STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

October 16, 2017

Commander Christopher Bisignano
First Coast Guard District
(dpb) Battery Park Building
One South Street
New York, New York 10004-1466

Dear Commander Bisignano:

Subject: State Project 40-141
Bridge No. 01138 (East Haddam Swing Bridge)
Route 82 over Connecticut River
Towns of East Haddam and Haddam

The Department of Transportation (Department) has initiated a bridge rehabilitation project to address structural deficiencies found during bridge inspection. A summary of the project, which is in the Preliminary Design phase, is as follows:

Existing Conditions:

Location of Bridge on Waterway:

The bridge is located approximately 13.5 miles north of the mouth of the Connecticut River (Latitude: 41° 27' 6.05" N**,** Longitude: 72° 27' 51.79" W). The Connecticut River flows southward to the Long Island Sound. Mean High Water (MHW) = 1.7 feet, Mean Low Water (MLW) = -0.5 feet, and Coastal Jurisdiction Elevation (CJL) = 3.0 feet (all elevations based on NAVD88).

Description of Existing Structure

Bridge No. 01138 is a four span structure which consists of a fixed deck truss in Span 1, a fixed through truss in Span 2, and a moveable through truss swing span (Spans 3 and 4). The bridge carries two lanes of Route 82 traffic in an east-west orientation. The fixed Span 2 and moveable Spans 3 and 4 are over the river. Span 1 is completely over land. The total structure length is 885 feet and the deck curb-to-curb width is 24.5 feet.

Bridge No. 01138 was originally constructed in 1913, and was rehabilitated in 1988, 1999, and 2007. An emergency project was completed in 2016 which addressed swing span operational issues until the mechanical and electrical system replacement under the subject major rehabilitation project. The purpose and need for the project is to repair a structurally and operationally deficient bridge. Section loss on steel members, areas of delaminated concrete on piers and mechanical/electrical systems that are not reliable for swing operations are some of the deficiencies noted in the inspection report. In addition, the towns of Haddam and East Haddam have requested that a sidewalk be constructed on the bridge to improve pedestrian and bicycle travel suitability and safety.

Existing Navigation Lighting:

The bridge currently supports nighttime navigation. The existing system consists of three navigation lights mounted on Pier 2 (one at each end of the pier and one on the eastern face), four navigation lights mounted on the machinery pit housing around Pier 3 (one at each nose and on each face of the pier) and three navigation lights on the swing span truss top chord at both ends and over the center pivot bearing/Pier 3. The bridge lighting is displayed in accordance with Part 118.70 of CFR Title 33.

Dimensions of Navigational Opening:

- Vertical Clearance: 22 feet above MHW (NAVD 88)
- Horizontal Clearance: 200 feet (Span 3) and 180 feet (Span 4)
- Length of Bridge Project: 920 feet (approx.)
- Width of Project: 100 feet
- Depth of Waterway: 41 feet (within Span 3, according to NOAA Chart 12377)
- Width of Waterway: 690 feet (approx.)

Proposed Project:

Proposed Project Description:

The proposed scope of rehabilitation for Bridge No. 01138 includes strengthening of structural steel members, the addition of a cantilevered sidewalk structure that is connected to the south side of the bridge, deck repairs in Spans 1 and 2, deck replacement in-kind over the machinery pit (Pier 3), installation of new bridge rails, replacement of the wearing surface, one deck joint and Span 1 disc bearings on Pier 1, localized painting of steel superstructure, substructure concrete patching and masonry repointing above the water surface, relocation of the electrical house and operator house staircase, replacement of the electrical system, replacement of the submarine cables, and replacement of portions of the mechanical system.

Estimated Construction Cost and Funding Source of Project:

The current total estimated construction cost is $55 Million and will be funded utilizing Federal (80 percent) and State (20 percent) funding.

Project Duration and Expected Years of Construction:

Construction is anticipated to begin in the fall of 2019. The anticipated duration of construction is two construction seasons (plus work during the normal winter shutdown) with construction ending in fall 2021.

A swing span operation outage for a minimum of four weeks will be necessary to install the new electrical system and part of the mechanical system. During this time the swing span will be in the closed position, allowing Route 82 traffic to cross the bridge. To minimize the impact to marine traffic, this work (including the replacement of the submarine cables) is proposed to be performed during the late fall or the typical winter shutdown (November – March).

Barges and Placement:

For work on the undersides of Spans 2-4, barges will likely be used. When the barges are being used for construction activities, they will be located within the span where the work is being performed. When not in use, the barges will be moored adjacent to Pier 2 in Span 2 and adjacent to Pier 3 in Span 4. This will leave the wider and deeper navigable channel open to marine traffic. The barges will be fairly large in order to support cranes and other equipment needed for the steel repair work and sidewalk construction. The barges will likely travel up the Connecticut River from the Long Island Sound and remain at the project site for the duration of each construction season. Approximate sizes and proposed locations of the barges is shown on the enclosed drawings. Final locations and size will be coordinated with the Coast Guard. The barges will be lighted and advanced signs will be placed to alert boaters to the barge locations.

Navigation Lighting:

The existing navigation lighting system will be protected in-place during construction. The new electrical system and house will be located at the north side of the bridge so it is anticipated that the existing electrical system can continue to power the navigation lights and swing span operations while the new electrical system is installed.

Horizontal Clearance:

The addition of the cantilevered sidewalk structure will permanently reduce the horizontal clearance in Span 4 by approximately 8.25 feet when the swing span is in the open position.

During construction, the barges will be moored in locations so that the existing horizontal clearance of 200 feet in Span 3 (the deeper navigable channel) will be maintained. The horizontal clearance in Span 4 will be reduced by the width of the barge. When the barges are in use within the navigable channels, the horizontal clearance will be temporarily reduced during the work day. This reduction in width will be allowed only during authorized channel reduction periods determined by Coast Guard. Barge size, location and information will be required to be submitted to and coordinated with the Coast Guard by the Contractor prior to construction.

Vertical Clearance:

No permanent impacts are anticipated. The existing vertical clearance is 22 feet above MHW and will be maintained after construction. The vertical clearance will be temporarily reduced because temporary work platforms, containment systems and scaffolding will likely be used over the Connecticut River navigation channel. Containment systems and work platforms suspended from the truss bottom chord are proposed to be above the 500 year flood elevation. This will temporarily reduce the vertical clearance to approximately 18.5 feet above MHW.

Means and Methods of Access for Bridge Work:

It is proposed that work be restricted to one span at a time. A containment system will be placed around the span where construction is occurring to prevent debris from falling into the river. Work on the underside of Span 1 can be completed from the ground within State right-of-way, using the driveway to the marina at the northwest corner of the bridge to access Span 1. For work on the undersides of Spans 2-4, barges will likely be used for the majority of the work. Substructure repairs (including mortar repointing) above the MHW elevation are proposed to be done from scaffolding on the barges or fixed platforms attached to the piers.

Enclosures:

The following enclosures have been included for the project to assist in the review of the project:

Enclosure A: Location Map
Enclosure B: NOAA Navigational Channel Information
Enclosure C: Existing and Proposed Conditions Plans

If you require additional information, please contact Mr. Mark F. Carlino at the Department's Office of Environmental Planning by email Mark.Carlino@ct.gov, or telephone (860) 594-2099.

Very truly yours,

Andrew Cardinali

Digitally signed by Andrew Cardinali
DN: C=US, E=andrew.cardinali@ct.gov, O=Connecticut Department of Transportation, OU=Consultant Bridge Design, CN=Andrew Cardinali
Date: 2017.10.16 09:10:46-04'00'

For Rabih M. Barakat, P.E.
Transportation Principal Engineer
Bureau of Engineering and Construction

Enclosures

Tracey A. Brais/tab/jwk/ajc/esk/rmb
bcc: Mark D. Rolfe
Scott A. Hill
Mark F. Carlino – Andrew H. Davis – Christopher Samorajczyk – Alexander Finch
Theodore H. Nezames – Rabih M. Barakat – Andrew J. Cardinali – Jonathan W. Kang
Robert Obey – Eileen Ego (District 2)
Donald P. Wurst – Anand Seshadri – Tracey A. Brais (CME)