

Roller Compacted Concrete

Prichard Intermodal Facility

Prichard, West Virginia

Project Overview

This 100-acre facility, located close to the West Virginia/Kentucky state line, offers industrial and warehousing space; modern and efficient freight container service; and improved access to international rail lines. The natural geologic formation at the site was not ideal for this application, so the project was paved with multiple pavement layers to reduce stresses on the subgrade and prevent excessive settlements.

Basic Construction Factors

- Placed on prepared subgrade, the RCC pavement used 42,560 SY of concrete.
- The design called for 6 in. of ballast; a geotextile fabric; 4 in. of open-graded bituminous drainage layer; and 18 in. of RCC pavement.
- The RCC was placed in two 9-in. lifts using two paving trains.
- Paving trains were operated back-to-back, with the second lift placed within 30 minutes of the first lift to ensure bonding of the two RCC lifts and to provide a monolithic structure.

Unforeseen Challenges

- Paving was delayed because underground utility structure were higher than the surface of the base layer.

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Fast Facts

Owner

West Virginia Department of Transportation Division of Highways (DOH)

Contractor

Morgan Corp.

Facility

Intermodal Facility

Project Type

18 in. RCC

Construction Time Frame

July 2012- Nov. 2014

- This slowed the RCC paving, but the contractor worked with the general contractor to cut the top of the structures flush with the base, then cover them with steel plates.
- Paving resumed, and even with the delays, the RCC pavement was completed two weeks early.

Specification Factors

- During the bid phase in 2012, several attempts to clarify unnecessary specification requirements were not successful.

- Making matters more complex, each step of the process—from mixture design to final approval of the placed RCC—had to be approved by multiple owner’s representatives.
- The prevailing NS RCC specification contained several requirements that were not necessary and might not be in the best interest of the project.
- Also, the owner’s representatives did not have prior experience with RCC mixture designs, construction methods, surface characteristics, advantages, and limitations, all of which made the communications and overall relationship with

the contractor more important.

Other Factors

- The contractor worked with the entire project team including the general contractor, West Virginia DOH representatives, NS representatives, and two independent testing firms.
- Through this team effort approach, Morgan Corp. was able to convince NS to accept specification changes, which were subsequently approved by the WVDOH.
- Morgan Corp. also trained the testing personnel on proper methods of RCC mix designs and quality control testing.



(Above) Concrete is deposited to the placer component ahead of the paver.



(Top right) Equipment operator applies curing compound.



(Right) Photo shows close-up of a sawcut on the new pavement.

Presented by the

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