

## 9th Avenue Deck Cover Structure

New York, NY

### Project Description

Brookfield's Manhattan West at Ninth Avenue and 33rd Street is a dramatic, environmentally sustainable addition to the Midtown Manhattan skyline. A five-acre site, with over five million square feet of office and mixed-use development. One block west of Penn Station, Brookfield's development lies at the heart of Manhattan's new West Side. Offices, hotels and residences are planned for surrounding blocks, including redevelopment of the adjacent Farley Post Office as the new Moynihan Station. Brookfield's Manhattan West iconic towers, flanking a grand outdoor plaza, will mark the centerpiece of Midtown West.

### Owner

Brookfield Office Properties Inc.

### Contractor

Rizanni de Eccher, USA

### Designer

McNary Bergeron & Associates

### Our Role

As part of the design-build team, McNary Bergeron designed the deck cover structure, which covers over the rail lines running in and out of Penn Station, the Hudson River Tunnels and Hudson Yards. We also provided construction engineering services to Rizanni de Eccher, USA, and Engineer of Record services for Brookfield Office Properties. Additionally, McB conducted independent checks of all of the major erection equipment components specially designed and supplied by DEAL.

### Total Contract Value

\$100 million

### Timeline

2011-2014

### Construction Method and Specifications

16 simple-span precast concrete segmental box girders set side-by-side

- Girders are 2100 tons, 240' long, 12' deep and 23' to 35' wide
- 20 x 37-strand tendons and 14 x 31-strand tendons per girder
- Girders were fully assembled and post-tensioned over a temporary platform before being placed in their final location using the launching gantry
- Girder placement was done during a 3-hour work window to minimize disruption to Penn Station rail traffic
- Cast-in-place concrete diaphragms and 6" structural slab ensure load-sharing between adjacent girders
- Armored steel openings for future building columns, ventilation, etc.

