

VICINITY MAP
NOT TO SCALE

LEGEND:
 FND. FOUND
 P.O.B. POINT OF BEGINNING
 P.O.T. POINT OF TERMINATION
 R.O.W. RIGHT-OF-WAY
 MHHW MEAN HIGHER HIGH WATER
 ——— MHHW LINE, OCTOBER 2020, ELEV. = 0.79' NAVD88
 - - - MHHW LINE AS PER ARTICLE 33.136 SKETCH 9, FILE DATE: 12-15-2005

- NOTES:
- ALL COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM, SOUTH ZONE (#4205), NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT), US FEET. ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL DISTANCES GRID. THE COMBINED SCALE FACTOR IS 0.99995967 AND CONVERGENCE ANGLE IS +00° 34' 24.2".
 - COORDINATES AND ELEVATIONS ARE BASED ON NGS MONUMENT:
 NGS MONUMENT "877 5792 A TIDAL" (PUBLISHED)
 N: 17,121,538.35
 E: 1,293,149.44
 EL: 2.76' NAVD88
 - ALL OTHER MONUMENTS ARE REFERENCED AS MEASURED AND SHOWN HEREON.
 - ALL POSITIONS AND ELEVATIONS RECORDED USING SURVEY GRADE, RTK GPS. EQUIPMENT: TRIMBLE R10.
 - THE STATE OWNERSHIP BOUNDARY IS BASED ON THE MEAN HIGHER HIGH WATER (MHHW) CONTOUR. MHHW ELEVATION OF 0.79' NAVD88 FOR LAGUNA MADRE WAS DETERMINED BY MEASUREMENTS TAKEN FROM A LOCAL TIDE GAUGE AND CALCULATED AGAINST AN EXISTING TIDE GAUGE LOCATED NEAR THE INTRACOASTAL WATER WAY AND THE J.F.K. CAUSEWAY, OPERATED BY THE CONRAD BLUCHER INSTITUTE FOR SURVEYING AND SCIENCE AND DESIGNATED AS "PACKERY CHANNEL". THE LOCAL AND PUBLISHED GAUGES PRODUCED AGREEABLE TIDAL RANGES OVER THE COURSE OF THE FIVE DAY MONITORING PERIOD. THUS, THE PUBLISHED MHHW ELEVATION OF 0.79' NAVD88 WAS UTILIZED FOR THIS SURVEY.
 - TO CONVERT FEET TO VARAS MULTIPLY BY 0.36.
 - REFERENCE ACCOMPANYING REPORT CONTAINING FIELD NOTES DATED OCTOBER 2020 FOR ADDITIONAL INFORMATION.

I, JAMES M. NAISMITH, HEREBY STATE THAT THIS DRAWING REPRESENTS A SURVEY THAT IS CORRECT; IN ACCORDANCE WITH SECTION 21.042 TEXAS NATURAL RESOURCES CODE, WAS MADE ACCORDING TO LAW; WAS MADE IN THE FIELD UNDER MY DIRECT CONTROL AND SUPERVISION; WAS MADE UTILIZING METHODOLOGY APPROVED BY THE GLO; AND IS RECORDED IN

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, AS REQUIRED BY CHAPTER 33, NATURAL RESOURCES CODE. THE LINE DEPICTED ON THIS SURVEY FIXES THE SHORELINE FOR THE PURPOSE OF LOCATING A SHORELINE BOUNDARY, SUBJECT TO MOVEMENT LANDWARD AS PROVIDED BY SECTION 33.136, NATURAL RESOURCES CODE.

THIS SHORELINE SURVEY OF MEAN HIGHER HIGH WATER ALONG THE WESTERN SHORE OF THE LAGUNA MADRE EXTENDS NORTHEASTERLY ALONG LAGUNA SHORES ROAD NEAR THE VICINITY OF ITS INTERSECTION WITH GRAHAM ROAD.

SURVEYED: OCTOBER 15, 2020
 SURVEY PERSONNEL: SCOTTY RALL, SR. AND SCOTTY RALL, JR.

James M. Naismith 3/31/2021
 JAMES M. NAISMITH
 LICENSED STATE LAND SURVEYOR



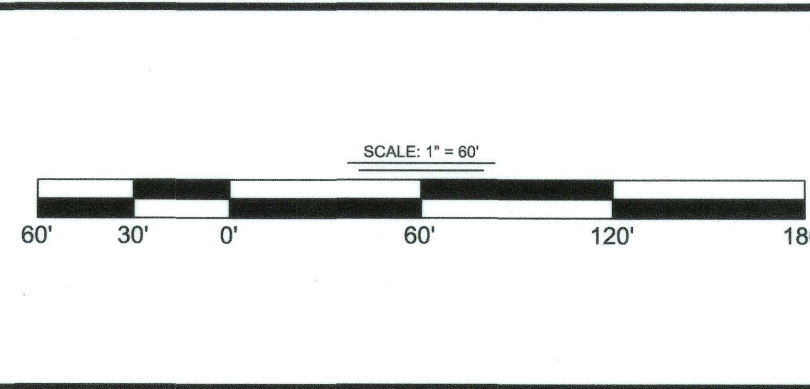
Naismith Marine Services, Inc.
 www.naismithmarine.com
 (361) 334-5719
 FIRM #10194575

THIS DOCUMENT IS RECORDED IN:
 NUECES COUNTY
 VOLUME 69, PAGE 595, OFFICIAL PUBLIC RECORDS

NOTES:

REV. NO.	REV. DATE	REV. DESCRIPTION	REV. BY
00			

TEXAS GENERAL LAND OFFICE
 Art. 33.136, Natural Resources Code
 Co. NUECES, SR. No. 20
 File Date 06/24/2022 by K. Schreiber



DRAWN BY: JTR APPROVED BY: JMN
 DATE: 3/22/2021 JOB NO.: 2020.0687
 DRAWING NAME: 2020.0687 HDR LAGUNA SHORES MHHW DWG
 PROJECTION: TEXAS SOUTH ZONE
 GEO. DATUM: NAD83 (2011) VERT. DATUM: NAVD88
 GRID UNITS: US SURVEY FEET
 SHEET NO: 1 OF 1

LAGUNA SHORES LIVING SHORELINE
 HDR ENGINEERING, INC.
 COASTAL BOUNDARY SURVEY OF A PORTION OF
 THE WESTERN SHORELINE OF THE LAGUNA MADRE
 SITUATED IN LAGUNA MADRE SUBMERGED LAND TRACT 15
 APPROXIMATELY TWELVE MILES SOUTHEASTERLY OF
 THE CITY OF CORPUS CHRISTI, NUECES COUNTY, TEXAS

3/22/2021 - P:\Y-2020\020.0687\DWG\CBS MAP AND REPORT\2020.0687 HDR LAGUNA SHORES MHHW.DWG



TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

Surveying Division
Coastal Boundary Survey Approval

Project: Laguna Madre situated within the Ramon de Ynojosa Survey, Abstract 411 and Laguna Madre Submerged Land tract 15, approximately twelve miles southeasterly of the city of Corpus Christi, Nueces County, Texas.

Project No: Coastal Erosion Planning and Response Act (CPERA) Project # 1658

Project Manager: Kelly Brooks, Coastal Resources

Surveyor: James M. Naismith, Licensed State Land Surveyor

Description: Coastal Boundary Survey, dated March 31, 2011, delineating the littoral boundary along the western shoreline of the Laguna Madre situated within the Ramon de Ynojosa Survey, Abstract 411 and Laguna Madre Submerged Land tract 15, approximately twelve miles southeasterly of the city of Corpus Christi, Nueces County, Texas in connection with *planned Coastal Erosion Planning and Response Act (CEPRA) Project # 1658, Dune Restoration and Beach Nourishment*. Centroid coordinates N 27°39'27.96", W 97°16'36.79", WGS84. A copy of the survey has been filed in Volume 69, Page 595, Nueces County Official Records

A Coastal Boundary Survey for the above-referenced project has been reviewed and accepted; upon completion of public notice requirements, the survey will be filed in the Texas General Land Office, Archives and Records, in accordance with provisions of the *Texas Natural Resources Code*, Chapter 33.136.

Approved:

Signed: [Signature]
Surveying Division

10/19/2021
Date

Approval Filed as:

Tex.Nat.Res.Code Article 33.136, Nueces County, Sketch No. 20

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code

Co. NUECES, SK No. 20

File Date 06/14/2022 by K. Schreiber

Naismith Marine Services, Inc.

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(361) 334-5719
FIRM #10078500



MARCH 2021

COASTAL BOUNDARY SURVEY OF A PORTION OF THE WESTERN SHORELINE OF THE LAGUNA MADRE SITUATED WITHIN THE RAMON DE YNOJOSA SURVEY, ABSTRACT 411 AND LAGUNA MADRE SUBMERGED LAND TRACT 15, APPROXIMATELY TWELVE MILES SOUTHEASTERLY OF THE CITY OF CORPUS CHRISTI, NUECES COUNTY, TX
AND BEING UPON, OVER, AND ACROSS A CALLED 1 ACRE TRACT CONVEYED TO STRATEGIC INVESTMENT SOLUTIONS, LLC AS RECORDED IN DOC# 2016001660, OFFICIAL PUBLIC RECORDS OF NUECES COUNTY TEXAS (O.P.R.N.C.T.), A CALLED 13.246 ACRE TRACT CONVEYED TO EXXON MOBIL CORPORATION AS RECORDED IN DOC# 2004062461, O.P.R.N.C.T., AND THE RIGHT-OF-WAY OF LAGUNA SHORES ROAD

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code

Co. NUECES, 51K No. 20
File Date 06/14/2022 by K. Schreiber

This report accompanies a map of survey dated March 2021.



Figure 1: Typical western shoreline of the Laguna Madre within surveyed area

A coastal boundary survey was conducted along the western shore of the Laguna Madre situated in Laguna Madre Submerged Land Tract 15, approximately 12 miles southeasterly of the City of Corpus Christi, in Nueces County, Texas. All survey work was performed using survey grade RTK GPS base and rover: R10 receivers. The survey was conducted October 15, 2020.

SURVEY CONTROL: One NGS survey marker was used as primary control: "877 5792 A TIDAL" (AC8464, N:17,121,538.35, E: 1,393,149.44, EL: 2.76' NAVD88), published position, and

A portion of the western shoreline of the Laguna Madre in Laguna Madre Submerged Land Tract 15, Page 1

Two NGS survey markers were used as secondary control:

“SP 050” (AH1716, N: 17,131,619.38, E: 1,376,833.30, EL: 16.34’ NAVD88), coordinates as measured from primary control.

“SQ 051” (AH1735, N: 17,121,072.87, E: 1,376,329.27, EL: 3.16’ NAVD88), coordinates as measured from primary control.

Two found monuments are referenced for local control:

Found 4” iron pipe (no stamping) N: 17,129,380.88, E: 1,379,974.42

Found 3” iron pipe (no stamping) N: 17,129,121.76, E: 1,379,905.66

Table 1: NGS benchmarks used as primary & secondary control for the survey.

	Northing	Easting	Elevation
NGS BENCHMARKS			
NGS ‘877 5792 A TIDAL’ (published position)	17,121,538.35	1,393,149.44	2.76’
NGS ‘SP 050’ (as measured from primary)	17,131,619.38	1,376,833.30	16.34’
NGS ‘SQ 051’ (as measured from primary)	17,121,072.87	1,376,329.27	3.16’

Table 2: Found monuments referenced for local control.

	Northing	Easting	Elevation
LOCAL CONTROL			
Found 4” iron pipe (NO STAMPING)	17,129,380.88	1,379,974.42	N/A
Found 3” iron pipe (NO STAMPING)	17,129,121.76	1,379,905.66	N/A

Datum is NAD 83 (2011), South Zone of the Texas Coordinate System (US Feet). Orthometric heights referenced to NAVD88 datum (Geoid 18).

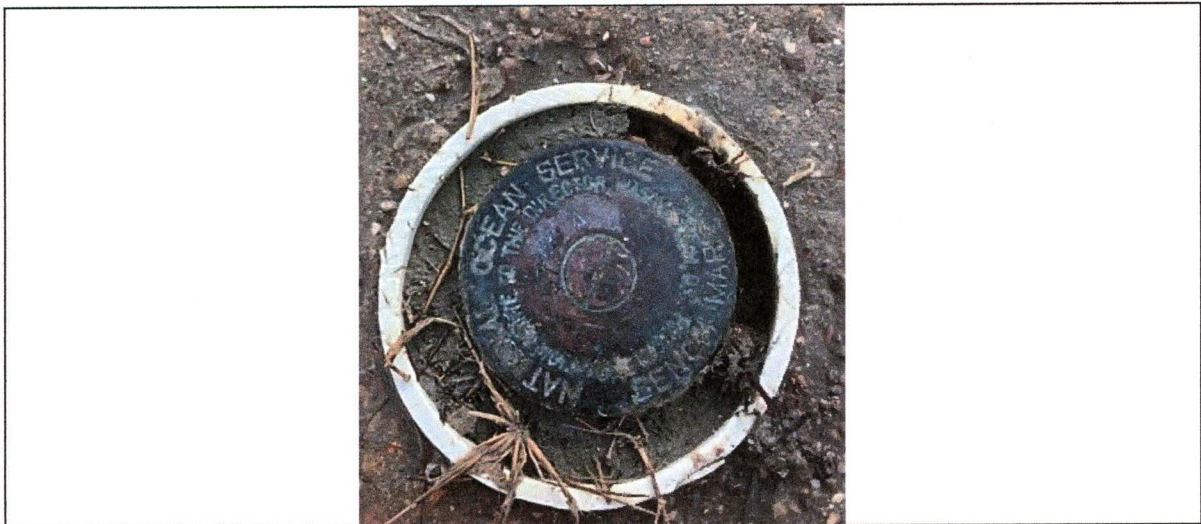


Figure 2: NGS benchmark “877 5792 A TIDAL” (N:17,121,538.35, E: 1,393,149.44, EL: 2.76’ NAVD88)

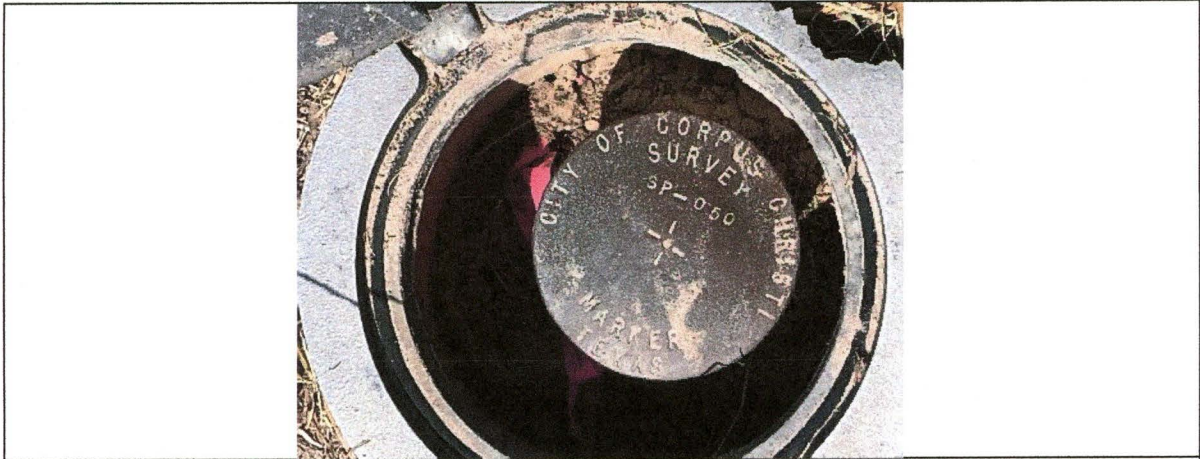


Figure 3: NGS benchmark "SP 050" (N: 17,131,619.38, E: 1,376,833.30, EL: 16.34' NAVD88), coordinates as measured from primary control.

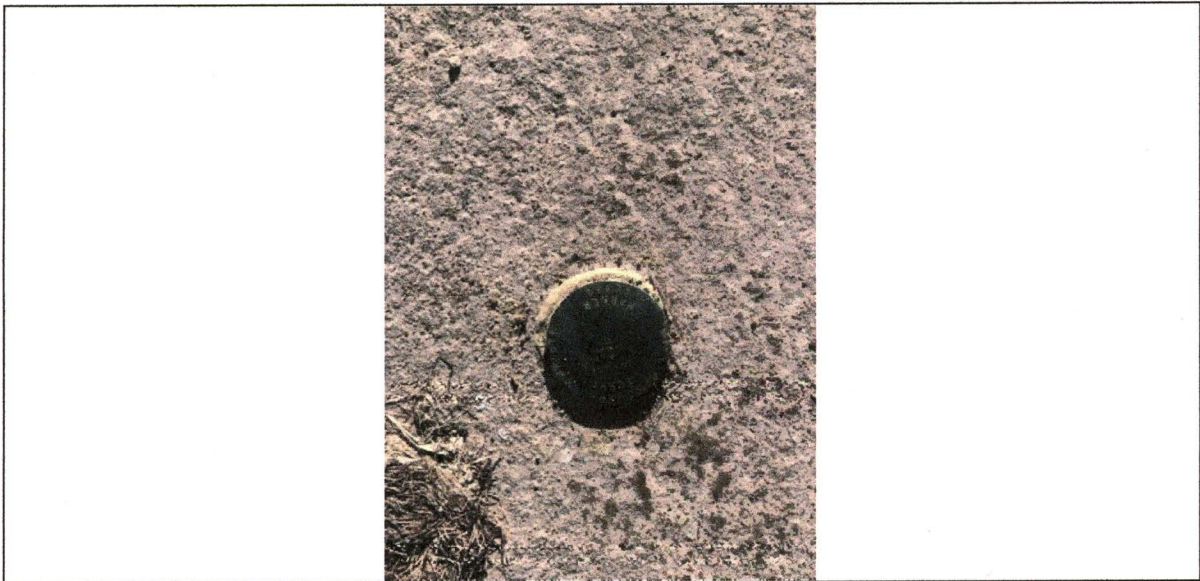


Figure 4: NGS benchmark "SQ 051" (N: 17,121,072.87, E: 1,376,329.27, EL: 3.16' NAVD88), coordinates as measured from primary control.



Figure 5: Local Control: Found 4" iron pipe (N: 17,129,380.88, E: 1,379,974.42)



Figure 6: Local Control: Found 3" iron pipe (N: 17,129,121.76, E: 1,379,905.66)



Figure 7: Existing culverts, possible localized influence on surveyed MHHW line

STATE OWNERSHIP BOUNDARY: As referenced to this survey, the state ownership boundary is based on the mean higher high water (MHHW) contour. MHHW elevation of 0.79' NAVD88 for Laguna Madre was determined by measurements taken from a local tide gauge and calculated against an existing tide gauge located near the Intracoastal Water Way and the J.F.K. Causeway, operated by the Conrad Blucher Institute for Surveying and Science and designated as "Packery Channel". The local and published gauges produced agreeable tidal ranges over the course of the five day monitoring period. Thus, the published MHHW elevation of 0.79' NAVD88 was utilized for this survey.

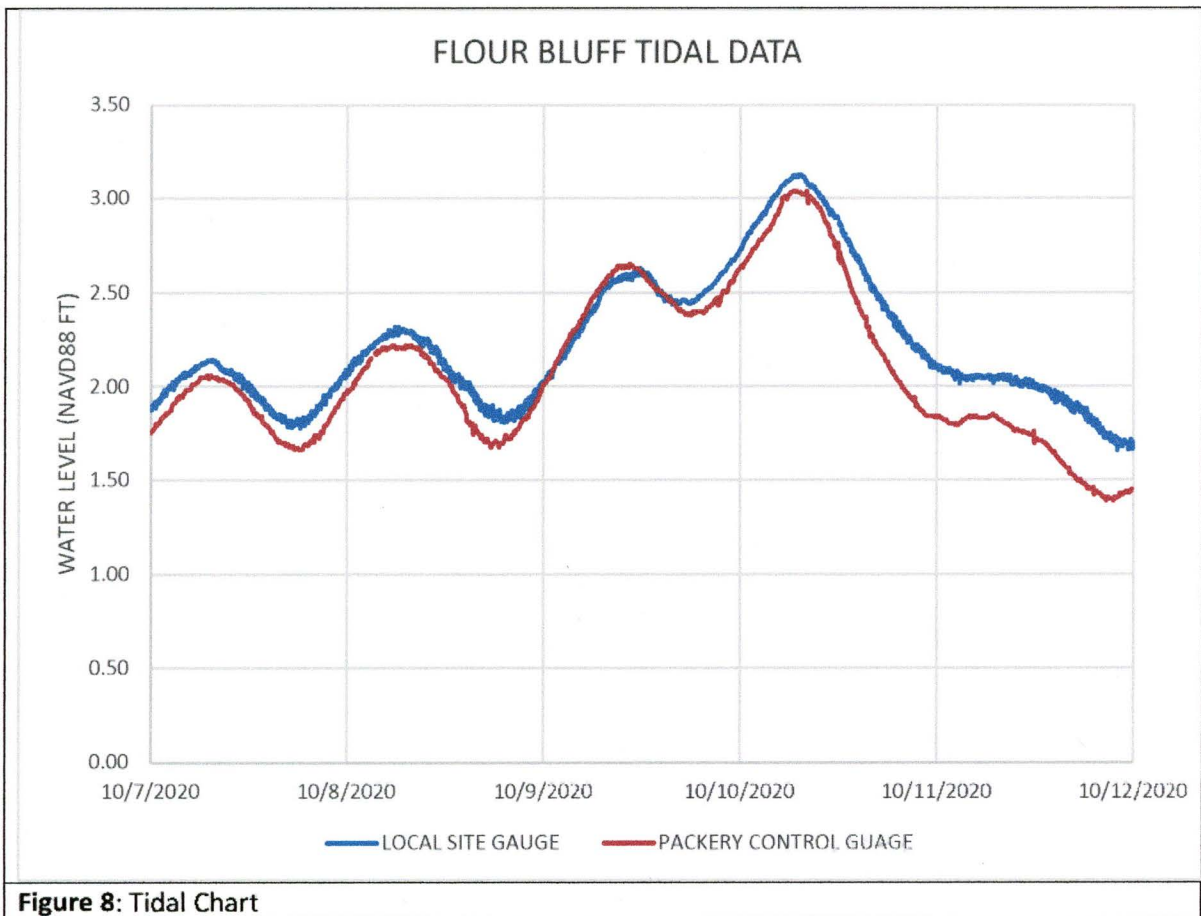


Figure 8: Tidal Chart

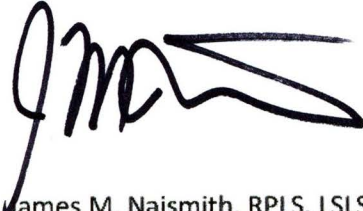
FIELD NOTES for the littoral boundary along the western shoreline of the Laguna Madre shoreline, being situated within the Ramon De Ynojosa Survey, Abstract 411 and Laguna Madre Submerged Land Tract 15, approximately 12 miles southeasterly of the City of Corpus Christi, in Nueces County, Texas, and being upon, over, and across a called 1 acre tract conveyed to Strategic Investment Solutions, LLC as Recorded in DOC# 2016001660, Official Public Records of Nueces County Texas (O.P.R.N.C.T.), a called 13.246 acre tract conveyed to Exxon Mobil Corporation as recorded in DOC# 2004062461, O.P.R.N.C.T., and the right-of-way of Laguna Shores Road, all as referenced and depicted upon the face of the accompanying survey plat. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Zone (4205) of the Texas Coordinate System;

Beginning at the southernmost point of this surveyed shoreline, (N: 17,129,295.21, E: 1,380,114.26, EL: 0.79') on the MHHW (Mean Higher High Water) line along the Laguna Madre shoreline; from which NGS monument "877 5792 A TIDAL" (N:17,121,538.35, E: 1,393,149.44, EL: 2.76') bears S 59°14'40" E a distance of 15,168.55 feet (5,460.68V), NGS monument "SQ 051" (N: 17,121,072.87, E: 1,376,329.27, EL: 3.16') bears S 24°43'05" W a distance of 9,051.68 feet (3,258.60V), a found 4" iron pipe (N: 17,129,380.88, E: 1,379,974.42) bears N 58°30'20" W a distance of 163.99 feet (59.04V), and a found 3" iron pipe (rusted, possible old fence corner) (N: 17,129,121.76, E: 1,379,905.66) bears S 50°15'20" W a distance of 271.29 feet (97.66V).

Thence along the western shoreline of the Laguna Madre and said MHHW line, the following courses and distances:

N 12°21'17" E a distance of 13.98 feet (5.03V);
N 57°33'51" E a distance of 25.39 feet (9.14V);
N 27°14'22" E a distance of 22.72 feet (8.18V);
N 45°56'41" W a distance of 47.08 feet (16.95V);
N 16°09'40" W a distance of 22.54 feet (8.11V);
N 52°31'42" W a distance of 60.60 feet (21.82V);
N 05°46'17" E a distance of 51.46 feet (18.53V);
N 04°51'57" W a distance of 123.02 feet (44.29V);
N 21°50'39" W a distance of 29.80 feet (10.73V);
N 01°53'23" W a distance of 22.47 feet (8.09V);
N 11°11'53" E a distance of 73.26 feet (26.38V);
N 32°07'00" E a distance of 46.45 feet (16.72V);
N 33°04'46" W a distance of 18.12 feet (6.52V);
N 01°10'14" E a distance of 6.46 feet (2.33V);
S 85°39'32" E a distance of 21.93 feet (7.89V);
N 55°10'42" E a distance of 225.77 feet (81.28V);
N 25°25'02" E a distance of 13.80 feet (4.97V);
N 57°01'03" E a distance of 40.12 feet (14.44V);
S 73°15'43" E a distance of 36.88 feet (13.28V);
N 11°53'18" E a distance of 56.74 feet (20.43V);
N 25°14'50" E a distance of 43.41 feet (15.63V);
N 15°51'49" E a distance of 143.05 feet (51.50V);

Thence N 42°30'27" E a distance of 22.42 feet (8.07V) to the Point of Termination (N: 17,130,190.55, E: 1,380,439.50, EL: 0.79'), from which NGS monument "SP 050" (N: 17,131,619.38, E: 1,376,833.30, EL: 16.34' NAVD88) bears N 68°23'09" W a distance of 3,878.94 feet (1,396.42V).



3/31/2021

James M. Naismith, RPLS, LSLs

Naismith Marine Services, Inc.

