

Hold It Together

Erosion control blankets stabilize Pennsylvania highway slopes

By John Ravert

U.S. Route 202 in southeastern Pennsylvania is a 59-mile-long highway that runs from New Jersey to Delaware. Some of the fastest-growing areas in the greater Philadelphia region are located along U.S. 202, making it a major commuter route in the tri-state region, with daily traffic volumes in excess of 100,000 vehicles.

Road Improvements

The Pennsylvania Department of Transportation (PennDOT) is improving U.S. 202 to reduce traffic congestion by rebuilding the existing two-lane pavement, constructing a new third lane, improving the storm water management system and widening the shoulders. The \$105.4 million contract was awarded to R.E. Pierson Construction Co. Inc. of Pilesgrove, N.J.

The widening of the roadway resulted in steep side slopes exceeding 33% gradient (3H:1V) that needed to be protected with rolled erosion control products

(RECPs) to minimize accelerated erosion and the resulting sedimentation.

The Pennsylvania Department of Environmental Protection (PA DEP) is the regulatory authority for earth-disturbance activities in the Commonwealth of Pennsylvania. In March 2012, PA DEP issued the Erosion and Sediment Pollution Control Program Manual Technical Guidance Number 363-2134-008. The manual states the following in Chapter 11 – Stabilization Methods and Standards: “Erosion control blankets should be used on all slopes that are 3H:1V or steeper and where potential exists for sediment pollution to receiving surface waters.”

Gordon Roscovich, an urban conservationist with the Chester County Conservation District, has firsthand knowledge of the project in his capacity as a PA DEP-delegated project inspector. PA DEP has delegated the administration of the Chapter 102 Erosion Control Program to 66 of the 67 county

conservation districts throughout Pennsylvania. “The need for stabilization on the side slopes in the U.S. 202 Section 320 project was well met by the erosion control blanketing installed,” Gordon said. “DOT’s subcontractors had a successful confluence of implementation with good soil prep, effective seeding and germination rates, seasonal timeliness, and sound installation of the erosion control blanketing to hold it all together until the channels and slopes were permanently stabilized.”

The Installation

RAM-T Corp., a PennDOT pre-qualified subcontractor and a certified Womens Business Enterprise firm located in West Chester, Pa., was subcontracted to install the more than 300,000 sq ft of ECS-1 RECP on the recently excavated and seeded bare slopes of Section 320. “Ram-T, faced with steep slopes, used East Coast



Left: U.S. 202, looking across both lanes of traffic. Right: RECPs assisted in the stabilization of the soil and seed installed, successfully providing grass growth along the entire corridor under construction.

ECS-1 RECPs in order to overcome the challenging terrain along the road-sides of Route 202 in Chester County,” said Ashley L. Kreutzer, vice president of Ram-T Corp. The product, purchased through Jolinca Construction Materials of Bensalem, Pa., assisted in the stabilization of the soil and seed installed, successfully providing grass growth along the entire corridor under construction.

ECS-1 is an approved PennDOT Bulletin 15 Section 806.2 Organic Mulch Material RECP and has a “C” factor of 0.014, for a cumulative R factor of less than 231. This value was determined in January 2014 via an AASHTO NTPEP ASTM Standard Test Method for Determination of Rolled Erosion Control Product Performance in Protecting Hillslopes from Rainfall Induced Erosion (ASTM D6459).

ECS-1 RECPs are manufactured with 100% agricultural straw that is harvested in the agriculturally rich region of southeastern Pennsylvania. The product is ideal for establishing vegetation on 3:1 or flatter slopes and has a functional longevity of approximately 12 months.

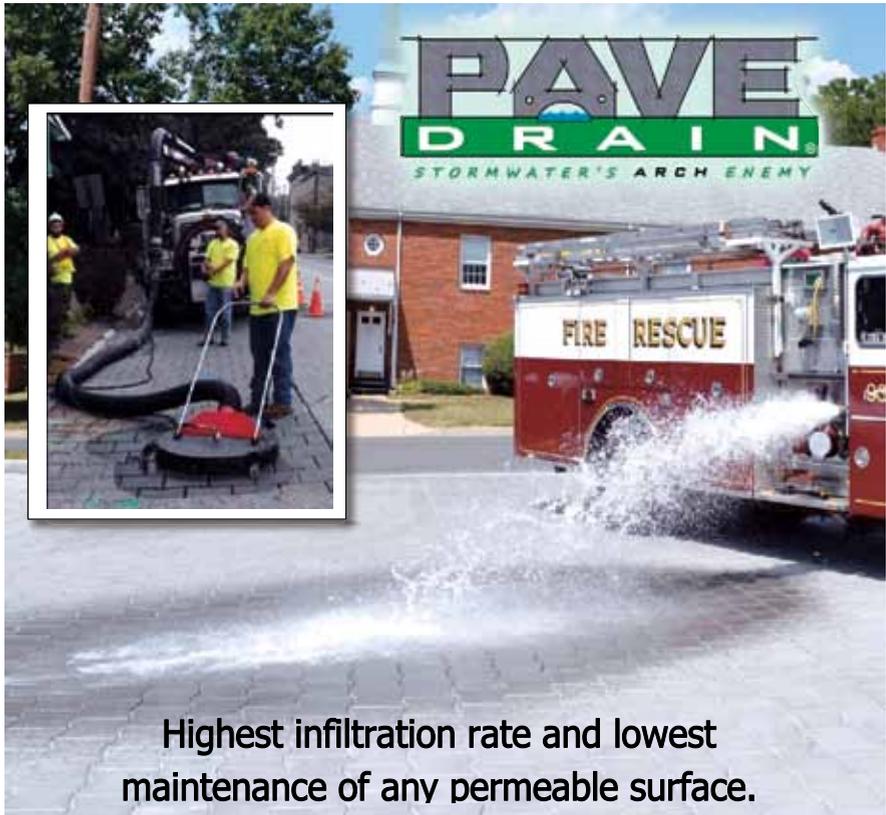
The RECPs effectively performed on the slopes immediately below the sound barrier walls, which were installed at the top of the slopes to minimize noise pollution to the residential areas adjacent to the highway.

Southeastern Pennsylvania receives an annual average of 44 in. of precipitation. Irrigation therefore was not required to initiate germination of the grass seeds and the eventual establishment of vegetation on slopes protected with RECPs.

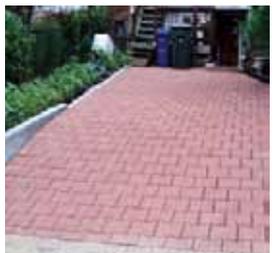
RAM-T continues to install ECS-1 RECP on Section 330 as the construction project continues to the south. More than 50,000 additional square feet of ECS-1 have been placed on the slopes created during the widening construction of Section 330. **SWS**

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