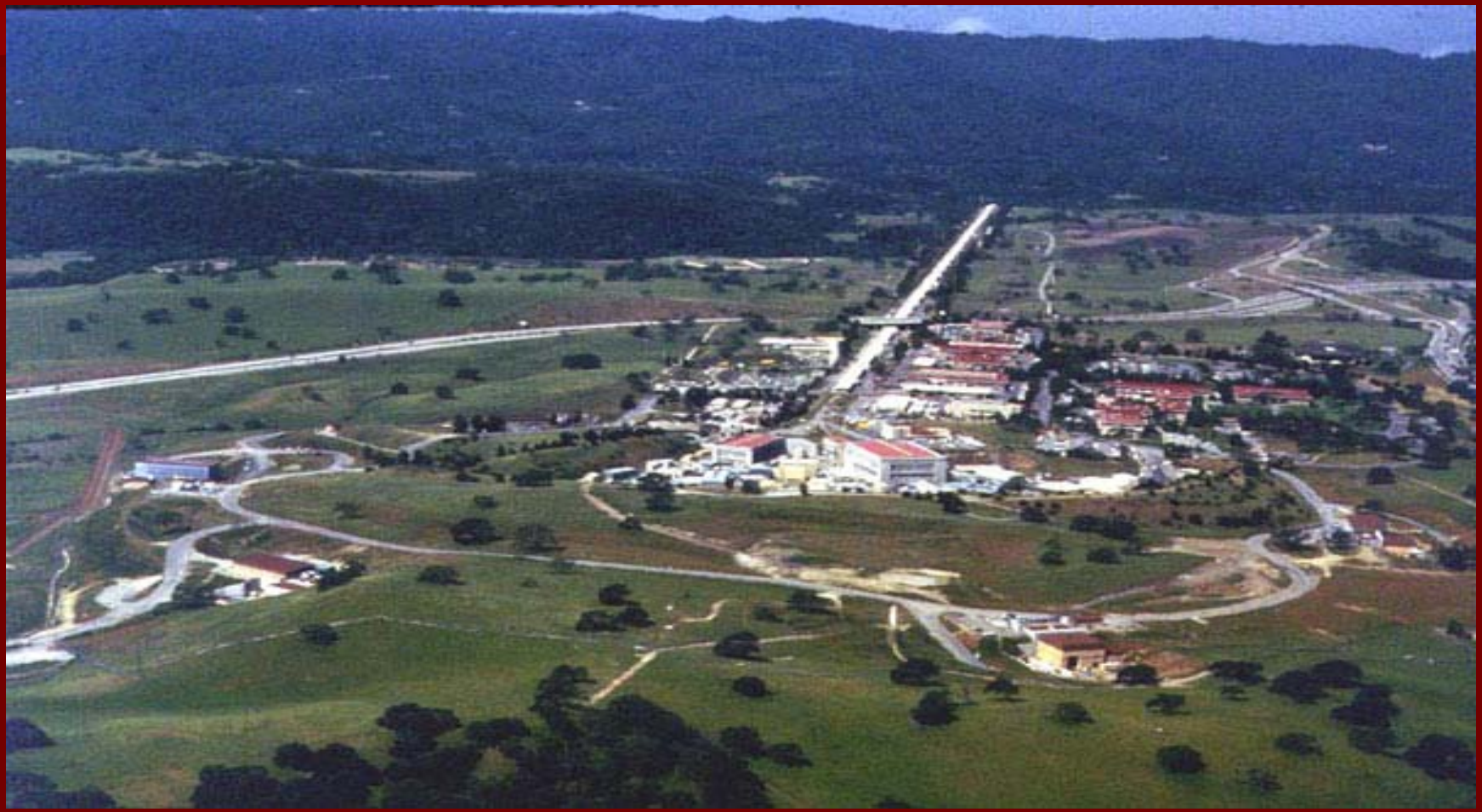
AEG Triangle Test

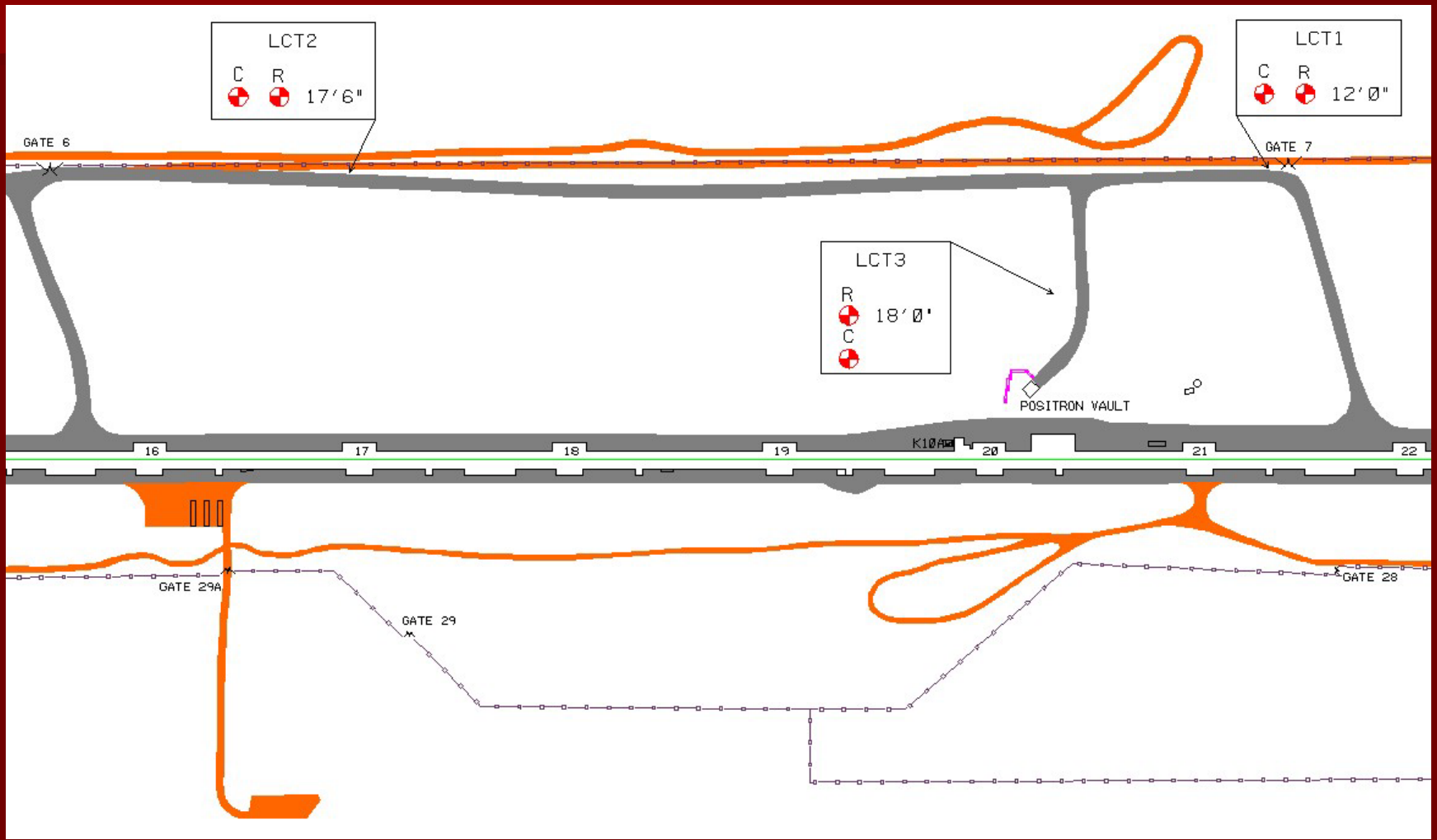
Monumentation Study

Michael J. Rogers
Alignment Engineering Group, Metrology Department
Stanford Linear Accelerator Center
Operated for the U.S. Department of Energy by Stanford University

Stanford Linear Accelerator Center



Monument Locations



Distances And Depths

- The distance between LCT 1 and LCT 2 is 545 meters.
- LCT 3 is 112 meters West and 66 meters South of LCT 1.
- LCTR1 has a depth of 12 feet 0 inches.
- LCTR2 has a depth of 17 feet 6 inches.
- LCTR3 has a depth of 18 feet 0 inches.

Overview Of Monuments Used

Selection Of The Site, January 2004

The site of the project needed to be relatively level and easily accessible in all types of weather.

Wanted to stay close to a road (Hard Surface) providing stable and consistent turning points between Monuments.

Out of the way of present or future construction projects.

Site needed a clear horizon for our Global Positioning System.

Site needed to be free of any underground obstructions or utilities. S.L.A.C's own S.E.M. department researched and approved the site.

Contracting Out The AEG Triangle Project

The Project did not fall under the Davis-Bacon Act.

The Contract was awarded to Bryan Harris Construction.

Cost of Construction

- Construction:

  Installing 6 monuments as per drawings and specifications.

Labor 3 men 8 hours	$1,500.00
16 bags cement at $6.00 each	$96.00
60 feet grade 60 5/8” Rebar	$30.00
Profit 10 %	$163.00
Total	**$1,789.00**

Concrete Monuments

Rebar Monument

Installing the Monuments

Freshly Poured Monument

Loose Rebar Monument Caps

Reason for Rebar Cap Failure

Rebar Caps

Fixing Rebar Monuments

- Chipped away part of the concrete surrounding the monument cap.
- Removed plastic from cap.
- Epoxy applied to rebar shaft and monument.

Repaired Rebar Monument