

FOUNDATION Series

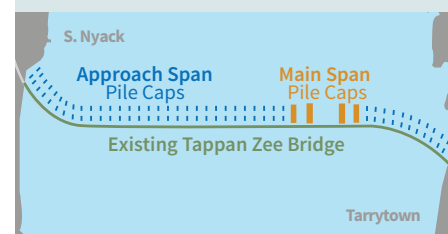
Approach Span Pile Caps

Prefabricated Bases Speed Up Construction



Approach Span Location

The opposing approach spans take off in Rockland and Westchester counties and continue away from the shore until they meet the main span at the deep-water navigation channel. The approach span pile caps, positioned in pairs to support the twin-span crossing, are considerably smaller in size than those for the main span but far greater in number.



⤴ The precast pile caps are placed atop groups of steel tubes, called piles, before being filled with steel-reinforced concrete.

Prefabricated Pieces

Pile caps are manufactured off site before being barged to the project and assembled. With less impact from weather and river conditions, this cost-effective system leads to a more precise construction process, improved safety and greater efficiency, saving time and money.

Installation

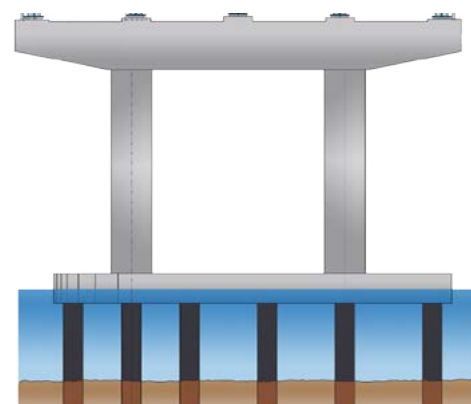
When pile caps arrive at the project site, crew members position them over a group of already-driven piles with barge-mounted cranes, as seen above. These cranes are equipped with specially-engineered rigging systems to firmly “grasp” the massive tubs. A system of clamps join the materials to form a singular structure.

Tubs Become Caps

Approach span pile caps begin as concrete tubs, which are created from molds at a location off site. Their construction is carefully overseen by the New NY Bridge quality assurance team, which verifies each unit meets the project’s precise specifications before it is barged to the project site.

Reinforcements

The pile caps rest on a series of piles, most of which extend hundreds of feet below the riverbed. Once in place, both the hollow piles and tubs are fitted with steel reinforcement, called rebar. These steel bars are then enclosed with up to 750 cubic yards of concrete. The resulting composite material, steel-reinforced concrete, combines the strengths of the two materials.



Building Up

Once the pile caps are completed, crew members begin building pier columns that will extend up and support the new bridge’s road deck. The deck sections are prefabricated and barged to the project before being lifted into place by floating cranes.

