

EXHIBIT A

Restoration Specifications for

SELECTIVE TREE AND SHRUB CLEARING
PINE STATION NATURE PRESERVE AND IVANHOE SOUTH

Lake County, Indiana

Indiana Department of Natural Resources
Division of Nature Preserves
402 W. Washington Street, W267
Indianapolis, Indiana 46204

November 2015

INDIANA DEPARTMENT OF NATURAL RESOURCES – DIVISION OF NATURE PRESERVES
RESTORATION SPECIFICATIONS

PART 1 - GENERAL

The Indiana Department of Natural Resources (DNR), Division of Nature Preserves is interested in the active management and restoration of Pine Station Nature Preserve and Ivanhoe South located in northern Lake County, Indiana. Portions of these preserves contain remnants of dune and swale; however, the land is gradually being dominated by native and non-native woody plant species. This project includes the removal of such target woody vegetation **through hand clearing methods**; as well as initial herbicide application.

1.1 PROJECT SCOPE, GOALS, AND OBJECTIVES

This restoration project involves approximately 68.5 acres, including 52 acres of Pine Station Nature Preserve and 16.5 acres of Ivanhoe South. This specification covers the requirements for furnishing all materials, labor, and equipment required for cutting, clearing, removal, disposal, and cut-surface herbicide treatment of the woody plant species defined in the removal goals.

1.1.1 Goals

The project goal is to reduce the invasive shrub and tree cover as well as the percent canopy cover within the degraded native oak savanna community, thereby restoring the natural savanna canopy structure. Restoration of this area will provide increased opportunities to improve the overall biodiversity in the underlying shrub and ground layers as well as the overall habitat potential for the project site. This work is to be completed under frozen, dry, or otherwise stable ground conditions during the dormant season between November 1, 2015 and February 28, 2016.

1.1.2 Objectives

Specific objectives in the project area include; 1) the reduction of cover and density of target trees and shrubs within the designated project area, 2) disposal of woody debris resulting from clearing operations.

1.2 REFERENCES AND REGULATORY REQUIREMENTS

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by designation only. The Contractor shall comply with Federal, State, and local herbicide safety requirements and disposal regulations.

1.2.1 Office of the Indiana State Chemist (OISC)

Indiana Pesticide Use and Application Law, 1975

1.2.2 United States Environmental Protection Agency (U.S. EPA)

Federal Insecticide, Fungicide, and Rodenticide Act of 1947 (FIFRA), Amended 1972

1.2.3 Nomenclature

Swink, F. and G.S. Wilhelm, 1994, Plants of the Chicago Region, Fourth Ed., Indiana Academy of Science, Indianapolis, Indiana.

1.3 SUBMITTALS

1.3.1 Herbicide License

Herbicides shall be applied by a State licensed applicator or licensed operator working under the supervision of a licensed applicator. The Contractor shall demonstrate that all persons applying herbicide as part of this work have current herbicide applicator or operator licenses. The Contractor must provide copies of all such licenses to the Project Manager prior to the start of any work on the project site.

The Contractor shall not subcontract the herbicide application portions of this project to any person or corporation that cannot provide documentation of competence and experience in selective herbicide application in previous natural area restoration projects. Any subcontractor to be used must document and identify at least 3 natural area restoration projects that they have implemented within the lower Lake Michigan Region that are at least 5 years old and at least 20 acres in size. Said documentation must include references for each site including contact name and telephone number. The Contractor will provide this documentation as a part of the bid package for consideration as a part of the bidding process.

1.4 DEFINITIONS

Clearing shall consist of the cutting of invasive trees and shrubs in the designated treatment area.

Debris removal shall consist of the collection and satisfactory disposal of all woody material and debris resulting from clearing operations that occur in the area to be restored.

Hand cutting is the physical cutting, by hand, of trees using chain saws, brush clearing saws, and handsaws.

1.5 MATERIAL AND EQUIPMENT STORAGE

1.5.1 Herbicide Storage

Storage of herbicide material shall not take place on site, but shall be delivered to and from the project sites by the Contractor, daily, or as necessary.

1.5.2 Equipment Storage

All vehicles, equipment, and supplies (other than herbicides) may be stored at a staging area approved by the Project Manager, at the sole discretion and risk of the Contractor. Any damage or losses to Contractor

vehicles, equipment or supplies during use, storage or transport shall be the sole responsibility of the Contractor.

1.6 PROJECT COORDINATION

1.6.1 Project Manager

The Project Manager is the designated person from DNR that will coordinate the project. **All communications concerning the project shall be coordinated through the Project Manager.** The Project Manager shall be responsible for all communications or concerns that involve the general public. The Project Manager may specify a representative for the reasonable expedition of his/her duties.

Project Manager:

Emily Stork, Regional Ecologist
DNR Division of Nature Preserves
5690 Chase Street
Merrillville, IN 46410

mobile: 219-688-0632
estork@dnr.in.gov

1.6.2 Contractor Representative

The Contractor shall designate an employee to be the contact person on behalf of the Contractor. This person shall be on site at all times when the Contractor is conducting work activities. He/She shall be the main contact person for all communications with the Project Manager. This person shall communicate in fluent English, or, the Contractor at his/her expense shall provide an interpreter fluent in English who will be on-site during all hours work is underway. Any work to be completed by a subcontractor is to be supervised by the Contractor Representative, with coordination and prior approval of the Project Manager.

1.6.3 Notification

The Contractor shall notify the Project Manager a minimum of 24 hours prior to the resumption of any work, following periods of inactivity. In the event of herbicide or fuel spillage or personal injury related to the project, the Contractor shall notify the Project Manager at once.

PART 2 – PRODUCTS

2.1 HERBICIDE SAFETY MATERIALS

2.1.1 Materials Safety Data Sheets (MSDS)

The Contractor shall have on site at all times the appropriate materials safety data sheets (MSDS) for all substances utilized in this work.

2.1.2 Portable Eye Wash Station

The Contractor shall have portable, emergency, and eye wash facilities at the project site. No herbicides shall be mixed or loaded on the project site, except in areas so designated by the Project Manager. A supply of chemical absorbent shall be maintained at the project site. Any chemical spills shall be cleaned up and reported to the Project Manager immediately.

2.1.3 Protective Gear/Equipment

The certified applicator and/or operator shall wear clothing and personal protective equipment as specified on the pesticide label. Water is not available on the site or property. The Contractor shall not allow the equipment to overflow. Prior to application of herbicides, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

2.2 HERBICIDE PRODUCTS

Only chemical products specified in Part 3 below are to be used unless an acceptable alternate is approved by the Project Manager. The Project Manager must approve of any chemical to be used prior to commencement of herbicide activities

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PART 3 – EXECUTION

3.1 CLEARING

3.1.1 Removal Targets

All areas slated for tree and shrub removal shall be verified in the field by the Project Manager prior to the start of any work. Trees and shrubs to be preserved will be tagged in the field by the Contractor for approval by the Project Manager prior to the start of any clearing work. The Project Manager will also tag, with pink tape, any individuals to be preserved outside the guidelines established in the Removal Goals on page 6. The removal goals contained herein shall apply to woody plant species of all size categories targeted to be removed from the project site in locations depicted on the plan documents (See Figures 1 & 2).

3.1.2 Cutting Techniques

All trees and shrubs will be cut horizontally and no higher than two (2) inches above the soil surface. This may require the contractor to lower cut stumps after the initial clearing. All cutting of woody vegetation **SHALL ONLY BE PERFORMED BY HAND** using chain saws, brush clearing saws, loppers or handsaws.

3.1.3 Collection and Disposal

All material from hand-cutting woody vegetation shall be collected and stacked in locations approved by the Project Manager in preparation for offsite disposal or chipping by the contractor. The stockpile locations will be selected in such a way as to protect native woody and herbaceous plant species. The collection, stockpiling, and removal of cuttings, brush, or logs must not result in pitting, rutting or any other disturbance to the soil. Brush piles shall be kept as compact as possible with all cut ends facing the same direction. However, no brush piles shall exceed a height of three feet from the ground. The Contractor may use chippers in designated areas of the site's perimeter. All cuttings are to be removed from the property and disposed of in a legal and proper manner. Only light, rubber tracked equipment may be used. **No dragging of brush or logs on the ground will be permitted.** All equipment to be used must be approved in advance by the Project Manager. Appropriate routes for equipment **must** be approved by the Project Manager.

3.1.4 Species Identification and Penalties

The Contractor is responsible for positively identifying all woody and herbaceous species before they are removed, cut, or herbicided. Errors in identification that are deemed by the Project Manager to result in unnecessary damage to species intended to be preserved, shall be replaced on a 2 to 1 basis from sources approved by the Project Manager. Two (2) live plants for each herbaceous plant affected and/or 2 inches (dbh) for every one 1 inch (dbh) replacement for woody species damaged. All replacement plantings are the financial responsibility of the Contractor and shall be installed, maintained, and guaranteed for one year from the date of installation by the Contractor. No additional payments will be made for such work.

SELECTIVE TREE AND SHRUB CLEARING REMOVAL GOALS

Tagged Black Oaks* – 100% Removals

Black Oak *Quercus velutina*

Aggressive Target Species - 100% Removals

Box Elder *Acer negundo*
Silver Maple *Acer saccharinum*
Tree of Heaven *Ailanthus altissima*
Japanese barberry *Berberis thunbergii*
Catalpa *Catalpa* spp.
Dogwood *Cornus* spp.
Autumn Olive, Russian Olive *Eleagnus* spp.
Honey Locust *Gleditsia tricanthos*
Exotic Bush Honeysuckles *Lonicera* spp. (except for native honeysuckles listed below)
White Mulberry *Morus alba*
Wild Black Cherry *Prunus serotina*
Aspen/Poplar *Populus tremuloides, P. grandidentata, P. alba*
Eastern Cottonwood *Populus deltoides*
Exotic Buckthorns *Rhamnus cathartica, R. frangula*
Sumac *Rhus typhina, R. glabra, R. copallina*
Black Locust *Robinia pseudoacacia*
Multiflora Rose *Rosa multiflora*
Willow *Salix* spp. (except for desirable willows listed below)
Sassafras *Sassafras albidum*
Siberian Elm *Ulmus pumila*
European Highbush Cranberry *Viburnum opulus*

Aggressive Target Species – 75% Removals

Buttonbush *Cephalanthus occidentalis*

Native Species** - Do Not Remove – Subject to Penalties (3.1.4)

Red Maple *Acer rubrum*
Speckled Alder *Alnus rugosa*
Serviceberry *Amelanchier* spp.
Chokeberry *Aronia prunifolia*
Paper Birch *Betula papyrifera*
Hawthorn *Crateagus* spp.
Dwarf Honeysuckle *Diervilla lonicera*
Witch Hazel *Hamamelis virginiana*
St. John's Wort *Hypericum kalmianum*
Winterberry *Ilex verticillata*
Tulip Poplar *Liriodendron tulipifera*
Red Honeysuckle *Lonicera dioica*
Iowa Crab *Malus ioensis*
Black Gum *Nyssa sylvatica*
Ninebark *Physocarpus opulifolius*
Shrubby Cinquefoil *Potentilla fruticosa*
Sand Cherry, Choke Cherry *Prunus pumila, P. virginiana*
Oaks *Quercus* spp. (except individuals of *Q. velutina* tagged for removal)
Alder-leaved Buckthorn *Rhamnus alnifolia*
Fragrant Sumac *Rhus aromatica, R. aromatica v. arenaria*
Native Roses *Rosa carolina, R. palustris*
Willow *Salix amygdaloides, S. bebbiana, S. glaucophylloides, S. humilis*

*The removal of untagged black oaks is subject to penalties (3.1.4)

**Plus any other native species identified, unless otherwise specified in Removals above.

3.2 HERBICIDE APPLICATION

3.2.1 Signage and Public Notification

The Contractor is responsible for posting herbicide application signs during the herbicide application process as requested by the Project Manager. The Contractor is responsible for the movement and placement of signage in the appropriate locations as the project proceeds.

3.2.2 Initial Herbicide Application

The cutting of stems shall be followed by the application of a 50% solution of strictly glyphosate-based products to the freshly cut surface, as per label specifications. AquaNeat shall be used in wet areas or over water, Razor shall be used over dry or upland areas. The herbicide application shall take place within 30 minutes of the time that the trees and shrubs are cut, weather conditions permitting. A sponge or wick applicator shall be used to apply herbicide to the stumps. No herbicide applications may be made with broadcast spray equipment. No open containers of herbicide shall be permitted in the work area due to the hazard of spilling.

3.3 PROJECT PERFORMANCE

3.3.1 Final Acceptance

In keeping with the overall goals and objectives of this contract, the Contractor shall make every reasonable effort to kill and remove 100% of the target species throughout the entire project area. The Contractor must achieve a minimum of 95% reduction of target shrubs by February 28, 2016.

****ALTERNATE BIDS ACCEPTED FOR... Completion of above target of 95% reduction in shrubs and small trees less than or equal to 3" diameter at breast height (DBH) by February 28, 2016 with final completion of the project with a minimum of 95% reduction of all target species of trees and shrubs of all size classes in the project area by February 28, 2017.**

****THIS PAGE MUST BE INCLUDED WITH YOUR BID DOCUMENTS****

**BID SHEET FOR UNIT PRICES
PINE STATION NATURE PRESERVE AND IVANHOE SOUTH
PROJECT NUMBER E160007**

Ideally, the DNR would like for the work to be completed this coming winter when frozen ground conditions are present by February 28, 2016. However, DNR realizes that this project is going out for bid a bit later than we had planned due to timing of funding source, therefore the DNR would allow for an alternate bid that extends the completion dates that would require completion of at least 95% reduction in target shrubs and small trees less than or equal to 3 inches in diameter at breast height (DBH) by February 28, 2016 with a final completion of the project with a minimum of 95% reduction of all target species of trees and shrubs of all size classes in the project area by February 28, 2017. In addition to a total cost for all work, the DNR is requesting to receive a price per acre for each of the two properties separately. These unit prices shall be submitted in addition to the total bid(s) for the base bid and/or alternate bid in order to assure appropriate payments are made when invoices are submitted for the work.

Base Bid if all work completed by February 28, 2016: **Total** \$ _____

- 1. Pine Station Nature Preserve (approximately 52 acres).....\$ _____/acre

- 2. Ivanhoe South (approximately 16.5 acres).....\$ _____/acre

*Alternate Bid as described above: **Total** \$ _____

- 1. Pine Station Nature Preserve (approximately 52 acres).....\$ _____/acre

- 2. Ivanhoe South (approximately 16.5 acres).....\$ _____/acre

FIGURE 1

**Pine Station Nature Preserve
SELECTIVE TREE AND SHRUB CLEARING**



Map Created By: Carl J. Wodrich
Indiana Department of Natural Resources
October 1, 2015

Legend

-  PSNP Woody Control_2015
-  Property Boundary

FIGURE 2

Ivanhoe South
SELECTIVE TREE AND SHRUB CLEARING

