Second-order, class I	1:	50,000
Second-order, class II	1:	20,000
Third-order, class I	1:	10,000
Third-order, class II	1:	5,000

A distance accuracy, 1:a, is computed from a minimally constrained, correctly weighted, least square adjustment by:

$$a = d/s$$

where

a = distance accuracy denominator

s = propagated standard deviation of distance between survey points obtained from the least squares adjustment

d = distance between survey points

correctly weighted means that prior knowledge of the accuracy of points is applied in their weighting

VERTICAL CONTROL NETWORK STANDARDS

When a vertical control point is classified with a particular order and class, NGS certifies that the orthometric elevation at that point bears a relation of specific accuracy to the elevations of all other points in the vertical control network. That relationship is expressed as an elevation accuracy, b. An elevation difference accuracy is the relative elevation error between a pair of control points that is scaled by the square root of their horizontal separation traced along existing level routes.

Table 2.2
Elevation Accuracy Standards

Classification	Maximum elevation difference accuracy
First-order	0.5
Second-order, class I	0.7
Second-order, class II	1.0
Third-order, class 1	1.3
Third-order, class II	2.0