

I-275 NB (I-96 WB) Lane Extension, 5 Mile Rd to 6 Mile Rd

Livonia, Michigan

Spalding DeDecker Associates, Inc (SDA) was retained by the Michigan Department of Transportation (MDOT) to provide design of a safety project involving an approximately one-mile-long lane extension of I-275 NB (I-96 WB) from 5 Mile Rd to just north of 6 Mile Rd in the City of Livonia for 2009 construction.

Roadway Rehabilitation & Rural Freeways

Classified by MDOT as a safety improvement project, SDA designed the approximately one-mile-long median lane extension per **4R guidelines** to allow traffic more time and distance to



merge coming out of the I-275/I-96/M-14 interchange just south of the project limits. The existing median shoulder had been constructed to act as a future lane, so the proposed construction actually created a new concrete shoulder section adjacent to the existing four to five-lane NB roadway. Median drainage had to be carefully evaluated since the existing median swale was impacted by the widening. Design plans

included typical cross-sections, removal and construction plans, guardrail design, permanent pavement markings, some permanent signing, and maintenance of traffic special provisions which had to address handling an ADT of over 200,000 vehicles.

Road Design Survey

SDA performed a pick-up topographical survey for the project. Horizontal control was established using GPS observations and post-processing the data using the NGS OPUS program to achieve state plane coordinates in relation to the HARN adjustment. Vertical control was established in relation to the NAVD'88 datum, with observations performed using a Leica NA2002 electronic level and least-squares adjustment of the vertical control network.

Mapping included performing pavement and median swale cross-sections in certain areas and locating surface features and surface drainage and creating a Digital Terrain Model (DTM) in CAICE.

OWNER / CLIENT

MDOT - Taylor TSC

PROJECT START - END

August 2007 - December 2008

SDA PROJECT NO.

RB07-001

Project Profile

