

WAHLUND WETLAND

WETLAND MITIGATION PLAN

Prepared by: Ducks Unlimited, Inc.
2525 River Road
Bismarck, ND 58503

Date Submitted: June 24, 2015



OBJECTIVES

Ducks Unlimited (DU) is proposing to restore several drained wetland basins on a portion of privately owned land in Foster County, ND. As shown in Figure 1 below, the property is located approximately 5 miles north of Carrington, ND in the northwest quadrant of the intersection of State Highway 281 and 8th Street NE. The legal description for the property is the SE ¼ of Section 19, Township 147 North, Range 66 West. Furthermore, as shown in Figure 2, the project is located in the James River Headwaters watershed (HUC 10160001). The James River Watershed is part of the larger Missouri River Basin Southern Zone.

The wetland basins have been previously drained by a man-made ditch to promote agricultural use. Restoration of the drained wetland basin will be used to provide wetland mitigation credits to offset impacts to wetlands within the Missouri River Southern Zone Watershed.

Figure 1: Location Map

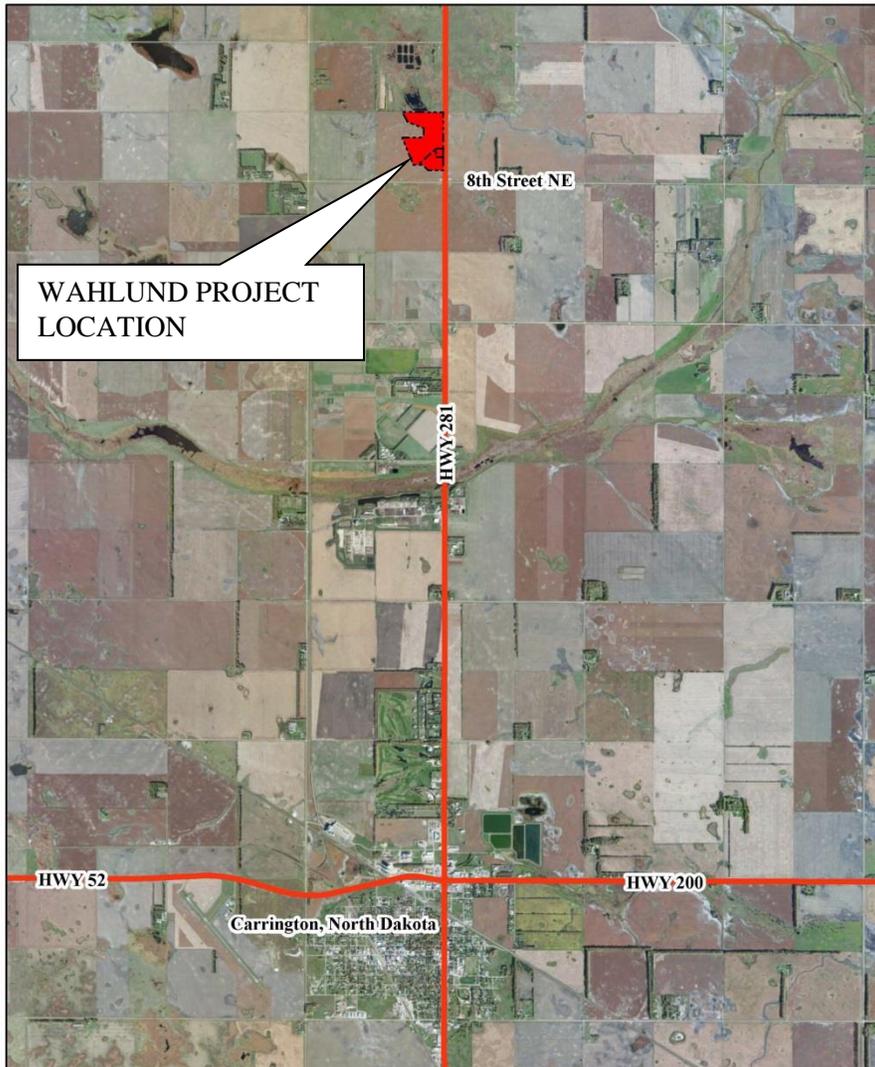
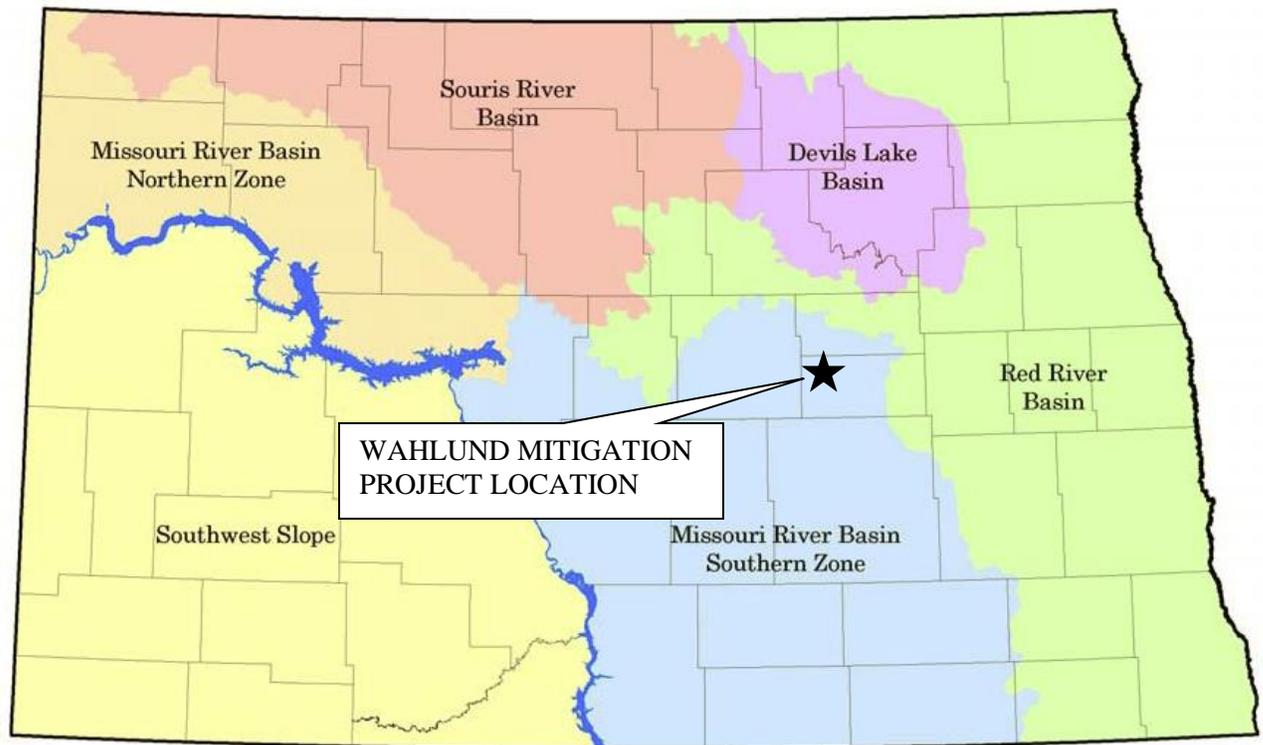


Figure 2: Watershed Map



SITE SELECTION

DU performed an extensive search for appropriate properties within the watershed. The Wahlund property presented an opportunity to restore several drained prairie pothole wetland basins. In addition to restoring the wetland basins, the easement parcels are large enough to re-establish a sizeable upland grass community to surround and protect the wetland basins.

In addition, as shown in Figure 3 below, several adjacent properties to the north and east remain in a grassland setting and have existing wetlands on the property. In fact, the $\frac{1}{4}$ section adjacent to and directly to the north of the Wahlund property has been restored to grass with several deep water wetlands. The Wahlund Mitigation project will have shallower, temporary and seasonal wetlands which will add diversity in the immediate vicinity of the deeper, more permanent wetland basins. It will also expand a larger contiguous piece of grassland.

By choosing existing basins that have been drained and used for agriculture, the opportunity for a successful restoration of the wetland basins is increased.

Figure 3: Land Cover



SITE PROTECTION INSTRUMENTS

Due to the timing of the easement acquisition, the mitigation project has two distinct easement areas. As shown in Figure 4, Mitigation Easement Site #1 is 47.26 acres and Mitigation Easement Site #2 is 9.9 acres. In addition, Lee Wahlund requested to designate an Auditors Lot #229 at 2.05 acres that will not be included as part of the easement acquisition. The Auditors Lot will remain in Lee Wahlund's ownership and no restoration will be done on this lot.

In December, 2014 Ducks Unlimited, Inc. and Lee Wahlund signed a Site Specific Agreement (SSA) for both the 47.26 acre parcel and the 9.9 acre parcel. A copy of each SSA can be found in Appendix A. As part of the SSA's, Mr. Wahlund has agreed to sign a United States Fish and Wildlife Service (USFWS) perpetual wetland easement. If deemed acceptable to the USFWS, Mr. Wahlund will also sign a perpetual grassland easement. If the USFWS refuses to accept the grassland easement for the properties, Mr. Wahlund will sign a 99 year DU easement. The USFWS wetland easements allow farming when the wetland basins are dry. The DU easement will restrict farming practices during dry times, maintaining the integrity of the wetland basins during those times.

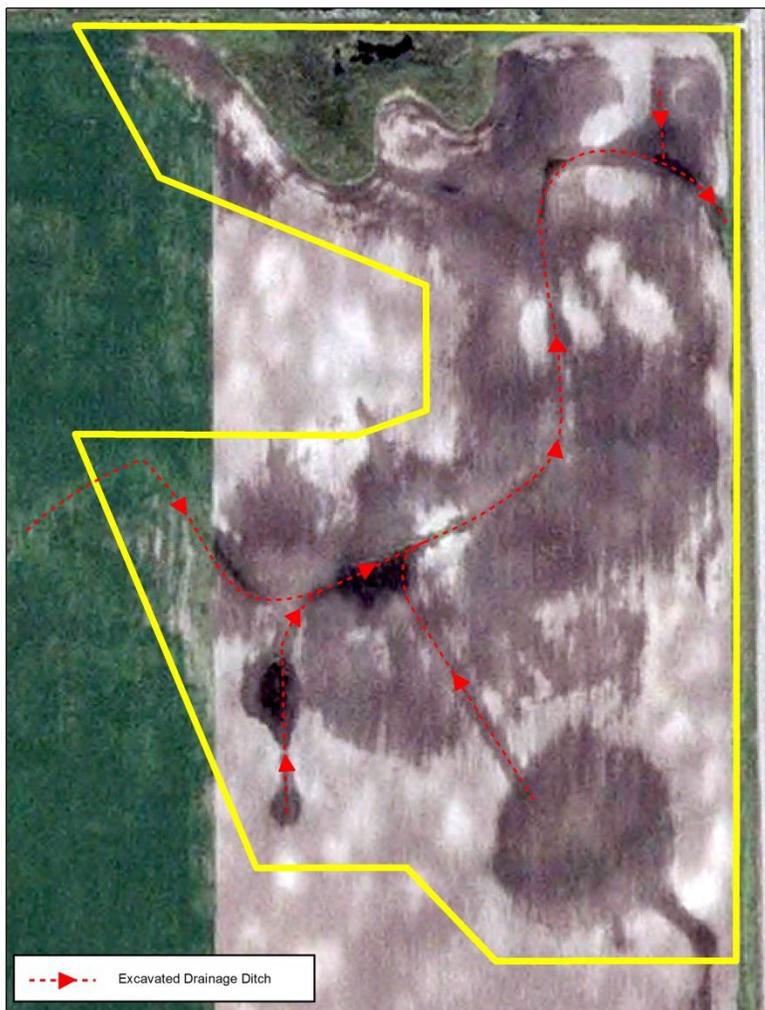
Figure 4: Easement Boundary



BASELINE INFORMATION

Currently, the site is used for agricultural production except for an existing wetland along the northern property boundary. Due to the depth of the existing wetland, it rarely dries enough to be farmed. Although the remainder of the property had wetlands, those wetlands were successfully drained and filled to allow for agricultural production. Refer to Figure 5 for a layout of the excavated drainage ditches on the property. The ditches drain to the northeast corner of the property where they continue into a culvert under Highway 281 and continue to drain to the east. Although, no records could be located pertaining to the installation of the ditches, it is speculated that the ditches were installed as far back as the 1950's. In addition to installing the drainage ditches, earthen fill material was placed within the wetland basins to further increase agricultural production. In some locations fill was placed in depths exceeding 24 inches. Although filled and drained, the wetland areas have not always produced a crop. During this wetter period in North Dakota history, the wetland basins are showing higher signs of salinity and crop production has been reduced significantly in those areas.

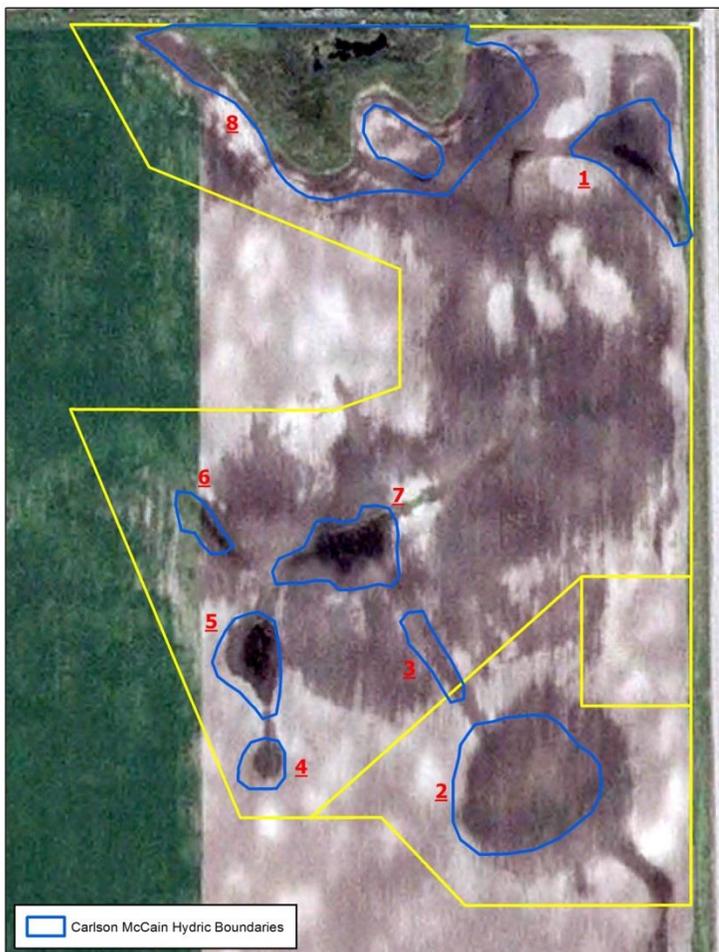
Figure 5: Drainage Ditch Location



In October 2014, at the request of DU, consultant Carlson McCain performed a wetland delineation and Scope and Effect Determination. The results of their study can be found in Appendix B. During their study, Carlson McCain identified eight (8) wetlands on the property. These wetland boundaries were surveyed and the survey files submitted to DU. The wetland boundaries can be found on Figure 6.

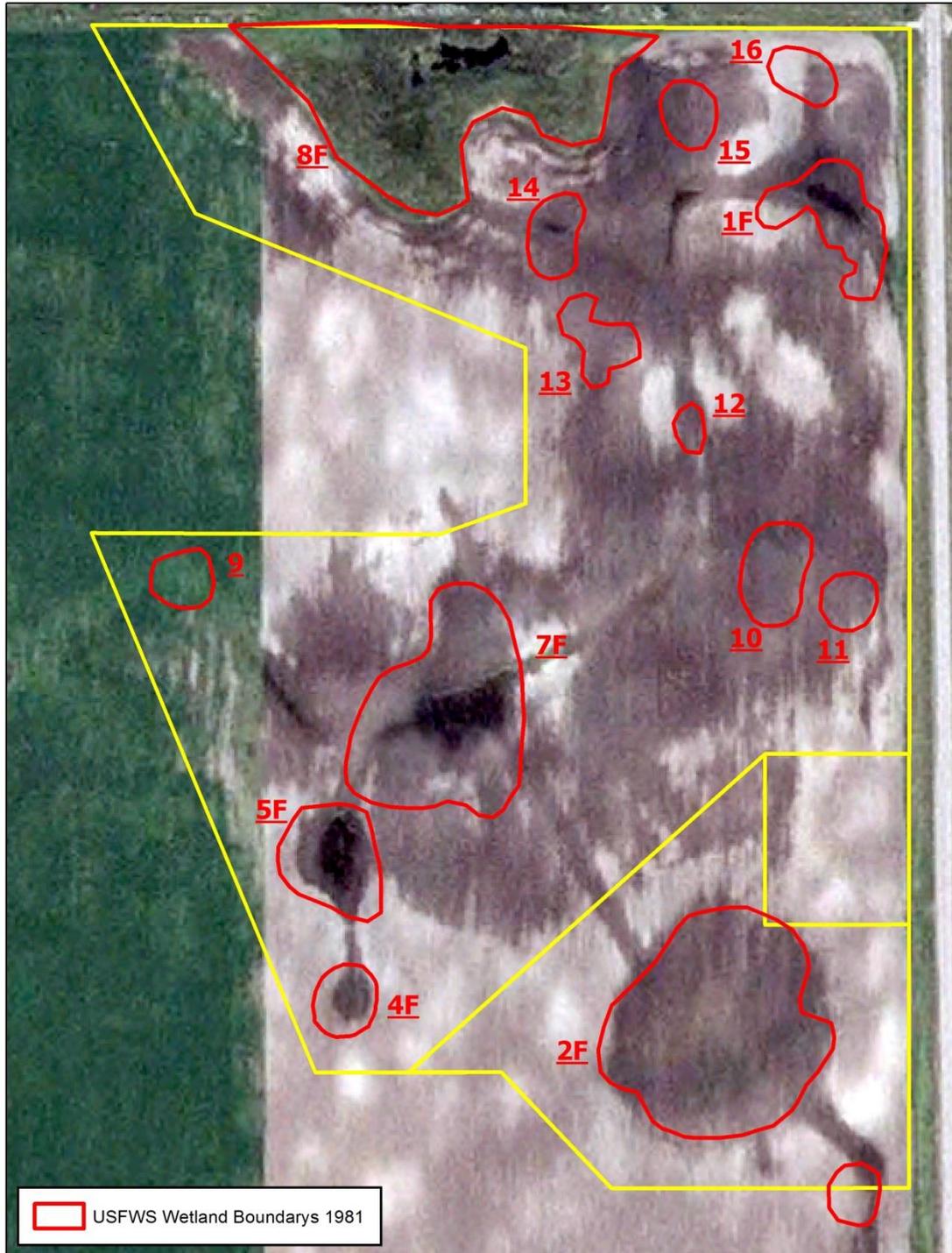
The Scope and Effect did determine that wetlands 1-7 were completely drained and not providing wetland functions, therefore making these candidates for full restoration. The middle portion of Wetland 8, approximately 3.6 acres, is a deeper, semi-permanent wetland that is not drained and has not been farmed in the past. The outer fringe of wetland 8, approximately 2.6 acres, is shallower, tends to dry out sufficiently for farming and lacks wetland characteristics. Wetland 8 is actually the southern portion of a much larger wetland basin on the adjacent property to the north. However, Wetland 8 is cut-off from the main basin by an access road that exists on the property line. The road acts as a barrier as there is not a culvert in the road bed connecting the basins. Hydrology for Wetland 8 is provided by seepage through the roadbed from the larger basin to the north and surface water runoff from the watershed to the west and south.

Figure 6: Carlson McCain Wetland Delineation



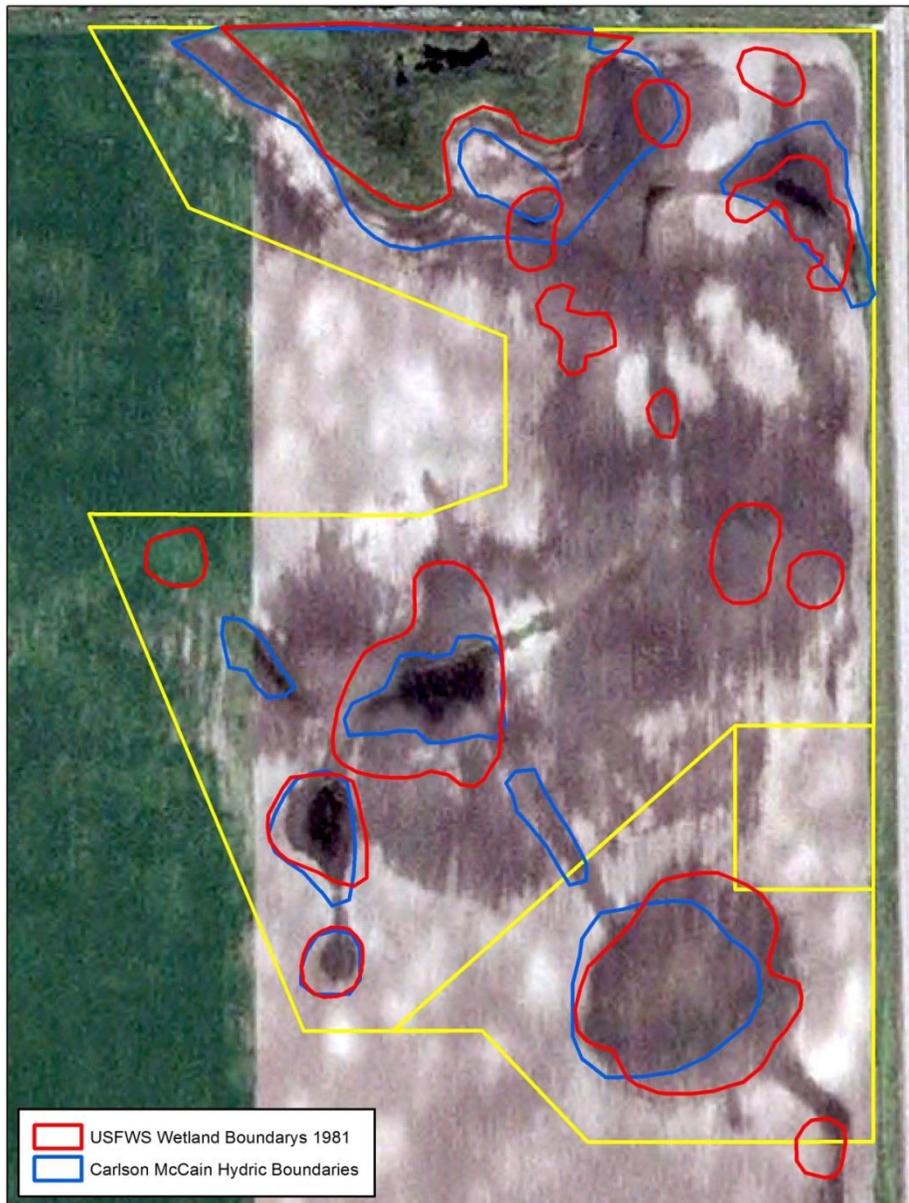
In addition to Carlson McCain, the United States Fish and Wildlife Service (USFWS) also analyzed the property using historical aerial photographs to interpret wetland boundaries. Their interpretations based on historic aerial photographs can be found in Appendix C and overlaid on Figure 7 below.

Figure 7: USFWS Wetland Boundaries



A comparison of the wetland boundaries is shown in Figure 8. As shown, the USFWS identified several smaller wetlands not identified by Carlson McCain. Unfortunately, DU did not obtain the aerial photographs used by USFWS prior to directing Carlson McCain on the wetlands to be delineated. Under normal circumstances, these wetlands may have been visually identified in the field. However, with the placement of fill material, the very shallow nature of these temporary wetlands and the decades of being farmed, they were easily obscured and not clearly evident as wetland basins. Given the complex of several smaller wetland basins dispersed throughout the entire ¼ section of the Wahlund property, it is highly likely that these shallow wetlands identified by USFWS did exist within the easement.

Figure 8: Wetland Delineation Comparison



CREDIT DETERMINATION METHODOLOGY

Credits will be determined using the guidelines stated in the *Wetland Mitigation Banking in North Dakota Interagency Guidance for Mitigation Bank Sponsors*. Wetlands will be restored on the property by a combination of excavating previously placed fill material exposing the historic wetland soils and plugging the existing drainage ditches to restore hydrology within the wetland basins. DU is proposing to use a combination of the Carlson McCain and USFWS delineated basins. Refer to Table 1 for the credit determination of the wetland restoration project and corresponding Figure 9: Credit Layout for an acreage breakdown of how the credits within the easement were determined.

For determining possible credits, Carlson McCain wetland delineation boundaries will supersede other methods. Therefore, the wetland areas as determined by Carlson McCain for wetlands 1-8 will be used in Table 1. According to the Carlson McCain report, Wetland 8 is 6.2 acres in size. However, this does include 3.6 acres of existing wetland along the north property line. Therefore, the 3.6 acres will be subtracted from the 6.2 acres for a total of 2.6 acres of restoration. The 3.6 acres will be tabulated as preservation at a 10:1 ratio.

Wetlands not identified by Carlson McCain but identified by the USFWS will also be tabulated as restoration opportunities at a 1:1 ratio. These wetlands include USFWS wetlands 9-13 and 16.

Due to the topography of the site and the location of the drainage ditches, there exists an opportunity to plug the ditch in the center of the site to flood a larger area than just the existing wetland basins and create a larger wetland basin. The area of creation will be determined by subtracting the area of the existing wetland basins from the area of the Full Service Level (FSL) of the wetland basin as determined by the primary spillway elevation. Throughout the property there is approximately 14 acres of creation opportunity at a 2:1 ratio.

Enhancement credits will be determined by placing a 50-foot buffer surrounding the wetland boundaries. A 5:1 ratio will be applied to the area of the 50-foot upland buffer. Further enhancement credits will be sought by applying a 20:1 credit ratio to the remaining upland areas outside the 50-foot buffer zone.

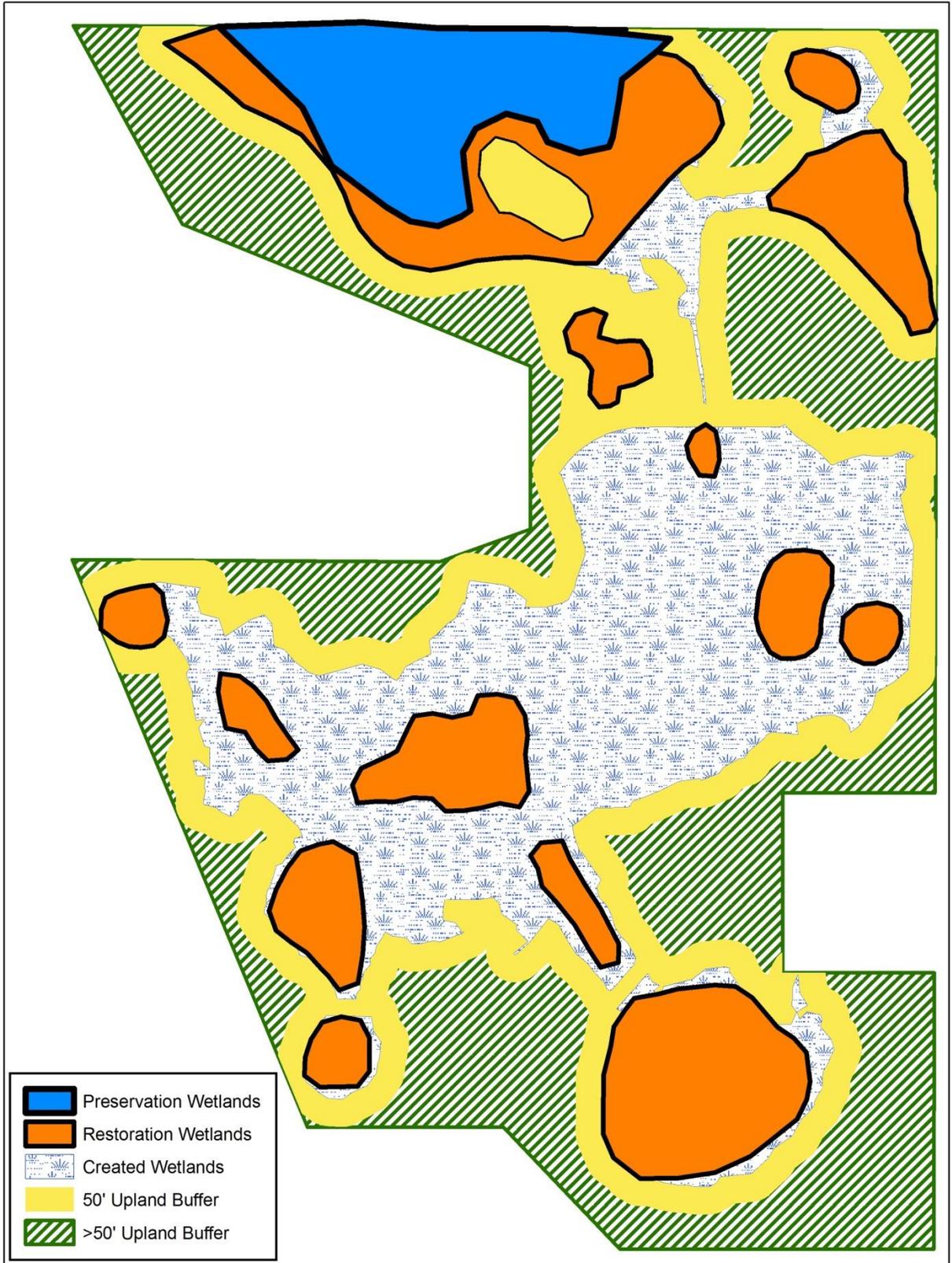
The summation of all the above described methods will determine the amount of credits sought for the Wahlund mitigation project.

Table 1: Credit Determination

	ACRES	METHOD	RATIO	CREDITS
Wetland 1 (CM)	1.2	Restoration	1:1	1.2
Wetland 2 (CM)	2.4	Restoration	1:1	2.4
Wetland 3 (CM)	0.3	Restoration	1:1	0.3
Wetland 4 (CM)	0.3	Restoration	1:1	0.3
Wetland 5 (CM)	0.7	Restoration	1:1	0.7
Wetland 6 (CM)	0.3	Restoration	1:1	0.3
Wetland 7 (CM)	1.0	Restoration	1:1	1.0
Wetland 8 (CM)	2.6	Restoration	1:1	2.6
Wetland 9 (USFWS)	0.25	Restoration	1:1	0.25
Wetland 10 (USFWS)	0.5	Restoration	1:1	0.5
Wetland 11 (USFWS)	0.20	Restoration	1:1	0.2
Wetland 12 (USFWS)	0.1	Restoration	1:1	0.1
Wetland 13 (USFWS)	0.3	Restoration	1:1	0.3
Wetland 16 (USFWS)	0.24	Restoration	1:1	0.24
Wetland Creation (DU)	14.6	Creation	2:1	7.3
Wetland Preservation	3.6	Preservation	10:1	0.36
50' Upland Buffer	15.9	Enhancement	5:1	3.18
Upland Buffer >50'	12.15	Enhancement	20:1	0.60
			Total =	21.83

The credit determination reflects the likelihood of success based upon the best available information at the time. The final determination will be based upon the monitoring results and conclusions. For instance, should the monitoring reveal a portion of the proposed created wetlands are not developing, adaptive management techniques will be implemented to help that portion progress towards becoming wetland. However, those credits shall not be considered released and cannot be sold until developed. Should adaptive management techniques still not develop that portion into wetland, those credits will be considered undeveloped. On the other hand, should the monitoring show an increase of created wetland acres, those credits can be considered developed and can be released for sale. Therefore, the final credit determination table will reflect the wetland acres as determined by the monitoring process. Any changes to the credit determination and adaptive management techniques applied will be discussed and approved with the Corps of Engineers and the NDIRT.

Figure 9: Credit Layout



CREDIT RELEASE SCHEDULE

Wetland credits will be released based on Table 2: Credit Release shown below. The table is based upon the framework identified in the DU In-Lieu Fee Program Instrument and the final credit determination of 21.83 credits. The percent approved through monitoring years 1-5 is based upon realistic estimates of wetland development. However, the percent approved will be based upon the monitoring results and successful development of the project.

The first 30% of the credits will be released upon approval of the Mitigation Plan, recording of the Site Specific Agreements, establishment of the financial account and construction and seeding of the restoration project. The Site Specific Agreements were recorded in the Foster County Courthouse in January 2015. A project specific account has currently been established by DU at a FDIC approved financial facility. This account is funded by credit sales within the Missouri River Southern Zone Watershed and will be used for all facets of the Wahlund project. The Mitigation Plan will be submitted in June 2015 for approval with an expected construction of the project in the fall of 2015. Upon completion of the construction, the first 30% or 6.54 credits shall be released.

The remainder of the credits will be released in stages beginning in 2016 and based upon monitoring results for the given year. Releases may be pro-rated to address partial success in meeting the required performance standards. In addition, credits can be released at an earlier date should monitoring show performance standards have been met for two consecutive years.

Any changes to the credit release schedule will be discussed and approved with the Corps of Engineers and the NDIRT.

Table 2: Credit Release

Year	Success Criteria	% Approved	# Credits	Total Credits	% Complete
2015	Mit. Plan approved, Site Specific Agreements recorded, financial account established	15%	3.27	3.27	15%
2015	Construction Complete	15%	3.27	6.54	30%
2016	1 st year Monitoring	10%	2.2	8.74	40%
2017	2 nd Year Monitoring	15%	3.27	12.0	55%
2018	3 rd Year Monitoring	20%	4.37	16.37	75%
2019	4 th Year Monitoring	10%	2.2	18.57	85%
2020	5 th Year Monitoring	15%	3.27	21.83	100%

WORK PLAN

After the discovery of fill material placed within the wetland basins, the consultant Carlson McCain was tasked with analyzing fill depths within each of the wetlands they worked. In addition, DU staff analyzed fill depths in the remainder of wetland basins as determined by USFWS personnel. As shown in the preliminary plans in Appendix D, the restoration of these wetland basins will include the removal of all fill material down to the historical wetland elevations. Also, in areas of wetland creation, some sediment removal will be undertaken to help establish a deeper wetland basin with a longer hydro-period. In addition to the fill removal, four ditch plugs will be constructed to re-establish the hydrology to the wetland basins within the project boundaries.

Refer to the preliminary design plans in Appendix D for ditch plug locations and excavation depths associated with restoration of the site. Sheet 2 of the design plans shows the plan view of the northern half of the easement area. Proposed excavation points are shown with a proposed elevation and the depth of cut. The existing ditches drain from the south to the north and then turn east and drain water into the Highway 281 road ditch and culvert where it can continue to the east. Embankment 2 is the final ditch plug within the easement area and sets the water Full Service Level (FSL) at elevation 1546.5. Water above this elevation will flow east over the primary spillway and into the Highway 281 road ditch. The next ditch plug, also shown on Sheet 2, is Embankment 3. This plug will be constructed upstream or to the southwest of Embankment 2. The ditch plug will be a long linear embankment with a primary spillway constructed around the east end. The primary spillway FSL will be set at elevation 1549.25. Several historic wetland basins and wetland creations will be obtained by this elevation. Refer to Sheet 3 for locations of the additional upstream embankments and excavation points. Embankment 4 will be constructed to restore one wetland basin. Similar to Embankment 3, a long linear embankment will be constructed to block the existing ditch. The primary spillway will be constructed around the southwest end of the plug. The primary spillway FSL will be set at elevation 1549.5. Excavation depths in this wetland range from as little as 4" to as deep as 24" in some locations. The final ditch plug shown is Embankment 5. This will restore a small wetland in the southwest corner of the easement area. The primary spillway will be constructed at the west end of the embankment with an FSL set at elevation 1550.0. Excavation of 14" of fill material will be required to restore this wetland basin to original elevations. Primary spillway elevations at all the ditch plugs were set to restore the wetlands back to their original elevations and to create some new wetland habitat, if possible. Elevations were kept low enough to not disturb or back water onto neighboring properties. No man-made materials, culverts, sheet pile weirs, etc., are designed to be used within the project. One exception may be the use of an erosion control fabric to reduce erosion of the primary spillways due to moving water.

Construction of the project, including fill material removal and ditch plug construction, will be determined by the contractor in association with a DU construction manager but will be typical of equipment used for this type of project. Typical equipment could include scrapers, bulldozers, trucks and compaction equipment.

DU is planning for a late summer, early fall of 2015 construction of the project. This allows for drier conditions which are more favorable for removal of fill material and construction of earthen ditch plugs.

The primary source of water for the wetlands will be surface water runoff. This is typical of the prairie pothole region. Depending on the hydrologic cycle, the wetlands will vary between wet and dry allowing for the typical wetland cycle.

Revegetation of the wetlands will occur naturally and will be based on the natural hydrologic cycle. As these are existing wetlands that have been previously drained, the wetland seedbank likely still exists. Upland areas associated with the project will be seeded with a native prairie grass-forb mix indigenous to the region.

Invasive species will be controlled in the disturbed areas by the use of standard weed control methods. These methods may include spraying or mowing to ensure the best vegetative response. DU will work closely with the county weed district and landowners to determine the best methods for weed control.

MAINTENANCE PLAN

Due to the nature of the project restoring drained wetland basins with earthen ditch plugs, it is anticipated the site will require minimal future maintenance. The wetland basins are very shallow in nature and should typically be very well vegetated. This reduces the impacts of erosion due to wave action, etc. Constructed ditch plugs and spillways will have flatter slopes to minimize erosion due to moving water. If applicable, and as determined in the final design plans, erosion control blankets will be installed to minimize erosion until vegetative cover can be established on all spillways. DU will monitor the site to determine if maintenance is required and the maintenance plan will be implemented to correct any issues.

PERFORMANCE STANDARDS

Historical wetland basins as delineated by Carlson McCain and USFWS that are restored within the project area will meet the criteria of soils, hydrology and vegetation as found in the 1987 Corps of Engineers Wetland Delineation Manual.

Created wetlands within the project area must also meet the criteria of the 1987 Corps of Engineers Wetland Delineation Manual except for the soils evaluation as hydric soil indicators may not be present due to the short timeframe. Therefore, created wetlands will be creditable based on hydrology and vegetation, assuming hydric soils will eventually form.

The wetland complex within this project will consist of several shallow basins. Depths range from less than 6" to 3.5'. Based on these depths, the wetland fringe should be

expected to be seasonal in nature while the deeper interior could be considered more semi-permanent. The shallower portions could be expected to develop emergent and possibly some submerged vegetation while the deeper portion may stay partially open water and develop submerged aquatic vegetation. Of course, the condition of the wetlands will be based entirely on the hydro-period. Given the dynamic nature of the North Dakota climate with dramatic swings from extremely wet to extremely dry, it should be expected these wetlands follow the typical wetland cycle based on the given climatic conditions at the time.

The 50' upland buffer should meet a minimum 90% canopy cover. The remaining upland cover outside the buffer zone but within the easement boundary shall exceed a 70% canopy cover.

The easement area can be hayed after July 15 or grazed under the conditions of a planned grazing system. In addition, all noxious weeds within the easement area will be in compliance of the policy set forth by the Foster County Weed Control Board.

MONITORING REQUIREMENTS

DU is proposing to monitor the easement area for a period of five (5) years starting the first growing season after completion of construction. Monitoring will consist of delineating wetland boundaries based on the 1987 Corps of Engineers Wetland Delineation Manual. In addition, 2 to 3 belt transects will be established to monitor vegetative development and diversity. Finally, photo points with compass bearings will be established to show vegetative development throughout the monitoring period. Written monitoring reports will be prepared and submitted to the Corps of Engineers Bismarck, ND office by the end of the calendar year. The report will include the information from each year's monitoring in order to show development of the wetland project. Along with the data from the monitoring, the report will include a map of the transect locations, the delineated wetland boundary, photo points and azimuth angles, areas of concern such as location of noxious weed infestations, erosion, etc. If applicable, yearly aerial photographs will be included.

LONG-TERM MANAGEMENT PLAN

Long-term management and maintenance will be provided by DU, its heirs, assigns or successors; unless the easement lands are transferred to a state or federal resource management agency or this responsibility is contractually conveyed to another person, subject to approval by the Corps, in consultation with the NDIRT.

In addition, as a USFWS wetland and grassland easement will be placed on the property, the USFWS will have authority to monitor and maintain the integrity of the easement under their easement program guidelines.

The DU Long-Term Management Plan shall be initiated upon closure of the ILF project. The goal of the long-term management is to continue to foster the viability of the project's wetlands and upland habitats. The long-term manager shall conduct annual inspections of the property during the growing season to ensure the property is functioning as expected and determine any needs of the project. Should needs arise, the long-term manager shall take corrective actions to rectify the needs of the wetland project. Long-term objectives include maintaining the native plant vegetation. This may include assessment and recommendations for improving the upland and wetland habitats within the easement. In order to minimize the spread of invasive species such as noxious weeds, the long-term manager shall identify and control any infestations as discovered. The long-term manager shall also assess the stability and structural integrity of any constructed ditch plugs or primary spillways and make recommendations for any maintenance of such structures due to erosion or other causes.

ADAPTIVE MANAGEMENT PLAN

An adaptive management plan will be established and carried out by DU should corrective actions be deemed necessary. Actions will be determined in cooperation with the Corps and NDIRT to maintain the success and viability of the wetland mitigation site.

FINANCIAL ASSURANCES

As of June 2015, DU has agreements to sell 24.61 wetland credits in the Missouri River Southern Zone Watershed. Of those credits, DU has received payment on 14.16 credits. Those payments have been placed in a Missouri River Southern Zone (MRSZ) specific account established by DU at a FDIC approved financial facility. It is expected that the majority of the remaining 10.45 credits will be invoiced and DU will receive payment this calendar year. As credit sales (24.61 credits) have outpaced the development of credits by the Wahlund project (21.83 credits), the MRSZ project specific account will be fully funded to the level to support the development of the project, the contingency fund and the long-term management fund. DU proposes to fund the development of the project, including the monitoring and maintenance through full credit release through the use of the MRSZ account. Once the credits are developed and released, the appropriate funds will be transferred from the MRSZ account into a long-term management account specifically designated for the Wahlund Mitigation project. Should the long-term management responsibilities be transferred or reassigned to another agency, organization, etc., the long-term management account will also be transferred to the appropriate long-term manager.

More information on the development of the financial assurances can be found in Appendix E.

APPENDIX A

Site Specific Agreements

DUCKS UNLIMITED, INC.

Lee M. Wahlund

SITE SPECIFIC AGREEMENT

ND-534-1

Wahlund Mitigation

This Agreement is effective this _____ day of _____, 2014 between Ducks Unlimited, Inc. (hereinafter "DU") and Lee M. Wahlund, (hereinafter "Cooperator").

WHEREAS, DU and the Cooperator have entered into this Agreement to assist in the development of the Wahlund Mitigation Project (hereinafter "Project") to develop a wetland, wetland mitigation credits and other natural resources on a 47.26 acre parcel as described in the Project Proposal attached as Exhibit A of this Agreement (hereinafter "Property") .

NOW, THEREFORE, in consideration of the above premises and other terms and conditions listed herein, DU and the Cooperator agree as follows:

A. DU AGREES TO:

1. Construct, or cause to be constructed, the Project, subject to the terms and conditions of this Agreement, in substantial compliance with the Site development plans and specifications developed pursuant to Section 3 of this Agreement.
2. Commence the construction of the Project in 2015. Should construction of the Project not commence during 2015 for reasons beyond the control of the parties including, but not limited to, the failure to timely obtain required permits, agreements, leases, approvals, and access rights necessary for the development of the Project, the parties will commence the construction of the Project in a mutually acceptable future year. The parties recognize the construction of the Project cannot be accomplished unless all required permits and approval from the Corps of Engineers are granted.
3. Obtain the topographical, soils, and hydrological data required to design the Project; prepare Site development plans and specifications for the Project; and submit same to Cooperator for review and mutual approval.
4. Prepare all Project bid specifications, accept or reject all contract bids, and be solely responsible for making any contract changes, additions, or deletions as the work progresses. The prime contractor shall be required to provide performance and payment bonds and carry casualty and liability insurance. The contracts shall provide that the contractor acknowledges that the

Cooperator is not a party and will assert no claims against the Cooperator in any disputes with subcontractors, materialmen, or DU.

5. Provide Project alignment and grade staking, and construction management services.
6. Provide funding in cash and in-kind services for the development of the Project in an amount to cover the total cost of project development.
7. Cooperator Payment. The cooperator will be paid as follows upon successful fulfillment of all obligations/requirements of this Agreement. A single payment in an amount not to exceed XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX (\$XXX,XXX.00) for development of the Project on the 47.26 acre Property. The total payment of \$XXX,XXX.00 is divided between the United States Fish and Wildlife Service (USFWS) value of a conservation easement and a separate site access and maintenance easement. The value of the USFWS easement will be determined in 2015, in accordance with USFWS policy. The value contribution of the USFWS easement will be reflected in a Statement of Just Compensation. The remainder dollar allocation will reflect the value contribution of the site access and maintenance easement. The distribution shall be made by DU to Cooperator prior to December 31, 2014, contingent upon all the obligations and/or requirements of this Agreement being first satisfied.
8. Obtain a Title Commitment. The commitment shall evidence the Cooperator's clear title to the Property and ability to deliver a clear easement interest. The Title Commitment and other documents to be prepared by the Cooperator, if any, must be submitted to DU at least ten (10) days before Closing. The Cooperator shall obtain a final title policy in the amount of the Purchase Price in the name of DU. DU shall be allowed a reasonable time after receipt of Title Commitment on the Property to examine same and make any objections to title. DU shall notify the Cooperator of any objections in writing or the objections will be deemed to be waived. If any objections are made, the Cooperator shall have fifteen (15) days from the receipt of the notice to correct the title. If the title is not corrected within fifteen (15) days, DU may elect to terminate this Agreement. Any mortgage or deed of trust encumbering the Property must be subordinated to the Deed of Conservation Easement or paid in full at closing.
9. Will pay closing costs such as any real estate transfer fee, escrow and title insurance or any similar charges including recording fees, upon recordation of the Deed of Conservation Easement.

B. COOPERATOR AGREES TO:

1. Convey conservation easements or similar long-term protections for the parcel. The landowner shall convey a Wetland and Grassland Perpetual Easement to the USFWS, if the USFWS is willing to accept said easement, for the mutually beneficial goals of the USFWS, the landowner, and DU of perpetual protection of habitat for wildlife (other resources). The landowner may not accept additional payment for the easement from the USFWS or other federal

agency. If the USFWS is unwilling to accept said easement, Cooperator agrees to convey to DU ninety-nine (99) year conservation easement for the parcel for the protection of the property.

2. The Cooperator shall also convey a site access and maintenance easement for the parcel to DU. This mitigation easement (“Covenant”) shall include site access and maintenance provisions allowing DU, and its officers, employees, agents, and the like access rights necessary for the development and monitoring of the Property and Project. Access rights will be restricted for purposes related to the development, monitoring, and maintenance necessary to maintain the continuing viability and functioning of the Project. Such agreement shall run for the Project Life of ninety-nine (99) years. Said form Covenant is attached hereto in form as Exhibit B.

3. Provide to DU, and its officers, employees, agents, and the like, all reasonable assistance and cooperation necessary for the implementation of this Agreement.

4. Routinely inspect the Site when any construction is in progress, maintain written record of the construction activity, and keep DU advised of the Project construction.

5. Following Project construction, and thereafter provide routine inspection and keep DU advised of any maintenance necessary to maintain the continuing viability and functioning of the Project throughout the term of this Agreement.

6. Satisfy to the satisfaction of DU any delinquent real property taxes, all real property taxes which are due in the year of closing and all levied assessments at or before closing. All future real estate taxes and assessments, as well as the maintenance of general liability insurance shall remain the responsibility of Cooperator.

7. Cooperator relinquishes claim to ownership of wetland mitigation credits or to reimbursement from sale of wetland mitigation credits over the Project Life and provides exclusive right to DU to market and sell wetland mitigation credits developed by the Project.

8. Warrant and represent to DU, its successors and assigns, the matters contained in the following paragraphs. Said representations, warranties, and indemnities shall survive closing.

(a) **Notices.** The Cooperator has not received any notices issued by any municipal or other public authority with regard to any work or improvements done or ordered by such authority to be done either before or after the date of this Agreement.

(b) **Title to the Property and Authority to Execute Documents.** Cooperator is sole legal owner of the Property in fee simple and the Property is not subject to any lease or to any other estate or to any outstanding option, lease or agreement of sale. Cooperator has full power and authority to execute, deliver and perform this Agreement.

(c) **No Condemnation.** There are no condemnation proceedings pending with regard to any portion of the Property and the Cooperator does not know of or have any proposed condemnation proceedings with regard to any portion of the Property.

(d) **No Hazardous Substance.** Cooperator warrants that, as it relates to the Property, no hazardous substance or toxic waste has been generated, treated, stored, used, disposed of, or deposited in or on the Property by the Cooperator, and warrants that it has no knowledge of any hazardous substance or toxic waste in or on the Property that may affect the Property or any use thereof or that may support a claim or cause of action under the common law or under any Federal, state or local environmental statute, regulations, ordinance, or other environmental regulatory requirement nor has any action been instituted for enforcement of same, nor is Property subject to any “Superfund Lien”.

(e) **No Brokers.** There are no commissions, fees or obligations owed any real estate brokers by Cooperator in connection with this transaction.

C. DU AND COOPERATOR AGREE:

1. That this agreement and the parties’ obligation herein are contingent upon acceptance and approval from the North Dakota Interagency Review Team as a wetland mitigation project. If the North Dakota Interagency Review Team does not accept or approve the project, any monies paid by DU to Cooperator shall be returned to DU within fifteen (15) days and the terms of this agreement shall be null and void.
2. To show the Project to potential bidders as deemed necessary and hold a pre-construction conference with the successful bidder prior to the commencement of Project construction.
3. To conduct a final inspection of the Site prior to accepting any completed Project developments. In the event the parties are unable to agree as to the acceptability of the completed Project developments, they shall select a mutually acceptable third party whose decision shall be binding.
4. To periodically review the Site management pursuant to this Agreement to study and consider any needed modifications within the confines of federally regulated requirements of mitigation.
5. To acknowledge the contribution of each party in any oral or written communications related to the Site. DU will provide mutually acceptable Project signs, and the Cooperator will erect and maintain these signs along roads, entrances, and/or convenient viewing locations on the Site in close proximity to the Project.

6. That this Agreement shall not be construed as binding either party to expend in any one fiscal year any sum in excess of authorized appropriations administratively allocated for the purpose of this Agreement, or to involve either party in any contract or other obligation for further expenditure of money in excess of such appropriations or allocations.

7. That the Site will be owned by Cooperator and that the Cooperator will work cooperatively with DU, which will be solely responsible for the Site's administration and management.

8. A. DU appoints Tim McNaboe as its Project Officer.

B. Cooperator appoints Lee M. Wahlund as its Project Officer.

The parties may change their respective Project Officer at any time by providing the other party with the name of their new Project Officer.

9. That Cooperator covenants that it will not, under any circumstances, bring lawsuit or claim against DU's individual employees, officers or directors and that Cooperator's sole remedy shall be against DU.

10. That this Agreement shall become effective upon the date first listed above and thereafter it will continue in force for a period of the life of the Project unless mutually terminated or modified through written amendment by the parties at an earlier date or unless Cooperator sells Property, in which case Cooperator is released from his obligations (except for those obligations contained in subsection C(1)) and the successor or assigns will be substituted for Cooperator pursuant to subparagraph C(11) below.

11. The terms and conditions of this Agreement shall apply to and bind successors and assigns of the Cooperator, and Cooperator (and any future successors or assigns) agrees to provide a copy of this Agreement to any putative purchaser prior to closing such that successors and assigns are aware of the obligations associated with the ownership of the Property. DU reserves the right to file a redacted version of this Agreement with the relevant local clerk's office so that putative purchasers will be aware of its existence.

12. That either party may terminate this Agreement by providing thirty (30) days written notice thereof to the other party if all or any portion of the Property is taken by any governmental agency by means of eminent domain, or pursuant to any compelling reasons of public health, safety or welfare. If all or a portion of the Property is taken as noted above, then DU shall receive the proportional amount of the remuneration, per its full and complete ownership of the value of its interest as agreed herein. If necessary, the parties shall jointly appoint an accountant or other expert to determine the proper division.

13. In addition to any other remedy specifically set forth in this Agreement, DU, its successors and assigns, and Cooperator, have the right to enforce the provisions of this Agreement through all legal remedies as provided by North Dakota law, to include the right to specific performance.

The election of one remedy available under this Agreement shall not constitute a waiver of other remedies.

14. This Agreement constitutes the sole and complete Agreement between the parties and representations or promises not included in this writing shall be binding upon any party to the agreement. No amendment, modification or attempt to supersede or cancel any terms or conditions hereof shall be effective unless such amendment, modification or direction to supersede or cancel such term or conditions in writing executed by DU and Cooperator. This Agreement shall be governed by the laws of the State of North Dakota.

15. The Effective Date of this Agreement shall be the first date above written.

16. If any term or covenant of its Agreement or the application thereof to any person or circumstance shall be invalid or unenforceable, the remainder of this Agreement shall be valid and enforceable to the fullest extent permitted by law. No waiver of the breach of any provision of this Agreement shall be construed to be a waiver of any subsequent breach of the same or of any other provision in this Agreement.

17. This Agreement may be executed in multiple counterparts, all of which executed counterparts shall constitute one complete document.

18. Each party hereto agrees to do all acts and things to make, execute and deliver such written instruments, as shall from time to time be reasonably required to carry out the terms and provisions of this agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first written above.

COOPERATOR.

BY: _____
Lee M. Wahlund

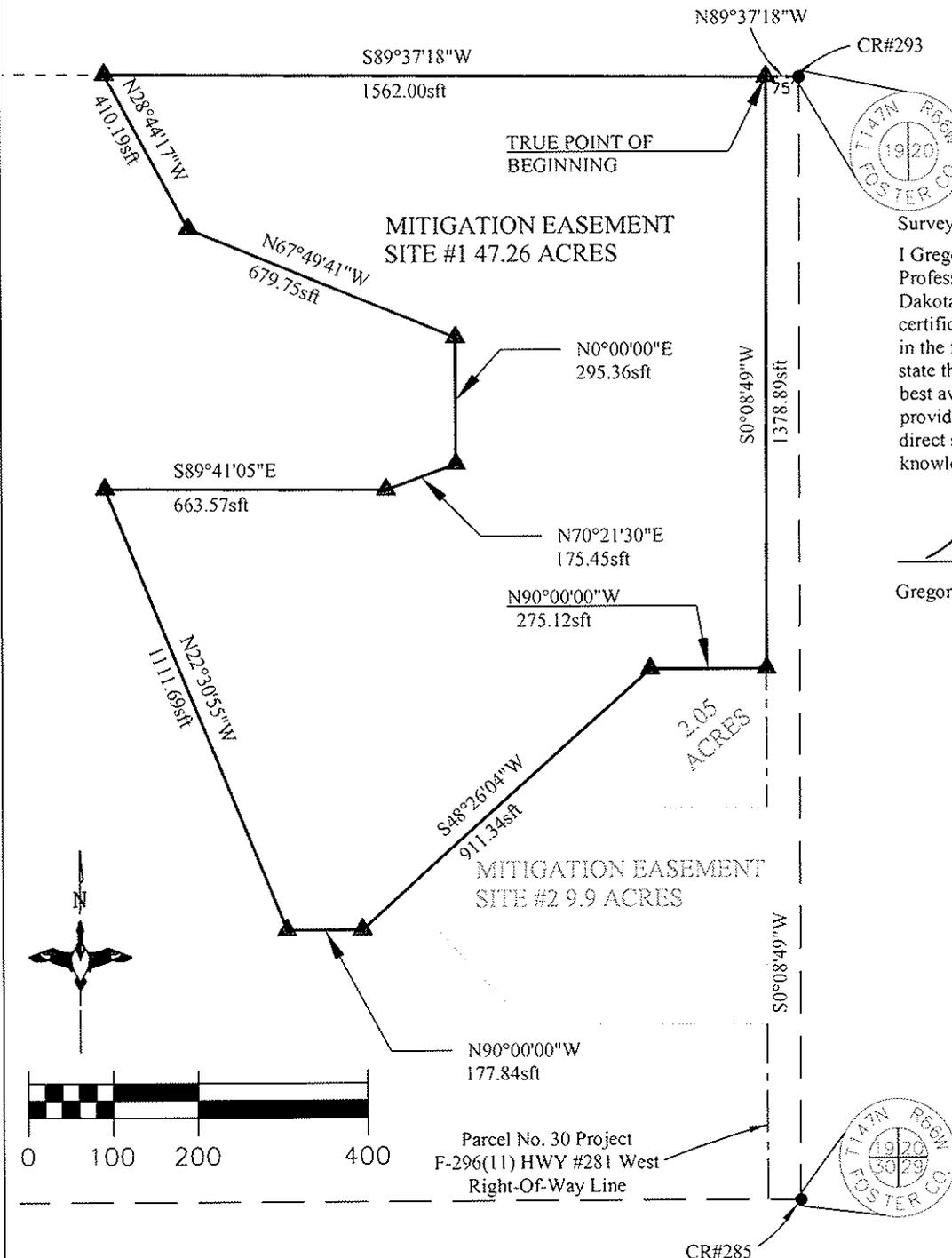
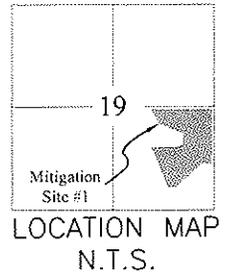
DUCKS UNLIMITED, INC.

BY: _____
Paul R. Schmidt
TITLE: Chief Conservation Officer

EXHIBIT A

MITIGATION CONSERVATION EASEMENT for a portion of SE ¼ Section 19 Township 147 Range 66 West of 5th Principle Meridian FOSTER COUNTY, NORTH DAKOTA

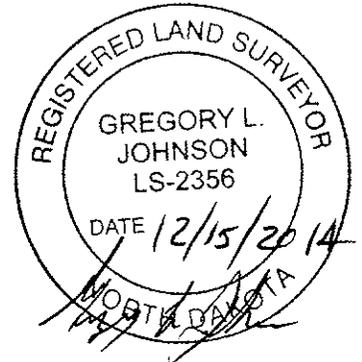
T147N R66W



Surveyor's Certificate

I Gregory L. Johnson a licensed and registered Professional Land Surveyor LS2356 in North Dakota hereby state the land owners shown on this certificate have caused this survey to be completed in the field according to their instructions. I further state that this survey was completed with all of the best available evidence from the field and of records provided me, and was done completely under my direct supervision and charge to the best of my knowledge and belief.

Gregory L. Johnson
 Gregory L. Johnson LS2356 North Dakota



LEGEND	
▲	SET 24" #5 REBAR W/2" ALUM CAP STAMPED DUCKS UNLIMITED 2356 FOR PROPERTY CORNER
○	CORNER NOT SET
●	IRON MONUMENT SET BY OTHERS PER CR RECORD
---	RIGHT OF WAY LINE
----	SECTION LINES
-----	QUARTER LINES
=====	PROPERTY LINE

PROPRIETOR'S CERTIFICATE STATEMENT

I, Lee M. Wahlund, being the owner/owners of the said SE ¼ of Section 19 have caused the above described 47.26 Acre tract of land lying within the said South East Quarter (SE ¼) of Section (19), Township One Hundred Forty Seven North (T147N), Range Sixty Six West (R66W) of the 5th Principal Meridian, Foster County, North Dakota to be surveyed and marked as a Mitigation Conservation Easement as shown on this survey, and hereby agree to this survey boundary and description.

Lee M. Wahlund

Mitigation Site # 1

A tract of land located in the South East Quarter (SE ¼) of Section Nineteen (19), Township One Hundred Forty Seven North (T147N), Range Sixty Six West (R66W) of the Fifth (5th) Principal Meridian, Foster County, North Dakota and being more specifically described as follows:

Commencing at the East One Quarter (E ¼) corner of said Section 19 as filed Corner Record #293 (CR #293); thence N89°37'18"E a distance of 75 feet to the West right-of-way line of parcel No. 30 on NDDOT project F-296 (11) highway number 281 to a #5 rebar with a 2" aluminum cap the True Point of Beginning; thence S0°08'49"W along the said West right-of-way line a distance of 1378.89 feet to the NE corner of a 2.05 Acre tract a #5 rebar with a 2" aluminum cap; thence N90°00'00"W along the North boundary of said 2.05 Acre tract a distance of 275.12 feet to the NW corner of said 2.05 Acre tract a #5 rebar with 2" aluminum cap; thence S48°26'04"W along the Northwesterly boundary of a 9.90 Acre tract a distance of 911.34 feet to a #5 rebar with 2" aluminum cap the Westerly most corner of said 9.90 Acre tract; thence N90°00'00"W a distance of 177.84 feet to a #5 rebar with 2" aluminum cap; thence S89°41'05"E a distance of 663.57 feet to a #5 rebar with 2" aluminum cap; thence N70°21'30"E a distance of 175.45 feet to a #5 rebar with 2" aluminum cap; thence N0°00'00"E a distance of 295.36 feet to a #5 rebar with 2" aluminum cap; thence N67°49'41"W a distance of 679.75 feet to a #5 rebar with 2" aluminum cap; thence N28°44'17"W a distance of 410.19 feet to a #5 rebar with 2" aluminum cap on the North line of the SE ¼ of said section 19; thence S89°37'18"W along the said North line of said SE ¼ of section 19 a distance of 1562.00 feet to the True Point of Beginning as shown on the plat. Said tract contains 47.26 Acres more or less.

STATE OF NORTH DAKOTA
 COUNTY OF FOSTER

On this _____ day of _____, 20__ A.D. before me, a Notary Public personally appeared _____, known to me to be the same person described herein and who executed the within and foregoing Proprietor's Certificate and acknowledged before me that he/she executed the same.

Notary Public
 State of North Dakota

Note: Basis of bearings was established from the use of UTM Zone 14 grid coordinates and all distances shown are ground distances in US feet all derived from an OPUS observation Solution Report from NGS observed for 2 hours and 32 minutes on the NAD83 (2011).

 GREAT PLAINS REGIONAL OFFICE DATE: 12-6-14	PROJECT NO. ND 534-1	DESIGNED BY: TMM
	WAHLUND WETLAND MITIGATION	DRAWN BY: CMH
SHEET NO. 1	APPROVED BY:	CHECKED BY: CLJ
	APPROVED BY:	

EXHIBIT B

**EASEMENT AGREEMENT
FOR WAHLUND MITIGATION SITE ACCESS AND MAINTENANCE**

This Wahlund Mitigation Site Access and Maintenance Agreement (“**Agreement**”) is made as of the below date, by and between Ducks Unlimited, Inc., created and organized under the laws of the District of Columbia and with a mailing address of One Waterfowl Way, Memphis, TN 38120 together with its heirs, personal representatives, successors, and assigns hereinafter collectively referred to as (“DU”), and Lee M. Wahlund (hereinafter “Owner”).

RECITALS

A. Owner owns certain real property located in Foster County, North Dakota as more particularly described in Exhibit A attached and incorporated hereto (the “**Owner’s Property**”); and,

B. DU and Owner have entered into a Site Specific Agreement (“SSA”) dated _____, included as Exhibit B to allow DU to undertake a wetland habitat restoration project on the Owner’s Property for the sole purpose of developing wetland mitigation credits acceptable to the Corps of Engineers (“Project”); and,

C. Construction of the Project will entail the installation of earthen embankments and upland seed mixes to restore wetland and grasslands. To complete the construction DU, or its contractors, will use large heavy construction equipment; and,

D. Operation of the Project will entail monitoring for a minimum of 5 years following construction of the wetland project. Monitoring will include the need to access the Owner’s Property for activities such as wetland delineations, wetland boundary surveys, weed identification, etc., and if required, repair of any issues that may arise during the life of the Project (i.e. dike erosion, etc.); this will require periodic access to the site and if required the use of construction equipment; and,

E. Long Term Management of the Project will be based on and will entail monitoring, weed spraying, mowing, grazing, burning, dike maintenance, etc; this will require periodic access to the site and if required the use of construction equipment; and,

F. The Project will be constructed, operated and managed long term according to the terms of a Corp of Engineers approved Mitigation Plan as described in 33CFR332.4(c) (“Mitigation Plan”). A copy of the Mitigation Plan when developed will be on file at the office of the Owner, DU and the Corps of Engineers. The construction, operation and long term management will be based on performance standards established in the approved Mitigation Plan for the Project. The Project will be undertaken at DU’s cost. In essence, DU shall have the right to access the property for the sole intention of implementing the Project according to the Mitigation Plan. These collective rights granted by the Owner to DU shall be referred to as the “Wahlund Mitigation Site Access Easement”.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Grant. Subject to compliance with the remaining provisions of this Agreement, Owner hereby grants to DU and its consultants, contractors, subcontractors and other agents an access easement and non-exclusive right of entry on, across and over the approximately 47.26 acres known as the Property (the "Easement"), for the sole purpose of undertaking the activities described in recital's C through F, and/or as required by law (such activities hereinafter collectively referred to as the "**Work**"). This Wahlund Mitigation Site Access Easement shall be 99 years in duration;

2. Limitations on Access. The Easement and rights of access granted hereby are expressly limited and restricted to the reasonably necessary use by DU, its consultants, contractors, subcontractors and other agents in performing the Work. At such time as any such equipment or material are no longer necessary to perform the Work, Company shall promptly remove such equipment and facilities from the Property.

3. Liens. DU shall save and keep the Easement free from all mechanic's and materialmen's liens and all other liens or claims, legal or equitable, arising from or associated with the Work. In the event any lien or claim arising from or associated with the Work, is filed by any person claiming by, through, or under DU, such lien or claim shall be removed and discharged by DU within ten (10) days of DU's receipt of written notice of the filing thereof.

4. Parties' Relationship. This Agreement is entered into by the parties solely to provide access to the Property for the limited purposes described herein and to define the rights, obligations, and liabilities of the parties associated therewith. Nothing contained in this Agreement shall be deemed or construed to make DU or its consultants, contractors, subcontractors and agents the employee or agent of Owner, or to create any partnership, joint venture, or other association between the parties hereto.

5. Successors and Assigns. This Agreement is personal to DU and Owner and shall inure to the benefit of, and be binding upon, their respective successors and assigns.

6. Notices. All notices, requests, demands or other communications hereunder shall be in writing and, addressed as follows:

If to Owner: Lee M. Wahlund
6723 HWY 200
Carrington, ND 58421

If to DU: TimMcNaboe
Ducks Unlimited, Inc
2525 River Road
Bismarck, ND 58503

All notices, requests, demands, and other communications must be in writing and shall be deemed to have been served if delivered by hand, or sent by telecopy or facsimile, or sent by certified United States mail, return receipt requested, with proper postage prepaid.

7. Attorney's Fees and Costs. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees and costs of investigation, in addition to any other relief to which the party may be entitled.

8. Governing Law. **THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NORTH DAKOTA WITHOUT REGARD TO LAWS GOVERNING CHOICE OF LAW OUTSIDE THE STATE.**

9. Alternative Dispute Resolution ("ADR"). In the event a dispute arises with respect to this Agreement, the parties agree to attempt in good faith to resolve such dispute through direct discussions among themselves. In the event such discussions are unsuccessful, the parties agree to attempt to resolve the dispute through non-binding mediation. A party may invoke the mediation process by providing written notice to the other party of its desire to mediate a dispute. The parties agree to conduct any such mediation in Foster County, North Dakota. The agreed upon or selected mediator shall be deemed the mediator for all future disputes arising under this Agreement, unless the parties otherwise agree in writing. The parties agree to share equally the costs of mediation. In the event mediation is unsuccessful, the parties agree to resolve their dispute through binding arbitration, in accordance with the Commercial Arbitration Rules then in force of the American Arbitration Association, with the parties to share equally the costs of arbitration. Such arbitration shall be binding and non-appealable.

10. Construction. The parties acknowledge that each party and, if it so chooses, its counsel have reviewed and revised this Agreement and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any amendments or exhibits hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in the manner appropriate to each, effective as of the date executed below.

GRANTOR:
LEE M. WAHLUND

By: _____
Name: Lee M. Wahlund
Title: Owner
Date: _____

GRANTEE:
DUCKS UNLIMITED, INC.

By: _____
Name: Paul R. Schmidt
Title: Chief Conservation Officer
Date: _____

THE STATE OF NORTH DAKOTA*
*
COUNTY OF _____ *

This instrument was acknowledged before me on the ____ day of _____, 2014, by Lee M. Wahlund whose title is _____ .

Notary Public, State of North Dakota

THE STATE OF TENNESSEE *
*
COUNTY OF SHELBY *

This instrument was acknowledged before me on the ____ day of _____, 2014, by _____ whose title is _____ for and on behalf of Ducks Unlimited, Inc.

Notary Public, State of Tennessee

EXHIBIT A – PROPERTY DESCRIPTION

EXHIBIT A - PROPERTY DESCRIPTION
INTENTIONALLY REMOVED

EXHIBIT B – SITE SPECIFIC AGREEMENT

EXHIBIT B - SITE SPECIFIC AGREEMENT
INTENTIONALLY REMOVED

DUCKS UNLIMITED, INC.

Lee M. Wahlund

SITE SPECIFIC AGREEMENT

ND-534-1

Wahlund Mitigation

This Agreement is effective this _____ day of _____, 2014 between Ducks Unlimited, Inc. (hereinafter "DU") and Lee M. Wahlund, (hereinafter "Cooperator").

WHEREAS, DU and the Cooperator have entered into this Agreement to assist in the development of the Wahlund Mitigation Project (hereinafter "Project") to develop a wetland, wetland mitigation credits and other natural resources on a 9.9 acre parcel as described in the Project Proposal attached as Exhibit A of this Agreement (hereinafter "Property") .

NOW, THEREFORE, in consideration of the above premises and other terms and conditions listed herein, DU and the Cooperator agree as follows:

A. DU AGREES TO:

1. Construct, or cause to be constructed, the Project, subject to the terms and conditions of this Agreement, in substantial compliance with the Site development plans and specifications developed pursuant to Section 3 of this Agreement.
2. Commence the construction of the Project in 2015. Should construction of the Project not commence during 2015 for reasons beyond the control of the parties including, but not limited to, the failure to timely obtain required permits, agreements, leases, approvals, and access rights necessary for the development of the Project, the parties will commence the construction of the Project in a mutually acceptable future year. The parties recognize the construction of the Project cannot be accomplished unless all required permits and approval from the Corps of Engineers are granted.
3. Obtain the topographical, soils, and hydrological data required to design the Project; prepare Site development plans and specifications for the Project; and submit same to Cooperator for review and mutual approval.
4. Prepare all Project bid specifications, accept or reject all contract bids, and be solely responsible for making any contract changes, additions, or deletions as the work progresses. The prime contractor shall be required to provide performance and payment bonds and carry casualty and liability insurance. The contracts shall provide that the contractor acknowledges that the

Cooperator is not a party and will assert no claims against the Cooperator in any disputes with subcontractors, materialmen, or DU.

5. Provide Project alignment and grade staking, and construction management services.
6. Provide funding in cash and in-kind services for the development of the Project in an amount to cover the total cost of project development.
7. Cooperator Payment. The cooperator will be paid as follows upon successful fulfillment of all obligations/requirements of this Agreement. A single payment in an amount not to exceed XXXXX XXXXX XXXXXXXXXX XXX XXXXXX Dollars (\$XXXXXX.00) will be made for development of the Project on the 9.9 acre Property: The total payment of \$XXXXXX is divided between the United States Fish and Wildlife Service (USFWS) value of a conservation easement and a separate site access and maintenance easement. The value of the USFWS easement will be determined in 2015, in accordance with USFWS policy. The value contribution of the USFWS easement will be reflected in a Statement of Just Compensation. The remainder dollar allocation will reflect the value contribution of the site access and maintenance easement. The distribution shall be made by DU to Cooperator prior to December 31, 2014, contingent upon all the obligations and/or requirements of this Agreement being first satisfied.
8. Obtain a Title Commitment. The commitment shall evidence the Cooperator's clear title to the Property and ability to deliver a clear easement interest. The Title Commitment and other documents to be prepared by the Cooperator, if any, must be submitted to DU at least ten (10) days before Closing. The Cooperator shall obtain a final title policy in the amount of the Purchase Price in the name of DU. DU shall be allowed a reasonable time after receipt of Title Commitment on the Property to examine same and make any objections to title. DU shall notify the Cooperator of any objections in writing or the objections will be deemed to be waived. If any objections are made, the Cooperator shall have fifteen (15) days from the receipt of the notice to correct the title. If the title is not corrected within fifteen (15) days, DU may elect to terminate this Agreement. Any mortgage or deed of trust encumbering the Property must be subordinated to the Deed of Conservation Easement or paid in full at closing.
9. Will pay closing costs such as any real estate transfer fee, escrow and title insurance or any similar charges including recording fees, upon recordation of the Deed of Conservation Easement.

B. COOPERATOR AGREES TO:

1. Convey conservation easements or similar long-term protections for the parcel. The landowner shall convey a Wetland and Grassland Perpetual Easement to the USFWS, if the USFWS is willing to accept said easement, for the mutually beneficial goals of the USFWS, the landowner, and DU of perpetual protection of habitat for wildlife (other resources). The landowner may not accept additional payment for the easement from the USFWS or other federal

agency. If the USFWS is unwilling to accept said easement, Cooperator agrees to convey to DU a ninety-nine (99) year conservation easement for the parcel for the protection of the property.

2. The Cooperator shall also convey a site access and maintenance easement for the parcel to DU. The mitigation easement (“Covenant”) shall include site access and maintenance provisions allowing DU, and its officers, employees, agents, and the like access rights necessary for the development and monitoring of the Property and Project. Access rights will be restricted for purposes related to the development, monitoring, and maintenance necessary to maintain the continuing viability and functioning of the Project. Such agreement shall run for the Project Life of ninety-nine (99) years. Said form Covenant is attached hereto in form as Exhibit B.

3. Provide to DU, and its officers, employees, agents, and the like, all reasonable assistance and cooperation necessary for the implementation of this Agreement.

4. Routinely inspect the Site when any construction is in progress, maintain written record of the construction activity, and keep DU advised of the Project construction.

5. Following Project construction, and thereafter provide routine inspection and keep DU advised of any maintenance necessary to maintain the continuing viability and functioning of the Project throughout the term of this Agreement.

6. Satisfy to the satisfaction of DU any delinquent real property taxes, all real property taxes which are due in the year of closing and all levied assessments at or before closing. All future real estate taxes and assessments, as well as the maintenance of general liability insurance shall remain the responsibility of Cooperator.

7. Cooperator relinquishes claim to ownership of wetland mitigation credits or to reimbursement from sale of wetland mitigation credits over the Project Life and provides exclusive right to DU to market and sell wetland mitigation credits developed by the Project.

8. Warrant and represent to DU, its successors and assigns, the matters contained in the following paragraphs. Said representations, warranties, and indemnities shall survive closing.

(a) **Notices.** The Cooperator has not received any notices issued by any municipal or other public authority with regard to any work or improvements done or ordered by such authority to be done either before or after the date of this Agreement.

(b) **Title to the Property and Authority to Execute Documents.** Cooperator is sole legal owner of the Property in fee simple and the Property is not subject to any lease or to any other estate or to any outstanding option, lease or agreement of sale. Cooperator has full power and authority to execute, deliver and perform this Agreement.

(c) **No Condemnation.** There are no condemnation proceedings pending with regard to any portion of the Property and the Cooperator does not know of or have any proposed condemnation proceedings with regard to any portion of the Property.

(d) **No Hazardous Substance.** Cooperator warrants that, as it relates to the Property, no hazardous substance or toxic waste has been generated, treated, stored, used, disposed of, or deposited in or on the Property by the Cooperator, and warrants that it has no knowledge of any hazardous substance or toxic waste in or on the Property that may affect the Property or any use thereof or that may support a claim or cause of action under the common law or under any Federal, state or local environmental statute, regulations, ordinance, or other environmental regulatory requirement nor has any action been instituted for enforcement of same, nor is Property subject to any “Superfund Lien”.

(e) **No Brokers.** There are no commissions, fees or obligations owed any real estate brokers by Cooperator in connection with this transaction.

C. DU AND COOPERATOR AGREE:

1. That this agreement and the parties’ obligation herein are contingent upon acceptance and approval from the North Dakota Interagency Review Team as a wetland mitigation project. If the North Dakota Interagency Review Team does not accept or approve the project, any monies paid by DU to Cooperator shall be returned to DU within fifteen (15) days and the terms of this agreement shall be null and void.
2. To show the Project to potential bidders as deemed necessary and hold a pre-construction conference with the successful bidder prior to the commencement of Project construction.
3. To conduct a final inspection of the Site prior to accepting any completed Project developments. In the event the parties are unable to agree as to the acceptability of the completed Project developments, they shall select a mutually acceptable third party whose decision shall be binding.
4. To periodically review the Site management pursuant to this Agreement to study and consider any needed modifications within the confines of federally regulated requirements of mitigation.
5. To acknowledge the contribution of each party in any oral or written communications related to the Site. DU will provide mutually acceptable Project signs, and the Cooperator will erect and maintain these signs along roads, entrances, and/or convenient viewing locations on the Site in close proximity to the Project.

6. That this Agreement shall not be construed as binding either party to expend in any one fiscal year any sum in excess of authorized appropriations administratively allocated for the purpose of this Agreement, or to involve either party in any contract or other obligation for further expenditure of money in excess of such appropriations or allocations.

7. That the Site will be owned by Cooperator and that the Cooperator will work cooperatively with DU, which will be solely responsible for the Site's administration and management.

8. A. DU appoints Tim McNaboe as its Project Officer.

B. Cooperator appoints Lee M. Wahlund as its Project Officer.

The parties may change their respective Project Officer at any time by providing the other party with the name of their new Project Officer.

9. That Cooperator covenants that it will not, under any circumstances, bring lawsuit or claim against DU's individual employees, officers or directors and that Cooperator's sole remedy shall be against DU.

10. That this Agreement shall become effective upon the date first listed above and thereafter it will continue in force for a period of the life of the Project unless mutually terminated or modified through written amendment by the parties at an earlier date or unless Cooperator sells Property, in which case Cooperator is released from his obligations (except for those obligations contained in subsection C(1)) and the successor or assigns will be substituted for Cooperator pursuant to subparagraph C(11) below.

11. The terms and conditions of this Agreement shall apply to and bind successors and assigns of the Cooperator, and Cooperator (and any future successors or assigns) agrees to provide a copy of this Agreement to any putative purchaser prior to closing such that successors and assigns are aware of the obligations associated with the ownership of the Property. DU reserves the right to file a redacted version of this Agreement with the relevant local clerk's office so that putative purchasers will be aware of its existence.

12. That either party may terminate this Agreement by providing thirty (30) days written notice thereof to the other party if all or any portion of the Property is taken by any governmental agency by means of eminent domain, or pursuant to any compelling reasons of public health, safety or welfare. If all or a portion of the Property is taken as noted above, then DU shall receive the proportional amount of the remuneration, per its full and complete ownership of the value of its interest as agreed herein. If necessary, the parties shall jointly appoint an accountant or other expert to determine the proper division.

13. In addition to any other remedy specifically set forth in this Agreement, DU, its successors and assigns, and Cooperator, have the right to enforce the provisions of this Agreement through all legal remedies as provided by North Dakota law, to include the right to specific performance.

The election of one remedy available under this Agreement shall not constitute a waiver of other remedies.

14. This Agreement constitutes the sole and complete Agreement between the parties and representations or promises not included in this writing shall be binding upon any party to the agreement. No amendment, modification or attempt to supersede or cancel any terms or conditions hereof shall be effective unless such amendment, modification or direction to supersede or cancel such term or conditions in writing executed by DU and Cooperator. This Agreement shall be governed by the laws of the State of North Dakota.

15. The Effective Date of this Agreement shall be the first date above written.

16. If any term or covenant of its Agreement or the application thereof to any person or circumstance shall be invalid or unenforceable, the remainder of this Agreement shall be valid and enforceable to the fullest extent permitted by law. No waiver of the breach of any provision of this Agreement shall be construed to be a waiver of any subsequent breach of the same or of any other provision in this Agreement.

17. This Agreement may be executed in multiple counterparts, all of which executed counterparts shall constitute one complete document.

18. Each party hereto agrees to do all acts and things to make, execute and deliver such written instruments, as shall from time to time be reasonably required to carry out the terms and provisions of this agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first written above.

COOPERATOR.

BY: _____
Lee M. Wahlund

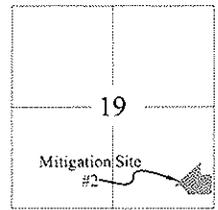
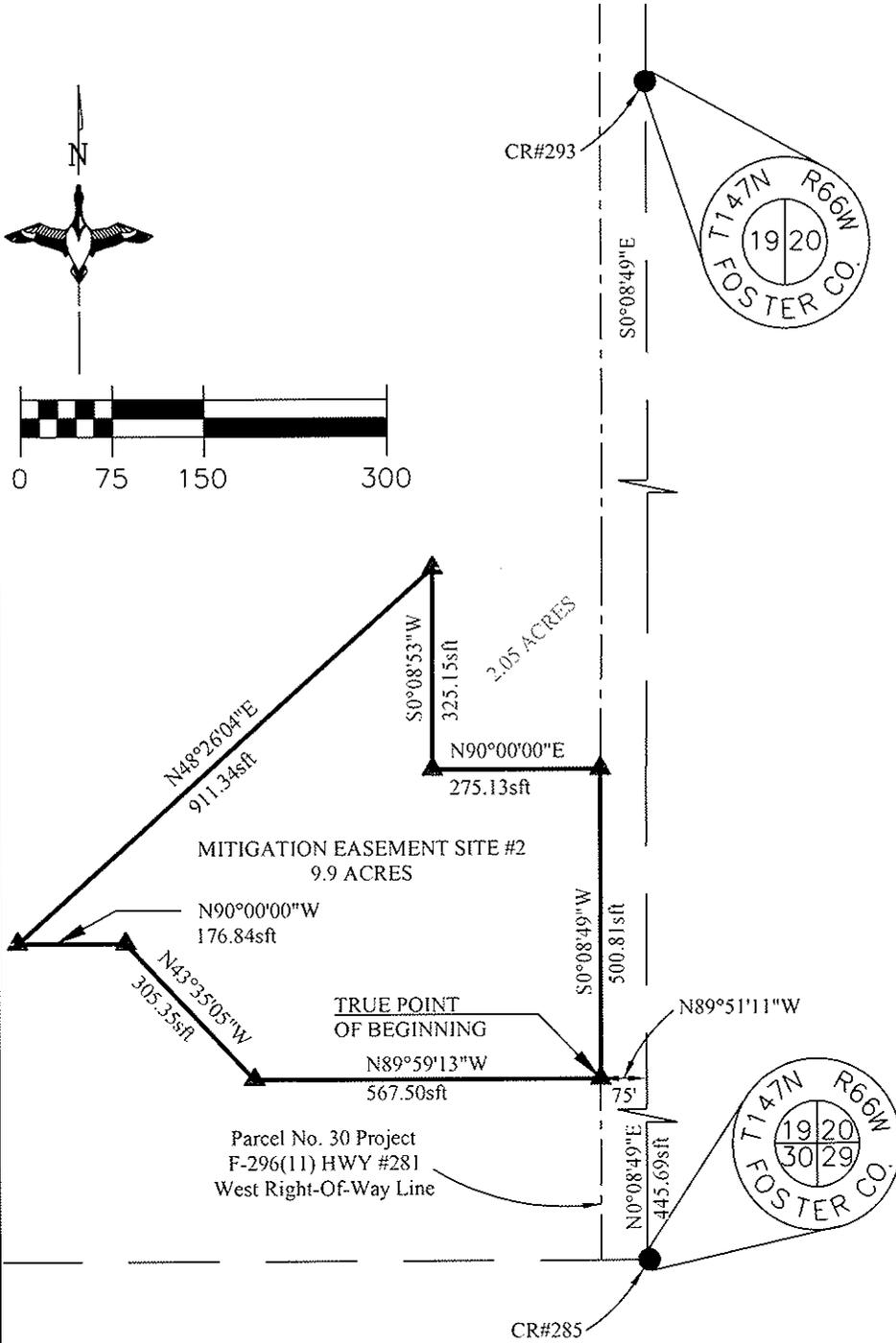
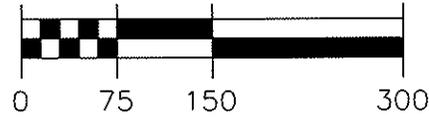
DUCKS UNLIMITED, INC.

BY: _____
Paul R. Schmidt
TITLE: Chief Conservation Officer

EXHIBIT A

MITIGATION CONSERVATION EASEMENT for a portion of SE $\frac{1}{4}$
 Section 19 Township 147 North Range 66 West of 5th Principal
 Meridian FOSTER COUNTY, NORTH DAKOTA

T147N R66W

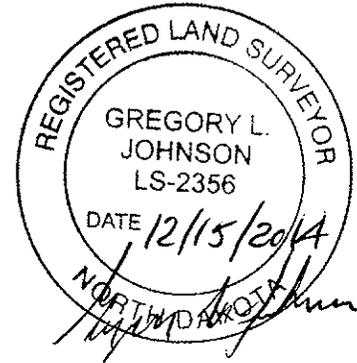


LOCATION MAP
N.T.S.

Surveyor's Certificate

I Gregory L. Johnson a licensed and registered Professional Land Surveyor LS2356 in North Dakota hereby state the land owners shown on this certificate have caused this survey to be completed in the field according to their instructions. I further state that this survey was completed with all of the best available evidence from the field and of records provided me, and was done completely under my direct supervision and charge to the best of my knowledge and belief.

Gregory L. Johnson
 Gregory L. Johnson LS2356 North Dakota



LEGEND	
▲	SET 24" #5 REBAR W/2" ALUM CAP STAMPED DUCKS UNLIMITED 2356 FOR PROPERTY CORNER
○	CORNER NOT SET
●	IRON MONUMENT SET BY OTHERS PER CR RECORD
---	RIGHT OF WAY LINE
---	SECTION LINES
---	PROPERTY LINE

PROPRIETOR'S CERTIFICATE STATEMENT

I, Lee M. Wahlund, being the owner/owners of the said SE $\frac{1}{4}$ of Section 19 have caused the above described 9.90 Acre tract of land lying within the said South East Quarter (SE $\frac{1}{4}$) of Section (19), Township One Hundred Forty Seven North (T147N), Range Sixty Six West (R66W) of the 5th Principal Meridian, Foster County, North Dakota to be surveyed and marked as a Mitigation Conservation Easement as shown on this survey, and hereby agree to this survey boundary and description.

Lee M. Wahlund

STATE OF NORTH DAKOTA
 COUNTY OF FOSTER

On this _____ day of _____, 20__ A.D. before me, a Notary Public personally appeared _____, known to me to be the same person described herein and who executed the within and foregoing Proprietor's Certificate and acknowledged before me that he/she executed the same.

Notary Public
 State of North Dakota

Mitigation Site # 2

A tract of land located in the South East Quarter (SE $\frac{1}{4}$) of Section Nineteen (19), Township One Hundred Forty Seven North (T147N), Range Sixty Six West (R66W) of the Fifth (5th) Principal Meridian, Foster County, North Dakota and being more specifically described as follows:

Commencing at the South East (SE) corner of said Section 19 as filed Corner Record #285 (CR #285) thence N0°08'49"E along the East line of said SE $\frac{1}{4}$ a distance of 445.69 feet; thence N89°51'11"W a distance of 75 feet to the West right-of-way line of parcel No. 30 on NDDOT project F-296 (11) highway number 281 to a #5 rebar with a 2" aluminum cap the True Point of Beginning; thence N89°59'13"W a distance of 567.50 feet to a #5 rebar with a 2" aluminum cap; thence N43°35'05"W a distance of 305.35 feet to a #5 rebar with a 2" aluminum cap; thence N90°00'00"W a distance of 176.84 feet to a #5 rebar with a 2" aluminum cap; thence N48°26'04"E a distance of 911.34 feet to a #5 rebar with a 2" aluminum cap the NW corner of a 2.05 Acre tract; thence S0°08'53"W along the West line of a 2.05 Acre tract a distance of 325.15 feet to a #5 rebar with a 2" aluminum cap and the SW corner of a 2.05 Acre tract; thence N90°00'00"E along the south line of a 2.05 Acre tract a distance of 275.13 feet to a #5 rebar with 2" aluminum cap being the SE corner of a 2.05 Acre tract an on the West right-of-way of parcel No. 30 on NDDOT project F-296 (11) on highway #281; thence S0°08'49"W along said West right-of-way a distance of 500.81 feet to the True Point of Beginning as shown on the plat. Said tract contains 9.90 Acres more or less.

NOTE: Basis of bearings was established from the use of UTM Zone 14 grid coordinates and all distances shown are ground distances in US feet all derived from an OPUS observation Solution Report from NGS observed for 2 hours and 32 minutes on the NAD83 (2011).

 GREAT PLAINS REGIONAL OFFICE DATE: 12-6-14	PROJECT NO. ND 534-1 WAHLUND WETLAND MITIGATION	DESIGNED BY: TMM DRAWN BY: CMH SURVEYED BY: GLJ CHECKED BY:
	SHEET NO. 1	APPROVED BY:

EXHIBIT B

**EASEMENT AGREEMENT
FOR WAHLUND MITIGATION SITE ACCESS AND MAINTENANCE**

This Wahlund Mitigation Site Access and Maintenance Agreement (“**Agreement**”) is made as of the below date, by and between Ducks Unlimited, Inc., created and organized under the laws of the District of Columbia and with a mailing address of One Waterfowl Way, Memphis, TN 38120 together with its heirs, personal representatives, successors, and assigns hereinafter collectively referred to as (“DU”), and Lee M. Wahlund (hereinafter “Owner”).

RECITALS

A. Owner owns certain real property located in Foster County, North Dakota as more particularly described in Exhibit A attached and incorporated hereto (the “**Owner’s Property**”); and,

B. DU and Owner have entered into a Site Specific Agreement (“SSA”) dated _____, included as Exhibit B to allow DU to undertake a wetland habitat restoration project on the Owner’s Property for the sole purpose of developing wetland mitigation credits acceptable to the Corps of Engineers (“Project”); and,

C. Construction of the Project will entail the installation of earthen embankments and upland seed mixes to restore wetland and grasslands. To complete the construction DU, or its contractors, will use large heavy construction equipment; and,

D. Operation of the Project will entail monitoring for a minimum of 5 years following construction of the wetland project. Monitoring will include the need to access the Owner’s Property for activities such as wetland delineations, wetland boundary surveys, weed identification, etc., and if required, repair of any issues that may arise during the life of the Project (i.e. dike erosion, etc.); this will require periodic access to the site and if required the use of construction equipment; and,

E. Long Term Management of the Project will be based on and will entail monitoring, weed spraying, mowing, grazing, burning, dike maintenance, etc; this will require periodic access to the site and if required the use of construction equipment; and,

F. The Project will be constructed, operated and managed long term according to the terms of a Corp of Engineers approved Mitigation Plan as described in 33CFR332.4(c) (“Mitigation Plan”). A copy of the Mitigation Plan when developed will be on file at the office of the Owner, DU and the Corps of Engineers. The construction, operation and long term management will be based on performance standards established in the approved Mitigation Plan for the Project. The Project will be undertaken at DU’s cost. In essence, DU shall have the right to access the property for the sole intention of implementing the Project according to the Mitigation Plan. These collective rights granted by the Owner to DU shall be referred to as the “Wahlund Mitigation Site Access Easement”.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Grant. Subject to compliance with the remaining provisions of this Agreement, Owner hereby grants to DU and its consultants, contractors, subcontractors and other agents an access easement and non-exclusive right of entry on, across and over the approximately 9.9 acres known as the Property (the "Easement"), for the sole purpose of undertaking the activities described in recital's C through F, and/or as required by law (such activities hereinafter collectively referred to as the "**Work**"). This Wahlund Mitigation Site Access Easement shall be 99 years in duration;

2. Limitations on Access. The Easement and rights of access granted hereby are expressly limited and restricted to the reasonably necessary use by DU, its consultants, contractors, subcontractors and other agents in performing the Work. At such time as any such equipment or material are no longer necessary to perform the Work, Company shall promptly remove such equipment and facilities from the Property.

3. Liens. DU shall save and keep the Easement free from all mechanic's and materialmen's liens and all other liens or claims, legal or equitable, arising from or associated with the Work. In the event any lien or claim arising from or associated with the Work, is filed by any person claiming by, through, or under DU, such lien or claim shall be removed and discharged by DU within ten (10) days of DU's receipt of written notice of the filing thereof.

4. Parties' Relationship. This Agreement is entered into by the parties solely to provide access to the Property for the limited purposes described herein and to define the rights, obligations, and liabilities of the parties associated therewith. Nothing contained in this Agreement shall be deemed or construed to make DU or its consultants, contractors, subcontractors and agents the employee or agent of Owner, or to create any partnership, joint venture, or other association between the parties hereto.

5. Successors and Assigns. This Agreement is personal to DU and Owner and shall inure to the benefit of, and be binding upon, their respective successors and assigns.

6. Notices. All notices, requests, demands or other communications hereunder shall be in writing and, addressed as follows:

If to Owner: Lee M. Wahlund
6723 HWY 200
Carrington, ND 58421

If to DU: TimMcNaboe
Ducks Unlimited, Inc
2525 River Road
Bismarck, ND 58503

All notices, requests, demands, and other communications must be in writing and shall be deemed to have been served if delivered by hand, or sent by telecopy or facsimile, or sent by certified United States mail, return receipt requested, with proper postage prepaid.

7. Attorney's Fees and Costs. If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees and costs of investigation, in addition to any other relief to which the party may be entitled.

8. Governing Law. **THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NORTH DAKOTA WITHOUT REGARD TO LAWS GOVERNING CHOICE OF LAW OUTSIDE THE STATE.**

9. Alternative Dispute Resolution ("ADR"). In the event a dispute arises with respect to this Agreement, the parties agree to attempt in good faith to resolve such dispute through direct discussions among themselves. In the event such discussions are unsuccessful, the parties agree to attempt to resolve the dispute through non-binding mediation. A party may invoke the mediation process by providing written notice to the other party of its desire to mediate a dispute. The parties agree to conduct any such mediation in Foster County, North Dakota. The agreed upon or selected mediator shall be deemed the mediator for all future disputes arising under this Agreement, unless the parties otherwise agree in writing. The parties agree to share equally the costs of mediation. In the event mediation is unsuccessful, the parties agree to resolve their dispute through binding arbitration, in accordance with the Commercial Arbitration Rules then in force of the American Arbitration Association, with the parties to share equally the costs of arbitration. Such arbitration shall be binding and non-appealable.

10. Construction. The parties acknowledge that each party and, if it so chooses, its counsel have reviewed and revised this Agreement and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any amendments or exhibits hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in the manner appropriate to each, effective as of the date executed below.

GRANTOR:
LEE M. WAHLUND

By: _____
Name: Lee M. Wahlund
Title: Owner
Date: _____

GRANTEE:
DUCKS UNLIMITED, INC.

By: _____
Name: Paul R. Schmidt
Title: Chief Conservation Officer
Date: _____

THE STATE OF NORTH DAKOTA*
*
COUNTY OF _____ *

This instrument was acknowledged before me on the ____ day of _____, 2014, by Lee M. Wahlund whose title is _____ .

Notary Public, State of North Dakota

THE STATE OF TENNESSEE *
*
COUNTY OF SHELBY *

This instrument was acknowledged before me on the ____ day of _____, 2014, by _____ whose title is _____ for and on behalf of Ducks Unlimited, Inc.

Notary Public, State of Tennessee

EXHIBIT A – PROPERTY DESCRIPTION

EXHIBIT A - PROPERTY DESCRIPTION
INTENTIONALLY REMOVED

EXHIBIT B – SITE SPECIFIC AGREEMENT

EXHIBIT B - SITE SPECIFIC AGREEMENT
INTENTIONALLY REMOVED

APPENDIX B

Carlson McCain Scope and Effect Determination

WETLAND DELINEATION AND DETERMINATION

Wahlund Mitigation Site
SE¼ of Section 19, T147N, R66W
Project #5383

Prepared for:
Mr. Tim McNaboe
Ducks Unlimited, Inc.
2525 River Road
Bismarck, ND 58503

December 16, 2014



600 South 2nd Street, Suite 105
Bismarck, ND 58504
Tel 701-255-1475
Fax 701-255-1477
www.carlsonmccain.com

ENVIRONMENTAL • ENGINEERING • LAND SURVEYING

Wahlund Mitigation Site Wetland Delineation and Determination
SE¼ of Section 19, T147N, R66W
Foster County, North Dakota

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Appendix B USACE Wetland Determination Data Forms
Appendix C Scope and Effect Data Form
Appendix D Field Photographs

1.0 INTRODUCTION

Carlson McCain, Inc. (Carlson McCain) conducted a wetland delineation and determination for Ducks Unlimited, Inc. (DU), within the Wahlund Mitigation Site, located in the SE¼ of Section 19, T147N, R66W, Foster County, North Dakota (Project Area). Please refer to figures in Appendix A. DU is proposing to develop the site for wetland mitigation purposes.

The Project Area is approximately 58 acres in size. The Project Area is located in the Drift Plains sub-core region with a landscape that is gently rolling and composed of fertile soils derived from glacial till and high concentrations of temporary and seasonal wetlands (Bryce et al. 1998). The Project Area is located in the James River Headwaters (10160001) Hydrologic Unit. The Project Area consists of an agriculture field with an extensive cropping history.

The wetland delineation and determination was conducted on October 29, 2014 by Greg Meyer, Ecologist, Carlson McCain, Inc. and Larry Edland, Professional Soil Classifier, Edland's Soil Consulting. Larry evaluated soils and hydrology present in the Project Area while Greg evaluated vegetation and conducted the scope and effect determination.

2.0 PROCEDURES

The wetland field delineation and determination was conducted in accordance with the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Manual).

Resource information was used to identify and aid in delineation of possible wetlands within the Project Area. Foster County NAIP 2012, 2010, 2009, and 2005 aerial photographs; U.S. Fish and Wildlife Service National Wetland Inventory (USFWS, 2014); U.S. Geological Survey (USGS) National Hydrography Dataset; and the digital web soil survey of Foster County (USDA-NRCS, 2014) were consulted prior to the wetland field delineation and determination.

The wetland areas were systematically evaluated by using numerous observation points to define their boundaries. The frequency of observation points was increased in transitional areas between uplands and lower areas to accurately identify wetland boundaries based on soils, vegetation, hydrology, and landscape. A single representative point observation and the wetland boundaries were digitally recorded with a Trimble GeoXH Global Positioning System (GPS).

The wetland areas were documented with single observation points. Wetland soil pits were evaluated for possible wetland areas. A description of the wetland type and documentation of the vegetation, hydrology, and hydric soils of potential wetlands were recorded on the associated USACE Wetland Determination Data Forms (Appendix B) and are identified by site number. Climatic and weather conditions were considered typical prior to and during the time of the onsite determinations.

Existing vegetation was classified using hydrophytic vegetation criteria outlined in the Manual and the *North American Digital Flora: National Wetland Plant List* (Lichvar, 2014). Hydric soil indicators were determined using the *Field Indicators of Hydric Soils in the United States; Guide for Identifying and Delineating Hydric Soils, Version 7.0* (USDA-NRCS, 2010). Hydrology was determined onsite by observation of hydrologic indicators. Aerial photography was used to assist hydrologic determinations.

During the scope and effect determination of the manipulated wetlands, elevations for the wetland low, current channel, original channel, natural overflow, and wetland boundary were recorded using a De-Walt Self-Leveling laser level and receiver. ND-CPA-339 forms were completed with the recorded elevations for manipulated wetlands located in the Project Area (Appendix C).

Sediment depths were measured in all wetland basins and drainage ditches. Accumulated sediment in constructed drains and natural wetland basins are the result of erosion from cultivated fields, regular farming practices, and normal deposition. In addition, natural wetlands can contain fill resulting from drainage activities. These fill materials, if they occur, are most often random in the wetland and are of varying thickness. Sediment in wetlands from erosion and farming practices is generally more significant on the outer margins of wetlands and often does not occur throughout the wetland basin. Sediment and fill material are recognized by observation of soil color, texture, structure, the presence of calcium carbonate (effervescence), stratification, horizon thickness, distinctness and topography of horizon boundaries, depth to undisturbed soil horizons and substratum material, and evidence of

mixing. Within the drainage ditches, sediment depths were measured from the parent material to the soil surface.

Present and original depth of ponding was calculated for manipulated wetlands in the project area. Present depth of ponding is calculated by subtracting the current channel high spot elevation (B) from the wetland low elevation (A) ($A-B = \text{present depth of ponding}$). Original depth of ponding is calculated by subtracting the original channel high spot elevation (C) from the wetland low elevation (A) ($A-C = \text{original depth of ponding}$).

If the channel elevation ($C=10.0$) is lower than the wetland low ($A=9.9$), the resulting depth of ponding calculation is a negative number and thus results in the calculated total loss of hydrology of the wetland basin ($[A=9.9] - [C=10.0] = -0.1$). Conversely, if the channel elevation ($C=9.8$) is higher than the wetland low ($A=9.9$), the depth of ponding calculation is a positive number and will result in only partial loss of hydrology of the wetland basin ($[A=9.9] - [B=9.8] = 0.1$).

Original channel elevations were calculated by measuring the sediment found within the drainage ditch. The original channel elevation is calculated by adding the sediment depth and half of the mixed soil layer to the current channel high spot elevation. If sediment depths were measured to be greater than 6 inches, the mixed soil layer was assumed to be 6 inches deep, i.e., 10" total sediment = half the mixed layer ($6"/2=3"$) + 4" sediment = 7" sediment for original channel elevation calculations. If the sediment depth was measured to be less than six inches, then it is assumed to be in the mixed layer and is divided in half, i.e., 4" sediment = $4"/2 = 2"$ sediment for the original channel elevation calculation.

3.0 RESULTS

Seven drained wetlands and one non-manipulated (undrained) wetland was delineated within the Project Area. Wetlands 1-7 were determined to be effectively drained and are not providing wetland functions. The majority of these wetlands have also been filled with 16-25 inches of upland soils to allow agriculture production. If restored these drained wetlands should be credited with a 1:1 ratio. Wetland 1 does have some hydrophytic vegetation within it even though hydrology has been effectively drained away but this is due to the high levels of salinity. The surface drains that flow from many of the wetlands have not been recently maintained. Regular maintenance of the drains would effectively remove all hydrology and any presence of hydrophytic vegetation within them.

Wetland 8 is a large depression wetland that has cattails (*Typha* spp.) within its interior and foxtail barley (*Hordeum jubatum*) along its hydric boundary.

A description of the wetland type and documentation of the vegetation, hydrology, and hydric soils of representative sites were recorded on the associated U.S. Army Corps of Engineers Wetland Determination Data Forms (Appendix B) and are identified by site number. Completed ND-CPA-339 forms are included in Appendix C. Table 1 provides a summary of findings for the wetlands determined in the Project Area.

Table 1. Wetland Delineation and Determination Results

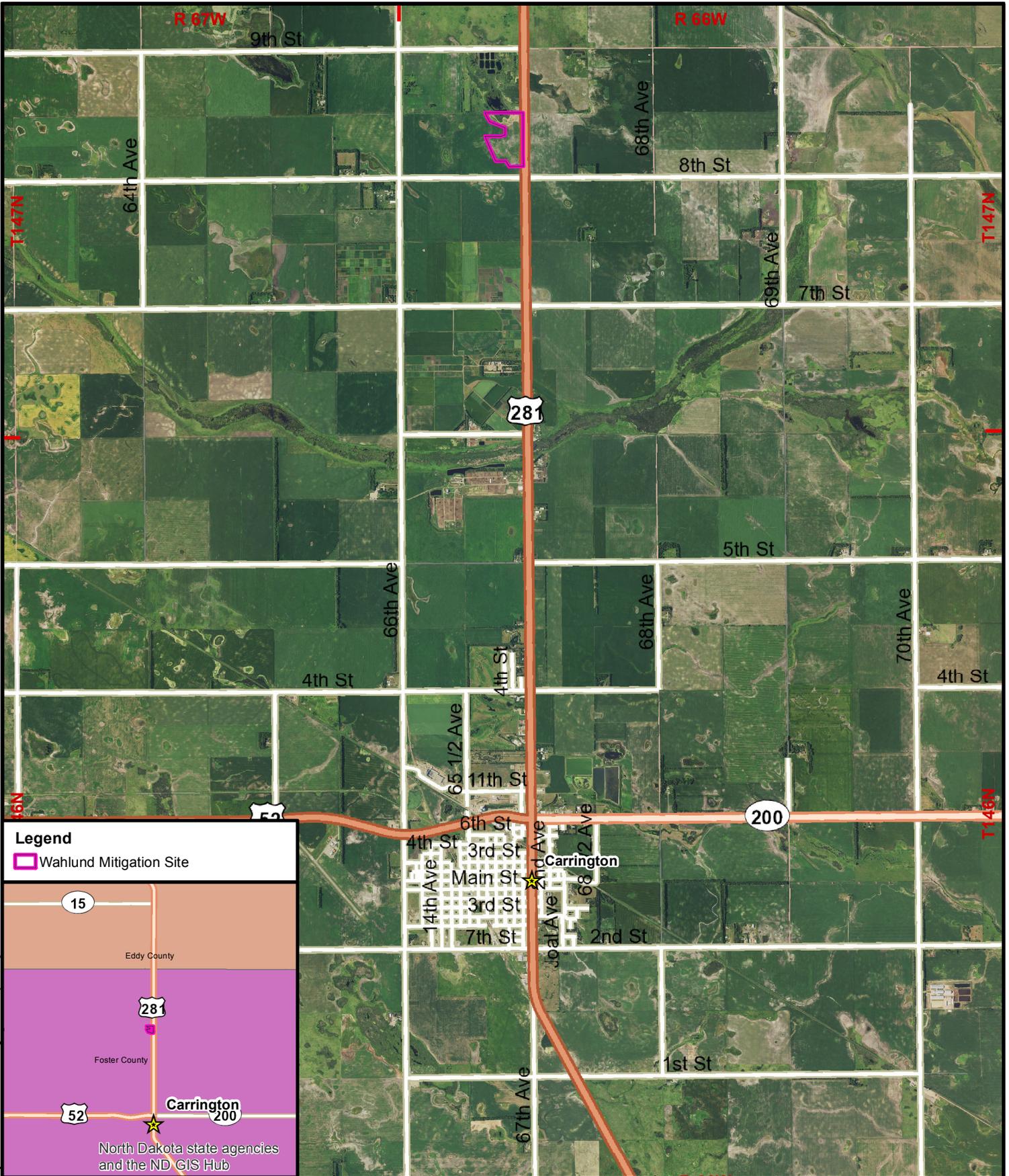
Wetland	Original Acreage	Depth of Ponding		Drainage	Current Acreage
		Current	Original		
1	1.2	-0.35	-1.15	Complete	0.0
2	2.4	-0.1	-0.85	Complete	0.0
3	0.3	-0.1	-0.85	Complete	0.0
4	0.3	0.25	-0.33	Complete	0.0
5	0.7	0.55	-0.49	Complete	0.0
6	0.3	0.1	-0.95	Complete	0.0
7	1.0	0.15	-0.89	Complete	0.0
8	6.2	NA	NA	NA	6.2

4.0 REFERENCES

- Bryce, Sandra. James M. Omernik, David E. Pater, Michael Ulmer, Jerome Schaar, Jerry Freeouf, Rex Johnson, Pat Kuck, and Sandra H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/index.htm> (Version 30NOV1998). Accessed October 2014.
- Environmental Laboratory. 1987. *Corp of Engineers Wetlands Delineation Manual*. Wetlands Research Program. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, US Army Corp of Engineers, Vicksburg, Mississippi, USA.
- Environmental Laboratory. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*. U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi, USA.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. *The National Wetland Plant List: 2014 Update of Wetland Ratings*. Phytoneuron 2014-41: 1-42. Accessed October 2014.
- USDA-NRCS. 2010. *Field Indicators of Hydric Soils in the United States—Guide for Identifying and Delineating Hydric Soils, Version. 7.0* in G.W. Hurt, L.M. Vasilas, and C.V. Noble, editors. USDA-NRCS in cooperation with the National Technical Committee for Hydric Soils.
- USDA-NRCS. 2014. Soil Survey of Foster County, North Dakota. <http://websoilsurvey.nrcs.usda.gov/app> Accessed October 2014.
- USFWS. 2014. United States Fish and Wildlife Service. National Wetlands Inventory. <http://wetlandsfws.er.usgs.gov/NWI/> Accessed October 2014.

Appendix A

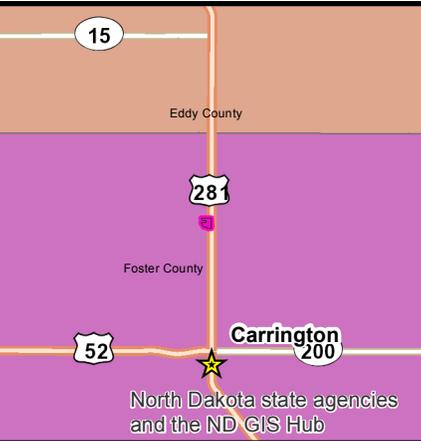
Figures



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Legend

Wahlund Mitigation Site



1:63,360

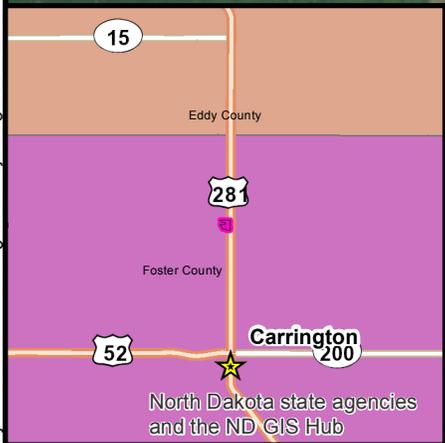
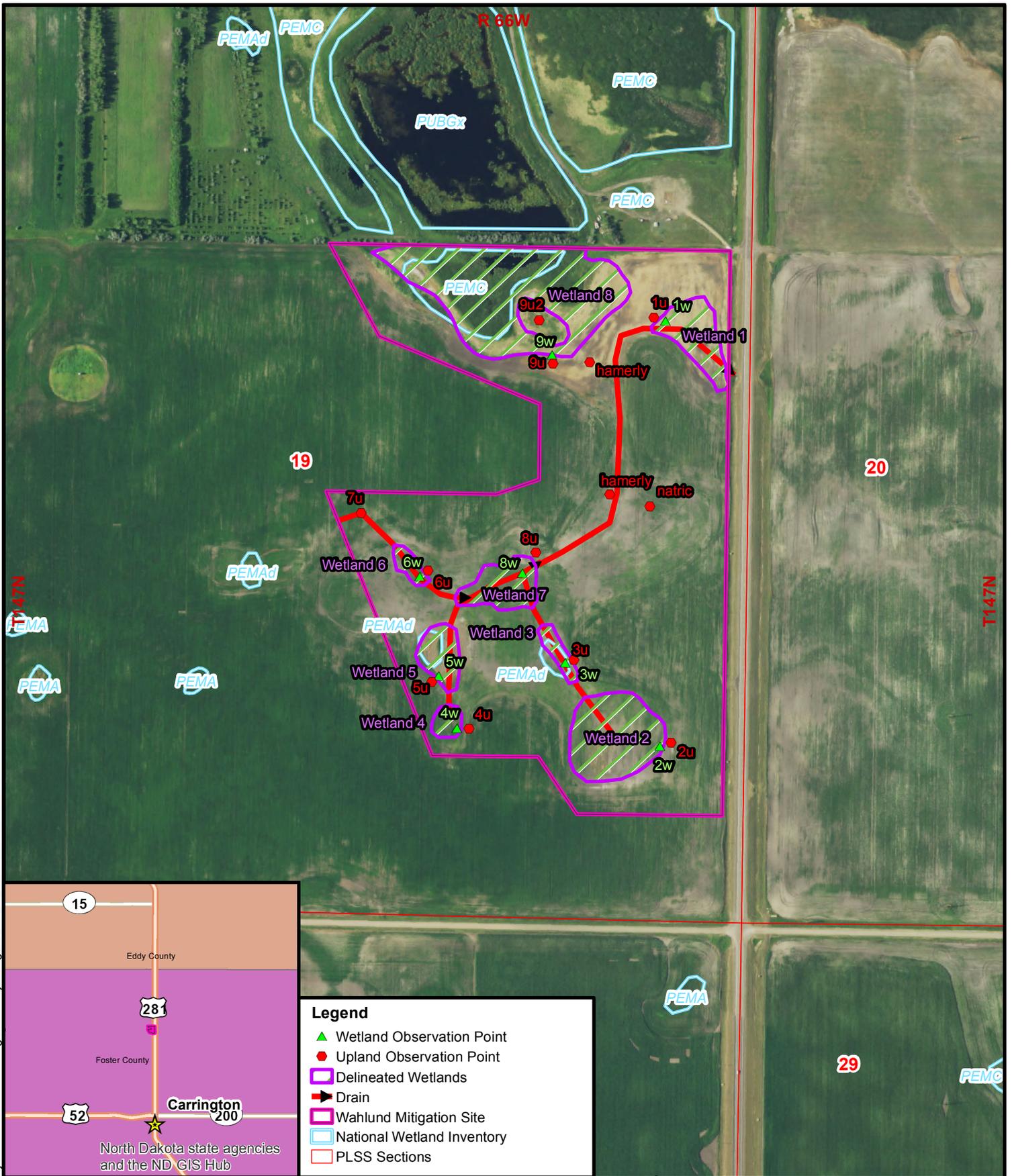


Basemap: NAIP Orthophoto 2014
Foster County, North Dakota



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McCain**
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Figure 1
General Location
 Section 19, T147N, R66W
Wahlund Mitigation Site



Legend

- ▲ Wetland Observation Point
- Upland Observation Point
- ▭ Delineated Wetlands
- ➔ Drain
- ▭ Wahlund Mitigation Site
- ▭ National Wetland Inventory
- ▭ PLSS Sections

1:6,000

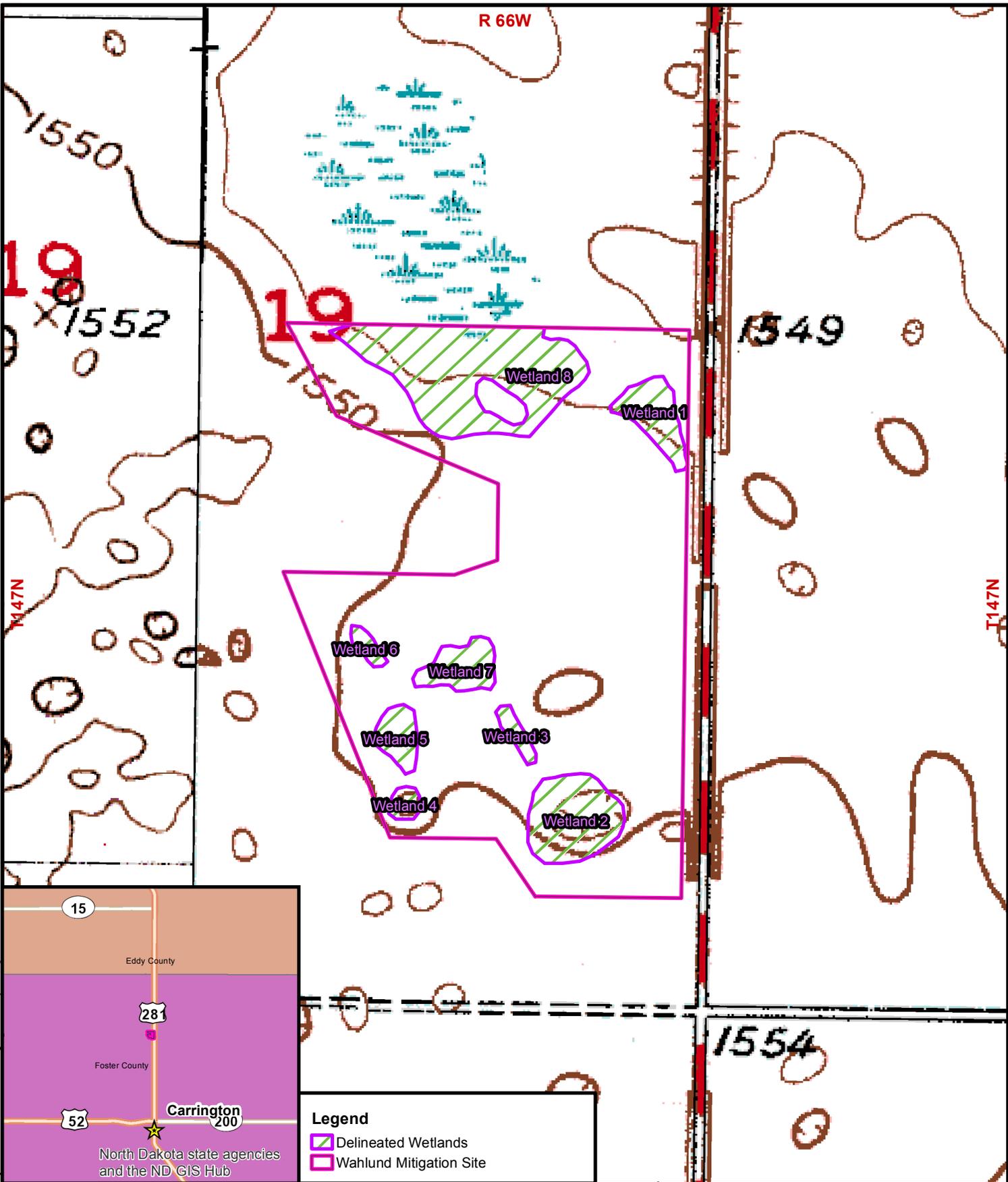
0 250 500 Feet

Basemap: NAIP Orthophoto 2014
Foster County, North Dakota

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Figure 2
Delineated Wetlands
Section 19, T147N, R66W
Wahlund Mitigation Site



December 2014 E:\Projects\DU\Wahlund Mitigation Project\figures\Wahlund_Topo.mxd

1:6,000

0 250 500 Feet

Basemap: USGS Topographical Quadrangle
New Rockford SE (47099e1), 1950



Legend

- Delineated Wetlands
- Wahlund Mitigation Site

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Figure 3
Topography
Section 19, T147N, R66W
Wahlund Mitigation Site

Appendix B

USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 1W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave/Concavee Slope (%): <1%
 Subregion (LRR): E Lat: 47.536288 Long: -99.118720 Datum: NAD 83
 Soil Map Unit Name: G225A Larson-Cathy loams, 0 to 3 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland - effectively drained.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: 5')				
1. <u>Hordeum jubatum</u>	50	yes	FACW	
2. <u>Cirsium arvense</u>	10	no	FACU	
3. <u>Bassia scoparia</u>	10	no	FAC	
4. <u>Artemisia biennis</u>	10	no	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			80 = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>20</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Vegetation present due to high salinity even though hydrology has been effectively drained.

SOIL

Sampling Point: Site 1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-9	10YR 2/1	100					Cl	Ap
9-16	10YR 4/1	85	10YR5/4	15	C	M	C	A
16-23	10Y 4/1	98	10YR 4/4	2	C	M	C	
23-30	2.5Y6/2	95	10YR 5/6	5	C	M	I	
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 1U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex/Convex Slope (%): 3%
 Subregion (LRR): F Lat: 47.536319 Long: -99.118907 Datum: NAD 83
 Soil Map Unit Name: G225A Larson-Cathay loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland comparison point.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: <u>5'</u>)				
1. <u>Bassia scoparia</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Hordeum jubatum</u>	<u>55</u>	<u>yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u>			= Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>5</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Salinity causing hydrophytic vegetation to be present.

SOIL

Sampling Point: Site 1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-6	10YR 3/1	100					Cl	Ap
6-13	2.5Y 5/2	60	2.5Y 5/6	5	C	M	Cl	Bk1
	2.5Y 5/3	35						
13-23	2.5Y 5/3	95	2.5Y 5/6	5	C	M	Cl	Bk2

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

Upland sideslope 3%

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: Natric
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Linear/Concave Slope (%): 1%
 Subregion (LRR): E Lat: 47.534302 Long: -99.118925 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Natric (non-hydric) soils in broad swale.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: 5')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			0 = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum 100				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

SOIL

Sampling Point: Site Natic

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-5	10YR 2/1	100	_____	_____	_____	_____	L	Ap
5-11	10YR 2/1	100	_____	_____	_____	_____	Sic	Btn1
11-15	10YR 2/1	100	_____	_____	_____	_____	Sic	Btn2
15-22	2.5Y 5/2	98	2.5Y 5/4	2	C	M	Sicl	Bk1
22+	2.5Y 5/3	95	_____	_____	_____	_____	_____	Bk2
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF 12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:
Cavour series

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	(where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 2W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave/Linear Slope (%): <1%
 Subregion (LRR): E Lat: 47.531739 Long: -99.118721 Datum: NAD 83
 Soil Map Unit Name: G212A Vallers-Fram loams, saline 0 to 2 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland - effectively drained and filled. Approximately 17-25 inches of fill on original surface throughout wetland area. Soybeans planted across wetland area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>0</u> = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>100</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Vegetation removed due to agriculture practices. Refer to nearby reference site 9 located in 19-147-66 for hydrophytic vegetation information.

SOIL

Sampling Point: Site 2W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-5	10YR 2/1	100	_____	_____	_____	_____	L	_____
5-17	10YR 5/1	100	_____	_____	_____	_____	L	_____
17-22	2.5Y 5/2	98	2.5Y 5/4	2	C	M	L	_____
22-30	2.5Y5/2	90	2.5Y 5/4	10	C	M	Cl	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

0-8" 10YR 3/1 Cl Fill Material
8-17" 2.5Y 5/3 & 5/4 Cl Fill Material
Vallers series with 17 - 25 inches of fill over original surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
Water Table Present? Yes No Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

D5 assumed from reference vegetation.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 2U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Linear/Convex Slope (%): 2%
 Subregion (LRR): E Lat: 47.531775 Long: -99.118543 Datum: NAD 83
 Soil Map Unit Name: G212A Vallers-Fram loams saline, 0 to 2 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: upland comparison point			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: 5')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
0 = Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum 100				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
No vegetation - removed dur to agriculture practicies.

SOIL

Sampling Point: Site 2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100	_____	_____	_____	_____	L	Ap
8-15	10YR 4/2	100	_____	_____	_____	_____	Cl	ABk
15-22	2.5Y 4/2	70	_____	_____	_____	_____	Cl	Bk1
_____	2.5Y 5/3	30	_____	_____	_____	_____	_____	_____
22-30	2.5Y 5/4	80	_____	_____	_____	_____	Cl	Bk2
_____	2.5Y 5/3	20	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF 12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:
Cavour series

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	(where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 3W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave/Concave Slope (%): <1%
 Subregion (LRR): E Lat: 47.532615 Long: -99.120230 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: PEMAd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland. Effectively drained. Soybeans planted throughout drained wetland area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: <u>5'</u>)				
1. <u>Bassia scoparia</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>20</u> = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>80</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Vegetation removed due to agriculture practices. Refer to nearby reference site 9 located in 19-147-66 for hydrophytic vegetation information.

SOIL

Sampling Point: Site 3W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-2	10YR 3/1	100					L	
2-11	10YR 4/1	95	2.5Y 4/3	5	C	M	Cl	
11-24	2.5Y 5/2	87	2.5Y 6/4	10	C	M	Cl	
			10YR 4/6	3	C	M	Cl	
24-30	2.5Y 5/2	80	2.5Y 5/4	20	C	C	M	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

0-9" 10YR 3/1 & 4/1 Cl Fill Material
9-17" 60% 2.5Y 5/4 & 40% 10YR 3/1 Cl Fill Material
Vallers series with 17 inches of fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) | <ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
|--|---|---|

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 3U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Linear/Convex Slope (%): 3%
 Subregion (LRR): E Lat: 47.532650 Long: -99.120095 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland comparison point			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: <u>5'</u>)				
1. <u>Bassia scoparia</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Chenopodium album</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>30</u>				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks: Soybeans approximately 30% coverage.				

SOIL

Sampling Point: Site 3U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-7	10YR 3/1	100	_____	_____	_____	_____	L	Ap
7-22	10YR 5/3	70	_____	_____	_____	_____	L	Bk1
	2.5Y 5/4	30	_____	_____	_____	_____	_____	_____
22-30	2.5Y 5/3	97	10YR 4/6	3	C	M	L	Bk2
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

Hamerly series

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 4W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave/Concave Slope (%): <1%
 Subregion (LRR): E Lat: 47.531898 Long: -99.121923 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland. Drained and filled. Soybeans planted throughout drained wetland area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: 5')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
0 = Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum 100				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Vegetation removed due to agriculture practices. Refer to nearby reference site 6 located in 19-147-66 for hydrophytic vegetation information.

SOIL

Sampling Point: Site 4W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	100					L	A
4-9	10YR 4/2	95	10YR 4/4	5	C	M	L	E
9-18	2.5Y 3/2	100					Cl	Bt1
18-26	10YR 4/3	100						Bt2

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF 12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)	

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:
 0-7" 10YR 3/1 Cl Fill Material
 9-18" 10YR 3/2 Cl Fill Material
 Tonka series with 18 inches of fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 4U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex/Convex Slope (%): 3%
 Subregion (LRR): E Lat: 47.531898 Long: -99.121732 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland comparison point.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
0 = Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum 65				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks: Soybeans approximately 35% coverage.				

SOIL

Sampling Point: Site 4U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100	_____	_____	_____	_____	_____	_____
8-15	10YR 4/1	100	_____	_____	_____	_____	_____	_____
15-23	10YR 4/2	100	_____	_____	_____	_____	_____	_____
23-31	10YR 5/3	100	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

Heimdal series

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 5W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave/Concave Slope (%): <1%
 Subregion (LRR): E Lat: 47.532461 Long: -99.12225 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: PEMAd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland. Hydrophytic vegetation present due to lack of recent maintenance of surface drain.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: 5')				
1. <u>Hordeum jubatum</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>10</u> = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>90</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Cattails in interior of wetland.

SOIL

Sampling Point: Site 5W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-6	10YR 2/2	100	_____	_____	_____	_____	L	A
6-12	10YR 4/1	100	_____	_____	_____	_____	L	Bk1
12-20	10YR 5/1	93	2.5Y 4/4	5	C	M	Cl	Bk2
_____	_____	_____	2.5Y 4/6	2	C	M	_____	_____
20-30	10YR 4/2	90	2.5Y 4/4	10	C	M	Cl	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 5U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex/Linear Slope (%): 3%
 Subregion (LRR): E Lat: 47.532390 Long: -99.122329 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: upland comparison point			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		= Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		= Total Cover		
Herb Stratum (Plot Size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
		<u>0</u> = Total Cover		
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
		= Total Cover		
% Bare Ground in Herb Stratum <u>65</u>				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks: Soybeans approximately 35% coverage.				

SOIL

Sampling Point: Site 5U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100	_____	_____	_____	_____	_____	_____
8-12	10YR 4/2	100	_____	_____	_____	_____	_____	_____
12-17	2.5Y 4/4	80	_____	_____	_____	_____	_____	_____
_____	2.5Y 5/3	20	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 6W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave/Linear Slope (%): <1%
 Subregion (LRR): E Lat: 47.533520 Long: -99.122540 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland. Wetland is drained and filled. Soybeans planted throughout drained wetland area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: <u>5'</u>)				
1. <u>Bassia scoparia</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>25</u> = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>75</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Vegetation removed due to agriculture practices. Refer to nearby reference site 9 located in 19-147-66 for hydrophytic vegetation information.

SOIL

Sampling Point: Site 6W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-3	10YR 2/1	100					L	
3-8	2.5Y 5/2	88	2.5Y 5/4	10	C	M	L	
			10YR 2/1	2	C	M		Fe/Mg
8-19	2.5Y 5/1	95	2.5Y 5/4	5	C	M	Cl	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

0-10" 10YR 3/1 Cl Sediment fill
10-16 10YR 3/1 70%
2.5Y 5/4 30% Mixed Fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) | <ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
|--|---|---|

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 6U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Linear/Convex Slope (%): 2%
 Subregion (LRR): E Lat: 47.533588 Long: -99.122414 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland comparison point.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: 5')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
0 = Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum 80				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks: Soybeans approximately 20% coverage.				

SOIL

Sampling Point: Site 6U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100	_____	_____	_____	_____	L	_____
8-15	10YR 3/1	100	_____	_____	_____	_____	L	_____
15-19	2.5Y 5/1	70	2.5Y 5/4	3	C	M	Cl	_____
_____	2.5Y 4/2	25	_____	_____	_____	_____	_____	_____
19-24	2.5Y 5/3	80	2.5Y 5/4	3	C	M	Cl	_____
_____	2.5Y 5/2	15	10YR 2/1	2	C	M	_____	FeMq
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 7U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): Linear/Concave Slope (%): 2%
 Subregion (LRR): E Lat: 47.534188 Long: -99.123480 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Shallow swale with non-hydric soils. Fill materials were place in site.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: <u>5'</u>)				
1. <u>Bassia scoparia</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>25</u> = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>75</u>				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:
Soybeans across site.

SOIL

Sampling Point: Site 7U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100	_____	_____	_____	_____	L	_____
8-15	10YR 3/1	100	_____	_____	_____	_____	L	_____
15-17	2.5Y 4/2	97	2.5Y 4/3	3	C	M	L	_____
17-26	2.5Y 5/4	100	_____	_____	_____	_____	Cl	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

0-8" 10YR 3/1 CL 100% fill material
8"-14" 2.5Y 4/4 CL 65% fill material
10YR 3/1 CL 35% fill material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
Water Table Present? Yes No Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 8W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave/Linear Slope (%): <1%
 Subregion (LRR): E Lat: 47.533571 Long: -99.120925 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Prior-converted depression wetland. Soybeans planted across drained wetland area.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: <u>5'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<u>0</u> = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>100</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:
Vegetation removed due to agriculture practices. Refer to nearby reference site 9 located in 19-147-66 for hydrophytic vegetation information.

SOIL

Sampling Point: Site 8W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	100					L	
4-11	2.5Y 5/2	93	10YR 4/6	5	C	M	Cl	
			10YR 2/1	2	C	M		Fe/Mg
11-23	2.5Y 5/1	80	2.5Y 5/4	20	C	M	Cl	
23-30	2.5Y5/2	90	2.5Y 5/3	10	C	M	Cl	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

0-12" 10YR 2/1 100% Cl Sediment fill
12-17 10YR 3/1 70% Cl
2.5Y 5/3 30% Cl Mixed Fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) | <ul style="list-style-type: none"> <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) (where not tilled) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) | <ul style="list-style-type: none"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) (where tilled) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |
|--|--|--|

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
Water Table Present? Yes No Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 8U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Linear/Convex Slope (%): 2%
 Subregion (LRR): E Lat: 47.533790 Long: -99.120717 Datum: NAD 83
 Soil Map Unit Name: G211A Fram-Wyard loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: upland comparison point			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
= Total Cover				Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____	(A) _____ (B) _____	Prevalence Index = B/A = _____	
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____	(A) _____ (B) _____																			
Prevalence Index = B/A = _____																				
Sapling/Shrub Stratum (Plot Size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
= Total Cover																				
Herb Stratum (Plot Size: <u>5'</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
<u>0</u> = Total Cover																				
Woody Vine Stratum (Plot Size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
= Total Cover																				
% Bare Ground in Herb Stratum <u>100</u>																				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				
Remarks: Soybeans prevalent at upland point.																				

SOIL

Sampling Point: Site 8U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100	_____	_____	_____	_____	L	_____
8-13	10YR 5/1	100	_____	_____	_____	_____	Cl	_____
13-21	2.5Y 5/3	100	_____	_____	_____	_____	L	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 9W
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Depression edge Local relief (concave, convex, none): Concave/Concave Slope (%): <1%
 Subregion (LRR): F Lat: 47.535908 Long: -99.120499 Datum: NAD 83
 Soil Map Unit Name: G3A Parnell silty clay loam, 0 to 1 percent slopes NWI classification: PEMC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: Large depression wetland with emergent vegetation present.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 2 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species 40 x2 = 80 FAC species _____ x3 = _____ FACU species 10 x4 = 40 UPL species _____ x5 = _____ Column Totals: 50 (A) 120 (B) Prevalence Index = B/A = 2.4
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: 5')				
1. <u>Hordeum jubatum</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Bassia scoparia</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			50 = Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum 50				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

SOIL

Sampling Point: Site 9W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-9	10YR 3/1	100					Cl	Ap
9-17	10YR 5/1	97	10YR 4/6	3	C	M	Cl	Bk1
17-30	10YR 4/2	95	10YR 2/1	5	C	M	Cl	Bk2
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 9U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex/Linear Slope (%): 1%
 Subregion (LRR): E Lat: 47.535817 Long: -99.120490 Datum: NAD 83
 Soil Map Unit Name: G3A Parnell silty clay loam, 0 to 1 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland comparison point.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: 5')				
1. <u>Hordeum jubatum</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>90</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

SOIL

Sampling Point: Site 9U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-9	10YR 2/1	100	_____	_____	_____	_____	_____	_____
9-13	10YR 3/2	100	_____	_____	_____	_____	_____	_____
13-17	10YR 5/2	100	_____	_____	_____	_____	_____	_____
17-23	10YR 4/4	100	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Wahlund Mitigation Site City/County: Foster Sampling Date: 10/29/14
 Applicant/Owner: DU State: ND Sampling Point: 9-2U
 Investigator(s): Greg Meyer and Lawrence Edland Section, Township, Range: 19-147-66
 Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): Convex/Convex Slope (%): 1%
 Subregion (LRR): E Lat: 47.536278 Long: -99.120712 Datum: NAD 83
 Soil Map Unit Name: G225A Larson-Cathay loams, 0 to 3 percent slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland comparison point.			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Across All Strata: 2 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot Size: 5')				
1. <u>Hordeum jubatum</u>	<u>35</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Sonchus arvensis</u>	<u>45</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Iva annua</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
90			= Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____			= Total Cover	
% Bare Ground in Herb Stratum 10				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

SOIL

Sampling Point: Site 9-2U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	100	_____	_____	_____	_____	_____	_____
8-14	2.5Y 4/3	70	_____	_____	_____	_____	_____	_____
13-17	2.5Y 5/2	30	_____	_____	_____	_____	_____	_____
17-23	2.5Y 5/4	100	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR I, J)
- Coast Prairie Redox (A16) (LRR F, G, H)
- Dark Surface (S7) (LRR G)
- High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF 12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soils Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along Living Roots (C3) **(where tilled)**
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

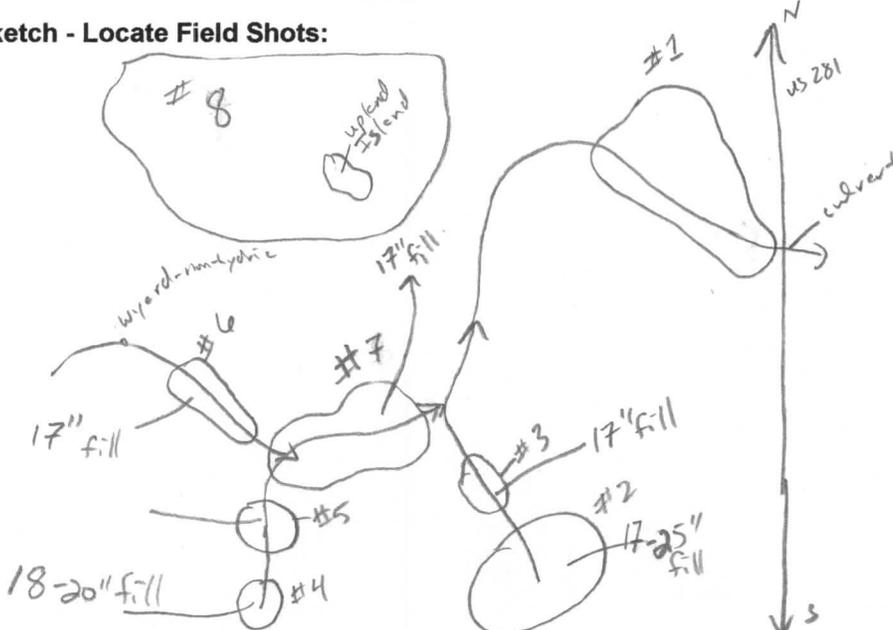
Scope and Effect Data Form

Scope and Effect Data Sheet

Preparer(s) & Title(s) GWM + LE Date 10/29/14

Legal Description NE 19-147-66

Sketch - Locate Field Shots:



Wetland #	Rod Reading Wetland Low Spot	Rod Reading Current Ch. High Spot	Rod Reading Original Ch. High Spot	Rod Reading Natural Overflow	Rod Reading Wetland Boundary	Depth of Ponding		Wetland Label with Ponding
						Present	Original	
1	7.45	7.8	8.26	5.3	6.4	-0.35	-1.15	NW (PC+85)
2	7.3	7.4	8.15	6.15	6.7	-0.1	-0.85	NW (PC+85)
3	7.5	7.6	8.35	6.6	6.85	-0.1	-0.85	NW (PC+85)
4	7.3	7.05	7.63	5.8	6.4	0.25	+0.33	NW (PC+85)
5	8.05	7.5	8.54	6.75	6.75	0.55	-0.49	NW (PC+85)
6	6.45	6.35	7.4	5.6	6.15	0.1	-0.95	NW (PC+85)
7	6.95	6.8	7.84	5.8	6.35	0.15	-0.89	NW (PC+85)

Remarks (include outlet size and type, and any hydrology, vegetation, and soil information that is not on the certified wetland determination worksheet)

#1 → 9" sed over 3" mix = $\frac{9}{12} = 0.75 + \frac{3}{12} = 1.5/12 = 0.125 + 0.75 = 8.75$ at cch
 #2 → 9" sed at cch = $\frac{9}{12} = 0.75 + 7.4 \rightarrow \sim 24"$ fill across wetland area, at cch
 #3 - 9" sed at cch = $\frac{9}{12} = 0.75 + 7.6 = 8.35$ at cch
 #4 - 6" mix over 4" sed = $\frac{6}{12} = 3/12 = 0.25 + 0.33 = 0.58$ at cch
 #5 - 9" sed + 7" mix = $\frac{9}{12} = 0.75 + \frac{7}{12} = 3.5/12 = 0.29 + 0.75 = 1.04 + 7.5 = 8.54$ at cch
 #6 - 5" mix over 10" sed = $\frac{5}{12} = 2.5/12 = 0.21 + 0.833 = 1.04 + 6.35$ at cch
 #7 - 5" mix over 10" sed = $1.04 + 6.8 = 7.84$ - at cch

fill materials placed in most wetlands

Appendix D

Field Photographs



Photograph 1. View of Wetland 1. A surface drain flows east out of the wetland and has effectively drained it. Foxtail barley is present along the drain due to the high salinity in the area.



Photograph 2. View of Wetland 2. A surface drain flows to the northwest out of the wetland and approximately 17-25 inches of fill materials have been placed into the wetland area. These actions have completely eliminated wetland functions within it.



Photograph 3. View Wetland 5. Wetland 5 is a drained wetland that hasn't been recently maintained and so a small patch of hydrophytic vegetation is present in the interior of the wetland area. The wetland should be considered completely drained as maintenance of the drain would remove all hydrology within the wetland.



Photograph 4. View of Wetland 7. A surface drain flows east out of this wetland and effectively drains it. Approximately 17 inches of fill is also present in the wetland.



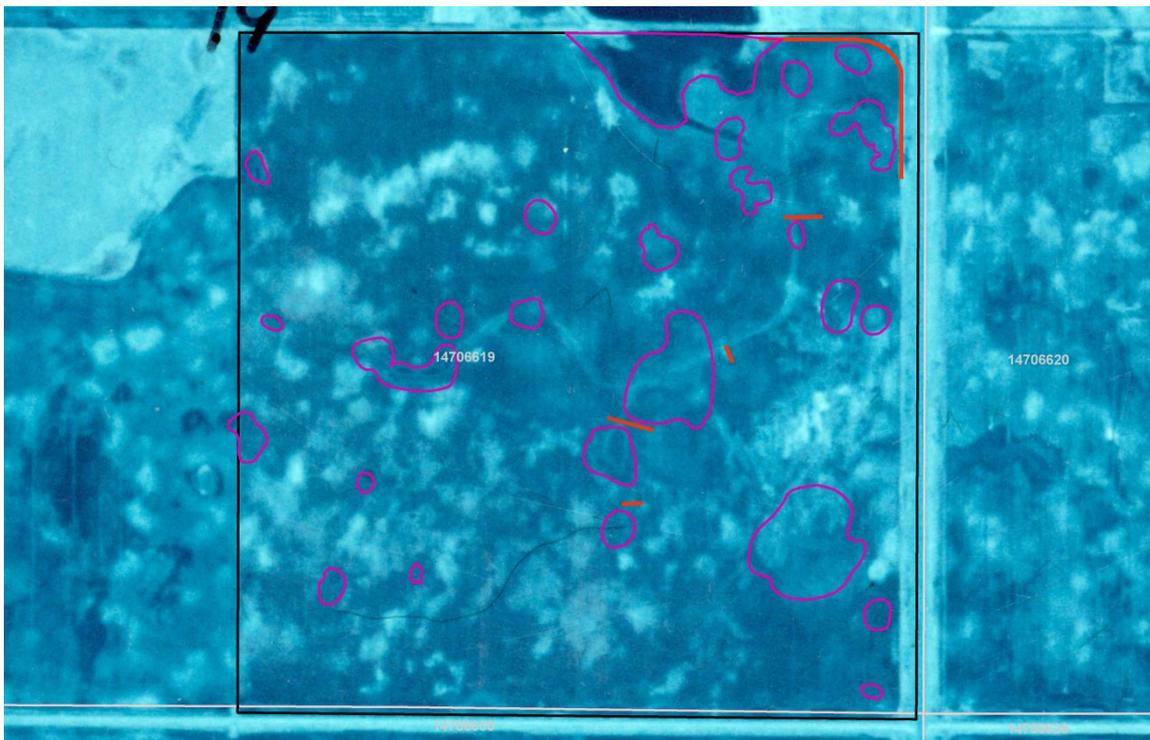
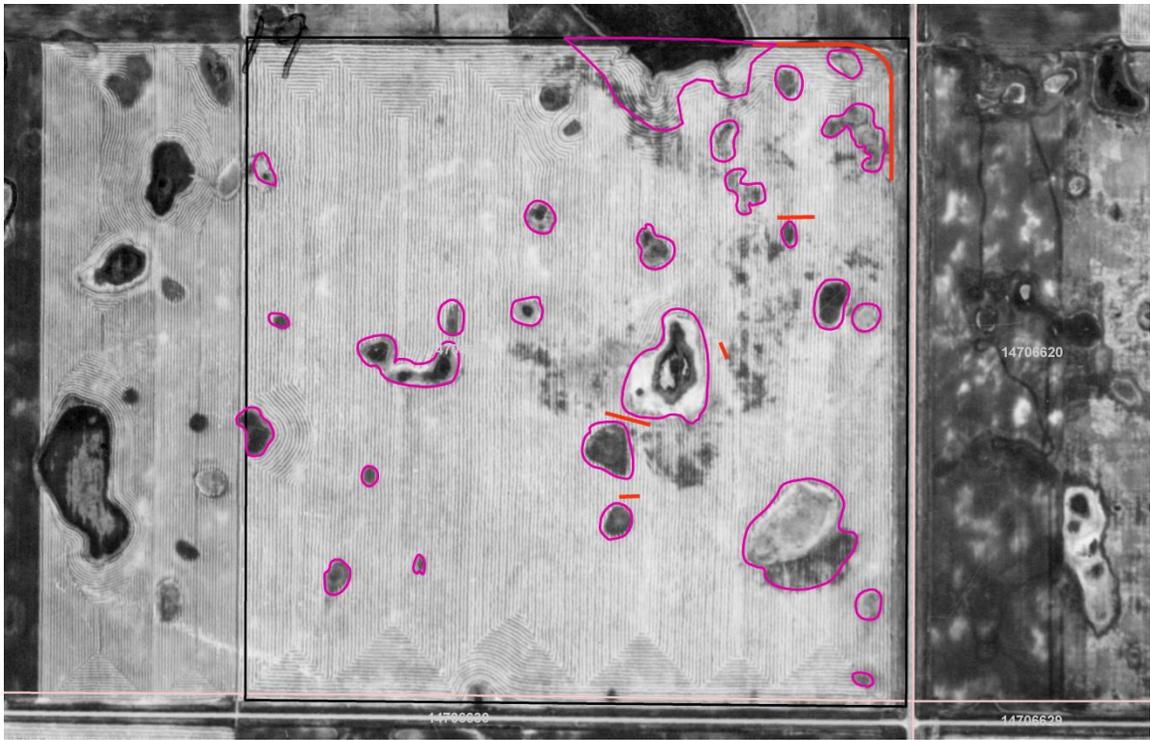
Photograph 5. View of Wetland 8. Wetland 8 is a sprawling depression wetland with cattails in the interior and foxtail barley along its hydric rim.



Photograph 6. View of non-hydric flat. This area does not have hydric soils thus was determined to be non-wetland; however, it consists of heavy clay soils and could be developed into an excellent mitigation wetland by plugging the drain that flows through it. The natric observation point is located in this flat (Appendix A).

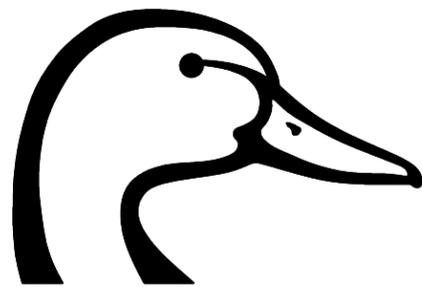
APPENDIX C

United States Fish and Wildlife Service Wetland Boundaries



APPENDIX D

Preliminary Design Plans



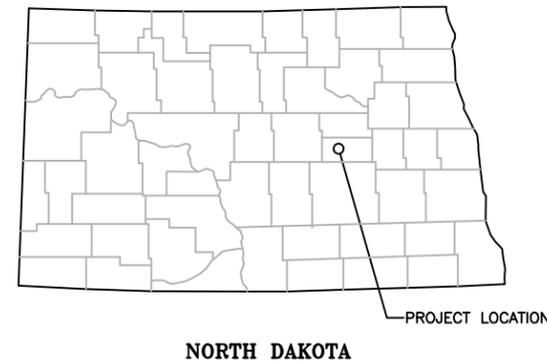
DUCKS UNLIMITED

DUCKS UNLIMITED

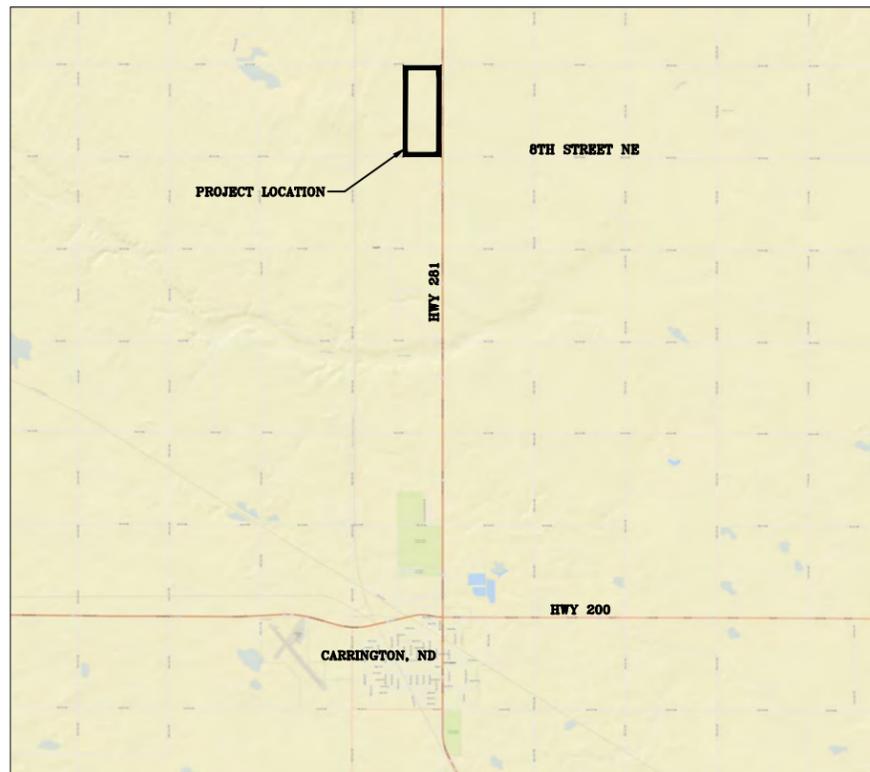
PROJECT

WAHLUND MITIGATION

LOCATED IN THE E 1/2 OF SECTION 19
TOWNSHIP 147N, RANGE 67W, 5TH P.M.
FOSTER COUNTY, NORTH DAKOTA



NORTH DAKOTA



VICINITY MAP
NTS



LOCATION MAP
NTS

INDEX

1. PROJECT LOCATION MAPS\ESTIMATED QUANTITIES AND NOTES
2. SITE PLAN NORTH
3. SITE PLAN SOUTH
4. EMBANKMENT 1 DETAILS
5. EMBANKMENT & SPILLWAY 2 DETAILS
6. EMBANKMENT & SPILLWAY 3 DETAILS
7. EMBANKMENT & SPILLWAY 4 DETAILS
8. EMBANKMENT & SPILLWAY 5 DETAILS
9. EMBANKMENT 6 DETAILS

ESTIMATED QUANTITIES

Mobilization
Site Preparation
Topsoil Stripping
Compacted Embankment

1 L.S.
1 L.S.
24,815 C.Y.-P**
2,885 C.Y.-P**

IF THESE PLANS ARE NOT PLOTTED AND/OR REPRODUCED AT THE ORIGINAL SIZE OF 24"x 36" ANY SCALE REFERENCED HEREIN SHOULD BE DISREGARDED AND THE PLANS SHOULD BE CONSIDERED "NOT TO SCALE."

PRELIMINARY NOT FOR CONSTRUCTION

DJ REGIONAL ENGINEER:
TIM MCNABOE, P.E.
2525 RIVER ROAD
BISMARCK, ND 58503
(701) 355-3566

Construction site safety is the sole responsibility of the contractor. Ducks Unlimited, Inc. shall not assume any responsibility for the safety of the work performed, persons engaged in the work, nearby structures or of other persons on-site.

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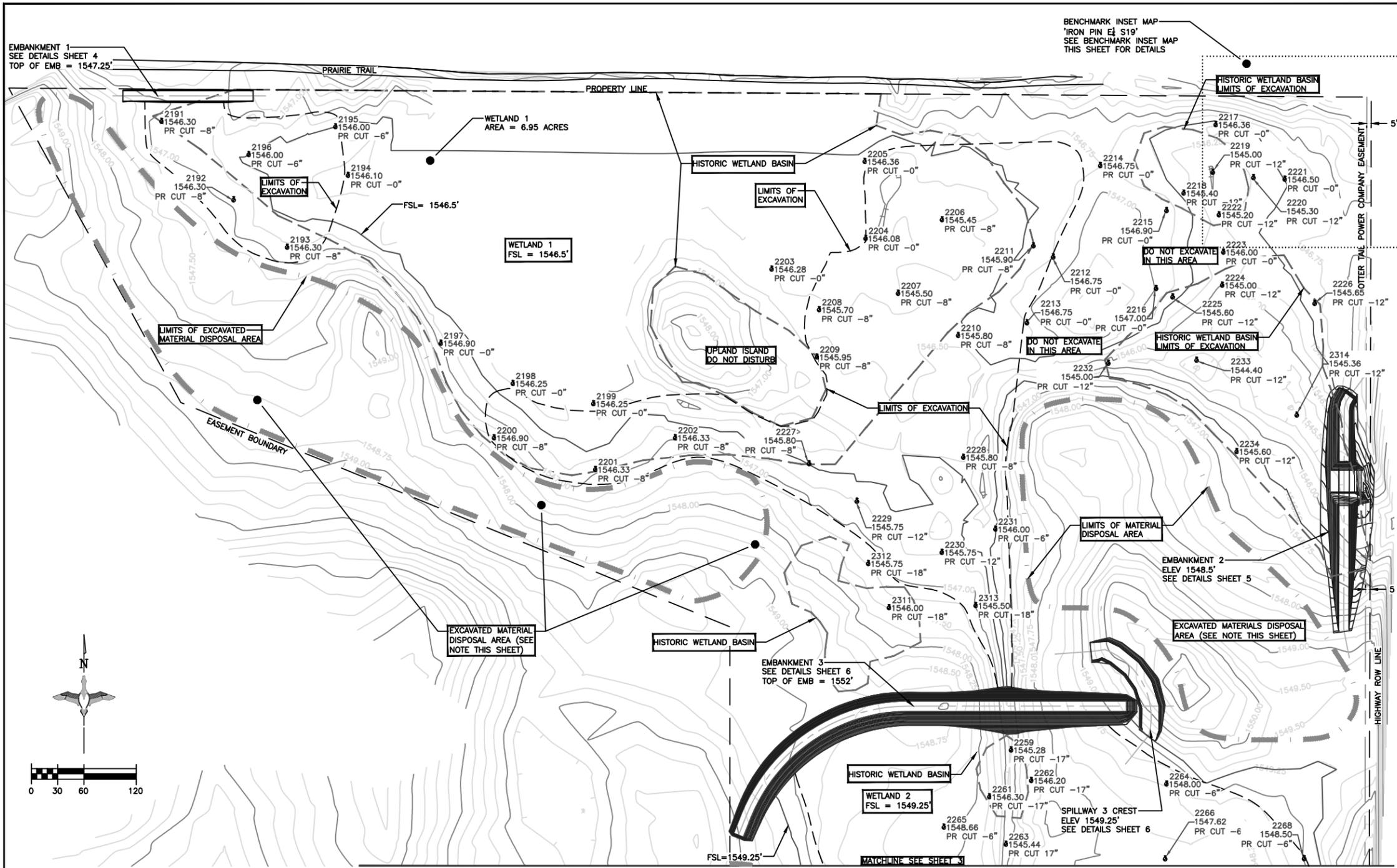


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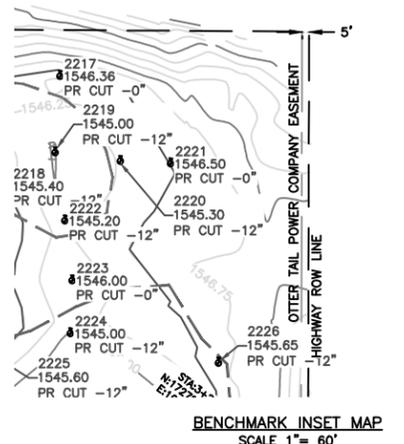
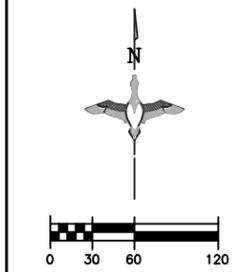
WAHLUND MITIGATION BANK
FOSTER COUNTY
NORTH DAKOTA

Revision No.	Sheet No.	Revisions	Date	By
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BOOK NO. -
DATE: 5/22/2015
PROJECT NO.: US-ND-534-1
SHEET 1



EXCAVATION POINT DATA				
POINT NUMBER	RAW DESCRIPTION	ELEVATION	NORTH	EAST
2191	PR CUT -8"	1546.30	17273078.68	1609965.43
2192	PR CUT -8"	1546.30	17272989.09	1610048.00
2193	PR CUT -8"	1546.30	17272934.95	1610109.40
2194	PR CUT -8"	1546.100	17273017.04	1610179.18
2195	PR CUT -6"	1546.000	17273072.58	1610184.70
2196	PR CUT -6"	1546.000	17273040.78	1610065.36
2197	PR CUT -0"	1546.900	17272825.13	1610285.47
2198	PR CUT -0"	1546.250	17272779.10	1610367.98
2199	PR CUT -0"	1546.250	17272755.92	1610460.34
2200	PR CUT -8"	1546.900	17272716.89	1610346.42
2201	PR CUT -8"	1546.330	17272680.81	1610482.54
2202	PR CUT -8"	1546.330	17272717.07	1610554.00
2203	PR CUT -0"	1546.280	17272909.87	1610664.59
2204	PR CUT -0"	1546.080	17272945.05	1610772.26
2205	PR CUT -0"	1546.360	17273032.90	1610771.22
2206	PR CUT -8"	1545.450	17272966.33	1610859.71
2207	PR CUT -8"	1545.500	17272882.27	1610809.54
2208	PR CUT -8"	1545.700	17272863.43	1610718.91
2209	PR CUT -8"	1545.950	17272809.36	1610716.49
2210	PR CUT -8"	1545.800	17272833.94	1610878.26
2211	PR CUT -8"	1545.900	17272936.40	1610964.37
2212	PR CUT -0"	1546.750	17272923.69	1610987.12
2213	PR CUT -0"	1546.750	17272848.47	1610957.04
2214	PR CUT -0"	1546.750	17273028.26	1611041.14
2215	PR CUT -0"	1546.900	17272976.67	1611116.99
2216	PR CUT -0"	1547.000	17272887.63	1611104.98
2217	PR CUT -0"	1546.380	17273075.10	1611173.42
2218	PR CUT -12"	1545.400	17272996.74	1611136.69
2219	PR CUT -12"	1545.000	17273020.56	1611169.95
2220	PR CUT -12"	1545.300	17273014.38	1611216.62
2221	PR CUT -0"	1546.500	17273012.63	1611252.80
2222	PR CUT -12"	1545.200	17272971.97	1611177.07
2223	PR CUT -0"	1546.000	17272929.29	1611182.15
2224	PR CUT -12"	1545.000	17272891.54	1611180.91
2225	PR CUT -12"	1545.600	17272878.04	1611124.01
2226	PR CUT -12"	1545.850	17272870.60	1611286.72
2227	PR CUT -8"	1545.800	17272687.28	1610707.39
2228	PR CUT -8"	1545.800	17272694.71	1610884.20
2229	PR CUT -12"	1545.750	17272644.44	1610762.24
2230	PR CUT -12"	1545.750	17272586.05	1610859.65
2231	PR CUT -8"	1546.000	17272612.54	1610920.98
2232	PR CUT -12"	1545.000	17272798.07	1611020.12
2233	PR CUT -12"	1544.400	17272805.59	1611151.40
2234	PR CUT -12"	1545.600	17272701.32	1611197.37
2235	PR CUT -17"	1545.280	17272360.11	1610938.93
2261	PR CUT -17"	1546.300	17272306.55	1610914.06
2262	PR CUT -17"	1546.200	17272325.21	1610962.01
2263	PR CUT 17"	1545.440	17272252.32	1610933.03
2264	PR CUT -6"	1548.000	17272321.25	1611117.03
2265	PR CUT -6"	1548.680	17272271.87	1610861.86
2266	PR CUT -6"	1547.820	17272335.52	1611115.38
2268	PR CUT -6"	1548.500	17272235.81	1611274.77
2311	PR CUT -18"	1546.000	17272522.75	1610799.01
2312	PR CUT -18"	1545.750	17272573.21	1610775.33
2313	PR CUT -18"	1545.500	17272525.24	1610898.31
2314	PR CUT -12"	1545.360	17272742.83	1611266.30



WETLAND GRADING PLAN
SCALE 1" = 60'

EXCAVATION NOTE: FILL MATERIAL HAS BEEN PLACED WITHIN WETLAND BASINS OVER ORIGINAL TOPSOIL LAYER AT VARIOUS DEPTHS WITHIN THE BASIN.
 FILL MATERIAL SHALL BE REMOVED AS SHOWN BY PROPOSED CUT DEPTHS.
 EXCAVATED FILL MATERIAL SHALL BE PLACED IN DESIGNATED UPLAND AREAS (SEE EXCAVATED MATERIAL DISPOSAL AREA NOTE.)
 DO NOT EXCAVATE BELOW TOP OF ORIGINAL TOPSOIL LAYER (SEE SOIL EXCAVATION PROFILE DETAIL THIS SHEET).

- TOP LAYERS TO BE REMOVED
- TOP SOIL LAYER
 - CLAY FILL LAYER
 - ORIGINAL TOP SOIL LAYER
 - ORIGINAL CLAY LAYER
- DO NOT DISTURB

SOIL EXCAVATION PROFILE
NOT TO SCALE

EXCAVATION MATERIAL DISPOSAL AREA NOTE:
 EXCAVATED MATERIAL MAY BE PLACED IN UPLAND AREAS AS DESIGNATED ON PLANS OR AS DIRECTED BY DUCKS UNLIMITED CONSTRUCTION MANAGER.
 EXCAVATED MATERIAL SHALL BE PLACED AND GRADED TO MAINTAIN POSITIVE DRAINAGE AND GENTLE SLOPES.
 ALL DISPOSAL AREAS SHALL BE FINISHED WITH MINIMUM 4" TOPSOIL MATERIAL AND SMOOTH FINISHED FOR UPLAND GRASS SEEDING.

UTILITIES NOTE:
 BEFORE THE START OF CONSTRUCTION, THE OWNER OF ANY UTILITIES INVOLVED MUST BE NOTIFIED. THE EXCAVATOR/CONTRACTOR IS RESPONSIBLE FOR GIVING THIS NOTICE BY CALLING "NORTH DAKOTA HOTLINE" AT (800)795-0555 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.

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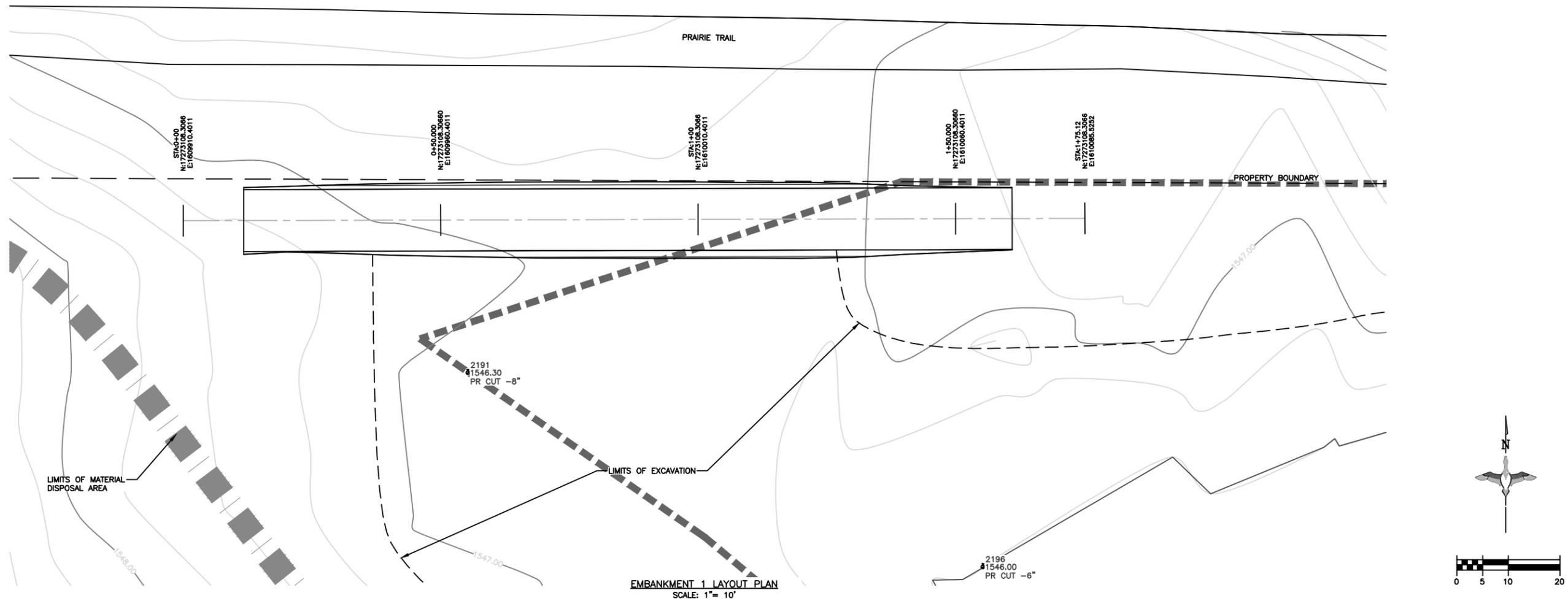
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Wahlung Mitigation Bank
 Wetland Grading Plan
 North Dakota

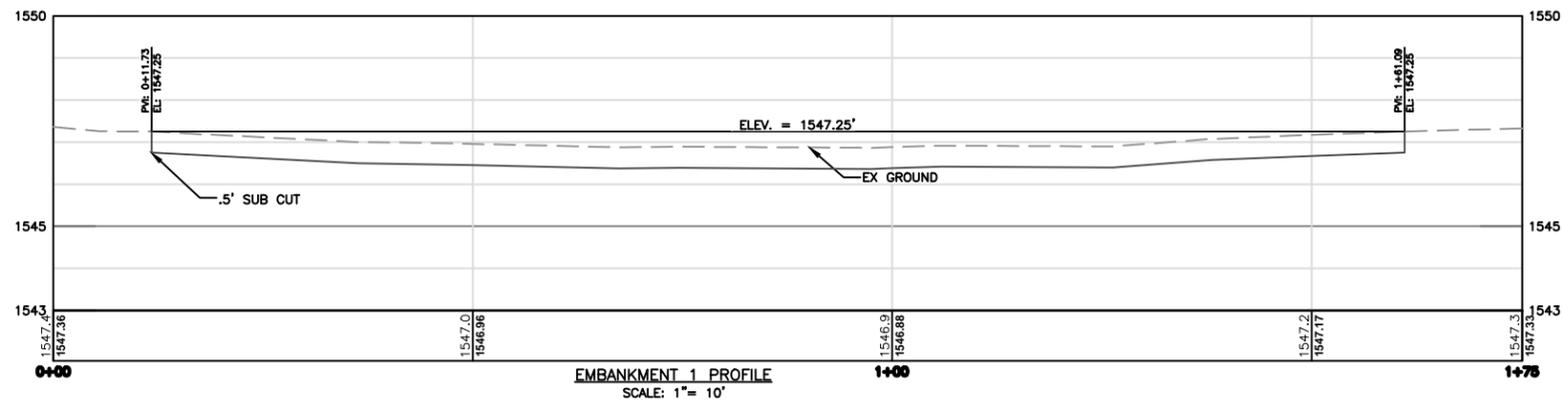
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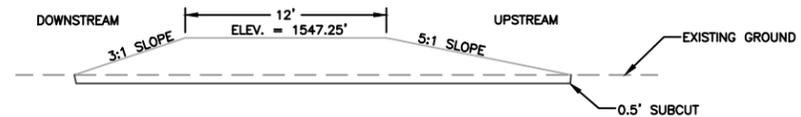
DATE: 5/27/2015
 PROJECT NO.: US-ND-534-1
SHEET 2



EMBankment 1 LAYOUT PLAN
SCALE: 1" = 10'



EMBankment 1 PROFILE
SCALE: 1" = 10'



TYPICAL EMBANKMENT SECTION
SCALE: 1" = 5'

PRELIMINARY

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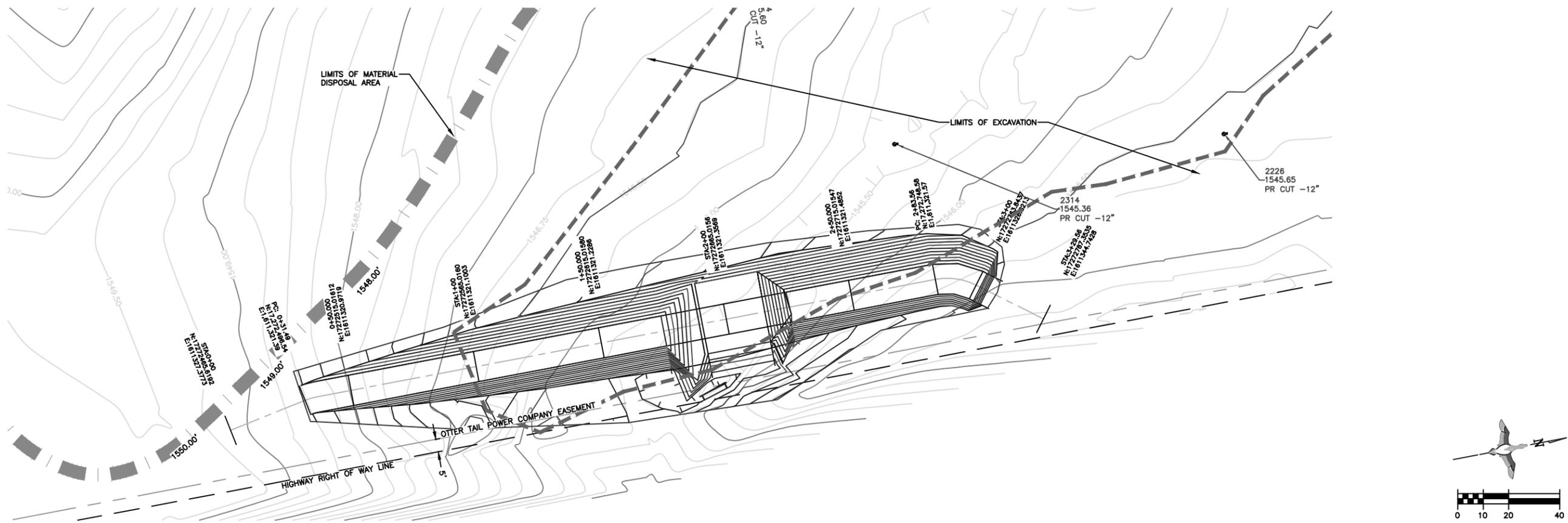


WAHLUND MITIGATION BANK
EMBANKMENT 1 DETAILS
NORTH DAKOTA

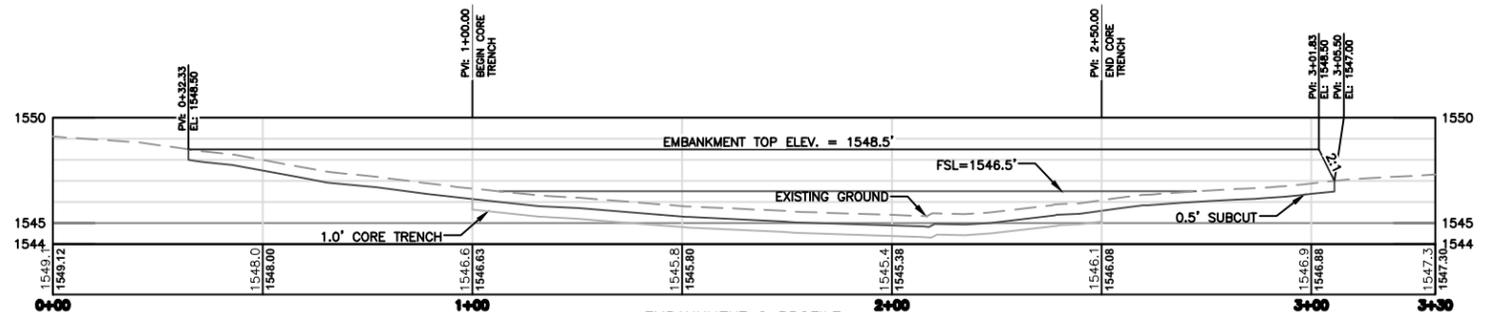
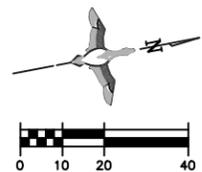
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DATE: 5/27/2015
PROJECT NO.: US-ND-534-1
SHEET 4

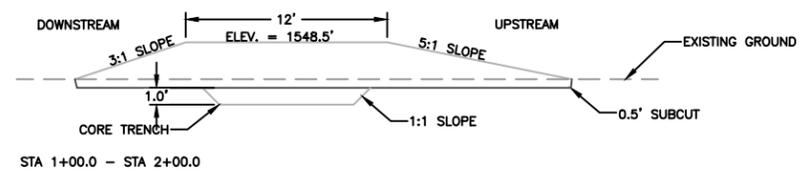
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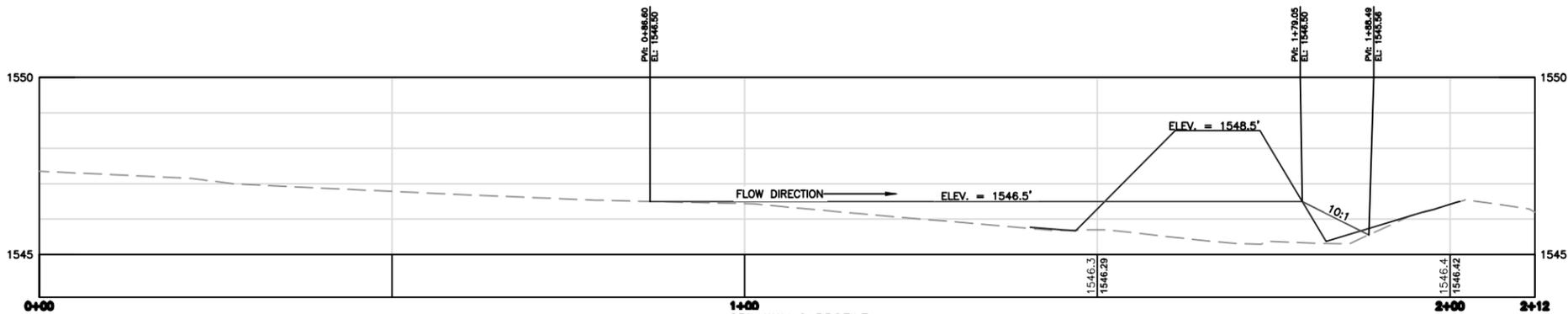
EMBANKMENT 2 LAYOUT PLAN
SCALE: 1" = 20'



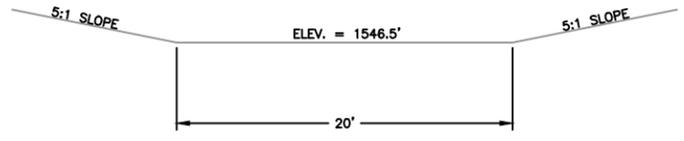
EMBANKMENT 2 PROFILE
SCALE: 1" = 20'



TYPICAL EMBANKMENT SECTION
SCALE: 1" = 5'



SPILLWAY 2 PROFILE
SCALE: 1" = 10'

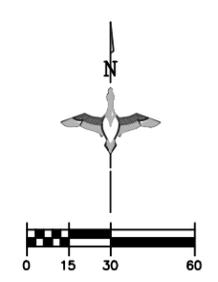
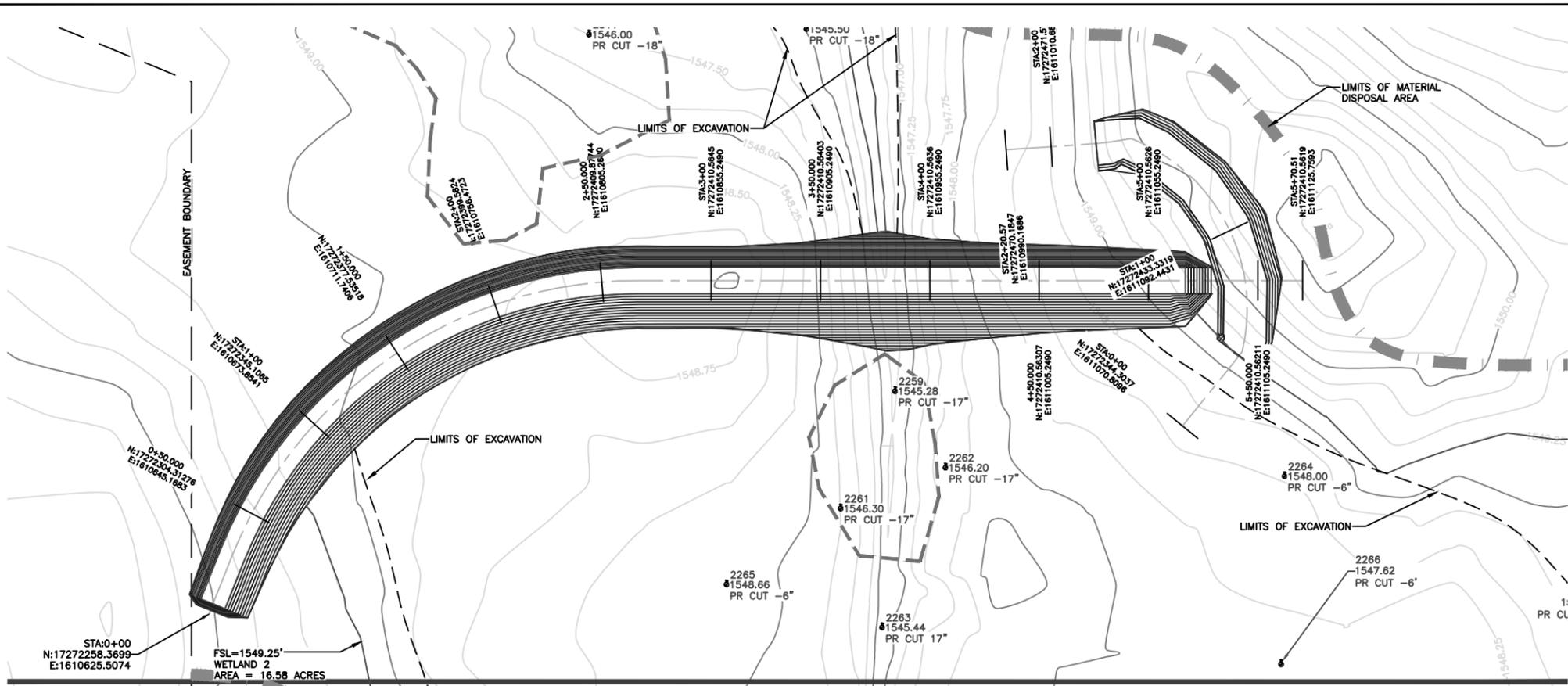


TYPICAL SPILLWAY SECTION
SCALE: 1" = 5'

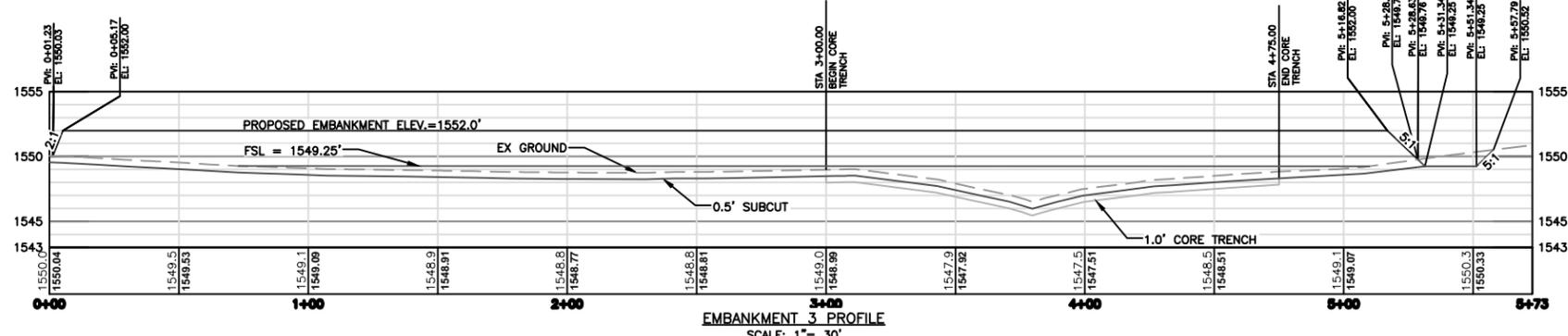
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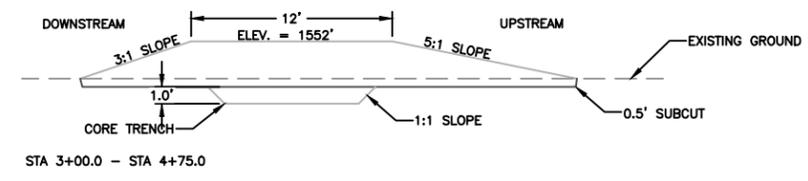
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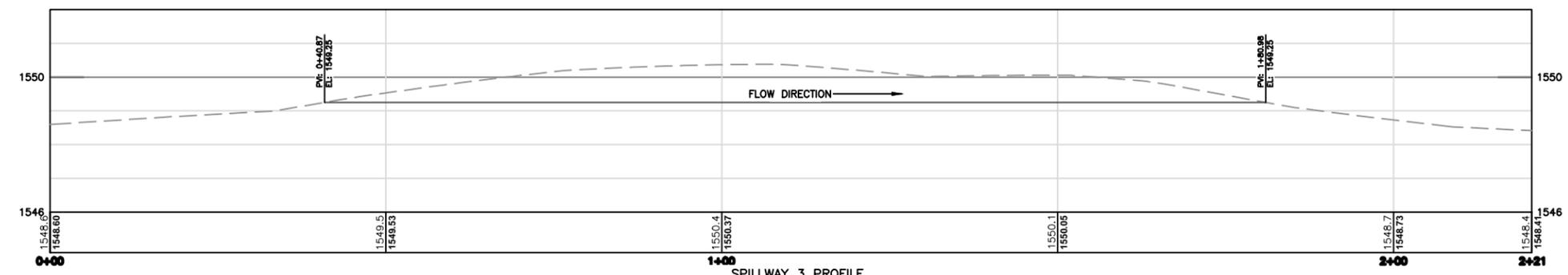
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SCALE: 1" = 30'



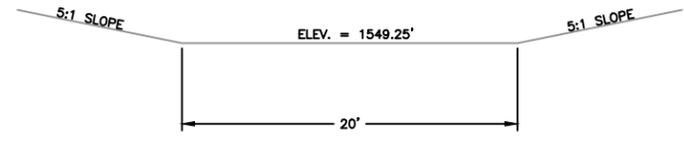
EMBANKMENT 3 PROFILE
SCALE: 1" = 30'



TYPICAL EMBANKMENT SECTION
SCALE: 1" = 5'



SPILLWAY 3 PROFILE
SCALE: 1" = 10'



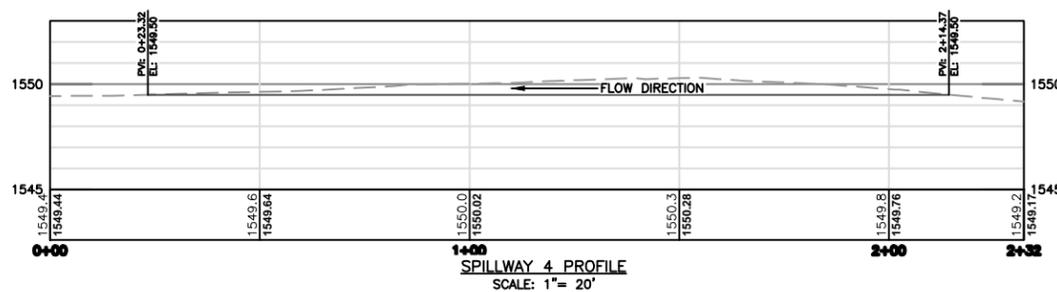
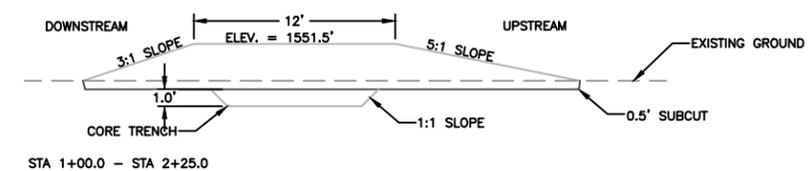
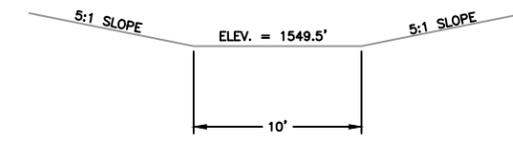
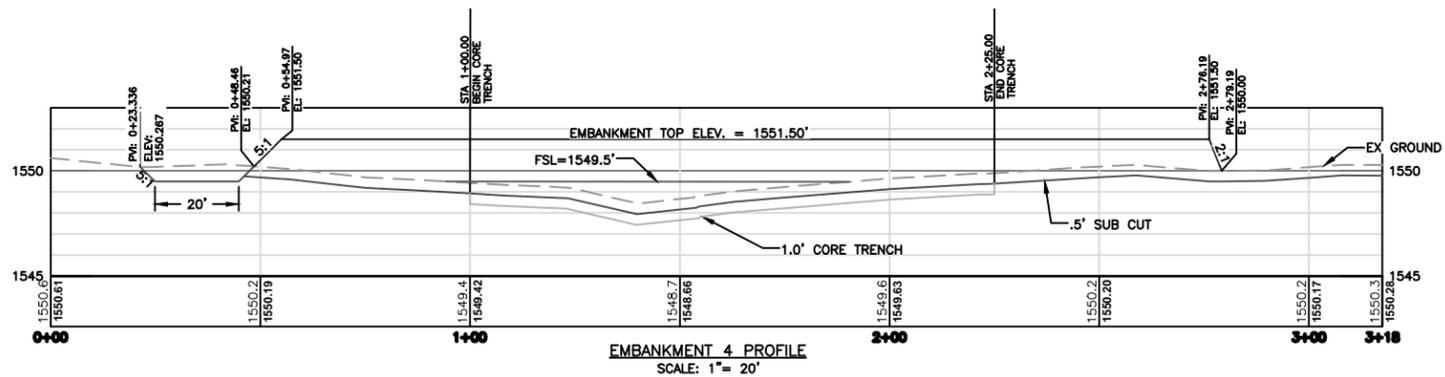
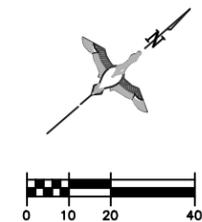
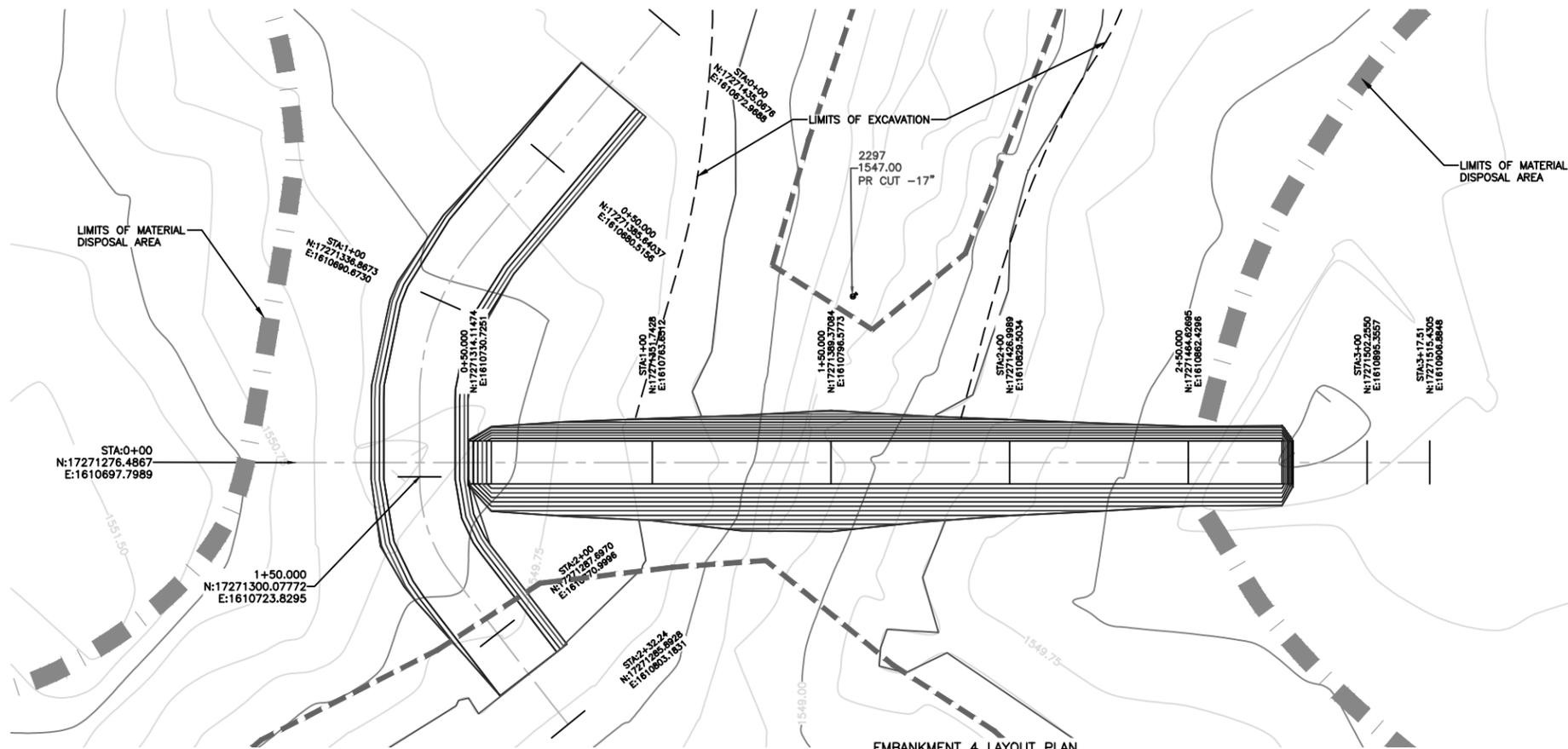
TYPICAL SPILLWAY SECTION
SCALE: 1" = 5'

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DATE: 4/20/2015
PROJECT NO.: US-ND-534-1
SHEET 6

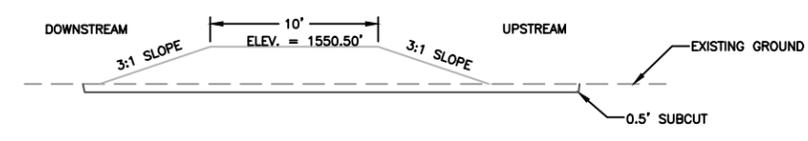
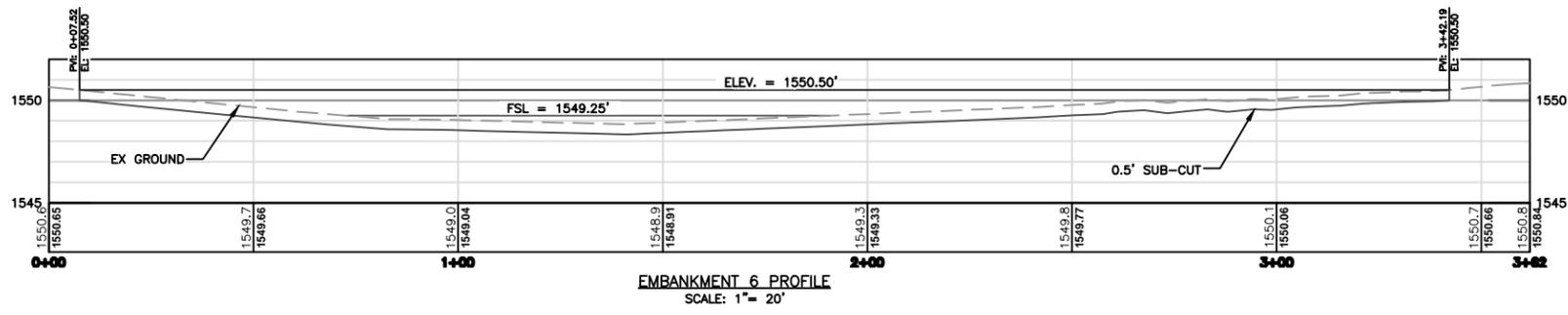
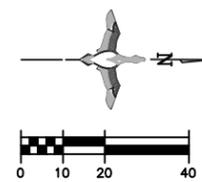
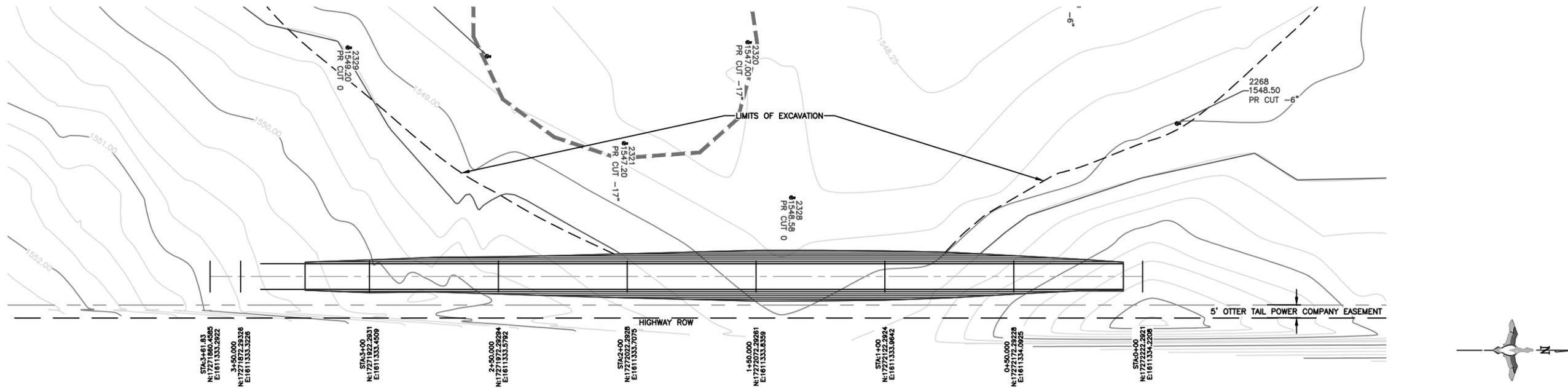


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SHEET 7

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WAHLUND MITIGATION BANK
 EMBANKMENT 1 DETAILS
 NORTH DAKOTA

Revision No.	Sheet No.	Revisions	Date	By
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DRAWN BY: CH
SURVEYED BY: -
BOOK NO. -
DATE: 5/27/2015
PROJECT NO.: US-ND-534-1
SHEET 9

APPENDIX E

Financial Assurances

Documents under this cover are considered proprietary and not subject to public release, unless required by law or court order.

As of June 2015, the ND-ILF Credit Ledger for the Missouri River Southern Zone Watershed has six (6) requests for mitigation totaling 14.16 credits (Table 1). Those credits have been invoiced by DU and payment has been received. The \$543,800 has been placed in the MSRZ specific account and will be used to pay for items including but not limited to, land purchase, DU staff costs, DU 15% administration fee, Wahlund construction and establishment costs, Wahlund operational costs and the Wahlund long-term management endowment.

Table 1: Mitigation Invoiced and Payment Received

Applicant	Date Payment Received	Permit Number	Acres of Impact	Credits Purchased	Type of Credit Purchased	Amount of Payment
City of Bismarck	May 2014	NWO-2013-1281-BIS	1.7	1.7	Advanced Credit	\$51,000.00
BNSF	July 2014	NWO-2014-0195-BIS	0.56	0.56	Advanced Credit	\$16,800.00
BNSF	May 2015	NWO-2015-0636-BIS	3.41	3.41	Advanced Credit	\$136,400.00
BNSF	May 2015	NWO-2014-1678-BIS	1.83	1.83	Advanced Credit	\$73,200.00
BNSF	May 2015	NWO-2015-0636-BIS	5.78	5.78	Advanced Credit	\$231,200.00
Canadian Pacific	June 2015	NWO-2015-0371-BIS	0.88	0.88	Advanced Credit	\$35,200.00
Totals			14.16	14.16		\$543,800

In addition to the sold mitigation credits, DU has also received requests and sent Credit Availability Letters for six (6) other projects in the Missouri River Southern Zone (Table 2). These projects have a requested mitigation amount of 10.45 credits for a total of \$417,800.

Table 2: Mitigation Requests/Payment not Received

Applicant	Date Payment Received	Permit Number	Acres of Impact	Credits Purchased	Type of Credit Purchased	Amount of Payment
City of Bismarck	N/A	N/A	3.21	3.21	Advanced Credit	\$128,400.00
BNSF	N/A	N/A	0.65	0.65	Advanced Credit	\$26,000.00
BNSF	N/A	N/A	1.51	1.51	Advanced Credit	\$60,400.00
BNSF	N/A	N/A	4.2	4.2	Advanced Credit	\$168,000.00
KLJ Client	N/A	N/A	0.5	0.5	Advanced Credit	\$15,000.00
Canadian Pacific	N/A	N/A	0.38	0.38	Advanced Credit	\$20,000.00
Totals			10.45	10.45		\$417,800

The total requested credit amount in the Missouri River Southern Zone is 24.61 credits. The value of the 24.61 credits is \$961,600.

The Wahlund Mitigation project has an estimated total cost of approximately \$805,665. This includes a breakdown of costs as follows:

Land Acquisition	\$228,575
Establishment Costs	\$254,850
Operational Costs	\$51,260
15% Administrative Fee	\$130,980
Long-term Management	<u>\$140,000</u>
Total =	\$805,665

As credits are established and confirmed by monitoring, funds from the MRSZ specific account will be released to cover costs associated with the Wahlund Mitigation Project.

The long-term management fund amount was determined by estimating the cost for yearly monitoring of the site, control of noxious weeds in the upland and wetland areas, periodic control or repair of small mammal (muskrat) damage to ditch plugs and periodic repair to spillways, ditch plugs, etc. due to high water flood events and erosion issues. The long-term management account established at \$140,000 will ensure a yearly amount of \$4,200 available for management.