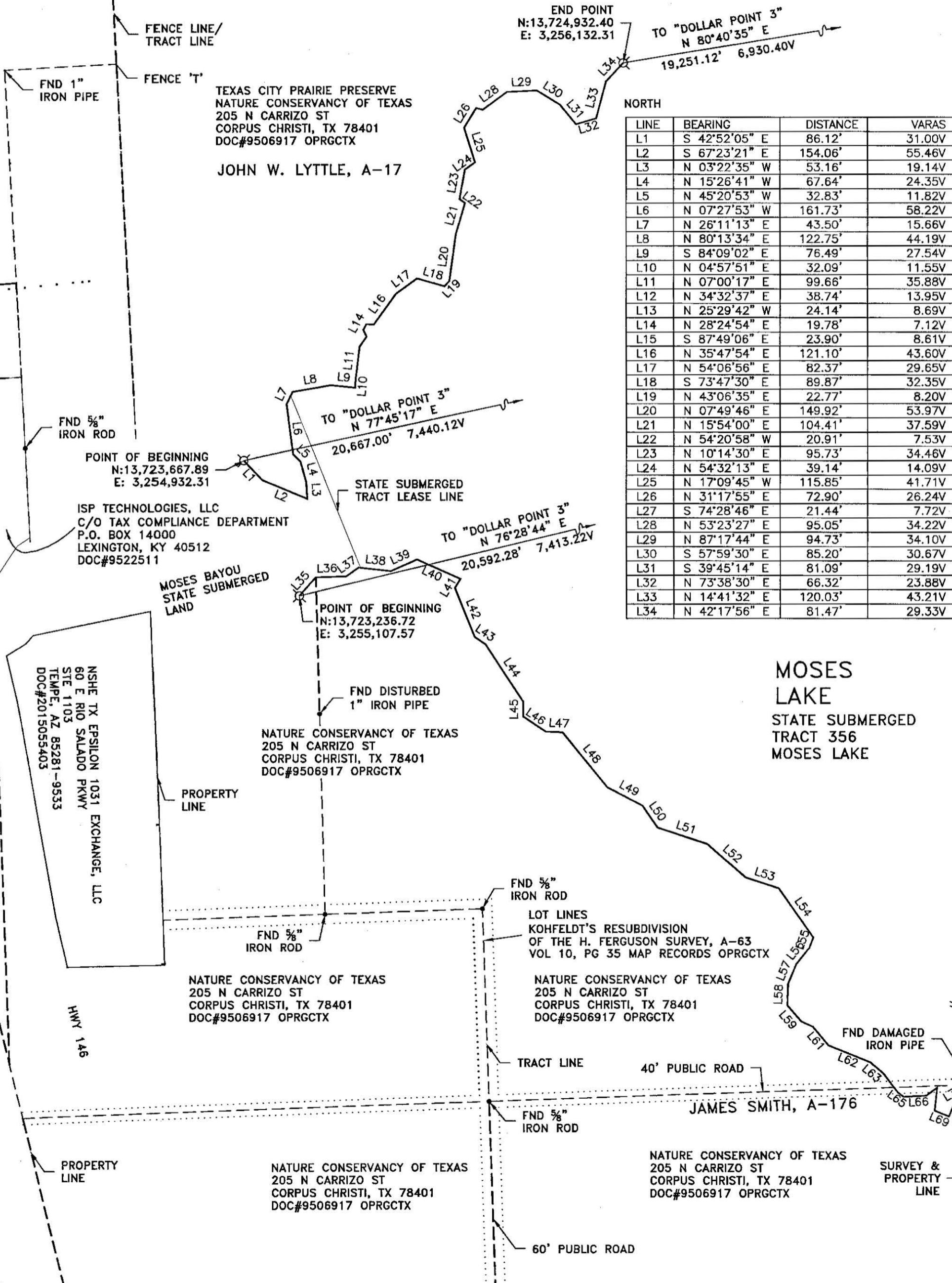


**TEXAS GENERAL LAND OFFICE**  
 - Art. 33.136, Natural Resources Code  
*Co. Galveston, Sketch No. 84*  
*Field Data Collection by R. Kuntz*  
 See Report

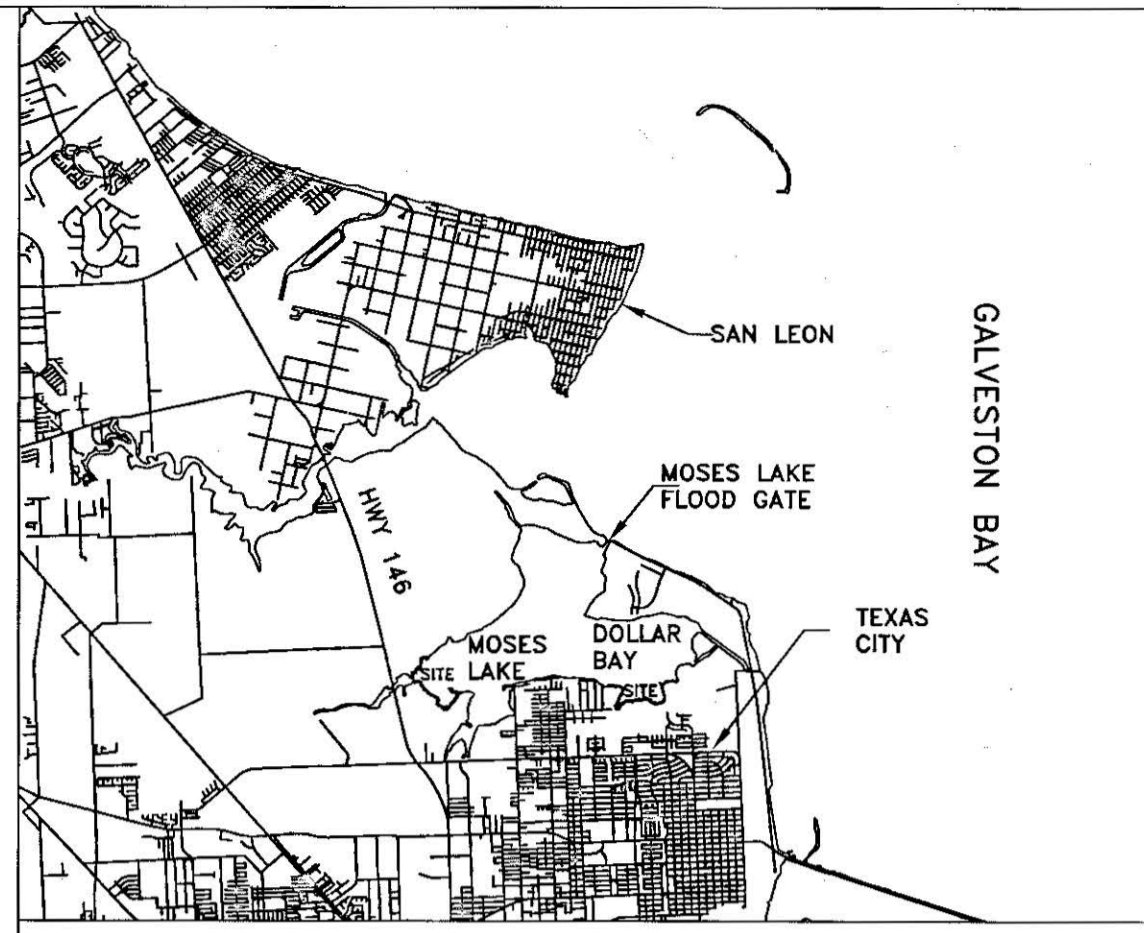


SOUTH

LINE	BEARING	DISTANCE	VARAS
L35	N 41°34'02" E	77.98'	28.07V
L36	N 88°12'21" E	95.95'	34.54V
L37	N 54°21'23" E	48.48'	17.45V
L38	S 83°25'07" E	102.61'	36.94V
L39	N 66°20'17" E	91.42'	32.91V
L40	S 65°36'24" E	149.61'	53.86V
L41	S 30°53'36" W	33.47'	12.05V
L42	S 21°52'33" E	167.23'	60.20V
L43	S 55°35'06" E	41.35'	14.89V
L44	S 32°57'30" E	217.48'	78.29V
L45	S 00°03'50" W	47.43'	17.07V
L46	S 55°58'07" E	85.82'	30.90V
L47	S 87°11'54" E	53.33'	19.20V
L48	S 39°08'10" E	225.79'	81.28V
L49	S 62°24'31" E	125.10'	45.03V
L50	S 34°27'11" E	85.00'	30.60V
L51	S 71°38'59" E	165.36'	59.53V
L52	S 48°28'15" E	160.27'	57.70V
L53	S 71°43'06" E	110.46'	39.77V
L54	S 35°12'57" E	190.02'	68.41V
L55	S 19°09'32" W	35.88'	12.92V
L56	S 38°15'12" W	68.03'	24.49V
L57	S 22°18'44" W	67.06'	24.14V
L58	S 02°23'35" W	68.76'	24.75V
L59	S 40°42'25" E	68.03'	24.49V
L60	S 65°20'00" E	39.92'	14.37V
L61	S 39°48'17" E	77.76'	27.99V
L62	S 67°54'54" E	141.82'	51.05V
L63	S 50°06'07" E	52.82'	19.02V
L64	S 37°27'12" E	78.50'	28.26V
L65	S 52°56'43" E	22.30'	8.03V
L66	N 87°02'28" E	71.68'	25.80V
L67	N 53°46'50" E	42.65'	15.35V
L68	S 05°57'39" W	73.33'	26.40V
L69	S 67°29'28" E	48.64'	17.51V
L70	N 21°39'19" E	57.91'	20.85V
L71	N 58°14'25" E	27.43'	9.88V
L72	S 32°56'25" E	43.99'	15.84V
L73	N 85°38'14" E	61.48'	22.13V
L74	N 37°17'14" E	209.16'	75.30V
L75	N 34°45'51" E	244.47'	88.01V
L76	N 50°18'54" E	165.84'	59.70V
L77	N 41°33'16" E	79.90'	28.76V
L78	N 21°49'38" E	57.81'	20.81V
L79	N 50°15'21" E	127.78'	46.00V
L80	N 18°51'37" E	257.33'	92.64V
L81	N 52°13'38" E	54.92'	19.77V
L82	N 57°18'16" W	133.36'	48.01V
L83	S 84°37'07" W	70.59'	25.41V
L84	N 73°48'07" W	239.61'	86.26V
L85	N 34°44'52" W	186.47'	67.13V
L86	N 74°51'05" E	61.00'	21.96V
L87	S 51°02'38" E	25.00'	9.00V
L88	S 24°57'42" E	123.04'	44.30V
L89	S 67°58'19" E	126.25'	45.45V
L90	N 82°35'46" E	83.42'	30.03V
L91	S 69°40'31" E	183.39'	66.02V
L92	N 82°12'19" E	157.05'	56.54V
L93	S 88°01'16" E	69.21'	24.92V
L94	N 68°54'24" E	78.41'	28.23V

NORTH

LINE	BEARING	DISTANCE	VARAS
L1	S 42°52'05" E	86.12'	31.00V
L2	S 67°23'21" E	154.06'	55.46V
L3	N 03°22'35" W	53.16'	19.14V
L4	N 15°26'41" W	67.64'	24.35V
L5	N 45°20'53" W	32.83'	11.82V
L6	N 07°27'53" W	161.73'	58.22V
L7	N 26°11'13" E	43.50'	15.66V
L8	N 80°13'34" E	122.75'	44.19V
L9	S 84°09'02" E	76.49'	27.54V
L10	N 04°57'51" E	32.09'	11.55V
L11	N 07°00'17" E	99.66'	35.88V
L12	N 34°32'37" E	38.74'	13.95V
L13	N 25°29'42" W	24.14'	8.69V
L14	N 28°24'54" E	19.78'	7.12V
L15	S 87°49'06" E	23.90'	8.61V
L16	N 35°47'54" E	121.10'	43.60V
L17	N 54°06'56" E	82.37'	29.65V
L18	S 73°47'30" E	89.87'	32.35V
L19	N 43°06'35" E	22.77'	8.20V
L20	N 07°49'46" E	149.92'	53.97V
L21	N 15°54'00" E	104.41'	37.59V
L22	N 54°20'58" W	20.91'	7.53V
L23	N 10°14'30" E	95.73'	34.46V
L24	N 54°32'13" E	39.14'	14.09V
L25	N 17°09'45" W	115.85'	41.71V
L26	N 31°17'55" E	72.90'	26.24V
L27	S 74°28'46" E	21.44'	7.72V
L28	N 53°23'27" E	95.05'	34.22V
L29	N 87°17'44" E	94.73'	34.10V
L30	S 57°59'30" E	85.20'	30.67V
L31	S 39°45'14" E	81.09'	29.19V
L32	N 73°38'30" E	66.32'	23.88V
L33	N 14°41'32" E	120.03'	43.21V
L34	N 42°17'56" E	81.47'	29.33V



- NOTES:
- ALL COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4204), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCES CODE OF THE STATE OF TEXAS, 1983 DATUM (2011), US FEET. ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL DISTANCES GRID. THE SCALE FACTOR IS 0.999864 AND MAPPING ANGLE IS 01d 59'.
  - COORDINATES AND ELEVATIONS ARE BASED ON MONUMENTS & ON OPUS SOLUTIONS. VERTICAL DATUM: NAVD88
- REFERENCE MONUMENT "DOLLAR POINT 3"  
 N: 13728051.27  
 E: 3275129.11  
 ELEV: 21.2' NAVD88
- TIDAL REFERENCE MONUMENT "877 1013 A"  
 N: 13744960.73  
 E: 3266697.46  
 ELEV: 4.3' NAVD88
- ALL POSITIONS AND ELEVATIONS RECORDED USING SURVEY GRADE, RTK GPS. EQUIPMENT: HEMISPHERE S320 OR TRIMBLE R8.
  - BOUNDARY BETWEEN STATE SUBMERGED LAND AND JOHN LYTTLE, A-17, SURVEYED 1833, AND THOMAS G. WESTERN, SURVEYED 1838 IS MEAN HIGHER HIGH WATER (MHHW) LINE. BOUNDARY BETWEEN STATE SUBMERGED LAND AND JAMES SMITH, A-176, SURVEYED 1853, AND H. FERGUSON, A-63, SURVEYED 1854, IS MEAN HIGH WATER (MHW) LINE. LOCAL TIDAL DATUMS WERE ESTABLISHED USING AN ONSITE TIDE GAUGE. MHHW WAS DETERMINED TO BE 0.73' NAVD88, MHW WAS DETERMINED TO BE 0.69' NAVD88. ELEVATIONS WERE LOCATED IN THE FIELD USING RTK GPS.
  - TO CONVERT FEET TO VARAS MULTIPLY BY 0.36.
  - UPLAND TRACT LINES SHOWN HEREON ARE BASED ON DEED DESCRIPTIONS AND APPRAISAL DISTRICT MAPS, LINES ARE SHOWN FOR REFERENCE ONLY.
  - EROSION RESPONSE WORK: MOSES LAKE PROTECTION PHASE 3 AND DOLLAR BAY MARSH RESTORATION CEPRA #: 1627
  - REFERENCE ACCOMPANYING REPORT DATED JUNE, 2016 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 *Book 247, Galveston Co. Surveyors Records in the Galveston Co. Engineer's Office*

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.

NO EVIDENCE OF FILL AND/OR BUILDUP IS LOCATED WITHIN THE SURVEY AREA; NO REINFORCING WALLS OR BULKHEADS ARE LOCATED WITHIN THE SURVEY AREA. SEE REPORT DATED JUNE 2016 FOR ADDITIONAL INFORMATION.

SURVEYED: JUNE 14, 2016 SURVEY PERSONNEL:  
 JAMES M. NAISMITH  
 J.Z. GIESSEL

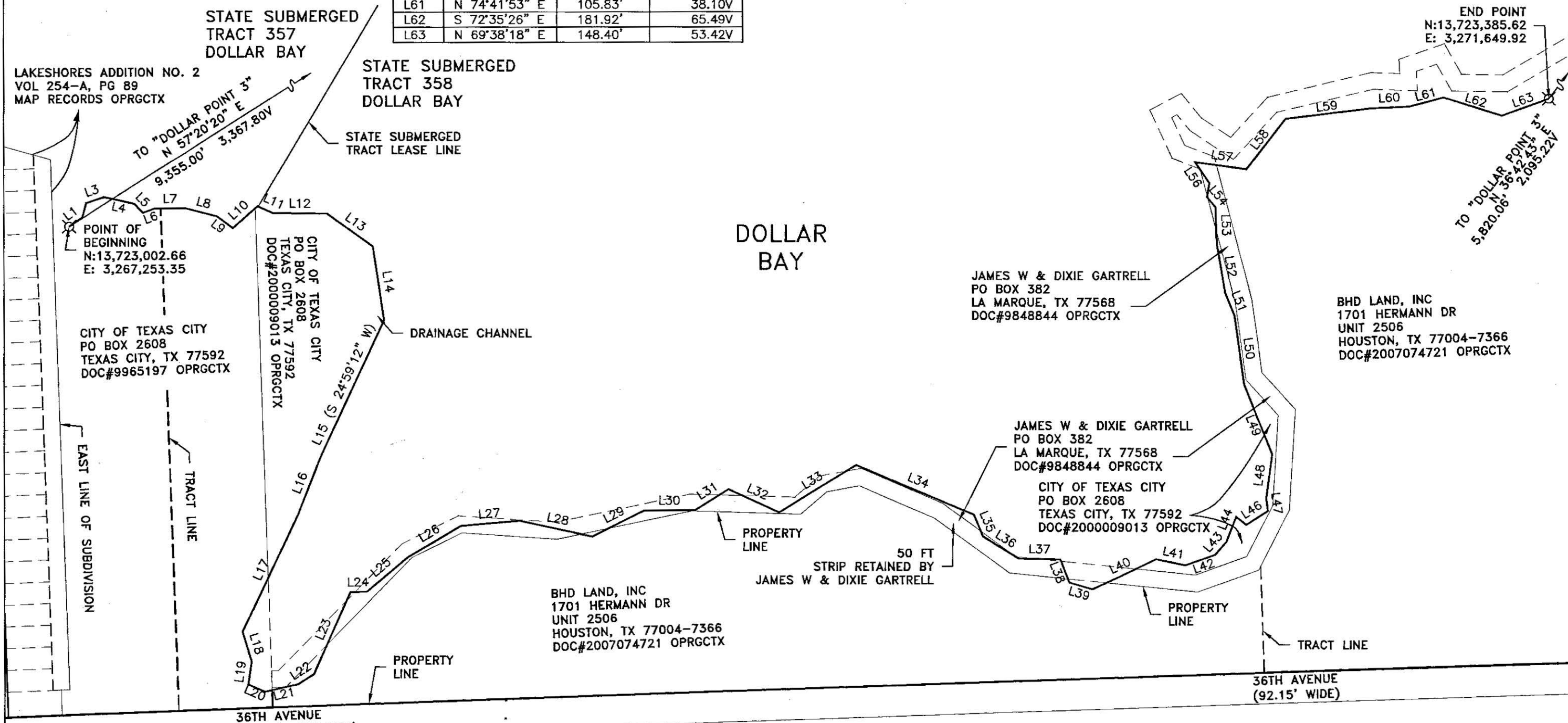
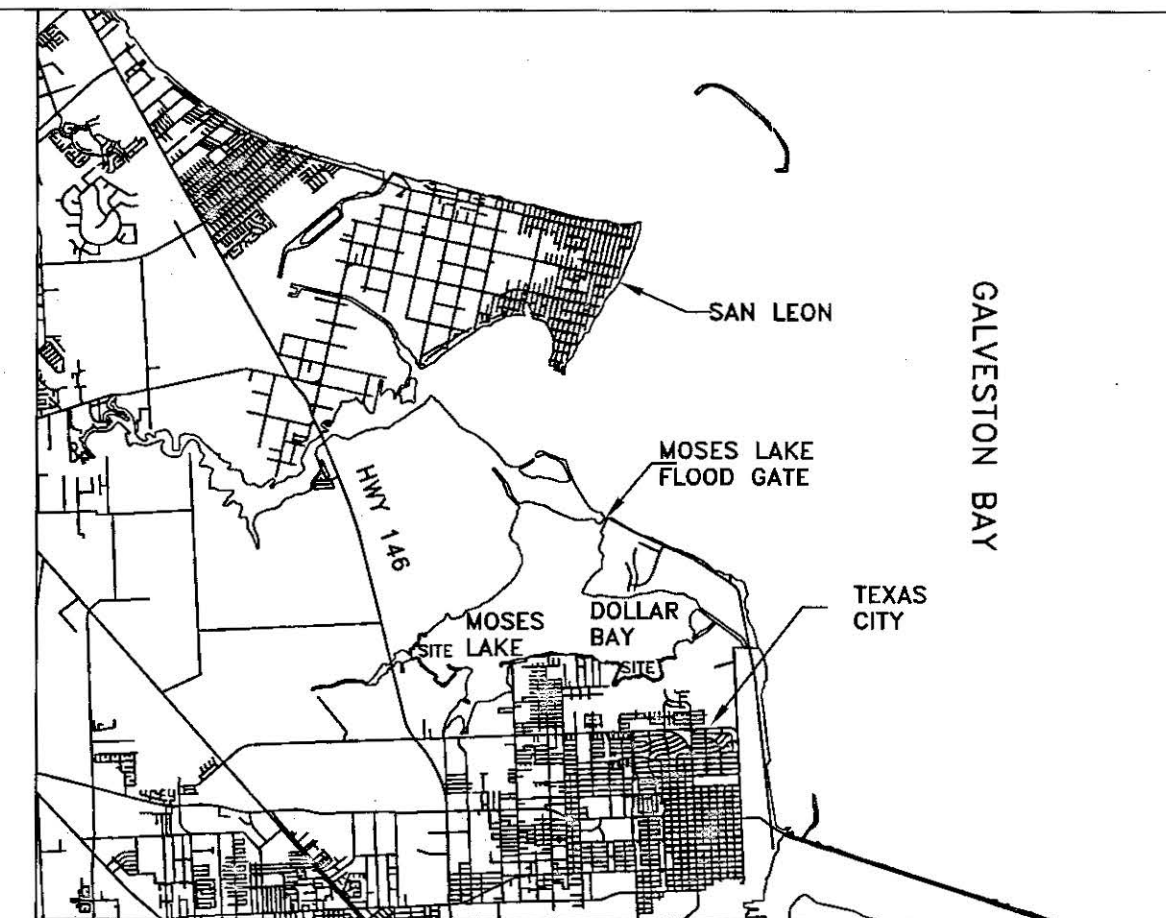
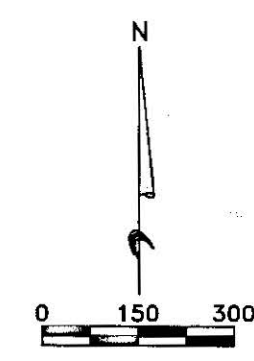
*James M. Naismith*  
 JAMES M. NAISMITH  
 LICENSED STATE LAND SURVEYOR

 Hydrographic - Geophysical Environmental www.naismithmarine.com (361) 945-0248 FIRM # 10078500	NO DATE REVISION	CONTR: HDR, INC
	0 1/2017 PER GLO	COASTAL BOUNDARY SURVEY OF THE LITTORAL BOUNDARY OF A PORTION OF THE J.W. LYTTLE, A-17, J. SMITH, A-176, H. FERGUSON, A-63, SITUATED AT THE MOUTH OF MOSES BAYOU ADJACENT TO STATE TRACT 356, MOSES LAKE, GALVESTON COUNTY, TEXAS
	SCALE: 1" = 300'	SHEET 1 OF 2
	DWN. BY: JZG	DATE: JUN 2016



LINE	BEARING	DISTANCE	VARAS	LINE	BEARING	DISTANCE	VARAS
L1	N 54°20'21" E	47.31'	17.03V	L31	N 58°12'53" E	117.65'	42.35V
L2	N 14°49'33" E	43.65'	15.72V	L32	S 65°39'44" E	165.68'	59.65V
L3	N 71°49'30" E	57.00'	20.52V	L33	N 58°22'11" E	268.29'	96.58V
L4	S 77°29'56" E	91.67'	33.00V	L34	S 67°09'41" E	379.90'	136.77V
L5	S 43°32'46" E	37.82'	13.54V	L35	S 22°34'10" E	70.12'	25.24V
L6	N 69°28'02" E	36.52'	13.15V	L36	S 58°15'27" E	125.66'	45.24V
L7	S 89°48'02" E	91.89'	33.08V	L37	S 89°05'21" E	123.91'	44.61V
L8	S 75°40'17" E	95.12'	34.24V	L38	S 21°18'43" E	73.70'	26.53V
L9	S 53°15'27" E	59.62'	21.46V	L39	S 73°15'40" E	71.63'	25.79V
L10	N 48°00'34" E	98.03'	35.29V	L40	N 64°39'13" E	209.28'	75.34V
L11	S 65°35'23" E	50.50'	18.18V	L41	S 78°37'45" E	88.96'	32.03V
L12	S 89°12'13" E	160.45'	57.76V	L42	N 70°47'47" E	93.55'	33.68V
L13	S 54°14'01" E	168.82'	60.78V	L43	N 40°39'23" E	51.78'	18.64V
L14	S 08°35'24" E	224.05'	80.66V	L44	N 21°03'28" E	80.07'	28.82V
L15	S 24°59'12" W	449.46'	161.80V	L45	S 50°21'28" E	38.65'	13.91V
L16	S 21°16'56" W	186.28'	67.06V	L46	N 57°07'45" E	76.87'	27.67V
L17	S 25°15'34" W	383.50'	138.06V	L47	N 07°38'02" W	37.21'	13.40V
L18	S 16°45'43" E	93.54'	33.68V	L48	N 07°27'47" E	132.58'	47.73V
L19	S 08°04'33" W	68.57'	24.69V	L49	N 21°52'51" W	223.36'	80.41V
L20	S 65°54'08" E	53.61'	19.30V	L50	N 07°57'55" W	208.07'	74.90V
L21	N 77°20'35" E	101.23'	36.44V	L51	N 21°49'06" W	75.01'	27.00V
L22	N 57°09'41" E	55.73'	20.06V	L52	N 09°35'02" W	146.43'	52.72V
L23	N 23°52'31" E	267.49'	96.30V	L53	N 02°27'27" W	111.62'	40.18V
L24	N 88°11'47" E	49.25'	17.73V	L54	N 39°22'30" W	38.60'	13.90V
L25	N 49°55'02" E	159.16'	57.30V	L55	N 09°35'19" E	42.50'	15.30V
L26	N 59°26'50" E	183.23'	65.96V	L56	N 33°49'25" W	75.77'	27.28V
L27	N 85°01'20" E	175.98'	63.35V	L57	S 82°08'28" E	153.29'	55.18V
L28	S 77°39'11" E	220.31'	79.31V	L58	N 37°34'08" E	190.67'	68.64V
L29	N 63°29'03" E	173.01'	62.28V	L59	N 82°47'10" E	253.97'	91.43V
L30	N 89°38'49" E	150.66'	54.24V	L60	N 87°07'48" E	115.43'	41.56V
				L61	N 74°41'53" E	105.83'	38.10V
				L62	S 72°35'26" E	181.92'	65.49V
				L63	N 89°38'18" E	148.40'	53.42V

TEXAS GENERAL LAND OFFICE  
 Art. 33.136, Natural Resources Code  
 Co. Galveston, State No. 84  
 File Data Reliance by R. K. Korte  
 1st Report



- NOTES:
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 ELEV: 21.2' NAVD88  
 TIDAL REFERENCE MONUMENT "877 1013 A"  
 N: 13,744,960.73  
 E: 3,266,697.46  
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  - BOUNDARY BETWEEN STATE SUBMERGED LAND AND JOHN LYTTLE, A-17, SURVEYED 1833, AND THOMAS G. WESTERN, SURVEYED 1838 IS MEAN HIGHER HIGH WATER (MHHW) LINE. BOUNDARY BETWEEN STATE SUBMERGED LAND AND JAMES SMITH, A-176, SURVEYED 1853, AND H. FURGUSON, A-63, SURVEYED 1854, IS MEAN HIGH WATER (MHW) LINE. LOCAL TIDAL DATUMS WERE ESTABLISHED USING AN ONSITE TIDE GAUGE. MHHW WAS DETERMINED TO BE 0.73' NAVD88, MHW WAS DETERMINED TO BE 0.69' NAVD88. ELEVATIONS WERE LOCATED IN THE FIELD USING RTK GPS.
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  - REFERENCE ACCOMPANYING REPORT DATED JUNE, 2016 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 Book 1, Page 247, Galveston Co. Surveyor's Records, in the Galveston Co. Engineer's Office.

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SURVEYED: JUNE 14, 2016 SURVEY PERSONNEL:  
 JAMES M. NAISMITH  
 J.Z. GIESSEL

*James M. Naismith*  
 1/20/2017  
 JAMES M. NAISMITH  
 LICENSED STATE LAND SURVEYOR

**Naismith Marine**  
 Hydrographic · Geophysical  
 Environmental  
 www.naismithmarine.com  
 (361) 945-0248  
 FIRM #10078500

NO	DATE	REVISION
0	1/20/17	PER GLO

CONTR: HDR, INC  
 COASTAL BOUNDARY SURVEY OF THE LITTORAL BOUNDARY OF A PORTION OF THE T.J. WESTERN, A-204 SITUATED AT THE SOUTH SHORE OF DOLLAR BAY ADJACENT TO STATE TRACT 358-DOLLAR BAY, GALVESTON COUNTY, TEXAS  
 SCALE: 1" = 300'  
 DWN. BY: JZG  
 SHEET 2 OF 2  
 DATE: JUN 2016





TEXAS GENERAL LAND OFFICE  
Art. 33.136, Natural Resources Code

Co. Galveston, Sketch No. 84

TEXAS GENERAL LAND OFFICE File Date 06/20/2018 by R. Kartve  
GEORGE P. BUSH, COMMISSIONER

### Surveying Division Coastal Boundary Survey Approval

**Project:** Moses Lake Shoreline Protection Phase 3 & Dollar Bay Marsh Restoration

**Project No:** CEPRA 1592 & CEPRA 1627 (GLO)  
SL20160036 & SL20170043 (GLO)

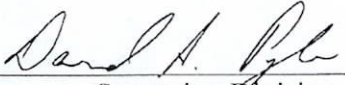
**Project Manager:** Thomas Durnin (GLO), Project Manager  
Mollie Powell (GLO), Upper Coast Regional Manager

**Surveyor:** James M. Naismith, Licensed State Land Surveyor

**Description:** Coastal Boundary Survey, dated January 20, 2017, by James M. Naismith, Licensed State Land Surveyor, delineating the line of Mean Higher High Water, along the lower western shore of Moses Lake, same line being a portion of the littoral boundary of the J.W. Lytle, A-17 and being on the western boundary line of Moses Lake Submerged Land Tract 356, also along the southern shore of Dollar Bay, same line being a portion of the littoral boundary of Thomas G. Western, A-204 and being the southern boundary line of Dollar Bay Submerged Land Tract 358, and also delineating the line of Mean High Water, along the southern shore of Moses Lake, same being a portion of the littoral boundary of the James Smith, A-176 and Hamlet Ferguson, A-63 and being on the southwestern boundary line of said Moses Lake Submerged Land Tract 356, coordinates for Moses Lake, N29°25'09.67" (29.419353°) W94°57'10.10" (94.952806°) and coordinates for Dollar Bay, N29°25'05.02" (29.418061°) W94°54'43.53" (94.912091°), WGS84. A copy of the survey has been recorded in Book I, Page 247, of the Galveston County Surveyor's Records in the Galveston County Engineering Department.

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:   
Surveying Division

July 25 2017  
Date

Approval Filed as: *Tex. Nat. Res. Code* Article 33.136 Galveston County, Sketch No. 84

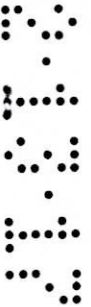


Zac Giessel  
Naismith Marine Services, Inc.  
2007 FM 3036  
Rockport, TX 78382

February 6, 2017

Attn: Mr. David Pyle  
Texas General Land Office  
Survey Division  
1700 N. Congress Ave.  
Austin, TX 78701

TEXAS GENERAL LAND OFFICE  
Art. 33.136, Natural Resources Code  
Co. Galveston, Sketch No. 84  
File Date 06/26/2018 by R. Kartye



RE: Coastal Boundary Survey Map and Report: Moses Lake & Dollar Bay

Mr. David Pyle:

Please find enclosed the signed and sealed Coastal Boundary Survey maps and report/field notes of

COASTAL BOUNDARY SURVEY OF THE LITTORAL BOUNDARY OF A PORTION OF THE J.W. LYTTLE, A-17, J. SMITH, A-176, H. FURGUSON, A-63, SITUATED AT THE MOUTH OF MOSES BAYOU ADJACENT TO STATE TRACT 356, MOSES LAKE, GALVESTON COUNTY, TEXAS

&

COASTAL BOUNDARY SURVEY OF THE LITTORAL BOUNDARY OF A PORTION OF THE T.J. WESTERN, A-204 SITUATED AT THE SOUTH SHORE OF DOLLAR BAY ADJACENT TO STATE TRACT 358-DOLLAR BAY, GALVESTON COUNTY, TEXAS

This coastal boundary survey report and maps were filed in Galveston County Survey records with the Galveston County Engineering department in Book I, Page 247. A copy of the book and page has been enclosed of Galveston Country survey records which has filing information. This information will have to be added to the Mylar copies of each map. Please call me if you have any questions.

Thank you,

Justin ZAC Giessel  
Naismith Marine Services, Inc.  
zac@naismithmarine.com  
361-920-0436

Encl.

- (1) CBS map & report/field notes
- (1) photocopy of CBS filing information at Galveston County Engineering Dept. survey records



# Naismith Marine Services, Inc.

www.naismithmarine.com

(361) 945-0248

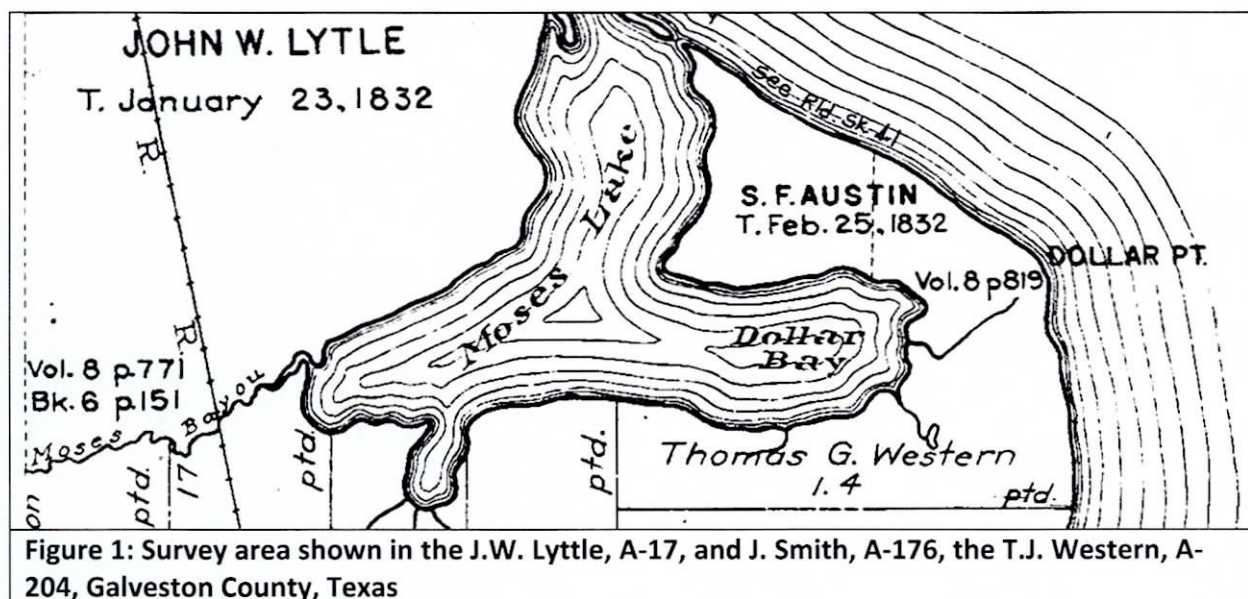
FIRM #10078500



JUNE, 2016

COASTAL BOUNDARY SURVEY OF THE LITTORAL BOUNDARY OF A PORTION OF THE J.W. LYTTLE, A-17, J. SMITH, A-176, AND H. FURGUSON, A-63 SITUATED AT THE MOUTH OF MOSES BAYOU ADJACENT TO STATE TRACT 356 MOSES LAKE, AND THE T.J. WESTERN, A-204 SITUATED AT THE SOUTH SHORE OF DOLLAR BAY ADJACENT TO STATE TRACTS 357 AND 358 DOLLAR BAY, GALVESTON COUNTY, TEXAS

This report accompanies a map of survey dated June 2016.



**SURVEY CONTROL:** Survey along the Moses Lake and Dollar Bay shoreline was performed using survey grade RTK GPS base and rover: Hemisphere S320 receivers. Survey was conducted June 14, 2016 based on the NGS monument "DOLLAR POINT 3" (N=13,728,051.27, E=3,275,129.11, Z=21.2' NAVD88) and 877 1013 A "LUB 1013 A 1992" (N= 13,744,960.73, E= 3,266,697.46, Z = 4.3' NAVD88). "LUB 1013 A 1992" is also a tidal benchmark for the Texas Coastal Ocean Observation Network (TCOON) tide gauge "Eagle Point" No. 8771013, and was used in tidal datum computation. Static GPS observations and OPUS solutions were used to compute coordinates in the South Central Zone of the Texas Coordinate System and NAVD88 orthometric height using geoid 2012b. Datum is NAD 83 (2011), US Feet.

TEXAS GENERAL LAND OFFICE  
Art. 33.136, Natural Resources Code

Co. Galveston, Sketch No. 84

File Date 06/20/2018 by R. Kartye



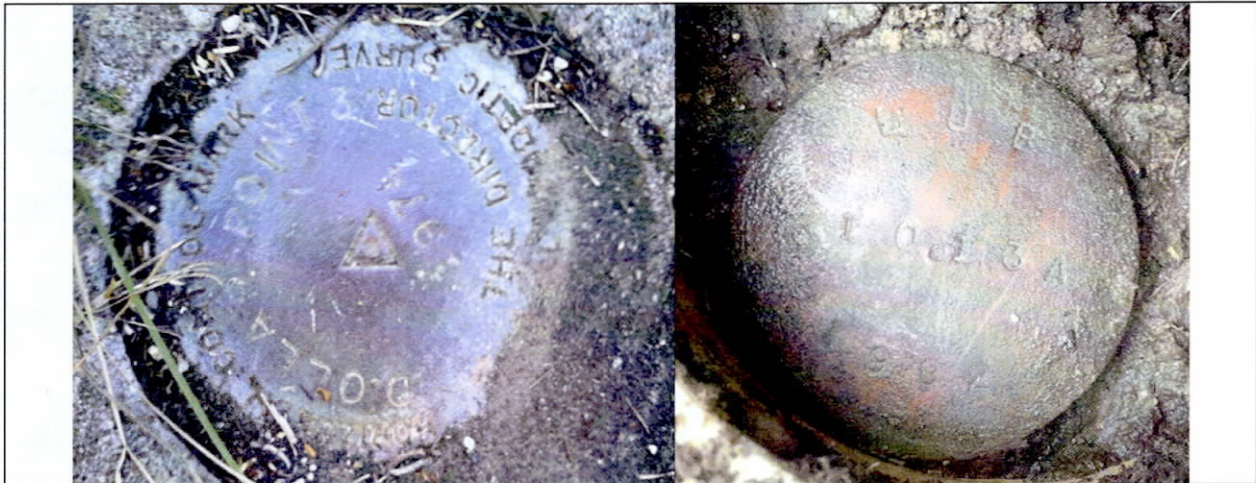


Figure 2: NGS monument "DOLLAR POINT 3", left, was used as horizontal and vertical control for the coastal boundary survey along the Moses Lake and Dollar Bay shoreline; tidal reference monument "877 1013 A TIDAL" stamped "LUB 1013 A 1992" was used to tie in onsite tide gauge, right.

**STATE OWNERSHIP BOUNDARY:** The boundary between state submerged land and private uplands was determined for portions of the John Lyttle, A-17, surveyed 1833, James Smith, A-176, surveyed 1853, H. Furguson, A-63, surveyed 1854, and Thomas G. Western, surveyed 1838. The John Lyttle, A-17 and Thomas G. Western, A-204 were surveyed pre-1840 and are subject to Spanish littoral boundary law which dictates the extent of private land ownership at the Mean Higher High Water (MHHW) line, whereas the James Smith, A-176, and the H. Furguson, A-63 were surveyed post-1840 and extent of private land along the littoral boundary is the Mean High Water (MHW) line. The TCOON tide gauge "Eagle Point" No. 8771013 on Galveston Bay was used as a control gauge. A tide gauge was also installed onsite in order to establish local tidal datums within Moses Lake/Dollar Bay. Station water level datums for "Eagle Point" were translated to NAVD88 elevation by tying in elevations of four tidal benchmarks used for leveling "Eagle Point" tide gauge.

OBSERVED		PUBLISHED		STATION	DIFFERENCE
TEXAS COORDINATE SYSTEM SOUTH CENTRAL		FT NAVD88	TIDAL MONUMENTS "EAGLE POINT"	FT	FT
13,744,960.73	3,266,697.54	4.3	877 1013 A "LUB 1013 A 1992"	8.8	-4.5
13,745,126.99	3,266,573.95	8.0	878 1013 C	12.5	-4.5
13,745,268.25	3,266,645.88	8.1	879 1013 D	12.5	-4.4
13,745,583.85	3,266,672.91	7.8	881 1013 E	12.3	-4.5

-4.47 FT

"EAGLE POINT" STATION DATUM '0' = NAVD88

"EAGLE POINT" PUBLISHED DATUMS

DATUMS	FT STATION	FT NAVD88
MHHW	5.32	0.85
MHW	5.28	0.81
MTL	4.77	0.3

Table 1: Observations and calculations for determination of "Eagle Point" water level station datums in NAVD88.



Established tidal datums were transferred onsite using the NOAA standard method which adjusts short term onsite observations to established control gauge datums by adjusting for amplitude and water level height of observed tidal levels. As referenced to this survey, the elevation of MHHW on the south shoreline of Moses Lake/Dollar Bay was 0.73' and MHW was 0.69' (datum is NAVD88).



Figure 3: On-site tide gauge setup on Moses Lake

**EXISTING FILL:** No existing artificial fill exists at the survey area. According to historical aerial photography, the shoreline has migrated landward as a result of shoreline erosion and subsidence. An artificial channel was cut pre-1969; however, surrounding and adjacent land has since subsided and eroded.



Figure 4: Cut channel at Moses Lake in 1969; the island between the channel and mainland eventually subsides and is eroded away.

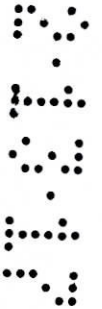
**FIELD NOTES** of the littoral boundary of a portion of the J.W. Lyttle, A-17, situated at the mouth of Moses Bayou adjacent to State Tract 356 Moses Lake, Galveston County, Texas. Distances, bearings, and coordinates are grid, North American Datum of 1983 (2011), South Central zone of the Texas Coordinate System;

**Beginning** at a point, (N=13,723,667.89, E=3,254,932.31), on the MHHW (Mean Higher High Water) line on the north shoreline of Moses Bayou, from which NGS monument "DOLLAR POINT 3" bears N 77°45'17" E a distance of 20,667.00' (7,440.12V);

thence along the MHHW line of Moses Bayou and Moses Lake the following courses:

S 42°52'05" E a distance of 86.12' (31.00V);  
thence S 67°23'21" E a distance of 154.06' (55.46V);  
thence N 03°22'35" W a distance of 53.16' (19.14V);  
thence N 15°26'41" W a distance of 67.64' (24.35V);  
thence N 45°20'53" W a distance of 32.83' (11.82V);  
thence N 07°27'53" W a distance of 161.73' (58.22V);  
thence N 26°11'13" E a distance of 43.50' (15.66V);  
thence N 80°13'34" E a distance of 122.75' (44.19V);  
thence S 84°09'02" E a distance of 76.49' (27.54V);  
thence N 04°57'51" E a distance of 32.09' (11.55V);  
thence N 07°00'17" E a distance of 99.66' (35.88V);  
thence N 34°32'37" E a distance of 38.74' (13.95V);  
thence N 25°29'42" W a distance of 24.14' (8.69V);  
thence N 28°24'54" E a distance of 19.78' (7.12V);  
thence S 87°49'06" E a distance of 23.90' (8.61V);  
thence N 35°47'54" E a distance of 121.10' (43.60V);  
thence N 54°06'56" E a distance of 82.37' (29.65V);  
thence S 73°47'30" E a distance of 89.87' (32.35V);  
thence N 43°06'35" E a distance of 22.77' (8.20V);  
thence N 07°49'46" E a distance of 149.92' (53.97V);  
thence N 15°54'00" E a distance of 104.41' (37.59V);  
thence N 54°20'58" W a distance of 20.91' (7.53V);  
thence N 10°14'30" E a distance of 95.73' (34.46V);  
thence N 54°32'13" E a distance of 39.14' (14.09V);  
thence N 17°09'45" W a distance of 115.85' (41.71V);  
thence N 31°17'55" E a distance of 72.90' (26.24V);  
thence S 74°28'46" E a distance of 21.44' (7.72V);  
thence N 53°23'27" E a distance of 95.05' (34.22V);  
thence N 87°17'44" E a distance of 94.73' (34.10V);  
thence S 57°59'30" E a distance of 85.20' (30.67V);  
thence S 39°45'14" E a distance of 81.09' (29.19V);  
thence N 73°38'30" E a distance of 66.32' (23.88V);  
thence N 14°41'32" E a distance of 120.03' (43.21V);  
thence N 42°17'56" E a distance of 81.47' (29.33V) to the **end point** (N=13,724,932.40, E=3,256,132.31) from which NGS monument "DOLLAR POINT 3" bears N 80°40'35" E a distance of 19,251.12' (6,930.40V).

**FIELD NOTES** of the littoral boundary of a portion of the J. Smith, A-176, and Hamlet Ferguson, A-63 situated at the mouth of Moses Bayou along the shoreline of Moses Lake adjacent to State Tract



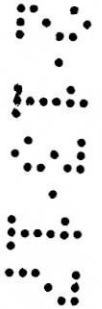


356 Moses Lake, Galveston County, Texas. Distances, bearings, and coordinates are grid, North American Datum of 1983 (2011), South Central zone of the Texas Coordinate System;

**Beginning** at a point, (N=13,723,236.72, E=3,255,107.57), on the MHW (Mean High Water) line on the south shoreline of Moses Bayou, from which NGS monument "DOLLAR POINT 3" bears N 76°28'44" E a distance of 20,592.28' (7,413.22V);

thence along the MHW line of Moses Bayou and Moses Lake the following courses:

thence N 41°34'02" E a distance of 77.98' (28.07V);  
thence N 88°12'21" E a distance of 95.95' (34.54V);  
thence N 54°21'23" E a distance of 48.48' (17.45V);  
thence S 83°25'07" E a distance of 102.61' (36.94V);  
thence N 66°20'17" E a distance of 91.42' (32.91V);  
thence S 65°36'24" E a distance of 149.61' (53.86V);  
thence S 30°53'36" W a distance of 33.47' (12.05V);  
thence S 21°52'33" E a distance of 167.23' (60.20V);  
thence S 55°35'06" E a distance of 41.35' (14.89V);  
thence S 32°57'30" E a distance of 217.48' (78.29V);  
thence S 00°03'50" W a distance of 47.43' (17.07V);  
thence S 55°58'07" E a distance of 85.82' (30.90V);  
thence S 87°11'54" E a distance of 53.33' (19.20V);  
thence S 39°08'10" E a distance of 225.79' (81.28V);  
thence S 62°24'31" E a distance of 125.10' (45.03V);  
thence S 34°27'11" E a distance of 85.00' (30.60V);  
thence S 71°38'59" E a distance of 165.36' (59.53V);  
thence S 48°28'15" E a distance of 160.27' (57.70V);  
thence S 71°43'06" E a distance of 110.46' (39.77V);  
thence S 35°12'57" E a distance of 190.02' (68.41V);  
thence S 19°09'32" W a distance of 35.88' (12.92V);  
thence S 38°15'12" W a distance of 68.03' (24.49V);  
thence S 22°18'44" W a distance of 67.06' (24.14V);  
thence S 02°23'35" W a distance of 68.76' (24.75V);  
thence S 40°42'25" E a distance of 68.03' (24.49V);  
thence S 65°20'00" E a distance of 39.92' (14.37V);  
thence S 39°48'17" E a distance of 77.76' (27.99V);  
thence S 67°54'54" E a distance of 141.82' (51.05V);  
thence S 50°06'07" E a distance of 52.82' (19.02V);  
thence S 37°27'12" E a distance of 78.50' (28.26V);  
thence S 52°56'43" E a distance of 22.30' (8.03V);  
thence N 87°02'28" E a distance of 71.68' (25.80V);  
thence N 53°46'50" E a distance of 42.65' (15.35V);  
thence S 05°57'39" W a distance of 73.33' (26.40V);  
thence S 67°29'28" E a distance of 48.64' (17.51V);  
thence N 21°39'19" E a distance of 57.91' (20.85V);  
thence N 58°14'25" E a distance of 27.43' (9.88V);

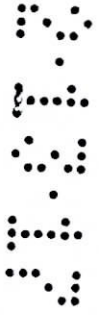




thence S 32°56'25" E a distance of 43.99' (15.84V) to a point (N=13,721,609.97, E=3,257,228.88) on the survey boundary between the James Smith, A-176 and the Hamlet Ferguson, A-63;

thence continuing along the MHW line of Moses Lake the following courses:

thence N 85°38'14" E a distance of 61.48' (22.13V);  
thence N 37°17'14" E a distance of 209.16' (75.30V);  
thence N 34°45'51" E a distance of 244.47' (88.01V);  
thence N 50°18'54" E a distance of 165.84' (59.70V);  
thence N 41°33'16" E a distance of 79.90' (28.76V);  
thence N 21°49'38" E a distance of 57.81' (20.81V);  
thence N 50°15'21" E a distance of 127.78' (46.00V);  
thence N 18°51'37" E a distance of 257.33' (92.64V);  
thence N 52°13'38" E a distance of 54.92' (19.77V);  
thence N 57°18'16" W a distance of 133.36' (48.01V);  
thence S 84°37'07" W a distance of 70.59' (25.41V);  
thence N 73°48'07" W a distance of 239.61' (86.26V);  
thence N 34°44'52" W a distance of 186.47' (67.13V);  
thence N 74°51'05" E a distance of 61.00' (21.96V);  
thence S 51°02'38" E a distance of 25.00' (9.00V);  
thence S 24°57'42" E a distance of 123.04' (44.30V);  
thence S 67°58'19" E a distance of 126.25' (45.45V);  
thence N 82°35'46" E a distance of 83.42' (30.03V);  
thence S 69°40'31" E a distance of 183.39' (66.02V);  
thence N 82°12'19" E a distance of 157.05' (56.54V);  
thence S 88°01'16" E a distance of 69.21' (24.92V);  
thence N 68°54'24" E a distance of 78.41' (28.23V) to the **end point** (N=13,722,681.08, E=3,258,264.28) from which NGS monument "DOLLAR POINT 3" bears N 72°20'14" E a distance of 17,699.19' (6,371.71V).



**FIELD NOTES** of the littoral boundary of a portion of the T.J. Western, A-204 situated at the south shore of Dollar Bay adjacent to State Tracts 357 and 358 Dollar Bay. Distances, bearings, and coordinates are grid, North American Datum of 1983 (2011), South Central zone of the Texas Coordinate System;  
Texas;

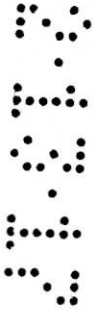
**Beginning** at a point (N=13,723,002.66, E=3,267,253.35), on the MHHW (Mean Higher High Water) line on the south shoreline of Dollar Bay, from which NGS monument "DOLLAR POINT 3" bears N 57°20'20" E a distance of 9,355.00' (3,367.80V);

thence continuing along the MHHW line of Dollar Bay the following courses:

N 54°20'21" E a distance of 47.31' (17.03V);  
thence N 14°49'33" E a distance of 43.65' (15.72V);  
thence N 71°49'30" E a distance of 57.00' (20.52V);  
thence S 77°29'56" E a distance of 91.67' (33.00V);



thence S 43°32'46" E a distance of 37.62' (13.54V);  
thence N 69°28'02" E a distance of 36.52' (13.15V);  
thence S 89°48'02" E a distance of 91.89' (33.08V);  
thence S 75°40'17" E a distance of 95.12' (34.24V);  
thence S 53°15'27" E a distance of 59.62' (21.46V);  
thence N 48°00'34" E a distance of 98.03' (35.29V);  
thence S 65°35'23" E a distance of 50.50' (18.18V);  
thence S 89°12'13" E a distance of 160.45' (57.76V);  
thence S 54°14'01" E a distance of 168.82' (60.78V);  
thence S 08°35'24" E a distance of 224.05' (80.66V);  
thence S 24°59'12" W a distance of 449.46' (161.80V);  
thence S 21°16'56" W a distance of 186.28' (67.06V);  
thence S 25°15'34" W a distance of 383.50' (138.06V);  
thence S 16°45'43" E a distance of 93.54' (33.68V);  
thence S 08°04'33" W a distance of 68.57' (24.69V);  
thence S 65°54'08" E a distance of 53.61' (19.30V);  
thence N 77°20'35" E a distance of 101.23' (36.44V);  
thence N 57°09'41" E a distance of 55.73' (20.06V);  
thence N 23°52'31" E a distance of 267.49' (96.30V);  
thence N 88°11'47" E a distance of 49.25' (17.73V);  
thence N 49°55'02" E a distance of 159.16' (57.30V);  
thence N 59°26'50" E a distance of 183.23' (65.96V);  
thence N 85°01'20" E a distance of 175.98' (63.35V);  
thence S 77°39'11" E a distance of 220.31' (79.31V);  
thence N 63°29'03" E a distance of 173.01' (62.28V);  
thence N 89°38'49" E a distance of 150.66' (54.24V);  
thence N 58°12'53" E a distance of 117.65' (42.35V);  
thence S 65°39'44" E a distance of 165.68' (59.65V);  
thence N 58°22'11" E a distance of 268.29' (96.58V);  
thence S 67°09'41" E a distance of 379.90' (136.77V);  
thence S 22°34'10" E a distance of 70.12' (25.24V);  
thence S 58°15'27" E a distance of 125.66' (45.24V);  
thence S 89°05'21" E a distance of 123.91' (44.61V);  
thence S 21°18'43" E a distance of 73.70' (26.53V);  
thence S 73°15'40" E a distance of 71.63' (25.79V);  
thence N 64°39'13" E a distance of 209.28' (75.34V);  
thence S 78°37'45" E a distance of 88.96' (32.03V);  
thence N 70°47'47" E a distance of 93.55' (33.68V);  
thence N 40°39'23" E a distance of 51.78' (18.64V);  
thence N 21°03'28" E a distance of 80.07' (28.82V);  
thence S 50°21'28" E a distance of 38.65' (13.91V);  
thence N 57°07'45" E a distance of 76.87' (27.67V);  
thence N 07°38'02" W a distance of 37.21' (13.40V);  
thence N 07°27'47" E a distance of 132.58' (47.73V);  
thence N 21°52'51" W a distance of 223.36' (80.41V);  
thence N 07°57'55" W a distance of 208.07' (74.90V);





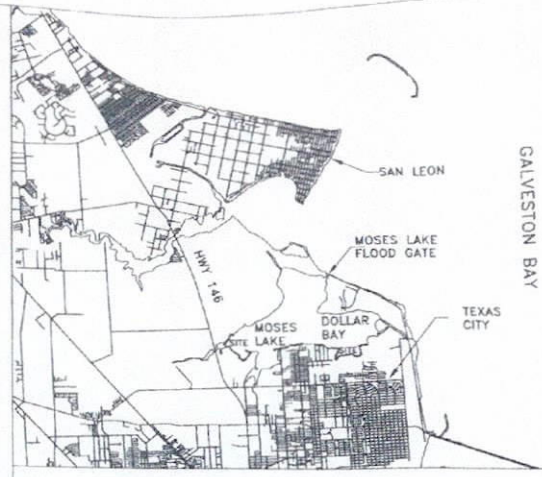
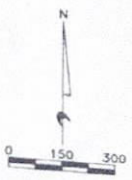
thence N 21°49'06" W a distance of 75.01' (27.00V);  
thence N 09°35'02" W a distance of 146.43' (52.72V);  
thence N 02°27'27" W a distance of 111.62' (40.18V);  
thence N 39°22'30" W a distance of 38.60' (13.90V);  
thence N 09°35'19" E a distance of 42.50' (15.30V);  
thence N 33°49'25" W a distance of 75.77' (27.28V);  
thence S 82°08'28" E a distance of 153.29' (55.18V);  
thence N 37°34'08" E a distance of 190.67' (68.64V);  
thence N 82°47'10" E a distance of 253.97' (91.43V);  
thence N 87°07'48" E a distance of 115.43' (41.56V);  
thence N 74°41'53" E a distance of 105.83' (38.10V);  
thence S 72°35'26" E a distance of 181.92' (65.49V);  
thence N 69°38'18" E a distance of 148.40' (53.42V) to the **end point** (N=13,723,385.62,  
E=3,271,649.92) from which NGS monument "DOLLAR POINT 3" bears N 36°42'43" E a distance of  
5,820.06' (2,095.22V).



1/20/2017

James M. Naismith, RPLS, LSLs  
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Naismith Marine Services, Inc.

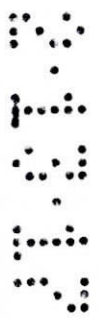
BEARING	DISTANCE	VARIAS
41°34'02" E	77.98'	28.07V
88°12'21" E	95.95'	34.54V
54°21'23" E	48.48'	17.45V
83°25'07" E	102.61'	36.94V
56°20'17" E	91.42'	32.91V
65°36'24" E	149.61'	53.86V
30°53'36" W	33.47'	12.05V
21°52'33" E	167.23'	60.20V
55°35'06" E	41.35'	14.89V
32°57'30" E	212.48'	78.29V
00°03'50" W	47.43'	17.07V
58°58'07" E	85.82'	30.80V
87°11'54" E	53.33'	19.20V
39°08'10" E	225.79'	81.28V
62°24'31" E	125.10'	45.03V
34°27'11" E	85.00'	30.60V
71°38'59" E	165.36'	59.53V
48°28'15" E	160.27'	57.70V
71°43'06" E	110.46'	39.77V
35°12'57" E	190.02'	68.41V
19°09'32" W	35.88'	12.92V
38°15'12" W	68.03'	24.49V
22°18'44" W	67.06'	24.14V
02°23'35" W	88.76'	24.49V
40°42'25" E	88.03'	24.49V
65°20'00" E	39.92'	14.37V
39°48'17" E	77.78'	27.99V
67°54'54" E	141.82'	51.05V
50°06'07" E	52.82'	19.02V
37°27'12" E	78.50'	28.26V
52°56'43" E	22.30'	8.03V
87°02'28" E	71.68'	25.80V
53°46'50" E	42.65'	15.35V
05°57'39" W	73.33'	26.40V
67°29'28" E	48.64'	17.51V
21°39'19" E	57.91'	20.85V
58°14'25" E	27.43'	9.88V
32°56'25" E	43.99'	15.84V
85°38'14" E	61.48'	22.13V
37°17'14" E	209.16'	75.30V
34°45'51" E	244.47'	88.01V
50°18'54" E	165.84'	59.70V
41°33'16" E	79.90'	28.76V
21°49'38" E	57.81'	20.81V
50°15'21" E	127.78'	46.00V
18°51'37" E	257.33'	92.64V
52°13'38" E	54.92'	19.77V
57°18'16" W	133.36'	48.01V
84°37'07" W	70.59'	25.41V
73°48'07" W	239.61'	86.26V
34°44'52" W	186.47'	67.13V



- NOTES:
1. ALL COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (#4204), AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCES CODE OF THE STATE OF TEXAS, 1985 DATUM (2011), US FEET. ALL BEARINGS ARE LAMBERT GRID BEARINGS AND ALL DISTANCES GRID. THE SCALE FACTOR IS 0.999864 AND MAPPING ANGLE IS 01d 50'.
  2. COORDINATES AND ELEVATIONS ARE BASED ON MONUMENTS & ON OPUS SOLUTIONS. VERTICAL DATUM: NAVD88  
 REFERENCE MONUMENT "DOLLAR POINT 3"  
 N: 13728051.27  
 E: 3275129.11  
 ELEV: 21.2' NAVD88  
 TIDAL REFERENCE MONUMENT "877 1013 A"  
 N: 13,744,960.73  
 E: 3,266,897.48  
 ELEV: 4.3' NAVD88
  3. ALL POSITIONS AND ELEVATIONS RECORDED USING SURVEY GRADE, RTK GPS. EQUIPMENT: HEMISPHERE S320 OR TRIMBLE R8.
  4. BOUNDARY BETWEEN STATE SUBMERGED LAND AND JOHN LITTLE, A-17, SURVEYED 1833, AND THOMAS G. WESTERN, SURVEYED 1838 IS MEAN HIGHER HIGH WATER (MHHW) BOUNDARY BETWEEN STATE SUBMERGED LAND AND JAMES SMITH, SURVEYED 1838.

of the Texas Coordinate System and NAVD88 datum. The height using the 2011 datum is 83 (2011), US Feet.

Dollar Bay and Moses Lake, Page 1



Filed for record in the County Surveyor's records the 16th day of Feb. 2017 at 9:47 a.m. and duly recorded the same day and time

*Lisa Butler*  
 Lisa Butler  
 Engineering Specialist  
 County Engineers Office  
 Custodian of County Records

TEXAS GENERAL LAND OFFICE  
 Art. 33.136, Natural Resources Code

Co. Galveston, Sheet No. 84

File Date 06/20/2018 by R. Kertye