

Exhibit [redacted]
SCOPE OF SERVICES

NEPA Categorical Exclusion and Preliminary Engineering
for

Project Name: [redacted]
Project Number: [redacted]
Control Number: [redacted]

A. PROJECT DESCRIPTION

This schedule provides for environmental and preliminary engineering design services related to compliance with the National Environmental Policy Act (NEPA) for [redacted] in [redacted] County, Nebraska. As defined in Chapter 6.4 in the LPA Guidelines "Preliminary Design is the amount of design work necessary to acceptably complete the environmental document" and is typically considered 30 to 50 percent plans. The project consists of:

- 1. [redacted]
- 2. [redacted]

This project is located in *(location description)*. Project activities include *(construction activities)*. Constraints in the area include *(project specific environmental issues)*. The project *(will/will not)* be constructed within existing right-of-way. The project *(will/will not)* require detour routing.

[redacted] (Consultant) shall serve as the agent for [redacted] (Client), representing the Client in all matters related to environmental and preliminary engineering services for this project, with the exception of *(list any tasks to be conducted by the Client or others)*:

- 1. [redacted]
- 2. [redacted]

It is anticipated that the project will require the following major tasks *(include the following, as appropriate)*:

- 1. Programmatic Categorical Exclusion Form or Categorical Exclusion Documentation Form and supporting documentation of concurrence and compliance with applicable environmental regulations
- 2. Topographic Survey
- 3. Preliminary Engineering Design
- 4. Geotechnical Analysis
- 5. Public Involvement
- 6. Project Management and QA/QC
- 7. Meetings

B. APPLICABLE PUBLICATIONS:

Work shall be done in accordance with the most current version of the following materials. The most current versions of the NDOR materials can be obtained from the NDOR website.

- 1. LPA Guidelines Manual for Federal-Aid Projects. NDOR, April 2009.
- 2. The Process for Obtaining Environmental Concurrences and Completing NEPA Documents for Local Public Agency (LPA) Federally Funded Transportation Projects. NDOR, December 2009.
- 3. Instructions for Completing the Probable Class of Action DR-53 Form for Local Federal-Aid Transportation Projects. NDOR, August 2010.
- 4. Guidelines for Completing the CE Documentation Form. NDOR, November 2008.
- 5. Guidelines for completing the Project Description Section of NEPA Determination and CE Forms. NDOR, May 2009.
- 6. Instructions to Complete Section 106 Concurrence Request Form. NDOR, December 2009.

7. Wetland and Water Resources Review Procedures for Federal Aid Projects. NDOR, October 2010.
8. Memorandum on Qualifications and Documentation Requirements for LPA Project Wetlands Reviews. NDOR, November 2009.
9. Instructions for Completing the Wetland Determination Checklist. November 2009.
10. NDOR Wetland Determination Checklist
11. US Army Corps of Engineers (USACE) Wetlands Delineation Manual, Technical Report Y-87-1. Environmental Laboratory, Department of the Army Waterways Experiment Station, USACE, Vicksburg, Mississippi. 1987.
12. Interim Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual: Midwest Region, ERDC/EL TR-08-27. Wetlands Regulatory Assistance Program, US Army Engineer Research and Development Center, Vicksburg, Mississippi. 2008.
13. Interim Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual: Great Plains Region, ERDC/EL TR-08-12. Wetlands Regulatory Assistance Program, US Army Engineer Research and Development Center, Vicksburg, Mississippi. 2008.
14. Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification. US Army Corps of Engineers. 2005.
15. Cowardin et al. Classification of Wetlands and Deepwater Habitats of the United States, FWS/OBS 79/31. Biological Services Program, Fish and Wildlife Service, US Department of the Interior. 1979.
16. Nebraska Wetland Subclasses (Attachment K, Wetland Mitigation Banking, Standard Operating Procedures in Nebraska)
17. Instructions for Completing Biological Evaluation Form for Local Federal Aid Projects. NDOR, October 2009.
18. Endangered Species Review Training Manual. NDOR, June 2010.
19. Guidelines for Completing Green Sheets for the NDOR Local Project Section. NDOR, September 2009.

C. CLIENT SHALL PROVIDE:

1. Provide as-built or design plans of the existing and adjacent roadways (if available).
2. Any drainage studies completed in the area.
3. Electronic files of current aerial photographs (if available).
4. Existing cadastral maps, plat maps, electronic right-of-way files of the project area (if available).
5. Provide location for and advertise for public meetings.
6. Names of known utilities, addresses and permits listing use and occupancy permit data along the project.
7. Traffic count information for public crossings (if available).
8. Crash history for study corridor.
9. Title Searches.

D. CONSULTANT SHALL PROVIDE:

1. Categorical Exclusion Document and Resource Reviews. The Consultant will complete either the NDOR Programmatic Categorical Exclusion Form (PCE) or the Categorical Exclusion (CE) Documentation Form. Consultant will obtain agency concurrences and produce supplemental information to attach to the Form. Figures and resource maps will also be required to be attached to the Form and produced or obtained by Consultant. The Form and attachments shall be sent to the Client and NDOR for review and approval. Consultant will submit a revised Form, address NDOR and FHWA comments, and prepare the final version of the Form.
 - 1.1 Resource Review. Using the Form and NDOR guidance, Consultant will review relevant resources. Some resources will likely require more evaluation than others. At a minimum, the following resources are considered to require evaluation: right-of-way acquisition, relocations and easements (temporary and permanent), Section 106 cultural and historic resources, Section 4(f) resources (e.g. parkland and wildlife refuges), Section 6(f) resources, air quality, noise,

wetlands, floodplains, streams, rivers, threatened and endangered species, environmental justice, farmland and hazardous waste.

Some projects require evaluation of public interest, permits and special provisions, and alternatives analysis, as well as impacts to utilities and railroads, socio-economic considerations, Platte River depletions, migratory birds, well head protection areas, construction impacts, aesthetics or other values.

- 1.2 SHPO Letter. A letter will be prepared for NDOR submittal to the State Historic Preservation Office (SHPO) for Section 106 cultural resource compliance.
- 1.3 Section 4(f) / 6(f) Evaluation. Consultant will determine if adjacent 4(f) properties such as public parks, recreation areas, and wildlife/waterfowl refuges, or historic sites of local, state or national significance are impacted by the project alignment. If the situation can be handled as an exemption or *de minimis* determination, Consultant will prepare the NDOR Determination of Section 4(f) De Minimis Use Form and concurrence letter. Consultant will also determine if any adjacent property was developed under Section 6(f) of the Land and Water Conservation Fund Act. If the project requires preparation of a Section 4(f) Statement or additional Section 6(f) document, these services would require a contract amendment.
- 1.4 Air Quality Impact Analysis. Consultant will perform an Air Quality Impact Analysis for the planned improvements to comply with the Air Quality Analysis for Environmental Documents Memorandum of Understanding (MOU) between the NDOR, NDEQ and FHWA. The MOU requires an analysis when projected average daily traffic exceeds 100,000 vehicles per day.

Consultant will perform an analysis for carbon monoxide in accordance with current NDOR and US Environmental Protection Agency guidelines. Consultant will model carbon monoxide concentrations along the preferred alternative using CALINE software and results from the traffic analysis update. If the traffic study analysis indicates that any study area intersections will operate at Level of Service D, E or F, up to [redacted] of those intersections will be examined as potential carbon monoxide "hot spot" using CAL3QHC software. The expected year of maximum emissions and the design year will be the focus of the air quality analysis.

Emission factors and background concentrations for carbon monoxide for the modeling will be obtained through coordination with NDOR staff. Model results will be compared with the National Ambient Air Quality Standards to assess impacts. Both 1-hour and 8-hour carbon monoxide results will be examined. Analysis of particulate matter (PM₁₀ and PM_{2.5}), ground-level ozone, and mobile source air toxics are not included in this scope.

Consultant will prepare a report describing the methods and findings from the air quality analysis, as well as recommended mitigation actions, if needed. The report will be included as an attachment to the CE Form.

- 1.5 Noise Study. Consultant will perform a traffic noise study using the most current version of the FHWA Traffic Noise Model (TNM) and in accordance with the NDOR Noise Analysis and Abatement Policy. The study will evaluate current and future build condition noise levels at reasonable residences and businesses along the project boundaries for one build and one no-build alternative. The location of the 66 and 71 dBA noise impact contour lines will be shown on an aerial map of the project area. If required, noise mitigation alternatives will be evaluated. The mitigation analysis will apply the effectiveness and reasonability criteria established by the NDOR.

Findings will be included in a Noise Study report describing the methods and findings. The report will be included as an attachment to the CE Form.

1.6 Wetland Delineation. For this project, the following definitions will apply:

Full Delineation shall mean delineating wetlands and waters of the US (regardless of isolation or jurisdictional status) according to the 1987 Corps Wetland Delineation Manual and NDOR Memorandum on Qualifications and Documentation Requirements for LPA Project Wetlands Reviews.

The delineation shall include (a) ground level photographs, (b) documentation of wetlands on Corps Wetland Determination Data Sheets (using the Midwest or Great Plains Regional Supplements) at all sample points, and (c) identification and characterization of other waters of the US (streams, lakes, ponds, pits or other impoundments), including delineation of the ordinary high water mark (OHWM) if present and determination of USGS Hydrologic Code and water regime. Field data collection shall be accomplished during the growing season, generally between 1 May and 1 November. The delineation data will be organized in to a clearly written Wetland Delineation Report.

Delineation of wetlands shall be performed using transect methods with at least one sample point in the wetland and one in upland at each upland/wetland interface. Wetlands shall be identified according to the Cowardin classification and Nebraska Wetland Subclass. Water regime (perennial, intermittent, ephemeral, etc.) will be based on best professional judgment and published resources (7.5 minute Topographic Map, County Soil Survey, National Hydrography Data Set, etc). Consultant shall take digital ground photos and use GPS to locate wetland boundaries and observation point locations. Consultant shall use a sub-meter accuracy GPS, to map all wetland and/or stream channel boundaries, photo points and data points.

For bridges and culverts, the OHWM will be delineated at the location of the bridge hydraulic cross-section(s), if these locations are provided. Where hydraulic cross-sections have been provided, wood lath (or equivalent) shall be placed at the OHWM to identify both the vertical and horizontal OHWM location. In situations where a temporary access crossing for construction may be required, the OHWM will also be delineated upstream and downstream of bridge structures on both banks of the stream using the same method. Beyond the locations of the bridge hydraulic cross-section or temporary crossing locations, the Consultant shall walk the stream channel banks with the GPS unit to obtain a multiple point horizontal OHWM boundary within the identified study area.

Preliminary Determination shall mean identifying potential wetlands and other waters of the US with field observations documented using the Routine Wetland Determination Data Forms (from the 1987 Corps Wetland Delineation Manual); however, no soil sampling will be necessary. Wetland information shall include Cowardin classification (including water regime) and Nebraska Wetland Subclass. Stream channel information shall include general stream channel type (ephemeral, intermittent, perennial) and estimates of width. Locations and estimated boundaries of wetlands and waters shall be recorded on an aerial photograph. Additional figures and ground level photographs should be provided as necessary to characterize the wetlands. A Wetland Delineation Report is not required.

1.6.1 Review Existing Resources / Databases. Consultant will review existing resources and prepare the *Wetland Determination Checklist* prior to the site visit. For cultivated fields, the consultant shall review the past 10 years of aerial photographs (if available) and the official 5-year NRCS slide set used for their wetland determinations.

1.6.2 Field Survey. Consultant will visit the project sites as assigned to determine if waters of the United States (waters of the US), including wetlands, are present within the proposed project limits of construction (LOC). Identified stream channels and/or wetlands shall be delineated with GPS and plotted on aerial photographs for assessment of fill or disturbance impacts resulting from construction of proposed project(s).

The level of wetland documentation will vary according to location. Along the project alignment, a Full Delineation shall be provided for the area 50 feet beyond the project LOCs or within the project right-of-way (ROW), whichever is farthest from the centerline. A Preliminary Determination shall be provided for the area 150 feet outside of the LOCs or ROW, whichever is farthest from the centerline. At a minimum, a Preliminary Determination shall be performed for any area that likely would be used for construction access, staging, stockpiling, or waste disposal (e.g. interchange/intersection areas, culvert and bridge construction sites, etc.). A full delineation shall be performed for known construction access, staging, stockpiling, or waste disposal areas. At culverts and bridges along the project alignment, a Full Delineation (including delineation of the OHWM if present, and adjacent wetlands) shall be provided for the area 150 ft outside of the LOCs or ROW, whichever is farthest from the centerline.

- 1.6.3 Documentation of Findings. Documentation as described above will be submitted to the Client and NDOR as a record of findings. Consultant will plot the data on aerial photographs with the roadway alignment and stationing. Data will include wetland boundaries, wetland types, waters of the US (OHWM) and location of data collection points and photographs. Map scale must be drawn to a scale no smaller than 1-inch = 200-feet.
- 1.6.4 Mitigation Site Suitability Memorandum. If it is determined that on-site or off-site mitigation must be developed, Consultant will identify a minimum of two potential mitigation sites along the project corridor. Recommendations will be submitted in a Mitigation Site Suitability Memorandum to the Client and NDOR, and locations of the mitigation sites will be plotted on the aerial photographs. If two sites cannot be identified, this will be explained in the memorandum.
- 1.6.5 404 Permit Application. If needed, the Consultant will prepare materials for submittal of an application for a 404 permit from the Corps, and for 401 Water Quality Certification or Title 117 compliance from the Nebraska Department of Environmental Quality (NDEQ). If an Individual Permit is required, Consultant will prepare an Alternatives Analysis and Sequencing Demonstration for inclusion in the permit application. All materials will be submitted to the Client and NDOR for review and approval prior to submittal to the Corps.

Consultant will prepare a 1st Draft of the 404 Permit Application Package consisting of 404 Permit Application and Wetland Delineation Report, including complete description of the project, documentation of impacts to all wetlands and waters of the US, and wetland and stream channel mitigation. A hard copy and electronic files of the documents will be submitted to NDOR for review. Consultant will revise materials per NDOR comments, and resubmit subsequent drafts to NDOR for review and approval. If mitigation is required, a proposal for additional services may be required to develop a mitigation plan.

- 1.6.6 Agency Coordination. Consultant will also handle coordination activities with the Corps and other regulatory and resource agencies, as needed, such as a pre-application meeting, submittal of the 404 permit application package to the Corps and NDEQ, and if needed, an on-site post-application meeting. The 404 authorization must be secured before PSE Turn-in, but not so early that the permit would expire before roadway fill impacts are accomplished. The target date for submittal of a 404 permit application is 12 months prior to letting. Time of the application submittal must be closely coordinated with NDOR.

If needed, Consultant will coordinate with NDEQ and obtain a letter of 401 Water Quality Certification. If wetlands are non-jurisdictional, Consultant will obtain a letter of opinion from NDEQ stating compliance with the non-degradation clause of Title 117 Nebraska Surface Water Quality Standards.

Consultant will coordinate with the agencies, whether in writing or personal contact, and be available to provide additional information, answer questions, respond to public comments, and attend meetings, if necessary. All correspondence with the Corps and other agencies, if necessary, shall be submitted to the State in draft form for approval at least 10 days before final submittal.

- 1.7 Floodplains, Streams and Rivers. Consultant will determine if the project will cross a designated floodplain, and whether the project activities will result in more than a one foot rise or the locally regulated maximum in the 100-year water surface elevation.

Consultant will identify any stream crossings and their hydrologic regime (perennial, intermittent, ephemeral).

Consultant will determine if the project is located 1.5 miles upstream or downstream, or within 0.25 miles of a river segment listed on the Wild and Scenic River or National Recreation River list, or Nationwide Rivers Inventory.

- 1.8 Threatened and Endangered Species Review. Consultant will prepare the Biological Evaluation (BE) letter for submittal to NDOR. The BE letter will include the project description, habitat impacts, activity checklist, and preliminary wetland determination memo.

- 1.9 Environmental Justice. Consultant will determine if the project has disproportionate impacts on low-income, minority or other protected populations.

- 1.10 Farmland. If there is any farmland located in the project area, Consultant will prepare an NRCS Farmland Conversion Form AD-1006 and perform coordination with NRCS.

- 1.11 Hazardous Materials Review and Memo. Consultant will complete a Hazardous Materials review for the project's environmental study area to identify the presence or likely presence of known or potential hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures, on the property or into the ground, groundwater, or surface water of the property.

The review will include a site visit and regulatory database search in accordance with the requirements listed in American Society for Testing Materials (ASTM) Standard Practice for Environmental Site Assessments E 1527-05, and NDOR Hazardous Materials guidance. The purpose of this review will be to identify regulated facilities within the project's environmental study area or within one quarter mile on either side of the project. Any facilities identified during the review will be assessed and their potential impact on the project discussed in a technical memo. The memo will be included as an appendix to the NEPA document, with the findings summarized in the main body of the NEPA document.

- 1.12 Documentation and Revisions. Consultant will complete the PCE or CE Form, including Project Description, Purpose and Need Statement, project maps, and other supplemental information such as resource agency correspondence. Consultant will submit the Form and attachments to the Client and NDOR for review and approval. Consultant will address Client, NDOR and FHWA comments and prepare revisions to the Form. Consultant will prepare the Green Sheet for the project.

- 1.13 Other. (Additional environmental project specific tasks may be added here).
2. Topographic Survey. The topographic survey will be completed for the project corridor in accordance with current NDOR survey specifications.
- 2.1 Survey Limits. *The consultant will collect topographic survey data within the following limits:*
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- Ditches and culverts will be identified and surveyed along their flow lines.
- 2.2 Base Map Preparation. Consultant will create the base maps using the topographic survey data.
- 2.3 Horizontal and Vertical Control. The consultant will establish control points along the project corridor at regular intervals and provide control point ties to topographic features of permanent nature.
- Horizontal control points will be established and referenced to existing section corners and lot pins. The control points will be permanent in nature and tied to Nebraska State Plane Coordinate system.
 - Vertical control points will be established and referenced to USGS NAVD88 datum. There will be a minimum of three permanent benchmarks established with additional temporary benchmarks set along the project corridor at intervals not to exceed 300 feet.
- 2.4 Section Corners and Property Pins. The consultant will locate necessary section corners, quarter-section corners, and property corners for use in drafting existing right-of-way and property lines.
- 2.5 Existing Utilities. The consultant will call in a One-Call utility locate ticket. Utilities will be shown based on visible, above ground, evidence in the field and utility locator's markings.
3. Preliminary Engineering. This task includes completing the preliminary design for the project. As defined in Chapter 6.4 in the LPA Guidelines "Preliminary Design is the amount of design work necessary to acceptably complete the environmental document" and is typically considered 30 to 50 percent plans.
- 3.1 Data Collection and Review. For gathering, reviewing and organizing data for the project.
- 3.2 Note Reduction/Preliminary Plotting. This task will include the effort for gathering data to create the existing topography file to use for preliminary design.
- 3.3 Traffic Analysis. The Consultant will conduct a traffic analysis for the study corridor for both the existing conditions and for the Design Year [REDACTED] traffic conditions. The future year analysis will be used to determine capacity, required lane configurations, and storage length needs at study intersections for the proposed project. This will also include a review of the crash history to determine if project would qualify for safety funds. Consultant will assist the Client with preparation of application and presentation to NDOR Safety Committee if eligible.
- 3.4 Roadway Horizontal Alignment. This task includes the design and drafting of the horizontal alignment(s) and/or adjustment of alignment(s).
- 3.5 Roadway Vertical Alignment. This task includes the design and drafting of the vertical alignment(s) and/or adjustment of vertical alignment(s).

- 3.6 Template Roadway Cross-Sections. Develop the templates necessary to process cross sections.
- 3.7 Earthwork. Process the earthwork for each alignment, including any extra earthwork due to frontage roads, large driveways, and any other cause for earthwork.
- 3.8 Roadway Geometric Design. This task includes the geometric design of all roadway alignments, intersections, driveways, etc., which includes setting up all the geometric sheets for the project and labeling. Labeling the geometric points with Station and Offsets will not be completed in this phase.
- 3.9 Drainage Design. This task includes the preparation of a drainage map outlining all drainage areas and completion of the following for each area:
 - 3.9.1 Compute area size and Q.
 - 3.9.2 Determine allowable H.W.
 - 3.9.3 Size culvert and compute H.W.
 - 3.9.4 Using design cross sections, determine rough length of culvert.
 - 3.9.5 For each culvert, show the Station, D.A., Q, H.W., Size and Length
- 3.10 Storm Sewer Design. This task includes the effort to complete the preliminary storm sewer design and draft the appropriate storm sewer plan data on the Construction sheets and storm sewer profiles on the Plan and Profile sheets respectively. The consultant will follow NDOR's Drainage Design & Erosion Control Manual.
- 3.11 Street Lighting Design. This task includes the design of street lighting.
- 3.12 Construction and Removal. Development of separate Removal plan sheets and Construction plan sheets with appropriate notes detailing construction and removal items not specifically identified elsewhere in the this scope.
- 3.13 Limits of Construction. The Consultant will define and draft the limits of construction on the plan sheets. These limits will be used to determine environmental impacts.
- 3.14 Utility Coordination / Verification. The Consultant will draft utilities on the plans that weren't included in the preliminary plotting and for limited coordination with the utilities to verify the location and type of utility. In addition, the Consultant will coordinate and schedule a Utilities meeting to identify and work through potential conflicts identified in the preliminary plans.
- 3.15 Construction Phasing. The Consultant will prepare plans showing construction phasing, temporary construction, and completed construction. A preliminary Construction Phasing Strip Map will be created for the Public Information Meeting.
- 3.16 Aerial / Wetland Plan. The Consultant will prepare aerial photo sheets showing any delineated wetlands, impacted wetlands and/or channels, and mitigation sites, if applicable.
- 3.17 Quantities/Estimates. Develop and tabulate all of the preliminary quantities. Quantities will be submitted to the Client for each submittal, including the Plan-in-Hand and Functional Plans, using NDOR standard bid items and NDOR quantities forms. Estimates of probable cost will be prepared by the Consultant using recent bid tabulations and other information.
- 3.18 Typical Sections. This includes design and drafting the typical sections.
- 3.19 Plan-In-Hand Meeting/Report. Schedule and attend a plan-in-hand meeting with the key stakeholders to review the thirty (30) percent roadway design plans. The

Consultant will prepare and submit a Plan-in-Hand report within two (2) weeks of the meeting summarizing the findings and decisions made regarding the project design.

- 3.20 Right-of-Way Design. The following tasks will be completed to establish the existing Right-of-Way and to design the proposed Right-of-Way.
- 3.20.1 Existing Right-of-Way Base. This task involves collecting the Plat drawings, reviewing property titles, reviewing survey data, and other necessary information to establish the existing Right-of-Way, including easements, for the properties abutting the project. The Client will provide the Consultant with the title information for the properties requested.
- 3.20.2 Proposed Right-of-Way. The Consultant will determine the easements (temporary and permanent) and right-of-way required to construct the project. It is estimated that there will be up to [REDACTED] tracts associated with this project.
- 3.20.3 Right-of-Way Strip Map. The Consultant will prepare right-of-way plan sheets to include in the plan set. The sheets will include existing property lines and all proposed right-of-way associated with this project. Preliminary right-of-way ownerships, easements and takings will also be tabulated and shown on the sheets.
- 3.21 Other. (Additional project specific tasks may be added here).

4. Geotechnical Analysis. The Consultant shall conduct geotechnical exploration through the advancement of soil borings, testing of samples in the field and in the laboratory, and analyses of the soil conditions encountered to determine recommendations for roadway subgrade preparation and pavement design.

Soil will be tested as follows:

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Other geotechnical task items are as follows:

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4.1 Project Preparation

- 4.1.1 Prior to drilling the soil borings, locations will be staked.
- 4.1.2 Area underground utility service representatives will be contacted through the Diggers Hotline system to mark area public utilities in order to remove conflicts between drilling and utilities in accordance with State law.
- 4.1.3 Site characteristics will also be noted and the boring location adjusted to fit the site characteristics.

4.2 Soil Borings

- 4.2.1 Soil sample boring will be obtained using a truck-mounted drilling and sampling rig. Consultant will obtain ___ soil samples.
- 4.2.2 Undisturbed samples of cohesive soil will be obtained using a thin-walled sampler tube in accordance with ASTM D1587, Standard Method for Thin-Walled Tube Sampling of Soils.
- 4.2.3 If encountered, sand or other granular soils will be retrieved with a split-barrel sampler. Standard Penetration Test (SPT) measurements will be made during the retrieval of each split-barrel sample in accordance with ASTM D1586, Standard Method for Penetration Test and Split-Barrel Sampling of Soils to determine the relative density of the granular materials.

- 4.2.4 Field logs of the soil types and characteristics encountered at the boring location will be recorded in the field.
- 4.2.5 Groundwater levels, if encountered within the boring depths, will be recorded at the time of drilling and after 24 hours.
- 4.2.6 The borings will be filled. Extra soil will be removed from the drill locations.

4.3 Field Log Recording, containing the following:

- 4.3.1 Thicknesses of existing fill or other disturbed soil layers will be recorded on the boring logs in the field, where encountered.
- 4.3.2 Approximate locations of changes in soil type with depth.
- 4.3.3 Groundwater levels when encountered during drilling.
- 4.3.4 Identification of the subsurface materials described in accordance with ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).
- 4.3.5 And other site conditions that may affect the engineering recommendations.

4.4 Laboratory Testing of Recovered Samples

- 4.2.4 Measurements of in-place moisture content, density, shear strength, unconfined compressive strength, and soil classification will be conducted on selected clayey samples. Moisture content of selected sand samples will be measured. Consolidation potential will be measured from select samples.
- 4.2.5 Laboratory tests will be completed in accordance with ASTM procedures.

4.5 Analysis of the Test Data

- 4.5.1 Potential effects of the area groundwater level.
- 4.5.2 Roadway subgrade preparation recommendations and support parameters

4.6 Report containing the following:

- 4.6.1 Description of site soil conditions.
- 4.6.2 Frost depth requirements for the pavement structures.
- 4.6.3 Analysis of soil to ascertain presence of potentially expansive soils.
- 4.6.4 Analyses of consolidation potential and recommendations for minimizing consolidation after construction.
- 4.6.5 Recommended types of fill and backfill soil materials and compaction requirements for support of structures and pavements.
- 4.6.6 Remedial site subsoil repair actions in the case that weak or otherwise unsuitable soils are found, if necessary.
- 4.6.7 Evaluation of soil or other materials requiring excavation or replacement and methods of removal.
- 4.6.8 Erosion control recommendations.
- 4.6.9 Pavement Determination Form.

5. Public Involvement

- 5.1 Public Information Meeting. If required by FHWA or NDOR, Consultant will assist the Client in conducting a Public Information Meeting (PIM). Prior to the meeting Consultant will work with the Client to develop a Public Involvement Plan to address public notifications, develop a database of project stakeholders and plan for the PIM, one-on-one meetings, or agency meetings that might be necessary. The Client will handle inviting the property owners and other stakeholders, advertising for the meeting, and securing a suitable location for the meeting.

Consultant will prepare materials for the PIM consisting of (1) aerials with proposed alternatives and potential impacts; (2) Fact Sheet suitable for a mailer or handout at the PIM; and (3) Comment Form. The Fact Sheet will include the

project purpose and need, summary of the project design criteria, features and relevant facts, as well as a project map, and detour map, if needed.

Consultant representatives will attend the meetings and be available to address questions on environmental issues. Consultant will also take notes summarizing the general comments, and review written comments. A summary document of the public comments will be prepared. For those comments requesting/warranting a response, written responses will be drafted for NDOR review and approval prior to mailing by the Client.

5.2 Postal Outreach. If required by FHWA or NDOR, Consultant will follow NDOR guidance and conduct postal outreach consisting of letters to landowners and other stakeholders to notify them of the project and to request their comments. Comments will be summarized and attached to the NEPA document. Consultant will prepare responses to written comments for NDOR review and approval.

5.3 Other. (Additional project specific tasks may be added here).

6. Project Management and QC.

6.1 Project Management. This task includes activities to initiate and monitor project schedules, workload assignments and internal cost controls throughout the project. Also included are efforts to prepare and process invoices and monthly progress reports; prepare project correspondence with the Client and NDOR; and maintain project records.

6.2 Quality Assurance/Quality Control. The Consultant will perform QA/QC checks at various stages of the study including prior to any official submittal.

6.3 Final Deliverables. Consultant will prepare final deliverables and submit to the Client and NDOR the electronic files and hard copies of all materials.

6.4 Other. (Additional project specific tasks may be added here).

7. Project Meetings.

7.1 Progress Meetings. Project staff will meet with the Client and/or NDOR for [redacted] progress meetings, and prepare minutes of the meetings. Meetings will be held in [redacted].

7.2 Plan-In-Hand Meeting/Report. The Consultant will schedule and attend a plan-in-hand meeting with the key stakeholders to review the thirty (30) percent roadway design plans.

7.3 Other. (Additional project specific tasks may be added here).

E. **DELIVERABLES:**

1. Monthly Invoices and Progress Reports
2. Meeting Minutes
3. *Programmatic Categorical Exclusion Form or Categorical Exclusion Determination Form* and supporting documentation
4. *Hazardous Materials Review Memo*
5. Concurrence request letter to SHPO
6. *4(f) De Minimis Determination* letter and form, if needed
7. *NDOR Wetland Delineation Checklist*, Preliminary Wetland Determination Memo of Findings or Wetland Delineation Report, as appropriate
8. Biological Evaluation Letter
9. SWPPP and NOI
10. Agency concurrence letters
11. Traffic Safety Report

12. Pavement Determination Form
13. Public Information Meeting Exhibits, Fact Sheet, Comment Sheet
14. Summary of Public Comments, and responses to written comments
15. Preliminary Engineering Design Plans
16. Hard copies of all materials and final electronic files
17. Other

F. PROJECT INFORMATION FORMAT

1. Consultant will follow the State's CADD drafting procedures and guidelines in preparing plans and the wetland delineations. File names must follow the State's CADD naming convention. Line weights, line styles, text size and leveling must follow the State's guidelines.

G. SCHEDULE

1. Notice to Proceed:
2. Public Information Meeting:
3. Plan-in-Hand:
4. Completion Date for NEPA Materials:
5. PS&E:
6. Project Letting: