

FGCS Instruments Working Group

January, 2015

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Of Potential Interest to the IWG - What's Happening at NGS?

- CBL Installation Manual Revision
- Development of Alternate River/Valley Crossing Procedure
- Assess the Requirement to Observe Temperature Gradient Values When Leveling
- Assess the effects of atmospheric conditions and soil stability on measurements using high precision positioning systems.



CBL Installation Manual Revision

NOS NGS 8

Establishment of Calibration Base Lines

<http://www.ngs.noaa.gov/CBLINES/calibration.html>

- Supports use of modern instrumentation.
- Introduction of alternate monumentation.



Development of Alternate River/Valley Crossing Procedure



Assess Requirement to Observe Temperature Gradient Values When Leveling

Modified - FGCS Specifications and Procedures to Incorporate Electronic Digital/Bar-Code Leveling Systems*

3.5 Geodetic Leveling

Geodetic leveling is a measurement system comprised of elevation differences observed between nearby rods. Geodetic leveling is used to extend vertical control.

Field Procedures

Order Class	First I	First II	Second I	Second II	Third
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Determine temperature gradient for vertical range of line of sight at each setup ^g	yes	yes	yes	---	---
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Instrument Evaluations in Difficult Conditions: Measuring Coastal Elevations

- Assess the effects of temperature, humidity, and soil stability on measurements using:
 - Total Stations
 - Kinematic GPS
 - Close-Range Photogrammetry

What kind of precision is possible under hostile conditions found in coastal environments?

Can we truly quantify the effects of refraction?

