

SURVEY OF MEAN HIGH WATER ALONG THE WEST BAY OF GALVESTON BAY WITHIN A PORTION OF SECTION 2 OF THE TRIMBLE & LINDSEY SURVEY OF GALVESTON ISLAND GALVESTON COUNTY, TEXAS

Art. 33.136, Natural Ac

CURRIE 5406 AVENUE R 1/2 GALVESTON, TEXAS 77598 G.C.C.F. NO. 010-98-0913

PROFESSIONAL LAND SURVEYING 10710 S. SAM HOUSTON PARKWAY W. SUITE: 230 HOUSTON, TX. 77031 TEL:713.995.1306 FAX:713.995.1906

_360





RECEIVED SEP 2 0 2006 LaPorte Field Office

September 19, 2006 Melissa Van Horn La Porte Regional Office 11811 North D Avenue La Porte, TX 77571

RE: Sportsman Road Shoreline Protection project

Dear Ms Van Horn:

Please find the enclosed surveyor's report and results from our completed LSLS as required for our recent Sportsman Road Shoreline Protection Project; Surface Lease application. Enclosed are the Mylar survey and a paper copy.

Thank you for your assistance as we work to complete this important project. Should you require any additional information or have any questions, please do not hesitate to contact me at 281-332-3381 (x210). Thank you again for your guidance and assistance as we work to complete this project.

Sincerely,

Philip Smith Habitat Restoration Specialist



SURVEYORS REPORT SURVEY OF THE LINE OF MEAN HIGH WATER ALONG THE WEST BAY OF GALVESTON BAY WITHIN A PORTION OF SECTION 2, TRIMBLE AND LINDSEY SURVEY OF GALVESTON ISLAND, GALVESTON COUNTY, TEXAS

At the request of the Galveston Bay Foundation and in my capacity as a Licensed State Land Surveyor in Texas, I have determined the line of Mean High Water along the West Bay of Galveston Bay within a portion of Section 2 of the Trimble and Lindsey Survey of Galveston Island in Galveston County, Texas. This survey was performed as per the requirements outlined in the Coastal Public Lands Management Act of 1973, as amended, Chapter 33, Natural Resources Code, and specifically per Section 33.136, Natural Resources Code, "Property Rights: Preservation of Littoral Rights".

The purpose of this survey was to evidence "...the location of the shoreline in the area depicted in this survey as that shoreline existed before commencement of erosion response activity..."(Section 33.136(b), Natural Resources Code).

This site, in general, is located on the southern shore of the West Bay of Galveston Bay immediately west of the west end of Sportsman Road and this site is tidally influenced.

In the case of Humble Oil & Refining Co. vs. Sun Oil Co. (190 F 2d 191), the court held that "grants issued by the King of Spain and the Mexican State before the adoption of common law in Texas, the boundary between sea and upland must be determined in accordance with principals announced in Las Siete Partidas, the basic law of Spain and Mexico which defines "shore" as all ground covered with water at high tide during the whole year, whether in winter or summer."

In a decision by the Texas Supreme Court in the case of Luttes vs. State (324 SW 2nd 167, on remand 328 SW 2nd 920) it was found that the littoral boundaries for civil law grants differs from the boundaries of common law grants. The court states that for civil law grants (grants by Spain and Mexico) the boundary is the line of Mean Higher High Water (MHHW) and for common law grants (grants made by the Republic and State of Texas) the boundary is the line of Mean High Water (MHHW). This case described that the best method of determining MHHW and MHW is to employ the use of scientific tide gauges.

The Luttes case defined MHHW as a tidal datum that is the average of the higher of the two daily tides observed over a specific 19 year period (epoch) and MHW as a tidal datum that is the average of all high tides over a specific 19 year period (epoch). Tides being defined as the regular and predictable rise and fall in sea level due to the gravitational pull of the sun and moon. Also, sea levels are influenced by weather conditions, geographical location and topography of the coastline. The combination of these conditions can result in a wide variation in the elevation of the tidal datum from location to location.

counter 83076

Golveston Co. NRC Art. 33.136 Sketch 41, sheet

Surveyors Report Galveston Bay Foundation Page 2 of 3

Due to this variation, the tidal datum had to be determined at the project location. Because of the impracticality of obtaining 19 years of tide readings at a specific location, methods have been developed to correct short term observations between project site staff gauges and a primary tide gauge (gauges with more than 19 years of observations).

Tide gauges along the Texas coastline are installed, operated and maintained by a joint effort involving the National Oceanic and Atmospheric Administration (NOAA), the Conrad Blucher Institute (CBI) and Lamar University. Tidal datum's, benchmarks and gauge readings are published and available from NOAA and CBI.

The project site is located in the general vicinity of the Galveston Pier 21 Tide Gauge, a primary gauge in use since 1908. In the past several years, NOAA has adopted new procedures to compute accepted tidal datum's in the Galveston area based on more recent observations. This procedural change is due to the rise in sea level in the Galveston area, being over 0.02 feet per year, which far exceeds the U.S. average rise of 0.005 feet per year. Currently the published tidal datum for the gauge is based on the 19-year epoch from 1983 to 2001. Due to this relatively rapid change in sea level I felt it was necessary to compute data on a more current epoch in lieu of using the published datum's. A new tidal datum for the Galveston Pier 21 Tide Gauge was calculated for the 19-year epoch ending in July, 2006.

A site staff gauge was installed and observed simultaneously with the Galveston Pier 21 Tide Gauge for four days (eight high tide cycles). These reading were compared to the Galveston Pier 21 Tide Gauge using the amplitude ratio method resulting in a calculated elevation for mean high water at the site staff gauge.

The project site is along approximately 5,400 linear feet of coast line which runs from the end of Sportsman Road, west, crossing Gangs Bayou and continuing west, to the mouth of Oxen Bayou.

Using the calculated elevation from the site staff gauge, points were located on the natural contour line of Mean High Water along the entire shoreline for the entire project length. These points were incorporated into surveyed meanders delineating the littoral boundary between the state owned seabed and privately owned uplands.

The surveyed meander line was tied to the Texas Coordinate System of 1983, South Central Zone – NAD 83 using NGS Monuments "HGCSD 62" and "162+87.6" for reference. Scale factor for this project is 0.999864323.

Galveston Co. NRC Art. 33.136 Sketch 41, Sheel 4

Surveyors Report Galveston Bay Foundation Page 3 of 3

To the best of my knowledge, except as shown on the accompanying plat, no artificial fill or development that would cause alteration to the line of mean high water has occurred within the area surveyed.

A plat showing the results of this survey was prepared and filed with this report.

Respectfully submitted,

William E. Merten Licensed State Land Surveyor GBI Partners, L.P. 10710 South Sam Houston Parkway West Suite 230 Houston, Texas 77031 713-995-1306 September 14, 2006



Galveston Co. NRC Art. 33.136 Sketch 41, sheet 5