Attachment A

Scope of Work
for the
Lake Oahe Bridge Project

I. Brief Project Description

The Project consists of preliminary engineering and affiliated services, including environmental documentation, environmental clearance, right of way acquisition, utility accommodation, permitting, geotechnical, hydraulic, and final plans, specifications and estimates (PS&E) design package for the construction of a new two-lane road bridge and approach roadways across Lake Oahe, including a sidewalk on each side of the bridge crossing. The new bridge will have an approximate length of 6500 feet, crossing Lake Oahe from Sioux County, North Dakota to Emmons County, North Dakota. The conceptual location of the new bridge is at the east terminus of BIA Route 16 on the Standing Rock Sioux Reservation in North Dakota in Sioux County, North Dakota connecting to roads in Emmons County, North Dakota.

The Project is being funded by the Tribal Transportation Facility Bridge Program (23 U.S.C. § 202(d); and 23 C.F.R. Part 661) and the Tribal Transportation Program (25 C.F.R. Part 170). The professionally licensed engineering consultant (Engineer) must use appropriate design standards approved by the Federal Highway Administration (FHWA) and the North Dakota Department of Transportation (NDDOT). These design standards include AASHTO LRFD Bridge Design Specifications, a minimum 100-year design life suitable for a two-lane roadway bridge, and two connected pedestrian facilities, and a design that ensures the structure is conducive to safety, durability, and economy of maintenance. All work will be reviewed and approved by the Tribe (Project Sponsor), and to the extent applicable, the Bureau of Indian Affairs (BIA), the FHWA, and NDDOT.

A. A Two-Phase Task Order Process

The Project's scope has been divided into two separate Task Orders requiring monthly billings based on completed and fully documented work. Additional Task Orders may be negotiated and authorized as needed pursuant to the Agreement's Terms.

1. Task Order One: Right of Way Acquisition and Environmental Studies and Permitting

The First Task Order is comprised of the following two components:

a) Right of Way Acquisition:

The first component of Task Order One requires the development of a right-of-way (ROW) acquisition plan and the securing of all necessary ROW in a manner that complies with the requirements of 25 C.F.R. Part 169 for allotted or restricted trust lands located within the Tribe's Reservation. The ROW acquisition process must also comply with all application federal, state and tribal laws and regulations, including but not limited to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. 4601 *et seq.* (Uniform Act). Engineer must properly budget for and acquire all ROW necessary to allow the Project Sponsor to secure and expend funding under the Tribal Transportation Facility Bridge Program (23 C.F.R. Part 661), obtain all required environmental permits, and complete a final PS&E design package for construction of a two-lane road bridge and approach roadways.

b) Environmental Studies and Permitting:

The second component of Task Order One requires the completion of environmental studies and other activities necessary to complete the environmental clearances and permitting – including federal agency concurrence and approval – to allow the Project to proceed from design to construction. The second component of Task Order One may be completed concurrently with the ROW acquisition process, so that the final alignment and Project footprint for the access road and bridge approaches, abutments and appurtenances are known and accounted for during the environmental review process. The environmental consultant must create a work plan and schedule that identifies all work necessary to complete the environmental document and environmental clearance process, which shall be provided to the Tribe and regularly updated. The second component will be considered complete upon receiving environmental approval from the lead federal agency and approval of all other deliverables. The work must comply with cultural resource and environmental requirements under applicable Federal laws and regulations (see appendix A to Subpart D, 25 C.F.R. Part 170), and applicable Tribal laws for environmental and archaeological work as required by 25 C.F.R. § 170.450.

2. Task Order Two: Completion of a Final PS&E Design Package

Task Order Two will be authorized by the Project Sponsor following the completion of the two components of Task Order One and is subject to the availability of funding. This Task Order is to complete final roadway and structure design, and all activities to complete the final bid package including construction plans, specifications, and estimates. Task Order Two (pending available funding) shall consist of all work necessary to complete final roadway and structure design, final utility conflict plans for adjustments and relocations, and preliminary and final bid package including construction plans, specifications, and estimates.

The Project Sponsor has identified several conceptual design requirements for the Project, including:

(i) Elevated pedestrian railing on the bridge for enhanced pedestrian safety;
(ii) Historic LED lighting to be incorporated on the bridge design;
(iii) Improving concrete tie-ins to adjacent recreational areas near Project area;
(iv) Particular curb and gutter enhancements to ensure vehicle access to adjacent recreational areas and improvement of pedestrian access signage;
(v) Bridge design must consider frequent usage by larger automobiles, including school buses and semi-trucks; and
(vi) Educational signage posted on both ends of the bridge containing Tribal and local historic information concerning the Project area.

Task Order Two will be considered complete upon delivery and Project Sponsor's approval of the final PS&E design package, certifications, permits, and the Project Sponsor's review and approval of all other design deliverables.

B. Regulatory Requirements for Scope of Work

All work and Task Order requirements will conform to regulations implementing the Tribal Transportation Program (TTP), 23 U.S.C. § 202, codified at 25 C.F.R. Part 170, regulations implementing the Tribal Transportation Facility Bridge Program (TTFBP), codified at 23 C.F.R. Part 661, the Indian Self-Determination and Education Assistance Act (ISDEAA), Pub. L. 93-638, as amended, 25 U.S.C. § 5301 et seq., regulations implementing the Act codified at 25 C.F.R. Part 900, and other applicable Federal, Tribal, and State laws and regulations.

In accordance with 23 C.F.R. 661.53(a), new and replacement structures must meet the current geometric, construction, and structural standards required for the types and volumes of projected traffic on the facility over a design life consistent with 25 C.F.R. Part 170, Subpart D, appendix B. The design will provide for a minimum 100-year design life suitable for a two-lane roadway bridge and two connected pedestrian facilities.

The Project shall be designed in accordance with the latest edition of **AASHTO, "A Policy on Geometric Design of Highways and Streets"**; the latest edition of **"AASHTO LRFD Bridge Design Specifications"**, and Tribal policies and other Federally-approved design standards identified in Appendix B to Subpart D-Design Standards for the TTP (25 C.F.R. Part 170). Other AASHTO publications and guide specifications shall also be utilized. Additional NDDOT Bridge design standards and specifications may also apply. The exact design standards and specifications to be used will be determined through collaborative discussions among the Project Sponsor, the Engineering Consultant, BIADOT and NDDOT officials and documented in writing prior to the start of the design process, in the Task Order authorizing the work.

Pursuant to 25 C.F.R. § 170.455, the design of the Project must take into consideration:

(a) The existing and planned future use of the facility in a manner that is conducive to safety, durability, and economy of maintenance;

(b) The particular needs of each locality, and the environmental, scenic, historic, aesthetic, community, and other cultural values and mobility needs in a cost-effective manner; and

(c) Access and accommodation for other modes of transportation.

By executing the Agreement, Engineer verifies that it has no interest, direct or indirect, that would conflict in any manner or degree with the performance of its obligations under its Agreement with Project Sponsor. Engineer must maintain an accurate record of all costs and expenses incurred or related to the performance of the Work under this Agreement for a minimum of three (3) years following completion of the Work. Upon request by Project Sponsor, Engineer must make its financial records available to Project Sponsor and, if so requested by the Project Sponsor, the BIA and the NDDOT for further review and auditing purposes.

II. Scope of Services

The Scope of Work for design and engineering and related services generally consists of completing the following tasks:

1. Design and land surveys as necessary to complete the Project;
2. Documentation for environmental clearance;
3. Environmental compliance surveys;
4. Environmental permitting;
5. Public involvement process;
6. Economic analysis for three construction alternatives;
7. Roadway/Bridge approach design and plans;
8. Bridge design and plans, including necessary hydrologic and hydraulic information;
9. Geotechnical studies;
10. ROW plans and acquisition activities; and
11. Assistance with construction bidding phase (Engineer's Estimate for construction, etc.).

Engineer shall allow forty-five (45) days for the review and approval of project deliverables by the Project Sponsor, which may also include review and approval by BIADOT and NDDOT officials, if so directed by the Project Sponsor. All deliverables shall be submitted in a manner to allow for review and decisions by the Project Sponsor, and submission to and receipt from third parties and

permitting agencies, as applicable, by the proposed completion date. The Project Sponsor shall not be responsible for added cost or lost time for the rework of the Project deliverables.

A. Environmental Studies and Permitting

Identify and evaluate preliminary engineering solutions that considers design of a two-lane bridge across Lake Oahe. Complete environmental studies and all activities necessary to complete the environmental document (including federal agency concurrence and approval), permitting and mitigation needs, conduct public involvement and engagement of stakeholders. The Engineer shall include a work plan and schedule for work performed by all parties that identifies all work necessary to complete the environmental document and environmental clearance. The environmental studies component of Task Order One will be considered complete upon receiving environmental approval from the lead federal agency and approval of all other deliverables. The Anticipated Completion date will be: **[TBD mm/dd/yyyy]**

1. **Surveys** – The Engineer is responsible for obtaining or providing all required aerial photography and topographic mapping, all field surveys including topographic surveys, hydraulic surveys, and property surveys. All survey tasks shall be performed under the supervision of a Registered Professional Surveyor licensed under the laws of North Dakota and shall be consistent with the State of North Dakota's minimum standards and in compliance with all applicable and/or relevant laws and regulations governing the practice of Land Surveyors.

2. **Environmental Clearances & Documentation** – Engineer shall prepare environmental clearance documentation. An Environmental Assessment (EA) is assumed; however, the Project Sponsor may modify the Task Order if the environmental document is elevated to an Environmental Impact Statement (EIS).

3. **Environmental Data Collection** – Engineer shall collect preliminary environmental data associated with the proposed project area and assess for the social, economic, and natural environments. Data related to the following impact areas will include:

    a) Air Quality;
    b) Noise Quality;
    c) Hazardous Materials;
    d) Wetlands and Stream Impacts;
    e) Water Quality, including Public Drinking Supplies;
    f) Farmland;
    g) Land Use and Land Cover;
    h) Migratory Birds;
    i) Terrestrial and Aquatic Communities;
    j) Endangered and Threatened Species;
    k) Economic;
    l) Community;

m) Relocations including Homes, Businesses, Non-profit Organizations, and Tenants of all types;
n) Environmental Justice and Title VI;
o) Recreational Areas;
p) Archeological and Historic Sites;
q) Visual;
r) Section 4(f) and 6(f) properties; and
s) Secondary and Cumulative Impacts.

B. Environmental Constraints Map – If Required

All environmental data collected by Engineer will be transferred to appropriately scaled aerial photographs to produce a map that indicates all known environmentally sensitive areas. The approved map will be the basis for avoidance and minimization of environmental impacts during the design process and notations on the plans for restraining conditions for the Project, in accordance with the Project Sponsor's requirements and other applicable Standard Specifications for Highway Construction. Contract Special Provisions will be developed as necessary to provide protection for environmentally sensitive areas or features and to provide guidance for construction of the Project. The Project Sponsor will supply current aerial photography for use on the project; any additional photography deemed necessary beyond that provided will be the responsibility of the Engineer. Constraints Mapping shall include an on-site survey level of site reconnaissance to verify desktop-collected data. A Constraints Memo shall be developed that summarizes the results of mapping and data collection and shall include avoidance recommendations.

C. Type Size & Location (TS&L)

Engineer shall prepare conceptual layouts for all location and/or design alternatives, which will include but not be limited to major drainage structures, accelerated construction techniques, and any intersection locations. Development of alternatives shall include early and continuous coordination with the Project Sponsor and appropriate Federal resource agencies.

D. Mitigation Strategies

Engineer shall prepare environmental documents to avoid and/or minimize environmental impacts, as appropriate. If impacts cannot be avoided, then the impacts shall be minimized. Mitigation for impacts should occur as a last resort. Engineer will prepare cost estimates for each alternative.

E. Public Involvement

Engineer shall, in consultation with the Project Sponsor, arrange for public involvement meetings in accordance with 25 C.F.R. § 170.435 relating to the construction of a new route and/or facility, and as required for the environmental studies required under NEPA, the National Historic Preservation Act (NHPA) and related Federal environmental laws and regulations. Engineer shall, in consultation with the Project Sponsor, provide notices of public involvement meetings, to be placed in a local newspaper in accordance with Tribal policies and requirements, together with public involvement displays and handouts. Engineer shall also provide adequate numbers of handouts and displays for the public involvement meeting. Engineer shall conduct public

involvement meetings to explain all concepts of the proposed alternatives. Engineer shall prepare a synopsis of the public involvement meetings, review and respond to comments received at the meeting (creating a public involvement transcript) and prepare a final report**.**

F. Cultural Resources and Historic Properties

Engineer shall assist the Project Sponsor prepare a cultural resources impact evaluation and comparison for the NEPA document based on Tribal/State records research and an on-site inspection of high probability sites, and a historic structures survey for all alternatives. After a Preferred Alternative is identified, Engineer shall assist the Project Sponsor conduct surveys, complete and submit a cultural resources report to the Project Sponsor's THPO. Cultural resources clearance will be required for the final environmental documentation.

G. Biological Investigations

Engineer shall perform wetland surveys and delineations to determine the limits of all jurisdictional waters of the United States and potential jurisdictional wetlands within the project limits. The area of the project impact to jurisdictional waters, including wetlands and streams, will be determined to permit the project under Section 404 of the Clean Water Act. Wetlands will be delineated using the **U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual of 1987** and applicable supplemental guidance published by the USACE for the project location. Engineer shall contact the U.S. Army Corps of Engineers (ACOE) to coordinate any required permits relating to lands falling within the ACOE's jurisdiction and control. Engineer shall contact the **U.S. Fish and Wildlife (USFWS)** to ensure that all state and federally listed threatened and endangered species of concern are identified, as well as their habitat areas, to avoid/minimize impacts. If suitable habitat for any listed threatened or endangered species is encountered within potential location alternatives, it may be necessary to survey for the species. **NOTE**: Presence and absence surveys for any listed threatened or endangered species are not included as part of this scope.

H. Hazardous Materials

Engineer shall arrange for a literature and database review and a visual survey to identify potential hazardous/regulated material sites in the vicinity of the proposed project. The results of this effort shall be documented in the Environmental Documentation. This work shall include:

1. Overview and Summary of Hazardous Material Sites within the Study Area – This initial screening will include a review and evaluation of applicable state and federal regulatory agency databases.

2. Identification of Sites of Concern – A review and evaluation of the following list will be performed for the reasonable and feasible alternatives: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), National Priority List (NPL), Resource Conservation and Recovery Act (RCRA), Regulated Storage Tanks (RST), Leaking Regulated Storage Tanks (LRST), etc.

3. Visual survey of the study area.

I. Environmental Document

After all reasonable and feasible alternatives have been reviewed by the Project Sponsor and BIA, which is the Federal Funding Agency, a determination will be made on which type of environmental document (Environmental Assessment or Environmental Impact Statement) is warranted. The Project Sponsor, BIA, and FHWA will discuss funding for additional environmental studies in accordance with 25 C.F.R. Part 661 and 25 C.F.R. Part 170, to the extent that the Task Order award does not cover the full cost for environmental studies required under NEPA. Assuming the Task Order award does cover the cost, Engineer shall prepare the environmental document. Include location studies, Biological assessments (per Section 7 Endangered Species Act), noise analysis results, and Section 4(f) evaluations if necessary.

1. Submit draft environmental document in MS Word format for text and pdf format for figures and attachments for review by the Project Sponsor and the BIA.

2. Perform revisions necessary to respond to comments.

3. Submit final draft to the BIA for approval.

4. Prepare designated number of copies of environmental document after BIA approval and distribute as directed. An electronic copy of the approved environmental document in pdf format shall be provided to the BIA.

5. Coordinate and obtain appropriate Federal, Tribal, and State permits and clearances (Section 106, Section 404, STAA, etc.) necessary for the environmental clearance and to construct the proposed project in compliance with Tribal procedures. Provide environmental information needed for completion of the NPDES SWPPP to design team, including wetland locations and acres of impacts, endangered and threatened species, 303(d) waters, Total Maximum Daily Load (TMDL) waters, operator of local municipal separate storm sewer system (MSS), and special waters for 50-ft buffer zone.

J. Environmental Requirements in the Final Design PS&E Design Package

Engineer shall prepare special provisions related to environmental commitments and protection to ensure all environmental commitments and regulatory requirements are incorporated into project plans and contracts by use of plan sheet notes, general notes and special provisions.

K. Final Roadway and Bridge Structure Design (Task Order Two)

Task Order Two may be negotiated and authorized either prior to or following completion of Task Order One, depending on Consultant's proposal and performance, and subject to the availability of funding. It shall include a work plan and work schedule for work to be performed by all parties and shall consist of all work necessary to complete final roadway and structure design, final utility

conflict plans for adjustments and relocations, final mitigation plans and permitting (if not completed earlier), final ROW acquisition (if not completed earlier), and development of a final request for proposals (RFP) or bid package that includes the final design PS&E package. This Task Order will be considered complete upon delivery and approval of final construction plans, specifications, estimates, certifications, ROW acquisition, permits, and Tribal approval of all other deliverables.

1. Preliminary Bridge Design (including bridge abutments). For the preliminary design phase, Engineer shall:

   a) Develop design criteria to be used in the design of the projects prior to beginning preliminary design work. This submittal shall include documentation stating that the Project Sponsor has reviewed and approved the design criteria.

   b) For bridges at stream crossings, provide a hydraulic study/analysis to determine the effects of the design flood, the 100-year flood and the 500-year flood, also known as the 1%-annual chance and 0.2%-annual chance floods, for the recommended bridge. Determination of overtopping floods and the effects of future roadway embankments may also be required. A scour assessment shall be performed. Engineer shall follow the approved methodology in the hydraulic study and scour assessment.

   c) The geotechnical design and plans must:

      (i) Obtain soil borings and determine soil properties with field and laboratory testing for bridge foundation, embankment design, and retaining walls.
      (ii) Interpret and evaluate geotechnical data for foundation analysis and design, bridge end and side slope embankment stability analysis including seismic analysis, and retaining walls.
      (iii) Provide recommendations for embankment height and material requirements for bridge approaches.
      (iv) Field surveying to determine location of soil borings.

   d) Provide two (2) half-size (11 x 17) paper copies of the approved preliminary bridge layout. The paper copies shall include all applicable check prints. The bridge layouts shall show, as a minimum:

      (i) Topography
      (ii) Hydraulic data. At stream crossings, hydraulic data should be shown in table form. The effects of the design flood, the 100-year flood and 500-year floods, also known as the 1%-annual chance flood and the 0.2%-annual chance flood, and overtopping.
      (iii) Geometric control dimensions

(iv) Bridge length, width, and span lengths and types
(v) Design, construction, and material specifications
(vi) Bridge foundation type, including, as applicable, estimated number and size of columns, pile sizes and lengths, etc.
(vii) Schematic cross-section sketches of superstructure, showing deck thickness, girder type and spacing, stage construction sequencing, etc.

e) The Project Sponsor will review preliminary bridge layouts of roadway/abutment plans at the 30% completion stage and shall coordinate written approvals of the bridge layout plans with the BIA, NDDOT and other agencies, as necessary, before the next stage of the bridge design process may commence. Engineer shall prepare conceptual construction work roads drawings for Conditional Letter of Map Revision and timely submittal of Section 404 permits as applicable.

2. Final Design Phase. For the final design, Engineer shall be responsible for the following tasks. Engineer shall present these completed tasks to the Project Sponsor for approval**.** The Project Sponsor will approve the plans, specifications and estimates for the project in accordance with 25 C.F.R. 170.461. The Engineer shall:

a) Perform bridge design calculations based on the approved layout with any staged construction sequence. Provide design calculations in a pdf format. This consists of:

(i) Seismic analysis, if necessary;
(ii) Foundations and pile lengths;
(iii) Substructure;
(iv) Superstructure;
(v) Elastomeric bearings; and
(vi) Bridge expansion joints.

b) Provide two (2) half-size (11 x 17) copies of detail drawings. The paper copies shall include all applicable check prints. Complete bridge detail drawings shall include:

(i) End bents;
(ii) Intermediate bents;
(iii) Piles;
(iv) Bearings;
(v) Superstructure;
(vi) Expansion joints;
(vii) Parapets;
(viii) Approach slabs;

(ix) Approach gutters; and
(x) Bridge quantity sheets.

c) Engineer will sign each detail drawing for the Project. When different detail checking engineers are used for the same bridge or for different bridges, Engineer shall ensure compatibility of details between bridge components and consistency between different bridges shall be carefully checked and confirmed by Engineer prior to submittal. The copies submitted for the final field inspection shall include the alterations necessary to respond to comments from the Project Sponsor, State and Federal officials. These detailed drawings should further:

(i) Provide quantities;
(ii) Provide special provisions;
(iii) Revise detail drawings as required to address comments from all reviews and field inspections;
(iv) Provide construction cost estimate;
(v) Provide two (2) half-size **(11 x 17)** paper signed and sealed plans.
(vi) Provide hydraulic certification as required.

d) Utility Relocation – If Necessary. Engineer shall: (1) verify if any existing utility locations would be in proximity or affected within to the Project area; (2) determine if any such utilities would need to be relocated; and (3) prepare designs and plans for any utility relocations.