

Victoria F. Sheehan  
Commissioner

William Cass, P.E.  
Assistant Commissioner

Bureau of Turnpikes  
March 10, 2020

His Excellency, Governor Christopher T. Sununu  
and the Honorable Council  
State House  
Concord, New Hampshire 03301

**REQUESTED ACTION**

Authorize the Department of Transportation to enter into an Agreement with HNTB Corporation, Concord, NH, Vendor #175663, for an amount not to exceed \$1,310,750.14, for preliminary and final design for conversion of the existing Spaulding Turnpike (NH 16) mainline toll plazas to All Electronic Tolling (AET) facilities, effective upon Governor and Council approval through February 28, 2023. 100% Turnpike Funds.

Funds to support this request are available in the following account in State FY 2020 and State FY 2021, and funding is contingent upon the availability and continued appropriation of funds in State FY 2022 and State FY 2023, with the ability to adjust encumbrances between State Fiscal Years through the Budget Office if needed and justified:

	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
04-96-96-961017-7511				
Toll Collection Equipment				
046-500464 Gen Consultants Non-Benefit	\$400,000.00	\$885,000.00	\$23,000.00	\$2,750.14

**EXPLANATION**

This project involves the construction of new All Electronic Tolling (AET) toll facilities to replace the existing conventional cash and E-ZPass toll plazas along the Spaulding Turnpike (NH16) in Dover and Rochester, NH. The new facilities will accommodate highway speed tolling with no cash option; referred to as All Electronic Tolling (AET). The scope of work includes design for construction of new AET facilities, demolition of the existing toll plazas including canopy, islands, tunnel and reconstruction of the roadway in the vicinity of the existing plazas, construction of three AET lanes in Dover (three lanes and shoulders on either side of the roadway centerline) and two AET lanes in Rochester (two lanes and shoulders on either side of the roadway centerline, but the gantry will accommodate a future three lane layout). Tolling operations will be perpetuated during construction of the new facilities as well as plaza demolitions. This project is included in the State's Ten-Year Transportation Improvement Plan (Dover-Rochester 29440).

The consultant selection process employed by the Department for this qualifications-based contract is in accordance with RSAs 21-I:22, 21-I:22-c, 21-I:22-d, 228:4 and 228:5-a, and all applicable Federal laws and the Department's "Policies and Procedures for Consultant Contract Procurement, Management, and Administration" dated August 25, 2017. The Department's Consultant Selection Committee is a standing committee that meets regularly to administer the process and make determinations. The Committee is comprised of the Assistant Director of Project Development (Chair), the Chief Project Manager, the Administrators of the Bureaus of Highway Design, Bridge Design, Environment, and Materials and Research, and the Municipal Highways Engineer.

The consultant selection process for this qualifications-based contract was initiated by a solicitation for consultant services for Dover-Rochester 29440, Implementation of All Electronic Tolling at the Dover & Rochester Toll Plazas. The assignment was listed as a "Project Soliciting for Interest" on the Department's website on August 9, 2018 asking for letters of interest from qualified firms. From the list of firms that submitted letters of interest, the Committee prepared a long and then short list of Consultants on September 27, 2018 for consideration and approval by the Assistant Commissioner. Upon receipt of that approval, three shortlisted firms were notified on December 19, 2018 through a technical "Request for Proposal" (RFP). Committee members individually rated the firms on February 14, 2019 using a written ballot to score each firm on the basis of comprehension of the assignment, clarity of the proposal, capacity to perform in a timely manner, quality and experience of the project manager and the team, previous performance, and overall suitability for the assignment. (A compilation of the completed individual rating ballots and the ranking summary form is attached.) The individual rankings were then totaled to provide an overall ranking of the three firms, and the Committee's ranking was submitted to the Assistant Commissioner for consideration and approval. Upon receipt of that approval, the short listed firms were notified of the results and the highest-ranking firm was asked to submit a fee proposal for negotiations.

The long list of four (4) consultant firms that were considered for this assignment, with the three (3) short-listed firms shown in bold, is as follows:

**Consultant Firm**

AECOM Technical Services, Inc.  
HNTB Corporation  
Stantec Consulting Services, Inc.  
WSP USA, Inc.

**Office Location**

Manchester, NH  
Concord, NH  
Auburn, NH  
Manchester, NH

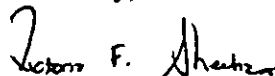
The firm of HNTB Corporation was recommended for this contract. This firm has an excellent reputation and has demonstrated their capability to perform the required services. Background information on this firm is attached.

HNTB Corporation has agreed to furnish the professional engineering services for an amount not to exceed \$1,310,750.14. This is a reasonable fee and is commensurate with the complexity of the project and the scope of the engineering and technical services to be furnished.

This Agreement has been approved by the Attorney General as to form and execution. The Department has verified that the necessary funds are available. Copies of the fully-executed Agreement are on file at the Secretary of State's Office and the Department of Administrative Services, and subsequent to Governor and Council approval will be on file at the Department of Transportation.

It is respectfully requested that authority be given to enter into an Agreement for consulting services as outlined above.

Sincerely,



Victoria F. Sheehan  
Commissioner

Attachments

**ARCHITECT - ENGINEER QUALIFICATIONS**

1. SOLICITATION NUMBER (If any)

**PART II - GENERAL QUALIFICATIONS**

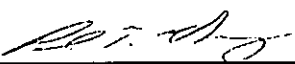
(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME HNTB Corporation			3. YEAR ESTABLISHED 1993		4. DUNS NUMBER 041601790	
2b. STREET 6 Loudon Road Suite 201			5. OWNERSHIP			
2c. CITY Concord			2d. STATE NH	2e. ZIP CODE 03301		
6a. POINT OF CONTACT NAME AND TITLE Paul Godfrey, PE, Vice President			a. TYPE S Corporation			
6b. TELEPHONE NUMBER (207) 774-5155			b. SMALL BUSINESS STATUS N/A			
6c. E-MAIL ADDRESS pgodfrey@hntb.com			7. NAME OF FIRM (If block 2a is a branch office) HNTB Holdings, Ltd.			
8a. FORMER FIRM NAME(S) (If any) Harrington, Howard & Ash Ash, Howard, Needles, & Tammen Howard, Needles, Tammen, & Bergendoff Howard, Needles, Tammen, & Bergendoff, Inc.			8b. YEAR ESTABLISHED 1914 1928 1940 1993		8c. DUNS NUMBER 167876478	
HNTB Management Company HNTB Holdings, Ltd. HNTB Corporation			1995 2004 2005			

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees		a. Profile Code	b. Experience	c. Revenue Index Number (see below)
		(1) FIRM	(2) BRANCH			
2	Administrative	984	2	B02	Bridges	10
8	CADD Technician	122	3	C15	Construction Management	10
15	Construction Inspector	229	5	C18	Cost Estimating	9
16	Construction Manager	180	4	D02	Dams, Dikes, Levees	5
48	Project Manager	515	10	D05	Dgtl Elev/Terrain Model Dev.	5
57	Structural Engineer	302	12	E08	Engineering Economics	9
58	Technical Analyst	258	1	E09	Environmental Impacts	9
60	Transportation Engineer	674	13	H07	Highway, Streets, Airfield Pave	10
				L03	Landscape Architecture	7
				L06	Lighting	8
				P05	Planning	8
				R03	Railroad	10
				R06	Rehabilitation	
				S09	Structural Design	8
				S10	Surveying	8
				T02	Testing and Inspection Serv	7
				T03	Traffic/Transportation Eng.	10
				W02	Water Resources	6
				W03	Water Supply	7
	Other Employees	864	1			
Total		4,10	51			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (Insert revenue index number shown at right)		PROFESSIONAL SERVICES REVENUE INDEX NUMBER	
a. Federal Work	9	1. Less than \$100,000	6. \$2 million to less than \$5 million
b. Non-Federal Work	10	2. \$100,000 to less than \$250,000	7. \$5 million to less than \$10 million
c. Total Work	10	3. \$250,000 to less than \$500,000	8. \$10 million to less than \$25 million
		4. \$500,000 to less than \$1 million	9. \$25 million to less than \$50 million
		5. \$1 million to less than \$2 million	10. \$50 million or greater

12. AUTHORIZED REPRESENTATIVE The foregoing is a statement of facts.	
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a. SIGNATURE 	b. DATE 12/18/2018
c. NAME AND TITLE Paul Godfrey, PE, Vice President	



**FIRM:**

**HNTB Corporation**

**ROLE:**

**Project Manager**

**EDUCATION:**

**BS, 2007, Civil Engineering,  
University of Maine  
at Orono**

**REGISTRATIONS:**

**Professional  
Engineer: ME**

**AFFILIATIONS:**

**American Society  
of Civil Engineers**

**YEARS OF  
EXPERIENCE:**

**11**

## RAY HANF, PE

Ray is a project manager/senior transportation engineer involved in a variety of projects throughout New Hampshire and Maine. He has been involved in highway, traffic and structural projects for the New Hampshire Department of Transportation (NHDOT), Maine Department of Transportation (MaineDOT), Eastern Trail Management District and Maine Turnpike Authority (MTA). His experience includes the design and feasibility for roadway, multi-use trail, traffic and toll facility projects.

**New Hampshire Department of Transportation - Bureau of Turnpikes, Bedford Toll Plaza ORT Conversion Preliminary Design, Bedford, NH**  
Project manager for ORT conversion project. Ray's responsibilities included multidiscipline/multi-office coordination, scope/schedule/budget monitoring, client interaction and coordination, public involvement preparation, subconsultant coordination and QC/QA oversight.

**New Hampshire Department of Transportation - Bureau of Turnpikes, Hooksett Toll Plaza ORT Conversion, Hooksett, NH**  
Deputy project manager/lead highway project engineer for the conversion of the I-93 mainline Hooksett Toll Plaza to ORT. Ray's responsibilities included multidiscipline/multi-office coordination, scope/schedule/budget monitoring, highway geometric layouts, horizontal and vertical alignment, superelevation calculations, roadside design, maintenance of traffic control, engineer's estimate and final plan production.

**New Hampshire Department of Transportation - Bureau of Turnpikes, Hampton Toll Plaza ORT Conversion, Hampton, NH**  
Lead highway project engineer for the conceptual feasibility study for the conversion of Hampton I-95 mainline toll plaza to ORT. Ray's responsibilities included conceptual geometric layouts, maintenance of traffic control and cost estimates.

**New Hampshire Department of Transportation - Bureau of Turnpikes, ORT and AET Feasibility Study, Statewide, NH**

Lead highway project engineer for the feasibility study that comparatively assessed the financial implications of ORT and AET at the Dover, Rochester, Bedford and Hooksett side toll plazas. Ray's responsibilities included development of conceptual toll plaza geometric layouts/footprints, conceptual engineer's estimates, client coordination and presentation to NHDOT Front Office.

**Maine Turnpike Authority, West Gardiner/Falmouth Spur/  
New Gloucester ORT Conversion, ME**  
Highway project engineer for three separate conversions of existing barrier toll plazas to ORT. Ray's tasks included coordinating several disciplines (highway, structural, electrical and tolling); assisting the client to determine plaza sizing; geometric and drainage design; coordinating with the MTA on maintenance and operational issues; and assisting with developing plans, specifications and cost estimates.

**Maine Turnpike Authority, York/  
Exit 44/Exit 103 ORT Conversion Planning, Final Design Peer Review and Toll System Design, York, ME**  
Highway project engineer for three separate conversions of existing barrier toll plazas to ORT where HNTB developed the conceptual designs and feasibility studies. HNTB, during final design, developed the toll system designs coordinating with MTA's toll system vendor and provided peer review services for the other disciplines being designed.

**PROJECT: Dover-Rochester 29440 AET Conversion**

**DESCRIPTION:** Preliminary and final design, as well as construction support services contract for the conversion of the existing Dover and Rochester conventional toll facilities to All Electronic Tolling (AET) facilities. Preliminary design is anticipated to include refinement of horizontal alignment(s), development of vertical alignment and confirmation of layouts developed by the Department. Conceptual designs/geometric layouts and estimates are being developed by the Department. Final design is expected to include development of all aspects of conversion contract plans to include AET infrastructure and gantry design, in addition to toll plaza demolition, drainage design, signing, soundwall design, construction sequencing and traffic management considerations. For additional information see scope of work checklist. The Dept. will develop the environmental study with the support of a statewide on-call environmental services consultant. Environmental services specific to the project to be completed by the selected consultant will include the development of a wetland permit application package including associated wetland plans and other resource delineation as necessary. The Rochester location has two soundwalls that are required along the northbound barrel also to be designed by the selected consultant. The Consultant will also be required to assist the Department in the public outreach and public involvement process. Geotechnical, right-of-way and survey aspects of the project are anticipated to be addressed by the Department, as/if needed.

**Services Required: RDWY, ENV, UTIL, STRC, PINV**

**SUMMARY**

AECOM Technical Services, Inc.	1	2	1	3	3	3		13
HNTB Corporation	2	1	2	1	1	1		8
Stantec Consulting Services, Inc.	3	3	3	2	2	2		15

**EVALUATION OF TECHNICAL PROPOSALS**

Rating Considerations	Scoring of Firms			
	WEIGHT	AECOM Technical Services, Inc.	HNTB Corporation	Stantec Consulting Services, Inc.
Comprehension of the Assignment	20%	20	20	20
Clarity of the Proposal	20%	19	19	19
Capacity to Perform in a Timely Manner	20%	20	20	19
Quality & Experience of Project Manager/Team	20%	19	19	18
Previous Performance	10%	9	9	8
Overall Suitability for the Assignment	10%	10	10	9
<b>Total</b>	<b>100%</b>	<b>97</b>	<b>97</b>	<b>93</b>

Ranking of Firms:

1. AECOM
2. HNTB
3. Stantec

Rating Considerations	Scoring of Firms			
	WEIGHT	AECOM Technical Services, Inc.	HNTB Corporation	Stantec Consulting Services, Inc.
Comprehension of the Assignment	20%	18	20	18
Clarity of the Proposal	20%	18	19	16
Capacity to Perform in a Timely Manner	20%	17	19	18
Quality & Experience of Project Manager/Team	20%	18	20	16
Previous Performance	10%	8	10	7
Overall Suitability for the Assignment	10%	9	10	8
<b>Total</b>	<b>100%</b>	<b>98</b>	<b>98</b>	<b>83</b>

Ranking of Firms:

1. HNTB
2. AECOM
3. Stantec

## EVALUATION OF TECHNICAL PROPOSALS (continued)

Rating Considerations	Scoring of Firms			
	W E I G H T	AECOM Technical Services, Inc.	HNTB Corporation	Stantec Consulting Services, Inc.
Comprehension of the Assignment	20%	18	16	16
Clarity of the Proposal	20%	18	16	18
Capacity to Perform in a Timely Manner	20%	18	18	16
Quality & Experience of Project Manager/Team	20%	18	18	18
Previous Performance	10%	8	9	7
Overall Suitability for the Assignment	10%	9	8	8
Total	100%	89	85	83

Ranking of Firms:

1. AECOM
2. HNTB
3. STANTEC

Rating Considerations	Scoring of Firms			
	W E I G H T	AECOM Technical Services, Inc.	HNTB Corporation	Stantec Consulting Services, Inc.
Comprehension of the Assignment	20%	19	20	19
Clarity of the Proposal	20%	16	19	17
Capacity to Perform in a Timely Manner	20%	18	20	18
Quality & Experience of Project Manager/Team	20%	18	19	17
Previous Performance	10%	7	10	8
Overall Suitability for the Assignment	10%	7	9	8
Total	100%	85	97	87

Ranking of Firms:

1. HNTB
2. STANTEC
3. AECOM

Rating Considerations	Scoring of Firms			
	W E I G H T	AECOM Technical Services, Inc.	HNTB Corporation	Stantec Consulting Services, Inc.
Comprehension of the Assignment	20%	10	18	15
Clarity of the Proposal	20%	13	18	14
Capacity to Perform in a Timely Manner	20%	13	18	15
Quality & Experience of Project Manager/Team	20%	13	14	18
Previous Performance	10%	6	12	9
Overall Suitability for the Assignment	10%	5	10	8
Total	100%	60	92	82

Ranking of Firms:

1. HNTB
2. STANTEC
3. AECOM

Rating Considerations	Scoring of Firms			
	W E I G H T	AECOM Technical Services, Inc.	HNTB Corporation	Stantec Consulting Services, Inc.
Comprehension of the Assignment	20%	18	20	20
Clarity of the Proposal	20%	20	20	19
Capacity to Perform in a Timely Manner	20%	20	19	20
Quality & Experience of Project Manager/Team	20%	18	20	19
Previous Performance	10%	9	10	10
Overall Suitability for the Assignment	10%	9	10	10
Total	100%	94	99	98

Ranking of Firms:

1. HNTB
2. STANTEC
3. AECOM

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## **ATTACHMENTS**

- A. **SCOPE OF WORK** Prepared by HNTB Corporation dated September 9, 2019
1. CERTIFICATION WITH REGARD TO THE PERFORMANCE OF PREVIOUS CONTRACTS OR SUBCONTRACTS, ETC.
2. CONSULTANT DISCLOSURE STATEMENT FOR PREPARATION OF ENVIRONMENTAL EVALUATIONS
3. CERTIFICATION OF CONSULTANT/SUBCONSULTANT
4. CERTIFICATION OF STATE DEPARTMENT OF TRANSPORTATION
5. CERTIFICATION FOR FEDERAL-AID CONTRACTS EXCEEDING \$100,000 IN FEDERAL FUNDS
6. CERTIFICATION OF GOOD STANDING
7. CERTIFICATION OF INSURANCE
8. CERTIFICATION OF AUTHORITY / VOTE
9. SIGNATURE PAGE



AGREEMENT  
FOR PROFESSIONAL SERVICES

PREAMBLE

THIS AGREEMENT made this 7<sup>th</sup> day of January in the year 2020 by and between the STATE OF NEW HAMPSHIRE, hereinafter referred to as the STATE, acting by and through its COMMISSIONER OF THE DEPARTMENT OF TRANSPORTATION, hereinafter referred to as the COMMISSIONER, acting under Chapter 228 of the Revised Statutes Annotated, and HNTB Corporation, with principal place of business at P.O. Box 419299, in the City of Kansas City, State of Missouri, and New Hampshire branch office at 6 Loudon Road, Suite 201, in the City of Concord, State of New Hampshire, and hereinafter referred to as the CONSULTANT, witnesses that:

The Department of Transportation, State of New Hampshire, hereinafter referred to as the DEPARTMENT, proposes to convert the existing Spaulding Turnpike (NH 16) mainline toll plazas in Dover and Rochester to All Electronic Tolling (AET) facilities.

The DEPARTMENT intends to have prepared for said project preliminary design, final design, contract plans, specifications, special provisions, and estimates of quantities and costs. These services are outlined in the CONSULTANT'S scope of work dated September 9, 2019 (included in this AGREEMENT as Attachment A) and fee proposal dated October 15, 2019, which is hereby adopted by reference and considered to be part of this AGREEMENT.

This AGREEMENT becomes effective upon approval by the Governor and Council.

## ARTICLE I

### **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 that 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 the construction of new AET toll facilities to replace the existing conventional cash and E-ZPass toll plazas along the Spaulding Turnpike in Dover and Rochester, NH. The new facilities will accommodate highway speed tolling with no cash option, referred herein as All Electronic Tolling (AET). The design for the following is included in the work scope:

- Construction of new AET facility.
- Demolition of the existing toll plazas including canopy, islands, tunnel and reconstruction of the roadway in the vicinity of the existing plazas.
- Construction of three AET lanes in Dover (three lanes and shoulders on either side of the roadway centerline) and two AET lanes in Rochester (two lanes and shoulders on either side of the roadway centerline) but the gantry will accommodate future three lane layout.
- Adjust pavement approach roadways and in the direct vicinity of the plazas to accommodate the new facilities.
- Installation of concrete barrier to separate northbound and southbound traffic in the vicinity of the AET facility.
- Construction of a new pavement profile and crown line in the area of the project limits especially in the area of the Toll Plaza.
- Installation of full span or cantilever overhead sign structures and ground mounted signs (which may use existing or new structures).
- Installation of full span toll gantry over the AET lanes and design a small climate control building approximately 12' x 12' to accommodate the AET equipment including connection to generator for backup power.
- Intelligent Transportation Systems (ITS) technologies will be designed and incorporated by the CONSULTANT. A copy of the ITS Master Plan for the I-95/Spaulding Turnpike will be provided. The CONSULTANT shall review the master plan and provide recommendations on CCTV, DMS, and MVDS placements along the project limits and for connecting into the existing ITS system to the south of Exit 6. Fiber optic communications shall be designed and permanent and/or temporary ITS elements will be incorporated, in whole or in part, into the

## ARTICLE I

contract plans and documents for the project design. A Smart Work Zone will be assessed for inclusion into the construction contract.

Tolling operations shall be perpetuated during construction of the new facilities as well as plaza demolitions.

### **B. SCOPE OF WORK (GENERAL)**

The scope of the work involves preliminary and final design tasks in support of the preparation of contract plans, to include further refinement horizontal layouts, development of profiles (DEPARTMENT does anticipate developing profiles to be provided to the CONSULTANT), specifications, and estimates for the layout described above. The CONSULTANT shall utilize the DEPARTMENT's base mapping ground model as required to develop the preliminary, final design and contract plans. The CONSULTANT shall incorporate reasonable adjustments to the ground model, such as updates to individual properties due to new developments, etc., as may be needed with supplemental ground survey to be done by the DEPARTMENT, as required to develop the final design and contract plans.

The CONSULTANT will develop colored plans for the DEPARTMENT's use in meetings and coordination with the public. The colored plans will be developed subsequent to the Preliminary submission, and incorporate necessary refinements based on DEPARTMENT review to date.

The CONSULTANT shall prepare the final design and contract plans, specifications and estimates for the development of wetland impacts, erosion control, and water quality improvements. The CONSULTANT shall tabulate the wetland impacts for the project, and complete the wetland permit applications individually for each location (to include the Alteration of Terrain and Shoreland Protection permits) with all applicable attachments.

Coordination will be required between the DEPARTMENT and the Towns of Dover and Rochester. The CONSULTANT shall be prepared to support such efforts, as required. Responsibilities of the CONSULTANT team shall include attendance of meetings when asked, preparation of minutes reflecting meeting commitments, and preparation of illustrative plans and exhibits for the meetings, as directed by the DEPARTMENT.

The CONSULTANT will develop a project-specific website and develop a Project Specific Fact Sheet, All Electronic Tolling Information E-ZPass Information to be included on the web site, all as further described in the CONSULTANT's Scope of Work, dated September 9, 2019.

## ARTICLE I

### C. SCOPE OF WORK (SPECIFIC DESIGN ELEMENTS)

#### AET Gantry Construction

The CONSULTANT shall design, prepare plans and specifications for construction an AET gantry system utilizing design criteria received from the Department's AET Toll Vendor for each of the northbound and southbound barrels at each location.

#### AET Building Construction

The CONSULTANT shall design, prepare plans and specifications for construction of AET Toll Equipment Building for our AET Vendor. This building shall be climate control, generator backup and will require coordination with our AET vendor.

#### Demolition and Reconstruction

The CONSULTANT shall prepare designs and specifications for the demolition of the existing toll lanes, islands, booths, tunnel, and canopy at each plaza as well as the needed reconstruction of the roadway elements at each location.

#### Best Management Practices (BMPs)

Designs shall consider temporary and permanent erosion control measures and Best Management Practices (BMPs) consistent with current New Hampshire Department of Environmental Services (NHDES) guidelines, traffic control measures, utility coordination, drainage, and treatments to minimize environmental impacts, highway signage, traffic analysis, pavement markings, lighting, and highway landscaping.

### D. SCOPE OF WORK (GEOTECHNICAL)

The DEPARTMENT anticipates completing the full geotechnical program required for the project. In support of the DEPARTMENT's geotechnical program, the CONSULTANT shall provide project plans and cross sections suitable for completion of the geotechnical program, as needed. The CONSULTANT shall also provide engineering to include preliminary and final subsurface exploration plan development and siting of the subsurface explorations by providing the station(s), offset(s) and associated GPS coordinate(s) for proposed or actual subsurface exploration locations for all structures, as well as highway design elements including, but not limited to, water quality BMPs, roadways, retaining walls, box culverts, overhead sign structure foundations, toll gantry foundations, etc. No geotechnical work by the CONSULTANT is anticipated other than the support efforts noted above.

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### E. SCOPE OF WORK (ENVIRONMENTAL)

The CONSULTANT shall be responsible for:

#### 1. Data Collection:

The CONSULTANT shall review relevant data sources to identify any and all resources present within the Project Area. Additional effort may be needed for the listed resources below to identify additional impacts, potential measures to minimize or mitigate impacts, and proposed enhancements.

Resources to be identified include:

##### a. Water-Based Resources:

1) Groundwater: Data regarding aquifers, public water supplies and wells within the study area will be gathered from appropriate sources such as the GRANIT GIS database, NHDES mapping, NHDES Drinking Water and Groundwater Bureaus, inventory data, municipal data or municipal mapping. The CONSULTANT will describe these resources and display them on project mapping. Data will also be needed to identify any sensitive resources directly adjacent and potentially down gradient of the project area. The mapped resources will be assessed and described in terms of their current and potential use and their relative proximity and potential hydrological connection to the project area. In addition consideration shall be given for the protection of drinking water supplies, as well as stormwater conveyance and treatment in the vicinity of the drinking water supplies and wellhead protection areas.

2) Surface Waters: All current regulatory requirements and constraints associated with water-based resources will be identified and summarized in the environmental document. The CONSULTANT shall determine surface water impacts including impacts to the channel and/or banks of any rivers or streams. The CONSULTANT shall coordinate as necessary with the appropriate regulatory agencies. Data regarding existing surface waters and water quality will be gathered and documented. The CONSULTANT will review the most recently approved State 303(d) list to identify water quality impairments and TMDLs, within the project area. The CONSULTANT will compile existing TMDL implementation plans, watershed management plans, and active water quality related permits including but not limited to NHDES Alteration of Terrain (AoT) and; EPA NPDES for Small Municipal Separate Storm Sewers (MS4), and for Construction activities (CGP). Permits that will be required will be identified, such as the MS4 General Permit and Water Quality Certificate. The CONSULTANT will investigate appropriate water quality treatment measures necessary to minimize nutrient impacts on

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surface waters. The project is located within an MS4 regulated area and will be subject to MS4 redevelopment requirements for stormwater treatment. The CONSULTANT shall evaluate the Redevelopment requirements of the MS4 permit issued in 2017; and the 2017 Revised AoT permit requirements. It is not anticipated that field sampling of surface waters and any MS4 services will be needed. All current regulatory requirements and constraints associated with surface water-based resources will be identified and summarized.

The CONSULTANT will investigate appropriate water quality treatment measures necessary to minimize nutrient impacts on surface waters. This shall include a pavement runoff area analysis (including enhanced plans showing the associated drainage areas) to determine the percent of the pavement treated prior to discharge and the volume (water quality volume) for the proposed condition and alternatives to determine approximate size and placement of structural Best Management Practices (BMPs). BMP placement and type will be compliant with current AoT requirements and will take into consideration: soil conditions, depth to bedrock, groundwater tables, water supply sources, and the proximity to the project's stormwater discharge points.

- 3) Floodplains and Floodways: Federal Emergency Management Agency (FEMA) floodplain and floodway information will be gathered from appropriate sources and displayed on project mapping. This information will be used to assess the status of anticipated impacts, and quantify the volume of impacted floodplain and floodway. The CONSULTANT will coordinate with the NH Floodplain Manager, ACOE, and FEMA regarding proposed impacts within the flood hazard areas. The need for the preparation of a Conditional Letters of Map Revision (CLOMR) is not anticipated.
- 4) Wetlands: The CONSULTANT will delineate wetlands and streams, including ordinary high-water and top-of-bank, and determine their functions and values within the study area limits based on state and federal criteria, and will collect field data sufficient to document the delineation, including photographs. If access to private property is required, landowners will be notified by the DEPARTMENT. The CONSULTANT will survey wetland flagging using appropriate technology to locate flagging. This will include noting any unusual features such as invasive species, disturbed areas, or uncommon wetland types such as bogs or vernal pools. This information will be provided in plan format and in a report that is stamped by a Certified Wetland Scientist(CWS) with a current NH certification, which includes the location of the

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features, classifications of wetlands present within the wetlands, descriptions of the each wetland's hydrology, soils and vegetation, flagging number system of each delineated feature, photographs, functions and values (including the Wetlands Function-Value Evaluation Form from the Highway Methodology Workbook Supplement) Wetland Determination Data Plot Forms with paired upland and wetland data plots and the results of the stream crossing assessments. If required, the CONSULTANT will identify potential wetland mitigation opportunities either within the project corridor or the surrounding area including any areas of proposed BMPs which will also require delineation. This effort will need to be coordinated with municipality.

- 5) Stream Crossings: The CONSULTANT will identify all intermittent and perennial stream crossings within the project study limits. The CONSULTANT will complete stream crossing field data collection assessments for any of the streams identified as tier 2 or tier 3 in accordance with Env-Wt 900 and any applicable NHDOT field data collection forms. The delineations at streams shall be at a minimum 100' upstream and downstream of the crossing. Data to be provided by the CONSULTANT shall include a longitudinal profile through the crossing with relative inlet and outlet invert elevations and upstream and downstream streambed elevations. The CONSULTANT will determine and delineate the watershed area and determine the watershed size for each crossing using the USGS Stream Stats tool. The CONSULTANT will also determine the corresponding Tier classification in accordance with the NHDES Stream Crossing Rules Env-Wt 900 series to aid in determination of a design for a stream crossing that meets the NHDES Stream Crossing Guidelines and/or alternative design.

b. Land-Based Resources:

- 1) Public and Conserved Lands: Publicly owned lands, bicycle and pedestrian trails, and privately conserved lands will be identified. This will also include coordination with public officials including the LCIP and the LCHIP programs.
- 2) Section 6(f) Resources: Lands receiving Section 6(f) funds will be identified based on coordination with the NH Department of Natural and Cultural Resources (DNCR). Section 6(f) properties will be identified, and potential impacts to 6(f) properties will be quantified.

c. Wildlife:

- 1) Wildlife and Habitat: Wildlife resources will be identified with information from the NH Wildlife Action Plan and supplemented as needed by field reconnaissance. The

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CONSULTANT will identify areas where habitat connectivity could be improved based on field observations, aerial imagery, and other data that is collected.

- 2) Threatened and Endangered Species: Threatened and endangered species information will be gathered by the CONSULTANT through coordination with the DNCR Natural Heritage Bureau, NH Fish and Game Department, the US Fish and Wildlife Service, as well as field investigations. The CONSULTANT will perform a field survey to identify the presence of potentially suitable habitat and known populations of State and Federal protected species and/or natural communities in the vicinity of the project. The CONSULTANT will use the US Fish and Wildlife Service's on-line Information for Planning and Consultation (IPaC) tool for review of identified federally-listed species. The U.S. Fish and Wildlife Service (USFWS) has listed the Northern Long-Eared Bat as threatened under the Endangered Species Act (ESA) to protect the bat and its habitat. In addition, the USFWS has published a Final 4(d) rule, which targets protections to certain sensitive portions of the Northern Long-Eared Bat's lifecycle and allows for specific otherwise legal actions that may result in incidental take of the Northern Long-Eared Bat. Based on the anticipated project alternatives, it is assumed that a bat acoustic presence/absence survey will not be required. As such, it is anticipated that this project will conform to one or more of the permissible actions included in the Final 4(d) rule.

d. Cultural Resources (Historic):

The CONSULTANT will be responsible for conducting the initial Section 106 public outreach efforts with the municipalities and any potential Consulting Parties. The CONSULTANT will prepare and submit, through the DEPARTMENT, a NH Division of Historical Resources (NHDHR) Request for Project Review (RPR) form for Transportation projects or the Section 106 Programmatic Agreement Appendix A or B Certification Forms, as applicable. If necessary the DEPARTMENT will be responsible for completing all National Register eligibility survey forms in accordance with NHDHR Survey Policy and Manuals. The DEPARTMENT will prepare the effect memo and, if needed, e106 for submission to the Advisory Council on Historic Preservation and a Memorandum of Agreement for the Adverse Effect. The CONSULTANT will be responsible for providing assistance in the form of mapping and other materials necessary to complete historic review. The CONSULTANT will be responsible for initiating and coordinating the preparation of any resource surveys, preparation of the effects memo, and the preparation of e106 with the DEPARTMENT's Cultural Resource Program staff.



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e. Cultural Resources (Archaeology):

If necessary, the CONSULTANT will be responsible for initiating and coordinating all necessary phases of archaeology with the DEPARTMENT's Cultural Resource Program staff. The DEPARTMENT will utilize Statewide On-call archaeological services agreements to complete all necessary phases of archaeology.

f. Noise:

The DEPARTMENT shall provide the preliminary design noise report (*Noise Analysis Technical Report, Dover-Rochester 29440 Spaulding Turnpike (Route 16) Open Road Tolling Project Dover and Rochester, New Hampshire*) which identifies two feasible and reasonable preliminary barrier designs within the project area. The CONSULTANT shall identify the need to modify the design of either of these preliminary barrier designs to accommodate for any changes during final design or due to additional permitted development. The CONSULTANT shall verify that the noise reductions at each of the benefitted receptors identified during preliminary design have been achieved by the CONSULTANT's final barrier designs. In conducting these tasks, the CONSULTANT shall demonstrate compliance with the FHWA Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772) and the DEPARTMENT'S current version of the *Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I & II Highway Projects* (the Noise Policy). Upon request of the CONSULTANT, the DEPARTMENT shall provide noise language for use in the environmental documentation.

g. Air Quality:

The DEPARTMENT shall perform, as necessary, tasks required to assess the potential air quality impacts of the project to determine and/or achieve compliance with the State of New Hampshire Air Quality Implementation Plan, and the provisions set forth in the Clean Air Act Amendments (CAAA) and the National Environmental Policy Act (NEPA). Upon request of the CONSULTANT, the DEPARTMENT shall provide air quality language for use in the environmental documentation.

h. Invasive Species:

The CONSULTANT will determine the presence of invasive species in conjunction with other project field investigations. General locations and types will be identified within the project limits, approximate limits of populations will be located with GPS and shown on the project plans.

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i. Contaminated Properties:

The CONSULTANT shall complete a database search to identify areas with records of hazardous materials or contamination within 1,000 feet of the project limits and landfills within 4,000 feet of the project limits. This work will also require a review of historic aerial photographs to evaluate past and current land use, and field surveys of the project area to look for observable physical evidence of contamination or potential contamination sources. The CONSULTANT will coordinate with the DEPARTMENT's hazardous materials program to confirm findings, and will assess measures required to conduct geotechnical investigations within areas of potential contamination which will be described in the summary report. The DEPARTMENT will utilize Statewide On-Call Hazardous Materials services to provide an asbestos- containing materials (ACM) and other hazardous materials (OHM) inspection and report for the structures associated with the toll plazas in Dover and Rochester. The ACM/OHM report will be provided to the CONSULTANT for including in the Contract Documents and POW. The DEPARTMENT will utilize Statewide On-Call Hazardous Materials services to remove Underground Storage Tanks (USTs) associated with the Dover and Rochester toll plazas. The UST removals will not be part of the Contract Documents.

j. Limited Reuse Soils (LRS)

The CONSULTANT shall determine the quantity of LRS generated during construction, by phase if applicable, and determine the ability, due to quantities and any applicable construction phasing, to reuse the LRS within the project limits. The CONSULTANT shall determine and provide figures for potential temporary on-construction-site stockpile locations for excavated LRS.

k. Per- and Polyfluoroalkyl Substances (PFAS):

The CONSULTANT shall perform a NHDES database search (NHDES OneStop and PFAS data mapper) to identify any sites with records of PFAS sampling and any NHDES requests to sample for any media type (soil, groundwater, surface water) within 1,000 feet of the project limits. This information will be described in a summary memo that includes a list of all parcels with potential PFAS contamination concerns. The CONSULTANT will coordinate with the DEPARTMENT on evaluating the risk of any PFAS results and in determining any future investigation requirements of the project.

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### l. Construction Impacts:

The CONSULTANT shall perform, as necessary, tasks required to assess the potential construction impacts on the natural, cultural, and socio-economic resources present within the project area and provide an assessment of required permits and compliance with said permits. Potential construction impacts and likely mitigation measures will be described. These measures are assumed to include detours during construction; erosion and sediment control; air, noise, and dust pollution; and special measures that may be needed to protect water quality.

### m. Detailed Resource Identification and Mitigation:

The CONSULTANT shall identify existing natural, cultural, social, and economic resources to a level sufficient to evaluate project impacts for environmental documentation purposes. The study area for this effort shall be for the Preferred Alternative.

### n. Environmental Commitments:

Environmental commitments will be summarized.

## 2. Agency Coordination:

The CONSULTANT will attend up to three of the DEPARTMENT's monthly Natural Resource Agency meetings. The CONSULTANT will also attend up to three of the DEPARTMENT's monthly Cultural Resource meetings. The CONSULTANT will be responsible for supplying support graphics, making presentations and preparing meeting minutes.

## 3. Project Purpose and Need:

The CONSULTANT, in conjunction with the DEPARTMENT, will develop a formal Purpose and Need Statement. Draft and final versions of the Purpose and Need will be developed and circulated for review.

## 4. Alternatives Development:

The CONSULTANT shall develop a reasonable range of alternatives for inclusion in the environmental document.

## 5. Description of Proposed Action:

The CONSULTANT will describe the Proposed Action in detail, including location, dimensions, traffic patterns, amenities or facilities such as pedestrian crossings, construction issues, right-of-way impacts, and estimated costs. Conceptual plan, profile, and cross section views will be included.

## 6. Environmental Impacts of Proposed Alternative:

The CONSULTANT will identify resource impacts, potential measures to minimize or mitigate impacts, and possible resource enhancements that could be achieved by the proposed alternative.

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### 7. The CONSULTANT will perform tasks for the following resources/impacts:

- a. Water-Based Resources
  - 1) Groundwater Resources
  - 2) Surface Water Resources
  - 3) MS4 (Area Analysis)
  - 4) Floodplains and Floodways
  - 5) Wetlands
  - 6) Stream Crossings
- b. Land-Based Resources
  - 1) Land Use
  - 2) Parks/Recreation/Conservation Lands
  - 3) Section 6(f) Resources
- c. Wildlife/Vegetation/Fisheries
  - 1) Threatened or Endangered Species
- d. Cultural Resources
- e. Social and Economic Resources
- f. Environmental Justice (provided by the DEPARTMENT)
- g. Noise
- h. Air Quality
- i. Invasive Species
- j. Hazardous Materials/Contamination
- k. Limited Reuse Soils (LRS)
- l. Per- and Polyfluoroalkyl Substances (PFAS)
- m. Construction Impacts
- ~~n. Resources Identification and Mitigation~~
- o. Summary of Impacts
- p. Visual Resources
- q. Environmental Commitments

### 8. Environmental Document:

It is anticipated that this project will require the preparation of an Environmental Study. The Environmental Study will document the resource impacts outlined above. The Environment Study will shall identify a reasonable range of alternatives and the reasons for selection of the Proposed Action. The document will also identify which environmental permits are required. The resource reports, agency

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correspondence, and public meeting summaries will be appended. An administrative Draft will be prepared for review by the DEPARTMENT. After comments are addressed by the CONSULTANT, the final Environmental Study will be submitted to the DEPARTMENT and all other parties as directed, for review. An electronic version of the Environmental Study will be provided in PDF format by the CONSULTANT.

### 9. Design of the permanent water quality features:

The CONSULTANT shall design the permanent water quality features in accordance with AoT (Wq-Env 1500) regulations and utilize the NH Stormwater Manual as guidance. Permanent water quality features shall be shown at the Slope and Drain plan submission with design backup calculations complete. The CONSULTANT shall furnish conceptual design calculations with Q2, Q10, Q25, Q50 flows and water quality volumes. Site locations, estimated areas and design elevations shall be proposed in detail sufficient enough to complete geotechnical investigations of each site. Any monitoring of the groundwater table prior to and during the design of the project shall be the responsibility of the CONSULTANT. Where additional monitoring wells are required, the DEPARTMENT will be responsible for drilling the wells.

In addition, the CONSULTANT shall be responsible for:

- a. Incorporating stormwater runoff treatment areas and detention basins and evaluating their environmental impacts during the environmental review process (such as archaeological sensitivity, wetland impacts, hazardous materials, etc.).
- b. As part of the drainage system, infiltration measures shall be investigated and evaluated as to their feasibility and prudence. Such measures would allow stormwater to infiltrate back into the ground following treatment. If such measures are determined feasible and prudent, they should be considered for incorporation into the design.
- c. Activities associated with investigations related to identify the nature and approximate extent of soil or groundwater contamination that may be present on properties to be acquired. It is anticipated that the CONSULTANT would update any information by reviewing the NHDES OneStop and other databases.
- d. Incorporation of water quality treatment measures (i.e., treatment basins and swales) into the overall project design according to the guidance provided in the latest version of NHDES Alteration of Terrain (AoT) regulations, and the NH Stormwater Manual. NHDES BMP worksheets shall be completed and submitted as part of the Drainage Report.

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### 10. Wetlands Permit/Dredge and Fill Application and plans:

To assist with permitting of the project, the CONSULTANT will review the preliminary plans with NHDOT and the resource agencies at Natural Resource Coordination Meetings. If the project triggers permitting requirements, the CONSULTANT will prepare permitting documents for filing with the NHDES Wetland Bureau including but not limited to:

- Current Application Form
- USGS Location Map, including the approximate boundaries and size of the contributing watershed
- Narrative addressing the NHDES Rule Env-Wt 302.04(a), Review Criteria for Major/Minor Projects
- Information required by Env-Wt 903.03, Information Required for a Stream Crossing Application
- Mitigation coordination summary/ARM calculator
- Wetland Permitting Plans, including:
  - Existing Conditions Plan
  - Proposed Condition Plans (i.e., General Plan), including information required by Env-Wt 903.03
  - Impact Sheet, showing temporary and permanent impacts and instream diversion/BMPs
  - Erosion and Sedimentation Control Plan Sheet including Strategies Sheets
- NHB review and IPaC supporting documentation
- Threatened and Endangered Species Coordination
- Cultural Coordination
- Construction Sequencing
- Photos of impact areas
- Items from NHDOT Wetland Application Checklist, as required

It is assumed that the project may trigger mitigation requirements. If it is determined that the project will require mitigation, the CONSULTANT will coordinate with the DEPARTMENT to find ways to reduce mitigation through project design and will participate in mitigation discussions with NHDES to determine appropriate mitigation for the project. Design of wetland creation/restoration mitigation sites is not included.

The CONSULTANT will coordinate with the DEPARTMENT to complete the Alternative Design Technical Report as needed. As applicable, the technical report will include an explanation of why the crossing(s) specified by rule is not practicable and will compare the proposed work to a full replacement based on the bankfull width estimated by the regional geometry curve.

The CONSULTANT will submit a draft permit application package to the DEPARTMENT for review and will revise the package in response to comments prior to submitting a final package. An

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allowance to cover the estimated permit application fee is not included in our contract (assumed paid by NHDOT). Up to 12 copies of the application would be provided to the DEPARTMENT for distribution.

The CONSULTANT will develop erosion control plans substantially conforming to (NHDES) PART Env-Wt 501.02 to include existing contours and finished grade contours at 1-foot intervals, and erosion control strategies for the completed project condition. The DEPARTMENT will submit the plans to NHDES, as part of the Wetland Permit application. The plans shall be prepared in "roll plan" and "cut sheet" format. The plan package shall also include an erosion control strategy legend (developed by the DEPARTMENT), drainage note sheets, traffic control phasing notes and a preliminary construction schedule. The CONSULTANT will design the perimeter erosion control strategies. The information will also be included as a part of the project Proposal for the Contractors' use during the bidding period.

### 11. US Army Corps of Engineers Section 404 Permit:

It is anticipated that this project will qualify for coverage under the ACOE General Permit. The CONSULTANT will verify this at the Natural Resource Coordination meetings.

### 12. Shoreland Protection:

It is unknown if the project lies within the Protected Shoreland, the project must comply with the NH Shoreland Water Quality Protection Act (RSA 483-B). The CONSULTANT shall determine if shoreland impacts are anticipated and coordinate with NHDOT if necessary to determine if a Standard Shoreland Application is required or if the project would qualify for a Shoreland Permit by Notification (PBN) under RSA 483-B:5-b.I(a)(3). In order to complete the application, the CONSULTANT will complete the appropriate application and plans to include but not be limited to:

- Form signed by the DEPARTMENT
- Name of the jurisdictional waterbody
- Plans clearly and accurately depicting the work to be completed relative to the reference line of the jurisdictional water body with Permanent and Temporary easements shown
- Plans using NHDOT hatching and line styles
- Planting plans shall be included for areas that have been disturbed occurring within temporary easement areas
- Photographs of the area to be impacted

A draft of the application will be completed and submitted to the NHDOT for review prior to submittal to NHDES.

### 13. Erosion Control Plan:

The development of erosion control plans substantially conforming to (NHDES) PART Env-Wt 501.02 to include existing contours and finished grade contours at 2-foot intervals, and erosion control

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strategies for the completed project condition. The DEPARTMENT will submit the plans to NHDES, as part of the Wetland Permit application. The plans shall be prepared in "roll plan" and "cut sheet" format. The plan package shall also include an erosion control strategy legend (developed by the DEPARTMENT), drainage note sheets, traffic control phasing notes and a preliminary construction schedule. The DEPARTMENT will assist the CONSULTANT in the design of the perimeter erosion control strategies. The information will also be included in the project Proposal for the Contractors' use during the bidding period.

### 14. Permitting Follow-On Services

Follow-up and liaison efforts are sometimes required to respond to specific comments and concerns raised by regulatory agencies following permit application submittal. Work under this task might include:

- Attendance and presentation at one or more regular Resource Agency Coordination Meetings organized by NHDOT;
- Preparation of responses to agency review comments; or
- Minor plan revisions/additions.

### F. SCOPE OF WORK (FINAL DESIGN)

The scope of work proposed by this AGREEMENT includes:

1. The development of base plans by the CONSULTANT using updated ground survey provided by the DEPARTMENT. The CONSULTANT shall develop plans at a scale of 1" = 50', unless otherwise noted. All signal design plans shall be at a scale of 1" = 20'. Additionally, the CONSULTANT shall be prepared to produce intersection grading plans at a scale of 1" = 20' where necessary, or as appropriate. The CONSULTANT shall be responsible for the incorporation of environmental resource mapping, utility information, right-of-way and property line information, etc. All of these will be provided by the DEPARTMENT, or as noted elsewhere in this document.
2. The development and refinement of the alignment, grades and intersections of the proposed roadway(s) as shown on the preliminary conceptual layouts furnished by the DEPARTMENT. The DEPARTMENT will not develop preliminary vertical alignments in preparation of the final design plan efforts.
3. The preparation of complete designs, including all plans, specifications for work not included in the current specifications of the DEPARTMENT, computations, estimates and documents for the required submissions to the DEPARTMENT and/or any other STATE or Federal agency that may be required.



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4. The design and preparation of contract plans for construction of the roadway, structures, traffic control plans, construction phasing plans, layout and design of overhead sign structures (conceptual design of foundations for purposes of developing quantities with final design based on shop drawings provided by the Contractor), temporary and permanent traffic signals (including phasing, conduit, signal coordination, foundations, and other signalization items), soundwalls, retaining walls, guardrail, drainage facilities, temporary/ permanent erosion control measures and related water quality features, landscaping plans and appurtenances in accordance with the policy and procedures of the DEPARTMENT and the provisions of this AGREEMENT.
5. The design of all overhead and ground mount permanent guide including AET signage, warning and regulatory signs, including the quantity summary sheets, with guidance from the DEPARTMENT. Contract signing shall include site reviews and documentation of the existing signing. The permanent guide, warning, and regulatory signs shall be progressed such that once reviewed and approved by the DEPARTMENT, the approved design can be incorporated into the PPS&E submission. All signing on the plans shall be closely coordinated with the location of guardrail installations, slopes, utility locations (including street lights and underground utilities) and drainage system locations to avoid conflicts and to determine which support system will be required to install the signs. The CONSULTANT shall be responsible to identify all conflicts and to make necessary adjustments to highway signing.
6. The final design of overhead sign structures and foundations and quantity development of these structures for incorporation into the contract plans.
7. The development of the permanent construction signs and warning device package, including the quantity summary sheets.
8. The design and incorporation into the contract plans (including the quantity summary sheets) of all temporary guide and regulatory signs, and permanent construction signing required for use with detours or construction staging. These signs and locations shall be shown on the Traffic Control Plans.
9. The design and development of all pavement marking layouts, item numbers, item descriptions, and quantities for inclusion into the contract and appropriate summary tables within the plan sets. The pavement markings shall be progressed such that the design can be reviewed and approved by the DEPARTMENT for incorporation into the PPS&E submission.
10. The incorporation of utility relocations, as designed by the individual utility owner, into the contract plans.

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11. Preparation of presentation (colored) base plans at the Preliminary, Slope and Drainage, PPS&E and PS&E submissions.
12. ITS concept plans, specifications, quantities, and engineer's estimate for incorporation into the final design plans as appropriate. The work is anticipated to consist of device installation and potential relocations of (CCTV, DMS, MVDS, etc.) and the potential installation of a hardwired fiber backbone system to connect with the recent Turnpike improvements south of Exit 6.

The engineering design shall take into consideration all factors affecting the cost of the construction, such as foundation problems, earthwork quantities, erosion and sedimentation control, water quality treatment issues, construction phasing and complexity, utilities affected, environmental, construction materials, etc. During all phases of design, the CONSULTANT shall make a continuous effort to identify and minimize impacts on existing and proposed utilities.

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.

The CONSULTANT shall submit for review, as requested, progress prints (black line) showing grades, cross-sections, special details and general design. Paper prints shall be submitted upon request for soils studies, right-of-way use, evaluation of utility impacts, and other purposes. The DEPARTMENT will provide the existing right-of-way and approximate, abutting property information in the appropriate CAD/D format. The CONSULTANT shall incorporate the existing right-of-way information into the base plans.

Designs shall conform to the current standards, specifications, policies and guidelines enumerated in the Federal-Aid Policy Guide, Subchapter 6, Part 625, or to 23 Code of Federal Regulations, Part 625 and the DEPARTMENT'S Design Manual and Standard Plans for Road Construction, except as approved.

Data from survey notes shall be transcribed and plotted on base plans, profiles and cross-sections as required, if not furnished by the DEPARTMENT under Article I-G.

Multiple visits to the site shall be made during the design to detect changed field conditions and, if required, the DEPARTMENT upon request will perform additional surveys. The DEPARTMENT will process additional survey requests to ensure continuity between new and current detail model files. The DEPARTMENT will incorporate these files into the current detail base plans and digital terrain models (DTM) to include all drafting, labeling, detailing and field checking of the detail. Additional surveys may be required throughout the design process, and the CONSULTANT shall modify the design, as necessary, based upon the updated survey information.

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The CONSULTANT shall examine which elements of design, such as horizontal and vertical alignments, typical sections, traffic control, earthwork utilization, drainage pipes and structures; as well as soils suitability, might affect aerial and underground utilities. Any conflict between design elements and utilities shall be identified and brought to the attention of the DEPARTMENT. A special effort shall be made by the CONSULTANT to modify drainage features in order to avoid conflicts with underground utilities.

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 (including quantity estimates) shall have been appropriately checked. The PS&E submission and final mylars shall have had complete final and "three-way" checks.

The CONSULTANT shall verify all computations and design calculations. The CONSULTANT shall furnish two (2) permanent, legible copies of the design calculations, suitably bound, and when directed, 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 any other documents that will be submitted to the DEPARTMENT. Stamps shall be those of the professional engineers who prepared them or under whose direct supervisory control they were prepared.

The CONSULTANT'S Licensed Land Surveyor stamp for the State of New Hampshire shall appear on the Right-of-Way Registry Plans that will be submitted to the Department. Stamps shall be those of the professional surveyors who prepared the plans, or under whose direct supervisory control they were prepared.

### **G. SCOPE OF WORK (UTILITIES)**

The utility coordination for this project will be performed by the DEPARTMENT, if any is required. The CONSULTANT shall incorporate utility relocations, as designed by the individual utility owner, into the contract plans. Municipal utility relocations (e.g., sewer and/or water), as approved by the DEPARTMENT, shall be included, as necessary, into the contract plans, cross sections, summary sheets and estimate. Non-participating municipal utility relocation items shall be kept separate from the highway and/or bridge items in the estimates submitted. The DEPARTMENT will provide the unit item numbers and unit prices to be used for the utility relocations.

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### **H. MATERIAL FURNISHED BY THE DEPARTMENT OF TRANSPORTATION**

The DEPARTMENT will furnish the following data to the CONSULTANT, which the CONSULTANT may reasonably rely on:

1. Electronic files in English 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. All existing survey and baseline data on disk or other electronic means, notes and note reductions in the format outlined in the DEPARTMENT'S CAD/D Procedures and Requirements. An electronic ground model will be provided, if available, along with all existing information that can be used to create a model.
  - b. Any additional surveys of adjacent parcels, mitigation sites, wetland boundaries or other pertinent items deemed necessary will be processed and incorporated by the DEPARTMENT.
  - c. Electronic drawings in Microstation format, along with reproducible sheets, 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 DEPARTMENT'S CAD/D Procedures and Requirements.
  - d. Electronic drawings in Microstation format of the existing underground utilities, if provided to the DEPARTMENT by the utility. The CONSULTANT shall be prepared to provide an electronic copy of preliminary base plans to the DEPARTMENT for use by the utilities. The CONSULTANT shall be responsible for the incorporation and manipulation of this information (either in paper or electronic format) into the plans, in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements.
  - e. Electronic drawings of roadway typical cross sections and other available detail sheets for inclusion in the contract plans.
  - f. Electronic drawings in Microstation format of the Right-of-Way data, approximate property lines, and parcel owners. These electronic files containing abstracting information will be updated, as necessary, throughout development of the project. The CONSULTANT shall be prepared to incorporate refinements from the Department, to the electronic files, as needed.
  - g. Prints of any information outlined in Article I.G.1.a. through f. above, both existing and proposed, when available, for verification by the CONSULTANT.

## ARTICLE I

2. Prints of the following information:
  - a. Any additional information (e.g., abstracting, utilities, etc., not available electronically) for the CONSULTANT to incorporate into the plans in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements.
3. Prints and data exchange files of existing conditions not previously provided to the CONSULTANT. Reduction and incorporation of this material shall be the responsibility of the CONSULTANT.
4. All required permits. The CONSULTANT shall be responsible for plans and computations for impacted areas. These plans shall provide all necessary data, area hatching (according to DEPARTMENT standards) and detail so that these plans can be forwarded to the respective regulatory agencies as appropriate attachments for the permit applications. The CONSULTANT shall be responsible to complete the permit applications and provide all supporting documentation (e.g. photographs).
5. Necessary traffic counts and crash data, as collected by the DEPARTMENT.
6. Proposal for bidding and Standard Specifications for Road and Bridge Construction, Standard Plans for Road Construction, plus supplemental specifications and special provisions that the DEPARTMENT currently has.
7. Geotechnical investigations.
8. Geotechnical recommendations for the roadway, and gantry foundation design, as needed.
9. The location of all existing utilities through direct contact with the various utility companies. Following the determination by the CONSULTANT of all unavoidable conflicts between existing utilities and the proposed construction, the DEPARTMENT will coordinate the necessary relocation of the conflicting utilities. The CONSULTANT shall be prepared to furnish CAD/D files in the current DEPARTMENT format to the DEPARTMENT for use in assisting with the Utility design.
10. The DEPARTMENT and the CONSULTANT will cooperatively develop the detailed Traffic Control Plans. The CONSULTANT shall develop the initial conceptual Traffic Control Plan and construction phasing. The DEPARTMENT will assist the CONSULTANT in the final design of the Traffic Control Plans as it relates to potential complications with concurrent work, utilities and closures. The CONSULTANT shall complete the final design and the associated quantity calculations.

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11. Conceptual design and layout of highway lighting (temporary and permanent) if deemed necessary. The CONSULTANT shall be responsible for incorporating the design and layout into the project documents and for recommending adjustments required to avoid conflicts.
12. Any updates of the DEPARTMENT-supplied CAD/D information will be released to the CONSULTANT throughout the duration of the AGREEMENT, as appropriate. The DEPARTMENT shall be held harmless from any and all loss, damage, expense or liability whatsoever resulting from the use of these programs and macros or translated information. The DEPARTMENT may supply the documentation for use with these programs and macros, but shall not be responsible for any training in their use.
13. ITS concept plans and specifications for incorporation into the final design plans, as appropriate.

### **I. WORK SCHEDULE AND PROGRESS REPORTS**

The CONSULTANT shall begin performance of the services designated in the Contract 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.

### **J. SUBMISSION OF REPORTS, PLANS AND DOCUMENTS**

During the prosecution of this AGREEMENT, the CONSULTANT shall prepare and submit to the DEPARTMENT separate submissions as described hereinafter.

The CONSULTANT, with each submission, shall submit a transmittal describing the "design issues" addressed in that submission. In addition, the transmittal shall include anticipated or outstanding issues and the CONSULTANT'S recommendations. All issues shall be noted as to whether the CONSULTANT feels that the issue is within the scope of work described in Article I. Meetings between the CONSULTANT and the DEPARTMENT shall be held prior to submissions to discuss design issues and recommendations.

## ARTICLE I

All plan drawings, including size of sheets, lettering, symbols and scale of said drawings, shall conform to the requirements and standards of the DEPARTMENT. Any and all CAD/D-related work completed during the course of this project shall be performed in conformance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT. The final construction plans Front Sheet and final right-of-way plans shall be submitted in waterproof ink on permanent, archival-quality, double-matte, polyester-base film (.004 in. thick) or silver-halide emulsion ("wash-off") reproduction on polyester-base film (.004 in. thick). Cross section sheets shall be submitted on quality paper prints. Construction and right-of-way plans shall be submitted on 22 in. x 34 in. sheets.

In addition to the final reproducible plans being furnished as noted herein, the CONSULTANT shall provide electronic file copies of all highway and bridge project plan sheets with real State plane coordinates, including, but not limited to, final quantity sheets, typicals and detail sheets, general plans and profiles, traffic-signal sheets, cross sections and right-of-way plans. In addition to these plan sheets, an electronic file of the entire project's final design shall be submitted in an "uncut" format showing all design features in a real State plane coordinate system, unrotated. These final electronic files shall be indexed with file name, description of the contents of the file and project sheet number as applicable. All files shall be submitted in conformance with the DEPARTMENT'S CAD/D Procedures and Requirements. Any plans (e.g. quantity summary sheets) produced from a spreadsheet (e.g. Excel, or equivalent) shall be submitted in ASCII file or format suitable for incorporation into Microsoft Office or the current DEPARTMENT software. The final Special Provisions(s) and other documents, as requested, shall be submitted in both electronic format (Microsoft Word-compatible) and hard copy. The CONSULTANT shall also be prepared to submit separate electronic files of all alignments, bound locations and other project features, as requested, in a format acceptable to the DEPARTMENT, throughout the design contract, in conformance with the DEPARTMENT'S CAD/D Procedures and Requirements. The CONSULTANT shall also provide a hard copy of all proposed alignments (25-foot minimum station interval and curve control points) with associated State plane coordinates (x, y, z).

### 1. Roadway & AET Design Submissions

The plan submissions for roadway design shall follow the procedures outlined below:

#### a. Preliminary Plans - Roadway

Based on a complete review of the material furnished by the DEPARTMENT and developed and/or supplemented by the CONSULTANT, particularly in regard to the proposed design criteria, predicted traffic, preliminary soil data, expected temporary and permanent erosion measures, conceptual traffic control and topography of the project area, the CONSULTANT

## ARTICLE I

shall prepare and submit to the DEPARTMENT five sets of roll plans (paper prints 8 ft. to 10 ft. in length) (cross sections and other applicable plan sheets may be submitted on cut sheets) showing:

- 1) The recommended horizontal and vertical alignment of all necessary roadway construction.
- 2) All roadway cross sections at 50-foot intervals, (except 25-foot intervals in ledge areas) which shall be plotted with the top line of the template of the proposed roadway cross-sections shown. The CONSULTANT shall recognize that, typically, geotechnical information is not available at this time and, therefore, this submission may need to be re-cut and reordered for subsequent submissions when soils/ledge information is made available. Plans addressing significant modifications to private parking areas and accesses shall be developed and used to coordinate with property owners early in the process.
- 3) Proposed pavement layouts and major control elements.
- 4) The alignment (horizontal and vertical) of major diversions or construction phases that will have significant implications for the project in the final design. Critical cross sections (with superelevations) shall be developed, and labeled by phases, to assist in the assessment of the conceptual traffic control phasing and conceptual location of overhead sign and gantry structures foundations.
- 5) Conceptual designs for erosion and sedimentation control (temporary and permanent) and related water quality features shall be shown with approximate flows.
- 6) Roll plans shall show where match lines are anticipated for future cut sheets.
- 7) Preliminary typical sections with top line template.
- 8) Proposed limits and recommendations for letting the construction under separate contracts (if applicable), including cost estimates, areas of overlap, maintenance of traffic, drainage, etc.
- 9) Proposed right-of-way layout with bounds as applicable to the projects.

The following issues shall also be considered in the development of the above-mentioned plans:

- 1) Traffic Control Plan and construction phasing especially AET zone and removal of Toll Plaza.
- 2) Recommended water quality treatment.
- 3) Wetland impacts.



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- 4) Earthwork balances and availability.
- 5) Potential closed drainage and underdrain outlets, and depth of cover over drainage structures.
- 6) Right-of-way involvement.
- 7) Potential conflicts with major utilities.

This submission shall be supplemented with such conceptual drawings, illustrations and descriptive matter as are necessary to facilitate a comprehensive review of both the proposed design and the feasibility of construction, and the coordination with the design of bridges or other structures. This shall include profiles and cross sections, particularly where clearance and setbacks may be issues.

Estimates for this submission shall be reasonably itemized to cover roadways, structures, drainage and other construction items, as well as costs of utility changes to be financed by the STATE.

For development of the right-of-way lines, sight distance review and the assessment of environmental impacts, it shall be necessary that all templates be plotted to develop slope lines. This shall require computation and submission of pavement superelevation calculations. Rounding of slopes shall be considered in developing slope lines, but plotted cross section templates do not need to have roundings shown at this submission. Guardrail calculations shall also be submitted.

b. Slope and Drainage Plans - Roadway

Upon approval in writing by the DEPARTMENT of the Preliminary submission, the CONSULTANT shall proceed to prepare and submit to the DEPARTMENT for approval the Slope and Drain Plans submission. The Slope and Drain submission shall consist of five sets of cut sheet plans (paper prints) showing slope lines, drainage system details and drainage features, and proposed right-of-way lines, including drainage, slope and/or construction easements. The cut sheets shall include typical sections, plan views, profiles, guardrail and barrier locations, and cross sections with complete template plotted and appropriate references on the plans relative to the drainage design to assist with the review of the drainage design and the backup drainage calculations. The submission shall be supplemented with a list of utility conflicts that could not be avoided during the design. Complete Best Management Practice (BMP) designs for permanent erosion and sedimentation control features, and water quality appurtenances, shall be shown accompanied by backup calculations, including a pre vs. post- development pollutant loading assessment. The BMPs

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shall be designed in accordance with the (NHDES) CHAPTER Env-Wq 1500 ALTERATION OF TERRAIN requirements, as well as the guidance in the New Hampshire Stormwater Manual. The backup calculations shall also include a narrative, mapping and computations addressing pre-construction and post-construction (and post-development, if applicable) drainage conditions and applicable drainage control features. Two bound drainage computation books shall be submitted with all backup drainage calculations illustrated and referenced to each drainage appurtenance shown based on the drainage design.

At this time, a field inspection shall be held with the DEPARTMENT, and indicated design changes or corrections shall be made and incorporated into the plans for the Preliminary PS&E submission. Any indicated revisions to fit actual field conditions, including any horizontal and vertical alignment revisions found necessary during this field inspection, and any resulting corrections to the right-of-way requirements, shall be made by the CONSULTANT.

Also, with the Slope and Drainage submission, the CONSULTANT shall submit the Traffic Control Plans in near-final form (roll plans, as a minimum) showing temporary slopes, lane uses and widths, overhead sign and gantry structures, temporary guardrail and barrier locations, temporary drainage, temporary easements, profiles, temporary drives, diversion cross sections and superelevations, etc. with backup calculations. Construction phasing shall be shown with narratives for each phase. The CONSULTANT shall also submit a conceptual construction schedule, showing the phased construction and utility relocation time frames (as applicable), for review and comment by DEPARTMENT staff.

Following incorporation of the DEPARTMENT'S comments on the Slope and Drain Submission, the CONSULTANT shall submit Wetland Impact plans showing permanent and temporary impacts for each wetland for inclusion with the wetland permit application. These areas shall be hatched according to the DEPARTMENT'S standards. Accompanying these plans, the CONSULTANT shall provide a tabulated impact summary showing wetland identification numbers, areas of fill or dredged volumes in the temporary and permanent conditions for this project, a draft copy of the wetland permit application package, and the Erosion Control Plans.

c. Utility Plans:

Following submission and review of the Slope and Drain submission, the CONSULTANT shall incorporate DEPARTMENT comments into the design layout and assemble the plans into a cut sheet format. The CONSULTANT shall then furnish up to five sets of cut sheet plans (paper

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prints) of front sheet, plans, profiles, and up to five sets of cross-sections and a list of revised utility conflicts for use by the Design Services Section. The CONSULTANT shall also submit separate electronic files of this information, in a format acceptable to the DEPARTMENT, in conformance with the DEPARTMENT'S CAD/D Procedures and Requirements. This submission plan set is intended to facilitate the identification of the scope of work required by various utilities to comply with the planned construction. The plans are intended to reflect the near-final design of drainage systems with all appurtenances, erosion and sedimentation-control features, other structures, right-of-way lines (proposed permanent and temporary, and existing), curbing, pavement layout, slope limits, guardrail, final template plotted on cross-sections, diversions and diversion cross-sections, traffic control issues with construction phasing, underdrain, clearing and grubbing limits, fencing requirements, lighting and ITS conduit. Also, the plans shall reflect all existing detail, existing drainage and existing utilities. The intent is to have incorporated all comments from the Slope and Drain submission along with design work that has progressed. All final design notes may not be necessary, but the scope of construction shall be evident to the reviewing utilities. Copies of this plan set will be forwarded to the Design Services Section for review. Comments will be returned to the CONSULTANT to finalize the plans prior to the formal submission for relocations. The plans shall show the status of the design prior to preparation of the Preliminary PS&E submission.

d. Preliminary PS&E – Roadway

Upon approval in writing by the DEPARTMENT of the Slope and Drain submission, the CONSULTANT shall proceed to prepare and submit to the DEPARTMENT for approval the Preliminary PS&E submission. The Preliminary PS&E submission shall consist of three to five sets of plans (paper prints) of preliminary contract drawings, draft special provisions for items for which current specifications are not available from the DEPARTMENT, and a Preliminary PS&E estimate of quantities and costs. The plans shall include title sheet, typical sections, detail sheets, all plan sheets, profile sheets, curb and pavement layout plans, pavement marking and signing plans, signal plans (including coordination), ITS infrastructure, AET Vendor plans, gantry plans including lighting protection, complete traffic control plans, and cross section sheets (including TCP sections). Also, landscaping, seeding and grading plans shall be included, if required. The plans shall also include utility relocations, if available. Quantity Summary sheets shall be submitted. All item summary boxes for drainage, clearing and grubbing, earthwork, surfacing and select materials, curbing, guardrail, sidewalks, traffic signs, construction signs and warning devices, pavement

## ARTICLE I

markings, conduit and pull boxes, ITS components, gantry, landscaping and slope protection, bounds, fencing, delineation and witness markers, and other items that are nearly complete shall be shown and note line-entries completed. Rounding and totals are not required. Item summary boxes of expected work not listed above shall be included and shown without line-entries completed. In developing the plans to the Preliminary PS&E stage, the DEPARTMENT will require an estimate of the quantities, expected unit costs, and total costs prepared in the form and manner prescribed by the DEPARTMENT for the Preliminary PS&E submission. An electronic copy of the spreadsheet shall be submitted for the estimate in Excel format. Roadway items shall be kept separate from bridge items. Two bound copies of the quantity calculations shall be furnished with the estimate. The plans shall reflect all comments from the Slope and Drain Plans submission and issues that appear during final design. Two bound copies of the drainage computations book (as revised, based on Slope and Drainage comments) including temporary drainage computations shall be submitted with the Preliminary PS&E submission.

e. PS&E - Roadway

Upon approval in writing by the DEPARTMENT of the Preliminary PS&E submission, the CONSULTANT shall proceed to prepare and submit to the DEPARTMENT for approval the PS&E submission, which shall consist of three complete sets of paper prints of construction plans, two bound copies of the revised quantity books, and a PS&E estimate. Special Provisions shall be submitted in both electronic format (Microsoft Word-compatible) and hard copy for all items not in the Standard Specifications for Road and Bridge Construction of the STATE and for which a current special provision is not available.

f. Contract Plans (Mylars) and Consultant Documents

Upon approval of the foregoing in writing by the DEPARTMENT, the CONSULTANT shall make the final submission of contract plans, any final special provisions required and a final PS&E estimate of costs. These final contract plans and documents shall reflect all comments resulting from the Draft Contract Plans (Paper Mylar) review. The CONSULTANT shall be prepared to incorporate all comments, furnish drafting services for omissions found and generally assist the DEPARTMENT in finalizing the contract plans. If changes are requested to be made to the CONSULTANT'S plans by the DEPARTMENT, the CONSULTANT shall be prepared to update the corresponding electronic files and submit them to the DEPARTMENT. Final acceptance of the contract plans will be made in writing. The final contract plans submitted shall include one mylar Front Sheet and two sets of paper prints.

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The first paper set and the mylar Front Sheet shall be submitted prior to the final set, so that the DEPARTMENT can complete a final "three-way" check. Also, all CONSULTANT backup documents shall be resubmitted to reflect the final Draft Contract Plans (Paper Mylar) comments and final contract plan conditions. The CONSULTANT shall also submit two bound copies of the final Drainage Calculations as well as two bound copies of the final Quantities Books.

The final contract plans shall include:

- 1) A front sheet.
- 2) Typical sections of improvement.
- 3) Summary of quantities sheets.
- 4) Detail Sheets and/ or special sheets required.
- 5) Plan and profile sheets required.
- 6) Cross section sheets (shall be submitted on quality paper prints)

Each of the plan sheets shall be labeled with its corresponding electronic file name.

### 2. Structure Design - Gantry, Overhead Sign Structures and AET Zone Concrete Pavement Submissions

The plan submissions for structures noted below shall follow, in general, the Instructions for Consulting Engineers Concerning Routine Procedures on Bridge Design Projects, prepared by the DEPARTMENT.

#### Overhead Gantry

A new toll gantry will be utilized for mounting of cameras and equipment associate with the high speed tolls. The frame will be mounted on four foundations. Foundations will be designed and detailed by the Consultant. The gantry will be delineated in plans and sections. The CONSULTANT will design the gantry and develop detailed plans for inclusion in the bid package.

#### Overhead Signs

All advanced overhead signage will utilize standard State of New Hampshire overhead gantries or existing bridges. Overhead signs shall be mounted on existing sign bridges, new bridges or existing bridges. The CONSULTANT shall design the foundations of all proposed sign structure locations as described in the Highway section, determine if existing structures can be utilize either in existing location or moved if necessary. DEPARTMENT will provide the CONSULTANT the original shop drawings and calculations of existing structures as request.

#### AET Slab

The CONSULTANT shall provide details for concrete roadway from "gantry to gantry" in area of .ORT lanes.

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The content, completeness and scales for all drawings shall be as approved by the DEPARTMENT and shall be such as to accurately portray the placement and positioning of components and surfaces and the general appearance of the structural units. Large-scale details shall be employed as directed for congested areas or connections between components.

The CONSULTANT shall perform a load and resistance-rating analysis for each structure using the AASHTO Load and Resistance Factor Design Method (Load and Resistance Factor Design or LRFD), to be submitted on a form provided by the DEPARTMENT.

The phases for the development of the project are as follows:

- Preliminary Plans (30% complete)
- Preliminary PS&E Plans (80% complete)
- PS&E Plans (95% complete)
- Contract Plans (Mylars)

a. Preliminary Plans - Structures

Preliminary plans for each structure shall be prepared following completion of the subsurface explorations and the preparation of the subsurface data sheets.

The preliminary structural designs shall include profile and/or alignment data and the results of soils investigations. Also included in this phase shall be the development of the survey plan for the structure location, and this plan shall include the existing surface contours, boring locations, sub- and superstructure layout, slope limits and major topographical items, Plan and elevation sheets, as well as typical structure sections shall be developed during this phase. The plan and elevation shall generally be drawn to a scale as approved by the DEPARTMENT and shall accurately portray the location and size of the structural components, pavement and slope lines, center and grade lines, vertical and horizontal clearances, foundation details etc.

Additional items to be included are the typical approach sections for the facilities over and under the structure and developed view showing foundation treatment and rock lines, as appropriate. These items shall become part of the final PS&E plans.

Reproducible prints of these Preliminary Plans and estimated quantities and construction costs shall be submitted for approval by the DEPARTMENT prior to progressing to final design of the structure.

b. Preliminary PS&E - Structures

Upon receipt of written approval of the Preliminary Plans, final design and preparation of contract plans shall be commenced. This final design shall incorporate revisions, if any, in

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the Preliminary Plans as approved by the DEPARTMENT. This submission shall be submitted with the Highway Section, Slopes and Drainage Plans.

The plan and elevation, survey plan and profiles, and boring logs as submitted for the Preliminary Plans shall be refined as necessary and become a part of the final contract plans. Estimates of quantities shall be prepared for all materials of construction and shall be tabulated on the plans for each major component (footings, etc.) and summarized for each structure.

Upon completion of these contract plans, except for quantities and reinforcing-bar lists, copies of the plans shall be submitted to the DEPARTMENT for review and comment, the plans at this stage representing about 80% completion.

c. PS&E - Structures

Comments resulting from the DEPARTMENT'S review of the Preliminary PS&E submission shall be incorporated into the design and contract plans. The estimate of quantities shall be completed and tabulated and the reinforcing-bar schedules shall be completed.

Upon completion of these contract plans, copies of the plans shall be submitted to the DEPARTMENT for review and comment, the plans at this stage representing about 95% completion.

d. Contract Plans (Mylars) and Consultant Documents

Comments resulting from the DEPARTMENT'S review of the PS&E submission shall be incorporated into the design and contract plans.

Upon completion of these contract plans, they shall be submitted to the DEPARTMENT, the plans at this stage representing 100% completion.

The submissions shall be as necessary in accordance with the study process and environmental analysis as outlined above. Each submission shall be supplemented with such electronic copies of MicroStation drawings, illustrations, and descriptive matter as are necessary to facilitate a comprehensive understanding and review of proposed concepts.

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.

**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.

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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/](http://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 2010 or NHDOT compatible version
Spreadsheets:	Microsoft Excel 2010 or NHDOT compatible version
Databases:	Microsoft Access 2003 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:

FTP: Files posted to the DEPARTMENT'S FTP site can be actual size or compressed. Contact the Project Manager for instructions for accessing the FTP site.

Compact Disc (CD): Files on CD(s) should be actual size, not compressed.

DVD: Files on DVD(s) should be actual size, not compressed.

Email: Files 10 MB or smaller may be transferred via Email. If compressed, the files should be self-extracting and encrypted based on content.

**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.



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### **Website Information:**

- a. Website Content: All external NHDOT websites created for this project shall meet the ADA Section 508 requirements as stated in the NH DoIT Website Standards. Those standards are outlined in <https://www.nh.gov/doit/vendor/documents/nh-website-standards.pdf>.
- b. Website Documents: All documents posted to a website created for this project, or that are submitted to be posted to a NHDOT website, shall meet ADA Section 508 accessibility requirements. A checklist for document compliance is provided in <https://www.section508.gov/content/build/create-accessible-documents> (go to second link down under "Checklists").

Upon completion of the AGREEMENT, the CONSULTANT shall turn over all documentation.

### **K. SCOPE OF WORK (CONSTRUCTION SUPPORT SERVICES)**

If a contract for construction of the project, or part of it, is entered into within two years after completion by the CONSULTANT of the services outlined in Articles I, III and IV, the CONSULTANT shall, without additional compensation therefor, render services to the DEPARTMENT, including, but not restricted to, the following:

#### **1. Construction**

If and when required by the DEPARTMENT during the construction of the project, the CONSULTANT shall:

- a. At the CONSULTANT'S sole expense, correct and resolve errors and/or omissions within the contract plans and specifications found during construction.
- b. Render interpretations, as necessary, of the contract plans and specifications and submit recommendations for necessary modifications in either or both and, upon approval of recommendations by the DEPARTMENT, revise the contract plans and specifications to cover same and prepare other detailed drawings as may be needed to supplement the contract plans in order to permit the proper completion of the project. This work effort, if required, will be viewed as additional services, subject to an adjustment in the fee.

#### **2. Shop Drawings**

The CONSULTANT shall:

- a. Review, check and approve all working drawings (including overhead sign structures, gantries and ITS devices) prepared by OTHERS including the construction contractors or their subcontractors subject to the provisions of Section 105 for the purpose of checking for conformance with the information given and the design concept expressed in the Contract documents. Only that work designed by the DEPARTMENT will be excluded from this requirement.

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- b. Design and prepare drawings for the substructure elements required for gantries ITS devices and overhead sign structures. The Contractor shall submit fabrication plans and design parameters for overhead sign structures, which, in combination with soils information obtained by the DEPARTMENT, shall be used by the CONSULTANT to develop the designs and drawings for substructure elements including quantities.

### **L. DATE OF COMPLETION**

In accordance with the Governor and Council Resolution authorizing this AGREEMENT, the date of completion for the professional design services rendered under this AGREEMENT is **February 28, 2023**. Completion of construction support services shall be in accordance with Article I-I - Construction Support Services.

## ARTICLE II

### ARTICLE II - COST PLUS FIXED FEE COMPENSATION OF CONSULTANT

#### A. GENERAL FEE

In consideration of the terms and obligations of this AGREEMENT, the STATE, through the DEPARTMENT, hereby agrees to pay and the CONSULTANT agrees to accept as full compensation for all services rendered to the satisfaction of the DEPARTMENT under this AGREEMENT, an amount equal to the sum of the following costs:

- 1) Actual salaries\* approved by the DEPARTMENT paid to technical and other employees by the CONSULTANT, including salaries to principals, for the time such employees are directly utilized on work necessary to fulfill the terms of this AGREEMENT.

\* In accordance with DEPARTMENT policy, the maximum direct-labor rate allowed for all positions under this AGREEMENT, including subconsultants, shall be \$60.00 per hour unless a waiver to the salary cap has been specifically approved for specialty services. A waived rate shall remain fixed at that rate for the life of the AGREEMENT unless a subsequent waiver is requested and approved.

An overtime premium of one and one half times the direct labor rate for non-exempt employees working beyond the standard 40 hours per workweek may be allowed for special circumstances when approved by the DEPARTMENT in writing in advance. The overhead portion of non-exempt employees' salary rates shall not be adjusted. Engineers are not eligible for overtime premium rates.

Direct salary costs are estimated at: \$438,329.64

- 2) Overhead costs applicable to the direct salary costs. The audited indirect cost rate, as submitted to and approved by the DEPARTMENT, will be applied to the direct-salary costs. The CONSULTANT'S audited indirect cost-rate for-fiscal year ending December 31, 2018, which expires June 30, 2020, 138.97%, shall be used for invoicing for the life of the AGREEMENT.

Overhead costs are estimated at: \$609,146.69

- 3) A fixed fee amount based on the estimated risk to be borne by the CONSULTANT [maximum 10.00% of Labor Costs (including overhead costs)] for profit and non-reimbursed costs.

The fixed fee is: \$104,747.63

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- 4) Reimbursement for direct expenses, including, but not limited to, subconsultants with a subcontract value of less than \$200,000, printing, reproductions and travel not included in normal overhead expenses. The reimbursable costs for mileage and for per diem (lodging and meals) shall be that allowed by the CONSULTANT'S established policy but shall not exceed that allowed in the Federal Acquisition Regulations (Subpart 31.205-46) and in the Federal Travel Regulation. Mileage and per diem costs shall be subject to approval by the DEPARTMENT. Subconsultants with a subcontract value of less than \$200,000 shall be invoiced as direct expenses and do not require individual invoices, unless the subcontract is more than 25% of the contract total.

Direct expenses are estimated at: \$14,372.00

- 5) Reimbursement for actual cost of subconsultants is estimated as follows:

Normandeau Associates, Inc. \$86,192.83

Bartlett Engineering, Inc. \$15,000.00

Mechanical Systems Engineering, Inc. \$15,000.00

Morris Communications \$27,961.35

**AGREEMENT NOT-TO-EXCEED TOTAL \$1,310,750.14**

The amount payable under categories 1), 2), 4), and 5) may be reallocated within the not-to-exceed total upon mutual agreement of the DEPARTMENT and the CONSULTANT. Reallocations shall be properly documented for Final Audit purposes, but do not require a formal amendment.

The total amount to be paid under this AGREEMENT shall not exceed \$1,310,750.14, the sum of the amounts shown in Article II, Section A (which amount is based on the CONSULTANT'S fee and manhour estimates of October 15, 2019), except by agreement of all parties made after supplemental negotiations and documented by a formal amendment to the AGREEMENT. Should circumstances beyond the control of the CONSULTANT require extension of the time of completion more than one (1) year, the general fee may be renegotiated and documented by a formal amendment to the AGREEMENT; however, the fixed fee (3) shall not change for reasons of work duration alone. The fixed fee (3) shall only change when there has been a significant increase or decrease in the scope of work outlined in this AGREEMENT.

### **B. LIMITATION OF COSTS**

1. Costs incurred against this AGREEMENT shall not exceed the total amount specified in Article II, Section A unless otherwise authorized. The CONSULTANT shall give the DEPARTMENT a ninety (90)-day written notice when it appears that this limit will be exceeded.

## ARTICLE II

2. It is expected that the total cost to the STATE shall be the not-to-exceed amount specified in Article II, Section A, and the CONSULTANT agrees to use best efforts to perform the work specified in the AGREEMENT and all obligations under this contract within this not-to-exceed amount.
3. The STATE shall not be obligated to reimburse the CONSULTANT for costs incurred in excess of the not-to-exceed amount specified in Article II, Section A.
4. Changes to the scope of work shall not be considered an authorization to the CONSULTANT to exceed the not-to-exceed amount specified in Article II, Section A.

### **C. PAYMENTS**

Monthly payments on account of services rendered under this AGREEMENT may be made upon submission of invoices by the CONSULTANT to the DEPARTMENT. The CONSULTANT shall follow the DEPARTMENT'S Standardized Invoicing format. The fixed fee shall be invoiced during the billing period based upon the overall percent complete calculated within the approved progress report found in the DEPARTMENT'S Standardized Invoicing. 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.

Actual salaries paid and the indirect cost rate shown in Article II, Section A, shall be used until such time as true costs of salary burden and overhead are fixed by Final Audit. At that time, payments shall be adjusted to agree with the indirect cost rates as determined by Final Audit for the period in which the work was performed, as approved by the DEPARTMENT.

### **D. ANNUAL INDIRECT COST RATE SUBMISSIONS**

The CONSULTANT and all subconsultants with a subcontract value of \$200,000 or greater shall submit their audited indirect cost rate and related documents annually for the life of this AGREEMENT as follows:

To comply with the Federal Acquisition Requisitions (FAR), the CONSULTANT'S Indirect Cost Rate Audit must meet the following requirements:

- Be conducted by an independent Certified Public Accountant (CPA), a Federal government agency, or another state transportation agency.
- Be conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS) issued by the U.S. Government Accountability Office (GAO) and with the cost principles and procedures set forth in Part 31 of the FAR.

## ARTICLE II

- Follow the guidance of the most recent American Association of State Highway Transportation Officials Uniform Audit and Accounting Guide for Audits of Architectural and Engineering Consulting Firms (AASHTO Audit Guide).

In addition to the Indirect Cost Rate Audit, CONSULTANTS shall submit the following documentation:

- AASHTO Internal Control Questionnaire (ICQ) for Consulting Engineers form with the required attachments.
- Certification of Final Indirect Costs as required pursuant to 23 CFR 172.11 and FHWA Order 4470.1A.
- Complete copy of the CONSULTANT'S annual audited financial statements.
- Analysis of reasonableness of executive compensation as outlined in the AASHTO Audit Guide.
- Cognizant letter, if available.
- A listing of all contracts, with dollar amounts, the CONSULTANT has currently with the DEPARTMENT as a prime consultant or subconsultant.

Annual indirect cost rate submissions are due within 6 months of the CONSULTANT'S fiscal year end and shall be submitted to the DEPARTMENT'S Internal Audit Office electronically to [DOT-InternalAudit@dot.nh.gov](mailto:DOT-InternalAudit@dot.nh.gov) or in writing.

### **E. RECORDS, REPORTS, AND FINAL AUDIT**

The CONSULTANT shall maintain adequate cost records for all work performed under this AGREEMENT. All records and other evidence pertaining to cost incurred shall be made available at all reasonable times during the AGREEMENT period and for three (3) years from the date of final expenditure report for examination by the STATE, Federal Highway Administration, or other authorized representatives of the Federal Government, and copies thereof shall be furnished if requested. Applicable cost principles are contained in the Federal Acquisition Regulations (FAR) in Title 48 of the Code of Federal Regulations (Subpart 31.2 and Subpart 31.105).

The DEPARTMENT shall have the right, at the time of Final Audit, to review all items charged on this project. If, in the opinion of the DEPARTMENT, such payment is unreasonable, the CONSULTANT shall be required to justify such payment or payments before they will be approved as direct or indirect costs.

All costs as described in Article II Section A.1 through A.5 are to be determined by actual records kept during the term of the AGREEMENT, which are subject to Final Audit by the STATE and Federal Governments. The final payment, and all partial payments made, may be adjusted to conform to this Final Audit. In no case will any adjustments exceed the not-to-exceed amount specified in Article II,

## ARTICLE II

Section A. All Subconsultant costs may also be subject to Final Audit by the STATE and Federal Governments.

## **ARTICLE III**

### **ARTICLE III - GENERAL PROVISIONS**

#### **A. HEARINGS, ETC.**

The DEPARTMENT will make all arrangements for and hold all necessary hearings in connection with the project, including recording and filing of surveys and plats, enter into all necessary agreements with railroads, public utilities, municipalities, agencies of the Federal Government or others, and make orders of takings and financial settlements with owners of properties affected.

#### **B. CONTRACT PROPOSALS**

After the CONSULTANT has furnished to the DEPARTMENT contract drawings, special provisions, specifications, and estimate of quantities and unit cost by items, the DEPARTMENT will prepare the documents for receipt of proposals from construction contractors and for execution of a construction contract or contracts.



## ARTICLE IV

### ARTICLE IV - STANDARD PROVISIONS

#### A. STANDARD SPECIFICATIONS

The CONSULTANT agrees to follow the provisions of the Design Manuals, Standard Specifications for Road and Bridge Construction, and Standard Plans for Road and Bridge Construction of the DEPARTMENT; A Policy on Geometric Design of Highways and Streets and LRFD Bridge Design Specifications of the American Association of State Highway and Transportation Officials (AASHTO), and amendments thereto, and/or other professional codes or standards applicable to the services to be performed under this AGREEMENT. When a publication (including interim publications) is specified, it refers to the most recent date of issue in effect at the time of execution of this AGREEMENT.

#### B. REVIEW BY STATE AND FHWA - CONFERENCES - INSPECTIONS

It is mutually agreed that all portions of the work covered by this AGREEMENT shall be subject to the inspection by duly-authorized representatives of the STATE and Federal Highway Administration, United States Department of Transportation, at such time or times as the STATE or Federal Highway Administration deems appropriate.

The location of the office where the work will be available for inspection by STATE and Federal Highway Administration representatives is 6 Loudon Road, Suite 201, Concord, NH.

It is further mutually agreed that any party, including the duly-authorized representatives of the Federal Highway Administration, may request and obtain conferences, visits to the site, and inspection of the work at any reasonable time.

#### C. EXTENT OF CONTRACT

##### 1. Contingent Nature of AGREEMENT

Notwithstanding anything in this AGREEMENT to the contrary, all obligations of the STATE, including, without limitation, the continuance of payments, are contingent upon the availability and continued appropriation of funds, and in no event shall the STATE be liable for any payments in excess of such available appropriated funds. In the event of a reduction or termination of those funds, the STATE shall have the right to terminate this AGREEMENT.

##### 2. Termination

The DEPARTMENT shall have the right at any time, and for any cause, to terminate the work required of the CONSULTANT by this AGREEMENT by written notice of such termination provided to the CONSULTANT by the DEPARTMENT, and, in the event of such a termination of this AGREEMENT without fault on the part of the CONSULTANT, the CONSULTANT shall be entitled to compensation for all work theretofore satisfactorily performed, pursuant to this AGREEMENT, such compensation to be fixed, insofar as possible, based upon the work

## ARTICLE IV

performed prior to termination. If no contract or contracts for construction of the project contemplated by this AGREEMENT is (are) entered into within two (2) years after satisfactory completion of the services outlined in Article I, all of the services contemplated by this AGREEMENT shall be deemed to have been completed.

It shall be a breach of this AGREEMENT if the CONSULTANT shall fail to render timely the services required under this AGREEMENT, in accordance with sound professional principles and practices, to the reasonable satisfaction of the DEPARTMENT, or shall be in such financial condition as to be unable to pay its just debts as they accrue, or shall make an assignment for the benefit of creditors, or shall be involved in any proceeding, voluntary or involuntary, resulting in the appointment of a receiver or trustee over its affairs, or shall become dissolved for any cause. In the event of the happening of any one or more of the foregoing contingencies, or upon the substantial breach of any other provisions of this AGREEMENT by the CONSULTANT, its officers, agents, employees, and subconsultants, the DEPARTMENT shall have the absolute right and option to terminate this AGREEMENT forthwith, and, in addition, may have and maintain any legal or equitable remedy against the CONSULTANT for its loss and damages resulting from such breach or breaches of this AGREEMENT; provided, however, that as to all plans, drawings, tracings, estimates, specifications, reports, proposals, sketches, diagrams, and calculations, together with all material and data theretofore furnished to the DEPARTMENT by the CONSULTANT, of a satisfactory nature in accordance with this AGREEMENT, which plans, drawings, tracings, etc., are of use to the DEPARTMENT, the CONSULTANT shall be entitled to a credit, based on the contract rate for the work so performed in a satisfactory manner and of use and benefit to the DEPARTMENT.

### **D. REVISIONS TO REPORTS, PLANS OR DOCUMENTS**

The CONSULTANT shall perform such additional work as may be necessary to correct errors in the work required under the AGREEMENT caused by errors and omissions by the CONSULTANT without undue delays and without additional cost to the DEPARTMENT.

Furthermore, prior to final approval of plans, specifications, estimates, reports, or documents by the DEPARTMENT, the CONSULTANT shall make such revisions of them as directed by the DEPARTMENT, without additional compensation therefor, except as hereinafter provided:

1. If, after its written approval thereof, the DEPARTMENT shall require changes to the plans or documents that revise engineering or other factors specifically approved, thereby necessitating revisions of the contract plans or documents, or,

## ARTICLE IV

2. When applicable, if during the term of this AGREEMENT, a revision of the alignment is ordered by the DEPARTMENT to the extent that the revised alignment will lie completely or partially outside the limit of the survey data plotted by the CONSULTANT (this does not apply to those adjustments and refinements to the alignments anticipated under the scope of work), or,
3. If, after approval by the DEPARTMENT of the final contract plans or documents, the CONSULTANT shall be ordered in writing by the DEPARTMENT to make revisions, or to perform services other than those necessary to adapt said plans, reports, or documents to conditions observed during field inspections and encountered during construction; the CONSULTANT shall be entitled to compensation therefor in accordance with Article II, Section A, such compensation to be in addition to the fee specified in Article II, Section A, for its original work on the plans, reports or documents.

### **E. ADDITIONAL SERVICES**

If, during the term of this AGREEMENT, additional professional services are required due to a revision in the limits of the project, or it becomes necessary to perform services not anticipated during negotiation, the DEPARTMENT may, in writing, order the CONSULTANT to perform such services, and the CONSULTANT shall be paid a fee in accordance with the provisions of Article II, Section A.

If, during the term of this AGREEMENT, additional professional services are performed by the CONSULTANT due to the fact that data furnished by the DEPARTMENT are not usable or applicable, the STATE will, upon written approval by the DEPARTMENT, reimburse the CONSULTANT for such additional design services in accordance with the provisions of Article II, Section A.

If additional services are performed by the CONSULTANT through its own acts, which are not usable or applicable to this project, the cost of such additional services shall not be reimbursable.

### **F. OWNERSHIP OF PLANS**

All data, plans, drawings, tracings, estimates, specifications, proposals, sketches, diagrams, calculations, reports, or other documents collected, prepared, or undertaken either manually or electronically by the CONSULTANT under the provisions of this AGREEMENT, immediately shall become the property of the DEPARTMENT, and, when completed, shall bear the CONSULTANT'S endorsement. The CONSULTANT shall surrender to the DEPARTMENT, upon demand at any time, or submit to its inspection, any data, plan, drawing, tracing, estimate, specification, proposal, sketch, diagram, calculation, report, or document which shall have been collected, prepared, or undertaken by the CONSULTANT pursuant to this AGREEMENT, or shall have been hitherto furnished to the CONSULTANT by the DEPARTMENT. The CONSULTANT shall have the right, with the written

## ARTICLE IV

approval of the DEPARTMENT, to use any of the data prepared by it and hitherto delivered to the DEPARTMENT at any later stage of the project contemplated by this AGREEMENT.

### **G. SUBLETTING**

The CONSULTANT shall not sublet, assign or transfer any part of the CONSULTANT'S services or obligations under this AGREEMENT without the prior approval and written consent of the DEPARTMENT.

All subcontracts shall be in writing and those exceeding \$10,000 shall contain all provisions of this AGREEMENT, including "Certification of CONSULTANT/Subconsultant". For subconsultants working on design, hazardous materials, geotechnical services, etc., the minimum limits of their professional liability (errors and omissions) insurance coverage shall be not less than \$2,000,000 in the aggregate, with a deductible of not more than \$75,000. For subconsultant contracts with less risk, e.g., wetland evaluations, materials inspection and testing, structural steel fabrication inspection, underwater bridge inspection, research, bridge deck condition surveys, land surveying, mapping, noise studies, air-quality studies, etc., the minimum limits of their professional liability (errors and omissions) insurance coverage shall be not less than \$1,500,000 in the aggregate, with a deductible of not more than \$50,000. For subconsultant contracts with no risk, e.g., archaeology, cultural resources, data gathering, traffic counting etc., professional liability insurance shall not be required. Subconsultants completing field exploration for geotechnical, hazardous materials/environmental, and subsurface exploration shall also have pollution liability insurance coverage not less than \$2,000,000 in the aggregate, with a deductible of not more than \$75,000. If coverage is claims made, the period to report claims shall extend for not less than three years from the date of substantial completion of the construction contract. A copy of each subcontract shall be submitted for the DEPARTMENT'S files.

### **H. GENERAL COMPLIANCE WITH LAWS, ETC.**

The CONSULTANT shall comply with all Federal, STATE, and local laws and ordinances applicable to any of the work involved in this AGREEMENT and shall conform to the requirements and standards of STATE, municipal, railroad, and utility agencies whose facilities and services may be affected by the construction of this project. The services shall be performed so as to cause minimum interruption to said facilities and services.

### **I. BROKERAGE**

The CONSULTANT warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration,

## ARTICLE IV

contingent upon or resulting from the award or making of this Contract. For breach or violation of this warranty, the STATE shall have the right to annul this Contract without liability, or, at its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

### J. CONTRACTUAL RELATIONS

#### 1. Independent Contractor

The CONSULTANT agrees that its relation to the STATE is as an independent contractor and not as an agent or employee of the STATE.

#### 2. Claims and Indemnification

##### a. Non-Professional Liability Indemnification

The CONSULTANT agrees to defend, indemnify and hold harmless the STATE and all of its officers, agents, and employees from and against any and all claims, liabilities, or suits arising from (or which may be claimed to arise from) any (i) acts or omissions of the CONSULTANT or its subconsultants in the performance of this AGREEMENT allegedly resulting in property damage or bodily injury, and/or, (ii) misconduct or wrongdoing of the CONSULTANT or its subconsultants in the performance of this AGREEMENT.

##### b. Professional Liability Indemnification

The CONSULTANT agrees to indemnify and hold harmless the STATE and all of its officers, agents, and employees from and against any and all claims, liabilities, or suits arising from (or which may be claimed to arise from) any negligent acts or omissions of the CONSULTANT or its subconsultants in the performance of professional services covered by this AGREEMENT.

- c. These covenants shall survive the termination of the AGREEMENT. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the STATE, which immunity is hereby reserved by the STATE.

#### 3. Insurance

##### a. Required Coverage

The CONSULTANT shall, at its sole expense, obtain and maintain in force the following insurance:

1. Commercial or comprehensive general liability insurance, including contractual coverage, for all claims of bodily injury, death, or property damage, in policy amounts of not less than \$250,000 per occurrence and \$2,000,000 in the aggregate (STATE to be named as an additional insured); and

## ARTICLE IV

2. comprehensive automobile liability insurance covering all motor vehicles, including owned, hired, borrowed, and non-owned vehicles, for all claims of bodily injury, death, or property damage, in policy amounts of not less than \$500,000 combined single limit; and
3. professional liability (errors and omissions) insurance coverage of not less than \$2,000,000 in the aggregate. If coverage is claims made, the period to report claims shall extend for not less than three years from the date of substantial completion of the construction contract. No retention (deductible) shall be more than \$75,000; and
4. workers' compensation and employer's liability insurance as required by law.

b. Proof of Insurance

The policies described in paragraph (a) of this section and Section G shall be in the standard form employed in the STATE, issued by underwriters licensed or approved by the Department of Insurance of the STATE. Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than 30 days, or 10 days in cases of non-payment of premium, after written notice thereof has been received by the STATE. The CONSULTANT shall provide to the STATE a certificate of insurance evidencing the required coverages, retention (deductible), and cancellation clause prior to submittal of the AGREEMENT to Governor and Council for approval and shall have a continuing duty to provide new certificates of insurance as the policies are amended or renewed.

4. No Third-Party Rights

It is not intended by any of the provisions of the AGREEMENT to make the public, or any member thereof, a third-party beneficiary of the AGREEMENT, or to authorize anyone not a party to this AGREEMENT to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Contract. The duties, obligations, and responsibilities of the parties to this AGREEMENT with respect to third-parties shall remain as imposed by law. No portion of this AGREEMENT shall be understood to be a waiver of the STATE'S sovereign immunity.

5. Construction of AGREEMENT

This AGREEMENT is executed in a number of counterparts, each of which is an original and constitutes the entire AGREEMENT between the parties. This AGREEMENT shall be construed according to the laws of the STATE.

## ARTICLE IV

### **K. AGREEMENT MODIFICATION**

The assignment of the CONSULTANT, generally established by the scope of work in this AGREEMENT, shall not be modified in any way without prior approval of the Governor and Council.

### **L. EXTENSION OF COMPLETION DATE(S)**

If, during the course of the work, the CONSULTANT anticipates that one or more of the completion dates specified in this AGREEMENT cannot be met, it shall be the CONSULTANT'S responsibility to notify the DEPARTMENT in writing at least ninety (90) days prior to the completion date(s) in question. The CONSULTANT shall state the reasons that a completion date(s) cannot be met and request a revised date(s) for consideration by the DEPARTMENT.

### **M. TITLE VI (NONDISCRIMINATION OF FEDERALLY-ASSISTED PROGRAMS)**

#### **COMPLIANCE**

During the performance of this AGREEMENT, the CONSULTANT, for itself, its assignees and successors in interest agrees as follows:

- (1) Compliance with Regulations: The CONSULTANT shall comply with Title VI of the Civil Rights Act of 1964 regulations relative to nondiscrimination in federally-assisted programs of the DEPARTMENT, such regulations entitled Title 49 Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the REGULATIONS), and which are herein incorporated by reference and made a part of this AGREEMENT.
- (2) Nondiscrimination: The CONSULTANT, with regard to the work performed by it during the AGREEMENT, shall not discriminate on the grounds of race, color, religion, age, sex, handicap, sexual orientation, or national origin in the selection and retention of subconsultants, including procurements of materials and leases of equipment specific to this project. The CONSULTANT shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the REGULATIONS, including employment practices when the AGREEMENT covers a program set forth in Appendix B of the REGULATIONS.
- (3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the CONSULTANT for work to be performed under a subcontract, including procurements of materials or leases of equipment specific to the project, each potential subconsultant or supplier shall be notified by the CONSULTANT of the CONSULTANT'S obligations under this AGREEMENT and the REGULATIONS relative to nondiscrimination on the grounds of race, color, religion, age, sex, handicap, sexual orientation, or national origin.

#### ARTICLE IV

- (4) Information and Reports: The CONSULTANT shall provide all information and reports required by the REGULATIONS or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the DEPARTMENT or the Federal Highway Administration to be pertinent to ascertain compliance with such REGULATIONS, orders and instructions. Where any information required of a CONSULTANT is in the exclusive possession of another who fails or refuses to furnish this information, the CONSULTANT shall so certify to the DEPARTMENT or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.
- (5) Sanctions for Noncompliance: In the event of the CONSULTANT'S noncompliance with nondiscrimination provisions of this AGREEMENT, the DEPARTMENT shall impose sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
- (a) withholding of payments to the CONSULTANT under the AGREEMENT until the CONSULTANT complies; and/or
  - (b) cancellation, termination, or suspension of the AGREEMENT, in whole or in part.
- (6) The CONSULTANT shall take such action with respect to any subcontract or procurement as the DEPARTMENT or the Federal Highway Administration may direct as a means of enforcing such provisions, including sanctions for noncompliance, provided, however, that in the event a CONSULTANT becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, the CONSULTANT may request the DEPARTMENT to enter into such litigation to protect the interests of the STATE, and, in addition, the CONSULTANT may request the United States to enter into such litigation to protect the interests of the United States.
- (7) 23 CFR 710.405(b) and Executive Order 11246 entitled "Equal Employment Opportunity," as amended by Executive Order 11375 and as supplemented in Department of Labor REGULATIONS (41 CFR Part 60), shall be applicable to this AGREEMENT and any subagreements hereunder.
- (8) Incorporation of Provisions: The CONSULTANT shall include the provisions of paragraphs (1) through (7) in every subcontract, including procurements of materials and leases of equipment specific to the project, unless exempt by the REGULATIONS, or directives issued pursuant thereto.



## ARTICLE IV

In accordance with EXECUTIVE ORDER 11246, the DEPARTMENT has the authority and responsibility to notify the Office of Federal Contract Compliance Programs of the United States Department of Labor if they become aware of any possible violations of Executive Order 11246 and 41 CFR Part 60. The Office of Federal Contract Compliance Programs is solely responsible for determining compliance with Executive Order 11246 and 41 CFR Part 60 and the CONSULTANT should contact them regarding related compliance issues.

### **N. DISADVANTAGED BUSINESS ENTERPRISE POLICY REQUIREMENTS**

1. **Policy.** It is the policy of the United States Department of Transportation (USDOT) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBE's), as defined in 49 Code of Federal Regulations (CFR) Part 26, to participate in the performance of agreements and any subagreements financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 apply to this AGREEMENT.
2. **Disadvantaged Business Enterprise (DBE) Obligation.** The STATE and its CONSULTANTS agree to ensure nondiscriminatory opportunity for disadvantaged business enterprises, as defined in 49 CFR Part 26, to participate in the performance of agreements and any subagreements financed in whole or in part with Federal funds. In this regard, the STATE and its CONSULTANTS shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that disadvantaged business enterprises have the opportunity to compete for and perform work specified in the agreements. The STATE and its CONSULTANTS shall not discriminate on the basis of race, color, religion, age, sex, handicap, sexual orientation, or national origin in the award and performance of agreements financed in whole or in part with Federal funds.
3. **Sanctions for Non-Compliance.** The CONSULTANT is hereby advised that failure of the CONSULTANT, or any Subconsultant performing work under this AGREEMENT, to carry out the requirements set forth in paragraphs 1 and 2 above, shall constitute a breach of agreement and, after the notification of the United States Department of Transportation, may result in termination of this AGREEMENT by the STATE or such remedy as the STATE deems appropriate.

### **O. DOCUMENTATION**

The CONSULTANT shall document the results of the work to the satisfaction of the DEPARTMENT and the Federal Highway Administration. This shall include preparation of progress reports, plans, specifications, and estimates and similar evidences of attainment of objectives called for in this AGREEMENT.

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### **P. CLEAN AIR AND WATER ACTS**

If the amount of the AGREEMENT or subcontract thereunder exceeds \$100,000, the CONSULTANT or subconsultant shall comply with applicable standards, orders, or requirements issued under Section 306 of the Federal Clean Air Act (43 U.S.C. 1857(h)), Section 508 of the Federal Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15), which prohibit the use under non-exempt Federal contracts, grants, or loans of facilities included on the EPA List of Violating Facilities. The CONSULTANT or subconsultant shall report violations to the FHWA and to the U. S. Environmental Protection Agency Assistant Administrator for Enforcement (EN-329).

# **ATTACHMENT A**



**ARCHITECTS ENGINEERS PLANNERS**

340 County Road, Suite 6-C, Westbrook, ME 04092 (207) 774-5155 FAX (207) 229-0909

**New Hampshire NHDOT of Transportation  
Dover-Rochester 29440**

**Dover and Rochester Mainline Toll Plaza Conversion to All Electronic Tolling (AET)  
Scope of Work for Preliminary and Final Design and Construction Services**

**September 9, 2019**

## **I. INTRODUCTION**

This Scope of Services addresses the final design, contract document preparation, and construction services for the conversion of the existing Spaulding Turnpike (NH 16) mainline toll plazas in Dover and Rochester, NH to All Electronic Tolling (AET) facilities.

The work will be developed as a single contract capturing the improvements at both locations.

## **II. LOCATION AND DESCRIPTION OF PROJECT**

The design for the following is included in the work scope:

- Reconstruction of the roadway area in the direct vicinity of the Dover and Rochester toll plaza areas to accommodate AET and open road travel along the turnpike. This will include the development of the roadway approach areas to a reconstructed roadway typical section consisting of three (3) lanes at the Dover location and two (2) lanes at the Rochester location. The AET gantry will be constructed to accommodate a future three (3) lane facility at the Rochester location.
- The reconstruction lengths at each location will be approximately 3,785 feet along the NB barrel and 2,805 feet along the SB barrel in Dover, and 2,425 feet along both barrels in Rochester. Signage and traffic control needs will extend beyond these formal project limits.
- Median concrete barrier will be placed, beginning at the southerly limits of the Dover location continuing northerly through the project for approximately 2,800 feet, where the barrier will transition to the existing double-faced w-beam guardrail for the remaining approximately 1,000 feet of the project limit. Within the limits of the existing rail on the northerly end, the median grading and drainage will remain as they exist today (i.e. no median reconstruction and development of a typical section will be required for this segment).
- Median concrete barrier will be placed, beginning at the southerly limits of the Rochester limits continuing northerly through the project for approximately 2,425 feet, where the barrier will match to the existing median barrier, just north of the project limit shown in the NHDOT concept plan at approximate station 88+00.
- Demolition of eight (8) toll lanes, seven (7) islands and booths, and all the canopy and connected appurtenances at the Dover plaza. The toll plaza administration building and equipment building will also be demolished, and the tunnel decommissioned.

- Demolition of six (6) toll lanes, five (5) islands and booths, and all the canopy and connected appurtenances at the Rochester plaza. The toll plaza administration building and equipment building will also be demolished, and the tunnel decommissioned.
- The existing roadway width at the plazas will be reduced, consistent with the two (Rochester) or three (Dover) lane facility through each project segment limits. This will include the removal of the parking lots.
- Reconstruction of the pavement surfaces through the project limits will be achieved via the development of a formal profile and typical sections for the entire length of the project. Removal and replacement of the existing pavements will be assessed, in addition to the use of cold planing and/or shimming to achieve the needed typical section.
- Design of full span or cantilever overhead sign structures and ground mounted signs will be included in the design efforts. HNTB will develop the initial conceptual layouts for coordination and refinement with the Bureau of Turnpikes and Bureau of Traffic. HNTB will be responsible for the development of the sign text layout sheets, providing them to the Traffic Bureau for review.
- Design of the three (3) lane full span toll gantry over the AET lanes, as well as coordination with the Turnpike Bureau AET vendor.
- Intelligent Transportation Systems (ITS) technologies will be designed by HNTB for the Dover location only. ITS infrastructure will extend from the existing elements installed under the prior projects. A copy of the ITS Master Plan for the I95/Spaulding Turnpike has been provided by NHDOT for reference. HNTB will review the master plan and provide recommendations on CCTV, DMS, and MVDS placements along the project limits and for connecting into the existing ITS system to the south of Exit 6. Fiber optic communications shall be designed and permanent and/or temporary ITS elements will be incorporated, in whole or in part, into the contract plans and documents by HNTB.

The following detailed work scope is arranged by major discipline and the corresponding submittals for that discipline. The work is subdivided into the following major disciplines:

- Highway (comprising of all related subdisciplines to include traffic control, drainage, signage/stripping, soundwalls)
- Structures (AET gantry and sign foundations)
- Toll Plaza (includes electrical, mechanical, structural and toll systems)
- Geotechnical
- Environmental (includes noise, wetlands, environmental permitting)

The work is further subdivided into the following submittals/phases:

- Preliminary Plans (30%)
- Slope and Drain (60%)

- Preliminary PS&E Plan (80%-85%)
- PS&E (98%)
- Contract Plans/Mylars (100%)
- Construction Services

A summary of anticipated project plan sheets is provided in Appendix A. The proposed projects schedule is provided in Appendix B.

### **III. SCOPE OF WORK**

Following is an outline of each Preliminary and Final Design and Construction Services Scope item:

#### **A. Highway**

The design will be based on AASHTO's Geometric Design of Highways and Streets (latest accepted version by NHDOT), FHWA's State of the Practice and Recommendations on Traffic Control Strategies at Toll Plazas; FHWA's MUTCD, 2009 Edition including 2012 revisions; ITE's Freeway and Interchange Geometric Design Handbook, and NHDOT's Design Manual and Standard Plans for Road and Bridge Construction (2010).

##### **1. Project Initiation**

- a. Refine final design schedule based upon Notice-to-Proceed (NTP)
- b. Review survey, CADD and as-built files from NHDOT (NHDOT will provide all survey/ground models to HNTB for all project areas).
- c. Kick Off Meeting – Two (2) team members from HNTB will attend project kick-off meeting, assumed to be at NHDOT.

##### **2. Preliminary Plans**

- a. Interdisciplinary Coordination – Coordinate with design team to advance design of project
- b. Progress/Working/Review Meetings: Two (2) meetings at NHDOT are assumed
- c. Conference calls – Four (4) project update calls with NHDOT are assumed
- d. Field Visit – Two (2) team members from HNTB will complete a site visit to make visual observations and understand existing conditions. Photographs and field notes will be collected (existing signs, deficiencies, BMP's, etc.)
- e. Traffic Analysis for Toll Plaza Sizing, Constructability/Traffic Control Needs, and Toll Zone Assessment. A report will be developed assessing the minimum number of lanes that will need to be maintained during the construction operations as well as the optimal tolling zone locations.

- i. Identify toll operation needs during traffic control and construction operations. The basis of the report will be the following:
  - 1. Traffic volumes during peak periods: This includes assessing the mix of E-ZPass vs. cash-paying traffic, as well as the mix of cars vs. trucks.
  - 2. Capacity of the existing lanes: Review historical NHDOT data from this plaza to determine existing cash lane capacity
  - 3. The potential locations for the AET tolling gantry will be assessed based upon site characteristics, tolling needs, separation from existing plaza for traffic control needs, as well as any other pertinent needs.
- ii. Traffic Analysis Assumptions:
  - (1) All analysis will be limited to spreadsheet-level analysis. No Vissim behavior-based simulations are assumed.
  - (2) Construction analysis will consider up to three (3) scenarios in each direction
  - (3) The final Technical Report will be 6-8 pages in length.
- f. Develop/Refine Plan and Profile: A profile will be developed for the project limits, no profile will be developed by the NHDOT.
- g. Define Preliminary Typical Sections: Typical sections will be developed for the following:
  - i. Roadway reconstruction areas
  - ii. Pavement removal areas
- h. Pavement Superelevation review and refinement
- i. Critical Cross Sections:
  - i. Construction critical locations (i.e. ROW constrained areas, OH sign locations, etc.)
  - ii. Profile touchdown points
  - iii. Centerline of AET area
  - iv. Every 200 feet
- j. Closed Drainage System Development and Analysis
  - i. HNTB will complete a conceptual drainage design and layout to determine the impacts to existing closed drainage systems and existing BMP's, as well as to identify needs based upon proposed construction. NHDOT will provide information (**Drainage Report Narrative and HydroCAD models**) for the existing condition related to the Newington-Dover 11238-Q project for reference.
  - ii. HNTB will assess the existing information provided and refine based on As-Built conditions. Drainage design will follow the guidelines as outlined in the

NHDOT Drainage Manual. A comparison between the pre-development peak discharge rates and the post-development peak discharge rates as modeled using HydroCAD software for the one, 2, 10 and 50-year, 24-hour storm events will be provided.

1. Pavement area at the Dover location will be increased a net of 0.4 acres (17,100 sf; 0.8-acre reduction but 1.2 acres increase).
- iii. A Drainage Report Narrative outlining how treatment is provided will be summarized and will include all supporting calculations. Type A grates only will be used and analyzed for spread to meet interstate highway standards. Spread analysis will be limited to the proposed closed system, modeled using InRoads Storm and Sanitary Version 8i, which will be further refined and developed for the Slope and Drain Submission.
- iv. Within the limits of the Dover project boundaries there are five (5) existing BMP's of various types. It is expected that the drainage models and designs narratives for the N-D 11238-Q project will be provided to HNTB.
- v. As a result of the increase in impervious area at the Dover location, it is assumed that the existing BMP's will need to be assessed for capacity and treatment efficiency, however that given the constraints of the soundwalls, that there will be no new BMP's designed. Modifications to the existing may be required due to increase and accommodations/hours will be allotted for the design modifications.
- vi. There are no existing BMP's at the Rochester location. Although there is a reduction of impervious area at the Rochester location, BMP's are anticipated. One (1) treatment basin and two (2) vegetated swales will be designed.
  1. Pavement area at the Rochester location will be decreased by 1.38 acres
- vii. This scope of has been developed assuming that calculations for the existing BMP's will be provided to HNTB. The Preliminary Plan submission will be proof of concept in order to appreciate the magnitude and direction of flows. This will allow NHDOT to review and approve the concept prior to developing detailed plans and calculations which will be provided at the Slope and Drain submission.
- viii. Model conceptual drainage routing and treatment locations to gain NHDOT concurrence prior to finalizing at Slope and Drain Submission.
  1. Preliminary analysis of existing storm sewer and BMP's
  2. Delineation of subcatchment areas and existing closed drainage system using HydroCAD.
  3. High level (preliminary) modeling of existing BMP's using HydroCAD.

4. Assessment of existing drainage infrastructure for replacement, rehabilitation, etc.
- ix. Conceptual design of proposed storm sewer and BMP's
  1. Delineation of subcatchment areas and proposed closed drainage system using HydroCAD.
  2. Development of three (3) new BMP's at the Rochester location:
    - a. One (1) new detention basin along the east or west side of NH 16 in the area just to the south of the existing toll plaza
    - b. Treatment swale on each side (total of 2) of NH 16 at the southerly limits of the project.
  3. Prepare conceptual design memorandum for proposed drainage approach and designs
- k. Signing
  - i. Cross-reference sign photo inventory (provided by NHDOT) to survey data.
  - ii. Coordinate preliminary OHSS locations with other highway features (barrier, drainage, utilities) and the N-D 11238-Q project.
  - iii. Complete layout for preliminary OHSS locations and submit boring request
  - iv. See the signing table below for the agreed to locations for the overhead guide signs required per each site.
  - v. Preliminary guide sign text sheets and proposed layouts will be developed and provided to NHDOT Bureau of Traffic for review.
- l. ITS Plan Development
  - i. HNTB will complete conceptual ITS layouts for discussion with the NHDOT based upon a review of the NH 16 Master Plan.
- m. Develop Engineering Report: An engineering report will be developed similar to the Engineering Report prepared by NHDOT for the Hooksett ORT Project.
- n. Quantities and Estimate (major items only with contingency and percentages for disciplines) will be developed.
- o. Public meeting preparation and attendance: The HNTB team will prepare for and attend one (1) public meeting in each municipality. The following work activities are assumed:
  - i. Preparation of colored plans
  - ii. Preparation of PowerPoint presentation
  - iii. Coordination with NHDOT



- iv. Attendance at a dry run at NHDOT
- v. Attendance and presentation at Public Meeting
- p. Milestone Submission Quality Reviews following HNTB project quality process will be completed by senior-level staff
- q. Submission Compilation (Plotting/Copies/Design narrative)

### **3. Slope & Drain**

- a. Interdisciplinary Coordination
- b. Conference calls – Four (4) project update calls with NHDOT are assumed
- c. Progress/Working/Review Meetings: Two (2) meetings at NHDOT are assumed
- d. General Plan/Profile Development
- e. Cross Section Development, incl. Drive Matches, Detailing, and Review
- f. Review and Incorporation of Geotechnical Information
- g. Pavement Superelevation
- h. Guardrail Calculations
- i. Refine Preliminary Typical Sections
- j. Signing: Sign text layout and disposition of existing signs will be established
- k. Utility Conflict Identification: The NHDOT Utility Bureau will complete the utility coordination required for the project. HNTB will not approve or be responsible for designing any utility relocations
- l. Drainage: Closed drainage design and detailing will be completed by HNTB (Plans/Profiles/Sections/Drainage Notes)
  - a. Finalize design and analysis of storm sewer and BMP's
    - i. Delineation of subcatchment areas for the design of the closed drainage system using HydroCAD.
    - ii. Import InRoads Storm and Sanitary output for use in HydroCAD model.
    - iii. Modeling of proposed BMP's using HydroCAD.
    - iv. Modification of model and completion of drainage design using HydroCAD with all supporting calculations for use in report.
    - v. Modification of models and completion of design of one (one) new BMP's at the Rochester location with all supporting calculations for use in report.
  - b. Finalize the proposed closed system spread analysis and catch basin spacing using InRoads Storm and Sanitary
  - c. Water quality analysis
    - i. Analyze BMP's for water quality (standard forms)

- ii. Address Comments
  - d. Develop preliminary drainage notes
  - m. Drainage Report: A drainage report will be developed summarizing the results of the project drainage design.
  - n. Slope line development & coordination with environmental team (NHDOT & Normandeau)
  - o. Traffic Control Plans, Typical Sections and Cross Sections: Plans will be developed based on the following assumptions:
    - i. Construction at both locations will be completed with these general principles maintained:
      - (1) Toll collection at the existing plaza will need to be maintained during construction of the new AET gantries, as well as testing of the toll collection infrastructure.
      - (2) The new AET gantries, for both barrels, are anticipated to be located north of the existing plaza at a location that allows for continued operations during construction and testing.
      - (3) Separate traffic control plans will be needed for sign installation locations similar to the Bedford ORT plan development.
    - ii. Traffic control plans will be developed with wide load/permit vehicles to be maintained to the extent practical within limits of the proposed roadway. Detour of wide load/permit vehicles through employee parking area or locations is assumed not acceptable. Development of detour plans for wide loads/permit vehicles is not included in this scope.
  - p. ITS Plan Development
    - i. HNTB will progress the plan development for ITS layouts for discussion with the NHDOT based upon the locations and devices confirmed during Preliminary Submission development.
  - q. Quantities and Estimate will be developed.
  - r. Development of a Construction Schedule for the work.
  - s. Preparation of responses to NHDOT's Preliminary Submission review comments.
  - t. Milestone Submission Quality Reviews following HNTB project quality process will be completed by senior-level staff
  - u. Submission Compilation (Plotting/Copies/Design narrative)
- 4. Preliminary PS&E
  - a. Interdisciplinary Coordination
  - b. Conference calls: Four (4) project update calls with NHDOT are assumed

- c. Progress / Working / Review Meetings: One (1) meeting at NHDOT is assumed
- d. General Plan and Profile Revisions
- e. Typical Section Revisions
- f. Develop Detail Sheets (including Median Barrier Elevation Calculations)
- g. Traffic Control Plan Revisions
- h. Final Guardrail calculations
- i. Final Drainage Design (w/ Notes and Summary Sheet)
- j. Incorporation of Proposed Lighting (NHDOT design)
- k. Signing and Pavement Marking Plans
- l. Curbing and Pavement Layout Plans
- m. General Sheet Development (title sheet, index sheet, etc.)
- n. Final Cross Section Revisions
- o. ITS Plan Development
  - i. HNTB will progress the plan development for ITS layout, designs, estimate and details to near final plan development.
- p. Summary Sheets Development
- q. Construction Quantity Estimate
- r. Develop draft Special Provisions
- s. Signing
  - i. Finalize Guide Sign Layouts
  - ii. Prepare OHSS Stick Diagrams
  - iii. Develop Sign Quantities and Summary Sheets
- t. Refinement of a Construction Schedule for the work
- u. Review of NHDOT Prepared specifications (POW and TCP)
  - v. Preparation of responses to NHDOT's Slope & Drain Submission review comments.
- w. Milestone Submission Quality Reviews will be completed by senior-level staff
- x. Submission Compilation (Plotting / Copies / Design Narrative)

## **5. PS&E**

- a. Interdisciplinary Coordination
- b. Conference calls: Two (2) project update calls with NHDOT are assumed
- c. Plan Revisions



- d. Special Provisions
- e. Quantity Estimate Revisions
- f. 3-way Check / Apples and Oranges
- g. Progress / Working / Review Meetings: One (1) meeting at NHDOT is assumed
- h. Preparation of responses to NHDOT's PPS&E Submission review comments.
- i. Milestone Submission Quality Reviews will be completed by senior-level staff
- j. Submission Compilation (Plotting / Copies / Design Narrative)
- k. Field Visit
- l. Client Coordination
- m. Sign Structures
  - i. Update sign quantities and cost estimate
  - ii. Finalize Sign Text Layout sheets

#### **6. Contract Plans/Mylars**

- a. Interdisciplinary Coordination
- b. Conference calls: Two (2) project update calls with NHDOT are assumed
- c. Preparation of responses to NHDOT's PS&E Submission review comments.
- d. Preparation of responses to NHDOT's Paper Mylar Submission review comments
- e. Milestone Submission Quality Reviews will be completed by senior-level staff
- f. Submission Compilation (Revisions, Plotting / Copies / Design Narrative)
- g. Electronic File Transfer w/ Project Journal
- h. Client Coordination

#### **7. Construction Services**

- a. Project Meetings and Conference calls
  - i. No specific deliverable will be provided. HNTB will provide assistance through project meetings and conference calls in order to assist the NHDOT team during construction.
- b. Respond to submittals, questions & RFIs
  - i. This effort is for responding to submittals, questions and RFI's in support of NHDOT.
  - ii. Project analyst/administration efforts have been included to assist in project invoicing, subconsultant coordination, budget/schedule preparation and maintenance, and progress reports.

**B. Structures**

Overhead Sign Foundations: HNTB will develop conceptual designs for new overhead sign structure foundations with guidance on preliminary foundation loadings provided by the NHDOT. Overhead sign structures will be bid by specification and designed by the Contractor.

Final design of sign structure foundations, in accordance with Chapter 10 of the 2015 NH Bridge Design Manual, will be completed by HNTB as part of construction phase services after the Contractor has submitted fabrication plans and design parameters for the overhead sign structures.

Overhead and cantilever sign structures will be designed in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 5<sup>th</sup> edition. Proposed median foundations that cannot be sufficiently protected by barrier will be designed to withstand vehicular collision loads in accordance with the AASHTO LRFD Bridge Design Specifications, 7<sup>th</sup> edition with 2015 Interims, Article 3.6.5.

Development of the sign foundation scope and fee is based on the following assumptions:

- All sign structures will be new ground-mounted overhead sign structures.
- The following sign structure and their disposition are anticipated:

Dover					
Location	Message	Direction	Structure Type	# of Foundations	Comments
Mainline #1 Station 1662+00 on DPR Bridge	AET collection ahead/no cash/no stopping.	NB	Bridge mount (replace existing)	0	New structure
Mainline #2 Station 1674+00	AET collection ahead/Stay in lanes/no E-ZPass will be billed via invoice	NB	Full	0	Use existing toll OH sign, structure assessment
Mainline #3 Station 1698+00	No E-ZPass No Problem	NB	Cantilever	1	New Structure
Mainline #4 Station 1716+00	AET collection ahead/no cash/no stopping	SB	Cantilever	1	New Structure
Mainline #5 Station 1701+00	AET collection ahead/Stay in lanes/no E-ZPass will be billed via invoice	SB	Cantilever	0	Use existing toll OH sign, structure assessment
Mainline #6 Station 1674+00	No E-ZPass No Problem	SB	Full	0	Use existing toll OH sign, structure assessment

NB On Ramp #7 ML Station 1666+00	AET collection ahead/no cash/no stopping	NB	Cantilever	1	New structure
<b>Rochester</b>					
Location	Message	Direction	Structure Type	# of Foundations	Comments
Mainline #8 (beyond station limits; approx. 2600' south of AET gantry)	AET collection ahead/no cash/no stopping	NB	Bridge Mount (replace existing)	0	Mount on Tebbets Road bridge, bridge assessment
Mainline #9 Station 65+00	AET collection ahead/Stay in lanes/no E- ZPass will be billed via invoice	NB	Cantilever	1	New structure
Mainline #10 Station 89+00	No E-ZPass No Problem	NB	Cantilever	1	New Structure
Mainline #11 (beyond station limits; approx. 2000' north of AET gantry)	AET collection ahead/no cash/no stopping	SB	Full	0	Use existing toll OH sign, structure assessment
Mainline #12 Station 91+00	AET collection ahead/Stay in lanes/no E- ZPass will be billed via invoice	SB	Cantilever	0	Use existing toll OH sign, structure assessment
Mainline #13 Station 69+00	No E-ZPass No Problem	SB	Cantilever	1	New structure
Total New Full Signs:				0	
Total New Cantilever Signs:				6	
Total New Foundations:				6	
Total Existing Sign/Bridge Assessments:				7	

- All proposed sign foundations will consist of spread footings.
- No more than six (6) separate foundation designs will be required.
- Final design of foundations will be completed as part of construction phase services after the Contractor has submitted fabrication plans and design parameters for the overhead sign structures.
- Draft specifications for the overhead sign structures will be provided by NHDOT.

#### 1. Preliminary Plans Submittal

- Interdisciplinary Coordination: The design team for the Overhead Sign Structures will coordinate with other design disciplines as required to advance the project.
- Conference calls: Two (2) project update calls with NHDOT are assumed.

- c. Progress / Working / Review Meetings: One (1) meeting at NHDOT is assumed
- d. Sign Foundations
  - i. Preliminary Review & Coordination:
    - (a) Review existing and proposed highway plans to locate proposed sign foundations for each structure. Complete site visit to review sign locations prior to completion of geotechnical explorations.
    - (b) Coordinate with design staff to develop anticipated sign surface area to be supported at each sign bridge location.
    - (c) Where existing sign bridges are present HNTB will review the as-built and original design information for the existing structure to determine each structure's suitability for reuse. Findings will be reviewed with NHDOT to determine whether the existing structure(s) will be reused or replaced. This scope of work has been developed assuming as-built plans and design information will be available and provided by NHDOT and that existing signs will be utilized where feasible (see sign table for basis of design efforts).
    - (d) Coordinate with the client for approval regarding each proposed sign location.
    - (e) Communicate final sign locations to geotechnical team lead so geotechnical explorations can be scheduled and completed.
  - ii. Deliverables will be limited to providing proposed foundation locations to the geotechnical design lead, no contract plans will be developed for this submittal.

## 2. Slope and Drain

- a. Interdisciplinary Coordination: The design team for the Overhead Sign Structures will coordinate with other design disciplines as required to advance the project.
- b. Conference calls: No design team coordination calls with the client are anticipated for this phase.
- c. Progress/Working/Review Meetings: No design team meetings at NHDOT are anticipated for this phase.
- d. Sign Foundations:
  - i. Review geotechnical boring data
  - ii. Preliminary Design & Analysis
  - iii. Complete preliminary foundation design
    - (1) Evaluate proposed foundation locations to determine if temporary earth support structures or shoring will be required during construction.

- iv. Preliminary Detailing & Plan Development: Start progression of sign foundation details and plans.
- v. Deliverables will include 60% plans showing proposed sign foundation locations and geometry.

### **3. Preliminary PS&E**

- a. Interdisciplinary Coordination: The design team for the Overhead Sign Structures will coordinate with other design disciplines as required to advance the project.
- b. Conference calls: Two (2) project update calls with NHDOT are assumed.
- c. Sign Foundations:
  - i. Coordination with NHDOT: Coordinate and respond to review comments.
  - ii. Refine Plans: Continue progression of sign foundation details and plans.
  - iii. Quantities and Engineer's Estimate: Prepare quantities and engineer's estimate.
  - iv. Deliverables will include preliminary PS&E plans showing proposed sign foundation locations with details and quantities.

### **4. PS&E**

- a. Interdisciplinary Coordination: The design team for the Overhead Sign Structures will coordinate with other design disciplines as required to advance the project.
- b. Conference Calls: No design team coordination calls with the client are anticipated for this phase.
- c. Progress / Working / Review Meetings: One (1) meeting at NHDOT is assumed.
- d. Sign Foundations:
  - i. Coordination with NHDOT: Coordinate and respond to review comments.
  - ii. Refine Plans: Continue progression of sign foundation details and plans.
  - iii. Quantities and Engineer's Estimate: Prepare refined quantities and Estimate.
  - iv. Deliverables will include plans for the foundation locations and designs, refined quantities, and engineer's estimate for the work.

### **5. Contract Plans/Mylars**

- a. Interdisciplinary Coordination: The design team for the Overhead Sign Structures will coordinate with other design disciplines as required to advance the project.
- b. Conference Calls: No design team coordination calls with the client are anticipated for this phase.
- c. Progress/Working/Review Meetings: No design team meetings at NHDOT are anticipated for this phase.



d. Sign Foundations:

- i. Coordination with NHDOT: Coordinate and respond to review comments.
- ii. Refine Plans: Complete preliminary foundation plans and details.
- iii. Quantities and Engineer's Estimate: Finalize quantities and Estimate.
- iv. Deliverables will include preliminary PS&E plans for the preliminary foundation locations and designs, quantities, and engineer's estimate for the work.

6. Construction Services

a. Sign Foundations:

- i. Final Foundation Design: Final foundation design will be completed after the Contractor has submitted the proposed sign structure designs.
- ii. Respond to questions and RFI's.
- iii. Deliverables will include final plans and quantities for sign foundations.

**C. Tolling Zone/Gantry and Existing Plaza Demolition**

Plans illustrating the proposed concrete slab, all conduits, loops, etc. will be developed.

This effort includes removal of the eight (8) existing toll lanes and seven (7) existing toll booths, islands and all the overhead canopy, supports, signage, etc. in Dover and in Rochester, six (6) lanes and five (5), respectively for lanes and islands, the administration buildings, toll systems equipment buildings, etc. The existing tunnels will be decommissioned, all existing infrastructure, electronics and toll collections equipment removed. This scope of work does not include an evaluation of design loads, structural analysis, design and detailing of the existing plaza in support of construction sequencing needs.

**1. Preliminary Plan**

- a. Interdisciplinary Coordination: The design team will coordinate between the various design disciplines as required to advance the project.
- b. Conference calls: Four project update calls with NHDOT are assumed.
- c. Progress / Working / Review Meetings: One meeting at NHDOT is assumed.
- d. Electrical: No work anticipated this phase.
- e. Mechanical: No work anticipated this phase.
- f. Structural:
  - i. Site Visit, Data Collection & data Review: Review existing as-built plans, inspection reports and previous rehabilitation and maintenance contracts. Two

HNTB team members will complete a site visit to review existing toll plaza condition and configuration and to collect toll plaza data and photos.

- ii. AET Roadway Slab: Initiate coordination efforts with Toll System vendor to define design criteria and requirements necessary for in pavement needs.
  - iii. AET gantry foundation locations will be finalized, and boring plan will be developed for use in geotechnical efforts.
  - iv. AET Toll Building: Initiate coordination efforts with Toll System vendor to identify proposed toll building size requirements and identify locations relative to proposed highway features and traffic control considerations.
  - v. Design Coordination: Structural team members will coordinate with other design disciplines as required to advance the project design.
- g. Toll Systems: No work anticipated this phase.

## 2. Slope and Drain

- a. Interdisciplinary Coordination: The design team will coordinate between the various design disciplines as required to advance the project.
- b. Conference calls: Two project update calls with NHDOT are assumed.
- c. Progress/Working/Review Meetings: No design team meetings at NHDOT are anticipated for this phase.
- d. Electrical: No work anticipated this phase.
- e. Mechanical: No work anticipated this phase.
- f. Structural:
  - i. AET Roadway Slab: Plans and specifications for concrete roadway extending from gantry to gantry will be developed. We assume the slab configuration and reinforcing conditions will generally be similar to the ORT roadway slabs utilized on Hooksett and Bedford ORT projects.
  - ii. AET Overhead Gantry: Plans for the tolling gantry and foundations will be developed in accordance with NHDOT and AASHTO design criteria. The plans will detail a monotube gantry and associated support brackets for tolling equipment. Foundation elements are assumed to be comprised of spread footings. This scope of work has been developed assuming both gantries will have similar designs and details (lengths will likely be different due to traffic control needs) and that the design and details will be similar to the final gantry design provided for the Hooksett ORT project or a single gantry configuration with modified design loads. The scope has also been developed assuming the design criteria and final mounting details approved by the vendor.

- iii. AET Toll Building: Building and site plans for the AET Toll Equipment will be developed. This will include coordination efforts with NHDOT Toll System Vendor to see that appropriate accommodations are provided within building.
- g. Toll Systems: HNTB will detail the required conduits and junction boxes in the vicinity of the AET concrete roadways based on coordination with the system vendor. Conduits and/or raceways will be detailed extending into the toll building.

### 3. Preliminary PS&E

- a. Interdisciplinary Coordination: The design team will coordinate between the various design disciplines as required to advance the project.
- b. Conference calls: Two (2) project update calls with NHDOT are assumed.
- c. Progress / Working / Review Meetings: -One (1) meeting at NHDOT is assumed.
- d. Electrical: HNTB will contract with Bartlett Design, Inc. to provide professional electrical and communication needs for the toll systems. This includes items such as power, lighting, electricity (including low and high voltage), communication, and lightning protection. Plans will be prepared to show proposed systems required for AET. HNTB will prepare plans and specifications under the direction Bartlett.

- i. Detailing & Plan Development

- ii. Design Coordination: Design team members will coordinate with other disciplines as required to advance the project design.

- e. Mechanical: HNTB will contract with Mechanical Systems Engineering, Inc. to provide professional mechanical design services for the toll systems. This includes items such as HVAC for the toll building. HNTB will prepare plans and specifications under the direction of Mechanical Systems Engineers, Inc. This task will include the following major work tasks:

- i. Detailing & Plan Development

- ii. Design Coordination: Design team members will coordinate with other disciplines as required to advance the project design.

- f. Structural: The design team will continue to progress the structural design and details including:

- i. AET Roadway Slab

- (1) Design & Analysis
      - (2) Detailing & Plan Development

- ii. AET Overhead Gantry

- (1) Design & Analysis
      - (2) Detailing & Plan Development

- iii. AET Toll Building:

- (1) Design & Analysis
  - (2) Detailing & Plan Development
- iv. Design Coordination: Design team members will coordinate with other disciplines as required to advance the project design
- g. Toll Systems: The design team will continue to progress the toll systems design and details as follows:
  - i. Detailing & Plan Development.
    - (1) Further develop plans
    - (2) HNTB will prepare prosecution of work special provisions and incentive/disincentive special provisions that outline how the work should be phased and when work needs to be completed to allow for adequate testing prior to opening.
  - ii. Design Coordination. This work will be coordinated with NHDOT and the toll vendors for their concurrence.
- h. Update quantities, cost estimate and Special provisions

#### 4. PS&E

- a. Interdisciplinary Coordination: The design team will coordinate between the various design disciplines as required to advance the project.
- b. Conference calls: One (1) project update call with NHDOT is assumed.
- c. Progress / Working / Review Meetings: One (1) meeting at NHDOT is assumed.
- d. Electrical: The design team will continue to progress the electrical systems design and details including:
  - i. Address Client Review Comments
  - ii. Design & Analysis
  - iii. Detailing & Plan Development
  - iv. Design Coordination
- e. Mechanical: The design team will continue to progress the mechanical systems design and details including:
  - i. Address Review Comments
  - ii. Design & Analysis
  - iii. Detailing & Plan Development
  - iv. Design Coordination
- f. Structural: The design team will continue to progress the structural design and details including:

- i. Address Client Review Comments
  - ii. AET Roadway Slab
    - (1) Design & Analysis
    - (2) Detailing & Plan Development
  - iii. AET Overhead Gantry
    - (1) Design & Analysis
    - (2) Detailing & Plan Development
  - iv. AET Toll Building:
    - (1) Design & Analysis
    - (2) Detailing & Plan Development
- g. Design Coordination: Design team members will coordinate with other disciplines as required to advance the project design.
- h. Quantities & Engineer's Estimate
- i. Special Provisions
- j. Toll Systems
  - i. Address Client Review Comments
  - ii. Design & Analysis
  - iii. Detailing & Plan Development
  - iv. Design Coordination

**5. Contract Plans/Mylars**

- a. Interdisciplinary Coordination: The design team will coordinate between the various design disciplines as required to advance the project.
- b. Conference calls: One (1) project update calls with NHDOT is assumed
- c. Progress/Working/Review Meetings with NHDOT are not anticipated for this project phase.
- d. Electrical: The design team will continue to progress the electrical design and details including:
  - i. Address Client Review Comments
  - ii. Design Coordination
- e. Mechanical: The design team will continue to progress the mechanical design and details including:
  - i. Address Client Review Comments
  - ii. Design Coordination

- f. Structural: The design team will continue to progress the structural design and details including:
  - i. Address Client Review Comments
  - ii. Design Coordination
- g. Toll Systems: The design team will continue to progress the toll systems design and details including:
  - i. Address Client Review Comments
  - ii. Design Coordination

**6. Construction Services**

The HNTB team will provide construction engineering support services during construction. This effort will generally include the following:

- a. Electrical: Respond to submittals, questions & RFIs
- b. Mechanical: Respond to submittals, questions & RFIs
- c. Structural: Respond to submittals, questions & RFIs
- d. Toll Systems: Respond to submittals, questions & RFIs

**D. Geotechnical**

Geotechnical work will be completed for this project by NHDOT including field explorations, materials testing, analyses, and geotechnical report development. HNTB's efforts will be limited to developing the boring plan, communicating geotechnical needs to NHDOT and reviewing NHDOT provided Geotechnical report and recommendations.

**1. Preliminary Plans**

- a. Coordinate with NHDOT for the completion of geotechnical work.
- b. HNTB will prepare a boring plan with boring coordinates for all proposed overhead sign structures, roadway work, and toll gantry foundations.

**2. Slope & Drain – Coordination with NHDOT and incorporation of geotechnical recommendations into the plans and documents.**

**3. Preliminary PS&E - Coordination with NHDOT**

**4. PS&E - Coordination with NHDOT**

**5. Contract Plans/Mylars - Coordination with NHDOT**

**6. Construction Services – None anticipated for this discipline**

**E. Environmental**

The HNTB team, together with environmental subconsultant Normandeau Associates, will develop environmental permits, the environmental study as well as other efforts for this project. See Normandeau's scope of work which will supplement this scope as well as the NHDOT Article I.

General elements of the environmental efforts are as follows:

- ACOE will be the lead federal agency in permitting of the improvements,
- Individual permits will be developed for each project location due to the independent utility at each location, location in two separate municipalities as well as the separation of the sites,
- An environmental study will be developed to meet NEPA requirements to include narratives on how we comply with MS4, NEPA, etc.
- All pavement area is to be treated with NHDES Alteration-of-Terrain (AOT) approved best management practices (BMP's),
- HNTB shall be aware that excavations or disturbance of the terrain in support of project development shall not be completed until presence/locations of PFAS has been determined (or not) and a plan can be developed to ensure safety of employees and public in completion of needed investigations,
- NAI will assume field investigations for invasives, wetlands and vernal pools will occur in the spring of 2020.
- Six (6) month timeframe is anticipated from submittal of permit documents to receipt of wetland permits.
- Only the two (2) soundwall locations deemed to be "reasonable and feasible" per the HMMH study will be advanced by HNTB.
- HNTB will contact the City of Rochester to assess if any future developments exist in the project area. If developments are forthcoming, HNTB and NHDOT will discuss the need to complete a noise study, if needed an amendment will be developed to support the additional soundwall location(s).
- HNTB will develop a qualitative statement for inclusion into the design narratives noting no substantial changes that warrant additional walls or the study of them.
- Soundwalls will need to be presented to the City of Rochester and need to be accepted by community. NHDOT will complete any outreach to the community beyond HNTB's presentation of the wall at a public meeting.

HNTB will complete the following aspects of the project:

- Removal of the UST's at the toll facilities will be removed as part of the project, accommodations will be developed in the plans and specs, the NHDOT will oversee removal operations during construction via a Bureau of Environment (BOE) On Call consultant,
- PFAS assessment will be a coordinated effort with BOE, a narrative will be included in the environmental study by HNTB,

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- NHDOT will complete the asbestos containing material and other hazardous material surveys (including lead) at all facilities and plazas, HNTB will incorporate the information from NHDOT into the contract documents,
- Pavement analysis report capturing the identification of drainage areas, discussion of BMP's, include the development of salt loading calculations (lane miles X 10-year average loading (from NHDOT)),
- Wetland impact plan development to include erosion control plans, 1-foot contour plans and accompanying narrative (NAI lead on narrative), none of these plans are to be included in the construction plans set per BOE,
- Limited Reuse Soils (LRS) will be addressed, quantities developed, disposal areas identified, and discussed in the environmental study, HNTB will assess the overlap of invasives and LRS and assess any limitations in disposal or placement,
- Normandeau will develop the Request for Project Review (RPR) for the cultural resource reviews and assume three (3) meetings, with HNTB to also attend.
- NHDOT to complete all archeology and above ground cultural assessments using a statewide on call consultant. NHDOT will complete e106, prepare the effects memo and if necessary, prepare the MOA. HNTB will provide support with development of location mapping (aerials with embellishments showing project areas).
- HNTB is to assume three (3) meetings in support of water resource/quality group reviews in prep for the development of NEPA needs.
- Assume extensions of culverts not replacements.
- No special studies for threatened/endangered species or exemplary natural communities will be undertaken as part of this contract.
- NHDOT will be responsible for all application fees.

Wetland plans are anticipated to consist of the following:

Description	No. of Sheets	Comments
Title Sheet	2	1 per project location
Index of Sheets and General Notes	2	1 per project location
Standard Symbols	4	2 per project location
Key Plan	2	1 per project location
Wetland Impact Plans	12	4 for Dover, 3 for Rochester & 5 for SW's
Erosion Control Plans	12	4 for Dover, 3 for Rochester & 5 for SW's
Contour Plans	12	4 for Dover, 3 for Rochester & 5 for SW's
<b>Total # of Sheets</b>	<b>46</b>	

1. **Preliminary Plans:** HNTB's subconsultant, Normandeau Associates (Normandeau), will be responsible for delineating jurisdictional wetlands in the vicinity of the proposed project. A New Hampshire Certified Wetland Scientist (CWS) will mark the jurisdictional boundary with sequentially numbered flags and will survey the flags using a hand-held



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Trimble GPS unit with sub-meter accuracy in accordance with federal and state requirements. Normandeau will also locate invasive species populations for inclusion of project plans. Normandeau will prepare a brief memo describing the functions and values of the existing resources and description of wetlands proposed to be impacted in preparation of an Environmental Study.

Also see Normandeau's scope of work which will supplement this scope as well as the NHDOT Article I.

- a. HNTB and Normandeau Associates will initiate wetland impacts assessments
- b. HNTB will coordinate with Normandeau Associates as needed to provide design information required to advance the environmental process
- c. HNTB will coordinate with Resource Agencies as needed to provide design information required to advance the environmental process
- d. HNTB and Normandeau will initiate development of the NEPA and Environmental Documents
- e. Soundwall Plan Development
  - i. HNTB will complete conceptual soundwall design and layouts to include the development of general plans and profiles, supplemented with critical cross sections.
  - ii. Confirmation of the previously developed study will be completed by HNTB to include confirmation of the soundwall elevations and noise reductions. NHDOT will provide the previously developed study for use in this effort.

## **2. Slope and Drain**

- a. Prepare Wetland Plans: HNTB will prepare standard Dredge and Fill permit plans for use by Normandeau Associates
- b. HNTB will coordinate with Normandeau Associates as needed to provide design information required to advance the environmental process.
- c. HNTB will coordinate with Resource Agencies as needed to provide design information required to advance the environmental process
- d. HNTB and Normandeau will continue development of the NEPA and Environmental Documents

Once impacts to jurisdictional wetland resources have been quantified, Normandeau will prepare a New Hampshire Department of Environmental Services (NHDES) Standard Dredge and Fill Wetland Application and all required attachments including a photo log, correspondence with various resource agencies, and GIS graphics of the project area. Normandeau will assist HNTB in preparation of permit plans for the application. Plans will depict the location and extent of jurisdictional resources and wetland impacts as well as coding the different impact areas in accordance with NHDOT practices. A table will be included on the plans providing a detailed accounting of impacts to jurisdictional resources with USACE and NHDES resource

types distinguished by column. Notes on the plans will provide all required information necessary to guide the permitting reviewers through the project.

The environmental scope has been developed based on the following assumptions:

- i. Normandeau and HNTB will attend Natural Resource Agency meetings at NHDOT to present the proposed project.
  - ii. The project will not trigger any of the thresholds that would require Wetland Mitigation under Env-Wt 302.03. Cultural/historic resource reviews will be performed by NHDOT with HNTB to attend assuming three (3) meetings for each discipline.
  - iii. Electronic versions of the Draft NHDES wetland application, including plans will be e-mailed to the NHDOT, Bureau of Environment. Upon resolution of the comments from NHDOT, ten hard copies of the Permit application, and one full size copy of the permit plans will be provided for NHDOT's use.
- e. Soundwall Plan Development
- i. HNTB will advance soundwall design and layouts to include the development of general plans, details, profiles, and quantities supplemented with cross sections.
  - ii. HNTB will finalize the noise study to include confirmation of the soundwall elevations and noise reductions. NHDOT will provide the previously developed study for use in this effort.

### 3. Preliminary PS&E

- a. Soundwall Plan Development
  - i. HNTB will advance soundwall design and layouts to include the development of general plans, details, profiles, and quantities supplemented with cross sections to near final status.
  - ii. Draft specifications will be developed.
- b. HNTB will coordinate with Normandeau Associates as needed to provide design information required to advance the environmental process.
- c. HNTB will incorporate environmental components into the plans and special provisions.

### 4. PS&E

- a. Soundwall Plan Development
  - i. HNTB will advance soundwall design and layouts to include the development of general plans, details, profiles, and quantities supplemented with cross sections to final status.
  - ii. Specifications will be finalized.



- b. HNTB will coordinate with Normandeau Associates as needed to provide design information required to advance the environmental process.
  - c. HNTB will incorporate environmental components into the plans and special provisions.
5. **Contract Plans/Mylars** – Refinement of plans per NHDOT comments.
6. **Construction Services** – No work anticipated for this phase

**F. Public Outreach**

**1. Public meetings**

- a. One (1) public meeting is anticipated in each municipality of Rochester and Dover.
- b. HNTB will develop a slideshow and present the project at each meeting.
- c. HNTB will attend one (1) dry run meeting at NHDOT prior to the formal public meeting.

**2. Website**

- a. The HNTB team will develop a website for use in disseminating information throughout the duration of the contract. Content is anticipated to include explanation of all AET operations (i.e. collection, billing, etc.), E-ZPass benefits, design progress, construction progress, changes to roadway signing for AET, FAQ's, etc.
- b. Website will be expected to be in use from January 1, 2020 until July 31, 2022.
- c. Website content shall meet all NHDOT website standards as outlined in <https://www.nh.gov/doit/vendor/documents/nh-website-standards.pdf>.
- d. Additionally, any website documents posted to a website created for this project, or that are submitted to be posted, shall meet ADA Section 508 accessibility requirements. A checklist for document compliance is provided in <https://www.section508.gov/content/build/create-accessible-documents> (go to second link down under "Checklists").
- e. Turnpike Bureau will approve the content and Richard Arcand of the Executive Office will review for compliance to requirements above.
- f. Morris Communications (MC) will send any public comments to the NHDOT, NHDOT will develop response and MC will refine content in response and post to website.
- g. A Frequently Asked Questions (FAQ) section of the site will be developed, NHDOT to provide guidance on content and HNTB to develop and update.

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- h. NHDOT will develop press releases, meeting flyers, etc. and MC will post.
- i. Conference calls/meetings will be held to support the initial development of the website.
- j. Quarterly "maintenance" and update conference calls/meetings will be held with MC and HNTB to attend, and MC to refine the website as needed.

**Appendix A****Preliminary Drawing List**

A summary of the plan sheets anticipated to be required for this project is outlined below.

Description	No. of Sheets	Comments
Title Sheet	1	
Index of Sheets and General Notes	1	
Standard Symbols	2	
Typical Sections	16	8 per project location
Summary of Quantities	30	15 per project location
Miscellaneous details	10	6 combined, 4 location specific
Construction Sign Text Layouts	2	
Sign Details	6	3 per project location
Sign Text Layout	6	3 per project location
Overhead Sign Structure Cross Sections	12	6 per project location
Key Plan	2	1 per project location
General Plan	7	4 for Dover and 3 for Rochester
Drainage Notes	6	3 per location
Profiles	7	4 for Dover and 3 for Rochester
Landscaping Plans	7	Requirement noted in Article I
BMP Sheets	10	5 each location for details and plan sheets
Erosion and Sediment Plans	7	Requirement noted in Article I
Curbing, Barrier and Pavement Layout	7	4 for Dover and 3 for Rochester
Pavement Marking and Signing	7	4 for Dover and 3 for Rochester
ITS Plans	16	Dover location only
Traffic Control	34	35 sheets Bedford ORT, 62 sheets Hooksett
Toll Gantry Details	8	2 locations, 5 each for Bedford & Hooksett
Toll Zone Plans	6	3 each location
Electrical and Mechanical	20	18 Bedford and 20 Hooksett
Cross Sections	50	assumes 3 per sheet
Soundwall Geometric	4	2 per location
Soundwall Standard Details	4	utilize same details for both locations
Soundwall Elevation Tables	2	1 per location
Soundwall General Plans	5	1500 lf per sheet, 6600 lf of wall
Soundwall Profiles	5	1500 lf per sheet, 6600 lf of wall
Soundwall Cross Sections	45	assumes 3 per sheet

**Total # of Sheets****345**



## Appendix B

### **Anticipated Project Schedule**

The design schedule for this project will need to be determined based upon Governor and Council approval and NHDOT notice-to-proceed.

## Appendix C

### **Assumptions:**

- Oversight and related coordination of the tolling efforts with Kapsch will be covered under an On-Call Agreement task, not part of this contract. HNTB's level of hours under this contract have been developed with this expectation.
- HNTB will present the project to the TCC and develop the draft designation letter for refinement by the NHDOT. The development of a "Significant" Level II TMP is anticipated. NHDOT will provide HNTB with sample Level II TMP memos for reference.
- There are no right-of-way needs for monumentation, plan recording efforts, whatsoever under this contract.
- All proposed & temporary work will be within State ROW.
- No salt loading or chloride assessments will be required as part of this project.
- Limited reuse soils will need to be addressed, NHDOT has provided the latest guidelines and directive. If requirements change warranting increased design efforts, HNTB will assess need for scope and fee modifications.
- The NHDOT will complete any archeological needs under their statewide contracts. No archeological efforts are required of the HNTB, other than incorporation of information from others into the environmental study.
- HNTB will use the new NHDOT invoicing format.



September 12, 2019

David Smith, PE  
Project Manager  
HNTB CORPORATION  
6 Loudon Road, Suite 201. Concord, NH 03301

Re: 29440-Dover-Rochester toll project – Environmental Services – Revised Scope

Dear David:

Normandeau Associates, Inc. (Normandeau) is pleased to present this revised work scope for natural resource survey and permitting services for the conversion of the existing Dover and Rochester, New Hampshire conventional toll facilities to All Electronic Tolling (AET) facilities (29440-Dover-Rochester toll project). The project design will include the elements as described in Part A of the Article 1 Agreement for Professional Services. We understand this project to include preliminary and final design as well as construction support services. Normandeau will provide natural resource mapping, permit application preparation, an Environmental Report, and permitting follow-on services as outlined below.

#### **Task 1. Desktop Review - Resource Identification**

Normandeau will review existing natural resource information available for the Project Area, including aerial photographs, soil maps, tax maps, and other New Hampshire natural resource mapping and publically available data. We expect to obtain, assess, and map, as appropriate, resource information as identified below:

- New Hampshire Wildlife Action Plan habitat maps and rankings and connectivity mapping;
- New Hampshire Natural Heritage Bureau (NHNHB) database for information regarding known rare, threatened or endangered species or exemplary natural communities in or near the Project Area;
- As needed, follow-up consultation with NHNHB and/or New Hampshire Fish and Game (NHF&G) regarding potential rare species impacts associated with the Project;
- U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation System (IPAC System) to review for federally listed species and/or habitat, including appropriate IPaC questionnaire(s);

- NH Division of Historical Resources (NHDHR) file search (now electronic) and submission of a Request for Project Review for cultural resources;
- State 303(d) list to identify water quality impairments and TMDLs within the project area;
- Available Surface Water Protection Area mapping, monitoring wells and public and private wells as identified by NHDES OneStop and city data sources;
- Federal Emergency Management Agency (FEMA) floodplain and floodway information and agency follow-up, as needed;
- Soil series maps, including the distribution of prime, statewide, local, or unique farmland soils;
- Tax maps and abutter lists;
- Publicly owned lands, bicycle and pedestrian trails, and privately conserved lands, including lands purchased under the LCIP and the LCHIP programs;
- Section 6(f) properties as provided by the NH Department of Natural and Cultural Resources (DNCR);
- Records of hazardous materials or contamination, including PFAS data, within 1,000 feet of the project limits, and landfills within 4,000 feet of the project limits from the NH OneStop data base; and
- Air and Noise reports/documentation from the Department of Transportation.

## Task 2.0 Wetland and Stream Delineation

A Normandeau New Hampshire Certified Wetland Scientist (NHCWS) will delineate wetland boundaries within the road ROW (or within 100 feet of the road, if so directed) in accordance with the US Army Corps of Engineers (USACE) three-parameter approach outlined in the USACE Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetlands Manual: Northcentral and Northeast Region (2012). Wetland boundaries will be flagged with consecutively numbered and labeled surveyors flagging. Wetlands will be delineated in 2019, and potential vernal pools identified. A vernal pool survey will be conducted in spring of 2020 as appropriate.

Normandeau will establish one or two paired upland and wetland data plots in representative wetland types based on the dominant vegetation present within the wetland. Wetland delineation and plot flagging will be located using a global positioning system (GPS) capable of sub-meter accuracy under ideal conditions. We will conduct a wetland functional assessment based on the USACE Highway Methodology Workbook Supplement (1999) for all wetlands. All wetlands will be classified following the US Fish and Wildlife classification method (Cowardin, et. al, 1979), and Priority Resource Areas (PRAs) as described in the proposed new wetland rules will be identified. All wetland resources and data plots will be photographed. Normandeau will provide the natural resource data in a digital format for the Project team for use on Project plans. One



draft and one final succinct wetland report, stamped by a NHCWS and describing the wetlands and other natural resource findings, will be submitted to the Project team for review and included with permit applications.

Normandeau will also identify, flag and characterize streams that are present within the Project Area, including the one that parallels the proposed sound wall north of the Rochester Toll Plaza. Stream delineations will extend at least 100 ft upstream and downstream of the crossing. We will complete NHDOT field data forms for all Tier 2 and 3 streams in the project area. We will flag wetlands, stream top of bank (TOB) and Ordinary High Water (OHW) for perennial streams, or channel for intermittent streams, with labeled surveyor's flagging and locate these features using GPS.

A preliminary review indicates that there is one Tier 2 stream and three Tier 1 streams mapped in the project area. At this time, it is not clear if any streams will need to be relocated for project construction, but culvert extensions or replacements are likely. This scope of work includes stream survey using the NH Stream Crossing Worksheet for all streams in the project area, and NHDOT Stream Crossing Assessment Worksheets for Tier 2 (and/or Tier 3) streams in the project area.

Wetland and stream impacts will be quantified by Normandeau and HNTB, and compared to state mitigation thresholds. If mitigation is needed, Normandeau will calculate the Aquatic Resource Mitigation (ARM) Fund payment amount. If the ARM fund payment would exceed \$100,000, Normandeau will also coordinate with the Dover and/or Rochester Conservation Commissions for local projects and review the Aquatic Restoration Web Mapper for culverts along the Turnpike or State roads in Dover and/or Rochester that could be candidates for replacement under the Stream Passage Improvement Program (SPIP). Mitigation options will be presented at a Natural Resource Coordination Meeting. This work scope does not include field surveys of potential mitigation projects, but Normandeau could provide this under an amended work scope if needed.

Normandeau will identify the reference line for the Bellamy River in Dover from available mapping and aerial photos, as the reference line is within 250 feet of the proposed road surfacing work (but outside of the 100-ft coastal wetland buffer zone), and separated from the Spaulding Turnpike ROW by private property. The applicable buffer zones will be provided in GIS format for inclusion on the plan set.

### Task 3.0 Contaminated Properties

Normandeau will obtain a radius report from Environmental Data Resources, Inc. (EDR) that will identify potential sources of contamination in and near the project area. Sources of data reviewed by EDR include Sanborn Maps, historical aerial photos, historical topographic maps, and city directories. Normandeau will review the current on-line PFAS maps and summarize the results

of both data collection efforts in a memo and provide this to NHDOT in advance of the Environmental Report. We are not proposing to conduct soil surveys, water quality sampling, groundwater surveys, or hazardous material surveys beyond recording (by photo and GPS) incidental observations of potential contamination during natural resource surveys. Information on limited reuse soils will be provided by HNTB for inclusion in the Environmental Report.

#### **Task 4.0 Invasive Species Assessment**

In conjunction with the wetland delineation effort, invasive species in the Project Area will be identified, and their locations sketched on Project plans and located with GPS. The Environmental Report will include a description and classification of the invasive species identified, and a digital file of their location(s) will be generated and provided to the Project team.

#### **Task 5.0 Farmland Soils**

Preliminary review of the on-line Web Soil Survey indicates that Prime Farmland soils and Farmland Soils of Statewide Importance are located within the project corridor, although farming is not currently taking place within the ROW. As confirmed by NHDOT, submittal of a Farmland Conversion Impact Rating form to Natural Resource Conservation Service (NRCS) is not necessary as there is no federal funding or assistance for this project. Farmland soils will be briefly described in the Environmental Report.

#### **Task 6.0 Threatened and Endangered Species**

##### *Northern Long-eared Bat Assessment*

The project will require the clearing of approximately 4-5 acres of trees for sound wall construction, possibly clearing for stormwater treatment, and preliminary review of the USFWS IPaC webtool identifies northern Long-eared bat as potentially present. Normandeau will complete the online Northern Long-Eared Bat 4(d) rule determination key for use in consultation with USFWS. Normandeau will conduct informal consultation with USFWS and NHDOT to verify compliance with the 4(d) rule. The results of the assessment will be summarized in the Environmental Report. We assume that the project will not require an incidental take permit or Habitat Conservation Plan.

##### *Other Species*

A preliminary IPaC review indicates that there are no other federally listed species in the Project area. A preliminary NHB data check indicates that State-listed plant and wildlife species may be present in the Project area in Dover. To the extent that any appropriate species-specific surveys

or habitat assessments can be conducted with minor additional effort during wetland resource delineation efforts, this is included in Normandeau's work scope. Normandeau will coordinate with the appropriate state and federal agencies to obtain relevant information and guidance on rare species impact avoidance and minimization. We will also consult with NH Fish and Game (NHF&G) regarding habitat connectivity opportunities and limitations within the project area.

## Task 7.0 State and Federal Permitting

The type and scope of permitting required for this project depends on the scale and nature of proposed impacts within jurisdictional wetlands, streams and protected shoreland. The extent of jurisdictional wetlands is unknown until the delineation is conducted, and additional information from the Project team is required to determine the extent and type of impacts. Normandeau will coordinate with USACE, NHDES, NHDOT and HNTB, and attend up to three NHDOT Natural Resource Agency Coordination meetings to describe environmental conditions, impacts, and determine/confirm the permits required. We will provide copies of relevant permit applications to the Cocheco River Local Advisory Committee and attend one meeting if requested. Draft and final permit applications will be provided for each program as appropriate. Support during agency application review in the form of written responses to questions or comments and phone/email correspondence will be provided as noted in Task 8. We assume that the Project will comply with the substantive requirements of the NHDES Alteration of Terrain program, and that no permit application will be needed. Based on currently available information, the following permitting efforts are expected:

### Task 7.1 NHDES Wetland Permitting

Normandeau anticipates a standard NHDES Dredge and Fill permit will be required under the New Hampshire Wetland Rules for work associated with the installation of sound walls, and possibly other Project work. We expect that the new Wetland rules may be in effect when this application is submitted. We have included the submission of two standard NH DES Wetland permit applications (one each for Dover and Rochester) in our work scope to address all project-related wetland and stream impacts (and likely shoreland impacts, as noted in Task 7.2). We will confirm this approach at a Natural Resource Agency meeting. Impact calculations will be tallied by wetland type, permanent and temporary impact, and by municipality by HNTB. HNTB will also provide a construction sequence, any culvert design data required, and a planting plan for restored areas, to which Normandeau can provide species recommendations. Normandeau will prepare permitting documents for filing with the NHDES Wetland Bureau including but not limited to:

- Current Application Form
- USGS Location Map, including the approximate boundaries and size of the contributing watershed

- Narrative addressing the NHDES Rule Env-Wt 302.04(a), Review Criteria for Major/Minor Projects
- Information required by Env-Wt 903.03, Information Required for a Stream Crossing Application
- Wetland Permitting Plans, including: (Plans to be prepared by HNTB and reviewed by Normandeau)
  - Existing Conditions Plan
  - Proposed Condition Plans (i.e., General Plan), including information required by Env-Wt 903.03
  - Impact Sheet, showing temporary and permanent impacts and instream diversion/BMPs
  - Erosion and Sedimentation Control Plan Sheet
- NHB review and IPaC supporting documentation
- Cultural Coordination
- Construction Sequencing
- Photos of impact areas
- Items from NHDOT Wetland Application Checklist, as required
- ARM fund worksheets, if applicable, or mitigation report/plans (prepared by others or under amended scope)

Impact avoidance and minimization will be discussed in the application, but restoration design plans, and compensatory mitigation other than an ARM fund payment is not anticipated at this time. Normandeau will discuss mitigation requirements at one of the Natural Resource Coordination meetings, provide an estimated ARM fund payment, and discuss possible alternative mitigation options under this work scope. However, alternative mitigation design, and restoration design plans would be addressed under a subsequent work scope.

#### Task 7.2 NHDES Shoreland Permitting

It appears that a Shoreland application or notification under the Shoreland Water Quality Protection Act will be required for work on the road surface in Dover that falls within 250 feet of the Bellamy River. This work should meet the requirements for a Permit by Notification submittal, but may require a full Shoreland Permit application, which Normandeau will prepare. If the new wetland rules are in place prior to Project permitting, it is expected that one application form to cover both the state wetlands and shoreland permits in Dover will be submitted.

#### Task 7.3 USACE Permitting

Based on currently available information, Normandeau anticipates authorization from the USACE will be required under Section 404 of the Clean Water Act for any proposed discharge of fill within jurisdictional Waters of the US, including wetlands and streams in the vicinity of the sound walls. We expect this project (Rochester and Dover segments) will meet the criteria for a

USACE Programmatic Permit #23, Wetland, Stream, River and Brook crossings. A pre-construction notification (PCN) level submission involves the completion of the USACE Appendix B - Corps Secondary Impacts Checklist to be included in the NHDES wetland applications for review by the USACE. Normandeau will also incorporate responses from the NHDHR. However, further archeological or historical surveys will be conducted by NHDOT.

#### **Task 7.4 Coastal Zone Consistency**

Dover falls within the NH Coastal Zone, and work involving federal funds or federal permits, including a Section 404 Wetland permit, may need to demonstrate consistency with Coastal Zone Management Act (CZMA) through submission of a project summary and determination request. Projects that qualify for a programmatic permit under the CWA may not need this additional action. The need to demonstrate consistency will be determined during NHDOT Natural Resource Agency Coordination meetings. At this time, we have assumed that we will need to draft a determination request for review by the NH Coastal Program for the work to be conducted in Dover.

#### **Task 7.5 2017 NH Small Municipal Separate Storm Sewer Systems (MS4) General Permit**

The project will be subject to the 2017 NH Small MS4 General Permit under Section 2.3.6 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management) as it is expected to create one or more acres of disturbance and will create new impervious surface area. Dover and Rochester, as well NHDOT, have filed notices of intent to obtain coverage under the 2017 MS4 permit and the project will have to meet certain conditions of the MS4 permit related to treatment of stormwater. The permit conditions that the project will be subject to as well as a discussion of how the project will comply with those permit conditions will be included in the Environmental Report (Task 6.0).

#### **Task 8.0 Environmental Report**

Normandeau will draft and send initial contact letters to local and state officials for their input regarding the proposed project. We will draft an Environmental Report documenting the results of the research and surveys conducted as described above in Tasks 1 through 6 for the selected alternative, and incorporate documentation from others on the Project team. We will describe compliance with the 2017 NH Small MS4 Permit conditions for development/redevelopment projects and its applicability to the proposed project and the substantive requirements of the Alteration of Terrain program, including Best Management Practices based on design and analysis of treatment systems by HNTB. HNTB will provide chloride loading calculations. We assume that the Project will meet the requirements of Section A under the MS4 program and fully capture the water quality volumes within existing ROW.

We expect that others will provide the following for the environmental report as follows:

- From HNTB: purpose and needs statement, alternatives analysis (with some input from Normandeau), the proposed action description, design plans, and details; and information on social and economic resources and traffic;
- From NHDOT: environmental justice, noise and air quality, visual resources; and guidance on limited reuse soils.

Normandeau will draft the other sections of the report and identify environmental commitments. Relevant reports, correspondence, meeting notes, data and photos will be appended. One draft and one final Environmental Report with attachments will be provided in electronic format for Project team review.

### **Task 9.0 Agency Coordination**

Normandeau will attend up to three of the Department's monthly Natural Resource Agency meetings, up to three of the Department's monthly Cultural Resource meetings, and one meeting with the Cocheco River Local Advisory Committee. We will provide natural resource-related graphics, data, and other information and assist in the preparation of meeting notes. We have also included time for one scientist to attend two public informational meetings, one in Rochester and one in Dover.

### **Task 10.0 Permitting Follow-on Services**

Normandeau will provide support to the Project during permit application review and completion of contract plans and bid documents. We have included 12 hours, as suggested by NHDOT, for the following preliminary list of services:

- Attend one NHDOT Natural Resource Agency Coordination meeting (post-permit application submittal);
- Response to agency review comments;
- Follow-up emails and phone calls as needed.

We have also included some time for attendance at a pre-bid meeting and construction kick-off meeting, should this be requested.

### **Assumptions**

- Project area limits/area of potential effect and access permission will be provided to Normandeau.
- Wetland delineation and vegetation surveys can only occur when soils are not frozen and there is no snow cover present. Vernal pool surveys can only be completed in spring.

- Rare species surveys or studies beyond what is noted in this work scope, if needed, will require a scope addition.
- Ground elevation survey data for stream assessment (such as cross-sections and profiles) will be collected by others. Normandeau will collect substrate data and horizontal measurements (bankfull width, flood-prone width, watershed area via streamstats, etc.) and classify the streams.
- Others will be responsible for evaluating Limited Reuse Soils, and the presence of lead paint and asbestos, and provide narrative for inclusion in the Environmental Report as appropriate.
- HNTB will provide all existing conditions, impact quantification, and permit-related drawings and figures associated with the Project, and incorporate natural resource mapping/notes provided by Normandeau for all necessary permit applications;
- Design of Best Management Practices, Erosion and Sedimentation Controls, etc. will be provided by HNTB.
- Normandeau will review draft and final preliminary and final design plans and provide natural resource related information.
- Normandeau will prepare one draft and one final Environmental Report with input from others. The document will be provided electronically to the Project team for review.
- Normandeau will document wetland resource findings relevant to state permit applications in a single brief report, by topic, for review by the Project team and submission with state permit applications. One final and one draft report is included.
- We assume that we will submit two NHDES wetland permit applications, one shoreland permit by notification, and that the Project will meet the requirements for the US Army Corps of Engineers Programmatic general permit, and no individual 401 water quality certificate will be needed.
- Draft permit applications will be provided to the Project team and final applications will incorporate edits and comments. One round of review is included.
- We expect the new DES wetland rules and application forms will apply to this project.
- Normandeau will determine if compensatory mitigation is required. This scope includes computation of an ARM fund payment (In-Lieu-Fee), contact with the local Conservation Commissions, and desktop review of potential culvert replacement options, but not field surveys or design of compensatory mitigation or restoration projects.
- Permit application and mitigation fees, as applicable, are not included in our cost estimate.
- We are including attendance at three NHDOT Natural Resource Agency meetings, three NHDOT Cultural Resource meetings, and one LRAC meeting during the design phase, and one Natural Resource agency meeting after application submittal. We are also including attendance at two public information meetings (one in each town).

Please contact me at 603 637-1150 or [lcarbonneau@normandeau.com](mailto:lcarbonneau@normandeau.com) if you have questions or comments regarding this proposed scope of work.

Sincerely,

*NORMANDEAU ASSOCIATES, INC.*

*Lee E. Carbonneau*

Lee Carbonneau, NHCWS/PWS  
Project Manager

*Curtis Thalken*

Curtis Thalken  
Sr. Vice President, COO





## **MORRIS COMMUNICATIONS**

PR ■ Public Involvement ■ Public Affairs

### **Scope of Work: Rochester/Dover AET/9.10.19**

Scope for Communication Services - Website Creation and Content Management for Rochester/Dover AET

#### **Tasks:**

- 1. Initial Planning, Create Site Plan, Domain Name, Hosting:** 10 hours
- 2. Initial Content Creation/Coordination** 30 hours
- 3. Website Creation: Management** 60 hours
- 4. Website Development and Specifications:** (see below)
  - Website to be designed in WordPress.
  - The site will be ADA-compliant to the extent deemed possible by the client. Certain pre-existing graphics may be unable to be adapted.
  - Pages that don't have content finalized at start of project will act as placeholders with approved filler content.
  - Multiple designs of certain pages may be provided as needed.
  - At launch, website will be moved from the staging site to the live server, and:
    - Bug tested and cross-browser tested
    - Forms will be fully tested to make sure they go to the correct place.
    - All form downloads will be tested to make sure they download correctly and download the correct PDF
    - Website will be fully ADA compliant with exceptions only as noted above
    - Meta titles and descriptions will be added to each page.
    - Auto-generated sitemap will be added
- 5. Ongoing Website Management/Maintenance/Updates**
  - Quarterly Maintenance Meetings/Conference Calls (14) 28 hours
  - Website Maintenance (1.5 hr/monthly/30 months @ Vendor Rate) (see below)
  - Manangement/Content Editing (3 hours per month/30 months) 90 hours

**Total Hours: 218**

207-329-6502

cmorris@morriscomm.net

2 High Tide Road Kennebunkport, ME 04046



## **MORRIS COMMUNICATIONS**

PR ■ Public Involvement ■ Public Affairs

Labor: \$50/hour

Overhead: 85%

Fee: 10%

**Total Labor Cost: \$22,181.50**

### **Expenses/Outside Vendor Costs**

- |                                         |            |
|-----------------------------------------|------------|
| • Domain Name – 3 years @ \$9.95        | \$ 29.85   |
| • Hosting – 3 years (wpengine.com)      | \$1,050.00 |
| • Website Vendor (creation/maintenance) | \$4,700.00 |
| o \$2,000 site creation                 |            |
| o \$2,700 ongoing maintenance           |            |

**Total Vendor Cost: \$5,779.85**

**Total Scope Cost: 27,961.35**

*Attachment 1*

**CERTIFICATION WITH REGARD TO THE PERFORMANCE OF  
PREVIOUS CONTRACTS OR SUBCONTRACTS SUBJECT TO  
THE EQUAL OPPORTUNITY CLAUSE AND THE FILING OF REQUIRED REPORTS**

The CONSULTANT X, proposed subconsultant \_\_\_\_\_, hereby certifies that it has X, has not \_\_\_\_\_, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Order 11246 and that it has X, has not \_\_\_\_\_, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

HNTB Corporation  
(Company)

By: 

Vice President

(Title)

Date: January 7, 2020

**Note:** The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by consultants and proposed subconsultants only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime consultants and subconsultants who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such consultant submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

(Revised: June, 1980) **NOTE: TO BE COMPLETED BY CONSULTANT WHEN SIGNING AGREEMENT.**

*Attachment 2*

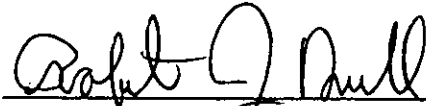
**CONSULTANT DISCLOSURE STATEMENT  
FOR PREPARATION OF  
ENVIRONMENTAL EVALUATIONS**

I hereby affirm that I have read and reviewed the Council on Environmental Quality (CEQ) regulation [40 CFR 1506.5(C)] and related guidance issued by CEQ and that pursuant thereto this firm has no financial or other interest in the outcome of this project.

I further hereby affirm that the information provided herein is true and correct and acknowledge that any knowingly false statement or false representation as to any material part contained herein may subject me to a fine and/or imprisonment, pursuant to pertinent provisions of the United States Code.

January 7, 2020

(Date)



(Signature)

Attachment 3

**CERTIFICATION OF CONSULTANT/SUBCONSULTANT**

I hereby certify that I am the Vice President and duly-authorized representative of the firm of HNTB Corporation and that neither I nor the above firm I here represent has:

- (a) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above CONSULTANT) to solicit or secure this Contract,
- (b) agreed, as an express or implied condition for obtaining this Contract, to employ or retain the services of any firm or person in connection with carrying out the Contract, or
- (c) paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above CONSULTANT) any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out the Contract:

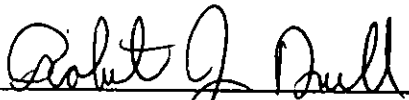
I/WE do also, under penalty of perjury under the laws of the United States, certify that, except as noted below, the company or any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of Federal funds): (a) is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency; (b) has not been suspended, debarred, voluntarily excluded or determined ineligibility by any Federal agency within the past three years; (c) does not have a proposed debarment pending; and (d) has not been indicted, convicted or had a civil judgment rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

except as here expressly stated (if any):

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted, indicate below to whom it applies, the initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

I acknowledge that this certificate is to be furnished to the State Department of Transportation and the Federal Highway Administration, U. S. Department of Transportation, in connection with this Contract involving participation of Federal-aid highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

January 7, 2020  
(Date)

  
(Signature)

**CERTIFICATION OF STATE DEPARTMENT OF TRANSPORTATION**

I hereby certify that I am the Director of Project Development of the Department of Transportation of the State of New Hampshire, and the above consulting firm or its representatives has not been required, directly or indirectly, as an express or implied condition in connection with obtaining or carrying out this Contract, to:

- (a) employ or retain, or agree to employ or retain, any firm or person, or
- (b) pay, or agree to pay, to any firm, person, or organization, any fee, contribution, donation, or consideration of any kind:

except as here expressly stated (if any):

January 16, 2020  
(Date)

  
(Signature)

*Attachment 5*

**CERTIFICATION FOR FEDERAL-AID CONTRACTS  
EXCEEDING \$100,000 IN FEDERAL FUNDS**

The prospective participant certifies, by signing and submitting this agreement, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower-tier subcontracts which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

Attachment 9

IN WITNESS WHEREOF the parties hereto have executed this AGREEMENT on the day and year first above written.

Consultant

WITNESS TO THE CONSULTANT

By: Cheer Butler  
Senior Project Analyst

Dated: January 7, 2020

CONSULTANT

By: Robert J. Hall  
Vice President  
(TITLE)

Dated: January 7, 2020

Department of Transportation

WITNESS TO THE STATE OF NEW HAMPSHIRE

By: Keith J. Givens

Dated: 1/16/20

THE STATE OF NEW HAMPSHIRE

By: [Signature]  
Director of Project Development

FOR DOT COMMISSIONER

Dated: 1/16/20

Attorney General

This is to certify that the above AGREEMENT has been reviewed by this office and is approved as to form and execution.

Dated: 1/28/2020

By: Alvin B. Greenstein  
Assistant Attorney General

Secretary of State

This is to certify that the GOVERNOR AND COUNCIL on \_\_\_\_\_ approved this AGREEMENT.

Dated: \_\_\_\_\_

Attest:

By: \_\_\_\_\_  
Secretary of State

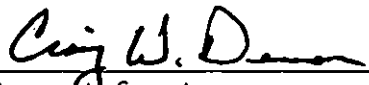


## CERTIFICATION OF AUTHORITY

State of Missouri )

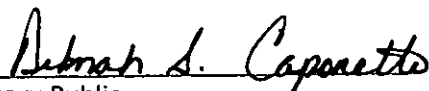
County of Jackson )

I, Craig W. Denson, being first duly sworn according to law, depose and say that I am the Corporate Secretary of HNTB Corporation. The attached is a complete, true and correct copy of a Certificate of Authority certifying that Robert J. Driscoll – Vice President, has been authorized by the Board of Directors of the Corporation to enter into agreements and contracts for usual and customary engineering and planning services with the Dover-Rochester AET Conversion - 29440, and to incur ordinary and necessary obligations in connection therewith in the name of and on behalf of HNTB Corporation.

  
Corporate Secretary

Date: January 7, 2020

Subscribed and sworn to and before me this 7<sup>th</sup> day of January, 2020.

  
Notary Public

My commission expires: August 21, 2022



# State of New Hampshire

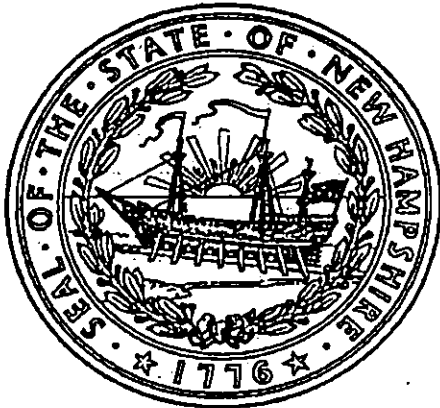
## Department of State

### CERTIFICATE

I, William M. Gardner, Secretary of State of the State of New Hampshire, do hereby certify that HNTB CORPORATION is a Delaware Profit Corporation registered to transact business in New Hampshire on January 22, 1993. I further certify that all fees and documents required by the Secretary of State's office have been received and is in good standing as far as this office is concerned.

Business ID: 182502

Certificate Number: 0004492413



IN TESTIMONY WHEREOF,

I hereto set my hand and cause to be affixed  
the Seal of the State of New Hampshire,  
this 9th day of April A.D. 2019.

A handwritten signature in cursive script, appearing to read "William M. Gardner".

William M. Gardner

Secretary of State



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
01/07/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER IMA, Inc.  51 Corporate Woods 9393 W. 110th Street, Suite 600 Overland Park, KS 66210	1-913-982-3650	CONTACT NAME: Business Insurance Manager PHONE (A/C No. Ext): 816-527-2511 FAX (A/C No.): 816-472-4060 E-MAIL ADDRESS: businessinsurancemgr@hntb.com
INSURED HNTB Corporation  340 County Road, Suite 6C Westbrook, ME 04092	INSURER(S) AFFORDING COVERAGE INSURER A: ZURICH AMER INS CO INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:	
		NAIC # 16535

## COVERAGES

CERTIFICATE NUMBER: 58282670

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADOL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:		GLO 0769451-00	01/01/20	01/01/21	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRE NON-OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY		BAP 0769452-00	01/01/20	01/01/21	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
	UMBRELLA LIAB EXCESS LIAB DED RETENTION \$	<input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE				EACH OCCURRENCE \$ AGGREGATE \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> N/A	WC 0769453-00	01/01/20	01/01/21	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

HNTB Job #73060; Professional Services for Dover-Rochester AET Conversion; Project No. 29440  
If required by written contract, the State of New Hampshire is Additional Insured as respects General Liability and Auto Liability subject to terms, conditions and exclusions of the policies. Minimum 30 days' notice of cancellation, 10 days' notice for non-payment of premium. Deductibles: GL is \$0.00 and AL is \$100K.

## CERTIFICATE HOLDER

Office #178  
HNTB Job #73060  
State of New Hampshire  
John O. Morton Building  
  
7 Hazen Drive  
P.O. Box 483  
Concord, NH 03302-0483

USA

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



# CERTIFICATE OF LIABILITY INSURANCE

5/1/2020

DATE (MM/DD/YYYY)

1/7/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

**PRODUCER** Lockton Companies  
444 W. 47th Street, Suite 900  
Kansas City MO 64112-1906  
(816) 960-9000

**CONTACT****NAME:****PHONE****(A/C, No, Ext):****E-MAIL****ADDRESS:****FAX****(A/C, No):****INSURER(S) AFFORDING COVERAGE****NAIC #****INSURER A:** Lexington Insurance Company

19437

**INSURER B:****INSURER C:****INSURER D:****INSURER E:****INSURER F:**

**INSURED** 1445095 HNTB CORPORATION  
340 COUNTY ROAD, SUITE 6C  
WESTBROOK ME 04092

**COVERAGES****CERTIFICATE NUMBER:** 16497198**REVISION NUMBER:** XXXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b>		NOT APPLICABLE			<b>EACH OCCURRENCE</b> \$ XXXXXXXX
	<input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR					<b>DAMAGE TO RENTED PREMISES (Ea occurrence)</b> \$ XXXXXXXX
						<b>MED EXP (Any one person)</b> \$ XXXXXXXX
						<b>PERSONAL &amp; ADV INJURY</b> \$ XXXXXXXX
	<b>GEN'L AGGREGATE LIMIT APPLIES PER:</b>					<b>GENERAL AGGREGATE</b> \$ XXXXXXXX
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC					<b>PRODUCTS - COM/POP AGG</b> \$ XXXXXXXX
	<b>OTHER:</b>					\$
	<b>AUTOMOBILE LIABILITY</b>		NOT APPLICABLE			<b>COMBINED SINGLE LIMIT (Ea accident)</b> \$ XXXXXXXX
	<input type="checkbox"/> ANY AUTO					<b>BODILY INJURY (Per person)</b> \$ XXXXXXXX
	<input type="checkbox"/> OWNED AUTOS ONLY	<input type="checkbox"/> SCHEDULED AUTOS				<b>BODILY INJURY (Per accident)</b> \$ XXXXXXXX
	<input type="checkbox"/> HIRED AUTOS ONLY	<input type="checkbox"/> NON-OWNED AUTOS ONLY				<b>PROPERTY DAMAGE (Per accident)</b> \$ XXXXXXXX
						\$ XXXXXXXX
	<b>UMBRELLA LIAB</b>	<input type="checkbox"/> OCCUR	NOT APPLICABLE			<b>EACH OCCURRENCE</b> \$ XXXXXXXX
	<b>EXCESS LIAB</b>	<input type="checkbox"/> CLAIMS-MADE				<b>AGGREGATE</b> \$ XXXXXXXX
	<b>DED</b> <b>RETENTION \$</b>					\$ XXXXXXXX
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b>		NOT APPLICABLE			<b>PER STATUTE</b> <b>OTH-ER</b>
	<b>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)</b>	<input type="checkbox"/> Y <input type="checkbox"/> N				<b>E.L. EACH ACCIDENT</b> \$ XXXXXXXX
	<b>If yes, describe under DESCRIPTION OF OPERATIONS below</b>	N/A				<b>E.L. DISEASE - EA EMPLOYEE</b> \$ XXXXXXXX
A	<b>PROFESSIONAL LIABILITY</b>	N	061853762	5/1/2019	5/1/2020	<b>E.L. DISEASE - POLICY LIMIT</b> \$ XXXXXXXX
						\$2,000,000 PER CLAIM/ ANNUAL AGGREGATE

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: HNTB JOB #73060; PROFESSIONAL SERVICES FOR DOVER-ROCHESTER AET CONVERSION; PROJECT NO. 29440. PROFESSIONAL LIABILITY SIR = \$75,000 PER CLAIM.

**CERTIFICATE HOLDER**

16497198

STATE OF NEW HAMPSHIRE  
JOHN O. MORTON BUILDING  
7 HAZEN DRIVE  
P.O. BOX 483  
CONCORD NH 03302-0483

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

**AUTHORIZED REPRESENTATIVE**

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