



Luck Stone Inter-Quarry Tunnel Luck Stone Corporation

Location: Ashburn, VA

Date: 2017 - 2019

Structure: Quarry Tunnel

Length: 1,300 ft (396 m)

Cross-Section: 47 ft height x 28 ft width (14.3 m x 8.5 m)

Geology: Diabase

Cost: Confidential

Client: Frontier Kemper Constructors

Owner: Luck Stone Corporation



Figure 1. East Portal.

Pre-Construction Support and On-Site Engineering Services:

Luck Stone Corporation constructed a connector tunnel, linking an existing pit of the Luck Stone quarry in Leesburg, VA with a new pit under development located west of Goose Creek to extend the life-span of the quarry by several decades. The approximately 1,300 feet long tunnel passing beneath Goose Creek with a cover of 50 feet was excavated through diabase and at least 3 fault zones using the Sequential Excavation Method (SEM) with drill and blast techniques.

Gall Zeidler Consultants (GZ) supported the contractor throughout the project. In the pre-construction phase, GZ developed shop drawings, Work Plan and Contingency Plan for the contractor. During construction, GZ provided on-site senior SEM Tunnel Engineer assessing ground conditions, evaluating in-tunnel monitoring data and verifying the adequacy of the installed support measures.



Figure 2. Top heading excavation face.