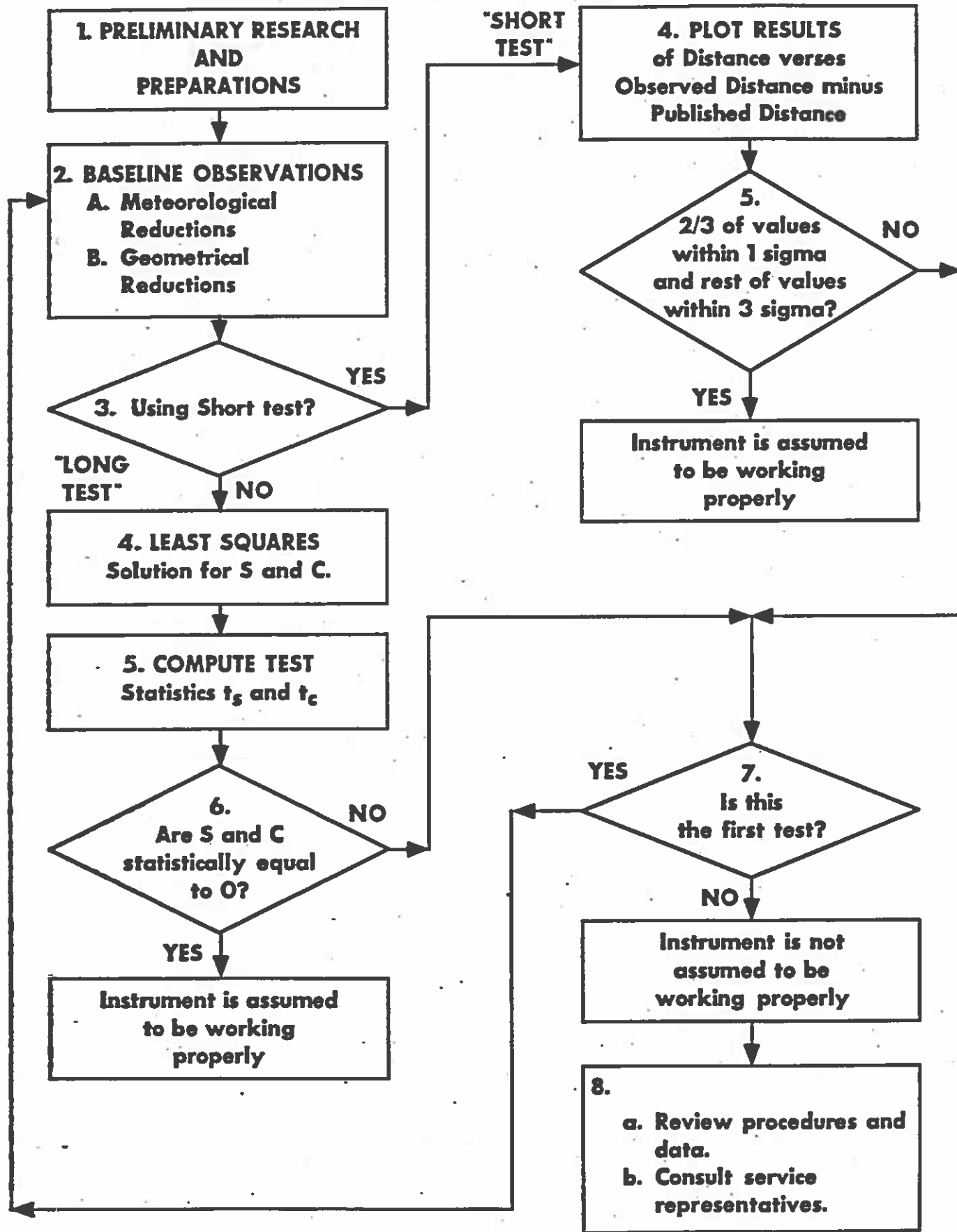
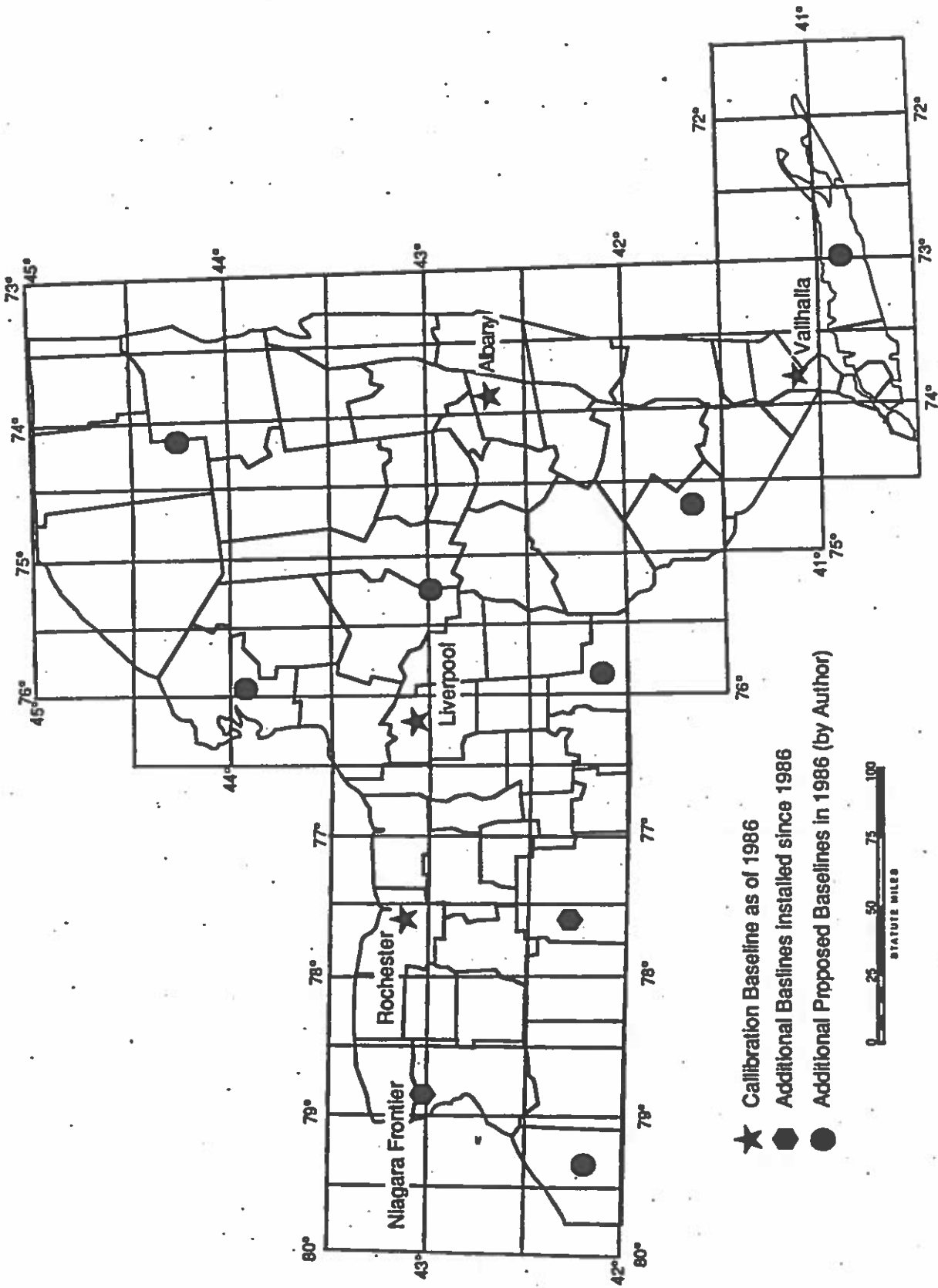


**HAVE
YOU
CHECKED
YOUR
EDM
LATELY?**

PROCEDURE FOR USING EDM BASELINE TO TEST EDM EQUIPMENT





- ★ Calibration Baseline as of 1986
- ◆ Additional Baselines installed since 1986
- Additional Proposed Baselines in 1986 (by Author)



NEW YORK STATE EDM BASELINES - 1992

Measurement Procedures

1. Set up instrument and reflector(s) over the marks using care to minimize centering and leveling errors.
2. Measure and record instrument and reflector heights above the marks.
3. Warm up the instrument in accordance with the manufacturer's instructions prior to making any measurements.
4. Observe and record meteorological observations. Since ambient meteorological conditions have a direct bearing on the results of the distance observations and atmosphere near the ground is the most turbulent, every effort should be taken to secure accurate data. When making temperature observations, the thermometer should be kept in the shade. Leveling it in the sun will cause significant error. The pressure observations are raw pressure altitude data (not something you get from your local radio station). They are and should not corrected to sea level. Ideally, the meteorological observations should be made along the entire line, but this is rarely done except where extreme accuracy is required. The second most desirable method is to make simultaneous observations on each end of the line. When is not practical, a measurement is made at the instrument site and used for reduction.
5. Record the instrument model and serial number, and reflector model and serial number (you should at least know the offset value of your reflectors). Record the reflector and instrument constants.
6. Record general weather conditions, making a note whether it is clear, overcast, partly cloudy, raining, etc.
7. Note any unusual or conditions which could cause problems with the measurements.
8. Observe and record the number of measurements as specified in the manufacturer's recommendations or the FGCC specifications, whichever applies.

The recommended procedure is to perform both forward and backward observations over each section of the baseline on separate days.

From *Practical Use and Application of a Calibrated Baseline*
by James Whitmeyer, USC&GS, 1985

BASELINE _____

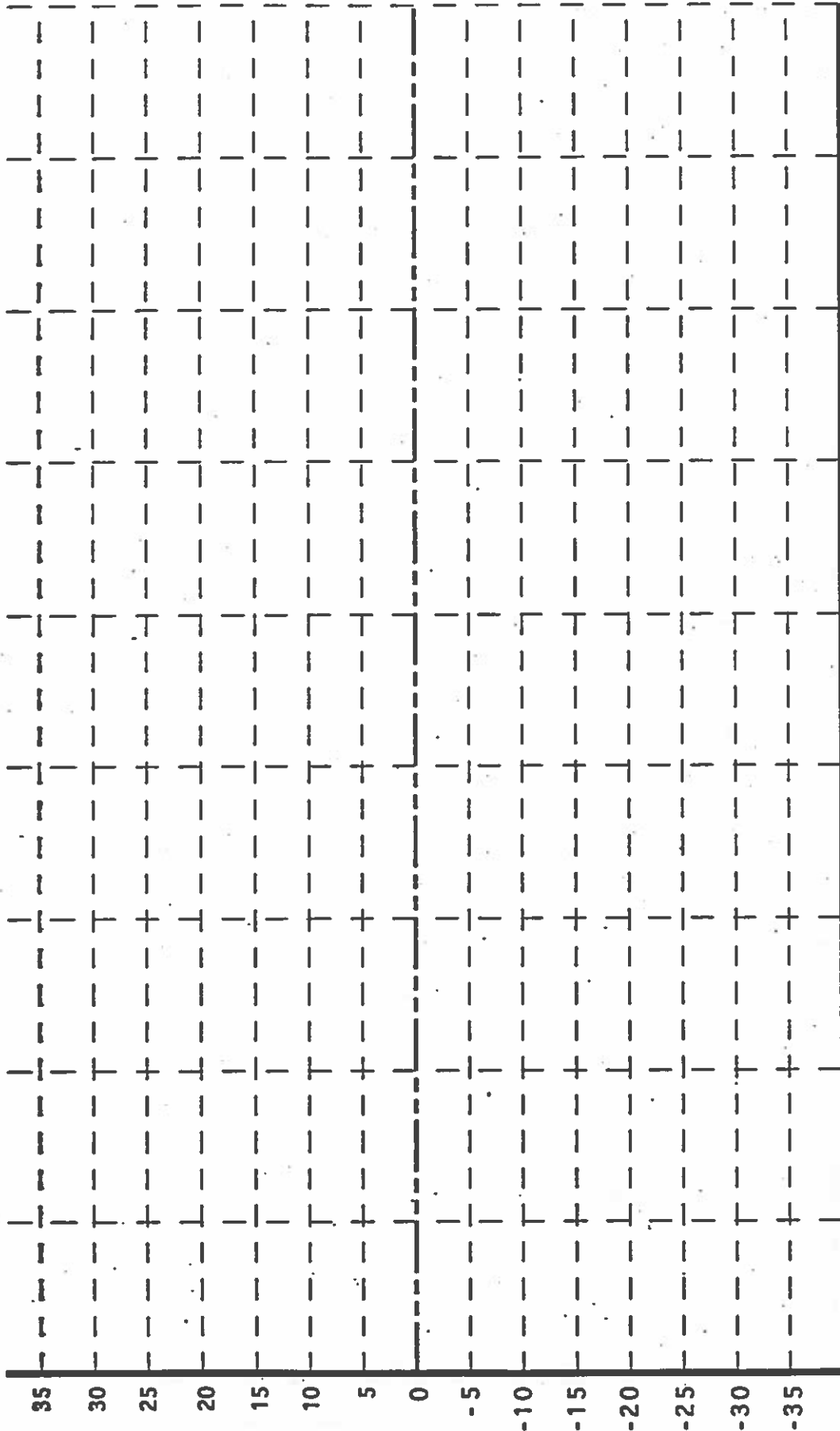
INSTRUMENT _____

SERIAL # _____

DATE OF OBSERVATIONS _____

SIGMA (BY MANUFACTURER) = (_____ mm + _____ ppm)

DIFFERENCE BETWEEN PUBLISHED AND OBSERVED MEASUREMENTS (MM)

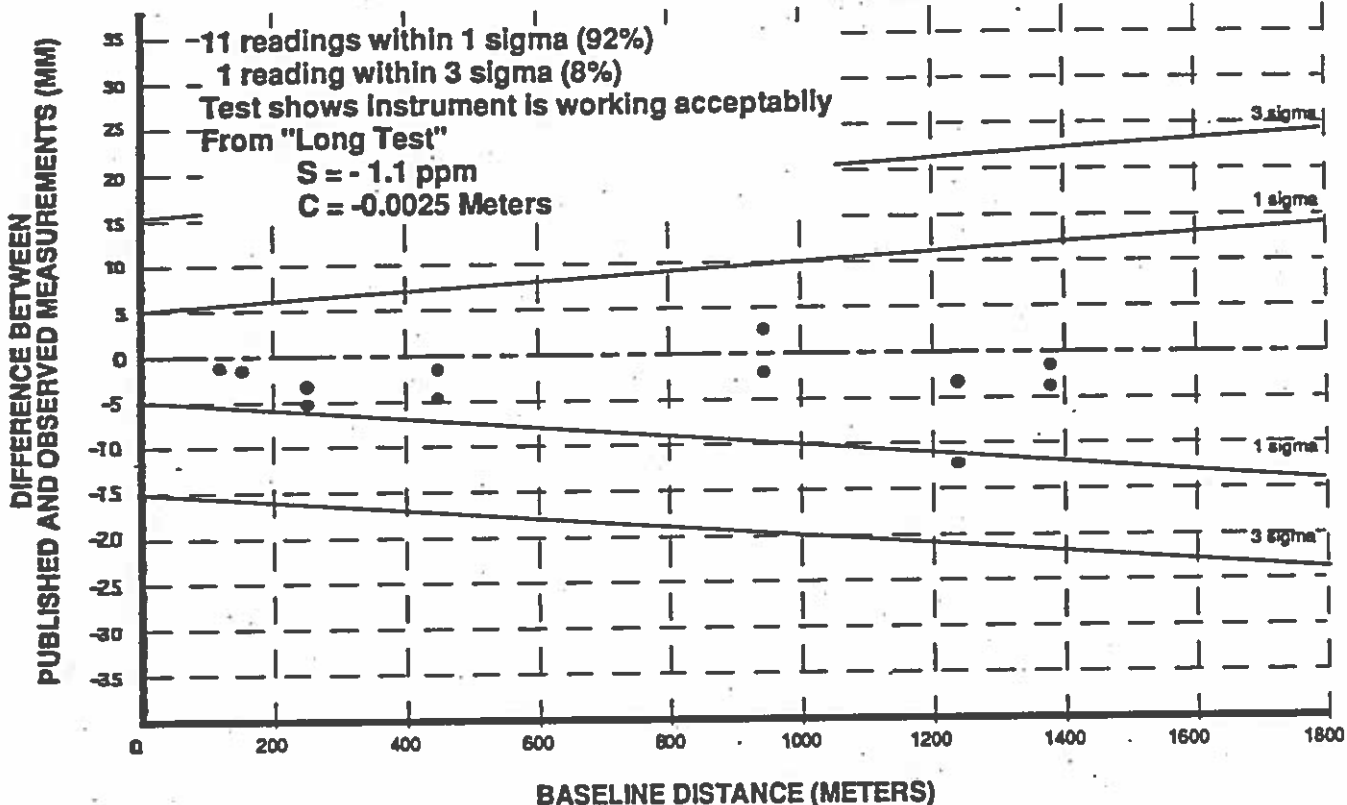


BASELINE DISTANCE (METERS)

EDM BASELINE MEASUREMENT CHART

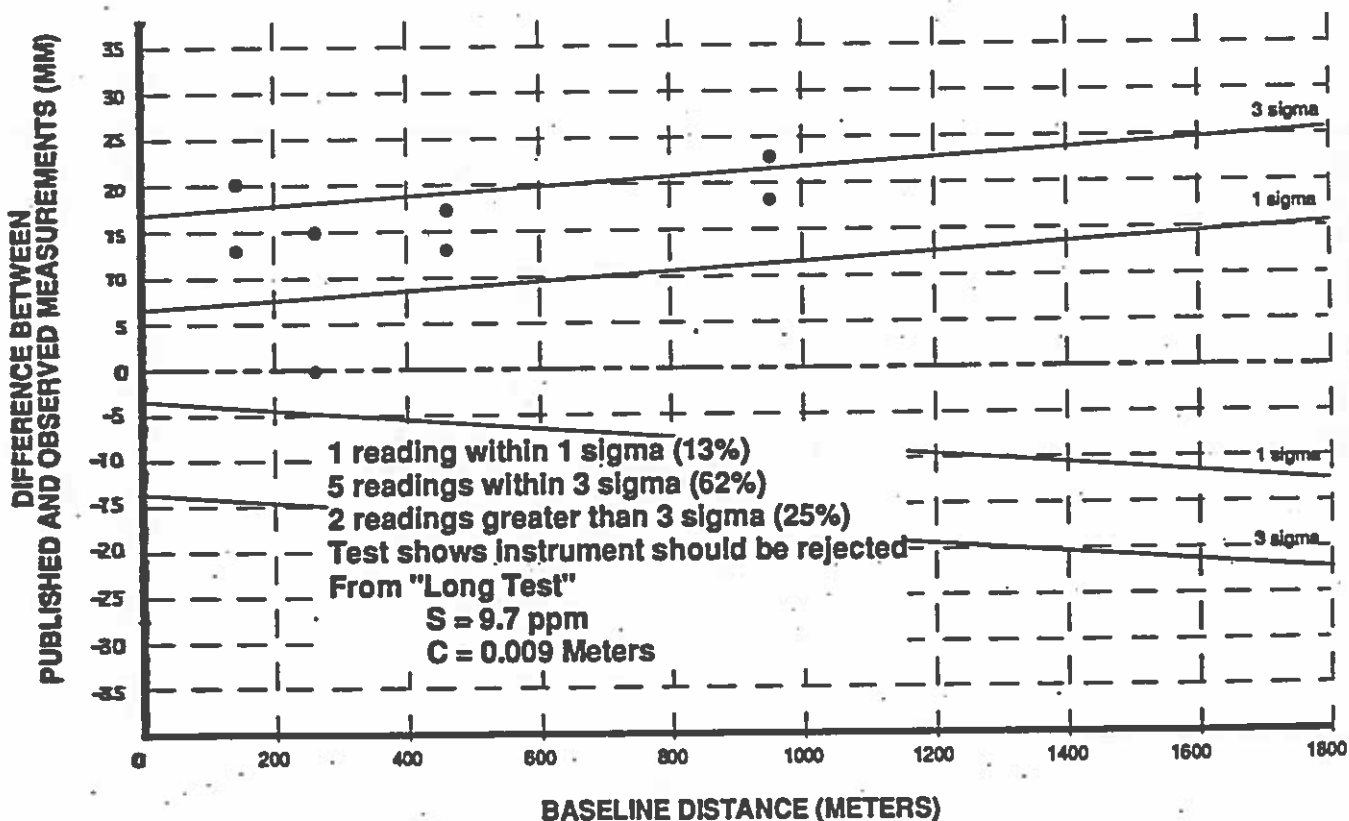
BASELINE ROCHESTER NY.

INSTRUMENT TOPCON E-1 SERIAL # _____
DATE OF OBSERVATIONS December 1985
SIGMA (BY MANUFACTURER) = (5 mm + 5 ppm)



BASELINE ROCHESTER NY.

INSTRUMENT WILD CITATION SERIAL # _____
DATE OF OBSERVATIONS September 1985
SIGMA (BY MANUFACTURER) = (5 mm + 5 ppm)



Some Possible Errors When Making EDM Measurements

1.	Level error of instrument (1 div)	0.14 mm
2.	Level error of reflector (1 div)	0.43 mm
3.	Optical plummet (adjusted)	0.50 mm
4.	Temperature error 1° C (1000 m line)	1.00 mm
5.	Pressure error 0.1" of Hg (1000 m line)	1.00 mm
		<hr/>
	Total possible error	3.07 mm

From:

Practical Use and Application of a Calibrated Baseline
by James Whitmeyer, USC&GS, 1985

Have you checked your:

Tripods?
Reflectors?
Battery Cables?

Suggested References

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Laurila, Simo H., 1983, *Electronic Surveying in Practice*, John Wiley & Sons, New York, 388 pp

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