

The Alignment Engineering Group
RTK Mapping Presentation – June 4, 2002

RTK Mapping Process

- Select, measure and record existing features at SLAC in NAD83
 - Road
 - Building
 - Fenceline
- Import collected data into MicroStation V8

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What is needed?

- Base Station
 - M40
- Rover Unit (x2)
 - With DISTO Pro A
- Software
 - Leica GPS Software (Ski-Pro, GIS DataPro)
 - MicroStation V8

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Base Station

- CA Zone 0403
 - N 603088.715 m
 - E 1849150.780 m
 - h 64.4232 m above Ellipsoid
 - H 96.9352 m based on Geoid99

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Rover Unit

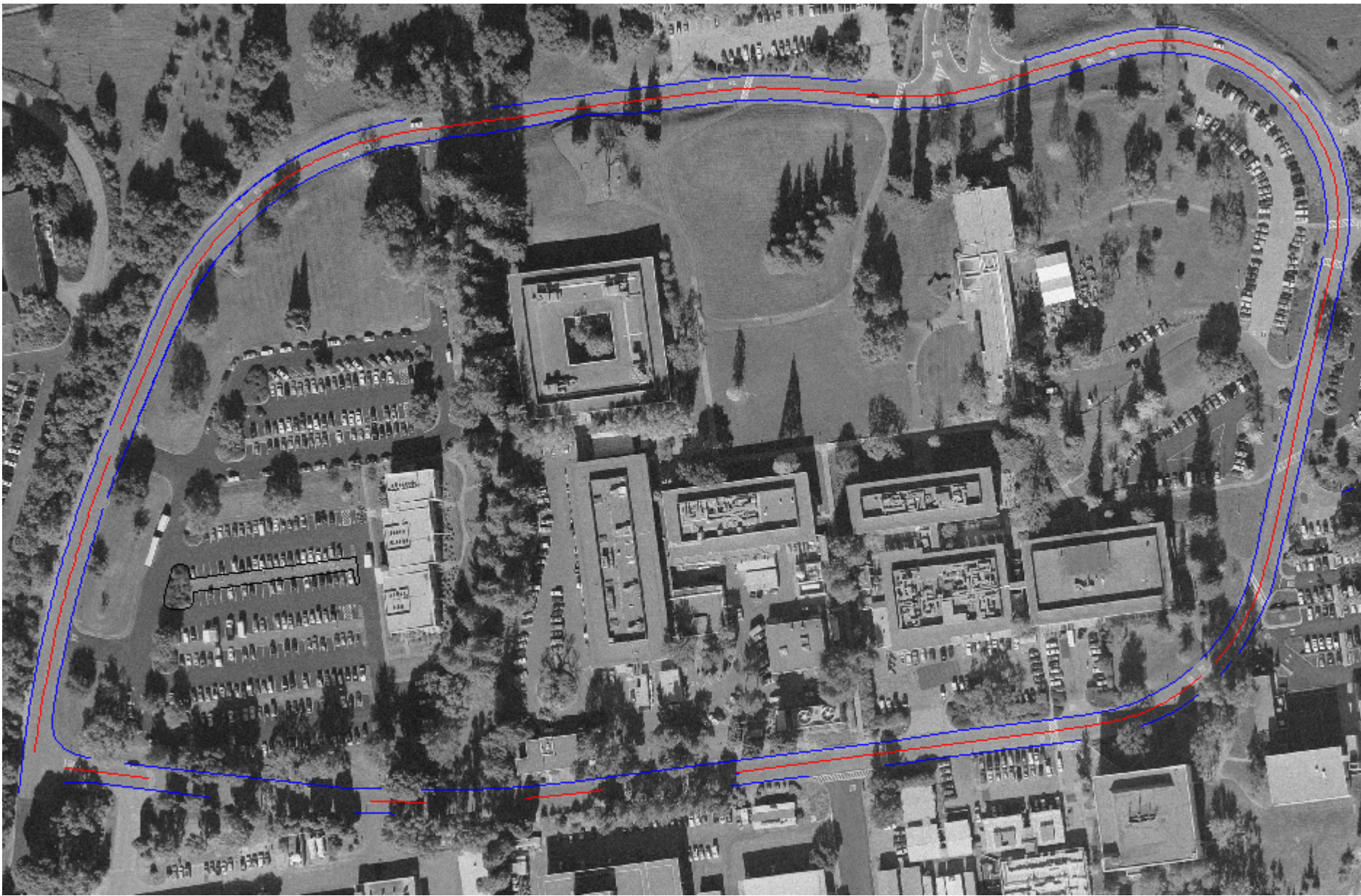
- Radio Link
 - 416.425 MHz
 - 2 watt
- DISTO Pro A
 - 300 ft
 - +/- 2mm



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Mapping Expertise, Road

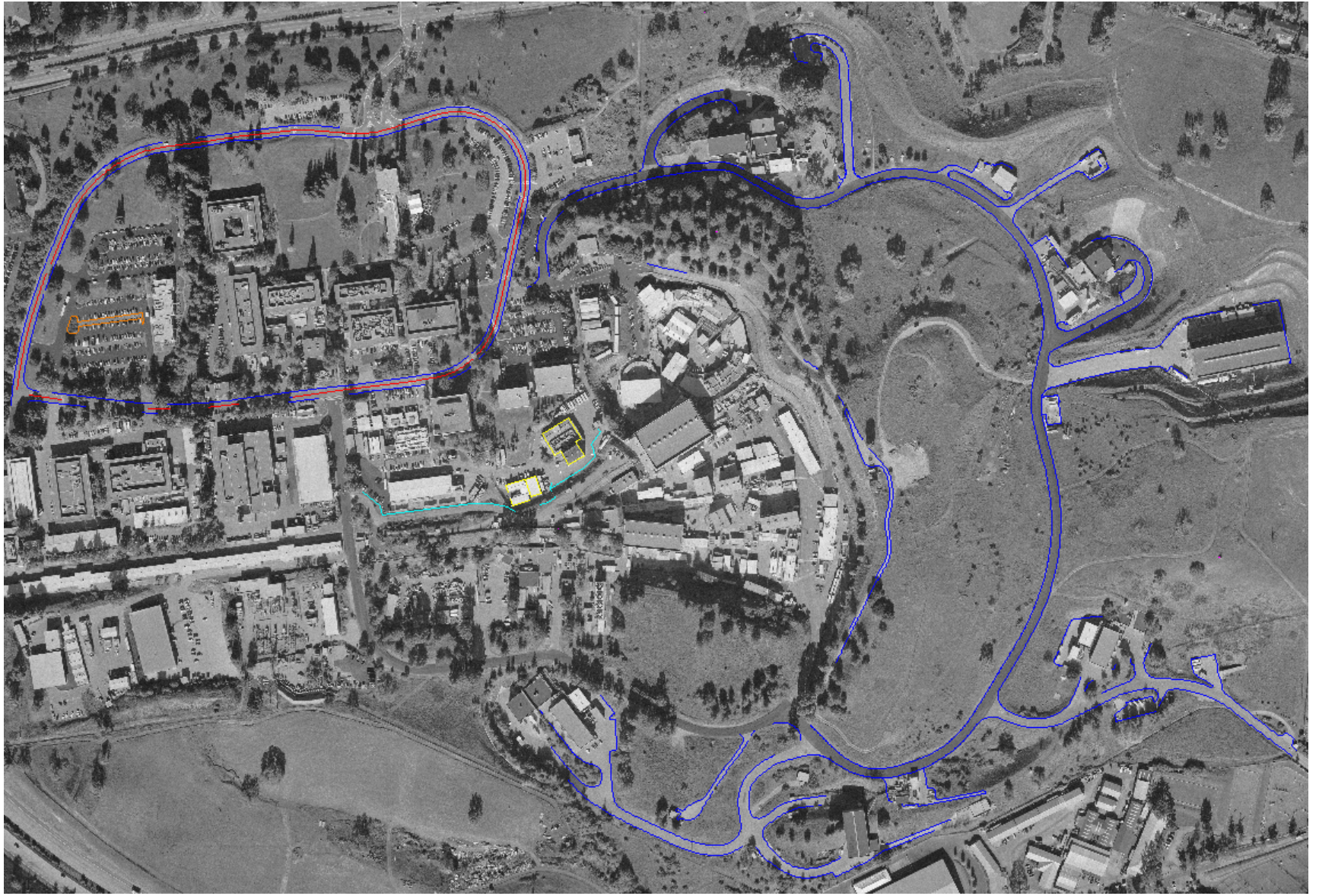
- Loop Road
 - Edge of Pavement
 - Centerline



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Mapping Expertise, Road

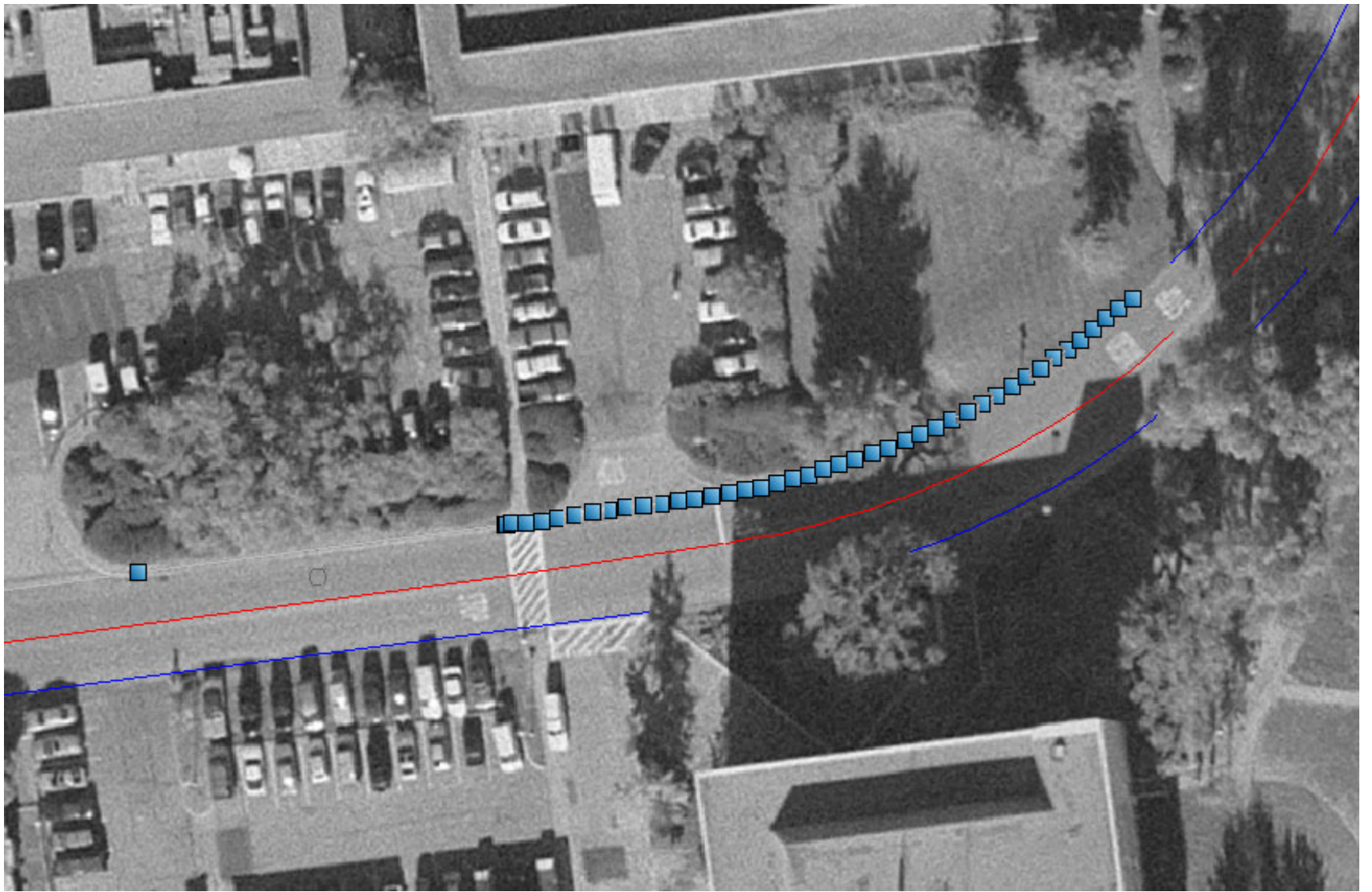
- Loop Road
 - Edge of Pavement
 - Centerline
- Misc. Roads
 - Edge of Pavement
 - Centerline



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Mapping Expertise, Road

- Data Collection Method
 - Line Feature
 - 1 node every second
 - Node Selection
 - Pause, Resume



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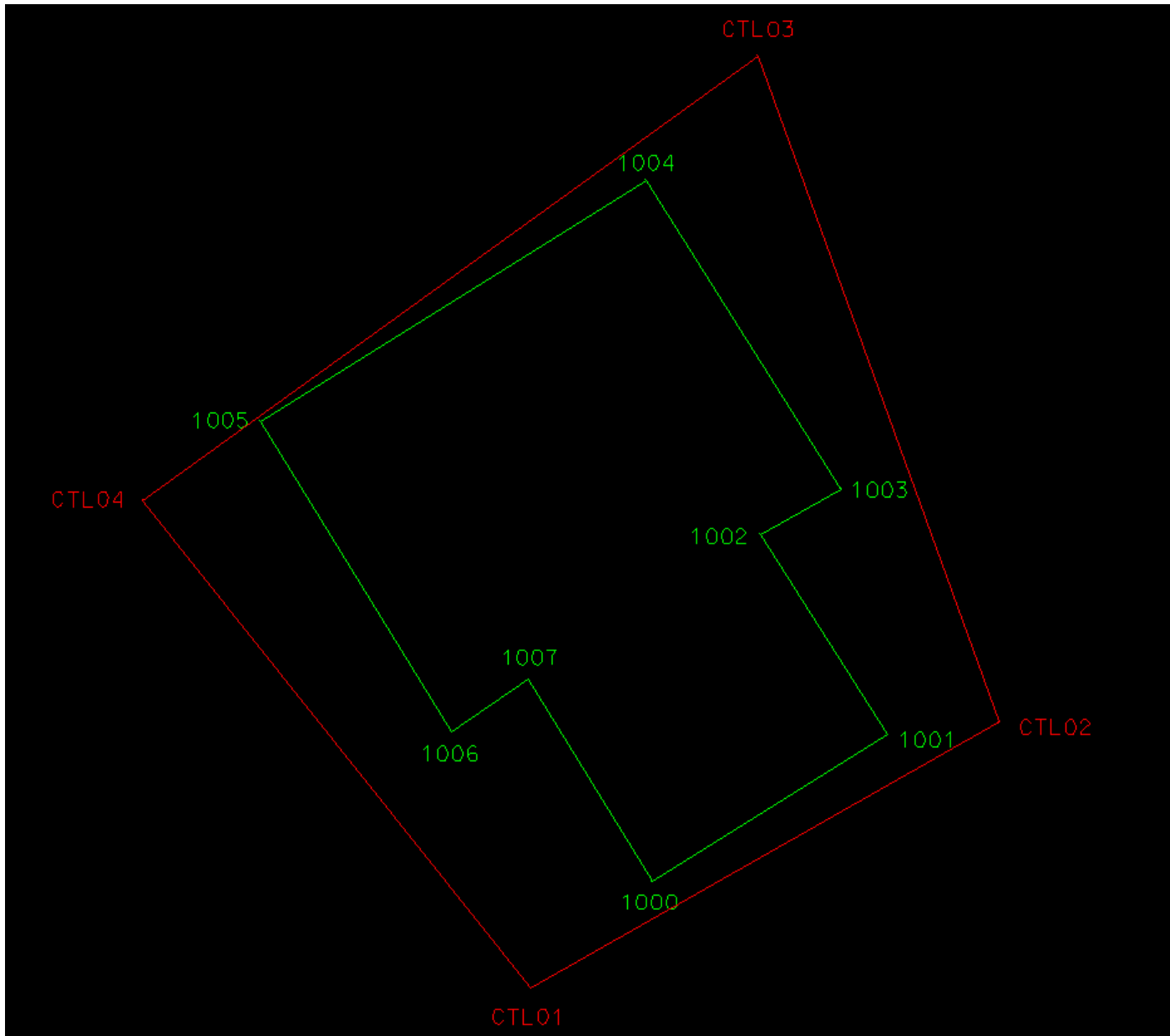
Mapping Expertise, Building

- Building 006 – Cryogenics
 - Footprint (I-beam corner)
- LINAC
 - Footprint (Concrete Pad)

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Mapping Expertise, Building

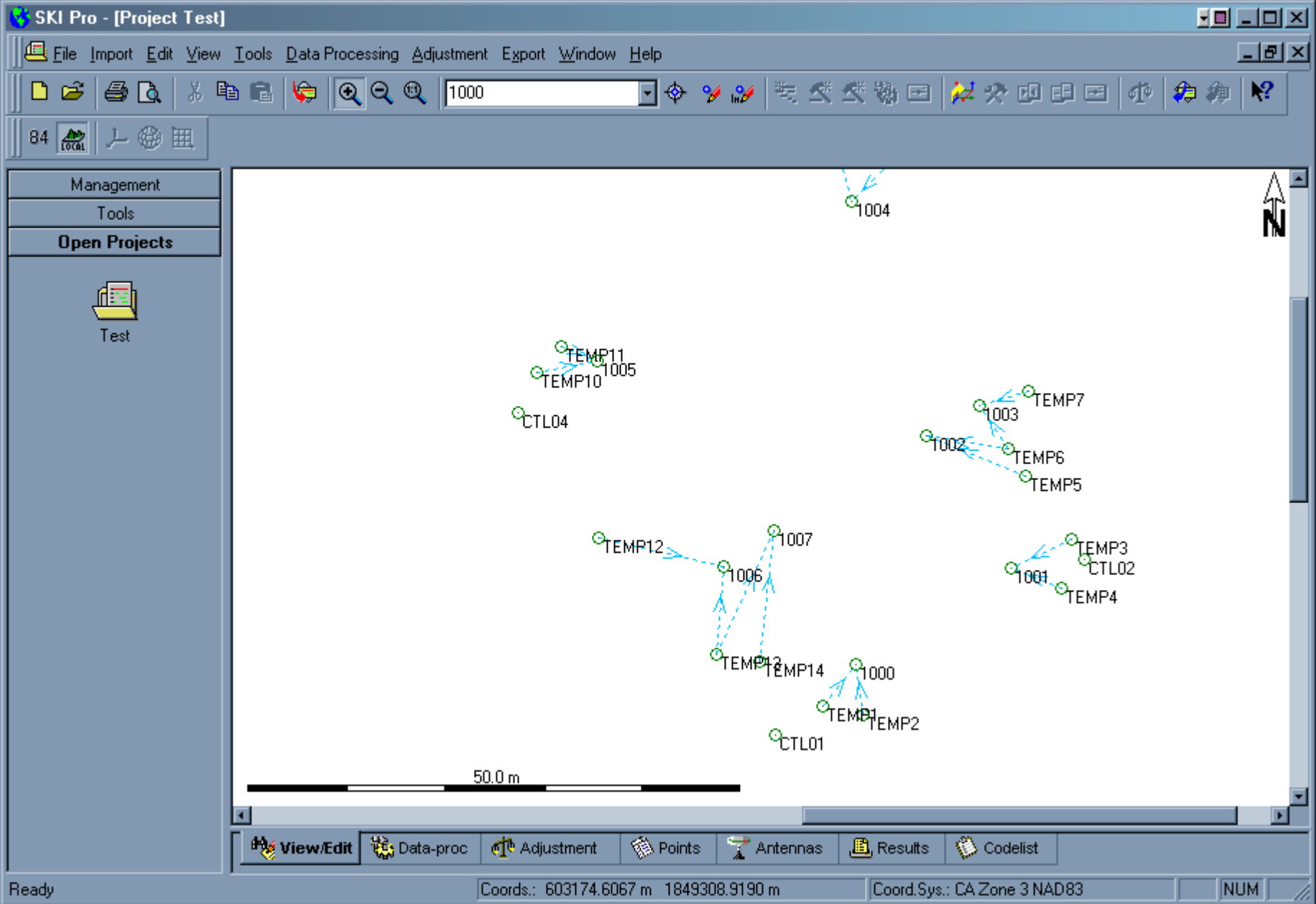
- Data Collection Method(s)
 - RTK Rover + TC2002
 - Create Control via RTK, measure corner using TC2002
 - Occupancy Time = 1 minute
 - Repeatability ~2cm
 - Center TC2002 over Control using Optical Plummet



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Mapping Expertise, Building

- Data Collection Methods
 - RTK Rover + TC2002
 - Create Control via RTK, measure corner using TC2002
 - RTK Rover + DISTO Pro A
 - Create corner by measuring 2 points plus distance to corner



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Time Estimate Example

- Loop Road (3x 4.6km)
 - Setup - 1 hr
 - Field Work – 12 hrs
 - Office Work – 4 hrs