



## Traffic flow diverted over the Naugatuck River in Waterbury

Temporary bridges sustain vehicle access through a busy interchange during its upgrade

An upgrade of several bridges located within the busy Route 8 and I-84 Interchange of Waterbury, Connecticut, will maintain and provide a 25-year service life to the structures and assure their structural integrity. The work involves deck repairs and replacements, steel repairs, substructure repairs, joint repairs, and other general repairs.

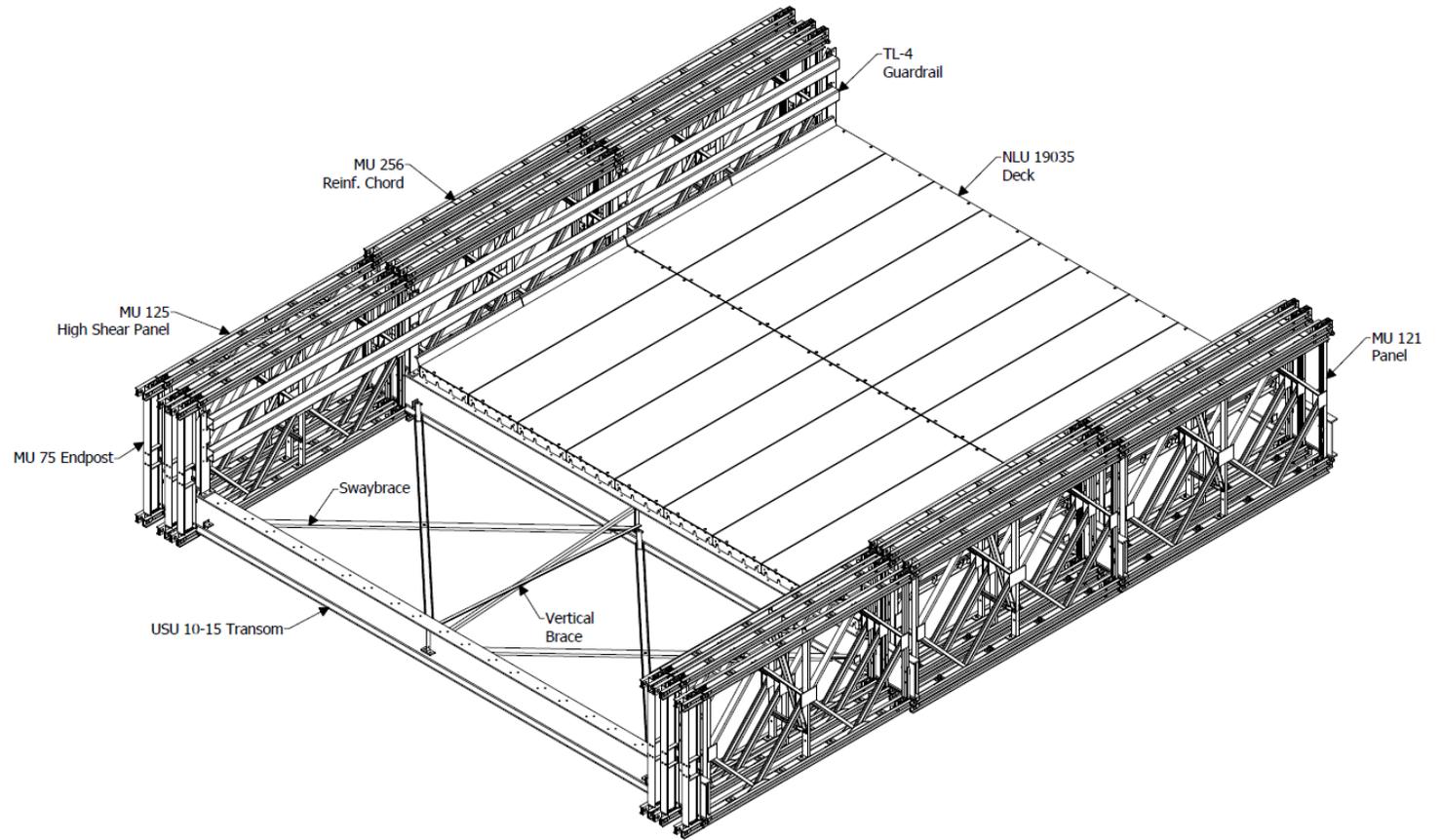
A temporary bypass was installed, consisting of three temporary bridges (two over the Naugatuck River), and carries Northbound traffic through the Interchange, facilitating the work and providing safe and efficient passage for motorists. The bypass will remain in service for three years, accommodating an average of 30,000 vehicles a day.

The contractor, Walsh Construction, procured two temporary bridges on a rental agreement. The modular components were assembled on the north bank of the Naugatuck River, and the temporary structure was launched Southwards to the intermediate piers.

One of these bridges, Temporary Bridge #1, presented the Design Engineer HNTB with several challenges. The 3-span, 450' (137.16m) long x 31' (9.45m) wide bridge needed to accommodate the road curvature, plus a gradient of nearly 3% and a super-elevation of over 5%.

The contractor, Walsh Construction, used a cantilever launch to install the bridge, launching at an upward slope in a plane parallel to the final position. Installation of temporary falsework towers enabled the bridge spans to reach the first pier. Once the three linked spans had crossed the river, the team slid the bridge into its proper alignment, 'broke' the spans to accommodate the curve and proceeded to jack down the spans before installation of the decking.

Traffic was successfully diverted to the temporary bridges in August 2019. The bypass will remain in place until late 2021.



## Specifications

### Bridge lengths:

Bridge #1: 3-span 450' (137.16m)

Bridge #3 132' (40.23m)

### Roadway widths:

Bridge #1: 31' (9.45m)

Bridge #3: 30' (9.14m)

### Deck surface:

Asphalt overlay

### Bridge erection method:

Full cantilevered launch

### Design load:

AASHTO LRFD HL93

### Standard Acrow Bridge finish:

- All major components galvanized to AASHTO M111-ASTM A123
- All bolts are hot-dip galvanized
- All pins are electrogalvanized

### Standard Acrow Bridge specification:

- (A) Panel chords, diagonals, verticals, reinforcing chords, rakers to AASHTO M223 GD 65
- (B) Raker braces, transoms, top chord braces, swaybraces, transom braces, diagonal chord braces, decking to AASHTO M223 GD 50
- (C) Panel pins to ASTM A 193 GD B7
- (D) Bolts to AASHTO M164M - A325