

Name	Latitude	Longitude	Height above sea level	Height above low water	Height above high water
Cape Disappointment L. Ho.	46° 16' 33"	123° 03' 14"	10' 12"	230 ft.	20
Point Adams L. Ho.	46° 11' 36"	123° 08' 40"	15' 54.7"	227 ft.	30

**BUOYS**  
 Red Buoy to be left in entering on Starboard hand  
 Black Buoy to be left in entering on Port hand  
 Black and White perpendicular stripes Channel Buoy  
 Buoys Corrected to 1875

**ABBREVIATIONS OF BOTTOMS**

Metals	Colors to indicate these small letters	Other qualities these small letters
M. for Mud	gy. for gy. s. for s. for sh. for sh.	sd. for sd. for r. for r. for cr. for cr.
S. for Sand	dk. for dk. for fl. for fl.	ro. for ro. for br. for br.
Sp. for Sp. for gn. for gn.	br. for br. for cr. for cr.	co. for co. for oc. for oc.

Note: The principal materials and their qualities are represented by larger letters than the subsidiary.

U.S. COAST SURVEY

BENJAMIN PEIRCE SUPERINTENDENT

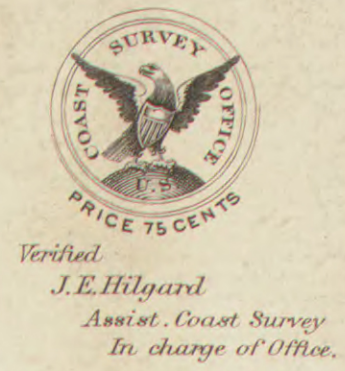
# COLUMBIA RIVER

SHEET No. 1

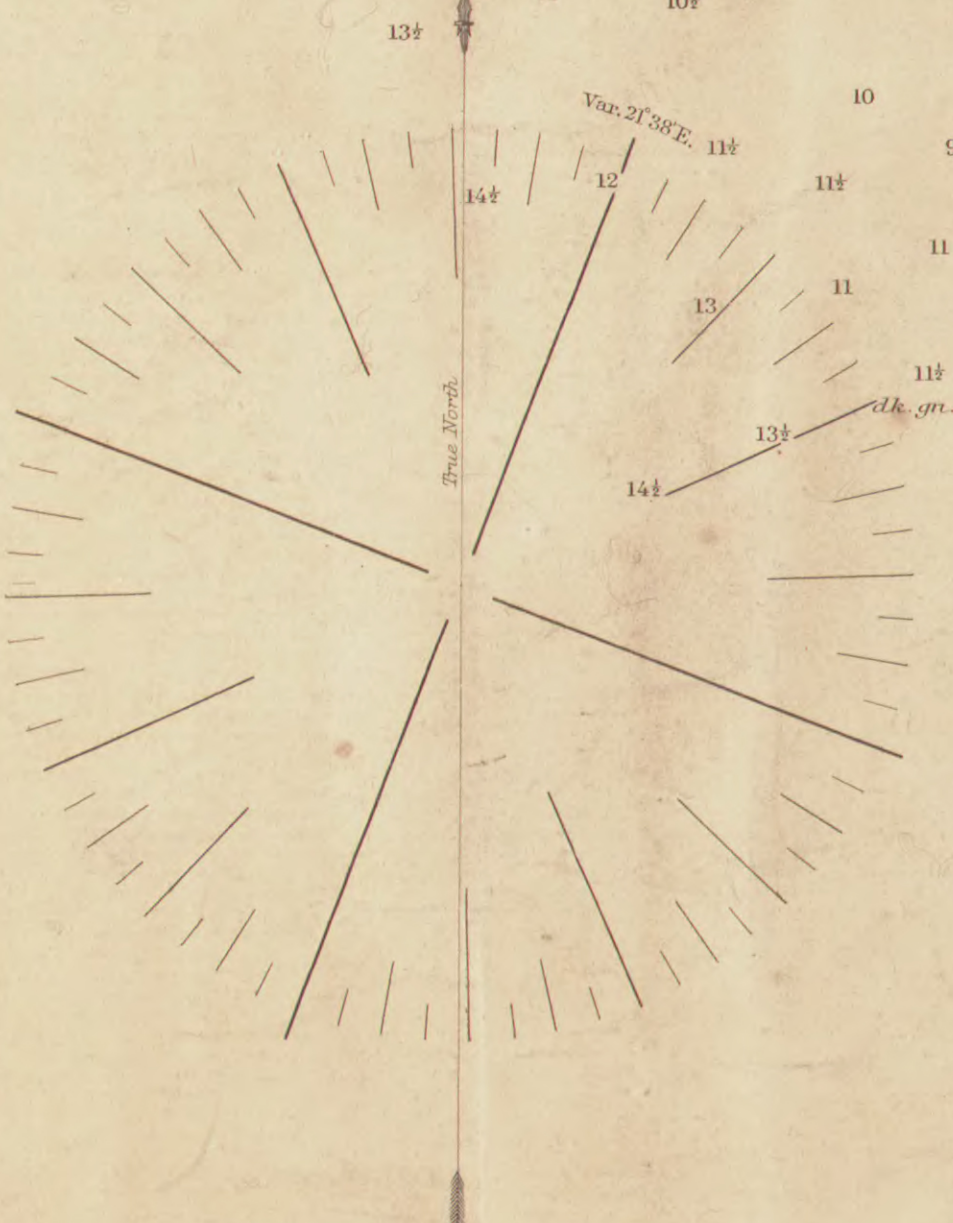
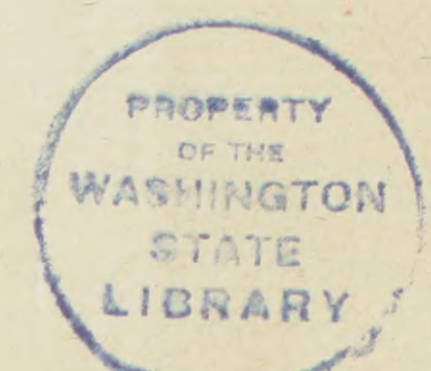
Scale 46000

Edition of 1875

C. P. PATTERSON Superintendent



Triangulation by R. D. Cuts Assistant in 1852  
 Topography by C. Rockwell Ass't. in 1869 and 1869  
 Hydrography by E. Correll Ass't. in 1868  
 Astronomical observations by G. Davidson and R. D. Cuts Ass'ts. in 1851 and 1852  
 Magnetic observations by G. Davidson Ass't. in 1852 and W. Earhart Subst. in 1875



### SOUNDINGS

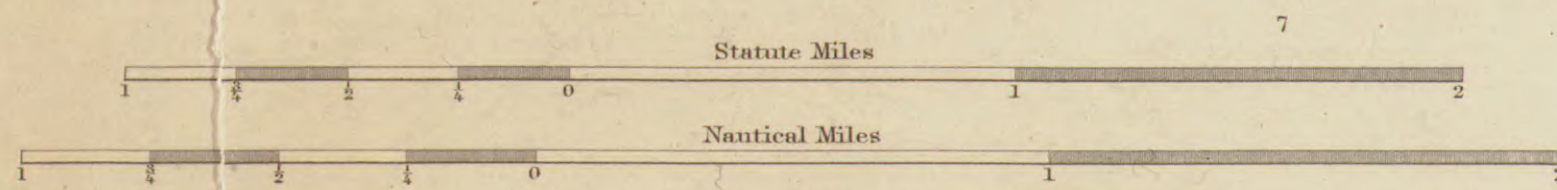
The soundings are expressed in feet to 10 fathoms, and within the dotted surfaces beyond 10 fathoms and show the depth at the average of the lowest low waters.

### TIDES

The two tides of the same day are generally unequal in proportion to the moon's declination. The time and height can be obtained approximately from the following table.

Place	Moon's Declination	Moon's Southing				Moon's Northing			
		High Water Interval	Low Water Interval	Height	Interval	High Water Interval	Low Water Interval	Height	
Cape Disappointment	Greatest North	12 <sup>h</sup> 04 <sup>m</sup>	7.5 ft.	10 <sup>h</sup> 13 <sup>m</sup>	0.7 ft.	13 <sup>h</sup> 18 <sup>m</sup>	6.1 ft.	10 <sup>h</sup> 32 <sup>m</sup>	2.9 ft.
	Zero	11 43	7.2	17 56	0.8	11 43	7.2	17 56	0.8
Fort Stevens	Greatest North	12 10	8.0	19 25	0.5	13 30	6.2	19 30	2.6
	Zero	12 00	7.6	18 18	0.6	12 00	7.6	18 18	0.6
Astoria	Greatest North	12 04	8.1	19 39	0.4	13 16	6.5	19 38	2.5
	Zero	12 05	7.5	19 14	0.8	12 05	7.5	19 14	0.8

The interval to be added to the time of the moon's transit to give the time of high or low water. The time of the moon's southing or upper transit is given in the Almanac and the time of its working or lower transit is the middle between two successive upper transits. The heights are given in feet and tenths and show the rise above the level of the average of the lowest low waters to which level the soundings on the chart are given. Spring Tides at the full and change of the moon the high waters will be 1.5 ft. higher than the above and the low waters will be 1.5 ft. lower. Neap Tides at the moon's first and last quarters the high waters will be 1.5 ft. lower and the low waters will not fall as low as 1.5 ft. below the average of the lowest low waters.



Columbia River  
Wash. Coast 1 1875  
T. H. B. 690 1875