

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

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Transmittal:

From: Mark McMillan
Date: May 12, 2017
To: Catherine Labadia, Deputy State Historic Preservation Officer

Project: State No.: 146-199
F.A.P. No.: 6146(017)
Project Title: Rehabilitation of Bridge #04575
Main Street over Tankerhoosen River
Town: Vernon

Subject: SHPO Consultation Documentation

Description of Activity

The Town of Vernon proposes to rehabilitate the Bridge #04575, which carries Main Street over the Tankerhoosen River (Image 1). They will do so with technical assistance from the Connecticut Department of Transportation (CTDOT) and financial assistance from the Federal Highway Administration. Federal involvement brings the project under the purview of Section 106 of the National Historic Preservation Act. Additionally, Bridge #04575 is a rare extant example of a lenticular truss and a contributing element to the Talcottville Historic District.¹

The subject bridge was built in 1891 and underwent a significant rehabilitation in 1995. At that time, a new steel and concrete superstructure was introduced to carry the live load of traffic (Image 2). The original masonry abutments and wrought iron lenticular trusses were retained. State Project #146-199 proposes to replace the superstructure that was installed in 1985. The lenticular trusses will be rehabilitated and reinstalled to bear on their original masonry abutments. Construction is scheduled to commence in 2018 and is anticipated to be completed in one season.

Technical Review of Project

Bridge #04575 is a single span structure over a segment of the Tankerhoosen River just upstream of a spillway for the Talcottville mill. The bridge consists of a wrought-iron lenticular pony truss superstructure supported on brownstone masonry abutments. It retains several of its original decorative features, such as the distinctive lattice railing and one of its four original cast iron orb finials (Image 3). Its tapered floor beams extend beyond the roadway on the west side of the bridge and originally supported a wooden sidewalk. The sidewalk has been removed and the beams currently support a gas line.

¹ National Park Service, *Talcottville Historic District (NRHP #88002959)*, listed January 5, 1988.

The bridge was produced by the Connecticut-based Berlin Iron Bridge Company. In 1877, they acquired the patent for a “parabolic” or lenticular truss and became a prolific manufacturer of this type of bridge. At its height, it is estimated that hundreds of Berlin lenticular truss bridges were installed throughout the state. Today, Bridge #04575 is one of less than twenty remaining in the state.

Berlin lenticular trusses represent a specific bridge type that is identified in the Connecticut’s 1991 Historic Bridge Inventory (hereafter “*Inventory*”). In its accompanying Preservation Plan, the *Inventory* notes that “special attention should be paid to preserving...Bridge #04575”.² While the bridge has been altered since its listing in the *Inventory* and on the National Register, it retains its ties to the Talcottville District and is an important and rare example of its type. For these reasons, Bridge #04575 is still a significant historic resource.

CTDOT’s Bridge Safety and Evaluation unit have assessed the subject bridge as being in Poor structural condition. This is largely due to the corrosion of the 1985 steel elements and deterioration of the bridge’s substructure. The abutments and wing walls exhibit large (up to 7’ x 5’) voids caused by missing stones (Image 4).

In 2008, the State Historic Preservation Officer (CTSHPO) reviewed the proposed removal and replacement of Bridge #04575. They determined that such an action constituted an Adverse Effect to Historic Properties under Section 106 of the National Historic Preservation Act of 1966.³ They advised an in-depth analysis of alternatives prescribed by the *Inventory*’s Preservation Plan.

Heeding this recommendation, the project has been resubmitted with an amended scope of work. The steel and concrete superstructure that has installed in 1985 will be replaced while the original lenticular truss elements and masonry substructure will be retained and repaired. Rather than the existing six-beam system, the replacement superstructure will consist of four rolled steel beams that will support an 8-1/2” thick reinforced concrete deck.

New cast-in-place concrete abutments will replace the concrete stem abutments that were installed in 1985. Like their predecessors, they will be installed behind the original masonry abutments and support the load of the new superstructure. The original masonry brownstone abutments will be rehabilitated by replacing missing stones and replacing missing mortar. The masonry abutments will then bear the load of the original lenticular trusses independently of the live load of the bridge.

The rehabilitated bridge will closely resemble its current appearance. It will remain a one-lane, alternating direction structure. The wearing surface will be restriped to allow for an 11-foot wide vehicle lane alongside a 4-foot wide pedestrian lane. The gas main currently carried on the original beams will be relocated between the new superstructure girders and will no longer be visible (figure 1).

² Historic Resource Consultants, *Connecticut Historic Bridge Inventory Final Report: Preservation Plan*, State of Connecticut Department of Transportation (May 1991), pg. 154.

³ David Bahlman (CTSHPO) letter to Tim Timberman (Close, Jensen and Miller), *Main Street Bridge, Vernon, CT, ConnDOT #146-TBD, ConnDOT Bridge No. 04575*, dated November 4, 2008.

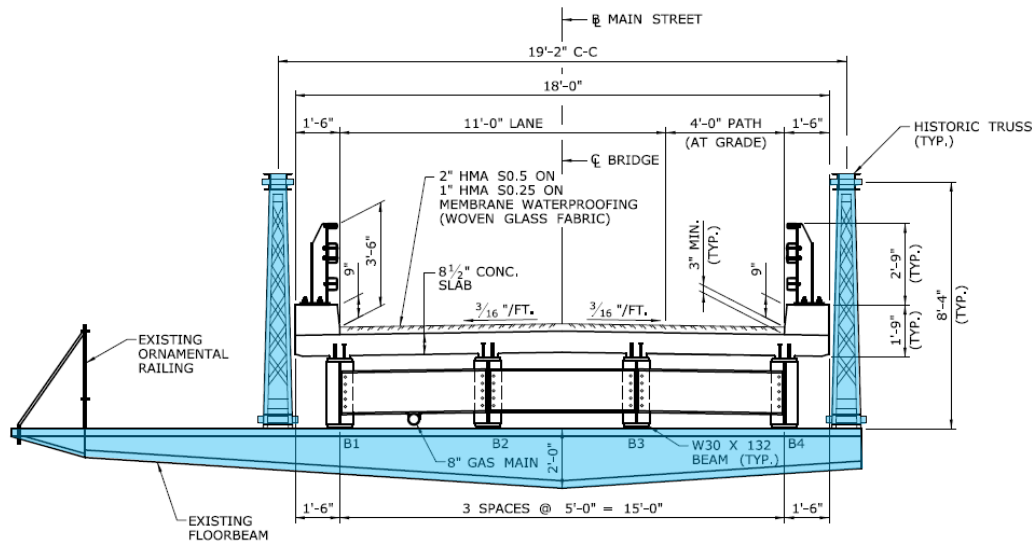


Figure 1: Detail of proposed cross section of rehabilitated Bridge #04575. The original truss members and girders (highlighted in blue) will be retained while a new superstructure will replace the 1985 system. Note that the new girders are installed just above the original beams. However, these two systems are independent and do not touch or bear on each other

The undertaking will also include full depth repaving of 200-feet of approach roadway on each side of the bridge. Historically, Main Street was a thoroughfare connecting the Talcottville with Manchester and Vernon. In the 1940s, construction of I-84 truncated Main Street so that it now terminates approximately 200 feet north of the subject bridge. There are three houses on this cul-de-sac north of the bridge, all of which are contributing elements of the Talcottville Historic District.

11 Main Street is a 2-story single family residence that was constructed in 1850 (Image 2). The parcel also features a detached garage which was built ca. 1900.

19 Main Street is a 2-1/2 story single family residence. Built ca. 1802, it is the oldest building in the historic district (Image 5). It is situated on a parcel whose southern border abuts the Tankerhoosen River. It is constructed of brick and an example of vernacular Federal-style architecture. The house was owned by John Warburton, who was one of the “pioneers of the cotton manufacturing industry in Connecticut.”⁴ The driveway to this house continues westward to **17 Main Street**. This is also a 2-1/2 story Greek Revival single family residence. It was built in 1840 (Image 6).

The soils surrounding the bridge are characterized as a combination of Udorthents, Urban Land Complex and Hartford Sandy Loam. There are no known archaeological resources within the area. Given the soil disturbances required in the construction of the mill, the soils are unlikely to contain pre-contact resources, though they have a moderate to high potential for historic resources associated with the mill or other structures of the town. Avoiding staging and construction activities is recommended, with the suggestion of utilizing the paved cul-de-sac / parking lot at the end of Main Street for such activities.

⁴ National Park Service, *Talcottville Historic District (NRHP #88002959)*, listed January 5, 1988., Section 8.

Recommendation

The Office of Environmental Planning has reviewed the revised scope of State Project #146-199. As part of this review, they conducted archival research on the bridge and the undertaking's area of potential effect, performed field assessments of the site, and consulted with the project design team. It is the professional opinion of the OEP that the proposed undertaking complies with the intention of the 1991 Historic Bridge Inventory Preservation Plan as well as the guidelines of the Secretary of the Interior's *Standards for Historic Preservation*.

The OEP recommends that the guidelines for repointing historic masonry described in Preservation Brief #2 "*Repointing Mortar Joints in Historic Masonry Buildings*", published by the National Park Service be incorporated into the final construction documents and that these documents are submitted to OEP and the State Historic Preservation Officer for their review. If these stipulations can be met, OEP recommends a determination of No Adverse Effect on Historic Properties.



Mark McMillan
National Register Specialist
Office of Environmental Planning

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Based on the information provided to the State Historic Preservation Office, we:



Concur



Do Not Concur (additional comments attached)

with CTDOT's Office of Environmental Planning's opinion that there will be

No Adverse Effect to Historic Properties

caused by this undertaking (State Project # 146-199 in Vernon).



Catherine Labadia
Deputy State Historic Preservation Officer

6/28/17

Date



Department of Economic and
Community Development

Connecticut
still revolutionary



Image 1: Main Street Bridge #04575 over Tankerhoosen River.



Image 2: The original truss supports its own weight on the brownstone abutments. The live load of the bridge is carried independently on a steel and concrete superstructure that was introduced in 1985. 11 Main Street is visible beyond the bridge.



Image 3: Details of the lattice railing with cast iron rosettes and ball finial on Bridge #04575. These elements are original and distinctive of the Berlin Iron Bridge Company. Note that the grey gas line visible beneath the lattice railing will be relocated as part of this rehabilitation. It will no longer be visible within the replacement superstructure.



Image 4: North abutment of bridge. No mortar remains between the brownstone units and there are several voids in the abutment walls.



Image 5: John Warburton House at 19 Main Street, viewed from cul-de-sac of Main Street. Bridge #04575 is just visible at the left of the picture.

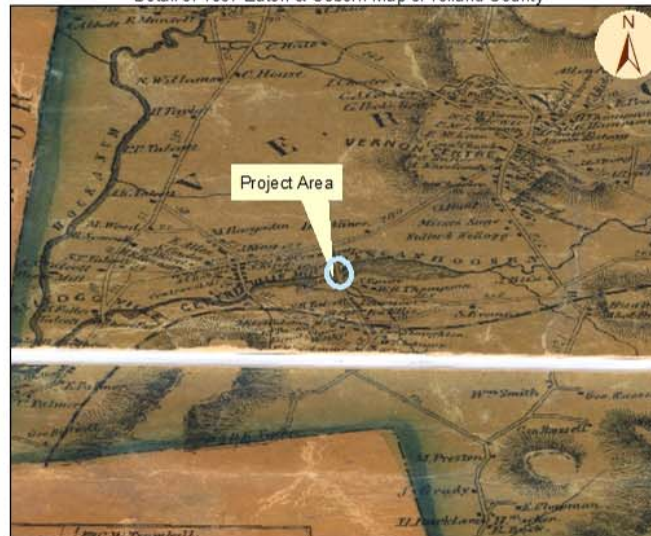


Image 6: Greek Revival house at 17 Main Street (on left) and the rear of 19 Main Street (on right), viewed from the spillway downstream of Bridge #04575.

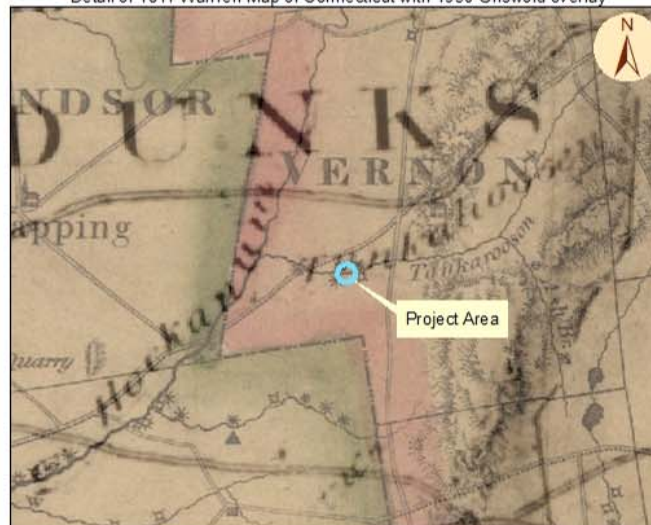
Detail of 2017 Aerial Photography



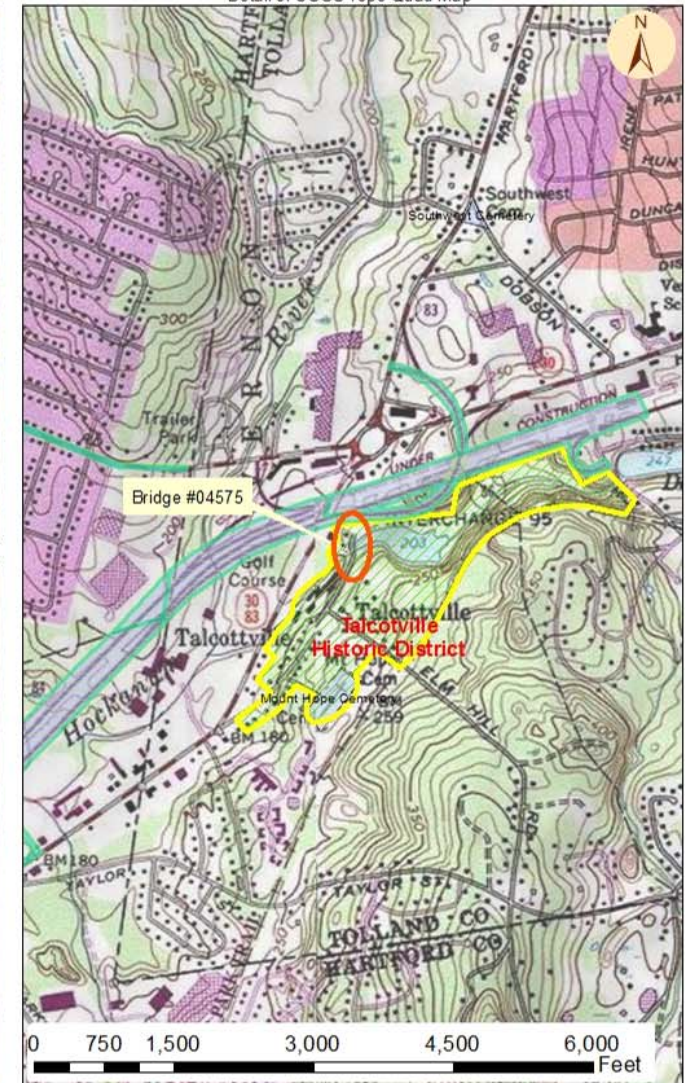
Detail of 1857 Eaton & Osborn Map of Tolland County



Detail of 1811 Warren Map of Connecticut with 1930 Griswold overlay



Detail of USGS Topo Quad Map

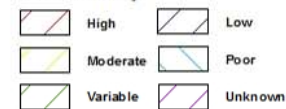


Office of Environmental Planning Environmental Review - Historical and Archaeological Resources

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Vernon

Predicted Archaeological Soil Sensitivity



National Register Historic District



Approximate Location of Archaeological Site



April 4, 2017