Straw Wattle Installation Guide for Roadway Projects in the Mountains

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The Basics: Simply fit the straw wattle across the ditch with some erosion control blanket beneath it.



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The erosion control blanket acts as a splash-pad for the water running over the wattle and helps prevent scouring.



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Make sure all gaps in connection between the wattle and the ground are plugged!

Try using cut pieces of erosion control blanket.



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Important! Make sure the lower spill point of the wattles is below the height of the roadway or you will back up water onto the road.



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In shallow ditch, if weir is higher than sides, water will simply flow around!



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Scouring is then sure to occur.

It only get worse over time.



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With a shallow bedrock...

 Wrap rock (class B stone) up in a layer of Erosion Control Blanket



Sprinkle 100 grams of PAM over the lower center portion of the wattle where the water is going to flow over.





Ideal BMP Spacing

• BMPs theoretically spaced such that flow goes from pool to pool...

This slows water velocity down and gives more time for water to infiltrate into the ground and causes sediment to fall out of suspension!



Typical tools and products needed for installation







Close up of the mesh



New Fibrous Check Dams



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New Fibrous Check Dams



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New Fibrous Check Dams

Coir wattles with 'flaps' or 'wings'



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Typical roadside ditch dimensions here



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Diamond staple pattern



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Use sod staples to hold wattle to the ground



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Place staples in at an angle to the wattle

Weave staples through the mesh casing of the wattle

Nail into the ground, ensuring that the wattle is held down snugly





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Weave the staples through the mesh casing

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For Coir check dams with 'wings' or 'flaps', hammer staples through 'wings' or 'flaps'

Place stakes in as before

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Is there a gap at the upturned edge of the wattle?



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Take a bit of leftover divelge toonbienkishikter to fill the gap.



ealing the wattle to the ground.

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Hammer in several 24" wooden stakes to help with heavy runoff events



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Why the upslope stakes? To keep wattle from folding in <u>on itself!</u>



Although this may be an unnecessary precaution

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Upslope stakes would help hold wattle in place during such an event.



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Finally, sprinkle 100 grams of PAM 705 on the lower, center portion of the wattle where water is going to flow over.

This is not a lot of PAM – only this much!



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Fibrous Check Dams with granular PAM in Ditches



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New wattles/PAM gave very good results



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Polyacrylamide (PAM)

- Water soluble synthetic polymer
- Forms: dry powder, solution, emulsion, 'logs'



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Polyacrylamide (PAM)

• Common for water treatment uses, including drinking water and drink (apple/grape juice) clarification



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Must let flocs settle out before discharging water off site! FIOCS

Polyacrylamide (PAM)

The passive approach we've discussed has benefits, just replace PAM from time to time (not TOTALLY maintenance free!)

Place on:

- Check dams with dry granular PAM
- Apply to erosion control blanket
- Floc logs (in pipes and other structures)

<u>Important</u>! PAM-treated water CANNOT be discharged directly off site. Must be settled out first.

http://h2o.enr.state.nc.us/ws/documents/pams_list.pdf

Removing Flocs From Flow: Options

- Discharge into a basin or trap
- Level spreaders
- Sediment bag
- Leave last several check dams untreated

Other Options for Check Dams Curlex Sediment logs®





Filled with 'curled' wood fibers

http://www.americanexcelsior.com/erosioncontrol/products/sedimentlogs.php



Other Options for Check Dams



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Other Options for Check Dams

Triangular Silt Dike™



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Other Options for Check Dams

Ditch Chexx ™ (filled with compost)





http://www.carolinacompost.com/PDFs/06AugEPAsockBPMfinal.pdf

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Any Questions?