



## 2006 – Oâ€™Malley Road Bridge

### Description

#### Meta Fields

**Specifications 0 Spec File :** 2248

**Abc Construction Equipment :** Conventional

**Miscellaneous Prefabricated :** Grouted key closure joints, Grouted blockout w/shear connectors, Asphalt overlay w/membrane

**Prefabricated Bridge Elements :** Adjacent deck bulb T beams

**Project Delivery :** Design-bid-build

**Longitude :** -149.886

**Latitude :** 61.123

**Nbi # :** 2081

**State Id # :** 2081

**Construction Equipment :** Conventional

**Total Bridge Length Ft :** 223

**Max Span Length Ft :** 110

**Beam Material :** Concrete

**Spans :** Two-span

**Location :** Urban

**Owner :** State

**State :** AK

**Year Abc Built :** 2006

**Contract Plans :** 1

**Funding Source :** Federal and State

**Costs :** The engineerâ€™s estimate for the entire project was \$24.1 million, of which \$2.23 million was for the bridge construction (both bridges). The low bid was \$27.6 million. There were four bidders. The cost per square foot of bridge was about \$130.

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

**High Performance Material :** Precast concrete girders and deck fâ€™c > 7,500 psi

**Stakeholder Feedback :** This type of bridge is quite common in Alaska. Most are built in one summer construction season â€” about 5 months maximum. The time is not determined so much for traffic and user impacts but rather for weather and climate limitations. That is, this bridge is not unique in the rate at which they were built -- itâ€™s just the way that this style of bridge is built.

**Construction Method :** The girders were fabricated at a precast plant and trucked to the site. The contractor drove the steel H-piles and constructed the cast-in-place abutments, and drove the steel pipe piles and constructed the cast-in-place pile cap. The girders were erected with a truck crane onto elastomeric bearing pads. They were welded to each other at embedded shear connectors spaced at 4 ft along flange edges. Grout was placed in the longitudinal shear keys and the shear connector blockouts between girders. Closure joints at the ends of the girders were cast. Curbs were cast, and metal railing was installed. A waterproof membrane was placed on the deck, followed by an asphalt overlay. This bridge is one of a pair of bridges constructed at this site. These bridges were part of a large roadway project. These bridges were built in about 60 days. They would likely have been opened to traffic sooner, but the bridge subcontractor had to wait for the earthwork to catch up.

**Replacement Or New Bridge :** The bridge has two 11.8-ft-wide traffic lanes (one lane in each direction), an 8.2-ft-wide shoulder, and a 4.3-ft-wide shoulder. The cross-section consists of six adjacent pretensioned decked double-tee girders with 6.5-ft-wide top flange and 4.5 ft depth. The interior pier consists of a cast-in-place concrete pile cap on steel pipe pile extensions. The cast-in-place abutment is founded on steel H-piles.

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

**Average Daily Traffic At Time Of Construction :** 30000

**Dimensions :** 223-ft long and 39-ft wide two-span prestressed deck bulb T girder bridge (110 ft “ 110 ft)

**Primary Drivers :** improved site constructability; reduced onsite construction time; improved work-zone safety; improved material quality and product durability; reduced life-cycle cost

**Impact Category :** Tier 5 (within 3 months)

**Mobility Impact Time :** ABC: 60-day construction Conventional: ABC is conventional construction in Alaska

**Project Location :** on Oâ€™Malley Road Eastbound over C Street in the Municipality of Anchorage in southern Alaska

**Project Summary :** 60-day construction of new prestressed concrete deck bulb T girder bridge for extension of a bypass route