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ARTICLE I - DESCRIPTION OF PROFESSIONAL SERVICES TO BE RENDERED

NOW THEREFORE, in consideration of the undertakings of the parties hereinafter set forth, the DEPARTMENT hereby engages the CONSULTANT, who agrees to render services to the DEPARTMENT which shall include, but not be restricted to, the following items, in accordance with conditions and terms hereinafter set forth:

A. LOCATION AND DESCRIPTION OF PROJECT

This project involves [write general description of the project, including roadway name, rough project limits. Note major intersections, general purpose of the project. If the project involves a bridge, provide feature crossed, bridge number, and general description of structure.]

B. GENERAL SCOPE OF WORK

The development of the engineering for this project is expected to be performed in two phases: 1) Preliminary Design, to study and prepare preliminary engineering plans suitable for a Public Information Meeting(s), Design Public Hearing (if needed), and completion of NEPA documentation; and 2) Final Design, to prepare final plans, specifications and estimates for the bridge and associated roadway improvements. This contract is for Preliminary Design services. Final Design is not included in this Agreement. Assuming a successful Public Hearing, and upon completion of Preliminary Design, the DEPARTMENT reserves the right to either negotiate a scope and fee for Final Design or terminate the contract.

The goals of the Preliminary Design engineering efforts of this project are to select an appropriate proposed action that is supported by the community, technically feasible, environmentally permissible, and economical; develop an approved Environmental Document; and bring the proposed action to a public hearing for layout approval. The development of improvement alternatives will include public participation involving public and private stakeholders and the general public in the decision-making process to aid in the determination of the proposed action, and the development of an approved NEPA document.

The work shall be as described in the CONSULTANT'S Scope of Services, Attachment A, and requires the development and refinement of engineering plans and technical documentation. The following general tasks may be included in Preliminary Design:

1. Develop and evaluate roadway and intersection alternatives.
2. Preliminary design of roadways, intersections, traffic features, bridges and other necessary design elements.
3. Evaluation of existing bridge structures.
4. Design of bridge preservation, rehabilitation and/or replacement alternatives for each crossing.

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5. Design of ancillary structures.
6. Develop a preliminary Traffic Control Plan that is acceptable and economical for travelers.
7. Consider construction phasing, constructability, and construction access.
8. Complete reports and/or studies summarizing concepts and recommendations.
9. Identify all impacted natural and cultural resources potentially affected by the proposed action and investigate means of minimizing or mitigating the impacts.
10. Prepare an environmental document and any potential for a Section 4(f) evaluation, for the proposed action to comply with the National Environmental Policy Act (NEPA) (including Cultural Resource investigations in accordance with Section 106 of the National Historic Preservation Act) and the identification of any permitting requirements.
11. Assist the Department with public involvement, including preparation of illustrative plans and exhibits for any meetings, including a Hearing plan.
12. Topographic survey mapping.
13. Identify and document the existing right-of-way.
14. Geotechnical services.
15. Utility coordination.

The CONSULTANT shall be responsible for developing engineered plans through an iterative process of design and review involving the DEPARTMENT, STATE, and Federal environmental resource agencies, regional planning commissions, the local community, and the public.

The CONSULTANT shall be responsible for the preparation of complete preliminary designs, including all plans, specifications for work not included in the current specifications of the DEPARTMENT, computations, estimates, and documents for required submissions to the DEPARTMENT, the Federal Highway Administration, and/or any other STATE or Federal agency, that may be required.

The engineering design shall take into consideration all factors affecting the cost of the construction, such as site-specific foundation considerations; earthwork quantities; erosion and sedimentation control; traffic control; water-quality-treatment issues; construction phasing and complexity; utilities affected; right-of-way needs; environmental issues and commitments; cost; construction materials; etc.

The CONSULTANT shall, when requested by the DEPARTMENT, render such assistance as required, including the preparation and explanation of sketches and plans for, or at, any meetings or conferences held by the DEPARTMENT. Meeting notes and conference memos shall be the responsibility of the CONSULTANT.

Designs shall conform to the current standards, specifications, policies, and guidelines enumerated in the Federal Aid Policy Guide, Subchapter G, Part 625, or to 23 Code of Federal Regulations, Part

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625 and the DEPARTMENT'S standards, including published Design Manuals, Guidelines, Directives and Design Memoranda, and the most current Standard Plans for Road Construction, except as otherwise approved.

All plotting, drafting, and calculations performed by the CONSULTANT shall be independently checked by members of the CONSULTANT'S staff other than those who performed the original work. The work of each stage submission or interim study submissions (including quantity estimates) shall have been appropriately checked. The CONSULTANT shall verify all computations and design calculations. The CONSULTANT shall furnish all study plans, work plans, alternate studies, and estimates indexed in accordance with DEPARTMENT procedures.

The CONSULTANT'S Licensed Professional Engineer stamp for the State of New Hampshire shall appear on the construction plans, reports, and other documents that will be submitted to the DEPARTMENT in accordance with RSA 310-A. Stamps shall be those of the professional engineers who prepared them or under whose direct supervisory control they were prepared.

C. MATERIALS FURNISHED BY THE DEPARTMENT OF TRANSPORTATION

The DEPARTMENT will furnish the following data to the CONSULTANT:

1. Electronic files in US Customary units of the following information in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements for incorporation into the plans by the CONSULTANT:
 - a. Any available electronic topographical mapping within the project area shall be provided along with any pertinent electronic supporting information (survey field notes, ASCII point file, SDR data files, etc.).
 - b. Electronic drawings in MicroStation format of roadway typical cross-sections and other detail sheets shall be provided, when available from the DEPARTMENT'S CAD/D library, upon request by the CONSULTANT, in accordance with the current DEPARTMENT CAD/D Procedures and Requirements.
2. Right-of-Way data: Any additional information collected or prepared by the DEPARTMENT that could supplement the CONSULTANT'S Right-of-Way Boundary (e.g. existing right-of-way layout per record plans, property lines to a tax map level, parcel owners, title abstracting, etc.) will be provided by the DEPARTMENT in MicroStation format for incorporation into the plans by the CONSULTANT.
3. Plans of prior highway and bridge construction projects within the project limits, as available.
4. The location of all existing and proposed utilities through direct contact with the various utility companies.
5. Geotechnical investigations and recommendations, if available: Electronic files of the Environmental resource data collected in previous studies.

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6. Crash data within the study area, if applicable.
7. Traffic count data, if applicable.
8. The DEPARTMENT's latest high-resolution color aerial photography (which is geo-referenced and ortho-rectified).
9. Latest bridge inspection reports, if applicable.
10. Conceptual design and layout of highway lighting (temporary and permanent), if available and applicable.
11. Conceptual design and layout of ITS features, if applicable.

D. WORK SCHEDULE AND PROGRESS REPORTS

See Supplemental Scope of Work, Attachment A for additional detail on the services to be provided.

The CONSULTANT shall begin performance of the services designated in the AGREEMENT promptly upon receipt from the DEPARTMENT of a Notice to Proceed and the material to be furnished as herein described. The CONSULTANT shall complete these services without delay unless unable to do so for causes not under the CONSULTANT'S control.

The CONSULTANT'S sequence of operation and performance of the work under the terms of this AGREEMENT shall be varied at the direction of the DEPARTMENT to give priority in critical areas so that schedules and other STATE commitments, either present or future, can be met.

The CONSULTANT shall report progress to the DEPARTMENT in conjunction with DEPARTMENT'S Standardized Invoicing process. Invoices shall be submitted for each month that there has been more than \$10,000 in cumulative billable work since the last invoice, and at least quarterly. For months with no progress or less than \$10,000 cumulative work since the last invoice, a status report briefly describing the reasons for little, or no progress shall be submitted.

E. SUBMISSION OF REPORTS, PLANS AND DOCUMENTS

The submissions shall be in accordance with the attached Scope of Work. Each submission shall be supplemented with such drawings, illustrations, and descriptive matter as are necessary to facilitate a comprehensive understanding and review of proposed concepts and designs. The CONSULTANT will be expected to support their design proposals and any issues resulting from review by the DEPARTMENT or in the public participation phase (including agency coordination), with alternative studies and reasonably itemized cost comparisons for alternate concepts.

Upon completion of the AGREEMENT, the CONSULTANT shall turn over all documentation, including, but not limited to, all reports, test results, drawings, plans, and all financial supporting documentation in their original format and in the format submitted to the DEPARTMENT.

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Bridge Design Submissions: The plan submissions for bridge structures shall follow, in general, the NHDOT Bridge Design Manual and the "Instructions for Consulting Engineers Concerning Routine Procedures on Bridge Design Projects" formats prepared by the DEPARTMENT

F. **DELIVERABLES**

All work and supporting documents compiled under this AGREEMENT shall be developed by the CONSULTANT and delivered to the DEPARTMENT according to the following formats:

Electronic Transfer of Data: The DEPARTMENT requires the following to ensure compatibility with software used by the DEPARTMENT and to ensure the efficient and timely exchange of computer files between the DEPARTMENT and the CONSULTANT.

All files submitted must be fully compatible with the formats listed in this document without any conversion or editing by the DEPARTMENT. Any files requiring conversion and/or editing by the DEPARTMENT will not be accepted. All files shall be virus free. All files shall use the DEPARTMENT'S file naming convention.

Computer Aided Design/Drafting (CAD/D) files: All CAD/D files shall be in accordance with the Deliverable Requirements described in the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time this AGREEMENT was executed, or any later version. All files submitted must be fully compatible with the current version of MicroStation being used by the DEPARTMENT. (The DEPARTMENT'S CAD/D Procedures and Requirements document can be found on the CAD/D website by following the "Downloads" link at www.nh.gov/dot/cadd/.)

Word Processing, Spreadsheet, and Database Files: For each Phase, all relevant files shall be provided in a format fully compatible, as appropriate, with the following:

Word Processing: Microsoft Word 2016 or NHDOT compatible version

Spreadsheets: Microsoft Excel 2016 or NHDOT compatible version

Databases: Microsoft Access 2016 or NHDOT compatible version

These specifications will be updated as necessary to reflect changes in DEPARTMENT software such as adding new software or updating to new versions of existing software. In such instances, the CONSULTANT will be promptly notified.

Computer File Exchange Media: Electronic files shall be exchanged between the DEPARTMENT and the CONSULTANT using the following media as appropriate for Windows Operating Systems:

- File Transfer Sites, Bluebeam, SharePoint.
- Email: Files 20 MB or smaller may be transferred via email. If compressed, the files should be self-extracting and encrypted based on content.

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Copies: The CONSULTANT shall provide hard (paper) and electronic copies of the deliverables for each Phase of Work. For all deliverables, provide electronic copies in two electronic versions: an electronic version in the original electronic file format (i.e., MicroStation (*.dgn), Microsoft Word (*.docx), Microsoft Excel (*.xlsx), etc.) and an electronic version in Adobe Acrobat (*.pdf) file format.

Website Information:

- a. Website Content: All external NHDOT websites created under this AGREEMENT shall meet the ADA Section 508 requirements as stated in the NH DoIT Website Standards. Those standards are outlined in [Vendor Resources and Procurement | NH Department of Information Technology](#).
- b. Website Documents: All documents posted to a website created under this AGREEMENT, or that are submitted to be posted to a NHDOT website, shall meet ADA Section 508 accessibility requirements. Compliance requirements can be found at <https://www.section508.gov/create/>.

Upon completion of the AGREEMENT, the CONSULTANT shall turn over all documentation, including, but not limited to, all reports, test results, drawings, plans, and all financial supporting documentation in the formats described above.

G. QUALITY CONTROL

The CONSULTANT shall be the Engineer-of-Record for this work, as such the CONSULTANT shall be responsible to ensure that the design and supporting documentation is accurate, checked, and thoroughly reviewed prior to each submission. DEPARTMENT staff will review the CONSULTANT'S submissions to ensure that DEPARTMENT objectives are being met and standard practices and procedures are adhered to. It is the CONSULTANT's and the Engineer-of-Record's responsibility to ensure the design is complete, accurate and meets all DEPARTMENT requirements.

The DEPARTMENT will reject any data that does not comply with the above. The DEPARTMENT will decide when the data and services have fully met the project requirements. The CONSULTANT will not be paid for insufficient work.

The CONSULTANT's designated Quality Control personnel shall sign-off on each submission prior to transmittal to the DEPARTMENT. The CONSULTANT shall, upon request, provide to the DEPARTMENT any and/or all Quality Control documentation pertaining to work efforts on the project.

H. Date of Completion

In accordance with the Governor and Council Resolution authorizing this AGREEMENT, the date of completion for the Design of professional services rendered under this AGREEMENT is **[COMPLETION DATE]** (approximately **[number]** months from the date of approval by the Governor and Council).