

VICTOR DOLMAGE

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GEOLOGY OF PROPOSED IRON GATES TUNNEL (cont'd):

even overhanging cliffs hundreds of feet high. These, like almost all breccias, are nearly free from joint cracks so numerous in most other rocks often causing loose, blocky ground, and difficult tunnelling conditions. The Redwall fault breccias contain a number of nearly vertical fissures such as those shown in plates 2 and 3. The one shown in plate 2 will almost certainly be met in the tunnel, but there it will be narrower and tighter. Other similar fissures also may be encountered but they will cause no serious difficulties other than the necessity for extra tunnel supports and/or a few rock bolts.

These rocks being composed of relatively soft minerals, mostly calcite, will be easily drilled and easy on drill steel. Owing to their heterogeneity they may be expected to have a rather low modulus of elasticity, which may require special blasting techniques to prevent boot-legging and to obtain adequate fragmentation.

The rocks are unstratified or otherwise divided into bands or zones consistently differing from one another. Therefore, tunnelling conditions will not likely vary significantly from end to end or top to bottom of the tunnel.

In general these breccias are believed to be better than average tunnelling rocks requiring less than the average amount of support for a tunnel of this width and design. The excavation of the rock section of the proposed tunnel should be a simple routine operation and should cost less than \$20.00 per cubic yard.

POSSIBLE DAMAGE TO SCENERY

The presence at this site of a tunnel with a neatly designed and constructed entrance could hardly detract from the natural scenery and might

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