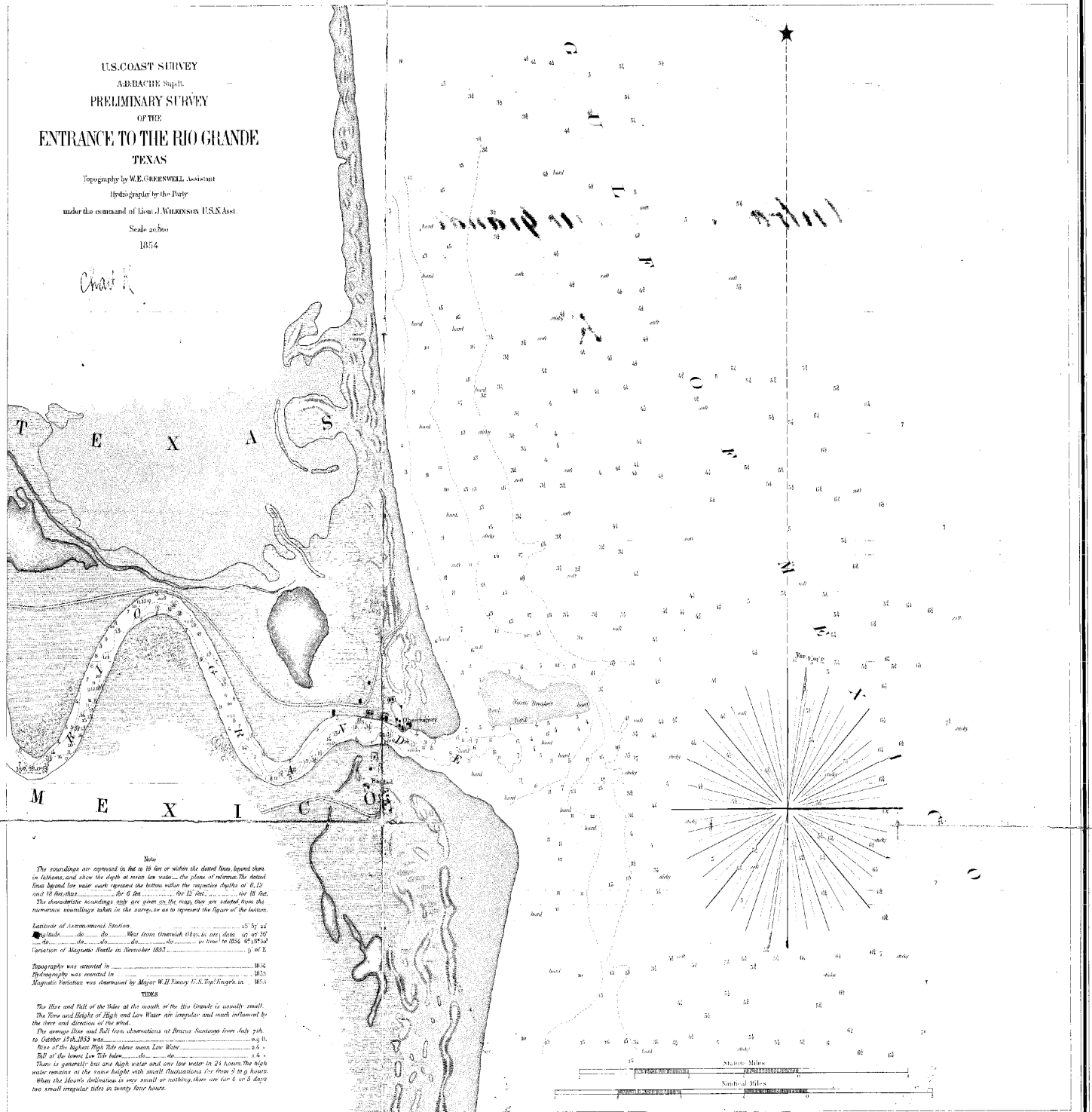


U.S. COAST SURVEY
 ABBACHE Supt.
 PRELIMINARY SURVEY
 OF THE
ENTRANCE TO THE RIO GRANDE
 TEXAS

Topography by W.E. GREENWELL Assistant
 Hydrographic by the Party
 under the command of Lieut. J. WILKINSON U.S.N. Asst.

Scale as before
 1854

Chart 1



NOTE

The soundings are expressed in fathoms, and within the dotted lines beyond three or fathoms, and show the depth at mean low water—the plane of reference. The dotted lines beyond low water mark represent the bottom with the respective depths of 6, 12 and 18 feet. The characteristic soundings only are given on the maps they are selected from the numerous soundings taken in the survey, so as to represent the figure of the bottom.

Latitude of Observation Station

25° 57' 52" N. to 26° 00' 00" N. West from Greenwich (G.M.T.) in 1854
 26° 00' 00" N. to 26° 02' 00" N. West from Greenwich (G.M.T.) in 1854
 Variation of Magnetic Needle in November 1853 2° E.

Topography was ascertained in

1854
 Hydrographic was executed in 1853
 Magnetic Variation was determined by Major W.H. Emory U.S. Topographic in 1853

TIDES

The Rise and Fall of the tides at the mouth of the Rio Grande is usually small. The Time and Height of High and Low Water are irregular and much influenced by the force and direction of the wind.

The average Rise and Fall from observations at Brazos Santiago from July 21st to October 17th, 1853 was 1.4 ft.
 Rise of the highest High Tide above mean Low Water 1.4 ft.
 Fall of the lowest Low Tide below 1.4 ft.

There is generally but one high water and one low water in 24 hours. The high water remains at the same height with small fluctuations for three to five hours. When the Moon's declination is very small or nothing, there are for 4 or 5 days two small irregular tides in twenty four hours.

Statute Miles

1:62,500

Nautical Miles

1:125,000