

Memorandum

ABC CONTRACTORS, INC.

To: Sally Smith, Building Professional
CC:
From: John Jones
Date: June 10, 2003
Re: Excavation & Clearing Issues for the Zoo Tunnel Project

A critical path project delay of 20 days was encountered when excavation for the tunnel began on May 2, 2003. This delay not only affected the project schedule but is also impacting project costs. Here are more details on what has happened:

- The original specifications indicated that the tunnel would be through solid granite. We developed our bid and planned our construction methods based on this assumption.
- We determined there were 56,000 cubic yards to be excavated and cleared. Although 40,000 cubic yards of the planned granite turned out to be shale, we did excavate a total of 56,000 cubic yards of material.
- 25% of the excavation and clearing schedule overrun was due to our own inefficiencies. However, the other 75% of the clearing schedule overrun was the result of the unexpected shale.
- We achieved 80% of our planned efficiency in clearing the granite portion of the tunnel. Recorded labor hours for granite clearing totaled 200, while recorded shale clearing totaled 1,480 hours. Recorded equipment hours totaled 114 for granite clearing and 846 for shale clearing. The estimated ratio of dump truck to loader/backhoe hours did not change.
- The existence of the unexpected shale required us to bring in a conveyor to transport the shale from the site. The conveyor rental cost was \$500 per day and we needed the conveyor for a total of 25 days for a total cost of \$12,500. Extra labor hours were incurred to set-up, load, and operate the conveyor since 2 additional full time workers were required for 25 days at an hourly rate of \$20 per hour.
- We experienced no labor or equipment rate variances.