

CIRCULAR FORMWORK REQUIRED FOR CONCRETE SHAFT

Washburn, North Dakota

1.5 Minute Read Time

CONSTRUCTION OF THE MISSOURI RIVER INTAKE

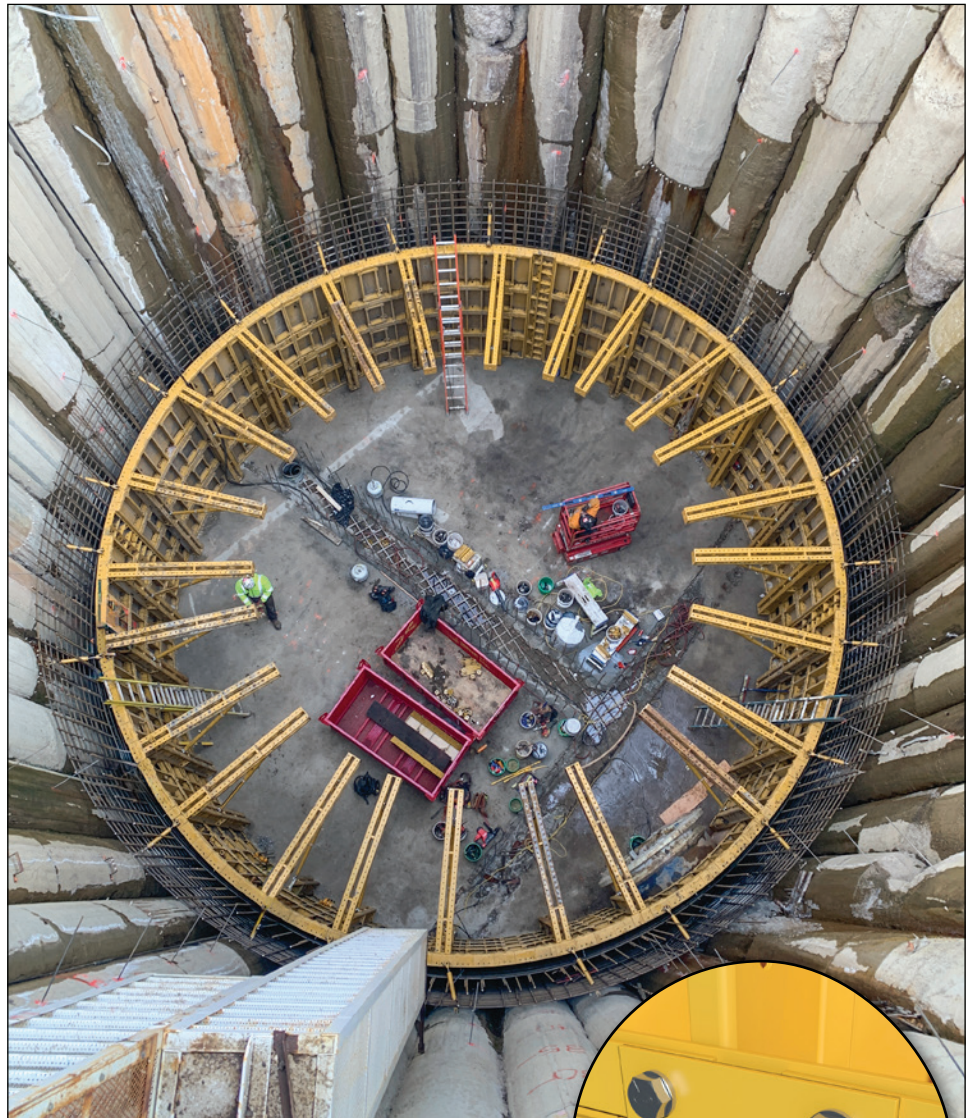
Michels Construction, Inc. partnered with EFCO to build the Missouri River Intake as part of the Red River Valley Water Supply Project. This project is being carried out to install an underground pipeline with the purpose of bringing water from the Missouri River to central and eastern North Dakota. The main goal of this project is to provide emergency water for the area.

REDI-RADIUS PROVIDES A RELIABLE SOLUTION

The Michels companies have a long history of providing safe, reliable solutions for global energy and infrastructure requirements. Construction of the concrete shaft of the Missouri River Intake, measuring 40' in diameter x 62' in height (Ø12.2 m x 18.9 m), used EFCO's innovative **REDI-RADIUS**® formwork system. EFCO's all-steel REDI-RADIUS panels have adjustable steel straps that allow them to be shaped to any radius. For this project, EFCO provided a 40' in diameter x 13' in height (Ø12.2 m x 4.0 m) set of REDI-RADIUS formwork which acted as a compression ring, thus eliminating the need for ties. ▶

“Using the EFCO full 360-degree picking form system was a game changer for our project. We increased our efficiency significantly and cycled each jump (12'-6") in less than a week. The EFCO system and their support directly impacted the successful completion of our project.”

Troy Paczesny
 Superintendent



Bolts of the integrated strap on a REDI-RADIUS form need to be loosened and the form panel pulled to the shaping fixture to create the radius required, then retighten the bolts.



INTEGRATED STRAP

CONSTRUCTION OF CONCRETE DIVIDER WALLS

For constructing the 26' (7.9 m) tall T-shaped divider walls in a subsequent project phase, Michels Construction once again partnered with EFCO. They opted to use the **PLATE GIRDER**® system with **SUPER STUD**® stiffbacks, which provided additional rigidity for the lifted pours. **PLATE GIRDER** formwork requires minimal ties and bracing, a crucial requirement considering the limited working space inside the shaft to work around the formwork.

An average **PLATE GIRDER**® panel weighs 18 lb/ft² (88 kg/m²) and withstands up to 1400 lb/ft² (67 kPa) pour pressure.



WHY MICHELS CONSTRUCTION CHOSE EFCO

TIME & LABOR SAVINGS

Michels Construction, Inc. found the benefit of quality engineered systems like REDI-RADIUS and **PLATE GIRDER** formwork systems to gain the lowest in-place concrete costs for this project. Time and labor savings came from robust and rigid formwork, few or no ties, minimal obstructions in limited space, and minimal finishing.

EFCO's REDI-RADIUS system offered Michels Construction a significant advantage to accelerate its schedule. Using a four-person crew, they were able to cycle the forms and achieve a rate of progress of 21 ft² (1.95 m²) per man-hour. **SUPER STUD**® bracing made it possible to safely strip the 360 degrees of formwork by unbolting it at four relief points in preparation to cycle the gang up as one unit.

EFCO EQUIPMENT

REDI-RADIUS, PLATE GIRDER, SUPER STUD

MICHELS CONSTRUCTION TEAM

Cory McLean..... Senior Project Manager
Troy Paczesny Superintendent

EFCO FORMWORK SPECIALISTS-CHICAGO

Joben Grimmius..... Territory Manager
Matt Harrington.....Sr. Field Supervisor
Zach Scholten..... District Engineer

CONTACT OUR CHICAGO OFFICE TODAY

511 West Armory Drive, Ste A
South Holland, IL 60473
Phone: (708) 893-0521

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