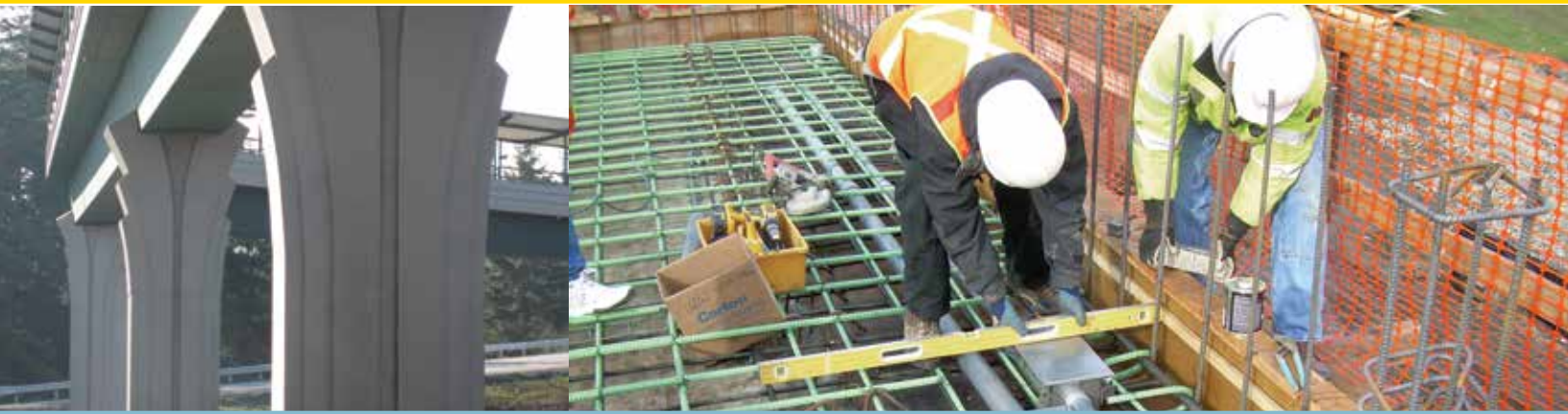


# Canyon Park Freeway Station Pedestrian Bridge

Bothell, WA



## Team

### Owner:

Central Puget Sound Regional Transit Authority (aka Sound Transit), Seattle, WA

### Preliminary Architect:

Streeter Associates, Seattle, WA

### Context-Sensitive Solution Architect:

HNTB, Bellevue, WA

### Engineer:

Washington State Department of Transportation, Olympia, WA

### General Contractor:

Granite Construction, Everett, WA (formerly Wilder Construction)

### Precast Concrete Supplier:

Central Pre-Mix Prestress Co. Spokane, WA

### Reinforcing Bar Fabricator:

Nucor Corp., Seattle, WA

### Total Project Cost:

\$5.5 million

### Total Project Size:

607 ft (overall span -124 ft typical span)

### Photography:

Washington State Department of Transportation, Olympia, WA

## STRUCTURAL FRAMING SYSTEM

Connecting an existing park-and-ride lot to a new interstate bus transit station across a busy interstate highway created key challenges for administrators at Central Puget Sound Regional Transit Authority (aka Sound Transit). Complicating their approach was their desire to use the bridge as the highway's prototype design for the state's newly introduced Context-Sensitive Solution guidelines.

To achieve the varied goals, designers created a 607-foot-long pedestrian bridge consisting of six spans of one precast concrete trapezoidal tub girder for each span. This design ensured traffic could flow smoothly during construction while maintaining accessibility to the parking lot with minimal disruption.

Designers also considered traditional I-girders. They decided the tub-girder's wider bottom flanges and two webs could allow one tub girder to replace two I-girders, which saved casting and erection time.

The superstructure costs were somewhat higher than for typical I-girders, but the aesthetic potential offset that. The shape enhances the aesthetic elements, including the columns, barrier and throw-screen panels. It also provides an efficient way to resist additional lateral loads from the pedestrian-bridge roof and throw-screen panels. The aesthetic elements are comprised of flared columns inspired by rhododendrons, horizontal ridges on the outside face of the barriers, and an arched pattern for the throw-screen panels.

To accent the design, three colors of pigmented sealer were used. "Cascade Green" was applied to the precast trapezoidal tub girders, spanning the highway, as well as to the underside of the deck overhangs and structural steel. "Mt. Baker Grey" was chosen for the central recess of the flared columns. "Mt. St. Helens Grey" was selected for all other concrete surfaces.

Foundations for the bridge columns and elevator/stair tower consist of 2-foot-diameter cast-in-place concrete piles with cast-in-place concrete pile caps, typical for a Washington Department of Transportation (WSDOT) design. The abutment adjacent to the new bus transit station and the connected entry structure were built on concrete spread footings.

Going against conventional techniques to specify tub girders and incorporate the context-sensitive solutions produced a structure that was quickly erected to achieve a dramatic appearance.

***Reinforced concrete increased the public's safety and convenience during construction.***