



**Boulder County
Land Use Department
Publications**

Revegetation

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Revegetation

Assuring the proper revegetation of disturbed areas is an integral part of many Boulder County reviews. Successful revegetation is essential to slow soil erosion, repair scarring from cut and fill slopes, and to help deter noxious weeds. This handout is meant to guide you through some common requirements placed on projects in the county.

The Revegetation Plan

Use a copy of your site plan to delineate the areas you expect to be disturbed by construction (see example). Common disturbances include areas around the house, along the driveway, utility corridors, septic system, and staging/construction parking areas. The locations of silt fences and straw-bale barriers, if necessary, must also be shown. Each of the disturbed areas must show the method of revegetation including:

Seed List

In the Revegetation Plan, attach a list containing each type of seed and where it is to be used.

- Boulder County always encourages the use of native vegetation, and mountain projects above 5500 feet are required to use native grasses. Depending on location, some plains projects will also be required to use native grasses. This list must include seed application rates.
- Please refer to the attached recommended seed mixes and the document, "*Suggested Native Plants for Horticultural Use on the Front Range of Colorado*" as a guide. Some sources for plant material are included. Boulder County will not accept any seeds from the section titled, "*Plant Species Not to Use...*"

Slope and Revegetation

The degree of attention needed to successfully revegetate the site depends greatly on the steepness of slopes. This table shows which measures, in addition to seeding, should be included in the Revegetation Plan. Tractors, drill seeders, and mowers can operate on slopes of 3:1 or flatter, which makes such grades optimal for seedbed preparation, planting and maintenance.

Degree of Slope*	Soil Prep	Topsoil/ Stockpile	Mulch	Matting/ Hydromulch
Level to 3:1	✓	✓		
3:1 to 2:1	✓	✓	✓	
2:1 to 1.5:1	✓	✓	✓	✓

* See Determining Steepness of Grade section on page 3 for degree of slope.



Topsoil/Stockpile

Stockpiling entails scraping off the topsoil — or the uppermost, fertile layer of the soil — and setting it aside until needed. After construction, this topsoil should be spread out to a depth of 3" or more on all surfaces that are to be seeded. The addition of fertilizer is usually unnecessary for native grasses, and it can promote the growth of annual weeds.

Soil Preparation

A good seedbed is crucial to successful revegetation. Slopes should be graded to avoid concentrated water flow and subsequent erosion. If possible, any areas severely compacted by machinery and equipment during construction should be ripped by tractor or backhoe to loosen soils and allow for water infiltration and root growth. Clods larger than 3" should be broken, and any weeds controlled by tilling the soil.

Seeding

Seeding can take place from the fall until spring, including the winter months as long as the soil is workable. Many native seeds require a period of cold to germinate and are not harmed by being in the soil over winter. The best time window for seeding on the plains is November 1 to March 31. At higher elevations, seeding can be done later into the spring and early summer.

If possible, drill seeding will be the best seeding method. If the area is too small or steep for a tractor to operate, broadcasting the seed by hand or with a mechanical spreader is acceptable. Boulder County does not recommend hydroseeding; it does not work in our arid climate. In contrast, hydromulching after seeding is fine. Pay close attention to the recommended rates of seed application. Broadcast seed needs to be applied at double the rate of drilled seed. After broadcasting, seed needs to be raked in lightly by hand to provide better soil contact. Not all the seed needs to be buried; it is fine if some is still visible.

Mulch

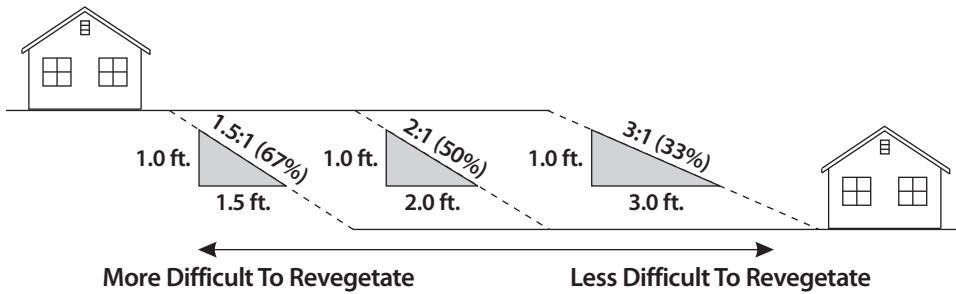
For steeper slopes, a mulch is necessary to keep the seed and topsoil in place. Mulch also provides shade to the seedlings and helps to retain soil moisture. On slopes of 3:1 or less, the mulch can be weed-free straw. The straw should be applied at 1.5 to 2 tons per acre. This is roughly one standard straw bale per 650 square feet. Do not mulch too thickly; some of the soil should still be visible to allow solar warming. If a tractor is available the straw can be "crimped" into the soil with a crimping tool. Crimping orients some of the straw vertically and keeps it in place, minimizing wind erosion. This can be simulated by hand using a shovel and jabbing the straw into the ground. Hydromulching is another option for larger areas. For small areas in the mountains, spreading pine needles over raked-in seed is acceptable.

Erosion Matting

Slopes steeper than 2:1 require erosion matting. Common types of matting include coir (coconut or jute fiber), straw, aspen fibers, or a blend of these. Steeper slopes will require more durable blankets. Talk to a vender about which product will work for your situation. When possible, specify biodegradable netting since this breaks down more quickly and is less of a hazard to wildlife.

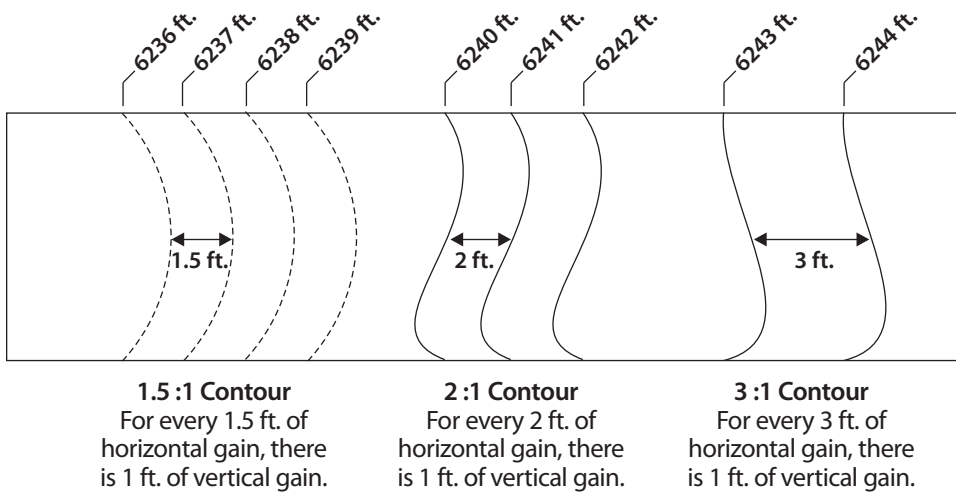
Determining Steepness of Grade

From Cross Sections:



From Topographic Contours:

The top numbers represent the elevation above sea level (starting with 6,236 feet) Intervals between contours represent the slope's steepness, in other words the closer the lines the steeper the slope. Contours can also be shown in 2 foot and 5 foot intervals.



Important Information on Grass and Rocky Terrain

The most common reason Final Inspections and Certificates of Occupancy are delayed by this office is because of insufficient progress of revegetation.

A common misconception is that establishing grass on a rocky, high-altitude site constitutes an alteration to the natural state of the land. Significant alteration to the ecosystem comes when trees, soil, and humus (even very thin layers of the latter two) are disturbed through construction. When this happens, something must be put in its place to prevent erosion and noxious weed infestation. Grass has the advantage of establishing quickly and is cheaper and less risky than trees and shrubs. Furthermore, in mountain ecosystems, grasses are commonly the first vegetation to establish and lead to the establishment of other plants.

Installation of Matting

Installation procedure:

1. Remove any material larger than 3" in diameter.
2. At the top of the slope, dig a trench the width of the blanket, about 6" deep. Fold over the edge of the blanket and secure in the trench with landscape staples. Place soil back into trench and compact.
3. Roll out matting downhill, keeping it straight and fairly tight but not so tight that it is lifted over any low spots. Fasten with landscape staples every 3' on the edges and across the middle. Follow manufacturer's directions if provided.
4. At the end of a roll of matting, dig another trench and fasten the end of the blanket as you did the top edge, including staples.
5. Overlap side-by-side blankets by 12" minimum, and staple.

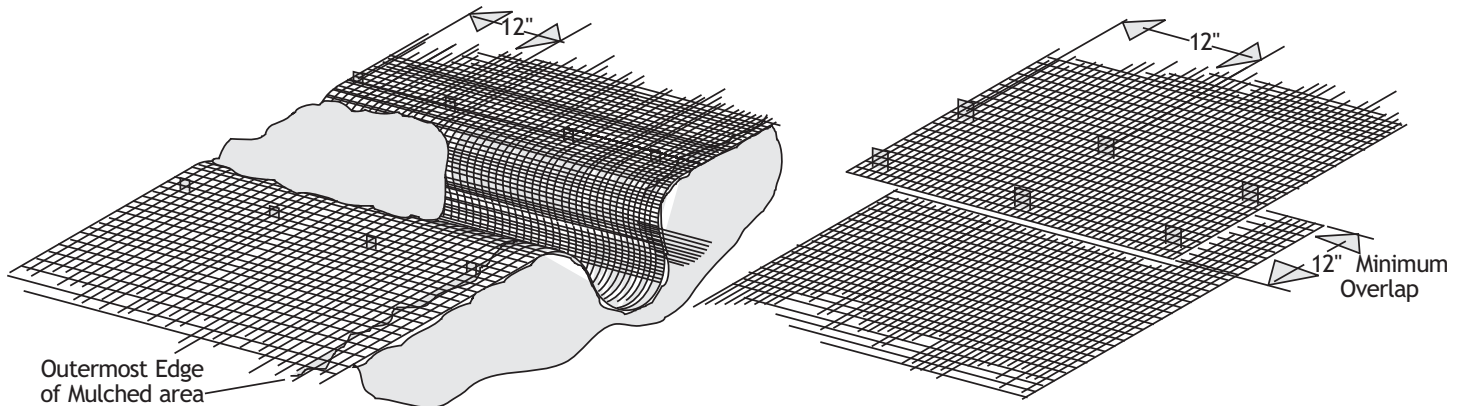


Diagram of Matting Installation.

- **Irrigation** – If you have seeded at the correct time of the year, and there is normal precipitation, then supplemental irrigation is not necessary. However, if it is a dry spring, irrigating seeds the first year will improve success.
- **Weeds** – Weeds will likely appear along with, or before, grass seedlings. There are weed seeds in the soil waiting for a disturbance that allows them to grow. If weeds are so thick that they are out-competing grasses, they can be mowed to a height of 8". Do not mow them close to the ground since this can harm the new grasses.
- **Time** – Be patient. Native grasses expend a lot of energy the first year in putting down roots. Because of this, the plants may look small after one year of growth. This is normal. It may take two growing seasons and good moisture before adequate results are seen.

Site Disturbance

The best Revegetation Plan is thoughtful about altering as little of the site as possible. Fewer disturbances translate into less time and money for revegetation. The foremost consideration in this regard is the selected project location on the site. Level building sites require less alteration to the topography. Also, it is helpful to show on the Revegetation Plan which areas are targeted for specific preservation (such as clarifying which trees will not be cut), and what measures will be taken to limit disturbances from construction (such as erecting construction fences to keep machinery away from sensitive areas).