

News Release/Photo Op
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I-84 Reconstruction Project

High-Tech Blasters Shoot for a Pretty Face--and Brief Delays--for Passing Motorists

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What: Drilling and blasting as part of the widening and reconstruction of I-84

Where: A 3.5-mile stretch between Exits 25 and 26 near Waterbury

When: Construction expected to continue through early 2005

Who: MD Drilling and Blasting, a subsidiary of Maine Drilling & Blasting; L.G. Deflice Inc., general contractor

On-site contact: Please arrange coverage directly with Todd Barrett: (cell phone) 860-593-0846

WATERBURY, Conn.-- By the time reconstruction is complete on this 3.5-mile stretch of I-84, blasters will have reduced 64,000 cubic yards of rock into rubble--enough to fill 5,333 dump trucks.

Yet, motorists will hardly be inconvenienced.

Relying on sophisticated electronic devices to accurately emplace the explosives, and 12,000-pound rubber mats to contain the shattering rock, crews from MD Drilling and Blasting and contractor L.G. Deflice Inc., expect to limit road closures to no more than ten minutes per shot, as dozers clear the roadbed of any debris. The tentative schedule calls for one blast per day Monday through Wednesday.

Making the roadway safe is what it's all about, said MD Drilling and Blasting Southern Division manager Todd Barrett. Besides that, we're always pleased to give motorists a pretty face to look at as they drive by.

The \$50 million project began last spring and is expected to be complete in early 2005. In addition to the widening, the Exit 26 ramps will be reconfigured for safety and Exit 25 will be transformed into a full-diamond interchange with the addition of an eastbound on-ramp and westbound off-ramp, according to Peter Pardee, resident engineer for the Connecticut Department of Transportation.

Widening of the road will require blasters to shear off about 35 feet of solid rock along both sides of the highway while sculpting new sloped faces.

The resulting rubble will be crushed on site and the material used for the new roadbed.

Cleanly shearing the present rock --as high in some places as 45 feet above the highway--calls for drilling a line of pre-split holes, three feet apart. (Picture the function of perforations on a sheet of paper.) When the explosives are detonated in the pre-split holes

simultaneously, the rock face fractures cleanly along the line. Milliseconds later, explosives packed into other drilled holes between the pre-split line and the current face, break the ledge into manageable pieces.

To assure a smoothly contoured and stable rock face, consistent from top to bottom at the 9.5 degree slope specified for this project, the crew at MD Drilling and Blasting depend on the sophisticated electronic Boretrak System, provided by the company's in-house engineering department.

The face we wind up with is only as good as the accuracy of the bore holes we drill, says Pete Marcotte, MD Drilling and Blasting engineer. To achieve a neat break, each hole along the pre-split line must remain parallel to the others while maintaining the intended plane and pitch from the surface to the bottom of the cut.

In the past, the driller had no way of knowing precisely what the hole looked like beneath his feet, said Marcotte. He wouldn't know if the drill wandered front to back or right to left. The Boretrak device provides that information.

To read the borehole beneath the surface, Marcotte lowers a stainless steel probe into the hole as on-board gravity sensors record data regarding pitch, roll and depth. Marcotte downloads the data to his laptop computer and prints out a precise three-dimensional picture of the hole. With the picture as a guide, blasters determine how to load the hole with explosives to compensate for any deviations.

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Sources:

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