

Pontoon construction project overview

- WSDOT is moving forward with pontoon construction to replace the aging and vulnerable SR 520 floating bridge on Lake Washington
- The \$367.3 million Pontoon Construction Project broke ground in February 2011 at a 55-acre site in Aberdeen.
- As part of this project, contractor Kiewit-General Joint Venture (K-G) has built a new casting basin facility and is constructing 33 concrete pontoons that will be used to replace the SR 520 floating bridge.



An aerial photograph of the pontoon casting basin and Grays Harbor in May 2012. Photo courtesy of Soundview Aerial Photography.



SR 520 floating bridge pontoons

The new SR 520 floating bridge will be supported by three types of concrete pontoons:

Longitudinal pontoons (21) – These are the largest pontoons at approximately 360 feet long. They form the backbone of the bridge and support the roadway superstructure.

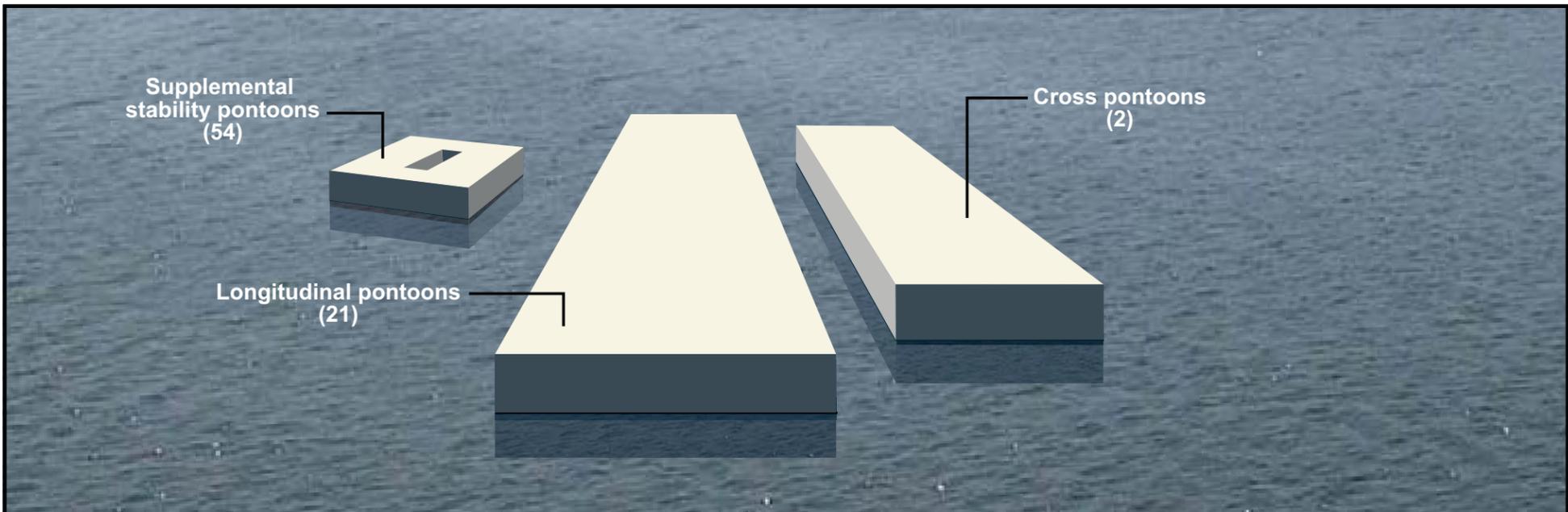
- Constructed in Aberdeen facility
- Weight: 11,100 tons

Cross pontoons (2) – These mark the ends of the floating bridge section and the transition to the East and West Approach structures.

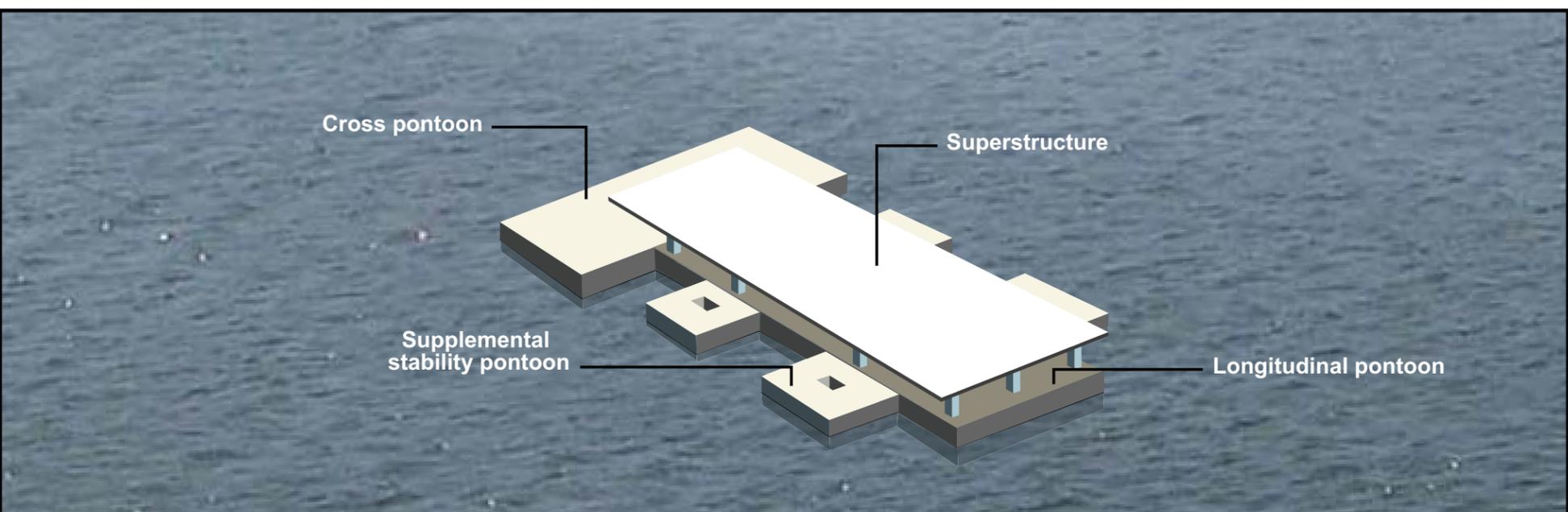
- Constructed in Aberdeen facility
- Weight: 10,100 - 10,550 tons

Supplemental stability pontoons (54) – These smaller pontoons help stabilize and support the weight of the new floating bridge.

- Constructed in Aberdeen facility (10) and Tacoma facility (44)
- Weight: 2,500 - 2,820 tons



The three types of pontoons that will support the new SR 520 floating bridge.



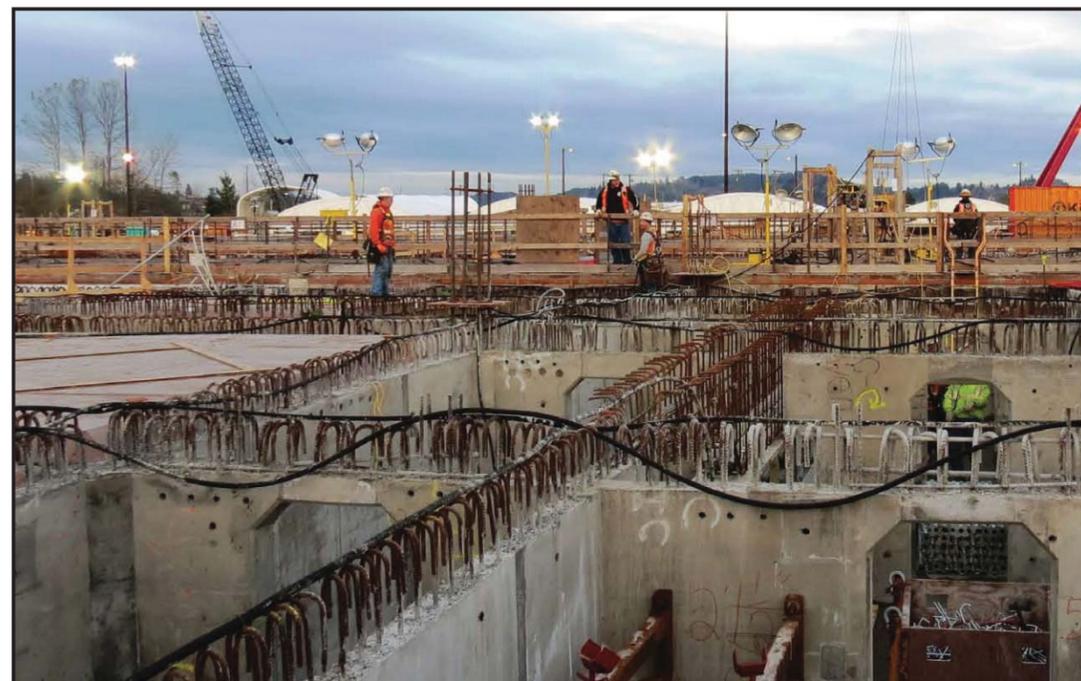
A representation of pontoons being assembled on Lake Washington.

Construction update

Crews are making progress on building the second cycle of six pontoons in Aberdeen.

Since Cycle 2 construction began in summer 2012, crews have:

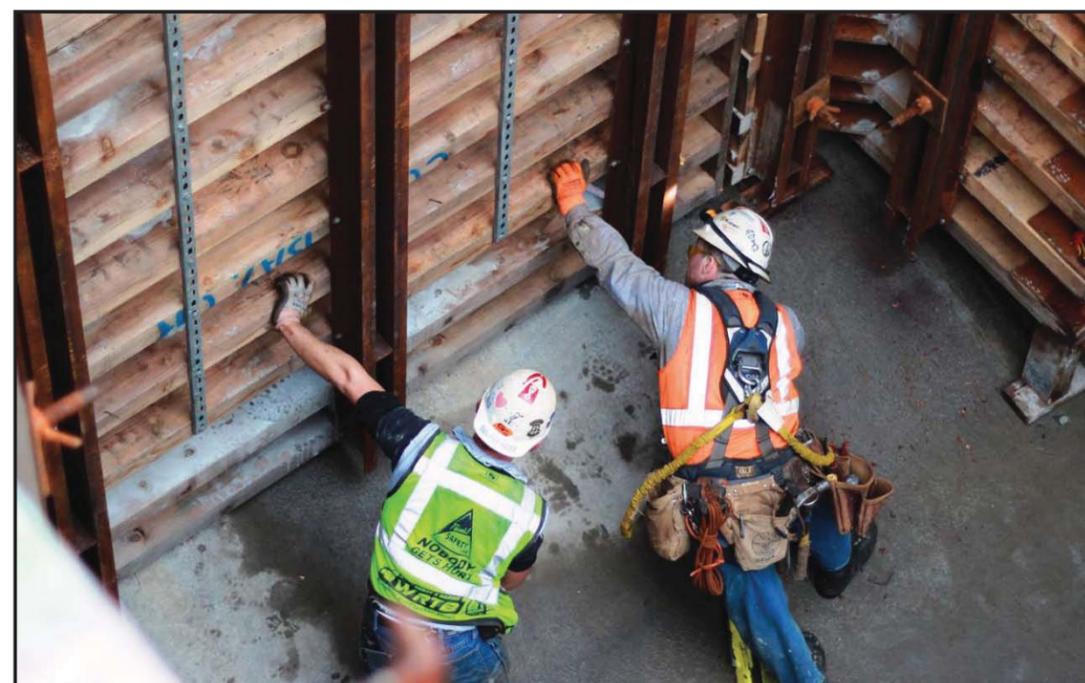
- Set forms for pontoon walls and keel slabs
- Installed reinforcing steel and post-tensioning ducts
- Built and set the interior precast panels
- Poured concrete for walls, keel slabs, and top slabs



View of interior precast panels and rebar inside a Cycle 2 pontoon in November 2012.



Aerial view of Cycle 1 pontoons under construction in Aberdeen, WA. Photo taken in May 2012 by Soundview Aerial Photography.



Workers team up in November 2012 to place forms before pouring concrete for the exterior walls of the pontoon.

2012 Aberdeen pontoon issues and repairs



Crews encounter spalling and end-wall cracking after a pontoon is post-tensioned

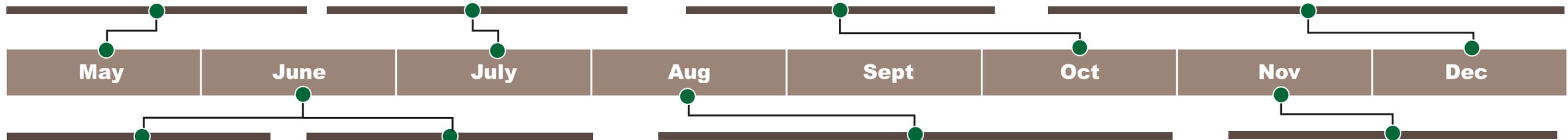


Repaired pontoons are floated out of the casting basin; crews complete pre-tow inspections



Computer analysis shows rebar in pontoons provides required structural capacity; expert review panel adds two new members who will assist in the panel's review of the design, materials, construction methods, and overall integrity of the pontoons

Floating bridge assembly continues on Lake Washington

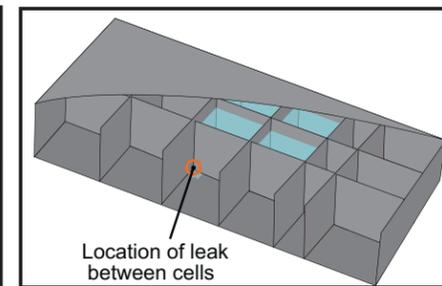


WSDOT convenes an expert review panel to address causes of spalling and end-wall cracking

Crews completed repairs to the first pontoon and pre-emptive modification in remaining pontoons



Pontoons are towed into Lake Washington. A leak is found and then repaired between two internal cells where ballast water was placed; Crews find additional moisture and WSDOT begins analysis of additional repair options



Expert review panel issues its report, and recommends WSDOT revise post-tensioning design and maintain rigorous concrete thermal controls
WSDOT starts Cycle 2 construction with revised post-tensioning design and other panel recommendations

KG rejects 9 of 345 precast panels for Cycle 2 pontoons in accordance with quality assurance process



Public and media involvement

WSDOT is committed to transparency and ongoing public and media involvement throughout the life of the project.

In 2012, WSDOT hosted several media briefings and informational tours in Aberdeen, Tacoma, Seattle and on Lake Washington.



Reporters speak with WSDOT project managers at the floating bridge construction site on Lake Washington.

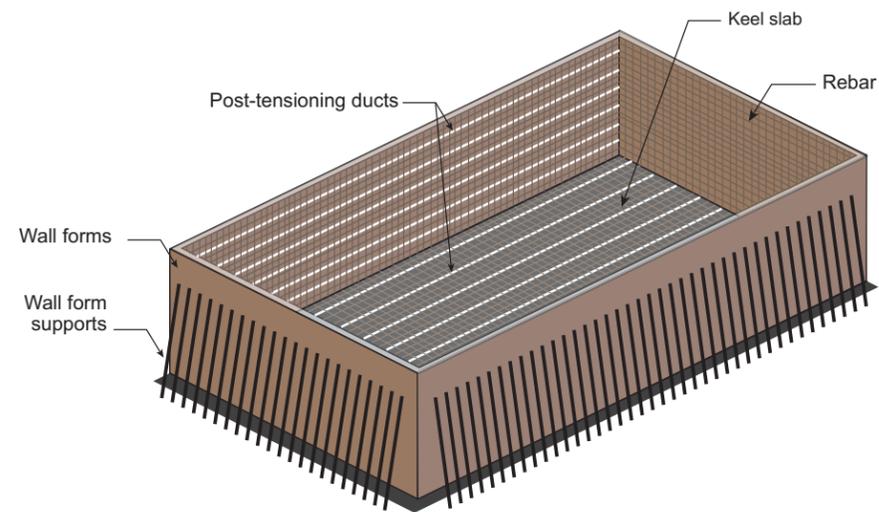


Camera crews document pontoon construction in Aberdeen in July 2012.

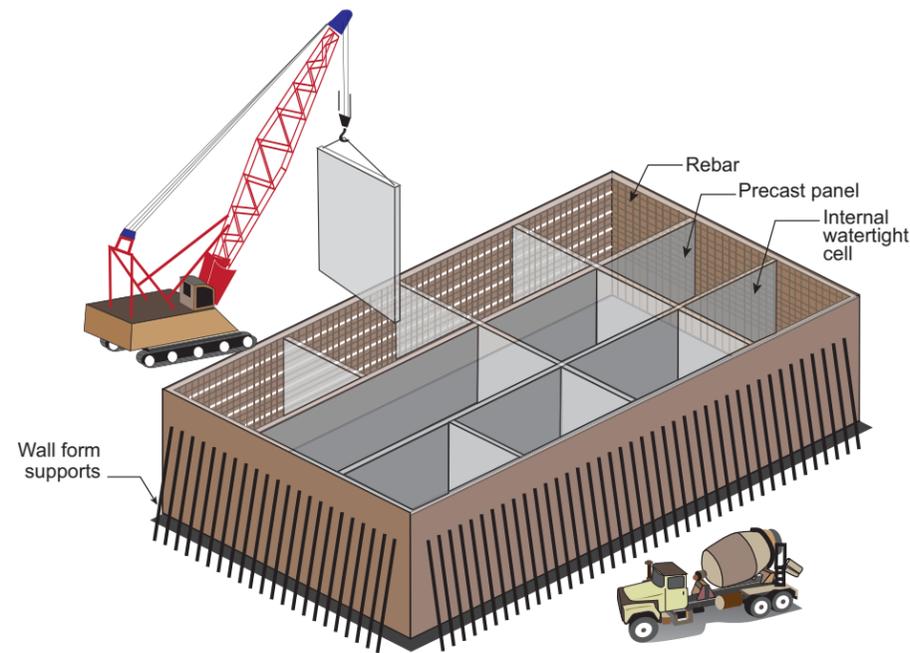


Reporters and camera crews view the inside of a new pontoon floating on Lake Washington during a media tour.

How to build a pontoon

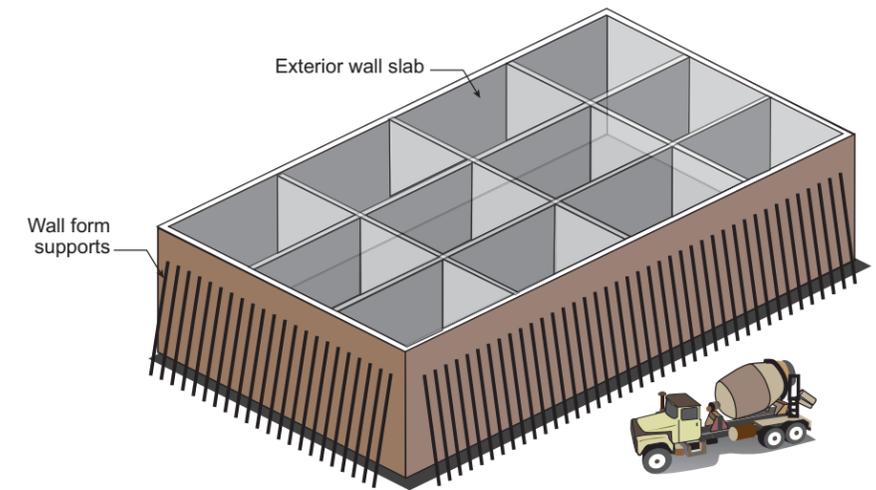


1 Set wall forms, rebar, and install post-tensioning ducts

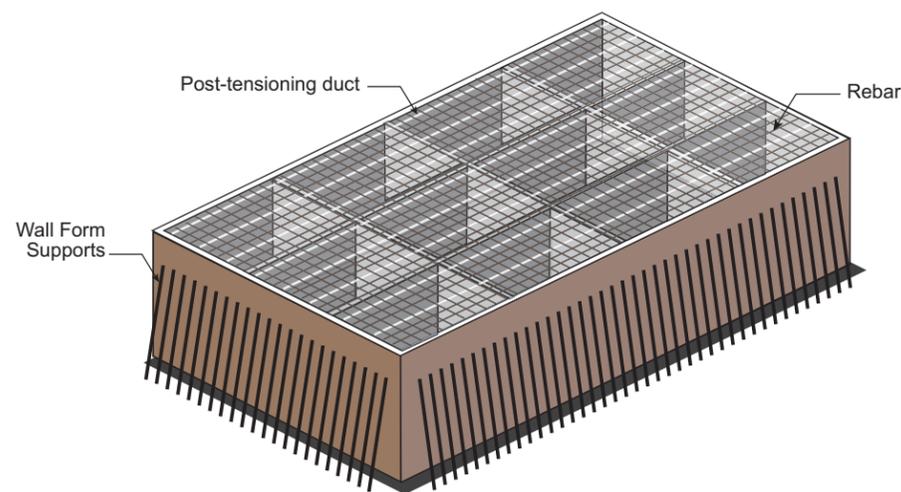


2 Install interior precast panels and pour concrete in keel slab

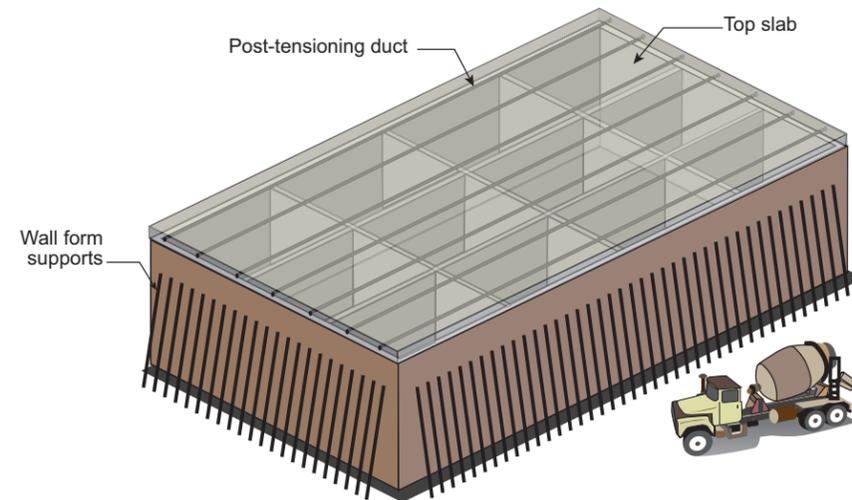
- Longitudinal pontoons: 90 precast panels
- Cross pontoons: 57 precast panels
- Supplemental stability pontoons: 9 precast panels



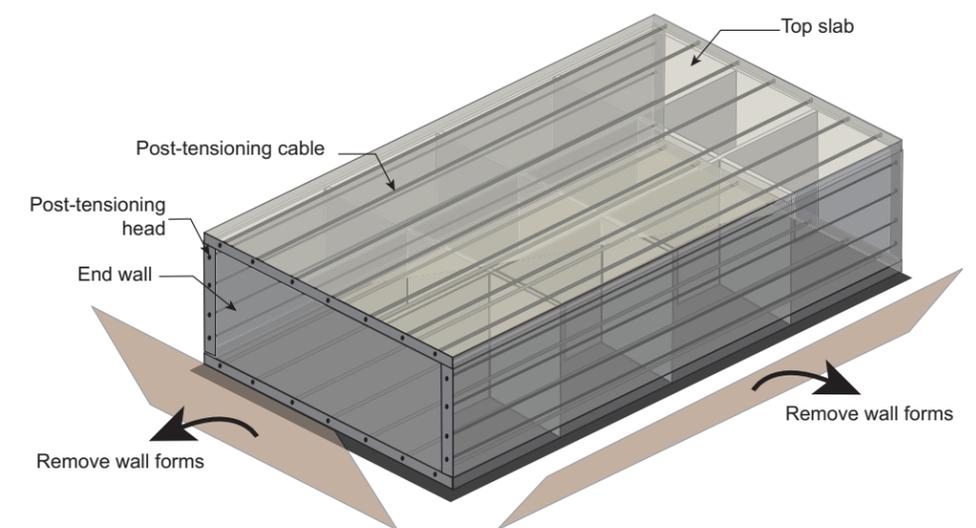
3 Pour concrete for exterior walls and joints between interior precast panels



4 Pour top slab rebar and post-tensioning ducts



5 Pour top slab concrete

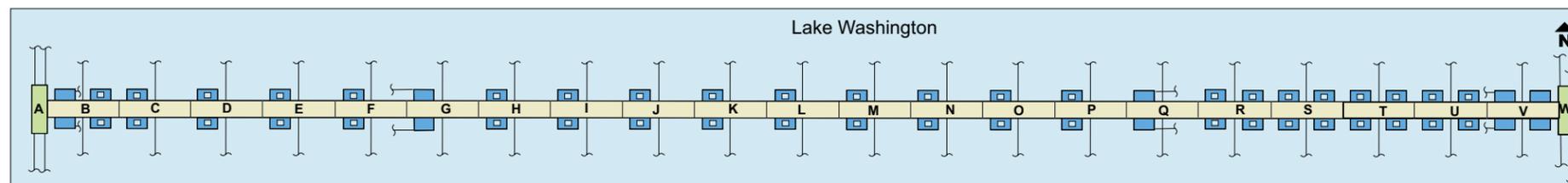


6 Remove wallforms and perform post-tensioning to add strength

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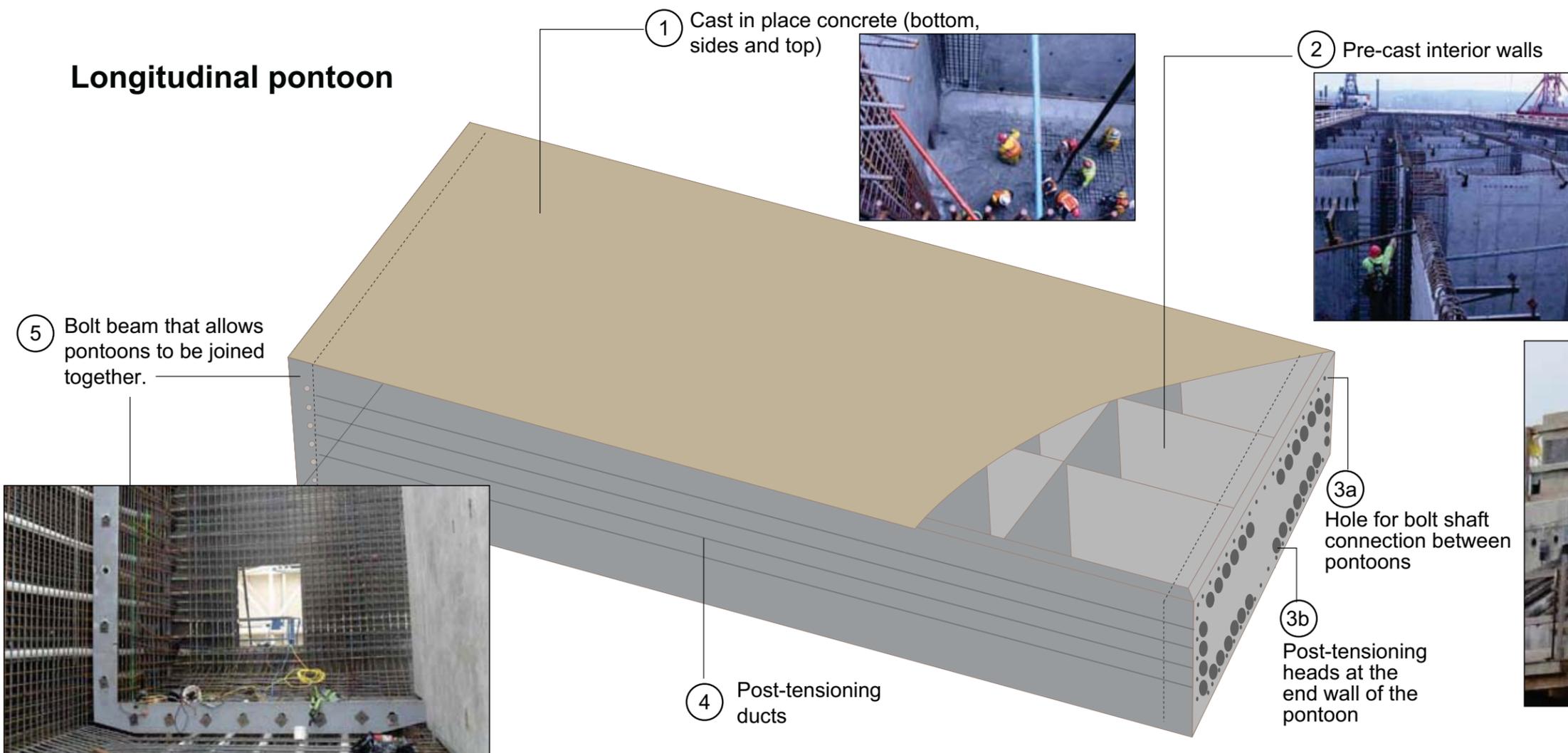
SR 520 longitudinal pontoons design components

Final six-lane bridge configuration on Lake Washington



- Longitudinal pontoons
- Supplemental stability pontoons
- Cross pontoons

Longitudinal pontoon



- Other components include:**
- Inserts for electrical conduit
 - Walkways and ladders for crew access
 - Maintenance access hatches



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