

Concrete Pavement Project Report

Beech River Regional Airport, Tennessee

Background

In 1997 the communities of Lexington and Parsons TN began to see how each could improve air services to their local economies. Transitioning from rural agricultural to manufacturing economies brought the demand for faster and larger aircraft. Neither existing airport could handle the need for freight delivery for just-in-time inventory, which is essential in today's manufacturing environment. A team of HMB Professional Engineers, and TLM Associates produced plans and specifications for a new Portland cement concrete facility to meet the long-term needs of these two communities.

Critical Success

Factors

- *Portland Cement Concrete Pavement designed for anticipated air traffic*
- *Fuel resistant surface*
- *Properly designed joint spacing*
- *Quality construction*
- *Safe, durable, and practically maintenance free*
- *Maturity meter use for strength determination to allow contractor access to new pavement for construction loading*



Photo Source: George Horral, TDOT

Project

New Airport—Runway, Parallel Taxiway, Connector Taxiways, and Aircraft Parking Apron

Time Frame

Paving Start date: 8/18/2004

Paving Completion date:
10/5/2005

Scope

The Communities of Parsons and Lexington, TN Airport Authorities

combined to form one Regional Airport Authority. The new Authority chose to construct a new airport consisting of over 120,000 square yards of 9-¹/₂ inch thick Portland cement concrete pavement. A new 6000-by-100-foot runway, parallel taxiway, connector taxiways and parking apron were constructed approximately half-way between the two communities. The new airport replaces two smaller individual facilities.

“Beech River Airport Authority got a durable paving project that will be here for the next 50 years at the same price that an asphalt pavement would have cost, and it would have had to be resurfaced every 15 years.”

Rick Hudgens, Program Manager, Tennessee Department of Transportation, Aeronautics Division

Beech River Regional Airport, TN

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Project Details

In August of 2004 APAC-TN, began paving the 3.5 million dollar concrete paving project at Beech River Airport in western TN. Prior to beginning paving, engineers found the subgrade contained numerous soft spots due to poor soil conditions and moisture. The Engineers decided to stabilize the base and sub-grade with the use of cement, which was mixed — in place — into the base and sub-grade. This procedure not only stabilized the based, it also created a uniform base support. A uniform base is ideal for con-

crete pavement, which can carry heavy loads by spreading the load forces over a large area. The stabilization also provided a working platform for the contractor that allowed for work on all days that it was not raining. By not losing time because of needing to rework the base after rains, paving proceeded quickly. Using local materials and their on-site concrete plant the contractor exceed all FAA strength requirements. The result was the new airport received a safe and durable pavement that should provide excellent service with little maintenance for many years.