



2000 - Kouwegok Slough Bridge

Description

Meta Fields

Project Summary : 55-day construction of bridge to access new landfill in remote location

Project Location : On the southeast corner of Norton Sound across the Kouwegok Slough in the village of Unalakleet, approximately 500 miles west of Fairbanks

Mobility Impact Time : ABC: bridge constructed in 55 days Conventional: ABC is conventional construction in Alaska

Impact Category : Tier 5 (within 3 months)

Dimensions : 378-ft long and 25-ft wide three-span steel beam bridge (114 ft $\times$ 144 ft $\times$ 114 ft)

Average Daily Traffic At Time Of Construction : 250

Traffic Management : ABC is conventional construction in Alaska due to climate and terrain

Replacement Or New Bridge : A bridge was required for access to a new landfill located across the slough on the east side of the village. The new two-lane bridge was the first in an evolving series of similar bridges built in remote locations within the state. Its substructure consists of driven steel pipe piles that support precast pile caps, and its superstructure consists of rolled wide-flange steel beams that support full-depth precast deck panels.

Construction Method : Bridge elements were fabricated in early 1999 and delivered by barge to the nearby village of Nome by mid-summer. The project was delayed by one year due to late ice break up in Norton Sound. All materials were delivered in early July 2000 by a barge that could not operate until after July 1 because the Norton Sound was frozen. The pipe piles were driven. The precast abutment cap beams, precast pier pile cap beams, steel beams, and precast deck panels were erected with a truck crane. The deck planks (panels) were not longitudinally post-tensioned. Precast concrete lagging panels were used in the soldier pile type abutment wall and wingwalls. The new bridge was opened to traffic in August 2000.

High Performance Material :

- Precast concrete members utilized 6,000 psi concrete
- Epoxy grout used between panels with compressive strength of 9,000 psi

Contacts : Owner: Leslie Daugherty, P.E., S.E. Chief Bridge Engineer Alaska Department of Transportation and Public Facilities leslie.daugherty@alaska.gov 907-465-8891

Costs : The engineer's estimate for this project was \$4.21 million. The low bid was \$4.79 million (\$585,000 = 14% higher than engineer's estimate). There were 11 bidders. The engineer's estimate for the bridge portion of this project was \$2.49 million. The low bid was \$2.24 million (\$257,000 = 10% lower than engineer's estimate). The cost per square foot of bridge was \$241 per sq ft.

Funding Source : Federal and State

Contract Plans : 1

Year Abc Built : 2000

State : AK

Owner : State

Location : Rural

Spans : Three-span

Beam Material : Steel

Max Span Length Ft : 144

Total Bridge Length Ft : 378

Construction Equipment : Conventional

State Id # : 1308

Nbi # : 1308

Latitude : 63.8814

Longitude : -160.7845

Project Delivery : design-bid-build

Prefabricated Bridge Elements : full-depth precast deck panel w/o PT, precast pile cap, precast abutment cap, precast lagging panel

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Miscellaneous Prefabricated : grouted key closure joint, grouted blockout w/shear connector

