



2010 â?? Gordonâ??s Corner Road Bridge over Route 9

Description

Meta Fields

Project Location :

Gordon's Corner Road over US Route 9 near the township of Manalapan in Monmouth County

Mobility Impact Time : ABC: 2 weekend closures ; Conventional: 10-month closure

Impact Category : Tier 2 (within 3 days)

Average Daily Traffic At Time Of Construction : 64300

Traffic Management :

Traffic management alternative, if constructed conventionally: extended use of 8-mile detour

Existing Bridge Description :

The existing two-span concrete-encased steel girder bridge had a 24-ft-wide traffic lane and no shoulders eastbound and two 12-ft-wide traffic lanes and no shoulders westbound. Its substructure consists of concrete abutments and interior pier on shallow foundations. Built in 1939, the bridge had insufficient vertical under-clearance and was damaged repeatedly by over-height loads. The superstructure required replacement.

Replacement Or New Bridge : The replacement superstructure has a 14-ft-wide eastbound traffic lane, two 12-ft-wide westbound traffic lanes, a 12-ft wide shoulder, a 2-ft-wide shoulder, and two 5.75-ft-wide sidewalks. The cross-section consists of five 9.33-ft-wide interior modular decked beam units and two 9.67-ft-wide outside modular decked beam units. Each modular decked beam unit consists of two W24x131 steel girders with 8.5-inch-thick concrete deck. Other prefabricated elements included precast cheek walls and precast approach slabs.

Construction Method : Construction Methods As Designed: The intent of the contract was to replace the superstructure and approach roadway during a one-weekend closure of Gordon's Corner Road with concurrent lane restrictions on Route 9, and to perform other work using lane restrictions on Route 9 and Gordon's Corner Road. Route 9 had two lanes and an acceleration/deceleration lane in both northbound (NB) and Southbound (SB) directions. Gordon's Corner Road was striped for two westbound (WB) lanes and one eastbound (EB) lane. The contract plans provided details for existing superstructure removal and new superstructure installation using self-propelled modular transporters (SPMTs). The contract did not specify the use of the SPMTs but instead included tight timeframes and high disincentives if the timeframes were not achieved. However, the project special provisions specifically advised contractors that the project design had been developed assuming the use of SPMT units for removal and erection activities. The as-designed approach to the project was to: 1. Construct temporary crossovers in the median of Route 9 no more than 30 days before the weekend replacement. Once completed the crossovers were closed pending the weekend construction. 2. Beginning two weeks before the weekend replacement, all substructure repairs to the pier and abutments would be performed and temporary shielding installed using nighttime lane closures on Route 9. 3. Beginning two weeks before the weekend replacement, Gordon's Corner Road would be restricted to one lane in each direction and partial demolition of the bridge would commence. This included removal of the balustrades, partial removal of the headers at the pier and abutments, cutting and removing all four wingwalls down to the top of seat elevation, partial removal of the concrete approach road and subgrade preparation for placement of precast approach slabs. 4. One week before the weekend replacement, redundant ramps would be closed and staging area preparation would begin. The ramps could remain closed for one week after the weekend replacement for demolition of the existing superstructure. 5. At 6 am on Friday of the weekend replacement, the commuter parking lot adjacent to the site would be closed and SPMT units would be assembled and calibrated. 6. At 8 pm on Friday, Gordon's Corner Road would be closed and final demolition would begin. The approach roadway would be removed and precast slabs placed

throughout the weekend period. 7. At 10 pm on Friday, Route 9 would be restricted to one lane in each direction and traffic would be shifted first to the NB side using the preconstructed crossovers. SPMTs would remove the existing west span superstructure and transport it to the staging areas east of Route

