Sec. 20-300b-11. Classes of accuracy

(a) Conversion to and from the metric system shall use the U.S. Survey Foot, which is defined as one meter is equal to 39.37 inches. When converting meters to feet the conversion is exactly 3937 divided by 1200, which when expressed to twelve places is 3.280833333333.

(b) **Horizontal Accuracy**

Each survey depicting horizontal locations shall conform to a Horizontal Accuracy Class the tolerance of which is defined as follows:

Class	**Positional**			**Linear**	**Angular**
		Feet	**Meters**	**(Use the ratio for D>...)**	
AA	1:15,000	±0.01’	±.003m	(1:22,500 @D>225’(69m))	±8”
A-1	1:10,000	±0.01’	±.003m	(1:15,000 @D>150’(46m))	±10”
A-2	1:5,000	±0.02’	±.006m	(1:7,500 @D>150’(46m))	±20”
B	1:1,000	±0.5’	±.15m	(1:1,500 @D>750’(229m))	±2’
C	±2’	±2’	±.6m		±30’
D	compilation of existing data-NOT A FIELD SURVEY				

Linear accuracies expressed as “±”apply to distances less than (<) those prescribed as a ratio. Additional accuracy standards for measurements made using Global Navigation Satellite Systems (GNSS) have relative positional accuracy of a ninety five percent level, and are defined as:

Confidence Level			
Class	**Accuracy**		**Minimum Spacing**
	Feet	**Meters**	
G-A	0.033’ + 1 PPM	1.0 cm + 1 PPM	500’
G-1	0.049’ + 2 PPM	1.5 cm + 2 PPM	500’
G-2	0.067’ + 3 PPM	2.0 cm + 3 PPM	335’
G-B	0.33’ + 10 PPM	0.10 m + 10 PPM	N/A

(c) **Vertical Accuracy**

Each survey depicting vertical location shall conform to a Vertical Accuracy Class the tolerance of which is defined as follows:

	Level Loop Closure Greater Than One Mile		**Level Loop Closure Less Than One Mile**	
Class	**Feet**	**Meters**	**Feet**	**Meters**
V-1	±.02√M	±.005√K	±.006√N	±.002√N
V-2	±.035√M	±.008√K	±.010√N	±.003√N

	Level Loop Closure Greater Than One Mile		Level Loop Closure Less Than One Mile	
Class	**Feet**	**Meters**	**Feet**	**Meters**
V-3	±.05√M	±.012√K	±.020√N	±.006√N

Class V-4* has a GNSS Vertical Accuracy (95% confidence level in feet) of 0.066 feet.
Class V-5* has a GNSS Vertical Accuracy (95% confidence level in feet) of 0.164 feet.
M or K = The length of the level loop in miles/kilometers
N = The number of instrument setups in the level loop

* GNSS only. The surveyor expresses his or her opinion that the differences between heights resulting from repeat observations would not exceed the stated accuracy levels.

(d) **Topographic Survey Accuracy**

Each Topographic Survey shall conform to a Topographic Accuracy Class, the tolerance of which is defined as follows:

Class	**Horizontal Position**		**Contour Interval Test**
	Feet	**Meters**	
T-1	$^{1}/_{40}$of map scale	$^{1}/_{1500}$of map scale	90% within ½ contour interval
T-2	$^{1}/_{40}$ of map scale	$^{1}/_{1500}$ of map scale	80% within ½ contour interval

T-3 This class of topographic map applies to photogrammetric maps for which the surveyor provides the horizontal and vertical control. Refer to the "National Map Standards for Photogrammetric Mapping" for requirements.

T-D This class of map standard applies to topographic maps compiled from various sources of information not necessarily verified by the surveyor.

In using Topographic Accuracy Class T-1 or T-2, the surveyor is expressing confidence that should a test profile be run in the field, a plotted comparison with a profile scaled from the map shall be in agreement within the above criteria and the remainder shall be within the contour interval.

(Adopted effective June 21, 1996; Amended October 26, 2018)