Full-Depth Reclamation
In-Place Recycling Presentation

Alabama FDR Case Study – Winston County

By Dale Cronauer – Blount Construction
Winston County

County Engineer – Bryan Cheatwood

Assistant County Engineer – James Glasgow

Winston County has completed over 24 miles of FDR on seven roadways since 2011.
Case Study – Winston County

- Project – County Road 65
- Project No. APL-STPNU-6714 (251)
- Length – 3.224 Miles
- Bid – April 24 2015
- Awarded – Blount Construction Company Inc $518,828.00
- $160,926.80 Per Mile
Project No. APL-STPNU-6714 (251)
Winston County

Full Depth Reclamation –
Blount Construction Company Inc.

Surface Treatment –
Charles E. Watts Inc.

Striping –
Riverside Traffic Systems, Inc.
Project Plans – Full Depth Reclamation 21’ Wide and 8” Thick. Bituminous Treatment JG 20’ Wide
Sampling For Mix Design
Samples were collected at 1000’ intervals at the specified mixing depth of 8”
Samples consisted of predominately silty sand with some gravel and asphalt.
Prior Condition – Multiple base failures and pavement surface that exceeded its useful life
Prior Condition – Edge failures that had narrowed the road considerably
Blount Construction Submitted the FDR Quality Control Plan Along With Mix Design From Carmichael Engineering To ALDOT. Lehigh Cement Company supplied cement for this project.
ALDOT verified the mix design and stated a 4% cement content would be adequate with soil of 131.5 pcf and an optimum moisture content of 6.9%. Spread rate would be 29lbs per square yard.
Beginning Construction
Initial staking of the road as well as remarking center and edge lines are crucial in order to re-establish alignment.
Portland cement was loaded into spreader trucks for accurate distribution of cement content.
Spreading Cement
Mixing cement into base. Water was injected directly into the cutter housing at the same time so optimum moisture can be achieved evenly throughout the mix.
Mixing
Larger horsepower reclaimers of 650 HP or greater are essential in meeting gradation and thorough blending of materials. Blount used two reclaimers.
Initial Compaction
Compaction behind mixer
The Motorgrader is essential for establishing road profile and smooth ride
Daily Testing was used to insure moisture, compaction, and spread rate are accurate in the field.
Keeping track of center and edge lines during the grading.
Multiple water trucks were used to keep optimum moisture during the finishing and compaction process.

Keeping the moisture in the base is a key element during the initial curing of the cement.
Heavy traffic roller used for compaction.
Center and edge lines continuously being remarked
Finished Base Appearance
Applying Bituminous Treatment A
The Bituminous Treatment A seals off the base allowing it to cure and helps provide protection to the finished surface until final surface is applied.
Sanding the bituminous treatment A
Completed Prime and Sand
Rubberized flippers were nailed down for a centerline for traffic
Emulsion being applied for surface treatment
Charles E Watts Inc applying aggregate
The JG Treatment was used as a final riding course on this project.
Completed section of JG Treatment
Sweeping loose rock from JG Treatment
The project was bid in late April. After award of contracts the mix design was done and approved. The FDR work was done in August it took six days to complete. The surface treatment was then applied in one day. The other items such as shoulder work and striping also had to be completed. All work was completed in late September.
Winston County Statement

“On this project, we had multiple base failures and a pavement surface that had drastically exceeded its useful life. We had edge failures that had narrowed our road considerably. Using FDR gave us the opportunity to rehabilitate and create a monolithic base, widen our road to meet the current requirements, and re-establish proper road geometry. The roadway failures on this road were fairly typical for many of the roads in our county and we see this application as extremely beneficial. We are very pleased with the results and will continue to use FDR w/ Portland Cement.”

James Glasgow
Assistant County Engineer

THANK YOU