

Project Name: Milligan's Driveway.

Engineer: Frank A. Kozeliski, P.E.,F.A.C.I.

Contractor: John Milligan and Family's Project, under the direction of Frank Kozeliski

Ready Mixed Concrete Supplier: Gallup Sand and Gravel Co.
Gallup, New Mexico

Project Location 1326 Country Club Drive. Gallup, New Mexico
N 35Degrees – 31.051' W 108D-43.780' elevation 6560 +`

Year Completed: October, 1993

The pervious fell apart on an incline of 10% where it was about 2" thick and cars and trucks would spin going up the hill.



The pervious concrete was placed as a driveway surface to keep a rustic look. The driveway is about 400 feet long and 10' wide. The traffic is pickups, SUVs, and cars (all four-wheelers), which have traveled up and down the hill every day for 11 years. The material was placed 4' to 6" thick and leveled with a regular garden rake. It was compacted with a walk-behind flat plate compactor. There are no drainpipes or curbs and gutters. The location undergoes an average of about 212 cycles/year. The average daily temperature stays below freezing for 62 consecutive days (on average) but there is very little precipitation during this period and only about 10 inches of rain throughout the year. So the climate is considered a hard dry freeze with very high freeze thaw cycling. There is no annual maintenance on this project and, after 11 years, the performance has been good. There is loose rock on the edge and some clogging where rain has caused soil to run onto the pervious. We placed a yellow color in the pervious when installed but it is not there now. The owner has a science background and is pleased with the results. The neighbors have placed base gravel twice and it continues to go down into the mud. The material was cheaper than concrete but more expensive than gravel base. Mixture design was cement = 300 lbs / cu.yd; coarse aggregate # 57 – 1" minus size 2570 lbs / cu.yd; water about 20 gals / cu.yd. Plastic unit was about 106 pcf, no entrained air or water reducer or fly ash. % void based on ASTM C-138 20 to 24 % . When filling a 4"x8" cylinder with pervious and then adding water 2" of water, can be placed into the cylinder. And it will fill the voids. Compressive strength after 28 days about 1000 psi. No special curing of the pervious. Just placed and opened for traffic.