

OGMCOAL - RE: WhiteOak Seedmix

From: "Tren Hagman" <tren@graniteseed.com>
To: "Ingrid Wieser" <ingridwieser@utah.gov>
Date: 2/18/2010 4:05 PM
Subject: RE: WhiteOak Seedmix
Attachments: cf_3000_csi.pdf

Ingrid,

Comments as follows:

Grasses

- Tegmar Intermediate wheatgrass (*Thinopyrum intermedium*) is no longer available, I would recommend 'Oahe' Intermediate wheatgrass (*Thinopyrum intermedium*) as a better alternative.
- The triticale I would recommend would be *QuickGuard* Sterile Triticale (*Triticum aestivum* x *Secale cereale*), this is a sterile triticale that will germinate fast and is not considered a grain type.
- All the other grasses would work fine, the Mammoth wildrye (*Leymus racemosus* ssp. *Racemosus*) is limited on its availability, an alternative may be Great basin wildrye (*Leymus cinereus*), I would also recommend using 'Hycrest' Standard crested wheatgrass (*Agropyron desertorum*).

Forbs

- A low growing drought tolerant alfalfa would be Falcata alfalfa (*Medicago sativa* ssp. *falcata*) you could also use 'Spreador 4' Alfalfa (*Medicago sativa*) both have creeping root systems and will stabilize the soil.
- Palmer penstemon (*Penstemon palmeri*) would be a great variety for your site, and is readily available.
- All asters are in short supply, and I do not think they are necessary for this site, you may consider California poppy (*Eschscholzia californica*) or Blanket flower (*Gaillardia aristata*) as other forbs to use on your site.

Shrubs

- The Ceanothus, Clematis, and Bearberry or Kinnikinnick (*Arctostaphylos uva-ursi*) are all hard to find.
- Other fshrub species I would recommend would be Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), Antelope bitterbrush (*Purshia tridentata*), Common snowberry (*Symphoricarpos albus*). Any of these species would work and are available.

Riparian Mix

- This mix has species that are all readily available and would do well on this site. My only recommendation would be 'Garrison' Creeping foxtail (*Alopecurus arundinaceus*) has a tendency to take over sites. You may consider another grass species that can olerate wetter environments like Timothy (*Phleum pratense*) or Reed canarygrass (*Phalaris arundinacea*).

I have also put together a seed mix with some of the species I have recommended and species from the list you sent me (see table below). Take a look at it and let me know what you think. The mix as is is giving you 94 seeds/ square foot. 90-100 seeds/ sq ft is what we aim for when we are dealing with critical sites. Also let me know if you would like me to price it and I can get that to you.

Species	PLS lbs/ acre	~Percent of mix by seeds
'Oahe' Intermediate wheatgrass (<i>Thinopyrum intermedium</i>)	6.00	13
'Lincoln' Smooth brome (<i>Bromus inermis</i>)	5.00	15
<i>QuickGuard</i> Sterile Triticale (<i>Triticum aestivum</i> x		3

Secale cereale)	10.00	
'Magnar' Great basin wildrye (<i>Leymus cinereus</i>)	5.00	16
'Critana' Thickspike wheatgrass (<i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i>)	5.00	19
'Hycrest' Standard crested wheatgrass (<i>Agropyron desertorum</i>)	4.00	17.5
Falcata alfalfa (<i>Medicago sativa</i> ssp. <i>falcata</i>)	1.00	5
Scarlet globemallow (<i>Sphaeralcea coccinea</i>)	0.25	3
Palmer penstemon (<i>Penstemon palmeri</i>)	0.25	3
Prairie sage (<i>Artemisia ludoviciana</i>)	0.01	1
Forage kochia or Prostrate summer cypress (<i>Bassia prostrata</i>)	0.25	2
Common snowberry (<i>Symphoricarpos albus</i>)	0.20	.5
Black sagebrush (<i>Artemisia nova</i>)	0.03	.5
Mountain big sagebrush (<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>)	0.01	.5
Total:	37.00	100

Something else to consider is the type of hydro mulch being used. For steeper slopes I would recommend using a Bonded Fiber Matrix, which acts like a Erosion control Blanket only it is applied hydraulically. The BFM is higher quality hydro mulch and will do a better job at keeping the seed on the slope and holding the moisture and improving germination. It is more expensive then typical wood fiber mulch, but worth it on steeper slopes in my opinion. I have attached a spec sheet on the BFM that we carry.

As far as contractors that could help you on this project, I have listed a few below with their contact information.

WRR industries
John
801-556-2909

RBI inc.
Randal
801-553-0500

If you have any questions please give me a call-Thanks

Tren

From: Ingrid Wieser [mailto:ingridwieser@utah.gov]
Sent: Wednesday, February 17, 2010 3:20 PM
To: tren@graniteseed.com
Cc: OGMCOAL@utah.gov
Subject: WhiteOak Seedmix

Hi Tren- I have attached a draft seed mix for the project. Can you answer my comments next to some of the species, and suggest changes/additions. Also, for the riparian area, we will want to do cuttings/plugs/containerized plants to help with erosion control. Feel free to make suggestions on the riparian mix, but we will most likely try and buy those from a provider. Thanks for your help.

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GUIDE SPECIFICATION FOR CONWED FIBERS 3000 M-BFM

SECTION 02925

BONDED FIBER MATRIX

PART 1 GENERAL

1.01 SUMMARY

- A. This section specifies a spray-applied bonded fiber matrix wood fiber mulch with pre-mixed tackifier and crimped polyester fiber for a strong mechanical and chemical bond within the fiber matrix for [hydro-seeding.]
- B. Related Sections: Other Specification Sections which directly relate to the work of this Section include, but are not limited to, the following:
 - 1. Section 01570 - Temporary Erosion and Sediment Control.
 - 2. Section 02300 - Earthwork; establishment of subgrade
 - 3. Section 02370 - Erosion and Sedimentation Control.
 - 4. Section 02920 - Lawns and Grasses.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions. Include required substrate preparation, list of materials, and application rate.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials and products in factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage from weather, excessive temperatures, and construction operations.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. PROFILE Products LLC, 750 Lake Cook Road – Suite 440, Buffalo Grove, IL 60089, 800-366-1180 (Fax 847-215-0577)

2.02 MATERIALS

- A. Bonded Fiber Matrix: Conwed Fibers 3000 M-BFM by PROFILE Products LLC with the following characteristics:
 - 1. Materials: Wood fiber, crimped polyester fibers, Polysaccharide crosslinked hydro-colloid polymer tackifier, dark green dye.
 - 2. pH Range: 4.8 plus or minus 2.
 - 3. Moisture Content: 12+-3% percent maximum.
 - 4. Wood Fiber Content: 85 percent maximum.
 - 5. Degradable Crimped Polyester Fibers: 5+-1% Locking Fibers (_ inch crimped staple lengths: 4.5 denier)
 - 6. Polysaccharide Crosslinked Hydro-colloid Polymer Tackifier: 10+-1% (university tested to control erosion without having to cure, effective immediately after seeding.)

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7. Organic Content: 95 percent minimum.
8. Ash Content: 5 percent plus or minus 1 percent.
9. Water Holding Capacity: 1,500 percent minimum.

10. Fiber Mulch Slurry Viscosity: Minimum 2.85 cps (Test Method: Falling Ball Viscometer) Test condition 1500 lbs of fiber mulch per 3000 gallons of water, evaluated immediately after mixing.
11. "C" Factor .0003 – 2.5 to 1 slope with an application rate of 3000 lbs per acre, 5 inch rain event for 60 minute test duration, Utah State University Water Research Laboratory.
12. "C" Factor .004 – 2 to 1 slope with an application rate of 3000 lbs per acre, 10 year storm event, San Diego State Water Research Laboratory.
13. "C" Factor .02 – 2 to 1 slope with an application rate of 3000 lbs per acre, 10 year storm event, tested with less than 2 hours drying time, wet matrix. San Diego State Water Research Laboratory.
14. "C" Factor .0001 – 2 to 1 slope with an application rate of 3500 lbs per acre, 3 consecutive 50 year storm event, San Diego State Water Research Laboratory.
15. Patents: 5,741,832, 5,779,782, 5,942,029, additional patents pending.
16. Packaging: 60 pound UV resistant bags, with UV resistant pallet cover.

PART 3 EXECUTION

3.01 SUBSTRATE PREPARATION

- A. Examine substrates and conditions where materials will be applied. Do not proceed with installation until unsatisfactory conditions are corrected, only apply product to geotechnically stable slopes that have been designed and built to divert the water shed away from the face of the slope, therefore eliminating surface flow energy from above from damaging the slope face.

3.02 INSTALLATION

- A. Strictly comply with manufacturer's installation instructions and recommendations. Use approved hydro-spraying machines. Apply Conwed Fibers 3000 M-BFM from opposing directions to soil surface, reducing the "shadow effect" and assures soil surface coverage of a minimum of 95%. Do not exceed maximum slope length of 100 feet when slope gradients are steeper than 4 to 1. Install materials at the following application rate:
 1. Hydro-Seeding: Add 30 to 50 pounds of Conwed Fibers 3000 M-BFM fiber per 100 gallons of water when hydroseeding; confirm loading rates with equipment manufacturer.
 - a. Mod to 3 to 1 Slope: 3000 pounds per acre.
 - b. 2 to 1 slope: 3500 pounds per acre
 - c. Greater than 1 to 1 Slope: 4000 pounds per acre

3.03 CLEANING AND PROTECTION

- A. Clean spills promptly. Advise Owner of methods for protection of sprayed areas.

END OF SECTION

GUIDE SPECIFICATION FOR CONWED FIBERS 3000 M-BFM

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1/1/02