

# THE AUSTIN ADVANTAGE

## EXPANDING A QUARRY WITHOUT MOVING POWER LINES



### GENERAL INFORMATION

**Location:** Southern Ontario

**Industry:** Limestone Surface Quarry - Aggregates

**Products Used:** E\*STAR, Hydromite 4100, Eagle Cast Boosters

**Project Lead & Author:** Dave Klingspor, Canada Tech Rep

### THE HISTORY

The quarry had been approaching its extraction limits for several years, during which time efforts were made to clean up leftover corners and the final pit wall. An expansion onto the neighboring property was approved over a year ago, and the electrical poles were initially condemned and scheduled for relocation in early 2024. However, following an inspection, the power company deemed the poles fit for continued use and abandoned the replacement and rerouting plans. In response, the quarry management approached the power company with an offer to fund the reroute themselves, but the cost estimate came back prohibitively high.

Subsequently, the quarry team consulted Austin Powder to perform blasting operations under the lines to connect the two properties. After Austin Powder signed a comprehensive Hold Harmless agreement drafted by the quarry's Legal Department, the project proceeded as planned.



### THE GOALS

1. Power lines and poles remain standing.
2. Gain access to quarry expansion property.
3. Considerable cost savings for the customers



## CUSTOMER CHALLENGE

The primary challenge lies in the bench area, which is riddled with mud seams yet still capped by cap-rock in certain spots. This irregular geology casts doubt on the pillar's stability, even if operations progress smoothly. Furthermore:

- Collar flyrock or stemming ejection poses a risk to the electrical lines.
- Flyrock from the face could also reach the crusher spread located approximately 100 m (330 ft) ahead of the blasting pattern.

## THE AUSTIN SOLUTION

Led by Dave Klingspor, with blasting executed by Aaron Merritt and Gary Deboer, the team designed a solution using E\*STAR, Hydromite 4100, and Eagle Cast Boosters. The blast pattern was engineered to preserve a 25-foot cap rock buffer for the 1st and 3rd poles, and a larger 50-foot pillar beneath pole 2. Holes are loaded with Hydromite to an 11 foot collar and a plastic stemming retention plug is placed at 9 feet before the stone is poured in to create an air gap or more room for the gassed Hydromite to expand. The face row of the 9 × 10 pattern was adjusted to maintain proper burden whenever a muck-free face allowed.

- Initial patterns: The first two blasts in each slot included extended corner delays (see fig 1) to reduce vibration impact on the poles.
- Subsequent patterns: These were expanded to three rows, and corner delays removed to eliminate overhang issues (see fig 2).
- Upcoming blasts: The “bridge” behind the pillar will be shot next, using a center pull into each slot—incorporating extra delay time to minimize vibration and drilling relief holes at the poles to prevent cap-rock slabs from detaching.

## THE OUTCOME

Six blasts have been successful. Although the pillar has experienced a slight shift, it remains intact—an encouraging sign in terms of stability. The client has avoided the considerable cost associated with relocating the hydro poles, yet still successfully gained access to the expansion area. This project highlights the value of technical expertise, creative problem-solving, and the power of partnership in overcoming even the most rigid obstacles.

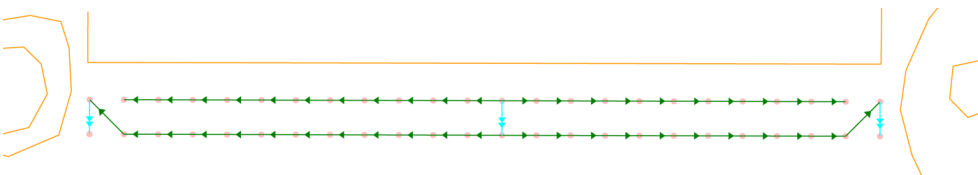


Figure 1



Figure 2



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