

## Rapidly Constructed Large-Bar Precast Bridge Bent Seismic Connection

### Description

#### Meta Fields

**Project Completion Year :** 2008

**Project Starting Year :** 2008

**Other Documents 0 Other Documents File :** 2337

**Primary Sponsor Contact Info :** Washington State Department of Transportation Research Office  
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**Budget :** 0.00

#### Key Words :

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

**Subject :** Grouted Ducts

**Group :** Seismic

**Category :** Completed Projects