

### C. Vertical and Horizontal Control

Soundings for this survey were tide adjusted using data from Tide Station Ketchikan 945-0460. Preliminary water level data was downloaded daily from the NOAA web site (<http://www.co-ops.nos.noaa.gov>) and applied as the data was processed in CARIS. Verified tide data from the Ketchikan gage was then downloaded off the Internet site and applied to the final smoothsheet soundings.<sup>12</sup>

The horizontal control datum for this survey is North American Datum of 1983(NAD 83). The projection used during collection was UTM, Zone 9. Control station *Penthouse* was established and used to send correctors to the survey vessels. A 24-hour observation on USGS Monument *WRONG* was used as a fixed point DGPS performance check on *Penthouse*. The observation survey showed the position on “Penthouse” to meet the required accuracy standards. The control survey to establish *Penthouse* and the 24-hour observation survey is detailed in the Project Wide Vertical and Horizontal Control report. In addition to station *Penthouse*, the United States Coast Guard (USCG) DGPS Beacon at Annette Island was used during hydrographic operations for the Shoreline Verification Survey and for daily confidence cross checks. A summary of the daily DGPS confidence checks can be found in the Project Wide Vertical and Horizontal Control report.<sup>13</sup>