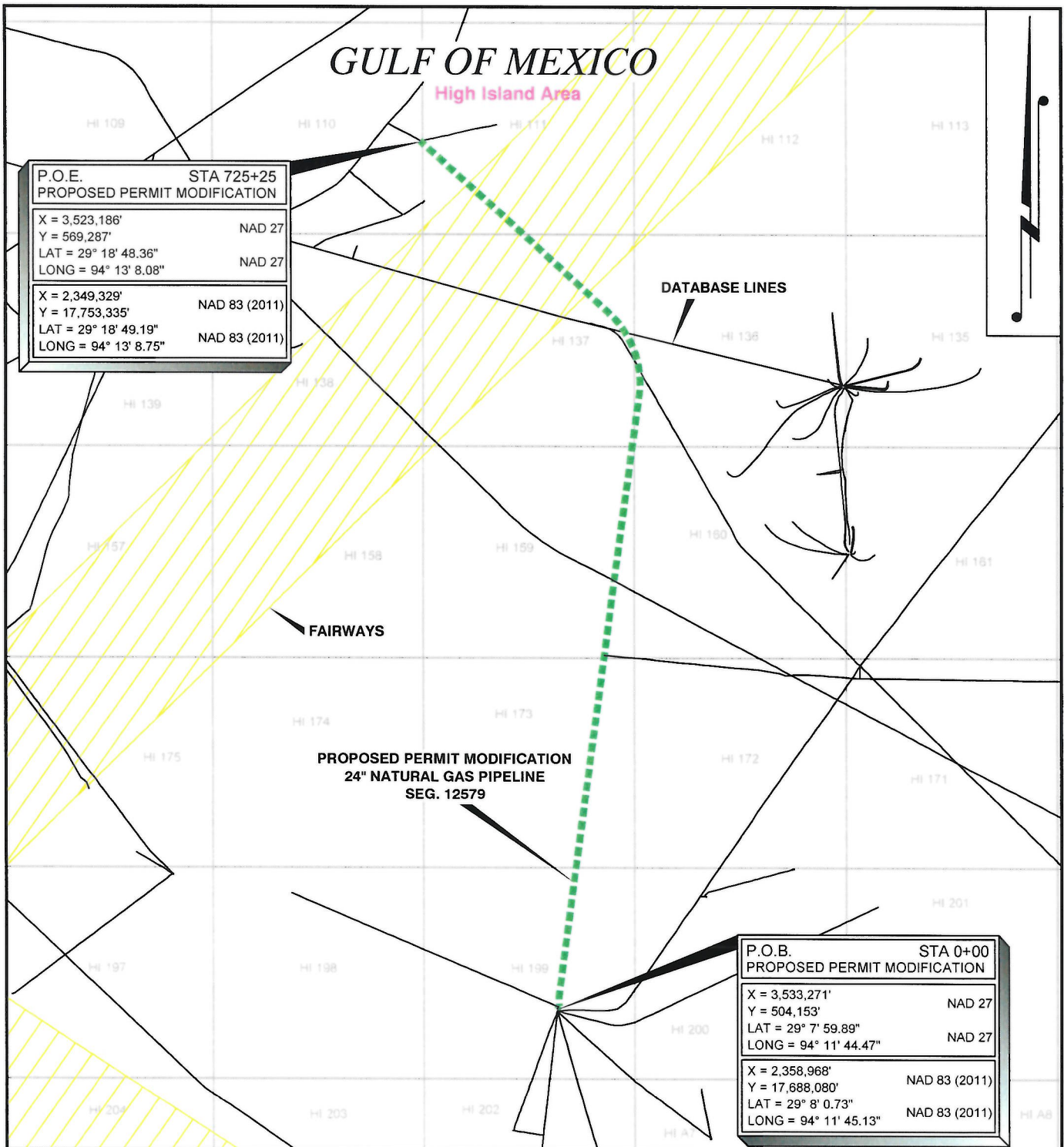


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DRAWN BY: JJR		APPROVED BY: JJJ		<b>VICINITY MAP</b> <b>WILLIAMS FIELD SERVICES-GULF COAST COMPANY, LP</b> <b>PROPOSED PERMIT MODIFICATION</b> <b>HIGH ISLAND AREA</b> <b>OFFHSORE TEXAS</b> <b>GULF OF MEXICO</b>	
DATE: 01/19/2017		JOB NO: 2017.0020			
DRAWING NAME: 170020_C1_SEG_12579_REV1.DWG					
SHEET NO: 1 OF 6					
PROJECTION: TEXAS SOUTH CENTRAL GEO. DATUM: NAD27   VERT. DATUM: NAVD88 GRID UNITS: US SURVEY FEET					
SCALE IN FEET 					
				REV. NO: 1    REV. DATE: 01/30/2017    REV. BY: JJJR REVISION DESCRIPTION: REVISED COMPANY NAME IN TITLEBLOCK.	





DRAWN BY: JJR	APPROVED BY: JJJ
DATE: 01/19/2017	JOB NO: 2017.0020
DRAWING NAME: 170020_C2_SEG_12579_REV1.DWG	
SHEET NO: 2	OF 6
PROJECTION: TEXAS SOUTH CENTRAL GEO. DATUM: NAD27   VERT. DATUM: NAVD88 GRID UNITS: US SURVEY FEET	
<p>SCALE IN FEET</p>	

**AREA MAP**

**WILLIAMS FIELD SERVICES-GULF COAST COMPANY, LP**

**PROPOSED PERMIT MODIFICATION**

**HIGH ISLAND AREA**

**OFFSHORE TEXAS**

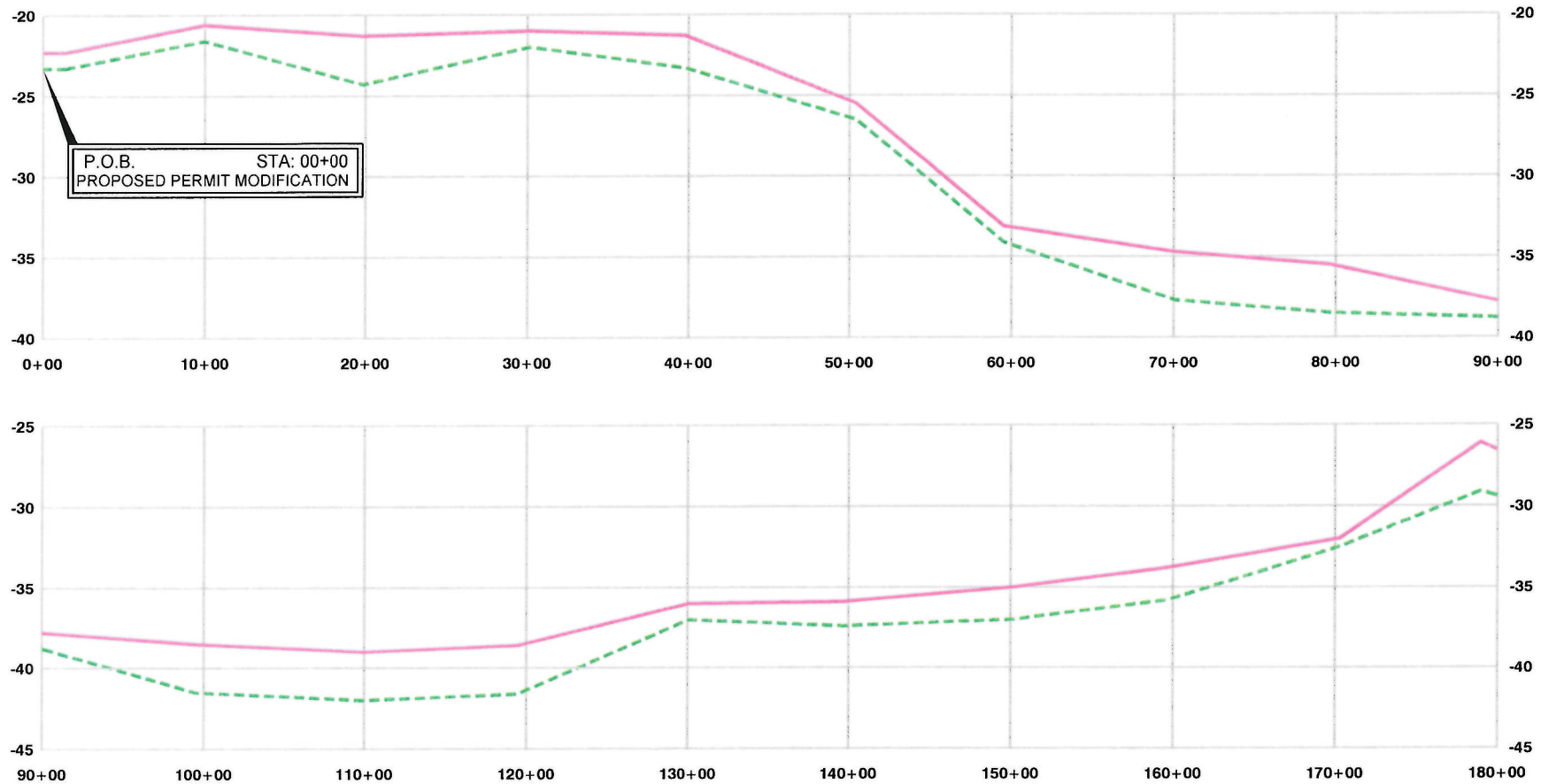
**GULF OF MEXICO**

**T. BAKER SMITH**  
A CENTURY OF SOLUTIONS  
127 Quince Circle, Lafayette, LA 70503  
(337) 233-6800 • tbsmith.com

REV. NO: 1	REV. DATE: 01/30/2017	REV. BY: JJR
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REVISION DESCRIPTION:  
REVISED COMPANY NAME IN TITLEBLOCK.

1/30/2017 - P:\Y-2017\2017.0020\DWG\COE\REV 1\SEGMENT 12579 REV 11\70020\_C2\_SEG\_12579\_REV1.DWG



### SEG 12579 - PROFILE VIEW

HORIZONTAL SCALE: 1" = 1,000'

VERTICAL SCALE: 1" = 10'

#### LEGEND

- = NATURAL BOTTOM
- - - = TOP OF PIPE

SCALE IN FEET



DRAWN BY: JJR APPROVED BY: JJL

DATE: 01/19/2017 JOB NO: 2017.0020

DRAWING NAME 170020\_C2\_SEG\_12579\_REV1.DWG

SHEET NO: 3 OF 6

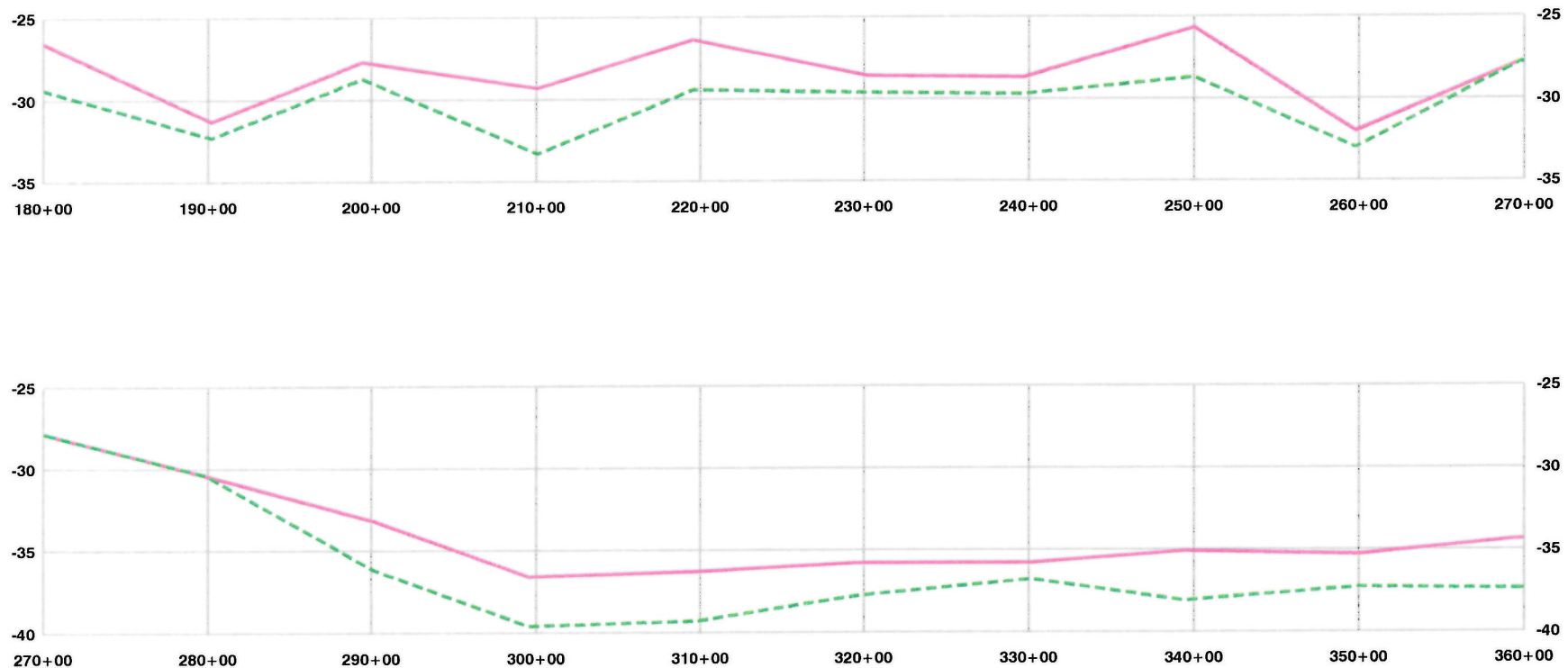
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GRID UNITS: US SURVEY FEET

REVISION DESCRIPTION:  
REVISED COMPANY NAME IN TITLEBLOCK.

#### PROFILE

**WILLIAMS FIELD SERVICES-GULF COAST COMPANY, LP**  
PROPOSED PERMIT MODIFICATION  
HIGH ISLAND AREA  
OFFSHORE TEXAS  
GULF OF MEXCO

REV. NO: 1 REV. DATE: 01/30/2017 REV. BY: JJR



### SEG 12579 - PROFILE VIEW

HORIZONTAL SCALE: 1" = 1,000'

VERTICAL SCALE: 1" = 10'

#### LEGEND

- = NATURAL BOTTOM
- - - = TOP OF PIPE

SCALE IN FEET



DRAWN BY: JJR APPROVED BY: JJL

DATE: 01/19/2017 JOB NO: 2017.0020

DRAWING NAME: 170020\_C2\_SEG\_12579\_REV1.DWG

SHEET NO: 4 OF 6

PROJECTION: TEXAS SOUTH CENTRAL  
GEO. DATUM: NAD27 | VERT. DATUM: NAVD88  
GRID UNITS: US SURVEY FEET

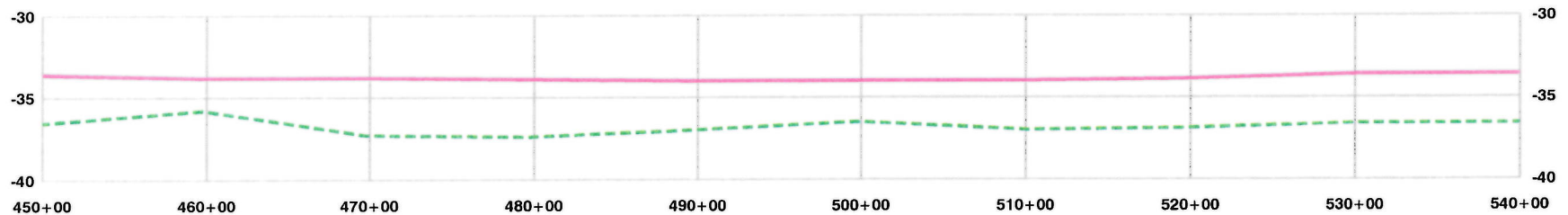
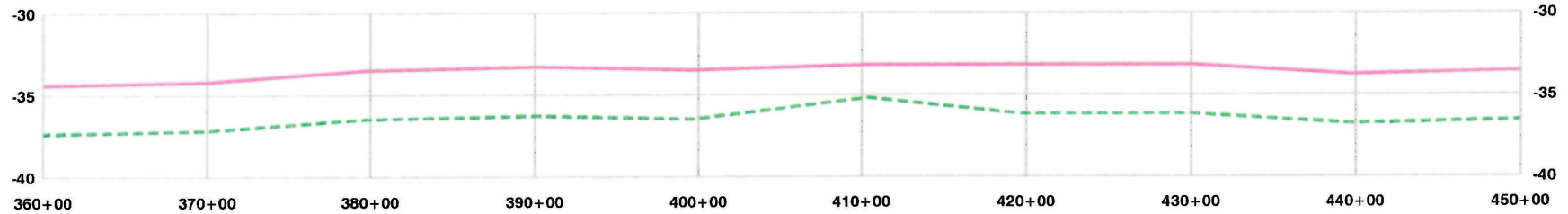
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REVISED COMPANY NAME IN TITLEBLOCK.

#### PROFILE

**WILLIAMS FIELD SERVICES-GULF COAST COMPANY, LP**  
PROPOSED PERMIT MODIFICATION  
HIGH ISLAND AREA  
OFFSHORE TEXAS  
GULF OF MEXICO

REV. NO: 1 REV. DATE: 01/30/2017 REV. BY: JJR





### SEG 12579 - PROFILE VIEW

HORIZONTAL SCALE: 1" = 1,000'

VERTICAL SCALE: 1" = 10'

#### LEGEND

- = NATURAL BOTTOM
- - - = TOP OF PIPE

SCALE IN FEET



DRAWN BY: JJR APPROVED BY: JJL

DATE: 01/19/2017 JOB NO: 2017.0020

DRAWING NAME: 170020\_C2\_SEG\_12579\_REV1.DWG

SHEET NO: 5 OF 6

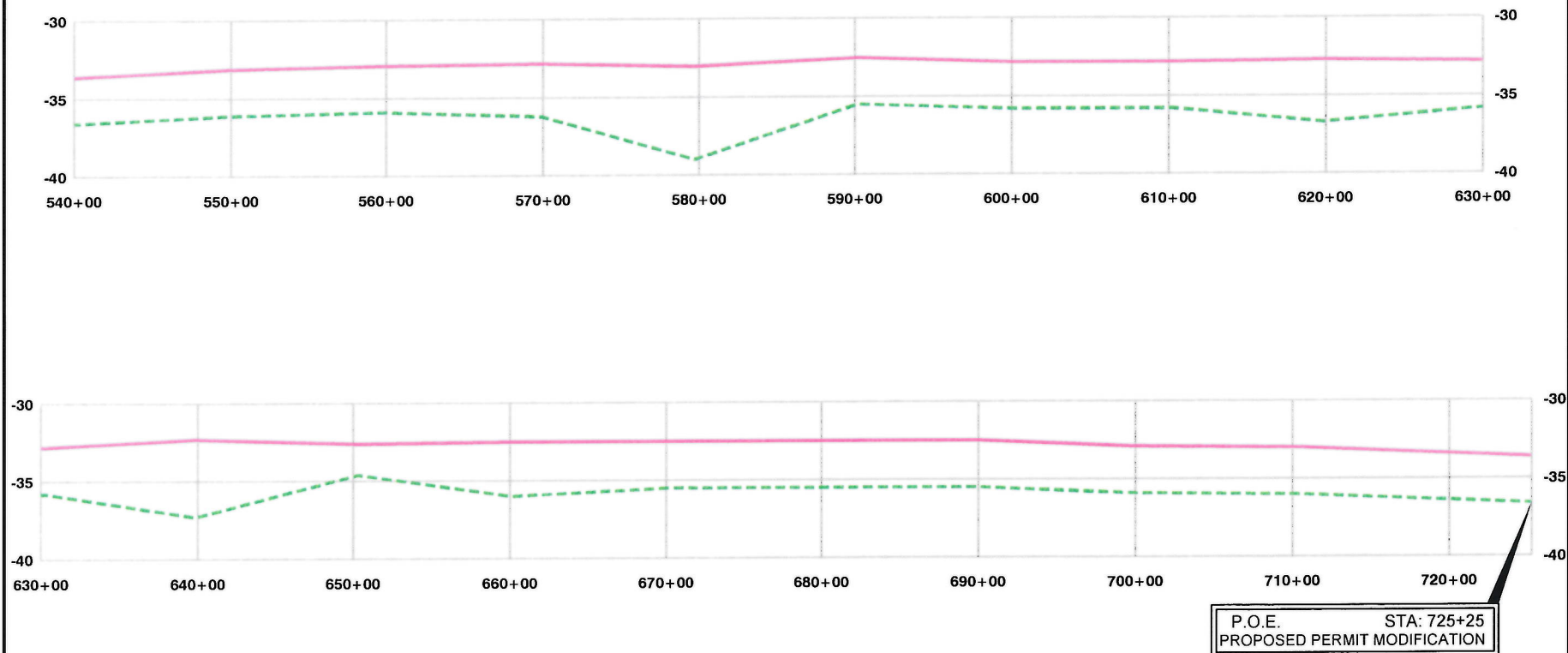
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GRID UNITS: US SURVEY FEET

REVISION DESCRIPTION:  
REVISED COMPANY NAME IN TITLEBLOCK.

#### PROFILE

**WILLIAMS FIELD SERVICES-GULF COAST COMPANY, LP**  
PROPOSED PERMIT MODIFICATION  
HIGH ISLAND AREA  
OFFSHORE TEXAS  
GULF OF MEXCO

REV. NO: 1 REV. DATE: 01/30/2017 REV. BY: JJR



### SEG 12579 - PROFILE VIEW

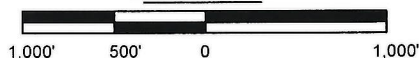
HORIZONTAL SCALE: 1" = 1,000'

VERTICAL SCALE: 1" = 10'

#### LEGEND

- = NATURAL BOTTOM
- = TOP OF PIPE

SCALE IN FEET



DRAWN BY: JJR APPROVED BY: JJL

DATE: 01/19/2017 JOB NO: 2017.0020

DRAWING NAME: 170020\_C2\_SEG\_12579\_REV1.DWG

SHEET NO: 6 OF 6

PROJECTION: TEXAS SOUTH CENTRAL  
GEO. DATUM: NAD27 | VERT. DATUM: NAVD88  
GRID UNITS: US SURVEY FEET

REVISION DESCRIPTION:  
REVISED COMPANY NAME IN TITLEBLOCK.

#### PROFILE

**WILLIAMS FIELD SERVICES-GULF COAST COMPANY, LP**  
PROPOSED PERMIT MODIFICATION  
HIGH ISLAND AREA  
OFFSHORE TEXAS  
GULF OF MEXICO

REV. NO: 1 REV. DATE: 01/30/2017 REV. BY: JJR

MAY 27 2017

# 3 Findings

## I. Survey Results-Summary

In July, 2016, TerraSond, Ltd. conducted a depth of burial and alignment investigation of PSNs 4613, 4590 and 12579. The purpose of their investigation was to verify the pipeline locations and depth of burial, investigate the condition of the seabed, report any pipeline exposures and identify possible hazards in the immediate vicinity of the pipeline crossing. Side scan sonar was used to determine, among other things, if there was any exposed pipeline on the seafloor. Sub-Bottom Profiler readings were taken at intervals of 500 feet to determine depth of pipeline burial. Magnetometer readings were taken to correlate horizontal alignment of the pipeline segments with the geophysical data.

### PSN 4613 Survey Results

The PSN 4613 survey revealed no potential pipeline exposures. Recorded water depths ranged from 52' from Mean Lower Low Water (MLLW) on the northern limit to 50-52' MLLW at the southern end of the segment with a Safety Fairway Precautionary Area crossing depth of 50-52 feet.

Surveyed depth of burial ranged from 4 feet at the extreme northern end, then southward with depth of cover of 1.0-6.0 feet for the non-safety fairway portion and 1.0-10.0 feet where the pipeline passes through the Safety Fairway Precautionary Area and then 2.0-3.0 feet southward to the southern terminus for the remaining non-safety fairway portion.

(TerraSond Limited Depth of Cover and Inspection Survey dtd 07/22/2016)

### PSN 4590 Survey Results

The PSN 4590 survey revealed one ground disturbance with potential pipeline exposure in the immediate vicinity of the eastern terminus of the pipeline in position 29-06.27' N, 94-23.7' W, outside of the safety fairway. Recorded water depths ranged from 52' from Mean Lower Low Water (MLLW) on the eastern limit to 60 feet MLLW at the western end of the segment with a safety fairway crossing depths of 50 feet at the eastern end crossing and 50 feet at the western end safety fairway crossing.

Surveyed depth of burial ranged from 1 foot at the extreme eastern end, then westward with depth of cover of 1.0-7.0 feet for the first (western) safety fairway portion then 1.0-5.0 feet for the middle non-safety fairway portion, then 3.0-6.0 feet for the second (eastern) safety fairway crossing section and finally 2.0-7.0 feet for the remaining non-safety fairway portion to the

MAY 27 2017

pipeline's western terminus.

The above possible exposure lies at the eastern terminus, outside of the safety fairway.

Side-Scan Sonar Target ID	NAD27 Decimal Minutes		US Survey Feet			Description
	Latitude	Longitude	Height	Length	Width	
Contact 001	29-06.36'N	094-23.7' W	0.0	129.08	23.88	Possible Exposure

### PSN 12579 Survey Results

The PSN 12579 survey revealed seven contacts and six potential pipeline exposures which are outlined below (all outside the safety fairway). Recorded water depths ranged from 45' from Mean Lower Low Water (MLLW) on the northern limit to 33' MLLW at the southern end of the segment atop of Heald Bank with a safety fairway crossing depth of 45-46 feet.

Surveyed depth of burial ranged from 3 feet at the extreme northern end, then southward with depth of cover of 2.0-6.0 feet for the safety fairway crossing portion then 1.0-4.0 feet for the

Side-Scan Sonar Target ID	NAD27 Decimal Minutes		US Survey Feet			Description
	Latitude	Longitude	Height	Length	Width	
Contact 001	29-16.32'N	094-10.38' W	0.0	68.91	2.62	Possible Exposure
Contact 002	29-15.9' N	094-10.2' W	0.0	190.9	2.47	Possible Exposure
Contact 003	29-12.36' N	094-10.86' W	0.0	94.07	7.72	Possible Exposure
Contact 004	29-12.18' N	094-10.92' W	0.0	87.38	2.54	Possible Exposure
Contact 005	29-12.12' N	094-10.92' W	0.0	63.05	2.83	Possible Exposure
Contact 006	29-13.32' N	094-10.68' W	0.0	79.60	1.83	Possible Exposure
Contact 007	29-11.7' N	094-10.98' W	0.0	8.03	6.83	Possible Debris

non-safety fairway portion to the pipeline's southern terminus.