

I-94 and I-69 Corridor Reconstruction Blue Water Bridge Gateway Project CS 77111, JN 87024A

City of Port Huron and Port Huron Township, St. Clair County, Michigan



OWNER / CLIENT

Michigan Department of Transportation

PROJECT START - END

January 2011 - Ongoing

SDA PROJECT NO.

SM11-003

SDA SERVICES

Construction Staking

The I-94/I-69 corridor is a significant NAFTA route due to its proximity to the Blue Water Bridge international crossing, and the high volume of commercial traffic which accounts for 21% of the total traffic volume. The overall goal of this project was to more efficiently move vehicles across the shared border between the United States and Canada by significantly expanding and reconfiguring the Blue Water Bridge Plaza. Contract Number 1 focuses on reconfiguring the I-94 and I-69 interchange, along with the corridor between the bridge and the interchange. A later contract will deal directly with the plaza itself.

Contract Number 1 includes 2.13 miles of road reconstruction of I-94/I-69 with temporary tie-ins to the existing plaza, reconfiguration of the Water Street and Lapeer Connector interchanges, wetland mitigation, site grading for a relocated welcome center, and replacement of four structures: S20, S21, bridge B03, and culvert C05. The project also includes construction of retaining walls and the relocation of a house.

Spalding DeDecker Associates, Inc. (SDA) performed full staking (contractor and engineer staking) as a consultant working directly for MDOT for Contract Number 1. The work spanned roughly a two-year timeline, with the construction led by Dan's Excavating, Inc. Survey work was performed through a contract for as-needed staking through the Port Huron TSC.



Preparation prior to staking included review of the plans, computing **stakeout points**, preparing **cut-sheets**, creating detailed **grade books**, and creating a detailed and precise **digital terrain model** for the contractor's use with their GPS machine control system. Stakeout computations were performed in the office using AutoCAD Civil 3D and MicroStation platforms.

Techniques used for staking included performing radial and GPS stakeout for slope staking; temporary and permanent signage; booking clay grade; staking finished grade and pavement; staking underground utilities including: sanitary sewer, water main, storm sewer and culverts; staking guard rail; and finished grade staking.

Deliverables included copies of cut-sheets, detailed grade books, stakeout reports, and as-built drawings. We also supplied an XML file for the digital terrain model that the contractor used to guide his equipment using GPS machine control.