



I-81 MM 48 NB Acceleration Lane Extension Design-Build Project Smyth County, Virginia

Client: A&J Development and Excavation / Owner: VDOT

Contact: Eric Hinkle (540) 271-0142 / Contact: Marty Halloway, PE (276) 696-3367

Key Personnel:

Dean Hatfield, PE
Hari Aamidala, PE
Walter Roberts, PE
Lawrence Gettier, PE
JD Kinder, PE

Project Cost:

\$7M

Year Completed:

2022

E. L. Robinson's Role:

Roadway, Traffic Control,
Geotechnical, Drainage,
Erosion Control, and
Construction Engineering
Inspections

The Project is part of VDOT's \$2.3B improvement program for the 330 mile I-81 Corridor and is located near Marion, Virginia. The purpose of the project is to improve safety and operations by extending the existing I-81 Exit 47 northbound on ramp approximately 3,900 feet from MM 48.1 to MM 48.8. The project improvements include mill and overlay existing lanes; extend existing ramp lane, shoulders, and ditches; install a rock fallout zone; grade slopes; and installation of signage.

To accomplish this, approximately 75,000 cyds of material were excavated with the use of explosives while staying within the existing right-of-way and maintaining traffic in the heavily travel north-south interstate. A significant portion of the cut was in rock, while a smaller portion is in soil, with less-weathered blocks suspended in a matrix of soil. Major risk on the project was presence of this site in karst topography with sinkholes. To mitigate the risk rock catchment ditch was provided, and ELR engineering geologist and engineers visited the site regularly to monitor the features exposed as the presplitting continued. As the rock splitting continued, and slope was exposed, rockfall hazard analysis was revised and recommendations were made for talus maintenance.

The design-build project was awarded to the Team in July 2021 with all permitting, design approvals, and construction completed early in less than 12 months.