



# NLC California Copper Mountain

150

145

135 a,b,c,d

Ca Logan Ridge \*

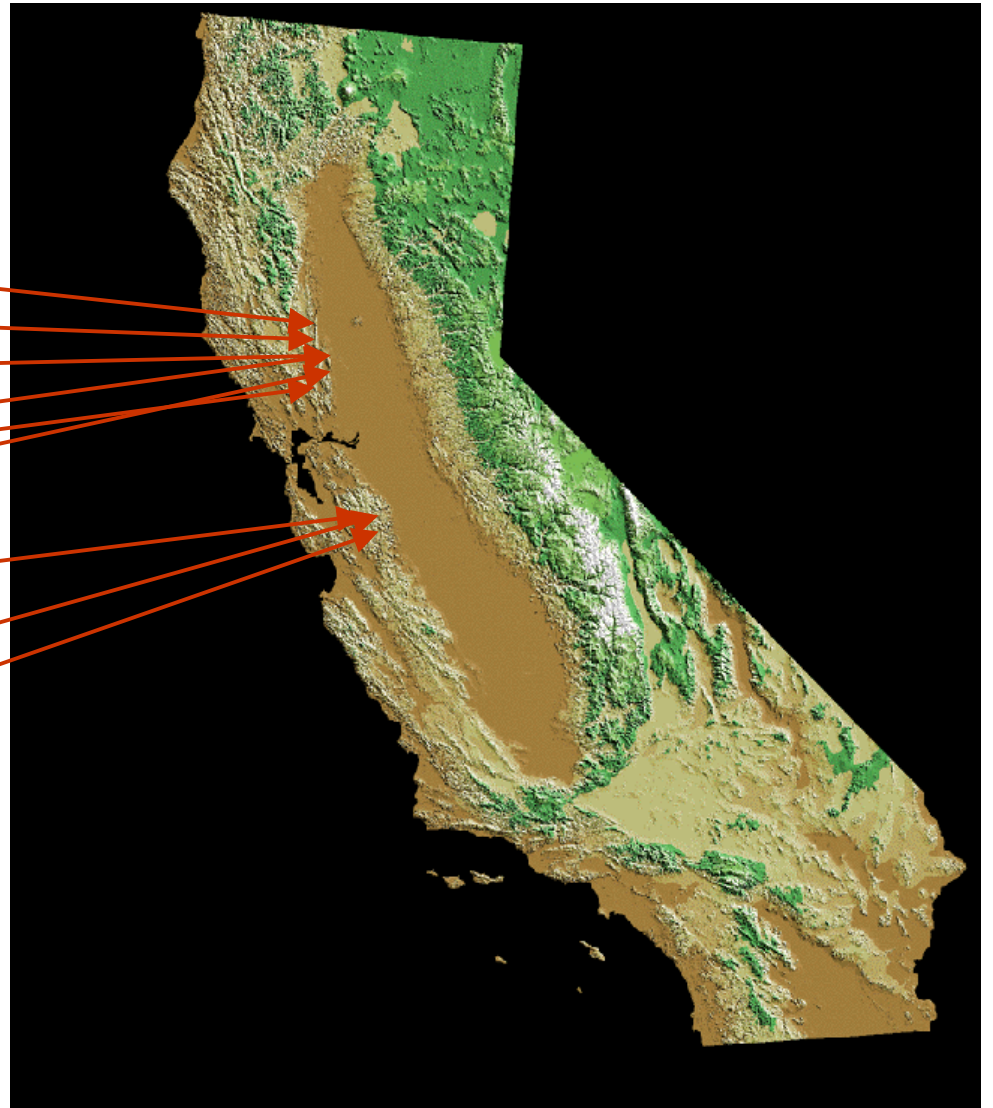
127

120

90N

Ca Cu Mountain \*

90S



SOME NLC CALIFORNIA SITES INVESTIGATED SINCE 1996

## NLC CA COPPER MOUNTAIN

33.5 kilometers, 1.0 Tev, SLED-II, Hi-Lo IR's, Remote Injectors

LLNL DOE Laboratory & Test Site to North (1 LC away)

SLAC & LBNL DOE Laboratories to West (2 LC's away)

Native CA Sandstone Rock, Competent, w/ High Bore Advance Rates

Low Noise Site, Confirmed at the Least Quiet Location

On No Active Faults, Slip Rates are Confirmed, Stability is NLC Adequate

Parallel 500 & 230 kv Power Transmission Corridor for Electricity > 2 GW

Parallel California Aqueduct System for Cooling, 20C Supply, Full Return

High & Dry Tunnel Elevation well Above Ground Water Table

Elevation Adequate for Pumped Water Storage & Quiet Gravity Feed

Fast Parallel Interstate 5 Vehicle Access, 75 mph

Parallel Southern Pacific Railway for Bulk Material and Transportainers

US Navy Auxiliary Air Field for Lay Down, Storage & Logistics

Local High Volume Gravel & Cement Plant for Short Haul Cement

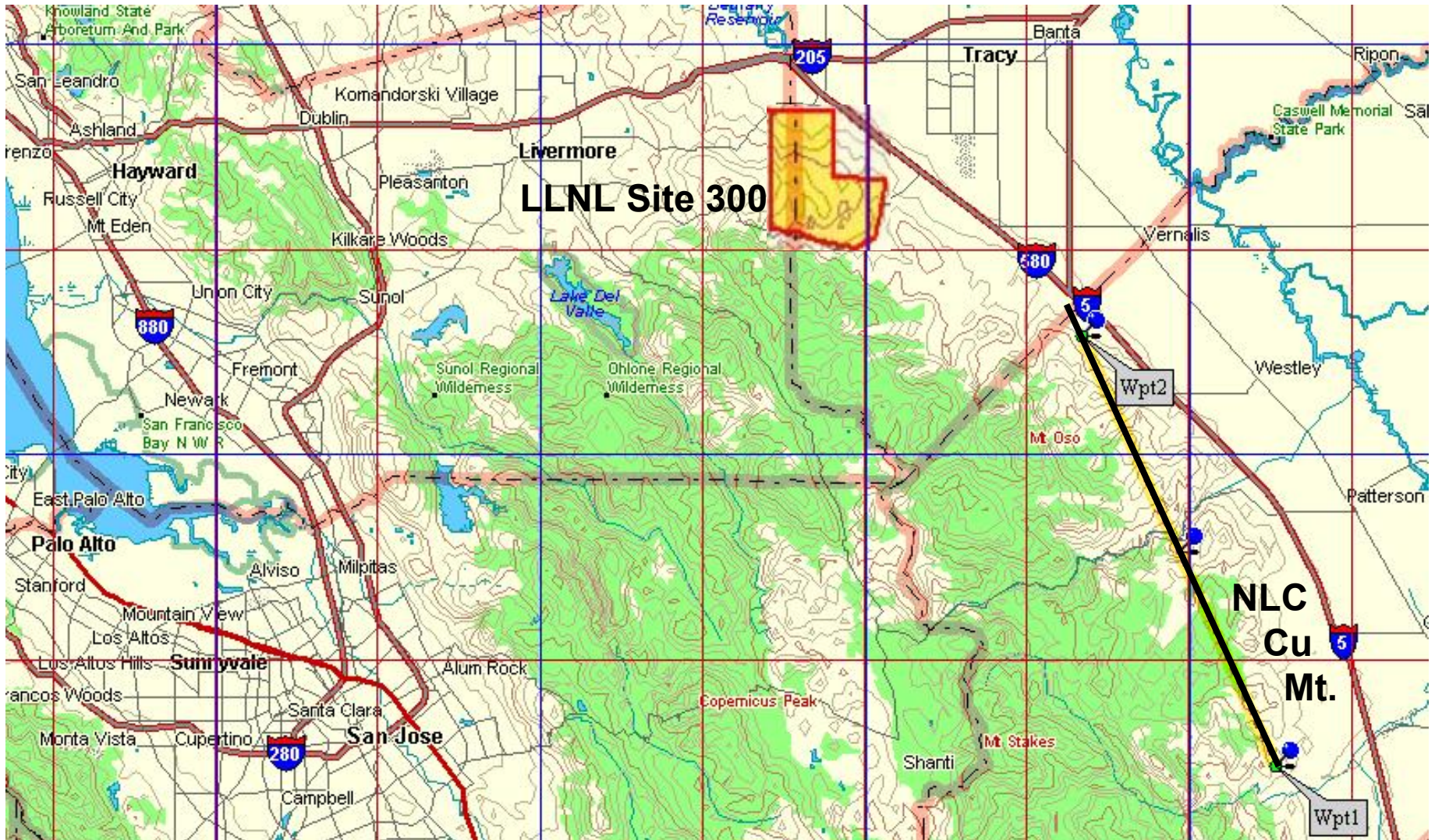
Hospital, Schools, Shopping, etc. in Patterson, Population ~ 13,000

Land use = Cattle Ranching w/ Low population, Low development

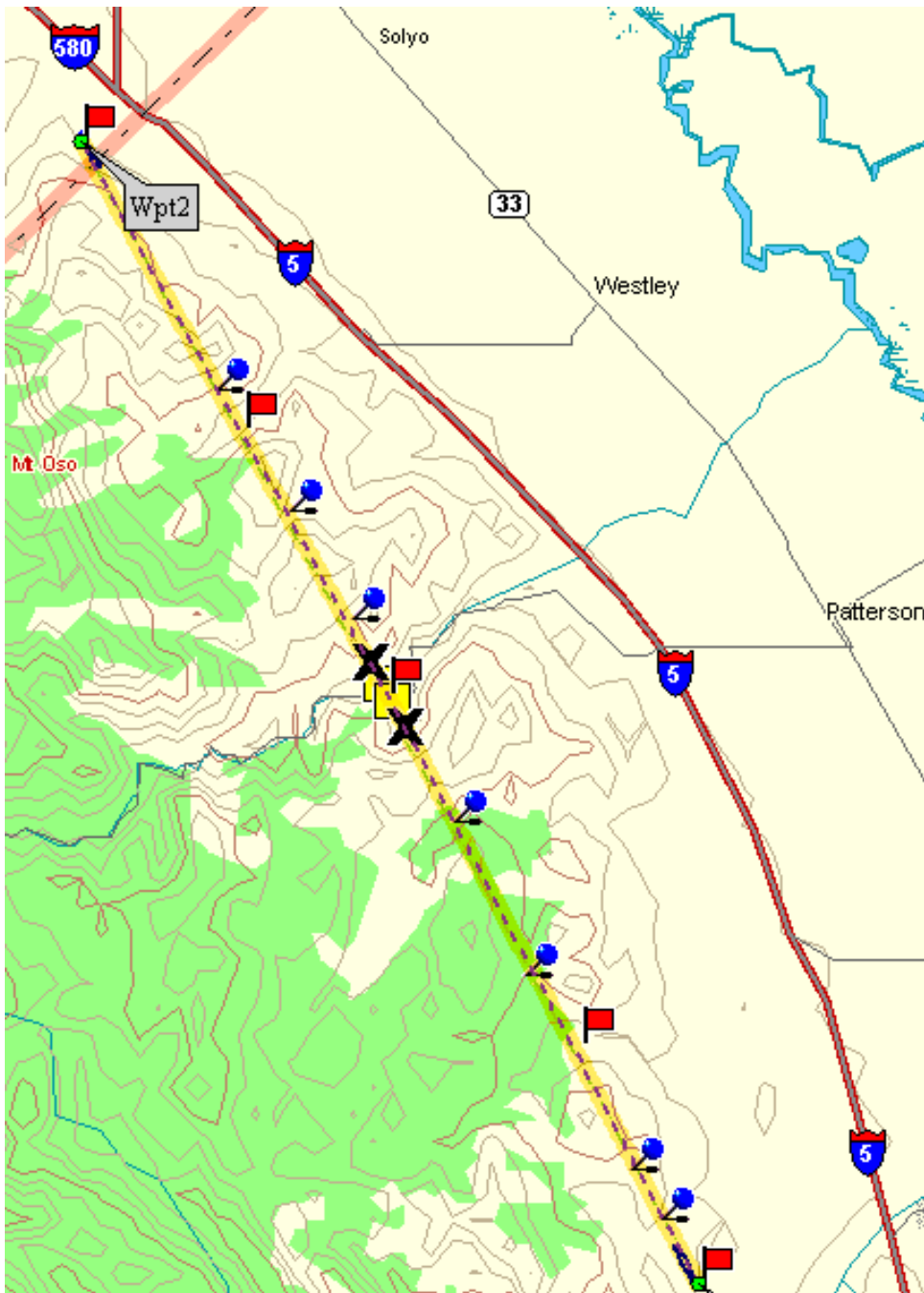
Inexpensive Land for Sale, Local Country Club-Vineyard-Golf Course

90 minutes drive (or less) from SLAC, LLBL, LLNL, UC, Stanford

# NLC CA COPPER MOUNTAIN LOCATION



33.5 kilometers, 1.0 Tev, SLED-II, Hi-Lo Energy IR Halls, Remote Injectors



NLC CA Copper Mt. Site  
Z- Axis Surface Projection

1 Tev 33.5 km

NORTH INJECTOR

N37 deg 35.138'

W121 deg 21.222'

SOUTH INJECTOR

N37 deg 19.259'

W121 deg 10.404'



IP Switch



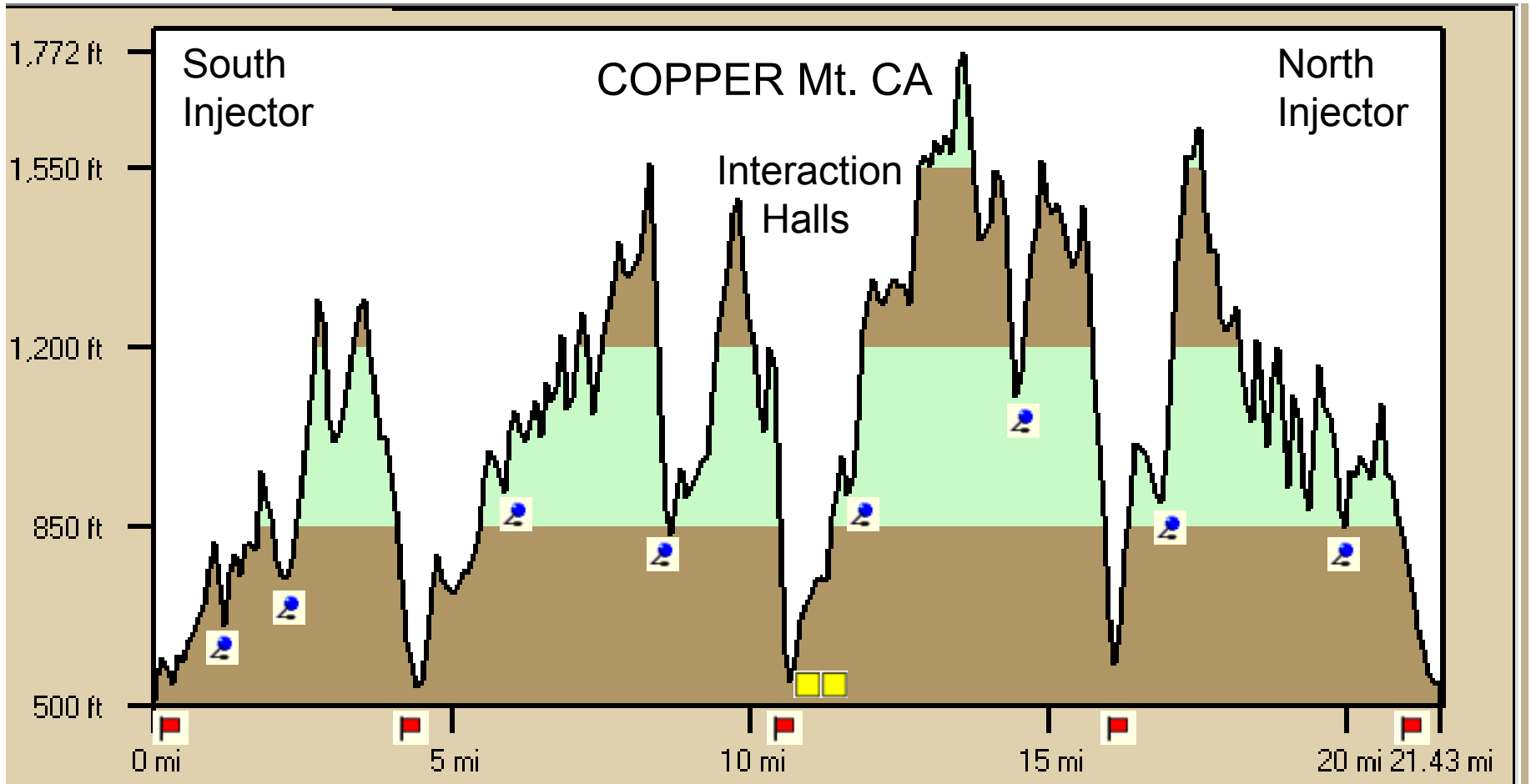
Utilities



Access & Utilities



IP



eL = 540' 653' 748' 536' 916' 834' 577' 913' 1106' 580' 894' 846' 509'

Section View West

NLC Beam Z-Axis eL ~480'

33,413 meters BC arc-to-arc



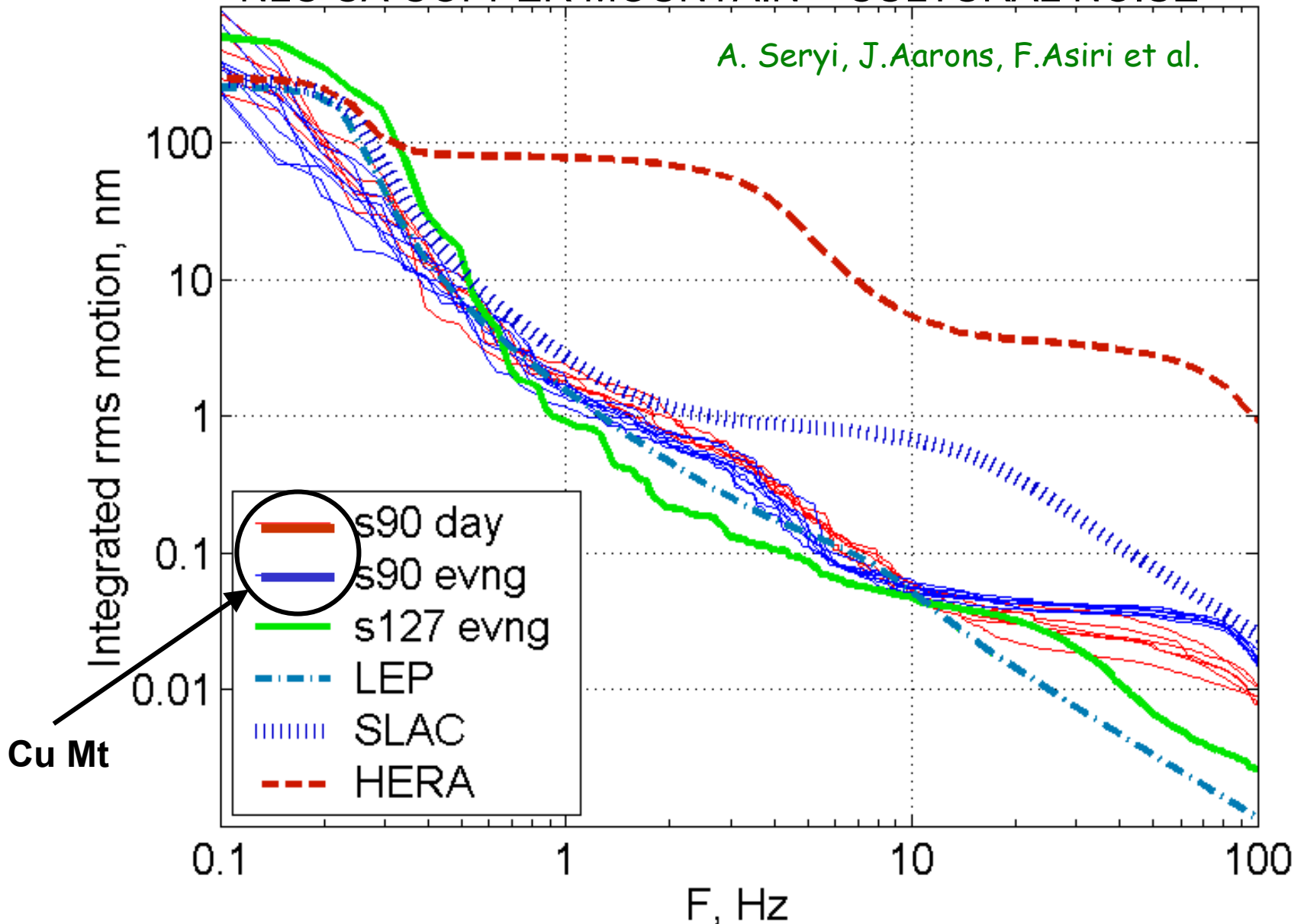
Utility Shaft

Tunnel Access Ramp & Utility Shaft

Interaction Hall

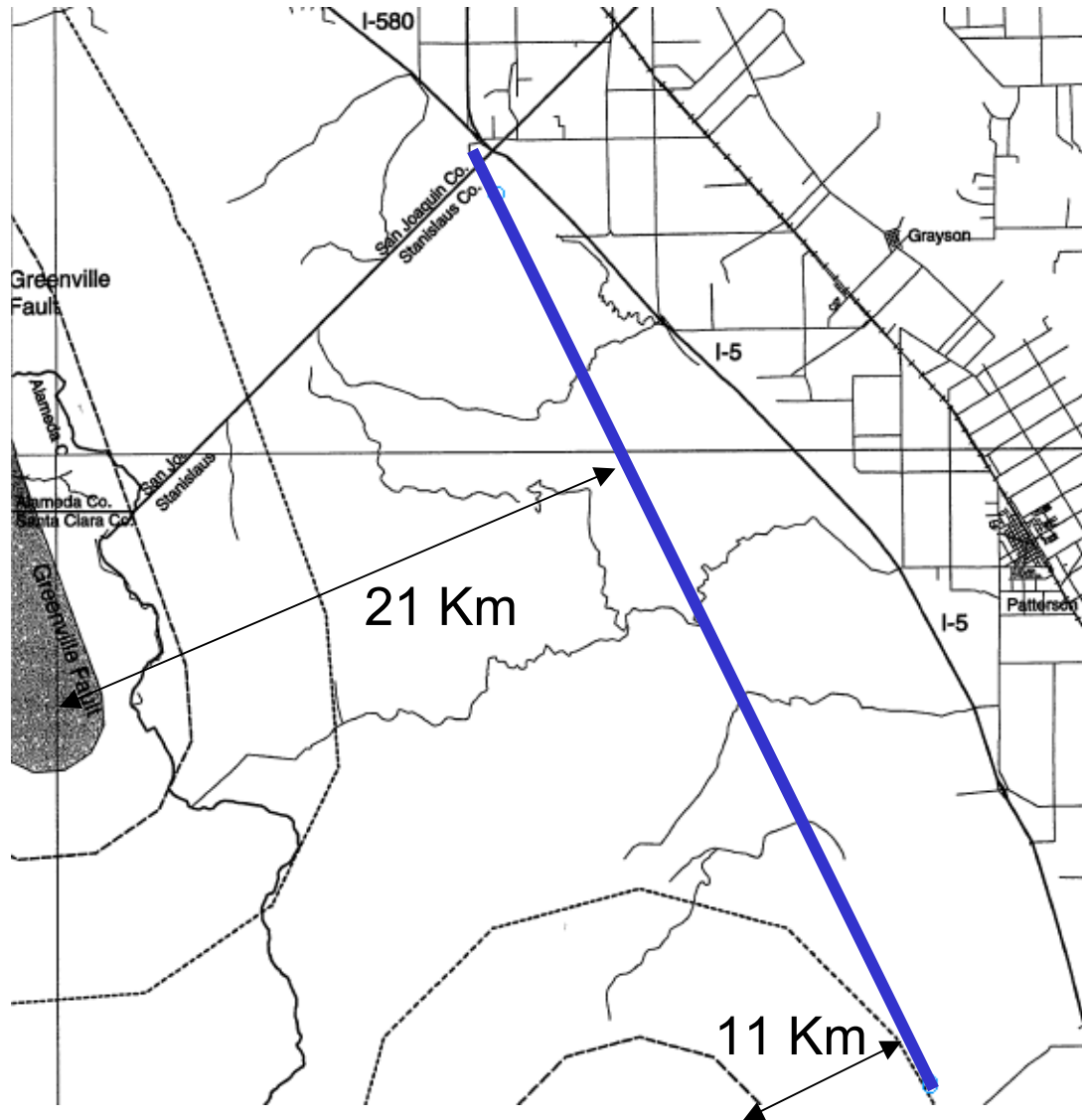
# NLC CA COPPER MOUNTAIN – CULTURAL NOISE

*A. Seryi, J.Aarons, F.Asiri et al.*



0-10 Hz NEGLIGABLE HIGHWAY NOISE FOR LC

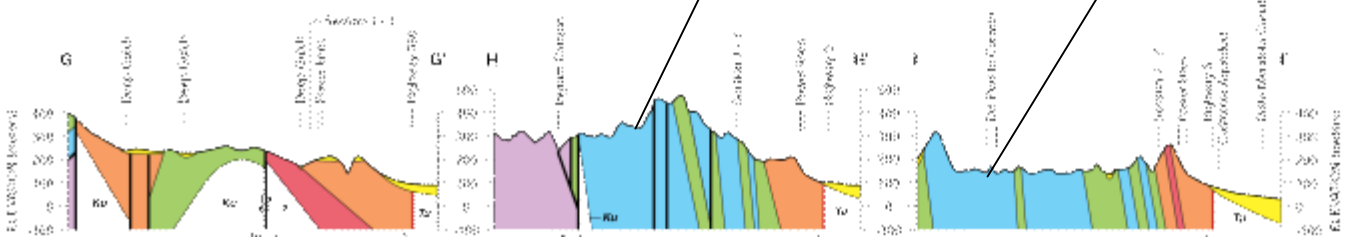
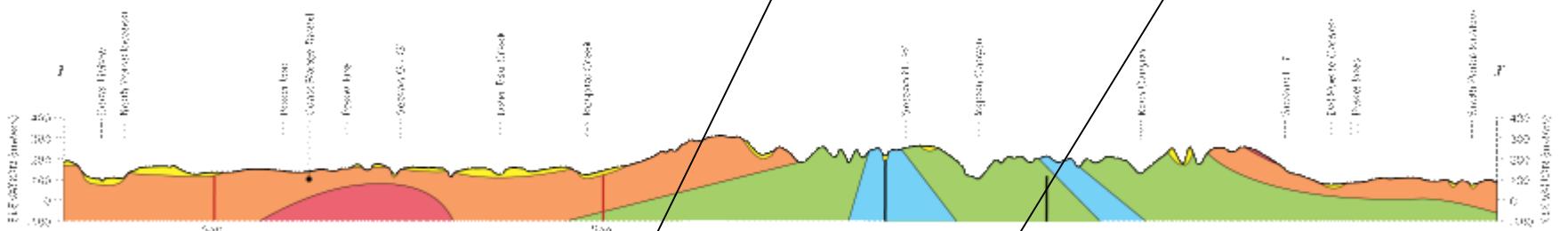
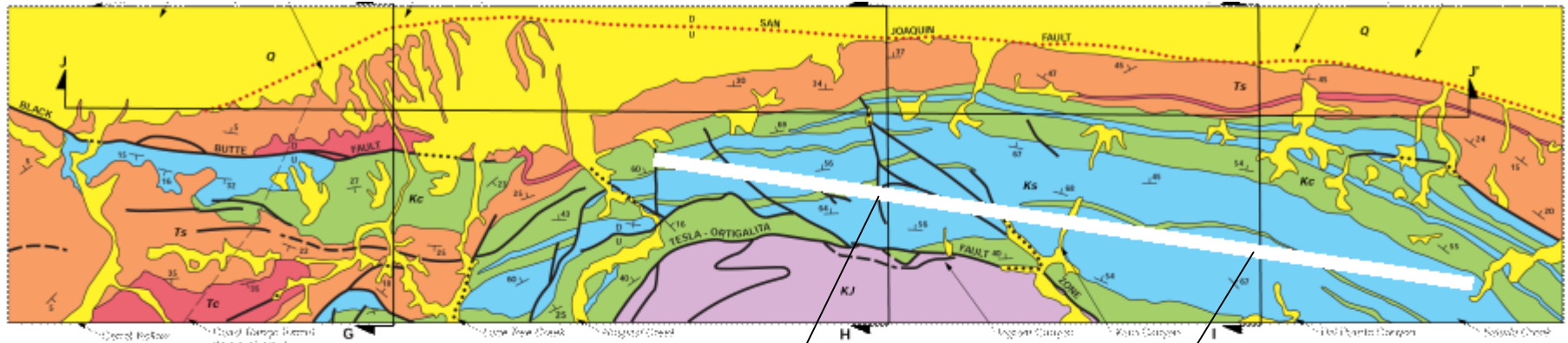
# NLC CA COPPER MOUNTAIN – REMOTE ACTIVE FAULT ZONES



ACCEPTABLE 1.5 mm ANNUAL SLIP RATE  
2 FAULTS, 21 Km & 11 Km DISTANT



# NLC CA COPPER MOUNTAIN – GEOLOGY

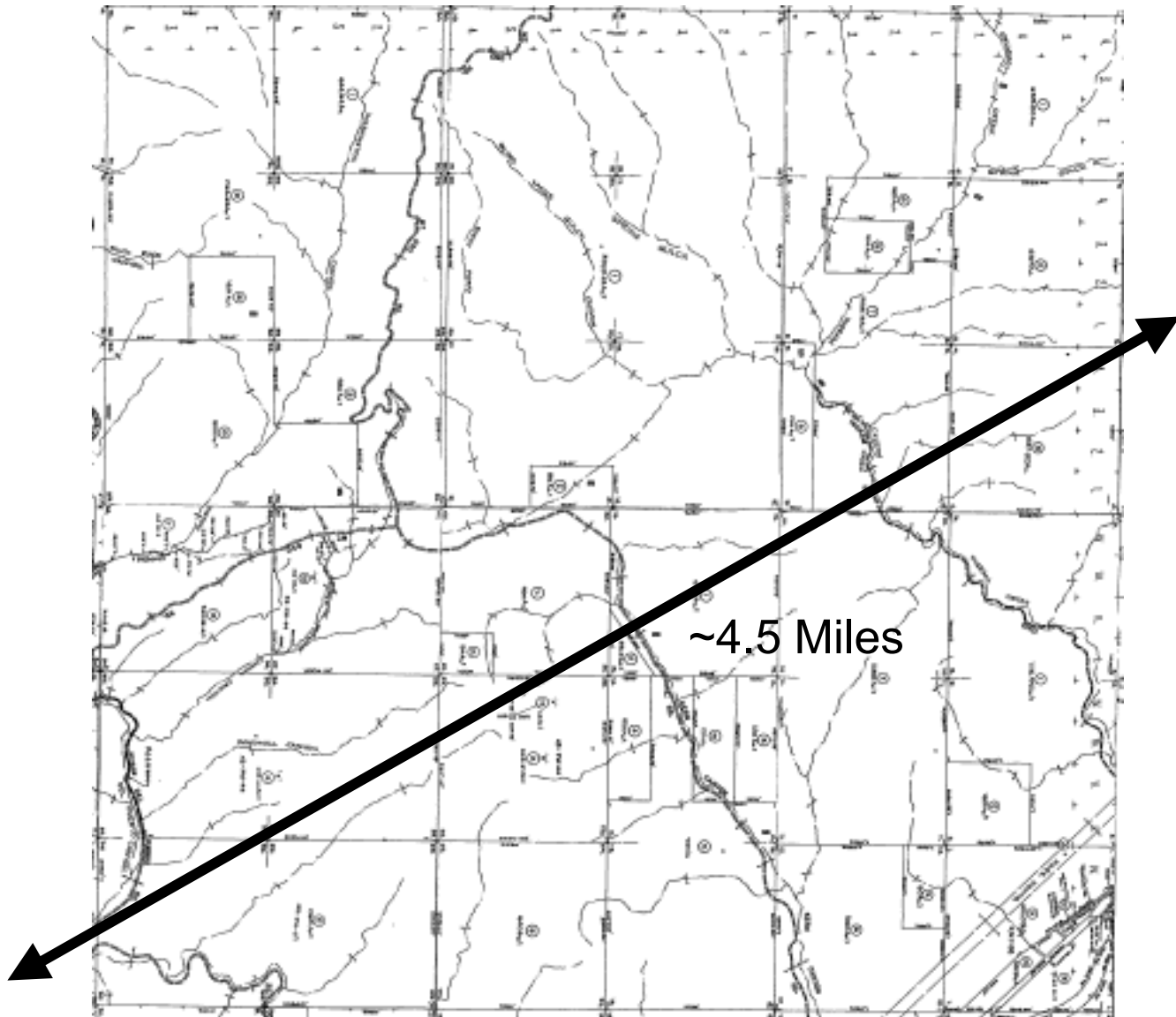


- Notes:
1. Topographic base map from U.S. Geological Survey, 500-foot contour interval, 1985, 2001 scans.
  2. Geologic map data from Barton and others (1965), Blake (1981), 1987A, B, C, Miller and others (1989), Seares and others (1997A, B), and Wagner and others (1998).
  3. See Figure 3 for Explanation.
  4. Color interpretation for all units applies.

Stanford Linear Accelerator Center  
GEOLOGIC INVESTIGATION  
OF REPRESENTATIVE NLC SITES

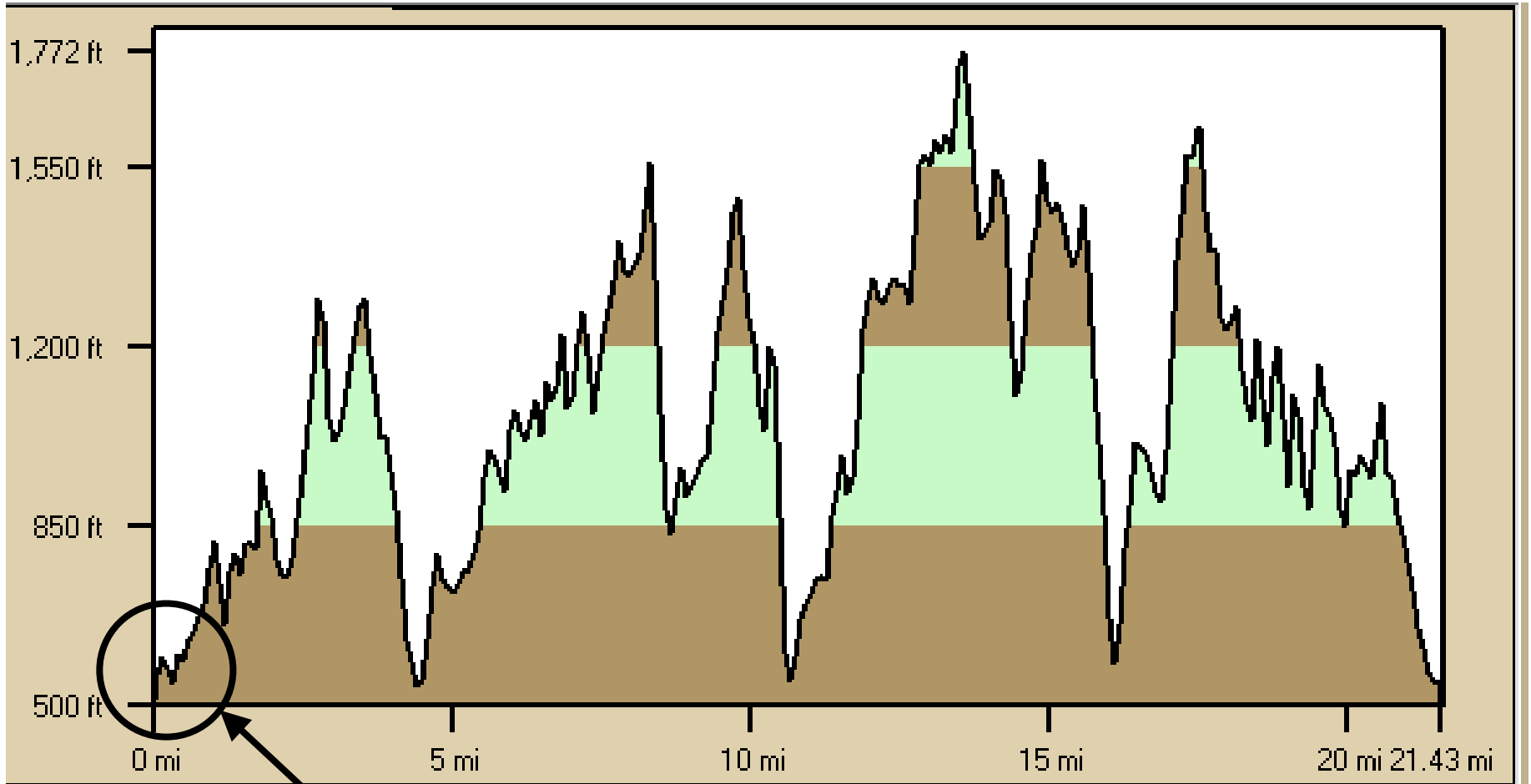
# NATIVE CALIFORNIA SANDSTONES

# NLC CA COPPER MOUNTAIN – PLOT PLANS & PROPERTY RIGHTS



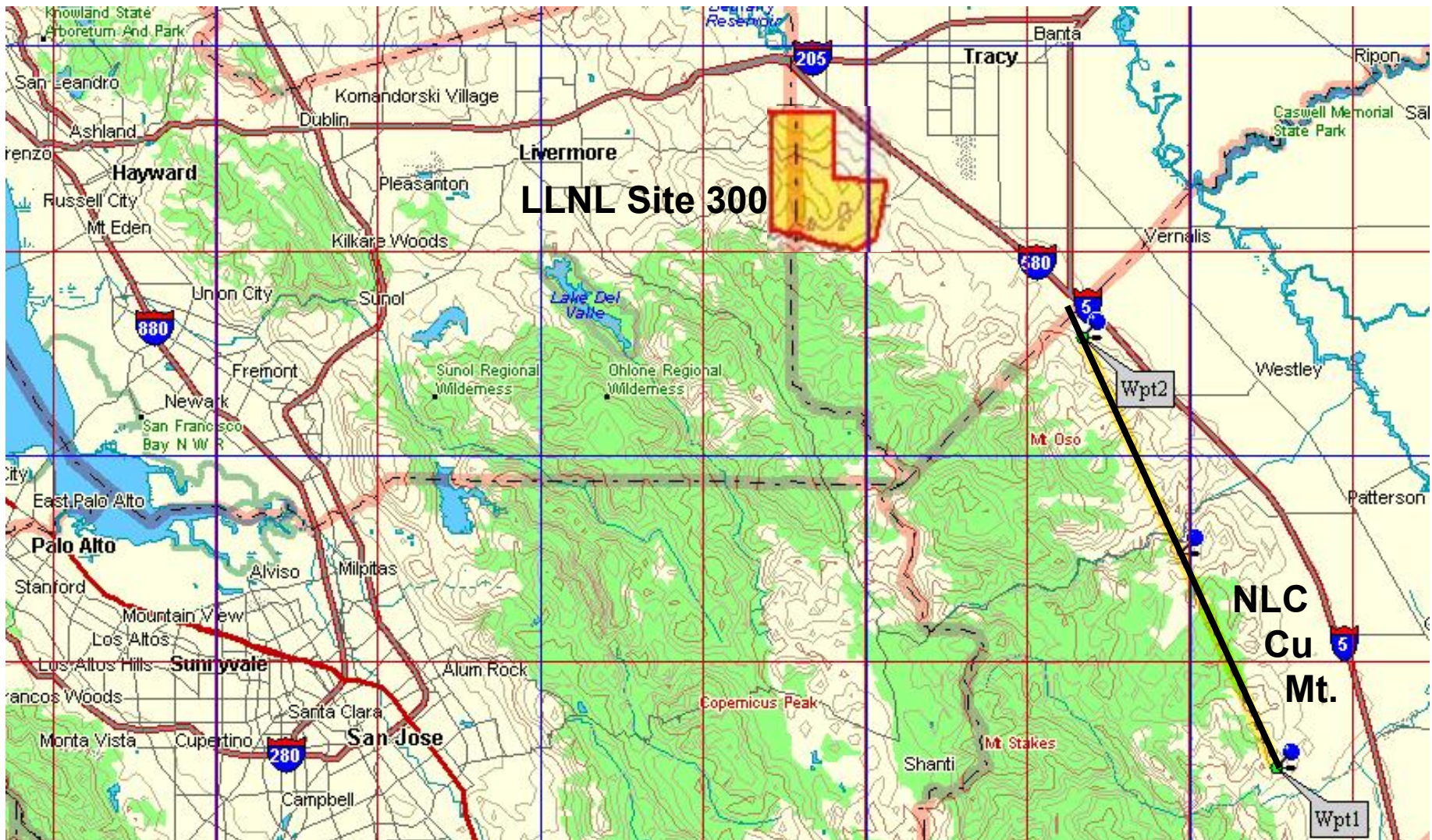
Approximately 30 Alignment + 60 Access Parcels

# NLC CA COPPER MOUNTAIN



SOUTH INJECTOR TOUR

# NLC CA COPPER MOUNTAIN LOCATION



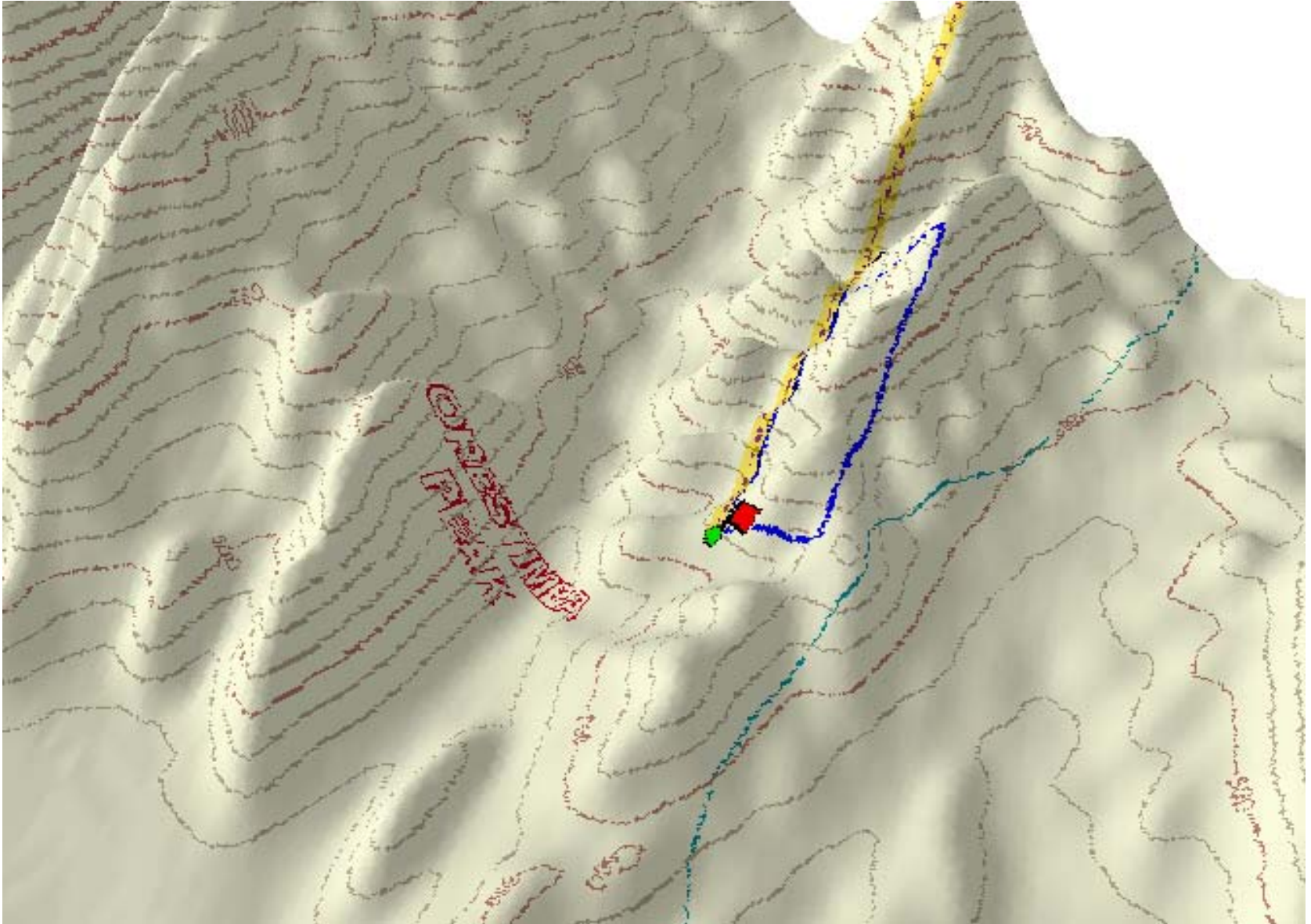
33.5 kilometers, 1.0 Tev, SLED-II, Hi-Lo Energy IR Halls, Remote Injectors

# NLC CA COPPER MOUNTAIN - SOUTH INJECTOR



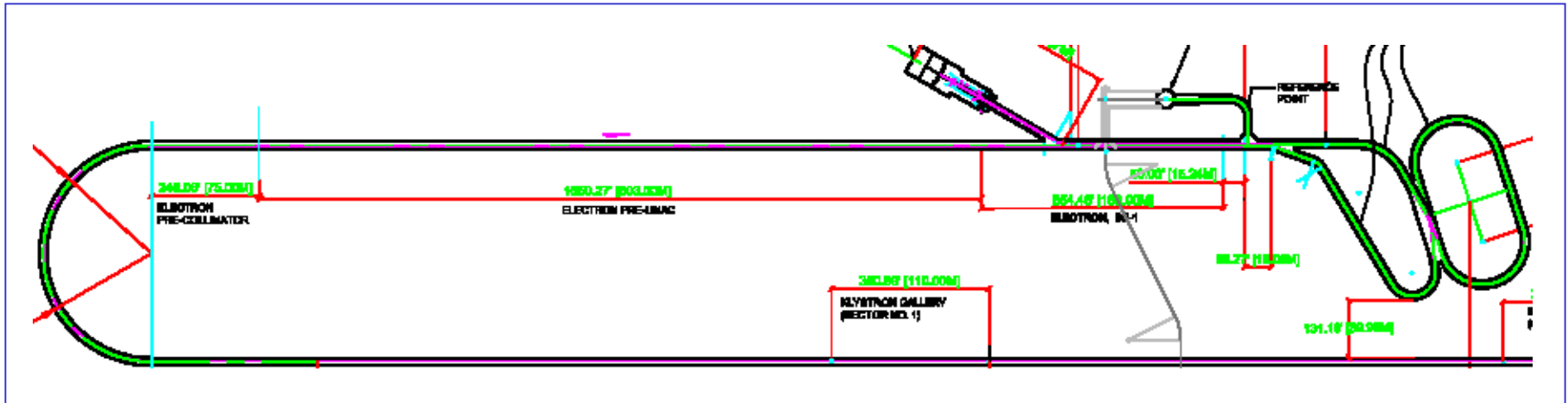
OSO CREEK DIVIDE VIEW NORTH

# NLC CA COPPER MOUNTAIN



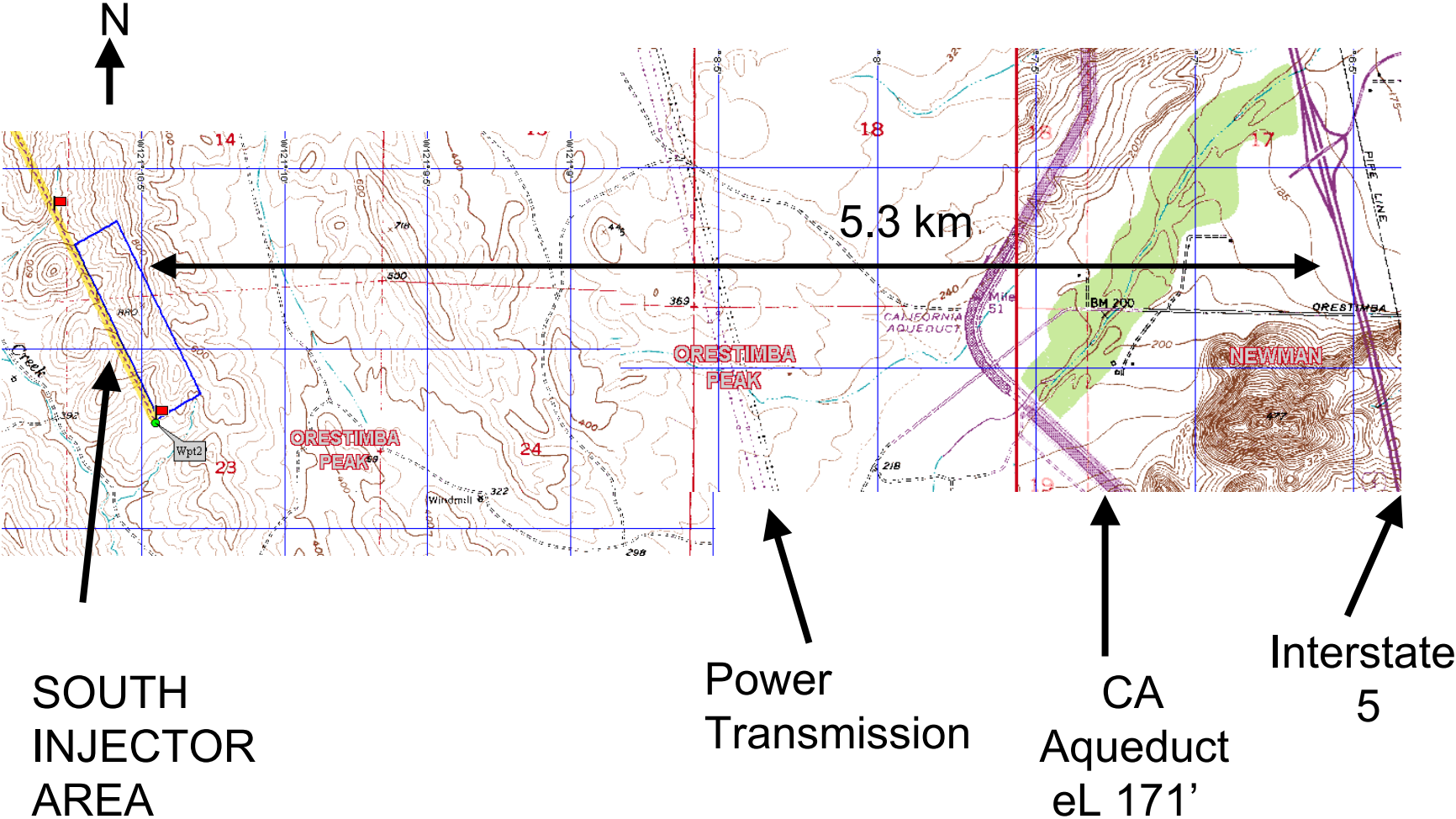
SOUTH INJECTOR VIEW NORTH

# NLC CA COPPER MOUNTAIN



## SOUTH ELECTRON INJECTOR

# NLC CA COPPER MT. - SOUTH INJECTOR



SOUTH INJECTOR AREA FEATURES



# NLC CA COPPER MOUNTAIN



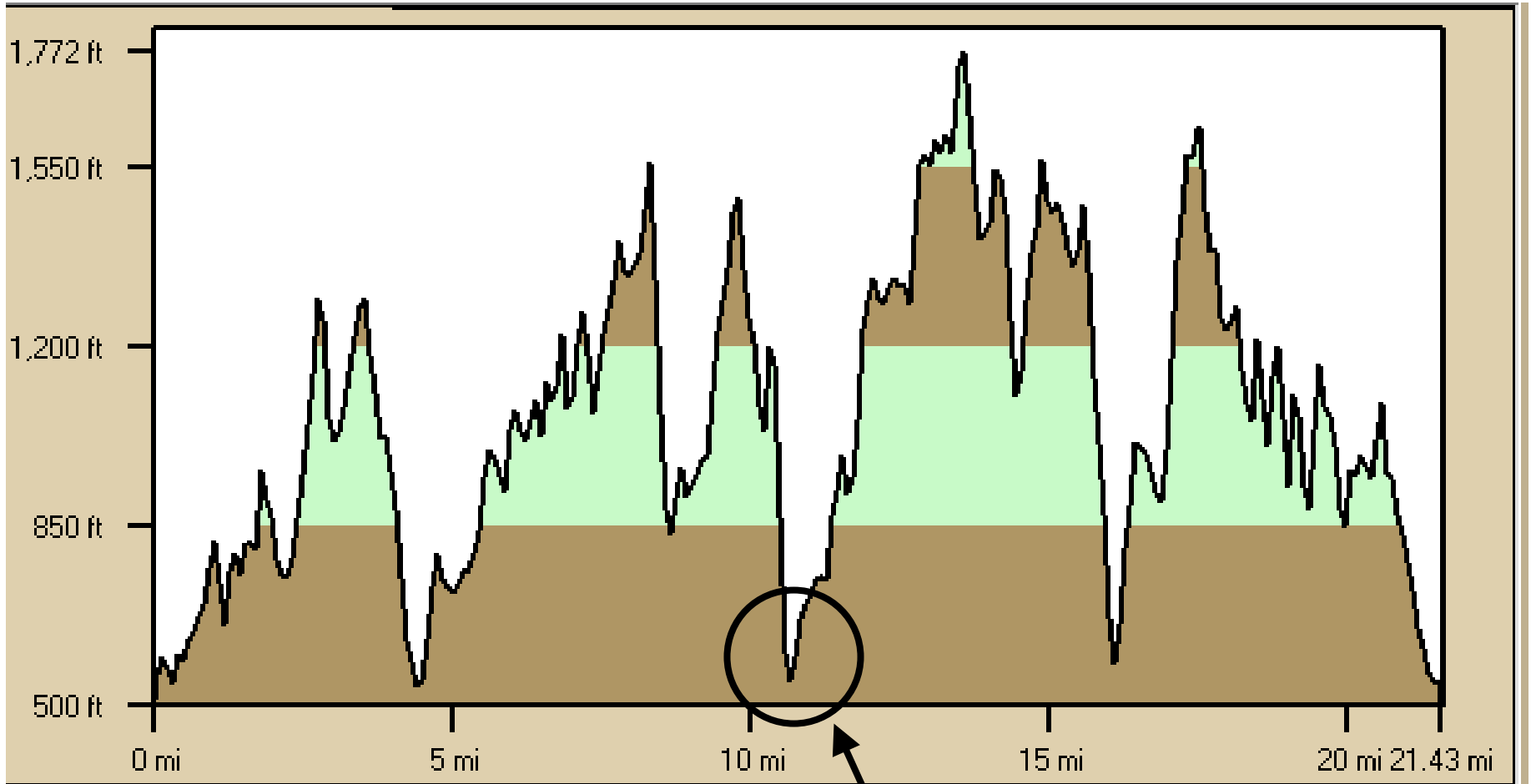
AQUADUCT - 2 & 3 Km DISTANT @ N. & S. INJECTORS

# NLC CA COPPER MOUNTAIN - SOUTH INJECTOR AREA



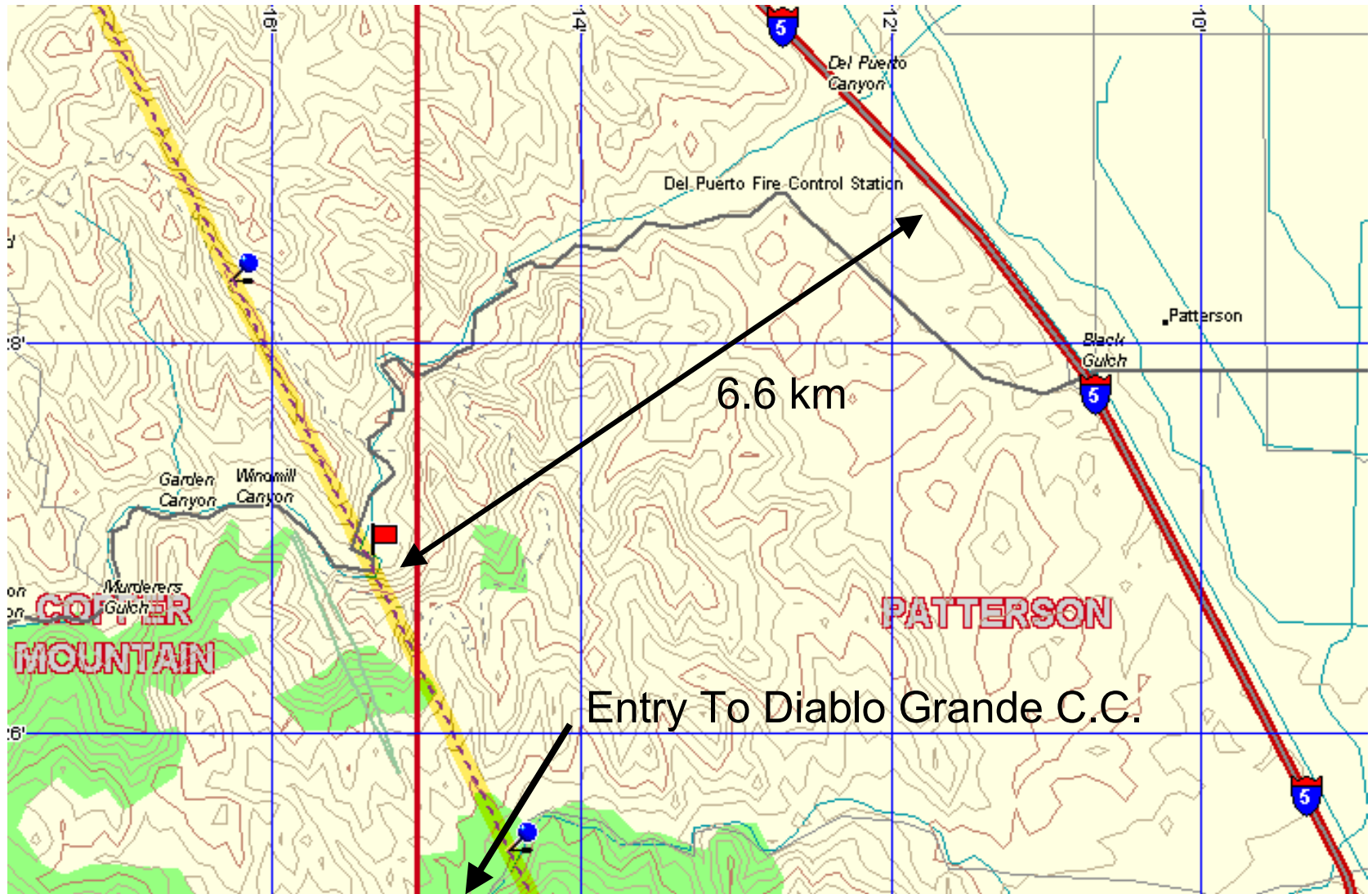
POWER TRANSMISSION CORRIDOR VIEW NORTH – 8 CIRCUITS

# NLC CA COPPER MOUNTAIN



INTERACTION REGION TOUR

# NLC CA COPPER MT – INTERACTION REGION



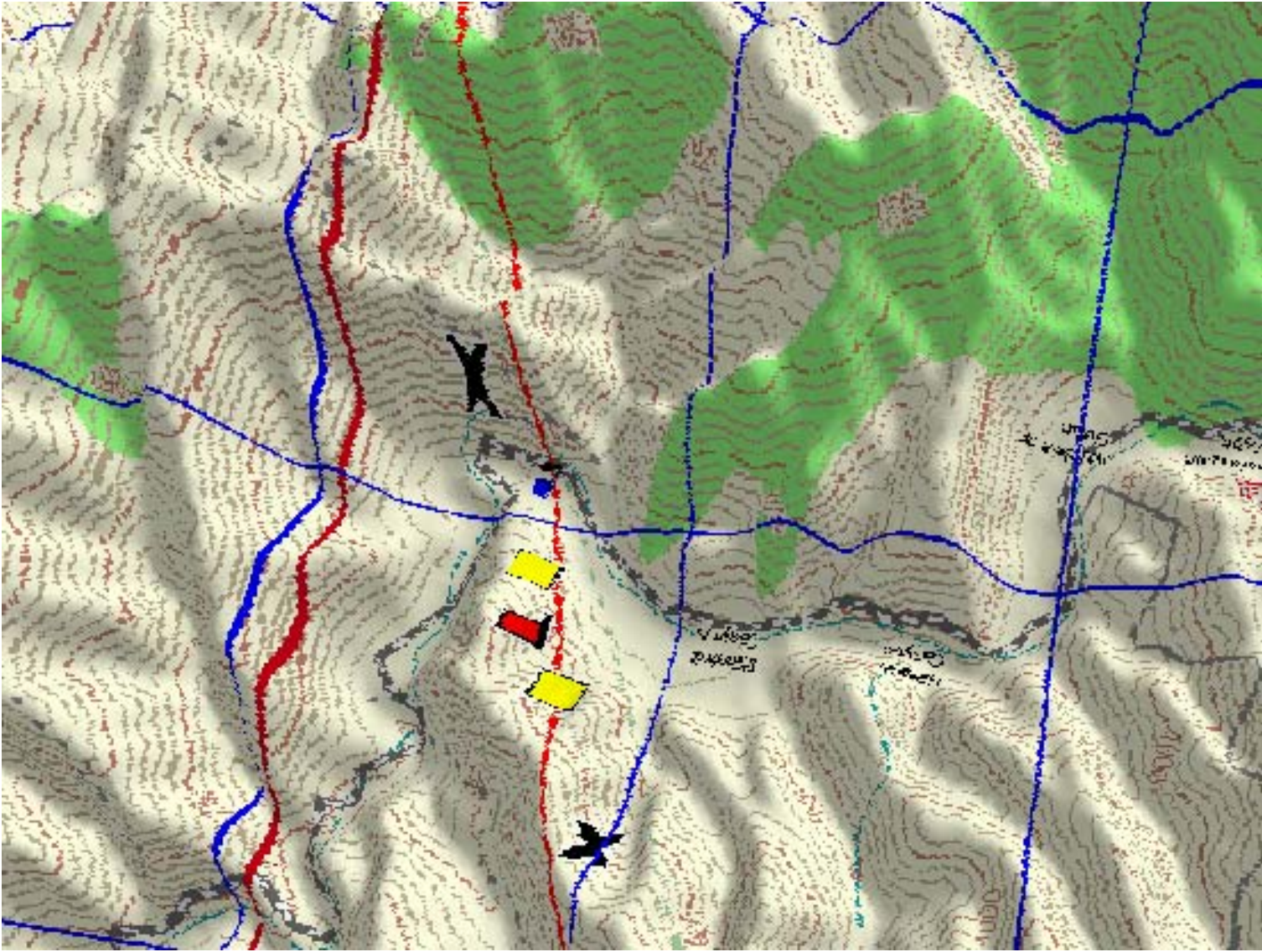
## INTERACTION REGION AREA FEATURES

# NLC CA COPPER MOUNTAIN



INTERACTION HALL RIDGE - VIEW EAST

# NLC CA COPPER MOUNTAIN – INTERACTION HALLS

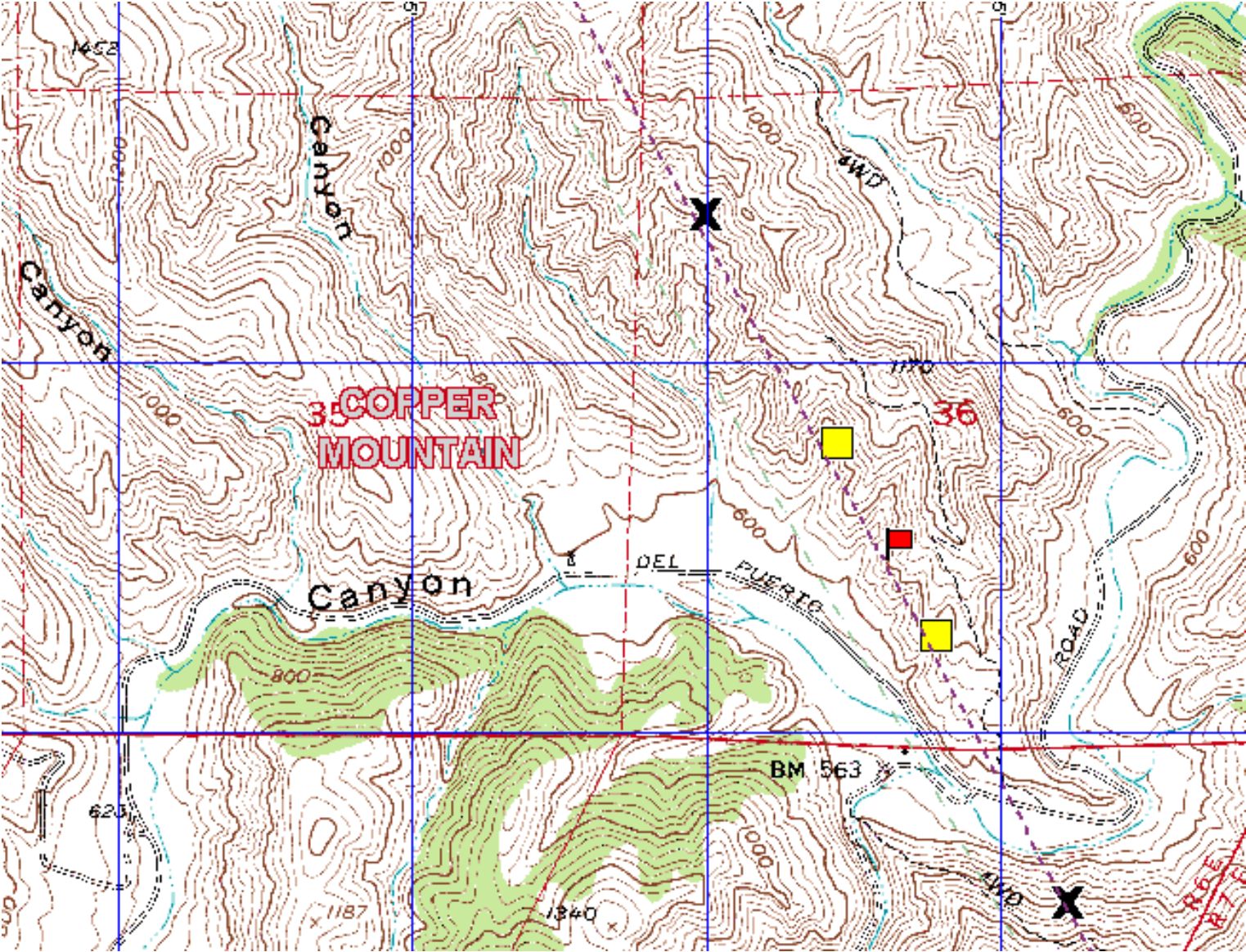


 ACCESS

 INTERACTION HALL

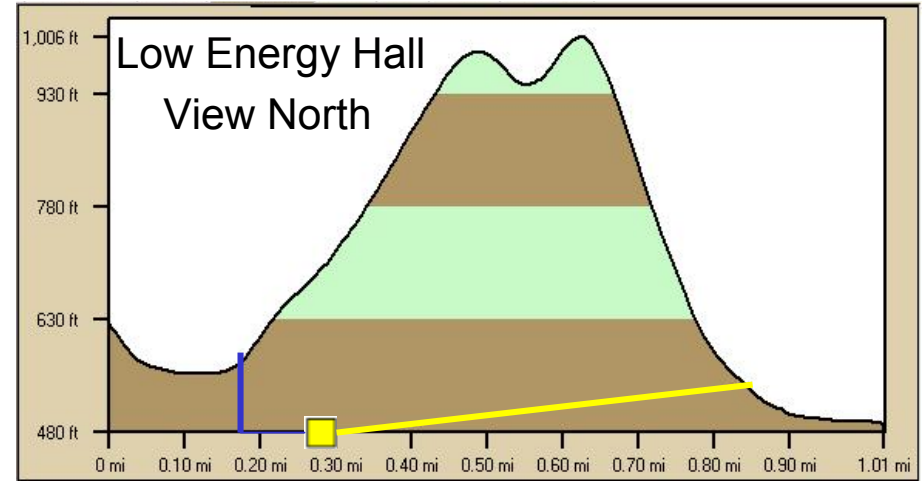
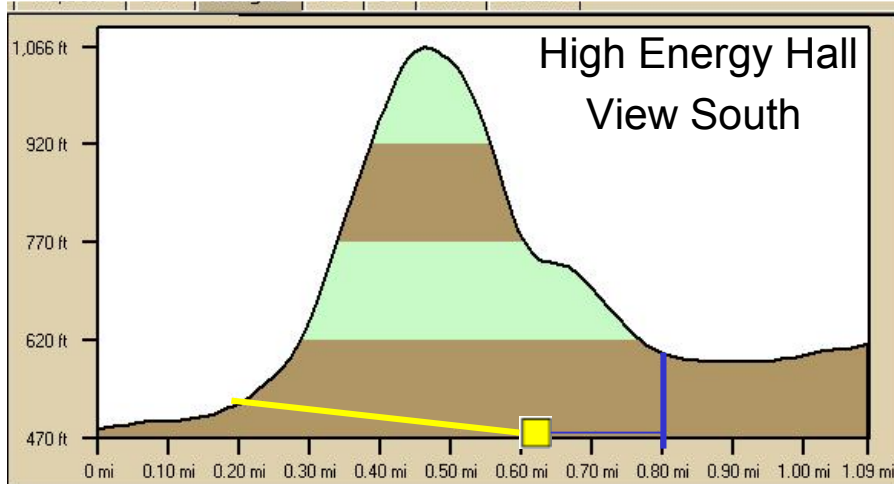
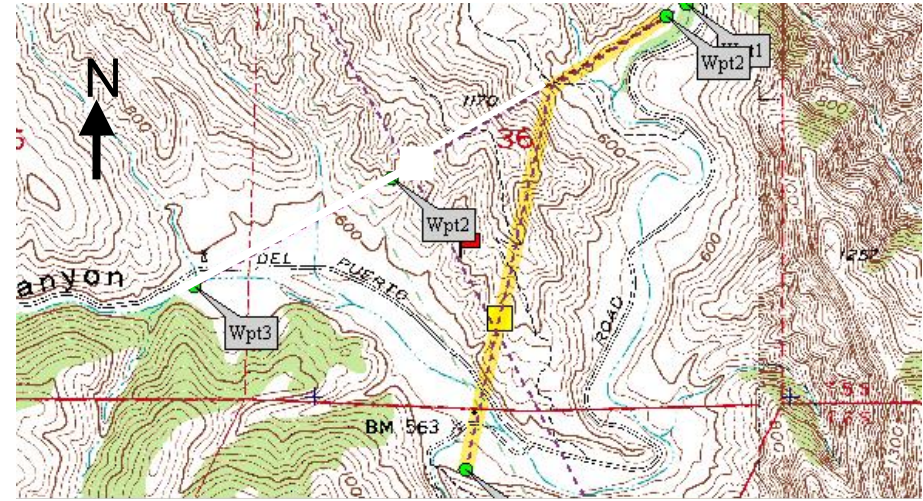
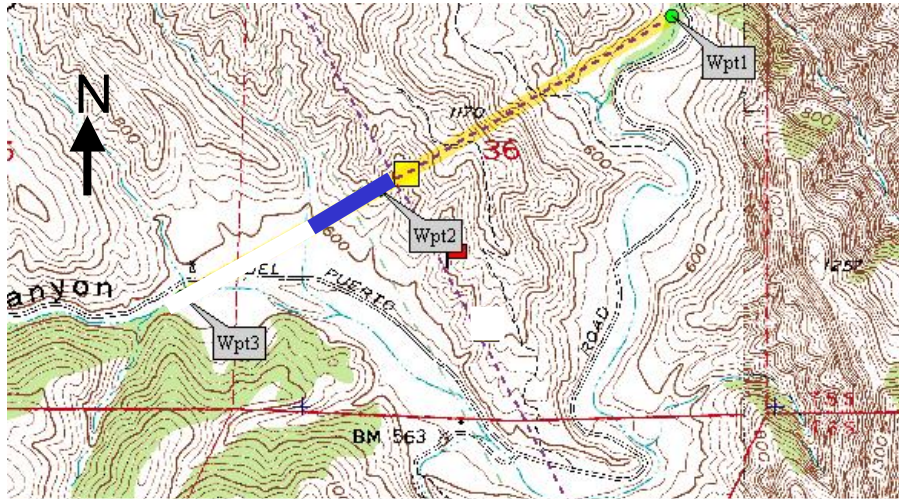
 IP SWITCH

# NLC CA COPPER MOUNTAIN – INTERACTION HALLS



 CENTER POINT     INTERACTION HALL     IP SWITCH

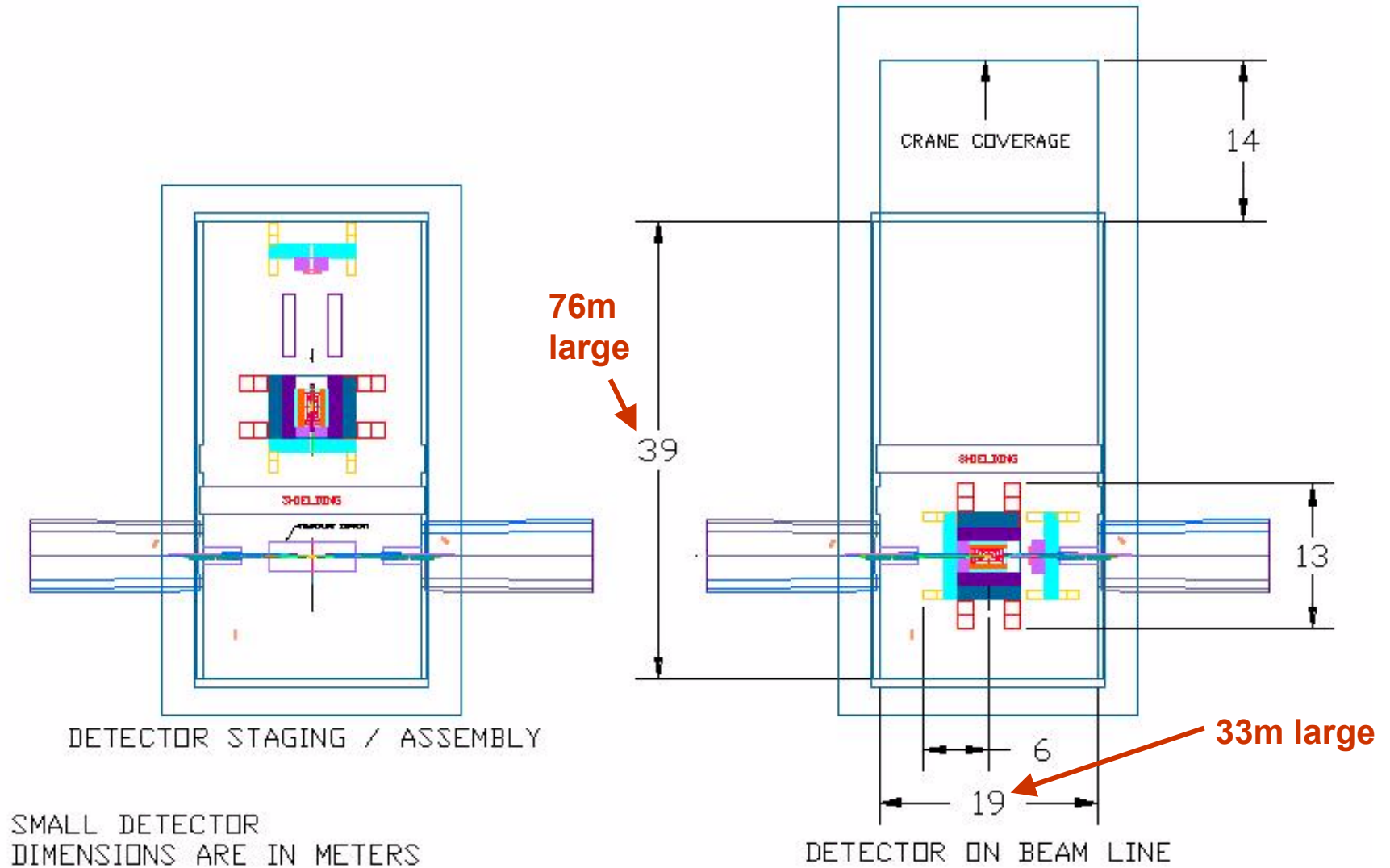
# NLC CA COPPER MOUNTAIN – IP UTILITY & ACCESS



- Interaction Hall
- Vehicular Access Ramp
- Utility & Elevator Shaft

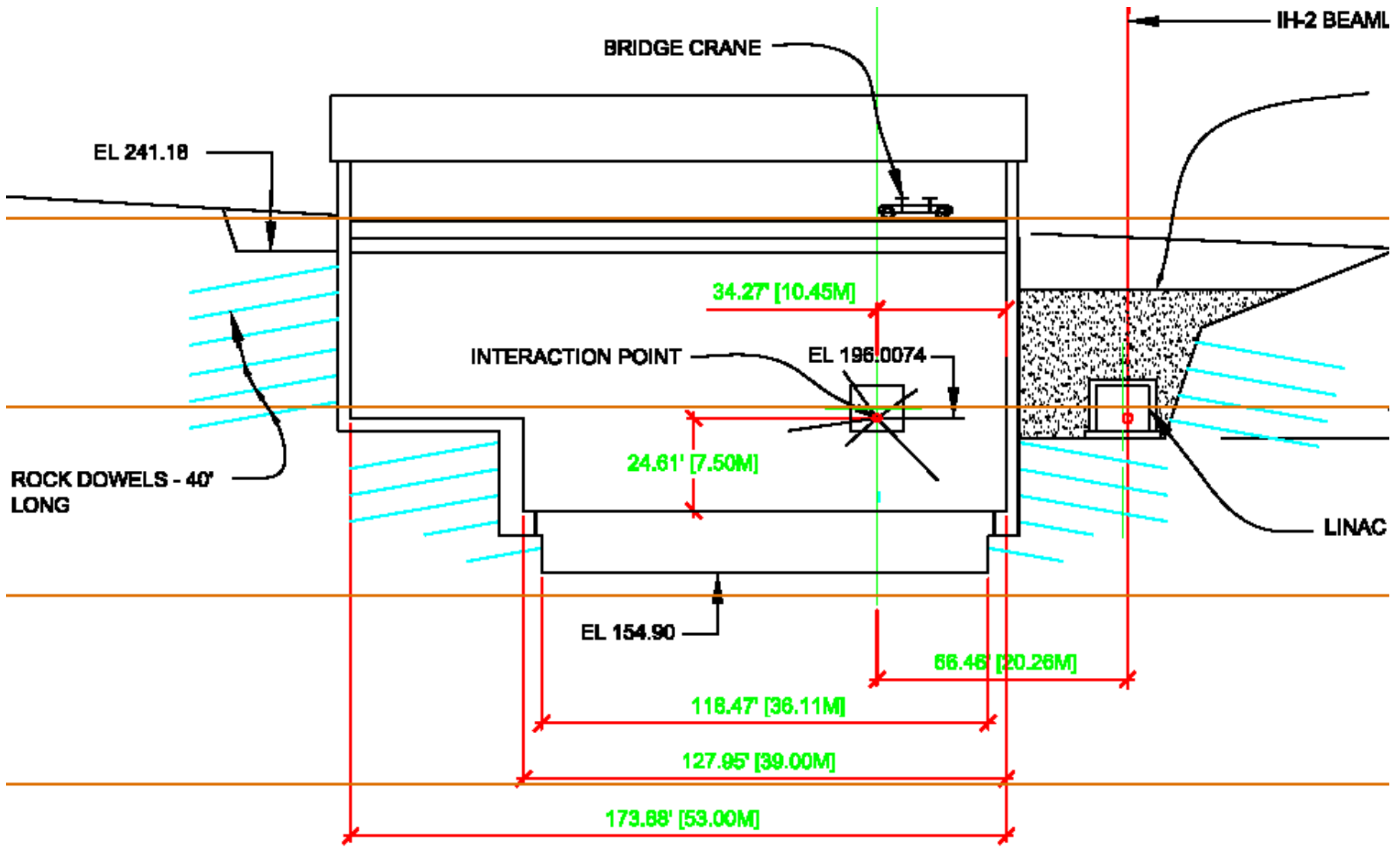


# NLC CA COPPER MOUNTAIN



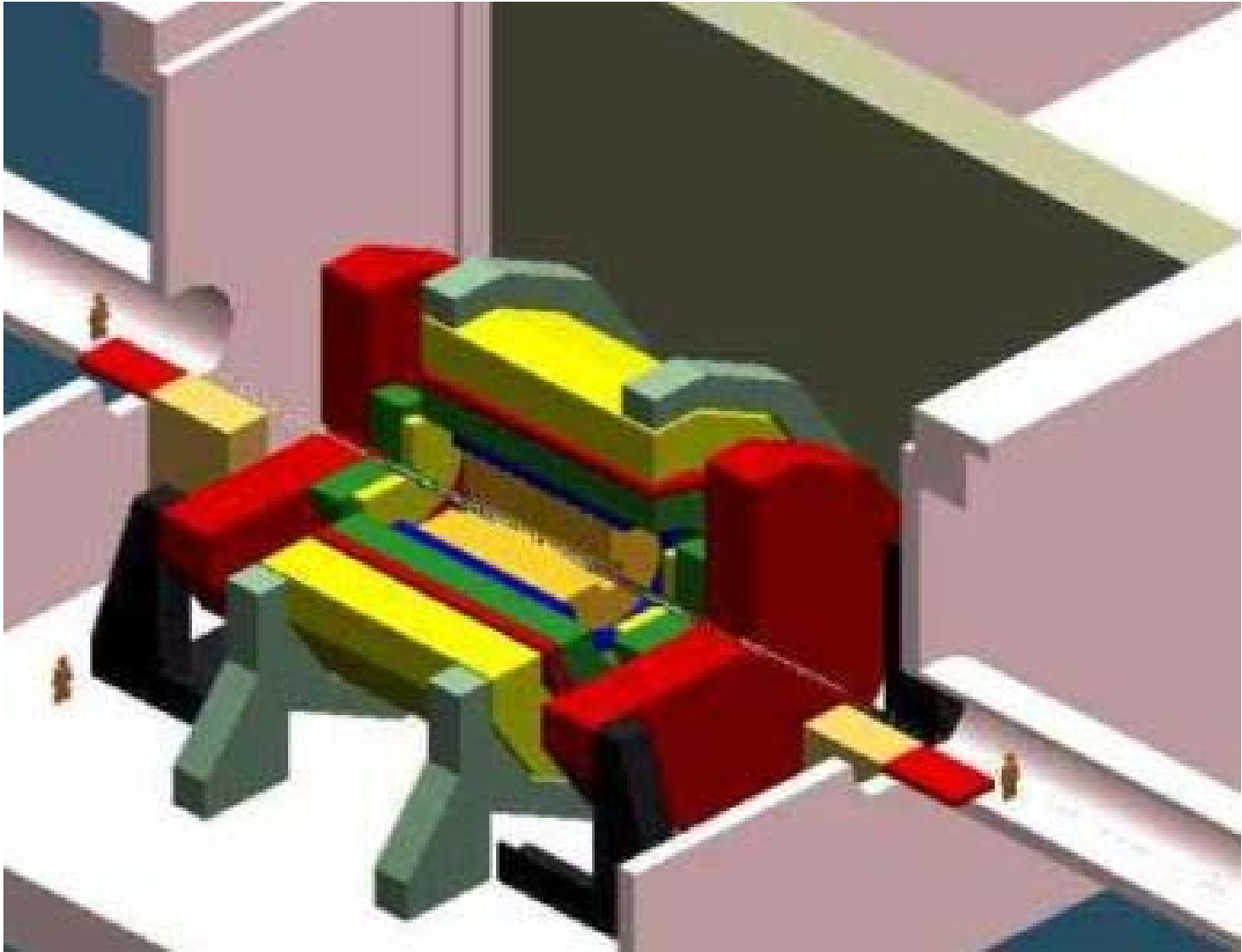
## INTERACTION REGION (small)

# NLC CA COPPER MOUNTAIN



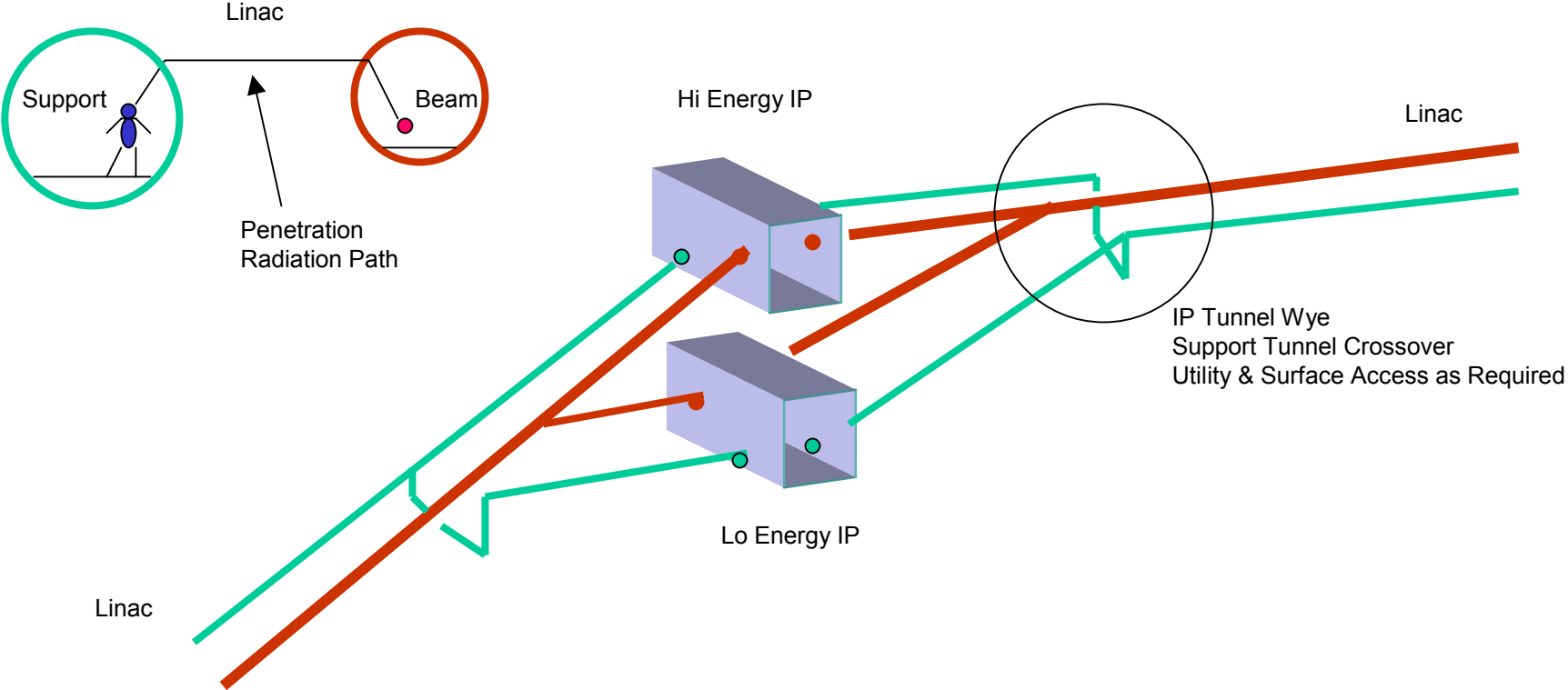
DETECTOR HALL (small)

# NLC CA COPPER MOUNTAIN

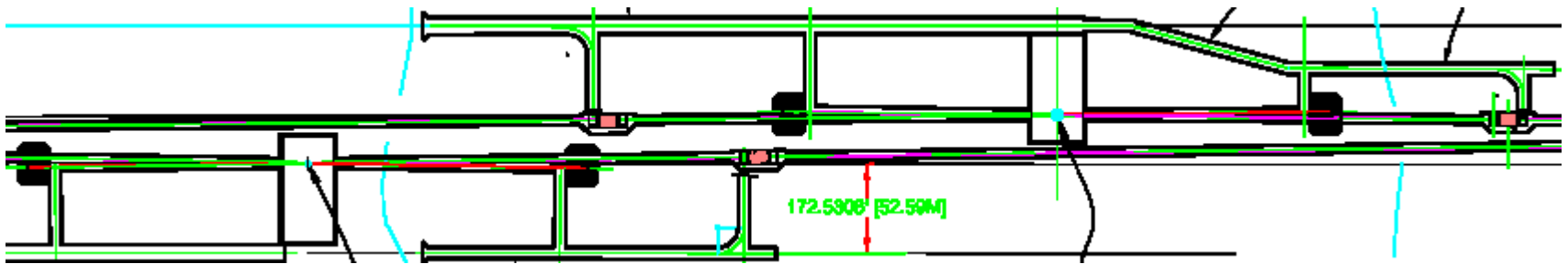


DETECTOR HALL (art view)

# Beam & Support Tunnel IP Approaches



# NLC CA COPPER MOUNTAIN



2001 (old) INTERACTION REGION TUNNEL NETWORK @ 127

# NLC CA COPPER MOUNTAIN



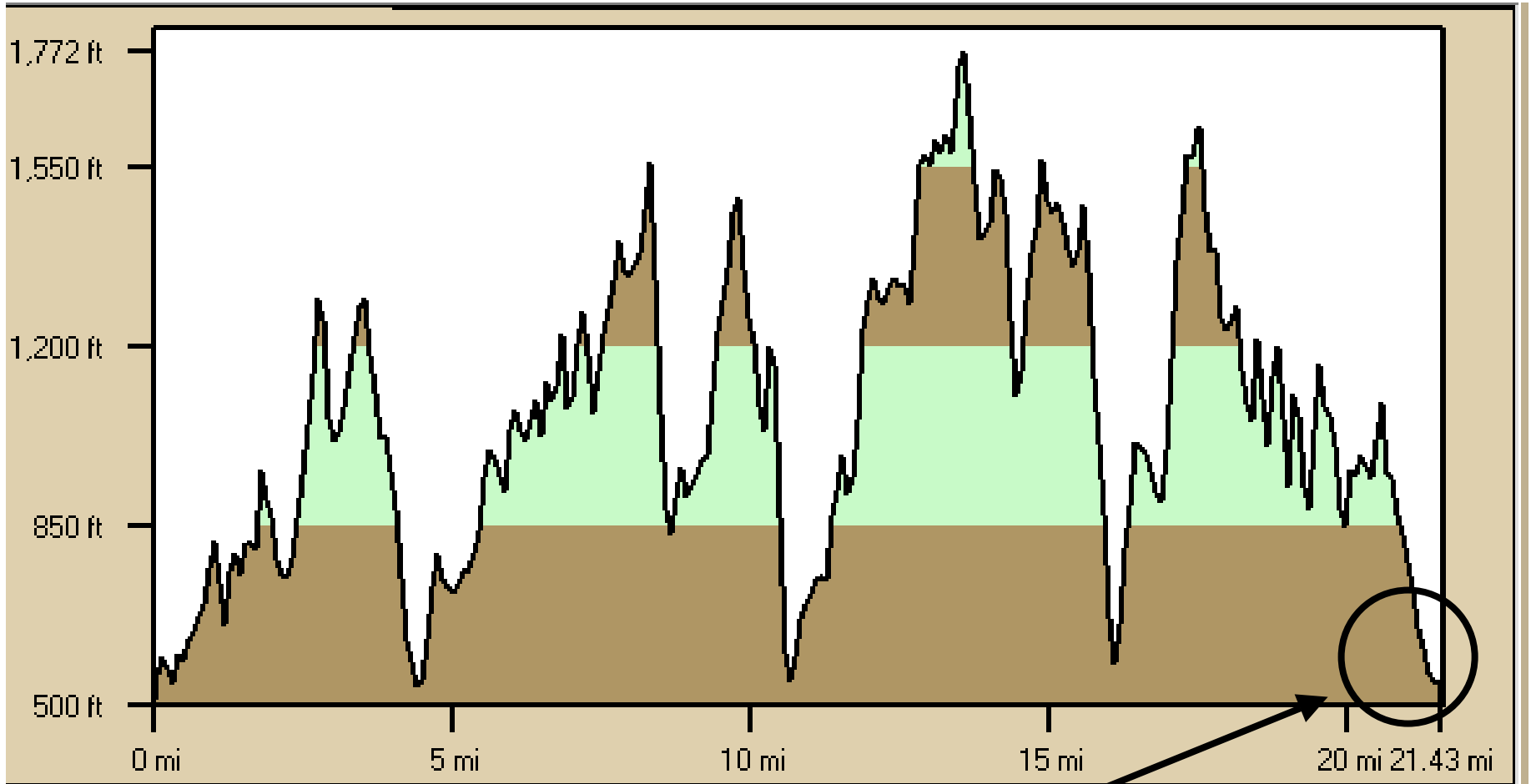
DIABLO GRANDE UTILITY SHAFT AREA

# NLC CA COPPER MOUNTAIN



DIABLO GRANDE COUNTRY CLUB, GOLF COURSE & VINEYARDS

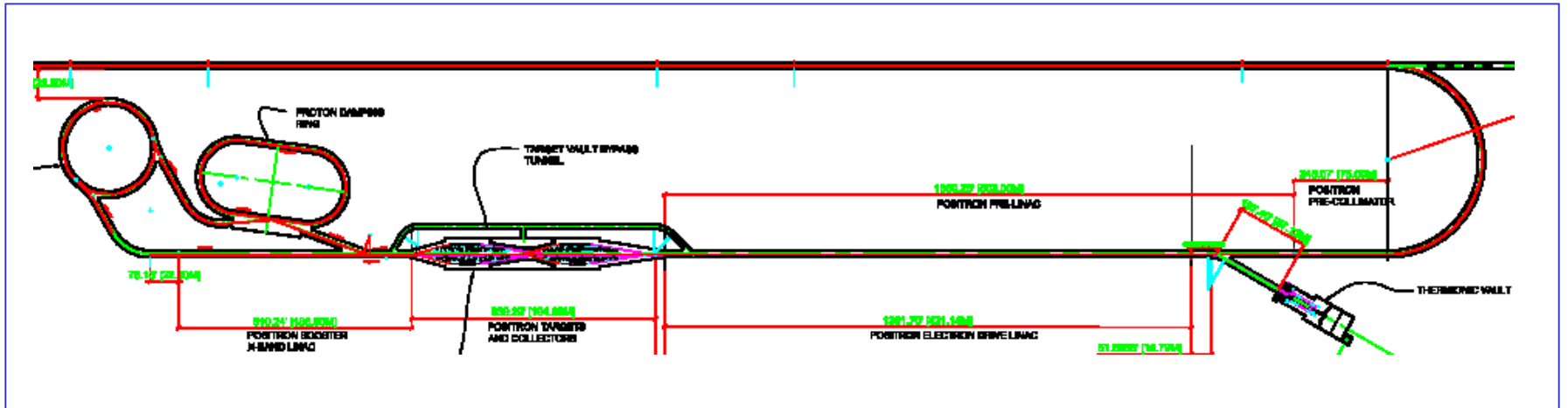
# NLC CA COPPER MOUNTAIN



NORTH INJECTOR REGION TOUR

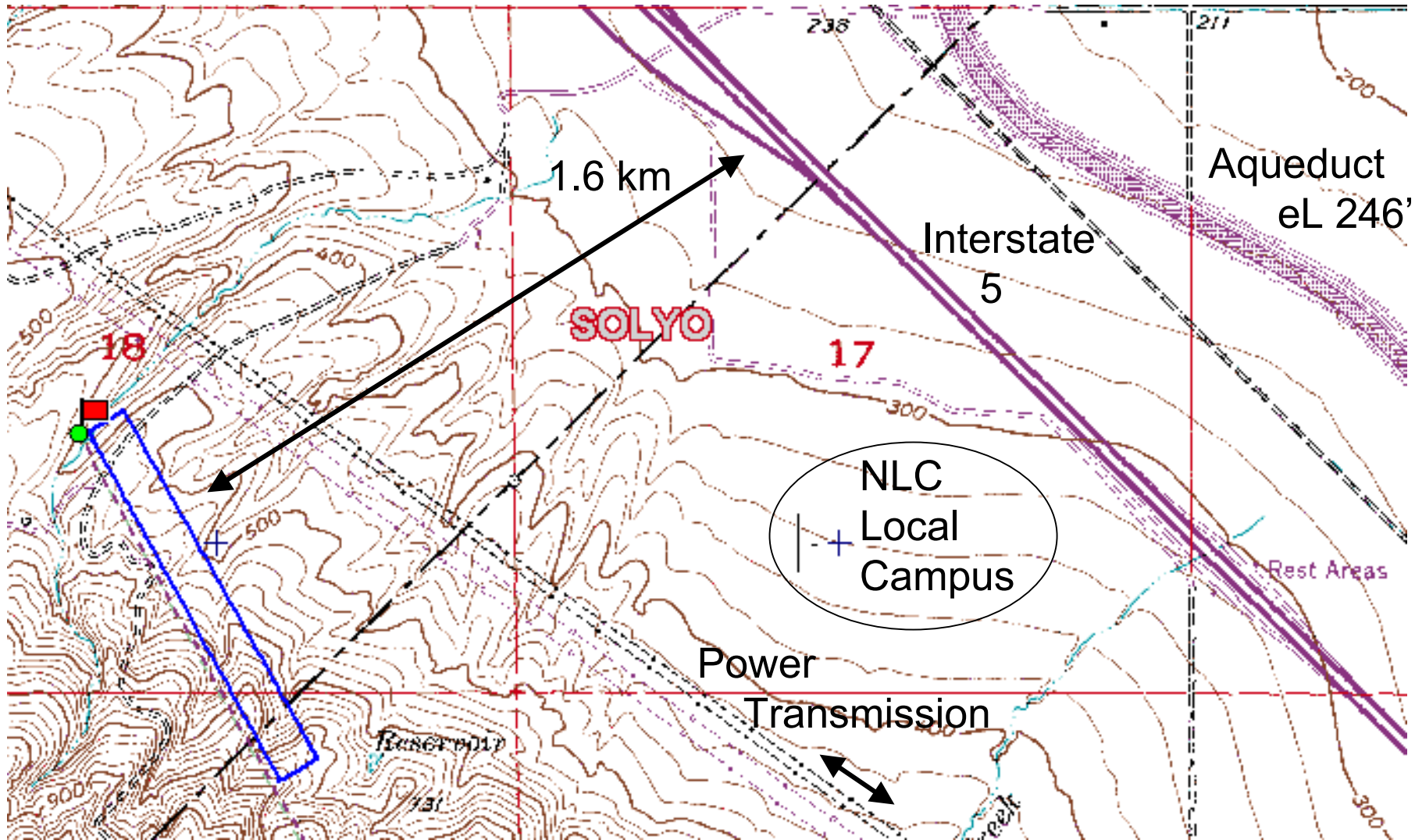


# NLC CA COPPER MOUNTAIN



NORTH POSITRON INJECTOR

# NLC CA COPPER MOUNTAIN - NORTH INJECTOR



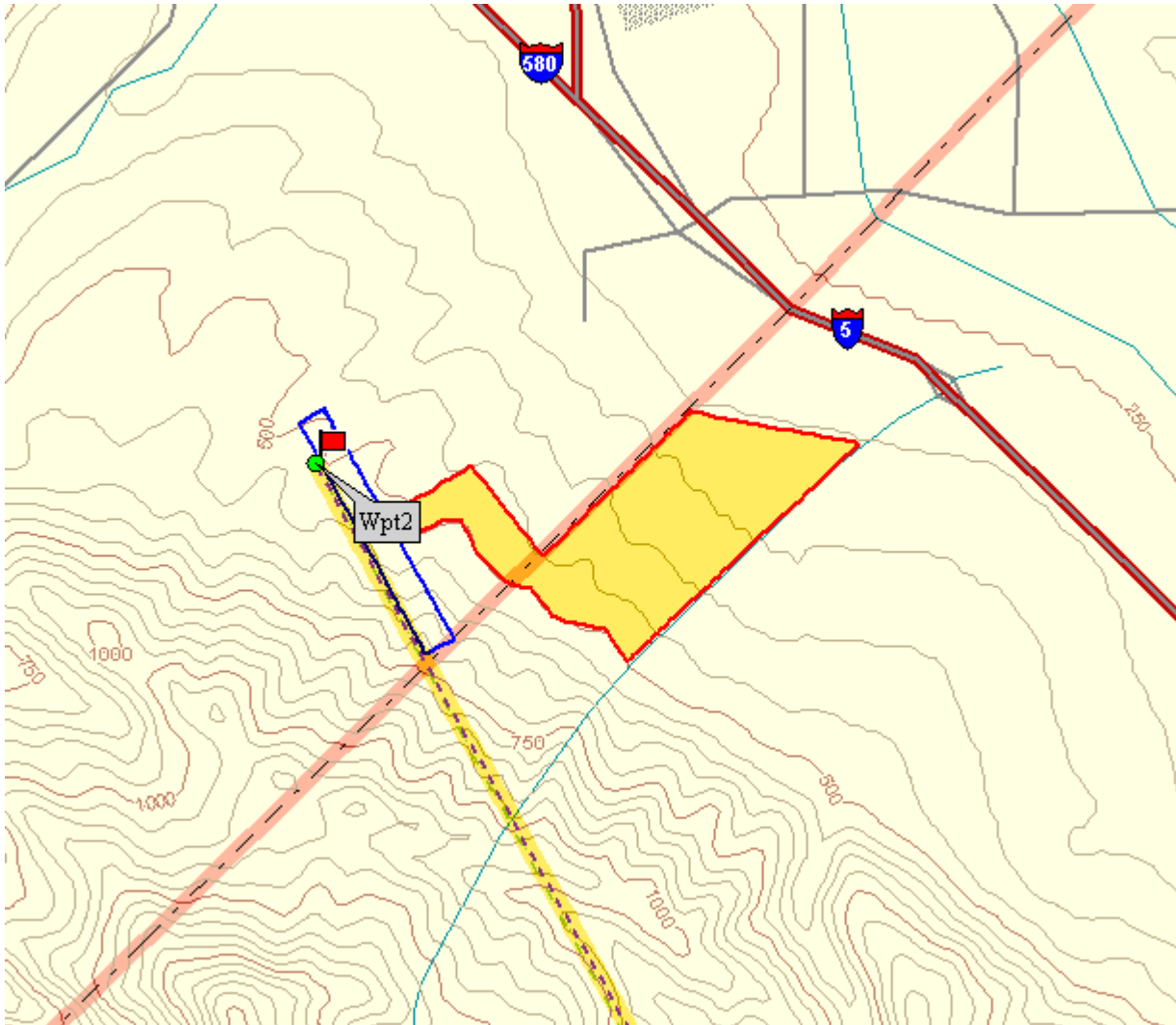
## NORTH INJECTOR AREA FEATURES

# NLC CA COPPER MOUNTAIN - NORTH INJECTOR AREA



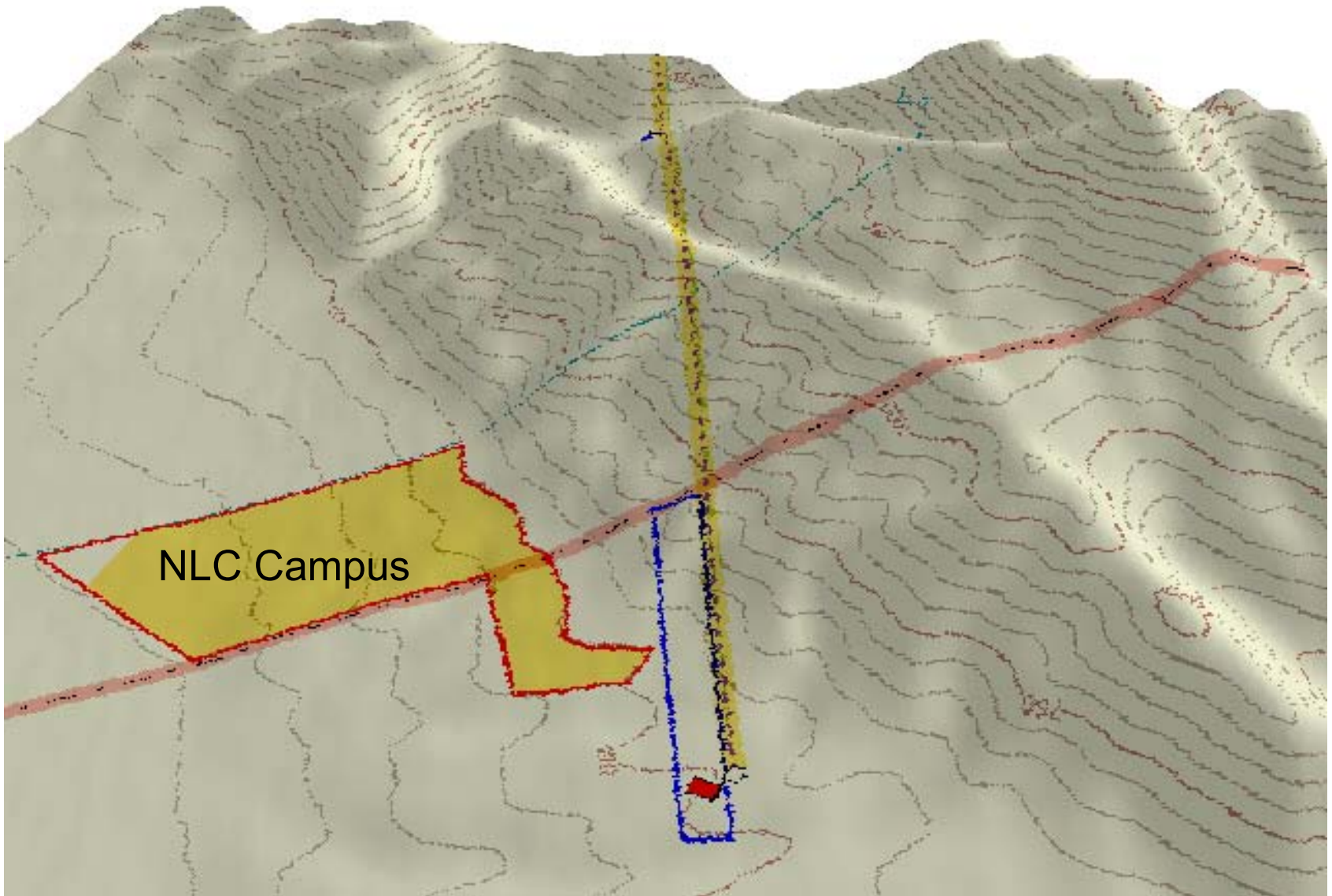
POWER TRANSMISSION CORRIDOR VIEW WEST – 8 CIRCUITS

# NLC CA COPPER MOUNTAIN



## NLC LOCAL CAMPUS

# NLC CA COPPER MOUNTAIN



NORTH INJECTOR VIEW SOUTH

# NLC CA COPPER MOUNTAIN



NORTH INJECTOR RIDGE & LOCAL CAMPUS



# NLC California Copper Mountain End