



KS Engineers, P.C.  
Engineers . Surveyors  
Construction Managers

New Jersey  
New York  
Pennsylvania

CORPORATE  
HEADQUARTERS:

24 Commerce Street  
Newark, NJ 07102  
P: (973) 623-2999  
F: (973) 242-2955

info@kseng.com  
www.kseng.com

# Inspection and Rating of 250 Metro-North Undergrade Railroad Bridges

## New York State

### PROJECT NAME

In-depth Inspection and Load Rating of 250 Metro-North Undergrade Railroad Bridges on the Harlem, Hudson, and New Haven Lines

### PROJECT OWNER

MTA Metro-North Railroad

### SERVICES PROVIDED

- Bridges Inspection – Railroad Bridges
- Load Rating Calculations

### PROJECT DESCRIPTION

As subconsultant to the Chas H. Sells/URS Greiner Joint Venture, KS Engineers, P.C. (**KSE**) performed in-depth inspections of 135 railroad bridges on the Harlem, Hudson, and New Haven Lines in New York and Connecticut.

Following the in-depth inspection a complete load rating calculations were performed for riveted plate through girder, floorbeam and stringer; I-beam with and without concrete encasement, concrete-slab both cast in-place and precast; rail-top, masonry and brick-arch, pedestrian tunnels and concrete-box-type structures. Load rating calculations were performed on 97 bridges. Many of the structures had been widened up to three times with different types of superstructure elements. This required load ratings to be calculated on each unique superstructure.

In-depth inspection reports were prepared for all 135-railroad bridges. These reports included general description of the structure, field conditions, structural and track defects, photographs, bridge sketches and load rating calculations.

Extensive coordination was required to schedule railroad flagging on the three lines and MPT for structures located over roadways. Significant planning efforts were required to gain access to sealed structures that were filled with water. Document searches were conducted for plans to be used for load ratings. Material testing and investigations were performed as required to determine material strength in order to complete the load ratings of the bridges.

