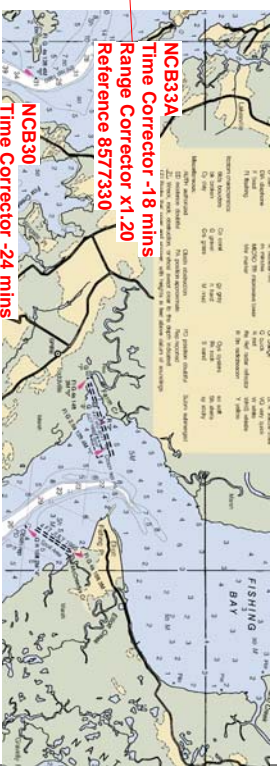
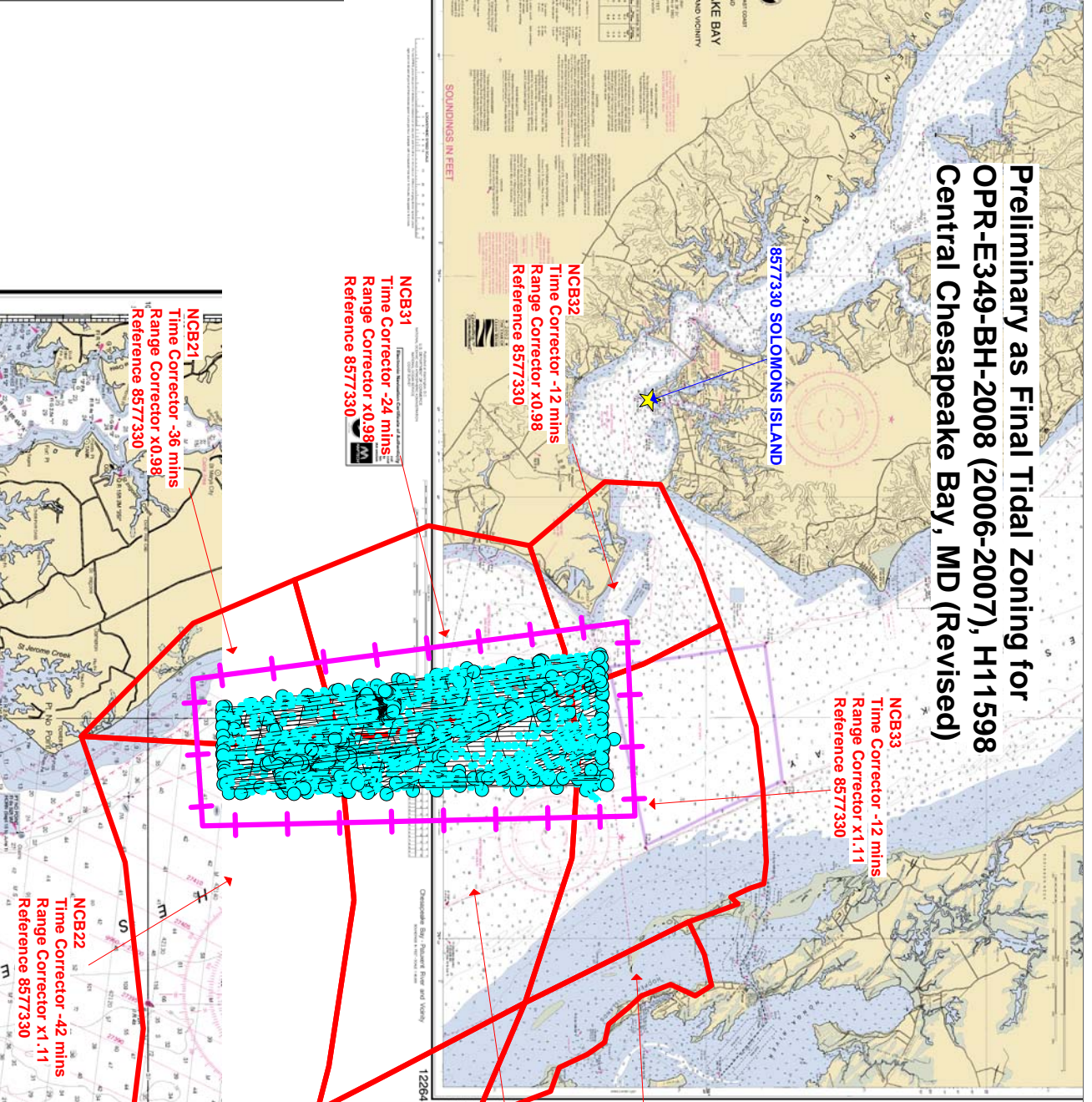


Preliminary as Final Tidal Zoning for OPR-E349-BH-2008 (2006-2007), H11598 Central Chesapeake Bay, MD (Revised)



5.0. TIDES

5.1. Purpose: All tide requirements in these instructions are in direct support of hydrographic survey operations.

5.2 through 5.6. Refer to Standing Instructions.

5.7. Vertical Datums:

Refer to Standing Instructions.

5.7.1. The operating National Water Level Observation Network (NWLON) station at Solomons Island, MD (857-7330) will serve as datum control for the survey area. Therefore, it is critical that this station remain in operation during all periods of hydrography.

5.7.1.1. Water level data acquisition monitoring

Refer to Standing Instructions.

5.7.1.2. Water level station operation and maintenance

Refer to Standing Instructions.

5.7.1.3. No leveling is required at Solomons Island, MD (857-7330) by NOAA's BAY HYDROGRAPHER personnel.

5.8. Water Level Station Requirements: The operating water level station at Solomons Island, MD (857-7330) will also provide water level reducers for this project, reiterating the importance of its operation during all periods of hydrography. See Sections 5.7.1.1. and 5.7.1.2. concerning responsibilities.

5.8.1. There are no subordinate water level stations required for this project.

5.8.1.2. This section is not applicable for this project.

5.8.1.3 Tide Component Error Estimation: The estimated tidal error contribution to the total survey error budget in the vicinity of Solomons Island is 0.05meters at the 95% confidence level, and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. Based on this analysis a station will not be required in the vicinity of Solomons Island, MD. It should be noted that the tidal error component can be significantly greater than stated if a substantial meteorological event or condition should occur during time of hydrography.

5.9. Zoning: For hydrography in the area of Southern Chesapeake Bay, Solomons Island, MD (857-7330) is the reference station for predicted tides. Predictions may be retrieved in one

month increments over the Internet from the CO-OPS Home Page at <http://tidesandcurrents.noaa.gov/olddata> and then clicking on “Predictions.” Predictions are six-minute time series data relative to MLLW in metric units on Greenwich Mean Time. Apply the following time and height correctors to the predicted tides at Solomons Island, MD (857-7330) during the acquisition and preliminary processing phases of this project for correcting all sounding data.

Zone Name	Time Corrector(mins)	Range Ratio	Predicted Reference
NCB21	-36	x0.98	857-7330
NCB22	-42	x1.11	857-7330
NCB29A	-30	x1.28	857-7330
NCB30	-24	x1.11	857-7330
NCB31	-24	x0.98	857-7330
NCB32	-12	x0.98	857-7330
NCB33	-12	x1.11	857-7330
NCB33A	-12	x1.20	857-7330

NOTE: The tide corrector values referenced to Solomons Island, MD (857-7330) are provided in the zoning file “E349BH2006CORP_Rev” for this project and are in the fourth set of correctors designated as TS4. Longitude and latitude coordinates are in decimal degrees. Negative (-) longitude is a MapInfo representation of west longitude.

NOTE: For time corrections, a negative (-) time correction indicates that the time of tide in that zone is earlier than (before) the predicted tides at the reference station, whereas, a positive (+) time correction indicates that the time of tide in that zone is later than (after) the predicted tides at the reference station. For height corrections, the water level heights relative to MLLW at the reference station are multiplied by the range ratio to estimate the water level heights relative to MLLW in the applicable zone.

Water level gauges for this project have been installed by CO-OPS prior to the start of the survey. Upon completion of project OPR-E349-BH-2006, submit a Pydro generated request for smooth tides, with times of hydrography abstract and mid/mif tracklines attached. Forward this request to smooth.tides@noaa.gov.

CO-OPS will review the times of hydrography, final tracklines, and six-minute water level data from all applicable water level gauges. After review, CO-OPS will send a notice indicating that the tidal zoning scheme sent with the project instructions has been approved for final zoning. If there are any discrepancies, CO-OPS will make the appropriate adjustments and forward a revised tidal zoning scheme to the field group and processing branch for final processing.

5.9.1. Zoning Diagram(s) A zoning diagram, created in MapInfo, is to assist with the zoning provided in Section 5.9.

5.9.2. TIDEBOT:

Refer to Standing Instructions

Year_DOY	Min Time	Max Time
2006_194	15:46:19	15:54:57
2006_198	14:57:55	19:21:50
2006_234	15:36:49	19:04:58
2006_235	15:01:48	19:23:40
2006_236	14:24:59	19:04:07
2006_237	16:22:37	18:52:01
2006_240	16:14:47	18:32:29
2006_241	14:07:32	18:46:31
2007_249	13:12:43	15:36:09
2007_262	14:06:32	19:22:09
2007_263	13:23:52	17:51:36
2007_288	13:17:30	19:04:37
2007_289	12:59:19	20:38:10
2007_290	13:18:12	18:28:47
2007_295	13:02:33	17:25:38
2007_303	13:00:31	19:04:38
2007_312	14:44:49	19:59:01
2007_313	13:42:14	16:31:28
2008_091	15:01:38	18:52:28
2008_107	13:57:20	19:15:08
2008_114	14:22:38	19:52:16
2008_116	14:14:30	18:05:18

C.1 Vertical Control

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Observation Network (NWLON) station at Solomon's Island, MD (857-7330) served as datum control for the survey. No leveling was required by the field unit for this tide station.

The preliminary zones and correctors used for the preliminary survey are as follows:

Zone Name	Time Corrector (min)	Range Ratio	Reference
NCB21	-36	x0.98	857-7330

NCB22	-42	x1.11	857-7330
NCB29A	-30	x1.28	857-7330
NCB30	-24	x1.11	857-7330
NCB31	-24	x0.98	857-7330
NCB32	-12	x0.98	857-7330
NCB33	-12	x1.11	857-7330
NCB33A	-12	x1.20	857-7330

Table 4: Preliminary & approved tide zones & correctors

A request for Smooth Tides was sent to N/OPS1 on 18 June 2008 (Appendix IV*). On 23 June 2008, a letter was received from N/OPS1 stating that preliminary zoning was accepted as the final zoning for this project. **Appended to this report*

Refer to the DAPR* for a summary of the methods used to determine, evaluate, and apply tide corrections to sounding data. **Submitted with H-Cell Deliverable*