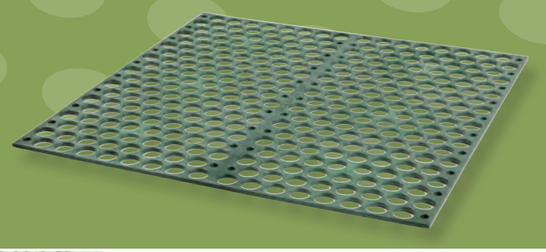
ScourStop®
INSTALLATION GUIDELINES



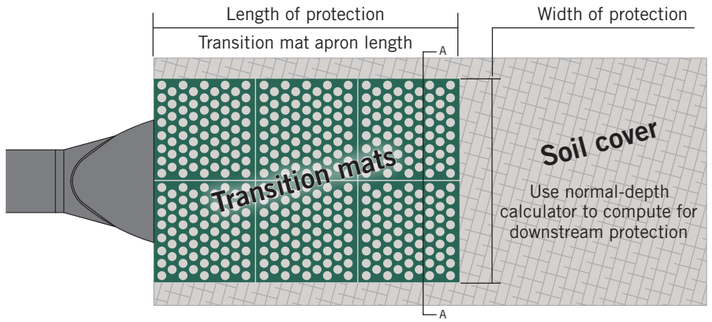
ScourStop may be used in many applications: culvert outlets, curb outfalls, spillways, overflow structures, stream banks, slopes, etc. The details in this example are for typical culvert outlet protection. Project engineer shall determine the limits of soil cover and ScourStop.

Downstream:

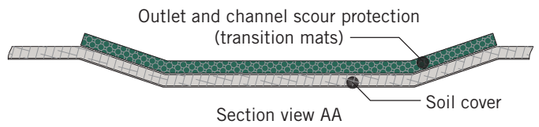
Continue soil cover beyond outlet apron area to properly protect downstream channel and prevent head-cutting.

Width:

Install soil cover wider than proposed ScourStop protection (recommend soil cover full width of channel – across bottom and up both slopes).



Culvert outlet protection – plan view



Section view AA

Electric Hammer:

- **Rotary hammer or demolition hammer** – the greater the impact energy (ft/lbs) and the heavier the hammer, the greater the driving force to install bullet anchors into soil (e.g., Makita HM1214C, Hilti or other).
- Use **hammer-only mode**, no rotation.
- Use 3/4" Ground Rod Driver, which fits onto ScourStop HD Driver.
- Recommend two ScourStop drivers per electric hammer to achieve maximum efficiency.

Maintenance:

- No maintenance is required for a ScourStop solution.
- Mowing over a vegetated ScourStop solution is allowed – minimum height of 4" recommended.
- Mowing is not recommended where soft, saturated soils exist.
- ScourStop surface may be slippery when wet – **use caution**.
- New construction: soil may consolidate, so lock washers may need to be re-tightened after settling.

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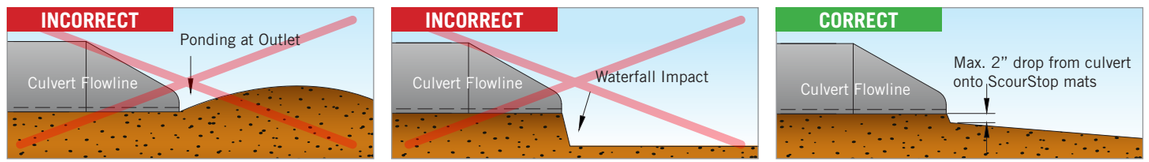
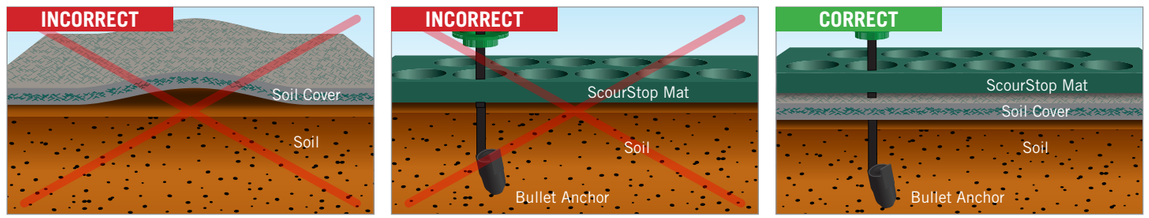
Site Preparation:

1 Finish grading to ensure positive drainage and eliminate ponding.
2 Create defined drainage channel to carry stormwater at outlet and downstream.
3 Compact soil in all areas of fill to create firm seed bed.
4 Install subsurface drainage tile if constant water is expected.
5 Grade a smooth transition from outlet to discharge area (allow for soil cover thickness and ScourStop thickness).
6 Max. 2” drop from culvert outlet/curb opening to top of ScourStop mats (no waterfall impact).



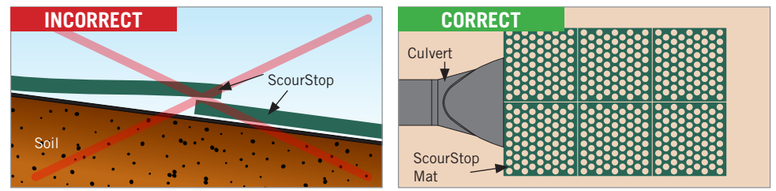
Soil Cover:

1 ScourStop must be placed over soil cover (sod, TRM, or geotextile) – not over bare ground, therefore, install soil cover first.
2 Channel flow data must be evaluated to determine proper soil cover.
3 Install sod; water thoroughly after completing installation.
4 Or install turf reinforcement mat (TRM), after seed and fertilizer, then water thoroughly after completing installation.
5 Non-vegetated: install geotextile (minimum 6 oz. non-woven geotextile fabric).

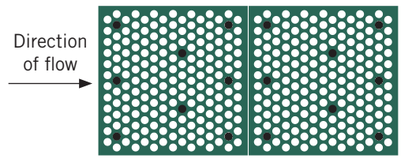


ScourStop Transition Mat Installation:

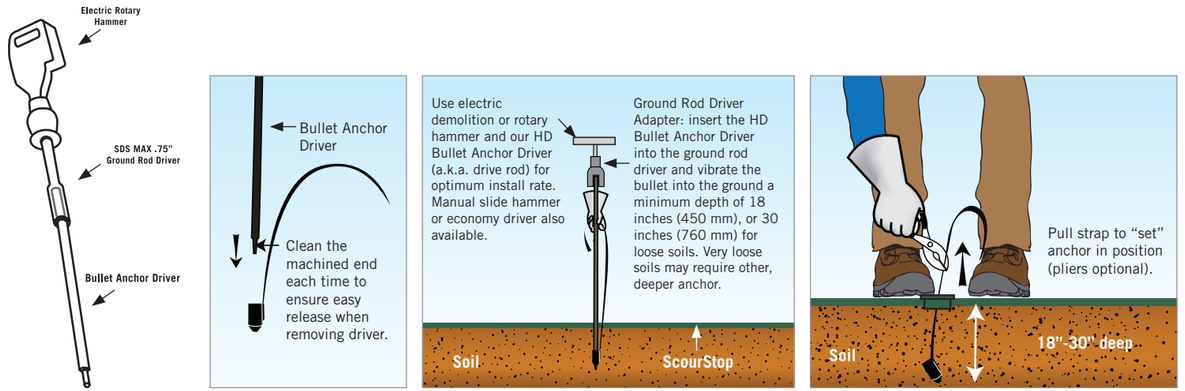
1 After proper grading and installation of selected soil cover, place ScourStop mats beginning at culvert outlet/curb opening, or at toe of slope, stream bank, or spillway.
2 Place ScourStop mat(s) adjacent to culvert/curb and adjacent to other ScourStop mats to avoid gaps.
3 Do not overlap adjacent mats unless necessary to conform to channel geometry.
4 If desired, ScourStop mats may be cut with circular saw or hand saw.



ScourStop Bullet Anchors:



1 Use ScourStop bullet anchors (minimum of 8 anchors per mat) to secure mats on top of soil cover and tightly to the soil surface.
2 Insert bullet anchor strap into lock washer (3”-4”).
3 Insert the machined end of the driver into the bullet anchor.
4 Drive anchor through a 2” hole in mat (per recommended anchor pattern), stopping before lock washer is at least 1” above mat.
5 Twist and pull the driver out of the soil. Wipe driver tip with rag or glove to remove soil.
6 Grasp end of strap with one hand and push down on lock washer with the other until lock washer is flush with mat.
7 Place foot on top of lock washer, then give a firm tug on the strap (quick tug, like setting a fish hook) to set the pivoting bullet anchor.
8 Use additional anchors if necessary to secure mats tightly to soil surface.



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