

File No. SKETCH FILE 74

GALVESTON County

45.30 ac. - Survey of Mean Higher High
Water along a portion of the S.F. Austin
League & the John Dickinson League

Date Filed: December 16, 2002 SURVEYORS REPORT

SURVEY OF THE LINE OF MEAN HIGHER HIGH WATER

David Dewhurst, Commissioner A PORTION OF THE S. F. AUSTIN LEAGUE

By Douglas Howard AND THE JOHN DICKINSON LEAGUE
GALVESTON COUNTY, TEXAS

At the request of the GeoSurv, LLC, and in my capacity as a Licensed State Land Surveyor in and for the State of Texas, I have determined the line of Mean Higher High Water for Clear Creek along a portion of the S. F. Austin League, Abstract Number 3, and a portion of the John Dickinson League, Abstract Number 9, in Galveston County, Texas. The purpose of this survey was to determine the location of the littoral boundary line between State owned seabed and private upland ownership.

The Austin and Dickinson Leagues border the south bank of Clear Creek and the area surveyed lies approximately 5 miles upstream from the point where Clear Creek widens into Clear Lake. This portion of Clear Creek is tidally influenced. Both Leagues were titled from the Mexican Government on February 25, 1832 and August 19, 1824, respectively.

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 (MHW). 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. 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, secondary tide gauges (gauges with

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more than one year but less than 19 years of observations) 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 Clear Lake Tide Gauge, a secondary gauge referenced to the Galveston Pier 21 Tide Gauge, a primary gauge in use since 1908. Recently, 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 rapid 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 two gauges is based on the 19-year epoch from 1960 to 1979, adjusted for the 5-year series from 1990 through 1994. Due to the 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. A new tidal datum for the Galveston Pier 21 Tide Gauge was calculated for the 19-year epoch ending in August, 2002 and using the standard method, the Clear Lake Tide Gauge was adjusted to this same epoch.

A site staff gauge was installed and observed simultaneously with the Clear Lake Tide Gauge for five days (ten high tide cycles). These reading were compared to the readings obtained for the Clear Lake Tide Gauge, and using the amplitude ratio method, resulting in a calculated elevation for mean higher high water at the site staff gauge.

The project site is along approximately 5000 linear feet of the southerly bank of Clear Creek with the easterly end of the project located approximately 3000 feet upstream from the Interstate 45 crossing of Clear Creek.

Using the calculated elevation for the site staff gauge, points were located on the natural contour line of Mean Higher High Water along the south bank of Clear Creek 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 (1986) using "League City Control Monument No. 24" for reference. The scale factor used for this project is 0.99986773.

THENCE S 87°00'31" W, continuing along the North line of said **CLEAR CREEK VILLAGE, SECTION NO. 6**, and the north line of **CLEAR CREEK VILLAGE, SECTION NO. 6, PHASE II**, according to the map or plat recorded in Volume 15, Page 106 of the Galveston County Map Records, passing at 59.30 feet (21.348 varas) and North 0.59 feet a 1/2 inch iron rod found for the Northeast corner of Lot 1, Block 13 of said **CLEAR CREEK VILLAGE, SECTION NO. 6** and continuing for a total distance of 585.18 feet (210.665 varas) to a bent 5/8 inch iron rod found for angle point at the Northwest corner of Lot 46, Block 15 of said **CLEAR CREEK VILLAGE, SECTION NO. 6, PHASE II**;

THENCE N 68°28'48" W, continuing along the North line of said **CLEAR CREEK VILLAGE, SECTION NO. 6, PHASE II** a distance of 373.47 feet (134.449 varas) to a 1/2 inch iron rod with cap found for angle point;

THENCE S 48°04'14" W, passing at 485.74 feet (174.866 varas) and **N 41°55'46" W**, 0.74 feet a 5/8 inch iron rod and continuing for a total distance of 498.13 feet (179.327 varas) to a 1/2 inch iron rod with cap set for angle point;

THENCE S 12°00'46" E a distance of 323.99 feet (116.636 varas) to a 5/8 inch iron rod found for the Southwest corner of said **CLEAR CREEK VILLAGE, SECTION NO. 6, PHASE II**;

THENCE N 84°33'21" W passing at 58.86 feet (21.082 varas) a found 1 inch iron pipe and continuing for a total distance of 281.84 feet (101.462 varas) to a 2 inch brass cap stamped "Delta Surveying" found for angle point;

THENCE N 86°34'51" W, passing at 280.71 feet (101.056 varas) a found 10 inch fence post and continuing for a total distance of 288.88 feet (103.997 varas) to a point on the Mean Higher High Water Line as established by William E. Merton, L.S.L.S. on October 11, 2002, said point having Texas State Plane Coordinates of Y = 13,751,773.75 feet (4,950,638.550 varas) and X = 3,199,643.89 feet (1,151,871.800 varas);

THENCE in with the meanders of said Mean Higher High Water Line of Clear Creek the following courses:

N 01°46'36" W, a distance of 670.83 feet (241.499 varas);
N 19°26'08" E, a distance of 364.96 feet (131.386 varas);
N 37°20'53" E, a distance of 257.33 feet (92.639 varas);
N 56°19'59" E, a distance of 316.23 feet (113.843 varas);
S 43°41'36" W, a distance of 180.48 feet (64.923 varas);
S 22°25'05" W, a distance of 136.05 feet (48.978 varas);
S 52°09'23" W, a distance of 167.97 feet (60.469 varas);
S 14°25'16" W, a distance of 135.69 feet (48.848 varas);
S 14°22'09" E, a distance of 151.84 feet (54.662 varas);
S 41°21'50" E, a distance of 144.37 feet (51.973 varas);
N 78°59'07" E, a distance of 153.66 feet (55.318 varas);
N 60°39'31" E, a distance of 104.45 feet (37.602 varas);
N 08°49'37" W, a distance of 449.81 feet (161.932 varas);
N 56°30'20" E, a distance of 201.38 feet (72.497 varas);
N 24°35'05" E, a distance of 112.89 feet (40.640 varas);
N 84°27'49" W, a distance of 136.66 feet (49.198 varas);
N 55°10'32" E, a distance of 76.45 feet (27.522 varas);
S 65°51'16" E, a distance of 81.12 feet (29.203 varas);

PROPERTY DESCRIPTION
OF
45.30 ACRES OUT OF THE
STEPHEN F. AUSTIN LEAGUE, ABSTRACT #3
AND THE
JOHN DICKINSON LEAGUE, ABSTRACT #9
CITY OF LEAGUE CITY
GALVESTON COUNTY, TEXAS

DECEMBER 2, 2002

(REFERENCE IS MADE TO SURVEY OF EVEN DATE HEREWITH)

All that certain 45.30 acres tract or parcel of land situated in the **STEPHEN F. AUSTIN LEAGUE**, Abstract #3, and the **JOHN DICKINSON LEAGUE**, Abstract #9, both in Galveston County, Texas, and being out of Subdivision No. 5 of said **JOHN DICKINSON LEAGUE**, and also being out of Lots 57 and 58 of **BRASKORA GARDENS SUBDIVISION**, according to the map or plat recorded in Volume 113, Page 47 and being a portion of a called 51.1517 acre tract described in a deed from the Hope Foundation for Retarded Children, Inc. to Kenneth W. Erickson recorded under Film Code No. 011-91-0882 both map and deed recorded in the Office of the County Clerk of Galveston County, said 45.30 acres tract being more particularly described by metes and bounds as follows:

NOTE: ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL COORDINATES REFER TO THE STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCE CODE OF THE STATE OF TEXAS, 1983 DATUM (1986 ADJUSTMENT). ALL DISTANCES ARE ACTUAL DISTANCES. SCALE FACTOR = 0.99986773. REFERENCE IS MADE TO PLAT OF EVEN DATE ACCOMPANYING THIS METES AND BOUNDS DESCRIPTION.

COMMENCING at the Northeast corner of the revised plat of **CLEAR CREEK VILLAGE, SECTION NO. 6**, recorded in Volume 15, Page 96 of the County Clerk's Records of Galveston County, said point being in the South line of a 10.8468 acre tract of land conveyed to Ronny M. and Charlotte A. Henson and recorded under Film Code No. 001-40-0748 in the Office of the County Clerk of Galveston County; said commencing point having Texas State Plane Coordinates of Y = 13,752,255.51 feet (4,950,811.984 varas) and X = 3,201,696.64 feet (1,152,610.790 varas).

THENCE S 86°58'14" W, with the North line of said **CLEAR CREEK VILLAGE, SECTION NO. 6** and the South line of said 10.8468 acre tract of land a distance of 127.86 feet (46.030 varas) to a 1/2 inch iron rod with cap found marking the Southeast corner of the herein described tract of land, the Southwest corner of said 10.8468 acre tract of land, and also being the **POINT OF BEGINNING**; said beginning point having Texas State Plane Coordinates of Y = 13,752,248.76 feet (4,950,809,554 varas) and X = 3,201,568.97 feet (1,152,564.829 varas);

THENCE S 87°00'31" W, along the North line of said **CLEAR CREEK VILLAGE, SECTION NO. 6** a distance of 120.00 feet (43.200 varas) to a 1/2 inch iron rod found for corner;

THENCE N 02°59'32" W, a distance of 30.56 feet (11.002 varas) to a 1/2 inch iron rod found for corner;

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GALVESTON County
Property Description - 45.30 ac. - S.F. AUSTIN
League & John Dickinson League

Date Filed: December 16, 2002

By David Dewhurst, Commissioner
Douglas Howard

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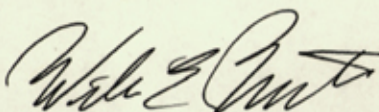
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To the best of my knowledge no artificial fill or development, other than previously stated, that would cause alteration to the line of mean higher high water has occurred within the area surveyed.

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

Respectfully submitted,



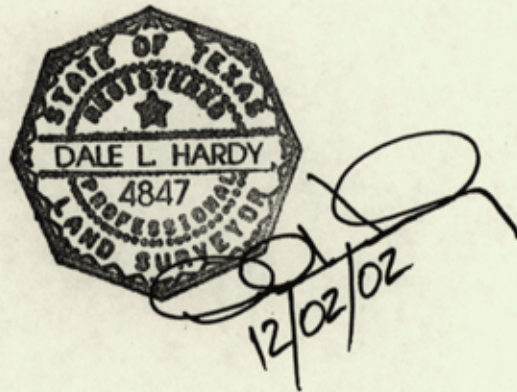
William E. Merten
Licensed State Land Surveyor
1448 Silverpines
Houston, Texas 77062
281-488-0460
October 11, 2002



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N 56°22'07" E, a distance of 211.18 feet (76.025 varas);
S 28°55'08" E, a distance of 140.42 feet (50.551 varas);
N 57°53'58" E, a distance of 42.46 feet (15.286 varas);
N 06°21'14" W, a distance of 137.80 feet (49.608 varas);
N 69°16'30" E, a distance of 176.87 feet (63.673 varas);
N 75°28'12" E, a distance of 279.77 feet (100.717 varas);
N 81°29'30" E, a distance of 193.32 feet (69.595 varas);
N 89°26'14" E, a distance of 268.57 feet (96.685 varas) to a point for corner being the Northwest corner of said 10.8468 acre tract of land, said point having Texas State Plane Coordinates of Y = 13,753,501.95 feet (4,951,260.702 varas) and X = 3,201,502.65 feet (1,152,540.954 varas);

THENCE S 03°01'46" E, along the west line of said 10.8468 acre tract of land and generally following along an old barbed wire fence line a distance of 1225.11 feet (451.840 varas) to the **POINT OF BEGINNING** and containing 45.30 acres of land.



NOTE: THIS PROPERTY DESCRIPTION WAS PREPARED BASED ON AN ACTUAL SURVEY MADE ON THE GROUND AND UNDER THE DIRECTION OF DALE L. HARDY, REGISTERED PROFESSIONAL LAND SURVEY 4847, DATED JANUARY 25, 1999, AND UPDATED JULY 27, 2000; JULY 8, 2002; OCTOBER 11, 2002 (THIS OCTOBER 11, 2002, UPDATE REFLECTS THE SHORELINE OF CLEAR CREEK BASED ON THE MEAN HIGHER HIGH WATER LINE AS ESTABLISHED BY WILLIAM E. MERTEN, LICENSED STATE LAND SURVEYOR), AND AMENDED DECEMBER 2, 2002, TO NOTE REFERENCE TO ON-SITE TIDE GAUGE, CLEAR LAKE TIDE GAUGE AND GALVESTON PIER 21 TIDE GAUGE EMPLOYED IN SURVEY OF THE MEAN HIGHER HIGH WATER LINE.

PREPARED BY

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