June 26, 2020

NOTICE TO CONTRACTORS

Sealed bids will be received by the South Dakota Department of Transportation until **1:30 pm, Wednesday, July 8, 2020** at which time they will be opened for the following project(s):

Project Number	PCN	County	Type of Work	Area Engineer
000i-171 000i-172	i65d i65e	Deuel, Moody & Roberts	Pollinator Habitat Vegetation Control	Matt Brey (605-882-5166)

Should you have questions you are encouraged to contact Area Engineer listed for the project.

AVAILABILITY OF PLANS AND PROPOSALS:

Specifications and proposal forms are available at the Watertown Area Office and at the following website: https://apps.sd.gov/hc65bidletting/RegionDefault.aspx

The DOT-123 form provided within the proposal document is for information only. Do not use for bidding purposes. Bids submitted on the enclosed DOT-123 form will be considered void and will not be accepted by the department. Please email the Aberdeen Area office for the DOT-123 form that can be used for bidding purposes to the following:

Scott.Schneider@state.sd.us and Michael.Welch@state.sd.us

The email request for the DOT-123 form shall include the following information, so that the SDDOT can maintain a list of prospective bidders for this project and to maintain a contact list for future region lettings:

Company Name
Mailing Address
Phone Number

Addendums, if any, will be made available on-line at the above website, no later than **48 hours** prior to opening bids. It will be the Contractor's responsibility to check for addendums prior to submitting bids.

CONTENT OF PROPOSALS:

Returned Proposals shall include the following items all signed in ink:

1. A notarized Contract Proposal (DOT-123). Non-signature items shall be typed or completed in ink.

Bids shall be in sealed envelopes and clearly marked on the outside as to the content when delivered to the Regional Office by the time indicated for Opening. Proposals faxed to the office will not be accepted.

If hand delivering or using a package delivery service, address the envelope:	*If using the US Postal Service, address the envelope:*
Mark Peterson, Region Engineer **Department of Transportation** **2735 West Highway 12** **Aberdeen, SD 57401**	**Mark Peterson, Region Engineer** **Department of Transportation** **P.O. Box 1767** **Aberdeen, SD 57402-1767**

Bidders will be required to fill out the blank spaces in the proposal form correctly. The bidder must fill in a unit price for each bid item shown on the proposal form. Bidders will also be required to carry out extensions and determine the "Total or Gross Sum Bid" as indicated in the proposal. The total of any proposal, as determined by the bidder, will be used only for a comparison when bids are publicly opened and read, and any errors noted in extensions or totals will be corrected to determine the "Total or Gross Sum Bid" of any proposal.

Failure to properly carry out any of the above requirements is deemed as sufficient reason to reject any proposal.

MISCELLANEOUS:

Any person engaged in highway construction work in the State of South Dakota must obtain a motor fuel highway contractor tax license.

The Department of Transportation in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, national origin, sex, age or disability in consideration for an award.

The Contractor, by signing and submitting a bid or proposal, agrees to provide services in compliance with the Americans with Disabilities Act of 1990.

The Department of Transportation reserves the right to reject any and all bids.

Sincerely,

DEPARTMENT OF TRANSPORTATION

_____

Mark Peterson
Aberdeen Region Engineer

cc:
T. Ondricek
M. Brey
File

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

CONTRACT PROPOSAL

CODE	PROJECT PRE	PROJECT ROUTE	PROJECT AGR	MAINT UNIT	CONTROL REFERENCE	AFE	FUNCTION	BEGIN MRM	END MRM
		[illegible]		[illegible]		[illegible]	[illegible]		
		[illegible]		[illegible]		[illegible]	[illegible]		

CITY AND/OR COUNTY: Deuel, Moody & Roberts

BUDGET SOURCE: FY21 Contract Maintenance

REGION MATERIALS CERTIFICATION REQUIRED: ☐ YES ☑ NO WIP #:

CERTIFIED INSPECTORS/TESTERS REQUIRED: ☐ YES ☑ NO

TO BE INSTALLED ON CM&P: ☑ YES ☐ NO

TYPE, PURPOSE AND LOCATION OF WORK: Control undesirable vegetation at the 5 Pollinator Habitat locations located in the Rest Areas along I-29.

ESTIMATE OF QUANTITIES AND COST

BID ITEM NUMBER	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT
009E0197	Mobilization 1 (Glacial Lakes & Wilmot)	4	Each		
009E0198	Mobilization 2 (Hidewood NB & SB)	4	Each		
009E0199	Mobilization 3 (Ward)	4	Each		
910E0030	Round Up	252	OZ		
910E0050	Plateau	632	OZ		
910E0085	Milestone	553	OZ		
910E1050	ATV/Sprayer	80	Hour		
910E1[illegible]60	Lab[illegible]	[illegible]60	H[illegible]u[illegible]		
				TOTAL	

CONTRACTOR'S PROPOSAL STATEMENT

The undersigned agrees to offer the labor and material in the quantities, at the unit price, for the purpose, in the place, and in accordance with attached provisions. The Contractor will provide services in compliance with the Americans with Disabilities Act of 1990 and any amendments.

SUBSTANTIAL COMPLETION DATE N/A

PROPOSED START DATE n/a

FIELD WORK COMPLETION DATE November 14, 2020

SIGNATURE ______

SUBSCRIBED AND SWORN TO BEFORE ME THE

PRINTED NAME ______

______ DAY OF ______ , 20__

COMPANY ______

NOTARY ______

STR. ADDRESS ______

My Commission Expires:

CITY, STATE, ZIP ______

DATE ______ ______ (SEAL)

FEDERAL TAX ID NUMBER ______

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

CONTRACT PROPOSAL

CODE	PROJECT			MAINT	CONTROL	AFE	FUNCTION	BEGIN	END
	PRE	ROUTE	AGR	UNIT	REFERENCE			MRM	MRM
		[illegible]		[illegible]		[illegible]	[illegible]		
		[illegible]		[illegible]		[illegible]	[illegible]		

TO BE FILLED OUT BY STATE PERSONNEL:

RECOMMENDED FOR APPROVAL:

CONSTRUCTION & MAINTENANCE ENGINEER — DATE

AREA / REGION / OPS ENGINEER — DATE

DIRECTOR OF OPERATIONS — DATE

INTERNAL SERVICES / AUDITS — DATE

ACCEPTED BY SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

NAME ______ TITLE ______ DATE ______

IF FEDERAL FUNDS WILL BE EXPENDED UNDER THIS AGREEMENT, ACCEPTANCE BY PROJECT DEVELOPMENT IS REQUIRED

PROJECT DEVELOPMENT ENGINEER — DATE

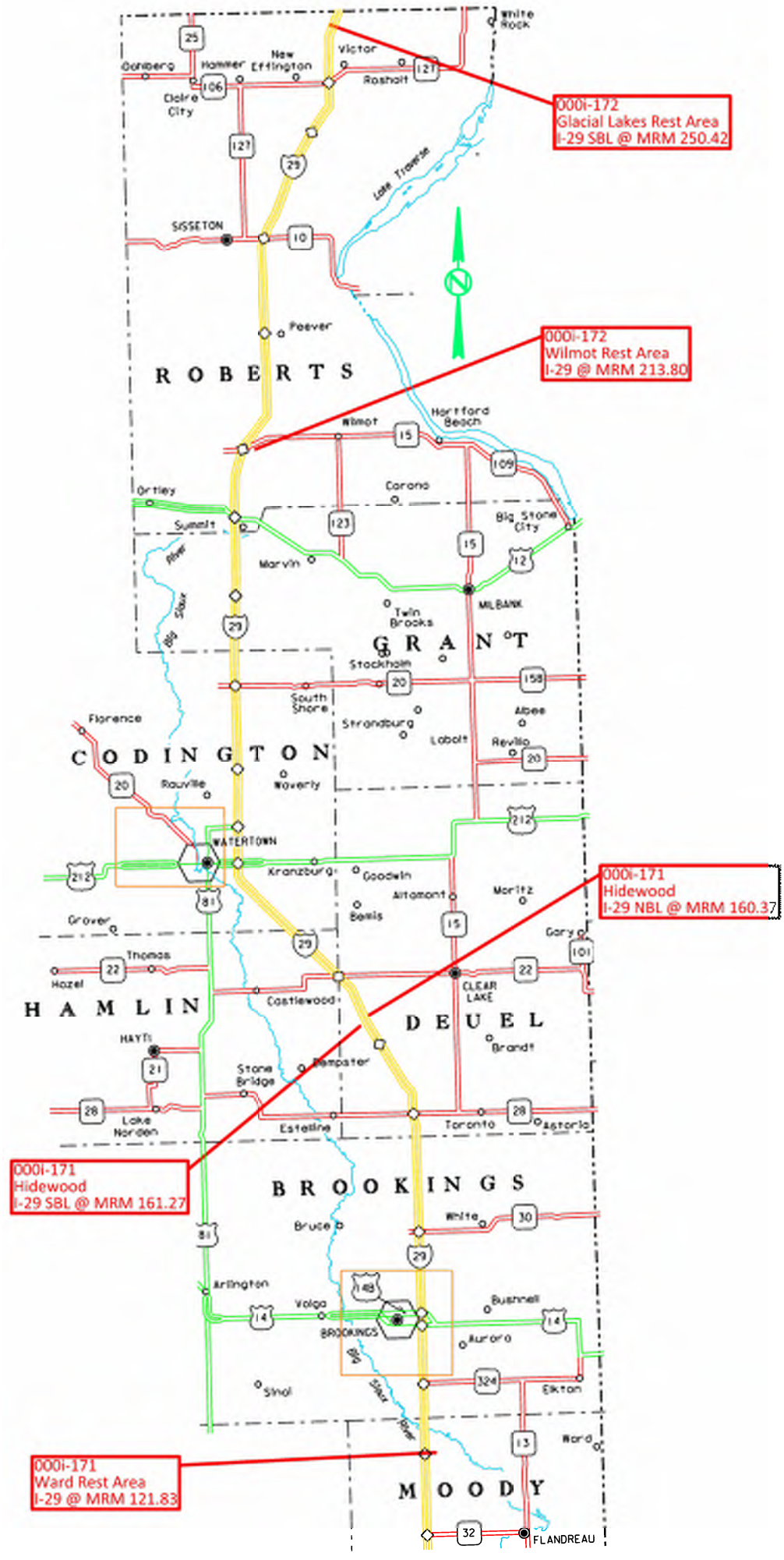
000i-172
Glacial Lakes Rest Area
I-29 SBL @ MRM 250.42
000i-172
Wilmot Rest Area
I-29 @ MRM 213.80
000i-171
Hidewood
I-29 NBL @ MRM 160.37
000i-171
Hidewood
I-29 SBL @ MRM 161.27
000i-171
Ward Rest Area
I-29 @ MRM 121.83
ROBERTS
GRANT
CODINGTON
HAMLIN
DEUEL
BROOKINGS
MOODY
White Rock
Victor
Roshalt
Hammer
New Effington
Corsberg
Claire City
SISSETON
Peever
Lake Traverse
Wilmot
Hartford Beach
Ortley
Corona
Summit
Big Stone City
Marvin
Twin Brooks
MILBANK
Stockholm
South Shore
Strandburg
Albee
Florence
Labolt
Revillo
Rauville
Waverly
WATERTOWN
Kranzburg
Goodwin
Altamont
Moritz
Bemis
Gary
Grover
Thomas
Hazel
Castlewood
CLEAR LAKE
Brandt
HAYTI
Stone Bridge
Dempster
Lake Norden
Estelline
Toronto
Astoria
Bruce
White
Arlington
Volga
BROOKINGS
Bushnell
Aurora
Elkton
Sinai
Big Sioux River
Ward
FLANDREAU

TABLE OF INFORMATIONAL QUANTITIES
FOR POLLINATOR HABITIAT VEGETATION CONTROL

000i-171, PCN i65d, Deuel & Moody Counties, Hidewood NB & SB and Ward Rest Areas
Estimate of Quantities

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0198	Mobilization 2 (Hidewood NB & SB)	4	Each
009E0199	Mobilization 3 (Ward)	4	Each
910E0030	Round Up	166	OZ
910E0050	Plateau	416	OZ
910E0085	Milestone	364	OZ
910E1050	ATV/Sprayer	48	Hour
910E1060	Labor	96	Hour

000i-172, PCN i65e, Roberts County, Wilmot and Glacial Lakes Rest Areas
Estimate of Quantities

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0197	Mobilization 1 (Glacial Lakes & Wilmot)	4	Each
910E0030	Round Up	86	OZ
910E0050	Plateau	216	OZ
910E0085	Milestone	189	OZ
910E1050	ATV/Sprayer	32	Hour
910E1060	Labor	64	Hour

Pollinator Habitat Herbicide Spraying Specifications

Scope of Work

The work will consist of controlling undesirable vegetation at 5 locations along I-29. The 5 locations are Interstate Rest Areas. Refer to title sheet for 5 locations. Pollinator Habitat was planted at these 5 locations in 2018 and vegetation control via the application of Herbicides is required to control undesirable vegetation. Refer to attached June inspection report for individual maps for each location of Pollinator Habitat.

Herbicides application may be required several times during the growing season.

The SDDOT has retained the services of a Landscape Architect, who performs a monthly inspection of the 5 locations. The requirements for herbicide application and the type of application will be determined via these monthly inspections.

The monthly inspection reports will be furnished to the Contractor, via email. The Contractor will be available to make a timely application of herbicides and the application will be completed within 10 calendar days of notification. If mowing is required before application of herbicide, the Contractor will be notified of when the mowing is anticipated to be completed.

The Contractor does hereby agree to furnish the necessary equipment, materials and labor to control the growth of undesirable vegetation. 4 types of herbicide application are required via this contract. Spot Hand Spraying, Spot Hand Wicking, Boom Spraying, and Boom Wicking may be required as part of this contract.

Spraying/Wicking

The spraying/wicking will consist of spot treatments and will be accomplished by using the herbicides specified on the contract with applicable rates as recommended by the manufactured. If a herbicide is needed that is not on this contract, the type and price will be negotiated and added by Change Order, prior to use of the herbicide.

The Contractor agrees to indemnify, save, and hold harmless the Department and all its employees and agents, from any and all claims, demands, actions or cause of action of whatsoever nature or character arising out of, or by reason of, the execution of performance of the work provided for under the contract whether or not the Contractor itself is negligent or otherwise culpable. The Contractor further agrees to defend at its own sole cost and expense any action or proceeding commenced for the purpose of asserting any claim on whatsoever nature or character arising under this contract whether or not the Contractor is itself negligent or otherwise culpable. This section does not require the Contractor to be responsible for or defend against claims or damages arising solely from acts or omissions of the State, its officers or employees.

The spraying/wicking will be accomplished by personnel properly licensed by the South Dakota Department of Agriculture.

The Contactor will advise the local Maintenance Supervisor of his intent to apply herbicides, 48 hours prior to doing so. The Maintenance Supervisor for the Ward and Hidewood Rest Areas is Calvin Esche (605-881-7163). The Maintenance Supervisor for the Ward and Glacial Lakes Rest Areas is Brian Chase (605-881-7183).

The Contractor will complete the attached daily form (DOT 820) “Contract Daily Pesticide Application Record” (Exhibit B), furnished by the Department, after each day of herbicide application. Each of the 5 sites will be separately tracked and documented.

Pollinator Habitat Herbicide Spraying Specifications

Spraying/Wicking (continued)

The Contractor will provide the Area Engineer with a complete copy of the daily form (DOT 820) at the end of herbicide application.

The Contractor will submit an invoice for payment to the Area Engineer. The invoice will be accompanied by the completed original daily form(s) DOT 820. Separate invoices may be submitted for the various herbicide applications, if the Contractor desires to do so.

Equipment used for spraying/wicking will be equipped with a flashing amber light. The light will be turned on and used at all times during application operation. Applcation will not interfere with the day to day operations of the rest area.

Herbicides will be applied uniformly with properly calibrated equipment.

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 1” each time the Contractor is called to apply herbicide at the Glacial Lakes and Wilmot Rest Area locations. This bid item will only be paid one time if work is required at the same time at both sites.

The Contractor will be paid by the contract item “Mobilization 2” each time the Contractor is called to apply herbicide at the Hidewood Northbound and Hidewood Southbound Rest Area locations. This bid item will only be paid one time if work is required at the same time at more than 1 site.

The Contractor will be paid by the contract item “Mobilization 3” each time the Contractor is called to apply herbicide at the Ward Rest Area locations.

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 doing hand spray/wicking and/or when operating motorized spraying equipment.

DOT-820 Exhibit B

"Contract" Daily Pesticide Application Record

Date: _____ Contact No: _____

Customer: _____

Contractor: _____

SPRAYING ON THIS DATE WAS ACCOMPLISHED ON: INDICATE WHICH DITCH

Highway No: _____ From MRM _____ To MRM _____ N S E W OR MEDIAN

Highway No: _____ From MRM _____ To MRM _____ N S E W OR MEDIAN

Highway No: _____ From MRM _____ To MRM _____ N S E W OR MEDIAN

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

Highway No.	Employee Name	Hours Worked		Rate		Cost
			X		=	
			X		=	
			X		=	

Highway 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 LOCAL MAINTENANCE UNIT FOREMAN, ONE TO BE RETAINED ON FILE BY THE COUNTY, AND ONE (ORIGINAL) TO ACCOMPANY THE COUNTY'S INVOICE TO THE STATE FOR PAYMENT.

Quality Assurance Inspection of the Pollinator Plots

Project 0009-500, PCN i4i63W - Clark Project X20054

Glacial Lakes, Wilmot, Hidewood South Bound, Hidewood North Bound, and Ward Rest Areas

Summary Period: June 2020

Date: June 20, 2020

To: Jacob Rosecky, Operations and Maintenance Engineer, SDDOT

From: Paul Clinton, PLA, Clark Engineering now IMEG

I. SUMMARY:

The inspections of the I-29 rest area pollinator habitats were conducted by Paul Clinton on June 8th, 10th, and11th. The May mowing suppressed the growth of cool-season invasive species. Cool-season species present are smooth brome, dandelions, reed canary grass, and thistles. The pollinator species have begun to out-compete many of the invasive species in select areas of the plots. There are patches of weeds that require maintenance during the summer. During the inspection Monarch Butterflies and bees were observed in the pollinator plots at all the rest areas. The dominant pollinator species that was observed was Canada Milk Vetch.

Mowing will be the primary management tool for controlling invasive and weed species for this year's early-summer maintenance. The recommendation is to complete spot mowing before July 10th. The thistle seed heads were forming during the June inspection. These seed heads should be removed by clipping (mowed) as soon as possible to reduce the spread of thistle in the area. If the mowing crew identifies any patches of thistle or yellow sweet clover that are not marked, they should mow that area as well. The figures below are depicting the two species.

Figure 1. Canada Thistle (ND.gov)

Figure 2. Yellow Sweet Clover (Applewood Seed Co.)

Mowing within the pollinator plots will do less damage than the herbicide application. The desirable plants in the understory can recover from mowing damage.

Herbicide application for summer maintenance can occur in the buffer areas. The application of herbicide can occur two weeks after mowing. The recommended herbicide is Milestone. This herbicide will kill the thistles in and other broadleaf species. Ten pollinator flowering species in the mix will tolerate Milestone herbicide after the first and second years of growth.

II. EXPECTATIONS:

This is the third growing season for the pollinator plots. Many prairie plants have a germination period of 3 to 5 years before reaching a point where they will flower. Patience is the most important and difficult part of establishing native prairie plantings as native plants develop their root system before developing flowers.

Habitat expectation for the second and third years is for the short-lived and quick-to-establish species to become more prominent. The biennial native plants such as black-eyed susan, lead plant, and partridge pea will be seen in greater numbers. Longer-lived species such as oxeye false sunflower, yellow coneflower, horary vervain, and bergamot will become more evident during the growing season.

Annual weeds will slowly become less dominant. Invasive perennial species such as Canada thistle, dandelions, and grasses will continue to be managed. Invasive species will continue to invade the areas of bare ground until the more desirable species become dominant.

III. WEED CONTROL:

Controlling weeds in native planting is challenging due to the difficulty of removing weeds without harming native plants or pollinators. Experts in the native plantings recommend mowing as one of the most effective methods of controlling weeds. Mowing during the establishment period reduces shading of the weeds and provides the native plants with more sunlight to increase the growth opportunity for native plant seedling. The management of weeds and invasive species infestation

is a priority. In the spring of 2020, weed control shall consist of mowing augmented by spot spraying of herbicides. It should be noted that the two primary herbicides of Milestone and Plateau were selected since native grasses and some wildflowers will tolerate these two herbicides.

A. Thistle

Canada thistle is a perennial noxious weed that spreads by seed and horizontal root shoots. Plants usually reach the bud stage by the end of May into the first week of June. The strategy for controlling this species will consist of mowing and herbicide control. During the growing season, mowing shall occur in the early spring to clip off the seed heads or buds. Mowing will not kill the plant but delay seed production. Spot spraying of herbicide shall occur to avoid injury to the pollinator species plants in late September through October before the first hard freeze (Purdue Extension FNR-436-W).

1) The recommend management techniques:
   a) Selective mowing.
   b) Selective herbicide applications.

B. Dandelions

Dandelion is a perennial plant that grows best in moist areas in full sun. This plant has a taproot and is a low growing plant. The best time of the year to apply herbicide is in the early spring or late summer into the fall when plants are actively growing. The low growing height is problematic in the pollinator sites. The dandelion is low enough that mowing will not have a significant impact on reducing the density of the patches. Typical herbicides used in lawn care will also kill the native flowers.

1) The recommendation for dandelions is to selectively apply Plateau herbicide.

C. Yellow Foxtail

Yellow foxtail is an annual summer grass. Typically, the method of controlling Yellow Foxtail is with pre-emergence or 2-4D herbicide blends. In this situation, using pre-emergent or 2-4D herbicides will kill the native flowers. The best option currently for native plants is mowing or clipping of the seed heads to suppress the weed competition in newly seeded areas. Mowing height shall be above the height of the seedlings or by maintaining at least 60% of the leaf area. Management of yellow foxtail will be necessary throughout the establishment period or until the density of native species out-competes yellow foxtail (UNL Extension Bulletin G1900).

1) The recommendation for managing yellow foxtail is to clip the seed heads off by mowing in the infested areas. Clipping and herbicide applications will occur during the 2020 growing season. Our research indicates management of yellow foxtail will continue into years 3 and 4.

D. Smooth Brome Grass

Smooth Bromegrass is an introduced, cool-season perennial sod-forming grass. This grass is aggressive and can rapidly invade native cool and warm-season grasslands. This specie emerges from winter dormancy in early spring (March-April) before native species. It spreads aggressively through rhizomes forming dense monocultures.

1) Recommendation for managing Smooth Bromegrass for the 2020 growing season:
   a) Mowing and Plateau herbicide application after the first flush of growth.

b) Continuous mowing.
c) Late fall prescribed burn.

E. Kentucky Bluegrass

There appears to be disagreement on whether Kentucky bluegrass is native to portions of North America. The USDA NRCS National Plants Data Center states: "Exact delineation of native status has not been determined, but data seems to indicate that it is native in parts of the southeast, northeast, and upper Midwest regions and introduced or naturalized elsewhere. It occurs throughout the United States although it is most prevalent in the northern half." The NRCS Plant Guide for Kentucky bluegrass lists it as an invasive weed in the Great Plains. The common consensus is Kentucky bluegrass is a cool-season, perennial sod-forming grass. Kentucky bluegrass can become an invasive species and may displace desirable vegetation if not managed. This grass is an aggressive competitor with native species. One of the reasons is it can outperform natives during cool-season temperatures when other species are dying back.

There are also different opinions by conservationists on the management of Kentucky bluegrass in native prairies. The NRCS Plant Guide for Kentucky bluegrass recommends the management of Kentucky bluegrass in native planting is to manage for the desired species. The Prairie Ecologist essay "Dealing With a Pervasive Invasive – Kentucky Bluegrass in Prairies by Chris Helzer, 2012" has taken the following approach in the management of the Kentucky bluegrass. The goal of re-establishing prairie is to manage for diversity and to improve habitat quality. The pervasive nature of this specie requires the modification of objectives and strategies. "Kentucky bluegrass acts like a thick blanket of interwoven stems, roots, and rhizomes – smothering most other plant species beneath it. Because our goal is to increase plant diversity, we want to make that blanket thin and porous enough that a wide variety of other plant species can grow up through it. "

1) The recommendation managing kentucky bluegrass for 2020 growing season is to mow and selective spraying with Plateau herbicide.

IV. MAINTENANCE RECOMMENDATIONS:

A. June maintenance for all rest areas.

Mow all rest areas before July 10th. This operation will help in the suppression of invasive species and clip the seed heads. Orange flagging was used to help identify mowing areas at Glacial Lakes, Wilmot, and Hidewood rest area. Mowing instructions for June are the following: Start at the Ward Rest Area and move north.

1) Avoid wet areas.
2) Use flail mowers.
3) Mow to a height of 8 to 12 inches.
4) Weed whip fence lines.

B. Standard summer buffer maintenance for all rest areas.

The management of buffer areas on the inside of the barbed wire fence and adjacent to the shelterbelts shall consist of monthly mowing with the flail mower. One of the purposes of the

buffer is to protect the pollinator planting areas from the adjacent land uses. The existing vegetation in the buffer is dominated by smooth bromegrass and a mix of weeds. Management of vegetation in the buffer can be done using conventional methods. The following are the instructions for monthly management.

1) Mow buffer with flail mower inside of the fence and next to shelterbelts the third week of the month.
2) Avoid mowing if the soil conditions are wet or saturated.
3) Mow areas to a height of 8 to 12 inches.
4) Spray buffer areas with Milestone herbicide one or two weeks after mowing.

C. Rest Area Maintenance

1) Glacial Lakes

Site Inspection: 8/11/20

Glacial Lakes pollinator planting areas can be divided into five management areas. The first is along the entrance to the rest area; second is west of the rest area building and between the shelterbelt; third is the wetland area along the south boundary; fourth is west of the shelterbelt, and the fifth is the shelterbelt. Map 1 in appendix 1 outlines the management areas. Each area will consist of different management techniques throughout the growing season.

June maintenance shall consist of mowing the buffer areas and spot mowing. Mowing shall be done with flail mowers. Mowing will also help suppress smooth bromegrass and clip the seed heads of the weed species. The fence line along the entrance and exit road should be weed whipped.

June Management Plan:

Management Area 1 consists of a mix of pollinator species with rows of smooth bromegrass. Spot mow areas four areas to clip off the seed heads of the smooth brome and thistles. The boundaries of the mowing areas have been marked with orange flagging to help identify the mowing areas.

Management Area 2 west of the building is a highly visible area that can be more intensely managed. This management consists of spot mowing. These weeds should be removed later in the growing season when weeds such as thistle, yellow and white clover become visible. Removal can be done by hand pulling or weed whipper.

Figure 3 is facing north along the fence line in Management Area 2. This is an example of a buffer mow area on the inside of the fence requiring mowing. Mowing width 6 feet

Figure 4 is facing south along the fence line in Management Area 2. This is an example of a buffer area on the inside of the fence requiring mowing. Mowing width 6 feet.

Management Area 3 along the southern boundary is a seasonal wetland that floods in the spring or after a heavy rain event. The unpredictable wet soil conditions make this area difficult to manage. Remove dead branches. No vegetation management is required.

Management Area 4 west of the shelterbelt along the west boundary is an area that has acceptable pollinator growth patches throughout the area. In May, the north third was dominated by Kentucky bluegrass. In June, the pollinators species have become more dominant. Figure 1 below is a photograph in May 2020 of sample point GL 11 dominated by Kentucky bluegrass. Figure 2 below is a photograph from June 2020 showing how pollinators species are overtaking the kentucky bluegrass.

Figure 5 is facing north at sample point GL11 in May 2020.

Figure 6 is facing north at sample point GL 11 in June 2020.

Management Area 5 is the shelterbelt in the center of the rest area. The dominant grasses within the shelterbelt are smooth bromegrass and kentucky bluegrass. Mow this area to clip the seed heads of the smooth bromegrass. Mowing will suppress smooth bromegrass from invading the pollinator area.

Management Area 5 has some dead and falling trees at the south end. These hazard trees should be removed. Figure 3 below is a new branch that has fallen in the central buffer area.

Figure 7 is one of the tree branches in Management Area 5 that has fallen.

The recommendation is to remove dead trees and replace them with trees that tolerate wet soil conditions in the extreme southern portion of the shelterbelt. Native cottonwood trees tolerate wet soil conditions. In the central and northern portion of the shelterbelt species to consider are Oaks, Dutch elm resistant Elm, and Hackberry trees.

Site photographs are in Appendix 2: Site Photographs.

2) Wilmot

Site Inspection: 6/11/20

The Wilmot rest area has three pollinator management areas. The first management area is the wetland on the west side of the rest stop near the entrance. Management Areas 2 and 3 are east of the rest area building and parking lots. Management Area 2 is east of the lagoon. Management Area 3 is west and north of the lagoon. Map 2 in appendix 1 outlines

the management areas. Each area will consist of different management techniques throughout the growing season.

June maintenance shall consist of spot mowing in pollinator and buffer areas to a height of 8 to 12 inches. Mowing shall be done with flail mowers to reduce the residue. Mowing will also help suppress smooth bromegrass, kentucky bluegrass, thistle, and woodworm. Avoid mowing the west management if the soils are wet or saturated.

June Management Plan:

Management Area 1 is a seasonal wetland west of the entrance road. This wetland has saturated soils in the spring, fall, and after heavy rain events. There is no maintenance requirement in this area.

Management Area 2 is east of the lagoon consists of patches of remnant alfalfa, smooth bromegrass, and thistle mixed in with the pollinator species. The challenge of managing this area is to suppress smooth bromegrass by mowing and not accelerate the growth of the alfalfa. The management plan for this area is to minimize mowing and allow the alfalfa and smooth bromegrass to use up the nitrogen in the soil. Spot mowing will be used to control the mix of smooth bromegrass, alfalfa, and thistle. Map 2 Wilmot identifies the areas to be mowed.

Management Area 3 is west and north of the lagoon. This sub-area consists of six weed patches across the site. The mowing areas were marked with orange flagging.

- Mow weed patch near the gate at sample point WE4. The target species are wormwood, thistle, and dandelions.
- West of sample point WE6 is a patch of pollinator species mixed with smooth bromegrass and thistles.
- Between sample points WE9 and WE7 is a patch of thistles, wormwood, and smooth bromegrass.
- West of sample point WE12 is a patch of thistle.
- WE14 mow thistle and smooth bromegrass.
- WE15 and WE16 is a patch of thistles.

Site photographs are in Appendix 2: Site Photographs.

3) Hidewood Southbound

Site Inspection: 6/10/20

Hidewood Southbound rest area has five management areas. The first is the old rest area building site; second is the obliterated road and lagoon; third the southeast pollinator planting area; fourth the west pollinator planting area; and the fifth is the central pollinator planting area. Map 3 in appendix 1 outlines the management areas. Each area will consist of different management techniques throughout the growing season.

June maintenance shall consist of mowing the grass areas, shelterbelt, and buffer areas to a height of 8 to 12 inches. Mowing shall be done with flail mowers to reduce the existing

stalks. Mowing will also help suppress smooth bromegrass and Kentucky bluegrass. Avoid mowing the management areas if the soils are wet or saturated.

June Management Plan:

Management Area 1 maintenance issues are trash, controlling poison hemlock, and thistle. The poison hemlock is near the spruce trees in the center of the management area. Figure 6 below is a photograph of the poison hemlock. The poison hemlock treatment shall be with Roundup herbicide in July.

Figure 8 Poison Hemlock in management area one.

Management Area 2. Vegetation coverage is improving in the obliterated road and lagoon areas. Mow this area to clip off the seed heads of the thistles and smooth bromegrass.

Figure 9 is facing south on the obliterated road near sample point HS4.

Dandelions are found mostly in the low areas (ditches) in the third and fourth management areas. Pollinator species and thistles are mixed in with the dandelions.

Management Area 3 in the southeast corner is a low area with saturated soils and wetland species. Avoid wet areas with mowers.

Management Area 4 along the west boundary. Mowing is required along the buffer and two areas adjacent to the buffer.

Figure 10 is facing north at HS 4. This is an example of smooth brome grass adjacent to the buffer.

Management Area 5 is west of the previous building site and lilacs. This area requires no maintenance.

Site photographs are in Appendix 2: Site Photographs.

4) Hidewood Northbound

Site Inspection: 6/10/20

Hidewood Northbound rest area has six management areas. The first is the old rest area building site; second is the obliterated road and lagoon; third is the southeast pollinator planting area; fourth is the northern portion of pollinator planting area; fifth is the pollinator planting area adjacent to the parking area, and the sixth management is the sloped buffer east of the previous building site. Map 4 in appendix 1 outlines the management areas. Each area will consist of different management techniques throughout the growing season.

June maintenance shall consist of spot mowing in pollinator areas, shelterbelt, and buffer areas to a height of 8 to 12 inches. Mowing shall be done with flail mowers to reduce the

existing stalks. Mowing will also help suppress smooth bromegrass and Kentucky bluegrass. Avoid mowing management areas if the soils are wet or saturated.

June Management Plan:

Management Area 1 is the previous building site. The maintenance issues in this area are trash and controlling small weed patches. Controlling these weed patches will consist of mowing to clip off the seed head of thistles, yellow and white clover.

Management Area 2, the obliterated road, and lagoon areas. The vegetation and coverage are improving. The lagoon portion of the management area requires mowing. Mowing will clip off the seed heads of the thistles.

Management Area 3, in the southeast corner, has patches of thistles north of the old lagoon. Treatment of these areas will be completed by spot mowing in June.

Management Area 4 is in the northern part of the rest area. This management area has dandelions in low areas (ditches) and thistles in the northwest corner. These areas can be treated by spot mowing and spraying in June.

Management Area 5 is adjacent to the parking lot. This area is dominated by kentucky bluegrass. The strategy for managing this area will be to thin or reduce the kentucky bluegrass coverage. This strategy will allow pollinator species diversity to increase. The Kentucky bluegrass is a short grass, and mowing will have little impact on suppression. The management technique for this area will be to use herbicides during the growing season. Plateau herbicide suppresses the Kentucky bluegrass while allowing the select pollinator species to survive.

Management Area 6 is the sloped area vegetated with smooth bromegrass. This area is an on-site source of smooth bromegrass that invades the pollinator plots. The management techniques for this area will be mowing and herbicide to suppress the smooth bromegrass.

Site photographs are in Appendix 2: Site Photographs.

5) Ward

Site Inspection: 6/8/2020

The Ward rest area consists of three management areas. The first management area is in the southeast corner of the site. The second management area is along the northern boundary. The third management area is on the west side of the site. Map 1 in appendix 1 outlines the management areas. Each area will consist of different management techniques throughout the growing season.

June maintenance shall consist of mowing the grass and stalks in pollinator areas, shelterbelt, and buffer areas to a height of 8 to 12 inches. Mowing shall be done with flail mowers to reduce the existing stalks. Mowing will also help suppress smooth bromegrass and Kentucky bluegrass. Avoid mowing management areas if the soils are wet or saturated.

June Management Plan:

Management Area 1 has a wetland in the southeast corner. Avoid mowing this area if the soils are wet or saturated. In the southwest corner of the management area is a patch of smooth bromegrass. A June mowing of this area will suppress the growth of the smooth bromegrass and thistles in this area.

Management Area 2 has a combination of dandelions and thistles in the low areas. Depending on the density and observation during the June inspection, either spot mowing or spraying will be the prescribed method of controlling weeds. Remove the branches on the ground along the east fence.

Management Area 3 adjacent to the interstate has three patches of weeds. There is a large patch of dandelions in the northwest corner near the lagoons. The second patch of dandelion is in the southwest corner of the management area. Spot spray both areas with Plateau. There is a patch of pollinators mixed in with smooth brome, dandelions, and thistles on the east side near a small stand of trees. Management of this area will consist of mowing.

Figure 11 Looking west south of the lagoon. Increase the width of the buffer strip to include the smooth bromegrass

Figure 12 Bark of the tree split off the trunk. This is severe damage to the tree. The tree should be removed.

Site photographs are in Appendix 2: Site Photographs

V. Table of Appendices

Appendix 1: Maps

CLARK ENGINEERING now IMEG
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siouxfalls@clark-eng.com
EOE

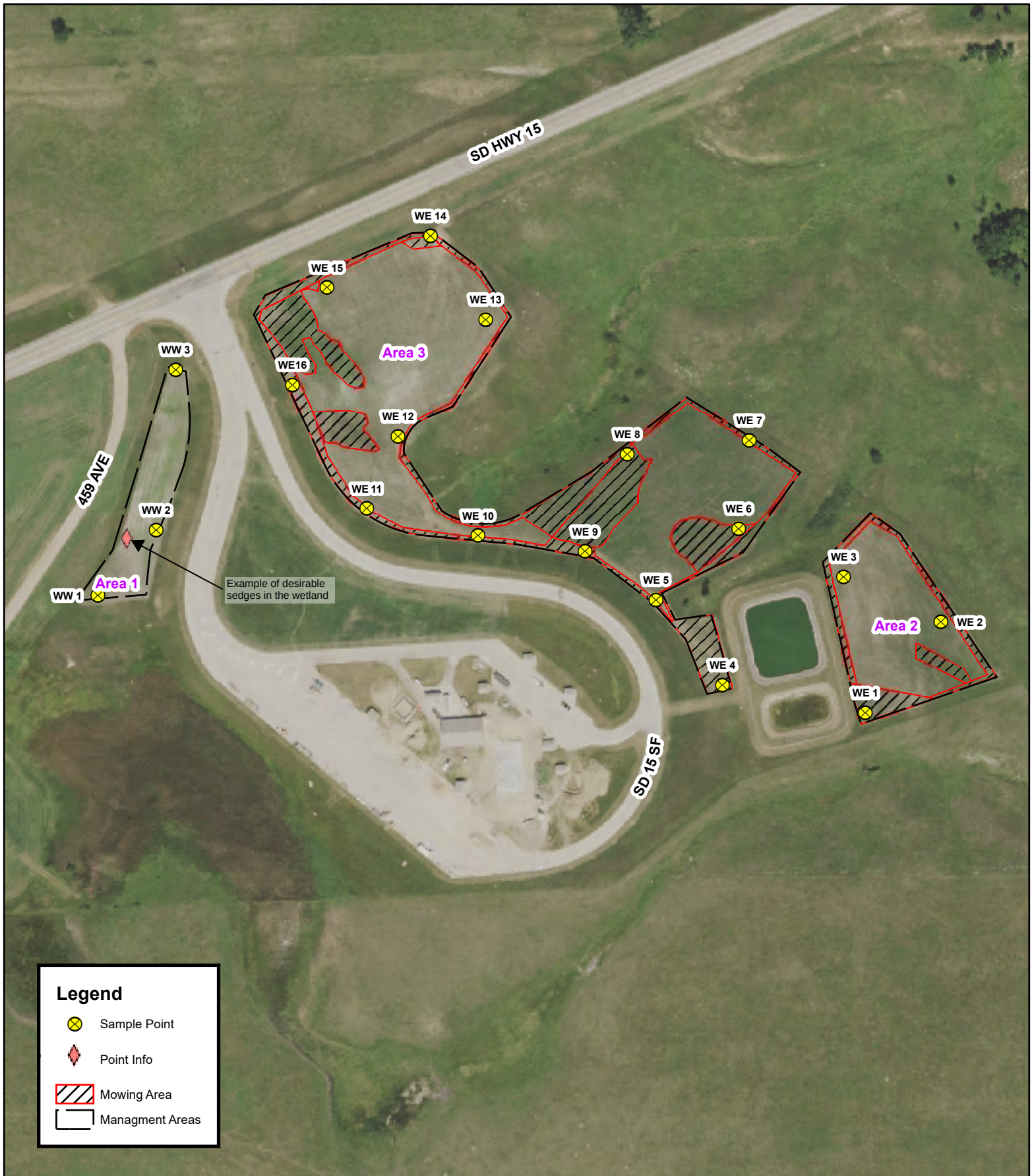
WO (OP-01-20) Project# 009-500 PCN i63W
QA inspection of pollinator plots Aberdeen Region

Map 1: Glacial Lakes Rest Area

0 100 200 400 Feet

N W E S

2018 Orthophotography
Project: X20054
Date: 06/19/2020
Created By: R. Wetzel



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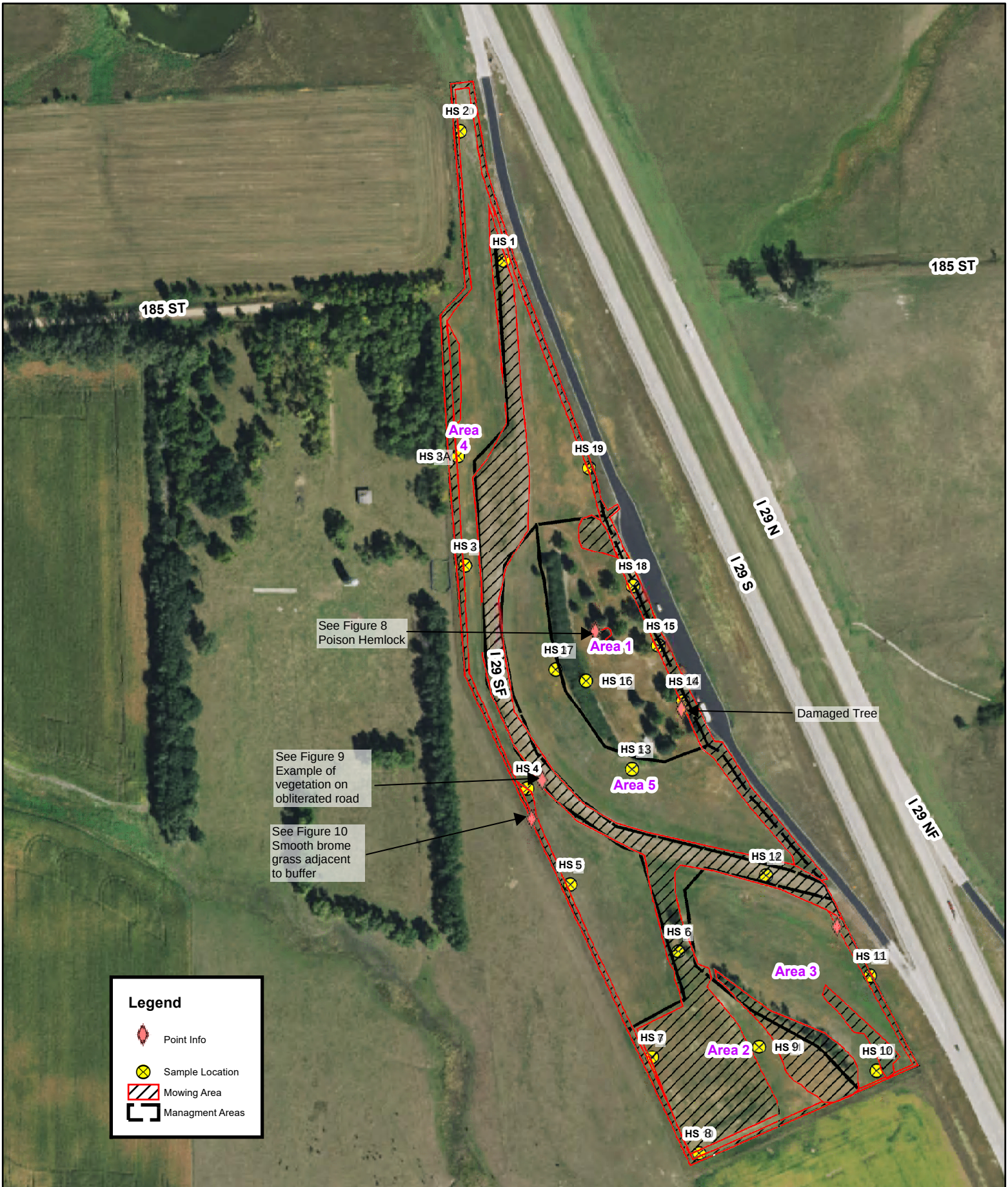
Map 2: Wilmot Rest Area

0 100 200 400 Feet

N W E S

2018 Orthophotography
Project: X20xxx
Date: 06/20/2020
Created By: R. Wetzel



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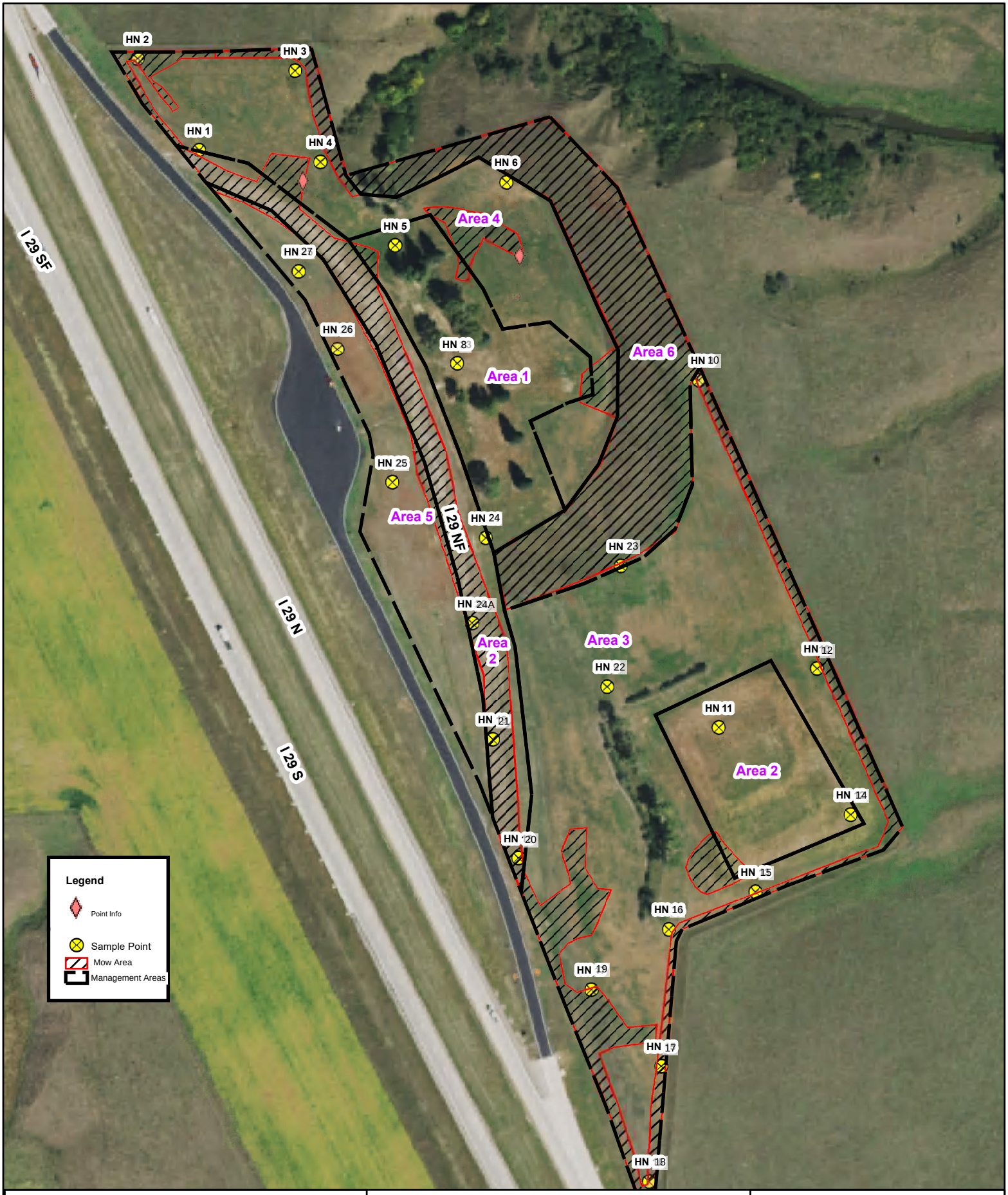
Map 3: Hidewood Southbound

0 100 200 400 600 Feet

N W E S

2018 Orthophotography
Project: X20054
Date: 06/20/2020
Created By: R. Wetzel



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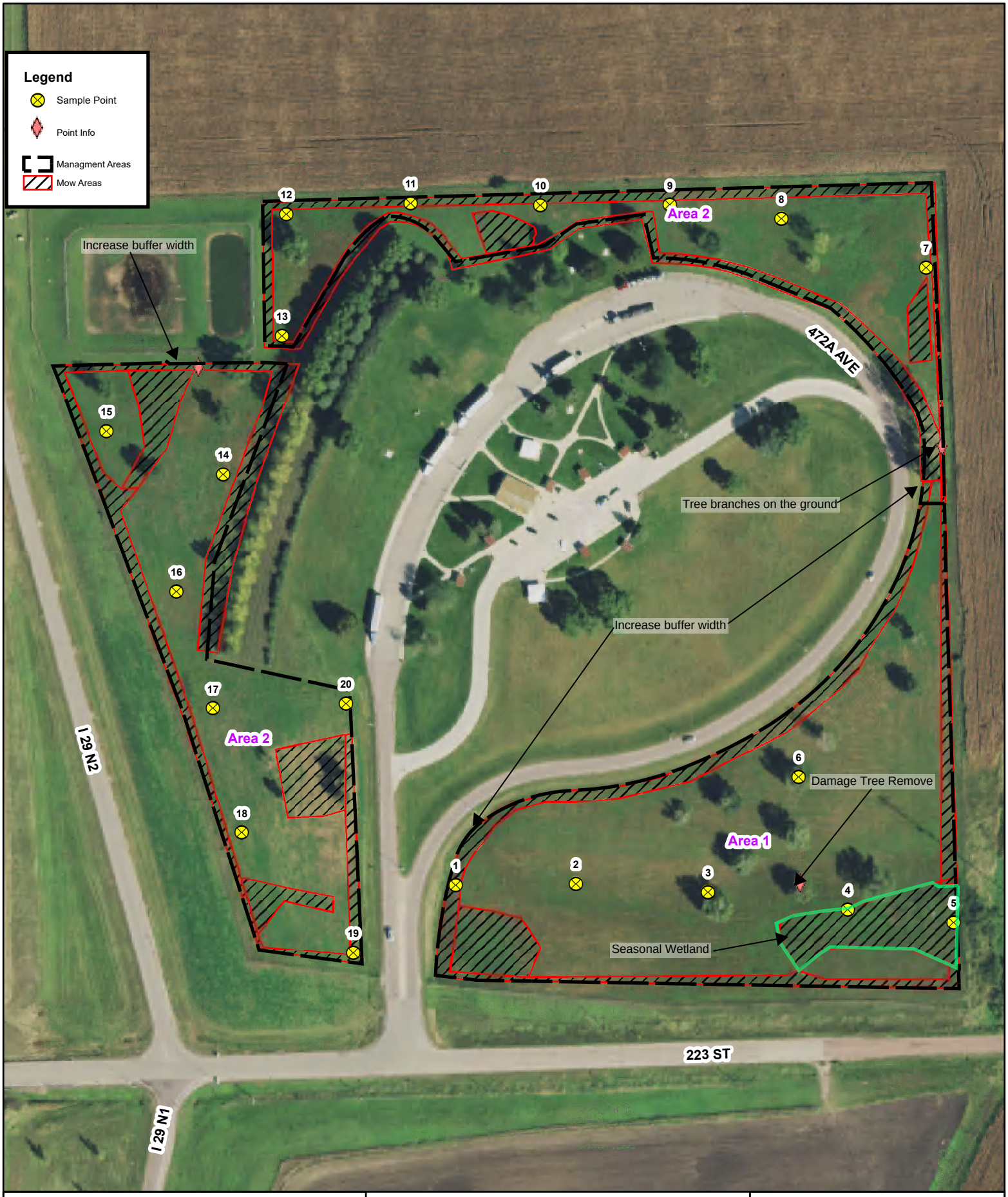
Map 4: Hidewood Northbound

0 50 100 200 300 400 Feet

N W E S

2018 Orthophotography
Project: X20054
Date: 06/20/2020
Created By: R. Wetzel



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Map 5: Ward

0 100 200 400 Feet

N W E S

2018 Orthophotography
Project: X20054
Date: 06/20/2020
Created By: R. Wetzel