



Product

Custom Reducers

Application

Single Leaf Bascule Lift Bridge

Highlights

- Custom-designed enclosed reducers
- One large single leaf bascule design replaced the original double leaf bascule configuration
- Three different drives were manufactured
- Fabricated steel housings
- 150% load test requirement

The 17th Street double leaf bascule lift bridge in Two Rivers, Wisconsin has been in operation since 1949, allowing the local commercial fishing fleet access to Lake Michigan via the East Twin River.

After over 60 years of service, the Wisconsin Dept. of Transportation commissioned a comprehensive rehabilitation of the bridge which was completed in 2014. The project included the replacement of the two approach spans and a redesigned single leaf bascule center span as well as all mechanical systems.

Working closely with the bridge engineering team, Nuttall Gear contributed to the development of the bridge's gearboxes which needed to drive the new larger single leaf bascule lift vs. the original double leaf configuration. Nuttall manufactured three enclosed drives which rotate 70 degrees with the bascule leaf. All units featured fabricated steel housings. Per specification, all steel materials were of USA origin. The drives met a 150% load test requirement and all welds were inspected by an Independent Certified Weld Inspector (CWI).

- Primary Reducer (WD15DIFF Differential Reducer):
Input rating: 120 HP @ 1170 RPM, Reduction ratio: 11.39:1,
Output torque rating: 74,000 lb.in.
- Secondary Reducers (WT30):
Input rating: 60 HP @ 103 RPM, Reduction ratio: 63.82:1,
Output torque rating: 2,343,000 lb.in.

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