

ITEM #0950043A - WETLAND GRASS ESTABLISHMENT

Description: The work included in this item shall consist of providing an accepted stand of established wetland grasses by furnishing and placing seed as shown on the plans, permits, or as directed by the Environmental Scientist from the Connecticut Department of Transportation’s Office of Environmental Planning within the Wetland Mitigation Areas or other areas when required.

Materials: All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture. Application of fertilizer will be directed by the Environmental Scientist based on a soil analysis of the wetland area to be seeded. The following mixes shall be used for this item.

Wetland Seed Mixes: In order to preserve and enhance the diversity of native wetland species, it is necessary that the source for wetland seed mixtures for use in wetland mitigation areas shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. Three approved seed mixtures are detailed below. Other proposed mixtures must be submitted and approved by the Environmental Scientist prior to use. The materials certification for any proposed mixture that is different from that described below must be submitted a minimum of ten (10) days prior to delivery on site. This certification must match both the previously approved substitute mixture and the seed tags on the bags that are to be removed upon delivery. No seeding shall occur if all three items do not match.

Wetland Seed Mixture: (NEWP) New England WetMix, New England Wetland Plants, Inc. 800 Main Street Amherst, MA 01002, or equal. Rate shall be 1 pound PLS per 2500 sq.ft.

<u>scientific name</u>	<u>common name</u>
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Aster puniceus</i>	Swamp Aster
<i>Bidens aristosa</i>	Tickseed Sunflower/Bur Marigold
<i>Carex crinita</i>	Fringed Sedge
<i>Carex lupulina</i>	Hop Sedge
<i>Carex lurida</i>	Lurid Sedge
<i>Carex scoparia</i>	Blunt Broom Sedge
<i>Carex vulpinoides</i>	Fox Sedge
<i>Deschampsia cespitosa</i>	Tufted Hairgrass
<i>Eleocharis palustris</i>	Creeping Spike Rush
<i>Eupatorium perfoliatum</i>	Boneset
<i>Glyceria canadensis</i>	Rattlesnake Grass
<i>Helenium autumnale</i>	Common Sneezeweed
<i>Juncus effusus</i>	Soft Rush
<i>Mimulus ringens</i>	Monkey Flower
<i>Panicum rigidulum</i>	Redtop Panic Grass
<i>Penthorum sedoides</i>	Ditch Stonecrop
<i>Poa palustris</i>	Fowl Bluegrass

<i>Scirpus atrovirens</i>	Green Bulrush
<i>Symphyotrichum novae-angliae</i>	New England Aster
<i>Verbena hastata</i>	Blue Vervain

Wetland Seed Mixture: OBL Wetland Seed Mixture: Ernst Conservation Seeds Inc. 8884 Mercer Pike, Meadville, PA, 16335, or equal. Rate shall be 1 pound PLS per 2,000 sq.ft.

<u>scientific name</u>	<u>common name</u>
<i>Alisma plantago-aquatica</i>	Water Plantain
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Bidens cernua</i>	Nodding Bur Marigold
<i>Carex crinita</i>	Fringed Sedge
<i>Carex lupulina</i>	Hop Sedge
<i>Carex lurida</i>	Lurid Sedge
<i>Carex scoparia</i>	Blunt Broom Sedge
<i>Carex vulpinoidea</i>	Fox Sedge
<i>Deschampsia cespitosa</i>	Tufted Hairgrass
<i>Eupatorium fistulosum</i>	Joe Pye Weed
<i>Eupatorium perfoliatum</i>	Boneset
<i>Glyceria canadensis</i>	Rattlesnake Grass
<i>Glyceria grandis</i>	American Manna Grass
<i>Iris versicolor</i>	Blue flag iris
<i>Juncus effusus</i>	Soft Rush
<i>Ludwigia alernifolia</i>	Seedbox
<i>Mimulus ringens</i>	Monkey Flower
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Panicum rigidulum</i>	Redtop Panic Grass
<i>Penthorum sedoides</i>	Ditch Stonecrop
<i>Scirpus atrovirens</i>	Green Bulrush
<i>Scirpus cyperinus</i>	Wool Grass
<i>Scirpus validus</i>	Soft-stem Bulrush
<i>Solidago patula</i>	Roughleaf Goldenrod
<i>Sparganium americanum</i>	Eastern Bur Reed
<i>Sparganium eurycarpum</i>	Gaint Bur Reed
<i>Symphyotrichum novae-angliae</i>	New England Aster
<i>Verbena hastata</i>	Blue Vervain

Wetland Seed Mixture: Wet Meadow/ Detention Basin, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT, 05760, or equal. Rate shall be 1 pound PLS per 1200 sq.ft.

<u>scientific name</u>	<u>common name</u>
<i>Panicum virgatum</i>	Wand Panic Grass
<i>Elymus virginicus</i>	Virginia Wild Rye
<i>Festuca rubra</i>	Red Fescue
<i>Carex vulpinoidea</i>	Fox Sedge
<i>Carex scoparia</i>	Broom Sedge
<i>Scirpus cyperinus</i>	Wool Grass
<i>Scirpus atrovirens</i>	Green Bulrush
<i>Bidens cernua</i>	Nodding Bur Marigold
<i>Eupatorium perfoliatum</i>	Boneset
<i>Eupatoriadelphus maculatus</i>	Joe Pye Weed
<i>Juncus effuses</i>	Soft Rush
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Verbena hastate</i>	Blue Vervain
<i>Symphotrichum nova-angliaea</i>	New England American Aster

Construction Methods: Construction methods shall be those established as agronomically acceptable and feasible and which the Environmental Scientist approves. Seeding shall occur during the fall season immediately following construction of the wetland site. Fall seeding must occur from August 15th to October 15th. Seeding shall be applied to all areas that will not be continuously inundated constructed wetland areas. If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage as determined by the following formula based off of the information provided on the seed tags at delivery.

$$(\text{Germination Percentage} \times \text{Purity Percentage}) / 100 = \text{Percentage PLS}$$

The Engineer shall verify that the seed is applied at a rate that will allow for 100 percent PLS.

Method of Measurement: This work will be measured for payment by the number of square feet of surface area of accepted established wetland plants as specified or by the number of square feet surface area of seeding actually covered as specified.

Basis of Payment: This work will be paid for at the contract unit price per square foot for “Wetland Grass Establishment,” which price shall include all materials maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Environmental Scientist.

Pay Item
Wetland Grass Establishment

Pay Unit
Sq.ft.