



The Naperville Financial Center parking garage is a 2-level structure. The elevated deck consists of untopped precast double-tee beams supported on perimeter foundation walls and a precast inverted tee beam at the center of the garage. Ongoing water leakage through the joints between double-tee beams had been an ongoing problem for many years.

Evaluation of the parking garage indicated significant deterioration of the double-tee beam flanges due to corrosion of embedded reinforcing steel and connection hardware. Deterioration of sealant at the joints between the double-tee beam flanges was the cause of water leakage into the lower level of the garage. Chloride testing indicated chloride contents within the top flanges of the double-tee beams were significantly higher than the threshold value required for corrosion.

Repairs to address overall deterioration and water leakage included concrete patch repairs, grinding shoulders of double-tee beam flanges to minimize impact from snowplows, replacement of sealant at the joints between double-tee beam flanges, pre-striping joints between double-tee beam flanges with a fabric-reinforced traffic bearing membrane, and completely coating the upper level of the garage with a traffic bearing membrane. Other repairs included replacement of miscellaneous deteriorated sealant, concrete foundation wall repairs, replacement of entrance ramps and expansion joints, and painting parapet walls around the upper level of the garage.

No leaks into the lower level of the garage have been reported since completion of the repair project. Furthermore, repairs to the joints between the precast double-tee beam flanges have withstood impact and abrasion from snowplows with very little deterioration.

**Project Name:**  
*Parking Garage Repairs  
 Naperville Financial Center*

**Project Location:**  
*Naperville, Illinois*

**Client:**  
*Pritchett Realty Corporation*

**Approximate Construction Cost:**  
*\$250,000*

**Year Completed:**  
*2008*

**Nature of Services:**  
*Evaluation, Repair Design, Bidding Assistance, and Construction Phase Services*

