

Constructing the World's Longest Floating Bridge

SR 520 Floating Bridge | Seattle, WA

Jason Pang | KPFF Consulting Engineers

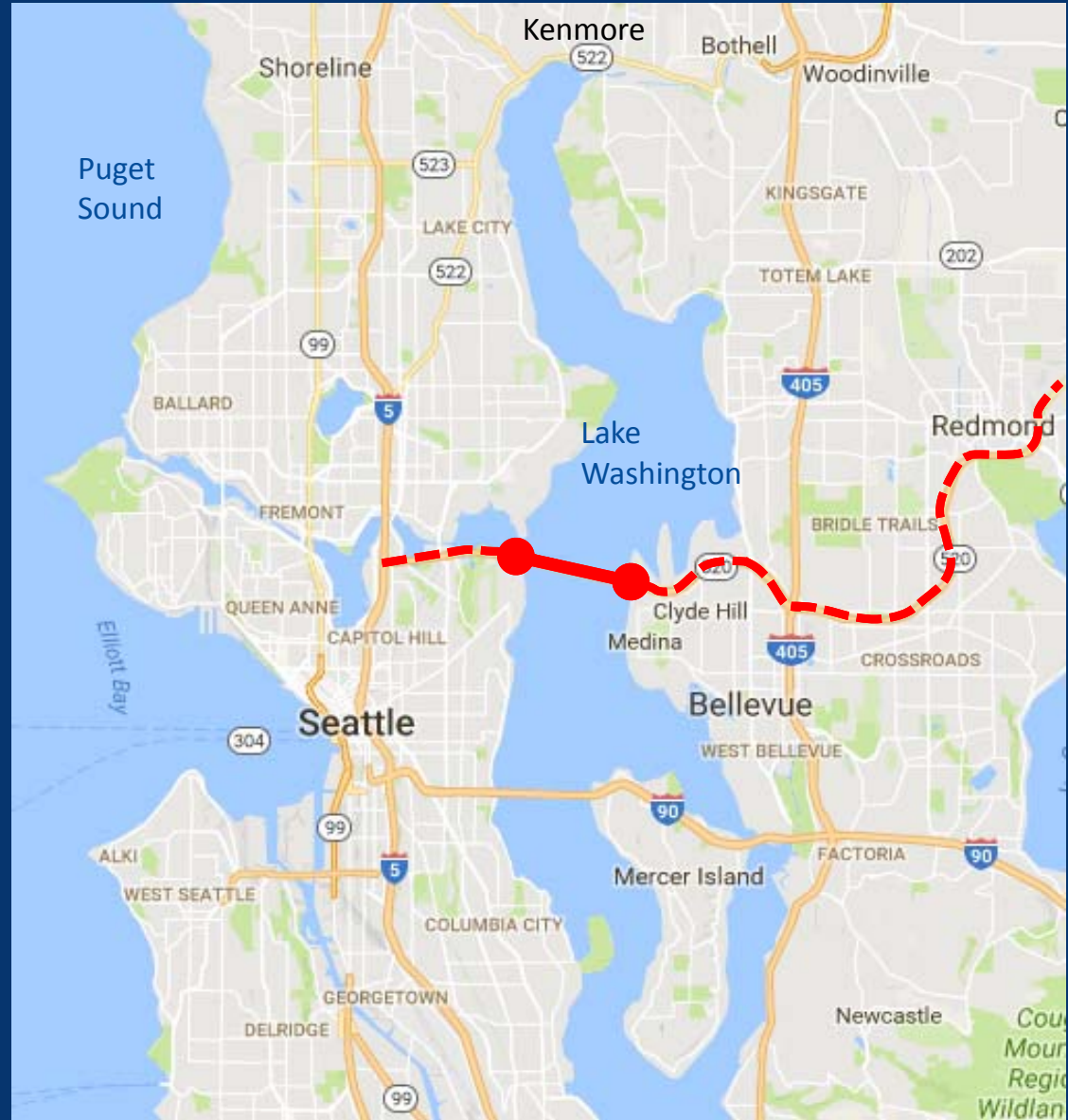
Greg Hess | KPFF Consulting Engineers



Presentation Overview

- Project Background
- Bridge Configuration
 - Pontoons and Anchors
 - High Rise Structure
 - Low Rise Structure
- Unique Aspects of Floating Bridge Design and Construction
 - Marine vs. Land Design and Construction
 - Construction Analysis
 - Joining and Ballasting
 - B-C-D Raft Construction
 - Decommissioning - External PT

Project Background



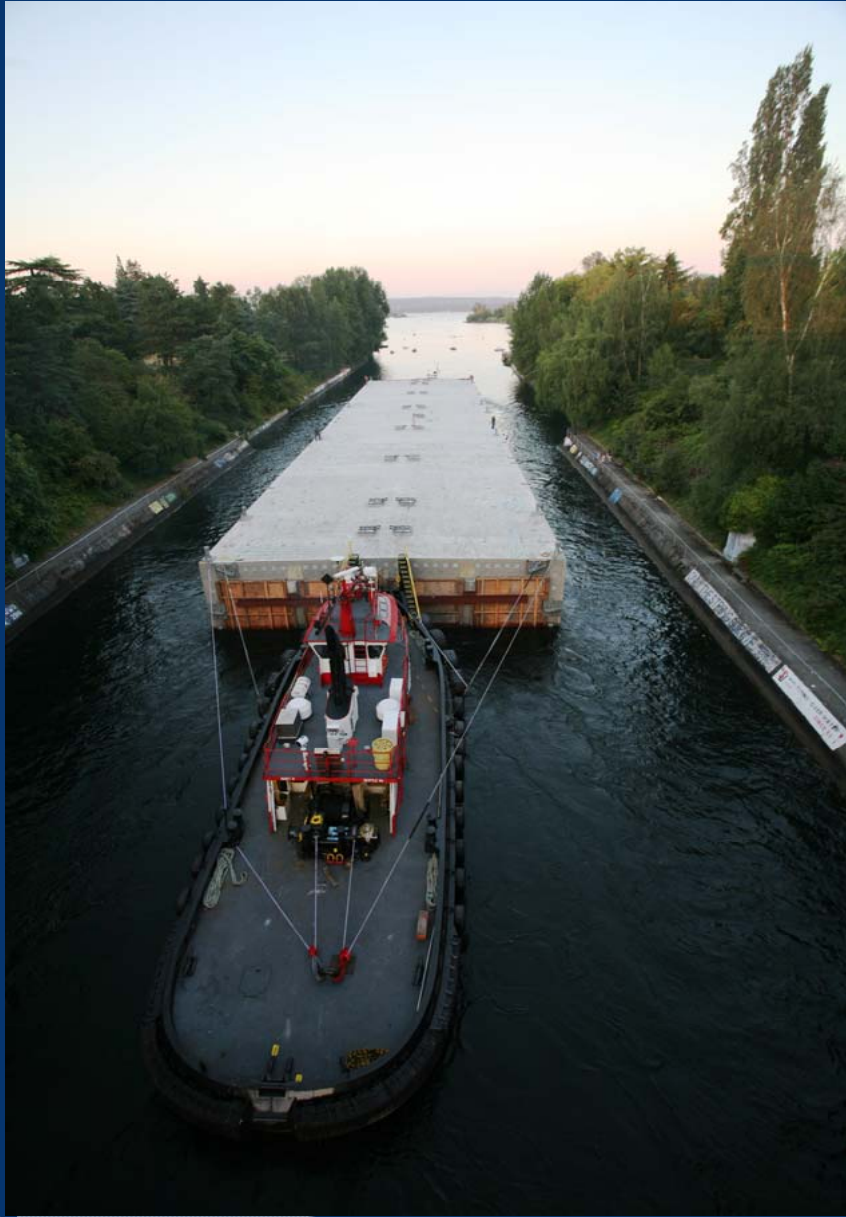
Bridge configuration



Pontoons



Pontoons



Anchors



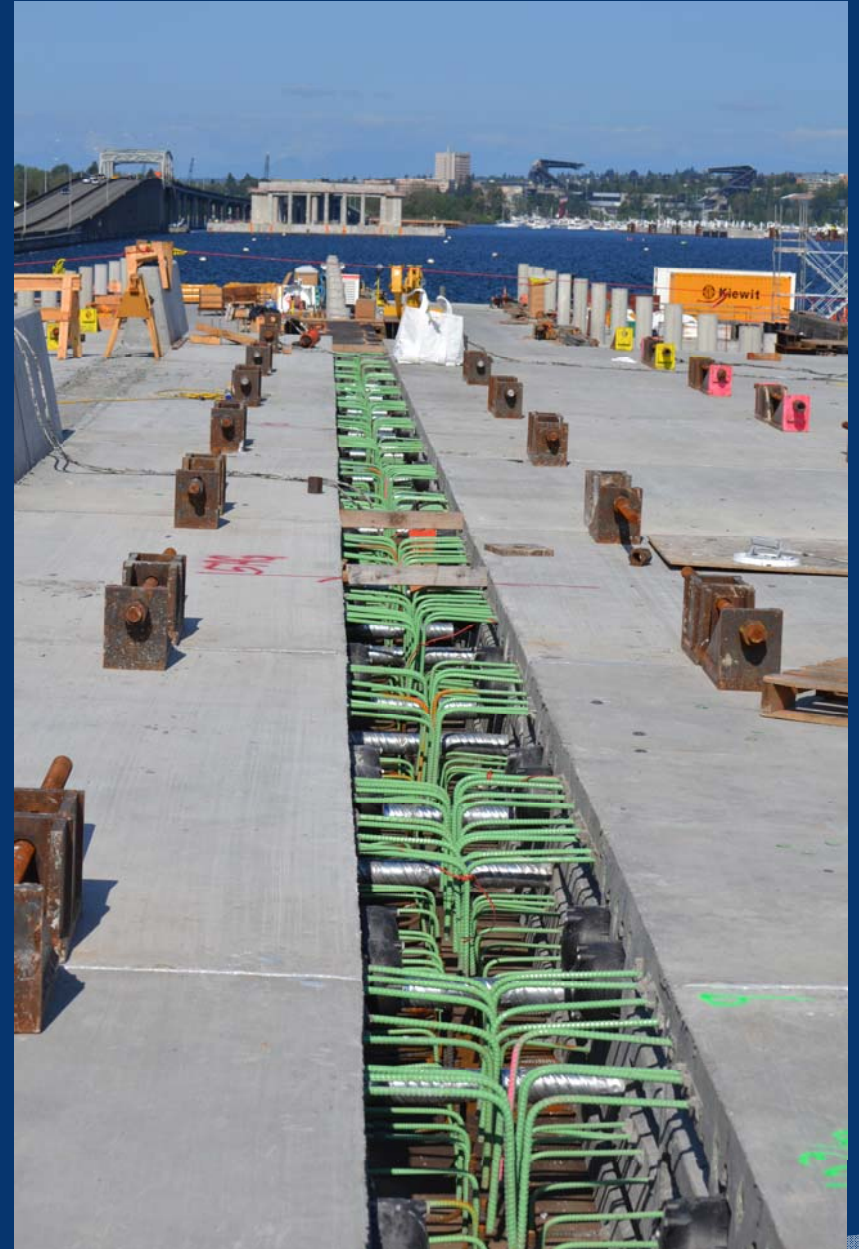
High Rise Structure



High Rise Structure



Low Rise Structure



Low Rise Structure

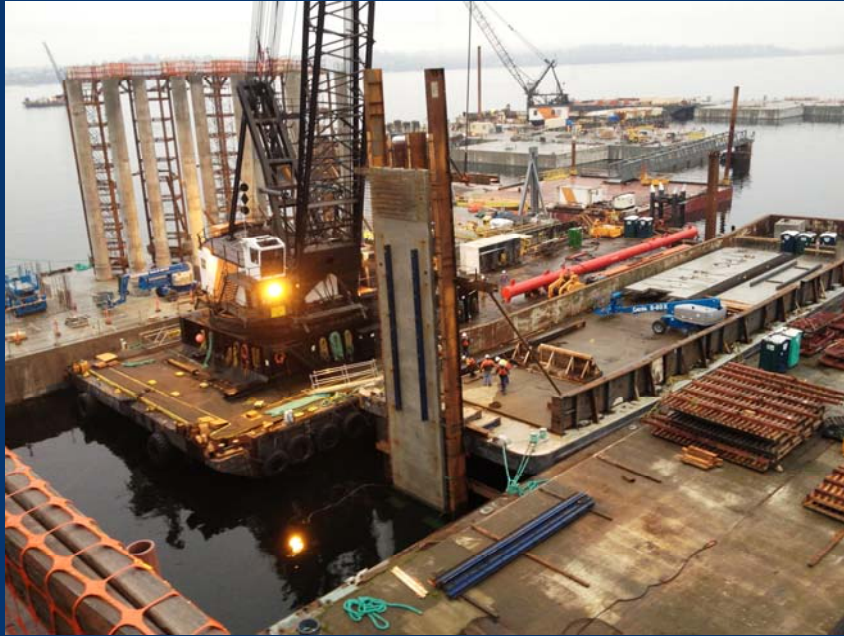


Marine vs. Land Design and Construction

- Challenge: Limited site access and over water work.
- Shift construction activities away from site
- Material delivery via water
- Reduce over water work
- Accelerate construction



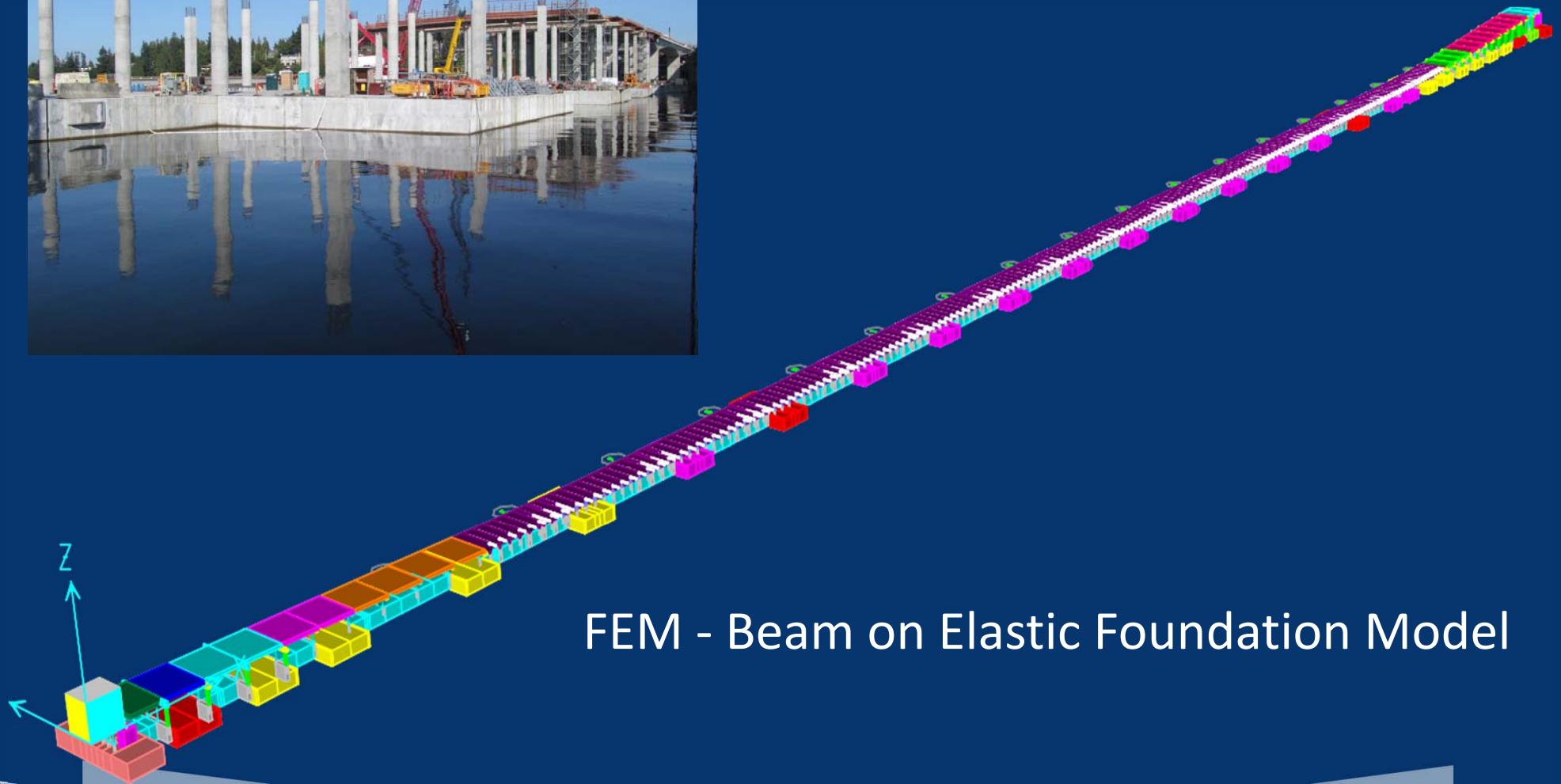
Marine vs. Land Design and Construction



Construction Analysis – Loading



Construction Analysis – Stage Construction



FEM - Beam on Elastic Foundation Model

Joining and Ballasting



Joining and Ballasting



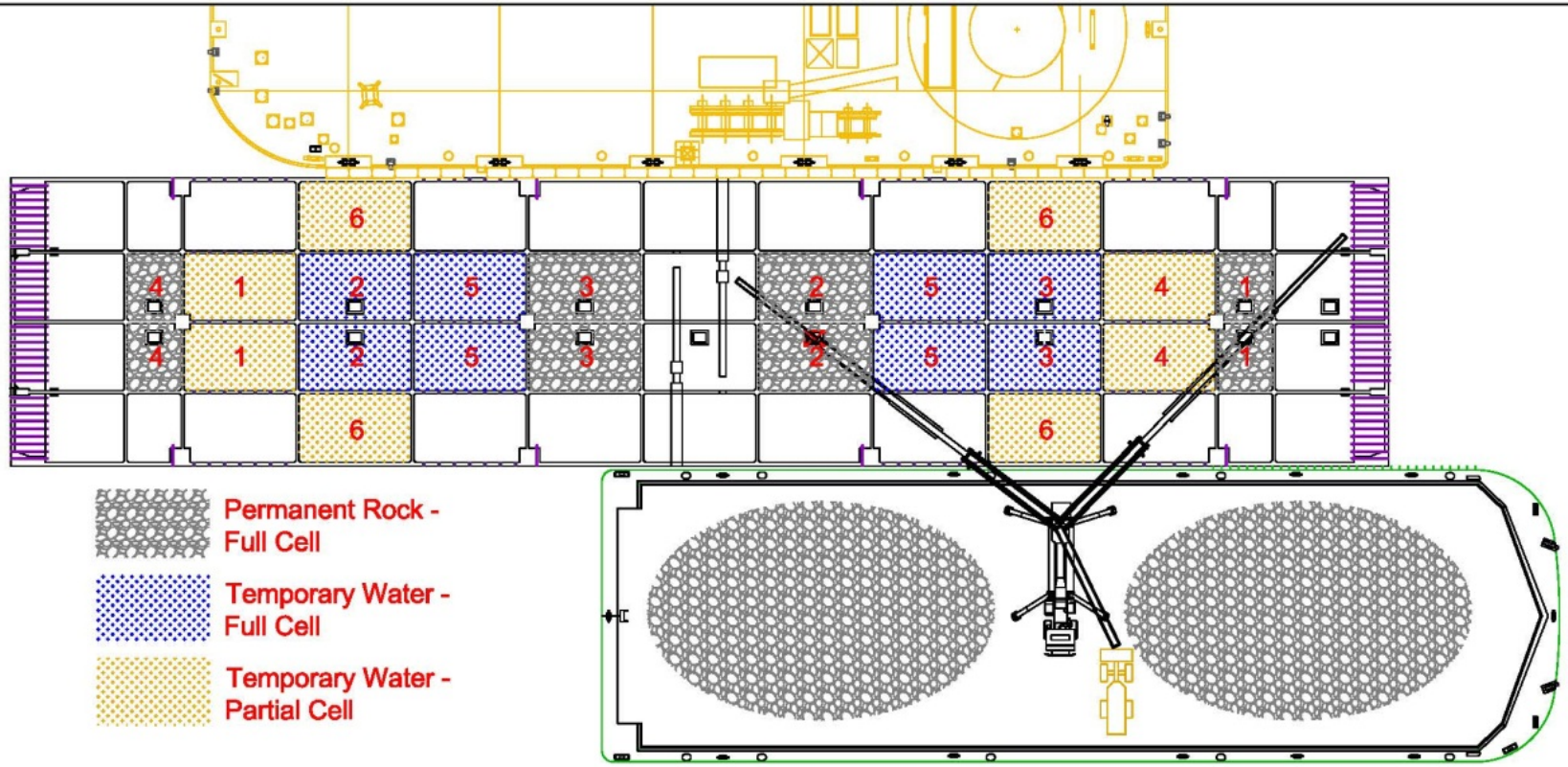
No.	Date	By	Revision




Ballast
Rock Installation

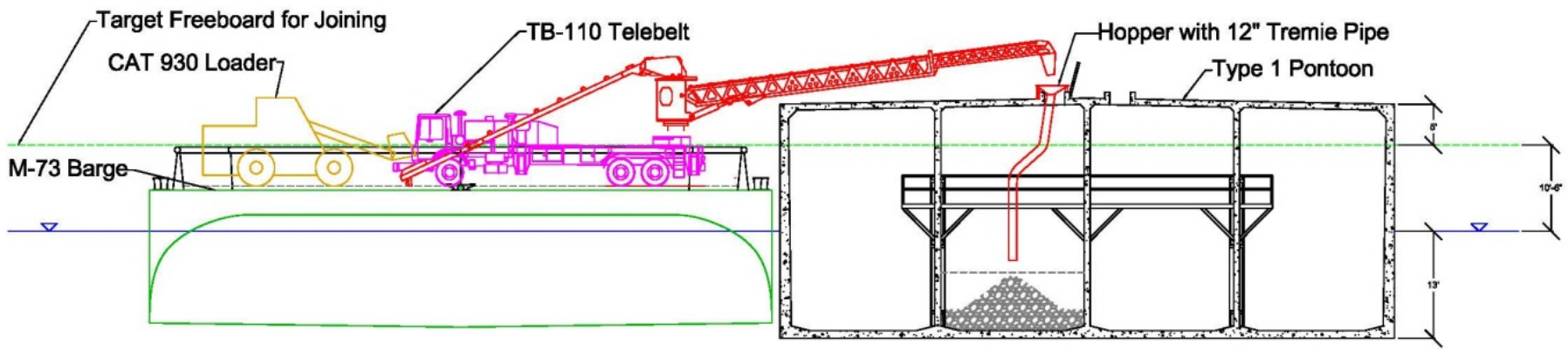
SR 520 Floating Bridge and Landings
Kiewit / General / Manson
A Joint Venture
Corporate Campus East
3015 122nd Avenue N.E. - Suite 110
Bellevue, WA, 98004

Date: 6/8/12
Drawn: MMB
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Scale:
Sheet
1 of 1

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-  Permanent Rock - Full Cell
-  Temporary Water - Full Cell
-  Temporary Water - Partial Cell



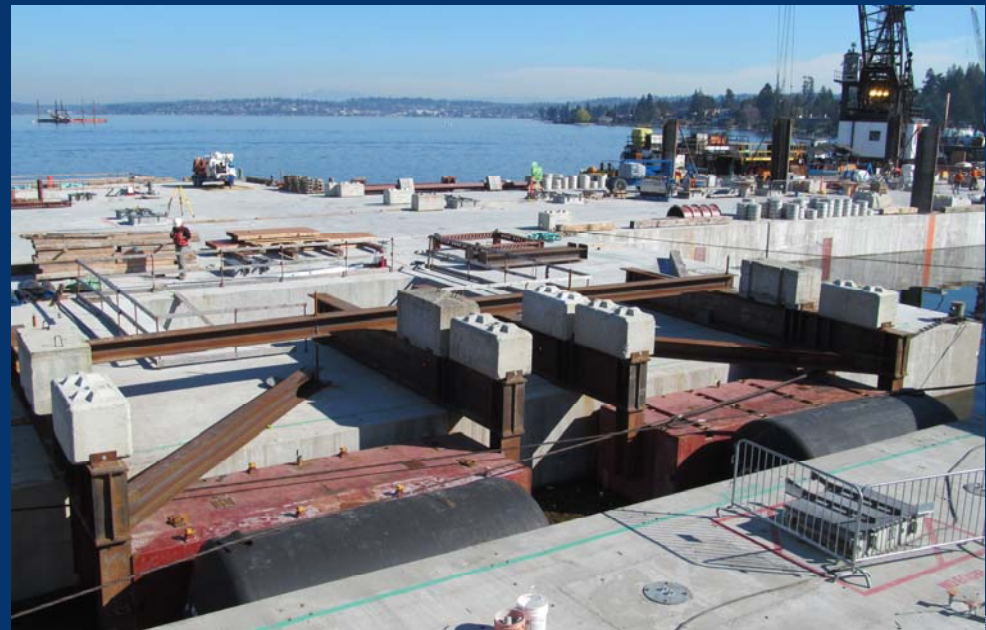
Joining and Ballasting



B-C-D Raft Construction



B-C-D Raft Construction



B-C-D Raft Construction



Decommissioning – External PT



Decommissioning – External PT



Decommissioning – External PT



Credit: WSDOT

SR 520 Floating Bridge



SR 520 Floating Bridge



LEHINGTON'S FLOATING BRIDGE HISTORY
 commemorated just as the 1962 date stems from the original SR 520 Governor Albert
 1963 Evergreen Point Floating Bridge, built between 1961 and 1963.
 had bridge replaced by traffic on Aug. 26, 1963, replacing a 1973 Lacey V. Murrow Bridge as the
 major floating bridge. The original SR 520 bridge is now a major component of the Evergreen
 and 14th. Construction of the new, replacement SR 520 Floating Bridge began in 2012.
 has four floating bridges, of which the five longest floating highway spans in the world.
 four floating bridges are the:
 1) Alvarado Bridge, covering King Seattle to Mercer Island
 2) and opened in 1962 (4,020 feet long)
 3) Canal for William A. Shupard Bridge (1961, rebuilt and opened in 1962; 4,523 feet long)
 4) Albert D. Rosellini - Evergreen Point Bridge
 5) opened in 2014 (7,768 feet long)
 Miller Bridge, which runs parallel to the Lacey V. Murrow Bridge
 and traffic (1997, 3,821 feet long)

COMMEMORATING THE 1963 EVERGREEN POINT FLOATING BRIDGE




A NEW BRIDGE FOR A NEW SEA.
 On a June day in April 2015, the new SR 520 Floating Bridge opened to traffic on the new "Seattle" Evergreen Point Floating Bridge" connecting the
 west of the existing new bridge from the existing bridge to the
 an evergreen bridge. While in 73-year bridge SR, the new bridge
 long, floating bridge for bridge and concrete, and to bridge
 path from here. The new bridge is longer than the old one, capable of
 withstanding higher winds, waves and currents, and to bridge
 four, with a bridge and changes in the lake level of up to 20 feet.
 This new bridge is built to serve the bridge, including workers, the
 vehicles and owners. This is a new bridge SR 520 has a
 foundation built and supports the 14th-century span of the bridge
 while on the path, which is a new bridge leading to bridge
 to have been about the new bridge bridge. The bridge of SR
 "Washington and the native wildlife found in the area."



Acknowledgements

Owner/Client:	WSDOT
Design Builder:	Kiewit/General/Manson, Joint Venture
General Contractor:	Kiewit/General/Manson, Joint Venture
Engineer:	KPFF Consulting Engineers, Berger ABAM, WSDOT
Specialty Consultants:	International Bridge Technologies, Wood Harbinger
Architect:	Helix Design Group
Other Team Members:	IBI Group, Hart Crowser, Geo Engineers, Floyd Snider, HDR, Envirolssues, Parametrix, Parsons Brinkerhoff





Thank You
Any Questions?

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