

Evaluation of Spliced Sleeve Connections for Precast RC Bridge Piers

Description

Meta Fields

Category : Completed Projects

Group : Seismic

Subject : Grouted Couplers

Abstract :

Although the splice sleeve connection has been used in buildings, there is currently no data for use of this connection in bridges located in seismic regions. The increased use of Accelerated Bridge Construction for constructing reinforced concrete bridge bents makes the investigation of the splice sleeve connection an important topic. The project aims at performing quasi-static cyclic tests to verify the capacity of the splice sleeve connection in seismic regions for connecting precast concrete elements such as footings to columns and columns to a cap beam. The project involves quasi-static cyclic testing of substructures for typical precast concrete bridge elements using splice sleeve connections that utilize large diameter bars. Primary longitudinal reinforcement for the footing, column and the bent cap will be designed based on capacity protection measures and force-transfer mechanism requirements as presented in the AASHTO Seismic Guide Specification (AASHTO 2009). Shear reinforcement near the joint region and joint shear reinforcement will be designed in accordance with the assumed force transfer mechanism of AASTHO (2009). The tasks for this project are: (1) Tests of three precast reinforced concrete column to footing splice sleeve connections. The 8 ft long column will consist of an 18 in. square cross-section with six #8 mild steel bars. The footing will be 6 ft by 3 ft in plan and 2 ft thick. (2) Tests of three precast reinforced concrete column to bent cap splice sleeve connections. The 5 ft long column will consist of a 18 in. square section with six #8 mild steel bars. The bent cap will be 10 ft long with a 22 in. square cross-section.

Key Words :

Bents; Bridge piers; Earthquake resistant design; Precast concrete; Reinforced concrete; Seismicity; Structural connection

Budget : 110000.00

Primary Sponsor Contact Info : New York State Department of Transportation 50 Wolf Road Albany, NY 12232 USA Utah Department of Transportation 4501 South 2700 West Project Development Salt Lake City, UT 84114-8380 USA

Other Documents 0 Other Documents File : 1962

Project Starting Year : 2011

Project Completion Year : 2016