

NOTES:

- ALL SURVEYING WAS PERFORMED BY HDR ENGINEERING, INC. FROM GPS OBSERVATIONS. THIS DRAWING REPRESENTS THE CONDITIONS THAT EXISTED AT THE TIME OF THE SURVEY CONDUCTED AUGUST 18-21, 2009.
FIELD PERSONNEL: GEORGE RUBALCABA, R.P.L.S. L.S.L.S.
ERIC OLIVEIRA
HOMER MARTINEZ
- ALL ELEVATIONS SHOWN ARE IN FEET AND REFERENCED TO NAVD '88.
- COORDINATES SHOWN ARE GRID IN U.S. FEET AND REFERENCED TO TEXAS COORDINATE SYSTEM, TEXAS SOUTH CENTRAL ZONE, AS DEFINED BY ARTICLE 21.071 OF THE NATURAL RESOURCES CODE OF THE STATE OF TEXAS, 1983 DATUM.
- MONUMENTS USED FOR HORIZONTAL AND VERTICAL CONTROL WERE:
"HGCS D 62" N 13,645,727.04
E 3,264,124.31
ELEV. 6.53'
"PARK R.M.2" N 13,642,375.74
E 3,260,135.69
ELEV. 7.26'
- MEAN HIGH WATER DETERMINED TO BE 1.15' NAVD '88 BASED ON A THREE DAY STUDY AT THE SITE AND COMPUTATIONS USING THE AMPLITUDE RATIO METHOD AND TCOON GAUGE 022-GALVESTON PIER 21 AS THE CONTROL STATION.
- BASIS OF BEARINGS IS "TEXAS COORDINATE SYSTEM" PER SECTION 21.071 OF THE NATURAL RESOURCES CODE.
- DISTANCES AND BEARINGS ARE GRID. SCALE FACTOR FOR "HGCS D 62" IS 0.99986954, CONVERGENCE IS +1'-59"-24.8.
- THIS SURVEY DOES NOT, NOR IS INTENDED TO BE USED TO IDENTIFY, DELINEATE, OR FIX THE LINE OF VEGETATION OR THE LANDWARD BOUNDARY OF THE PUBLIC BEACH.
- AERIAL PHOTOGRAPH WAS OBTAINED FROM THE TEXAS GENERAL LAND OFFICE AND WAS FLOWN IN JANUARY 2009.
- NO RETAINING WALLS OR OTHER STRUCTURAL MODIFICATIONS HAVE BEEN PLACED ON OR ALONG THE LITTORAL BOUNDARY.

UPLAND OWNERS

- INDIAN BEACH PROPERTY OWNERS ASSOCIATION. - P.O. BOX 160 TOMBALL, TX 77377
- CARLOS AND JOSE DUMLAO - 11719 BEXLEY DR, HOUSTON, TX 77099
- RCO JR LLC - 8554 KATY FRWY, STE 100, HOUSTON, TX 77024
- RCO JR LLC - 8554 KATY FRWY, STE 100, HOUSTON, TX 77024
- ASHOKA MALLADI REDDY, ET. AL. - 2398 BAYCREST DR., HOUSTON, TX 77058
- GEORGE E. JR. AND ANN L. SIMS - P.O. BOX 3629, GALVESON, TX 77552
- RONALD W. AND DORA L. GUSTAFSON - 17200 FM 3005, GALVESTON, TX 77550
- REV. A NELSON MCCARTER A LIVING TRUST - 11380 BONHAM RANCH RD, DRIPPING SPRINGS, TX 77554
- CAROL HOLMES WOLF - 4514 SHETLAND LN., HOUSTON, TEXAS 77027
- THOMAS G. AND MARY JANE GREADY - P.O. BOX 574 WALLER, TX 77484

I, GEORGE RUBALCABA, LICENSED STATE LAND SURVEYOR, HEREBY STATE THAT THIS DRAWING REPRESENTS THE CONDITIONS THAT EXISTED AT THE TIME OF THE MEAN HIGH WATER (MHW) LINE SURVEY CONDUCTED AUGUST 18-21, 2009. TO THE BEST OF MY KNOWLEDGE, THERE IS NO ARTIFICIAL FILL OR ACCRETION LOCATED WITHIN THE SURVEYED AREA.

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. THE LIMITS OF THESE LITTORAL BOUNDARIES WERE DETERMINED BY METHODOLOGY APPROVED BY THE TEXAS GENERAL LAND OFFICE AS PER TITLE 31, CHAPTER 7, RULE 7.2 (COASTAL LANDS) OF THE TEXAS ADMINISTRATIVE CODE.

George Rubalcaba 10/12/09
 GEORGE RUBALCABA
 LICENSED STATE LAND SURVEYOR
 555 N CARANCAHUA SUITE 1650
 CORPUS CHRISTI, TX 78478
 361-857-2211



ISSUE	DATE	DESCRIPTION
0	10/12/09	SUBMITTED TO TGLO

PROJECT MANAGER	L. AUGUSTIN
CONTRACT MANAGER	G. HAUSKE
DRAWN BY	M. BRANIN
CHECKED BY	D. HEILMAN
PROJECT NUMBER	116284

TEXAS GENERAL LAND OFFICE
 Art. 33.136, Natural Resources Code
 Co. Galveston, Sketch No. 57
 File Date 10/12/2009 by G. Rubalcaba

RECOVERY ACT: RESTORING ESTUARINE HABITAT IN WEST GALVESTON BAY

COASTAL BOUNDARY JUMBILLE COVE WEST BAY GALVESTON COUNTY, TEXAS		
FILENAME		SHEET
SCALE	AS SHOWN	1 OF 2

LINE TABLE			
LINE NO.	LENGTH	DIRECTION	VARA
L1	34.72'	N33°02'41"W	12.50
L2	79.54'	S83°00'36"W	28.63
L3	76.66'	S37°35'09"E	27.60
L4	77.58'	S40°29'01"W	27.93
L5	60.67'	N76°10'20"W	21.84
L6	62.05'	S41°20'04"W	22.34
L7	120.93'	S39°45'47"E	43.54
L8	113.21'	S32°55'05"W	40.75
L9	93.18'	S71°20'08"W	33.54
L10	89.24'	S65°07'55"W	32.13
L11	90.69'	S66°35'03"W	32.65
L12	91.77'	S74°06'03"W	33.04
L13	95.06'	N88°39'21"W	34.22
L14	77.96'	N83°04'29"W	28.07
L15	86.15'	S47°10'58"W	31.01
L16	88.30'	S84°12'31"W	31.79
L17	142.14'	S32°10'30"W	51.17
L18	116.31'	S70°02'29"W	41.87
L19	146.68'	S82°59'55"W	52.81
L20	74.92'	S41°10'25"E	26.97
L21	101.74'	N89°15'03"E	36.63
L22	98.22'	S70°46'58"E	35.36
L23	94.64'	S82°08'29"E	34.07
L24	68.64'	S88°59'24"E	24.71
L25	52.99'	N69°33'15"E	19.08
L26	127.43'	S72°33'22"E	45.87
L27	95.97'	S87°16'57"E	34.55
L28	80.86'	N89°08'33"E	29.11
L29	31.10'	N54°51'31"E	11.20
L30	42.75'	S58°27'58"E	15.39
L31	128.67'	N88°12'51"E	46.32
L32	131.70'	S82°56'50"E	47.41
L33	114.10'	N69°42'13"E	41.08
L34	94.47'	N52°12'08"E	34.01
L35	93.29'	N63°44'13"E	33.58
L36	94.66'	N45°51'06"E	34.08
L37	94.07'	N63°50'07"E	33.86
L38	98.01'	N55°44'56"E	35.28
L39	95.35'	N71°01'59"E	34.32
L40	94.95'	N82°46'10"E	34.18
L41	108.98'	N84°13'23"E	39.23
L42	195.45'	N85°24'58"E	70.36
L43	96.16'	N81°32'38"E	34.62
L44	104.54'	S89°32'03"E	37.64
L45	98.47'	S75°03'48"E	35.45
L46	100.97'	S82°09'43"E	36.35
L47	115.71'	S79°40'08"E	41.65
L48	114.77'	S78°09'52"E	41.32
L49	109.49'	S76°59'58"E	39.42
L50	136.79'	S72°01'53"E	49.25

LINE TABLE			
LINE NO.	LENGTH	DIRECTION	VARA
L51	110.93'	S67°55'07"E	39.93
L52	123.42'	S64°56'18"E	44.43
L53	116.48'	S71°41'28"E	41.93
L54	121.26'	S65°27'42"E	43.65
L55	118.21'	S60°36'42"E	42.56
L56	113.33'	S56°27'31"E	40.80
L57	109.69'	S56°33'54"E	39.49
L58	113.06'	S36°51'10"E	40.70
L59	105.44'	S76°40'13"E	37.96
L60	2.64'	S42°05'02"W	0.95
L61	90.23'	S29°23'20"E	32.48
L62	44.54'	S33°59'23"E	16.03
L63	90.75'	N68°11'13"W	32.67
L64	65.63'	N49°54'26"W	23.63
L65	48.93'	S30°27'13"W	17.61
L66	85.90'	S48°13'23"W	30.92
L67	87.68'	N53°21'03"W	31.57
L68	61.83'	S39°29'15"W	22.26
L69	114.46'	N44°31'20"W	41.21
L70	121.88'	N61°50'43"W	43.88
L71	52.07'	S83°54'54"W	18.75
L72	140.31'	N53°23'12"W	50.51
L73	108.93'	N84°02'06"W	39.21
L74	126.62'	N73°05'06"W	45.58
L75	85.40'	N78°12'59"W	30.74
L76	123.92'	N66°03'28"W	44.61
L77	138.27'	N88°57'50"W	49.78
L78	93.05'	S78°19'27"W	33.50
L79	110.46'	S86°31'59"W	39.77
L80	126.33'	N89°01'13"W	45.48
L81	136.71'	S71°51'57"W	49.22
L82	121.37'	S37°22'23"W	43.69
L83	96.42'	S12°04'53"E	34.71
L84	128.49'	S21°45'12"W	46.26
L85	136.73'	S22°19'33"W	49.22
L86	61.08'	S13°20'49"W	21.99
L87	158.54'	N73°11'50"W	57.07
L88	115.83'	S44°52'39"W	41.70
L89	108.55'	S53°51'04"W	39.08
L90	115.72'	S47°35'05"W	41.66
L91	120.50'	S33°29'18"E	43.38
L92	100.43'	S24°10'07"E	36.16
L93	134.51'	N84°07'42"W	48.42
L94	123.99'	S26°51'53"W	44.64
L95	111.66'	S40°49'52"E	40.20
L96	75.29'	S86°25'15"E	27.10
L97	69.34'	S39°24'20"W	24.96
L98	102.32'	S72°23'38"W	36.84
L99	84.96'	N83°03'50"W	30.59
L100	101.32'	N87°58'10"W	36.48

LINE TABLE			
LINE NO.	LENGTH	DIRECTION	VARA
L101	116.90'	N84°37'32"W	42.09
L102	117.14'	N88°37'49"W	42.17
L103	111.62'	N67°56'04"W	40.18
L104	140.32'	N73°29'17"W	50.51
L105	142.16'	S89°30'01"W	51.18
L106	119.00'	S49°27'03"W	42.84
L107	132.60'	N83°07'35"W	47.74
L108	64.37'	S4°50'21"W	23.17
L109	207.49'	S80°51'15"W	74.70
L110	114.93'	S45°04'52"W	41.37
L111	76.09'	S24°03'57"W	27.39
L112	121.43'	S32°18'05"E	43.72
L113	120.37'	S40°14'55"E	43.33
L114	130.04'	S68°49'55"E	46.82
L115	178.40'	S71°05'45"E	64.22
L116	152.04'	S54°38'37"E	54.73
L117	140.57'	S88°32'56"E	50.60
L118	116.40'	S89°25'44"E	41.90
L119	99.07'	N68°18'49"E	35.67
L120	68.81'	N54°38'57"E	24.77
L121	86.00'	N38°26'14"E	30.96
L122	59.00'	N44°26'13"W	21.24
L123	83.32'	N80°26'42"E	29.99
L124	93.64'	N55°59'15"E	33.71
L125	106.28'	S85°58'50"E	38.26
L126	95.43'	N84°47'59"E	34.36
L127	257.39'	S72°40'13"E	92.66
L128	208.36'	S62°30'45"E	75.01
L129	166.50'	S42°03'34"E	59.94
L130	123.90'	S37°31'59"E	44.60
L131	85.10'	S34°29'28"E	30.64
L132	46.35'	S85°13'23"E	16.69
L133	57.46'	N32°30'23"E	20.69
L134	75.30'	S19°47'40"W	27.11
L135	112.87'	S89°12'11"W	40.63
L136	130.49'	N70°10'20"W	46.97
L137	180.33'	N67°10'44"W	64.92
L138	240.75'	N67°57'28"W	86.67
L139	191.18'	N72°08'49"W	68.82
L140	80.97'	S85°13'05"W	29.15
L141	103.25'	S24°50'15"W	37.17
L142	146.68'	S60°12'12"W	52.81
L143	135.24'	S75°55'29"W	48.69
L144	161.27'	S83°04'10"W	58.06
L145	176.89'	S72°02'55"W	63.68
L146	184.95'	S85°30'01"W	66.58
L147	139.80'	N74°01'09"W	50.33
L148	76.13'	N85°37'51"W	27.41
L149	169.23'	S41°21'48"W	60.92
L150	135.91'	S27°32'44"E	48.93

LINE TABLE			
LINE NO.	LENGTH	DIRECTION	VARA
L151	76.57'	S29°21'25"W	27.57
L152	105.53'	S42°44'18"E	37.99
L153	72.01'	S61°25'01"W	25.92
L154	149.66'	N78°57'35"W	53.88
L155	81.29'	S11°21'30"W	29.27
L156	33.10'	S59°32'17"W	11.92
L157	100.00'	N59°59'40"W	36.00
L158	142.49'	N88°54'22"W	51.29
L159	102.87'	S17°43'11"W	37.03
L160	135.42'	S27°09'06"E	48.75
L161	154.77'	S29°43'26"E	55.72
L162	97.15'	S51°04'30"E	34.97
L163	89.77'	S51°28'04"W	32.32
L164	153.75'	N33°07'51"W	55.35
L165	205.87'	N45°34'07"W	74.11
L166	185.74'	N60°49'46"W	66.87
L167	189.97'	N72°30'16"W	68.39
L168	143.63'	N67°07'30"W	51.71
L169	197.13'	N33°12'38"W	70.97
L170	115.51'	S54°26'19"W	41.59
L171	38.73'	S62°12'15"W	13.94
L172	48.72'	S62°04'59"W	17.54
L173	99.77'	N47°08'56"W	35.92
L174	116.18'	S73°20'02"W	41.82
L175	97.94'	N73°38'41"W	35.26
L176	73.00'	N87°24'33"W	26.28
L177	40.78'	S6°53'11"W	14.68
L178	120.95'	N75°14'48"W	43.54
L179	162.19'	N50°41'23"W	58.39
L180	173.48'	N52°13'52"W	62.45
L181	205.15'	N34°28'12"W	73.85
L182	139.22'	N55°37'18"W	50.12
L183	67.28'	N73°05'22"W	24.22
L184	333.74'	S35°38'51"E	120.14
L185	339.17'	S38°49'54"E	122.10
L186	81.84'	S55°59'36"E	29.46
L187	246.20'	S72°46'09"E	88.63
L188	167.99'	S61°54'07"E	60.48
L189	91.10'	S40°44'40"E	32.80
L190	139.16'	S76°44'08"E	50.10
L191	198.98'	S41°07'57"E	71.63
L192	150.38'	S28°14'31"E	54.14
L193	163.91'	S43°55'47"E	59.01
L194	153.30'	S46°20'53"E	55.19
L195	95.86'	S38°46'15"E	34.51
L196	90.94'	S27°40'31"E	32.74
L197	75.58'	S61°14'03"W	27.21
L198	96.34'	S84°10'24"W	34.68
L199	98.96'	N63°33'24"W	35.63
L200	125.91'	N50°40'56"W	45.33

LINE TABLE			
LINE NO.	LENGTH	DIRECTION	VARA
L201	113.80'	N80°37'08"W	40.97
L202	150.16'	S87°38'15"W	54.06
L203	91.01'	S73°09'00"W	32.76
L204	28.10'	N19°15'37"W	10.12
L205	62.12'	N33°19'00"E	22.36
L206	81.57'	N75°51'29"E	29.37
L207	61.80'	N45°12'35"E	22.25
L208	135.81'	N19°20'13"W	48.89
L209	114.11'	N36°18'13"W	41.08
L210	142.45'	N55°38'18"W	51.28
L211	229.64'	N73°30'29"W	82.67
L212	139.32'	N75°32'05"W	50.15
L213	159.31'	N60°06'54"W	57.35
L214	174.40'	N47°26'40"W	62.79
L215	164.14'	N26°12'55"W	59.09
L216	201.08'	N44°22'46"W	72.39
L217	136.85'	N40°09'57"W	49.27
L218	78.80'	N60°52'06"W	28.37
L219	76.59'	N35°54'23"W	27.57
L220	157.57'	N55°49'58"W	56.72
L221	68.59'	S30°37'58"W	24.69
L222	59.81'	N67°32'19"W	21.53
L223	29.58'	S33°14'59"W	10.65
L224	51.09'	N85°24'31"W	18.39
L225	127.87'	N11°43'23"W	46.03
L226	186.16'	N61°18'08"W	67.02
L227	139.47'	N59°40'44"W	50.21
L228	109.59'	N79°12'28"W	39.45



HDR Engineering, Inc.
Texas P.E. Firm
Registration No. 754

ISSUE	DATE	DESCRIPTION
0	-10/12/09	SUBMITTED TO TGLO

PROJECT MANAGER	L. AUGUSTIN
CONTRACT MANAGER	G. HAUSKE
DRAWN BY	M. BRANIN
CHECKED BY	D. HEILMAN
PROJECT NUMBER	116284

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code
Co. Galveston, Sketch No. 57
File Date 06/22/2010 by R. Korte

RECOVERY ACT: RESTORING
ESTUARINE HABITAT IN WEST
GALVESTON BAY

COASTAL BOUNDARY LINE TABLES
JUMBILE COVE
WEST BAY
GALVESTON COUNTY, TEXAS

FILENAME	00C-01.dwg	SHEET
SCALE	AS SHOWN	2 OF 2



**Survey Division
Coastal Boundary Survey Approval**

Project: Recovery Act: Restoring Estuarine Habitat in West Galveston Bay/Jumbile Cove

Project No: CEPRA 1483 (Texas General Land Office)

Project Manager: Dennis Rocha, CEPRA Project Manager (Texas General Land Office)

Surveyor: George Rubalcaba, L.S.L.S.

Description: Coastal Boundary Survey, dated October 12, 2009, of the Mean High Water line, along a portion of the southeast boundary of Jumbile Cove, Galveston West Bay, situated adjacent to and southwest of the Jamaica Beach Subdivision, on Galveston Island, Galveston County, Texas.

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: Paul A. Pyl
Survey Division

Oct. 26, 2009
Date

Approval Filed as:

Tex. Nat. Res. Code Article 33.136 Galveston ^{Sketch} County Report No. 57

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code
Co. Galveston, Sketch No. 57
File Date 06/22/2018 by R. Kertye

October 9, 2009

116284

Mr. William D. "Bill" O'Hara, R.P.L.S., L.S.L.S.
Director Survey Division
Texas General Land Office
Stephen F. Austin Building
1700 N. Congress Avenue
Austin, Texas 78701-1495

**RE: SURVEYS AT GALVESTON STATE PARK AND JUMBILE COVE,
GALVESTON COUNTY, TEXAS (STATE COASTAL BOUNDARY SURVEYS)**

Dear Mr. O'Hara:

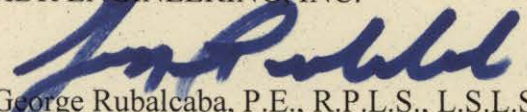
Enclosed are the State Coastal Boundary Survey drawings depicting the surveys conducted by us on the Shoreline of West Galveston Bay at the State Park and Jumbile Cove in Galveston County. The Mean High Water Line shown was determined from a three-day study and computations using the amplitude ratio method and TCOON Tide Gauge No. 022 at Galveston Pier 21 as the control station.

State plane coordinates were arrived at from the monumentation shown on the drawing. Elevations are referenced to NAVD '88 datum and the monumentation used for the vertical is also noted on the drawing.

Thanks again for your time and assistance on this project. If you should have any questions, please call me at (361) 857-2211.

Sincerely,

HDR ENGINEERING, INC.


George Rubalcaba, P.E., R.P.L.S., L.S.L.S.
Survey Group Manager

GR/dl

Enclosures: State Coastal Boundary Survey Drawings

cc: Jerry Hauske
Dennis Rocha

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code
Co. Galveston, Sketch No. 57
File Date 06/22/2012 by R. Kentye