

Acrow Bridges Maintain Traffic Flow Across the Charles River

Critical bridge replacement project is quickly and safely progressing with two temporary bridges

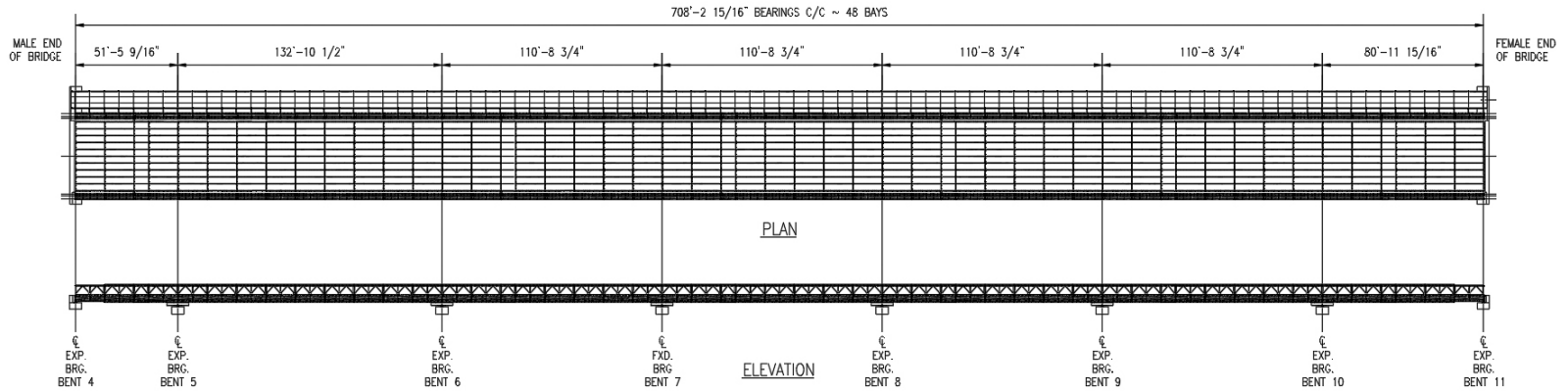
The North Washington Street Bridge is critical to Boston's infrastructure. Owned by the City of Boston, and administered by the Massachusetts Department of Transportation (MASSDOT), the bridge carries over 40,000 vehicles a day and serves as the main bus route between Boston and Charlestown. The original structure had exceeded its useful life, requiring significant annual maintenance and repair, leading to a reduction in traffic lanes in recent years. Originally planned as a phased replacement, the contractor, J.F. White Contracting, proposed a multi-span temporary vehicular bridge to accelerate project delivery and improve worker safety.

Bridge #1 carries the project utilities including natural gas, water, and several electrical and communication lines. This 7-span utility bridge is 797' (242.93m) long x 6.9' (2.1m) wide and used for contractor access. Bridge #2 is a 7-span 708' (215.8m) long vehicular bridge. It accommodates three lanes of traffic, as well as an 8' (2.44m) wide pedestrian footwalk to keep open Boston's famed Freedom Trail.

The structure utilizes distribution beams and continuous construction so that the temporary piers could closely match the originals. Special distribution roller beams were designed and supplied to reduce the total jacking height.

A seamless transition of all services to the temporary utility bridge, maintaining power and water for the City of Boston, was achieved. The main challenge involved the additional traffic engineering required to add the temporary bridge in a very congested area. The temporary vehicular bridge allows the contractor to bring in materials for the replacement bridge by barge, without interrupting road traffic. MASSDOT expects the temporary bridge to speed up project completion by six months.

Both bridges were opened in July 2020 and will keep traffic flowing and services running until the main bridge completes in early 2024.



Specifications

Bridge lengths:

Vehicular: 7-span 708' (215.8m)

Utility: 7-span 797' (242.93m)

Roadway width:

Vehicular: 34' (10.36m) with 8' (2.44m) pedestrian walkway

Utility: 6.9' (2.1m)

Deck surface:

Crowned asphalt overlay

Bridge erection:

Full cantilever launch

Design load:

HL-93 and pedestrian

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:

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