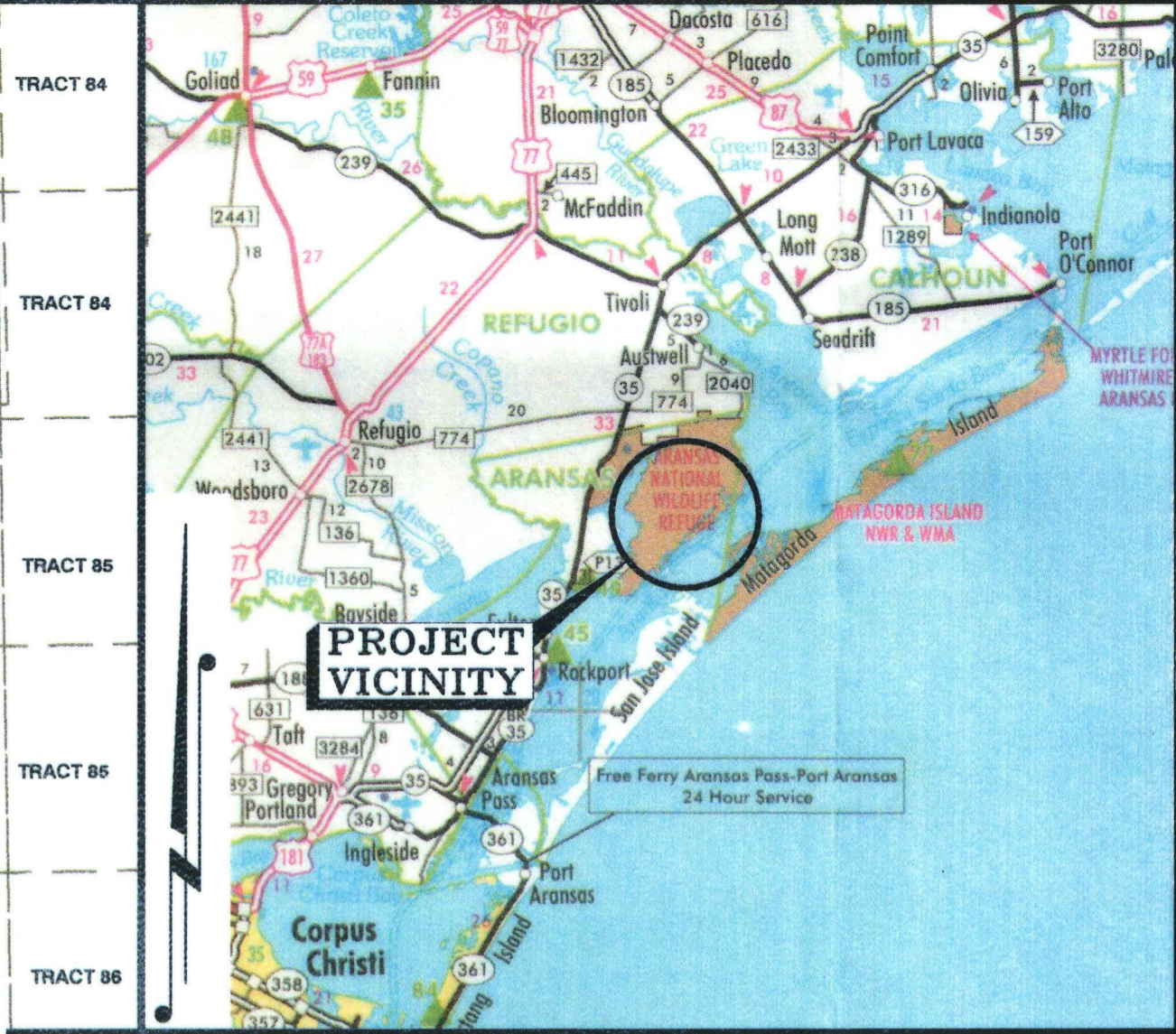


ARANSAS NATIONAL WILDLIFE REFUGE
THE UNITED STATES OF AMERICA
C.F. No. 2370
D.R.A.C.T.
P.O. BOX 100
AUSTWELL, TX 77950



VICINITY MAP
NOT TO SCALE

- NOTES:
- ALL COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4204), NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT), US FEET. ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL DISTANCES GRID. THE COMBINED SCALE FACTOR IS 1.00004878 AND CONVERGENCE ANGLE IS +01° 04' 41.5".
 - COORDINATES AND ELEVATIONS ARE BASED ON NGS MONUMENTS:
 NGS MONUMENT "877 90037 B"
 N: 13,283,608.70
 E: 2,635,886.73
 EL: 2.8' NAVD88
 NGS MONUMENT "877 90038 B"
 N: 13,275,073.31
 E: 2,877,188.40
 EL: 3.8' NAVD88
 - ALL OTHER MONUMENTS ARE REFERENCED AS MEASURED AND SHOWN HEREON.
 - ALL POSITIONS AND ELEVATIONS RECORDED USING SURVEY GRADE, RTK GPS. EQUIPMENT: HEMISPHERE S320 AND TRIMBLE R10 RECEIVERS.
 - THE STATE OWNERSHIP BOUNDARY IS BASED ON THE MEAN HIGH WATER (MHW) CONTOUR. MHW ELEVATION OF 1.28' NAVD88 WAS DETERMINED IN ACCORDANCE WITH NOAA TIDE GAUGE: "ARANSAS WILDLIFE REFUGE, TX - STATION ID: 8774230".
 - TO CONVERT FEET TO VARAS MULTIPLY BY 0.36.
 - SURVEY LINES ARE APPROXIMATE.
 - REFERENCE ACCOMPANYING REPORT CONTAINING FIELD NOTES DATED MAY 2 THROUGH 25, 2023 FOR ADDITIONAL INFORMATION.
 - EROSION RESPONSE WORK: COASTAL BEND BAYS AND ESTUARIES PROGRAM (CBBEP) PROJECT NO. 2312 AND GLO PROJECT NO. 1127.
 - NO ARTIFICIAL FILL / BUILDUP EXISTS AT TIME OF SURVEY.
 - THE TYPICAL SHORELINE OF ARANSAS NATIONAL WILDLIFE REFUGE IS COVERED WITH CONCRETE MATTING.

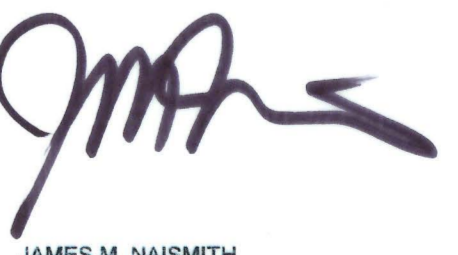
I, JAMES M. NAISMITH, HEREBY STATE THAT THIS DRAWING REPRESENTS A SURVEY THAT IS CORRECT; IN ACCORDANCE WITH SECTION 21.042 TEXAS NATURAL RESOURCES CODE, WAS MADE ACCORDING TO LAW. WAS MADE IN THE FIELD UNDER MY DIRECT CONTROL AND SUPERVISION; WAS MADE UTILIZING METHODOLOGY APPROVED BY THE GLO; AND IS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


403985 V:8 P:88-9

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 COASTAL BOUNDARY SURVEY OF MEAN HIGH WATER EXTENDS ALONG PORTIONS OF THE GULF INTRACOASTAL WATERWAY AND THE ARANSAS NATIONAL WILDLIFE REFUGE.

SURVEYED: MAY 2 THROUGH 25, 2023
 SURVEY PERSONNEL: SCOTTY RALL, SR., SCOTTY RALL, JR., VINNI MAGNI


 JAMES M. NAISMITH
 LICENSED STATE LAND SURVEYOR



LEGEND:

	FOUND POINT OF BEGINNING
	POINT OF TERMINATION
	RIGHT-OF-WAY
	MEAN HIGH WATER
	OFFICIAL PUBLIC RECORDS OF ARANSAS COUNTY, TEXAS
	OFFICIAL PUBLIC RECORDS OF CALHOUN COUNTY, TEXAS
	DEED RECORDS OF ARANSAS COUNTY, TEXAS
	CONTROL POINT
	MHW LINE, MAY 2023, ELEV. = 1.28' NAVD88 (GEOID 18)
	APPARENT PROPERTY LINE
	APPROXIMATE SURVEY LINE

REV. NO.	REV. DATE	REV. DESCRIPTION	REV. BY:
02	11/02/23	GLO APPROVED	MM
01	09/06/23	GLO REVISIONS	MM


T. BAKER SMITH
 A CENTURY OF SOLUTIONS
 3854 FM 1069
 Aransas Pass, TX 78336
 (361)334-5719 - tbsmith.com

SCALE: 1" = 200'

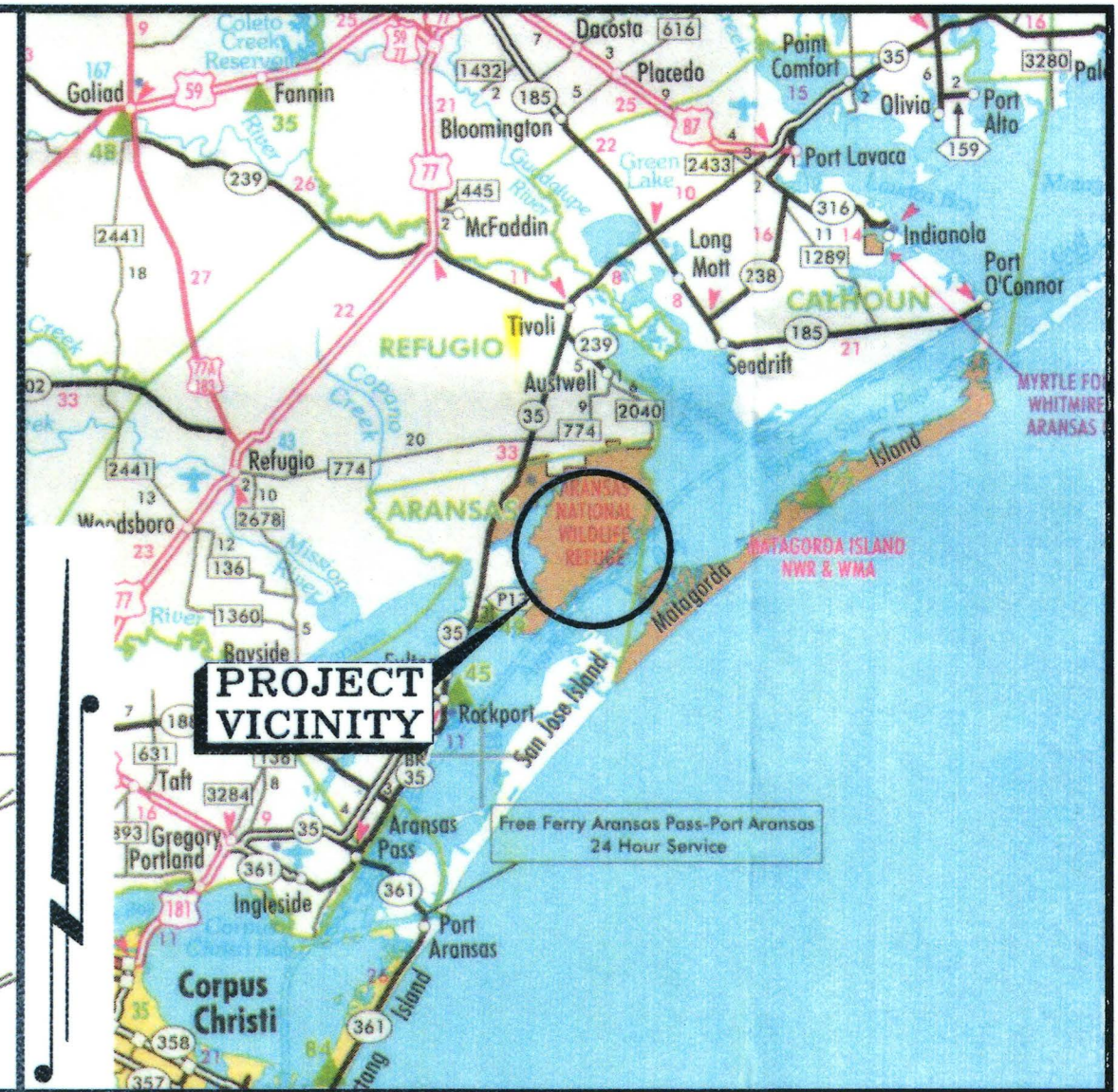


DRAWN BY:	MM	APPROVED BY:	JTR
DATE:	07/20/2023	JOB NO.:	2022.0141
DRAWING NAME: 22.0141_ANCHOR_QEA_ANWR_MHW_MAY_2023_REV2.DWG			
PROJECTION: TEXAS SOUTH CENTRAL ZONE GEO. DATUM: NAD83 (2011) VERT. DATUM: NAVD88 GRID UNITS: US SURVEY FEET			
SHEET NO.:	1	OF	4

COASTAL BOUNDARY SURVEY
ANCHOR QEA, LLC
 COASTAL BOUNDARY SURVEY ALONG PORTIONS OF
 THE GULF INTRACOASTAL WATERWAY
 AND THE ARANSAS NATIONAL WILDLIFE REFUGE
 AND BEING SITUATED IN
 ARANSAS & CALHOUN COUNTIES, TEXAS

11/2/2023 - P:\Y-2023\2022.0141\DWG\MHW22.0141_ANCHOR_QEA_ANWR_MHW_MAY_2023_REV2.DWG

ARANSAS NATIONAL WILDLIFE REFUGE
THE UNITED STATES OF AMERICA
C.F. No. 2370
D.R.A.C.T.
P.O. BOX 100
AUSTWELL, TX 77950



VICINITY MAP
NOT TO SCALE

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 E: 2,635,886.73
 EL.: 2.6' NAVD88

 NGS MONUMENT "877 90038 B"
 N: 13,275,073.31
 E: 2,677,168.40
 EL.: 3.6' NAVD88
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 - TO CONVERT FEET TO VARAS MULTIPLY BY 0.36.
 - SURVEY LINES ARE APPROXIMATE.
 - REFERENCE ACCOMPANYING REPORT CONTAINING FIELD NOTES DATED MAY 2 THROUGH 25, 2023 FOR ADDITIONAL INFORMATION.
 - EROSION RESPONSE WORK: COASTAL BEND BAYS AND ESTUARIES PROGRAM (CBBEP) PROJECT NO. 2312 AND GLO PROJECT NO. 1727.
 - NO ARTIFICIAL FILL / BUILDUP EXISTS AT TIME OF SURVEY.
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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

403985 V:R P:88-9

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THIS COASTAL BOUNDARY SURVEY OF MEAN HIGH WATER EXTENDS ALONG PORTIONS OF THE GULF INTRACOASTAL WATERWAY AND THE ARANSAS NATIONAL WILDLIFE REFUGE.

SURVEYED: MAY 2 THROUGH 25, 2023
 SURVEY PERSONNEL: SCOTTY RALL, SR., SCOTTY RALL, JR., VINNI MAGNI

JMA 1/22/2024
 JAMES M. NAISMITH
 LICENSED STATE LAND SURVEYOR

SEGMENT 1

LINE	BEARING	FEET	DISTANCE	VARAS
L1	S 30°57'58" E	64.96'	23.35V	
L2	S 52°29'48" E	144.78'	18.13V	
L3	S 36°58'01" E	62.90'	22.64V	
L4	N 78°00'50" E	18.26'	6.63V	
L5	N 83°08'48" E	15.04'	5.41V	
L6	N 08°21'07" W	15.05'	5.42V	
L7	N 81°48'34" E	34.95'	12.58V	
L8	N 79°24'43" E	71.81'	25.85V	

SEGMENT 2

LINE	BEARING	FEET	DISTANCE	VARAS
L9	N 38°17'38" E	56.74'	20.43V	
L10	N 71°35'21" E	38.47'	13.95V	
L11	N 27°33'47" E	37.84'	13.55V	
L12	N 42°43'39" E	24.86'	8.95V	
L13	N 28°30'18" E	41.70'	15.01V	
L14	N 42°50'58" E	70.11'	25.24V	
L15	N 31°05'41" E	49.91'	17.87V	
L16	N 06°08'31" E	17.36'	6.26V	
L17	N 58°07'01" E	31.06'	11.19V	
L18	N 72°18'54" E	8.44'	3.04V	
L19	N 24°11'51" E	46.81'	16.85V	
L20	N 47°45'15" E	35.93'	12.90V	
L21	N 38°08'21" E	88.72'	31.84V	
L22	N 17°06'18" E	11.63'	4.19V	
L23	N 89°49'20" E	85.54'	30.39V	
L24	N 18°49'34" E	13.08'	4.73V	
L25	N 48°30'57" E	18.29'	6.63V	
L26	N 39°42'20" E	35.17'	11.85V	
L27	N 83°13'21" E	24.20'	8.71V	
L28	N 26°59'58" E	14.95'	5.39V	
L29	N 66°09'07" E	6.87'	2.48V	
L30	N 58°29'49" E	33.35'	12.01V	
L31	N 20°17'59" W	6.70'	2.41V	
L32	N 41°58'34" E	28.73'	10.42V	
L33	N 07°17'10" E	9.88'	3.58V	
L34	N 68°59'40" E	23.03'	8.29V	
L35	N 32°57'13" E	24.92'	8.97V	
L36	N 67°37'17" E	33.27'	12.09V	
L37	N 18°09'59" W	12.42'	4.47V	
L38	N 36°19'54" E	39.78'	14.32V	
L39	N 82°13'33" E	12.32'	4.45V	
L40	N 27°10'24" E	73.48'	26.44V	
L41	N 38°58'57" E	38.26'	13.85V	

SEGMENT 3

LINE	BEARING	FEET	DISTANCE	VARAS
L42	N 37°29'01" E	387.44'	139.88V	
L43	N 46°17'54" E	51.95'	18.71V	
L44	N 52°13'33" E	22.24'	8.01V	
L45	N 43°02'48" E	30.31'	10.91V	
L46	N 28°54'08" E	42.23'	15.20V	
L47	N 37°11'17" E	72.76'	26.19V	

SEGMENT 4

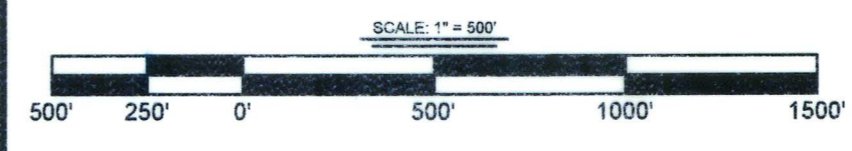
LINE	BEARING	FEET	DISTANCE	VARAS
L48	N 42°00'04" E	64.55'	23.25V	
L49	N 44°13'13" E	34.35'	12.38V	
L50	N 44°32'38" E	58.59'	20.37V	
L51	N 06°03'28" W	20.72'	7.46V	
L52	N 14°25'48" E	14.25'	5.13V	
L53	N 61°13'59" E	38.41'	13.71V	
L54	N 62°26'28" E	30.22'	10.88V	
L55	N 21°37'09" E	40.36'	14.54V	
L56	N 63°11'39" E	6.38'	2.29V	
L57	N 24°18'48" E	19.15'	6.89V	
L58	N 53°58'56" E	15.43'	5.56V	
L59	N 82°22'17" E	80.91'	29.13V	
L60	N 08°19'08" E	15.07'	5.42V	
L61	N 52°01'07" E	14.30'	5.15V	
L62	N 80°24'54" E	12.37'	4.45V	
L63	N 11°40'47" E	17.44'	6.28V	
L64	N 47°34'53" E	51.37'	18.49V	
L65	S 72°00'13" E	5.53'	1.99V	
L66	N 25°39'59" E	49.28'	17.60V	
L67	N 78°18'42" E	5.21'	1.88V	
L68	N 34°59'49" E	104.20'	37.51V	
L69	N 25°47'49" E	30.75'	11.07V	
L70	N 39°18'43" E	87.37'	31.45V	

LEGEND:

FND	FOUND
P.O.B.	POINT OF BEGINNING
P.O.T.	POINT OF TERMINATION
R.O.W.	RIGHT-OF-WAY
MHW	MEAN HIGH WATER
O.P.R.A.C.T.	OFFICIAL PUBLIC RECORDS OF ARANSAS COUNTY, TEXAS
P.R.C.C.T.	OFFICIAL PUBLIC RECORDS OF CALHOUN COUNTY, TEXAS
D.R.A.C.T.	DEED RECORDS OF ARANSAS COUNTY, TEXAS
△	CONTROL POINT
—	MHW LINE, MAY 2023, ELEV. = 1.28' NAVD88 (GEOID 18)
---	APPROXIMATE SURVEY LINE

REV. NO.	REV. DATE	REV. DESCRIPTION	REV. BY:
02	11/02/23	GLO APPROVED	MM
01	09/06/23	GLO REVISIONS	MM

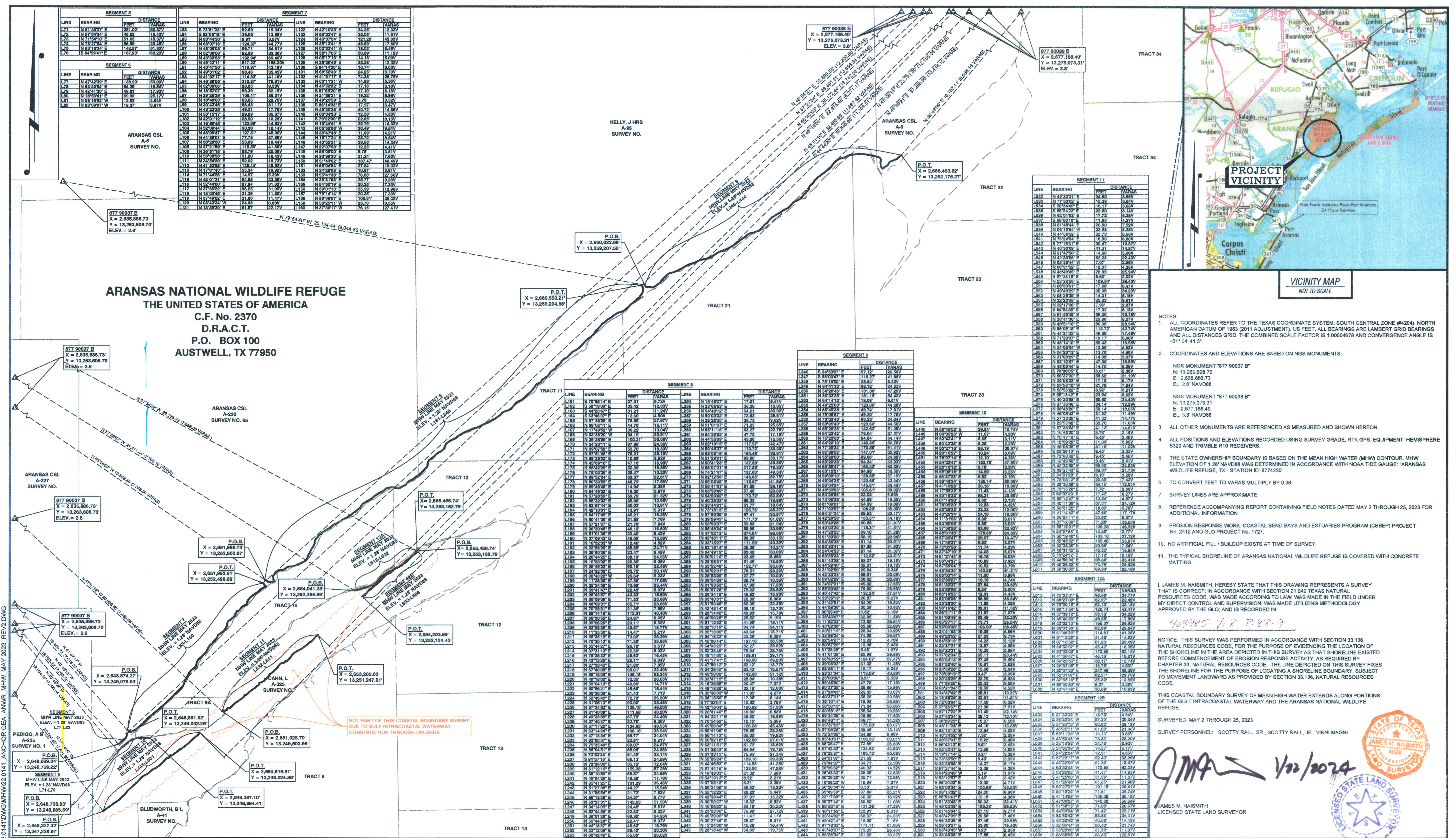
T. BAKER SMITH
 A CENTURY OF SOLUTIONS
 3854 FM 1069
 Aransas Pass, TX 78336
 (361)334-5719 - tbsmith.com



DRAWN BY: MM APPROVED BY: JTR
 DATE: 07/20/2023 JOB NO.: 2022.0141
 DRAWING NAME: 22.0141_ANCHOR_QEA_AINWR_MHW_MAY_2023_REV2.DWG
 PROJECT: TEXAS SOUTH CENTRAL ZONE
 GEO. DATUM: NAD83 (2011) | VERT. DATUM: NAVD88
 GRID UNITS: US SURVEY FEET
 SHEET NO: 2 OF 4

COASTAL BOUNDARY SURVEY
ANCHOR QEA, LLC
 COASTAL BOUNDARY SURVEY ALONG PORTIONS OF
 THE GULF INTRACOASTAL WATERWAY
 AND THE ARANSAS NATIONAL WILDLIFE REFUGE
 AND BEING SITUATED IN
 ARANSAS & CALHOUN COUNTIES, TEXAS

11/2/2023 - P:\Y-2023\2022-0141\DWG\MHW22.0141_ANCHOR_QEA_AINWR_MHW_MAY_2023_REV2.DWG



ARANSAS NATIONAL WILDLIFE REFUGE
THE UNITED STATES OF AMERICA
C.F. No. 2370
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VICINITY MAP
 NOT TO SCALE

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 - TO CONVERT FEET TO VARAS MULTIPLY BY 0.36.
 - SURVEY LINES ARE APPROXIMATE.
 - REFERENCE ACCOMPANYING REPORT CONTAINING FIELD NOTES DATED MAY 2 THROUGH 25, 2023 FOR ADDITIONAL INFORMATION.
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403985 V.8 P.88-9

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SURVEYED: MAY 2 THROUGH 25, 2023

SURVEY PERSONNEL: SCOTTY RALL, SR., SCOTTY RALL, JR., VINNI MAGNI

[Signature] 1/22/2024

JAMES M. NAISMITH
 LICENSED STATE LAND SURVEYOR

LEGEND:

FND	FOUND
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P.O.T.	POINT OF TERMINATION
R.O.W.	RIGHT-OF-WAY
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O.P.R.C.C.T	OFFICIAL PUBLIC RECORDS OF CALHOUN COUNTY, TEXAS
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△	CONTROL POINT
---	APPROXIMATE SURVEY LINE

REV. NO.	REV. DATE:	REV. DESCRIPTION:	REV. BY:
02	11/02/23	GLO APPROVED	MM
01	09/06/23	GLO REVISIONS	MM

T. BAKER SMITH
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3854 FM 1069
 Aransas Pass, TX 78336
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SCALE: 1" = 1000'

DRAWN BY: MM APPROVED BY: JTR

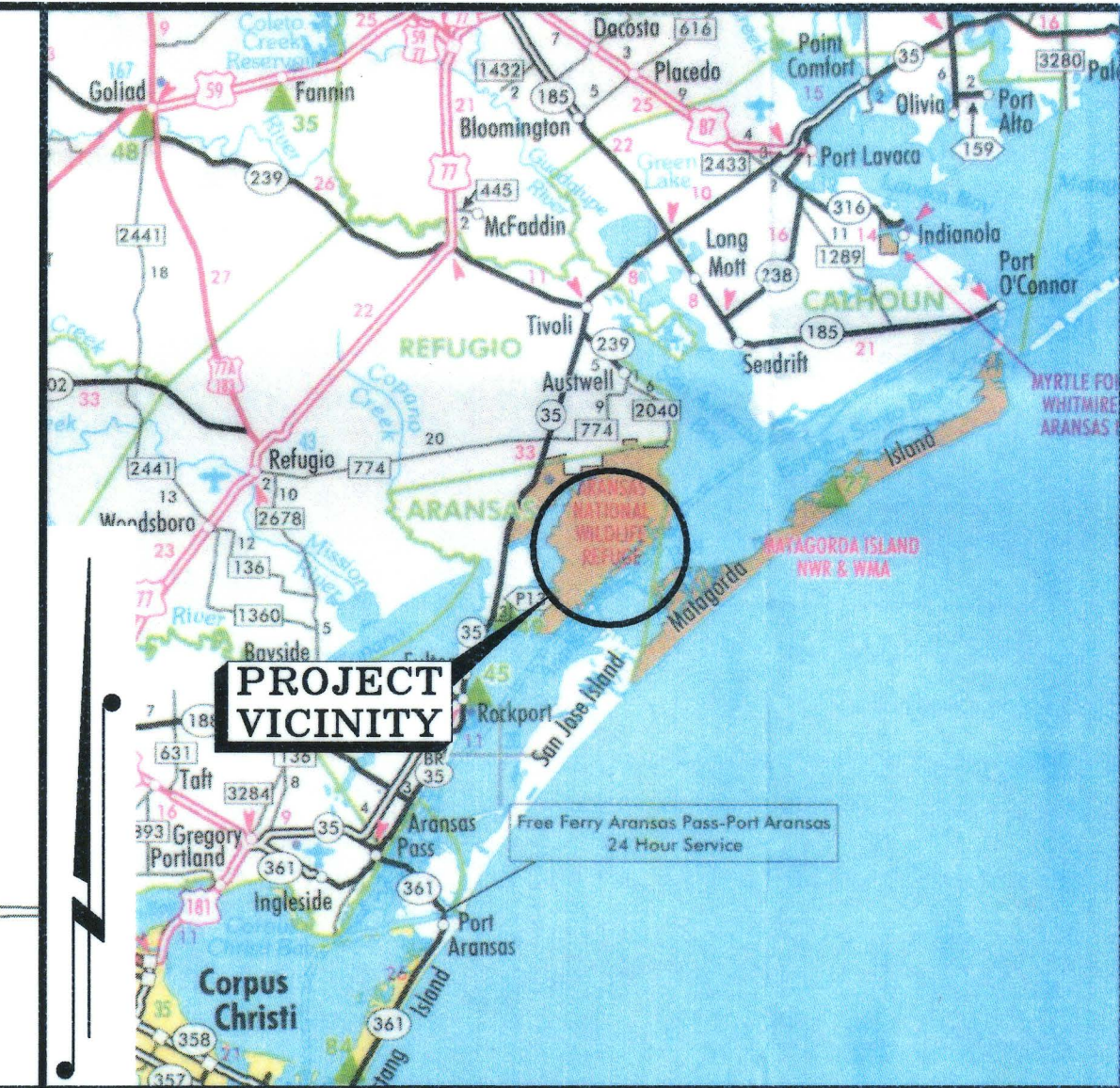
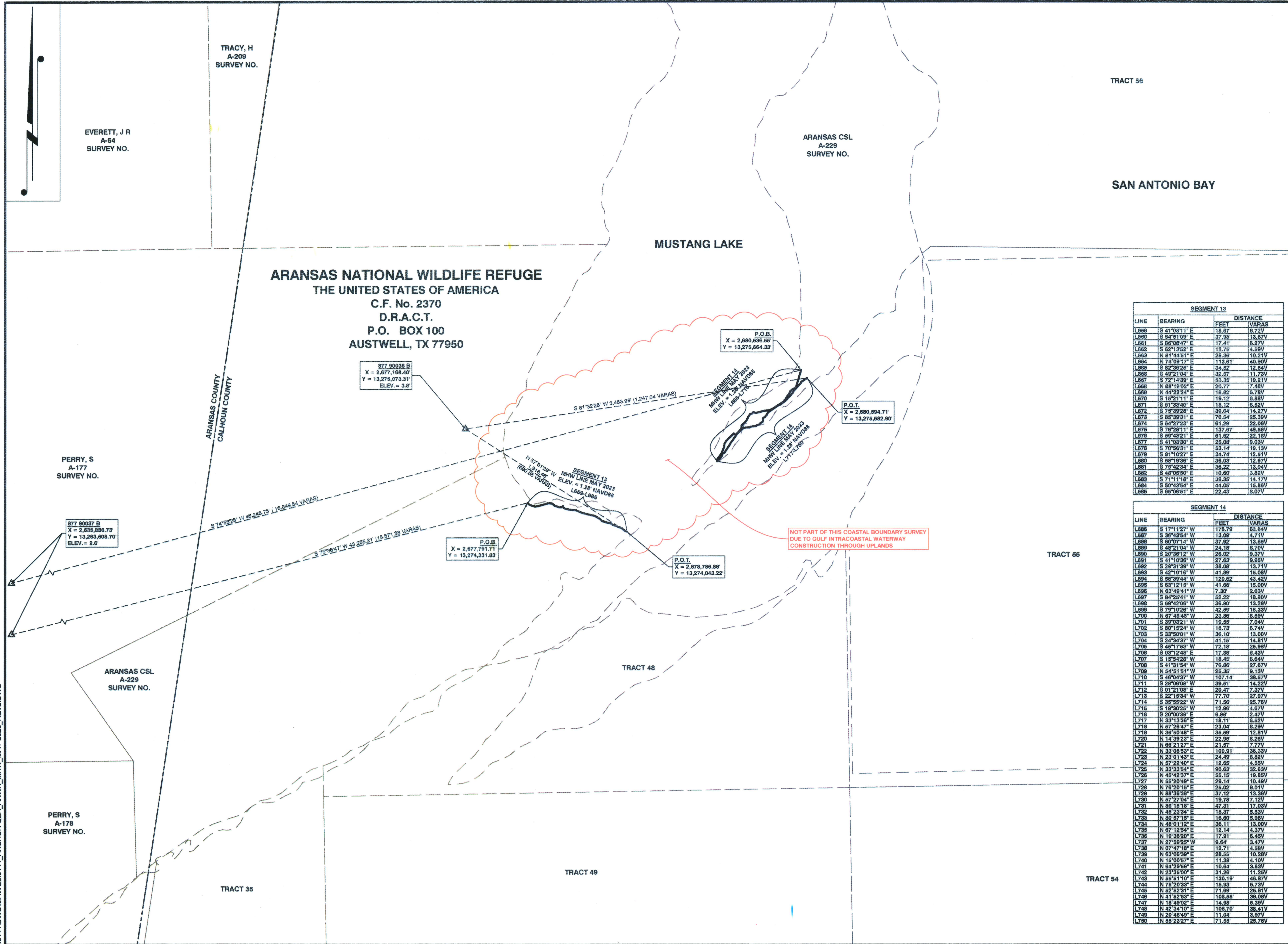
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DRAWING NAME: 22.0141_ANCHOR_QEA_ANWR_MHW_MAY_2023_REV2.DWG

PROJECTION: TEXAS SOUTH CENTRAL ZONE
 GEO. DATUM: NAD83 (2011); VERT. DATUM: NAVD88
 GRID UNITS: SURVEY FEET

SHEET NO: 3 OF 4

COASTAL BOUNDARY SURVEY
ANCHOR QEA, LLC
COASTAL BOUNDARY SURVEY ALONG PORTIONS OF
THE GULF INTRACOASTAL WATERWAY
AND THE ARANSAS NATIONAL WILDLIFE REFUGE
AND BEING SITUATED IN
ARANSAS & CALHOUN COUNTIES, TEXAS



VICINITY MAP
NOT TO SCALE

SEGMENT 13

LINE	BEARING	FEET	DISTANCE	VARIABLES
L658	S 41°08'11" E	18.57'	6.72V	
L660	S 64°51'09" E	37.98'	13.67V	
L661	S 85°08'47" E	17.41'	6.27V	
L662	S 92°13'59" E	12.75'	4.99V	
L663	N 81°44'51" E	28.38'	10.21V	
L664	N 74°09'17" E	119.61'	40.80V	
L665	S 82°38'28" E	39.85'	12.56V	
L666	S 49°21'04" E	32.57'	11.73V	
L667	S 72°14'39" E	83.38'	19.21V	
L668	N 88°19'02" E	20.77'	7.48V	
L669	N 44°22'24" E	16.82'	6.78V	
L670	S 19°21'11" E	15.12'	6.88V	
L671	S 61°33'00" E	13.12'	6.52V	
L672	S 75°39'28" E	39.64'	14.27V	
L673	S 85°39'31" E	70.54'	28.39V	
L674	S 64°21'23" E	61.29'	25.06V	
L675	S 78°28'11" E	137.67'	48.86V	
L676	S 69°43'21" E	61.62'	22.18V	
L677	S 41°03'30" E	25.08'	9.03V	
L678	S 70°56'11" E	63.14'	19.13V	
L679	S 81°10'27" E	34.74'	12.81V	
L680	S 58°19'36" E	36.03'	12.97V	
L681	S 78°42'34" E	35.22'	13.04V	
L682	S 48°06'50" E	10.50'	3.82V	
L683	S 71°11'18" E	39.38'	14.17V	
L684	S 50°43'54" E	44.05'	15.86V	
L685	S 85°06'51" E	22.43'	8.07V	

SEGMENT 14

LINE	BEARING	FEET	DISTANCE	VARIABLES
L686	S 17°11'27" W	178.79'	63.64V	
L687	S 36°43'54" W	13.09'	4.71V	
L688	S 60°07'14" W	37.92'	13.66V	
L689	S 49°11'04" W	24.18'	8.70V	
L690	S 20°36'12" W	26.02'	9.37V	
L691	S 41°10'38" W	27.53'	9.85V	
L692	S 29°31'39" W	38.58'	13.71V	
L693	S 42°10'16" W	41.89'	15.08V	
L694	S 55°39'44" W	120.82'	43.42V	
L695	S 53°12'15" W	41.86'	15.00V	
L696	N 53°49'41" W	7.30'	2.50V	
L697	S 84°29'41" W	52.22'	18.80V	
L698	S 89°42'08" W	36.90'	13.28V	
L699	S 75°10'28" W	42.89'	15.33V	
L700	N 67°48'45" W	23.88'	8.89V	
L701	S 39°03'21" W	19.55'	7.04V	
L702	S 87°15'24" W	13.73'	6.74V	
L703	S 33°50'01" W	36.10'	13.00V	
L704	S 24°34'37" W	41.15'	14.81V	
L705	S 45°17'33" W	72.19'	25.98V	
L706	S 03°12'48" E	17.88'	6.43V	
L707	S 15°54'28" W	18.45'	6.64V	
L708	S 41°31'54" W	75.88'	27.67V	
L709	N 54°51'51" W	25.35'	9.19V	
L710	S 46°04'37" W	107.14'	38.67V	
L711	S 28°06'08" W	38.51'	14.22V	
L712	S 01°21'08" E	29.47'	7.37V	
L713	S 22°15'34" W	77.70'	27.97V	
L714	S 38°59'22" W	71.58'	25.78V	
L715	S 19°20'33" E	12.95'	4.87V	
L716	S 20°00'39" E	6.85'	2.47V	
L717	N 33°13'36" E	18.11'	6.82V	
L718	S 37°28'17" E	22.18'	8.19V	
L719	N 36°50'48" E	35.59'	12.81V	
L720	N 14°39'23" E	22.95'	8.26V	
L721	N 68°21'27" W	21.57'	7.77V	
L722	N 33°06'53" E	100.91'	36.33V	
L723	N 23°01'43" E	24.49'	8.82V	
L724	N 57°22'40" E	12.85'	4.65V	
L725	N 33°33'54" E	90.63'	32.63V	
L726	N 45°42'37" E	55.15'	19.85V	
L727	N 55°20'48" E	29.14'	10.48V	
L728	N 76°20'19" E	25.05'	9.01V	
L729	N 88°38'38" E	37.12'	13.36V	
L730	N 57°27'04" E	19.78'	7.12V	
L731	N 86°15'18" E	47.21'	17.03V	
L732	N 45°23'34" E	15.37'	5.53V	
L733	N 80°57'15" E	16.89'	5.98V	
L734	N 49°11'12" E	35.11'	13.00V	
L735	N 87°12'54" E	12.14'	4.37V	
L736	N 19°38'20" E	17.91'	6.45V	
L737	N 27°39'28" W	9.64'	3.47V	
L738	N 07°47'18" E	12.71'	4.68V	
L739	N 63°08'39" E	28.55'	10.28V	
L740	N 15°00'27" E	11.38'	4.10V	
L741	N 84°29'59" E	10.64'	3.83V	
L742	N 23°39'00" E	31.26'	11.25V	
L743	N 55°11'10" E	130.19'	46.87V	
L744	N 75°20'33" E	15.93'	5.73V	
L745	N 82°52'31" E	71.69'	26.81V	
L746	N 41°52'33" E	108.85'	39.08V	
L747	N 18°49'02" E	14.98'	5.39V	
L748	N 42°34'10" E	106.70'	36.41V	
L749	N 20°48'19" E	11.04'	3.97V	
L750	N 65°23'27" E	71.55'	26.78V	

- NOTES:
- ALL COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4204), NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT). US FEET. ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL DISTANCES GRID. THE COMBINED SCALE FACTOR IS 1.00004678 AND CONVERGENCE ANGLE IS +01° 04' 41.5".
 - COORDINATES AND ELEVATIONS ARE BASED ON NGS MONUMENTS:
 NGS MONUMENT '877 90037 B'
 N: 13,263,808.70
 E: 2,835,886.73
 EL: 2.8' NAVD88

 NGS MONUMENT '877 90038 B'
 N: 13,275,073.31
 E: 2,877,188.40
 EL: 3.8' NAVD88
 - ALL OTHER MONUMENTS ARE REFERENCED AS MEASURED AND SHOWN HEREON.
 - ALL POSITIONS AND ELEVATIONS RECORDED USING SURVEY GRADE, RTK GPS. EQUIPMENT: HEMISPHERE S320 AND TRIMBLE R10 RECEIVERS.
 - THE STATE OWNERSHIP BOUNDARY IS BASED ON THE MEAN HIGH WATER (MHW) CONTOUR. MHW ELEVATION OF 1.28' NAVD88 WAS DETERMINED IN ACCORDANCE WITH NOAA TIDE GAUGE: 'ARANSAS WILDLIFE REFUGE, TX - STATION ID: 8774230'.
 - TO CONVERT FEET TO VARAS MULTIPLY BY 0.36.
 - SURVEY LINES ARE APPROXIMATE.
 - REFERENCE ACCOMPANYING REPORT CONTAINING FIELD NOTES DATED MAY 2 THROUGH 25, 2023 FOR ADDITIONAL INFORMATION.
 - EROSION RESPONSE WORK: COASTAL BEND BAYS AND ESTUARIES PROGRAM (CBEP) PROJECT No. 2312 AND GLO PROJECT No. 1727.
 - NO ARTIFICIAL FILL / BUILDUP EXISTS AT TIME OF SURVEY.
 - THE TYPICAL SHORELINE OF ARANSAS NATIONAL WILDLIFE REFUGE IS COVERED WITH CONCRETE MATTING.

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

403985 V:8 P:88-9

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 COASTAL BOUNDARY SURVEY OF MEAN HIGH WATER EXTENDS ALONG PORTIONS OF THE GULF INTRACOASTAL WATERWAY AND THE ARANSAS NATIONAL WILDLIFE REFUGE.

SURVEYED: MAY 2 THROUGH 25, 2023
 SURVEY PERSONNEL: SCOTTY RALL, SR., SCOTTY RALL, JR., VINNI MAGNI

JMB 1/30/2024

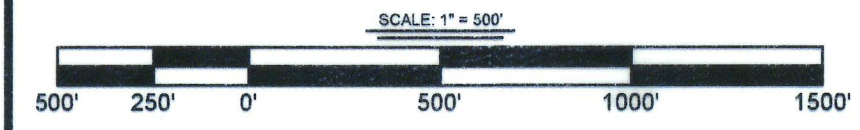
JAMES M. NAISMITH
 LICENSED STATE LAND SURVEYOR

LEGEND:

FND.	FOUND
P.O.B.	POINT OF BEGINNING
P.O.T.	POINT OF TERMINATION
R.O.W.	RIGHT-OF-WAY
MHW	MEAN HIGH WATER
O.P.R.A.C.T	OFFICIAL PUBLIC RECORDS OF ARANSAS COUNTY, TEXAS
O.P.R.C.C.T	OFFICIAL PUBLIC RECORDS OF CALHOUN COUNTY, TEXAS
D.R.A.C.T	DEED RECORDS OF ARANSAS COUNTY, TEXAS
Δ	CONTROL POINT
—	MHW LINE, MAY 2023, ELEV. = 1.28' NAVD88 (GEOID 18)
---	APPROXIMATE PROPERTY LINE
- - -	APPROXIMATE SURVEY LINE

REV. NO.	REV. DATE	REV. DESCRIPTION	REV. BY
02	11/02/23	GLO APPROVED	MM
01	09/06/23	GLO REVISIONS	MM

T. BAKER SMITH
 A CENTURY OF SOLUTIONS
 3854 FM 1069
 Aransas Pass, TX 78336
 (361)334-5719 - tbsmith.com



DRAWN BY:	MM	APPROVED BY:	JTR
DATE:	07/20/2023	JOB NO.:	2022.0141
DRAWING NAME: 22.0141_ANCHOR_QEA_ANWR_MHW_MAY_2023_REV2.DWG			
PROJECTION: TEXAS SOUTH CENTRAL ZONE GEO. DATUM: NAD83 (2011) VERT. DATUM: NAVD88 GRID UNITS: US SURVEY FEET			
SHEET NO.:	4	OF	4

COASTAL BOUNDARY SURVEY
 ANCHOR QEA, LLC
 COASTAL BOUNDARY SURVEY ALONG PORTIONS OF
 THE GULF INTRACOASTAL WATERWAY
 AND THE ARANSAS NATIONAL WILDLIFE REFUGE
 AND BEING SITUATED IN
 ARANSAS & CALHOUN COUNTIES, TEXAS

11/2/2023 - P:\11-2023\2022_0141\DWG\MHW22.0141_ANCHOR_QEA_ANWR_MHW_MAY_2023_REV2.DWG



TEXAS GENERAL LAND OFFICE
COMMISSIONER DAWN BUCKINGHAM, M.D.

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code
Co. Aransas, sk No. 21
File Date 6/17/24 by L. Parsons

**Surveying Services
Coastal Boundary Survey**

Project: Anchor QEA - Aransas National Wildlife Refuge-GIWW

Project No: CEPRA 1727

Project Manager: Kevin Frenzel, P.G. CEPRA Program Manager

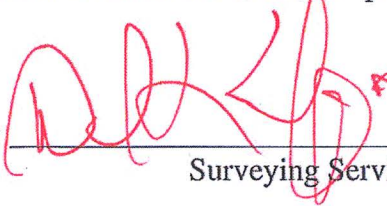
Surveyor: Jim Naismith, Licensed State Land Surveyor

Description: Coastal Boundary Survey dated May 2 – 25, 2023, delineating the littoral boundary of portions of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, and being situated in Submerged Land Tracts 2, 9A, 10, 12, 11, 21, & 23 and the A.B. Pedigo Survey, Abstract 336, the Aransas CSL Survey, Abstract 230, the Leopold Cahn Survey, Abstract 325, the John Kelly Heirs Survey, Abstract 95, and the Aransas CSL Survey, Abstract 9 in Aransas and Calhoun Counties, in connection with CEPRA No. 1727. Centroid coordinates 28.180171°, -96.864877°, WGS84. A copy of the survey has been filed in Instrument: 403985, Volume 8, Page 88 & 89, Aransas County Plat Records.

A Coastal Boundary Survey for the above-referenced project has been reviewed and accepted by Surveying Services; 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.

by:

Signed:



Surveying Services

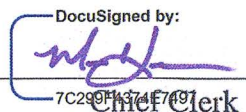
6/6/2024

Date

Pursuant to §33.136 of the *Texas Natural Resources Code*, the herein described Coastal Boundary Survey is approved by Dawn Buckingham, M.D., Commissioner of the Texas General Land Office.

by:

Signed:


DocuSigned by:

7C299FK374E7097
Chief Clerk


6/13/2024

Date


Filed as: *Tex.Nat.Res.Code* Article 33.136 Aransas County, Sketch No. 21.


ROUTING FOR INTERNAL DOCUSIGN PACKET

Staff Surveyor 

Surveying 


Legal 

Director 

Dep. Gen. Counsel 

Gen. Counsel 

Deputy Land Commissioner 

Chief Clerk 



T. BAKER SMITH
 A CENTURY OF SOLUTIONS
 3854 FM 1069
 Aransas Pass, TX 78336
 (361)334-5719 - tbsmith.com

TEXAS GENERAL LAND OFFICE
 Art. 33.136, Natural Resources Code
 Co. Aransas, sk No. 21
 File Date 6/17/24 by L. Parsons

MAY 2023

COASTAL BOUNDARY SURVEY ALONG PORTIONS OF
 THE GULF INTRACOASTAL WATERWAY
 AND THE ARANSAS NATIONAL WILDLIFE REFUGE
 AND BEING SITUATED IN
 ARANSAS & CALHOUN COUNTIES, TEXAS

This report accompanies a map of survey dated May 2023.



Figure 1: The typical shoreline of Aransas National Wildlife Refuge is covered with concrete matting.

A coastal boundary survey was conducted along portions of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas and Calhoun Counties, and also being situated in State Submerged Tracts 2, 9A, 10, 12, 11, 21, & 23 and the A.B. Pedigo Survey, Abstract 336, the Aransas CSL Survey, Abstract 230, the Leopold Cahn Survey, Abstract 325, the John Kelly Heirs Survey, Abstract 95, and the Aransas CSL Survey, Abstract 9. All survey work was performed using survey grade RTK GPS base and rover: Hemisphere S320 and Trimble R10 receivers. The survey was conducted on May 2 through 25, 2023.

SURVEY CONTROL: Two NGS survey markers were used as primary control:

“877 90037 B” (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6’ NAVD88), published position

“877 90038 B” (N: 13,275,073.31, E: 2,677,168.40, EL: 3.8’ NAVD88), published position

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



Figure 2: NGS benchmark “877 90037 B” (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6’ NAVD88)



Figure 3: NGS benchmark “877 90038 B” (N: 13,275,073.31, E: 2,677,168.40, EL: 3.8’ NAVD88)



Figure 4: MHW elevation of 1.28' NAVD88

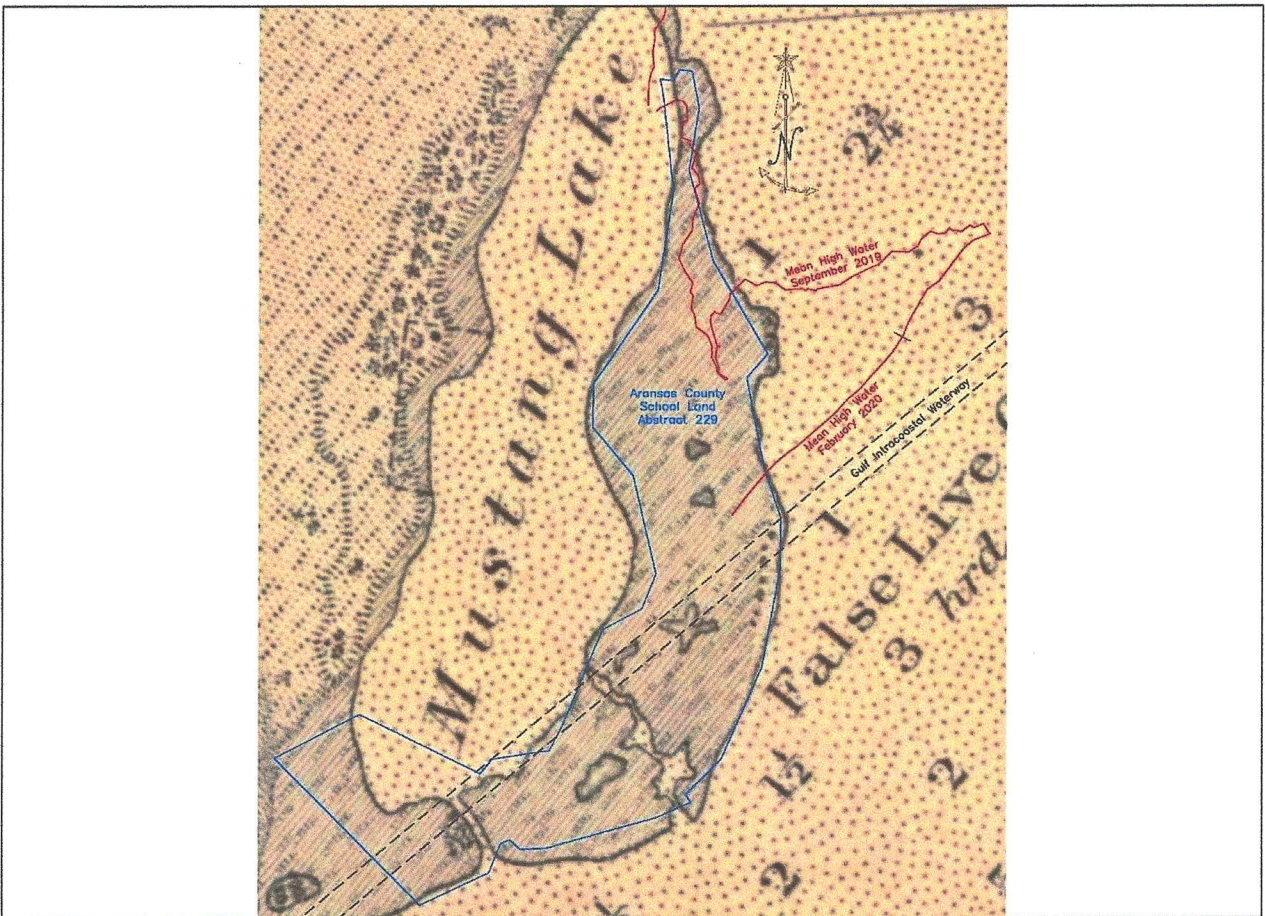


Figure 5: Gulf Intracoastal Waterway overlaid on 1884 Coast and Geodetic Survey Coast Chart No. 108 of Pass Cavallo, Lavaca and San Antonio Bays. (September 2019, February 2020) MHW (red), original Aransas County School Land Survey No. 68, Abstract 229 (February 1878, blue)

STATE OWNERSHIP BOUNDARY: As referenced to this survey, the state ownership boundary is based on the Mean High Water (MHW) contour. MHW elevation of 1.28' NAVD88 for Aransas Bay was determined in accordance with NOAA Tide Gauge: "Aransas Wildlife Refuge, TX – Station ID: 8774230".

SEGMENT 1

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in State Submerged Tract 2 and the A.B. Pedigo Survey, Abstract 336. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,239,339.62, E: 2,641,449.32, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 12°54'34" W, a distance of 24,898.41 feet (8,963.43V).

Thence along said shoreline and said MHW line, the following courses and distances:

- S 30°57'58" E, a distance of 64.96 feet (23.39V);
- S 52°29'49" E, a distance of 44.79 feet (16.12V);
- S 36°58'01" E, a distance of 62.90 feet (22.64V);
- N 78°00'50" E, a distance of 19.26 feet (6.93V);
- N 33°56'48" E, a distance of 15.04 feet (5.41V);
- N 08°21'07" W, a distance of 15.05 feet (5.42V);
- N 81°48'34" E, a distance of 34.96 feet (12.58V);

Thence N 70°24'43" E, a distance of 71.91 feet (25.89V) to the Point of Termination (N: 13,239,266.85, E: 2,641,683.51, EL: 1.28'), from which NGS monument "877 90038 B" (N: 13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 44°44'30" E, a distance of 50,411.11 feet (18,148.00V).

SEGMENT 2

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in the A.B. Pedigo Survey, Abstract 336. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,239,307.91, E: 2,641,722.00, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears

N 13°30'09" W, a distance of 24,991.57 feet (8,996.97V).

Thence along said shoreline and said MHW line, the following courses and distances:

N 39°17'38" E, a distance of 56.74 feet (20.43V);
N 71°35'21" E, a distance of 38.47 feet (13.85V);
N 27°33'47" E, a distance of 37.64 feet (13.55V);
N 42°43'39" E, a distance of 24.86 feet (8.95V);
N 28°50'16" E, a distance of 41.70 feet (15.01V);
N 42°50'55" E, a distance of 70.11 feet (25.24V);
N 31°05'41" E, a distance of 49.91 feet (17.97V);
N 00°08'31" W, a distance of 17.36 feet (6.25V);
N 38°07'01" E, a distance of 31.08 feet (11.19V);
N 72°16'54" E, a distance of 8.44 feet (3.04V);
N 24°11'51" E, a distance of 46.81 feet (16.85V);
N 47°45'12" E, a distance of 35.83 feet (12.90V);
N 35°06'21" E, a distance of 88.72 feet (31.94V);
N 17°06'18" E, a distance of 11.63 feet (4.19V);
N 39°49'20" E, a distance of 95.54 feet (34.39V);
N 18°45'34" E, a distance of 15.08 feet (5.43V);
N 49°30'57" E, a distance of 15.29 feet (5.50V);
N 30°42'20" E, a distance of 32.17 feet (11.58V);
N 53°13'21" E, a distance of 24.20 feet (8.71V);
N 29°59'55" E, a distance of 14.96 feet (5.39V);
N 66°09'07" E, a distance of 9.87 feet (3.55V);
N 36°28'42" E, a distance of 33.35 feet (12.01V);
N 20°17'59" W, a distance of 6.70 feet (2.41V);
N 41°58'34" E, a distance of 26.73 feet (9.62V);
N 07°17'10" E, a distance of 9.88 feet (3.56V);
N 66°59'40" E, a distance of 23.03 feet (8.29V);
N 32°57'13" E, a distance of 24.92 feet (8.97V);
N 57°37'17" E, a distance of 23.27 feet (8.38V);
N 18°09'59" W, a distance of 12.42 feet (4.47V);
N 36°18'54" E, a distance of 39.78 feet (14.32V);
N 52°51'33" E, a distance of 21.32 feet (7.67V);
N 27°10'24" E, a distance of 73.46 feet (26.44V);

Thence N 39°56'57" E, a distance of 36.26 feet (13.05V) to the Point of Termination (N:13,240,152.84, E: 2,642,364.16, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 44°54'16" E, a distance of 49,302.88 feet (17,749.04V).

SEGMENT 3

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in the A.B.

Pedigo Survey, Abstract 336. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,243,577.84, E: 2,644,863.48, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 24°08'22" W, a distance of 21,950.34 feet (7,902.12V).

Thence along said shoreline and said MHW line, the following courses and distances:

- N 37°20'01" E, a distance of 357.44 feet (128.68V);
- N 46°17'54" E, a distance of 51.96 feet (18.71V);
- N 25°09'25" W, a distance of 22.24 feet (8.01V);
- N 43°02'48" E, a distance of 30.31 feet (10.91V);
- N 28°54'06" E, a distance of 42.23 feet (15.20V);

Thence N 37°11'17" E, a distance of 72.75 feet (26.19V) to the Point of Termination (N:13,244,035.16, E: 2,645,193.44, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 45°51'06" E, a distance of 44,561.92 feet (16,042.29V).

SEGMENT 4

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in the A.B. Pedigo Survey, Abstract 336. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,244,067.89, E: 2,645,216.62, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 25°31'21" W, a distance of 21,653.87 feet (7,795.39V).

Thence along said shoreline and said MHW line, the following courses and distances:

- N 42°00'04" E, a distance of 64.58 feet (23.25V);
- N 24°13'13" E, a distance of 34.39 feet (12.38V);
- N 44°32'56" E, a distance of 56.59 feet (20.37V);
- N 06°03'26" W, a distance of 20.72 feet (7.46V);
- N 14°25'49" E, a distance of 14.25 feet (5.13V);
- N 51°19'55" E, a distance of 36.41 feet (13.11V);
- N 62°26'28" E, a distance of 30.22 feet (10.88V);
- N 21°37'06" E, a distance of 40.38 feet (14.54V);

N 63°21'59" E, a distance of 6.36 feet (2.29V);
N 24°15'48" E, a distance of 19.15 feet (6.89V);
N 53°56'55" E, a distance of 15.43 feet (5.55V);
N 32°22'17" E, a distance of 80.91 feet (29.13V);
N 08°19'06" E, a distance of 15.07 feet (5.42V);
N 52°01'07" E, a distance of 14.30 feet (5.15V);
N 80°24'54" E, a distance of 12.37 feet (4.45V);
N 11°40'47" E, a distance of 7.44 feet (2.68V);
N 47°34'53" E, a distance of 51.37 feet (18.49V);
S 72°00'13" E, a distance of 5.53 feet (1.99V);
N 34°38'58" E, a distance of 40.28 feet (14.50V);
N 79°16'42" E, a distance of 5.21 feet (1.88V);
N 34°59'43" E, a distance of 104.20 feet (37.51V);
N 25°47'49" E, a distance of 30.75 feet (11.07V);

Thence N 39°15'43" E, a distance of 87.37 feet (31.45V) to the Point of Termination (N:13,244,674.78, E: 2,645,681.26, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 46°00'28" E, a distance of 43,766.55 feet (15,755.96V).

SEGMENT 5

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in State Submerged Tract 9A and the Leopold Cahn Survey, Abstract 325. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,248,685.59, E: 2,648,738.83, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 40°44'09" W, a distance of 19,694.56 feet (7,090.04V).

Thence along said shoreline and said MHW line, the following courses and distances:

N 51°46'27" E, a distance of 251.02 feet (90.37V);
N 57°54'24" E, a distance of 45.62 feet (16.42V);
N 71°54'10" E, a distance of 51.03 feet (18.37V);
N 78°27'04" E, a distance of 56.89 feet (20.48V);
N 83°18'34" E, a distance of 142.57 feet (51.32V);

Thence S 84°59'41" E, a distance of 167.23 feet (60.20V) to the Point of Termination (N:13,248,894.41, E: 2,649,387.10, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 46°42'03" E, a distance of 38,172.44 feet (13,742.08V).

SEGMENT 6

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in State Submerged Tract 9A and the Aransas CSL Survey, Abstract 230. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,248,759.22, E: 2,648,669.04, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 40°43'18" W, a distance of 19,593.22 feet (7,053.56V).

Thence along said shoreline and said MHW line, the following courses and distances:

N 47°42'39" E, a distance of 138.90 feet (50.00V);
N 53°49'54" E, a distance of 54.29 feet (19.54V);
N 42°41'30" E, a distance of 49.81 feet (17.93V);
N 18°56'41" E, a distance of 69.92 feet (25.17V);
N 08°19'52" W, a distance of 12.62 feet (4.54V);

Thence N 83°09'07" W, a distance of 19.37 feet (6.97V) to the Point of Termination (N:13,249,002.26, E: 2,648,851.02, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 47°21'54" E, a distance of 38,491.21 feet (13,856.84V).

SEGMENT 7

FIELD NOTES for the littoral boundary along portions of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in State Submerged Tracts 9A & 10 and the Aransas CSL Survey, Abstract 230. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,249,076.83, E: 2,648,874.27, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 41°47'17" W, a distance of 19,489.78 feet (7,016.32V).

Thence along said shoreline and said MHW line, the following courses and distances:

S 72°51'23" E, a distance of 52.89 feet (19.04V);

S 52°06'18" E, a distance of 36.06 feet (12.98V);
N 83°44'30" E, a distance of 9.91 feet (3.57V);
N 63°07'16" E, a distance of 124.37 feet (44.77V);
N 48°09'03" E, a distance of 96.71 feet (34.81V);
N 52°06'06" E, a distance of 92.68 feet (33.36V);
N 43°33'53" E, a distance of 192.94 feet (69.46V);
N 49°42'11" E, a distance of 517.23 feet (186.20V);
N 43°47'56" E, a distance of 119.97 feet (43.19V);
N 49°31'02" E, a distance of 98.46 feet (35.45V);
N 41°32'17" E, a distance of 114.33 feet (41.16V);
N 46°36'05" E, a distance of 210.87 feet (75.91V);
N 32°08'06" E, a distance of 26.05 feet (9.38V);
N 18°52'07" E, a distance of 89.39 feet (32.18V);
N 29°25'29" E, a distance of 106.41 feet (38.31V);
N 18°48'03" E, a distance of 63.05 feet (22.70V);
N 30°43'46" E, a distance of 86.43 feet (31.11V);
N 43°22'25" E, a distance of 49.31 feet (17.75V);
N 53°15'17" E, a distance of 99.09 feet (35.67V);
N 42°01'12" E, a distance of 28.50 feet (10.26V);
N 16°56'45" E, a distance of 123.96 feet (44.63V);
N 32°09'44" E, a distance of 50.38 feet (18.14V);
N 48°09'47" E, a distance of 127.51 feet (45.90V);
N 44°36'01" E, a distance of 77.76 feet (27.99V);
N 38°28'30" E, a distance of 53.99 feet (19.44V);
N 27°21'59" E, a distance of 115.56 feet (41.60V);
N 36°51'15" E, a distance of 55.79 feet (20.08V);
N 53°38'58" E, a distance of 51.20 feet (18.43V);
N 34°54'29" E, a distance of 52.02 feet (18.73V);
N 41°33'58" E, a distance of 126.44 feet (45.52V);
N 17°01'43" E, a distance of 55.34 feet (19.92V);
N 71°44'26" E, a distance of 14.97 feet (5.39V);
N 48°01'31" E, a distance of 64.98 feet (23.39V);
N 52°44'00" E, a distance of 87.84 feet (31.62V);
N 37°36'22" E, a distance of 86.25 feet (31.05V);
N 13°00'45" E, a distance of 31.39 feet (11.30V);
N 37°49'02" E, a distance of 31.86 feet (11.47V);
N 03°43'34" W, a distance of 24.68 feet (8.88V);
N 13°36'30" E, a distance of 61.57 feet (22.17V);
N 42°10'39" E, a distance of 34.25 feet (12.33V);
N 69°33'47" E, a distance of 33.08 feet (11.91V);
N 46°37'04" E, a distance of 121.20 feet (43.63V);
N 35°13'41" E, a distance of 48.89 feet (17.60V);
N 02°32'41" W, a distance of 18.02 feet (6.49V);
N 38°17'05" E, a distance of 30.89 feet (11.12V);
N 05°17'13" E, a distance of 14.13 feet (5.09V);
N 36°36'45" E, a distance of 33.38 feet (12.02V);

S 84°14'30" E, a distance of 16.74 feet (6.03V);
N 68°52'43" E, a distance of 24.25 feet (8.73V);
N 41°31'17" E, a distance of 74.33 feet (26.76V);
N 03°11'21" W, a distance of 14.88 feet (5.36V);
N 46°52'22" E, a distance of 17.16 feet (6.18V);
S 87°55'20" E, a distance of 17.10 feet (6.16V);
N 21°55'21" E, a distance of 19.32 feet (6.96V);
N 49°25'59" E, a distance of 9.78 feet (3.52V);
S 86°14'03" E, a distance of 17.97 feet (6.47V);
N 46°20'36" E, a distance of 40.72 feet (14.66V);
N 66°34'33" E, a distance of 12.58 feet (4.53V);
S 79°22'00" E, a distance of 22.65 feet (8.15V);
N 19°44'41" E, a distance of 39.79 feet (14.32V);
N 05°55'56" W, a distance of 26.49 feet (9.54V);
N 39°47'48" E, a distance of 11.69 feet (4.21V);
N 15°17'24" E, a distance of 23.72 feet (8.54V);
N 40°55'31" E, a distance of 39.55 feet (14.24V);
N 22°07'53" E, a distance of 12.25 feet (4.41V);
N 59°09'00" E, a distance of 9.75 feet (3.51V);
N 30°39'30" E, a distance of 21.24 feet (7.65V);
N 51°43'02" E, a distance of 137.47 feet (49.49V);
N 65°04'54" E, a distance of 27.84 feet (10.02V);
N 34°29'08" E, a distance of 10.57 feet (3.81V);
N 55°41'38" E, a distance of 76.83 feet (27.66V);
N 38°31'53" E, a distance of 25.77 feet (9.28V);
N 54°56'19" E, a distance of 20.35 feet (7.33V);
N 39°01'13" E, a distance of 35.99 feet (12.96V);
N 79°14'14" E, a distance of 20.35 feet (7.33V);
N 59°08'07" E, a distance of 105.61 feet (38.02V);
N 56°25'11" W, a distance of 23.76 feet (8.55V);

Thence N 37°30'17" W, a distance of 76.15 feet (27.41V) to the Point of Termination
N:13,252,428.69, E: 2,651,953.51, EL: 1.28'), from which NGS monument "877 90038 B"
(N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 48°04'27" E, a distance of 33,890.55
feet (12,200.60V).

SEGMENT 8

FIELD NOTES for the littoral boundary along portions of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in State Submerged Tracts 10, 12, 11 & 21 and the Aransas CSL Survey, Abstract 230 and the John Kelly Heirs Survey, Abstract 95. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,252,502.67, E: 2,651,995.73, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same

being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 55°24'59" W, a distance of 19,566.40 feet (7,043.90).

Thence along said shoreline and said MHW line, the following courses and distances:

S 70°55'14" E, a distance of 27.01 feet (9.72V);
S 58°18'00" E, a distance of 33.42 feet (12.03V);
S 44°23'47" E, a distance of 31.21 feet (11.24V);
S 63°46'07" E, a distance of 13.60 feet (4.90V);
N 87°38'09" E, a distance of 76.85 feet (27.67V);
N 68°02'11" E, a distance of 44.76 feet (16.11V);
N 17°49'52" W, a distance of 36.22 feet (13.04V);
N 03°38'20" W, a distance of 94.19 feet (33.91V);
N 39°26'59" E, a distance of 100.21 feet (36.08V);
N 54°20'11" E, a distance of 67.66 feet (24.36V);
N 69°07'52" E, a distance of 53.70 feet (19.33V);
N 87°51'48" E, a distance of 78.31 feet (28.19V);
N 69°25'03" E, a distance of 10.89 feet (3.92V);
N 45°09'10" E, a distance of 47.16 feet (16.98V);
N 58°42'25" E, a distance of 52.35 feet (18.85V);
N 75°03'35" E, a distance of 28.47 feet (10.25V);
N 89°52'24" E, a distance of 63.37 feet (22.81V);
N 80°30'55" E, a distance of 48.79 feet (17.56V);
N 59°49'48" E, a distance of 14.94 feet (5.38V);
N 84°49'32" E, a distance of 16.30 feet (5.87V);
N 57°28'59" E, a distance of 59.79 feet (21.52V);
N 85°32'03" E, a distance of 35.96 feet (12.95V);
N 62°57'44" E, a distance of 30.03 feet (10.81V);
N 42°13'01" E, a distance of 13.91 feet (5.01V);
N 64°17'45" E, a distance of 45.21 feet (16.28V);
N 80°41'06" E, a distance of 21.56 feet (7.76V);
N 57°21'27" E, a distance of 21.78 feet (7.84V);
N 36°30'45" E, a distance of 46.12 feet (16.60V);
N 51°01'36" E, a distance of 23.40 feet (8.42V);
N 37°09'42" E, a distance of 46.05 feet (16.58V);
N 10°32'33" W, a distance of 13.40 feet (4.82V);
N 22°56'35" E, a distance of 68.65 feet (24.71V);
N 36°50'26" E, a distance of 23.47 feet (8.45V);
N 26°44'25" E, a distance of 68.19 feet (24.55V);
N 10°20'02" E, a distance of 22.39 feet (8.06V);
N 35°49'32" E, a distance of 90.16 feet (32.46V);
N 24°22'32" E, a distance of 83.72 feet (30.14V);
N 02°43'22" W, a distance of 25.64 feet (9.23V);
N 11°38'36" E, a distance of 47.36 feet (17.05V);
N 35°34'59" E, a distance of 70.68 feet (25.44V);

N 59°41'47" E, a distance of 22.43 feet (8.07V);
N 25°42'57" E, a distance of 43.33 feet (15.60V);
N 56°09'08" E, a distance of 71.33 feet (25.68V);
N 48°09'31" E, a distance of 65.71 feet (23.66V);
N 70°28'31" E, a distance of 21.36 feet (7.69V);
N 56°14'18" E, a distance of 112.21 feet (40.40V);
N 66°30'55" E, a distance of 24.87 feet (8.95V);
N 39°06'26" E, a distance of 23.11 feet (8.32V);
N 62°08'39" E, a distance of 46.57 feet (16.77V);
N 11°35'50" E, a distance of 14.47 feet (5.21V);
N 56°35'19" E, a distance of 73.02 feet (26.29V);
N 70°30'13" E, a distance of 71.28 feet (25.66V);
N 55°44'27" E, a distance of 26.70 feet (9.61V);
N 37°31'13" E, a distance of 22.30 feet (8.03V);
N 76°35'32" E, a distance of 45.63 feet (16.43V);
N 43°13'25" E, a distance of 25.11 feet (9.04V);
N 27°33'42" E, a distance of 21.80 feet (7.85V);
N 67°40'08" E, a distance of 90.01 feet (32.40V);
N 58°18'06" E, a distance of 148.18 feet (53.34V);
N 49°18'00" E, a distance of 72.35 feet (26.05V);
N 59°04'13" E, a distance of 40.86 feet (14.71V);
N 50°56'21" E, a distance of 45.66 feet (16.44V);
N 36°36'09" E, a distance of 21.43 feet (7.71V);
N 52°46'49" E, a distance of 72.78 feet (26.20V);
N 31°05'13" E, a distance of 93.00 feet (33.48V);
N 57°24'52" E, a distance of 136.10 feet (49.00V);
N 61°40'08" E, a distance of 111.68 feet (40.20V);
N 49°33'39" E, a distance of 67.79 feet (24.40V);
N 37°40'47" E, a distance of 22.78 feet (8.20V);
N 57°17'22" E, a distance of 134.85 feet (48.55V);
N 63°14'24" E, a distance of 108.18 feet (38.94V);
N 47°18'34" E, a distance of 66.77 feet (24.04V);
N 63°00'37" E, a distance of 22.81 feet (8.21V);
N 75°35'49" E, a distance of 69.07 feet (24.87V);
N 86°04'51" E, a distance of 69.06 feet (24.86V);
S 70°53'23" E, a distance of 61.49 feet (22.14V);
S 84°57'16" E, a distance of 69.13 feet (24.89V);
N 72°26'00" E, a distance of 35.12 feet (12.64V);
N 61°12'16" E, a distance of 159.38 feet (57.38V);
N 39°10'59" E, a distance of 68.57 feet (24.69V);
N 45°54'56" E, a distance of 49.39 feet (17.78V);
N 65°41'25" E, a distance of 101.29 feet (36.46V);
N 51°27'38" E, a distance of 44.27 feet (15.94V);
N 31°55'54" E, a distance of 21.73 feet (7.82V);
N 68°13'26" E, a distance of 24.37 feet (8.77V);
N 53°37'31" E, a distance of 143.05 feet (51.50V);

N 34°14'05" E, a distance of 24.48 feet (8.81V);
N 52°44'59" E, a distance of 22.83 feet (8.22V);
N 39°01'26" E, a distance of 69.30 feet (24.95V);
N 56°44'28" E, a distance of 22.41 feet (8.07V);
N 44°18'37" E, a distance of 46.63 feet (16.79V);
N 22°12'08" E, a distance of 56.40 feet (20.30V);
N 00°42'40" E, a distance of 55.60 feet (20.02V);
N 15°46'07" E, a distance of 17.81 feet (6.41V);
N 33°05'53" E, a distance of 36.26 feet (13.05V);
N 54°49'12" E, a distance of 94.21 feet (33.92V);
N 50°03'32" E, a distance of 73.93 feet (26.61V);
N 38°26'20" E, a distance of 26.73 feet (9.62V);
N 51°01'07" E, a distance of 71.25 feet (25.65V);
N 65°11'16" E, a distance of 63.27 feet (22.78V);
N 54°29'53" E, a distance of 47.72 feet (17.18V);
N 44°55'09" E, a distance of 43.06 feet (15.50V);
N 22°10'15" E, a distance of 117.97 feet (42.47V);
N 50°46'37" E, a distance of 110.72 feet (39.86V);
N 63°08'16" E, a distance of 154.48 feet (55.61V);
N 51°29'21" E, a distance of 83.80 feet (30.17V);
N 60°41'23" E, a distance of 137.68 feet (49.56V);
N 66°07'21" E, a distance of 217.55 feet (78.32V);
N 74°21'47" E, a distance of 137.60 feet (49.54V);
N 62°12'58" E, a distance of 146.65 feet (52.79V);
N 69°05'48" E, a distance of 115.67 feet (41.64V);
N 56°41'51" E, a distance of 81.08 feet (29.19V);
N 65°50'49" E, a distance of 57.48 feet (20.69V);
N 54°23'42" E, a distance of 173.72 feet (62.54V);
N 40°38'33" E, a distance of 55.23 feet (19.88V);
N 53°44'21" E, a distance of 51.77 feet (18.64V);
N 73°18'15" E, a distance of 125.76 feet (45.27V);
N 57°50'09" E, a distance of 57.41 feet (20.67V);
N 39°59'43" E, a distance of 171.73 feet (61.82V);
N 53°59'37" E, a distance of 59.83 feet (21.54V);
N 66°49'24" E, a distance of 85.98 feet (30.95V);
N 47°52'12" E, a distance of 274.04 feet (98.65V);
N 42°43'11" E, a distance of 92.09 feet (33.15V);
N 33°15'27" E, a distance of 111.99 feet (40.32V);
N 52°15'14" E, a distance of 28.36 feet (10.21V);
N 64°49'19" E, a distance of 83.49 feet (30.06V);
N 50°01'16" E, a distance of 23.49 feet (8.46V);
N 28°09'31" E, a distance of 51.46 feet (18.53V);
N 55°52'48" E, a distance of 152.77 feet (55.00V);
N 38°02'31" E, a distance of 78.51 feet (28.26V);
N 25°53'29" E, a distance of 27.77 feet (10.00V);
N 39°04'32" E, a distance of 28.74 feet (10.35V);

N 61°03'53" E, a distance of 47.99 feet (17.28V);
N 50°57'26" E, a distance of 79.23 feet (28.52V);
N 26°24'15" E, a distance of 45.83 feet (16.50V);
N 63°40'31" E, a distance of 22.39 feet (8.06V);
N 51°50'45" E, a distance of 62.09 feet (22.35V);
N 42°43'14" E, a distance of 38.15 feet (13.73V);
N 28°14'40" E, a distance of 43.83 feet (15.78V);
N 40°00'28" E, a distance of 25.52 feet (9.19V);
N 51°15'32" E, a distance of 41.98 feet (15.11V);
N 62°10'16" E, a distance of 94.74 feet (34.11V);
N 35°18'30" E, a distance of 43.64 feet (15.71V);
N 54°18'23" E, a distance of 23.28 feet (8.38V);
N 45°00'44" E, a distance of 107.16 feet (38.58V);
N 64°09'25" E, a distance of 82.27 feet (29.62V);
N 52°38'49" E, a distance of 79.94 feet (28.78V);
N 45°14'50" E, a distance of 108.81 feet (39.17V);
N 41°17'41" E, a distance of 108.90 feet (39.20V);
N 47°59'12" E, a distance of 52.13 feet (18.77V);
N 54°39'45" E, a distance of 52.42 feet (18.87V);
N 49°50'00" E, a distance of 142.00 feet (51.12V);
N 33°47'15" E, a distance of 28.84 feet (10.38V);
N 16°36'58" E, a distance of 20.47 feet (7.37V);
N 49°18'26" E, a distance of 35.18 feet (12.66V);
N 33°46'33" W, a distance of 11.85 feet (4.27V);
N 36°15'50" E, a distance of 17.05 feet (6.14V);
S 77°53'04" E, a distance of 10.53 feet (3.79V);
N 42°16'04" E, a distance of 160.82 feet (57.90V);
N 20°41'46" E, a distance of 18.96 feet (6.83V);
N 54°32'11" E, a distance of 46.80 feet (16.85V);
N 76°54'52" E, a distance of 10.16 feet (3.66V);
N 49°26'34" E, a distance of 126.28 feet (45.46V);
N 60°41'06" E, a distance of 78.55 feet (28.28V);
N 50°14'13" E, a distance of 55.05 feet (19.82V);
N 56°02'12" E, a distance of 102.80 feet (37.01V);
N 63°11'51" E, a distance of 51.72 feet (18.62V);
N 81°35'42" E, a distance of 54.94 feet (19.78V);
N 61°23'13" E, a distance of 75.95 feet (27.34V);
N 52°26'24" E, a distance of 109.16 feet (39.30V);
N 44°46'53" E, a distance of 114.58 feet (41.25V);
N 51°44'15" E, a distance of 133.00 feet (47.88V);
N 18°49'33" E, a distance of 21.32 feet (7.68V);
N 54°19'13" E, a distance of 8.92 feet (3.21V);
N 07°05'18" E, a distance of 9.31 feet (3.35V);
N 66°31'05" E, a distance of 36.82 feet (13.26V);
N 55°12'22" E, a distance of 26.23 feet (9.44V);
N 42°38'44" E, a distance of 37.01 feet (13.32V);

N 00°00'27" W, a distance of 15.33 feet (5.52V);
N 40°08'53" E, a distance of 56.16 feet (20.22V);
N 23°03'30" E, a distance of 76.99 feet (27.72V);
N 40°39'05" W, a distance of 11.41 feet (4.11V);
N 20°27'46" E, a distance of 25.87 feet (9.31V);
N 13°24'00" W, a distance of 45.68 feet (16.44V);

Thence N 28°18'40" W, a distance of 54.86 feet (19.75V) to the Point of Termination (N:13,259,204.88, E: 2,660,553.21, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 46°19'01" E, a distance of 22,975.46 feet (8,271.17V).

SEGMENT 9

FIELD NOTES for the littoral boundary along portions of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas and Calhoun Counties, and also being situated in State Submerged Tracts 21, 23 & 22 and the John Kelly Heirs Survey, Abstract 95 and the Aransas CSL Survey, Abstract 9. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,259,207.50, E: 2,660,622.68, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 79°54'40" W, a distance of 25,124.44 feet (9,044.80V).

Thence along said shoreline and said MHW line, the following courses and distances:

S 34°53'27" E, a distance of 57.12 feet (20.56V);
S 88°03'47" E, a distance of 116.27 feet (41.86V);
S 75°19'00" E, a distance of 25.64 feet (9.23V);
N 64°41'30" E, a distance of 68.12 feet (24.52V);
N 54°28'46" E, a distance of 131.36 feet (47.29V);
N 36°33'35" E, a distance of 151.19 feet (54.43V);
N 64°14'13" E, a distance of 18.08 feet (6.51V);
N 49°25'00" E, a distance of 123.00 feet (44.28V);
N 65°49'38" E, a distance of 49.74 feet (17.91V);
N 79°06'57" E, a distance of 49.30 feet (17.75V);
N 70°02'46" E, a distance of 96.23 feet (34.64V);
N 63°05'40" E, a distance of 123.60 feet (44.50V);
N 59°26'38" E, a distance of 142.63 feet (51.35V);
N 64°22'42" E, a distance of 76.04 feet (27.37V);
N 75°23'08" E, a distance of 94.84 feet (34.14V);
N 64°20'10" E, a distance of 146.39 feet (52.70V);
N 77°20'34" E, a distance of 170.59 feet (61.41V);
N 65°39'05" E, a distance of 147.01 feet (52.92V);

N 55°29'00" E, a distance of 69.06 feet (24.86V);
N 60°20'39" E, a distance of 94.24 feet (33.93V);
N 68°56'47" E, a distance of 168.22 feet (60.56V);
N 63°15'51" E, a distance of 84.98 feet (30.59V);
N 59°09'10" E, a distance of 158.85 feet (57.19V);
N 49°04'25" E, a distance of 120.66 feet (43.44V);
N 56°04'24" E, a distance of 145.81 feet (52.49V);
N 49°33'23" E, a distance of 105.61 feet (38.02V);
N 60°25'58" E, a distance of 23.83 feet (8.58V);
N 73°06'35" E, a distance of 44.99 feet (16.20V);
N 81°09'01" E, a distance of 54.99 feet (19.80V);
N 71°03'57" E, a distance of 108.33 feet (39.00V);
N 54°31'34" E, a distance of 69.93 feet (25.17V);
N 42°28'58" E, a distance of 150.51 feet (54.18V);
N 50°40'26" E, a distance of 60.58 feet (21.81V);
N 40°03'20" E, a distance of 115.31 feet (41.51V);
N 47°20'55" E, a distance of 59.10 feet (21.28V);
N 61°33'20" E, a distance of 58.16 feet (20.94V);
N 54°36'38" E, a distance of 61.14 feet (22.01V);
N 60°33'41" E, a distance of 87.59 feet (31.53V);
N 54°04'53" E, a distance of 87.14 feet (31.37V);
N 63°58'33" E, a distance of 112.52 feet (40.51V);
N 51°43'28" E, a distance of 53.27 feet (19.18V);
N 44°29'40" E, a distance of 52.01 feet (18.72V);
N 31°02'50" E, a distance of 25.94 feet (9.34V);
N 42°23'33" E, a distance of 55.81 feet (20.09V);
N 59°02'09" E, a distance of 58.02 feet (20.89V);
N 74°07'31" E, a distance of 49.02 feet (17.65V);
N 55°50'48" E, a distance of 79.60 feet (28.66V);
N 40°47'42" E, a distance of 132.24 feet (47.61V);
N 59°35'19" E, a distance of 26.87 feet (9.67V);
N 31°42'51" E, a distance of 54.29 feet (19.54V);
N 44°59'36" E, a distance of 30.05 feet (10.82V);
S 80°55'43" E, a distance of 8.82 feet (3.18V);
N 38°43'47" E, a distance of 32.05 feet (11.54V);
N 11°52'23" E, a distance of 73.92 feet (26.61V);
N 43°02'08" E, a distance of 63.58 feet (22.89V);
N 63°21'19" E, a distance of 28.34 feet (10.20V);
N 33°58'34" E, a distance of 74.08 feet (26.67V);
N 02°54'27" E, a distance of 13.29 feet (4.78V);
N 50°57'29" E, a distance of 15.08 feet (5.43V);
S 81°28'26" E, a distance of 5.46 feet (1.97V);
N 41°01'38" E, a distance of 82.95 feet (29.86V);
N 56°20'59" E, a distance of 104.07 feet (37.47V);
N 39°05'03" E, a distance of 31.32 feet (11.28V);
N 68°56'11" E, a distance of 18.17 feet (6.54V);

N 53°21'34" E, a distance of 113.59 feet (40.89V);
N 23°00'00" E, a distance of 9.81 feet (3.53V);
N 59°45'50" E, a distance of 47.76 feet (17.19V);
N 50°27'25" E, a distance of 38.86 feet (13.99V);
N 27°24'43" E, a distance of 29.65 feet (10.67V);
N 40°37'01" E, a distance of 58.28 feet (20.98V);
N 35°10'14" E, a distance of 79.38 feet (28.58V);
N 50°56'13" E, a distance of 71.84 feet (25.86V);
N 60°58'15" E, a distance of 55.54 feet (19.99V);
N 69°24'35" E, a distance of 48.88 feet (17.60V);
N 86°46'17" E, a distance of 39.77 feet (14.32V);
N 65°37'25" E, a distance of 175.20 feet (63.07V);
N 87°09'25" E, a distance of 36.49 feet (13.14V);
N 72°24'55" E, a distance of 24.89 feet (8.96V);
N 85°40'51" E, a distance of 168.36 feet (60.61V);
S 88°35'47" E, a distance of 73.89 feet (26.60V);
S 81°42'32" E, a distance of 124.82 feet (44.94V);
S 78°22'37" E, a distance of 180.72 feet (65.06V);
S 64°31'07" E, a distance of 21.69 feet (7.81V);
S 79°44'37" E, a distance of 34.71 feet (12.50V);
S 50°09'32" E, a distance of 40.33 feet (14.52V);
S 26°43'33" E, a distance of 35.09 feet (12.63V);
S 00°39'28" W, a distance of 35.71 feet (12.86V);
S 15°06'22" W, a distance of 19.64 feet (7.07V);
S 66°30'34" W, a distance of 8.53 feet (3.07V);
S 09°49'50" E, a distance of 97.80 feet (35.21V);
S 23°17'09" E, a distance of 30.32 feet (10.92V);
S 38°27'44" E, a distance of 30.80 feet (11.09V);
N 56°52'15" E, a distance of 131.36 feet (47.29V);
N 46°11'59" E, a distance of 23.91 feet (8.61V);
N 30°34'32" E, a distance of 68.97 feet (24.83V);
N 49°42'14" E, a distance of 19.96 feet (7.19V);
N 67°16'32" E, a distance of 171.11 feet (61.60V);
N 45°48'37" E, a distance of 79.05 feet (28.46V);

Thence N 56°28'34" E, a distance of 51.02 feet (18.37V) to the Point of Termination (N:13,262,176.27, E: 2,666,453.82, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 39°43'09" E, a distance of 16,767.11 feet (6,036.16V).

SEGMENT 10 (NOT PART OF THIS COASTAL BOUNDARY SURVEY DUE TO GULF INTRACOASTAL WATERWAY CONSTRUCTION THROUGH UPLANDS)

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in the Leopold

Cahn Survey, Abstract 325. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,247,238.97, E: 2,648,327.32, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 37°14'02" W, a distance of 20,560.55 feet (7,401.80V).

Thence along said shoreline and said MHW line, the following courses and distances:

N 50°48'02" E, a distance of 29.84 feet (10.74V);
N 00°09'26" W, a distance of 11.67 feet (4.20V);
N 63°43'41" E, a distance of 8.65 feet (3.11V);
S 60°42'35" E, a distance of 6.25 feet (2.25V);
N 53°27'16" E, a distance of 85.19 feet (30.67V);
N 29°16'27" E, a distance of 10.24 feet (3.69V);
N 78°07'14" E, a distance of 12.10 feet (4.36V);
N 54°23'47" E, a distance of 132.78 feet (47.80V);
N 20°16'16" E, a distance of 9.18 feet (3.30V);
N 58°08'18" E, a distance of 14.59 feet (5.25V);
S 66°37'23" E, a distance of 5.82 feet (2.10V);
N 55°42'34" E, a distance of 139.14 feet (50.09V);
N 41°10'26" E, a distance of 30.16 feet (10.86V);
N 17°58'32" E, a distance of 11.48 feet (4.13V);
N 52°16'22" E, a distance of 58.31 feet (20.99V);
N 01°14'20" E, a distance of 8.60 feet (3.10V);
N 78°09'20" E, a distance of 12.28 feet (4.42V);
N 50°26'23" E, a distance of 33.33 feet (12.00V);
N 40°20'34" E, a distance of 54.16 feet (19.50V);
N 11°31'06" W, a distance of 8.36 feet (3.01V);
N 83°50'09" E, a distance of 8.38 feet (3.02V);
N 37°36'56" E, a distance of 63.66 feet (22.92V);
N 48°01'40" E, a distance of 178.69 feet (64.33V);
N 57°49'47" E, a distance of 29.07 feet (10.47V);
N 17°48'27" E, a distance of 8.52 feet (3.07V);
N 72°05'56" E, a distance of 11.74 feet (4.23V);
N 37°47'10" E, a distance of 14.08 feet (5.07V);
N 61°21'44" E, a distance of 16.75 feet (6.03V);
N 06°04'37" E, a distance of 10.89 feet (3.92V);
N 87°59'04" E, a distance of 10.52 feet (3.79V);
N 42°34'24" E, a distance of 142.26 feet (51.21V);
N 65°03'14" E, a distance of 11.00 feet (3.96V);
N 22°30'27" E, a distance of 13.18 feet (4.74V);
N 51°32'37" E, a distance of 57.84 feet (20.82V);
N 23°50'56" E, a distance of 8.34 feet (3.00V);

N 86°10'55" E, a distance of 12.31 feet (4.43V);
N 62°06'06" E, a distance of 98.99 feet (35.64V);
N 33°28'20" E, a distance of 11.89 feet (4.28V);
N 58°16'42" E, a distance of 32.01 feet (11.52V);
N 36°21'11" E, a distance of 21.87 feet (7.87V);
N 51°08'49" E, a distance of 92.49 feet (33.30V);
N 65°27'17" E, a distance of 73.71 feet (26.54V);
N 55°00'38" E, a distance of 106.90 feet (38.48V);
N 24°41'53" E, a distance of 19.05 feet (6.86V);
N 49°20'52" E, a distance of 27.03 feet (9.73V);
N 84°50'18" E, a distance of 14.23 feet (5.12V);
N 22°37'21" E, a distance of 13.87 feet (4.99V);
N 56°23'31" E, a distance of 16.26 feet (5.85V);
N 37°02'34" E, a distance of 65.11 feet (23.44V);
N 50°04'13" E, a distance of 27.48 feet (9.89V);
N 87°50'46" E, a distance of 10.91 feet (3.93V);
N 23°39'28" E, a distance of 15.68 feet (5.64V);
N 73°03'19" E, a distance of 8.47 feet (3.05V);
N 30°26'29" E, a distance of 23.70 feet (8.53V);
S 71°29'25" E, a distance of 25.23 feet (9.08V);
N 63°21'34" E, a distance of 12.56 feet (4.52V);
N 34°47'42" E, a distance of 28.81 feet (10.37V);
N 19°55'25" E, a distance of 32.81 feet (11.81V);
N 72°03'04" E, a distance of 17.56 feet (6.32V);
S 57°38'57" E, a distance of 21.98 feet (7.91V);
N 57°17'22" E, a distance of 61.49 feet (22.14V);
N 27°42'34" E, a distance of 28.13 feet (10.13V);
S 66°29'25" E, a distance of 18.27 feet (6.58V);
N 43°11'23" E, a distance of 44.10 feet (15.88V);
N 68°14'13" E, a distance of 13.84 feet (4.98V);
N 40°34'52" W, a distance of 7.36 feet (2.65V);
N 48°37'31" E, a distance of 15.22 feet (5.48V);
S 66°42'12" E, a distance of 9.51 feet (3.42V);
N 55°53'47" E, a distance of 13.68 feet (4.92V);
N 19°17'14" E, a distance of 9.21 feet (3.32V);
N 73°35'50" E, a distance of 8.46 feet (3.05V);
N 32°29'08" E, a distance of 14.37 feet (5.17V);
N 67°27'44" E, a distance of 12.08 feet (4.35V);
N 04°26'46" W, a distance of 5.19 feet (1.87V);
N 53°12'57" E, a distance of 9.49 feet (3.42V);
S 56°20'03" E, a distance of 13.08 feet (4.71V);
N 55°06'34" E, a distance of 120.98 feet (43.55V);
N 28°15'32" E, a distance of 24.06 feet (8.66V);
S 86°53'41" E, a distance of 12.18 feet (4.38V);
N 51°30'48" E, a distance of 90.03 feet (32.41V);
N 45°02'26" E, a distance of 165.35 feet (59.53V);

N 61°45'04" E, a distance of 27.15 feet (9.77V);
N 43°47'09" E, a distance of 20.56 feet (7.40V);
N 56°33'26" E, a distance of 57.45 feet (20.68V);
N 39°40'57" E, a distance of 53.90 feet (19.40V);
N 03°40'45" W, a distance of 8.20 feet (2.95V);

Thence N 33°46'38" E, a distance of 17.85 feet (6.43V) to the Point of Termination (N:13,249,024.86, E: 2,650,516.81, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 45°39'21" E, a distance of 37,266.99 feet (13,416.12V).

SEGMENT 11 (NOT PART OF THIS COASTAL BOUNDARY SURVEY DUE TO GULF INTRACOASTAL WATERWAY CONSTRUCTION THROUGH UPLANDS)

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in the Leopold Cahn Survey, Abstract 325. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,249,503.95, E: 2,651,028.70, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 47°01'52" W, a distance of 20,693.56 feet (7,449.68V).

Thence along said shoreline and said MHW line, the following courses and distances:

N 42°33'31" E, a distance of 24.60 feet (8.86V);
N 77°53'02" E, a distance of 15.39 feet (5.54V);
S 52°34'45" E, a distance of 10.17 feet (3.66V);
S 85°24'23" E, a distance of 22.60 feet (8.14V);
N 52°01'52" E, a distance of 17.72 feet (6.38V);
S 69°08'16" E, a distance of 11.85 feet (4.27V);
N 61°48'44" E, a distance of 20.90 feet (7.52V);
N 06°15'54" W, a distance of 22.93 feet (8.25V);
N 44°06'52" E, a distance of 23.79 feet (8.56V);
N 76°24'54" E, a distance of 18.90 feet (6.80V);
S 77°15'31" E, a distance of 30.47 feet (10.97V);
N 40°30'09" E, a distance of 41.31 feet (14.87V);
N 61°47'50" E, a distance of 14.60 feet (5.26V);
N 42°39'06" E, a distance of 62.23 feet (22.40V);
N 05°39'44" W, a distance of 7.07 feet (2.55V);
N 86°31'52" E, a distance of 12.07 feet (4.35V);
N 48°40'45" E, a distance of 72.05 feet (25.94V);
S 57°23'16" E, a distance of 5.60 feet (2.02V);
N 53°29'56" E, a distance of 109.54 feet (39.43V);

N 68°30'01" E, a distance of 17.98 feet (6.47V);
N 49°49'29" E, a distance of 95.08 feet (34.23V);
N 08°29'35" E, a distance of 14.31 feet (5.15V);
N 32°23'05" E, a distance of 25.03 feet (9.01V);
N 62°17'06" E, a distance of 7.96 feet (2.87V);
S 64°04'30" E, a distance of 17.02 feet (6.13V);
N 51°49'46" E, a distance of 56.00 feet (20.16V);
N 36°41'36" E, a distance of 22.96 feet (8.27V);
N 48°51'18" E, a distance of 80.38 feet (28.94V);
N 56°09'15" E, a distance of 118.72 feet (42.74V);
N 44°21'23" E, a distance of 48.59 feet (17.49V);
N 71°30'37" E, a distance of 19.17 feet (6.90V);
N 48°14'10" E, a distance of 55.43 feet (19.95V);
N 24°05'04" W, a distance of 12.59 feet (4.53V);
N 04°20'13" E, a distance of 13.78 feet (4.96V);
N 31°03'29" E, a distance of 14.08 feet (5.07V);
N 83°10'57" E, a distance of 47.09 feet (16.95V);
N 43°03'44" E, a distance of 14.70 feet (5.29V);
S 79°38'05" E, a distance of 6.61 feet (2.38V);
N 56°37'30" E, a distance of 58.62 feet (21.10V);
N 35°08'33" E, a distance of 17.15 feet (6.17V);
N 03°56'18" W, a distance of 21.78 feet (7.84V);
N 53°56'22" E, a distance of 8.92 feet (3.21V);
S 88°13'42" E, a distance of 23.94 feet (8.62V);
N 40°20'58" E, a distance of 95.60 feet (34.42V);
N 27°35'46" E, a distance of 34.14 feet (12.29V);
N 58°48'20" E, a distance of 50.14 feet (18.05V);
N 45°05'43" E, a distance of 31.92 feet (11.49V);
N 57°33'29" E, a distance of 41.03 feet (14.77V);
N 29°55'02" E, a distance of 30.70 feet (11.05V);
N 57°38'54" E, a distance of 41.13 feet (14.81V);
N 16°45'20" E, a distance of 8.76 feet (3.15V);
N 70°47'19" E, a distance of 9.45 feet (3.40V);
N 12°09'22" E, a distance of 11.09 feet (3.99V);
N 46°08'35" E, a distance of 31.16 feet (11.22V);
S 85°59'13" W, a distance of 8.43 feet (3.03V);
N 72°03'29" E, a distance of 9.45 feet (3.40V);
N 10°40'50" E, a distance of 9.46 feet (3.41V);
N 42°32'58" E, a distance of 95.90 feet (34.52V);
N 69°27'43" E, a distance of 60.37 feet (21.73V);
S 34°51'29" E, a distance of 9.10 feet (3.28V);
N 78°09'13" E, a distance of 20.65 feet (7.43V);
N 28°32'59" E, a distance of 35.10 feet (12.64V);
N 79°15'28" E, a distance of 7.78 feet (2.80V);
S 66°07'20" E, a distance of 17.42 feet (6.27V);
N 85°12'47" E, a distance of 13.54 feet (4.87V);

N 40°11'39" E, a distance of 67.01 feet (24.12V);
N 56°21'26" E, a distance of 18.83 feet (6.78V);
N 41°14'43" E, a distance of 47.69 feet (17.17V);
N 26°04'11" E, a distance of 23.80 feet (8.57V);
N 37°12'00" E, a distance of 71.26 feet (25.65V);
N 55°15'01" E, a distance of 129.23 feet (46.52V);
S 83°27'58" E, a distance of 10.46 feet (3.77V);
N 60°19'40" E, a distance of 103.10 feet (37.12V);
N 52°48'52" E, a distance of 155.46 feet (55.97V);
N 32°33'30" E, a distance of 20.95 feet (7.54V);
N 49°37'43" E, a distance of 46.22 feet (16.64V);
S 76°24'12" E, a distance of 17.10 feet (6.16V);
N 44°56'34" E, a distance of 98.36 feet (35.41V);
N 40°06'52" E, a distance of 74.78 feet (26.92V);

Thence N 50°30'55" E, a distance of 69.94 feet (25.18V) to the Point of Termination (N:13,251,247.91, E: 2,653,205.03, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 45°09'55" E, a distance of 33,791.90 feet (12,165.08V).

SEGMENT 12A

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in State Submerged Tracts 10 & 12 and the Leopold Cahn Survey, Abstract 325. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,252,256.86, E: 2,654,041.23, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 57°58'57" W, a distance of 21,411.44 feet (7,708.12V).

Thence along said shoreline and said MHW line, the following courses and distances:

N 76°33'31" E, a distance of 96.58 feet (34.77V);
N 68°27'03" E, a distance of 62.27 feet (22.42V);
N 78°00'18" E, a distance of 92.10 feet (33.16V);
N 69°11'54" E, a distance of 120.74 feet (43.47V);
N 57°39'12" E, a distance of 96.16 feet (34.62V);
N 49°40'59" E, a distance of 49.98 feet (17.99V);
N 43°02'12" E, a distance of 165.37 feet (59.53V);
N 56°31'33" E, a distance of 82.89 feet (29.84V);
N 61°46'20" E, a distance of 114.61 feet (41.26V);

N 51°15'26" E, a distance of 41.48 feet (14.93V);
N 67°16'56" E, a distance of 81.93 feet (29.49V);
N 54°52'07" E, a distance of 45.42 feet (16.35V);
N 63°02'02" E, a distance of 172.60 feet (62.14V);
N 41°26'47" E, a distance of 46.15 feet (16.61V);
N 50°22'55" E, a distance of 38.17 feet (13.74V);
N 26°53'08" E, a distance of 13.75 feet (4.95V);
N 50°07'22" E, a distance of 247.99 feet (89.28V);
N 55°31'07" E, a distance of 82.51 feet (29.70V);
N 32°55'16" E, a distance of 35.80 feet (12.89V);
N 58°00'50" W, a distance of 6.27 feet (2.26V);

Thence N 43°47'46" E, a distance of 30.09 feet (10.83V) to the Point of Termination (N:13,253,162.79, E: 2,655,456.74, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 44°44'20" E, a distance of 30,845.86 feet (11,104.51V).

SEGMENT 12B (NOT PART OF THIS COASTAL BOUNDARY SURVEY DUE TO GULF INTRACOASTAL WATERWAY CONSTRUCTION THROUGH UPLANDS)

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Aransas County, and also being situated in the Leopold Cahn Survey, Abstract 325. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the easternmost point of this surveyed shoreline, (N:13,253,162.79, E: 2,655,456.74, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears N 61°54'29" W, a distance of 22,183.38 feet (7,986.02V).

Thence along said shoreline and said MHW line, the following courses and distances:

S 37°32'33" E, a distance of 13.73 feet (4.94V);
S 38°20'24" W, a distance of 57.33 feet (20.64V);
S 57°24'16" W, a distance of 80.90 feet (29.12V);
S 46°35'11" W, a distance of 61.00 feet (21.96V);
S 69°11'38" W, a distance of 10.13 feet (3.65V);
S 43°56'46" W, a distance of 78.32 feet (28.20V);
S 32°19'55" W, a distance of 24.78 feet (8.92V);
S 54°05'38" W, a distance of 14.37 feet (5.17V);
S 24°22'24" W, a distance of 12.91 feet (4.65V);
S 57°23'17" W, a distance of 92.40 feet (33.26V);
S 42°22'09" W, a distance of 51.30 feet (18.47V);
S 63°33'48" W, a distance of 175.65 feet (63.23V);
S 52°25'02" W, a distance of 41.47 feet (14.93V);

S 41°25'00" W, a distance of 31.58 feet (11.37V);
S 51°26'48" W, a distance of 61.05 feet (21.98V);
S 63°27'07" W, a distance of 101.15 feet (36.41V);
S 50°18'26" W, a distance of 71.51 feet (25.74V);
S 41°14'58" W, a distance of 106.09 feet (38.19V);
S 47°06'27" W, a distance of 140.68 feet (50.64V);
S 51°58'15" W, a distance of 74.08 feet (26.67V);
S 44°59'54" W, a distance of 71.42 feet (25.71V);
S 53°58'42" W, a distance of 95.58 feet (34.41V);
S 43°30'40" W, a distance of 40.08 feet (14.43V);
S 32°04'44" W, a distance of 60.40 feet (21.74V);
S 53°20'06" W, a distance of 31.58 feet (11.37V);

Thence S 66°38'56" W, a distance of 63.35 feet (22.81V) to the Point of Termination (N:13,252,124.43, E: 2,654,203.99, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 45°01'10" E, a distance of 32,465.60 feet (11,687.62V).

SEGMENT 13 (NOT PART OF THIS COASTAL BOUNDARY SURVEY DUE TO GULF INTRACOASTAL WATERWAY CONSTRUCTION THROUGH UPLANDS)

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Calhoun County, and also being situated in the Aransas CSL Survey, Abstract 229. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the westernmost point of this surveyed shoreline, (N: 13,274,331.83, E: 2,677,791.71, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears S 75°38'47" W, a distance of 43,255.21 feet (15,571.88V).

Thence along said shoreline and said MHW line, the following courses and distances:

S 41°08'11" E, a distance of 18.67 feet (6.72V);
S 64°51'09" E, a distance of 37.98 feet (13.67V);
S 86°08'47" E, a distance of 17.41 feet (6.27V);
S 62°13'52" E, a distance of 12.75 feet (4.59V);
N 81°44'51" E, a distance of 28.36 feet (10.21V);
N 74°09'17" E, a distance of 113.61 feet (40.90V);
S 82°36'25" E, a distance of 34.82 feet (12.54V);
S 49°21'04" E, a distance of 32.57 feet (11.73V);
S 72°14'39" E, a distance of 53.35 feet (19.21V);
N 88°19'02" E, a distance of 20.77 feet (7.48V);
N 44°22'24" E, a distance of 18.82 feet (6.78V);
S 15°21'11" E, a distance of 19.12 feet (6.88V);

S 61°33'40" E, a distance of 18.12 feet (6.52V);
S 75°39'28" E, a distance of 39.64 feet (14.27V);
S 85°39'31" E, a distance of 70.54 feet (25.39V);
S 64°27'23" E, a distance of 61.29 feet (22.06V);
S 76°28'11" E, a distance of 137.67 feet (49.56V);
S 59°43'21" E, a distance of 61.62 feet (22.18V);
S 41°03'30" E, a distance of 25.08 feet (9.03V);
S 70°56'31" E, a distance of 53.14 feet (19.13V);
S 81°10'27" E, a distance of 34.74 feet (12.51V);
S 58°19'36" E, a distance of 36.03 feet (12.97V);
S 75°42'34" E, a distance of 36.22 feet (13.04V);
S 48°05'50" E, a distance of 10.60 feet (3.82V);
S 71°11'18" E, a distance of 39.35 feet (14.17V);
S 50°43'54" E, a distance of 44.05 feet (15.86V);

Thence S 65°06'51" E, a distance of 22.43 feet (8.07V) to the Point of Termination (N:13,274,043.22, E: 2,678,786.86, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears N 57°31'29" W, a distance of 1,918.46 feet (690.65V).

SEGMENT 14 (NOT PART OF THIS COASTAL BOUNDARY SURVEY DUE TO GULF INTRACOASTAL WATERWAY CONSTRUCTION THROUGH UPLANDS)

FIELD NOTES for the littoral boundary along a portion of The Gulf Intracoastal Waterway and The Aransas National Wildlife Refuge, situated in Calhoun County, and also being situated in the Aransas CSL Survey, Abstract 229. Distances, bearings, and Coordinates are grid, North American Datum of 1983 (2011), South Central Zone (4204) of the Texas Coordinate System;

Beginning at the northwesternmost point of this surveyed shoreline, (N: 13,275,664.33, E: 2,680,536.55, EL: 1.28') on the MHW line along the northern shoreline of The Gulf Intracoastal Waterway, same being the southern shoreline of The Aransas National Wildlife refuge, from which NGS monument "877 90037 B" (N: 13,263,608.70, E: 2,635,886.73, EL: 2.6') bears S 74°53'25" W, a distance of 46,248.73 feet (16,649.54V).

Thence along said shoreline and said MHW line, the following courses and distances:

S 17°11'27" W, a distance of 176.79 feet (63.64V);
S 36°43'54" W, a distance of 13.09 feet (4.71V);
S 60°07'14" W, a distance of 37.92 feet (13.65V);
S 48°21'04" W, a distance of 24.18 feet (8.70V);
S 20°36'12" W, a distance of 26.02 feet (9.37V);
S 41°10'36" W, a distance of 27.63 feet (9.95V);
S 29°31'39" W, a distance of 38.08 feet (13.71V);
S 42°10'16" W, a distance of 41.89 feet (15.08V);
S 56°39'44" W, a distance of 120.62 feet (43.42V);
S 63°12'15" W, a distance of 41.66 feet (15.00V);
N 63°49'41" W, a distance of 7.30 feet (2.63V);

S 84°25'41" W, a distance of 52.22 feet (18.80V);
S 69°42'06" W, a distance of 36.90 feet (13.28V);
S 79°10'26" W, a distance of 42.59 feet (15.33V);
N 67°48'45" W, a distance of 23.86 feet (8.59V);
S 39°03'21" W, a distance of 19.55 feet (7.04V);
S 80°15'24" W, a distance of 18.73 feet (6.74V);
S 33°50'01" W, a distance of 36.10 feet (13.00V);
S 24°34'37" W, a distance of 41.15 feet (14.81V);
S 45°17'53" W, a distance of 72.18 feet (25.98V);
S 03°12'48" E, a distance of 17.86 feet (6.43V);
S 15°54'28" W, a distance of 18.45 feet (6.64V);
S 41°31'54" W, a distance of 76.86 feet (27.67V);
N 54°51'51" W, a distance of 25.35 feet (9.13V);
S 46°04'37" W, a distance of 107.14 feet (38.57V);
S 28°06'08" W, a distance of 39.51 feet (14.22V);
S 01°21'08" E, a distance of 20.47 feet (7.37V);
S 22°15'34" W, a distance of 77.70 feet (27.97V);
S 35°55'22" W, a distance of 71.56 feet (25.76V);
S 19°30'25" W, a distance of 12.96 feet (4.67V);
S 20°00'39" E, a distance of 6.86 feet (2.47V);
N 33°13'36" E, a distance of 18.11 feet (6.52V);
N 57°26'47" E, a distance of 23.04 feet (8.29V);
N 36°50'48" E, a distance of 35.59 feet (12.81V);
N 14°39'23" E, a distance of 22.95 feet (8.26V);
N 66°21'27" E, a distance of 21.57 feet (7.77V);
N 33°06'53" E, a distance of 100.91 feet (36.33V);
N 23°01'43" E, a distance of 24.49 feet (8.82V);
N 57°22'40" E, a distance of 12.65 feet (4.55V);
N 33°33'54" E, a distance of 90.63 feet (32.63V);
N 45°42'37" E, a distance of 55.15 feet (19.85V);
N 55°20'49" E, a distance of 29.14 feet (10.49V);
N 76°20'15" E, a distance of 25.02 feet (9.01V);
N 88°36'38" E, a distance of 37.12 feet (13.36V);
N 57°27'04" E, a distance of 19.78 feet (7.12V);
N 86°15'18" E, a distance of 47.31 feet (17.03V);
N 45°23'34" E, a distance of 15.37 feet (5.53V);
N 80°57'15" E, a distance of 16.60 feet (5.98V);
N 48°01'12" E, a distance of 36.11 feet (13.00V);
N 67°12'54" E, a distance of 12.14 feet (4.37V);
N 19°36'20" E, a distance of 17.91 feet (6.45V);
N 27°59'25" W, a distance of 9.64 feet (3.47V);
N 07°47'18" E, a distance of 12.71 feet (4.58V);
N 63°06'39" E, a distance of 28.55 feet (10.28V);
N 15°00'57" E, a distance of 11.38 feet (4.10V);
N 64°29'59" E, a distance of 10.64 feet (3.83V);
N 23°35'00" E, a distance of 31.26 feet (11.25V);

N 55°51'10" E, a distance of 130.19 feet (46.87V);
N 75°20'33" E, a distance of 15.93 feet (5.73V);
N 52°52'31" E, a distance of 71.69 feet (25.81V);
N 41°52'53" E, a distance of 108.55 feet (39.08V);
N 18°49'02" E, a distance of 14.98 feet (5.39V);
N 42°34'10" E, a distance of 106.70 feet (38.41V);
N 20°48'49" E, a distance of 11.04 feet (3.97V);

Thence N 55°23'27" E, a distance of 71.55 feet (25.76V) to the Point of Termination (N:13,275,582.90, E: 2,680,594.71, EL: 1.28'), from which NGS monument "877 90038 B" (N:13,275,073.31, E: 2,667,168.40, EL: 3.8' NAVD88) bears S 81°32'26" W, a distance of 3,463.99 feet (1,247.04V).



James M. Naismith, RPLS, LSLs

1/22/2024

