



1993 US 27 Bridge over Pitman Creek

Description

Meta Fields

Project Summary : exodermic replacement deck

Project Location : Somerset, in Southern Kentucky

Mobility Impact Time :

- ABC: overnight deck replacement over multiple nights with one of two lanes kept open
- Conventional: months

Impact Category : Tier 1 (within 1 day)

Dimensions : 700-ft long and 36.3-ft wide three-span continuous deck truss bridge (200 ft ~ 300 ft ~ 200 ft)

Average Daily Traffic At Time Of Construction : 25000

Traffic Management : extended detour

Existing Bridge Description : The two-lane bridge is heavily used by vehicular and truck traffic and provides a major north-south road for the area. Its deck was deteriorated and required replacement.

Replacement Or New Bridge : Deteriorated deck was replaced with exodermic deck.

Construction Method : The exodermic replacement deck consists of a 4.25-inch-thick steel grid with 4-inch-thick precast reinforced concrete composite topping. The plans required that the grid be produced by a member of the Bridge Grid Flooring Manufacturers Association licensed to produce exodermic bridge decks. The steel grid was galvanized in accordance with ASTM A123, and the steel reinforcement was epoxy coated. The concrete was cast on the steel grid and fully cured prior to placement of the grid deck. The Kentucky Transportation Cabinet opted to replace the existing 33.2-ft wide bridge deck during nighttime hours, keeping both lanes open during the day and one lane open at night. Traffic was routed to one lane at 6:00 pm and opened back to both lanes at 6:00 am. The slab between floor beams (spaced at 25 ft) was removed and replaced with the full-depth deck panels. Using high-early-strength concrete allowed the joints between deck panels to be poured and opened to traffic the next morning. Precast New Jersey barrier railing was attached, and a latex-modified concrete overlay was placed.

Contacts : Owner: Mark Hite, P.E. Director, Division of Structural Design Kentucky Transportation Cabinet Email: Mark.Hite@ky.gov Phone: 502-564-4560

Costs : Not available.

Funding Source : Other

Contract Plans : 1

Year Abc Built : 1993

State : KY

Owner : State

Location : Urban

Spans : Three-span

Beam Material : Steel

Max Span Length Ft : 300

Total Bridge Length Ft : 700

Construction Equipment : Conventional

State Id # : 10000027B00032

Latitude : 37.003333

Longitude : -84.615000

Project Delivery : design-bid-build

Prefabricated Bridge Elements : exodermic deck

Miscellaneous Prefabricated : CIP reinforced closure joint, prefabricated railing, latex-modified overlay

Abc Construction Equipment : Conventional

