



## Concrete Pavement Enhances the Mobility of I-485 and I-85 in Charlotte, North Carolina for Years to Come



**1**  
Paving underway on I-485



**2**  
Batch plant in median of I-485



**3**  
I-85/I-485 turbine interchange

To foster innovation and accelerate construction, North Carolina Department of Transportation (NCDOT) took steps to coordinate construction work on three separate concrete pavement projects that will complete the I-485 Outer Loop and widen I-85 near Concord, North Carolina, and northeast of Charlotte.

NCDOT utilized the design-build method to integrate the projects, all of which were awarded as concrete pavements. Two of the projects were completed in 2014; the third project, completing the last loop section of I-485, will open in the spring of 2015.

The first project involves the construction of a new 8-lane section of I-485 from west of N.C. 115 (Old Statesville Road) to west of I-85. NCDOT awarded the project in May 2010 as a 13-inch concrete pavement, using nearly 496,500 square yards of concrete pavement (42,000 tons of cement). This 5.7-mile section links I-77 to I-85. ACPA-SE member McCarthy Improvement Company, formerly Ballenger Paving Company, is completing the concrete paving for this project (photo 1).

McCarthy Improvement located their on-site batch plant in the median of the project to expedite transportation of the concrete paving mix to the paving spread equipment (photo 2).

The second project involves the widening and reconstruction of approximately seven miles of I-85 from four to eight lanes. The project stretches from south of Bruton Smith Boulevard/Concord Mills Boulevard to north of N.C. 73 in Cabarrus County. Awarded in July 2010, the job entailed a 14-inch concrete pavement that used 448,500 square yards of

concrete pavement (41,000 tons of cement). The project also includes improvements to roads around the interchange. ACPA-SE member Lane Construction was part of the design-build team and completed the concrete paving in 2014. Mike Holder, NCDOT chief engineer, noted the excellent ride quality of this finished roadway during the NCDOT/Industry Rigid Pavement Committee meeting. Once the Charlotte Outer Loop is completed, this will help the already heavily traveled I-85 accommodate additional traffic.

The third project involves the re-construction of the I-85/I-485 interchange to a “turbine interchange” (photo 3). A turbine interchange utilizes smaller, single-span bridges, smaller columns and flatter roadway profiles, thus resulted in significant project savings. It is the first time North Carolina has installed this type of interchange. The turbine interchange design minimized traffic impact during the construction phase. Awarded in October 2010, Lane Construction was part of the design-build team and completed the concrete paving in 2014. It used 196,000 square yards of concrete pavement (16,600 tons of cement). The entire project utilized diamond grinding to enhance the final riding surface. One ramp of the interchange was selected to demonstrate ACPA’s “Next Generation Concrete Surface” to further enhance the pavement texture and produce the quietest ride possible.

These three projects have a combined value of more than \$350M. They contain in excess of 1.1M square yards of concrete paving and will consume nearly 100,000 tons of cement within the pavement items only.

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