



Concrete Briefs Case Studies

Whitotopping Case Study of Interchange I-595 & US301

Case Study: Whitotopping

Location: I-595 and US 301 Interchange

General Contractor: Concrete General

Diamond Grinding Contractor: Penhall Company

Completion Date: September 2013

Heavy traffic at the interchange of I-595 & US301 in Bowie, MD had caused significant damage to the asphalt roadway, more than 100,000 vehicles use the interchange daily and many of those are large heavy vehicles. The damaged roadway was causing a safety hazard for drivers, as they entered or exited the ramps, uneven pavement and serious rutting caused drivers to struggle with keeping their vehicles safely on the ramps.

State Highway Administration planned to repair the damage by resurfacing the existing asphalt. Chaney Enterprises and MRMCA successfully petitioned SHA to use a bonded concrete overlay called "Whitotopping" instead.

Whitotopping is a concrete overlay that covers damaged asphalt and is a long term solution that actually grows stronger over time. Whitotopping typically lasts twice as long as other resurfacing methods, reduces rutting caused by larger vehicles and its durability produces savings through less frequent road repairs, lane closures and construction zones.

Concrete reflects light making the pavement brighter reducing the need for lighting by up to 30%. Concrete is more rigid than asphalt which makes concrete roads 4% more fuel efficient for cars and up to 7% for large trucks. A Whitotopping overlay is more cost efficient because its competitive in initial costs to asphalt and actually less once you compare total costs over time.

For this project, the existing flexible asphalt (HMA) was milled and replaced with 6" bonded concrete overlay with a curing compound and contraction joints. Over 500,000 yards of concrete was poured, finished with a truss screed and diamond grinded to provide a smooth finished roadway. This interchange will typically not need sealing or any other maintenance for the next 30 years. All work was done over a few weekends to minimize traffic disruptions.



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