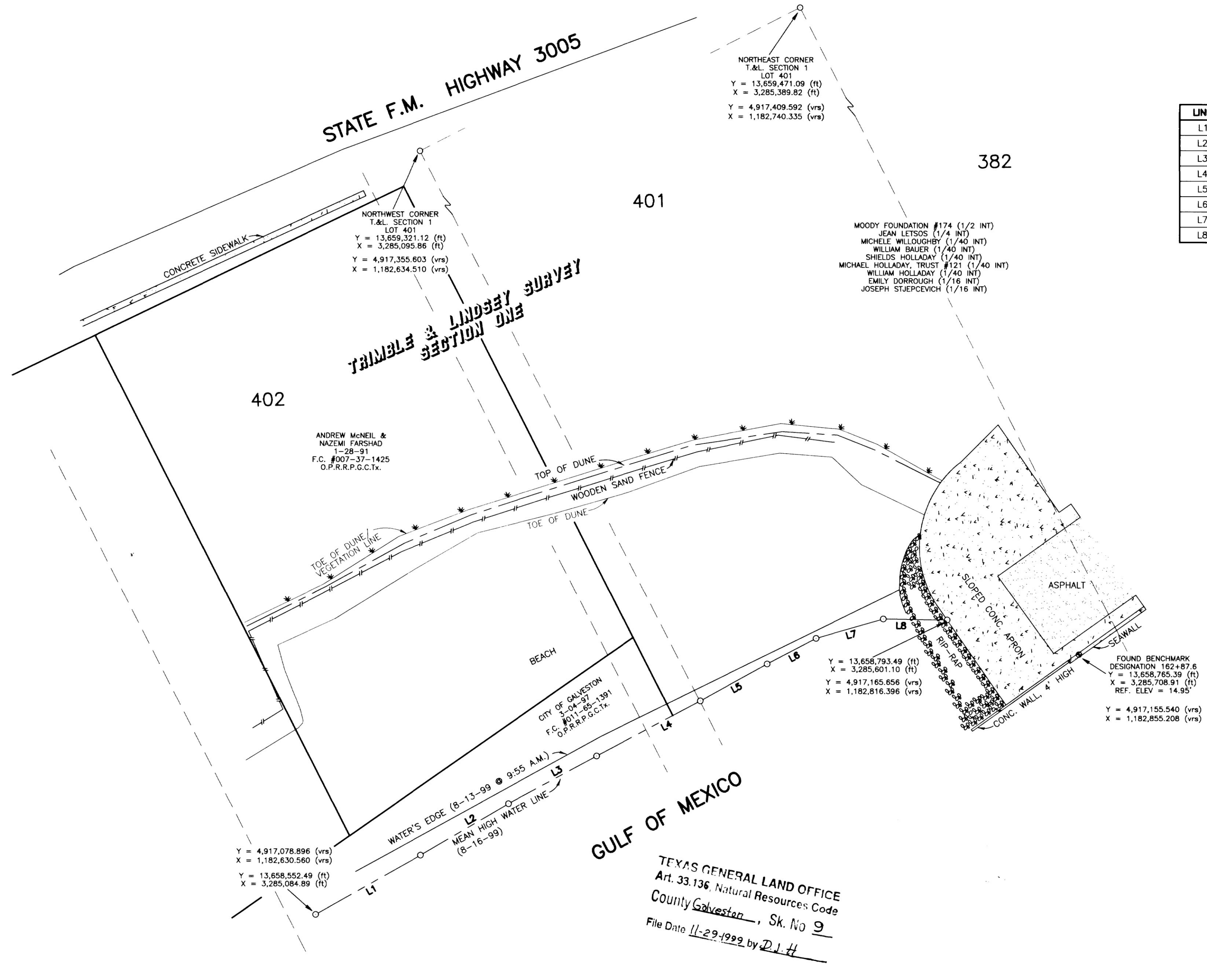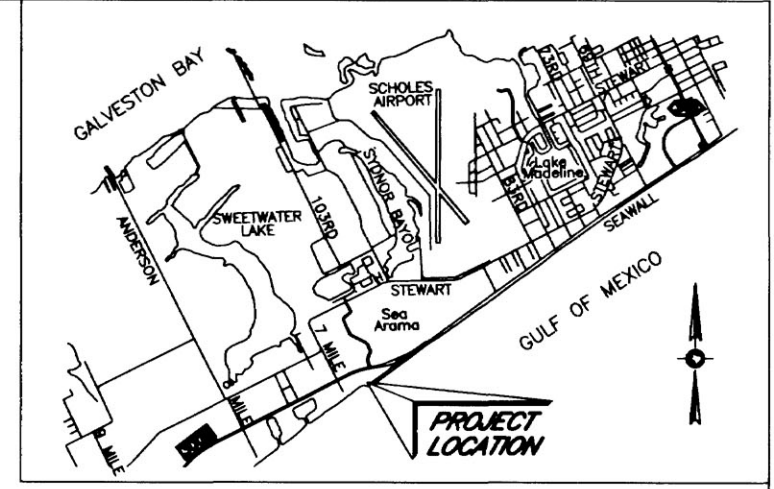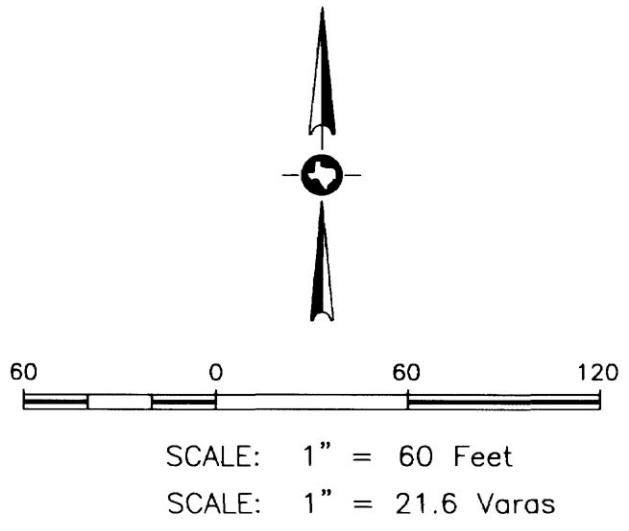# SURVEY OF MEAN HIGH WATER ALONG THE GULF OF MEXICO
WITHIN A PORTION OF SECTION ONE OF THE
TRIMBLE AND LINDSEY SURVEY OF GALVESTON ISLAND
GALVESTON COUNTY, TEXAS

SCALE: 1" = 60 Feet
SCALE: 1" = 21.6 Varas

VICINITY MAP
SCALE: N.T.S.

STATE F.M. HIGHWAY 3005

NORTHEAST CORNER
T.&L. SECTION 1
LOT 401
Y = 13,659,471.09 (ft)
X = 3,285,389.82 (ft)
Y = 4,917,409.592 (vrs)
X = 1,182,740.335 (vrs)

382

401

NORTHWEST CORNER
T.&L. SECTION 1
LOT 401
Y = 13,659,321.12 (ft)
X = 3,285,095.86 (ft)
Y = 4,917,355.603 (vrs)
X = 1,182,634.510 (vrs)

CONCRETE SIDEWALK

MOODY FOUNDATION #174 (1/2 INT)
JEAN LETSOS (1/4 INT)
MICHELE WILLOUGHBY (1/40 INT)
WILLIAM BAUER (1/40 INT)
SHIELDS HOLLADAY (1/40 INT)
MICHAEL HOLLADAY, TRUST #121 (1/40 INT)
WILLIAM HOLLADAY (1/40 INT)
EMILY DORROUGH (1/16 INT)
JOSEPH STJEPCEVICH (1/16 INT)

TRIMBLE & LINDSEY SURVEY
SECTION ONE

402

ANDREW McNEIL &
NAZEMI FARSHAD
1-28-91
F.C. #007-37-1425
O.P.R.R.P.G.C.Tx.

TOP OF DUNE

WOODEN SAND FENCE

TOE OF DUNE

TOE OF DUNE
VEGETATION LINE

ASPHALT

SLOPED CONC. APRON

RIP-RAP

SEAWALL

FOUND BENCHMARK
DESIGNATION 162+87.6
Y = 13,658,765.39 (ft)
X = 3,285,708.91 (ft)
REF. ELEV = 14.95'
Y = 4,917,155.540 (vrs)
X = 1,182,855.208 (vrs)

CONC. WALL, 4' HIGH

BEACH

Y = 13,658,793.49 (ft)
X = 3,285,601.10 (ft)
Y = 4,917,165.856 (vrs)
X = 1,182,816.396 (vrs)

CITY OF GALVESTON
3-04-97
F.C. #011-65-1391
O.P.R.R.P.G.C.Tx.

L8
L7
L6
L5
L4
L3
L2
L1

WATER'S EDGE (8-13-99 @ 9:55 A.M.)
MEAN HIGH WATER LINE
(8-16-99)

Y = 4,917,078.896 (vrs)
X = 1,182,630.560 (vrs)
Y = 13,658,552.49 (ft)
X = 3,285,084.89 (ft)

GULF OF MEXICO

U.S. SURVEY FEET

LINE	DISTANCE	BEARING
L1	98.52 (ft)	N 60°29'01" E
L2	83.36 (ft)	N 59°41'00" E
L3	81.95 (ft)	N 61°36'55" E
L4	95.93 (ft)	N 61°59'10" E
L5	62.47 (ft)	N 61°05'25" E
L6	45.15 (ft)	N 62°11'45" E
L7	57.14 (ft)	N 73°52'24" E
L8	52.23 (ft)	S 89°10'30" E

VARAS

LINE	DISTANCE	BEARING
L1	35.467 (vrs)	N 60°29'01" E
L2	30.010 (vrs)	N 59°41'00" E
L3	29.502 (vrs)	N 61°36'55" E
L4	34.535 (vrs)	N 61°59'10" E
L5	22.489 (vrs)	N 61°05'25" E
L6	16.254 (vrs)	N 62°11'45" E
L7	20.570 (vrs)	N 73°52'24" E
L8	18.803 (vrs)	S 89°10'30" E

NOTES:

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 RESOURCES CODE OF THE STATE OF TEXAS, 1983 DATUM (1986 ADJUSTMENT). COORDINATES LISTED ARE BASED ON SURFACE COORDINATES AND DISTANCES SHOWN HEREON ARE SURFACE DISTANCES. ALL DISTANCES SHOWN HEREON MAY BE CONVERTED TO GRID BY MULTIPLYING BY A SCALE FACTOR OF 0.99986402.

FOR REFERENCE ONLY, ALL ELEVATIONS SHOWN HEREON AND THE LINE OF MEAN HIGH WATER WAS RELATED VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) ELEVATION DATUM SYSTEM PUBLISHED BY THE NATIONAL GEODETIC SURVEY (NGS). USING THE NGS PUBLISHED ELEVATION OF 24.11 FEET FOR TIDE GAUGE BENCHMARK "NO 43 1957", THE LINE OF MEAN HIGH WATER IS COMPUTED AT 0.49 FEET (NAVD 88, 1997 ADJUSTMENT DATUM).

NOTICE:

THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH SECTION 33.136, NATURAL RESOURCES CODE, FOR THE PURPOSE OF EVIDENCING THE LOCATION OF THE SHORELINE IN THE AREA DEPICTED IN THIS SURVEY AS THAT SHORELINE EXISTED BEFORE COMMENCEMENT OF EROSION RESPONSE ACTIVITY ON THE PUBLIC BEACH, AS REQUIRED BY CHAPTER 33, NATURAL RESOURCES CODE. THE MEANDER LINE DEPICTED ON THIS SURVEY FIXES THE SHORELINE FOR THE PURPOSE OF LOCATING A SHORELINE BOUNDARY, SUBJECT TO EROSION LANDWARD AS PROVIDED BY SECTION 33.136, NATURAL RESOURCES CODE.

I, WILLIAM E. MERTEN, LICENSED STATE LAND SURVEYOR IN AND FOR THE STATE OF TEXAS, DO HEREBY CERTIFY THAT ON AUGUST 16, 1999, I HAVE LOCATED THE NATURAL CONTOUR LINE OF MEAN HIGH WATER ON THE GROUND, ACCORDING TO LAW AND WITH THE PERSONNEL STATED, AND THAT THE MEANDERS OF SAID CONTOUR LINE ARE TRUE AND CORRECT AS SHOWN HEREON. TO THE BEST OF MY KNOWLEDGE, NO ARTIFICIAL FILL OR ANY DEVELOPMENT, OTHER THAN THE GALVESTON SEAWALL STRUCTURE, THAT WOULD CAUSE ALTERATION TO SAID CONTOUR LINE HAS OCCURRED WITHIN THE AREA SURVEYED. REFERENCE IS HEREBY MADE TO THE ACCOMPANYING REPORT BY ME OF THE SAME DATE.

FIELD PERSONNEL:
DALE L. HARDY (RPLS #4847)
A. MUNROE KELSAY (SIT)
RON DEZERN
MALCOLM COMEAUX

WILLIAM E. MERTEN
LICENSED STATE LAND SURVEYOR
1448 SILVERPINES
HOUSTON, TEXAS 77062
(281) 488-0460

TEXAS GENERAL LAND OFFICE
Art. 33.136 Natural Resources Code
County Galveston , Sk. No 9
File Date 11-29-1999 by D.J.H

LICENSED STATE LAND SURVEYOR
STATE OF TEXAS

D:\DWG\99-0639.DWG

File No. Sketch File 74

Galveston County

~~Erosion Response Activity Contract 99-214~~

~~Date Filed:~~ November 29, 1999

~~David Dewhurst, Commissioner~~
By Douglas Howard

SURVEYOR'S REPORT
LOCATION OF THE LITTORAL BOUNDARY
WITHIN A PORTION OF SECTION ONE OF
THE TRIMBLE & LINDSEY OF GALVESTON ISLAND
GALVESTON COUNTY, TEXAS

At the request of Mr. Dale L. Hardy, R.P.L.S., of Dale L. Hardy and Associates, in my capacity as a Licensed State Land Surveyor in Texas, I have determined the line of Mean High Water along a portion of Section One of the Trimble & Lindsey Survey of Galveston Island, 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 on the public beach,…"(Section 33.136(b), Natural Resources Code).

The project area is located along a portion of Lots 401 and 402 of Section One of the Trimble & Lindsey Survey of Galveston Island. The area surveyed begins at the southwesterly end of the Galveston Seawall Structure and extends southwesterly approximately 600 feet along the shore.

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 littoral boundaries can be determined by the use of the tides and that the boundary for Common Law Grants will be at the line of Mean High Water. Tides being defined as the regular and predictable rise and fall in sea level due to the gravitational pull of the sun and moon, and the line of Mean High Water being defined as a tidal datum that is the average of all high tides observed over a specific 19 year period (epoch). Finally, the Luttes case described the best method of determining the line of Mean High Water is to employ the use of scientific tide gauges.

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. Each Tide Gauge has several Gauge Benchmarks which are referenced to gauge datum and relationships between the Gauge Benchmarks and Mean Lower Low Water/Mean High Water is established and published. Tidal datum's, benchmarks and gauge readings are published and available from NOAA and CBI.

I was fortunate that the project site was in the general vicinity of the Galveston Pleasure Pier Tide Gauge, a primary gauge in use since the late 1950's, in that datum's and elevations could be transferred directly from existing tide gauge benchmarks.
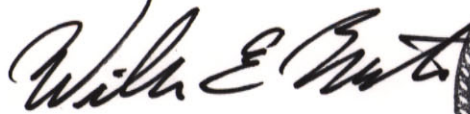
Elevations were run directly from Tide Gauge Benchmark "NO 43 1957" to the project site, with an elevation check through Tide Gauge Benchmark "E 168 1936 ELEV 15.502 FT". With site benchmarks in place, the published relationship between the Galveston Pleasure Pier benchmarks and the line of Mean High Water was applied and points reflecting this relationship were located horizontally and vertically on the ground.

The points located were on the natural contour line of Mean High Water along the Gulf of Mexico from the southwestern end of the Galveston Seawall Structure, southwesterly for approximately 600 feet. These points were incorporated into surveyed meanders delineating the littoral boundary between the state owned seabed and privately owned uplands.

For reference only, the line of Mean High Water was related vertically to the North American Vertical Datum of 1988 (NAVD 88) elevation datum system published by the National Geodetic Survey (NGS). Benchmark elevations in this system are published and available from NGS. Elevation Data Sheets were obtained from the NGS for the Pleasure Pier Tide Gauge Benchmarks and using the NGS published elevation of 24.11 feet for Tide Gauge Benchmark "NO 43 1957", the line of Mean High Water is computed at 0.49 feet (NAVD 88, 1997 adjustment datum).

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

Galveston Co. Article 33.136 ~~Report 3~~ Sketch 9

Counter 27011