

A. OVERVIEW

1. The Consultant will perform preliminary roadway design-related services on US-275, Norfolk to West Point, designed to New and Reconstruction standards. Services may include, but are not limited to, the following:
 - a. Prepare project description and Purpose and Need
 - b. Preliminary Engineering including, but not limited to, the following tasks:
 - 1) Engineering, Geodetic, and Land Surveys
 - 2) Roadway horizontal and vertical alignment
 - 3) Pavement geometrics
 - 4) Earthwork quantities
 - 5) Drainage design/hydraulic analysis
 - 6) Storm sewer and culvert design
 - 7) Alternatives Analysis as required for 404 permits and flood plain permits
 - 8) Erosion Control
 - 9) ADA design and compliance
 - 10) Guardrail layout
 - 11) Retaining wall layout
 - 12) Utility coordination
 - 13) Right of Way Design including conducting title searches and preparing legal descriptions, and condemnation plats
 - 14) Quantity calculations
 - 15) Construction and Traffic Phasing
 - 16) Traffic engineering operational and safety studies
 - 17) Traffic Control plans
 - 18) Preliminary lighting plan
 - 19) Field inspections (Plan-in-Hand's, field review of existing conditions, etc.)
 - c. Public Involvement
 - d. Construction Consultation services
2. Project management services include managing the flow of information and the project details between the all disciplines of the project. It is NDOR's intent that the Roadway Design Consultant be primarily responsible for ensuring communication leading to the production of project deliverables. Project information and deliverables will be managed by the Roadway Design Project Manager in such a manner that each consultant team

member providing services has access to all project related information necessary to provide their services. This includes such information as surveys, roadway and bridge design plans, right of way design, and hydraulic studies. The NDOR will be the Coordinating Professional, as defined in Neb. Rev. Stat. § 81-3437.

B. QUALIFICATIONS, KNOWLEDGE AND EXPERIENCE

1. All work shall be completed by or under the direct supervision of a Nebraska licensed professional civil engineer. ROW services shall be provided by a Registered Land Surveyor, or a Licensed Abstractor as applicable. The consultant firm shall use engineers experienced with all aspects of roadway design related to the services to be provided.
2. The Consultant shall have a working knowledge of and use, when applicable, of the following non-exclusive list of references:
 - a. A Policy on Geometric Design of Highways and Streets 2011 (AASHTO)
 - b. Access Control Policy to the State Highway System, 2006 (or latest) (NDOR)
 - c. Americans with Disabilities Act Accessibility Guidelines
 - d. Design Process Outline (NDOR)
 - e. Drainage Design & Erosion Control Manual, 2006 (or latest) (NDOR)
 - f. Highway Capacity Manual 2010 (HCM2010), Transportation Research Board
 - g. Local, State and federal laws and regulations that pertain to roadway design
 - h. Manual on Uniform Traffic Control Devices (FHWA), 2009 Edition
 - i. MUTCD - Nebraska 2011 Supplement to the MUTCD
 - j. Nebraska Minimum Design Standards – Counties, Municipalities, State - 2010 (or most current) (Nebraska Administrative Code Title 428; Rules and Regulations of the Board of Public Roads Classifications and Standards
 - k. Familiarity of environmental documentation process to support USACE approval
 - l. Preliminary Survey Manual (NDOR)
 - m. Roadside Design Guide, 2011 (AASHTO)
 - n. Roadway Design Manual, 2010 (or latest) (NDOR)
 - o. Standard and Special Plans Manual (NDOR)
 - p. Standard Specifications for Highway Construction 2007 (or latest edition) (NDOR)
 - q. Traffic Control Devices Handbook, 2001 (or latest) (ITE)
 - r. United States Access Board Guidelines, Standards, and Publications +
 - s. NDOR Right-Of Way Manual.
 - t. R.O.W. Design Consultant Sample Packet.
 - u. Evidencing Nebraska Land Titles (Nebraska Land Title Association)
 - v. Uniform Relocation Assistance and Real Property Acquisition Act (the Uniform Act)

C. SOFTWARE AND EQUIPMENT REQUIREMENTS

1. The Consultant's design and drafting software and design files must be compatible with NDOR's design and drafting software. Information on NDOR's design protocol can be found on NDOR's website on the Roadway Design page; <http://www.transportation.nebraska.gov/roadway-design/downloads.htm>.
2. The Consultant's design must be accomplished using the design software GEOPAK OpenRoads modeling technology version SS4 or later but no later than that in use by NDOR. The consultant's design must follow NDOR's drafting procedures, guidelines, and file naming convention using the appropriate version of MicroStation CAD software. Consultant's use of an earlier version of GEOPAK OpenRoads may be approved for specific activities with written permission of NDOR and at NDOR's sole discretion.
3. In many cases, projects will require that a 3D model be generated using GEOPAK OpenRoads technology.
4. Reports and documents must be submitted in a form compatible with Microsoft Office products unless otherwise directed.
5. The Consultant will provide all software and computer equipment required to complete the work including any analysis software required to perform the bridge design work.

D. EXPECTATIONS FOR THE DELIVERABLES

1. The consultant shall provide to NDOR acceptable preliminary plans for use in completing a preliminary apparent LEDPA for the project.
2. Plans and special provisions shall be developed in compliance with the manuals, guidelines and specifications as listed in the Qualifications, Knowledge and Experience section, paragraph B.
3. Consultant shall submit to the NDOR roadway design plans at the following stages, when applicable: before the plan-in-hand field inspection, before public meetings, at completion of the preliminary engineering stage. Deliverables will be completed and submitted in accordance with the schedule set out in the agreement.
4. Deliverables will be submitted in hard copy and electronic form.
5. Submittals will be reviewed and approved by NDOR. Consultant shall address all issues raised by NDOR's review and make all necessary changes to the work.