**EXHIBIT I**

**SCOPE OF SERVICES**

**Perform Rehabilitation and NBI Inspections, Develop Roadway and Bridge Plans, for A3664, East and West, as well as A3665 and A3666, over the Missouri River in St. Joseph Missouri.**

The CONSULTANT shall be responsible for completing an NBI inspection of L0135. In addition, the CONSULTANT shall complete a Bridge Rehabilitation Checklist for each of the structures. The project construction budget is set at $9,000,000.

This scope of services is intended to be an accurate description of the items and tasks required for completion of the design of this project. However, each project is unique and may require more or less effort in an individual task to complete the design. The following information will explain and define in general terms the major items of importance relating to this project. All the elements of work that are necessary to satisfactorily complete this project may not be listed. The lack of a specific listing item in the scope of services does not in itself constitute the basis for additional services, supplemental agreements, and/or adjustment in compensation.

A more detailed description of the process and requirements used by MoDOT for completion of the design may be found in the MoDOT Engineering Policy Guide (EPG). The consultant is encouraged to review the appropriate sections of the EPG as a means to supplement the information contained in the scope of services and provide additional guidance in the requirements and expectations of MoDOT for completion of the design services.

The provisions of the Design Consultant Agreement outlining the responsibilities of the CONSULTANT regarding the quality and accuracy of the deliverables and products shall apply to any decisions regarding determinations of additional services.

Preparation of a supplemental agreement is necessary prior to performance of any work, which is considered as additional services, not included in the original scope of services. The CONSULTANT will not be compensated for additional services performed prior to execution of a supplemental agreement. Only additional services, which are required due to changed or unforeseen conditions or are due to a change in the specified end product, will be considered for inclusion in a supplemental agreement.

The CONSULTANT will provide the professional, technical, and other personnel resources, equipment, materials and all other things necessary to perform an NBI Inspection, prepare roadway and bridge preliminary plans and construction plans.

The consultant shall perform the following services, all in accordance with the standard practice of the Commission and AASHTO Standard Specification for Highway Bridges:

The scope of the complete rehabilitation plan is unknown at the time of the execution of this agreement. The scope is thought to consist of routine items such as new wearing surfaces, coating of structural steel, expansion joint rehabilitation and/or replacement and standard concrete repairs. Exhibit III shall be the basis for the need of supplemental agreements.

I **Bridge Inspection**

Conduct inspection in accordance with MoDOT’s Bridge Inspection Manual, AASHTO Manual for Bridge Evaluation and MoDOT’s EPG. Each Inspection team shall have a Team Lead Qualified, Fracture Critical trained inspector.

1. Review existing bridge plans, inspection reports, photos and information.
2. Develop inspection plan. Coordinate plan with MoDOT district and bridge office. The inspection plan shall include provisions to maintain one lane of traffic.
3. Notify the US Coast Guard of any activities that may affect navigation.
4. Provide inspection access. Access may be performed with a combination of UBIV, boom-lift, ladders and assisted climbing. All work is to be conducted with appropriate safety tie-offs and fall protection. Deck inspection will be from above and below.
5. Conduct a daily safety meeting at the project site to discuss the daily safety issues. Work for each individual shall not proceed until they are documented to have participated in the safety meeting.
6. Provide inspection documentation in a format organized by MoDOT’s conventional naming criteria. Develop a list of members to be evaluated for rehabilitation and / or additional monitoring. Inspection sketches of trusses and floor system used for inspection documentation shall be developed in advance to mobilizing for the inspection.
7. Map areas of deck repair and provide documentation for evaluation and rehabilitation of structural steel.
8. Document changes from previous inspections.
9. Provide inspection reports, sketches and photos to MoDOT in an acceptable electronic format.
10. MHTC will provide traffic control and TMA’s for the inspection. A safety boat in the river will not be provided and is not required with 100% tie off procedures.
11. Notify MoDOT’s District Office and MoDOT’s Bridge Office three weeks prior to starting field inspection by letter of the starting and approximate end date of the inspection.

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1. Update the Bridge Rehabilitation Checklist for each structure.
2. The CONSULTANT is responsible for all permits, railroad coordination and associated fees to access the bridge over the BNSF Railway ROW.
3. Coordinate with local municipalities as need for staging, storage, parking or access.
4. Conduct one kick-off meeting prior to mobilization of inspection crews and equipment.

**II Preliminary Bridge Design**

(A) Review existing bridge plans, inspection reports, photos and information.

1. Based on inspection reports, identify component of the bridge that should be repaired and develop preliminary repair concepts and estimates.
2. Develop a Bridge Memo and Estimate for the work to advance to final design. Design Layout documents are not required.
3. Coordinate with the district to determine construction staging.
4. Develop Inspection Criteria for future inspections.
5. Collaborate with MoDOT to determine the best project that can be delivered within the established $9,000,000 budget.

**III Final Roadway Design**

1. The COMMISSION shall coordinate utility company activities for any adjustments required to be included in the final design plans.
2. The COMMISSION will secure execution of municipal agreements with the cities and/or county agreements. A copy of the executed agreements will be furnished to the CONSULTANT for his information. The CONSULTANT shall conform to all design provisions of these agreements.
3. A final design field check shall be held with CONSULTANT and COMMISSION representatives prior to completing final design plan quantities. The CONSULTANT shall make any necessary revisions to the final plans as determined by this design field check.
4. The CONSULTANT shall prepare detailed temporary erosion control plans for review and approval before inclusion in the final design plans.
5. The CONSULTANT shall prepare computations for all design plan quantities. All plan quantities shall be shown on the Quantity Sheets, by construction stage, if applicable. The format for these sheets shall be furnished by the COMMISSION. Specialty items may have separate sheets for quantity tabulations.
6. The CONSULTANT shall prepare for review and approval by the COMMISSION all General Job Special Provisions, which are to supersede the Missouri Standard Specification for Highway Construction. A brief reason for the deviation from the standard plans and specifications should also be provided. The CONSULTANT shall prepare only Job Special Provisions related to design elements shown in the plans.
7. The following list shall be considered the minimum requirements for a complete set of Final Design Plans.
   1. Title Sheet
   2. Typical Sections
   3. Quantity Sheets
   4. Plan Sheets at 1”=50’ horizontal (or different scale as determined by MoDOT Project Manager for clarity). Plan sheets shall include all necessary adjustments to signing and proposed pavement marking, if needed.
   5. Profile Sheets at 1”=50’ horizontal and 1”=10’ vertical, if needed.
   6. Culvert Sections at 1”=10’, if needed.
   7. Special Sheets for geometrics, referenced points, grading plan, traffic control plan, temporary erosion control plan and any other sheets for special design features.
   8. Earthwork Quantities, Cross Sections at 100’ intervals, 1”=10’ (1:100), horizontal and vertical, including entrance sections with existing and proposed grades, if needed.
   9. Tabulation of Quantity Sheets
   10. Job Special Provisions in electronic format readable in COMMISSION’S current word processor
   11. File with the bid items and quantities as generated by COMMISSION’S current estimating program.
   12. Construction Workday Study
   13. Transportation Management Plan
   14. Final Plans Checklist Form D-12
8. Additional plans and information may be required to complete the Final Design Plans. With the submittal of the Final Design the CONSULTANT shall also provide the COMMISSION a statement that an internal quality control check has been conducted and to the best of the CONSULTANT’S knowledge the final design plans are free of gross errors, misleading or confusing typos, and includes adequate information to construct the project.
9. The CONSULTANT shall prepare all plans through the use of a Computer Aided Drafting (CAD) program. The CONSULTANT shall conform to MoDOT’s Specifications for Computer Deliverable Contract Plans as referenced in the MoDOT EPG. The CONSULTANT shall use Microstation and Geopak SS4.
10. The CONSULTANT shall furnish the COMMISSION the following completed sheets and documents, as applicable, for each separate construction project included in this contract, as follows:
    1. Preliminary Plans showing profile grades, geometric data, alignment data, etc.
    2. One (1) electronic copy of the location sketch for Commission Approval submitted in electronic format.
    3. Draft copy of the job special provisions related to design elements for review. After corrections, the job special provisions shall be furnished in electronic format utilizing the COMMISSION’S latest word processing program.
    4. One (1) legible electronic copy of engineering calculations and analysis.
    5. One (1) electronic copy of a complete summary of quantities and estimate of construction costs. The estimate shall be prepared using the latest version of MoDOT’s current estimating program.
    6. One (1) electronic copy of a workday study showing the estimated number of workdays required to construct each project.
    7. The CONSULTANT shall provide a 3D model of the project exported from Geopak SS4 software for the COMMISSION’S use, if volume grading should be needed.

**IV Final Bridge Design**

Furnish to the COMMISSION fully checked design plans, job special provisions, design computations, quantity computations, final cost estimate, and a construction work day study for the structure(s). The CONSULTANT is expected to make the COMMISSION aware of more economical design alternatives that may become apparent during the preparation of the final design.

1. The plans shall be complete and shall cover all parts of the structure they represent. The degree of detail shall be comparable to that furnished on typical plans prepared by the COMMISSION. Deliverables shall be in accordance with the “Specifications of Computer Deliverable Contract Plans” requirement outlined in the Commission’s Engineering Policy Guide. The electronic plans in Microstation format cannot be signed and sealed. The electronic submittals shall be made in a method suitable to MoDOT.
2. All construction changes made to the plans during construction of the project shall also be submitted electronically in Adobe Acrobat and Microstation format.
3. The job special provisions shall be complete and describe all design features, construction procedures, or material requirements in the plans that are deviations from the latest edition of the Missouri Standard Plans for Highway Construction. Typical job special provisions that have been developed by MoDOT for previous jobs are posted on MoDOT’s website and are available for use and modification as needed. The job special provisions shall include a table of contents sheet that is signed and sealed by a professional engineer registered in Missouri. The signed and sealed job special provisions shall also be submitted in Adobe Acrobat Reader format, version 7 or higher. Job Special Provisions shall also be submitted in Microsoft Word format. The submittal letter shall explain the need for each provision.
4. The design computations and plans shall be acceptable to, and will become the property of the Commission. The CONSULTANT shall submit design computations in Adobe Acrobat Reader version 7.0 format or greater. The files shall be transferred in a manner acceptable to MoDOT. The design computations shall contain an index file, with electronic links to the files contained within. Submittals shall include a minimum of set of design computations for each project. The design computations shall not be combined with the Microstation or the Adobe Acrobat Reader submittals.
5. The final estimate submitted by the CONSULTANT shall include backup material that supports the estimates made for non-standard or lump sum pay items.
6. The CONSULTANT shall submit the hours and cost summarizing the design effort for each bridge. The summary shall include separate amounts for: Number of Hours for Bridge Preliminary Design, Cost of Bridge Preliminary Design, Number of Hours for Bridge Final Design, Cost of Bridge Final Design. Generally, the above amounts should include all hours and costs invoiced that are attributable to bridge design and plans preparation up to the point of turning in the signed and sealed plans. It should not include hours attributable to preparing the bridge survey, final construction cost estimate, or workday study.

**V Construction Support**

1. The CONSULTANT shall be available to the COMMISSION to discuss and interpret plans and specifications during the bidding and construction phase of the project as determined necessary by the Engineer.
2. The CONSULTANT may be required to attend a pre-construction meeting, and a post construction meeting.
3. If issues arise during construction, there will be a direct line of communication established between the MoDOT Construction Office and the CONSULTANT. The CONSULTANT will immediately inform the MoDOT Bridge Division of any recommendations or clarifications made to the Construction Office.