

06/28/11

3:33 PM

**From:** Ott, Kyle R.

**Sent:** Tuesday, June 28, 2011 3:33 PM

**To:** Keller, Jake A.

**Cc:** Pepe, Frank

**Subject:** RE: Rte 29

Jake,

I would not say the rock is like granite. The ground as described in the memo is a metamorphosed sandstone and shale (metagraywacke and phyllite) and decomposed rock / saprolite (very weathered rock). Based on the memo, it appears that the excavation methods would vary depending on rock mass quality and soil conditions. They may entail drill and blast excavation, ripping and general excavation with a backhoe or dozers.

Kyle