



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



AUG 15 '16 PM 3:27

Handwritten initials and signature

VICTORIA F. SHEEHAN
COMMISSIONER

WILLIAM CASS, P.E.
ASSISTANT COMMISSIONER

Bureau of Highway Design
August 9, 2016

Her Excellency, Governor Margaret Wood Hassan
and the Honorable Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

1. Authorize the Department of Transportation to amend PO #4001569, with Jacobs Engineering Group, Inc., Bedford, NH and Pasadena CA, Vendor #176231, for the final design for the reconstruction and widening of a 2.7-mile section of NH 12 in the Towns of Walpole and Charlestown, by increasing the total amount payable by \$455,002.79 (from \$1,443,075.97 to \$1,898,078.76) for additional design services associated with a substantial design revision, effective upon Governor and Council approval. 100% Federal Funds.

Funds to support this request are available in the following account in State FY 2017, and are contingent upon the availability and continued appropriation of funds in FY 2018, with the ability to adjust encumbrances between State Fiscal Years through the Budget Office, if needed and justified:

Table with 3 columns: Account Number, FY 2017, FY 2018. Rows include Consolidated Federal Aid and Gen Consultants Non-Benefit.

2. Further, authorize to amend the contract's completion date from December 31, 2016 to December 31, 2017, effective upon Governor and Council approval.

EXPLANATION

On August 10, 2011, the Governor and Council authorized the subject engineering and environmental consultant services Agreement (Item #135; copy of Resolution attached) in the amount of \$1,443,075.97 to complete the final design, contract plans, specifications, special provisions, estimates of quantities and costs, and right-of-way plans for the reconstruction and widening of NH 12 and associated railroad relocations in the Towns of Walpole and Charlestown. The project begins at a point along NH 12 at the intersection of Main Street in the village of North Walpole and continues northerly 2.7 miles to the NH 12A intersection with NH 12 in the village of South Charlestown. In addition, the project includes the relocation of approximately 2.5 miles of active railroad track adjacent to the southerly and northerly portions of the project. This project is currently included in the State's Ten-Year Transportation Improvement Plan (Walpole-Charlestown 14747).

This amendment to the Agreement is for additional work associated with a substantial design revision that avoids impacts to the New England Central Railroad and saves approximately \$16M in construction costs. The original design's proposed roadway alignment required relocation of approximately 2.5 miles

of active railroad track in order to minimize impacts to the Connecticut River. Ledge excavation adjacent to the track would require very controlled blasting techniques and only a four-hour window of operation, which would be very expensive and wasn't apparent at the outset of the design process. As a result, the roadway alignment is being shifted 4 to 12 feet west of the existing roadway, which will eliminate impacts to the railroad, but create impacts to the river. Vegetated armored stone slopes will be used along the river to help stabilize the river bank and minimize river impacts.

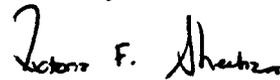
This is a substantial change in scope of design, but a necessary one given the increased cost and construction complexity of the original layout. This design revision has been reviewed and concurred with by the natural resource and permitting agencies, and has been reviewed and endorsed by the Citizens Advisory Committee and representatives of the Towns. Even though the design contract is being extended by a year due to this revision, the overall construction completion is still in keeping with the Ten Year Plan and previous commitments. An initial action project to relocate the Railroad (originally planned for Fall 2016) will not be needed and overall mainline construction is planned for 2018 and 2019, one year sooner than the road reconstruction would have been completed.

The increase in fee as proposed is commensurate with the revised scope of work and the corresponding additional engineering and technical services to be furnished. This project funding is 80% Federal funds with 20% State match. Turnpike toll credit is being utilized for New Hampshire's match requirement, effectively using 100% federal funds.

This amended 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 amended 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 amend this Agreement for consulting services as outlined above.

Sincerely,



Victoria F. Sheehan
Commissioner



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



VICTORIA F. SHEEHAN
COMMISSIONER

WILLIAM CASS, P.E.
ASSISTANT COMMISSIONER

WALPOLE-CHARLESTOWN
X-A000(487)
14747 (Final Design)
(Agreement Dated February 20, 2013, PO 4003160)
(Fee Increase Amendment)

Bureau of Highway Design
Room 200 (CMF)
Tel. (603) 271-2171
Fax: (603) 271-7025

July 25, 2016

Mr. Clinton S. Mercer, P.E.
Project Manager
Jacobs Engineering Group Inc.
Two Executive Park Drive
Bedford, NH 03110

Dear Mr. Mercer:

This letter amends the Table of Contents, Article I, Description of Professional Services to be Rendered; Sections A through K, and Article II, Compensation of Consultant for Cost Plus Fixed Fee Agreements; Section A, in the above-referenced Agreement.

The Table of Contents is being amended to add Attachment A – Article I (Revised Design).

Article I, Sections A through K are being amended by deleting the original Article I and replacing it with Attachment A – Article I (Revised Design).

Original Article I, Section K (Date of Completion) had been amended twice to extend the date of completion. The new Article I, Attachment A, contains the third amended date of completion. The original and amended dates are as follows:

Original Completion Date	December 31, 2014
Amended to	December 31, 2015
Amended to	December 31, 2016
By this letter, amended to	December 31, 2017

Article II, Section A (General Fee) is being amended to increase the total amount payable under this Agreement by \$455,002.79 as payment for additional design services by Jacobs Engineering Group, Inc. and subconsultant Comprehensive Environmental, Inc. for work associated with a substantial design revision.

The portion of Article II, Section A (General Fee) specifying the dates for the fee and manhour estimates is being amended to read as follows:

“The total amount to be paid under this AGREEMENT shall not exceed \$1,898,078.76, the sum of the amounts shown in Article II, Section B (which amount is based on the CONSULTANT’S fee and manhour estimates of April 26, 2011 and May 11, 2016),...”

Furthermore, this fee increase revises the amounts in Article II, Section B (Summary of Fees) as follows:

- Increases the estimated amount of (a) actual CONSULTANT'S salaries, costs applicable to actual salaries, salary burden (direct and indirect) and administrative costs attributable to overhead by \$288,317.26, from \$1,116,589.09 to \$1,404,906.35.
- Increases the amount of (b) fixed fee to cover profit and non-reimbursed costs by \$23,494.37, from \$111,658.91 to \$135,153.28.
- Does not change the estimated amount of (c) reimbursement for direct, out-of-pocket expenses, which remains at \$27,350.00.
- Increases the estimated amount of (d) reimbursement for actual cost of subconsultant Comprehensive Environmental. Inc. by \$143,191.16, from \$187,477.97 to \$330,669.13.

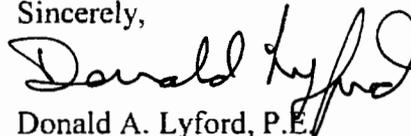
Also, the first sentence in paragraph 1 of Article II, Section C (Limitation of Costs) is being amended to read as follows:

"Costs incurred against this AGREEMENT shall not exceed \$1,898,078.76, unless otherwise authorized."

The above additional work revises the total amount payable under this Agreement, which increases from \$1,443,075.97 to \$1,898,078.76 by this amendment.

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

Sincerely,



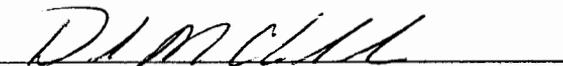
Donald A. Lyford, P.E.
Project Manager



Approved: Peter E. Stamnas, P.E.
Director of Project Development

We concur in the above Amendment.

JACOBS ENGINEERING GROUP, INC.

By: 

Title: MANAGER

DAL/wjh
attachments

s:\highway-design\towns\walpole\14747\letters\jacobs 07-25-16 al.doc

AGREEMENT AMENDMENT

WALPOLE-CHARLESTOWN, X-A000(487), 14747

JACOBS ENGINEERING GROUP, INC.

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

Consultant

WITNESS TO THE CONSULTANT

By: [Signature]

Sr. Project Manager

Dated: 7/25/16

CONSULTANT

By: [Signature]

Manager (Title)

Dated: 7/25/16

Department of Transportation

WITNESS TO THE STATE OF NEW HAMPSHIRE

By: [Signature]

Dated: 8/4/16

THE STATE OF NEW HAMPSHIRE

By: [Signature]

Director of Project Development

^{For} DOT COMMISSIONER

Dated: 8/4/16

Attorney General

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

Dated: 8/12/16

By: [Signature]
Assistant Attorney General

Secretary of State

This is to certify that the GOVERNOR AND COUNCIL on _____ approved this amended AGREEMENT.

Dated: _____

Attest:

By: _____
Secretary of State

ATTACHMENT A – ARTICLE I (REVISED DESIGN)

APRIL 26, 2016

WALPOLE-CHARLESTOWN
X-A000(487)
14747
(REVISED DESIGN)

This AMENDMENT deletes Article1, Sections A. through K, of the AGREEMENT in their entirety and adds the following:

A. LOCATION AND DESCRIPTION OF PROJECT

This project involves the reconstruction and widening of NH 12 in the Towns of Walpole and Charlestown. The project begins at a point along NH 12 at the intersection of Main Street in the village of North Walpole and continues northerly 2.7 miles to the NH 12A intersection with NH 12 in the village of South Charlestown. The new roadway alignment will be shifted to the west of the existing alignment to avoid impacts to the existing New England Central Railroad infrastructure. The roadway typical for NH 12 is proposed to have an eleven-foot wide lane in each direction and five-foot wide paved shoulders.

B. SCOPE OF WORK (GENERAL)

The scope of the work involves the final design and preparation of contract plans, specifications, and estimates for the layout described above. Ground survey detail provided by the DEPARTMENT will be used to develop the required final design and contract plans.

The design 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, treatments to minimize environmental impacts, highway signage, pavement marking, lighting, and highway landscaping.

The CONSULTANT shall also incorporate improvements necessitated by development that may take place on properties adjacent to the highways.

The CONSULTANT will develop color plan graphics for the DEPARTMENT's use in meetings and coordination with the public. The colored plans will be developed at the Slope and Drain, PPS&E and PS&E submittals, 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 shoreland impacts, wetland impacts, erosion control, and water quality improvements. The CONSULTANT shall tabulate the shoreland and wetland impacts for the project, and complete the shoreland and wetland permit applications with all applicable attachments for impacts.

Coordination may be required between the DEPARTMENT, the Railroad and the Towns of Walpole and Charlestown. 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.

A Project Advisory Committee has been utilized through the Preliminary Design development of the project and is expected to continue to work with the DEPARTMENT during Final Design. The CONSULTANT may need to provide support documents or drawings for use at Project Advisory Committee meetings. Attendance at these meetings by the CONSULTANT is not anticipated at this time.

C. SCOPE OF WORK (GEOTECHNICAL)

The DEPARTMENT shall perform the full geotechnical program required for the project, including the complete design and engineering required for the proposed rock slopes along the Connecticut River and other locations on the project, and foundations for roadway and drainage components (i.e., sign structures, box culverts, etc.). The DEPARTMENT shall provide the CONSULTANT with the geotechnical recommendations, plans, and details that define the specific requirements associated with the project geotechnical elements, and shall review the CONSULTANT'S plans for conformance to geotechnical requirements. In support of the DEPARTMENT's geotechnical program, the CONSULTANT shall provide support for the 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 bridge structures, as well as highway design elements to include but not limited to water quality BMPs, roadways, retaining walls box culverts, etc. No geotechnical work by the CONSULTANT is anticipated.

D. SCOPE OF WORK (ENVIRONMENTAL)

The design of the permanent erosion and sedimentation control and water-quality features shall be the responsibility of the CONSULTANT. The development of the Temporary Erosion Control and Stormwater Pollution Prevention Plan (SWPPP) (a permitting requirement during construction of the project) shall not be the responsibility of the CONSULTANT. However, recommended controls shall be addressed during final design to the extent that appropriate items, quantities, and an appropriate layout are developed for bidding purposes. Permanent erosion and sedimentation control and water-quality features shall be shown at the Slope and Drain Plan submission with design backup calculations complete. Conceptual erosion and sedimentation control and water-quality plans shall be part of the Preliminary Plans. The CONSULTANT shall furnish pre and post development design calculations with Q2, Q10, Q25, Q50 flows and water quality volumes, as appropriate. Site locations for BMPs, estimated areas and design elevations shall be proposed in sufficient detail to complete geotechnical investigations of each site.

In addition, the CONSULTANT shall be responsible for the following:

- The preparation of a Categorical Exclusion Reevaluation (CER). This CER will reevaluate the Categorical Exclusion previously prepared by the DEPARTMENT in September 2011 based upon the above layout and updated natural, cultural and socioeconomic resource impact investigations completed under this scope of work. The DEPARTMENT and the FHWA shall be provided the opportunity to review and comment on the CER. Upon addressing comments from both the Department and the FHWA, the CONSULTANT shall prepare the Final CER.
- If necessary, at the direction of the DEPARTMENT, the CONSULTANT shall update the September 2011 Section 4(f) Evaluation based upon the above layout and coordination with the cultural resource agencies.
- The DEPARTMENT shall complete any necessary additional phases of archaeological, architectural or contamination investigation. The DEPARTMENT shall provide the CONSULTANT with the final reports detailing the results of these investigations for incorporation by the CONSULTANT into the above referenced CER.
- All applicable environmental permits and supporting documentation, including photographs will be completed by the CONSULTANT. It is assumed that this project will qualify for coverage under the Army Corps of Engineers Programmatic General Permit, and that an Individual Army Corps permit and subsequent Water Quality Certification will not be necessary.
- The CONSULTANT's Certified Wetland Scientist shall verify and update the existing wetland delineations within the area of potential effect.
- The CONSULTANT shall complete an underwater survey to determine the presence or absence of the federally endangered Dwarf Wedge Mussel within the area of potential effect. The CONSULTANT shall assist the DEPARTMENT with informal Section 7 consultation with the US Fish & Wildlife Service (USF&WS).
- Based upon an updated NH Natural Heritage Bureau search to be completed by the CONSULTANT, the CONSULTANT shall complete an aquatic and terrestrial plant survey of the area of potential effect to determine the presence or absence of any potential federal or state-listed threatened or endangered plant species or habitats. This survey shall include federally listed *Scirpus ancistrochaetus* (northeastern bulrush), which the USF&WS has indicated is known to occur in proximity to the project area. The DEPARTMENT shall provide copies of reports from prior studies within the project area.
- If necessary, at the direction of the DEPARTMENT, the CONSULTANT shall prepare a Biological Assessment, or similar documentation, to assist the DEPARTMENT with

formal Section 7 consultation with the FHWA and the USF&WS regarding the Dwarf Wedge Mussel and/or the northeastern bulrush.

- If necessary, at the direction of the DEPARTMENT, the CONSULTANT shall prepare an Essential Fish Habitat (EFH) Assessment of the project area. The DEPARTMENT shall provide a copy of the prior assessment completed within the project area.
- In consultation with the DEPARTMENT, the CONSULTANT shall initiate, lead and provide minutes for necessary natural and cultural resource agency coordination meetings necessary to complete the environmental review and permitting process.
- The CONSULTANT shall determine final estimates of impacts to flood storage and develop mitigation recommendations as may be required.
- Investigate the need for a Letter of Map Revision (LOMR) for the Connecticut River in Walpole and Charlestown. Assist the Department with the coordination, as needed with the Army Corps of Engineers, OEP and/or FEMA regarding the LOMR. A Hydraulic analysis, to include both the northern and southern project segments, will be required as supporting documentation for the LOMR investigations. The CONSULTANT's effort will include the incorporation of approximately twenty (20) additional FEMA Flood Insurance Study (FIS) cross-sections for the existing condition into the HEC-RAS model and incorporation of the proposed condition into the HEC-RAS model for the entirety of the northern and southern project segments. No new Hydrologic data input is proposed to be entered into HEC-RAS beyond the existing FEMA FIS data (Atlas 14, "un-studied" areas, changed sub-watershed, etc.).

[If a rise in elevation over 0.0 feet over the Base Flood Elevation is determined then the DEPARTMENT will complete a LOMR FEMA review package based on post-construction as-built survey data, including completion of forms MT-2 Form 1 and 2; Section F. Sediment Transport of Form 3; alternatives documentation for Section 65.12 compliance; and preparation of a certified topographic work map developed in GIS utilizing available GRANIT data as detailed in FEMA MT-2 Form 2. In addition, the DEPARTMENT will provide notification of and coordination with the local officials regarding proposed floodplain changes.]

- Incorporate water quality treatment measures [Best Management Practices (BMPs), treatment swales] into the overall project design, and evaluate their environmental impacts (such as archaeology sensitivity, wetland impacts, hazardous materials, etc.). The BMPs and stormwater management design shall meet the NHDES Alteration of Terrain regulations and the NH Stormwater Management Manual criteria. NHDES BMP worksheets shall be completed and submitted as part of the Drainage Report.

- Quantify, estimate and summarize the invasive species removal items for the PPS&E, PS&E, Draft Contract Plans and Contract Plans submissions. The CONSULTANT shall update the invasive species delineations provided by the DEPARTMENT, as necessary.
- Coordination of final design plan submissions and wetland impact accounting, as well as follow-up coordination on permit conditions. Coordination with NHDES will be the responsibility of the DEPARTMENT.
- The CONSULTANT will prepare an updated in-lieu fee compensatory mitigation package with supporting materials. The DEPARTMENT shall submit the mitigation package and associated fees (impact and in-lieu fees), and is responsible for payment of all fees.
- Minimizing impacts to floodplain areas to the greatest extent practicable during the final design.
- Developing erosion control plans substantially conforming to (NHDES) PART Env-Wt 501.02 to include existing and finished grade contours at 2-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 information will also be included in the project Proposal for the Contractors’ use during the bidding period.

The CONSULTANT’S plans shall include all commitments made in the environmental documents to the extent practicable.

Determination of surface and subsurface hazardous material contamination, including mildly contaminated soils, obtaining samples, testing, mitigation and development of a Soils Management Plan is not included in this Scope of Work. The DEPARTMENT shall provide CONSULTANT with unit item numbers, quantities, unit prices and special provisions for any work related to hazardous materials. The CONSULTANT is responsible for incorporating such information into the contract documents.

The CONSULTANT is responsible for and limited to the number of field visits and meetings as described in the Fee Proposal for the various work elements, coordination requirements, and submissions described in this Scope of Work.

E. SCOPE OF WORK (FINAL DESIGN)

1. The development of base plans by the CONSULTANT using updated ground survey provided by the DEPARTMENT. The CONSULTANT shall develop plans at the scale of 1" = 50', unless otherwise noted. 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 refinement of the alignment, grades and intersections of the proposed roadway, as shown on the preliminary conceptual designs furnished by the DEPARTMENT.
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, the Federal Highway Administration and/or any other STATE or Federal agency that may be required.
4. The design and preparation of contract plans for construction of the roadway, structures, traffic control plans, construction phasing plans, drainage facilities (including Best Management Practices for permanent erosion and sedimentation-control and water-quality features), and appurtenances, in accordance with the policy and procedures of the DEPARTMENT and the provisions of this AGREEMENT. The plans shall include all commitments made in the environmental documents to the extent practicable.
5. The design and development of all permanent guide, warning and regulatory signs, including the quantity summary sheets with guidance from the DEPARTMENT. This shall include site reviews and documentation of the existing signing into the DEPARTMENT's Database. 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. The sign text layout details shall be formatted and submitted in a manner acceptable to the DEPARTMENT. The DEPARTMENT will develop the permanent construction sign package with the CONSULTANT responsible for incorporation of the permanent construction sign package into the contract plans, including the quantity summary sheets. 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 will be responsible to identify all conflicts and to make necessary adjustments to highway signing.
6. The design and development of all pavement marking layouts, item numbers, item description, quantities, 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.
7. The incorporation of utility relocations, as designed by others, into the contract plans.
8. The incorporation of all ITS and Smart Work Zones, including plans, special provisions, unit item numbers, quantities, unit prices, as designed by others, into the contract plans.

9. Structural design for drainage or roadway elements (i.e. headwalls, culverts, retaining walls, bridge pier protection, etc.) are not included in the Scope of Work. CONSULTANT shall verify adequate depth of cover over the pier footings of NH Route 12A Bridge based on survey provided by DEPARTMENT.
10. A Traffic Management Plan (TMP) per NHDOT's Guidelines for Implementation of the Work Zone Safety and Mobility Policy dated October 12, 2007 (Policy No. 601.01) is not included in this Scope of Work.

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. In addition, the CONSULTANT shall make a continuous effort, during each phase of the design, to monitor costs and seek ways to minimize the overall cost of the project.

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 and provided in a timely manner.

The CONSULTANT shall submit for review, as requested, progress prints 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. All horizontal alignment notes, including traverse line notes furnished by the DEPARTMENT, shall be computed by the CONSULTANT to include coordinates. Right-of-way abstracting shall be furnished to the CONSULTANT in MicroStation format.

Designs shall conform to the current standards, specifications, policies and guidelines enumerated in the Federal-Aid Policy Guide, Subchapter G, Part 625, or to 23 Code of Federal Regulations, Part 625 and the DEPARTMENT'S Design Manual, Standard Plans for Road Construction (2010).

Frequent 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. The CONSULTANT shall modify the design, as necessary, based upon the updated survey information.

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 and include appropriate supporting calculations and materials (i.e. plan areas). The PS&E submission and contract plans shall have had complete final and "three-way" checking.

The CONSULTANT shall verify all computations and design calculations. The CONSULTANT shall furnish two (2) permanent, single sided, 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. The CONSULTANT'S stamp shall not cover the geotechnical design, engineering, reports, or any other geotechnical documents. Stamps shall be those of the professional engineers who prepared them or under whose direct supervisory control they were prepared.

The CONSULTANT is responsible for and limited to the number of field visits and meetings as described in the Fee Proposal for the various work elements, coordination requirements, and submissions described in this Scope of Work.

F. SCOPE OF WORK (UTILITIES)

The utility coordination for this project will be performed by the DEPARTMENT. 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.

The CONSULTANT is responsible for and limited to the number of field visits and meetings as described in the Fee Proposal for the various work elements, coordination requirements, and submissions described in this Scope of Work.

G. MATERIAL FURNISHED BY THE DEPARTMENT OF TRANSPORTATION

The DEPARTMENT will furnish the following data to the CONSULTANT:

1. Electronic files in English units of the following information in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT, for incorporation into the plans by the CONSULTANT.
 - a. All existing survey and baseline data on disk or by electronic transmission, and notes and note reductions in the format outlined in the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT. An electronic ground model will be provided, if available, along with all existing information that can be used to create a model.
 - b. Electronic preliminary horizontal and vertical alignments for the project limits as envisioned. This data will be in MX format and coordinate (x, y, z) data (ASCII) format, in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT.
 - c. Any additional surveys of adjacent parcels, mitigation sites, wetland boundaries or other pertinent items deemed necessary will be processed and incorporated by the DEPARTMENT.
 - d. Electronic drawings in MicroStation format of roadway typical cross-sections and other detail sheets shall be provided, when available from the DEPARTMENT'S CAD/D library, upon request by the CONSULTANT, in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT.
 - e. 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 received from the utilities in paper or electronic format) into the plans, in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT.

- f. Prints of any information outlined in Article I.G.1.a. thru e above, both existing and proposed, when available, for verification by the CONSULTANT.
2. Prints of the following information:
 - a. Any additional information (e.g., abstracting, utilities, etc.) for the CONSULTANT to incorporate into the plans, in accordance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT.
 - b. Available critical cross-sections 100 feet left and right of the existing baseline or within the current limits of ground data. The CONSULTANT shall be responsible for any remaining coverage necessary.
3. Electronic drawings of roadway typical cross sections and other available detail sheets for inclusion in the contract plans.
4. Prints and electronic files of existing conditions not previously provided to the CONSULTANT. Reduction and incorporation of this material shall be the responsibility of the CONSULTANT.
5. Electronic drawings in MicroStation format of the right-of-way data, property lines, and parcel owners. These electronic files containing abstracting information will be updated as necessary throughout the development of the project. The CONSULTANT shall be prepared to incorporate refinements, from the DEPARTMENT, to the electronic files as needed.
6. 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.
7. Necessary traffic counts and crash data as collected by the DEPARTMENT.
8. 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.
9. The DEPARTMENT will serve on the team with the CONSULTANT in developing 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 complications with concurrent work, utilities and closures. The CONSULTANT shall complete the final design and the associated quantity calculations.

10. 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.
11. The DEPARTMENT will furnish a list of permanent construction signs and warning devices reflecting the general construction. The CONSULTANT shall be responsible for the incorporation of these signs into the contract plan(s) (including the quantity summary sheets).
12. Sketches, layouts and items for landscaping within the project. The CONSULTANT shall be responsible for incorporating this material into the plans and project documents.
13. 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.

H. 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 develop an acceptable reporting system capable of indicating project status on at least a monthly basis for all critical activities of the project. Monthly progress reports shall be submitted by the CONSULTANT to the Project Manager, giving the percentage of completion of the work required by this AGREEMENT. These monthly progress reports shall be received by the DEPARTMENT by the 10th day of each month. All correspondence shall include the STATE and Federal project numbers as well as the municipality's name.

I. 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.

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. Final construction plans, Right-of-Way plans and cross-section sheets shall be submitted on quality paper prints (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 applicable. The final electronic plan submittal shall also include one PDF per plan set for the project, and one PDF of each sheet; this is applicable to all plan sets provided (Construction, Right-of-Way, Wetlands, Shoreland, etc.). All files shall be submitted in conformance with the DEPARTMENT'S CAD/D Procedures and Requirements in effect at the time of execution of this AGREEMENT. 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 in effect at the time of execution of this AGREEMENT. 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 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 existing information with the CONSULTANT, particularly in regard to the proposed design criteria, predicted traffic, preliminary soil data, expected Best Management Practices for erosion and sedimentation control

and water-quality issues, conceptual traffic control and topography of the project area, the CONSULTANT shall prepare and submit to the DEPARTMENT three 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, including local roads.
- 2) All roadway cross-sections at 50-foot intervals (except 25-foot intervals in ledge areas) and drive cross-sections, 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 recut 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 treatment of local roadways affected by the project, along with significant construction appurtenances and other design features.
- 4) The alignment (horizontal and vertical) of major detours 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 phase to assist in the assessment of the conceptual traffic control phasing and conceptual location of overhead sign structures
- 5) Conceptual Best Management Practices for erosion and sedimentation control and water-quality issues shall be shown with approximated flows. A presentation and narrative will be required to explain the concept for approval.
- 6) Preliminary typical sections with top-line template.
- 7) Proposed right-of-way layout with bounds.

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

- 1) Conceptual Traffic Control Plan and construction phasing.
- 2) Erosion and sedimentation control measures (permanent and temporary).
- 3) Recommended water quality treatment.
- 4) Conceptual design for mitigation areas and summary of wetland impacts.
- 5) Earthwork balances and availability.
- 6) Potential closed drainage and underdrain outlets, and cover over drainage structures.
- 7) Right-of-way involvement.
- 8) Potential conflicts with major utilities.
- 9) Proposed present and future signal interconnect and coordination.

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 railroad and 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 Drain Plans – Roadway

The Slope and Drain Plans submission shall consist of five (5) 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 plans shall include typical sections, plan views, profiles, guardrail locations, and cross sections with complete template plotted and appropriate references on the plans relative to 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 Practices for permanent and temporary erosion and sedimentation control features and water quality appurtenances shall be shown accompanied by backup calculations. 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 Drain submission, the CONSULTANT shall submit the Traffic Control Plans in near-final form (roll pans, at a minimum) showing temporary slopes, lane uses and widths, overhead-sign structures, temporary traffic signals, temporary guardrail and barrier locations, temporary drainage, temporary easements, profiles, temporary drives, detour cross sections and superelevations, etc. with backup calculations. Construction phasing shall be shown with narratives for each phase.

At this submission, a design narrative and a revised construction estimate shall be prepared and submitted by the CONSULTANT based on the best information and design features shown in this submission relative to the anticipated construction including any detours or temporary widenings. The estimate should be broken out to include the estimated amounts based on the anticipated contract breakout.

Following incorporation of the DEPARTMENT'S comments on the Slope and Drainage Submission, the CONSULTANT shall submit Wetland Impact plans (with Erosion Control plans) and Shoreland Impact plans showing permanent and temporary impacts for each wetland for inclusion with the wetland permit applications. 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 each construction contract and the final build-out for this project.

c. Utility Plans

Following submission and review of the Slope and Drainage 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 (5) sets of cut sheet plans (paper prints) of the front sheet, plans, profiles, and 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 in effect at the time of execution of this AGREEMENT. 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, sign structures, traffic signals, slope limits, guardrail, final template plotted on cross-sections, detours and detour cross sections, traffic control issues with construction phasing, underdrain, drive locations, sidewalks, clearing and grubbing limits, fencing requirements, building demolition and lighting and

signal conduit. Also, the plans shall reflect all existing detail, existing drainage and existing utilities. The intent is to have incorporated all comments from the preliminary right-of-way submission and 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. This plan set will not be reviewed and comments will not be given to the CONSULTANT for this submission by the DEPARTMENT. 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

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-marking-layout plans (including sign text layout sheets), traffic signal plans, complete traffic control plans, cross-section sheets and necessary detail sheets. Also, landscaping and grading plans shall be included, if required. 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 markings, lighting, conduit and pull boxes, 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 a design narrative, 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 each estimate in a format furnished by the DEPARTMENT. Two single sided bound copies of the quantity calculations shall be furnished with the estimate. Quantity calculations for this submission (and subsequent submissions) shall include adequate backup (e.g. graphics and sample calculations) to clearly identify the location of item quantities and the method of calculation. The plans shall reflect all comments from the Slope and Drain Plans submission and issues that appear during final design. One bound copy of the drainage-computations book (as revised, based on Slope and

Drain 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, a Design Narrative, two bound copies of the revised quantities book, 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. Draft Contract Plans (Prints)

Upon approval of the foregoing in writing by the DEPARTMENT, the CONSULTANT shall proceed to prepare and submit to the DEPARTMENT for approval the Draft Contract Plan submission, which shall consist of three complete sets of paper prints of the construction plans, a Design Narrative, one bound copy of the revised Quantity Book, any final Special Provisions required and a draft final estimate of costs. These draft contract plans and documents shall reflect all comments resulting from the PS&E review.

g. Contract Plans 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 PS&E 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 set of paper prints. The paper set shall be submitted prior to the final submission. Also, all CONSULTANT backup documents shall be resubmitted to reflect the Draft Contract plans comments and final contract plan conditions. The CONSULTANT shall also submit a Design Narrative, two bound copies of the final Drainage, Guardrail, and Superelevation 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) Plan and profile sheets.
- (5) Detail sheets and/or special sheets required (including, but not limited to, standard symbols, sign text layout sheets, drainage notes, ITS sheets, BMP details).
- (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. Right-of-Way Plans

Right-of-way plans shall consist of a separate set of plans for the purpose of negotiating and defining the required right-of-way for the project.

Final right-of-way plans shall be developed to include:

- a. Front sheet
- b. Property-layout plan sheets 1"=200'-scale (or as appropriate) showing existing detail, complete parcel boundaries, proposed roadway layout, parcel numbers, property owners' names and access points granted
- c. Summary sheets
- d. Geometric layout sheets
- e. Purchase plan sheets showing all impacts (temporary or permanent)

Based on the current design, the DEPARTMENT has negotiated agreements with all affected property owners except TransCanada (Parcel 3, 10, 23, 31, 34) Len-Tex (Parcel 4, 6), NECR (Parcel 4-1, 18, 20, 29), DRED (Parcel 12), and Golden Knight (Parcel 24). The proposed design revisions will eliminate the need for acquisitions on Parcel 6, 12, 20, 24 and 29. To the extent practicable, the CONSULTANT shall design the improvements to avoid additional right-of-way impacts to parcels for which negotiations have been completed. It may be necessary to complete the right-of-way plans in stages, with work in some areas being accomplished very early in the project schedule. Right-of-way plans shall be in Imperial units. The CONSULTANT shall be prepared to provide working (progress) right-of-way plans (front sheet, summary sheets, geometric layout sheets, and plan sheets) (four sets of paper prints) concurrent with the Slope and Drain Plans submission, if requested. Where the proposed right-of-way lines have been firmly established, acquisition calculations shall be performed. Acquisition and easement calculations may be submitted in handwritten format. The purpose of this working (progress) submission is to show anticipated areas of acquisition and easements, as well as the correct format of the right-of-way plans. These plans shall also show the acquisition limits for (both) the revised design and the current design, (re: parcels for which negotiations have already been completed) for review by the DEPARTMENT.

The preliminary right-of-way submission (four sets of paper prints) shall be submitted shortly after the CONSULTANT'S submission of the overall Slope and Drain plans. The preliminary right-of-way plans shall include a front sheet, summary sheets, geometric layout sheets, and all plan sheets. Acquisition and easement areas shall be calculated and summary boxes filled in. Handwritten format is acceptable.

The right-of-way purchase plans shall be submitted after the CONSULTANT has received and incorporated the DEPARTMENT'S Slope and Drain, and preliminary right-of-way plan comments. The CONSULTANT shall be prepared to make corrections and/or revisions as required. Upon DEPARTMENT review and written approval of the purchase plan submission, four full size and four half scale sets of paper prints and an electronic (pdf) copy will be required for use by the DEPARTMENT'S Bureau of Right-of-Way. The CONSULTANT shall be prepared to make revisions to the final right-of-way plans based on the DEPARTMENT'S negotiations with property owners.

In the event that the DEPARTMENT needs to acquire a particular parcel in advance of completing the right-of-way plan process, the CONSULTANT shall be prepared to submit a working (progress) print(s) containing the parcel(s) in question. The working (progress) print(s) are intended to be construction plans showing the impacts, easements, etc., with summary boxes illustrating impacts to the parcel(s).

J. DATE OF COMPLETION

In accordance with the Governor and Council Resolution authorizing this AGREEMENT AMENDMENT, the revised date of completion for the professional design services rendered under this AGREEMENT is December 31, 2017.

CERTIFICATE OF AUTHORITY

I, Brian Scher, do certify that I am the Assistant Secretary of Jacobs Engineering Group Inc., a corporation duly organized under the laws of the State of Delaware, in the united State of America (the "Company"). I do further certify that David M. Chamberlain is an Operations Manager of the Company and is duly authorized by the By-Laws, Articles of Incorporation, general resolutions and other authority of the Company to execute and deliver for on behalf of the Company, for this Amendment to the Walpole Charlestown Contract [(X-A000(487), 14747)]. I further certify that such authority has not been repealed, rescinded, or amended.

IN WITNESS WHEREOF, I have hereunto set my hand and attached the Corporate Seal of the Company on this 25th day of July, 2016.



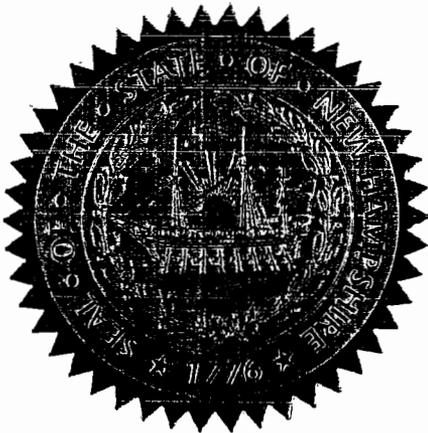
Brian Scher
Assistant Secretary

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 JACOBS ENGINEERING GROUP INC. a(n) Delaware corporation, is authorized to transact business in New Hampshire and qualified on August 30, 1996. I further certify that all fees and annual reports required by the Secretary of State's office have been received.



In TESTIMONY WHEREOF, I hereto set my hand and cause to be affixed the Seal of the State of New Hampshire, this 7th day of July, A.D. 2016

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)
08/15/2016

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 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 LIC #0437153 Marsh Risk & Insurance Services CIRTS_Support@internal.jacobs.com 777 S. Figueroa Street Los Angeles, CA 90017-5822	1-212-948-1306	CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS: FAX (A/C, No): 1-212-948-1306
INSURED Jacobs Engineering Group Inc. 155 North Lake Avenue, 9th Floor Pasadena, CA 91101	INSURER(S) AFFORDING COVERAGE	
	INSURER A: ACE AMER INS CO	NAIC # 22667
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES CERTIFICATE NUMBER: 47591810 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	ADDL/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 <input checked="" type="checkbox"/> CONTRACTUAL LIABILITY GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		HDO G27853766	07/01/16	07/01/17	EACH OCCURRENCE \$ 250,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 250,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 250,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 250,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS		ISA H09042398	07/01/16	07/01/17	COMBINED SINGLE LIMIT (Ea accident) \$ 500,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	Y/N	SCF C48605291 (WI)	07/01/16	07/01/17	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A	WLR C48605254 (AOS)	07/01/16	07/01/17	E.L. EACH ACCIDENT \$ 1,000,000
A	If yes, describe under DESCRIPTION OF OPERATIONS below		WCU C4860528A (LA, OH, TX)	07/01/16	07/01/17	E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	PROFESSIONAL LIABILITY "CLAIMS MADE"		EON G21655065 007	07/01/16	07/01/17	PER CLAIM/PER AGG 2,000,000 AGGREGATE DEFENSE INCLUDED

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
OFFICE LOCATION: Manchester, NH 03103. PROJECT MGR: Clinton Mercer. CONTRACT MGR: Michael Perry. RE: Walpole-Charlestown X-A000(487) 14747 Final Design. Final Design of 3 miles of roadway and 2.5 miles of railroad on NH 12 in the town of Walpole and Charlestown New Hampshire. CONTRACT NUMBER: Walpole-Charlestown X-A000(487) 14747. CONTRACT END DATE: 12/31/2017. PROPOSAL NUMBER: NEX000CX. SECTOR: Public. *\$2,250,000 SIR FOR STATES OF: LA, OH, TX. The State of New Hampshire is added as an additional insured for general liability & auto liability as respects the negligence of the insured in the performance of insured's services to cert holder under contract for captioned work. \$1,000 deductible is included on the Professional Liability coverage. *THE TERMS, CONDITIONS, AND LIMITS PROVIDED UNDER

CERTIFICATE HOLDER	CANCELLATION
State of New Hampshire - Department of Transportation John O. Morton Building, 7 Hazen Drive P.O. Box 483 Concord, NH 03302-0483 USA	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

© 1988-2014 ACORD CORPORATION. All rights reserved.

**AMENDMENT OF CANCELLATION PROVISIONS --
NOTICE TO ADDITIONAL INTEREST (S)**

Named Insured Jacobs Engineering Group Inc.			Endorsement Number 45
Policy Symbol ISA	Policy Number H09042398	Policy Period 07/01/2016 TO 07/01/2017	Effective Date of Endorsement
Issued By (Name of Insurance Company) ACE American Insurance Company			

Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

**BUSINESS AUTO COVERAGE FORM
TRUCKERS COVERAGE FORM
MOTOR CARRIERS COVERAGE FORM
AUTO DEALERS COVERAGE FORM**

SCHEDULE

Number of days advance notice: 30

Name: State of New Hampshire, Department of Transportation

Address 7 Hazen Drive, Concord, NH 03302

Name:

Address

Name:

Address

Name:

Address

David A. Felichman

Authorized Representative

Workers' Compensation and Employers' Liability Policy

Named Insured JACOBS ENGINEERING GROUP, INC. 155 NORTH LAKE AVENUE PASADENA CA 91101	Endorsement Number
	Policy Number Symbol: WLR Number: C48605254
Policy Period 07-01-2016 TO 07-01-2017	Effective Date of Endorsement 07-01-2016
Issued By (Name of Insurance Company) ACE AMERICAN INSURANCE COMPANY	
Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.	

THIS ENDORSEMENT CHANGES THE POLICY OF INSURANCE.

PLEASE READ IT CAREFULLY.

PROVIDE REQUIRED NOTICE OF CANCELLATION TO ANOTHER ENTITY

This endorsement modifies insurance provided under the following:

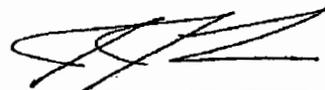
A. Schedule*

Entity	No. Of Days
All entities or persons holding certificates of insurance reflecting the policy	<u>10</u> for nonpayment of premium
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, 7 HAZEN DRIVE,	<u>30</u> for all other reasons CONCORD, NH 03302
*Information required to complete this Schedule, if not shown on this endorsement, will be shown in the Declarations.	

B. Provisions

If this insurance is terminated or cancelled, whether at your request or ours, we will provide the entity shown in the Schedule with prior written notice of such termination or cancellation within the number of days shown in the Schedule, above.

All other terms, conditions and exclusions of this Policy remain unchanged.



Authorized Agent

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

Named Insured Jacobs Engineering Group Inc.			Endorsement Number 34
Policy Symbol EON	Policy Number G21655065 007	Policy Period 07/01/2016 to 07/01/2017	Effective Date of Endorsement 07/01/2016
Issued By (Name of Insurance Company) ACE American Insurance Company			

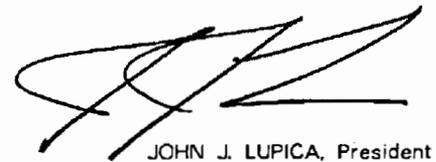
TERMINATION AMENDED ENDORSEMENT

It is agreed that Section X, Notice, is amended by adding the following to subsection C:

Notwithstanding anything in the foregoing to the contrary, in event the **Insurer** cancels this **Policy** (except with respect to cancellation for nonpayment of premium), the **Insurer** agrees to mail written notice 30 days prior to the effective date of such cancellation to:

New Hampshire Department of Transportation
John O Morton Building
7 Hazen Drive
P.O. Box 483
Concord, NH 03002-0483

All other terms and conditions of this **Policy** remain unchanged.



JOHN J. LUPICA, President

Authorized Representative

SUPPLEMENT TO CERTIFICATE OF INSURANCE

DATE
06/03/2016

NAME OF INSURED: Jacobs Engineering Group Inc.

THIS CERTIFICATE OF INSURANCE WILL NOT EXCEED OR BROADEN IN ANY WAY THE TERMS, CONDITIONS, AND LIMITS AGREED TO UNDER THE APPLICABLE CONTRACT.*



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



4B

VICTORIA F. SHEEHAN
COMMISSIONER

WILLIAM CASS, P.E.
ASSISTANT COMMISSIONER

Bureau of Highway Design
October 19, 2015

Her Excellency, Governor Margaret Wood Hassan
and the Honorable Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

The Department of Transportation requests placing this item on the Consent Calendar.

Authorize the Department of Transportation to amend PO #4001569, with Jacobs Engineering Group, Inc., Bedford, NH, Vendor #176231, for the final design for the reconstruction and widening of a 2.7-mile section of NH 12 in the Towns of Walpole and Charlestown, by extending the completion date from December 31, 2015 to December 31, 2016, effective upon Governor and Council approval. The original Agreement was approved by Governor and Council on August 10, 2011, Item #135. Time extension only, no new funding.

EXPLANATION

The purpose of this engineering and environmental consultant services Agreement is for the preparation of the final design, contract plans, specifications, special provisions, estimates of quantities and costs, and right-of-way plans for the reconstruction and widening of NH 12 and associated railroad relocations in the Towns of Walpole and Charlestown. The project begins at a point along NH 12 at the intersection of Main Street in the village of North Walpole and continues northerly 2.7 miles to the NH 12A intersection with NH 12 in the village of South Charlestown. In addition, the project includes the relocation of approximately 2.5 miles of active railroad track adjacent to the southerly and northerly portions of the project. This project is currently included in the State's Ten-Year Transportation Improvement Plan (Walpole-Charlestown 14747).

This amendment to the Agreement is to extend the contract's previously-amended completion date to allow the consultant sufficient time to continue to develop the contract plans, railroad relocation, and permits. The final design process has been delayed due to difficult coordination efforts with the railroad regarding design issues. Of the original \$1,443,075.97 amount for this contract, there is a balance of approximately \$435,635 remaining (100% Federal Funds). The original completion date of December 31, 2014 was previously amended to December 31, 2015 and was approved by Governor and Council on October 29, 2014, Item #5B.

This amended Agreement has been approved by the Attorney General as to form and execution. Copies of the fully-executed amended 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 amend this Agreement for consulting services as outlined above.

Sincerely,

Victoria F. Sheehan
Commissioner



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



5B

CHRISTOPHER D. CLEMENT, SR.
COMMISSIONER

JEFF BRILLHART, P.E.
ASSISTANT COMMISSIONER

Bureau of Highway Design
September 25, 2014

Her Excellency, Governor Margaret Wood Hassan
and the Honorable Council
State House
Concord, New Hampshire 03301

REQUESTED ACTION

The Department of Transportation wishes to place item on the Consent Calendar.

Authorize the Department of Transportation to amend PO #4001569, with Jacobs Engineering Group, Inc., Bedford, NH, Vendor #176231, for the final design for the reconstruction and widening a 2.7-mile section of NH 12 in the Towns of Walpole and Charlestown, by extending the completion date from December 31, 2014 to December 31, 2015, effective upon Governor and Council approval. The original Agreement was approved by Governor and Council on August 10, 2011, Item #135. Time extension only, no new funding.

EXPLANATION

The purpose of this engineering and environmental consultant services Agreement is for the preparation of the final design, contract plans, specifications, special provisions, estimates of quantities and costs, and right-of-way plans for the reconstruction and widening of NH 12 and associated railroad relocations in the Towns of Walpole and Charlestown. The project begins at a point along NH 12 at the intersection of Main Street in the village of North Walpole and continues northerly 2.7 miles to the NH 12A intersection with NH 12 in the village of South Charlestown. In addition, the project includes the relocation of approximately 2.5 miles of active railroad track adjacent to the southerly and northerly portions of the project. This project is currently included in the State's Ten-Year Transportation Improvement Plan (Walpole-Charlestown 14747).

This amendment to the Agreement is to extend the contract's original completion date to allow the consultant sufficient time to continue to develop the contract plans, railroad relocation, and permits. Of the original \$1,443,075.97 amount for this contract, there is a balance of approximately \$906,500 remaining (100% Federal Funds).

This amended Agreement has been approved by the Attorney General as to form and execution. Copies of the fully-executed amended 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 amend this Agreement for consulting services as outlined above.

Sincerely,

Christopher D. Clement, Sr.
Commissioner



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



Bureau of Highway Design

GEORGE N. CAMPBELL, JR.
COMMISSIONER

JEFF BRILLHART, P.E.
ASSISTANT COMMISSIONER

Highway Design

July 6, 2011

*Walpole
14747*

His Excellency, Governor John H. Lynch
and the Honorable Council
State House
Concord, New Hampshire 03301

Requested Action

Authorize the Department of Transportation to enter into an Agreement with Jacobs Engineering Group Inc., Manchester, NH, Vendor #176231, in the amount of \$1,443,075.97, for the final design for the reconstruction and widening a 2.7-mile section of NH 12 in the Towns of Walpole and Charlestown, effective upon Governor and Council approval, through December 31, 2014. 100% Federal Funds.

Funding is available as follows:

		<u>FY 2012</u>
04-96-96-963515-3054	Consolidated Federal Aid	\$1,443,075.97
046-500463	Consultants	

EXPLANATION

The Department requires professional engineering design and environmental consultant services to prepare final design, contract plans, specifications, special provisions, estimates of quantities and costs, and right-of-way plans for the reconstruction and widening of NH 12 and associated railroad relocations in the Towns of Walpole and Charlestown. The project begins at a point along NH 12 at the intersection of Main Street in the village of North Walpole and continues northerly 2.7 miles to the NH 12A intersection with NH 12 in the village of South Charlestown. In addition, the project includes the relocation of approximately 2.5 miles of active railroad track adjacent to the southerly and northerly portions of the project. The southerly portion includes 1.2 miles of active railroad track, a 1.0-mile siding track and associated interlocking. The northerly portion includes approximately 1.3 miles of active track. A minimum of two separate phased construction contracts are envisioned. This project is currently included in the State's Ten-Year Transportation Improvement Plan (Walpole – Charlestown 14747).

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 and 21-I:22-d, all applicable Federal laws and the Department's "Consultant Selection and Service Agreement Procedures" dated December 1999. 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 the final design for the Walpole-Charlestown NH 12 reconstruction, widening, and railroad relocation project. The assignment was listed as a "Possible Action Project" on the Department's website on May 27, 2010, 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 June 24, 2010 for consideration and approval by the Assistant Commissioner. Upon receipt of that approval, three shortlisted firms were notified on July 14, 2010 through a technical "Request For

Proposal" (RFP). Committee members individually rated the firms on August 26, 2010 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. (The completed individual rating ballots and the ranking summary form, as well as comments on the proposals, are 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 thirteen (13) consultant firms that were considered for this assignment, with the three short-listed firms shown in bold, is as follows:

<u>Consultant Firm</u>	<u>Office Location</u>
The Louis Berger Group, Inc.	Manchester, NH
CHA, Inc.	Keene, NH
CLD Consulting Engineers, Inc.	Manchester, NH
Fay, Spofford & Thorndike, LLC	Bedford, NH
Green International Affiliates, Inc.	Westford, MA
Greenman-Pedersen, Inc.	Nashua, NH
GM2 Associates, Inc.	Concord, NH
Hoyle, Tanner & Associates, Inc.	Manchester, NH
Jacobs Engineering Group, Inc.	Manchester, NH
Maguire Group Inc.	Portsmouth, NH
PB Americas, Inc.	Manchester, NH
Stantec Consulting Services, Inc.	Auburn, NH
Vanasse Hangen Brustlin, Inc.	Bedford, NH

The firm of Jacobs Engineering Group Inc. has been recommended for this contract. This firm has an excellent reputation and has demonstrated their capability to perform the necessary engineering and technical services for this assignment. Background information on this firm is attached.

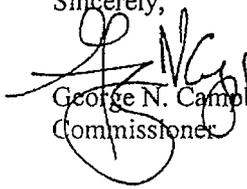
Jacobs Engineering Group Inc. has agreed to furnish the required services for a total amount of \$1,443,075.97. This is a reasonable fee and is commensurate with the complexity of the project and the scope of engineering and technical services to be furnished.

This project funding is 80% Federal funds with 20% State match. Turnpike toll credit is being utilized for New Hampshire's match requirement, effectively using 100% federal funds.

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,


George N. Campbell, Jr.
Commissioner

