

STATE PROJECT NO. 0130-0187
REHABILITATION OF BRIDGE NO. 07043
INTERSTATE 84 EASTBOUND OVER BULLET HILL BROOK
TOWN OF SOUTHBURY

PROJECT DESCRIPTION

Project Location:

Bridge No. 07043 conveys Bullet Hill Brook beneath Interstate 84 Eastbound (I-84 EB) in the Town of Southbury. The structure is located 1.5 miles east of the Exit 15 interchange, at milepost 23.6. Bridge No. 07043 is located approximately ¼ mile upstream of Bridge No. 07042.

Existing Bridge:

Bridge No. 07043, built in 1961, is a 112-inch wide by 75-inch tall asphalt coated corrugated metal pipe (ACCMP) arch culvert supported by a concrete headwall, endwall and wingwalls at the inlet and outlet. A 15-inch ACCMP conveys drainage from I-84 to the inlet through the southeast wingwall 2B. The concrete headwalls and wingwalls exhibit spalls and cracks, up to 35-inches by ¼-inch wide. The arch culvert is 112-feet long and under 8 to 12 feet of material with sloped embankments at the inlet and outlet. The structure is in overall serious condition (Rating = 3) due to the deterioration of the ACCMP. The invert exhibits numerous holes (up to 6-feet long by 2-foot wide) and missing corrugations throughout the pipe, resulting in a channel bed typically 5 inches below the existing invert. The concrete cradles at the inlet and outlet are exposed up to full width and 18 inches high resulting in a perched condition at the outlet. I-84 EB over the structure consists of three 12-foot travel lanes with a right and left shoulder. The AADT of I-84 EB over the structure is 36,100 vehicles per day (2018 CTDOT Traffic Logs).

There are no overhead or underground utilities within the project area. The Project Site is not within an Aquifer Protection Area and is not within the FEMA 100-year floodplain. No wetlands were flagged in the project area, adjacent wetlands were identified and can be avoided. A review of the CTDEEP Natural Diversity Database (NDDDB) indicates that the project area is not located within an area of known habitat for endangered, threatened, or special concern species (NDDDB map dated December 2022).

Proposed Bridge Rehabilitation:

The purpose and need of this project is to address the structural condition of the bridge. The rehabilitation of the bridge will consist of constructing a 79" x 68" corrugated aluminum pipe arch within the existing pipe arch. The annular space between the existing pipe and the new pipe arch would be filled with controlled low strength material. Prior to the construction of the structural pipe liner, the existing pipe should be cleaned and any voids around the existing pipe should be filled with pressure grout. Angled corner baffles should be installed to facilitate fish passage and may be fastened to the proposed liner between the corrugations. Additionally, this alternative includes the construction of five rock weirs installed at the outlet to complete fisheries enhancements. Water handling will likely consist of cofferdams and low flow pumping through the existing culvert.

One temporary and one permanent construction access road will be established off I-84 to reach the upstream and downstream ends of the structure to facilitate completion of the proposed work. All proposed rehabilitation work can generally be performed with minimal, temporary disturbance to the travel way, consisting of off-peak lane and shoulder closures. Sections of the existing three-cable and R-B 350 guiderail would require temporary removal to maintain admittance to the construction access roads.

Construction is anticipated to begin in the spring of 2026.

Currently, the construction cost is to be undertaken with 90% Federal funds and 10% State funds.