Appendix G

Section 7/Endangered and Threatened Species Coordination

Agency Concurrence Letters and Correspondence

NEBRASKA
GAME PARKS

Nebraska Game and Parks Commission
2200 N. 33rd St. • P.O. Box 30370 • Lincoln, NE 68503-0370 • Phone: 402-471-0641 • Fax: 402-471-5528

May 16, 2014

Molly Lamrouex
Federal Highway Administration
100 Centennial Mall North, Room 220
Lincoln, NE 68508-3803

Re: L62A/US-385 to Alliance, Project No. DPS-385-3(118), CN 51432, Morrill County and Box Butte County, NE

Dear Ms. Lamrouex:

Please make reference to your letter dated April 28, 2014. This letter is in response to your request for concurrence regarding this project's potential impacts to endangered and threatened species in Morrill County and Box Butte County, Nebraska. This project is part of the overall Heartland Expressway Corridor Development Project, and proposes to widen the existing 2-lane highway to a four-lane expressway on existing and new alignments. Activities associated with this project were outlined in the documents attached to your letter. We have completed our review of the proposed project under Neb. Rev. Stat. § 37-807 (3) of the Nongame and Endangered Species Conservation Act (NESCA) and we offer the following comments.

This project is within the range of the federal and state-listed endangered black-footed ferret (*Mustela nigripes*) and blowout penstemon (*Penstemon haydenii*), and the state-listed endangered swift fox (*Vulpes velox*). Habitat for all these species exists within or near the project area. The Nebraska Department of Roads (NDOR) has agreed to implement standard and species-specific conservation conditions in order to avoid impacts to the aforementioned species. In the event a borrow site associated with this project results in a depletion to the Platte River, NDOR will contact the appropriate agency, depending on which river basin the borrow site is located in, to address offsetting the depletion.

Based on this information, we concur the proposed project "May Affect but is Not Likely to Adversely Affect" black-footed ferret, blowout penstemon and swift fox, and will have "no effect" on all other state-listed endangered or threatened species. This concurrence is based on a review of the material you sent, information shared during previous correspondences and meetings, aerial photographs, and our Nebraska Natural Heritage Database.

Therefore, we have no objection to the proposal as currently planned. If the proposed project is changed or new information regarding endangered and threatened species becomes available,

then this concurrence is no longer valid and further consultation with the Nebraska Game and Parks Commission (Commission) will be necessary.

NDOR has reviewed the proposed project pursuant to the federal Fish and Wildlife Coordination Act (FWCA) and the federal Bald and Golden Eagle Protection Act (BGEPA). A wetland delineation was conducted pursuant to FWCA, and it was determined a Section 404 permit from the U.S. Army Corps of Engineers may be needed. All impacts will be mitigated as required by the permit. Additionally, NDOR has identified golden eagle (*Aquila chrysaetos*) nesting habitat within ½ mile of the project area. NDOR has determined it will follow the Golden Eagle Survey Protocol to avoid adverse impacts to golden eagles. NDOR will also use its Avian Protection Plan in order to reduce conflicts with migratory birds and comply with the federal Migratory Bird Treaty Act. The Commission acknowledges and supports these actions and this review process in order to avoid impacts to other state trust resources which do not receive legal protection under NESCA, but are still considered valuable for maintaining the ecological diversity within our state and are protected under federal laws.

For an assessment of potential impacts to habitats and species protected under federal wildlife laws, including federally listed, candidate or proposed endangered or threatened species, please contact John Cochnar, Nebraska Field Office, U.S. Fish and Wildlife Service, 203 W. Second St., Grand Island, NE 68801.

Thank you for the opportunity to comment. If you have any questions or need additional information, please feel free to contact me at (402) 471-5438 or michelle.koch@nebraska.gov.

Sincerely,

Michelle R. Koch
Environmental Analyst Supervisor
Planning & Programming Division

ec: USFWS (John Cochnar, Brooke Stansberry)
NDOR (Melissa Marinovich, Zach Cunningham)
FHWA (Melissa Maiefski, Kevin Jones, Sue Petracek)

06E22000-2014-I-0048
06E22000-2014-CPA-0062

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Nebraska Field Office
203 West Second Street
Grand Island, Nebraska 68801

May 1, 2014

FWS-NE: 2014-094

Ms. Molly Lamrouex
Environmental Protection Specialist
Federal Highway Administration
100 Centennial Mall
Room 220
Lincoln, NE 68508

RE: Biological Assessment, L62A/US 385 to Alliance, Project Number: DPS-385-3(118), Control Number: 51432, Morrill and Box Butte Counties

Dear Ms. Lamrouex:

This responds to the April 29, 2014, Emailed request for comments and concurrence from the U.S. Fish and Wildlife Service (Service) for the subject project. The Service has responsibility for conservation and management of fish and wildlife resources for the benefit of the American public under the following authorities: 1) Endangered Species Act of 1973 (ESA), 2) Fish and Wildlife Coordination Act, 3) Bald and Golden Eagle Protection Act, and 4) Migratory Bird Treaty Act. The National Environmental Policy Act (NEPA) requires compliance with all of these statutes and regulations. This project was prioritized by the Nebraska Department of Roads (NDOR) and the Federal Highway Administration (FHWA) on April 29, 2014.

The Service has special concerns for endangered and threatened species, migratory birds, and other fish and wildlife and their habitats. Habitats frequently used by fish and wildlife species are wetlands, streams, riparian (streamside) woodlands, and grasslands. Special attention is given to proposed developments that include modification of wetlands, stream alteration, loss of riparian habitat, or contamination of habitats. When this occurs, the Service recommends ways to avoid, minimize, or compensate for adverse effects to fish and wildlife and their habitats.

ENDANGERED SPECIES ACT (ESA)

Pursuant to section 7(a)(2) of the Endangered Species Act, every federal agency, shall in consultation with the Service, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. If a proposed project may affect federally listed species or designated critical habitat, section 7 consultation is required with the Service. It

is the responsibility of the federal action agency to fully evaluate all potential effects (direct and indirect) that may occur to a listed species and critical habitat in the action area. The federal agency provides their effects determination to us for concurrence. If federally listed species and/or designated/proposed critical habitat would be adversely affected by implementation of the project, the federal agency will need to formally request further section 7 consultation with the Service prior to making any irretrievable or irreversible commitment of federal funds (section 7(d) of ESA), or issuing any federal permits or licenses.

This project is considered part of the overall Heartland Expressway project and proposes to upgrade the existing two-lane roadway to a four-lane expressway (on both existing and new alignments) for approximately 26-miles. The project is located along both L62 A and US 385, beginning at MM 7.00 on L62A (and MM 84.50 on US 385) and ending at MM 9.19 on L62A (and MM 109.24 on US 385). Additional construction activities include the following: clearing and grubbing, culverts new/replacement/extension/repair—ephemeral, new/replacement/extension/repair—intermittent, curb and flume, curb and gutter, earth shoulder construction, erosion control (checks, inlet/outlet, rolled, and post construction), fencing, grading beyond the hingepoint, habitat fragmentation/modification of connectivity, lighting, milling, pavement marking, pavement removal, paving, removal of structures and obstructions, rock or gravel surfacing, sidewalks and bikeways, signs with soil disturbance, survey and staking. The proposed project may need to obtain a Department of the Army (DA) permit, and likely need borrow material for construction.

For the project, FHWA/NDOR has proposed to implement conservation conditions for the federally and state endangered federally and state endangered Blowout penstemon (*Penstemon haydenii*), the state endangered Swift fox (*Vulpes velox*). In addition, FHWA/NDOR has proposed to implement conservation measures for golden eagles, and they have developed an Avian Protection Plan for ways to avoid and minimize a project's potential impacts to migratory birds that will be implemented into projects when applicable.

Based on the information that was submitted, the Service concurs that the proposed project may affect but is not likely to adversely affect federally listed species and/or critical habitat within the limits-of-construction (LOCs). However, should changes to the proposed project occur (i.e. direct/indirect effects are identified, off-site contractor activities such as borrow, staging, or waste sites are identified), Platte River depletions are identified, or new information regarding federally listed species and/or critical habitat become available, this determination is no longer valid. Further section 7 consultation with the Service will be necessary. The species sited in the project's biological assessment could be impacted by off-site construction activities within or outside of the 5-mile action area surrounding the LOCs (July 31, 2009, letter to FHWA). If such contractor activities as haul roads, staging, borrow or waste are identified as necessary for the proposed project, the Service should be contacted and the following information should be submitted to the Service for further section 7 consultation:

1) an aerial photo showing the proposed activity site
2) a soil survey map with the location of the activity site
3) a plan-sheet or drawing showing the location and dimensions of the activity site, identify the depth to ground water and depth of the pit
4) at a minimum, four different ground photo views showing the existing conditions at the proposed site
5) evaluation of the proposed impacts to federally listed species from the offsite construction activities

6) post-construction restoration plan for the disturbed site
7) pre/post construction report

Additionally, the contractor should be made aware that potential species surveys (prior to the actual use of the site) may be necessary for any off site activities.

All federally listed species under ESA are also State-listed under the Nebraska Nongame and Endangered Species Conservation Act. However, there are also State-listed species that are not federally listed. To determine if the proposed project may affect State-listed species, the Service recommends that the project proponent contact Michelle Koch (michelle.koch@nebraska.gov), Nebraska Game and Parks Commission, 2200 N. 33rd Street, Lincoln, NE 68503-0370.

REVIEW, COMMENTS, AND RECOMMENDATIONS ON THE PROPOSED PROJECT ACTION UNDER OTHER FISH AND WILDLIFE STATUTES

Fish and Wildlife Coordination Act (FWCA)

1. Water Resources

The FWCA requires consultation with the Service and State fish and wildlife agency for the purpose of giving equal consideration to fish and wildlife resources in the planning, implementation, and operation of federal and federally funded, permitted, or licensed water resource development projects. The FWCA requires that federal agencies take into consideration the effect that water related projects may have on fish and wildlife resources, to take action to avoid impact to these resources, and to provide for the enhancement of these resources.

2. Wetlands, Streams, and Riparian Habitats

The Service recommends that impacts to wetlands, streams, and riparian areas be avoided or minimized, in accordance with the Section 404(B)(1) Guidelines of the Clean Water Act. For projects that do not require access or proximity to, or location within aquatic environments (i.e., non-water dependent project) to fulfill its basic project purpose, it is assumed that practicable alternatives exist that would cause less damage to aquatic resources than projects that are located in aquatic ecosystems. In addition to determining the least environmentally damaging practicable alternative, 40 CFR Part 230.10(a) of the Guidelines also states, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."

If after an alternatives analysis has been completed in accordance with the Guidelines and unavoidable impacts are to occur to aquatic habitats, the Service recommends that compensation (i.e., restoration of a degraded wetland or creation) occur.

3. Wildlife Connectivity and Aquatic Biota

Land use practices that allow soil to runoff into waterways following rainfall events cause the siltation of streams, and increase turbidity which can result in a lowering of water quality and thus, a loss in the diversity of natural aquatic systems. The Service recommends that the project proponent incorporate rigorous soil erosion control practices both during and after the proposed construction, including temporary construction activities or any other alignment procedures in

order to avoid impacts to fish and other aquatic organisms. Bridge placement and any culverts should also be constructed at appropriate sizes and elevations so as to not impede animal/fish movement (i.e. either new structure installation or culverts used in a temporary crossing). The Service further recommends that the project proponent not alter or install structures in any way that would result in reductions in current channel width. See these websites for structure design considerations for both aquatic movements and improving wildlife connectivity:

- http://www.wildlifeandroads.org/,
- http://www.wildlifeconsultingresources.com/pdf/Carnivore%20Safe%20PassageFinalSMALL.pdf,
- http://www.transwildalliance.org/resources/20114211913.Pacific.Region.Roadway.Design.Guidelines.pdf,
- http://wdfw.wa.gov/hab/engineer/cm/culvert_manual_final.pdf,
- http://www.fhwa.dot.gov/engineering/hydraulics/policymemo/20071219.cfm.

Additionally, the Service has enclosed recommended best management practices to minimize potential impacts to native fish and other aquatic resources, including spawning timeframes for Nebraska fish species. To determine if the proposed project may affect fish and wildlife resources of the State of Nebraska under the FWCA, the Service recommends that the project proponent contact Carey Grell (Carey.Grell@nebraska.gov), Nebraska Game and Parks Commission, 2200 N. 33rd Street, Lincoln, NE 68503-0370.

The Service appreciates the opportunity to provide comments on this proposed project. Should you have any questions regarding these comments, please contact Ms. Brooke Stansberry within our office at Brooke_Stansberry@fws.gov or at (308) 382-6468, extension 16.

Sincerely,

Eliza Hines
Acting Nebraska Field Supervisor

Enclosure

cc: NGPC; Lincoln, NE (Attn: Michelle Koch)
NGPC; Lincoln, NE (Attn: Carey Grell)
USACE; Omaha, NE (Attn: Phil Rezac)
USACE; Omaha, NE (Attn: Adam Nebel)
NDOR; Lincoln, NE (Attn: Melissa Marinovich)
NDOR; Lincoln, NE (Attn: Zach Cunningham)

ENCLOSURE

Recommended Best Management Practices for Proposed Construction Activities Associated with Streams/Rivers

- Avoid earth moving activities or fill/bank armoring during native fish spawning periods from May 15 – July 31, construct stream crossings or other associated temporary embankments during low flow periods (usually August – October).

- Minimize work area at stream locations. The majority of the work (including heavy equipment and storage sites) should occur above the high bank line. Avoid driving equipment through the streambed.

- Implement comprehensive and effective erosion and sediment controls. These methods should be implemented and maintained for the duration of the project and considered at all stages of the project planning and design. Close attention is warranted for the placement and maintenance of temporary erosion control measures at the construction site to minimize sediment loading. These erosion/sediment control techniques should keep sediments from entering the stream and remain in place until work areas become re-vegetated and stable. Such erosion control measures may include properly placed sediment/silt screens or curtains and hay bales. Proper techniques are important to the placement of these types of structures and include trenching, staking and backfilling as well as using the appropriate number of bales. These techniques are best used in combination with each other rather than separately.

- Erosion and sediment controls should be monitored daily during construction to ensure effectiveness, particularly after storm events, and only the most effect techniques should be utilized. Clean, repair and replace structures as necessary.

- Exposed stream banks must be stabilized immediately after construction activity. Eroded surfaces should not be left exposed for greater than one day. If rain is predicted, no construction should commence unless eroded surfaces are immediately treated with geotextile fabric, mulch, seeding or some techniques that would stabilize the bank or exposed areas from eroding.

- Erosion repair and stream bank restoration should use appropriate bioengineering solutions.

- Develop and implement a hazardous materials safety protocol. This would include that all temporary storage facilities for petroleum products, other fuels and chemicals must be located and protected to prevent accidental spills from entering streams within the project area.

FISRWG. 1998. Stream Corridor Restoration: Principles, Processes, and Practices. By the Federal Interagency Stream Restoration Working Group (FISRWG) (15 Federal agencies of the U. S. Government). GPO item No. 0120–A; SuDocs No. A 57.6/2:EN 3/PT.653. ISBN-0-934213-59-3.

Marinovich, Melissa

From: Koch, Michelle
Sent: Tuesday, August 05, 2014 12:00 PM
To: Marinovich, Melissa; Stansberry, Brooke
Cc: Lamrouex, Molly; Maiefski, Melissa
Subject: RE: Jct. L62A/US-385 to Alliance, NH-385-3(118), CN 51432 - Additional Coordination

Hi Melissa,
Thank you for providing updated project information on August 5, 2014 (see below), regarding Jct. L62A/US-385 to Alliance, NH-385-3(118), CN 51432. We have reviewed the information provided and have no objection to the conservation condition (SF – Additional 1) being revised as proposed. We concur that making this change does not alter the effect determinations we previously concurred with.

Please let me know if you have questions or need additional information.

Thanks,
Michelle

Michelle R. Koch
Environmental Analyst Supervisor | Planning & Programming Division

Nebraska Game and Parks Commission | 2200 N. 33rd St. | Lincoln, NE 68503
Office: (402) 471-5438 | Fax: (402) 471-4992 | Email: michelle.koch@nebraska.gov

Office Hours: M, W, Th 9:00 am – 5:30 pm
Telework: Tu, F 8:30 am – 5:00 pm

From: Marinovich, Melissa
Sent: Tuesday, August 05, 2014 11:30 AM
To: Stansberry, Brooke; Koch, Michelle
Cc: Lamrouex, Molly; Maiefski, Melissa
Subject: Jct. L62A/US-385 to Alliance, NH-385-3(118), CN 51432 - Additional Coordination
Importance: High

Hi Brooke and Michelle,

This project was originally signed-off by FHWA on 4/29/14 and concurrence was received from USFWS on 5/1/14, and NGPC on 5/16/14. FHWA has since begun review of the Draft Environmental Assessment for this Project and highlighted a concern with one of the conservation conditions for Swift Fox, regarding the fencing commitment and the legal aspect of whether or not this action would be allowable or enforceable. After discussion with NDOR ROW manager, it has been determined that NDOR will make the commitment to replace the fence on NDOR ROW, therefore, not placing any requirements on the landowner to replace a fence with a certain type.

Below is what was included in the original Biological Assessment:

SF-Additional 1 ROW contract language will state that NDOR will pay landowners to replace existing fencing with a 4- or 5-strand barbed wire. Landowners will be held to the contract requirements, and no woven or welded wire will be allowed. (NDOR ROW, Contracting)

Below in **RED** is what I have drafted as a proposed change:

SF-Additional 1 NDOR will replace existing ROW fencing on NDOR ROW with 4-strand barbed wire, wildlife-permeable, fencing (See attached example drawing). No woven or welded wire will be allowed. (NDOR Design, Construction, Contracting)

Please let me know your thoughts. Originally, we had agreed to pay the landowner to replace fence with 4 or 5-strand barbed wire, depending on what they already had installed. However, we opted so specify 4-strand, wildlife permeable to ensure pronghorns, as well as mule deer are still able to move freely across the landscape. Attached is an example fence design that would be included. Hopefully this change can be approved via email, since it is not a major change and would not change the effect determinations for the species.

Thanks,

Melissa Marinovich

Highway Environmental Biologist

Nebraska Department of Roads
1500 Highway 2, Lincoln, NE 68509
Phone: (402) 479-3546
Cell: (402) 560-0760
Fax: (402) 479-3895
Email: melissa.marinovich@nebraska.gov

Office Hours: M-Th 7:00 am - 5:30 pm

Marinovich, Melissa

From: Stansberry, Brooke <brooke_stansberry@fws.gov>
Sent: Tuesday, August 05, 2014 12:19 PM
To: Marinovich, Melissa
Cc: Koch, Michelle; Lamrouex, Molly; Maiefski, Melissa
Subject: Re: Jct. L62A/US-385 to Alliance, NH-385-3(118), CN 51432 - Additional Coordination

Melissa,

Thank you for providing the project update for Junction L62A/US-385 to Alliance (NH-385-3(118) in your August 5, 2013, emailed submittal.

The Service has reviewed the information and has no objection to the modified conservation condition (SF-Additional 1) as proposed. As with the NGPC, the Service concurs that this change does not alter the effect determinations we have previously concurred with.

The Service appreciates the updated project information and continued assurances from NDOR/FHWA to protect fish and wildlife trust resources.

Thanks again,

Brooke

Brooke Stansberry
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
203 West Second Street
Grand Island, Nebraska 68801
Phone: 308-382-6468, Extension 16
Cell: 308-379-8554
Fax: 308-384-8835
Brooke_Stansberry@fws.gov
http://www.fws.gov/nebraskaes/

"Like the resource it seeks to protect, wildlife conservation must be dynamic, changing as conditions change, seeking always to become more effective."

--Rachel Carson

Threatened and Endangered Species Concurrence Memorandum

NDOR
Nebraska
Department of Roads

Memorandum

DATE 8/5/14

TO Tom Plattner

FROM Melissa Marinovich, HWY Environmental Biologist

SUBJECT Jct. L62A – US-385 to Alliance; NH-385-3(118); 51432
Threatened & Endangered Species Concurrence

The attached concurrence document signed on 4/29/14 by Molly Lamrouex, FHWA, and concurrence letters from the USFWS signed on 5/1/14 and NGPC signed on 5/16/14 is the documentation required for threatened & endangered species concurrence in the NEPA document. Also attached is email correspondence regarding additional coordination with the agencies that required a slight language change to one of the conservation conditions for swift fox dated 8/5/14.

The project, as proposed has been determined to **"may affect, not likely to adversely affect"** the following listed species with the implementation of conservation conditions: **Black-Footed Ferret, Blowout Penstemon, Swift Fox.** The project will have "no effect" to all other state or federally listed species or their designated critical habitat. Northern Long-eared Bat (Proposed endangered) was reviewed and the project was found to have "no effect."

Below are the Conservation Conditions and survey protocol (if applicable) that will be required for this project. They must be included verbatim in the "green sheet" **and** NEPA document.

CONSERVATION CONDITIONS ALREADY COMPLETED:

Blowout Penstemon:

BOP-1 A qualified biologist will survey according to protocol during the growing season (June - July) prior to the completion of the Process. If the Natural Heritage Database identifies a known occurrence within 1.0 mile of the project, since the year 1975, there will be another survey according to protocol during the growing season immediately prior to construction. If species are not found during the survey, then the May Affect, Not Likely to Adversely Affect stands. If positive finding, then consultation is required.

The site was surveyed on June 13-15, 2011. No blowout penstemon were documented at the time of the survey. No Natural Heritage Database records exist within 1-mile of the project area. No further surveys for this species are required.

CONSERVATION CONDITIONS TO CARRY FORWARD:

General Conservation Conditions:
(Responsible Party for the measure is found in parentheses)

A-1 **Changes in Project Scope**. If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate

potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the Federal Highway Administration. *(District Construction, Contractor)*

A-2 **Conservation Conditions**. Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. *(District Construction, Contractor)*

A-3 **Early Construction Starts**. Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle timeframes. Work in these timeframes will require approval from the Federal Highway Administration and could require consultation with the USFWS and NGPC. *(District Construction, Contractor)*

A-4 **E&T Species**. If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. *(NDOR Environmental, District Construction, Contractor)*

A-5 **Refueling**. Refueling will be conducted outside of those sensitive areas identified on the plans, in the contract, and/or marked in the field. *(Contractor)*

A-6 **Restricted Activities.** The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the right-of-way designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.

For activities outside the project limits, the contractor should refer to the Nebraska Game and Park Commission website to determine which species ranges occur within the off-site area. The contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site, or other off-site activities. The contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

Any project related activities that occur outside of the project limits must be environmentally cleared/permitted with the Nebraska Game and Parks Commission as well as any other appropriate agencies by the contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of 4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental which will coordinate with FHWA for acceptance if needed. The contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. *(NDOR Environmental, District Construction, Contractor)*

A-7 **Waste/Debris**. Construction waste/debris will be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. *(Contractor)*

S-1 **Fencing.** When project-related fence construction/relocation work is required to be done prior to the start of construction and if the fence work occurs outside urban or cropland areas not within swift fox or mountain plover range, then fencing can be installed/relocated at any time using the following criteria:

a. the fencing is temporary in nature and/or consists of only hand-driven posts
b. the work does not compact the soils (ex. through the use of heavy equipment) or cause soil disturbance beyond the driving of posts
c. within the **whooping crane** migration corridor, work occurring within a half of a mile of wetlands or perennial waters will occur between the hours of 10:00 am to 4:00pm when the work is between March 10th to May 10th or September 16th to November 16th

If the fencing work cannot meet these criteria, then NDOR Right-of-Way Division shall coordinate with NDOR environmental prior to the completion of Right-of-way negotiations.

S-3 **Revegetation**. All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed **plants** were identified during the survey, any seed mix requirements identified during resource agency consultations shall be used for the project. *(NDOR Environmental)*

S-4 **Sensitive Areas**. Environmentally Sensitive Areas will be marked on the plans, in the field, or in the contract by NDOR Environmental for avoidance. *(NDOR Environmental, District Construction)*

S-5 **Species Surveys**. If species surveys are required for this project, results will be sent by NDOR to the USFWS, NGPC, and if applicable COE. FHWA will be copied on submittals. *(NDOR Environmental, District Construction)*

Species Specific Conservation Conditions:

Swift Fox:

SF-1 Up to a year prior to construction, NDOR or a qualified contractor may survey for potential swift fox den sites within the projects' environmental study area. Any potential den sites that are not in use by any species may be covered with 2" by 4" weld-wire fencing and adequately secured to the ground. Two weeks prior to the start of construction, a qualified biologist shall survey the environmental study area according to protocol to determine if active swift fox den sites are present. If an active den with young is located and it is outside the project limits, then a buffer zone shall be established around the den and all construction activities shall avoid the buffer until the den is abandoned. If an occupied den with or without young is identified within the project limits or staging areas, NDOR shall immediately coordinate with the NGPC and notify FHWA (if applicable) to determine how to proceed. A buffer zone shall be established around the den and all construction activities shall avoid the buffer until NDOR gives approval to enter the buffer area. Between April 1 and August 31 the buffer zone shall be 250 yards around the active den site; other times of the year, the buffer shall be 100 yards around the active den site. (NDOR Environmental)

SF-Additional 1 NDOR will replace existing ROW fencing on NDOR ROW with 4-strand barbed wire, wildlife-permeable, fencing (See attached example drawing). No woven or welded wire will be allowed. (NDOR Design, Construction, Contracting)

SF-Additional 2 Artificial escape dens will be installed along the project corridor in areas of suitable habitat as determined by NDOR or a qualified biologist. Escape den specifications

and habitat suitability maps for the Junction L62A/US 385 to Alliance project can be found in the attached Swift Fox Escape Den Protocol. (NDOR Environmental, Roadway Design, Construction)

Bald and Golden Eagle Protection Act:

- Suitable **Golden Eagle** nesting habitat exists within 0.5 miles of the Environmental Study Area. If construction will begin between February 1 and April 15, a nest survey must be completed at least 1 but not more than 14 days prior to construction. If construction will begin between April 15 and October 1, a nest survey completed in March is sufficient, as nests will likely already be constructed if nesting will occur that year. However, a nest survey may be completed anytime during this timeframe, as long as it is completed prior to construction. If golden eagles are nesting in the area, consultation with NGPC and USFWS will be required.

Felsburg Holt & Ullevig Memorandum: Safety Analysis Report—Deer Collisions

July 31, 2014

MEMORANDUM

TO: Randy Eldorado, PE

FROM: Rick Haden
Felsburg Holt & Ullevig

SUBJECT: Junction of L62A/US 385 to Alliance
NDOR Project No. NH-385-3(118) Control No. 51432
Safety Analysis Report- Deer Collisions

As you know, Felsburg Holt & Ullevig (FHU) completed a traffic safety analysis (see November 14, 2011 Report) for the US 385 study corridor from the L62A Junction to Alliance. The collision history for the study area was analyzed for the eight-year period of July 1, 2002 thru June 30, 2010 utilizing crash data provided by the Nebraska Department of Roads (NDOR).

The crash review along the project corridor involved an examination of the patterns of crashes. The most frequently observed patterns by type, contributing circumstances or involvement for the 5-year period from July 1, 2002 to June 30, 2007 and the 3-year period from July 1, 2007 to June 30, 2010 are shown in **Table 3**. The data was broken into the two periods to track trends.

The total of the percentages of crashes by type in each period do not add up to exactly 100% since some crashes are included in two categories. Overall, the most frequently observed crash patterns in both periods were animal (primarily deer) collisions (35% and 38%). For perspective, deer collisions represented 42.5% of all collisions in Morrill County, 6.8% of all collisions in Box Butte County, and 22.6% of all collisions on the state highway system in 2009.

Table 3. Crash Patterns

	5 years (7-1-02 to 6-30-07)		3 years (7-1-07 to 6-30-10)	
Crash Type	**Number of Crashes**	**% of Crashes**	**Number of Crashes**	**% of Crashes**
Animal (Deer)	38	35	26	38
Snow/ Ice	24	22	17	25
Overturn / Off Road/ Embankment	35	32	12	18
Truck	22	20	10	15
Fixed Object	7	6.4	11	16
Passing / Over Taking / Head-on	4	3.7	10	12
Rear-End	9	8.2	5	7.3
Right Angle	6	5.5	2	2.9

The average number of Deer Related Collisions along the entire 27-mile study corridor equates to 64 in eight years or .30 crashes per mile per year. This is consistent with the statewide average of 0.29 animal crashes/ mile/ year on state highways in 2009.

The crash patterns along the L62A and US 385 corridors within the study area were also plotted by FHU on plan and profile sheets for the study corridor and reviewed for patterns by location, geometrics, Time of Day, Day of Week, Weather Conditions, Road Surface Conditions, Driver's Condition, and Vehicle Type **(Appendix)**. Several locations were noted as having two or more crashes of a particular pattern in a specific section of roadway over the most recent three-year study period. The specific crash patterns, correctable number of crashes and contributing circumstances are shown in **Table 4**.

Table 4. Safety Evaluation by Pattern & Segments in More Recent 3-Years (7-1-07 to 6-30-10)

Location	Crash Pattern	Crashes	Other Comments
JCT. L62A & US 385	Eastbound Stop Sign Violation (SSV)	2	There were 2 SSV reported crashes - Stop sign, three warning signs, two route markers, and two rumble bars
RP 85.00 to RP 87.00	Deer Related Collisions	7	These are in the open area north of L-62A to Angora. All but one of the collisions occurred in low light conditions
RP 89.70 to RP 91.62	Snowy or Icy Roads	5	All occurred between 6:10-9:30 AM, included SB truck passing left turning vehicle at north access to rest area
	Deer Related Collisions	2	Countermeasures such as deer reflectors have been used by some states with mixed results. Other higher cost measures such as high tech detection and fencing with grade separation for deer are effective but expensive
RP 93.00 to RP 94.00	Deer Related Collisions	4	Just south of County Road 128
RP 102.41 to RP 107.51	Passing	8	Four of the collisions involved a vehicle attempting to pass a left turning vehicle on the left at an intersection
	Left Turns	4	Two involved trucks at an intersection, one truck at fault and one car at fault for trying to pass left turning vehicle
	Snowy or Icy Roads	4	These were spread throughout the open areas
RP 108.41 to RP 109.48	Right Turn	3	Two of the crashes involved trucks negotiating a right turn off of US 385, right turn deceleration lanes were evaluated
	Deer Related Collisions	4	Surprising number of deer collisions within the City of Alliance where the speed limits are lower

The highest concentration of Deer Related Collisions was noted in Alliance from RP 108.41 to RP 109.48 with 4 crashes in 3 years or an average of 1.25 crashes/ mile/ year. It is, however, below the critical rate of 2 collisions per mile per year generally used by NDOR in identifying a concentration of animal related conditions.

The widening from 2 lanes to 4 lanes would provide some improvement in sight distance and a driver's ability to react to deer adjacent to the roadway. The experience of widening I-80 from 4 lanes to 6 lanes between Lincoln and Omaha showed a 25-40% reduction in deer collisions. This was outside of the area that deer fencing and undercrossings were provided near the Plate River.

Species Specific Survey Protocols:
Swift Fox Escape Dens and Golden Eagle Surveys

Swift Fox Escape Den Installation Protocol

Junction of L62A/US-385 to Alliance
Project Number: NH-385-3(118)
Control Number: 51432

Introduction

To mitigate for potential mortality of swift fox (*Vulpes velox*) due to vehicle-fox collisions on the expanding Junction L62A and US-385 corridor, the installation of artificial escape dens may help to prevent mortality from coyote predation of swift foxes in the vicinity of the Project and off-set potential mortality to the species. Swift foxes rely on dens throughout the year for protection from predators (Tannerfeldt et al. 2003), and better access to dens may reduce swift fox mortality from coyotes (Kitchen et al. 1999). Successful use of artificial dens has been demonstrated with studies of the federally-listed San Joaquin kit fox (*Vulpes macrotis mutica*) in California (Bjurlin et al. 2005) and swift fox in northwest Texas (McGee et al. 2006). Swift fox and San Joaquin kit fox are closely related species (Mercure et al. 1993) with similar morphology. Consequently, artificial dens for both species would have similar specifications. Den openings are the same size for both species, an approximate diameter of 20 cm (Cutter 1958, Pruss 1999).

Artificial Den Description

Escape dens should consist of 3- to 6-m lengths of 20-cm diameter pipe (Figure 1a). Pipes should be polyvinyl chloride (PVC) or high density polyethylene (corrugated plastic sewer pipe) (Figure 1b). Pipes should be placed on the surface of the ground and covered with 1-2 m of soil (Figure 1c). Both open ends of the pipe should be left exposed (McGee et al. 2006). Although natural den entrances are 20 cm, artificial den entrances can be modified to an opening of 10-15 cm in order to exclude larger predators such as the red fox. One way this can be accomplished is by driving a stake into the ground in front of the entrances at the desired width (Bjurlin et al. 2005). Artificial dens should be permanently marked to alert maintenance personnel to their presence.

Location Selection

Escape dens should be installed as close as possible to the area where natural dens are potentially being disturbed or destroyed. They should also be in areas that swift fox are likely to utilize. This is generally in elevated areas with well-drained soils, near the tops of gently sloping hills (20% slope or less). If possible, den entrances should generally be oriented east or west, as most natural dens in Nebraska have this orientation (Hines and Case 1991), but more importantly they should be oriented to avoid flooding during precipitation events. Dens should be located in grassland with short vegetation (<30 cm. (Meyer 2009), such as overgrazed cattle pasture (Allardyce and Sovada 2003) or near prairie dog towns (Russell 2006). Den locations will preferably be located in loamy soils, as swift fox generally avoid areas of clay soils (Marks 2005). The majority of natural den sites in Nebraska occur in sandy loam soil (Hines 1991). Dens may be located near anthropogenic areas such as roads or culverts (Tannerfeldt et al. 2003). The distance of dens to

major roads may not be an important factor as San Joaquin kit foxes have been observed to use dens within 100 feet of major roadways at the same rate as those at greater distances from the roadway (Bjurlin et al. 2005). Location considerations are summarized in the following bullet points:

- **Topographic Location**: elevated, well-drained areas, near tops of slopes
- **Slope**: gently sloping, about 20% or less
- **Aspect**: openings should be oriented to avoid flooding; should face east or west only if possible
- **Vegetation**: short grass, less than 30 cm in height
- **Substrate**: loam or sandy loam is preferred over clay or very sandy soils
- **Anthropogenic Features**: may be located near roads or culverts, no known minimum distance

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Figures

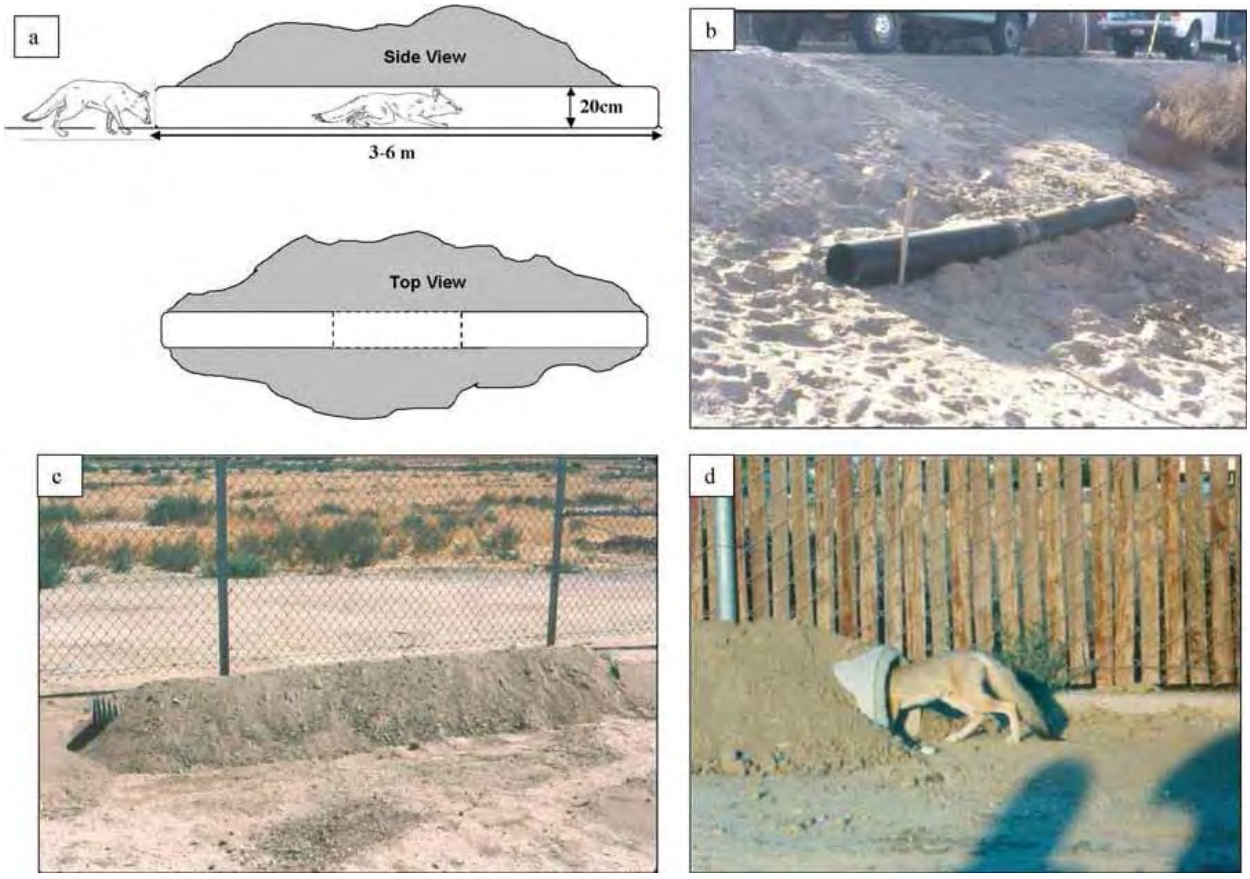

Figure 1. Artificial escape dens for San Joaquin kit fox at Bakersfield, CA. a) Escape den schematic. b) High-density polyethylene escape den under construction. c) Completed den. d) Kit fox entering escape den. (Bjurlin et al. 2005.)

Nebraska Transportation Habitat Assessment Protocol for Golden Eagle

Background

Golden eagles (*Aquila chrysaetos*) can be found in the tundra, throughout grasslands, woodland-brushlands, and forested habitat, south to arid deserts, including Death Valley, California (Kochert et al., 2002). They are aerial predators and eat small to mid-sized reptiles, birds, and mammals up to the size of mule deer fawns and coyote pups. They also are known to scavenge and utilize carrion. In Nebraska's Panhandle, golden eagles are found in arid open country with grassland for foraging, which covers approximately the western quarter of the state. These habitats are typically near buttes or canyons which serve as nesting sites. Golden eagle food sources often consist of prairie dogs and jackrabbits; however, eagles are opportunistic scavengers and will occasionally feed on any available animal carcass. Golden eagles are a regular spring and fall migrant and winter visitor in central Nebraska, but they are not commonly observed in the eastern third of the state.

Golden eagles build nests on cliffs, in the largest trees of forested stands, or on rock escarpments, allowing for an unobstructed view of the surrounding habitat (Beecham and Kochert 1975, Menkens and Anderson 1987, Bates and Moretti, 1994). Usually, sticks and soft material are added to existing nests, or new nests are constructed to create a strong, flat or bowl shaped platform for nesting (Palmer 1988, Watson 1997, Kochert et al., 2002). Golden eagles have been known to decorate multiple nests in a single year; continuing to do so until they lay eggs in a selected nest. The completed nest structure(s) can vary from large and multi-layered; or a small augmentation of sticks in caves with little material other than extant detritus (Ellis et al., 2009).

Golden eagles avoid nesting near urban areas and do not generally nest in densely forested habitat. Individuals will occasionally nest near semi-urban areas where housing density is low or in farmland habitat; however golden eagles have been noted to be sensitive to some forms of human presence (Pagel et al., 2010). Golden Eagles lay one to four eggs, with two eggs being common and four eggs being rare. The laying interval between eggs ranges between three to five days. Severe weather may delay the onset of egg-laying (Driscoll, 2010).

Phenology is not well understood in Nebraska; however nesting birds have been observed on eggs in April and young birds reported by the third week of May (Molhoff, 2001). The golden eagle breeding season generally occurs from mid-January to mid-September, but varies according to geographic area (Phillips et al., 1990, Verner et al., 1980).

Driscoll (2010) describes that breeding chronology begins with an increase in courtship flights and nest refurbishment in December and January. Some eagle pairs lay eggs as early as January; however, mid-February is more typical. Incubation is 45 days. Young hatch from mid-March through April and remain in the nest for 10 weeks, fledging in June. Fledglings remain in the breeding area for up to two months, during which the adults continue to feed them. Juveniles disperse from the breeding area during July and August.

Purpose

Golden eagles are legally protected by the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act and are considered a Tier II at-risk species (i.e., a species that is at-risk in Nebraska but doing well in other parts of its range) by the Nebraska Game and Parks Commission (NGPC) (Schneider et. al., 2011). The Nebraska Department of Roads (NDOR) and Federal Highway Administration (FHWA) has a need to demonstrate due diligence efforts that the transportation program is trying to avoid potential conflicts between eagles and potentially disruptive construction activities, as is already assessed and completed for bald eagles and migratory birds (Bald eagle survey protocol, 2007, NDOR APP, 2012). To document this effort for golden eagles, a habitat assessment process will be followed and coordinated with the NGPC and the U.S. Fish and Wildlife Service (USFWS).

Habitat Assessment Process

1) Similar to our Species Evaluation Process for listed species, NDOR will determine if a proposed project occurs in a county within the most current available breeding range map (2012 example attached) and if there are known nest observations identified by NGPC's Heritage Program or the Breeding Bird Atlas within a 0.5-mile radius of the project.

2) In addition to range & nest location data, other types of desktop (GIS) information could be analyzed to determine whether the Limits of Construction are within 0.5-mile of the following golden eagle habitat indicators:

- Undeveloped
- Native grassland
- Trees
- Steep terrain
- Biologically Unique Landscapes (Pine Ridge, Wildcat Hills, Panhandle Prairies, Kimball Grasslands, Oglala Grasslands)
- Rocky escarpments
- Cliffs
- Rock outcrop
- Shortgrass prairie
- Sandhills dune prairie with 400 foot high rolling dunes
- Prairie dog towns

(3) If a **known** nest does occur within 0.5-mile of the project, or the habitat within 0.5-mile of the project appears to suggest a strong likelihood for golden eagle occupancy, a planned site visit prior to construction should take place:

It is recommended that the dates of the site visit should be sensitive to the local nesting (i.e. laying, incubating, and brooding) and conducted during weather conditions favorable for observing from medium to long range distances (+300—700 meters) (Pagel et al, 2010). There is some unknown proportion of golden eagles that nest in trees in the panhandle (<10%) but these nests are not always detected as cliff-dwelling nests are but usually they are found in

fairly remote locations (Joel Jorgensen, pers comm). It seems likely that these tree nests should be detected by following the bald eagle nest survey protocol.

(4) If nests are identified, follow up coordination with the Service and Commission should take place.

Nest Surveys

Golden eagle nests are typically large and distinctive, but may be well concealed and difficult to see against cliff faces and within rocky areas, or if in a tree, when trees have foliage. Nest surveys should complete a full inspection of rock escarpments, buttes, cliff faces, and large trees within 0.5-mile of the project in areas considered suitable habitat. Identified nests should be recorded using GPS. In addition to nests, any golden eagles observed during the survey and their behavior should be noted on the survey report. Potential nests should be observed from a distant location that does not disturb the eagles to confirm presence or absence of eagle activity. Nest surveys are to be conducted by a qualified biologist. Surveys resulting in a positive nest location will be sent to the NGPC and USFWS.

If construction will begin between February 1 and April 15, a nest survey must be completed at least 1, but not more than 14 days prior to construction. If construction will begin between April 15 and November 1, a nest survey completed in March is sufficient, as nests will likely already be constructed if nesting will occur that year. However, a nest survey may be completed at any time during this timeframe, as long as it is completed prior to construction. If golden eagles are nesting in the area, consultation with USFWS will be required, so it is in the project proponent's best interest to complete the survey and notify the agencies as early as possible.

Identification resources

The field identification of North American eagles:
http://www.globalraptors.org/grin/researchers/uploads/155/eagle_i.d._1983.pdf

Good examples of differences between species (i.e. feet, bills, feathers and pictures):
http://www.hancockwildlife.org/forum/viewtopic.php?showtopic=132018

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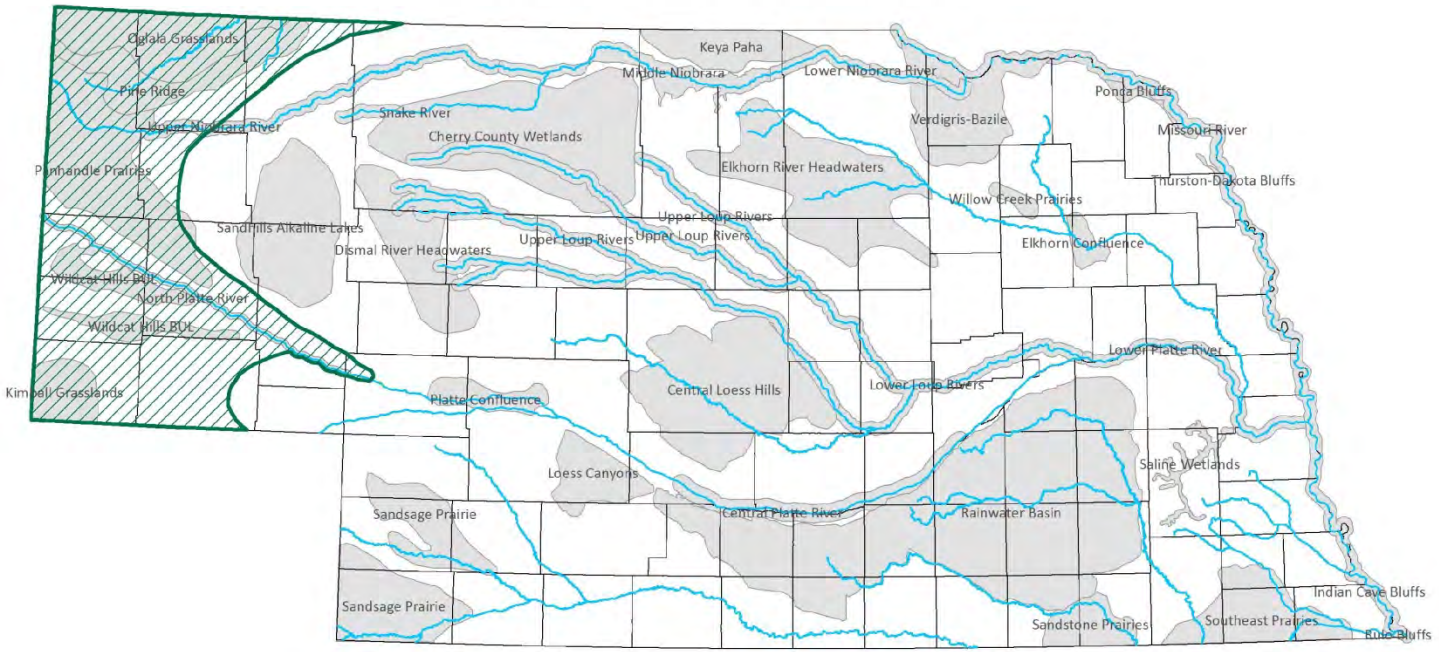
Current breeding range of Golden Eagle
(Aquila chrysaetos)



NEBRASKA GAME PARKS

NEBRASKA Natural Heritage Program

Nebraska Natural Heritage Program,
Nebraska Game and Parks Commission
September 2012

Adult Golden Eagle (USFWS)

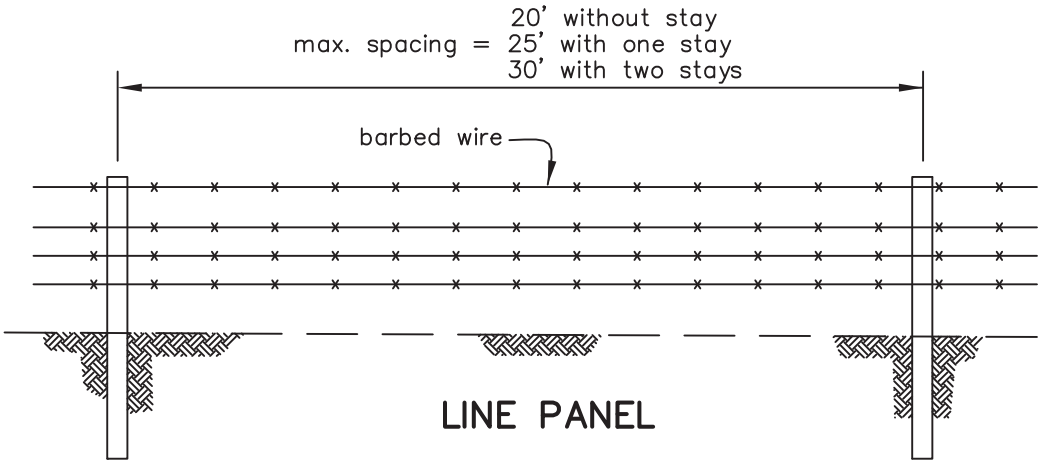
Immature Bald Eagle (USFWS)

Golden Eagle (USFWS)

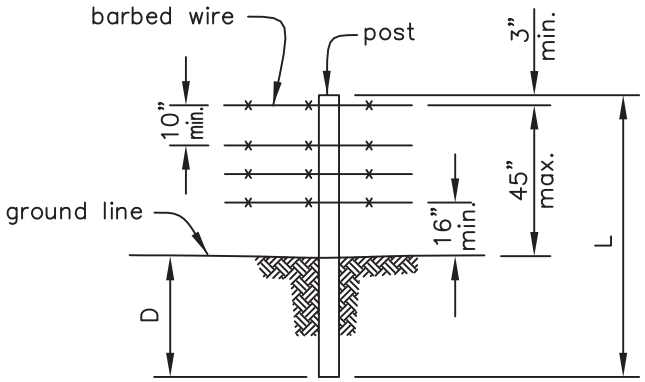
Turkey Vulture (USFWS)

Fencing Design for
Swift Fox-Additional 1 Commitment

NEBRASKA STANDARD DRAWING	4 STRAND STANDARD POST AND WIRE FENCE	STANDARD DRAWING NO. NE500–10–002 APPROVED BY: TGH DRAWN BY: RXS Drawing revised: 12/06



LINE PANEL



BARBED WIRE DETAIL

BARBED WIRE

Min. line wire diameter:
12.5 gauge conventional or
15.5 gauge high tensile.

2 twisted strands with 14 gauge or heavier two–point barbs on 5 inch or less centers (min.).

Type Z, Class 1 (min. or equiv.) zinc–coating as per ASTM A121.

LINE

Wood: L = 6 1/2 ft. min.
D = 2 1/2 ft. min.
Dia. = 3 in. min.

Fiberglass: L = 6 ft. min.
D = 18 in. min.
Dia. = 1 1/4 in. min.

Steel: L = 6 ft. min.
D = 18 in. min.
Standard "T" or "U"; > 1.33 lbs/ft of length

CORNER OR GATE

Wood: L = 8 ft. min.
D = 3 1/2 ft. min.
Dia. = 5 in. min.

Steel: L = 7 ft. min.
D = 3 ft. min. (set in conc.)
Dia. = Round 2 3/8 in. O.D. or
Angle iron 2 1/2 x 2 1/2 x 1/4 (in.)

STAYS

Wood: 1 1/2 in. dia. min. of durable wood
Fiberglass: Any manufactured for this purpose
Wire: 9.5 gauge, zinc coated, twisted, manufactured for this purpose

SPECIES for all wood: _____

SPECIAL INSTRUCTIONS

_____

_____

_____

Modified from Washington LSK–0010.dwg

Drawing not to scale. Standardized drawing must be adapted to the specific site.

	JOB CLASS	Date
	CAD FILE NO. NE500–10–002.dwg	Designed _____ _____
	SHEET OF	Drawn _____ _____
		Checked _____ _____
U.S.D.A. – NATURAL RESOURCES CONSERVATION SERVICE		Approved _____ _____