



TEMPORARY BRIDGE TRESTLE AND COFFERDAM FOR NEW ROUTE 4 BRIDGE IN BOSCAWEN

Location: Route 4 Bridge, Boscawen, NH

Client: Beck and Bellucci

Project Responsibilities:

- Temporary Support Trestle for Manitowac 888, 200 ton crane;
- Demolition Plan for the built-up girder bridge;
- Cofferdam Plan for access to the Trestle;
- Rigging and Hoisting connections.

Subsurface Conditions: Alluvial deposits were very soft and deep requiring pile lengths in excess of 100 feet

GSI provided the construction engineering design services for the new Route 4 Bridge over the Merrimack River in Boscawen. The bridge replaced a two-lane plate girder stringer bridge that was completed in 1958. GSI designed a temporary trestle to support a 200-ton Manitowac 888 crane required for bridge demolition. Included in the innovative design scheme were battered pile bents, pinned at the head. The design optimized the vertical and lateral capacity of the HP 14x102 pile sections. This was a pertinent aspect of the design economy because the alluvial deposits were very soft and deep requiring pile lengths in excess of 100 feet. Further economy was introduced because the design called for the use of 12-inch concrete slab sections, which were salvaged from a previous project.

To achieve access to the trestle from the riverbank, GSI design a steel sheet pile cofferdam with lateral bracing by mean of a double row of HP 12 x 53 wales tied back with 1-inch aircraft cable. The cofferdam was required to withstand the forces of the interior backfill as well as the surcharge effects of the 200-ton crane.

GSI also prepared the demolition plan, design of a fall protection system and structural design of lifting appurtenances with which to accomplish the demolition.

