

D:99079:092000

**SPECIFICATIONS FOR:  
PLANTING, MONITORING, AND MANAGEMENT  
OF THE CALEDONIA PROPERTY  
CALEDONIA, WISCONSIN**

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September 2000

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**GENERAL PROVISIONS**

**PART 1      DEFINITIONS**

Wherever in these specification and plans the following terms are used, the intent and meaning shall be interpreted as follows:

**Contractor.** The individual, firm, partnership, joint venture, or corporation contracting with the Owner for performance of the work described in these specifications and plans.

**Owner.** The individual, firm, partnership, joint venture, or corporation employing the contractor for performance of the work described in these specifications and plans. The term may also refer to the Owner's authorized representative.

**Plans.** The approved plan drawings, profiles, typical cross-sections, working drawings, etc., and exact reproductions thereof, which show the location, character, dimensions, and details of the work to be done.

**Work.** Work shall mean the furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project.

**PART 2      GENERAL**

The work described herein consists of furnishing, transporting, and installing all seeds, plant materials, and other materials as required for the establishment of Mesic Forests, Wet Prairies, Emergent Wetlands, Drainage Conveyance Swales, and Mesic Prairies, and management of planting areas after final acceptance. The Contractor shall perform all planting, soil preparation, management, and such additional, extra and incidental work as may be necessary to complete the work in accordance with the specifications and plans. The Contractor shall furnish all required materials, equipment, tools, labor, and incidentals, unless otherwise provided in the specifications or plans.

**PART 3      LEGAL RESPONSIBILITIES**

The Contractor shall at all times observe and comply with all Federal and State laws, local laws, ordinances, and regulations which in any manner affect the conduct of the work, and all such orders or enactments as exist at the present and which may be enacted later, of legislative bodies or tribunals having legal jurisdiction or which may have affect over the work.

**PART 4      FAMILIARITY WITH JOB SITE**

The Contractor shall familiarize himself with conditions at the job site prior to the commencement of work. The Contractor shall notify the Owner immediately if site conditions are such that inhibit progress of the work.

The Contractor shall be responsible for having all underground utilities located by servicing agency. The Contractor shall take all necessary precautions for the protection of utility facilities. The Contractor shall be responsible for any damage or destruction of utility facilities resulting from negligence or misconduct in the Contractor's manner or method of execution of the work, or caused by defective work or the use of unsatisfactory materials. Whenever any damage or destruction of a utility facility occurs as a result of work performed by the Contractor, the Utility company and Owner will be immediately notified.

#### PART 5 VEGETATION MONITORING

The Contractor shall conduct monitoring of performance success, as measured by plant cover. Annual photographic monitoring shall be completed to document changes in each planting zone. Color slides or photographs showing planting zones shall be taken annually from the same location. Time, date, and location shall be identified on each photo or slide.

END OF GENERAL PROVISIONS

SITE WORK  
SECTION – SELECTIVE WOODY BRUSH REMOVAL

PART 1. GENERAL

1.1 DESCRIPTION

- A. This section includes the selective cutting and disposal of woody brush including trees and shrubs.

1.2 RELATED SECTIONS

- A. Herbaceous species removal, seeding.

1.3 QUALITY ASSURANCE

- A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with this type of work and the type of materials being used. Said person shall be competent at identification of plant materials to be cut and to be preserved during the season (summer, winter) work is to be completed. Said person shall also direct all work performed under this section.
- B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. The use of any herbicide shall follow directions given on the herbicide label. In the case of a discrepancy between these specifications and the herbicide label, the label shall prevail.

1.4 SUBMITTALS

- A. Materials: Prior to delivery of any materials to the site, submit to the owner a complete list of all materials to be used during this portion of the work. Include complete data on source, amount and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the owner's representative.
- B. Licenses: Prior to any herbicide use the Contractor shall submit to the owner a current copy of the State of Wisconsin commercial pesticide applicator's license, for each person who will be applying herbicide at the project site. A copy of each commercial pesticide applicator's license must be maintained on site at all times during completion of the work.
- C. Equipment: Prior to commencement of any work, submit to the owner a written description of all mechanical equipment and its intended use during the execution of the work.
- D. After the work is complete submit to the owner "as-built" plans including a listing of all species installed, and quantities installed. Mark in red ink on the original planting plan any field changes or deviations from the original plans.

PART 2. PRODUCTS

2.1 MATERIALS

- A. Herbicide to be used for basal applications shall be triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester, trade name Garlon 4 or equivalent as approved in writing by the owner.
- B. Herbicide to be used for foliar applications shall be triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester, trade name Garlon 3 or equivalent as approved in writing by owner.

PART 3. EXECUTION

3.1 METHOD

- A. The Contractor will cut all woody species designated for removal in the woods in the northeast corner (clean up mature woodland area on concept plan) with hand tools including, but not necessarily limited to, gas powered chain saws, gas powered clearing saws, bow saws, and loppers.
- B. All stumps shall be cut flat with no sharp points, and to within two inches of surrounding grade.
- C. Removal of undesirable woody species shall preferentially occur when the ground is frozen.
- D. Stumps shall be left in the ground and not removed. All stumps shall be treated with an approved herbicide mixed with a marking dye.
- E. Girdling may also be used in combination with cutting and stump herbicide treatment if approved in writing by the owner. Trees to be girdled shall have a one inch deep notch cut completely around the trunk approximately 36" above surrounding grade. A basal application of an approved herbicide shall also be used following label directions.
- F. Stack cut brush in piles not to exceed eight (8) feet in height by twelve (12) foot in diameter. Piles shall be spaced as necessary to minimize dragging of cut material over long distances. Piles shall be located in open areas without canopy branches of preserved trees overhanging the piles. Piles shall be burned on site. Ensure no debris (rubble, plastic, etc.) other than the cut brush is placed in the burn piles.
- G. A supply of chemical absorbent shall be maintained at the project site. Any chemical spills shall be properly cleaned up and reported to the owner within 24 hours.
- H. The Contractor shall maintain copies at the project site of all current pesticide applicator's licenses, herbicide labels, and MSDS's (Material Safety Data Sheets) for all chemicals utilized during completion of the work.
- I. Species designated for removal are:

COMMON NAME	SCIENTIFIC NAME	DISPOSITION
Boxelder	<i>Acer negundo</i>	Reduce by 50%
Common buckthorn	<i>Rhamnus cathartica</i>	Remove all
Honeysuckle	<i>Lonicera spp.</i>	Remove all
Red elm	<i>Ulmus rubra</i>	Reduce by 50%

### 3.2 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. At no time, shall empty herbicide containers, trash, or other material be allowed to accumulate at the project site. All tools shall be kept in appropriate carrying cases, tool boxes, etc. Parking areas, roads, sidewalks, paths and paved areas shall be kept free of mud and dirt.
- B. Removal: after work has been completed remove tools, empty containers, and all other debris generated by the Contractor.
- C. Repair: Repair any damages caused by the Contractor during completion of the work described in this Section. Said damages may include, but are not limited to, tire ruts in the ground, damage to lawn areas, damage to trails, etc. In the event any vegetation designated to be preserved is damaged, notify the owner within 24 hours. The Contractor shall be liable for remedying said damages to plant materials.

### 3.3 INSPECTION

- A. After completion of selective woody brush removal, the Contractor shall schedule with the owner a provisional acceptance inspection of the work.
- B. After provisional acceptance of selective woody brush removal, the Contractor shall conduct a year end inspection of work areas. Within five business days of the inspection, the Contractor shall notify the owner in writing of the results of the inspection, and noting any stumps that have re-sprouted.

### 3.4 ACCEPTANCE AND GUARANTEE

- A. Provisional acceptance: the work shall be provisionally accepted by the owner after initial selective woody brush removal is completed per the given plans and specifications, and the Contractor has completed all clean up, removal, and repair as described in 3.2 of this section. Selective woody brush removal shall be considered 75% complete at the time of provisional acceptance.
- B. Final acceptance: selective woody brush removal shall be considered 100% complete after the Contractor has complied with all provisions of the Guarantee described in 3.4C. of this section.
- C. Guarantee: the Contractor guarantees not more than 10% of the cut stumps shall be re-sprouting at any time. The Contractor shall guarantee the work until one full year after brushing.

END OF SECTION .

**SITE WORK**  
**SECTION – HERBACEOUS SPECIES REMOVAL**

**PART 1. GENERAL**

**1.1 DESCRIPTION**

- A. This section includes the eradication of herbaceous species, including grasses and forbs.

**1.2 RELATED SECTIONS**

- A. Soil preparation, Seeding, Herbaceous perennial planting.

**1.3 QUALITY ASSURANCE**

- A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with this type of work and the type of materials being used. Said person shall be competent at identification of plant materials to be removed and to be preserved during the season (summer, winter) work is to be completed. Said person shall also direct all work performed under this section.
- B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. The use of any herbicide shall follow directions given on the herbicide label. In the case of a discrepancy between these specifications and the herbicide label, the label shall prevail.

**1.4 SUBMITTALS**

- A. Materials: Prior to delivery of any materials to the site, submit to the Owner a complete list of all materials to be used during this portion of the work. Include complete data on source, amount and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner's representative.
- B. Licenses: Prior to any herbicide use the Contractor shall submit to the Owner a current copy of the State of Wisconsin commercial pesticide applicator's license, with certification in the appropriate categories, for each person who will be applying herbicide at the project site. A copy of each commercial pesticide applicator's license must be maintained on site at all times during completion of the work.
- C. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.
- D. After the work is complete submit to the Owner "as-built" plans of actual completed work. Mark in red ink on the original plan any field changes or deviations from the original plans.



## PART 2. PRODUCTS

### 2.1 MATERIALS

- A. Herbaceous species to be removed in areas without standing water or saturated soils shall be treated with Glyphosate, N-(phosphonomethyl) glycine, trade name Roundup or equivalent as approved in writing by Owner.
- B. Herbaceous species to be removed in areas with standing water or saturated soils shall be treated with Glyphosate, N-(phosphonomethyl) glycine in a form approved for aquatic applications such as Rodeo or equivalent as approved in writing by Owner.

## PART 3. EXECUTION

### 3.1 METHOD

- A. The Contractor will treat all vegetation within targeted areas with an approved herbicide. Herbicide application instructions given on the label shall be followed at all times.
- B. Targeted areas may be shown on plans or located in the field by the Owner.
- C. Care shall be taken not to affect vegetation outside of target areas.
- D. A supply of chemical absorbent shall be maintained at the project site. Any chemical spills shall be properly cleaned up and reported to the Owner within 24 hours.
- E. The Contractor shall maintain copies at the project site of all current pesticide applicator's licenses, herbicide labels, and MSDS's (Material Safety Data Sheets) for all chemicals utilized during completion of the work.
- F. Herbicide may be applied using a backpack sprayer, a hand-held wick applicator, or a vehicle mounted high pressure spray unit.

### 3.2 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. At no time shall empty herbicide containers, trash, or other material be allowed to accumulate at the project site. All tools shall be kept in appropriate carrying cases, tool boxes, etc. Parking areas, roads, sidewalks, paths and paved areas shall be kept free of mud and dirt.
- B. Removal: after work has been completed remove tools, empty containers, and all other debris generated by the Contractor.
- C. Repair: Repair any damages caused by the Contractor during completion of the work described in this Section. Said damages may include, but are not limited to, tire ruts in the ground, damage to lawn areas, damage to trails, etc. In the event any vegetation outside of targeted areas is damaged, notify the Owner within 24 hours. The Contractor shall be liable for remedying said damages to plant materials.

### 3.3 INSPECTION

- A. After completion of herbaceous species removal, the Contractor shall schedule with the Owner a provisional acceptance inspection of the work.

- B. After provisional acceptance of herbaceous species removal, the Contractor shall conduct monthly inspections of work areas until the end of the current growing season. Within five business days of the inspection, the Contractor shall notify the Owner by telephone of the results of the inspection.

#### 3.4 ACCEPTANCE AND GUARANTEE

- A. Provisional acceptance: the work shall be provisionally accepted by the Owner after initial herbaceous species removal is completed per the given plans and specifications, and the Contractor has completed all clean up, removal, and repair as described in 3.2 of this section. Herbaceous species removal shall be considered 90% complete at the time of provisional acceptance.
- B. Final acceptance: Herbaceous species removal shall be considered 100% complete after the Contractor has complied with all provisions of the Guarantee described in 3.4C. of this section.
- C. Guarantee: the Contractor guarantees not more than 10% vegetative cover within the treated area at any time. The Contractor shall guarantee the work until provisional acceptance of Seeding, Herbaceous perennial planting, and/or tree and shrub planting in the targeted area.

END OF SECTION

SITE WORK  
SECTION – SOIL PREPARATION

PART 1. GENERAL

1.1 DESCRIPTION

A. This section includes preparation of soil prior to seeding and/or planting.

1.2 RELATED SECTIONS

A. Seeding, Herbaceous perennial planting, Tree and shrub planting.

1.3 QUALITY ASSURANCE

A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type and operation of equipment being used. Said person shall direct all work performed under this section.

B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations.

1.4 SUBMITTALS

A. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.

PART 2. PRODUCTS

2.1 MATERIALS

A. None specified.

PART 3. EXECUTION

3.1 METHOD

A. Prior to seeding and planting design rotovate soils to produce a fine seedbed.

B. Remove all foreign matter larger than one inch in any dimension from the areas to be seeded and/or planted.

3.2 CLEAN-UP, REMOVAL AND REPAIR

A. Clean up: after soil preparation is complete, clean up any remaining materials, debris, trash, etc. Avoid driving over the area to minimize additional compaction.

B. Repair: Repair any damages caused by the Contractor during completion of the work described in this Section.

3.3 INSPECTION

A. After completion of soil preparation, the Contractor shall schedule with the Owner a final acceptance inspection of soil preparation.

3.4 ACCEPTANCE AND GUARANTEE

- A. Final acceptance: this portion of the work shall be considered 100% complete after the Contractor has completed soil preparation, and completed all required clean up as described in 3.2 of this section.

END OF SECTION

**SITE WORK  
SECTION – COVER CROP SEEDING**

**PART 1. GENERAL**

**1.1 DESCRIPTION**

A. This section includes installation of cover crop seed.

**1.2 RELATED SECTIONS**

A. Herbaceous species removal, Soil preparation, Herbaceous perennial planting.

**1.3 QUALITY ASSURANCE**

A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type and operation of equipment being used. Said person shall direct all work performed under this section.

B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. All seed shall be free from insects and disease. Species shall be true to their scientific name as specified.

**1.4 SUBMITTALS**

A. Materials: Prior to delivery of any materials to the site, submit to the Owner a complete list of all seed to be used during this portion of the work. Include complete data on source, quantity and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner.

B. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.

C. After the work is complete submit to the Owner "as-built" plans including a listing of all species installed, and quantities installed. Mark in red ink on the original planting plan any field changes or deviations from the original plans.

**PART 2. PRODUCTS**

**2.1 PRAIRIE COVER CROP SPECIES LIST**

SCIENTIFIC NAME	COMMON NAME	POUNDS/ACRE
Spring <i>Avena sativa</i>	Oats	30.00
<i>Lolium multiflorum</i>	Annual rye	30.00
Fall <i>Secale cereale</i>	Winter rye	50.00

## 2.2 WETLAND COVER CROP SPECIES LIST

SCIENTIFIC NAME	COMMON NAME	POUNDS/ACRE
<i>Agrostis alba</i>	Redtop	0.25
<i>Echinochloa crusgalli</i>	Barnyard grass	0.50
<i>Lolium multiflorum</i>	Annual rye	20.00
<i>Polygonum spp.</i>	Smartweed	0.50

## 2.3 TREE PLANTING COVER CROP SPECIES LIST

SCIENTIFIC NAME	COMMON NAME	POUNDS/ACRE
<i>Lolium multiflorum</i>	Annual rye	30.00
<i>Phleum pratense</i>	Timothy	2.00

## 2.4 MATERIALS

- A. All grass species shall be supplied as pure live seed. Submit to the Owner lab germination test results.
- B. Straw or hay for erosion control shall be clean, seed-free hay or threshed straw of wheat, rye, oats, or barley.

## PART 3. EXECUTION

### 3.1 METHOD

- A. Seeds shall have proper stratification and/or scarification to break seed dormancy for spring planting.
- B. Seeding shall be preferentially conducted as a late fall dormant seeding (after November 1) or in early spring (as soon as the soil is free of frost and in a workable condition but no later than July 15).
- C. All seed shall be preferentially installed with a rangeland type grain drill or no-till planter, such as by Truax, or equivalent as approved in writing by the Owner.
- D. If soil is too wet to install seed as described in 3.1D. above, a mechanical broadcast seeder, such as by Cyclone, shall be used. Hand broadcasting of seed may also be employed. Within 24 hours, or as soon as site conditions permit, broadcast seeded areas shall be rolled or dragged perpendicular to the slope.
- E. Within seven days of seeding, crimp 2,000 pounds per acre of straw or hay for erosion control onto slopes greater than one foot horizontal to five foot vertical (1:5).
- F. If area to be seeded was treated with herbicide, seeding shall occur no less than 14 days after herbicide application.

3.2 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. After seed installation is complete, clean up any remaining materials, debris, trash, etc. Avoid driving over seeded areas to minimize disturbance
- B. Removal: after work has been completed remove any tools, equipment, empty containers, and all other debris generated by the Contractor.
- C. Repair: repair any damages caused by the Contractor during completion of the work described in this section.

3.3 INSPECTION

- A. After completion of seeding, the Contractor shall schedule with Owner a provisional acceptance inspection of the work.

3.4 ACCEPTANCE AND GUARANTEE

- A. Provisional acceptance: the work shall be considered 90% complete after all seed has been installed and the Contractor has completed all required clean up, removal, and repair as described in 3.2 of this section.
- B. Final acceptance: the work shall be considered 100% complete after the Contractor has met or exceeded the performance standards given in 3.4C. of this section, and completed all required clean up, removal, and repair as described in 3.2 of this section.
- C. The Contractor shall guarantee seeded areas will meet or exceed the following performance criteria one full growing season after provisional acceptance: 70% plant cover.

END OF SECTION

**SITE WORK  
SECTION – HERBACEOUS PERENNIAL PLANTING**

**PART 1. GENERAL**

**1.1 DESCRIPTION**

- A. This section includes installation of live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants.

**1.2 RELATED SECTIONS**

- A. Soil preparation, Seeding, Tree planting.

**1.3 QUALITY ASSURANCE**

- A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type and operation of equipment being used. Said person shall direct all work performed under this section.
- B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. All live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be free from insects and disease.

**1.4 SUBMITTALS**

- A. Materials: Prior to delivery of any materials to the site, submit to the Owner a complete list of all live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants to be used during this portion of the work. Include complete data on source, quantity and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner's representative.
- B. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.
- C. After the work is complete submit to the Owner "as-built" plans including a listing of all species installed, and quantities installed. Mark in red ink on the original planting plan any field changes or deviations from the original plans.

**PART 2. PRODUCTS**

**2.1 MESIC PRAIRIE SPECIES LIST (Prairie restoration and entrance enhancement)**

SCIENTIFIC NAME	COMMON NAME	PLANTS/ACRE
<i>Allium cernuum</i>	Nodding wild onion	25
<i>Aster azureus</i>	Sky blue aster	50
<i>Aster laevis</i>	Smooth blue aster	50
<i>Aster novae-angliae</i>	New England aster	50
<i>Baptisia leucantha</i>	White indigo	50
<i>Desmodium canadense</i>	Showy tick trefoil	50



<i>Echinacea purpurea</i>	Purple coneflower	50
<i>Helianthus laetiflorus</i>	Showy sunflower	50
<i>Heliopsis helianthoides</i>	False sunflower	50
<i>Lespedeza capitata</i>	Bush clover	50
<i>Liatris aspera</i>	Rough blazing star	50
<i>Monarda fistulosa</i>	Bergamot	50
<i>Penstemon digitalis</i>	Bearded foxglove	50
<i>Petalostemum purpureum</i>	Purple prairie clover	50
<i>Potentilla arguta</i>	Prairie cinquefoil	25
<i>Ratibida pinnata</i>	Yellow coneflower	50
<i>Silphium integrifolium</i>	Rosin weed	50
<i>Silphium laciniatum</i>	Compass plant	50
<i>Silphium terebinthinaceum</i>	Prairie dock	50
<i>Solidago rigida</i>	Stiff goldenrod	50
<i>Tradescantia ohiensis</i>	Spiderwort	50

## 2.2 WETLANDS SPECIES LIST (Detention area wetlands)

SCIENTIFIC NAME	COMMON NAME	PLANTS/ACRE
<i>Acorus calamus</i>	Wild calamus	75
<i>Asclepias incarnata</i>	Swamp milkweed	75
<i>Eupatorium maculatum</i>	Joe pye weed	50
<i>Eupatorium perfoliatum</i>	Boneset	50
<i>Helenium autumnale</i>	Sneezeweed	75
<i>Iris virginica</i>	Blue flag	75
<i>Lobelia siphilitica</i>	Great blue lobelia	75
<i>Lycopus americanus</i>	Water horehound	50
<i>Lythrum alatum</i>	Winged loosestrife	50
<i>Mimulus ringens</i>	Monkey flower	50
<i>Penthorum sedoides</i>	Ditch stone crop	50
<i>Pycnanthemum virginianum</i>	Mountain mint	50
<i>Sagittaria latifolia</i>	Common arrowhead	75
<i>Silphium perfoliatum</i>	Cup plant	50
<i>Sparganium eurycarpum</i>	Common bur reed	75
<i>Thalictrum dasycarpum</i>	Meadow rue	50
<i>Verbena hastata</i>	Blue vervain	50
<i>Vernonia fasciculata</i>	Iron weed	75
<i>Veronicastrum virginicum</i>	Culvers root	75
<i>Zizia aurea</i>	Golden Alexander	75

## 2.3 MATERIALS

- A. Live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be from within a 150 mile radius of the project site and native to Wisconsin. Species shall be true to their scientific name as specified.

## PART 3. EXECUTION

### 3.1 METHOD

- A. Planting of all live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be completed after May 15 but no later than July 15.
- B. All live herbaceous plants shall be potted, one year old nursery grown stock unless approved in writing by the Owner.
- C. All live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be approved by the Owner prior to installation.
- D. Provide healthy, vigorous live herbaceous perennial plants; provide freshly dug tubers, bulbs, and dormant rootstocks of herbaceous perennial plants. Do not use materials that have been in cold storage for longer than 45 days.
- E. Deliver live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants to project site after preparations for planting have been completed.
- F. Live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks shall be packed in such a manner as to insure adequate protection against wind damage, desiccation, and other physical damage while in transit.
- G. If planting is delayed more than four hours after delivery, keep plants in refrigerated container or set plants in shade protected from weather and mechanical damage, and keep moist and cool.
- H. Live herbaceous emergent perennial plants, tubers, bulbs, and dormant rootstocks shall be installed in 0-6" depth of water.
- I. Wetland live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be clustered into groups of 25-50 individuals of the same species.
- J. Prairie live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks shall be randomly mixed species from the species lists given in PART 2, section 2.1 of this section.
- K. All live herbaceous perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be adequately healed in to prevent desiccation.
- L. All groupings of live herbaceous wetland perennial plants, tubers, bulbs, and dormant rootstocks of herbaceous perennial plants shall be protected from wildlife herbivory, if necessary, on all four sides by 36-48" high fencing attached to wooden stakes. The Contractor shall submit shop drawings, including a materials list, to the Owner for approval prior to installation. Said fencing shall be removed by the Contractor one full growing season after installation or as otherwise directed by the Owner.
- M. If planting into an area treated with herbicide, plant materials shall be installed not less than 14 days after herbicide treatment.

### 3.2 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. After the work is complete, clean up any remaining materials, plant containers, debris, trash, etc. Avoid driving or walking over planted areas to minimize disturbance.
- B. Removal: after work has been completed remove any tools, equipment, empty containers, and all other debris generated by the Contractor.

- C. Repair: repair any damages caused by the Contractor during completion of the work described in this section.

### 3.3 INSPECTION

- A. After completion of planting and fencing, the Contractor shall schedule with the Owner a provisional acceptance inspection of the work.

### 3.4 ACCEPTANCE AND GUARANTEE

- A. Provisional acceptance: the work shall be considered 90% complete after initial planting and construction of fencing, and after the Contractor has completed all required clean up, removal, and repair as described in 3.2 of this section.
- B. Final acceptance: the work shall be considered 100% complete after the Contractor has met or exceeded the performance standards given in 3.4C. of this section, completed all required clean up, removal, and repair as described in 3.2 of this section, and removed fencing as described in 3.2K. of this section.
- C. The Contractor shall guarantee planted areas will meet or exceed the following performance criteria one full growing season after provisional acceptance: 10% survivorship of all planted species

END OF SECTION

SITE WORK  
SECTION – SEEDING

PART 1. GENERAL

1.1 DESCRIPTION

A. This section includes installation of seed.

1.2 RELATED SECTIONS

B. Herbaceous species removal, Soil preparation, Herbaceous perennial planting, Tree and shrub planting.

1.3 QUALITY ASSURANCE

A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type and operation of equipment being used. Said person shall direct all work performed under this section.

B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. All seed shall be free from insects and disease. Species shall be true to their scientific name as specified.

1.4 SUBMITTALS

A. Materials: Prior to delivery of any materials to the site, submit to the Owner a complete list of all seed to be used during this portion of the work. Include complete data on source, quantity and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner.

B. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.

C. After the work is complete submit to the Owner "as-built" plans including a listing of all species installed, and quantities installed. Mark in red ink on the original planting plan any field changes or deviations from the original plans.

PART 2. PRODUCTS

2.1 MESIC PRAIRIE SPECIES LIST

SCIENTIFIC NAME	COMMON NAME	OUNCES/ACRE
<i>Andropogon gerardii</i>	Big bluestem grass	80.00
<i>Asclepias syriaca</i>	Common milkweed	0.50
<i>Aster novae-angliae</i>	New England aster	1.50
<i>Avena sativa</i>	Seed Oats	800.00
<i>Cassia hebecarpa</i>	Wild senna	2.00
<i>Desmodium canadense</i>	Showy tick trefoil	2.00
<i>Echinacea purpurea</i>	Purple coneflower	2.00

<i>Elymus canadensis</i>	Canada wild rye	48.00
<i>Heliopsis helianthoides</i>	False sunflower	1.00
<i>Lespedeza capitata</i>	Bush clover	2.00
<i>Liatris aspera</i>	Rough blazing star	1.00
<i>Monarda fistulosa</i>	Wild bergamot	2.00
<i>Oenothera biennis</i>	Common evening primrose	1.00
<i>Panicum virgatum</i>	Switch grass	16.00
<i>Penstemon digitalis</i>	Bearded foxglove	1.00
<i>Petalostemum purpureum</i>	Purple prairie clover	1.00
<i>Potentilla arguta</i>	Prairie cinquefoil	1.00
<i>Ratibida pinnata</i>	Yellow coneflower	4.00
<i>Rudbeckia hirta</i>	Black-eyed susan	8.00
<i>Silphium integrifolium</i>	Rosin weed	2.00
<i>Silphium laciniatum</i>	Compass plant	2.00
<i>Silphium terebinthinaceum</i>	Prairie dock	2.00
<i>Solidago rigida</i>	Stiff goldenrod	2.00
<i>Sorghastrum nutans</i>	Indian grass	24.00
<i>Tradescantia ohioensis</i>	Spiderwort	1.00
<i>Verbena stricta</i>	Hoary vervain	1.00
<i>Zizia aptera</i>	Heart-leaved Alexander	1.00

## 2.2 WETLAND SPECIES LIST

SCIENTIFIC NAME	COMMON NAME	OUNCES/ACRE
<i>Alisma subcordatum</i>	Water plantain	2.00
<i>Angelica atropurpurea</i>	Angelica	2.00
<i>Asclepias incarnata</i>	Swamp milkweed	2.00
<i>Aster novae-angliae</i>	New England aster	1.00
<i>Aster puniceus</i>	Marsh aster	0.50
<i>Avena sativa</i>	Oats	640.00
<i>Calamagrostis canadensis</i>	Blue joint grass	4.00
<i>Carex hystricina</i>	Bottlebrush sedge	4.00
<i>Carex scoparia</i>	Pointed broom sedge	32.00
<i>Cicuta maculata</i>	Water hemlock	0.10
<i>Echinochloa crusgalli</i>	Barnyard grass	6.00
<i>Elymus canadensis</i>	Canada wild rye	16.00
<i>Glyceria striata</i>	Fowl manna grass	1.00
<i>Helenium autumnale</i>	Sneezeweed	1.00
<i>Juncus effusus</i>	Common spike rush	1.00
<i>Liatris pycnostachya</i>	Prairie blazing star	0.50
<i>Lobelia siphilitica</i>	Great blue lobelia	1.00
<i>Lycopus americanus</i>	Common water horehound	0.05
<i>Mimulus ringens</i>	Monkey flower	1.00
<i>Panicum virgatum</i>	Switch grass	2.00
<i>Pycnanthemum virginianum</i>	Common mountain mint	0.25
<i>Rudbeckia laciniata</i>	Wild golden glow	1.00
<i>Scirpus atrovirens</i>	Dark green rush	1.00
<i>Scirpus cyperinus</i>	Wool grass	2.00

<i>Scirpus validus creber</i>	Great bulrush	1.00
<i>Silphium perfoliatum</i>	Cup plant	2.00
<i>Spartina pectinata</i>	Prairie cord grass	2.00
<i>Teucrium canadense</i>	Germander, Wood sage	0.10
<i>Thalictrum dasycarpum</i>	Purple meadow rue	1.00
<i>Verbena hastata</i>	Blue vervain	2.00

### 2.3 FOREST SPECIES LIST (Soften Woodland Edge Zones)

SCIENTIFIC NAME	COMMON NAME	OUNCES/ACRE
<i>Aquilegia canadensis</i>	Wild columbine	0.50
<i>Arisaema triphyllum</i>	Jack-in-the pulpit	1.00
<i>Bromus pubescens</i>	Woodland brome	2.00
<i>Carex pensylvanica</i>	Pen sedge	1.00
<i>Carex rosea</i>	Wood sedge	1.00
<i>Carex sprengelii</i>	Sprengel's sedge	2.00
<i>Elymus canadensis</i>	Canada wild rye	8.00
<i>Elymus virginicus</i>	Virginia wild rye	6.00
<i>Hystrix patula</i>	Bottlebrush grass	2.00
<i>Smilacina racemosa</i>	False Solomon's seal	2.00
<i>Solidago flexicaulis</i>	Zig zag goldenrod	1.00

### 2.4 MATERIALS

- A. All grass species shall be supplied as pure live seed. Submit to the Owner lab germination test results.
- B. Seed of all species native to Wisconsin shall be from within a 150 mile radius of the project site.
- C. Straw or hay for erosion control shall be clean, seed-free hay or threshed straw of wheat, rye, oats, or barley.

## PART 3. EXECUTION

### 3.1 METHOD

- A. Seeds shall have proper stratification and/or scarification to break seed dormancy for spring planting.
- B. All legumes shall be inoculated with proper rhizobia at the appropriate time prior to planting.
- C. Seeding shall be preferentially conducted as a late fall dormant seeding (after November 1) or in early spring (as soon as the soil is free of frost and in a workable condition but no later than July 15).
- D. All seed shall be preferentially installed with a rangeland type grain drill or no-till planter, such as by Truax, or equivalent as approved in writing by the Owner.
- E. If soil is too wet to install seed as described in 3.1D. above, a mechanical broadcast seeder, such as by Cyclone, shall be used. Hand broadcasting of seed may also be employed. Within 24 hours, or as soon as site conditions permit, broadcast seeded areas shall be rolled or dragged perpendicular to the slope.
- F. Within seven days of seeding, crimp 2,000 pounds per acre of straw or hay for erosion control onto slopes greater than one foot horizontal to five foot vertical (1:5).

- G. If area to be seeded was treated with herbicide, seeding shall occur no less than 14 days after herbicide application.

### 3.2 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. After seed installation is complete, clean up any remaining materials, debris, trash, etc. Avoid driving over seeded areas to minimize disturbance
- B. Removal: after work has been completed remove any tools, equipment, empty containers, and all other debris generated by the Contractor.
- C. Repair: repair any damages caused by the Contractor during completion of the work described in this section.

### 3.3 INSPECTION

- A. After completion of seeding, the Contractor shall schedule with Owner a provisional acceptance inspection of the work.

### 3.4 ACCEPTANCE AND GUARANTEE

- A. Provisional acceptance: the work shall be considered 90% complete after all seed has been installed and the Contractor has completed all required clean up, removal, and repair as described in 3.2 of this section.
- B. Final acceptance: the work shall be considered 100% complete after the Contractor has met or exceeded the performance standards given in 3.4C. of this section, and completed all required clean up, removal, and repair as described in 3.2 of this section.
- C. The Contractor shall guarantee seeded areas will meet or exceed the following performance criteria one full growing season after provisional acceptance: 70% plant cover, seedlings of three planted grass/sedge species found, and seedlings of three planted forb species found.
- D. The Contractor shall guarantee seeded areas will meet or exceed the following performance criteria two full growing seasons after provisional acceptance: 80% plant cover, 5% cover by planted native grass/sedge species, 10% cover by planted forb species, and 20% of planted species are found.

END OF SECTION

**SITE WORK  
SECTION – TREE PLANTING**

**PART 1. GENERAL**

**1.1 DESCRIPTION**

A. This section includes planting of trees in the soften woodland edge zones.

**1.2 RELATED SECTIONS**

A. Soil preparation, Seeding, Herbaceous perennial planting.

**1.3 QUALITY ASSURANCE**

- A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type and operation of equipment being used. Said person shall direct all work performed under this section.
- B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. All plant materials shall be free from insects and disease. Species shall be true to their scientific name as specified.

**1.4 SUBMITTALS**

- A. Materials: Prior to delivery of any materials to the site, submit to the Owner a complete list of all trees and shrubs to be installed during this portion of the work. Include complete data on source, quantity and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner.
- B. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.
- C. After the work is complete submit to the Owner "as-built" plans including a listing of all species installed, and quantities installed. Mark in red ink on the original planting plan any field changes or deviations from the original plans.

**PART 2. PRODUCTS**

**2.1 WOODLAND EDGE SPECIES LIST**

SCIENTIFIC NAME	COMMON NAME	PLANTS/ACRE
<i>Quercus alba</i>	White oak	50
<i>Carya ovata</i>	Shagbark hickory	50

**2.2 MATERIALS**

- A. Seedling protection tubes shall be 4" diameter, 24" tall, photodegradable plastic, with a 2-year life span, such as Pro/Gro tubes manufactured by Protex, or equivalent with written approval by the Owner.
- B. Trees shall be from within a 150 mile radius of the project site.



- C. All trees shall be 2" caliber bare root nursery grown stock unless approved in writing by the Owner.

## PART 3. EXECUTION

### 3.1 METHOD

- A. Planting of trees shall be completed as soon as the soil is free of frost and in a workable condition but no later than July 15.
- B. All trees shall be approved by the Owner prior to installation.
- C. Provide healthy, vigorous, freshly dug plant materials. Do not use materials that have been dug more than 30 days in advance.
- D. Deliver trees to project site after preparations for planting have been completed.
- E. Trees shall be packed in such a manner as to insure adequate protection against wind damage, desiccation, and other physical damage while in transit.
- F. If planting is delayed more than four hours after delivery, keep plants in refrigerated container or set plants in shade protected from weather and mechanical damage, and keep moist and cool.
- G. Trees shall be randomly planted from the species lists given in PART 2 of this section.
- H. A seedling protection tube shall be installed around every tree and shrub within seven days of planting. Seedling protection tubes shall be secured to the ground with a 3/8"x36" bamboo stake and plastic cable tie. Seedling protection tubes shall not be removed by the Contractor unless directed by the Owner.
- I. If planting into an area treated with herbicide, plant materials shall be installed not less than 14 days after herbicide treatment.

### 3.2 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. After the work is complete, clean up any remaining materials, plant containers, debris, trash, etc. Avoid driving or walking over planted areas to minimize disturbance.
- B. Removal: after work has been completed remove any tools, equipment, empty containers, and all other debris generated by the Contractor.
- C. Repair: repair any damages caused by the Contractor during completion of the work described in this Section.

### 3.3 INSPECTION

- A. After completion of the work, the Contractor shall schedule with the Owner a provisional acceptance inspection of the work.

### 3.4 ACCEPTANCE AND GUARANTEE

- A. Provisional acceptance: the work shall be considered 90% complete after initial planting and installation of seedling protection tubes, and after the Contractor has completed all required clean up, removal, and repair as described in 3.2 of this section.
- B. Final acceptance: the work shall be considered 100% complete after the Contractor has met or exceeded the performance standards given in 3.4C. of this section, and has completed all required clean up, removal, and repair as described in 3.2 of this section.

- C. The Contractor shall guarantee planted areas will meet or exceed the following performance criteria one full growing season after provisional acceptance: 50% survivorship of all planted species.

END OF SECTION

SITE WORK  
SECTION – MANAGEMENT

PART 1. GENERAL

1.1 DESCRIPTION

- A. This section includes maintenance activities for Seeding, Herbaceous perennial planting, Tree planting, Woody Brush removal and Wetland areas.

1.2 RELATED SECTIONS

- A. Seeding, Herbaceous perennial planting, Tree planting, Woody brush removal.

1.3 QUALITY ASSURANCE

- A. Qualifications of workmen: provide at least one person who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with this type of work and the type of materials being used. Said person shall be competent at identification of plant materials to be removed and to be preserved during the season (summer, winter) work is to be completed. Said person shall also direct all work performed under this section.
- B. Standards: all materials used during this portion of the work shall meet or exceed applicable federal, state, county and local laws and regulations. The use of any herbicide shall follow directions given on the herbicide label. In the case of a discrepancy between these specifications and the herbicide label, the label shall prevail.

1.4 SUBMITTALS

- A. Materials: Prior to delivery of any materials to the site, submit to the Owner a complete list of all materials to be used during this portion of the work. Include complete data on source, amount and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Owner's representative.
- B. Licenses: Prior to any herbicide use the Contractor shall submit to the Owner a current copy of the State of Wisconsin commercial pesticide applicator's license, with certification in the appropriate categories, for each person who will be applying herbicide at the project site. A copy of each commercial pesticide applicator's license must be maintained on site at all times during completion of the work.
- C. Equipment: Prior to commencement of any work, submit to the Owner a written description of all mechanical equipment and its intended use during the execution of the work.
- D. After the work is complete submit to the Owner an annual report summarizing management activities completed during the past calendar year by the Contractor.
- E. Permits: Prior to the commencement of any prescribed burning, the Contractor shall submit copies of all required open burn permits to the Owner.

## PART 2. PRODUCTS

### 2.1 MATERIALS

- A. Herbaceous species to be removed in areas without standing water or saturated soils shall be treated with Glyphosate, N-(phosphonomethyl) glycine, trade name Roundup or equivalent as approved in writing by Owner.
- B. Herbaceous species to be removed in areas with standing water or saturated soils shall be treated with Glyphosate, N-(phosphonomethyl) glycine in a form approved for aquatic applications such as Rodeo or equivalent as approved in writing by Owner.
- C. Herbicide to be used for treating woody species shall be triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester, trade name Garlon or equivalent as approved in writing by the Owner.

## PART 3. EXECUTION

### 3.1 METHOD - HERBICIDE APPLICATION

- A. The Contractor will treat all undesirable species with an approved herbicide. Herbicide application instructions given on the label shall be followed at all times.
- B. Undesirable species include plant species not native to Wisconsin.
- C. Care shall be taken not to affect surrounding vegetation. The Contractor may be required to replant any vegetation affected by herbicide outside of targeted species.
- D. A supply of chemical absorbent shall be maintained at the project site. Any chemical spills shall be properly cleaned up and reported to the Owner within 24 hours.
- E. The Contractor shall maintain copies at the project site of all current pesticide applicator's licenses, herbicide labels, and MSDS's (Material Safety Data Sheets) for all chemicals utilized during completion of the work.
- F. Herbicide may be applied using a backpack sprayer, a hand-held wick applicator, or a vehicle mounted high pressure spray unit.

### 3.2 METHOD - MOWING

- A. The Contractor shall mow all seeded areas to a height of 8-12" after vegetation in said areas reach a height of 30" and before non-native species go to seed during the first two growing seasons after planting.
- B. For bidding purposes, Contractor shall provide costs for providing three mowings.

### 3.3 METHOD - PRESCRIBED BURNING

- A. Prescribed burning shall be the primary method of long-term ecological management and weed control of planting areas at the project site. Burning shall be conducted annually after the second full growing season or as directed by the Owner.
- B. Prior to the commencement of prescribed burning, the Contractor shall compile a burn plan that outlines a plan of action, identifies contingencies, and lists the names and phone numbers of emergency agencies (fire department, police department, etc.). Proper notice of intent to burn shall be given.
- C. The Contractor shall apply for and receive all required permits prior to the

commencement of prescribed burning.

3.4 CLEAN-UP, REMOVAL AND REPAIR

- A. Clean up: the work area shall be kept free of debris by the Contractor. At no time shall empty herbicide containers, trash, or other material be allowed to accumulate at the project site. All tools shall be kept in appropriate carrying cases, tool boxes, etc. Parking areas, roads, sidewalks, paths and paved areas shall be kept free of mud and dirt.
- B. Removal: after work has been completed remove tools, empty containers, and all other debris generated by the Contractor.
- C. Repair: Repair any damages caused by the Contractor during completion of the work described in this Section. Said damages may include, but are not limited to, tire ruts in the ground, damage to lawn areas, damage to trails, etc. The Contractor shall be liable for remedying damages to plant materials and property at no cost to the Owner caused by Contractor negligence during completion of the work.

3.5 INSPECTION

- A. At the request of the Owner, the Contractor shall schedule an inspection with the Owner to review the work completed by the Contractor pursuant to this section.

3.6 ACCEPTANCE AND GUARANTEE

- A. Final acceptance: Management shall be considered 100% complete after the Contractor has complied with all parts of this section.

END OF SECTION