



Precast Prestressed Concrete Pavement to Abate Settlement Problems Under Bridge Approach Slabs

Description

Meta Fields

Category : Ongoing Projects

Group : Superstructure

Subject : Approach Slabs

Abstract :

The problems encountered in bridge approach embankments have often been found to be due to settlement caused by poor compaction of the soil behind the abutments, expansion of the soil behind the abutment or settlement of the soft soil underlying the embankment. Failure of bridge deck approach slabs have also been due to shoving from the adjacent pavement structure causing slope failure of the surrounding fill areas. Malfunctions associated with transition joints between the slab and the adjacent structure are also a major concern. Although several measures have been attempted, some more extreme than others, the settlement problem seems to persist. Three objectives are identified for this project: (1) the development of construction specifications and design guidelines for the use of Precast Pre-tensioned Concrete Pavement (PPCP) approach slabs, (2) the development of construction specifications and design guidelines for the use of soil columns and similar technologies to strengthen and reinforcement approach slab fills and embankments and (3) the development of guidelines to monitor and maintain polyester polymer concrete (PPC) pavements as approach slab structures. Guidelines for PPCP approach slabs will address the details of design including slab thickness, joint stiffness, subbase strength, required prestressing and thickness, and joint sealant requirements among other aspects of the design. Guidelines for soil columns and similar technologies will consider the characteristics of the fill materials, such as moisture, density, size distribution, type and other pertinent properties in which to make them less susceptible to consolidation will be addressed.

Key Words : Bridges and other structures; Design; Highways; Pavements; I30: Materials

Specific Abc Aspect : Precast bridge elements and systems

Budget : 99955.00

Project Length : 24

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Other Documents 0 Other Documents File : 4426

Project Starting Year : 2015

Project Completion Year : 2016