

ACPA » Project Profile

Rt. 57 Lopatcong Creek Culvert Replacement

TYLin International served as the prime consultant for NJDOT, overseeing Preliminary Engineering, Final Design, and Construction Engineering for the replacement of the Rt. 57 culvert over Lopatcong Creek. The original 1921 structure—a single-barrel, four-sided reinforced concrete box culvert—was functionally obsolete and in need of replacement. Given its location near the intersection of Rt. 22 and Phillipsburg’s population center, the route sees over 11,000 vehicles daily, making uninterrupted traffic flow and schedule efficiency essential.

Design & Engineering

From the beginning, NJDOT established three critical design requirements: no right-of-way acquisitions, an expedited construction schedule, and continuous traffic flow. TYLin gathered existing data, performed surveys, and coordinated with utility companies to inform their design. Their Preliminary Engineering Report recommended replacing the culvert with a four-sided precast concrete structure, enlarged to accommodate two 12-foot lanes and two 8-foot shoulders.

A hydrologic and hydraulic analysis confirmed that the new structure would not impact off-site flood elevations. TYLin’s design allowed the culvert to be installed in two stages under a two-way alternating traffic pattern controlled by temporary signals. Final Design began in September 2021 and included supplemental surveys, subsurface utility exploration, and extensive utility coordination.

One major challenge was replacing a 12" watermain that passed through the culvert. TYLin proposed a directional drill of a 16" ductile iron line beneath the culvert and used custom stainless steel tapping sleeves, approved by Aqua NJ, to maintain uninterrupted service.

Construction Execution

Construction began in September 2023 with Ritacco Construction as the prime contractor. Pre-stage work included utility relocations, temporary lighting and traffic signals, and the watermain installation. Stage 1 began in March 2024 with demolition and excavation on the south side of the roadway. When a thunderstorm flooded the work zone with 10 feet of water on May 23rd, Ritacco’s team pumped and cleaned the area in time to install the culvert segments that same night—keeping the project on schedule.

Stage 2 included installation of the northern culvert half, retaining walls, guardrails, and roadway widening. Stage 3 concluded with final paving and substantial completion on October 25, 2024.

Project Impact

By eliminating right-of-way conflicts, minimizing utility impacts, and maintaining continuous traffic, the project was completed in just 13 months—with alternating traffic maintained for 7 of them. This project exemplifies how thoughtful planning, close coordination, and innovative solutions can deliver infrastructure improvements efficiently and with minimal public disruption. As one public commenter asked: “Do you really think this will all be completed in a 1-year cycle?” The result proved it could.

Project Profile

Location

Lopatcong Township, New Jersey

Installation Completed

October 2024

Project Owner

New Jersey Department of Transportation

Contractor

Ritacco Construction, Inc.

ACPA Producer

Oldcastle Infrastructure

Engineer/Designer

TYLin

» Precast Box Culvert, Traffic Management, Utility Coordination