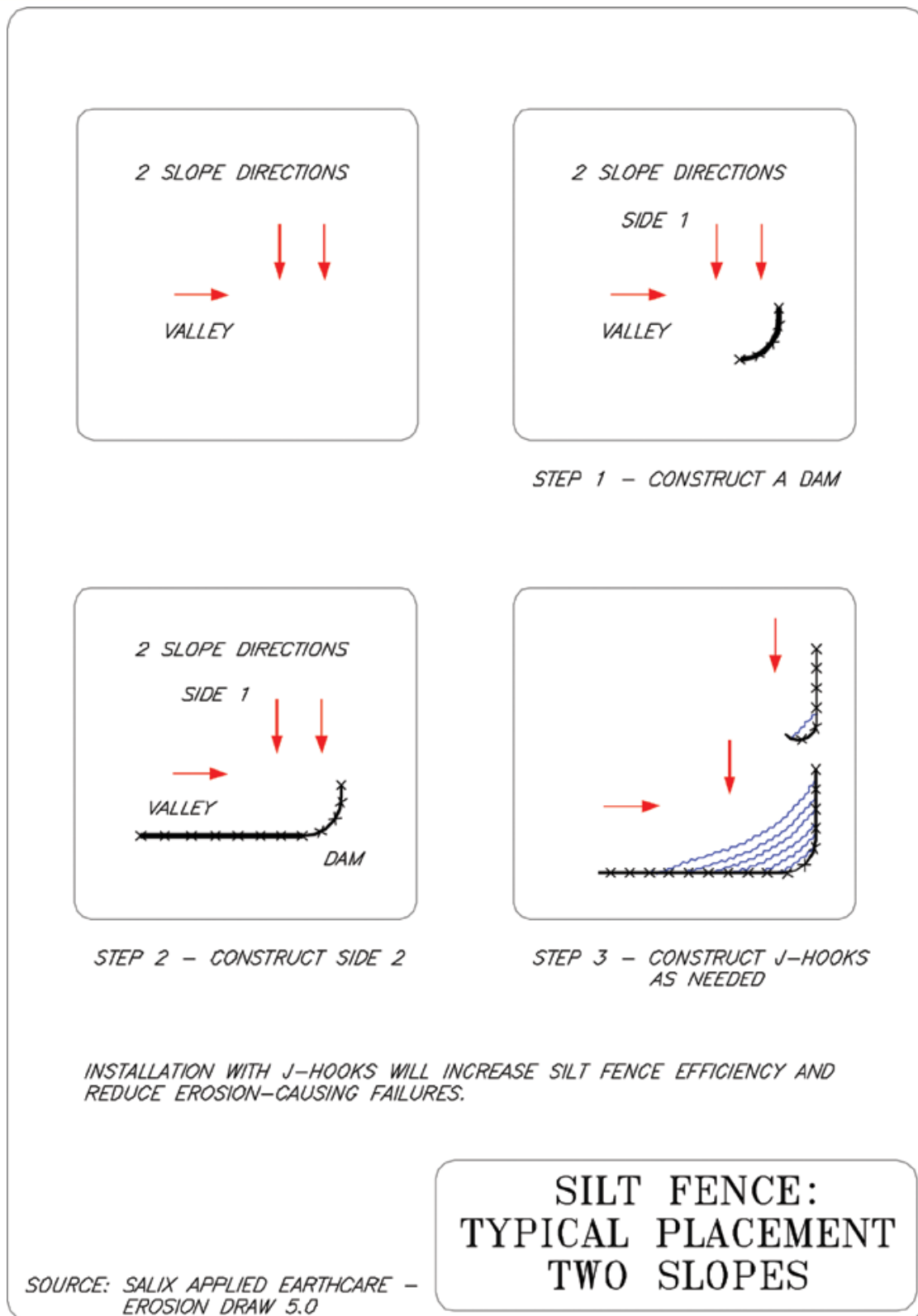
**Figure EPP01-3. Silt Fence Perimeter Placement**

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**Figure EPP01-4. Silt Fence Placement on Slopes**

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**Figure EPP01-5. Silt Fence Placement on Compound Slope**  
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