Technologies to manage risk for infrastructure

World's Largest Instrumentation Monitoring Contract – Central Artery / Tunnel

Geocomp-Brown J.V. has completed a nine year $10.6M contract with the Massachusetts Turnpike Authority to provide geotechnical monitoring services for the Central Artery/Tunnel project in Boston, MA. The Geocomp-Brown joint venture offered the lowest bid in a procurement process that attracted twelve teams. Our bid represented approximately 60% of the engineer's estimate for the contract value.

Geocomp-Brown's contract involved collecting readings from instrumentation, processing the data and providing status reports scheduled or as requested 24 hours/day, 7 days/week.

The contract required data collected from the instrumentation to be processed and reported within 4-16 hours. The contract placed the responsibility for monitoring instruments in the hands of one team rather than having it spread out over the individual project contractors. The contract paid for the monitoring services on a unit price per reading basis rather than on the traditional "services provided-time and materials" type of contract.

To meet the project requirements, data was collected using hand held computers, which interface with a contract database developed by Geocomp for the work. The database software enabled the field technicians to manage large lists of instruments, collect and validate readings, record field notes, and upload the information electronically to minimize potential recording and booking errors. The handheld computers store 1 year of data for all of the sensors read on the project; each reading is automatically scrutinized in the field to minimize misreads or erroneous data entry.

The readings were checked by Geocomp-Brown's contract team and then transmitted electronically to the project management's Oracle GIS database. Data was then further distributed to abutters, contractors, managers and owners. Geocomp-Brown J.V. successfully met all the objectives outlined at the start of the project and routinely collected large quantities of data that were validated and entered into the project database.

The geotechnical instrumentation program was invaluable to the success of the CA/T project. During the monitoring period, no significant damage occurred to facilities outside the work area. We attribute this in large part to the use of the data from the instrumentation to keep construction movements within tight tolerances.

Data from the instrumentation helped to answer complaints from abutters about construction effects. Insurance companies used the data as a tool to determine which damage claims are valid and to adjust premiums for coverage.

Geocomp-Brown J.V. has collected, validated and reported in electronic format 26 million readings from over 4,000 different instruments.

By focusing on our partnership, we, along with Bechtel/Parsons Brinckerhoff, the Management Consultant for the project, fulfilled our monitoring contract obligations on this unique project to the complete satisfaction of our client and substantially under the contract amount. The remaining funds were used to provide an additional 2 ½ years of monitoring at no added cost to the project.