



Summary of FHWA Precast Pavement Demonstration Projects Completed to Date

Texas Demonstration Project

Location: NB Frontage road of Interstate 35 just north of Georgetown

Completed: Spring 2002

Length: 2,300 ft (post-tensioned in 250 ft sections)

Width: 36 ft (24 ft travel lanes, 4 ft and 8 ft shoulders)

Slab Thickness: 8"

Precast Panel Dimensions:

Full-width panels: 36' x 10' x 8"

Partial-width panels: 16' x 10' x 8" and 20' x 10' x 8"

Base: 2" HMA leveling course

Installation Rate: 25 panels/6 hours (250 lf/6 hours)

Total Number of Panels: 339

Total Pavement Area: 9,240 SY

Total Concrete Volume: 2,044 CY

Cost (Installed, including post-tensioning): \$162/SY

Key Aspects of Project:

- First installation of precast, prestressed concrete panels based on the FHWA precast pavement concept.
- 339 panels were fabricated and installed without the loss of any panels.
- Diamond grinding was not required for the finished surface.

California Demonstration Project

Location: EB Interstate 10 in El Monte, just before Meeker Rd. overpass

Completed: April 2004

Length: 248 ft (post-tensioned in 120 ft sections)

Width: 37 ft (27 ft of travel lanes and 10 ft of shoulder)

Slab Thickness: Varied from 10" to 13"

Precast Panel Dimensions: 37' x 8' x 10"-13"

Base: Lean concrete base

Installation Rate: 15 panels/3 hours (120 lf/3 hours)

Total Number of Panels: 31

Total Pavement Area: 1,020 SY

Total Concrete Volume: 327 CY

Cost (Installed, including post-tensioning): \$224/SY

Key Aspects of Project:

- Panel installation was permitted from only 11 PM-5 AM.
- A change in pavement cross-slope (from 2% on the main lanes to 5% on the shoulder) was cast into the surface of the precast panels.
- Panels were installed between existing pavement and a new sound wall.
- Finished surface was diamond ground to meet Caltrans' PI specification.



Missouri Demonstration Project

Location: NB Interstate 57 near Charleston, Missouri

Completed: January 2006

Length: 1,010 ft (post-tensioned in four 250 ft sections)

Width: 38 ft (24 ft travel lanes, 4 ft and 10 ft shoulders)

Slab Thickness: Varied from 5.75" to 11"

Precast Panel Dimensions: 37' x 8' x 10"-13"

Base: 4" permeable asphalt stabilized base

Installation Rate: 25 panels/8 hours (250 lf/8 hours)

Total Number of Panels: 101

Total Pavement Area: 4,264 SY

Total Concrete Volume: 1,020 CY

Cost (Installed, including post-tensioning): \$248/SY

Key Aspects of Project:

- Precast pavement section was designed to match the existing pavement cross-section.
- "Rooftop" crown pavement cross-section incorporated into the precast panels.
- Finished surface was diamond ground to meet MoDOT's smoothness specification.

Iowa Demonstration Project

Location: State Highway 60 near Sheldon, Iowa

Completed: September 2006

Length: Variable, ~154 ft at centerline of approach slabs (2 approach slabs, each 77 ft in length)

Width: 28 ft (two 14' "widened lanes")

Slab Thickness: 12"

Precast Panel Dimensions: 14' x 20' x 12" (typical)

Base: crushed limestone aggregate base

Installation Rate: 8 panels/8 hours

Total Number of Panels: 16

Total Pavement Area: 479 SY

Total Concrete Volume: 160 CY

Cost (Installed, including post-tensioning): \$739/SY

Key Aspects of Project:

- First application of PPCP for bridge approach slabs.
- First use of 2-way on-site post-tensioning (no plant pretensioning).
- Approach slabs were constructed "lane-by-lane" to simulate future single-lane reconstructions on a crowned pavement cross-section.
- Finished surface was diamond ground to meet IADOT smoothness specifications.