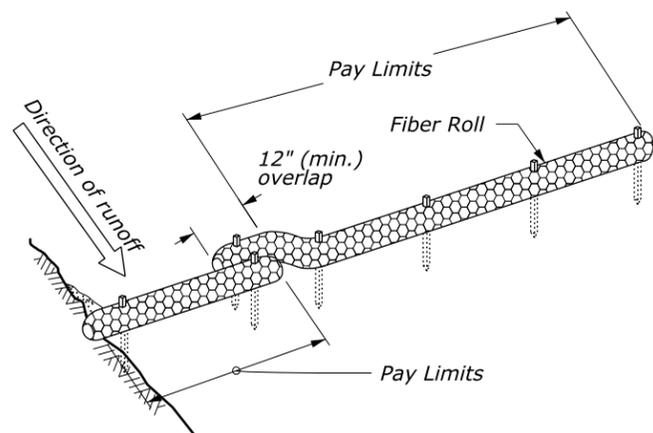


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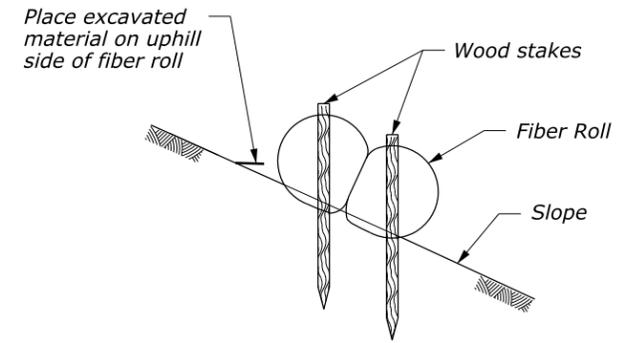


FIBER ROLL JOINT DETAIL

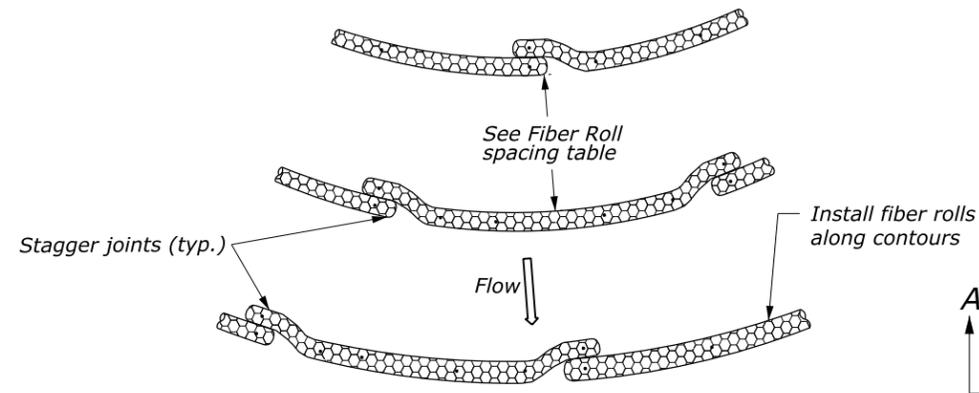
FIBER ROLL SPACING TABLE*	
Slope Gradient	9" Ø Fiber Roll Maximum spacing (ft)
1V:4H or flatter	60
Between 1V:4H and 1V:3H	45
Between 1V:3H and 1V:2H	30
1V:2H or steeper	15

*Approximate spacing shown. Adjust spacing as needed due to project-specific conditions.

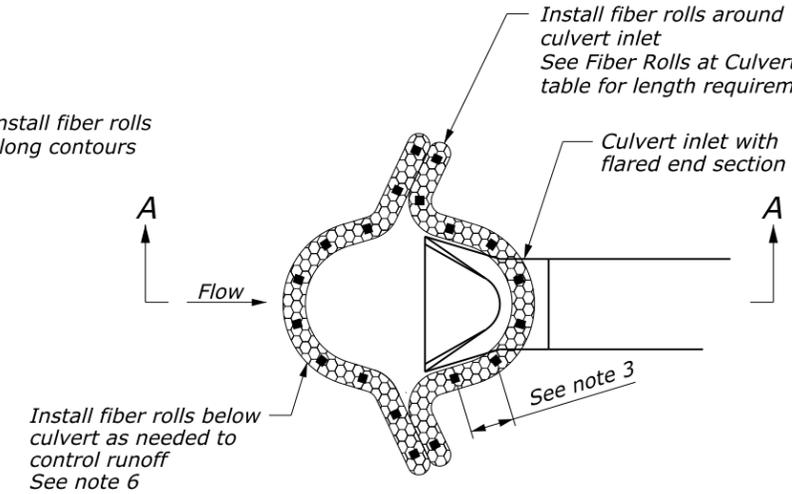
- NOTE:**
1. Repair all rills or gullies and properly compact prior to installation.
 2. Install fiber rolls along slope contours. For any 20' section of fiber roll, do not allow the fiber roll to vary more than 5% from level.
 3. Stake fiber rolls in place with 1" x 1" or 1" Ø wood stakes. Space stakes 4' o.c. max. on slopes and 2' o.c. max. culverts. Stake fiber rolls 6-inches from each end.
 4. Drive stakes into undisturbed soil at least 12" deep. Expose stakes 2" above top of fiber roll.
 5. For fiber rolls on bare soil, construct trenches parallel to the contour. Place fiber rolls in continuous contact with trench bottom and sides. Tamp soil backfill against upstream side of fiber roll to ensure storm water is forced to flow through fiber roll rather than under it.
 6. Place fiber rolls all the way around the inlet when the disturbance is on both the road and around the culvert and all water entering the culvert is crossing the disturbance.



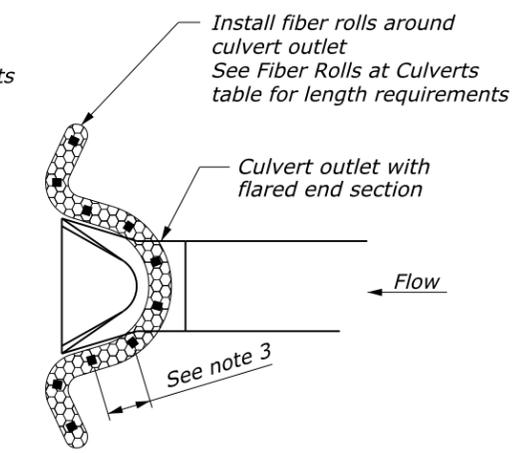
FIBER ROLL LAPPING DETAIL



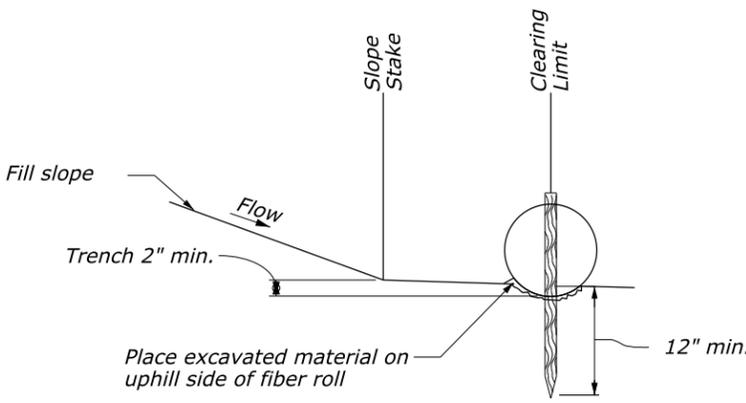
FIBER ROLL SLOPE LAYOUT



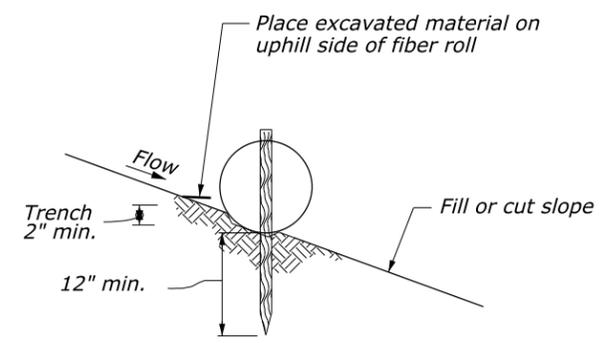
FIBER ROLL AT CULVERT INLET



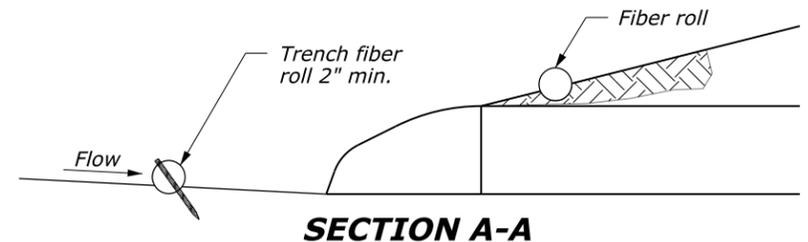
FIBER ROLL AT CULVERT OUTLET



FIBER ROLL AS PERIMETER CONTROL INSTALLATION DETAIL



STAKE DETAIL



FIBER ROLLS AT CULVERTS*	
Culvert Size	9" Ø Fiber Roll length (ft)
24" or smaller	10
30" to 48"	20
54" or larger	30

*Approximate length shown for rolls across the top of the culvert inlet only. Adjust length as needed due to project-specific conditions.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

FIBER ROLL

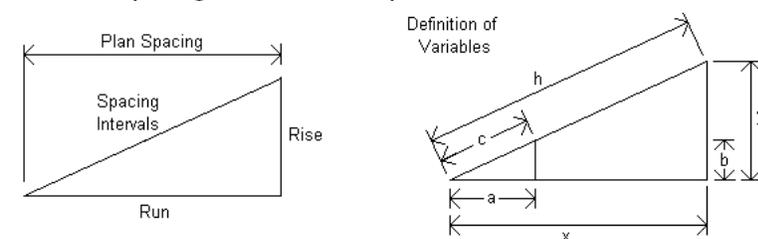
DETAIL APPROVED FOR USE 01/2011	DETAIL
REVISED: 12/2017	C157-55

NOTES TO THE DESIGNER

Last Updated: September 2017

General Information – Fiber Rolls for Slopes

1. **Appropriate Applications.** Fiber rolls placed on slopes help slow, filter, and spread overland flows. Fiber rolls reduce the effects of long or steep slopes. Fiber rolls are suitable for the following:
 - Along the toe, top, face, and at grade breaks of exposed and erodible soils
 - Can be used with other erosion control devices, including mulch, bonded fiber matrix, etc. Use RECP in the same area as wattles only on rare occasions.
2. **Limitations.** Fiber rolls are not effective on bare soils unless trenched.
3. **Layout Guidance.**
 - Fiber rolls are installed along the contour. Estimate proposed contours or generate proposed contours using GEOPAK. To draw the wattles along the contours, use the D&C manager.
 - The fiber roll spacing shown in the drawing is based on a slope distance. Remember to adjust for the horizontal distance when drawing fiber rolls into the plan view. See drawing below.



b	a	h	x
Rise	Run	Spacing Intervals	Plan Spacing
1	1	15	10.607
1	2	30	26.833
1	3	45	42.691
1	4	60	58.209
1	5	60	58.835
1	6	60	59.184

- Recommended fiber roll spacing is shown in the drawing and can be used for most applications. Consider adjusting spacing based on soil conditions (e.g. for soft loamy soils, place rows closer together. For hard, rocky soils, place the rows farther apart).

General Information – Fiber Rolls for Culvert Inlet/Outlet Protection

1. **Appropriate Applications.** Fiber Rolls may be used at culverts for inlet or outlet protection to prevent disturbed soils from entering the flowline of the culvert or sloughing into the end section.
2. **Layout Guidance.**
 - When all the disturbance is above the culvert on the roadway and fill slopes, wrap the fiber rolls around the top and sides of the culvert and end section, but do not place across the flow line of the culvert to allow off-site water to continue to flow unimpeded.
 - When the disturbance is on both the road and around the culvert where all water entering the culvert is crossing the disturbance, then the rolls can be wrapped all the way around the culvert inlet.
 - Do not wrap fiber rolls all the way around the outlet, to keep sediment from being trapped in the culvert. If additional outlet sediment protection is needed to capture remaining sediment, place the second fiber roll away from the culvert.

Applicable SCRs

None

Typical Pay Item Used

- 15705-1400 Soil erosion control, Fiber roll [LNFT]

Updates

January 2011

- New Detail drawing

August 2014

- Updated for FP-14
- Updated border

September 2017

- Added new inlet/outlet protection drawing
- Updated Designer Notes

December 2017

- Added section drawing