

**Owner's Engineer Services for the  
Tappan Zee Hudson River Crossing Project  
at MP 14.67 in the New York Division**

**TASK ORDER NUMBER 16**

This Task Order is made effective as of April 16, 2020, under the terms and conditions established in the MASTER AGREEMENT BETWEEN HNTB AND CONSULTANT, effective May 1, 2013 (the Agreement), between HNTB New York Engineering & Architecture, PC (HNTB) and Bittner-Shen Consulting Engineers, Inc. (Consultant). This Task Order is made for the following purpose, consistent with the Project defined in the Agreement:

*To provide consultation services as part of the Owner's Engineer Assignment 6 – Construction Compliance Oversight.*

**Section A. - Scope of Services**

A.1. Consultant shall perform the following Services:

See Attachment A

A.2. The following Services are not included in this Task Order, but shall be provided as Additional Services if authorized or confirmed in writing by HNTB:

N/A

A.3. In conjunction with the performance of the foregoing Services, Consultant shall provide the following submittals/deliverables (Documents) to HNTB:

See Attachment A

**Section B. - Schedule**

Consultant shall perform the Services and deliver the related Documents (if any) according to the following schedule:

Start Date:            April 16, 2020  
Completion Date:    June 30, 2020

**Section C. - Compensation**

C.1. In return for the performance of the foregoing obligations, HNTB shall pay Consultant on a billing rate basis a total not to exceed amount of \$65,361, (\$54,758 for direct technical labor, overhead and profit, and \$10,603 for direct non-salary costs), consistent with Attachment A.

C.2. Compensation for Additional Services (if any) shall be paid by HNTB to Consultant according to the following terms:

Compensation for Additional Services shall be paid according to the terms of the Master Agreement.

**Section D. - HNTB's Responsibilities**

HNTB shall perform and/or provide the following in a timely manner. Unless otherwise provided in this Task Order, HNTB shall bear all costs incident to compliance with the following:

N/A

**Section E. - Other Provisions**

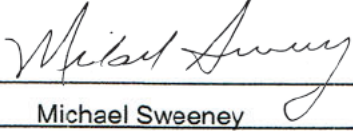
The parties agree to the following provisions with respect to this specific Task Order:

No out of scope services shall be performed without prior written approval of HNTB.

Application of Owner project policies, procedures, protocols and any other Owner project requirements, including but not limited to the OE Staffing Procedure, may result in a change to the Scope of Services, Schedule and Compensation described in this Task Order. Should such a circumstance arise, the Scope of Services, Schedule and Compensation in this Task Order shall be adjusted accordingly and a revised Task Order executed.

Except to the extent modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

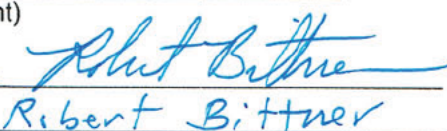
HNTB New York Engineering & Architecture, PC  
(HNTB)

Signature:   
Name: Michael Sweeney

Title: Executive Vice President

Date: April 20, 2020

Bittner-Shen Consulting Engineers, Inc.  
(Consultant)

Signature:   
Name: Robert Bittner

Title: President

Date: April 20, 2020

# Task Order Number 16

## ATTACHMENT A

### Scope of Work

#### **Non-Destructive Evaluation of SUP and Main Span**

Consultant will provide a nondestructive evaluation (NDE) investigation of blisters observed on selected areas of the Shared Use Paths and Main Lanes of the recently constructed Governor Mario M. Cuomo Bridge.

Consultant will conduct an initial 3-day field NDE investigation of selected deck areas of the SUP and main traffic lanes of the northbound and/or southbound bridge decks, using a Sonic Surface Scanner or "S3" system to scan selected deck areas to check for debonding of the Rosphalt 50 vs. sound, bonded deck conditions. This system allows extensive Impact Echo/Spectral Analyses of Surface Waves (IE/SASW) testing over large areas to be done in a timely and economic manner compared to point-by-point testing.

Day 1 – SUP Lane NDE - Consultant will scan both IE/SASW tests on scan lines spaced 1 ft apart on the SUP lane of the NB (west) bridge for about 10 scan lines on 3 sections of 500 ft in length. SUP test areas will be selected where surface conditions are visibly sound, moderately blistered and severely blistered and also include the areas where the 6 cores were recently drilled. A total of about 25,000 to 30,000 IE tests and 25,000 to 30,000 SASW tests would be done over a total area of 1500 ft x 10 ft or 15,000 sq ft. The OE will also perform some much slower point-by-point IE/SASW testing on SUP test areas with apparent visually sound, moderately and severely blistered areas for comparison purposes with the SSS-IE-SASW scanner results. Assuming proper conditions exist, the OE will attempt Infrared Thermography (IRT - assuming sunshine is present) to see if it is sensitive to debonding of the Rosphalt 50 as well as to identify hot spots indicative of debonding as the Rosphalt warms up in the morning and/or cool spots as it cools down in the late afternoon. The SUP NDE data will be reviewed that evening to see if IE tests were successful in mapping the debonded asphalt or if combined IE/SASW tests were best at identifying areas of debonded asphalt by cores and in areas of visible blisters.

Days 2 and 3 – Main Lanes NDE – The OE HNTB will select main traffic lane areas that are of interest for scanning and IRT. If OE knows of possible areas that might be sound vs. blistered (or with suspected incipient debonding/delamination) that is rolled flat due to truck traffic vs. more car traffic areas, then those areas will be selected. Testing will be dependent on traffic control and accessibility. IRT will be conducted using a Flir iPhone camera of the main lane areas tested with the scanner. The NDE investigation results will be presented in a report with example IE, SASW, and IRT data for debonded vs. sound bonded Rosphalt 50 deck conditions. Plan views mapping out debonded asphalt conditions vs. bonded asphalt/sound deck conditions will be presented in the form of 2D color images. The results of the investigation will be presented in an engineering report to be submitted within 2 to 3 weeks of completing the field NDE. The OE will present interim results, as requested, so that coring could be done to check/confirm the NDE results in terms of bonded to debonded Rosphalt 50 conditions.

In addition, Consultant will:

- Attend site investigations while other members of the OE Team are executing NDT on the SUP and Travel Lanes;
- Review NDT data and establish where cores should be taken on SUP and Travel Lanes;
- Review cores for defects, etc;
- Provide Report of findings establishing existing condition of Rosphalt
  - What caused the existing blemish condition
  - Longevity of the Rosphalt
  - Determine if remedial work must be completed short term/long term for pavement life

**Task Order Number 16**  
**ATTACHMENT B**  
**Fee Estimate**

New York State Thruway Authority  
P.O. Box 189  
Albany, NY 12201-0189

Exhibit B  
Salary Schedule

SUB-CONTRACTOR:

**Bittner-Shen Consulting Engineers**  
Tappan Zee Owner's Engineer  
D214187

Effective 2/14/2020

JOB TITLE	ASCE (A) or NICET (N) Grade	AVERAGE LOADED HOURLY RATES (Includes Direct Technical Labor, Overhead and Profit)		MAXIMUM LOADED HOURLY RATES (Includes Direct Technical Labor, Overhead and Profit)				OVERTIME CATEGORY (A, B or C)	
		PRESENT	PROJECTED	Year	Year	Year	Year		
		2019	(Midpoint) 2020	2018	2019	2020	2021		
[REDACTED]	N/A	\$202.71	\$206.76	\$198.73	\$202.71	\$206.76	\$210.90	N/A	
	N/A	\$163.29	\$166.56	\$160.09	\$163.29	\$166.56	\$169.89	N/A	
	N/A	\$198.73	\$202.70	\$194.84	\$198.73	\$202.70	\$206.75	N/A	
	N/A	\$70.36	\$71.77	\$68.98	\$70.36	\$71.77	\$73.21	N/A	
	N/A	\$194.84	\$198.74	\$191.02	\$194.84	\$198.74	\$202.71	N/A	
	N/A	\$317.32	\$323.67	\$311.10	\$317.32	\$323.67	\$330.14	N/A	
	N/A	\$135.25	\$137.96	\$132.60	\$135.25	\$137.96	\$140.72	N/A	
	Staff Engineer	II	\$186.00	\$189.72	N/A	\$186.00	\$189.72	\$193.51	B
	Project Engineer/Geologist/Geophysicist	IV	\$198.00	\$201.96	N/A	\$198.00	\$201.96	\$206.00	B
	[REDACTED]	N/A	N/A	\$320.00	N/A	N/A	\$320.00	\$326.40	N/A
[REDACTED]	VI	\$230.00	\$234.60	N/A	\$230.00	\$234.60	\$239.29	B	
[REDACTED]	VIII	\$322.00	\$328.44	N/A	\$322.00	\$328.44	\$335.01	A	

ENGINEER'S OVERTIME COMPENSATION POLICY

It shall be the ENGINEER'S responsibility to comply with Labor Laws in the payment of overtime. The ENGINEER'S overtime compensation policy controls what overtime category is assigned to each job title listed above.

Category A - no overtime compensation

Category B - overtime compensated at straight time rate

Category C - overtime compensated at straight time rate x 1.5 (Premium Overtime)

**Exhibit B**  
**Estimated Direct Non-Salary Costs**  
 HNTB Engineering & Architecture, P.C.  
 Owner's Engineer for the Design-Build Contract, TANY 12-18B/D214134  
 Tappan Zee Hudson River Crossing Project  
 D214187  
**Bittner-Shen Consulting Engineers**

ITEM 1	TRAVEL						Total
	Mileage	60	miles	@	\$ 0.575	=	35
	Travel - Rockville, MD (Project Engineer/Geologist)	1	trip	@	\$ 825.00	= \$	825
	Airfare - Denver to NY (Senior Engineer/ NDE Manager)	1	trip	@	\$ 875.00	= \$	875
	Airfare - CA to NY (Pavement Materials Scientist)	1	trip	@	\$ 1,500.00	= \$	1,500
	Rental Car	1	day	@	\$ 88.000	= \$	88
	Ground Transportation	1	trip	@	\$ 110.000	= \$	110
	Hotel	11	nights	@	\$ 146.00	= \$	1,606
	Per Diem	14	days	@	\$ 76.00	= \$	1,064
ITEM 4	MISCELLANEOUS						
	Equipment Charges - SSS-IE, IRT, IE/SASW						\$ 4,500
<b>TOTAL DIRECT NON-SALARY COST</b>							<b>\$ 10,603</b>
ITEM 5	SUBCONTRACTOR EXPENSE						
<b>TOTAL DIRECT NON-SALARY COST - SUB-CONTRACTOR EXPENSE</b>							<b>\$ 10,603</b>
<b>TOTAL DIRECT NON-SALARY COST</b>							<b>\$ 10,603</b>

**Exhibit C - Term 3 Extension  
Staffing Table**

**Bittner-Shen Consulting Engineers  
Tappan Zee Owner's Engineer  
D214187**

*Bittner-Shen Consulting Engineers*

JOB TITLE	ASCE (A) or NICET (N) Grade	Task 1 Constr. Compliance Oversight - Mgmt Support	Task 2 Constr. Compliance Oversight - Field Support	Task 2.6 Non- Destructive Evaluation of SUP and Main Span	Task 3 Owner Verification Testing	Task 4 Coord. with Owner IA Firm and Independent Referee Lab	Task 5 Compliance Review of Ancillary Constr. and Procedures	HOURS	Max Hourly Rates 2020	DOLLARS
	N/A							0	\$206.76	\$0
	N/A							0	\$166.56	\$0
	N/A							0	\$202.70	\$0
	N/A							0	\$71.77	\$0
	N/A							0	\$198.74	\$0
	N/A							0	\$323.67	\$0
	N/A							0	\$137.96	\$0
Staff Engineer	II			40				40	\$189.72	\$7,589
Project Engineer/Geologist/Geophysicist	IV			91				91	\$201.96	\$18,318
	N/A			45				45	\$320.00	\$14,400
	VI			56				56	\$234.60	\$13,138
	VIII			4				4	\$328.44	\$1,314
<b>Total Hours</b>		<b>0</b>	<b>0</b>	<b>236</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>236</b>		
<b>Total Dollars</b>		<b>\$0</b>	<b>\$0</b>	<b>\$54,758</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>			<b>\$54,758</b>

**Exhibit D  
Summary**

**HNTB Engineering & Architecture, P.C.  
Owner's Engineer for the Design-Build Contract, TANY 12-18B/D214134  
Tappan Zee Hudson River Crossing Project  
D214187**

**Bittner-Shen Consulting Engineers**

	<b>Total</b>
<b>Item IA, Loaded Labor (estimated)</b> (Includes Direct Technical Labor, Overhead and Profit)	54,758
<b>Item IB, Direct Technical Salaries (estimated)</b>	
<b>Item IIA, Direct Non-Salary Costs (estimated)</b> Subject to Audit	10,603
<b>Item IIB, Direct Non-Salary Costs (estimated)</b> Subject to Audit (Sub-Contractor Cost)	
<b>Item IIC, Direct Non-Salary Costs (estimated)</b> Subject to Audit (Sub-Consultant Cost)	
<b>Item III, Multiplier - N/A Included in Item IA Loaded Labor</b> (Includes Overhead, Administrative Time and Profit)	
<b>TOTAL ESTIMATED COST</b>	<b>\$65,361</b>