



PROJECT NAME: WEST GIRARD OVER CSX RR



Photo: Existing Masonry Abutments with new Precast Abutment Cap, W. Girard Ave over CSX RR, Philadelphia, PA

Location: W. Girard Ave, Philadelphia, PA
Client: Pennsylvania Dept of Transportation
Product: ceEntek ce200SF-G™ & ce200-120G™

Product Volume: 14 m³ (18.2 cy)
Panel Dimension: Various
Completion Date: November 2020

PROJECT SITE



Photo: Proximity of the Bridge to the Philadelphia Zoo, Site Location

The West Girard Avenue (US30) Bridge in Philadelphia, Pennsylvania was a cast-in-place solid deck slab on masonry dry-stacked abutments. The bridge is a single-span, 4-lane structure which also carries two sets of tram tracks between the two-directions of traffic. The bridge is a critical part of the Philadelphia transportation network.

The Tram stop for the Philadelphia Zoo is at one end of the bridge. The bridge spans over the CSX Railroad and facilitates traffic entering and exiting Interstate 76. The City of Philadelphia and PennDOT required a staged construction to maintain traffic during repair to minimize inconvenience to the motoring public.

PROJECT PROFILE

PROJECT DESCRIPTION

The West Girard Avenue (US30) bridge is at an important on/off ramp to Interstate 76 providing critical access to the Philadelphia Zoo. When considering a rehabilitation of the bridge, maintaining traffic flow and minimizing user inconvenience was a significant factor.

The existing structure was built on dry stack masonry abutments which were considered to be in good condition. The project used precast abutment caps grouted with ceEntek's ce200-120G™ high strength grout to provide a solid bearing and ce200SF-G™ between the precast abutment caps.

The new superstructure was Precast Modular Units (PMU) with UHPC closure pours using ceEntek's ce200SF-G™.



Photos: ceEntek's UHPC Mixers in pairs (L); Preparing to cast the connection between the PMUs (R).

PROJECT EXECUTION

The ce200SF-G™ and ce200-120™ was batched on site with ceEntek's variable speed specially designed Model 30 Mixers (0.65 cy [0.5 m³] capacity) and supplied in 1,075 kg (2,370 lb) bulk bags, with 0.008" x 0.5" (0.2 mm x 13 mm) steel fibres and ceEntek's CNF enhanced paste. The project required a high early strength of 12,000 psi (80 MPa) in 12 hours using the Maturity Method to accommodate an accelerated construction.



Photo: Precast Modular Unit with integral barrier wall.