

Replacement of Duck Farm Bridge on Hooper Avenue

Township of Brick | Ocean County, NJ



Van Cleef was contracted by the County of Ocean to provide design and construction support services for the replacement of Duck Farm Bridge on Hooper Avenue (CR 631) over the Cedar Bridge Branch of the Metedeconk River. The existing bridge was a single-span structure 28' in length, consisting of prestressed concrete adjacent, non-composite slab beams, with an HMA overlay on timber bulkhead abutments with 45-degree timber bulkhead wingwalls. The structure width was 60.5' out-to-out, with a cartway width of 50', with two 12' wide lanes and a 1' wide shoulder in each direction. Two 4' wide sidewalks were carried over the bridge. The bridge barrier consisted of solid concrete parapet, and the horizontal alignment across the bridge consists of a superelevated curve with a radius of 800'. The structure was posted for weight restriction of 17 tons, and the overall condition of the bridge was rated as fair, due to the condition of the superstructure.

An alternatives analysis was prepared, and a Concept Design Report was submitted to the County to identify the preferred option, considering the impacts of each potential alternative. The bridge now consists of a precast concrete three-sided rigid frame. The roadway's horizontal curvature, as well as profile and superelevation cross section has been maintained, in order to minimize environmental, right-of-way, and utility impacts. Design efforts included the design of the new bridge, horizontal and vertical geometry, guide rail, ADA curb ramps, full depth pavement, drainage, right-of-way acquisitions, and utility relocations. The project involved the acquisition of NJDEP Permits, including Tidelands, Coastal Wetlands, Waterfront Development In-Water Individual Permit, CAFRA Individual Permit, Freshwater Wetlands GP-10, and a Water Quality Certificate.

The bridge is situated along Hooper Avenue (CR 631), a busy north-south corridor, and this roadway provides important north-south connectivity to local and regional land uses. The project was designed in accordance with Ocean County, NJDOT, and AASHTO design standards.

CLIENT CONTACT

Ocean County
Engineering Department
Toms River, NJ

PROJECT HIGHLIGHTS

- County Client
- Bridge Design
- Roadway Corridor Design
- Road Safety Improvements
- Construction Staging & MPT Design
- ADA Curb Ramp Design
- Stormwater Management Design
- Utility Relocations
- ROW Acquisitions
- Cost Estimating
- Environmental Permitting
- Public Outreach