

Replacement of Bridges #330.1 (Structure 1100-065) and #331.1 (Structure 11C3101) Carrying Alexander Street over Stony Brook

Borough of Princeton | Mercer County, NJ



Van Cleef was contracted by the County of Mercer to provide design services for the reconstruction of Bridge #330.1 carrying Alexander Street over Stony Brook and Bridge #331.1 carrying Alexander Street over Branch of Stony Brook in Princeton. This work also included significant improvements and widening of 1,450 LF of roadway along Alexander Street, at the approaches and between the two (2) bridges.

For Bridge 330.1, the existing bridge was a single span, 90' long steel thru-truss with an additional flanked walkway truss. The proposed structure was a pile-supported, composite, single span, welded plate girder bridge and was widened from 31' to 45' with wider lanes and an 8' sidewalk/shared use bike path. The bridge was reconstructed on its current alignment. For Bridge 331.1, the existing bridge was a heavily skewed 9' wide box culvert. The proposed structure was a 18' span 3-sided precast concrete rigid frame and was widened from 47' to 64', also with wider lanes and an 8' sidewalk/shared use bike path. The unique design of this project includes the use of precast construction, including the pedestals and footings for the Bridge 331.1 rigid frame, as well as the use of precast concrete abutments, wingwalls, and deck for Bridge 330.1. Precast approach slabs were also used at both bridges.

Utility coordination was a critical phase in the design of this project. Existing water and gas mains led to the design of a utility accommodation plan with temporary support systems and permanent relocation to accommodate the proposed structure and to reduce construction duration. Work included field survey, environmental permits, hydrology and hydraulic design for compliance with NJDEP requirements, geotechnical investigation, roadway alignment/profile/widening, drainage design, and detailed coordination and design accommodations for the local Municipality, all designed per NJDOT (LRFD) standards. Design was advanced with the use of a limited detour.

CLIENT CONTACT

County of Mercer
Trenton, NJ

PROJECT HIGHLIGHTS

- ☞ Bridge Replacement
- ☞ Precast Substructure/Deck
- ☞ Accelerated Bridge Construction
- ☞ Utility Accommodation Design
- ☞ Structural and Roadway Design
- ☞ Geotechnical Design
- ☞ Traffic Engineering
- ☞ Survey and ROW Engineering
- ☞ NJDEP Permits