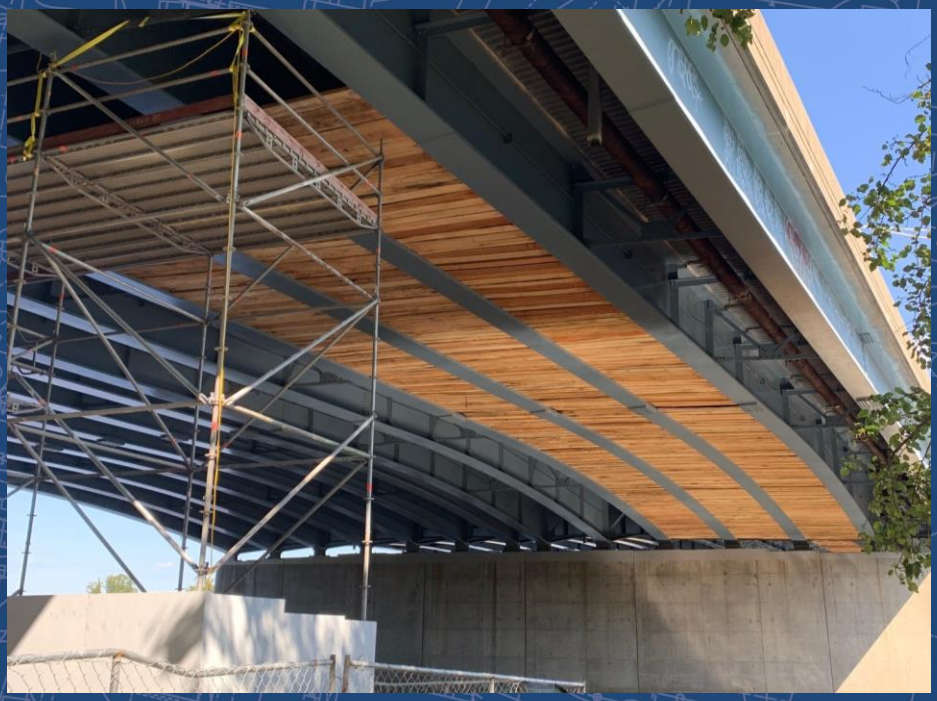
Van Cleef
ENGINEERING WITH FOCUS

Electric Duct Bank Attachment to the US Route 130 Bridge over Rancocas Creek (NJDOT Structure No. 0316-152)

Townships of Delanco and Delran | Burlington County, NJ



Van Cleef was contracted by PSE&G to provide engineering support services, as a subconsultant to EN Engineering (now ENTRUST Solutions Group), and obtain approval from NJDOT for the attachment of electric utility conduits onto the Rancocas Creek Bridge (NJDOT Structure No. 0316-152).

PSE&G's work involved the installation of a 69kV underground electric circuit consisting of twelve (12) 5" diameter conduits on the Rancocas Creek Bridge, a four (4) span, 550' long bridge carrying US Route 130 over Rancocas Creek. The twelve (12) conduits are arranged within a duct bank frame assembly which spans the entirety of the bridge. The duct bank is supported by new transverse steel channels attached either to the existing intermediate stiffeners or to the existing steel plate girders.

Van Cleef prepared MPT plans, duct bank attachment plans, load rating calculations, and the Bridge Attachment Permit application for review and approval from NJDOT. In addition, our team performed a fatigue analysis and a comparative capacity analysis to demonstrate sufficient structural capacity of the existing girders with the addition of the new conduits. Critical concerns during design were worker safety/constructability and construction access issues due to restrictions on working within the navigable waterway and how workers would safely access the underbridge area. Complex and varying cross-frame configurations due to haunched plate girders limited the options for acceptable conduit routes and required significant coordination with NJDOT.

CLIENT CONTACT

PSE&G
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PROJECT HIGHLIGHTS

- Coordination with NJDOT
- MPT Plans
- Bridge Load Ratings
- Structural Design & Analysis
- Complex Structure Configuration