Non-finalized versions of the CSAR surfaces are also included. These do not have the _Final designation in the filename.

A CARIS HOB file was submitted (H13038_FFF.HOB) with the survey deliverables as well. The final feature file (FFF) contains meta-data and other data not readily represented by the final surfaces, including bottom samples and shoreline verification results, if applicable. Each object is encoded with mandatory S-57 attributes and NOAA Extended Attributes (V#5.6).

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

C.1 Vertical Control

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

Traditional Methods Used:

Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
Sand Point, AK	9459450
King Cove, AK	9459881

Table 11: NWLON Tide Stations

The following subordinate water level stations were established for this survey:

Station Name	Station ID
Zachary Bay	9459465

Table 12: Subordinate Tide Stations

File Name	Status
9459450.tid	Final Approved

Table 13: Water Level Files (.tid)

File Name	Status
OPRR300KR2017_20171031.zdf	Final

Table 14: Tide Correctors (.zdf or .tc)

The Zachary Bay (9459465) station was used for tidal zoning purposes only. Final corrections used the NWLON station Sand Point, AK (9459450).

C.2 Horizontal Control

The horizontal datum for this project is NAD83 (2011).

The projection used for this project is UTM Zone 4N.

The following PPK methods were used for horizontal control:

Smart Base

Positioning and attitude data was post-processed for this project.

The Continually Operating Reference Station (CORS) site AB07 (Sand Point) was used as the primary base station for GPS post-processing. The site was used in an Applanix SmartBase (ASB) algorithm configuration, yielding final positioning results well within requirements. Project base stations installed in Sand Point (0056 and 5240) were not used for final positioning, but were utilized for independent position quality checks on the AB07-derived results.

Real-time positions for both vessels were replaced during data processing with post-processed kinematic (PPK) solutions, with few exceptions (noted if applicable earlier in this report).

Quality control confidence checks were performed at least weekly on the survey vessels as well as the project base stations. RMS error estimates for positioning results were very good, with RMS error generally estimated at 0.10 m (or better). Confidence check results are available in Separate I.

Refer to the project DAPR for additional details on quality control checks, results, and PPK processing methodology.

Final positions are NAD83 (2011).

The following CORS Stations were used for horizontal control:

HVCR Site ID	Base Station ID
AB07	Sand Point CORS

Table 15: CORS Base Stations

The following user installed stations were used for horizontal control:

HVCR Site ID	Base Station ID
0056	Sand Point 1
5240	Sand Point 2

Table 16: User Installed Base Stations

WAAS was used for real-time corrections only.

The following WAAS Stations were used for horizontal control:

DGPS Stations
n/a

Table 17: FAA WAAS Stations

D. Results and Recommendations

D.1 Chart Comparison

The chart comparison was performed by examining all Electronic Navigational Charts (ENCs) that intersect the survey area. The latest editions available at the time of the review (12/4/17) were used.

The chart comparison was accomplished by overlaying the finalized BASE surfaces with shoal-biased soundings, and final feature file on the charts in CARIS HIPS. The general agreement between charted soundings and survey soundings was then examined and a more detailed comparison was undertaken for any shoals or other dangerous features. In areas where a large scale chart overlapped with a small scale chart, only the larger scale chart was examined.