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To: Rise Grass Valley Inc.
PO Box 271
Grass Valley, CA 95945

Date: February 26, 2020

Re: Idaho-Maryland Mine Project – Recommendations for Native Plant Erosion Control: Seed Mix, Seed Densities, and Application Rates

These recommendations for the proposed Idaho-Maryland Mine Project ("IMM Project") are intended to be implemented for native plant erosion control of exposed soils, including revegetation that supports long-term site reclamation, as part of the implementation of the proposed IMM Project. The recommendations outlined below include the recommended native seed mix and densities to be applied to any exposed soils during the implementation of the proposed IMM Project. Additionally, recommendations for erosion control measures to control runoff from exposed soils and spoils that are stored within the IMM Project area are included below.

Recommended Native Plants to Use for Erosion Control and their Application Rates

The following native plant species form the recommended seed mix as part of the recommended native plant erosion control methods for the IMM Project:

- Spanish colver (*Lotus purshianus*) is a dicot and an annual herb that is native to California and many locations within Nevada County and several counties surrounding the IMM Project area.
- Nodding needlegrass (*Nassella cernua*) is a monocot and perennial grass that is native and endemic to California and is known from several counties surrounding the IMM Project area.
- California brome grass (*Bromus carinatus*) is a monocot and perennial grass that is native to California and is known from many locations within Nevada County and several counties surrounding the IMM Project area.

- Red fescue (*Festuca rubra molate*) is a monocot and perennial grass that is native to California and is known from many locations within Nevada County and several counties surrounding the IMM Project area.
- California barley (*Hordeum californicum*) is a monocot and perennial grass that is native to California and is known from many locations within Nevada County and several counties surrounding the IMM Project area.
- Creeping wild rye (*Leymus triticoides*) is a monocot and perennial grass that is native to California and is known from many locations within Nevada County and several counties surrounding the IMM Project area.

Seed density should be applied between 80 to 100 seeds/ft^2 for the IMM Project. The seeds can be hydroseeded or hand or drill seeded (same recommended application rate, 80 – 100 seeds/ft^2). The recommended seed mix and seeding density below is based on the application rate (lb PLS/ac) for the seed mix listed in Table 1. Seed application rates are included in Table 2. These seed mixes, seeding density, and application rates are based on the recommendations for native plant erosion control seeding by the California Department of Transportation (Caltrans).

Table 1 - Seed Mix Species and Seeding Density

Scientific Name	Desired seeding density (seeds/ft^2)	Average pure seed weight (seeds/lb PLS)
Lotus purshianus	11	108,500
Nassella cernua	11	215,200
Bromus carinatus	23	72,600
Festuca rubra molate	22	391,800
Hordeum californicum	22	135,700
Leymus triticoides	11	153,000
Total	**100**	

Table 2 - Seed Application Rates

Scientific name	Application rate (lb PLS/ac)
Lotus purshianus	4.4
Nassella cernua	2.2
Bromus carinatus	13.8
Festuca rubra molate	2.4
Hordeum californicum	7.1
Leymus triticoides	3.1
Total	**33.0**

Additional Recommended Erosion Control Methods to Minimize IMM Project Runoff

All disturbed soils should be reseeded per the recommended application rate as stated above. For hydroseeding, a hydroseed mixture that includes seed, fertilizer, wood fiber, and stabilizing emulsion is recommended. Hydroseeding is recommended for application outside of the late fall and early winter rainy season to ensure that the disturbed area is seeded and sprouted and protecting such disturbed areas from erosion after such soil disturbance takes place. Hand or drill seeding can be used if implemented in the late fall and early winter when rain is prevalent for sprouting. For hand or drill seeding, once seeded the area should be covered with mulch or straw to protect the seed from blowing or washing away prior to sprouting. For both hydroseeding and hand or drill seeding, such areas should be monitored and if such areas appear to be drying out, it is recommended that a water truck or another form be used to irrigate such areas to ensure that the revegetation does not fail due to plant death.

It is recommended that the placement of soil erosion control devices (such as wattles, hay bales, etc.) be placed along the outside edges of exposed soils if those exposed areas lie outside the Nevada County non-disturbance buffers for such aquatic resources (50-feet for intermittent and seasonal streams and 100-feet for perennial streams, wetlands, and ponds). For exposed soils located within a Nevada County non-disturbance buffer, erosion control devices should be placed along the outside edges of the exposed soil areas and silt fencing should be placed between the exposed soil areas and protected aquatic resources (wetlands and streams) to ensure that any sedimentation impacts to such aquatic resources are minimized. Additionally, for disturbance within a non-disturbance buffer, a Management Plan is required per the Nevada County Land Use and Development Code and must be approved by the Nevada County Planning Department prior to any disturbance within such a non-disturbance buffer.

See the attached recommendations for the placement of erosion control devices, include silt fencing, published by the Nevada County Community Development Agency. Any required erosion control devices, including silt fencing, should follow the requirements as outlined in the attachment.

For soils and/or spoils that are proposed to be stored long-term within the IMM Project area, such soils and/or spoils should be covered with an erosion control blanket. An erosion control blanket will minimize any runoff from stored soils and/or spoils that are stored within the IMM Project area by covering the soils and/or spoils such that during any precipitation event, water will be restricted from reaching the soil and causing erosion that could create sedimentation into a protected aquatic resource. Individual erosion control blankets should cover the entirety of the stored soils and/or spoils and they should be buried along the edges of the soil/spoil storage area at least 6-8 inches deep. The

erosion control blankets should be rolled out over the soils/spoils such that the edges of each erosion control blanket overlap each other by at least 4 inches. Additionally, along the bottom edge around the soil/spoil area, erosion control devices should also be placed on the outside edge of the erosion control blanket where it is buried for extra precaution related to potential erosion from precipitation events. It is recommended to place such soil/spoil storage outside of non-disturbance buffers protecting aquatic resources. However, if the placement of such soils/spoils must occur within a non-disturbance buffer protecting aquatic resources, silt fencing should be placed between the protected aquatic resource and the edge of the erosion control blanket.

Please let me know if you have any questions regarding the recommendations outlined above. I am available at the phone number listed at the top of this memo if you have any questions or comments regarding these recommendations.

Regards,

Greg Matuzak, Principal Biologist
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COUNTY OF NEVADA
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EROSION AND SEDIMENT CONTROL PLANS

What is an Erosion /Sediment Control Plan?

- An erosion/sediment control plan includes specific construction techniques identified on the site plan or grading plan, to ensure that no sediment leaves the construction site.

Information on Erosion/Sediment Control Plans:

- Location of proposed building site
- Property lines
- Existing slope direction and grade identified.
- Proposed contour lines (if grading permit required)
- Location and any needed details of erosion/sediment control measures
- Construction entrance/exit
- Drainage plan with details of drainage control devices
- Limits of land disturbance
- Septic and leach field
- Re-vegetation plan to include all disturbed soils shall be seeded and covered with mulch

NOTE:

- Straw bales are not recommended for steep sloping site
- Silt fencing is recommended for bottom of steep sites
- Straw rolls/wattles are recommended for gently sloping site with lots of grading
- Erosion control blankets are recommended for steep slopes with gradients over 3”1.
- Land disturbance of one acre (43,560 SF) or more requires filing of a Notice of Intent (NOI) with the State.

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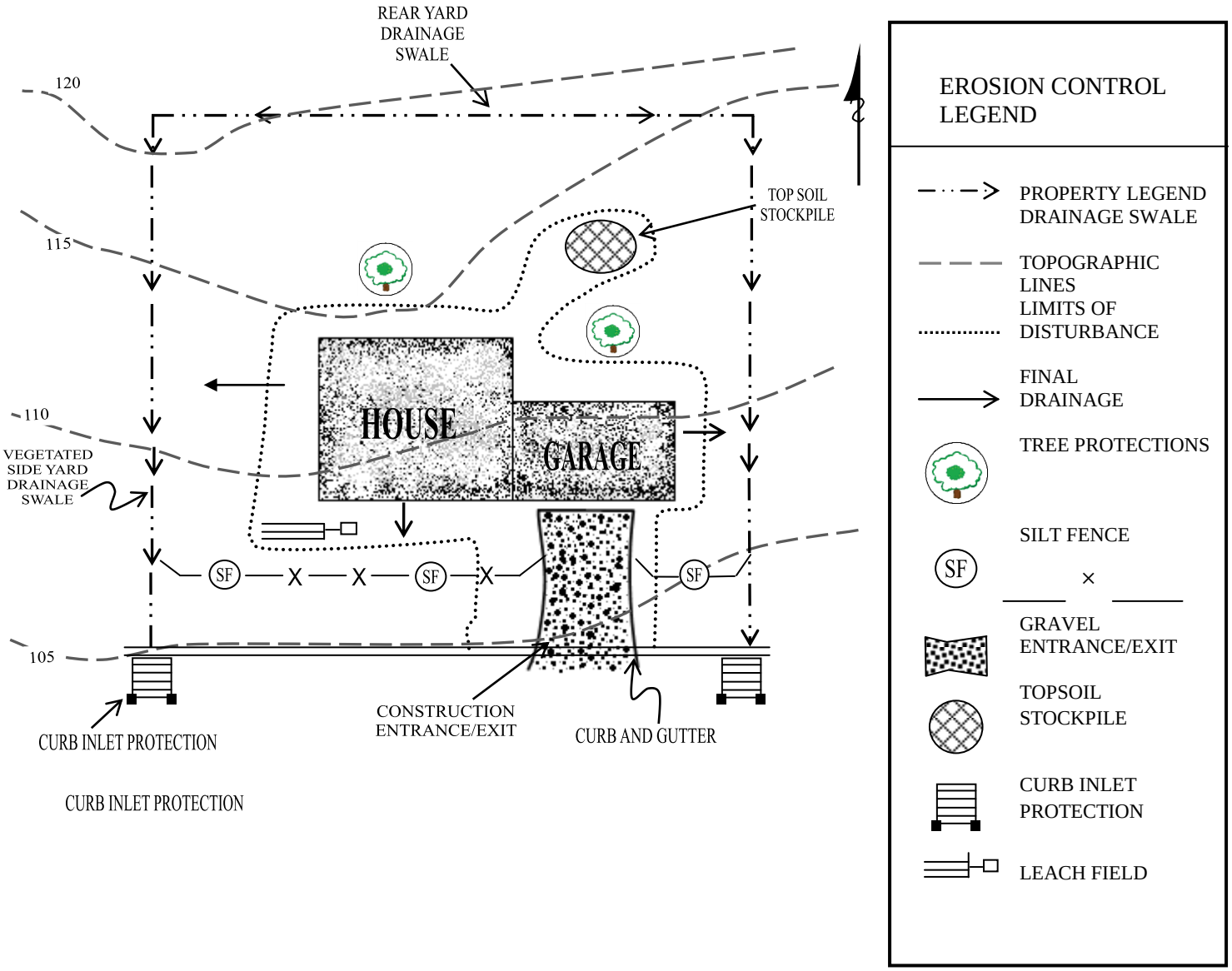
SAMPLE EROSION /SEDIMENT CONTROL PLAN FOR A SINGLE FAMILY RESIDENCE UNDER CONSTRUCTION



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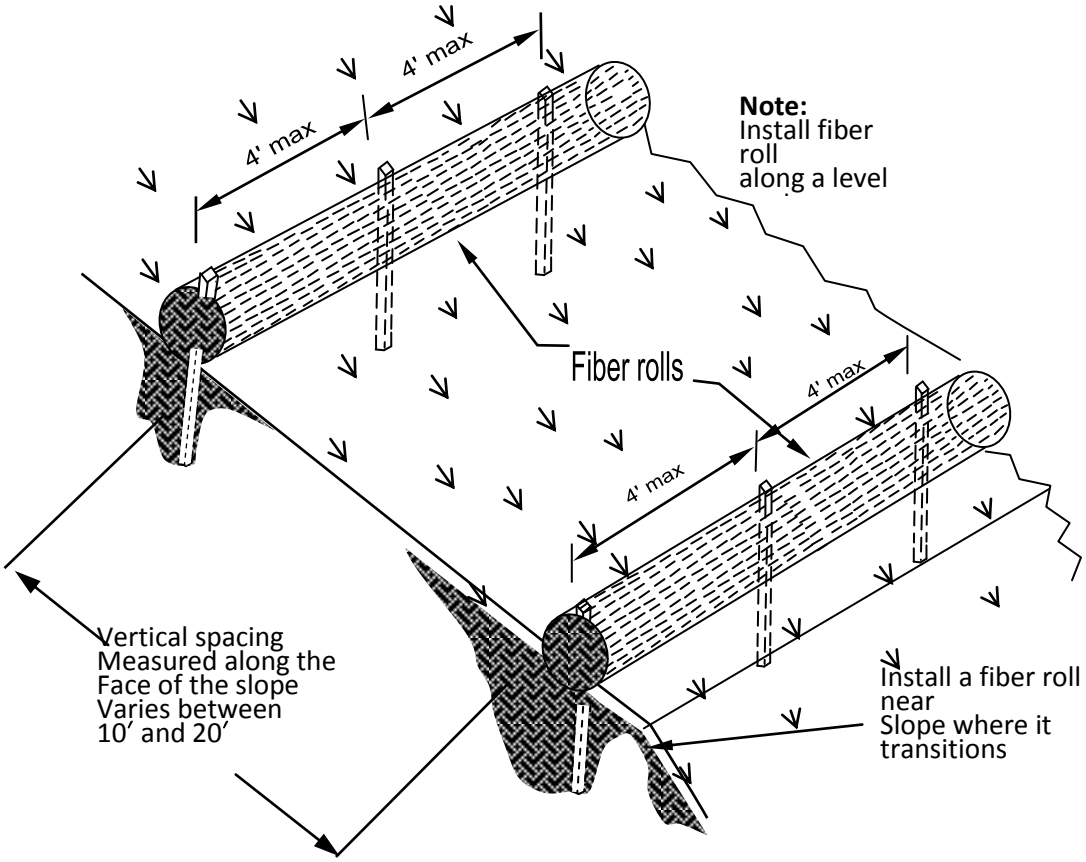
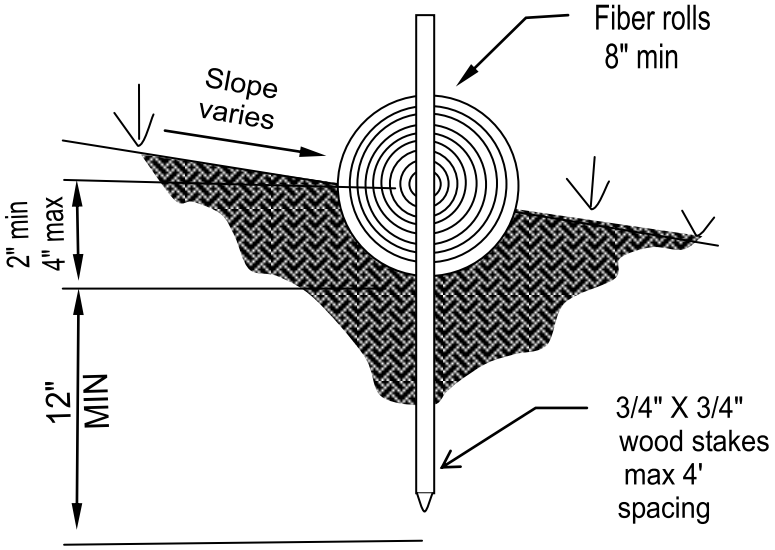


TYPICAL FIBERT ROLL INSTALLATION

N.T.S.



ENTRENCHMENT DETAIL

N.T.S.

California Storm water BMP Handbook
Construction
www.cabmphandbooks.com

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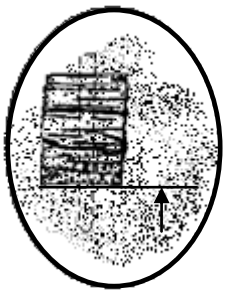
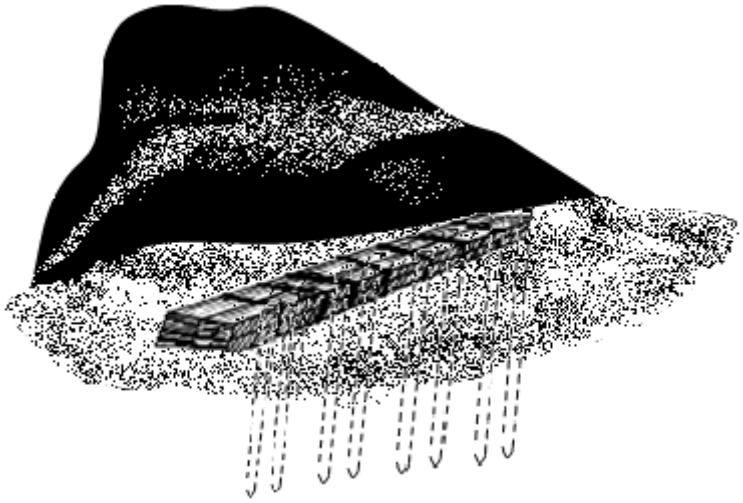
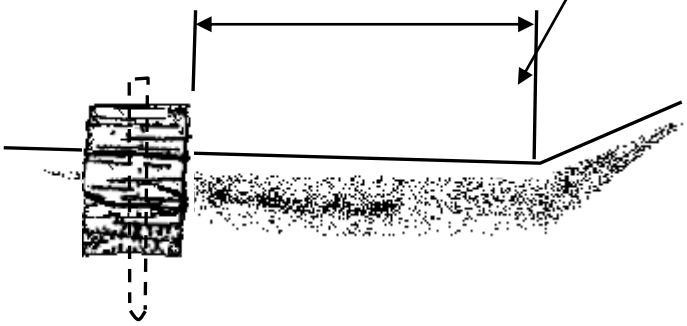




SOIL NOTE:
EMBED
STRAW BALE
4'' MIN. INTO

ALLOW SPACE AT TOE
OF SLOPE FOR SEDIMENT
TO ACCUMULATE FOR
SEDIMENT TO ACCUMULATE



1

STRAW BALE DIKE

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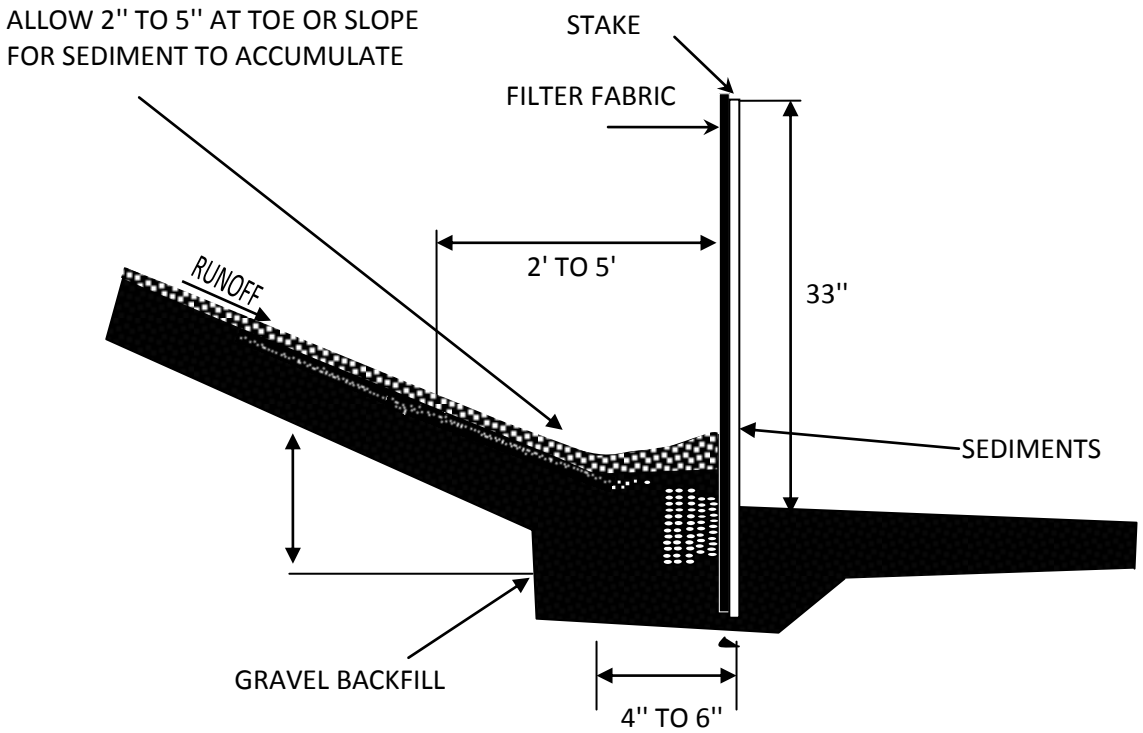
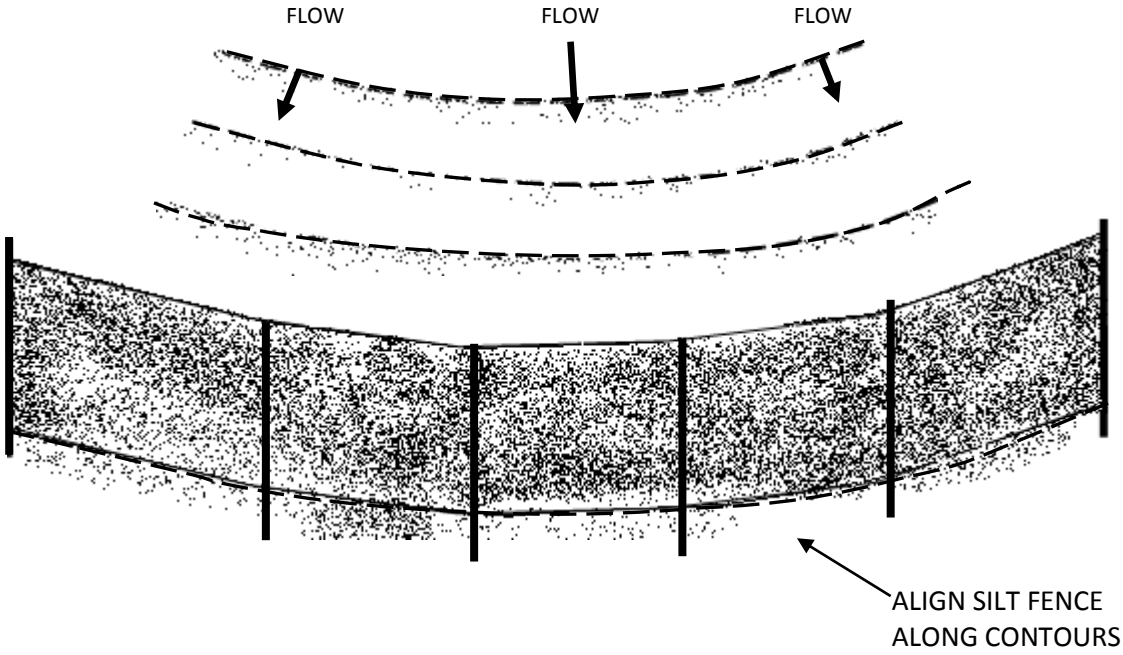


RECOMMENDED INSTALLATION OF SILT FENCE



NOTE: Erosion and sediment control measures must remain functional and be maintained throughout the winter season. Failure to adequately maintain erosion and sediment control measures constitute a violation of the issued building or other permit. Maintain positive drainage away from all structures. Seed and cover all disturbed soil with mulch.

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