



STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

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Determination of Effect on Historic Properties

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Project: State No.: 132-139
F.A.P. No.: TBD
Project Title: Rehabilitation of Culvert #05944
I-291 and King Street over Podunk River
Town: South Windsor

Determination of Effect: No Adverse Effect, Conditional

Project Description

The Connecticut Department of Transportation (CTDOT), with funding support from the Federal Highway Administration (FHWA), proposes to rehabilitate Culvert #05944, which conveys the Podunk River beneath Interstate 291 and King Street in South Windsor. Recent inspections by CTDOT's Bridge Safety and Inspection unit have determined the culvert is in Poor condition due to the deterioration of its corrugated metal pipe linings. Under the proposed scope of work, a layer of new concrete will be installed over the existing liner. The project will also install repairs to the concrete headwall on the north end and construct new end treatments at the outlet (south) end of the culvert. Construction will require access roads to be built at both ends of the culvert. Off-peak closures of King Street will be needed in order to move equipment and materials to the access points.

Culvert #05944 is comprised of twin 12-foot diameter corrugated metal pipes that are each approximately 81 feet long. At its north end (inlet) is a reinforced concrete headwall that follows the contour of the built-up road bed of I-291 (Image 1). At the south end, the pipes are beveled to match the slope of the road bed but do not feature a headwall. The differing treatments reflect the stages of construction of the structure. The older portion of Culvert #05944 was installed beneath King Street in 1958. Above it is approximately 10-12 feet of fill soils.

In 1966, construction of I-291 extended the culvert northward and brought several other changes to the project area (Image 2). Additional lengths of pipes were attached to what had been the inlet of Culvert #05944 to triple its overall length. Fill soils were introduced to create a raised roadbed for I-291 that is approximately 20 feet above the

natural topography. The meandering course of the upstream (northern) segment of the Podunk River was straightened into a riprap-lined channel (Images 2 – 4). The new interstate also permanently acquired land from the abutting privately-owned properties. The resulting right of way included a buffer zone that extends approximately 100 feet from the shoulder of I-291.¹

Under the current project's scope of work, the pipes of Culvert #05944 will be cleaned of debris and loose material and then pressure grouted. A cured-in-place concrete lining system will then be centrifugally cast to build up a 2-½" thick cementitious coating over the existing steel liner. This will create a waterproof seal within the pipe and reduce future corrosion of the liner.

Under the provisions of the Programmatic Agreement executed between CTDOT, FHWA, the Connecticut State Historic Preservation Officer (CT SHPO), and the Advisory Council on Historic Preservation regarding compliance with Section 106 of the National Historic Preservation Act (NHPA) for minor transportation projects², the Office of Environmental Planning (OEP) intends to make a determination of effect on historic properties for the described undertaking.

Resources Potentially Affected

The NPGallery digital asset management database maintained by the National Park Service was consulted for the purpose of locating any properties listed upon the National Register of Historic Places (NRHP) in the project vicinity. It was thereby determined that the ***Windsor Farms Historic District*** abuts the north side of the project area.³ According to the NRHP nomination form, the district is significant as a well-preserved rural-residential community historically devoted to tobacco agriculture. The District is also architecturally significant in containing, in addition to the more than 50 tobacco barns and sheds, well-preserved examples of major domestic building types and styles dating from 1694 to 1930.

Culvert #05944's proximity to the District may be the reason it is categorized as "Possibly Eligible for the National Register" in the statewide bridge inventory database maintained by CTDOT. The culvert is within the existing road right of way, and outside the boundaries of the district. OEP's qualified cultural resource staff reviewed documents related the construction of the subject culvert and I-291 as well as researched the properties within the project APE. They note that the structure does not exhibit design characteristics or associations with historically significant events or people that would qualify it for listing on the National Register. Neither the

¹ CTDOT, *Construction Documents for State Project #132-70, Interstate 291*, (November, 1965).

² *Programmatic Agreement among the Federal Highway Administration, the Connecticut Department of Transportation, the Connecticut State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Implementation of Minor Transportation Projects*, signed October 26, 2012 and revised May 4th, 2018. Accessible online at: www.ct.gov/culturalresources

³ *National Park Service, Windsor Farms Historic District (NRHP #86000723)*, listed on April 11, 1986.

construction design of the culvert nor the fill soils installed over it are likely to contain information potential. In accordance with the provisions of the Section 106 Programmatic Agreement, an OEP qualified architectural historian reached the conclusion that Culvert #05944 is not eligible for the NRHP.

A series of historic maps obtained from the University of Connecticut Map and Geographical Information Center was examined to assess the potential for previously unidentified historic properties to be located within the project area of potential effect (APE). Prior to European settlement, this area was inhabited by the Podunk Tribe. One of the Tribe's primary Contact Period villages was located in the general project vicinity, perhaps a half-mile southwest of the APE.⁴ South Windsor's Main Street ran through the area by at least the late Federal Period as reflected in the 1811 Warren Map of the state, and was rather thickly lined with rural residential farmsteads by the mid-19th Century as evidenced by the 1855 Woodford Map of Hartford County. Fairchild Series aerial photos from 1934 reveal a tobacco barn standing in the rear yard of 712 N. King Street and relatively undisturbed banks of the Podunk River during the early-to-mid 20th Century.

Digital site records maintained by the Office of the State Archaeologist, as well as OEP's own internally compiled database of resources and previous cultural resource studies, were consulted for the purpose of identifying any previously known archaeological sites within the APE. There have been two archaeological surveys conducted that overlap with the subject project's APE. The more recent of the two was conducted in 1999. It focused on the area west of the ramps of the Route 30 and Route 5 interchange. The survey found that the sediments within the APE were "characterized by multi-depositions of moderate to coarse sand and gravel fill".⁵ The report did not discover any prehistoric artifacts or features. It documented that the area had been previously disturbed by "road construction, railroad construction, and commercial and residential development."⁶ The survey concluded that there were no historically significant resources within its study area and that no further study was warranted.

The earlier survey, conducted in 1982, was prepared as part of an Environmental Impact Statement for a proposed I-284 connector⁷. Phase 1 Archaeological Survey was conducted that identified several archaeological sites. None of these sites were within the immediate project area; the closest is over a quarter mile outside of the APE. The nearest sites are all pre-European Contact resources, mostly of Late Woodland chronology, some of substantial size.

Soil classification maps maintained by the U.S. Natural Resources Conservation Service were examined in conjunction with predictive models developed within the

⁴ Mathias Spiess, Podunk Indian Sites, published in *ACS Bulletin No. 4 (April, 1960)*.

⁵ Public Archaeology Laboratory, *Phase 1 Archaeological Assessment and Reconnaissance Survey, Reconstruction of Route 30 and Route 5, State Project #132-126, South Windsor, CT*, (November, 1999).

⁶ *Ibid.*

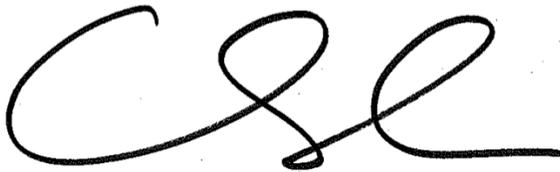
⁷ Public Archaeology Survey Team, Inc., *Environmental Impact Statement for Interstate Route 284, Phase 1 Archaeology Survey, East Hartford, South Windsor, CT*, (September, 1982).

State of Connecticut to assess the sensitivity of the project area for previously unknown archaeological resources. The sediments surrounding the culvert are characterized as Udorthents-Urban Land Complex, which have a low archaeological sensitivity. Beyond the existing road right of way, especially on the north end of the APE where a temporary access road is proposed, are Limerick and Lim and Haven and Enfield Soils predicted to be high in archaeological potential.

Determination of Effect

Consultation was carried out with Federally-recognized Native American Tribal authorities with ancestral ties to the State of Connecticut for this undertaking in August of last year. None of the solicited Tribes responded to the invitation to consult within the allotted time frame.

Given the involvement of the Windsor Farms NRHP Historic District, albeit without any anticipated project-related impacts that might compromise the integrity of the qualities that render these resources significant, as well as the elevated archaeological potential of the area being used for the temporary access road, OEP hereby determines that there will be *no adverse effect to historic properties* in association with the present undertaking. This finding is made **conditional** upon use of heavy duty interlocking plastic protective construction matting for the transport of equipment along the temporary access road. No vehicular operation or other ground disturbance off of this surface is to be permitted on the property of 712 N. King Street. With this determination, FHWA, through OEP, has concluded its responsibility to consider the potential effects of the described project on cultural resources under Section 106 of the NHPA via the provisions of the Programmatic Agreement referenced above.



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Image 1: Inlet (north end) of Culvert #05944. This portion of the culvert was installed in 1966 as part of the construction of I-291. Each pipe is approximately 12 feet in diameter.

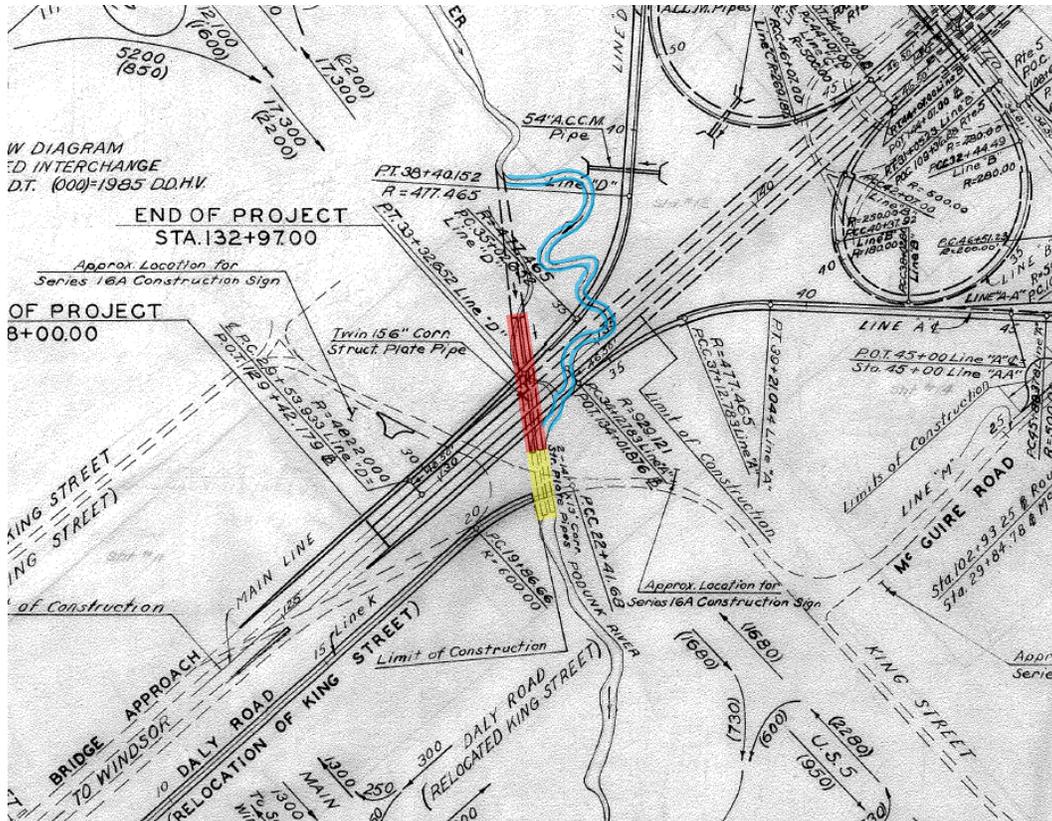


Image 2: Detail of drawings from 1966 construction of I-291. The 1958 portion of Culvert #05944 is highlighted in yellow. The extension of the culvert is highlighted in red. Also shown is the course of the Podunk River that was abandoned when the river was re-aligned as part of this project (outlined in blue). The dashed lines show the original path of King Street (then a through road that would be truncated by I-291) and McGuire Road that were also reconfigured by this project.

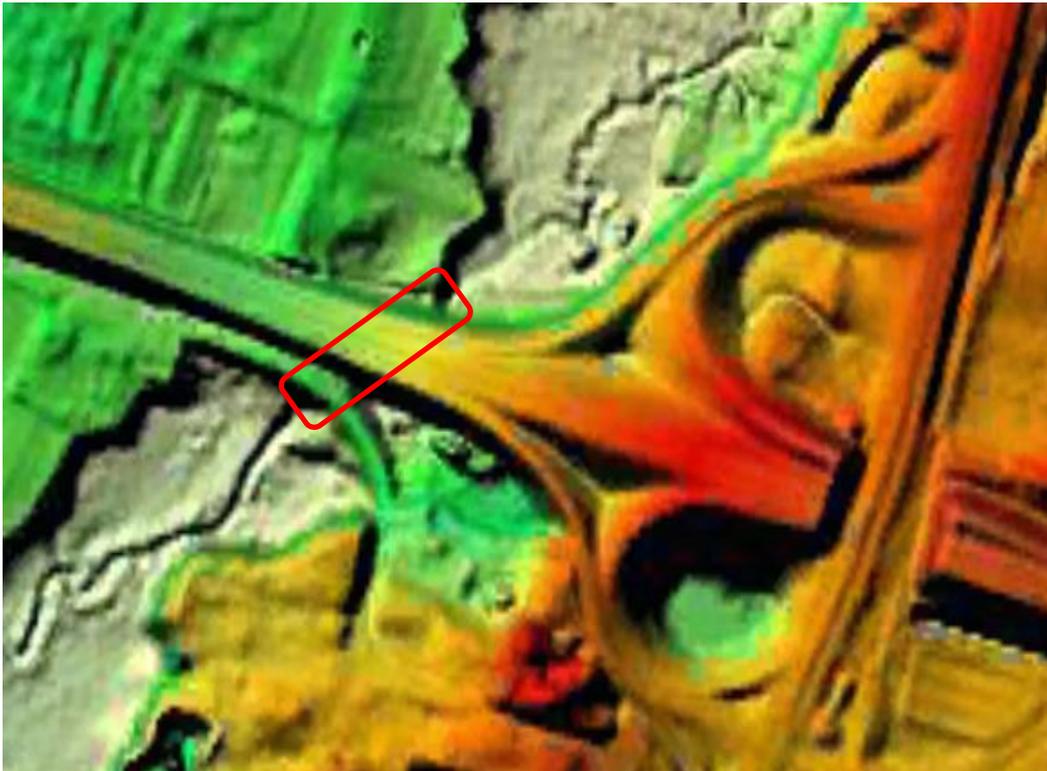


Image 3: LiDAR view of project area, showing the raised roadbed Interstate 291. Culvert #05944 (outlined) was extended before the fill soils were introduced to construct I-291 in 1966.

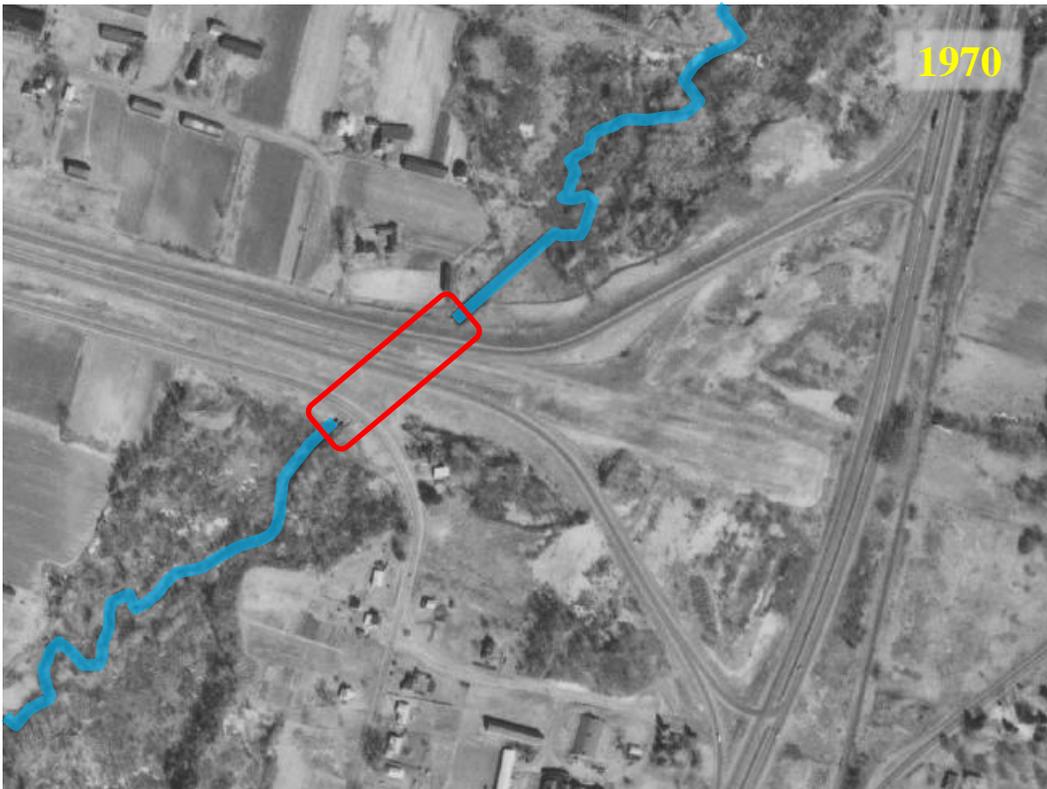


Image 4: Culvert #05944 (outlined in red) as it appears in 1970. During the construction of I-291, the meandering Podunk River was redirected into a straight channel which included the subject culvert.

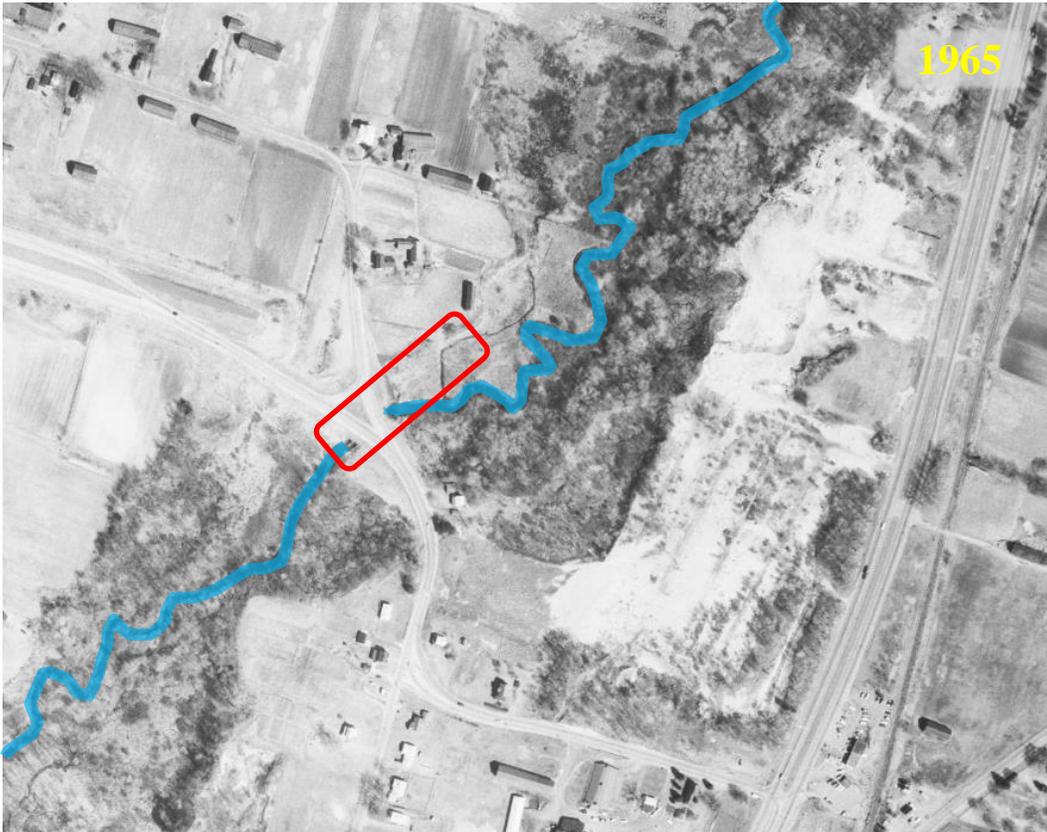


Image 5: Aerial image of Culvert #05944 location as it appeared in 1965. The red outline shows the footprint the culvert occupies today. Note the meandering course of the Podunk River. This will be realigned in 1966 when I-291 is constructed.



Image 6: Fairchild Series aerial photo of project area from 1934, with tobacco barn visible in rear yard of 712 N. King Street and relatively undisturbed banks of the Podunk River.