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16. Abstract Reconstruction of bridge approach slabs which have failed due to a loss of support from embankment fill consolidation or erosion can be particularly challenging in urban areas where lane closures must be minimized. Precast prestressed concrete pavement is a potential solution for rapid bridge approach slab reconstruction which uses prefabricated pavement panels that can be installed and opened to traffic quickly. To evaluate this solution, the Iowa Department of Transportation constructed a precast prestressed approach slab demonstration project on Highway 60 near Sheldon, Iowa in August/September 2006. Two approach slabs at either end of a new bridge were constructed using precast prestressed concrete panels. This report documents the successful development, design, and construction of the precast prestressed concrete bridge approach slabs on Highway 60. The report discusses the challenges and issues that were faced during the project and presents recommendations for future implementation of this innovative construction technique.			
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CHAPTER 8. SUMMARY AND RECOMMENDATIONS

SUMMARY

The bridge approach slab project on Highway 60 near Sheldon, Iowa demonstrated one more application for precast prestressed precast concrete pavement. The primary objective of this demonstration project was to evaluate the viability of PPCP for bridge approach slab construction. Although this project was constructed on a new bridge, the design and construction details that were developed through this project lend themselves for approach slab reconstruction as well. The project helped to familiarize IADOT as well as local contractors and precast producers with this innovative construction technique. It also allowed IADOT to develop design details and construction procedures for precast approach slabs that may eventually be adopted as standards.

Some of the important features of PPCP that were demonstrated by this project included:

- Use of full-depth precast panels for bridge approach slabs,
- Use of bi-directional post-tensioning in lieu of pretensioning,
- Use of partial-width precast panels on a crowned pavement cross section, and
- Construction over crushed stone aggregate base.

The project demonstrated the adaptability of the PPCP concept to a unique application. The design details and precast panel layout used for this project are adaptable to variable approach slab lengths, widths, thicknesses, and skew angles. The concept can be used for full-width approach slab construction or partial-width (lane-by-lane) construction.

RECOMMENDATIONS FOR FUTURE IMPLEMENTATION

The next step in bringing this construction technique into standard practice will be to use PPCP for reconstruction of an existing approach slab under traffic. This will bring additional considerations into play, such as staging construction and panel installation. Different precast panel configurations, as discussed in the previous chapter, may also be considered based on the site constraints.

Reconstruction of existing approach slabs also requires consideration of the condition of the paving notch. A failed or poorly constructed paving notch will likely need to be replaced. IADOT is already addressing this need by developing details for a precast concrete paving notch which can be quickly bolted to the bridge abutment to replace the existing paving notch. This, used in conjunction with precast pavement panels, will provide IADOT with long-term solution for rapid reconstruction of bridge approach slabs.