

Rapidly Constructed Large-Bar Precast Bridge Bent Seismic Connection

Description

Meta Fields

Category : Completed Projects

Group : Seismic

Subject : Grouted Ducts

Abstract :

The use of precast components in bridge bents can accelerate bridge construction, but their use in seismic systems is challenging. Such systems must have connections that are both easy to assemble on site, and have sufficient strength and ductility during earthquakes. A precast bridge bent beam-column connection that is suitable for rapid construction in seismic regions has been developed and tested. The connection features a small number of large (#18) vertical column bars grouted into large corrugated ducts embedded in the cap-beam. This combination provides speed and simplicity of erection, as well as generous construction tolerances. Lateral-load tests on the system showed that it has strength and ductility similar to those of a comparable cast-in-place connection, and that deliberate debonding of a short length of the bars has little effect on its seismic performance.

Key Words :

Precast concrete, bridge substructures, bents, bridge column, accelerated bridge construction, anchorage, ducts

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