

INNOVATIVE ENGINEERING FOR PIER STEMS AND BULLNOSE CAPS

Madawaska, Maine

2.5 Minute Read Time

INTERNATIONAL BRIDGE CONSTRUCTION

The Madawaska Bridge Project involves the construction of an \$86-million, six-span bridge that will serve as a critical connection between Madawaska, Maine, and Edmundston, New Brunswick, Canada. This project carried out in collaboration with MDOT (Maine Department of Transportation), forms an integral part of the Land Port of Entry – the 16th busiest port in the United States.

INSTALLING CAISSONS, FORMWORK, AND POURING CONCRETE

The weather conditions in Madawaska posed distinct challenges, with temperatures frequently dropping below freezing and large ice dams flowing downstream. These factors created a narrow window of opportunity for the construction team to install the caissons, steel formwork, and place concrete. Working closely with their Canadian subcontractor, Greenfield Construction Ltd., **Reed & Reed, Inc.**, persevered through challenging conditions and met the expected construction schedule goals.

RELIABLE FORMWORK PARTNER

Reed & Reed, Inc. and Greenfield Construction recognized the need for a reliable formwork partner who delivers superior products and expert field service. Having had many years of positive experience with EFCO products, Reed & Reed, Inc. immediately contacted EFCO to secure Super Service and a professional formwork design package.

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We find EFCO forming systems are simple to assemble and use. EFCO's formwork systems are versatile and meet our needs. They have forms available to fit any variation of concrete formwork we require. EFCO also has great product support and delivery service. Their formwork is engineered for easy removal and reassembly for quick cycle times. We have used EFCO formwork systems for years, from pier shaft and pier cap formwork to large abutment forms. EFCO fits within our budgets and schedule needs.

Greg Letourneau
Senior Superintendent

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PIER STEMS AND BULLNOSE CAPS

EFCO's **Round Column**® forming system was used to construct the 8' (2400 mm) diameter pier stems. The bullnose pier caps, measuring 8'-6" (2.6 m) wide x 45'-6" (13.9 m) long, were formed with EFCO **PLATE GIRDER**®, Round Column, and **SUPER STUD**®. EFCO also created custom steel soffit forms for the pier caps, which wrapped around the column, eliminating the need for wood fillers.

EFCO ENGINEERS THE FORMWORK SOLUTION FOR PRODUCTIVITY

With the remote location of the project, the contractors put their trust in EFCO's Engineering team to provide a complete formwork system. EFCO's design included assembling large gangs of formwork ▶

The formwork for each pier cap was lifted in one crane pick. Once the concrete was placed for the pier caps, the formwork was stripped in two crane picks.





EFCO created custom steel soffit forms for the pier caps, which wrapped around the column, eliminating the need for wood fillers.

safely on the ground and flying them into place with fewer crane picks, increasing jobsite productivity. The formwork for each pier cap was lifted in one crane pick. Once the concrete was placed for the pier caps, the formwork was stripped in two crane picks, with each gang being lowered to the temporary bridge.

CLEANING, OILING, AND CYCLING FORMWORK

Next, the forms were cleaned, oiled, and reassembled for the next pour. The customized steel EFCO components for the bullnose and bridge column forms ensured minimal jobsite buildup. The sides and soffit of the cap utilized EFCO *PLATE GIRDER* forms bolted together with EFCO's Quick Bolts. *SUPER STUDS* were used on the bottom of the cap as wind beams.

The sides and soffit of the cap utilized EFCO *PLATE GIRDER* forms bolted together with EFCO's Quick Bolts.



WHY REED & REED CHOSE EFCO A QUALITY CUSTOM-BUILT SOLUTION

Custom steel soffit panels for the bullnose and soffit closure surrounding the round column eliminated the need for wood fillers. EFCO's all-steel solution, with customized components, provided a superior finish and labor savings.

A RELATIONSHIP BACKED ON TRUST & INTEGRITY

A long-time EFCO customer, Reed & Reed Inc., could expect end-to-end Super Service. EFCO's Engineering team delivered an efficient, custom solution on a complex design, EFCO Field Service provided necessary hands-on support in any season, and EFCO manufacturing and warehousing supplied the logistical support to deliver in a challenging geographic region and climate. All components were needed to provide the lowest in-place concrete costs!

EFCO EQUIPMENT
PLATE GIRDER, Round Column, SUPER STUD

REED & REED INC. TEAM
Greg Letourneau Senior Superintendent
Jacob Hall Project Manager

EFCO FORMWORK SPECIALISTS-NEW ENGLAND
Matt Taylor Territory Manager
Lou Szabo Sr. Field Supervisor
Joel Lindberg Engineer

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