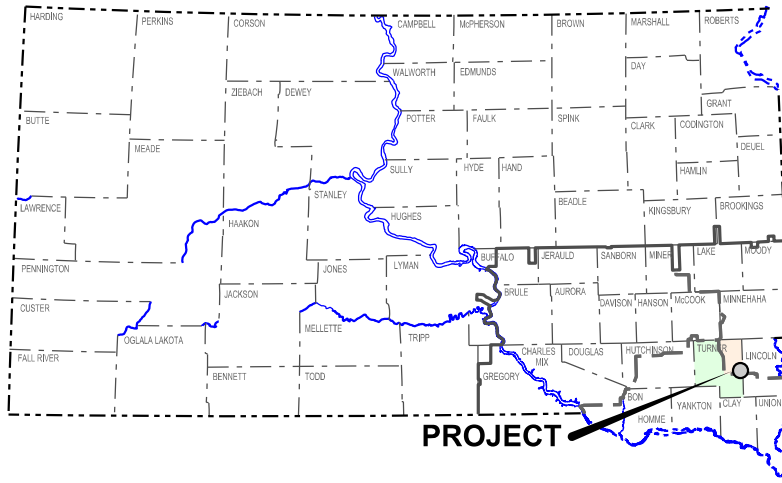
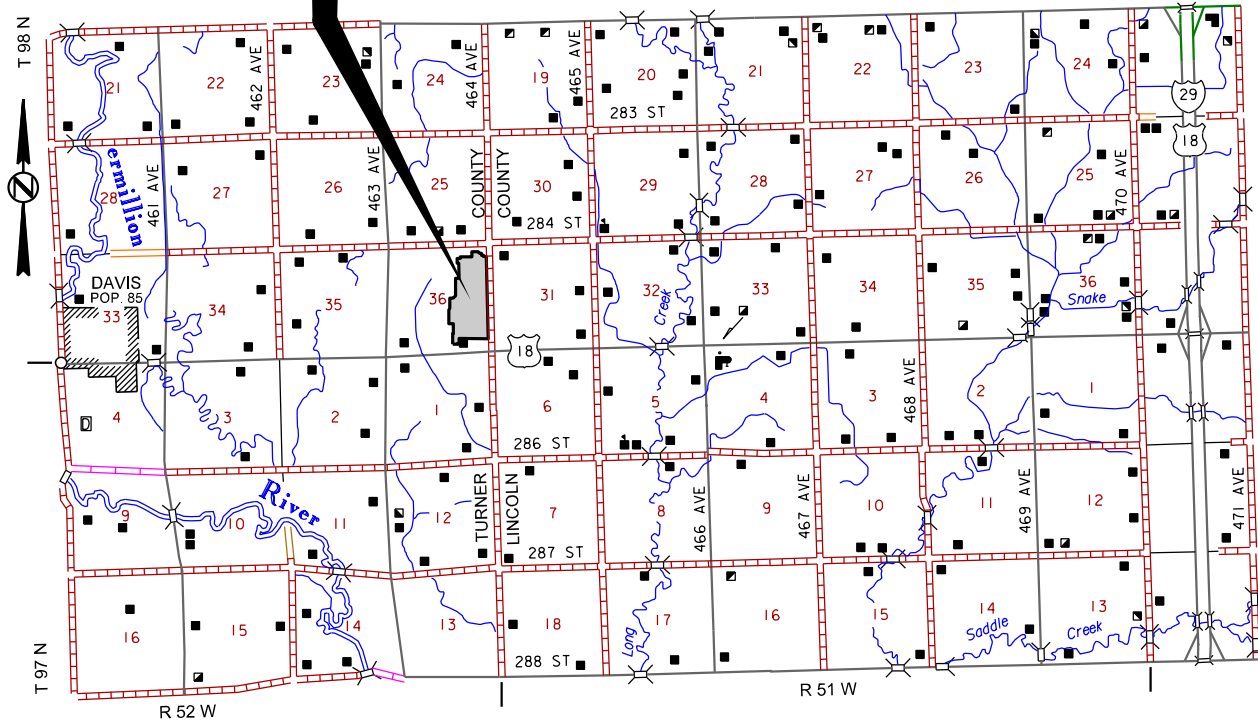


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT P 00SW(00)2
TURNER COUNTY
WETLAND BANK SITE MANAGEMENT
PCN 07CJ



WETLAND BANK SITE MANAGEMENT
 In the E $\frac{1}{2}$ Section 36 - T 98 N - R 52 W

STORM WATER PERMIT
 (None required)



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INDEX OF SHEETS**

Sheet 1	Layout Map
Sheet 2	Index of Sheets & Estimate of Quantities
Sheets 3 - 5	Environmental Commitments
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Sheet 11	Exhibit A – Management Zones
Sheets 12 & 13	Exhibit B – Site Photos
Sheet 14	Exhibit C – DOT-820 Form

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	P 00SW(00)2 QUANTITY	UNIT
009E0197	Mobilization 1	9	Each
900E2300	Mowing	660	Acre
910E0071	Rodeo	9	Gal
910E0086	Milestone	6	Gal
910E0197	Surfactant	288	Oz
910E1050	ATV/Sprayer	36	Hour
910E1060	Labor	96	Hour

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ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

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COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, No Dumping Allowed.
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

Cost associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

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COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow 30 Days from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

VERMILLION SITE 1 VEGETATION MANAGEMENT

SCOPE OF WORK

The Vermillion Site 1 (VS1) is a wetland mitigation bank site developed by South Dakota Department of Transportation in Turner County. Approximately 60 acres of wetlands are being restored on the property. As part of this restoration, management is required to control invasive vegetation. This scope of work is intended to cover the first year of VS1 vegetation management. VS1 is located within the east ½ of Section 36 of Township 98N and Range 52W.

Year 1 management goals are to assist in the establishment and development of desirable wetland and upland vegetation and to control and manage undesirable competing vegetation within the property. VS1 management should be responsive to the most current site conditions and allow for adaptive timelines for management activities. Invasive weed control will consist of controlling populations of invasive weeds within VS1 by the following methods of mechanical and chemical treatments.

The total size of VS1 is approximately 160 acres which has been designated in four separate management zones (See Exhibit A). Management requirements and timing will differ depending on the designated zone. The boundary of the entire property is fenced, but each identified management zone is not physically marked on the property. An ArcGIS shapefile can be provided of the management zones. Representative photos of the site after construction can be found in Exhibit B.

Management activities should not require the use of any heavy earth-disturbing equipment or require significant soil disturbance.

General Items

- A project kick-off meeting with the awarded management contractor is recommended prior to any management activities in order to review the work plan, applicable environmental requirements and project considerations. Recommended parties to be present include: the contractor, assigned project engineer, and South Dakota Department of Transportation environmental wetland scientists.
- The contractor must notify the project engineer prior to any subsequent management visits to discuss changes in site conditions and changes to management needs. This coordination will allow the contractor to perform the most meaningful management activities on VS1.
- The selected contractor should have a basic knowledge of desirable and undesirable species for native prairie and wetland plantings, which will be valuable to the contractor during required herbicide application(s).
- Management activities will not occur on driveway and small acreage on site (See Exhibit A).

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Chemical Treatments

- Chemical treatment of VS1 will consist of spot treatments and/or broadcast spraying of recommended zones. Table 1 outlines an estimated schedule and methods for application, along with a recommended herbicide. The contractor may substitute other common industry herbicides which meet or exceed those listed in Table 1, but must be approved by the project engineer prior to use. The contractor will submit his intended list of herbicides to the project engineer at least 3 weeks prior to commencing work or at the kickoff meeting for approval.
- Care must be taken when using broadcast spraying. Broadcast spraying should not occur when wind speeds are greater than 5 miles per hour (mph) and by using low pressure applicators. The contractor shall advise the project engineer of his intent to spray, 48 hours prior to doing so.
- The contractor will complete the attached daily form (DOT-820) "Contract Daily Pesticide Application Record" (Exhibit B) after each day of herbicide application. The DOT-820 Form will be provided to the project engineer within 3 days of herbicide application.
- Rates of applications should be determined from product labeling and should be based on vegetation being between 6 and 12 inches.
- To ensure adequate leaf surface and herbicide absorption, herbicide application should be applied at least 3 days before mowing. After herbicide application, allow three to four days to pass before mowing. This allows sufficient time absorption of the herbicide and translocate it to their roots
- All herbicide applications must follow application rates and procedures identified on the packaging label. Herbicides will be applied with properly calibrated equipment and by personnel properly licensed by the South Dakota Department of Agriculture. A copy of the license(s) will be presented to the project engineer prior to herbicide application.

Mowing Activities

- A flail mower or sickle mower should be used to cut vegetation to minimize clumping of cut vegetation and prevent "windrowing" of downed vegetation. Removing canopy cover is essential for establishing warm season vegetation.
- Early mowing (late April or early May) should occur to begin to remove establishment of weedy growth. Early mowing should cut vegetation to 3-4 inches. This will remove as much as the undesirable species as possible while avoiding warm season plants that have yet to emerge.
- Mowing should be done before vegetation reaches approximately 12 inches in height. Mowing should occur often to slow the growth and seedset of undesirable species and prevent thatch build-up that may smother native seedlings. Table 1 estimates the mowing frequency at VS1.
- Weed-eating may be required in areas that are not reachable by vehicle-mounted mowers. Suggested cutting devices for heavy vegetation under, in or near the water not accessible

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by mower are various weed-eater attachments and include a steel blade or hedge trimmer attachment.

- Rutting, tracking, or furrowing should be avoided when performing all activities, including mowing. If soil characteristics are resulting in excessive soil disturbance when performing mechanical mowing or spraying, other means of management involving either foot traffic or lighter footprint equipment may be required.

Species-specific Control Information:

Two invasive species in particular are anticipated to be prevalent on the VS1 site during the first year. In upland and transition areas, Canada thistle is anticipated to be prolific. In wetter areas, cattails are likely to establish and can easily form a monoculture in wetland areas. Species specific information is included below. If other noxious weeds are observed on site, best management practices to include mowing or proper herbicide application should be taken. These species will be reported on the DOT-820 provided to the project engineer within 3 days of herbicide application.

Cattails

Cattails prefer shallow, flooded conditions and are easily established in ponded areas less than 18-inches deep. On VS1, cattails will primarily be found in the pool zone as shown in Exhibit A, though may establish in the wet meadow zones in wetter years.

- Mechanical Control - Mowing ponded areas should occur in winter, when the ground is frozen. Cattails should be mowed as close to the ground or ice surface as possible. In spring, high water levels will cover cut stems to eliminate air exchange pathways during growing season. Do not cut cattails in spring, as this will only stimulate cattail growth.
- Chemical Control - In the wetland pools, apply a wetland approved herbicide such as Rodeo®, or similar equivalent glyphosate with a nonionic surfactant to aid penetration and coverage.

Canada thistle

Canada thistle is a perennial noxious weed that spreads by both seeds and root shoots. The root shoots emerge in early spring while the bud and flowering stages occurring in June. Canada thistle is a common and persistent invasive species in eastern South Dakota. Control techniques are constrained by the need to minimize damage to desirable species.

- Mechanical Control – Mowing just prior to flowering inhibits seed production and long-distance seed colonization. However, establishment of new plants can still occur by creeping lateral roots. Timing of mowing is critical to prevent seed production. Mowing to reduce biomass and minimize seed production should occur in late spring, during bud to early blooming. During this time, the mower should be as low to the ground as possible. Mowing can also occur in September to help inhibit development of shoots. Height of mowing in fall should be no less than 6 inches.

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- Chemical Control – Large patches (at least greater than ¼ acre) of Canada thistle can be controlled by broadcast methods if applied in early spring, when the species has aboveground growth, but more desirable broadleaf species have not emerged. Spring application should occur prior to the bud stage, which is between late May and mid-June. An additional spot treatment should be done in the fall when Canada thistle is recharging its root systems, and when native plants are dormant. Spot herbicide treatments should also be used for anything in late spring or summer when other desirable broadleaves have emerged. A broadleaf herbicide should be used and can be used for spot or broadcast treatments. Care should be taken to preserve desirable broadleaf species.

Measurement and Payment

The contract unit price will be nonnegotiable regardless of changes in contract quantity.

The Contractor will be paid by the contract item “Mobilization” each time the Contractor mobilizes equipment or personnel to conduct mowing and/or spraying activities.

The Contractor will be paid by the contract item “ATV Sprayer” when Boom Spraying and/or Wicking.

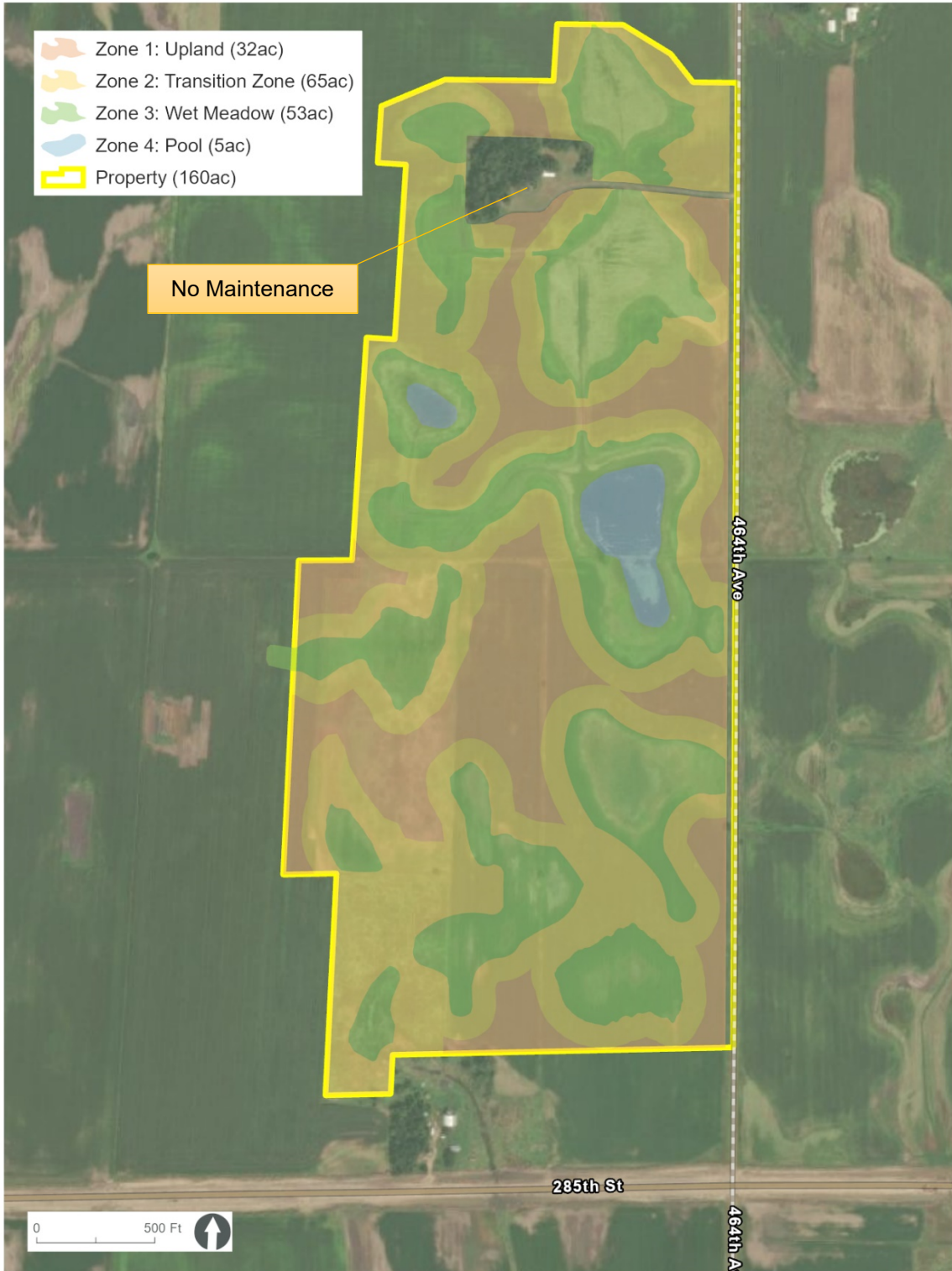
The Contract item “Labor” will be measured and paid for when performing mowing, hand spray/wicking and/or when operating motorized spraying equipment.

Table 1. Recommended vegetative control methods and timing.

	May	June	July	August	September	October	November	December	January
Mowing or Weed Eating									
Zone 1	Mow all areas to 3-4 inches where accessible. Do not cut cattails	Mow all areas to 6-8 inches where accessible	Mow weedy areas	Mow all areas to 6-8 inches	Mow weedy areas to 6-8 inches				
Zone 2									
Zone 3			Mow/weed-eat weedy areas where accessible	Mow all areas to 6-8 inches where accessible	Mow all areas to 6-8 inches where accessible				Mow cattails where present if ground/water frozen and site accessible.
Zone 4									
Spot or Broadcast Spraying									
Zone 1	Broadcast spray Milestone®	Spot spray patches Canada thistle Milestone®				Spot spray patches Canada thistle. Broadcast spray may be used for large patches (>0.25 acres) Milestone®			
Zone 2									
Zone 3	Broadcast spray if accessible, otherwise spot spray Milestone®	Spot spray Rodeo® or Milestone®				Spot spray Rodeo® or Milestone®			
Zone 4	Spot spray fringes Milestone® or Rodeo®	Spot spray fringes Milestone® or Rodeo®							

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Exhibit A. VS1 Management Zones



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Exhibit B. Site Photos Post Construction 2020



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Exhibit C. DOT 820 Form

DOT-820

Exhibit C

"Contract" Daily Pesticide Application Record

Date: _____ Contact No: _____
 Customer: _____
 Contractor: _____

SPRAYING ON THIS DATE WAS ACCOMPLISHED ON: INDICATE ACRES _____

Zone 1	_____	Total	_____	Broadcast	_____	Spot Spray	_____
Zone 2	_____	Total	_____	Broadcast	_____	Spot Spray	_____
Zone 3	_____	Total	_____	Broadcast	_____	Spot Spray	_____
Zone 4	_____	Total	_____	Broadcast	_____	Spot Spray	_____

Zone No.	Type of Pesticide	Amount Used	Cost/Unit	Cost
_____	_____	_____ X	_____ =	_____
_____	_____	_____ X	_____ =	_____
_____	_____	_____ X	_____ =	_____

Zone No.	Employee Name	Hours Worked	Rate	Cost
_____	_____	_____ X	_____ =	_____
_____	_____	_____ X	_____ =	_____
_____	_____	_____ X	_____ =	_____

Zone No.	Equipment	Miles or Hours Worked	Rate	Cost
_____	_____	_____ X	_____ =	_____
_____	_____	_____ X	_____ =	_____
_____	_____	_____ X	_____ =	_____
			Total Cost	_____ = _____

 Sprayer Operator Signature
 D.O.A. License Number: _____

THIS FORM WILL BE COMPLETED IN TRIPLICATE. ONE COPY WILL BE FORWARDED TO THE PROJECT ENGINEER, ONE TO BE RETAINED ON FILE BY THE CONTRACTOR, AND ONE (ORIGINAL) TO ACCOMPANY THE CONTRACTORS INVOICE TO THE STATE FOR PAYMENT.