

## C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

### ERS Datum Transformation

The following ellipsoid-to-chart vertical datum transformation was used:

Method	Ellipsoid to Chart Datum Separation File
ERS via ERTDM	OPR-T383- RA-19_ERTDM_NAD83(2011)_MLLW_Extended2.csar

*Table 12: ERS method and SEP file*

All submitted H13339 MBES data, except as noted below, were reduced to MLLW using Ellipsoid Referenced Tidal Datum Model (ERTDM) processing methods.

## C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD 83).

The projection used for this project is Universal Transverse Mercator (UTM) Zone 5.

The following PPK methods were used for horizontal control:

- Single Base
- RTX

Precise Positioning-Real Time Extended (PP-RTX) processing methods were used in Applanix POSPac MMS (v8.2.1) software during post-processing horizontal correction for most MBES data. Single Base processing methods were also used to address small vertical or horizontal offsets observed in some PP-RTX

processed data. Single Base processing was used for the following data: 2801 DN264 lines 0002-0051, 2803 DN264 lines 0001-0066.

The following CORS Stations were used for horizontal control:

<b>HVCR Site ID</b>	<b>Base Station ID</b>
Mauna Loa	MLO1

*Table 13: CORS Base Stations*

### WAAS

The Wide Area Augmentation System (WAAS) was used for real-time horizontal control during data acquisition.