



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



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WILLIAM CASS, P.E.
ASSISTANT COMMISSIONER

Bureau of Highway Design
September 2, 2015

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

REQUESTED ACTION

Authorize the Department of Transportation to amend PO #4003160, with Parsons Brinckerhoff, Inc., New York, NY, and Manchester, NH, Vendor #164158, to complete the final design of the roadway and bridges comprising the northern section of the Salem-Manchester I-93 improvement project beginning in the Town of Windham and ending in the City of Manchester, by increasing the total amount payable by \$788,212.27 (from \$10,334,568.23 to \$11,122,780.50) for additional design services that were not anticipated in the original scope of work, effective upon Governor and Council approval through the contract's original completion date of February 28, 2018. 47% Other Funds, 53% State Funds.

Funds to support this request are anticipated to be available in the following accounts in State FY 2016 and State FY 2017 upon the availability and continued appropriation of funds in the future operating budget, 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 2016, FY 2017. Rows include Garvee I-93 Construction Project and Non Par I-93 Consultants.

EXPLANATION

This project, Salem-Manchester 10418V (Northern Design Section), begins in the vicinity of the existing weigh stations located approximately one mile south of North Lowell Road in the Town of Windham and runs northerly approximately twelve miles to the I-93/I-293 split in the City of Manchester. The above limits exclude a segment in the Town of Londonderry in the vicinity of Exit 5 that is currently under construction. Funding for this design effort is currently included in the State's Ten-Year Transportation Improvement Plan.

On February 20, 2013, the Governor and Council authorized the subject engineering and environmental consultant services Agreement (Item #88; copy of Resolution attached) in the amount of \$9,358,904.06 to complete the final design for the five (5) individual construction projects by preparing contract plans, specifications, special provisions, estimates of quantities and costs, right-of-way plans, and supplying construction support services. A previous 2005 final design services Agreement that was completed in 2011 brought the final design to an approximately 50% complete stage. At the time, given the funding uncertainties for constructing the remaining capacity improvements associated with this northern section, it was deemed prudent to delay pursuing the remaining design effort until needed. In addition to the typical final design tasks, this Agreement also includes Right-of-Way Acquisition services. More specifically, the Agreement includes: project management and coordination; public involvement and support; Right-of-Way procurement; calculation and documentation of environmental impacts; Phase III Archaeological Evaluations; sound wall evaluations; traffic capacity analysis and traffic demand management; drainage design, including pollutant loading and construction stormwater assessments; geotechnical services; river hydraulics with LOMR; utility relocation and coordination; traffic control for construction; constructability evaluations; CPM scheduling; in-depth cost estimating; and ITS accommodations.

On December 3, 2014, the Governor and Council authorized an amendment to the Agreement (Item #31; copy of Resolution attached) to increase the fee by \$975,664.17 for additional services that included a revised recreational trail design that provides a safer solution by eliminating travel along the shoulder of North Lowell Road, replacement of the Beaver Brook Bridges rather than extending the culverts as originally proposed, designing a solution for the replacement of the Cohas Brook Culverts 41 & 42 due to the T-Wall originally proposed not being a viable solution, additional bridge design efforts for Bridges 38, 39, & 40, design for an additional 2,250 feet of soundwall, overhead sign structure and choice lane at NB I-93 / I-293 split, design refinements to the Kendall Pond Access Road, additional project management resources, development of a Conditional Letter of Map Revision (CLOMR) to the FEMA Flood Insurance Rate Map for the floodway area of Wheeler Brook near Exit 4. The amendment increased the total amount payable from \$9,358,904.06 to \$10,334,568.23.

This amendment to the Agreement is for additional work associated with the following items:

Traffic Control Plan (TCP) Revisions (Contract 14633H & I) - The original TCP concept for both contracts involved a "borrow a barrel" method of construction. As the design for the 14633H project was advanced, it became evident that the construction costs for the crossovers exceeded the savings that would be realized for the segment of I-93 NB constructed out of traffic. A similar situation existed in the 14633I contract. TCP lane width guidance provided by the Department's Consultant Review Section resulted in a construction pavement joint located several feet to one side of the ultimate crown line. After review with the Department's Pavement Management Section staff and Construction staff, it was decided to revise the design to locate pavement joints at the crown line to eliminate constructability issues and enhance long term pavement performance. This results in the need to modify the TCP using reduced shoulder widths (variable 2'-6') to minimize temporary widening, as well as designing emergency pull offs to provide designated areas for disabled vehicles. (\$224,783)

Emergency Access Roads & Beaver Brook Bridge adjustments - The TCP concept for both contracts involves a "borrow a barrel" method of construction. This approach eliminates existing access to the northbound barrel at North Lowell Road and, by way of the median crossover, just south of Kendall Pond Road. This work effort includes design and details for temporary ramps to the northbound barrel at both locations. New information was uncovered during the preliminary design stage that would allow the Department to advance a different design that could save from \$600,000 to \$800,000 in construction costs. This work effort would reproduce the preliminary design of the bridge from a 52' span using cantilevered abutments to a 75' span using integral abutments. (\$113,628)

Lane Transitions (Contract 14633 I)

The task involves revisions to the northern project limits of 14633I contract. The NB limit of work will be extended approximately 3,380 feet in order to maintain three travel lanes through the Exit 5 NB off ramp and match to the southerly limit of the 14633H contract. The SB limit of work will be extended approximately 11,965 feet to the north to perpetuate the four lane configuration through Exit 5 and match to the southern limit of 14633H four lane section. These design revisions result from a decision to modify the lane use through the Exit 5 interchange that was made subsequent to the final fee negotiations for the existing Agreement. (\$30,970)

Right-of-Way Abstracting - Additional work outside of the original scope is required to complete the ROW abstracting, documentation and plan development tasks. This work involves completion of the ROW abstracting and alignment development required to establish the existing ROW and basis for accurate ROW acquisition plan development. (\$418,831)

Additionally, the contract's intermediate date of completion for final design services is being amended from October 31, 2015 to December 31, 2016. The final date of completion for all services including construction support and right-of-way acquisition remains unchanged at February 28, 2018.

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. Preliminary Engineering costs will be funded with 2012 Garvee Bond proceeds. Debt Service will be paid with 100% Federal funds at 80% reimbursement rate and 20% match using Turnpike Toll Credits. Right-of-Way costs for this amendment are 100% State 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,

A handwritten signature in black ink, appearing to read "William Cass". The signature is fluid and cursive, with a large initial "W" and a long, sweeping underline.

William Cass, P.E.  
Assistant Commissioner



Best  
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**CHRISTOPHER D. CLEMENT, SR.**  
**COMMISSIONER**

**JEFF BRILLHART, P.E.**  
**ASSISTANT COMMISSIONER**

Bureau of Highway Design  
January 4, 2013

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

**REQUESTED ACTION**

Authorize the Department of Transportation to enter into an Agreement with Parsons Brinckerhoff, Inc., New York, NY, and Manchester, NH, Vendor #164158, for a total fee not to exceed \$9,358,904.06, to complete the final design of the roadway and bridges comprising the northern section of the Salem-Manchester I-93 improvement project beginning in the Town of Windham and ending in the City of Manchester, effective upon Governor and Council approval, through February 28, 2018. 100% Other Funds.

Funding is available as follows:

04-96-96-963515-1843	<u>FY 2013</u>
Garvee I-93 Construction Project	
046-500463 Eng Consultants Non-Benefit	\$9,358,904.06

**EXPLANATION**

This project, Salem-Manchester 10418V (Northern Design Section), begins in the vicinity of the existing weigh stations located approximately one mile south of North Lowell Road in the Town of Windham and runs northerly approximately twelve miles to the I-93/I-293 split in the City of Manchester. The above limits exclude a segment in the Town of Londonderry in the vicinity of Exit 5 that is currently under construction. Funding for this design effort is currently included in the State's Ten-Year Transportation Improvement Plan.

The Department requires professional engineering design and environmental consultant services to complete the final design for the five (5) individual construction projects by preparing contract plans, specifications, special provisions, estimates of quantities and costs, right-of-way plans, and supplying construction support services. A previous 2005 final design services Agreement that was completed in 2011 brought the final design to an approximately 50% complete stage. At the time, given the funding uncertainties for constructing the remaining capacity improvements associated with this northern section, it was deemed prudent to delay pursuing the remaining design effort until needed. In addition to the typical final design tasks, this Agreement also includes Right-of-Way Acquisition services. More specifically, the Agreement includes: project management and coordination; public involvement and support; Right-of-Way procurement; calculation and documentation of environmental impacts; Phase III Archaeological Evaluations; sound wall evaluations; traffic capacity analysis and traffic demand management; drainage design, including pollutant loading and construction stormwater assessments; geotechnical services; river hydraulics with LOMR; utility relocation and coordination; traffic control for construction; constructability evaluations; CPM scheduling; in-depth cost estimating; and ITS accommodations. The intermediate completion date for the design services is October 31, 2015. The final completion date for the R.O.W. acquisition and construction support services is February 28, 2018.

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 preliminary engineering design and associated environmental services for the Salem-Manchester 10418C I-93 Improvements – North project. The assignment was listed as a "Project Soliciting for Interest" on the Department's website on December 9, 2011, 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 December 28, 2011 for consideration and approval by the Assistant Commissioner. Upon receipt of that approval, three shortlisted firms were notified on December 29, 2011 through a technical "Request For Proposal" (RFP). Committee members individually rated the firms on February 3, 2012 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 six (6) consultant firms that were considered for this assignment, with the three short-listed firms shown in bold, is as follows:

Consultant Firm

The Louis Berger Group  
 Fay, Spofford & Thorndike, LLC  
 Maguire Group, Inc.  
**McFarland-Johnson, Inc.**  
**Parsons Brinckerhoff, Inc.**  
**Vanasse Hangen Brustlin, Inc.**

Office Location

Manchester, NH  
 Bedford, NH  
 Portsmouth, NH  
**Concord, NH**  
**Manchester, NH**  
**Bedford, NH**

The firm of Parsons Brinckerhoff, 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.

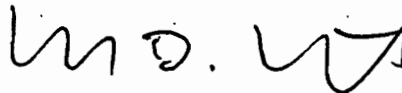
Parsons Brinckerhoff, Inc. has agreed to furnish the required services for a total fee not to exceed \$9,358,904.06. This is a reasonable fee and is commensurate with the complexity of the project and the scope of engineering and technical services to be furnished.

Preliminary Engineering and Right-of -Way costs will be funded with 2012 Garvee Bond proceeds. Debt Service will be paid with 100% Federal funds at 80% reimbursement rate and 20% match using Turnpike Toll Credits.

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,



Christopher D. Clement, Sr.  
 Commissioner



**THE STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF TRANSPORTATION**



**CHRISTOPHER D. CLEMENT, SR.**  
**COMMISSIONER**

**JEFF BRILLHART, P.E.**  
**ASSISTANT COMMISSIONER**

Bureau of Highway Design  
November 5, 2014

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

**REQUESTED ACTION**

Authorize the Department of Transportation to amend PO #4003160, with Parsons Brinckerhoff, Inc., New York, NY, and Manchester, NH, Vendor #164158, to complete the final design of the roadway and bridges comprising the northern section of the Salem-Manchester I-93 improvement project beginning in the Town of Windham and ending in the City of Manchester, by increasing the total amount payable by \$975,664.17 (from \$9,358,904.06 to \$10,334,568.23) for additional design services that were not anticipated in the original scope of work, effective upon Governor and Council approval through the contract's original completion date of February 28, 2018. 100% Other Funds.

Funding is available as follows:

04-96-96-963515-1843 FY 2015  
Garvee I-93 Construction Project  
046-500463 Eng Consultants Non-Benefit \$975,664.17

**EXPLANATION**

This project, Salem-Manchester 10418V (Northern Design Section), begins in the vicinity of the existing weigh stations located approximately one mile south of North Lowell Road in the Town of Windham and runs northerly approximately twelve miles to the I-93/I-293 split in the City of Manchester. The above limits exclude a segment in the Town of Londonderry in the vicinity of Exit 5 that is currently under construction. Funding for this design effort is currently included in the State's Ten-Year Transportation Improvement Plan.

On February 20, 2013, the Governor and Council authorized the subject engineering and environmental consultant services Agreement (Item #88; copy of Resolution attached) in the amount of \$9,358,904.06 to complete the final design for the five (5) individual construction projects by preparing contract plans, specifications, special provisions, estimates of quantities and costs, right-of-way plans, and supplying construction support services. A previous 2005 final design services Agreement that was completed in 2011 brought the final design to an approximately 50% complete stage. At the time, given the funding uncertainties for constructing the remaining capacity improvements associated with this northern section, it was deemed prudent to delay pursuing the remaining design effort until needed. In addition to the typical final design tasks, this Agreement also includes Right-of-Way Acquisition services. More specifically, the Agreement includes: project management and coordination; public involvement and support; Right-of-Way procurement; calculation and documentation of environmental impacts; Phase III Archaeological Evaluations; sound wall evaluations; traffic capacity analysis and traffic demand management; drainage design, including pollutant loading and construction stormwater assessments; geotechnical services; river hydraulics with LOMR; utility relocation and coordination; traffic control for construction; constructability evaluations; CPM scheduling; in-depth cost estimating; and ITS accommodations. The intermediate completion date for the design services is October 31, 2015. The final completion date for the R.O.W. acquisition and construction support services is February 28, 2018.

This amendment to the Agreement is for additional work associated with the following items:

Recreation Trail Design (Contract 14633B) – The Windham Greenway trail improvements will provide a means to connect the existing trail on the west side of I-93 to the Windham Depot on the east side of I-93. Providing this connectivity is a project commitment. The revised design will construct a 135'-long x 12'-wide x 12'-high box culvert under the NB and SB barrels to provide the connectivity in lieu of 1900'-long trail connection included in the original scope of work. The construction costs are similar for both alternatives, but the revised design provides a safer solution by eliminating travel along the shoulder of North Lowell Rd. (\$70,365)

Beaver Brook Bridges (Contract 14633D) – The original scope included design efforts to extend the existing northbound and southbound culverts to accommodate the widening of the mainline. A rating analysis of the existing culverts identified structural deficiencies. Hydraulic studies also identified unacceptable headwater conditions due to the limited size and conveyance of the culverts. These factors resulted in the decision to replace the culverts with conventional steel stringer bridges. (\$450,331)

Cohas Brook Culverts 41 & 42 (Contract 14633H) - Culvert #41 – The original scope of work excluded this structure. Mainline roadway widening resulted in steep slopes and additional fill on the concrete box culvert. A rating analysis of the existing culvert identified structural deficiencies. This task will design a solution to resolve the structural deficiencies. Culvert #42 – The original scope for Culvert #42 included development of a precast concrete T-Wall on and off the existing culvert. Preliminary Plans were submitted utilizing a precast concrete T-Wall. Department review of the Preliminary Plan submission determined a T-Wall on soil off the culvert is not viable and other options needed to be evaluated. This task will design a viable solution. (\$132,136)

Bridges 38, 39 & 40 (Contract 14633H) - Br. No 38 (NB/Cohas Bk), Br. No 39 (NB/Bodwell Rd) and Br. No. 40 (SB/Bodwell Rd) all require additional bridge design efforts, not originally anticipated, to widen an additional 2 feet to account for new LRFD requirements relative to impact loads on soundwalls. (\$107,895)

Soundwall Evaluation/Design (Contract 14633H) - Additional highway design efforts are required to accommodate soundwall revisions resulting from further noise analysis. The revisions result in an additional 2,250 feet of soundwall design and related elements, which were not originally anticipated. (\$50,158)

Overhead Sign Structure (OHSS) Relocations and Choice Lane at NB I-93/I-293 Split (Contract 14633H) - The project design originally proposed to maintain two dedicated left turn lanes onto I-293 WB and to provide a third through lane to continue on I-93 NB. After review with the Preliminary Design section and the Bureau of Traffic, the Department decided to revise the design to provide a "choice" lane that provides motorists with additional "decision" time at the I-93/I-293 split. This modification results in revised locations for the OHSS (guide signs) to accommodate the new striping layout. The additional design efforts include striping redesign, guardrail and drainage modifications to accommodate the new OHSS locations, cross section updates, and sign modifications. (\$15,640)

Kendall Pond Access Road (Contract 14633B) – This effort relates to design refinements to the BMP access road that is designed along the west side of I-93 between Kendall Pond Road and BMP 3558. The efforts are beyond the scope of typical BMP access road designs, considering the length (1500') and resultant drainage requirements and cross section development (both mainline and access road). (\$30,687)

Project Management Resources – This task provides for a continuation of technical services related to Public Outreach, Traffic Management and the Financial Plan on the I-93 Salem to Manchester project. (\$85,420)

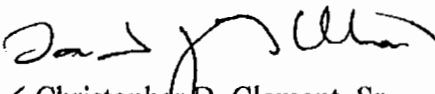
Wheeler Brook CLOMR – Impacts to a floodway near Exit 4 requires a Conditional Letter of Map Revision (CLOMR) to the FEMA Flood Insurance Rate Map for the area. These impacts were not known prior to the start of the design effort and therefore these efforts are beyond the existing scope of work. (\$33,032)

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. Preliminary Engineering and Right-of-Way costs will be funded with 2012 Garvee Bond proceeds. Debt Service will be paid with 100% Federal funds at 80% reimbursement rate and 20% match using Turnpike Toll Credits.

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,

  
for Christopher D. Clement, Sr.  
Commissioner





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
9/10/15

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).

<b>PRODUCER</b>  JLT Specialty Insurance Services Inc. 5847 San Felipe Street, Suite 2800 Houston, TX 77057	<b>CONTACT NAME:</b> JLT Service Team
	<b>PHONE (A/C, No., Ext):</b> 713-325-7615 <b>FAX (A/C, No):</b> <b>E-MAIL ADDRESS:</b> <a href="mailto:wspbpcertrequest@iltus.com">wspbpcertrequest@iltus.com</a>
<b>INSURED</b>  Parsons Brinckerhoff, Inc. 4139 Oregon Pike Ephrata, PA 17522	<b>INSURER(S) AFFORDING COVERAGE</b> <b>NAIC #</b>
	<b>INSURER A:</b> Liberty Insurance Corporation      42404
	<b>INSURER B:</b> Zurich American Insurance Company      16535
	<b>INSURER C:</b>
	<b>INSURER D:</b>
	<b>INSURER E:</b>

**COVERAGES**      **CERTIFICATE NUMBER:**      **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.

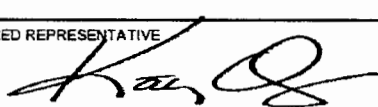
INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B X	<b>COMMERCIAL GENERAL LIABILITY</b>  CLAIMS-MADE X OCCUR  X Contractual Liability  GEN'L AGGREGATE LIMIT APPLIES PER POLICY X PRO-JECT LOC  OTHER		GLO 9835819-02	4/1/2015	4/1/2016	EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$300,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$2,000,000 GENERAL AGGREGATE \$5,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 S
A	<b>AUTOMOBILE LIABILITY</b>  X ANY AUTO ALL OWNED AUTOS      SCHEDULED AUTOS HIRED AUTOS      NON-OWNED AUTOS		AS7621094060035	10/1/2015	11/1/2016	COMBINED SINGLE LIMIT (Ea accident) \$2,000,000 BODILY INJURY (Per person) S BODILY INJURY (Per accident) S PROPERTY DAMAGE (Per accident) S S
	<b>UMBRELLA LIAB</b> OCCUR  <b>EXCESS LIAB</b> CLAIMS-MADE  DED      RETENTIONS					EACH OCCURRENCE S AGGREGATE S S
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b>  ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N N/A	WA762D094060015 (AOS)	10/1/2015	11/1/2016	X PER STATUTE      OTH-ER E L EACH ACCIDENT \$2,000,000 E L DISEASE - EA EMPLOYEE \$2,000,000 E L DISEASE - POLICY LIMIT \$2,000,000

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

PB #52625; I-93 SALEM-MANCHESTER; SALEM-MANCHESTER IM-IR-0931(174) 10418C (NORTHERN SECTION) (2013 CONTRACT)

FOR ADDITIONAL INFORMATION SEE PAGE 2

THIRTY (30) DAYS NOTICE CANCELLATION

<b>CERTIFICATE HOLDER</b>  NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION JOHN O. MORTON BUILDING 7 HAZEN DRIVE P.O. BOX 483 CONCORD NH 03302	<b>CANCELLATION</b>  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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AGENCY CUSTOMER ID: \_\_\_\_\_

LOC #: \_\_\_\_\_



### ADDITIONAL REMARKS SCHEDULE

Page 2 of 2

AGENCY JLT Specialty Insurance Services Inc.		NAMEDINSURED Parsons Brinckerhoff, Inc. 4139 Oregon Pike Ephrata, PA 17522	
POLICYNUMBER Various		EFFECTIVEDATE: Various	
CARRIER Various	NAICCODE		

**ADDITIONAL REMARKS**

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,  
FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

Subject always to policy terms, conditions and exclusions, State of New Hampshire is named as Additional Insured (*excluding Workers' Compensation and Employers' Liability*) but only to the extent of risks and liabilities assumed by the Named Insured in a signed written contract.



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
9/10/15

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).

<b>PRODUCER</b> JLT Specialty Insurance Services Inc. 5847 San Felipe Street, Suite 2800 Houston, TX 77057	<b>CONTACT NAME:</b> Jennifer Sprinkle <b>PHONE (A/C, No, Ext):</b> 713-325-7593 <b>E-MAIL ADDRESS:</b> wsppbcertrequest@jltus.com	<b>FAX (A/C, No):</b>	
	<b>INSURER(S) AFFORDING COVERAGE</b> INSURER A Zurich American Insurance Company		<b>NAIC #</b> 16535
<b>INSURED</b> Parsons Brinckerhoff, Inc. 4139 Oregon Pike Ephrata, PA 17522	<b>INSURER B :</b>		
	<b>INSURER C :</b>		
	<b>INSURER D :</b>		
	<b>INSURER E :</b>		
	<b>INSURER F :</b>		
	<b>INSURER G :</b>		

**COVERAGES**                      **CERTIFICATE NUMBER:**                      **REVISION NUMBER: 1**

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.

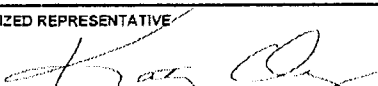
INSR LTR	TYPE OF INSURANCE	ADD'L SUBR INSD - WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:					EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$	
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS					COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$	
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED    RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$	
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N/A				<input type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$	
A	Professional Liability Deductible- \$75,000	N    N	E0C587103612	11/1/2014	11/1/2015	Per Claim Aggregate	\$2,000,000 \$2,000,000

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

PB #52625; I-93 SALEM-MANCHESTER; SALEM-MANCHESTER IM-IR-0931(174) 10418C (NORTHERN SECTION) (2013 CONTRACT)

THIRTY (30) DAYS NOTICE CANCELLATION

*This certificate replaces any previously issued certificate(s).*

<b>CERTIFICATE HOLDER</b> NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION JOHN O. MORTON BUILDING 7 HAZEN DRIVE P.O. BOX 483 CONCORD NH 03302	<b>CANCELLATION</b> 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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**THE STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF TRANSPORTATION**



**WILLIAM CASS, P.E.**  
**ASSISTANT COMMISSIONER**

**SALEM-MANCHESTER**

**IM-IR-0931(174)**

**10418C** (Northern Section - 2013 Contract)

(Agreement Dated February 20, 2013, PO 4003160)

Room 200 (CMF)

Tel. (603) 271-2171

Fax: (603) 271-7025

September 2, 2015

Mr. Andrew B. Boyd, P.E.  
Parsons Brinckerhoff, Inc.  
650 Elm Street  
Manchester, NH 03101

Dear Mr. Boyd:

This letter amends Article I – Description of Professional Services to be Rendered and Article II – Firm Fixed Price Line Item Compensation of Consultant in the above-referenced Agreement. This amendment increases the total fee not to exceed for this Agreement by \$788,212.27 (from \$10,334,568.23 to \$11,122,780.50) as payment for additional design services not anticipated under the original agreement.

Article I, Section E – Scope of Work (Final Design), page 12, is being amended to include Attachment B, dated August 10, 2015, a detailed description of additional services for this contract amendment.

Article I, Section L – Date of Completion, page 36. The original intermediate date of completion for the final design services is being amended from October 31, 2015 to December 31, 2016. The final date of completion for all services including construction support and right-of-way acquisition remains unchanged at February 28, 2018.

Article II, Section A - General Fee, page 37, is being amended to revise the Unit Prices and Totals as follows:

- Item #1, Final Design of Roadways. The Unit Price (Quantity = 1) and Total increase by \$301,485.12, from \$3,430,028.55 to \$3,731,513.67.
- Item #A1-2, NB/SB Beaver Brook Bridges (from Amendment #1). The Unit Price (Quantity = 2) increases by \$33,948.08. The Total increases by \$67,896.15 from \$450,331.37 to \$518,227.52.
- Item #9, Right-of-Way Plans (Preliminary, Purchase, & Registry). The Unit Price (Quantity = 1) and Total increase by \$418,831.00, from \$404,642.14 to \$823,473.14.

The above fee increase revises the total amount payable under this Agreement, which increases from \$10,334,568.23 to \$11,122,780.50 by this amendment.


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

Sincerely,



Peter E. Stamnas, P.E.  
Project Manager



Approved:  William Cass, P.E.  
Assistant Commissioner

We concur in the above Amendment.

**PARSONS BRINCKERHOFF, INC.**

By: Richard T. O'Brien

Title: VICE PRESIDENT

PES/wjh  
attachments

**AGREEMENT AMENDMENT**

**SALEM-MANCHESTER, IM-IR-0931(174), 10418-C**

**PARSONS BRINCKERHOFF, 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: *M. G. Goudreau*

Senior Vice President

Dated: Sept. 10, 2015

CONSULTANT

By: *Richard F. O'Brien*

Vice President (Title)

Dated: SEPT. 10, 2015

**Department of Transportation**

WITNESS TO THE STATE OF NEW HAMPSHIRE

By: *Michelle Brown*

Dated: 9/16/15

THE STATE OF NEW HAMPSHIRE

By: *Pat Ward*

Pat DOT COMMISSIONER

Dated: 9/16/15

**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: 10/2/15

By: *[Signature]*  
Assistant Attorney General

**Secretary of State**

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

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

Attest:

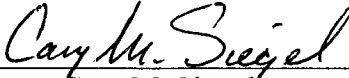
By: \_\_\_\_\_  
Secretary of State

PARSONS BRINCKERHOFF, INC.  
ASSISTANT SECRETARY'S CERTIFICATE

I, Cary M. Siegel, Assistant Secretary of Parsons Brinckerhoff, Inc. (the "Corporation"), do hereby certify on behalf of the Corporation and not in my individual capacity that on June 1, 2015 the Board of Directors of the Corporation adopted the following resolution:

**"RESOLVED**, that parties authorized by the Delegation of Authority may sign RFPs, RFQs and any resulting project contracts or amendments in accordance with the Delegation of Authority."

I further certify that the resolution has not been revoked and that, as a Vice President and Area Manager of the Corporation, Richard F. O'Brien is authorized by the Delegation of Authority to sign contract amendment to complete the final design of the roadway and bridges comprising the northern section of the Salem-Manchester I-93 improvement project beginning in the Town of Windham and ending in the City of Manchester, Contract No. Salem-Manchester 10418C, between the State of New Hampshire, Commissioner of the Department of Transportation and the Corporation.

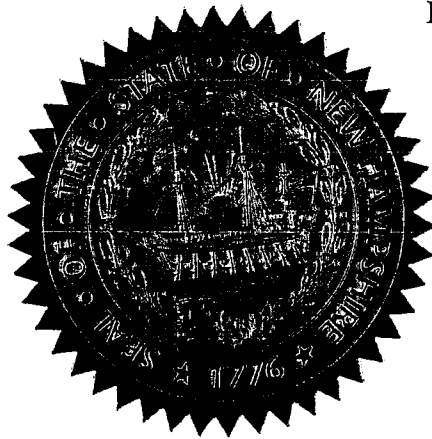
  
\_\_\_\_\_  
Cary M. Siegel  
Assistant Secretary

September 10, 2015  
Date

# 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 Parsons Brinckerhoff, Inc. a(n) New York corporation, is authorized to transact business in New Hampshire and qualified on June 20, 1977. 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 10<sup>th</sup> day of September, A.D. 2015

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

William M. Gardner  
Secretary of State





AGENCY CUSTOMER ID: \_\_\_\_\_

LOC #: \_\_\_\_\_



### ADDITIONAL REMARKS SCHEDULE

Page 2 of 2

AGENCY JLT Specialty Insurance Services Inc.		NAMED INSURED Parsons Brinckerhoff, Inc. 4139 Oregon Pike Ephrata, PA 17522	
POLICY NUMBER Various		EFFECTIVE DATE: Various	
CARRIER Various	NAIC CODE		

#### ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,  
FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

Subject always to policy terms, conditions and exclusions, State of New Hampshire is named as Additional Insured (*excluding Workers' Compensation and Employers' Liability*) but only to the extent of risks and liabilities assumed by the Named Insured in a signed written contract.



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
9/10/15

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).

<b>PRODUCER</b>  JLT Specialty Insurance Services Inc. 5847 San Felipe Street, Suite 2800 Houston, TX 77057	<b>CONTACT NAME:</b> Jennifer Sprinkle	
	<b>PHONE (A/C, No, Ext):</b> 713-325-7593 <b>FAX (A/C, No):</b> <b>E-MAIL ADDRESS:</b> wspbcertrequest@iltus.com	
<b>INSURER(S) AFFORDING COVERAGE</b>		<b>NAIC #</b>
INSURER A Zurich American Insurance Company		16535
<b>INSURED</b>		
Parsons Brinckerhoff, Inc. 4139 Oregon Pike Ephrata, PA 17522		
<b>INSURER B :</b>		
<b>INSURER C :</b>		
<b>INSURER D :</b>		
<b>INSURER E :</b>		
<b>INSURER F :</b>		

**COVERAGES**                                  **CERTIFICATE NUMBER:**                                  **REVISION NUMBER: 1**

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	ADD'L SUBR INSD WYD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	<input type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:					<input type="checkbox"/> EACH OCCURRENCE <input type="checkbox"/> DAMAGE TO RENTED PREMISES (Ea. occurrence) <input type="checkbox"/> MED EXP (Any one person) <input type="checkbox"/> PERSONAL & ADV INJURY <input type="checkbox"/> GENERAL AGGREGATE <input type="checkbox"/> PRODUCTS - COM/OP AGG	\$ \$ \$ \$ \$ \$
	<input type="checkbox"/> <b>AUTOMOBILE LIABILITY</b> <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					<input type="checkbox"/> COMBINED SINGLE LIMIT (Ea. accident) <input type="checkbox"/> BODILY INJURY (Per person) <input type="checkbox"/> BODILY INJURY (Per accident) <input type="checkbox"/> PROPERTY DAMAGE (Per accident)	\$ \$ \$ \$
	<input type="checkbox"/> <b>UMBRELLA LIAB</b> <input type="checkbox"/> EXCESS LIAB DED    RETENTION \$	<input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE				<input type="checkbox"/> EACH OCCURRENCE <input type="checkbox"/> AGGREGATE	\$ \$ \$
	<input type="checkbox"/> <b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> <input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y/N    N/A				<input type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT <input type="checkbox"/> E.L. DISEASE - EA EMPLOYEE <input type="checkbox"/> E.L. DISEASE - POLICY LIMIT	\$ \$ \$
A	Professional Liability Deductible- \$75,000	N   N	E0C587103612	11/1/2014	11/1/2015	Per Claim Aggregate	\$2,000,000 \$2,000,000

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

PB #52625; I-93 SALEM-MANCHESTER; SALEM-MANCHESTER IM-IR-0931(174) 10418C (NORTHERN SECTION) (2013 CONTRACT)

THIRTY (30) DAYS NOTICE CANCELLATION

*This certificate replaces any previously issued certificate(s).*

CERTIFICATE HOLDER	CANCELLATION
NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION JOHN O. MORTON BUILDING 7 HAZEN DRIVE P.O. BOX 483 CONCORD NH 03302	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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## **I-93 Widening North Supplement #2 Scope of Work**

*(Submitted to NHDOT on 8/10/2015)*

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### **1. Crown Line/Pavement Joint and TCP Changes**

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**(submitted to NHDOT 1/21/15)**

#### **Introduction**

Based on experience from the southern I-93 contracts and recent projects on I-89, the department has determined that the TCP construction phasing limits need to construct to the crown line and avoid all longitudinal joints not on lane lines. This is being done in an effort to reduce or eliminate constructability and overall pavement performance issues. The department previously gave guidance to use minimum traffic configurations of 4'-12'-12'-8' during construction. As part of the PPS&E plan development process, the department directed the PB Team to provide configurations of 2'-12'-12'-2' for the northbound side and 4'-12'-12'-4' for the southbound side of Contract H for the initial proposed widening phases. Ideally, this will allow for traffic to remain on the existing pavement and minimize the need to construct temporary widening as part of the initial phase. During the subsequent phases, 4'-12'-12'-6' and 6'-12'-12'-4' configurations will be used for the northbound and southbound respectively. The 6 ft. shoulder will be along the portable concrete barrier for winter conditions. Hours estimated for the completion of the redesign (phased construction) will include only the incremental time for the unanticipated work.

As part of the new TCP design concept, the PB Team will need to design emergency pull offs approximately every 0.5 miles if feasible. Emergency pull offs will be 200 ft. long by 14 ft. wide (additional 6 ft. width over the 8 ft. shoulder and additional 8 ft. width over the 6 ft. shoulder). Utilize 10:1 tapers in and out of the pull offs (in addition to the 200 ft.).

The previous TCP plan was developed in close coordination with the department through several OTS TCP/constructability meetings during the PPS&E phase. The previous concept completed narrowed roadway TCP phasing prior to the winter. The new concept to be developed will entail making accommodation for maintaining traffic over the winter and will require additional temporary guardrail design.

The department has also requested that another 14633H earthwork analysis roll plan be completed, broken down into TCP phases, to assist the department with their further constructability review of the TCP Plan.

After S&D review for the contracts and during the progression of the PPS&E plans, the department informed the PB Team that all pavement joints must be located at lane lines for the final pavement, including pavement layers below the final wearing surface. This is new information that will cause significant rework of the TCP plans and cross-sections. This could lead to temporary widening on both sides of the roadway. Based on the fact that this guidance

was given after the original work was performed, the PB Team considers this to be extra work. The department is requiring the PB Team to develop alternative TCP layouts showing the additional temporary widening and guardrail along with grading impacts. The additional amount of work is substantial as the entire TCP layout will need to be re-evaluated and redesigned, including temporary drainage. The construction timing will also need to be totally re-analyzed.

## **14633I Contract**

The Contract I TCP will need to be revised to allow the pavement joint to be aligned with the crown/lane lines as directed by the department. The associated impacts, such as temporary guard rail or temporary drainage, will depend on the typical traffic configurations required by the department.

### **Work Tasks**

This scope assumes that the TCP will be designed from conceptual to a PPS&E level at the PPS&E Submission. The following tasks are necessary to complete the redesign of the TCP.

#### **A. TCP Redesign for Pavement Joints at Crown Line**

##### **1. PPS&E Design Phase**

- a. **Develop Conceptual TCP:** PB will develop conceptual TCP, evaluating likely temporary pavement widths and establishment of typical section. One meeting is anticipated at this stage for discussion of potential options and issues to ensure PB and the department is in agreement on the preferred alternative. PB will develop and evaluate reasonable alternatives and associated pros and cons, and then present to the department for concurrence prior to moving forward and refining the TCP.
- b. **Refine Conceptual TCP:** Upon acceptance of the conceptual TCP layout, PB will define phase transition locations and develop horizontal and vertical alignments with typical sections along these areas to facilitate the construction and allow traffic to safely progress from newly constructed pavement to existing pavement.
- c. **Finalization of TCP:** After the constructability meeting, PB will address the concerns that come out of the meeting and then continue finalization of Traffic Control Plans. Individual tasks include:
  - ✓ **Develop Critical Sections:** Entirely new critical sections will be needed and evaluated.
  - ✓ **Develop Typical Sections:** Typical sections will be based on approved typicals discussed at the previous review meetings.
  - ✓ **Develop new TCP Phasing Notes.**
  - ✓ **Develop Plans:** This will include completely new plan set with additional phases and new phase limits.

- ✓ Bridge Coordination: The new TCP will need to be reflected in the Bridge drawings. Coordination hours are included to ensure the phasing is properly integrated into the Bridge designs and represented appropriately in the Bridge plans.
  - ✓ Temporary Drainage Design: PB will investigate temporary drainage needs required as part of the proposed TCP layout.
- d. Environmental Impacts Evaluation: PB will review and minimize impacts and revise the wetland impact tables as appropriate. PB will also develop a new summary to be included in the Design Narrative.
  - e. Emergency Pull-Off Locations: As part of the new TCP design concept, PB will incorporate emergency pull-offs where possible (500' lengths spaced within 3,000 feet). This is only required where the work zone is adjacent to the low speed side. PB will develop these areas and submit to the department during the finalization stage.
  - f. Construction Schedule and TCP Narrative Revisions: Construction timing will be totally re-analyzed based upon the noted configurations listed above.
  - g. Quantities and Estimate: PB will develop new quantity calculations for items related to temporary widening, shimming, temporary guardrail, temporary drainage, and similar items.
2. TCP Redesign to Eliminate Borrow a Barrel

Based on past performance of the cross over just north of Stonehenge Road used for the southbound borrow a barrel during construction of the 14633F contract the department has decided to pursue a phased construction northbound and southbound in the 14633I contract rather than a northbound borrow a barrel scenario that would utilize the same cross over referenced above. This will require PB to reevaluate/redesign the current north bound phasing to eliminate any unnecessary temporary widening proposed as part of the borrow a barrel design and, since the borrow a barrel concept assumed that there would be no traffic on the southbound side of I-93 during the borrow a barrel phase, PB will now have to develop a complete phased construction traffic control plan for the southbound barrel. In addition the phased construction of the southbound barrel further complicates the construction of the southbound bridge over Stonehenge Road. Whereas the original borrow a barrel concept assumed the southbound bridge over Stonehenge Road would be constructed without having to accommodate traffic the phased construction of the southbound barrel will require the southbound bridge to be a phased construction. The tasks involved are:

- a. Reevaluate/redesign the northbound phased construction extents.
- b. Design an entirely new phased construction sequencing for southbound. Including plans, profiles, cross sections and phasing quantities.
- c. Develop temporary drainage for phased construction southbound.

- d. Modify the schedule of construction to reflect the southbound phased construction.
- e. Evaluate the implications of phased construction for the I-93 southbound bridge over Stonehenge Road.

## 14633H Contract

There are two changes to the original scope for development of Traffic Control Plans for this contract. The first is a conversion from a “borrow a barrel” method to staged construction in the southern portion of the project. The second concerns modifying the TCP to meet the new requirements for constructing pavement joints at the crown line.

This scope assumes that the TCP will be designed from conceptual to a PS&E level at the PS&E Submission. The following tasks are necessary to complete the redesign of the TCP.

### A. Conversion from Borrow A Barrel to Staged Construction

1. Several tasks will be necessary due to the change to staged construction. These additional tasks and the hours to accomplish them provide consideration for no longer needing refinements to Borrow a Barrel. These unanticipated tasks include the following:
  - a. Developing the conceptual staged construction design with temporary widening.
  - b. Reviewing the length of roadway for trapped drainage issues due to construction on the low side of superelevation.
  - c. Evaluation of grading impacts due to temporary widening.
  - d. Developing transitions at both ends of the previously unstaged northbound lane.
  - e. The southbound barrel TCP needs to be redesigned considering the removal of “borrow a barrel” to traditional staged construction.
  - f. Modifications to the slope lines along NB and SB and in the crossover areas need to be redeveloped along with wetland impact information in the crossover areas.
  - g. Critical sections have to be redrawn and analyzed for constructability.

### B. TCP Redesign for Pavement Joints at Crown Line

#### 1. PS&E Design Phase

- a. Develop Conceptual TCP: CLD will develop conceptual TCP, evaluating likely temporary pavement widths and establishment of typical section. One meeting is anticipated at this stage for discussion of potential options and issues to ensure CLD and the department is in agreement on the preferred alternative. CLD will develop

and evaluate reasonable alternatives and associated pros and cons, and then present to the department for concurrence prior to moving forward and refining the TCP.

- b. Refine Conceptual TCP: Upon acceptance of the conceptual TCP layout, CLD will define phase transition locations and develop horizontal and vertical alignments with typical sections along these areas to facilitate the construction and allow traffic to safely progress from newly constructed pavement to existing pavement.
- c. Finalization of TCP: After the constructability meeting, CLD will address the concerns that come out of the meeting and then continue finalization of Traffic Control Plans. Individual tasks include:
  - ✓ Determine and Develop Critical Sections: Entirely new critical sections will be needed and evaluated.
  - ✓ Develop Typical Sections: Typical sections will be based on approved typicals discussed at the previous review meetings.
  - ✓ Develop New TCP Phasing Notes.
  - ✓ Develop Plans: This will include completely new plan set with additional phases and new phase limits.
  - ✓ Temporary Drainage Design: CLD will investigate temporary drainage needs required as part of the proposed TCP layout.
  - ✓ Environmental Impacts Evaluation: CLD will review and minimize impacts and revise the wetland impact tables as appropriate. CLD will also develop a new summary to be included in the Design Narrative.
  - ✓ Recreate Earthwork Analysis Roll Plan: Previously, CLD developed a roll plan that depicted the approximate earthwork quantities (cut, fill, rock cut) that would be anticipated for certain areas to determine earthwork balancing. CLD will recreate the roll plan based upon the new phasing limits.
  - ✓ Emergency Pull-Off Locations: As part of the new TCP design concept, CLD will incorporate emergency pull-offs where possible (500' lengths spaced within 3,000 feet). This is only required where the work zone is adjacent to the high speed side. CLD will develop these areas and submit to the department during the finalization stage.
- d. Construction Schedule and TCP Narrative Revisions: Construction timing will be totally re-analyzed based upon the noted configurations listed above.
- e. Quantities and Estimate: CLD will develop new quantity calculations for items related to temporary widening, shimming, temporary guardrail, temporary drainage, and similar items.



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## 2. Emergency Access Roads at N. Lowell & Kendall Pond

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(submitted to NHDOT on 2/20/15)

The existing NB and SB configuration provides: 1) an emergency access point from North Lowell Road with median cross-over; 2) a median cross-over just south of Kendall Pond Road. The approach to constructing the 14633B contract that was previously developed and approved by the DOT included a "borrow a barrel" scenario where both NB and SB would be placed in the NB barrel with traffic separated by temporary barrier. CHA finalized S&D plans and subsequently the Pre-PS&E plans with TCP showing the use of these emergency access points being disrupted during Phases 5A and 5B. CHA examined these locations, during S&D and Pre-PS&E phases, to determine if emergency access could be maintained during the "borrow a barrel" configuration through an opening in the barrier. Due to the over-widening of the highway that would be necessary and the restriction imposed by bridges at these locations, maintaining these facilities during certain phases was not feasible. Based on DOT's review of the 14633B Pre-PS&E submission and subsequent discussions with CHA at the 10/2/14 OTS, DOT indicated that they have sketch/concept plans of temporary ramps at both of the aforementioned locations that they would provide to CHA. Design and incorporation of temporary ramps to maintain cross-overs was never considered part of the scope of work for this project.

DOT provided CHA with the sketch/concept plans and design criteria. To incorporate these ramps CHA will need to review the sketch/concept plans and develop alignments and profiles meeting AASHTO and DOT provided design criteria. CHA will update TCP plans, quantities and drainage design as necessitated by the addition of these ramps. Estimated length for these ramps is North Lowell Road: 1950 LF; Kendall Pond Road: 900 LF.

In general, the work tasks associated with this effort are as follows:

- ✓ Develop horizontal alignments and profiles
- ✓ Develop typical sections and details
- ✓ Coordination with DOT to progress ramps in an expedited manor.
  - Coordination to include preparing draft plans, corresponding with DOT and refining ramp design criteria.
  - It is anticipated that the Kendall Pond Road ramp will take additional coordination based on the proximity of the Beaver Brook culvert.
- ✓ Evaluate and update guardrail design
- ✓ Modeling
- ✓ Drainage Design (Permanent and Temporary)
- ✓ Plan prep, drafting and detailing (Plans, Profiles, Sections, Color Plans)
- ✓ Update quantity estimate & summary sheets
- ✓ Update TCP and Narrative including design calculations (i.e. superelevation)
- ✓ Detail Ramp Signage

- ✓ Access Control will only be addressed through signage. Gated access will not be designed.
- ✓ Update CSA & ECP

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### 3. Beaver Brook Bridges Revised Scope of Work

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(Submitted to NHDOT on 2/20/15)

The scope and fee which was previously submitted and approved in October 2014 assumed that the existing I-93 NB and SB culverts over Beaver Brook would be replaced with a bridge for each barrel with a clear span of 52'.

At an over-shoulder meeting held July 30, 2014, to discuss the TS&L for these bridges, NHDOT directed Parsons Brinckerhoff (PB) not to look into integral abutments as a substructure option. PB submitted preliminary plans with the design concept of cantilever abutments supported on piles. In the NHDOT review of the preliminary plans, the NHDOT Geotechnical Section suggested integral abutments. PB and NHDOT staff agreed that it would be worthwhile to take a conceptual look at this option and present it to NHDOT for a decision.

During this meeting held February 12, 2015, NHDOT and PB staff discussed this integral abutment option in detail. Based on initial concepts and preliminary cost estimates, it was decided to change the scope and pursue a preferred integral abutment option at this location with an approximate span of 75'.

#### **Scope of Work (Bridge Design Submissions) - Work Performed by PB**

Based on the change in design direction, PB will need to re-produce the preliminary design and significantly revise the preliminary plans and estimate. NHDOT is not requiring an official re-submission of the preliminary plans. An over-the-shoulder meeting will be held before PPS&E plans are submitted.

The proposed integral abutment design may require longer spans, which may in turn affect the superstructure designs. Possible adjustments in the channel profile will be reviewed by Bridge Design and the Bureau of Environment in an effort to keep the proposed spans as short as possible.

PB has been directed to look into keeping the same NEXT F beam superstructure type. If a change in span length is required, the Department has approved the use of 10 ksi concrete in the design. PCI design charts indicate that 10 ksi, 36" deep NEXT F beams with an 8' to 10' width will be adequate for span lengths from 80' and 87'. However, further analysis will be required to verify this superstructure type is viable. If NEXT F Beams cannot be utilized for this span, further alternatives, such as NEXT E beams should be pursued.

## Scope of Work (Highway Design Submissions) - Work Performed by PB

As part of the revision to the design of the NB and SB Beaver Brook bridges, the roadway approach work will have to be modified to accommodate the new span lengths. This work includes:

- Updated guardrail approach calculations.
- Relocation of one proposed drainage structure and associated note revisions.
- Relocation of proposed ITS equipment.
- Revisions to cross sections.
- Updated summary sheets.
- Revised quantity calculations.

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## 4. 14633I Northern Match to 14633H Contract

(submitted to NHDOT on 3/4/15)

### I-93 Contract 14633I, Northern Project Limits

The project scope for Contract 14633I states that the project includes the widening/reconstruction of approximately 2.0 miles of Interstate 93 beginning approximately 1,400 feet north of the Ash Street overpass in Londonderry, NH and ending approximately 2,400 feet north of Stonehenge Road underpass in Londonderry, NH (approximately Sta. 1773+89 NB and approximately Sta. 3768+25 SB). The Department would like to modify the northern project limits for Contract 14633I to encompass the work required to construct the “ultimate,” four lane design for a portion of Contract 14633F. Currently, as constructed in Contract 14633F for the interim, the width of the pavement along this portion of Interstate 93 varies between 58 feet and 72 feet, including pavement markings to provide two, 12-foot travel lanes with varying shoulder widths. Contract 14633I will widen the pavement width to the “ultimate,” four lane width.

Interstate 93 Northbound 14633I Project Limit: For the interim lane configuration along the northbound barrel, the Department has expressed a desire to maintain three travel lanes through the approach to and past the Exit 5 off ramp connecting to the 14633H three lane configuration at approximately Sta. 1807+70. In order to complete the three lane configuration, the project limits will extend approximately 3,300 feet further to the north along the northbound barrel. The new project limits along the northbound barrel will be approximately 5,700 feet north of Stonehenge Road.

Interstate 93 Southbound 14633I Project Limit: In order to perpetuate the four lane configuration through Exit 5 and connect to the 14633H four lane configuration at approximately Station 3887+90 the project limits will extend approximately 11,960 feet further to the north along the southbound barrel. The new project limits along the southbound barrel will be approximately 14,360 feet north of Stonehenge Road.

## Assumptions

The scope of work is to extend the project limits further to the north to provide additional pavement and pavement markings only. PB assumes the following:

1. The additional pavement required to widen the shoulder to the “ultimate” design has been included with the permitting for Contract 14633F, therefore no additional drainage or pollutant loading calculations will be required.
2. The work required for the extension of the project to approximately Station 3801+25 southbound and approximately Station 1798+00 northbound will be conveyed through the entire plan set with the exception of Profiles and Cross Sections. A Typical Section and Longitudinal Pavement Joint Detail will be developed. These stations are the approximate limits of pavement widening to the ultimate four lane width.
3. The work required for the extension of the project north of Station 3801+25 southbound and north of Station 1797+90 northbound will be conveyed through a set of Signing and Pavement Marking Plans with needed construction notes.

## Work Tasks

The scope is to address all the changes to the plans and estimates referenced above. The following tasks are necessary to modify the project limits.

## PPS&E Design Phase

The modifications to the plans will result in ten additional plan sheets for the Signing and Pavement Marking Plans and two additional plan sheets for the General Plans, Curbing and Pavement Layout Plans, and the Drainage, Utility and ITS Plans resulting in a total of sixteen additional sheets.

1. Interstate 93 Northbound 14633I Project Limit Revisions: The following tasks will be completed:
  - a. Signing and Pavement Marking Plan: The project limit will be extended approximately 3,300 feet to the north (approx. Sta. 1806+90) to accommodate the new lane configuration. This work will perpetuate the three lane section past the Exit 5 northbound off ramp and match into the 14633H three lane layout at approximately Sta. 1806+90
  - b. Curbing and Pavement Layout Plans: The pavement layout will extend approximately 2,400 feet to the north (approx. Sta. 1797+90) to incorporate paving the shoulder on the median side of Interstate 93 Northbound. The existing pavement will be sawcut/milled one foot inside the existing edge of pavement as it was constructed under Contract 14633F and an additional 0 - 11 feet of pavement will be provided, resulting in a 10-foot shoulder.

- c. General Plans: The project limits will be updated and the General Plans will reflect the modifications listed above.
  - d. TCP Plan/Narrative: The portable concrete barrier limits will be extended northerly to provide protection for the additional pavement construction. North of the widening appropriate construction notes will be added to the Signing and Pavement marking plans to provide traffic control guidance to the contractor in the areas of overlay and milling/inlay.
2. Interstate 93 Southbound 14633I Project Limit Revisions: The following tasks will be completed:
- a. Signing and Pavement Marking Plan revisions: The project limit will be extended approximately 11,960 feet (approx. Sta. 3887+90) to the north to encompass the necessary shoulder paving and revised four lane pavement markings. Starting at the north end, the work will match the four lane pavement marking configuration from the 14633H contract at approximately Sta. 3887+90; proceed southerly as four lanes through the Exit 5 interchange and over Stonehenge Road; terminating at Sta. 3741+51. Starting at Sta. 3741+51RT, there will be a 65:1 lane drop of the low speed lane which ends at the curve-spiral Sta. 3733+71. This is the beginning of a 65:1 lane shift within the curve to move the remaining three travel lanes from the east side of I-93 Southbound to the west side of I-93 Southbound.
  - b. Curbing and Pavement Layout Plans: The pavement layout will extend 750 feet to the north to incorporate paving the shoulder on the median side of Interstate 93 Southbound. The existing pavement will be sawcut/milled one foot inside the existing edge of pavement as it was constructed under Contract 14633F and an additional 0 - 11 feet of pavement will be provided, resulting in a 10-foot shoulder.
  - c. General Plans: The project limits will be updated and the General Plans will reflect the modifications listed above. This work will perpetuate a four lane configuration throughout the Exit 5 interchange and connect to the 14633H four lane configuration at approximately Sta. 3887+90.
  - d. Drainage, Utility and ITS Plans: Six catch basins ( 2 at approx. Sta. 3765+45 RT, 2 at approx. Sta. 3766+49 RT and 2 at approx. Sta. 3767+53 RT) will be within the proposed pavement. The 3 structures closest to the construction baseline will be filled and abandoned and the connecting pipes to the 3 structures furthest from the baseline will be plugged and abandoned. The 3 structures furthest from the baseline will be adjusted to the new pavement edge and elevation.
  - e. TCP Plan/Narrative: The portable concrete barrier limits will be extended northerly to provide protection for the additional pavement construction. North of the widening appropriate construction notes will be added to the Signing and Pavement marking plans

to provide traffic control guidance to the contractor in the areas of overlay and milling/inlay.

3. Longitudinal Pavement Joint Detail: A detail will be developed to step the base, binder and wearing pavement courses along the longitudinal saw cut.
4. Drainage Note Revisions: Additional drainage notes will be required to address the modifications to the Drainage, Utility and ITS Plans.
5. Summary Table Revisions: Additional modifications will be required to update the summary tables to reflect the modifications described above.
6. Update Quantities and Estimate: Additional effort is required to quantify and estimate the modified items as described above.
7. Coordination with CLD and the Department: The extended project limits and the layout as described above requires coordination with both the Department and CLD to determine the appropriate pavement layout for the interim condition.

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## 5. Right-of-Way Development and Abstracting

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(Submitted to NHDOT on 8/6/15)

### Introduction

The following summarizes the work required to complete the Right-of-Way and abstracting scope, compared to what was proposed in our original contract. This information is being provided as a follow-up to our meeting with NHDOT held on June 18, 2015.

The ROW Abstracting task scoped by PB assumed that NHDOT would provide a preliminary title abstract report for all parcels currently on file. As noted in the I-93 contract scope of work: "A Full Title Abstract or update of an existing Title Abstract will be required for each impacted property where property rights will be required. The DEPARTMENT will provide a preliminary title abstract report for those parcels currently on file, which shall be verified by the CONSULTANT."

### PB prepared a scope which included:

- Review NHDOT preliminary abstract information for potentially impacted parcels and update, as appropriate, with the research information collected by O.R. Colan.
- Existing ROW plan development, building on the base information supplied by NHDOT.
- Update ROW information, as necessary, based on supplemental information provided by O.R. Colan or NHDOT.
- When there are changes to the property line or right-of-way lines, PB will modify the information in the base detail and revise the abstracting file.

At the initial ROW Meeting, NHDOT ROW staff indicated that the information available was primarily from town tax files. All they had done to date was essentially connect bounds, and they indicated that they did not feel that it was adequate for right-of-way determination.

PB assumed that we would be receiving ROW establishment work that had been completed or nearly completed. This assumed that the legacy alignment would have been identified, or at a minimum would have been well in the works, and that the property line information would have been developed to a higher level than tax map data as indicated by the Department at the ROW kick-off meeting.

Additional work outside of the scope of that proposed for the original project is required to complete the ROW abstracting, documentation and plan development tasks. This work involves completion of the ROW abstracting and plan development required to establish the existing ROW and basis for accurate plan development.

Tasks required to complete this work are identified as follows:

## **Research**

Work includes the following:

- Review provided title abstracts of impacted parcels (227 abstracts).
- Perform additional research for parcels along the corridor that are not directly impacted by the project. (not included in original scope – but needed to develop Legacy Alignment)
- Perform Alignment, ROW/boundary research and review for ROW confirmation.
  - Review historical ROW plans and alignments.
  - Verify that the land within the project corridor has been acquired by the State of New Hampshire (by condemnation, easement, deed, etc.).
  - Verify “as-bought” ROW limits.

## **ROW Development**

PB reviewed available information from NHDOT, however it was not what was anticipated, and based on a review meeting with NHDOT it was determined that this information was incomplete and the ROW will need to be established by PB.

### **Establish Existing ROW - Recreate Legacy Alignment Baseline and ROW Limits**

The first step is to establish the right-of-way based on the legacy alignments of I-93. Establishing the legacy alignments is a multi-step process involving the following tasks:

Original Horizontal Layout: Create the legacy alignments using the horizontal alignment data on the original design plans.

Existing Roadway Features: Establish the center of the existing highway using the surveyed edges of pavement and the pavement markings.

Best Fit Bounds: Assume that most of the bounds are in the correct locations and establish alignments that are as parallel to the original design plans as possible while matching the design plan offsets to the bounds.

**Compare Alignment / ROW Against Record and Field Evidence**

Once an acceptable right-of-way line and legacy baseline has been established for each mainline alignment, it is necessary to evaluate the accuracy of the Departments property lines, minor roadway and Exit 4 ramps right-of-ways for the entire alignment with the main focus being those parcels that will have impacts due to the proposed improvements.