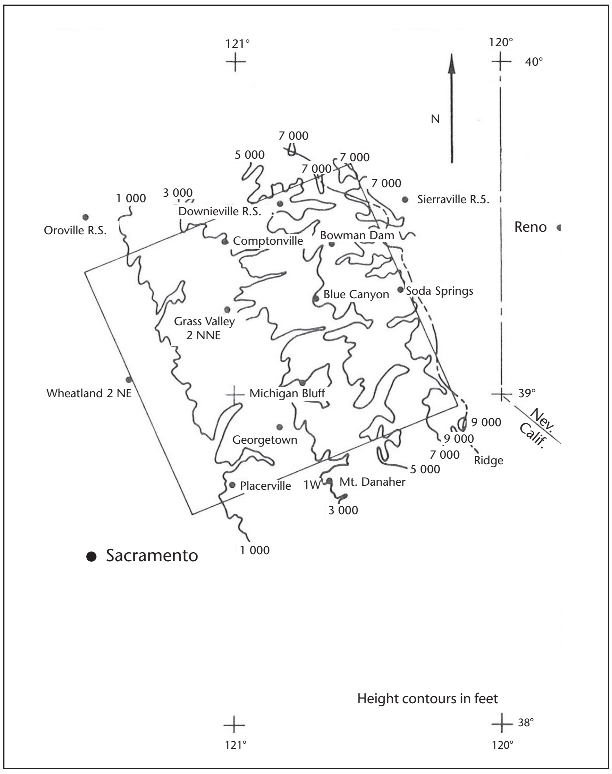

Figure 3.4. Blue Canyon orographic laminar-flow model test area in California (United States Weather Bureau, 1966)

pressures at the end of each leg, and draw the ground profile as shown in Figure 3.6. (Until some way is found to take downslope motion of air into account in computing precipitation, it is recommended that any downslopes in the ground profile be drawn horizontal.) Construct verticals at the inflow and outflow ends of the model and at the end of each leg.

3.2.3.2 Inflow data

The inflow data used in the example are tabulated in the first eight columns of Table 3.1. These data were obtained from the sounding. The wind speeds are the components normal to the mountain ridge, that is, $V = V_o \cos(\alpha)$, where V_o is the observed wind speed from the observed direction and a is the angle between the observed direction and the normal to the ridge.

3.2.3.3 Air streamlines

Space the streamlines at the inflow vertical in the manner indicated in Figure 3.6. There, the first streamline above the surface streamline is set at 1 000 hPa. Streamlines are then spaced at 25-hPa intervals up to the 800-hPa level, then at every 50 hPa up to the nodal surface, which is assumed to be at 350 hPa. Streamlines at the outflow vertical and intermediate verticals are spaced in proportion to the spacing at inflow. Spacing may be done either graphically or by mathematical interpolation.

3.2.3.4 Freezing level

As the air travels along any streamline, its pressure, temperature and mixing ratio at any point on the streamline may be determined from a pseudo-adiabatic chart. Determine the pressure at the freezing point on those streamlines where the 0°C

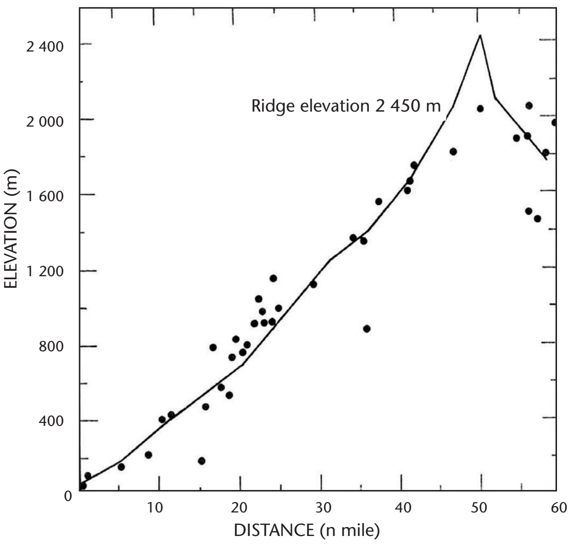

Figure 3.5. Precipitation station elevations relative to adopted ground profile for test area of Figure 3.4 (United States Weather Bureau, 1966)