

## MHD Load Rating & Special Inspection Statewide, MA

### Project Description:

#### Location

Statewide, MA

#### Owner

MHD

#### Duration

2005 - Present

AI Engineers, Inc. is currently performing load rating analysis and evaluation of in-service bridges statewide for Massachusetts Highway Department. These structures have included precast concrete deck units, simply supported and continuous steel multi-girder bridges of up to 10 spans, and steel trusses with emphasis on analysis of gusset plates, splice plates and primary member connections. The elements evaluated for rating included concrete deck slabs and corrugated metal decks filled with bituminous, stringer and floor beams, girders and truss members. These structures were analyzed using the Virtis program and other software approved by the Department, and the results were reported as outlined in the MHD Bridge Design Manual. Several of the bridges evaluated required field inspection to verify the extent of deterioration and or obtain member sizes due to lack of original plans. AI Engineers, Inc. has also used special services of qualified testing firms to obtain reinforcing sizes and other pertinent information on concrete structures, where plans were not available and the inspection reports did not contain sufficient information to complete the rating.

Shortly after the collapse of the deck truss in Minnesota, the Department directed us to perform emergency inspections for some of their large trusses with special emphasis on connection and gusset plates. We performed the inspections and proceeded to analyze and load rate the bridges and the gusset plates.

All structures are evaluated for H20, Type 3, Type 3S2 and HS20 trucks in accordance to AASHTO specifications and MHD Bridge Design Manual; and the reports are prepared with the appropriate color coded covers indicating the range of the load rating results. Comprehensive recommendations have been provided for bridges requiring repairs or rated below the statutory limits. Posting recommendations were also made for some of the bridges, and bridge closures have been recommended in the event the structure is not capable of carrying the minimum specified loads.



### Salient Features

- Virtis Software
- Special Inspections
- Destructive And Non-Destructive Testing
- AASHTO Specifications
- Red Cover Reports