

# THE AUSTIN ADVANTAGE

COMPLEX RIDGE  
REMOVAL PROJECT  
SHOWS CAPABILITIES  
OF AUSTIN TECHNICAL  
TEAMS



## GENERAL INFORMATION

**Location:** New York Hudson Valley Region

**Project Type:** Limestone Aggregate Quarry

**Products Used:**

- E\*STAR
- Eagle E\*STAR 450
- Emulex 2 x 16
- Packaged Hydromite
- Paradigm Modeling Software

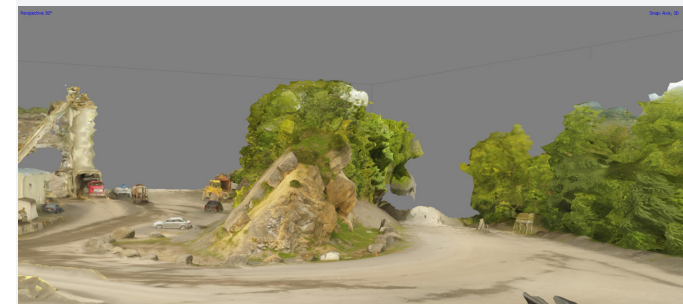
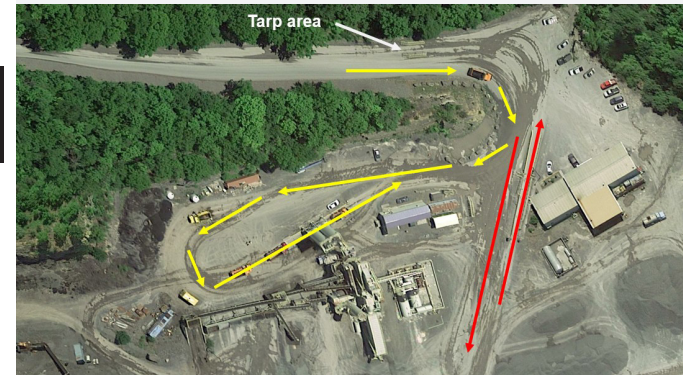
**Project Lead & Author:** Jason Staats

## THE CHALLENGES

A 28-foot-high ridge had been present in this area since the 1950's and was causing a pinch point and early morning traffic issues for contractors and blacktop customers. Removing a portion of this highly weathered ridge would allow for more defined traffic patterns. This was not an easy project as there was no access to the upper part of ridge due to the triangular shape. The smooth slope on the West side also presented drilling difficulties. The ridge was 361 feet away from a neighboring house and 82 feet higher in elevation. There was only 80 feet from a blacktop control building and it was 280 feet away from a busy 55 MPH two-lane county highway, which was 70 feet higher in elevation. To complicate it all, the area had considerable seams.

## THE GOALS

- 1.** Removed a portion of the 28-foot-high ridge causing a pinch point and early morning traffic issues for contractors and blacktop customers.
- 2.** Keep blasted material from blocking entrance road.
- 3.** Drill high enough up the slope to allow adequate fragmentation and boreholes with a more vertical orientation to hold stemming.

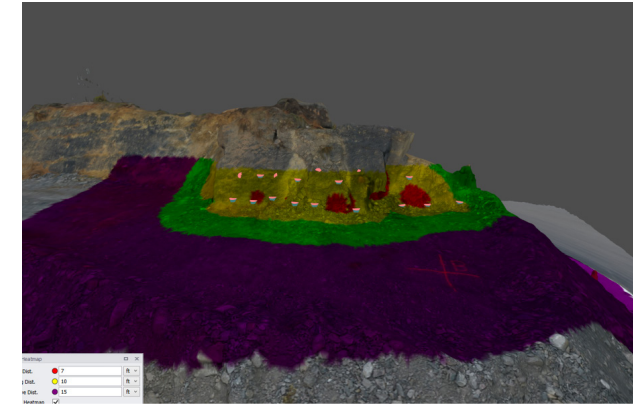
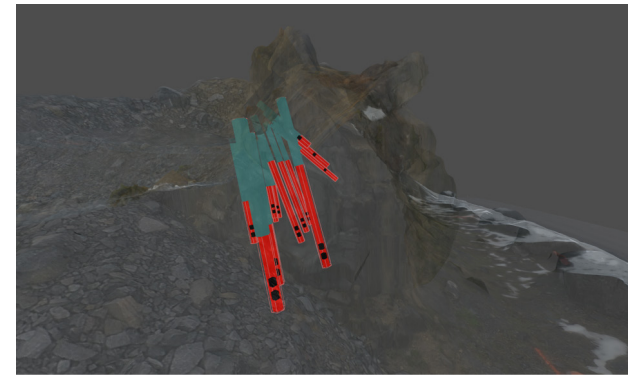


## THE **AUSTIN** SOLUTION

For the first shot, Austin worked together with the customer who built a ramp to allow access for the drill rig. A drone survey was imported into Paradigm where the complex shot was designed, on site. Nearly vertical holes in the lower rows were created to help move to and avoid a ridge when the ramp was removed. Variable angle and depth holes on the upper rows were created to lift and break the mass. All hole loads were designed individually based on targeted powder factors.

- 4-inch production holes
- 3-inch helper holes
- Drill depths 8 – 23 feet

The customer dug the first shot to grade prior to designing a second shot. Digging showed that the ridge was 2 distinct rock masses intersecting, which made drilling the next shot difficult. The second shot was designed in Paradigm on site with holes ranging 10-28 feet in depth.



## THE **OUTCOME**

Although this area presented more geological challenges than originally planned, both shots were performed safely and successfully, with complete cleanup and grading finished in 4 days.

There was no damage to any structures, and no recorded vibration over .02 inches per second.

- 110 feet long, 41 feet thick at widest point
- 2,112 tons / 941 yards
- 1,671 lbs. blasting agents
- Powder factor 1.78 lbs. per yard - .79 lbs. per ton



**AUSTIN POWDER**