



National Electrical Contractors Association



International Brotherhood Of Electrical Workers

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E.S. Boulos Company Nears Completion of \$1.25M Electrical Construction of Penobscot Narrows Bridge and Observatory, Verona Island, Maine

Westbrook, ME NECA Contractor Teams with GC: Cianbro/Reed & Reed LLC, Pittsfield, Maine and Bridge Designer: Figg Bridge Engineers, Inc., Tallahassee, Florida on Maine Department of Transportation Project

PROSPECT and VERONA ISLAND, ME – E. S. Boulos Company (ESB), the Westbrook, Maine based NECA member firm, is on schedule with the \$1,250,000 electrical construction of the Penobscot Narrows Bridge & Observatory. The Penobscot Narrows Bridge, Maine's first cable stay bridge, spans a length of 2,120 feet over the Penobscot River and connects Prospect, Maine with Verona Island, Maine. It opened to traffic in December. The project is being overseen by the Maine Department of Transportation

The E.S. Boulos project scope entails providing comprehensive power, lighting, fire alarm, lightning protection, and other specialty electrical installations for both the bridge and observatory.

The primary electrical power for the bridge and observatory is provided via a 12.4KV feeder located on the Verona side of the bridge. Cabling runs through the bridge deck and down the pylon on the Prospect side. The bridge is also equipped with an emergency standby generator in the event of power outage.

Lighting parameters include the installation of FAA light fixtures at the top of the bridge pylons for aircraft, and navigation beacons within the underside of the bridge deck for ship guidance. The bridge features an aesthetic lighting package comprised of 92 Northstar sun spot fixtures on the bridge deck that illuminate the cable stays and pylons. Lighting and receptacles are also installed throughout the utility tunnel which is located inside the deck structure.

The fire alarm system for



Photo by Justin Russell

the bridge integrates smoke detectors, horn strobes and other alarm signaling equipment which tie into the structure's sprinkler system. Fire alarm equipment was provided by distributor R. B.



Photo by Justin Russell

Allen of North Hampton, New Hampshire. Within its life safety installations, ESB worked in tandem with Eastern Fire Protection of Auburn, Maine. The bridge and observatory are also equipped with a lightning protection system.

The Penobscot Narrows Bridge features two pylons, both 447 feet in height from the base to the rooftop. At mean high tide, the Bridge, which serves as a federal shipping channel, accommodates ship clearance to 144 feet.

On the westerly Prospect side of the Penobscot Narrows Bridge, the Observatory and its three-level glass observation deck is located in the western pylon and accessed via an elevator which rises to a height of 420 feet. The Observatory offers 360 degree views of Midcoast and Down East, Maine.

Commenting on the project, E.S. Boulos project manager

Wade Stedt said, "The greatest challenge has involved site access. Staging systems for personnel, equipment and material access are unique in a project of this type due to the elevation of the site. It has demanded close coordination with the general contractor and all members of the project team. Safety is always the primary consideration."

Construction on the bridge commenced in September 2003, after an extensive restoration of the area's Waldo-Hancock Bridge had been undertaken and revealed that the suspension bridge's cables had suffered greater corrosion than anticipated. Due to the corrosion problem, and safety issues, truck access to that bridge had to be restricted to only vehicles weighing less than 24,000 pounds. The Waldo-Hancock Bridge has served as a direct freight route between Midcoast and Down East Maine since it opened in 1931.

When project costs for repairing the old bridge's suspension cables were evaluated, it was determined that a new bridge would be both a better long term solution and more economically feasible. In mid-September 2003, the Maine Department Of Transportation announced plans for the new bridge – since named the Penobscot Narrows Bridge & Observatory, and groundbreaking took place in December of 2003. The progressive bridge design was provided by Figg Bridge Engineers, Inc. of Tallahassee, FL. It incorporates various advanced features including the bridge observatory and also a new cradle system for cable stays which more readily accommodates long term inspection of such structures and allows for easier maintenance.

Cianbro/Reed & Reed LLC of Pittsfield, Maine is serving as the bridge constructor/general contractor. The Penobscot Narrows Bridge and Observatory project is a fast track project given its scope and magnitude. E.S. Boulos commenced work on the project in January 2006 and is on schedule for an April 1, 2007 completion. Throughout the project, E.S. Boulos' project manager Stedt and site foreman Alan Squilanti have supervised a field crew of 12 electricians from IBEW Augusta Local 1253, which is now based in Fairfield, ME.

The Waldo-Hancock Bridge will remain in place until State budgets accommodate the estimated cost for its removal. The older suspension bridge was closed in December when all traffic started being routed across the new Penobscot Narrows Bridge.