

Standard Work Categories anticipated for these services may include:

- 130. Bridge Design
- 131. Bridge Inspection
- 132. Bridge Load Rating

A. OVERVIEW

The consultant will provide bridge related services for NDOT such as:

- 1. Preliminary Engineering Services including Bridge Data Sheet development and Type, Size, and Location plans (TS&L's)
- 2. Final Bridge Design (including load rating of bridges per the current BIPP)
- 3. Bridge Plan production
- 4. Independent structural design reviews
- 5. Support in Value Engineering activities
- 6. Construction phase services including but not limited to:
 - a. Calculating girder shims,
 - b. Shop drawing review
 - c. Providing construction consultation

B. QUALIFICATIONS, KNOWLEDGE AND EXPERIENCE

- 1. All work must be completed by, or under, the direct supervision of a Nebraska licensed professional civil engineer. The Consultant shall use engineers experienced with all aspects of bridge design related to the services to be provided.
- 2. The Consultant's team shall have working knowledge of and follow, when applicable:
 - a. Bridge design industry standards
 - b. The NDOT Bridge Office Policies and Procedures Manual. (BOPP)
 - c. AASHTO LRFD Bridge Design Specifications
 - d. NDOT Standard Specifications for Highway Construction
 - e. NDOT Approved Products List
 - f. Special Provisions and Specifications developed by NDOT's Bridge Division
 - g. Local, State and federal laws and regulations that pertain to bridge design

C. SOFTWARE AND EQUIPMENT REQUIREMENTS

- 1. The Consultant shall provide all software and computer equipment required to complete the work including any analysis software required to perform the bridge design work.

2. The consultant is required to complete CADD work within NDOT's Bentley ProjectWise environment (MicroStation). It is the Consultant's responsibility to obtain the software necessary to translate to and from the specified format for all electronic files supplied by the State and for all electronic files prepared by the Consultant and supplied to the State.
3. Calculation reports and supporting documentation must be submitted to the NDOT Bridge Division FTP site
4. Reports for calculations must be submitted in a PDF format and supporting documents must be submitted in a form compatible with Microsoft Office products unless otherwise directed.
5. Electronic design models (LEAP, etc.) should be submitted in native format with a file naming convention that notes the name of the software, and the version utilized.
6. The Consultant shall provide quantities for estimation using AASHTOware Project
7. The Consultant shall load rate bridges within AASHTOware BrR. Specialized load ratings can be completed by hand and a calculation package shall accompany the load rating summary sheet.

D. EXPECTATIONS FOR THE DELIVERABLES

1. Plans and special provisions must be developed in compliance with the manuals, guidelines and specifications as listed in the Qualifications, Knowledge and Experience section.
2. Bridge plans for new construction will typically be submitted to NDOT for review and comment at preliminary (TS&L), 75% completion stage, 90% completion stage, and final. A preliminary design calculation package should be submitted with the 75% submittal. A refined design calculation package with an accompanying independent calculation package should be submitted at 90% for bridge reconstruction projects. Final plans, calculations, and quantities should be submitted at final turn-in.
3. Bridge repair plans must be submitted at 90% and final completion for review and comment. Final turn-in for all bridge projects shall include stamped and signed plans, all special provisions, cost estimates, and the design calculation package.
4. Load rating submittals shall be required when significant structural improvement is provided thru repairs or for new bridge construction. Load rating submittals shall be provided at final turn-in and shall include a BrR model and signed/stamped LRSS. Load ratings calculated outside of BrR shall include a calculation package.
5. Final plan Microstation files shall be cleaned prior to submittal by removing any unnecessary "working" drawings or details and keeping only the final plan work.
6. Plans will be completed and submitted in accordance with the schedule set out in the Task Orders. Occasionally, the NDOT may require the plans be completed on a "rush" basis for emergency repairs.
7. Consultant's services will be used directly or incorporated into NDOT project plans for use in bidding and constructing projects.