



2007 - SR 520 / SR 202 Interchange

## Description

### Meta Fields





## Project Summary :

The contractor of this design-bid-build project elected to modify the crossbeam (bent cap) from cast-in-place crossbeams to the precast crossbeams. The crossbeams were cast on site, on grade at the base of the columns.

## Project Location :

Bellevue, Washington

**Mobility Impact Time :** The contractor submitted for 10 days of time savings, reducing the construction schedule for the crossbeams.

**Impact Category :** Tier 5 (within 3 months)

**Dimensions :** This bridge has three spans with five prestressed I-girder (WF74G) and a CIP bridge deck. All spans are 145-ft long with the roadway width varying from 45 ft to 46 ft. All piers are normal to the roadway alignment. The precast crossbeam elements were 45-ft long x 7-ft wide and varied in depth from 2 ft to 5 ft.

**Average Daily Traffic At Time Of Construction :** 35000

## Traffic Management :

Traffic was not impacted for the construction of this bridge.

## Existing Bridge Description :

No existing bridge was replaced as a result of the construction of this bridge.

**Replacement Or New Bridge :** This bridge was originally designed to be constructed conventionally and to have CIP concrete piers, including the columns and crossbeams. Due to the complex geometry of the crossbeam, the contractor elected to cast the crossbeam at ground level at each corresponding pier. It eliminated falsework construction to support the crossbeam formwork on the existing grade. Corrugated ducts were cast into the crossbeam for the column reinforcement, and grouted after erection. A single 500-ton crane was used to erect the crossbeam.

**Construction Method :** The two crossbeams were precast on-site, on grade and erected with 500-ton crane. The elimination of the falsework to support crossbeam formwork accelerated and simplified the construction of the crossbeam with complex geometry. Other than the decision for acceptance from the owner, all decision making was done by the contractor to reduce costs and improve convenience.

**Contacts :** Bijan Khaleghi, Ph.D., P.E., S.E. State Bridge Design Engineer Washington State Department of Transportation khalegb@wsdot.wa.gov 360-705-7181 **Submitter:** Jed Bingle P.E. Accelerated and Innovative Bridge Construction (ABC) Specialist Washington State Department of Transportation binglej@wsdot.wa.gov 360-705-7222 **Designer:** Washington State Department of Transportation Arthur Chu P.E. chua@wsdot.wa.gov 360-705-7176 **Contractor** Tri-State Construction Inc (425) 455-2570

**Costs :** No cost savings were submitted for the contractor's proposed change to precast the crossbeam at grade, on-site.

**Additional Information :** Contract plans are available below. The precast crossbeam was done by change order; there are no precast crossbeam specifications or bid tabs.

**Contract Plans :** 1

**Year Abc Built :** 2007

**State :** WA

**Owner :** State

**Location :** Urban

**Spans:** Three-span

**Beam Material:** Precast Concrete 348-0110 | Email: abc@fiu.edu | 10555 W. Flagler Street, EC 3680 Miami, FL 33174

**Max Span Length Ft :** 145

