



CHALLENGE

THE WIDENING OF A 6.5 MILE STRIP OF THE OHIO TURNPIKE THROUGH PORTAGE COUNTY, OHIO REQUIRED EXTENSIVE EFFORTS, INCLUDING BRIDGE REHABILITATION, BRIDGE INSPECTION, AND EARTHWORK.

SERVICES

- Civil Engineering
- Construction Inspection
- Environmental Evaluation
- Surveying
- Traffic Engineering

OHIO TURNPIKE WIDENING

ms provided all civil engineering, traffic engineering, surveying, and construction inspection services for the widening of the Ohio Turnpike to three lanes in both directions from milepost 199.05 to 205.46 in Portage County, Ohio, a total of 6.5 miles. This section of roadway required the rehabilitation of five bridges and complete inspection/underclearance studies for four bridges.

This widening project included extensive earthwork as well as the reconstruction of four major structures. Design services encompassed: roadway, bridge

widening, bridge rehabilitation, drainage, culvert rehabilitation, drainage rehabilitation, retaining wall, traffic control, maintenance of traffic, and storm water pollution prevention plans.

Preliminary services included:

- Field surveys and inspections;
- Geotechnical studies and reports;
- Drainage studies and reports;

- Bridge underclearance studies and recommendations; and,
- Geometric evaluation and design; and, bridge, culvert, and drainage structure condition reports.

BRIDGE RECONSTRUCTION

As part of the widening of the turnpike in Portage County, the existing five-span bridge carrying S.R. 88 was reconstructed to eliminate two median piers, replacing them with a single pier at the centerline of the Turnpike. The existing continuous steel beam superstructure was salvaged due to its good condition and to avoid right-of-way problems if the entire bridge was replaced. The method used was to cast-in-place concrete crossbeams above the piers to be eliminated supported by two new steel carrying girders erected alongside the bridge and resting on new pier supports

on the Turnpike centerline and outside shoulders. The cast-in-place crossbeams were cast around and below the existing steel beams and framed into the new carrying girders. Post-tensioning ducts in the six-foot, six-inch wide by four feet. Deep crossbeams passed below the beams of the original bridge and through the new carrying girders. After the concrete had obtained the specified strength, the 13 tendons in each crossbeam were sequentially stressed to smoothly transfer the original bridge pier reactions to the new crossbeam carrying girder system.