

Project Description

Bridge No. 07110 supports Route 349 over Birch Plain Creek in the town of Groton. The structure is located approximately 1,500 feet north of Meridian Street and approximately 300 feet south of an interchange with US Route 1.

The existing bridge was constructed in 1964 and consists of a 6-foot asphalt-coated corrugated metal pipe (ACCOMP) approximately 270 feet long. The culvert is buried beneath approximately 40 feet of fill, with sloped embankments at the inlet and outlet. The culvert is supported by a concrete headwall with wingwalls at the inlet and a concrete cradle at the outlet. Bridge No. 07110 exhibits deterioration of the corrugated steel.

Route 349 northbound (NB) lane configuration over the bridge is composed of two 12-foot through lanes, one 12-foot exit, a 4-foot left shoulder, and 8-foot right shoulder. The Route 349 southbound (SB) lane configuration over the bridge is composed of two 12-foot through lanes, one 12-foot merging lane, an 8-foot left shoulder, and a 4-foot right shoulder. Metal beam rail is present along both sides of the northbound and southbound roadway. An approximately 40-foot grass median lies between Route 349 NB and SB. The Average Daily Traffic (ADT) over the bridge is approximately 19,300 vehicles per day (2023 CTDOT Traffic Log).

Illumination exists within the project limits; however no utility impacts are anticipated.

It is anticipated that impacts to right-of-way (ROW) will include temporary construction easements at the inlet and outlet ends to provide access road landing areas and work areas at the invert.

The project site lies within the Southeast Shoreline drainage basin (2000) and is not located within an aquifer protection area. According to the FEMA Map Service Center, the Project Area is not within a flood area. Review of CTDEEP's Natural Diversity Data Base (NDDDB) for Groton indicates that the project site is not located within an area identified as a known habitat for state and federally listed species and significant natural communities.

The purpose and need of this project is to address the poor condition of the bridge and restore the structure to good condition. The proposed scope of work consists of relining the existing ACCOMP with a 2" Ultra-High-Performance Concrete (UHPC) invert liner along the full length of the culvert. The concrete collar at the outlet is broken and non-functional. Prior to installing the 2" UHPC invert lining, the existing culvert will be cleaned. The collar will be removed and a new concrete headwall and wingwalls will be constructed in its place. A riprap basin and rock weir will be constructed at the outlet to further reduce flow velocities.

There are minimal impacts to the roadway and ramps anticipated with short-term duration, off-peak lane and shoulder closures to construct the access roads and facilitate access to and from the work areas.

All proposed rehabilitation work to the existing structure is expected to be generally performed with minimal, temporary disturbance to the travel way. Temporary construction access roads will be established to reach the upstream and downstream ends of the structure to complete the proposed work. Sections of the metal beam rail will be removed and reset during construction for the installation of the access roads.

Construction is anticipated to begin in Spring 2030.