



HMA AT THE STATE FAIR FOR 39 YEARS

*By Jill M. Thomas, P.E.
MAPA Associate Director*

A legacy's time has come and gone. The half-mile racetrack at the Minnesota State Fair is in the process of removal to make room for more seating at the Grandstand. The original hot mix asphalt (HMA) racetrack has been in place since 1964 when it replaced the dirt racetrack. Dust, dirt control, and flying stones were a major safety hazard for drivers and fans. Not only did paving with HMA significantly improve the safety of the racetrack, it helped reduce maintenance costs and set new speed records for the racecar drivers over the years. The racecars were able to pass one another on the turns, which have an 11-degree bank.

At the time of construction, 1964, new technology was implemented with the use of an electronic grade control device developed by Honeywell. Wooden blocks were set at 25-foot intervals (using approximately 650 nails) and surveyed for location and elevation. A nylon cord was attached to the blocks and used to guide the electronic grade control device attached to the Barber-Greene model SA-40 paver owned and operated by the contractor of the job, Bituminous Surface Treating Co. based in Inver Grove, MN. The total project cost was \$88,534.

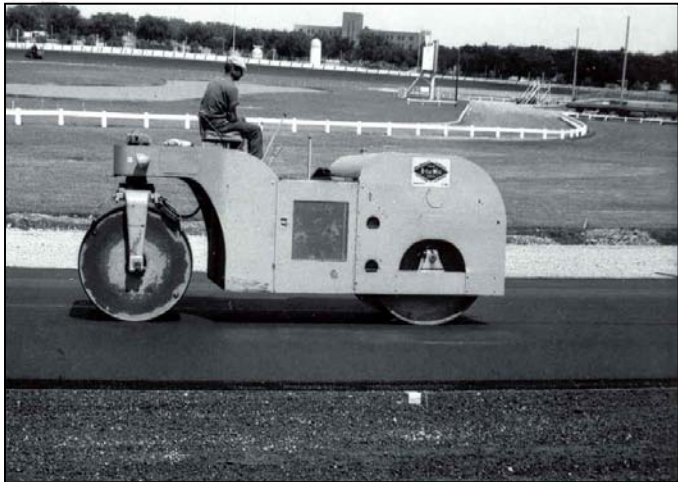


Lyle Jacoby placing the string line on the blocks in 1964. [Lyle is currently Past President (Retired), Pine Bend Paving, Inc. Inver Grove Heights, MN.]



Pictured Left to Right: Dan Ringrose (Project Engineer from Ed Bather & Associates, Inc.) and Lyle Jacoby ensure lift thickness.

Performance, stability and skid resistance were the objectives of the mix design. The total thickness of the HMA was 4-inches. The first layer of HMA was 1½-inches of Mn/DOT 2341 leveling course mixture. The second layer was 1½-inches of Mn/DOT 2351 binder mixture, using 60-70 penetration asphalt cement. The surface layer was 1-inch (ultra-thin) special design mixture wearing course containing 70 percent crushed angular material, all passing the ½-inch screen and 60-70 penetration asphalt cement.



Bituminous Surface Treating Co. compacts the new mix.



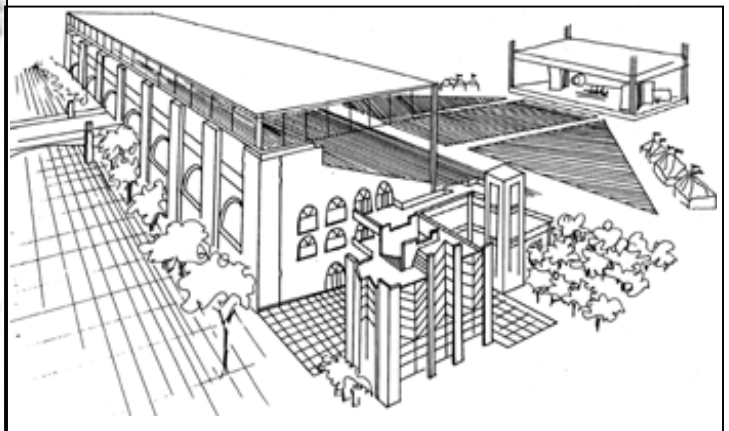
Paving the HMA racetrack in 1964 using an electronic grade control device to ensure proper grade.

The superintendent for Bituminous Surface Treating Co. was Lyle Jacoby [Past President (Retired) of Pine Bend Paving that is celebrating their 30th Anniversary this year with three generations in the company]. Lyle was highly innovative in meeting the requirements for the job. He successfully obtained a $\frac{3}{4}$ -inch gap between the mat and the outside wall by placing a $\frac{3}{4}$ -inch rope along the outside wall, abutting the pavement to the rope, removing the rope, and continuing around the track. Joint construction was also a high priority. An infra-red heater was used to pre-heat all joints and allow for the tight construction of smooth joints and all joints were staggered by at least a foot.

The initial phase of removal began in the fall of 2002 and includes new "Plaza" seating between the Grandstand and the stage on what was the front straightaway of the racetrack. The construction is scheduled to be completed prior to the 2003 Minnesota State Fair.



Aerial Photo of Grandstand.



Sketch of new Grandstand