Appendix 1

Permissible limits and arithmetic checks:

1. Checks for traverse:
   a. Closing error of the angular measurements:
      i. The closing error should be less than or equal to the defined limit. According to the closing error, the quality of the survey work is defined. The order of survey and their respective permissible limits are mentioned below:

Table 1 Quality of the traversed network

Quality	Permissible limit of closing error
First order	6″√N
Second order	15″√N
Third order	30″√N

N is the number of sides in the traverse.

      ii. After the adjustment of the traverse, the error in the distance (e) should also lie within the permissible limit.

$e=\sqrt{(\partial x^2+\partial y^2)}$ p: perimeter of the traverse

e/p is reported in 1:X format.

Quality	Permissible limit of closing error
First order	1:25000
Second order	1:10000
Third order	1:5000

2. Check for the levelling exercise:
   a. Permissible error (E)=c√n

Where c=5mm and n is the number of setups of auto-level instrument.

Note: The survey works which are inferior in quality need to be repeated.