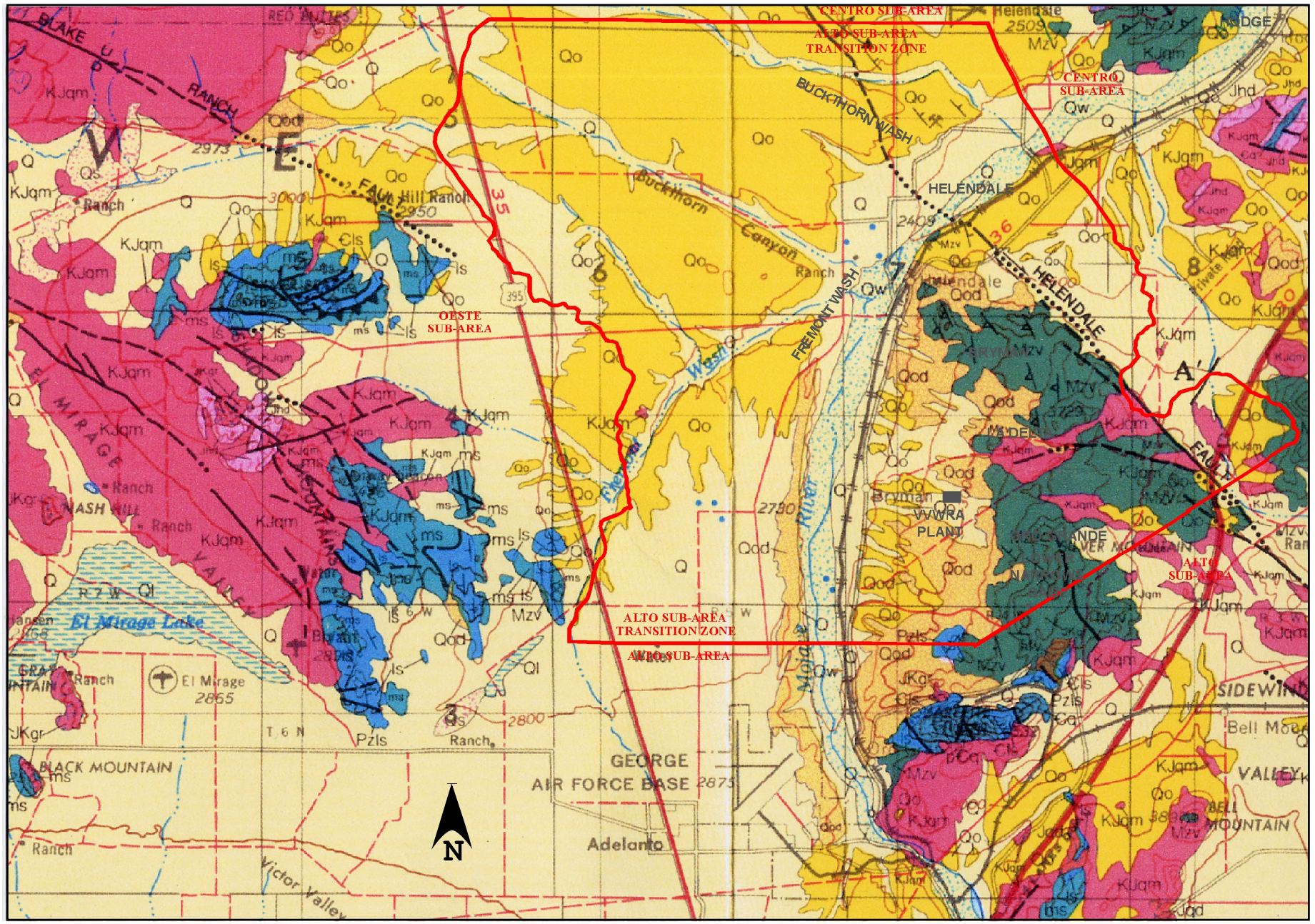
Figure 1 **Generalized Geological Map of the Mojave Transition Zone**



LEGEND

Dominant Lithologies

- Cretaceous or Jurassic Quartz Monzonite
- Mesozoic Metavolcanic Rocks
- Miocene Sandstone
- Well Dissected Alluvial Fans
- Older Alluvium
- Alluvium

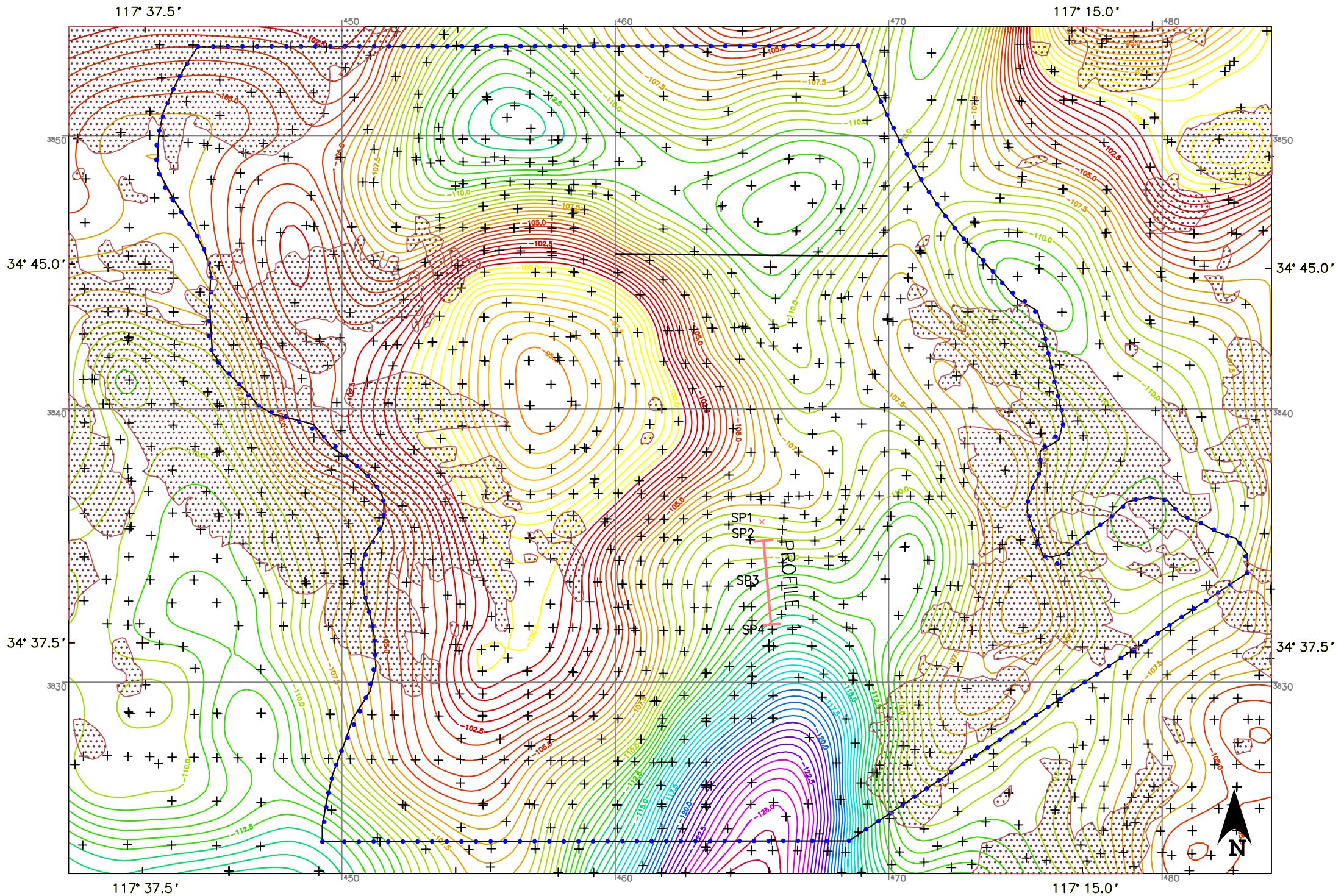
Modified From: California Division of Mines and Geology, 1986, Geologic Map of California, San Bernardino Sheet, 1:250,000.

Approximate Scale

0 4 8 12 Miles

URS Corporation
Rancho Cucamonga
California

Figure 2 **Complete Bouguer Anomaly Map**



LEGEND

Gravity Contour Interval = 0.5 mGals

- – 95.0
- – 97.5
- –100.0
- –102.5
- –105.0
- –107.5
- –110.0
- –112.5
- –115.0
- –117.5
- –120.0
- –122.5
- –125.0
- –127.5

Gravity Station

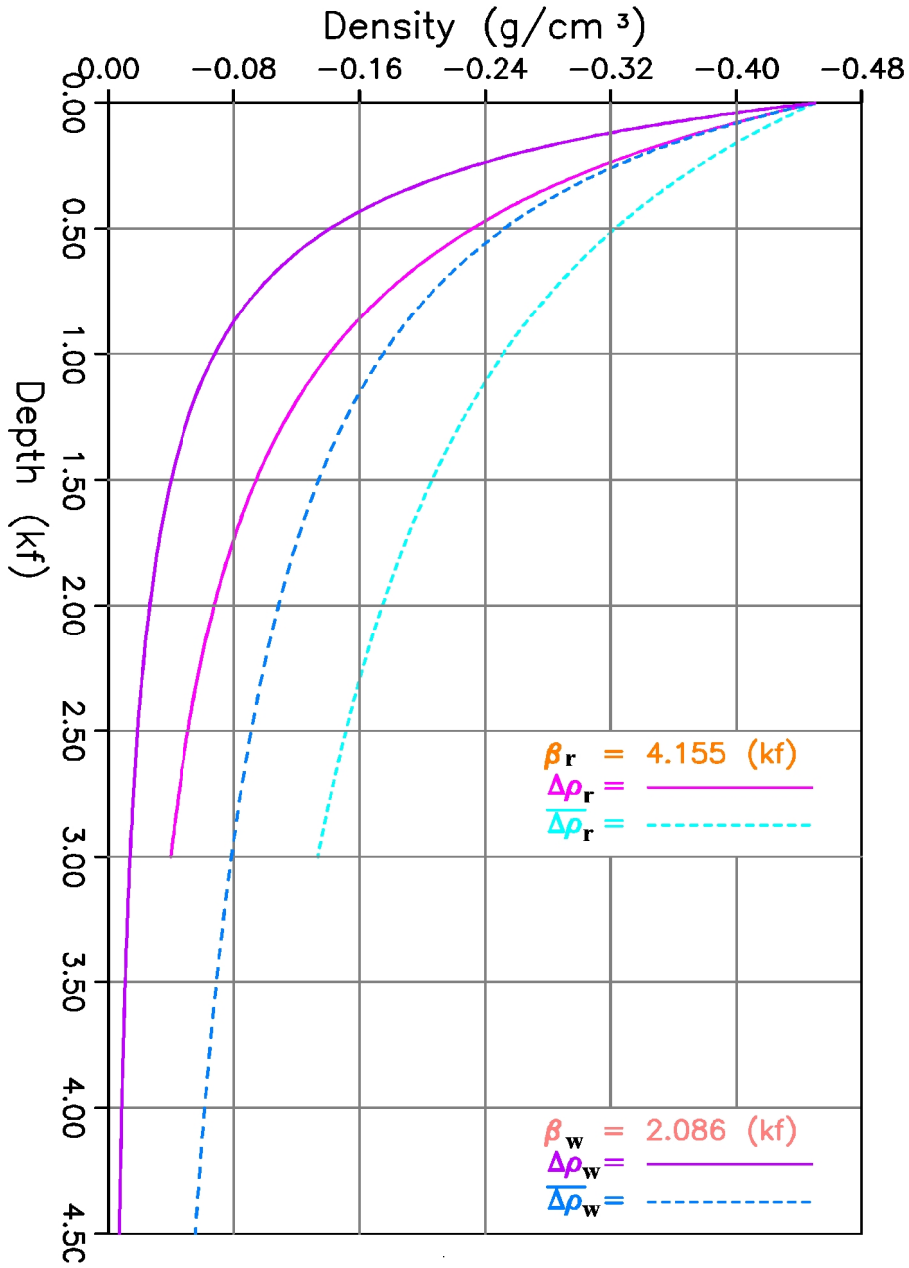
Anomaly Isolines

Seismic profile

URS Corporation
Rancho Cucamonga
California

Complete Bouguer Anomalies of the Transition Zone using Bouiguer Density - 2.67 gm/cc.

Figure 3 **Density-Depth Functions**



$\Delta\rho = \Delta\rho_0 \beta\ (h + \beta)^{-}$

$\overline{\Delta\rho} = \Delta\rho\ \beta(H + \beta)$

where:

$\Delta\rho_0$ = density contrast at the surface.

$\Delta\rho$ = density contrast at depth h.

$\overline{\Delta\rho}$ = effective density contrast at h.

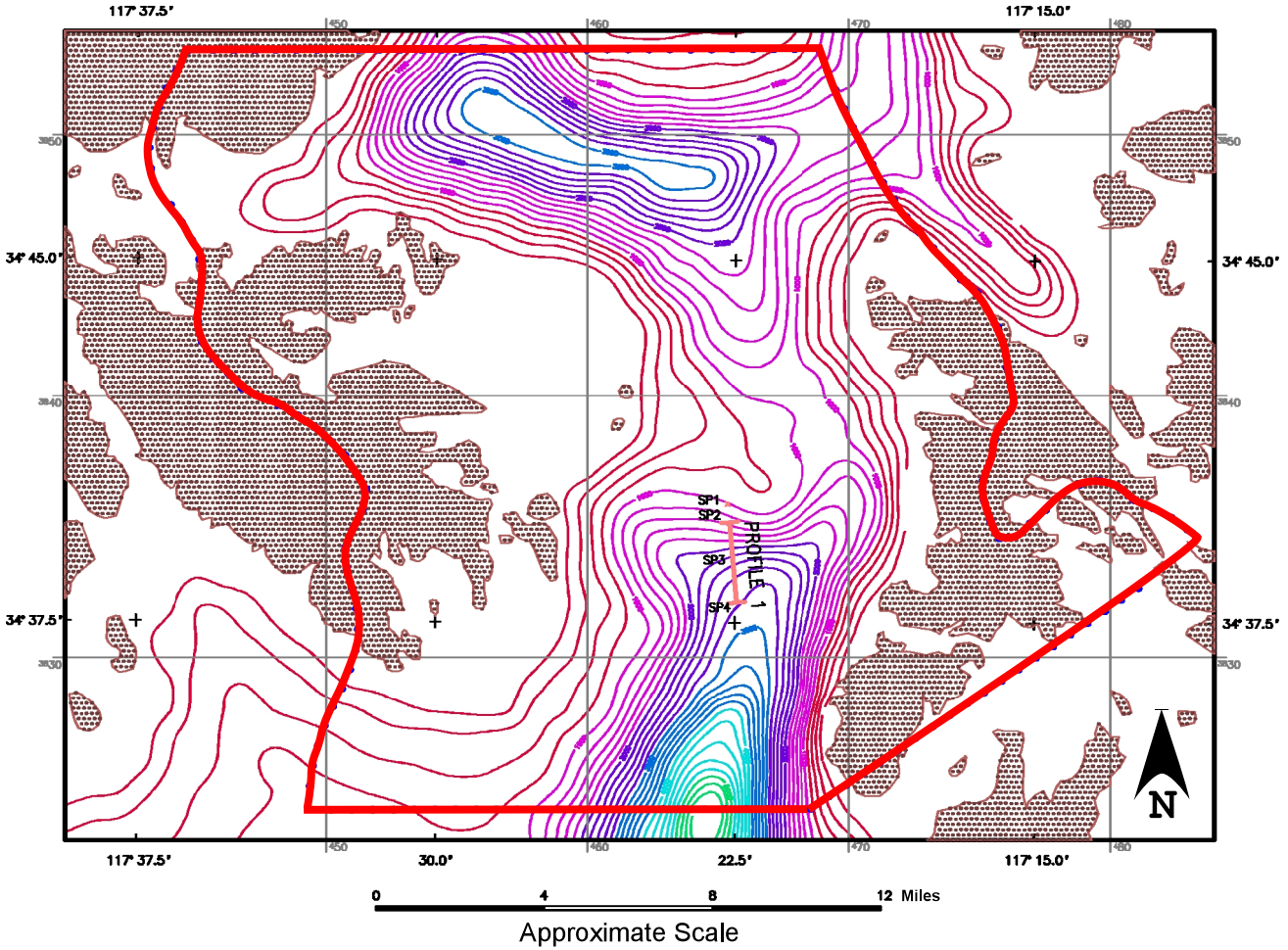
β = decrement of density contrast with depth.

H = total depth of the basin.

URS Corporation
Rancho Cucamonga
California

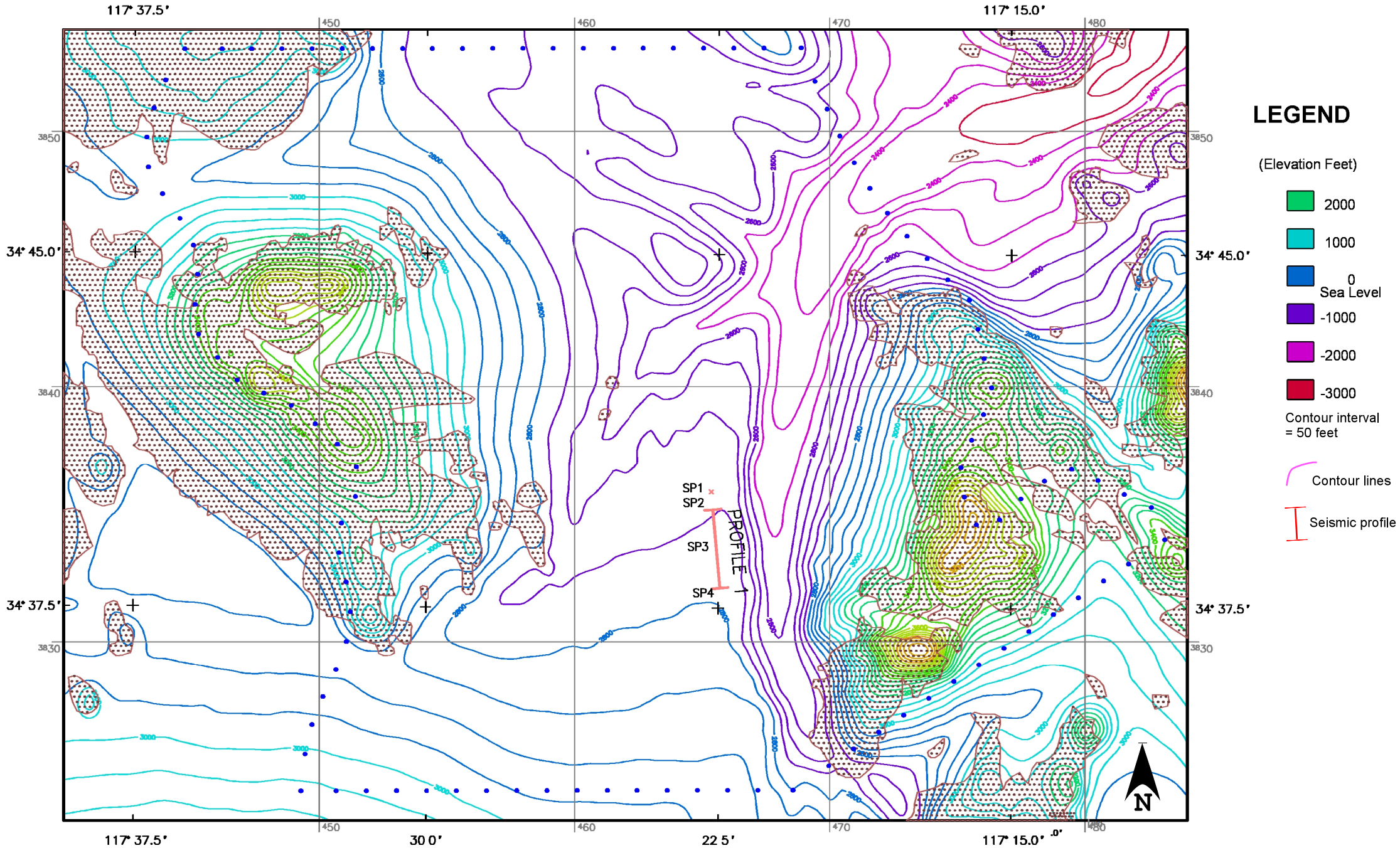
Exponential density-depth functions for the Transition Zone using refraction line (r) and Astley basin well (w) as control (see Litinsky, 1989).

Figure 4 Composite Basement Depth Contour Map



URS Corporation
Rancho Cucamonga
California

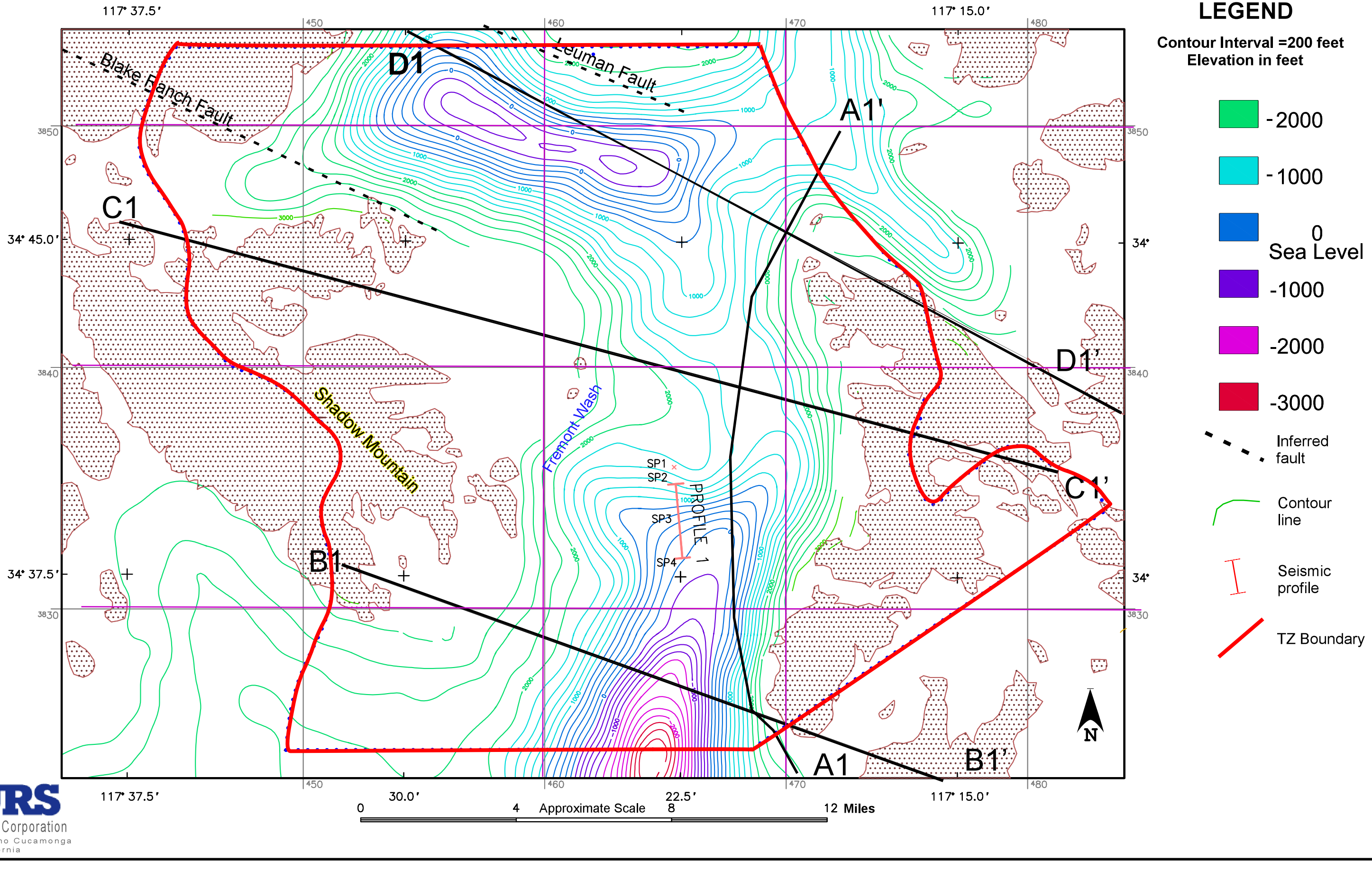
Figure 5 Average Topography, 500 Meter Grid



URS Corporation
Rancho Cucamonga
California

Figure 6

Basement Elevation Contour Map



LEGEND

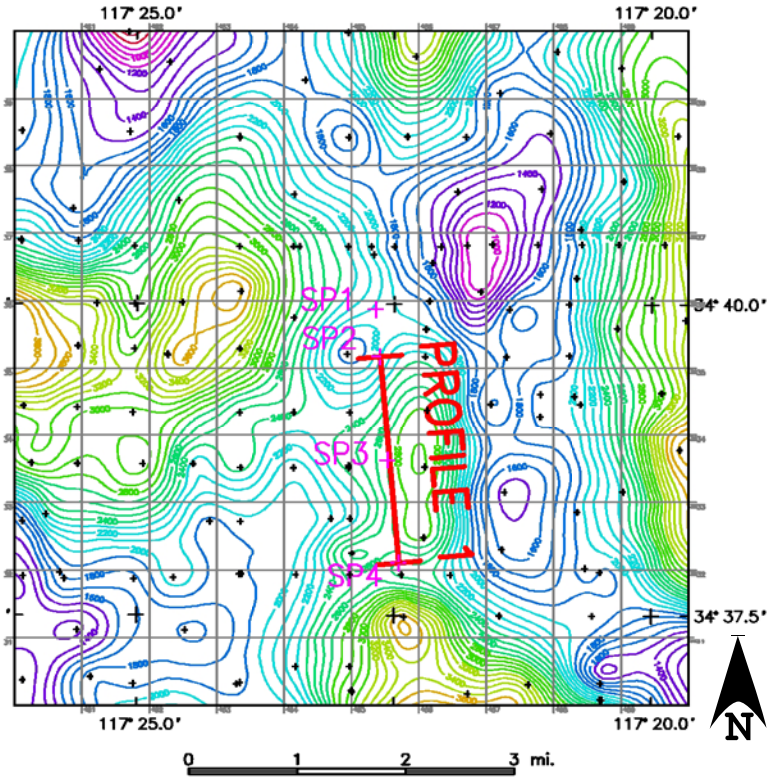
Contour Interval =200 feet
Elevation in feet

- -2000
- -1000
- 0 Sea Level
- -1000
- -2000
- -3000
- Inferred fault
- Contour line
- Seismic profile
- TZ Boundary

URS Corporation
Rancho Cucamonga
California

Figure 7

Detailed Composite Basement Depth Map



LEGEND

(Depth Feet)

- 0
- 1000
- 2000
- 3000
- 4000
- 5000

Approximate Scale

Contour Interval = 100 feet

\+ Gravity Station

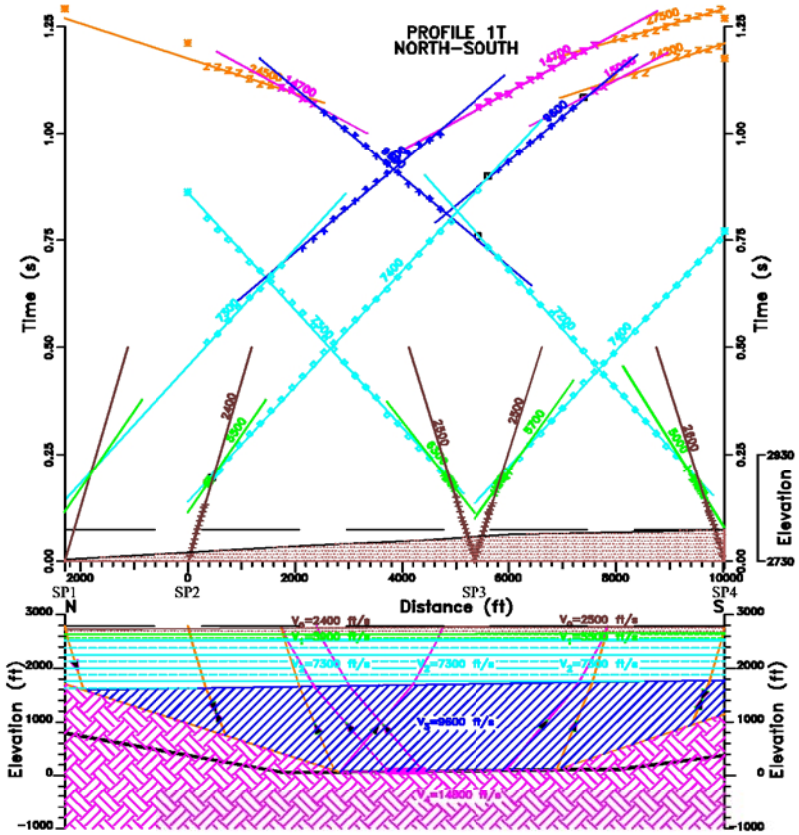
Contour lines

Seismic Profile Line

URS Corporation
Rancho Cucamonga
California

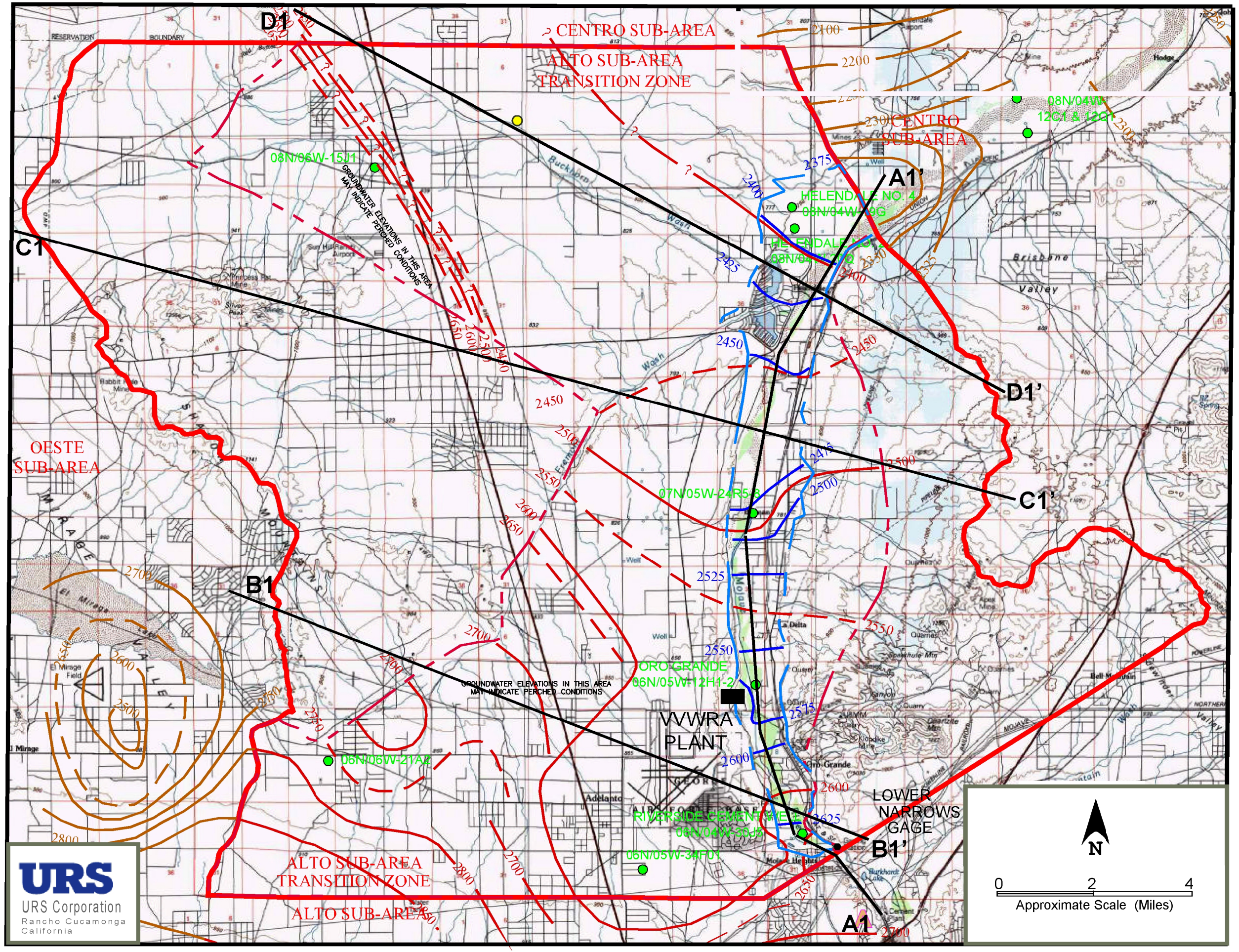
Figure 8

Seismic Refraction Profile



Time-distance plot and ray traced model for seismic refraction Profile 1, Helendale Road. Datum for elevation correction shown by dashed line. Shot point locations marked by SP. Bold black lines =gravity depths.

Figure 9 **Location of Cross-sections and 1998 Groundwater Elevation Contour Map**



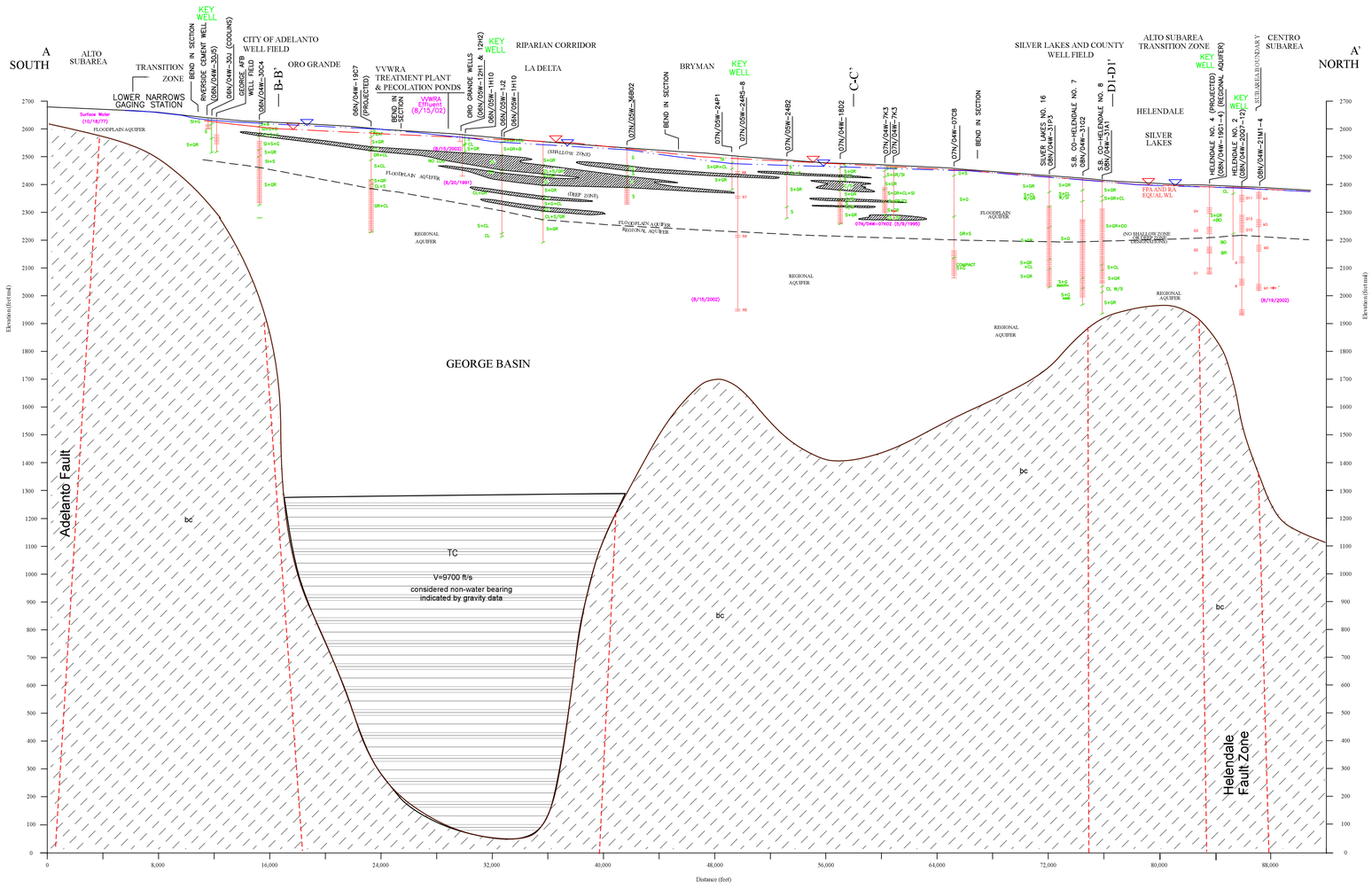


Figure 10
HYDROGEOLOGIC
CROSS SECTION A1-A1'

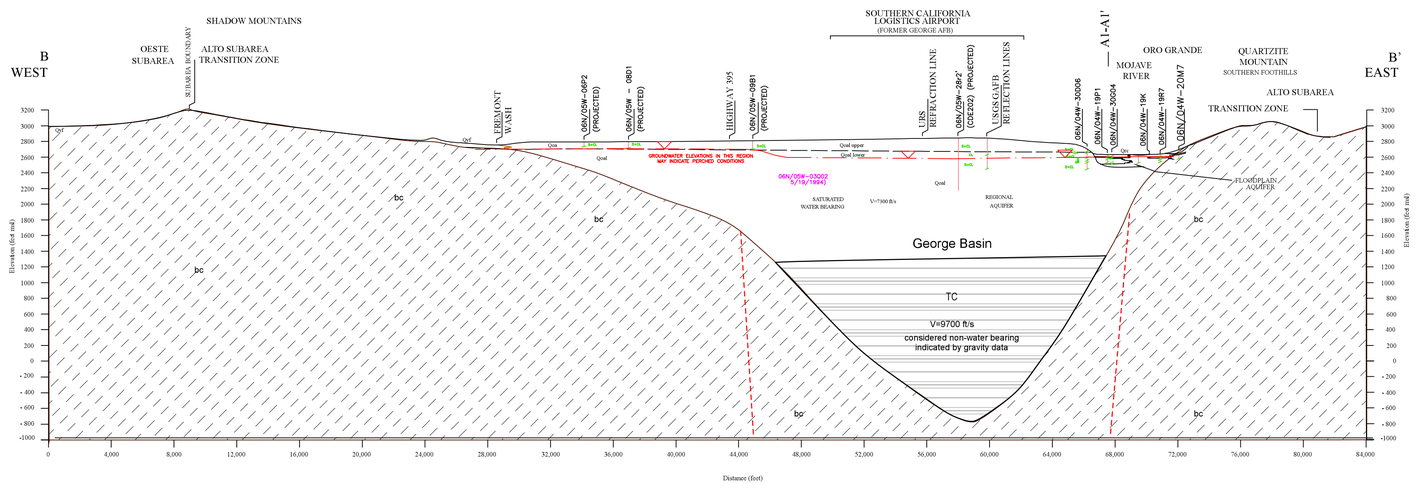


Figure 11
HYDROGEOLOGIC
CROSS SECTION B1-B1'

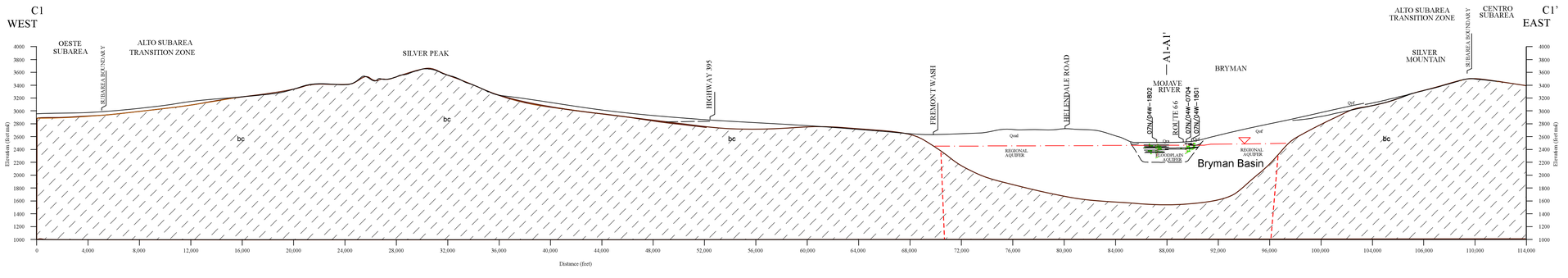
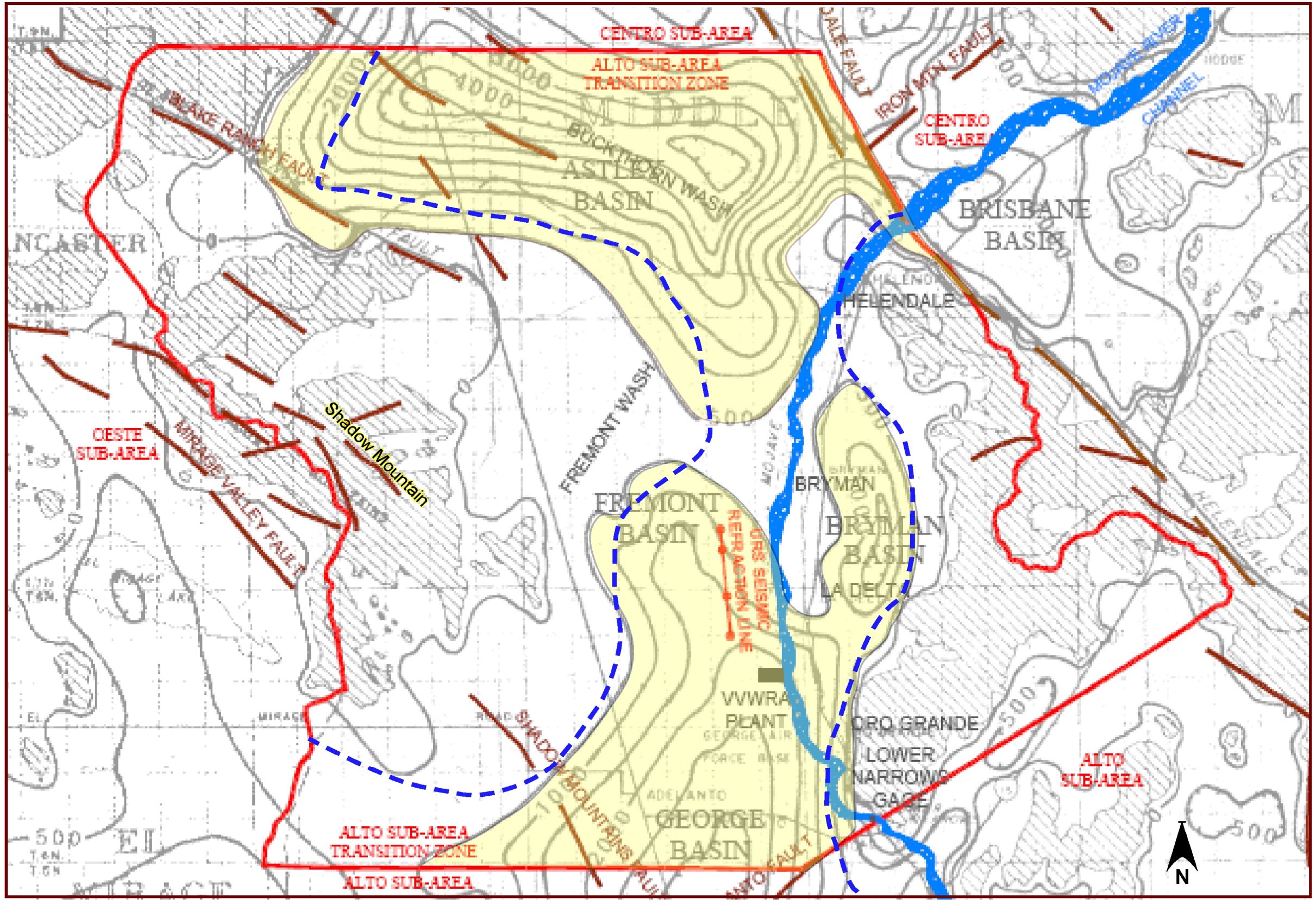


Figure 12
HYDROGEOLOGIC
CROSS SECTION C1-C1'

Figure 13
HYDROGEOLOGIC
CROSS SECTION D1-D1'

Figure 14 **Subsurface Surveys Basement Depth Contour Map (SSI, 1990)**



LEGEND

- Depth of basin greater than 500 feet (SSS, 1990)
- Subsurface Surveys Depth of Basement Contours (1990)
- 500 feet Depth of Basement Contour URS, 2006

0 3 6

Scale In Miles

URS Corporation
Rancho Cucamonga
California