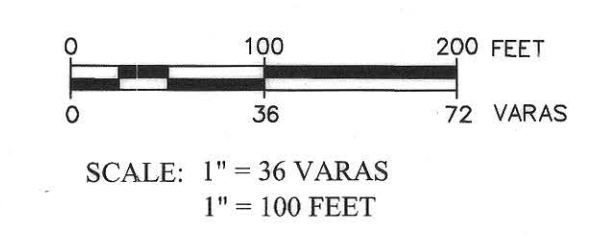
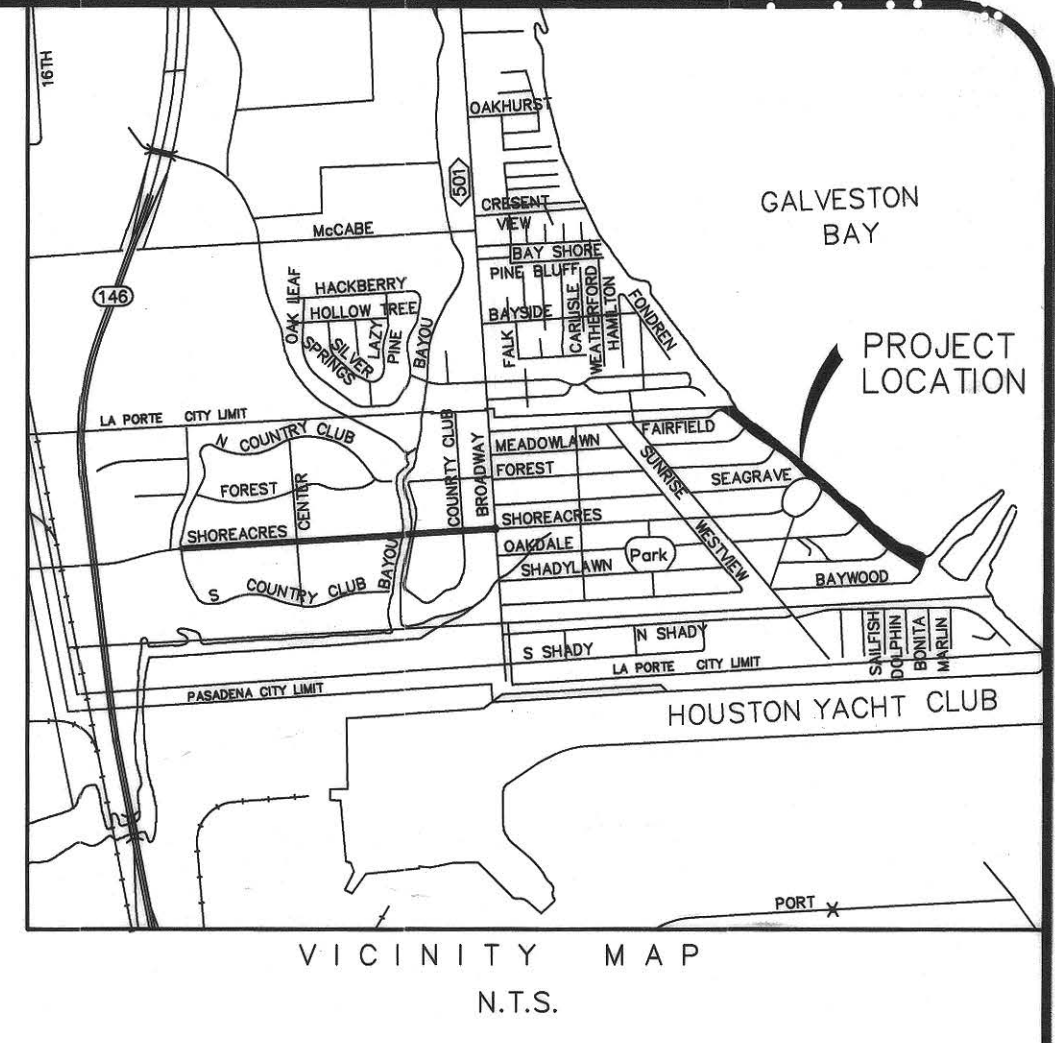
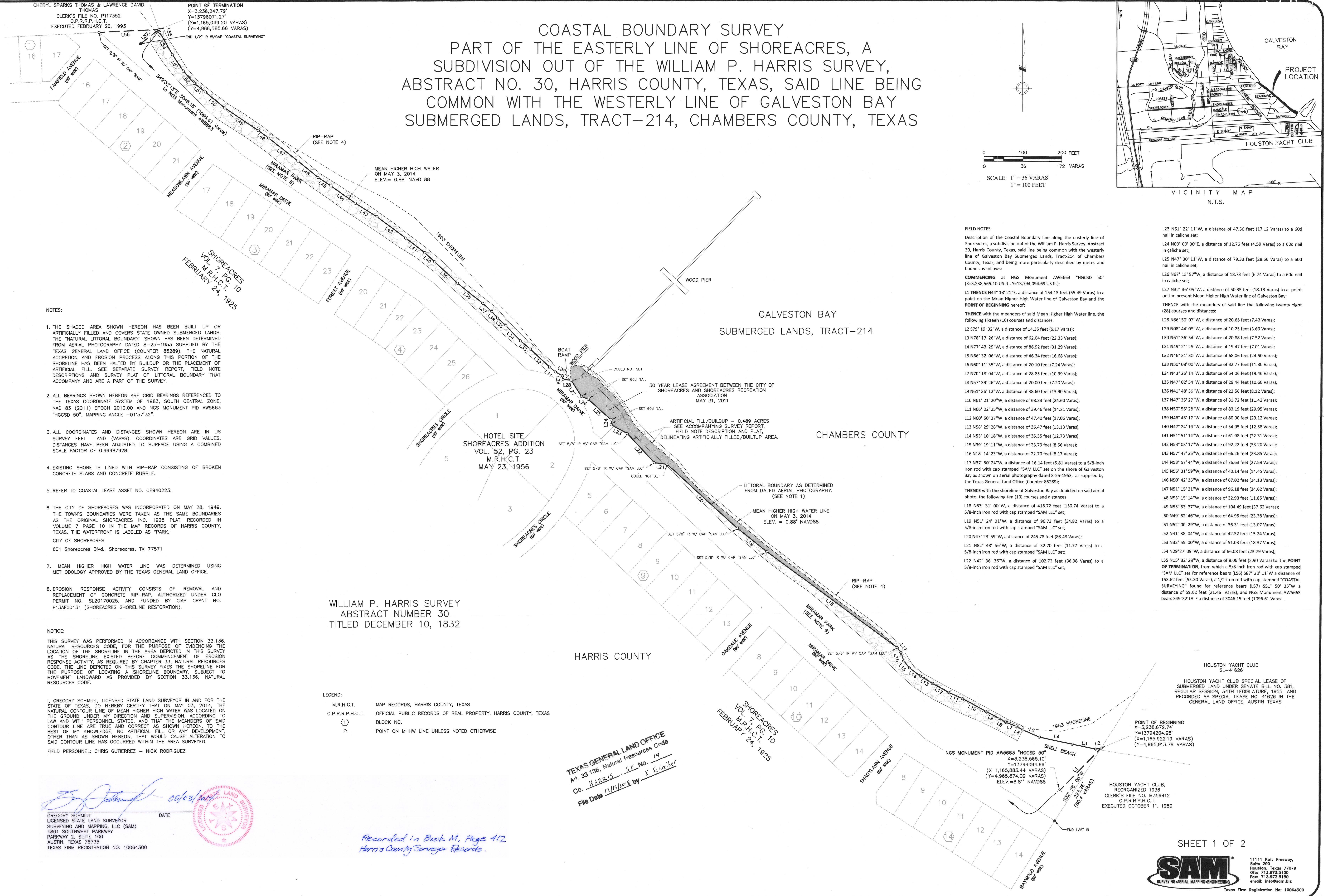


COASTAL BOUNDARY SURVEY PART OF THE EASTERLY LINE OF SHOREACRES, A SUBDIVISION OUT OF THE WILLIAM P. HARRIS SURVEY, ABSTRACT NO. 30, HARRIS COUNTY, TEXAS, SAID LINE BEING COMMON WITH THE WESTERLY LINE OF GALVESTON BAY SUBMERGED LANDS, TRACT-214, CHAMBERS COUNTY, TEXAS



FIELD NOTES:

Description of the Coastal Boundary line along the easterly line of Shoreacres, a subdivision out of the William P. Harris Survey, Abstract 30, Harris County, Texas, said line being common with the westerly line of Galveston Bay Submerged Lands, Tract-214 of Chambers County, Texas, and being more particularly described by metes and bounds as follows;

COMMENCING at NGS Monument AW5663 "HGCSO 50" (X=3,238,565.10 US Ft., Y=13,794,094.69 US Ft.);

L1 THENCE N44° 18' 21"E, a distance of 154.13 feet (55.49 Varas) to a point on the Mean Higher High Water line of Galveston Bay and the **POINT OF BEGINNING** hereof;

THENCE with the meanders of said Mean Higher High Water line, the following sixteen (16) courses and distances:

L2 S79° 19' 02"W, a distance of 14.35 feet (5.17 Varas);
 L3 N78° 17' 26"W, a distance of 62.04 feet (22.33 Varas);
 L4 N77° 43' 29"W, a distance of 86.92 feet (31.29 Varas);
 L5 N66° 31' 06"W, a distance of 46.34 feet (16.68 Varas);
 L6 N60° 11' 35"W, a distance of 20.10 feet (7.24 Varas);
 L7 N70° 18' 04"W, a distance of 28.85 feet (10.39 Varas);
 L8 N57° 39' 26"W, a distance of 20.00 feet (7.20 Varas);
 L9 N61° 36' 12"W, a distance of 38.60 feet (13.90 Varas);
 L10 N61° 21' 20"W, a distance of 68.33 feet (24.60 Varas);
 L11 N66° 02' 25"W, a distance of 39.46 feet (14.21 Varas);
 L12 N60° 50' 37"W, a distance of 47.40 feet (17.06 Varas);
 L13 N58° 29' 28"W, a distance of 36.47 feet (13.13 Varas);
 L14 N53° 10' 18"W, a distance of 35.35 feet (12.73 Varas);
 L15 N39° 19' 11"W, a distance of 23.79 feet (8.56 Varas);
 L16 N18° 14' 23"W, a distance of 22.70 feet (8.17 Varas);
 L17 N37° 50' 24"W, a distance of 16.34 feet (5.81 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set on the shore of Galveston Bay as shown on aerial photography dated 8-25-1953, as supplied by the Texas General Land Office (Counter 85289);

THENCE with the shoreline of Galveston Bay as depicted on said aerial photo, the following ten (10) courses and distances:

L18 N53° 31' 00"W, a distance of 418.72 feet (150.74 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;
 L19 N51° 24' 01"W, a distance of 96.73 feet (34.82 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;
 L20 N47° 23' 59"W, a distance of 245.78 feet (88.48 Varas);
 L21 N82° 48' 56"W, a distance of 32.70 feet (11.77 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;
 L22 N42° 36' 35"W, a distance of 102.72 feet (36.98 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;

L23 N61° 22' 11"W, a distance of 47.56 feet (17.12 Varas) to a 60d nail in caliche set;
L24 N00° 00' 00"E, a distance of 12.76 feet (4.59 Varas) to a 60d nail in caliche set;
L25 N47° 30' 11"W, a distance of 79.33 feet (28.56 Varas) to a 60d nail in caliche set;
L26 N67° 15' 57"W, a distance of 18.73 feet (6.74 Varas) to a 60d nail in caliche set;
L27 N32° 36' 09"W, a distance of 50.35 feet (18.13 Varas) to a point on the present Mean Higher High Water line of Galveston Bay;

THENCE with the meanders of said line the following twenty-eight (28) courses and distances:

L28 N86° 50' 07"W, a distance of 20.65 feet (7.43 Varas);
 L29 N08° 44' 03"W, a distance of 10.25 feet (3.69 Varas);
 L30 N61° 36' 54"W, a distance of 20.88 feet (7.52 Varas);
 L31 N49° 21' 25"W, a distance of 19.47 feet (7.01 Varas);
 L32 N46° 31' 30"W, a distance of 68.06 feet (24.50 Varas);
 L33 N50° 08' 00"W, a distance of 32.77 feet (11.80 Varas);
 L34 N43° 26' 14"W, a distance of 54.06 feet (19.46 Varas);
 L35 N47° 02' 54"W, a distance of 29.44 feet (10.60 Varas);
 L36 N41° 48' 36"W, a distance of 22.56 feet (8.12 Varas);
 L37 N47° 57' 27"W, a distance of 31.72 feet (11.42 Varas);
 L38 N50° 55' 28"W, a distance of 83.19 feet (29.95 Varas);
 L39 N46° 45' 17"W, a distance of 80.90 feet (29.12 Varas);
 L40 N47° 24' 19"W, a distance of 36.47 feet (13.13 Varas);
 L41 N51° 51' 14"W, a distance of 61.98 feet (22.31 Varas);
 L42 N53° 03' 17"W, a distance of 92.22 feet (33.20 Varas);
 L43 N57° 47' 25"W, a distance of 66.26 feet (23.85 Varas);
 L44 N53° 53' 37"W, a distance of 104.49 feet (37.62 Varas);
 L45 N56° 31' 59"W, a distance of 40.14 feet (14.45 Varas);
 L46 N50° 42' 35"W, a distance of 67.02 feet (24.13 Varas);
 L47 N51° 15' 21"W, a distance of 96.18 feet (34.62 Varas);
 L48 N53° 15' 14"W, a distance of 32.93 feet (11.85 Varas);
 L49 N55° 53' 37"W, a distance of 104.49 feet (37.62 Varas);
 L50 N49° 52' 46"W, a distance of 64.95 feet (23.38 Varas);
 L51 N52° 00' 29"W, a distance of 36.31 feet (13.07 Varas);
 L52 N41° 38' 04"W, a distance of 42.32 feet (15.24 Varas);
 L53 N32° 55' 00"W, a distance of 51.03 feet (18.37 Varas);
 L54 N29° 27' 09"W, a distance of 66.08 feet (23.79 Varas);
 L55 N15° 32' 28"W, a distance of 8.06 feet (2.90 Varas) to the **POINT OF TERMINATION**, from which a 5/8-inch iron rod with cap stamped "SAM LLC" set for reference bears (L56) S87° 20' 11"W a distance of 153.62 feet (55.30 Varas), a 1/2-inch iron rod with cap stamped "COASTAL SURVEYING" found for reference bears (L57) S51° 50' 35"W a distance of 59.62 feet (21.46 Varas), and NGS Monument AW5663 bears S49° 32' 13"E a distance of 3046.15 feet (1096.61 Varas).

- NOTES:**
- THE SHADED AREA SHOWN HEREON HAS BEEN BUILT UP OR ARTIFICIALLY FILLED AND COVERS STATE OWNED SUBMERGED LANDS. THE "NATURAL LITTORAL BOUNDARY" SHOWN HAS BEEN DETERMINED FROM AERIAL PHOTOGRAPHY DATED 8-25-1953 SUPPLIED BY THE TEXAS GENERAL LAND OFFICE (COUNTER 85289). THE NATURAL ACCRETION AND EROSION PROCESS ALONG THIS PORTION OF THE SHORELINE HAS BEEN HALTED BY BUILDDUP OR THE PLACEMENT OF ARTIFICIAL FILL. SEE SEPARATE SURVEY REPORT, FIELD NOTE DESCRIPTIONS AND SURVEY PLAT OF LITTORAL BOUNDARY THAT ACCOMPANY AND ARE A PART OF THE SURVEY.
 - ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE, NAD 83 (2011) EPOCH 2010.00 AND NGS MONUMENT PID AW5663 "HGCSO 50". MAPPING ANGLE +01°57'32".
 - ALL COORDINATES AND DISTANCES SHOWN HEREON ARE IN US SURVEY FEET AND (VARAS). COORDINATES ARE GRID VALUES. DISTANCES HAVE BEEN ADJUSTED TO SURFACE USING A COMBINED SCALE FACTOR OF 0.99987928.
 - EXISTING SHORE IS LINED WITH RIP-RAP CONSISTING OF BROKEN CONCRETE SLABS AND CONCRETE RUBBLE.
 - REFER TO COASTAL LEASE ASSET NO. CE940223.
 - THE CITY OF SHOREACRES WAS INCORPORATED ON MAY 28, 1949. THE TOWN'S BOUNDARIES WERE TAKEN AS THE SAME BOUNDARIES AS THE ORIGINAL SHOREACRES INC. 1925 PLAT, RECORDED IN VOLUME 7 PAGE 10 IN THE MAP RECORDS OF HARRIS COUNTY, TEXAS. THE WATERFRONT IS LABELED AS "PARK." CITY OF SHOREACRES
601 Shoreacres Blvd., Shoreacres, TX 77571
 - MEAN HIGHER HIGH WATER LINE WAS DETERMINED USING METHODOLOGY APPROVED BY THE TEXAS GENERAL LAND OFFICE.
 - EROSION RESPONSE ACTIVITY CONSISTS OF REMOVAL AND REPLACEMENT OF CONCRETE RIP-RAP, AUTHORIZED UNDER GLO PERMIT NO. SL20170025, AND FUNDED BY CIAP GRANT NO. F13AF00131 (SHOREACRES SHORELINE RESTORATION).

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 THE 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.

I, GREGORY SCHMIDT, LICENSED STATE LAND SURVEYOR IN AND FOR THE STATE OF TEXAS, DO HEREBY CERTIFY THAT ON MAY 03, 2014, THE NATURAL CONTOUR LINE OF MEAN HIGHER HIGH WATER WAS LOCATED ON THE GROUND UNDER MY DIRECTION AND SUPERVISION, ACCORDING TO LAW AND WITH PERSONNEL STATED, AND THAT THE MEANDERS OF SAID CONTOUR LINE ARE TRUE AND CORRECT AS SHOWN HEREON. TO THE BEST OF MY KNOWLEDGE, NO ARTIFICIAL FILL OR ANY DEVELOPMENT, OTHER THAN AS SHOWN HEREON, THAT WOULD CAUSE ALTERATION TO SAID CONTOUR LINE HAS OCCURRED WITHIN THE AREA SURVEYED.

FIELD PERSONNEL: CHRIS GUTIERREZ - NICK RODRIGUEZ

LEGEND:

M.R.H.C.T. MAP RECORDS, HARRIS COUNTY, TEXAS
 O.P.R.P.H.C.T. OFFICIAL PUBLIC RECORDS OF REAL PROPERTY, HARRIS COUNTY, TEXAS
 (1) BLOCK NO.
 o POINT ON MHHW LINE UNLESS NOTED OTHERWISE

TEXAS GENERAL LAND OFFICE
 Art. 33.136, Natural Resources Code
 Co. HARRIS, S.K. No. 19
 File Date 12/15/2018 by K.S. Kueber

GREGORY SCHMIDT
 LICENSED STATE LAND SURVEYOR
 SURVEYING AND MAPPING, LLC (SAM)
 4801 SOUTHWEST PARKWAY
 PARKWAY 2, SUITE 100
 AUSTIN, TEXAS 78735
 TEXAS FIRM REGISTRATION NO: 10064300

DATE 05/03/2014

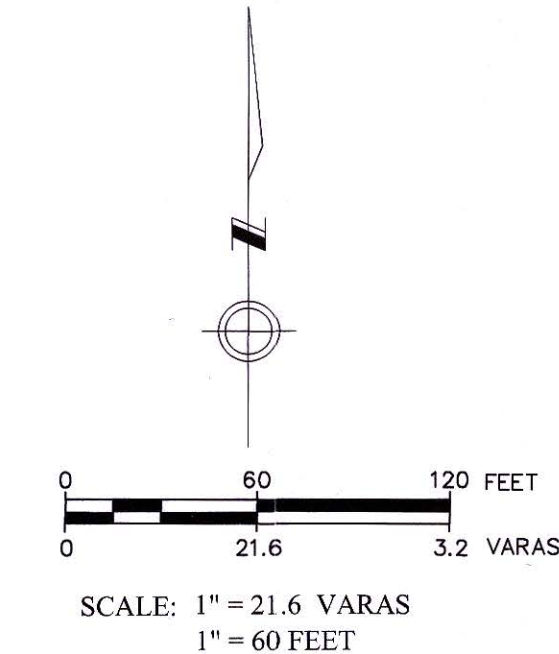
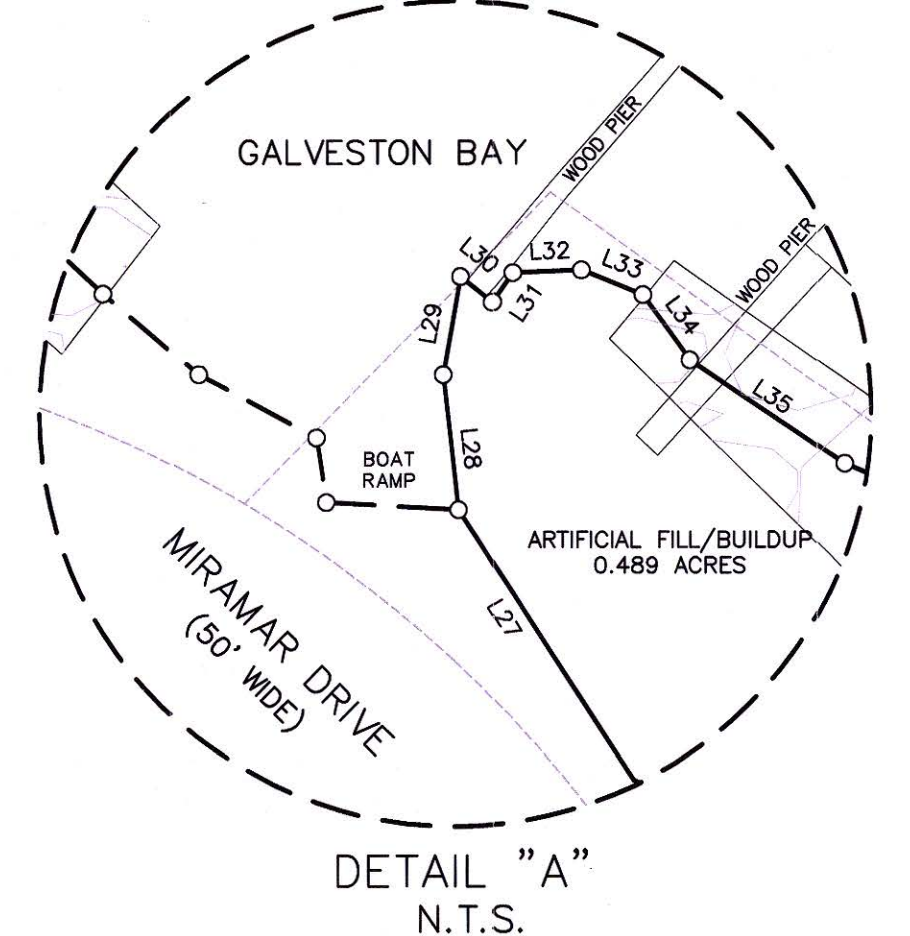
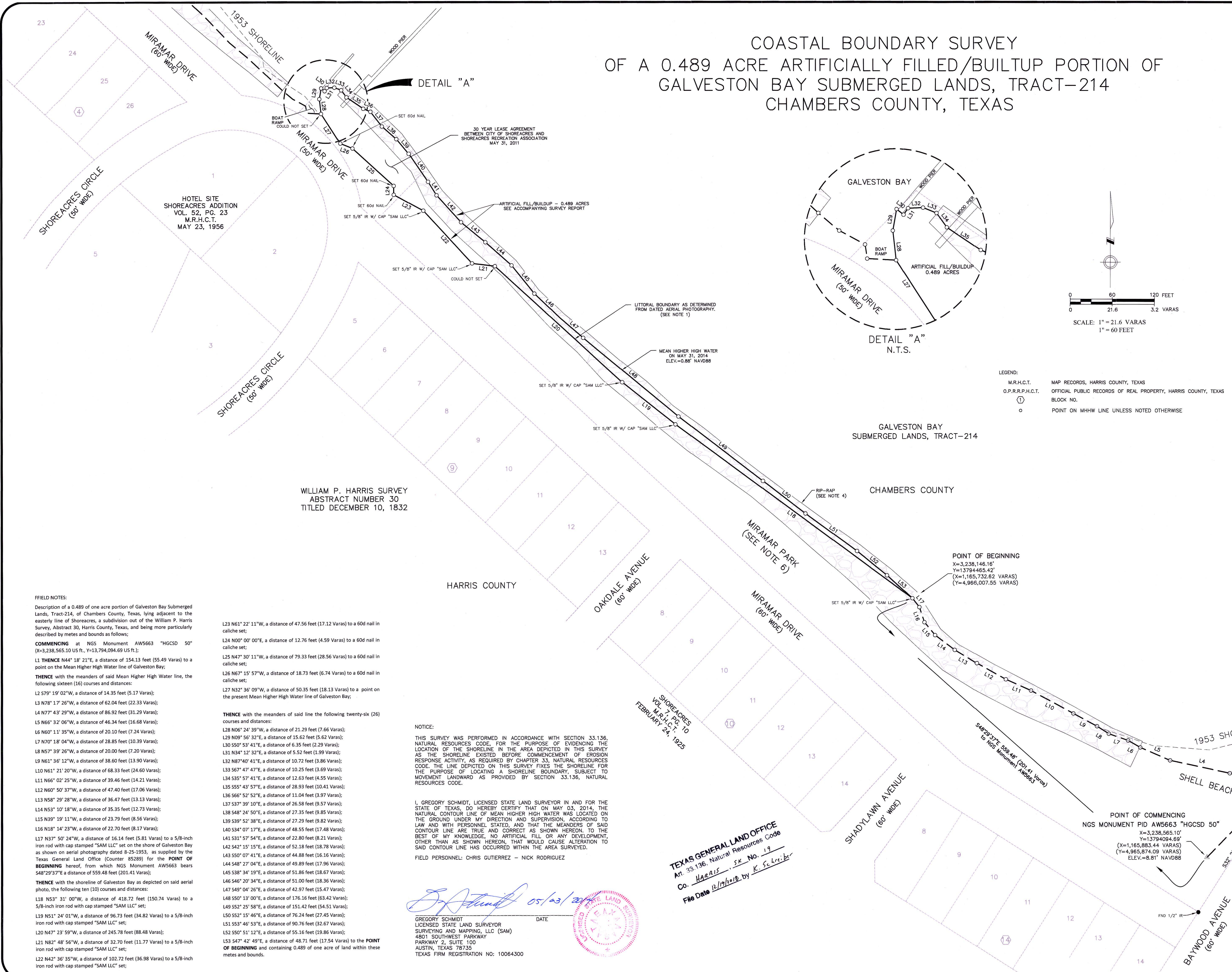
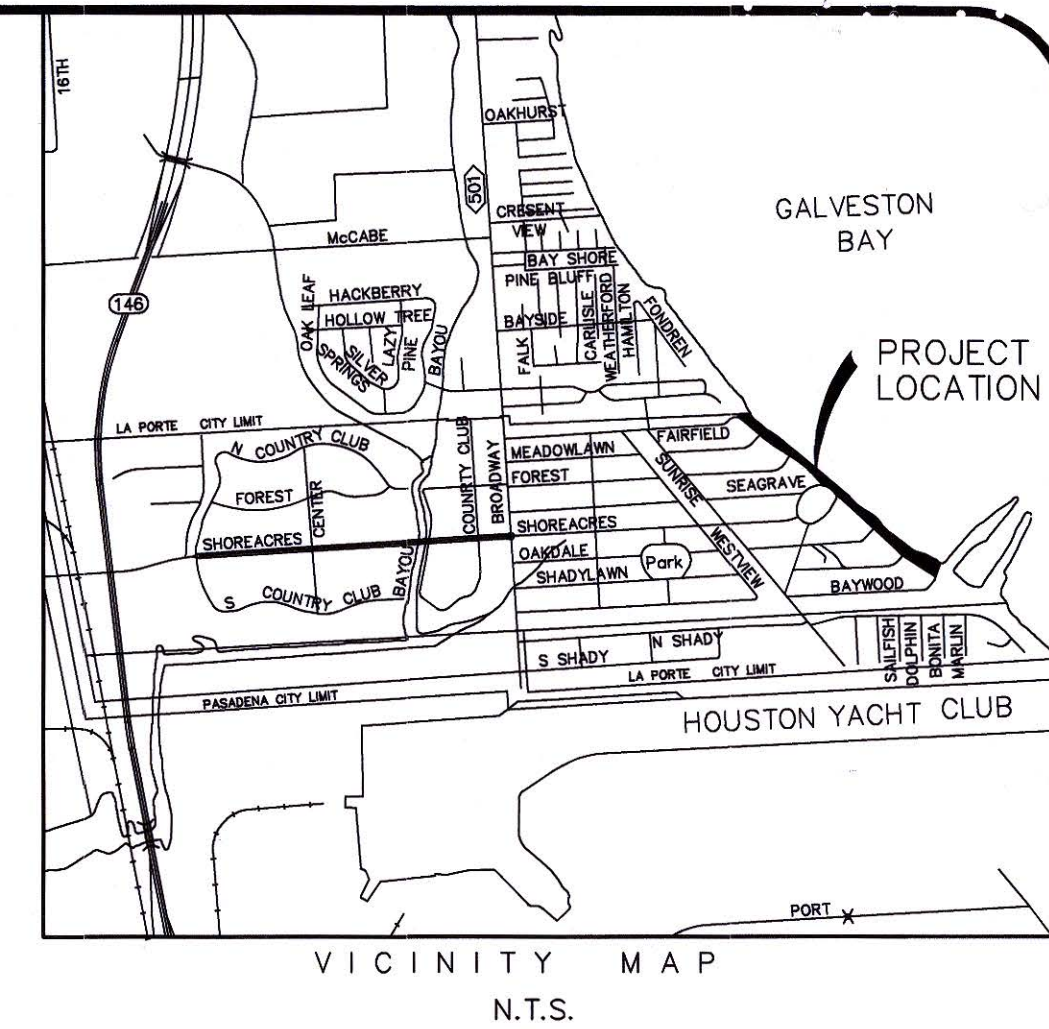
Recorded in Book M, Page 412
 Harris County Surveyor Records.

SAM
 SURVEYING-AERIAL-MAPPING-ENGINEERING

11111 Katy Freeway,
 Suite 200
 Houston, Texas 77079
 Tel: 713.873.5100
 Fax: 713.873.5150
 Email: info@sam.biz

Texas Firm Registration No: 10064300

COASTAL BOUNDARY SURVEY OF A 0.489 ACRE ARTIFICIALLY FILLED/BUILTUP PORTION OF GALVESTON BAY SUBMERGED LANDS, TRACT-214 CHAMBERS COUNTY, TEXAS



LEGEND:
 M.R.H.C.T. MAP RECORDS, HARRIS COUNTY, TEXAS
 O.P.R.R.P.H.C.T. OFFICIAL PUBLIC RECORDS OF REAL PROPERTY, HARRIS COUNTY, TEXAS
 (1) BLOCK NO.
 o POINT ON MHHW LINE UNLESS NOTED OTHERWISE

- NOTES:**
1. THE AREA SHOWN HEREON HAS BEEN BUILT UP OR ARTIFICIALLY FILLED AND COVERS STATE OWNED SUBMERGED LANDS. THE "NATURAL LITTORAL BOUNDARY" SHOWN HAS BEEN DETERMINED FROM AERIAL PHOTOGRAPHY DATED 8-25-1953 SUPPLIED BY THE TEXAS GENERAL LAND OFFICE (COUNTER B5289). THE NATURAL ACCRETION AND EROSION PROCESS ALONG THIS PORTION OF THE SHORELINE HAS BEEN HALTED BY BUILDUP OR THE PLACEMENT OF ARTIFICIAL FILL. SEE SEPARATE SURVEY REPORT, FIELD NOTE DESCRIPTIONS AND SURVEY PLAT OF LITTORAL BOUNDARY THAT ACCOMPANY AND ARE A PART OF THE SURVEY.
 2. ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS REFERENCED TO THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE, NAD 83 (2011) EPOCH 2010.00 AND NGS MONUMENT PID AW5663 "HGCS 50". MAPPING ANGLE +01°57'32".
 3. ALL COORDINATES AND DISTANCES SHOWN HEREON ARE IN US SURVEY FEET AND (VARAS). COORDINATES ARE GRID VALUES. DISTANCES HAVE BEEN ADJUSTED TO SURFACE USING A COMBINED SCALE FACTOR OF 0.99987928.
 4. EXISTING SHORE IS LINED WITH RIP-RAP CONSISTING OF BROKEN CONCRETE SLABS AND CONCRETE RUBBLE.
 5. REFER TO COASTAL LEASE ASSET NO. CE940223.
 6. THE CITY OF SHOREACRES WAS INCORPORATED ON MAY 28, 1949. THE TOWN'S BOUNDARIES WERE TAKEN AS THE SAME BOUNDARIES AS THE ORIGINAL SHOREACRES INC. 1925 PLAT, RECORDED IN VOLUME 7 PAGE 10 IN THE MAP RECORDS OF HARRIS COUNTY, TEXAS. THE WATERFRONT IS LABELED AS "PARK".
CITY OF SHOREACRES
601 Shoreacres Blvd., Shoreacres, TX 77571
 7. MEAN HIGHER HIGH WATER LINE WAS DETERMINED USING METHODOLOGY APPROVED BY THE TEXAS GENERAL LAND OFFICE.
 8. EROSION RESPONSE ACTIVITY CONSISTS OF REMOVAL AND REPLACEMENT OF CONCRETE RIP-RAP, AUTHORIZED UNDER GLO PERMIT NO. SL20170025, AND FUNDED BY CIAP GRANT NO. F13AF00131 (SHOREACRES SHORELINE RESTORATION).

FIELD NOTES:
 Description of a 0.489 of one acre portion of Galveston Bay Submerged Lands, Tract-214, of Chambers County, Texas, lying adjacent to the eastern line of Shoreacres, a subdivision out of the William P. Harris Survey, Abstract 30, Harris County, Texas, and being more particularly described by metes and bounds as follows:
COMMENCING at NGS Monument AW5663 "HGCS 50" (X=3,238,565.10 US ft., Y=1,165,883.44 US ft.);
 L1 **THENCE** N44° 18' 21"E, a distance of 154.13 feet (55.49 Varas) to a point on the Mean Higher High Water line of Galveston Bay;
THENCE with the meanders of said Mean Higher High Water line, the following sixteen (16) courses and distances:
 L2 S79° 19' 02"W, a distance of 14.35 feet (5.17 Varas);
 L3 N78° 17' 26"W, a distance of 62.04 feet (22.33 Varas);
 L4 N77° 43' 29"W, a distance of 86.92 feet (31.29 Varas);
 L5 N66° 32' 06"W, a distance of 46.34 feet (16.68 Varas);
 L6 N60° 11' 35"W, a distance of 20.10 feet (7.24 Varas);
 L7 N70° 18' 04"W, a distance of 28.85 feet (10.39 Varas);
 L8 N57° 39' 26"W, a distance of 20.00 feet (7.20 Varas);
 L9 N61° 36' 12"W, a distance of 38.60 feet (13.90 Varas);
 L10 N61° 21' 20"W, a distance of 68.33 feet (24.60 Varas);
 L11 N66° 02' 25"W, a distance of 39.46 feet (14.21 Varas);
 L12 N60° 50' 37"W, a distance of 47.40 feet (17.06 Varas);
 L13 N58° 29' 28"W, a distance of 36.47 feet (13.13 Varas);
 L14 N53° 10' 18"W, a distance of 35.35 feet (12.73 Varas);
 L15 N39° 19' 11"W, a distance of 23.79 feet (8.56 Varas);
 L16 N18° 14' 23"W, a distance of 22.70 feet (8.17 Varas);
 L17 N37° 50' 24"W, a distance of 16.14 feet (5.81 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set on the shore of Galveston Bay as shown on aerial photography dated 8-25-1953, as supplied by the Texas General Land Office (Counter B5289) for the **POINT OF BEGINNING** hereof, from which NGS Monument AW5663 bears S48°29'37"E a distance of 559.48 feet (201.41 Varas);
THENCE with the shoreline of Galveston Bay as depicted on said aerial photo, the following ten (10) courses and distances:
 L18 N53° 31' 00"W, a distance of 418.72 feet (150.74 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;
 L19 N51° 24' 01"W, a distance of 96.73 feet (34.82 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;
 L20 N47° 23' 59"W, a distance of 245.78 feet (88.48 Varas);
 L21 N82° 48' 56"W, a distance of 32.70 feet (11.77 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;
 L22 N42° 36' 35"W, a distance of 102.72 feet (36.98 Varas) to a 5/8-inch iron rod with cap stamped "SAM LLC" set;

L23 N61° 22' 11"W, a distance of 47.56 feet (17.12 Varas) to a 60d nail in caliche set;
 L24 N00° 00' 00"E, a distance of 12.76 feet (4.59 Varas) to a 60d nail in caliche set;
 L25 N47° 30' 11"W, a distance of 79.33 feet (28.56 Varas) to a 60d nail in caliche set;
 L26 N67° 15' 57"W, a distance of 18.73 feet (6.74 Varas) to a 60d nail in caliche set;
 L27 N32° 36' 09"W, a distance of 50.35 feet (18.13 Varas) to a point on the present Mean Higher High Water line of Galveston Bay;
THENCE with the meanders of said line the following twenty-six (26) courses and distances:
 L28 N06° 24' 39"W, a distance of 21.29 feet (7.66 Varas);
 L29 N09° 56' 32"E, a distance of 15.62 feet (5.62 Varas);
 L30 S50° 53' 41"E, a distance of 6.35 feet (2.29 Varas);
 L31 N34° 12' 32"E, a distance of 5.52 feet (1.99 Varas);
 L32 N87° 40' 41"E, a distance of 10.72 feet (3.86 Varas);
 L33 S67° 47' 47"E, a distance of 10.25 feet (3.69 Varas);
 L34 S35° 57' 41"E, a distance of 12.63 feet (4.55 Varas);
 L35 S55° 43' 57"E, a distance of 28.93 feet (10.41 Varas);
 L36 S66° 52' 52"E, a distance of 11.04 feet (3.97 Varas);
 L37 S37° 39' 10"E, a distance of 26.58 feet (9.57 Varas);
 L38 S48° 24' 50"E, a distance of 27.35 feet (9.85 Varas);
 L39 S39° 52' 38"E, a distance of 27.29 feet (9.82 Varas);
 L40 S34° 07' 17"E, a distance of 48.55 feet (17.48 Varas);
 L41 S31° 57' 54"E, a distance of 22.80 feet (8.21 Varas);
 L42 S42° 15' 15"E, a distance of 52.18 feet (18.78 Varas);
 L43 S50° 07' 41"E, a distance of 44.88 feet (16.16 Varas);
 L44 S48° 27' 04"E, a distance of 49.89 feet (17.96 Varas);
 L45 S38° 34' 19"E, a distance of 51.86 feet (18.67 Varas);
 L46 S46° 20' 34"E, a distance of 51.00 feet (18.36 Varas);
 L47 S49° 04' 26"E, a distance of 42.97 feet (15.47 Varas);
 L48 S50° 13' 00"E, a distance of 176.16 feet (63.42 Varas);
 L49 S52° 25' 58"E, a distance of 151.42 feet (54.51 Varas);
 L50 S52° 15' 46"E, a distance of 76.24 feet (27.45 Varas);
 L51 S53° 46' 53"E, a distance of 90.76 feet (32.67 Varas);
 L52 S50° 51' 12"E, a distance of 55.16 feet (19.86 Varas);
 L53 S47° 42' 49"E, a distance of 48.71 feet (17.54 Varas) to the **POINT OF BEGINNING** and containing 0.489 of one acre of land within these metes and bounds.

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 THE 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.

I, GREGORY SCHMIDT, LICENSED STATE LAND SURVEYOR IN AND FOR THE STATE OF TEXAS, DO HEREBY CERTIFY THAT ON MAY 03, 2014, THE NATURAL CONTOUR LINE OF MEAN HIGHER HIGH WATER WAS LOCATED ON THE GROUND UNDER MY DIRECTION AND SUPERVISION, ACCORDING TO LAW AND WITH PERSONNEL STATED, AND THAT THE MEANDERS OF SAID CONTOUR LINE ARE TRUE AND CORRECT AS SHOWN HEREON, TO THE BEST OF MY KNOWLEDGE, NO ARTIFICIAL FILL OR ANY DEVELOPMENT, OTHER THAN AS SHOWN HEREON, THAT WOULD CAUSE ALTERATION TO SAID CONTOUR LINE HAS OCCURRED WITHIN THE AREA SURVEYED.

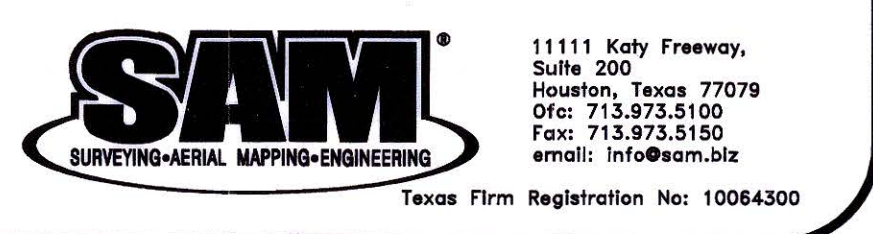
FIELD PERSONNEL: CHRIS GUTIERREZ - NICK RODRIGUEZ

GREGORY SCHMIDT
 LICENSED STATE LAND SURVEYOR
 SURVEYING AND MAPPING, LLC (SAM)
 4801 SOUTHWEST PARKWAY
 PARKWAY 2, SUITE 100
 AUSTIN, TEXAS 78735
 TEXAS FIRM REGISTRATION NO: 10064300

DATE: 05/03/2014

SHOREACRES
 VOL. 7, PG. 10
 M.R.H.C.T.
 FEBRUARY 24, 1925

TEXAS GENERAL LAND OFFICE
 Art. 33.136, Natural Resources Code
 Co. Harris, S.K. No. 19
 File Date 12/19/2012 by K. Se Kreiber





TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

Surveying Division
Coastal Boundary Survey Approval

Project: Shoreacres Shoreline Restoration

Project No: SL20170025 GLO
Grant No. F13AF00131 CIAP

Project Manager: Molly Powell, Upper Coast Regional Manager
Texas General Land Office

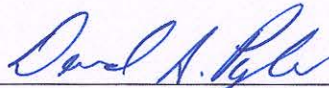
Surveyor: Gregory Schmidt, Licensed State Land Surveyor

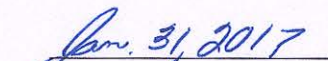
Description: Coastal Boundary Survey, dated May 3, 2014, by Gregory Schmidt, Licensed State Land Surveyor, delineating the line of Mean Higher High Water, along the western shore of Galveston Bay, same line being a portion of the littoral boundary of the William P. Harris Survey, A-30, and being on the western boundary line of Galveston Bay Submerged Land Tract 214, situated at Shoreacres Subdivision and extending approximately 0.6 miles northwesterly from the Houston Yacht Club Marina, coordinates N29°37'17" (29.621450°) W95°00'20" (95.005531°), WGS84. A copy of the survey has been recorded in Book M, Page 412, of the Harris County Surveyor's Records.

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

Approved:

Signed:


Surveying Division


Date

Approval Filed as:

Tex. Nat. Res. Code Article 33.136 Harris County, Sketch No. 19

TEXAS GENERAL LAND OFFICE
Art. 33.136, Natural Resources Code

Co. HARRIS, SK No. 19

File Date 12/19/2018 by K. Schreiber

**SURVEYOR'S REPORT
COASTAL BOUNDARY SURVEY
PART OF THE EASTERLY LINE OF SHOREACRES,
A SUBDIVISION OUT OF THE WILLIAM P. HARRIS SURVEY
ABSTRACT NO. 30, HARRIS COUNTY, TEXAS**

At the request of ARUP Texas, Inc. and in my capacity as a Licensed State Land Surveyor in Texas, the line of Mean Higher High Water of a portion of the easterly line of Shoreacres, a subdivision out of the William P. Harris Survey, Abstract Number 30, Harris County, Texas, was conducted under my direction and supervision. This survey was performed as per the requirements outlined in the Coastal Public Lands Management Act of 1973, as amended, Chapter 33, Natural Resources Code, and specifically Section 33.136, Natural Resources Code, "Property Rights: Preservation of Littoral Rights". The purpose of this survey was to evidence "...the location of the shoreline in the area depicted in this survey as that shoreline existed before commencement of erosion response activity..." (Section 33.136(b), Natural Resources Code). The project site is along approximately 3,100 linear feet of the westerly shoreline of Galveston Bay adjacent to the City of Shoreacres.

The William P. Harris Survey borders on Galveston Bay and title was received from the Mexican Government on December 10, 1832. For grants issued by the King of Spain and the Mexican State before the adoption of common law in Texas, the boundary between sea and upland must be determined in accordance with principles announced in Las Siete Partidas, the basic law of Spain and Mexico which defines "shore" as all ground covered with water at high tide during the whole year, whether in winter or summer.

In a decision by the Texas Supreme Court in the case of Luttus vs. State (324 SW 2nd 167, on remand 328 SW 2nd 920) it was found that the littoral boundaries for civil law grants differ from the boundaries of common law grants. The court states that for civil law grants (grants by Spain and Mexico) the boundary is the line of Mean Higher High Water (MHHW) and for common law grants (grants made by the Republic and State of Texas) the boundary is the line of Mean High Water (MHW). This case described that the best method of determining MHHW and MHW is to employ the use of scientific tide gauges.

The Luttus case defined MHHW as a tidal datum that is the average of the higher of the two daily tides observed over a specific 19 year period (epoch) and MHW as a tidal datum that is the average of all high tides over a specific 19 year period (epoch). Tides are defined as the regular and predictable rise and fall in sea level due to the gravitational pull of the sun and moon. Sea levels are also influenced by weather conditions, geographical location and topography of the coastline. The combination of these conditions can result in a wide variation in the elevation of the tidal datum from location to location. Due to this variation, the tidal datum had to be determined at the project location. Because of the impracticality of obtaining 19 years of tide readings at a specific location, methods have been developed to correct short term observations between project site staff gauges, secondary tide gauges (gauges with more than one year but less than 19 years of observations) and a primary tide gauge (gauges with more than 19 years of observations).

TEXAS GENERAL LAND OFFICE

Art. 33.136, Natural Resources Code

Co. HARRIS, SK No. 19

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Tide gauges along the Texas coastline are installed, operated and maintained by agencies such as the Texas Coastal Oceanic Observation Network (TCOON). This project is situated approximately 4 miles south of the Morgan's Point Tide Gauge and approximately 8 miles north of the Eagle Point Tide Gauge, both of which are operated by TCOON and have published offsets between the North American Vertical Datum (NAVD) 88 and the 19 year observed Mean Higher High Water datum.

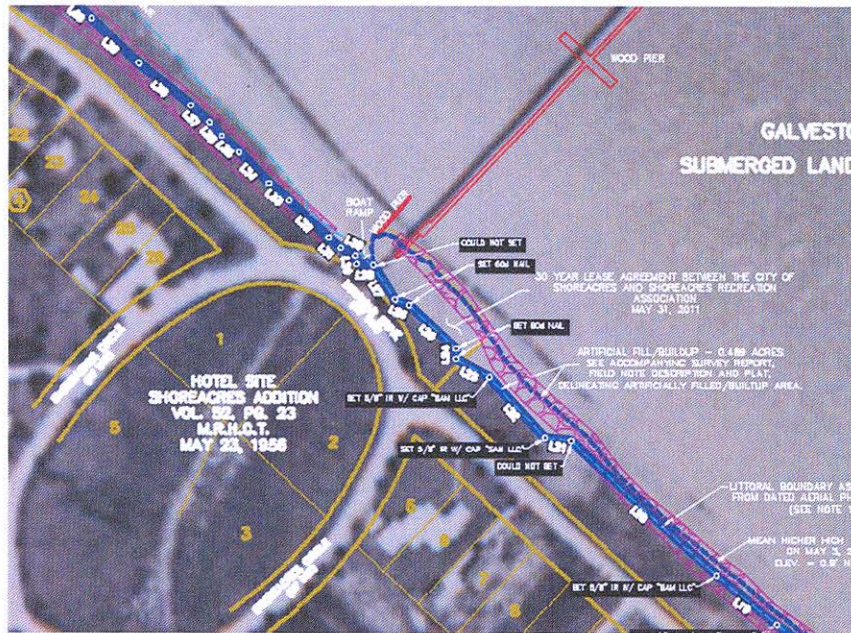
A site staff gauge was installed at the Houston Yacht Club to collect data for approximately 1 week. The gauge used was an OHMEX TideM8 pressure gauge that was calibrated for the ambient temperature, salinity and pressure of the area. Tide data was collected simultaneously with the Morgan's Point and Eagle Point Tide Gauges for four high tide cycles. These readings were compared using the height-difference method resulting in a calculated **NAVD88 elevation of 0.88'** for MHHW at the site staff gauge.

Using the calculated elevation for the site staff gauge, points were located on the elevation of the Mean Higher High Water line along the westerly shoreline of Galveston Bay for the entire project length. These points were incorporated into a surveyed meander line which was tied to the Texas Coordinate System of 1983, South Central Zone – NAD 83 (1993) using NGS Monument AW5663 "HGCS D 50" for reference. The combined scale factor used for this project is 0.99987928. Published elevation for this point is 8.81' NAVD88.

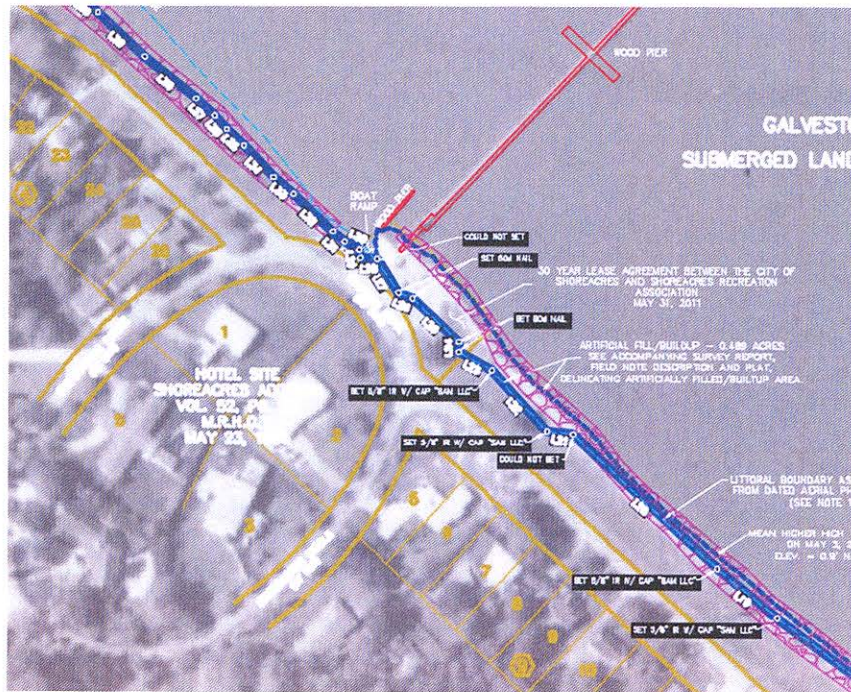
Concrete rubble and slabs have been placed along the majority of the shore in the project area. Since the purpose of this survey is to identify the shoreline as it existed prior to any erosion response activity, historical aerial imagery was reviewed. A digitally scanned aerial photograph dated 8-25-1953 supplied by the Texas General Land Office (TGLO) revealed the potential of a filled or built up area in the vicinity of the present boat ramp and piers when compared to current imagery.

Additional aerial imagery was collected in digital format from the Texas Natural Resources Information System (TNRIS), dated 1957, 1969, 1979 and 1989. Each digital image was overlaid onto the survey aligning pavement and visible occupation lines in Computer Aided Drafting software (CAD). The imagery was turned on and off in the CAD file in sequence to observe shoreline changes over time.

Upon examining the photos the shoreline stayed substantially the same in the two earliest 1953 and 1957 photos, with some erosion noted along the portion of the shore northwest of the boat ramps. The 1969 photo is very grainy and it is difficult to discern the shoreline with any certainty, however a new pier is evident, and the distance from the pavement edge of Miramar Drive to the shoreline increased approximately 45 feet in the vicinity of the docks. The 1979 and 1989 images show this distance increasing even more, on the order of 65' to 75' from the 1953 shoreline. No increase in surface area along the remaining portions of the shoreline was evident. The 1979 and 1989 shorelines closely follow the present MHHW meander line as surveyed. The changes are evident when the 1953 and 1979 imagery is compared, as shown on the following page.



1953 Aerial Image Overlay



1979 Aerial Image Overlay

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For the purposes of this survey it is assumed that the apparent increase in area in the vicinity of the boat dock and piers is the result of either (1) build up as a result of shoreline protection response or (2) fill placed along the shoreline. A line was digitized within the CAD software following the apparent shoreline in the 1953 aerial image. Deviations between this line and the MHHW meander line of the present shore of 10 feet or less were considered to be coincident, due to the methodology and uncertainty in determining the 1953 line from the aerial photo. The 1953 aerial imagery and the subsequent digitized line is the best evidence we have recovered that indicates the shore prior to commencement of any fill, build up, or shoreline protection activities.

A plat showing the results of this survey was prepared and filed with this report.

Respectfully submitted,



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