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## **Ancient stonecutters would flip over water slicing through stone Computer eases work on huge world map for the Navy**

**KEN WEBER** *Journal-Bulletin Staff Writer*. *Providence Journal*. Providence, R.I.: Apr 21, 1987. pg. A-16

### **Abstract** (Document Summary)

In what is believed to be the largest undertaking of this kind anywhere, New England Stone Industries is fashioning a circular map, 100 feet in diameter, that eventually will be the centerpiece of a Navy Memorial in Washington, D.C.

The \$150,000 cutting machine, purchased when New England Stone landed the map contract, is totally computerized, using an electric eye that follows lines drawn on a paper pattern to cut through 2-inch-thick slabs of granite.

Once the architects and New England Stone designers had drawn up their 445 paper patterns, they taped them together on the floor of the Cranston Street Armory, in Providence, for review by Navy officials, who, after a few more last-minute suggestions, gave their approval.

### **Full Text** (620 words)

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SMITHFIELD --- The stonecutters of the past would be astounded at what is going on at the Douglas and Providence Pikes. A map of the world is being carved in granite, by jet streams of water guided by computers.

In what is believed to be the largest undertaking of this kind anywhere, New England Stone Industries is fashioning a circular map, 100 feet in diameter, that eventually will be the centerpiece of a Navy Memorial in Washington, D.C.

"It may be another year and a half or so before we're finished," said Edmund Pistocco, a project manager for New England Stone Industries. "Can you imagine how long it would take the old way, by hand? Years and years.

"It could be done by hand, I suppose," said Pistocco, "but our machine is probably more precise. There is a lot of really intricate cutting, following all the coastlines. The machine doesn't make mistakes."

The \$150,000 cutting machine, purchased when New England Stone landed the map contract, is totally computerized, using an electric eye that follows lines drawn on a paper pattern to cut through 2-inch-thick slabs of granite.

Slices beams in a snap

Instead of a chisel or saw, the machine's "blade" is a minute stream of water mixed with sand driven under so much pressure - 750 pounds per square inch - that it not only bores straight through the granite but whatever else is in its path.

"We have 5-inch (wood) beams under the granite," said Pistocco, "and if we're not careful just where we're cutting, and have the part we're working on directly above a beam, the water slices through it like nothing. It will cut glass, stainless steel, anything."

In all, there will be 445 pieces to this jigsaw puzzle of a map, each different. The largest, about 6 feet by 8 feet, weigh several hundred pounds.

The workers begin with green granite that represents the water area of the world, then cut out what should be land masses. Then, the islands and continents are cut from what is called gray granite - it has flecks of pink, black and white, as well as gray - and are glued into the corresponding holes.

"It's gotten more complex since the original specifications were given us," said Pistocco. "Generals and admirals and the people who had to approve the project kept adding islands and wanting more details in the coastlines. The coastlines are really tricky now."

R.I. is dead center

A computer also was used to design the map. Aerial photographs supplied by the Defense Department were programmed in until they showed the entire world on one surface.

Then the image was tilted until it reached the desired angle, with North America near the middle. As it turned out, Rhode Island, or at least southern New England, is dead center in the entire map.

Once the architects and New England Stone designers had drawn up their 445 paper patterns, they taped them together on the floor of the Cranston Street Armory, in Providence, for review by Navy officials, who, after a few more last-minute suggestions, gave their approval.

Now, the cutting is in progress; and as every few pieces are finished, they are shipped to Washington. The map will be put together at the Navy Memorial, on Pennsylvania Avenue, across from the National Archives and Justice Department buildings.

The map, recessed below ground level, will be surrounded by elaborate stone walkways, walls, fountains and pools - all being built by New England Stone Industries - along with a statue of a lone sailor and other monuments to naval history.

"It will be something to see," said Pistocco. "It feels good to be part of it."

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