

Supplying Canada's Military with Four Permanent Structures at Alberta Training Facility Helps Accommodate Needed Training Vehicles and Equipment

The replacement bridges on Canadian Forces Base Wainwright will accommodate heavier equipment and meet updated design codes



Canadian Forces Base/Area Support Unit Wainwright is one of the busiest Army bases in Canada. Located near Denwood, Alberta, the base is used primarily for training exercises, but also houses a residential community for military members stationed there. Because the Battle River cuts off one-third of Wainwright's training area, ensuring safe and reliable crossings is critical. When four bridges on the base were deemed obsolete, it was determined they would need to be replaced, and Acrow won the mandate after a competitive bid process based on price, experience and technical expertise.

The new structures were necessary to accommodate the heavier loads of re-introduced tanks and associated vehicles as well as new training and towing vehicles. The permanent installations were required to meet design conformance with Military Load Classification (MLC) 150 in accordance with NATO STANAG 2012/ CAN/CSA-S6 Canadian Highway Bridge Design Code. The old bridges bore an MLC of 60.

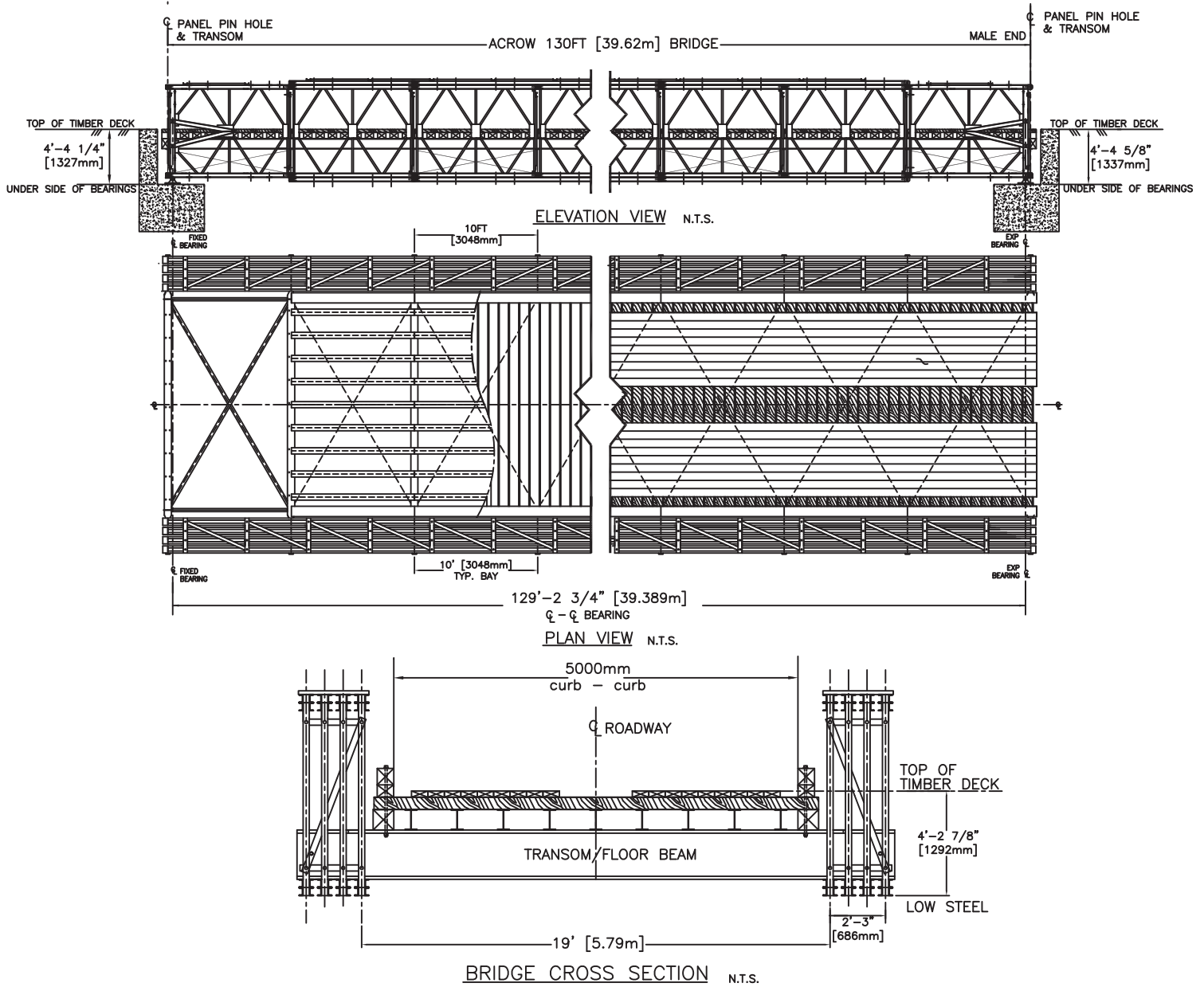
While it was originally expected the project would be completed within four years, all four structures were installed and opened in slightly over two years from the delivery of the first bridge. First completed was the Purple Bridge, which was needed to be in

place by April 2016 for the annual Exercise MAPLE RESOLVE, which brought 7,000 Canadian troops to the base for the largest and most comprehensive Canadian Army training event of the year. In addition to the required quick turnaround, the timing meant a particularly difficult build under harsh winter conditions.

The four bridges range from 24.4 meters (80 feet) to 39.6 meters (130 feet) in length. All are 5 meters (16.4 feet) wide curb to curb and have timber decks. The first bridge was delivered in December 2015 and the final bridge was installed and completed in December 2017.

Design of all four bridges was done by Acrow, and the procurement and construction specifications were prepared by SNC-Lavalin. Three design consultants were involved with the design of the substructures and approaches: SNC-Lavalin, Stantec and WSP Canada Inc. The contractor for the first and fourth bridges was Ironclad Earthworks Ltd. while the contractor on the other two structures was Surespan Construction.

The purchase order was issued by Defence Construction Canada. At a later date the bridge ownership will be transferred from Defence Construction Canada to the Department of National Defence.



Specifications

Bridge length:

24.4 meters (80 feet) to
39.6 meters (130 feet)

Bridge width:

5 meters (16.4 feet) roadway

Live load:

MLC150 design load

Deck Surface:

Timber deck

Bridge finish:

- All major components galvanized to AASHTO M111 – ASTM A 123
- All bolts are hot dipped galvanized
- All pins are electro galvanized

Bridge design:

- Panel chords, diagonals, verticals, panel reinforcing chords, rakers to AASHTO M223 GD 65
- Raker brace, transom, top chord brace, swaybrace, transom brace, diagonal chord brace to AASHTO GD 50
- Panel pins to ASTM A 193 GD b7
- Bolts to AASHTO M164M – A325

ACROW
BRIDGE

Building Bridges.
Connecting People.®

Acrow Bridge

www.acrow.com

sales@acrow.com

+1.973.244.0080