

## Cedar Street over Route 9 “Heavy Lift” Project Wellesley, MA

BRIDGE # W13015

### DESIGN-BUILD

Accelerated bridge construction  
Self-propelled modular transports

### KEY GILL STAFF

Joseph Gill, Proj Mgr  
Paul Moyer, QA Administrator  
Preston Huckabee, Proj Eng  
Dave Comerford, Sr. Engineer  
Sami Kassis, Sr Engineer  
Patrick Chiu, Engineer  
Nathan Rosencranz, Engineer  
Amy Musgrave, Asst Engineer  
John Phelps, Asst Engineer

### DESIGN-BUILD PARTNER

J.F. White Contracting Co.

### CLIENT/OWNER

Mass Dept of Transportation

### REFERENCE

Alex Bardow  
MassDOT State Bridge  
Engineer  
617-973-7571

John McInerney  
MassDOT District 6  
Construction Engineer

### CONSTRUCTION COST

\$3.5M

### CONSTRUCTION SCHEDULE

March-2011-July 2011



Gill Engineering served as prime consultant for this fast-track design-build contract for the reconstruction of an existing bridge carrying a local roadway over Route 9. The schedule allowed only nine months for design and construction of a replacement superstructure. The singular challenge the team faced was complying with the strict construction schedule that required that the superstructure be replaced during a 72-hour road closure of Route 9 and Cedar Street over the Fourth of July weekend of 2011.

The existing bridge consists of a rolled stringer superstructure with a reinforced concrete deck, sidewalk and railing, supported by unreinforced concrete piers and abutments. Years of exposure to de-icing salts led to corroded reinforcing steel and spalled concrete in the deck, sidewalk and railing. The concrete abutments and pier were in good condition.

The superstructure was replaced with a two-span continuous steel stringer superstructure with concrete deck and railing. Shallow stringers were used, and the profile of Cedar Street was elevated to increase the vertical clearance over Route 9 from 13'-6" to 15'-0". Beam seats, backwalls and wingwalls were adjusted to accommodate the new superstructure elevation, and cracks and spall damage were repaired.



### 2012 AWARD WINNER

- CMAA NE Project of the Year (Projects < \$10M)
- America's Transportation Competition "Ahead of Schedule" (Small Projects)

A safe and durable structure was provided through the use of weathering steel, neoprene bearings, slab-over details at the abutments that eliminated open roadway joints, epoxy coated reinforcing steel, membrane waterproofing and high performance concrete.

Gill's successful implementation of accelerated bridge construction techniques confined traffic impacts to a single July 4<sup>th</sup> weekend, making it the fastest bridge replacement in Massachusetts to date.

- The superstructure and deck were prefabricated adjacent to the site on temporary bents, located within one of the cloverleaf ramps
- Precast concrete pier caps and abutment beam seats were prefabricated off-site and installed during the weekend closure
- The existing structure was demolished and the new structure was rolled-into place during the weekend closure using Self Propelled Modular Transports (SPMTs).