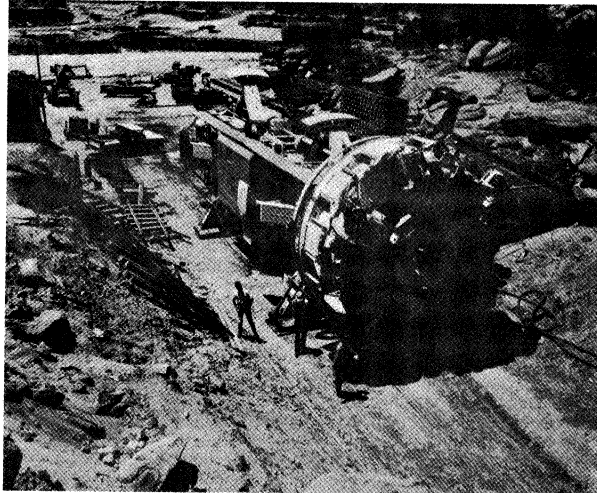


tunneling to improve his shelter. And throughout history, one of the usual developments of an advancing society has been an increased use of tunnels and other subsurface structures as a consequence of increasing urbanization. The Romans and Egyptians, and even earlier civilizations, were tunnel builders. The need is much more urgent now than ever before, simply because of the constantly increasing size of our population and the magnitude and complexity of the services it demands.

A ROCK TUNNEL BORING MACHINE



**BORES A 20 FOOT DIAMETER TUNNEL
IN SOFT ROCKS**

FIGURE 3