Scanning
ROW G01681B
SN 15585 & 18881 updated

United States Department of the Interior

BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
Gulf of Mexico OCS Region
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

In Reply Refer To: GE 1035A

March 15, 2013
(Revised)

Mr. Larry Alexander
Crimson Gulf, LLC
496 Corporate Drive
Houma, Louisiana 70360

Dear Mr. Alexander:

Reference is made to the following application that has been reviewed by this office:

Application Type: Right-of-Way Route Modification
Application Date: February 12, 2013
Work Description: Request to modify pipeline by partial relinquishment, partial abandonment and installation new pipe to connect to segment no. 3034. The to-be abandoned portion of the pipeline is given segment number 18881. This modification is being done to go around the to-be removed South Marsh Island Block 58 A Platform.

Segment Numbers	Size (inches)	Length (feet)	Service	From	To
15585	08	90,191	Oil	12 SSTI Vermilion Area Block 255 OCS-G01152	12-inch SSTI South Marsh Island Area Block 58 OCS-G01194
18881	08	138	Oil	Capped end South Marsh Island Area Block 58 OCS-G01194	Platform A South Marsh Island Area Block 58 OCS-G01194

Right-of-Way OCS-G01681B

Pursuant to 30 CFR 250.1000(b), your request is hereby approved.
Pursuant to 30 CFR 250.1751, your request to abandon a portion of segment no. 15585 is hereby approved.

Segment No.	MAOP (psig)	MAOP Determination
15585	1440	Valves, Flanges, Subsea Segments

Please submit as-built plats for this modification when completed. Also in accordance with a Letter to Lessees dated April 18, 1991, a copy of the as-built plat must be submitted to the NOAA-National Ocean Service-OCS, Chief, Nautical Data Branch, N/CS26, 1315 East West Highway, Silver Spring, MD, 20910-3282

Right-of-way OCS-G01681B is described as:

A 200 foot wide right-of-way for the operation and maintenance of two existing pipelines; one 8-inch pipeline, 2.39 miles in length (SN 15584), to transport oil from an 8-inch SSTI with SN 12530 in Vermilion Area Block 247, through Vermilion Area, South Addition, Block 256, to an 8-inch subsea tie-in with SN 15585 in Vermilion Area, South Addition, Block 255; and one 8-inch pipeline, 17.08 miles in length (SN 15585), to transport oil from a 12-inch subsea tie-in with SN 15586, in Vermilion Area, South Addition, Block 255, through Vermilion Area, South Addition Block 254, Vermilion Area Blocks 249, 250, 233, 232, South Marsh Island Area, Blocks 70 and 57, to a 12-inch subsea tie-in with segment 3034 in Block 58 all in South Marsh Island Area.

Sincerely,

Digitally signed by Frank Patton
DN: cn=Frank Patton, o=BSEE, ou=Pipeline, email=frank.patton@bsee.gov, c=US
Date: 2013.03.18 14:41:01 -05'00'

(for) Nick Wetzel
Regional Supervisor
Regional Field Operations

bcc: 1502-01 Segment No. 15585, 18881, ROW OCS-G01681B (GE 1035A)
1502-01 ROW OCS-G01681B (Scanning) (GE 274E)

Scanning
ROW OCS-G 01681 B

CRIMSON GULF, LLC
496 Corporate Drive
Houma, LA 70360

February 12, 2013

U.S. Department of the Interior
Bureau of Safety and Environmental Enforcement
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Attn: Acting Pipeline Section Chief
MS GE 1035A

Re: Application to Modify Existing 8-inch Oil Right-of-Way Pipeline by Partial Relinquishment, Partial Abandonment and Installation of New Pipe, Segment 15585 ROW OCS-G 01681B Originating at a Subsea Tie-in Located in Vermilion Block 255 and Terminating at A Platform, South Marsh Island Block 58, Offshore Louisiana

Gentlemen:

Pursuant to regulations contained in Title 30 CFR 250 Subpart J, Crimson Gulf, LLC (Crimson) hereby submits this application in quadruplicate to modify the subject pipeline by partial relinquishment, partial abandonment and installation of new pipe. The modifications consist of disconnecting Pipeline Segment 15585 from the South Marsh Island Block 58 A platform and reconnecting the pipeline underwater to existing Pipeline Segment 3034. Note: An application to modify Segment 3034 is being submitted by Crimson under separate cover.

Crimson respectfully requests your expeditious review and approval of this application as Apache's platform removal deadline is July, 2013. Therefore, it will be necessary for Crimson to start the modification work by mid June, 2013.

Installation of the new pipeline will be accomplished with a dive boat and divers. The new pipe will be jetted to a minimum of 3 feet below the mudline. There are two pipeline crossings along the proposed route, as reflected on the attached pipeline route map.

We expressly agree that if any site, structure, or object of historical or archaeological significance should be discovered during the conduct of any operations within the permitted right-of-way, we shall report immediately such findings to the Director, Gulf of Mexico OCS Region, and make every reasonable effort to preserve and protect the cultural resource from damage until said Director has given directions as to its preservation.

In accordance with Notice to Lessees (NTL) No. 2008-G05, Section VI, paragraph B, during construction operations, Crimson will utilize an on-board state-of-the-art real time navigational positioning equipment (e.g., DGPS) system to depict all existing pipelines and other potential hazards located within 150 meters (490 feet) of the operations.

Crimson Gulf, LLC will be the operator of the subject right-of-way pipeline. This application (and any amendments made hereto) is made with our full knowledge and concurrence with the OCS Lands Act (43 U.S.C. 1331 et. seq.), as amended (P.L. 95-372), including the following: Sec. 5(e) addressing pipeline rights-of-way, requirements of the Federal Energy Regulatory Commission relating to notice of hearing, transportation and purchase of oil and gas without discrimination; Sec. 5(f)(1) addressing operation of pipelines in accordance with competitive principles, including open and nondiscriminatory access to both owner and non-owner shippers; Sec. 5(f)(2) which may allow exemption of the requirements in Sec. 5(f)(1); Sec. 5(e) addressing the assuring of maximum environmental protection, including the safest practices for pipeline installation; and Sec. 5(f)(1)(B) which may require expansion of throughput capacity of any pipeline except for the Gulf of Mexico or the Santa Barbara Channel.

In accordance with applicable regulations, we have forwarded information regarding the proposed project by Federal Express, receipt of which will be confirmed, to each designated oil and gas lease operator, right-of-way or easement holder whose lease, right-of-way or easement is so affected. A list of such designated operators, a right-of-way or easement holders is included in this submittal. Copies of receipt confirmations showing date and signature as evidence of service upon such operators, right-of-way or easement holders will be forwarded to your office when received.

In order to expedite the permit process, we have requested a letter from the operator, right-of-way or easement holder expressing no objection to the proposed project. When obtained, these letters will be forwarded to your office. The proposed right-of-way does not adjoin or subsequently cross state submerged lands.

Applicant agrees to be bound by the foregoing regulations, and further agrees to comply with the applicable stipulations as set forth in Title 30 CFR 250 (Subpart J) and that certain Letter to Lessees dated April 18, 1991.

In support of our application, the following maps, drawings and documents are enclosed:

1. Pay.gov documentation of payment in the amount of $3865.00
2. Originally signed copy of Nondiscrimination in Employment Stipulation is attached to each copy of the application
3. Designated Oil & Gas Lease Operators and Right-of-Way Holders and copies of submittal letters to same
4. Pipeline Description and Reroute
5. General Information and Calculations
6. Maps and Construction Drawings
7. Pipeline Safety Schematics
8. Pipeline Equipment Brochures
9. Underwater Survey

Contact on technical points or other information:

Gaby Medrano
J. Connor Consulting, Inc.
16225 Park Ten Place, Suite 700
Houston, Texas 77084
(281) 698-8524
Email address: gaby.medrano@jccteam.com

Bryan Lee
Chapman Consulting, Inc.
338 Thoroughbred Drive
Lafayette, LA 70507
Phone: (337) 896-1721
Email address: blee@chapmanconsulting.net

Crimson Gulf, LLC hereby agrees to keep open at all reasonable times for inspection by the Bureau of Ocean Energy Management, Regulation and Enforcement the area covered by this right-of-way and all improvements, structures, and fixtures thereon and all records relative to the design, construction, operation, maintenance, and repairs, or investigations on or with regard to such area.

Please refer to your New Orleans Miscellaneous File No. 3218 for a copy of a resolution approved by the Board of Directors authorizing the undersigned to sign for and on behalf of Crimson Gulf, LLC. Additionally, Crimson Gulf, LLC has an approved $300,000 Right-of-Way Grant Bond on file with the Bureau of Ocean Energy Management, covering installation of right-of-way pipelines in Federal Waters, Gulf of Mexico.
Should you have questions or require any additional information, please contact Gaby Medrano at 281-698-8524 or by email at gaby.medrano@jccteam.com.

Sincerely,

Crimson Gulf, LLC

Larry W. Alexander
Manager and Chief Operating Officer

LWA:BL:GM
Enclosures

Gaby Medrano

From: paygovadmin@mail.doc.twai.gov
Sent: Wednesday, February 13, 2013 4:15 PM
To: Gaby Medrano
Subject: Pay.gov Payment Confirmation: BSEE Pipeline ROW Modification Application - BY

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Wendy Yanez at (504) 736-2818.

Application Name: BSEE Pipeline ROW Modification Application - BY Pay.gov Tracking ID: 259JCVN0 Agency Tracking ID: 74410524385 Transaction Type: Sale Transaction Date: Feb 13, 2013 5:15:13 PM

Account Holder Name: Leland Chapman
Transaction Amount: $3,865.00
Billing Address: 338 Thoroughbred Dr.
City: Lafayette
State/Province: LA
Zip/Postal Code: 70507
Country: USA
Card Type: AmericanExpress
Card Number: **********3010

Region : Gulf of Mexico
Contact: Gaby Medrano 281-698-8524
Company /Co No: Crimson Gulf, LLC, 03218 Pipeline Segment No.: 15585 Originating Area/Block: Vermilion VR, 255 Terminating Area/Block: South Marsh Island SM, 58

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

DESIGNATED OIL & GAS LEASE OPERATORS & RIGHT-OF-WAY HOLDERS

The following Designated Oil & Gas Lease Operators and Right-of-Way Holders have been furnished information regarding the proposed pipeline installation by Federal Express; confirmation of receipt will be confirmed.

SOUTH MARSH ISLAND AREA

BLOCK 58

Apache Corporation	OCS-G 01194	Oil & Gas Lease
Apache Corporation	ROW OCS-G 15001 Segment 10529	Right-of-Way
Apache Corporation	ROW OCS-G 14705 Segment 10333	Right-of-Way

NONDISCRIMINATION IN EMPLOYMENT

As a condition precedent to the approval of the granting of the subject pipeline right-of-way, the grantee, Crimson Gulf, LLC hereby agrees and consents to the following stipulation, which is to be incorporated into the application for said right-of-way.

During the performance of this grant, the grantee agrees as follows:

> During the performance under this grant, the grantee shall fully comply with paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended (reprinted in 41 CFR 60-1.4(a)), which are for the purpose of preventing discrimination against persons on the basis of race, color, religion, sex or national origin. Paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended, are incorporated in this grant by reference.

Signature

February 12, 2013

Date

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February 12, 2013

Date

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Signature

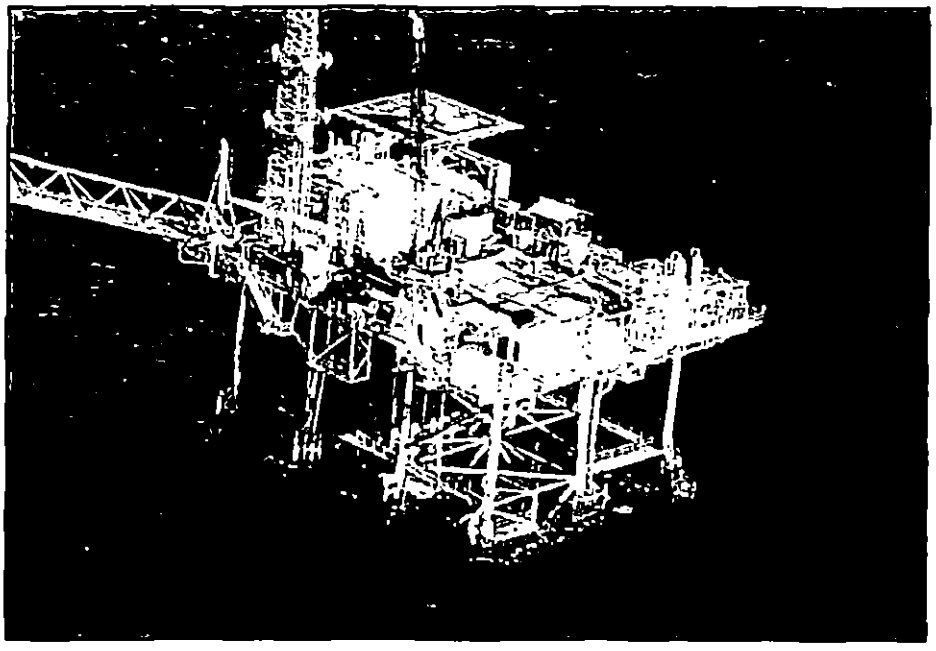
February 12, 2013

Date

Crimson Gulf, LLC

SM-58 PL Re-route Permit Application Seg# 15585

January 29, 2013



Crimson Gulf, LLC.
496 Corporate Drive
Houma, LA 70360

CRIMSON GULF, LLC

SM-58 Pipeline Reroute

Project Summary

February 5, 2013

Crimson Gulf, LLC request approval to disconnect 3 of its pipeline segments #15585, #3034 and #14480 from the SM-58 "A" platform and to reconnect these pipeline segments underwater. One permit package is being submitted for each individual pipeline segment, therefore a total of 3 permit packages are being submitted for this particular project.

The SM-58 "A" Platform is being removed in July of 2013 by its owner, Apache Corporation. Therefore, it is necessary for Crimson to disconnect its two 12" and one 8" oil pipelines (segment #15585, #14480 and #3034) from the platform **prior to mid July. It will be necessary to start the offshore work by mid June in order to meet the platform removal deadline.**

The SM-58 pipeline reroute work sequences in regards to the three different pipeline segments are:

1. PL Seg #14480 (12" Departing) - Reroute modifications Phase I
    A. Platform disconnection and installation of new subsea connection

2. PL Seg #3034 (12" Incoming) - Reroute modifications Phase I
    A. Platform disconnection, installation of new subsea connection and installation of 276' of 12" piping

3. PL Seg #15585 (8" Incoming) - Reroute modifications Phase I
    A. Platform disconnection, installation of new subsea connection and installation of 255' of 8" piping

4. PL Seg #14480, #3034 and #15585 Phase II
    A. High pressure leak test and dewater pipelines to return to service

Should there be any questions in regards to the permit application do not hesitate to contact Randy Chapman or Bryan Lee at Chapman Consulting, Inc (Phone 337-896-1721).

Thanks

Bryan Lee
Project Engineer
Office: (337) 896-1721
blee@chapmanconsulting.net

Table of Contents

I. Pipeline Description and Re-route Procedure

CRIMSON GULF, LLC

PIPELINE REROUTE PROCEDURE TO
CONNECT PIPELINE SEGMENT #15585,
VIA SUBSEA AT SM-58
January 29, 2013

8" Pipeline Segment #15585, incoming pipeline from VR-255 SSTI
Rev. #0

Pipeline Description:

Segment #	15585
ROW #	1681B
Service	Crude Oil Sales
Diameter	8"
Length of Existing Pipe	90,108 ft
Length of Pipe to be used	89,936 ft
Length of New pipe	255 ft
Length of Pipe in Service after Reroute	90,191 ft
Length of pipe to be abandoned in place	138 ft
Length of pipe to be removed	34 ft
MAOP	1440 psi
Origin	VR-255 "SSTI" (WD = 155 ft)
Termination	SM-58 "A" Platform (WD = 130 ft)
Current Configuration	SSTI x Riser
Proposed Configuration	SSTI x SSTI
Lateral Lines Attached	Seg #15584 and #15586 (owned by Crimson), Seg #10771 (owned by others)

Permit Requested:
Crimson Gulf, LLC (Crimson) requests approval to disconnect pipeline segment #15585 from the SM-58 "A" Platform and to reconnect the pipeline underwater to Seg #3034. The necessary pipeline length will be removed from the existing piping, subsea connections will be made and new piping will be installed to connect the pipeline via subsea. Upon disconnection of the SM-58 "A" platform and installation of the new SS connections with piping, normal pipeline operations will be resumed.

Background:
The SM-58 "A" Platform is being removed in July of 2013 by its owner, Apache Corporation. Therefore, it is necessary for Crimson to disconnect its 8" oil pipeline (segment #15585) from the platform **prior to mid July**. This procedure describes the proposed process for pipeline disconnection from the platform and reroute installation via subsea. **It will be necessary to start the offshore work by mid June in order to meet the platform removal deadline.**

Work Plan Summary:
After depressurization, the pipeline will be safely cut back to approximately 150 ft from the platform and terminated with a "Grip Lock End Connector" type connection and block valve. Oil will be displaced from the line using pigging prior to cutback of the line and a pollution dome will be used to ensure that no oil escapes the pipeline into the environment. The terminated line will then be reconnected as per drawing No. 3043.00-108 using prefabricated and previously hydro tested piping and components. A leak test will be performed on the newly assembled pipe spools prior to placing line back into service.

Reroute Procedure for Pipeline Segment #15585
Phase I – Platform disconnection, subsea tie-in installation and piping installation

1. Work procedures will be coordinated with Apache Corporation and all affected platform operators. Pipeline shut-in notification to all affected producers will be made well in advance of the proposed work.
2. Mobe surface construction crew and pumping crew via utility boat and prepare to launch pigs.
3. Mobe Dive spread, 4 pt anchor boat.
4. General procedure: JSA and safety meetings will be conducted at every 12 hour shift change and also prior to starting work at a new location.
5. Confirm that Phase I reroute modifications for pipeline segment #14480 and #3034 is complete before proceeding.
6. Each platform connected to the pipeline segments listed herein shall have all pressure sources to the pipeline shut-in and locked closed using a lock-out tag-out (LOTO) procedure prior to commencing any dive operations and shall remain in communication with the dive boat throughout all dive construction activities.
7. Completely de-pressure pipeline segments #15585, #11158, #10099, #3034, #6367, #6230, #14480, #11461, #15586, #15584, #15860, #12530, #17026, and #10771. This de-pressuring will be done by shutting off and locking out flow from Platforms VR-214 A, SM-147 A, SM-130 A, SM-106 A, SM-99 A, WC-498 B-Aux, VR-256 E, VR-245 C, VR-215 A, VR-252 A and SM-58 A.
8. 8" Incoming PL Seg #15585:
    a. Divers lock open-the VR-252 A (or alternate platform) subsea check valve.
    b. Depressure PL and lock-out / tag-out all pressure sources.
    c. Launch pig from SM-58 A in reverse flow direction and receive displaced fluids at VR-252 "A" (or alternative) Platform.
    d. At SM-58 A, mark cut point, set pollution dome, prepare line for installation of "Grip Lock End Connector". Take CP readings on Pipeline at "Grip Lock End Connector" installation point.
    e. Cut line at base of riser and at "Grip Lock End Connector" installation point.
    f. Install "Grip Lock End Connector" and ball valve assembly. Close ball valve.
    g. Hydrotest seals of "Grip Lock End Connector".
    h. Retake CP readings on section of pipeline to remain in service.
    i. Label and retain cut out pipe for use in integrity management program.
9. Install concrete mats and sandbag cover at each pipeline crossing location.

10. Install prefabricated and hydrotested 8" pipe spools, per dwg No. 3034.00-108, which will tie-in the 8" pipeline Seg #15585 into the 12" pipeline Seg #3034 near the piggable "wye" fitting.

This completes the subsea tie-in and reroute modifications for pipeline segment #15585. Once all piping has been installed for pipeline reroute segments #14480, #3034 and #15585 proceed to Phase II (pressure testing and dewatering).

Reroute Procedure for Pipeline Segment #15585
Phase II – Pressure testing and dewatering
Do not proceed with phase II until phase I reroute modifications are completed for pipeline segments #14480, #3034, and #15585. Phase II procedure is the same for all 3 of the SM-58 pipeline reroute segments (#14480, #3034, and #15585).

1. Perform 2 hour high pressure leak test (1800 psi) on newly assembled pipe spools.
2. Install mats and sandbags over each of the pipeline crossings as per dwg no. SD-45879.
3. Dewater each pipeline by flowing water to the dive boat via high pressure return hose and capturing water in receiving tanks. Recovered water will be either filtered and sent overboard or it will be sent to shore and disposed. Water will be displaced during dewatering by a single platform pumping to the pipeline while in direct radio contact with that platform. Pigs will be left in the pipeline for eventual displacement to shore.
4. Remove lock out and tag out controls at SM-130 A, VR-215 A and EI-188 A only.
5. Re-pressure the pipeline system and perform 2 hour leak test with available system pressure.
   a. Resume pipeline operations with only SM-130 A and VR-215 A pumping and with EI-188 A receiving.
   b. Once normal system operating pressure of about 300 psi at EI-188 A is resumed, observe pipeline segments #15585, #3034, and #14480 for leaks by helicopter for 2 hours after pipelines are re-pressured for operation.
6. After the 2 hour leak test is complete removal all remaining lock out tag out controls and resume normal pipeline operations.
7. Unlock SS check valve at VR-252 A SSTI. Cover valve with either sand/cement bags or mat.
8. Remove cut out pipeline sections and recover to surface. Label and retain all cut out pipe for use in integrity management program.
9. Surface crew to cut out a 2 ft long section of each of the 3 risers (seg #14480, #3034, and #15585) and plug openings with plumber's plugs. Add pipe support for the cut risers if needed.
10. Demobe dive and surface crews.
11. Sent reports and records to BSEE.

Mitigation Measures:

1. Company representatives shall be on-site (dive boat and SM-58 "A" Platform) during all construction activities to monitor contractor's work and to ensure that the work plan is followed accurately by both contractor and by producers and that precautions are taken to prevent a safety or environmental incident.
2. The pipeline to be cut (segment #15585) shall be completely isolated from any source of pressure or product (isolated by pig) prior to beginning any cutting or disassembly work on the underwater pipeline.
3. A pollution dome will be in place prior to any activities where crude oil could escape the system. Any pollution dome used will be separately piped back to a 25 bbl cutting box or tank on the dive boat.

Attachments:

Drawing 3034.00-300 - Fugro Vicinity Map / Pipeline Plat
Drawing 3034.00-301 - Fugro Pipeline Reroute Base Map
Drawing 3043.00-100 - Sub-Sea Connection of Proposed 8" line to Existing 8" Seg# 15585
Drawing 3043.00-105 - Sub-Sea Connection of Proposed 12" line to Existing 12" Seg# 3034
Drawing 3043.00-108 - SM-58 A Proposed Pipeline Reroute
Drawing 3034.00-114 - SM-58 A Pipeline Abandonment Plan
Drawing 3034.00-115 - SM-58 Pipeline Reroute Profile
Drawing SD-80699 - Flow Diagram between VR-255 & SM-58 A
Drawing SD-45879 - Pipeline Crossing in Water Depth Less than 200 ft

II. General Information and Calculations

Crimson Gulf, LLC
8" Oil Lease Pipeline Reroute – Seg #15585
Block 58, South Marsh Island Area
January 29, 2013

General Information and Calculations:

1. The proposed pipeline reroute will transport production of Crimson pipeline segments #15585 into pipeline segment #3034 via subsea connection. These pipelines currently tie in together on Apache's SM-58 A structure which is going to be abandoned in July 2013.
2. Maximum source pressure to the pipeline will be limited to 1440 psi by facilities safety system.
3. The approximate maximum water depth (-) 134' MSL along the proposed pipeline reroute and in relationship to the natural bottom is set forth on the attached Pipeline "Re-route Plan and Profile" dwg no 3034.00-115.
4. The piping for the pipeline reroute will be installed via a 4-point Anchor Dive Support Vessel.
5. The description of the pipe and coating is as follows:
    a. New Line Pipe: 8.625" O.D. x .500" W.T. API-5L X-42 seamless; bare weight = 43.4#/ft. Specific gravity in seawater (empty) = 1.66. Weight coating is not required. Pipe will be coated with Scotchkote SK 6233 fusion bonded epoxy 12-14 mils. Pipe joints will be protected with coal tar epoxy or heat shrinkable wrap-around pipe sleeves.

6. Subsea Connection to existing 8.625" O.D. Pipeline Segment #15585: New 8.625" O.D. x .500" W.T. API-5L X-42 seamless pipe; bare weight = 43.4#/ft will be connected to existing 8.625" O.D. piping on Segment #15585. Subsea connections will be made to the existing 8" piping via use of a QCS Mechanical Flange connector, with ANSI 900# flanges rated at 2220 psi MAWP.

7. Internal Coating: Internal Coating is not required. The analysis of transported products will be monitored and preventative measures will be employed as necessary.

8. The proposed new piping for Segment #15585 is approximately 255 feet in length. The line will transport oil. The pipeline design working pressure is 1,440 psig. Additional pipe tally information for pipe abandoned and pipe removed is shown on drawing 3034.00-301.

9. Valves and Flanges: All Valves and Flanges will be ANSI 900# series with rated working pressure of 2220 PSIG.

10. PIPELINE SUMMARY
    a. New Line Pipe Specifications:

O.D	W.T	Material Spec.	Length	MAOP
8.625"	.500"	API 5L X-42 Seamless	255 Ft.	1440 PSI

Crimson Gulf, LLC
8" Oil Lease Pipeline Reroute – Seg #15585
Block 58, South Marsh Island Area
January 29, 2013

11. Line Pipe Coating:

    a) 8.625" O.D. x .500" W.T. API-5LX-42 seamless
    3M Scotchkote 6233 thin film fusion bonded epoxy 12-14 mils.

12. Welded joints protected with coal tar epoxy or heat shrinkable pipe sleeves.

13. Name of Product: Oil

14. Governing Code: (where applicable)

    API RP 14C, API RP 14E, ASME B31.4, 49 CFR Chapter 1 Part 195, 30 CFR Part 250 Subpart J and ANSI B16.5.

15. Specific Gravity Calculations:

    The specific gravity of the 8.625" OD line pipe:

    The 8.625" pipe weighs 43.4 #/ft.

    Pipe displacement:
    (.785 x 8.625 x 8.625 / 144 x 1 cu ft) x (62.4 #/cu. ft. x 1.03) = 26.06# water/ft

    Specific gravity of 8.625" pipe = 43.4 / 26.06 = 1.66.

    Specific gravity of the 8.625" pipe is adequate. The weight of Skotchkote FBE protective coatings and anodes are negligible for these calculations.

16. A 2 hour high pressure leak test (1800 psi) will be performed on the newly assembled pipe spools (except for tie-in spools) before operating pressure is applied to the system. Thereafter, a 2 hour leak test using oil at available system pressure will be applied to all piping and flanges, then observed for leaks after all work is completed but prior to returning to permanent service.

17. The design of the proposed pipeline is in accordance with API RP 14C, API RP 14E, ASME B31.4, 49 CFR Chapter 1 Part 195, 30 CFR Part 250 Subpart J and ANSI B16.5. Each was applied within the scope of the intended code or regulation.

18. Pipe Wall Thickness Calculations:

    Per B31.4 code,
    $t_n \geq t + A$

    $t = (PD)/(2S)$

    $S = F \times E \times Sy$

tn = minimum required nominal wall thickness satisfying requirements for pressure and allowances
t = pressure designed wall thickness
A = sum of allowances for threading, grooving, corrosion, and erosion
D = outside diameter of pipe, (in.)
P = internal design pressure = 1440 psi
S = applicable allowable stress value
E = weld joint factor
F = design factor based on nominal wall thickness
Sy = specified minimum yield strength of the pipe
Corrosion allowance = .05"
Mill Tolerance = 12.5%

For 8.625" O.D. line pipe (using X-42 seamless):

S = F x E x Sy = .72 x 1 x 42,000 = 30,240 psi

t = (PD) / (2S) = (1440 x 8.625") / (2 x 30,240) = .205

Apply corrosion allowance (A= .05")
tn ≥ t +A ≥ .205 + .05 = .255"

Apply Mill Tolerance of 12.5%
tn ≥ .255" x (1 / (1 – 0.125)) = .29"

tn ≥ .29" for 8.625" X-42 Line Pipe

Wall thickness calculations show that the selected .500 W.T. for the 8.625" O. D. pipe is adequate.

19. Cathodic protection system

Pipeline anodes with the following characteristics will be used for cathodic protection.

Anode Type:	Tapered Semi-cylindrical Aluminum Bracelet (Galvalum III or equal)
Pipe Size:	8.625" (Length = 255')
Anode Weight:	32#
Number of anodes:	1
Spacing:	Maximum 500'
Life Expectancy:	71.2 years

Crimson Gulf, LLC
8" Oil Lease Pipeline Reroute – Seg #15585
Block 58, South Marsh Island Area
January 29, 2013

Calculations:

Life Expectancy = (38,200 x W) / (D x I x R)

Life Expectancy = (38,200 x 32) / (8.625 x 255 x 7.8)

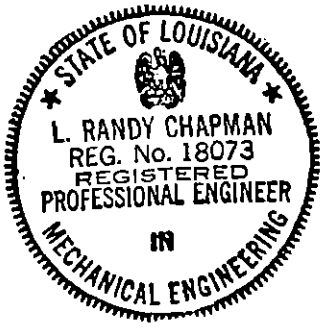
Life Expectancy = 71.2 years

Where:

Life Expectancy = life of cathodic protection system (years)
W = Weight of unit anodes (lbs) = 32
D = Diameter of pipe (inches) = 8.625
I = Interval length of pipe / total # of anodes = 255/1 = 255
R = Rate of consumption (lbs/amp year) = 7.8

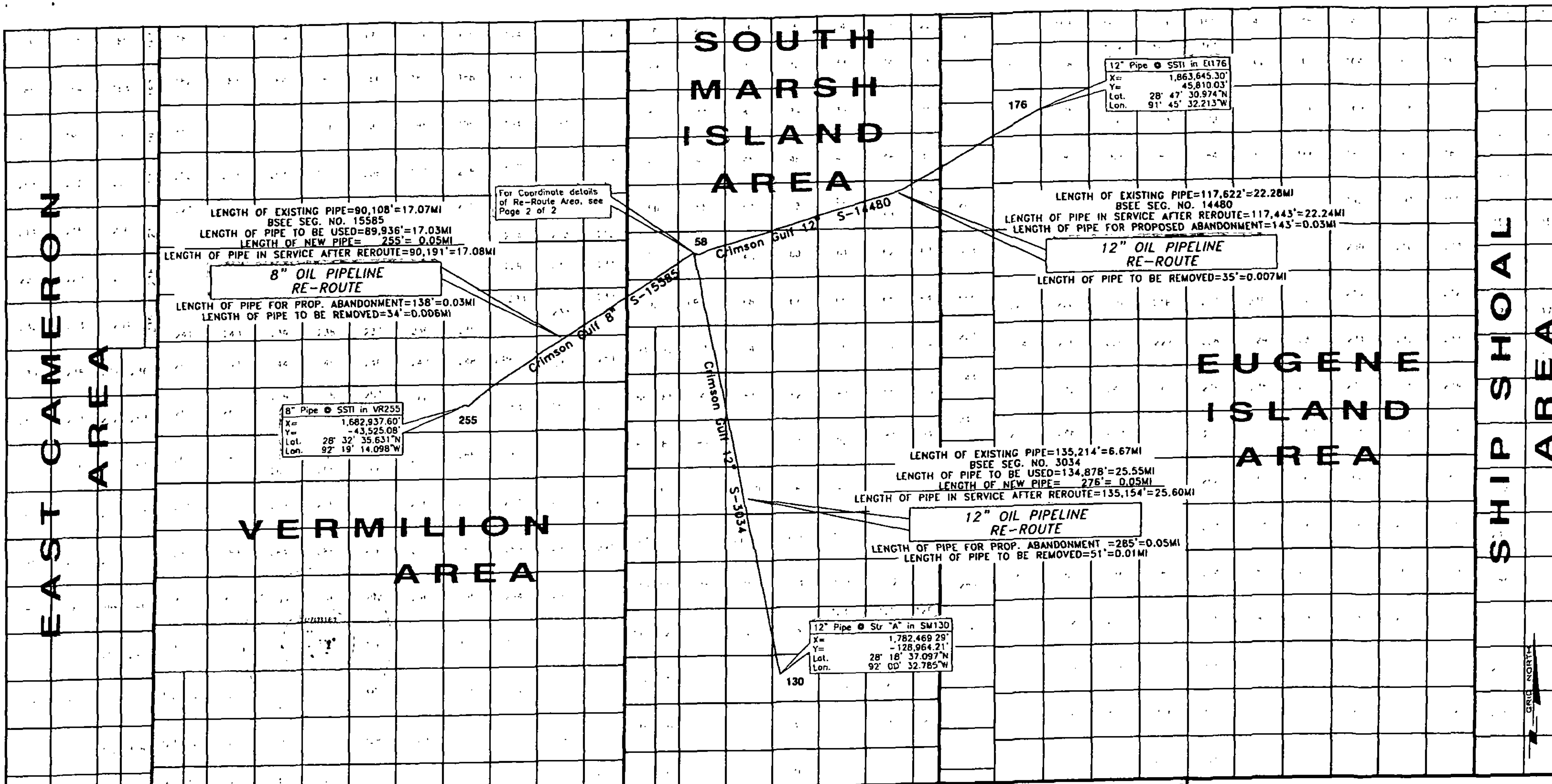
The cathodic protection system for the pipeline reroute consist of (1) 32# aluminum alloy tapered semi-cylindrical bracelet anode on the ends of the reroute piping.

Calculations Prepared by
Bryan Lee and
Randy Chapman, P.E.
Chapman Consulting, Inc.
January 29, 2013

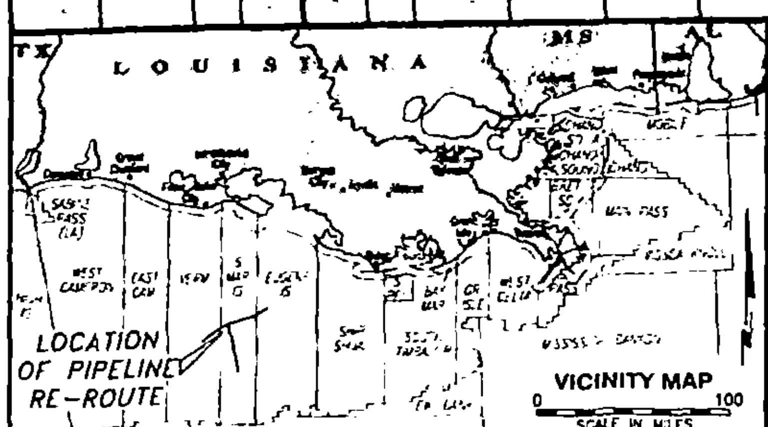


2-6-13

III. Maps and Construction Drawings



SOUTH MARSH ISLAND AREA
EAST CAMERON AREA
VERMILION AREA
EUGENE ISLAND AREA
SHIP SHOAL AREA
12" Pipe @ SSTI in EI176
X= 1,863,645.30'
Y= 45,810.03'
Lat. 28° 47' 30.974"N
Lon. 91° 45' 32.213"W
176
For Coordinate details of Re-Route Area, see Page 2 of 2
LENGTH OF EXISTING PIPE=90,108'=17.07MI
BSEE SEG. NO. 15585
LENGTH OF PIPE TO BE USED=89,936'=17.03MI
LENGTH OF NEW PIPE= 255'= 0.05MI
LENGTH OF PIPE IN SERVICE AFTER REROUTE=90,191'=17.08MI
8" OIL PIPELINE RE-ROUTE
LENGTH OF PIPE FOR PROP. ABANDONMENT=138'=0.03MI
LENGTH OF PIPE TO BE REMOVED=34'=0.006MI
58
Crimson Gulf 12" S-14480
Crimson Gulf 8" S-15585
LENGTH OF EXISTING PIPE=117,622'=22.28MI
BSEE SEG. NO. 14480
LENGTH OF PIPE IN SERVICE AFTER REROUTE=117,443'=22.24MI
LENGTH OF PIPE FOR PROPOSED ABANDONMENT=143'=0.03MI
12" OIL PIPELINE RE-ROUTE
LENGTH OF PIPE TO BE REMOVED=35'=0.007MI
8" Pipe @ SSTI in VR255
X= 1,682,937.60'
Y= -43,525.08'
Lat. 28° 32' 35.631"N
Lon. 92° 19' 14.098"W
255
Crimson Gulf 12" S-3034
LENGTH OF EXISTING PIPE=135,214'=6.67MI
BSEE SEG. NO. 3034
LENGTH OF PIPE TO BE USED=134,878'=25.55MI
LENGTH OF NEW PIPE= 276'= 0.05MI
LENGTH OF PIPE IN SERVICE AFTER REROUTE=135,154'=25.60MI
12" OIL PIPELINE RE-ROUTE
LENGTH OF PIPE FOR PROP. ABANDONMENT =285'=0.05MI
LENGTH OF PIPE TO BE REMOVED=51'=0.01MI
12" Pipe @ Str "A" in SM130
X= 1,782,469.29'
Y= -128,964.21'
Lat. 28° 18' 37.097"N
Lon. 92° 00' 32.785"W
130
GRID NORTH



BEST AVAILABLE COPY

NOTE:
THE PROPOSED PIPELINE ROUTE WAS SURVEYED WITH SCANNING SONAR AND AND DIVERS IN DEC., 2012

NOTE:
REVISED ASBUILTS OF THE THREE PIPELINES WILL BE FURNISHED AFTER CONSTRUCTION. ASCII FILES TO BE PROVIDED AT THAT TIME.

NOTE:
THIS PLAT WAS PREPARED FOR PERMIT PURPOSES ONLY, AND IS NOT A PROPERTY BOUNDARY SURVEY, AND AS SUCH DOES NOT COMPLY WITH THE "MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS" AS ADOPTED BY THE LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD.

THE RIGHT OF WAY OF THE PROPOSED PIPELINE RE-ROUTE IS ACCURATELY REPRESENTED.

STATE OF LOUISIANA
LIONEL J. CORMIER
REG. No. 4401
REGISTERED PROFESSIONAL LAND SURVEYOR

REG. PROFESSIONAL LAND SURVEYOR NO. 4401
STATE OF LOUISIANA
Printed 1/14/13

CRIMSON GULF, LLC

AREA MAP PIPELINE RE-ROUTE FOR 8" (S-15585), 12" (S-3034) & 12" (S-14480)

BLOCK 58
SOUTH MARSH ISLAND AREA
GULF OF MEXICO

FUGRO CHANCE INC.

GEODETIC DATUM: NAD27
PROJECTION: LOUISIANA SOUTH
GRID UNITS: US SURVEY FEET

SCALE IN FEET 0 — 30,000'

Job No.: 13-00047	Date: 1/30/13	Drwn: MGK	Chart: 1 Of: 2
Dwgfile: H:\...\1300047_8_12_12PLMod_VICINITY_1-03-13			#3043.00-300

SM58
OCS-G-01194
Apache

"O" (APPROX.)

Str "A"

Approx. 143' of 12" Pipe for Proposed Abandonment

Approx. 138' of 8" Pipe for Proposed Abandonment

Approx. 34' of 8" Pipe to be removed

Approx. 35' of 12" Pipe to be removed

Approx. 285' of 12" Pipe for Proposed Abandonment

Approx. 134' Water Depth 3' min. Burial

Shell FLARE S-5716

Pre-Fab Bend (PI)
X= 1,755,477.70'
Y= 3,261.17'
Lat. 28° 40' 24.230"N
Lon. 92° 05' 44.479"W

Start New 8" Pipe
New Pipe Tie-in to Existing 8"
X= 1,755,465.02'
Y= 3,250.74'
Lat. 28° 40' 24.126"N
Lon. 92° 05' 44.621"W

Pre-Fab Bend (PI)
X= 1,755,794.52'
Y= 3,274.27'
Lat. 28° 40' 24.381"N
Lon. 92° 05' 40.924"W

End New 12" Pipe
New Pipe Tie-in to Existing 12"
X= 1,755,808.79'
Y= 3,262.04'
Lat. 28° 40' 24.261"N
Lon. 92° 05' 40.763"W

S49° 24' 08"E

N50° 34' 07"E

S47° 46' 18"E FLOW New 8" Pipe

N70° 04' 38"E

N40° 08' 33"E FLOW New 12" Pipe

Crimson Gulf 8" S-15585

Crimson Gulf 12" S-14480

Apache 6" S-3240

Apache 6" S-3243

Apache 6" S-3242

Approx. 51' of 12" Pipe to be removed

Pre-Fab Bend
X= 1,755,641.01'
Y= 3,092.25'
Lat. 28° 40' 22.569"N
Lon. 92° 05' 42.633"W

N08° 58' 04"W

End New 8" Pipe
New 8" Pipe Tie-in to New 12" Pipe
X= 1,755,655.71'
Y= 3,109.67'
Lat. 28° 40' 22.743"N
Lon. 92° 05' 42.470"W

New Pipe Tie-in to Existing 12"
X= 1,755,644.01'
Y= 3,073.27'
Lat. 28° 40' 22.381"N
Lon. 92° 05' 42.598"W

Start New 12" Pipe

Pre-Fab Bend (PI)
X= 1,755,647.78'
Y= 3,106.80'
Lat. 28° 40' 22.714"N
Lon. 92° 05' 42.559"W

Crimson Gulf 12" S-3034

Apache 6" S-10529

Apache 6" S-10533

8" OIL PIPELINE RE-ROUTE

BSEE SEG. NO. 15585
LENGTH OF PIPE TO BE USED=89,936'=17.03MI
LENGTH OF NEW PIPE= 255'= 0.05MI
LENGTH OF PIPE IN SERVICE AFTER REROUTE=90,191'=17.08MI
LENGTH OF PIPE FOR PROP. ABANDONMENT=138'=0.03MI
LENGTH OF PIPE TO BE REMOVED=34'=0.006MI

12" OIL PIPELINE RE-ROUTE

BSEE SEG. NO. 3034
LENGTH OF PIPE TO BE USED=134,878'=25.55MI
LENGTH OF NEW PIPE= 276'= 0.05MI
LENGTH OF PIPE IN SERVICE AFTER REROUTE=135,154'=25.60MI
LENGTH OF PIPE FOR PROP. ABANDONMENT =285'=0.05MI
LENGTH OF PIPE TO BE REMOVED=51'=0.01MI

BSEE SEG. NO. 14480
LENGTH OF PIPE IN SERVICE AFTER REROUTE=117,443'=22.24MI
LENGTH OF PIPE FOR PROPOSED ABANDONMENT=143'=0.03MI
LENGTH OF PIPE TO BE REMOVED=35'=0.007MI

12" OIL PIPELINE RE-ROUTE

GRID NORTH

NOTE:
THE PROPOSED PIPELINE ROUTE WAS SURVEYED WITH SCANNING SONAR AND AND DIVERS IN DEC., 2012

NOTE:
REVISED ASBUILTS OF THE THREE PIPELINES WILL BE FURNISHED AFTER CONSTRUCTION. ASCII FILES TO BE PROVIDED AT THAT TIME.

NOTE:
THIS PLAT WAS PREPARED FOR PERMIT PURPOSES ONLY, AND IS NOT A PROPERTY BOUNDARY SURVEY, AND AS SUCH DOES NOT COMPLY WITH THE "MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS" AS ADOPTED BY THE LOUISIANA PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD.

Printed: 1/14/13

CRIMSON GULF, LLC

BASE MAP PIPELINE RE-ROUTE FOR 8" (S-15585), 12" (S-3034) & 12" (S-14480)

BLOCK 58
SOUTH MARSH ISLAND AREA
GULF OF MEXICO

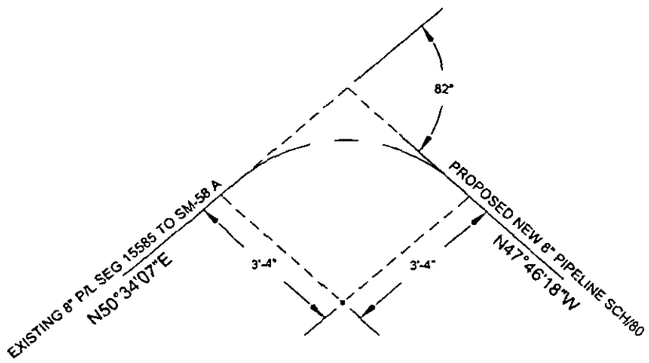
FUGRO CHANCE INC.
200 Dulles Dr. Lafayette, Louisiana 70506-3001 (337) 237-1500

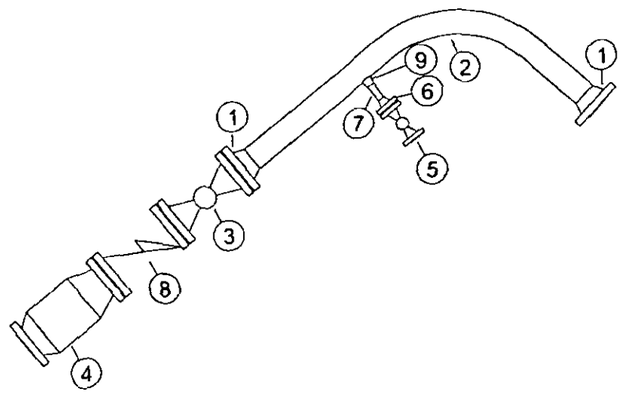
GEODETIC DATUM: NAD27
PROJECTION: LOUISIANA SOUTH
GRID UNITS: US SURVEY FEET

SCALE IN FEET 0 100'

Job No.: 13-00047 | Date: 1/30/13 | Drwn: MGK | Chart: 2 Of: 2

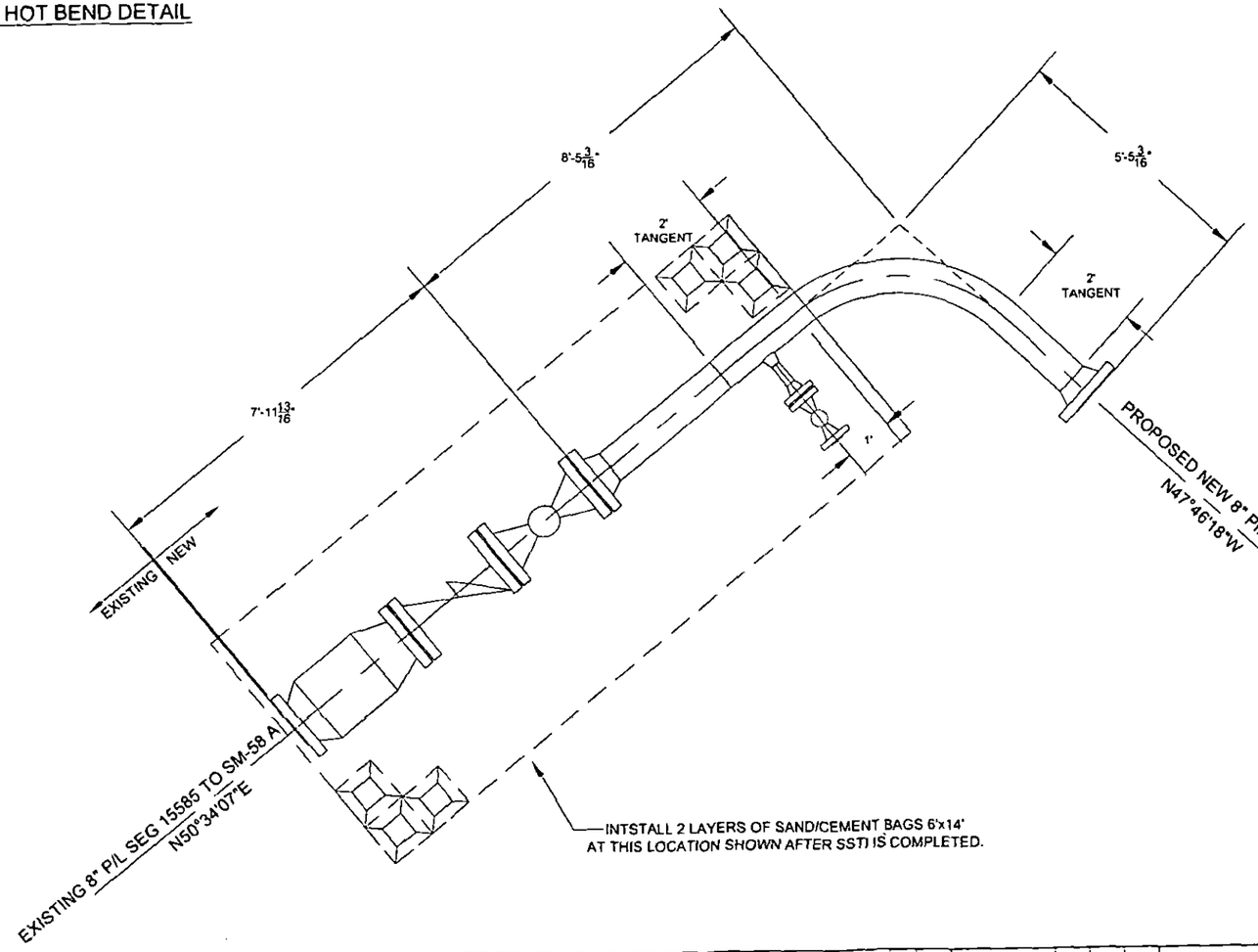
Dwgfile: H:\2013\1300047\CAD\1300047_B_12_12PLMod_1-03-13 | #3043.00-301





8" - 5-R HOT BEND DETAIL

ITEM #.	QTY.	DESCRIPTION
1	2	8" 900# RTJWN FLANGE, A-105
2	1	8" 5R HOT-BEND (3'-4" RADIUS) USING 8" S/80 API 5LX-42 SEAMLESS PIPE
3	1	8" 900# RTJ FULL OPEN BALL VALVE WITH GEARED OPERATOR, PREPARED FOR SUB-SEA SERVICE, BLASTED & PAINTED WITH 20 MILLS OF COAL TAR EPOXY INCLUDING INSIDE OF BOLT HOLES.
4	1	8" 900# RTJ GRIP LOCK END CONNECTOR WITH SEAL TEST PORT, MAOP=2220 PSI. BLASTED & PAINTED WITH 20 MILLS OF COAL TAR EPOXY INCLUDING INSIDE OF BOLT HOLES.
5	1	2" ANSI 900#, RTJ BALL VALVE, CARBON STEEL BODY, STANDARD TRIM, KF SERIES 35 W/ REPLACEABLE VITON SEAT OR APPROVED EQUAL
6	1	2" 900# RTJWN FLANGE, A-105
7	1ft.	2" S/80 API-5LX-42 SEAMLESS PIPE
8	1	8" ANSI 900#, RTJ CHECK VALVE, SWING TYPE, CARBON STEEL BODY, TOM WHEATELY
9	1	2" WELO-O-LET, A-234 GR 52



RELEASED FOR	DATE	BY	APP'D
Information			
Preliminary			
Bidding			
Client Approval			

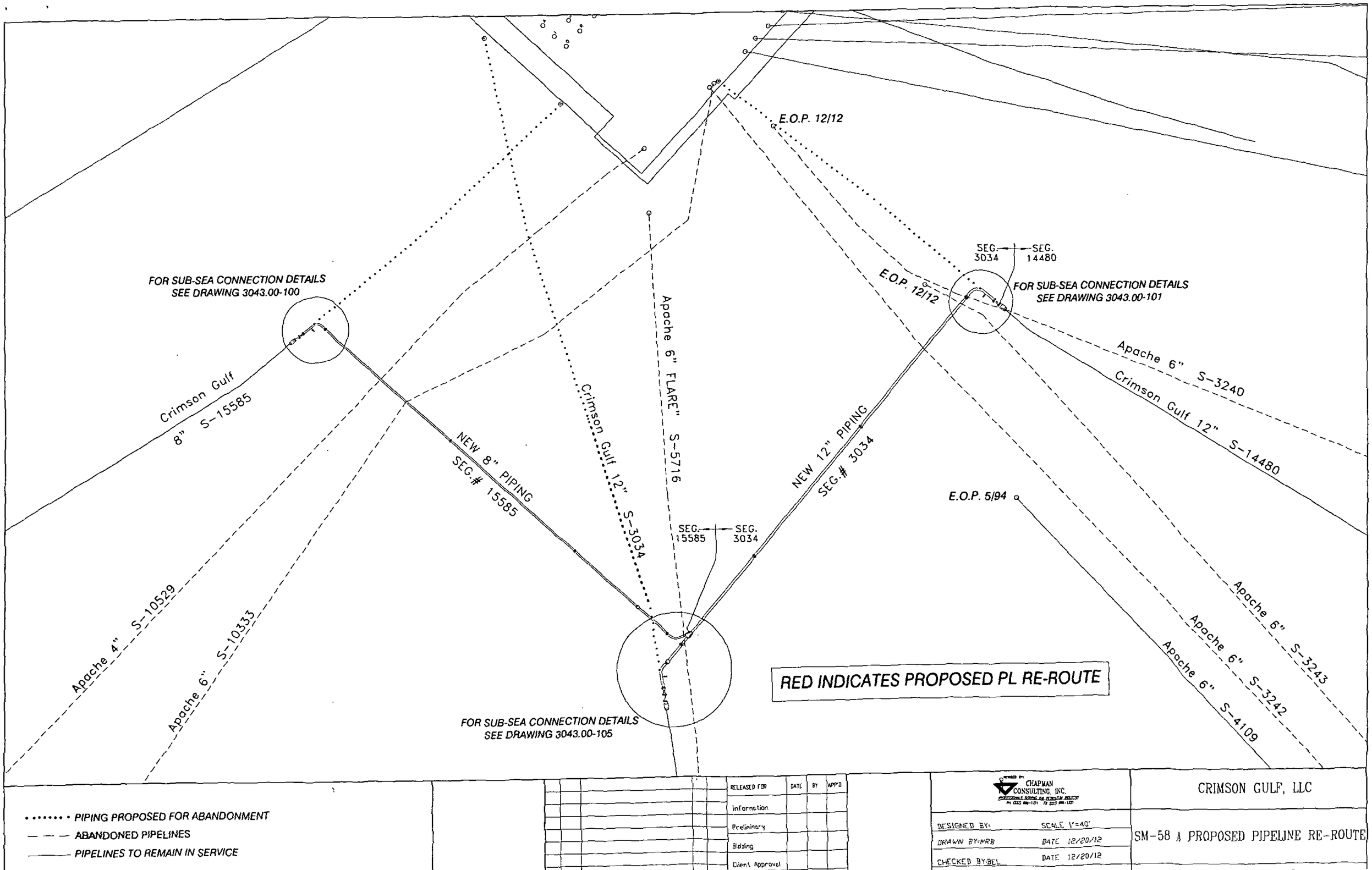
CHAPMAN CONSULTING, INC.

CRIMSON GULF, LLC

SUB-SEA CONNECTION OF PROPOSED 8" LINE TO EXISTING 8" LINE SEGMENT 15585, SM-58 A

DESIGNED BY:	SCALE NTS
DRAWN BY: MRB	DATE 11/29/12
CHECKED BY: BEL	DATE 11/29/12
APPROVED BY: LRC	PROJECT NO. 3043.00

DRAWING NO. 3043.00-100 REVISION NO. 0



RELEASED FOR	DATE	BY	APP'D
Information			
Preliminary			
Bidding			
Client Approval			

CHAPMAN CONSULTING, INC.

CRIMSON GULF, LLC

DESIGNED BY: SCALE 1"=40'

DRAWN BY: MRB DATE 12/20/12

CHECKED BY: BEL DATE 12/20/12

SM-58 A PROPOSED PIPELINE RE-ROUTE

INTO MUD

Apache 3"

Crimson Gulf 8" S-15585

OPEN END

PI X= 1,755,477.70'
Y= 3,261.17'

12/12

6/09

7/12

C/L ROUTE

12/12 Crimson Gulf 12" S-3034

12/12 Apache 6" FLARE" S-5716

Apache 4" S-10529
Reroute Crossing Not Found

Apache 6" S-10333

SEG. 15585 — SEG. 3034

PI X=1,755,655.70'
Y= 3,109.66'

PI X= 1,755,641.01'
Y= 3,092.25'

12/12

12/12

12/12

E.O.P. 12/12

SEG. 3034 — SEG. 14480

PI X= 1,755,794.52'
Y= 3,274.27'

12/12

Apache 6" S-3240

Crimson Gulf 12" S-14480

Apache 6" S-3242

Apache 6" S-3243

ROUTE 12/12

1" Wire Not Removed

E.O.P. 5/94

Apache 6" S-4109, etc

RED INDICATES PROPOSED PL RE-ROUTE

- ..... PIPING PROPOSED FOR ABANDONMENT
- – – – ABANDONED PIPELINES
- ——— PIPELINES TO REMAIN IN SERVICE
- DENOTES SCANNING SONAR DROP LOCATION 12/12.
- DENOTES SCANNING SONAR CONTACT OBSERVED 12/12.
- DENOTES SCANNING SONAR CONTACT FROM PREVIOUS SURVEY.
- DENOTES REFLECTOR LOCATIONS SET BY DIVERS 12/12.

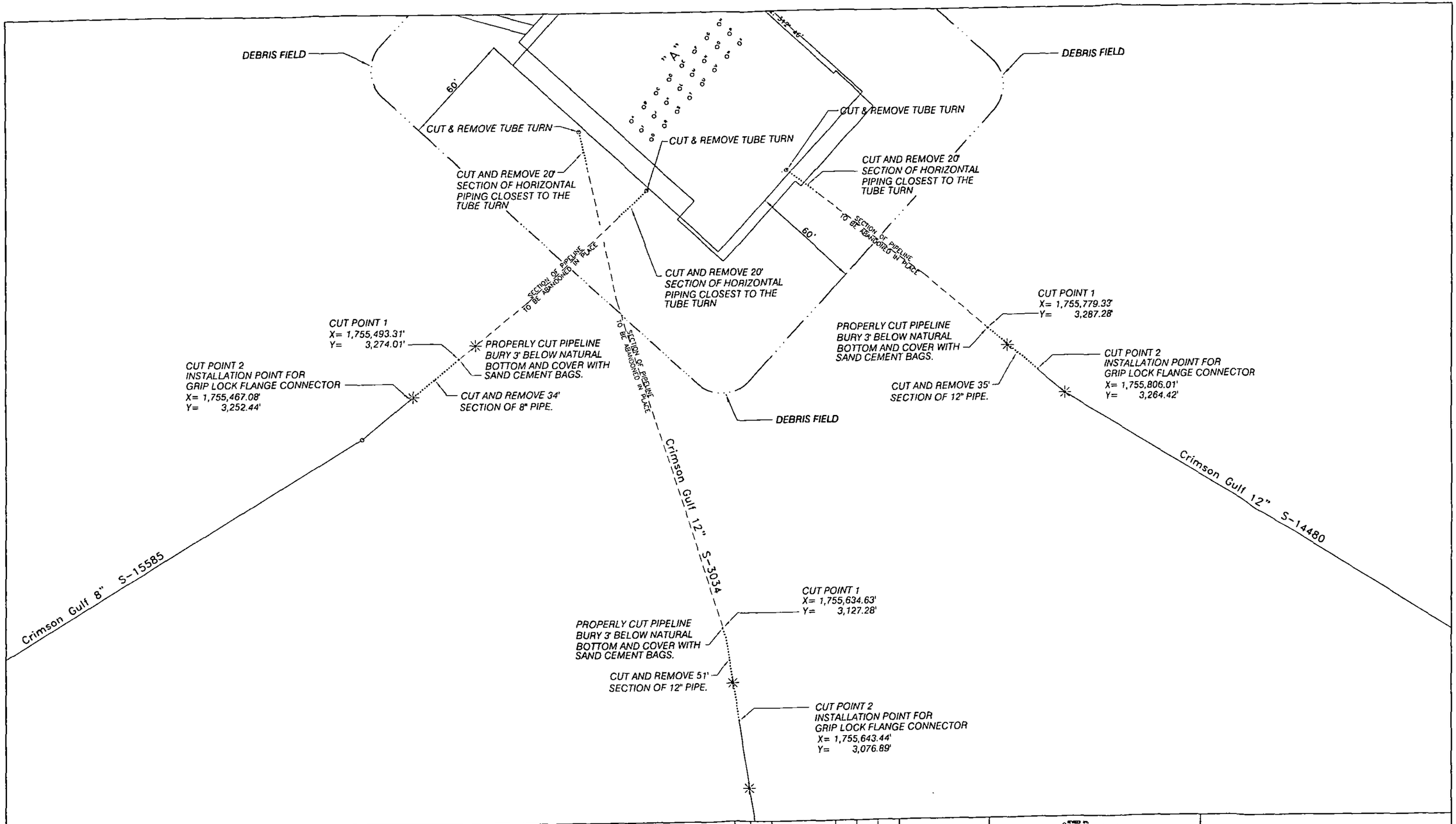
RELEASED FOR	DATE	BY	APP'D
Information			
Preliminary			
Bidding			
Client Approval			

CHAPMAN CONSULTING, INC.

CRIMSON GULF, LLC

DESIGNED BY:	SCALE 1"=50'
DRAWN BY: MRB	DATE 12/20/12
CHECKED BY: BEL	DATE 12/20/12

SM-58 A PROPOSED PIPELINE RE-ROUTE
SUB-SEA SURVEY



✳ DENOTES FIELD JOINTS FOUND BY DIVERS ON DEC. 2012.

· · · · · · · PIPING TO BE REMOVED

— — — PIPING TO BE ABANDONED IN PLACE

——— PIPING TO REMAIN IN SERVICE AFTER PIPELINE RE-ROUTE

RELEASED FOR	DATE	BY	APP'D
Information			
Preliminary			
Bidding			
Client Approval			

CHAPMAN CONSULTING, INC.

CRIMSON GULF, LLC

SM-58 A PIPELINE ABANDONMENT PLAN

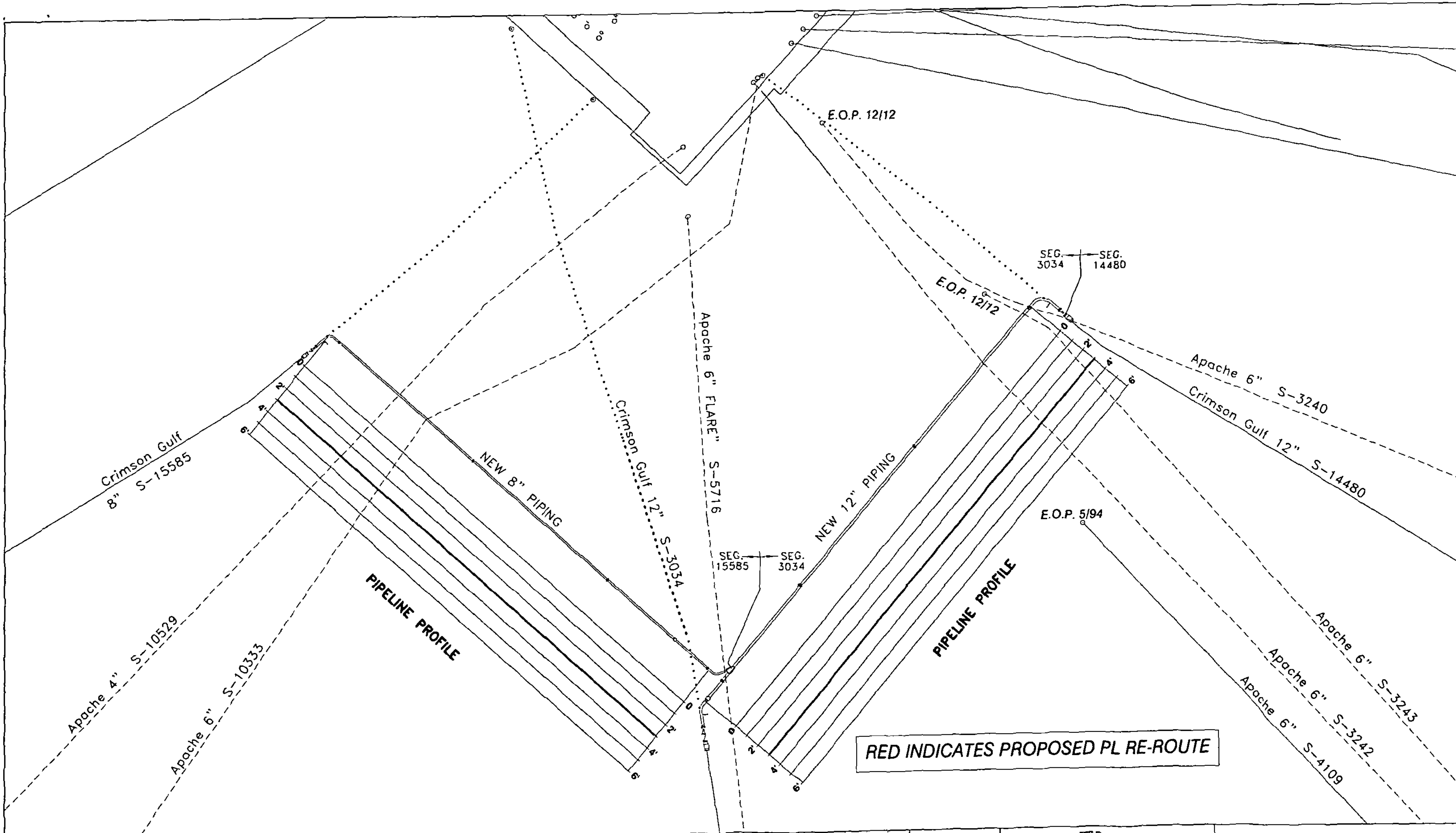
DESIGNED BY: SCALE 1"=50'

DRAWN BY:MRB DATE 12/20/12

CHECKED BY:BEL DATE 12/20/12

APPROVED BY:LRC PROJECT NO 3043.00

DRAWING NO.3043.00-114 REVISION NO. 0



.... PIPING PROPOSED FOR ABANDONMENT

— — — ABANDONED PIPELINES

——— PIPELINES TO REMAIN IN SERVICE

RELEASED FOR	DATE	BY	APP'D
Information			
Preliminary			
Bidding			
Client Approval			

CHAPMAN CONSULTING, INC.

DESIGNED BY:	SCALE 1"=40'
DRAWN BY:MRB	DATE 1/3/12
CHECKED BY:BEL	DATE 1/3/12

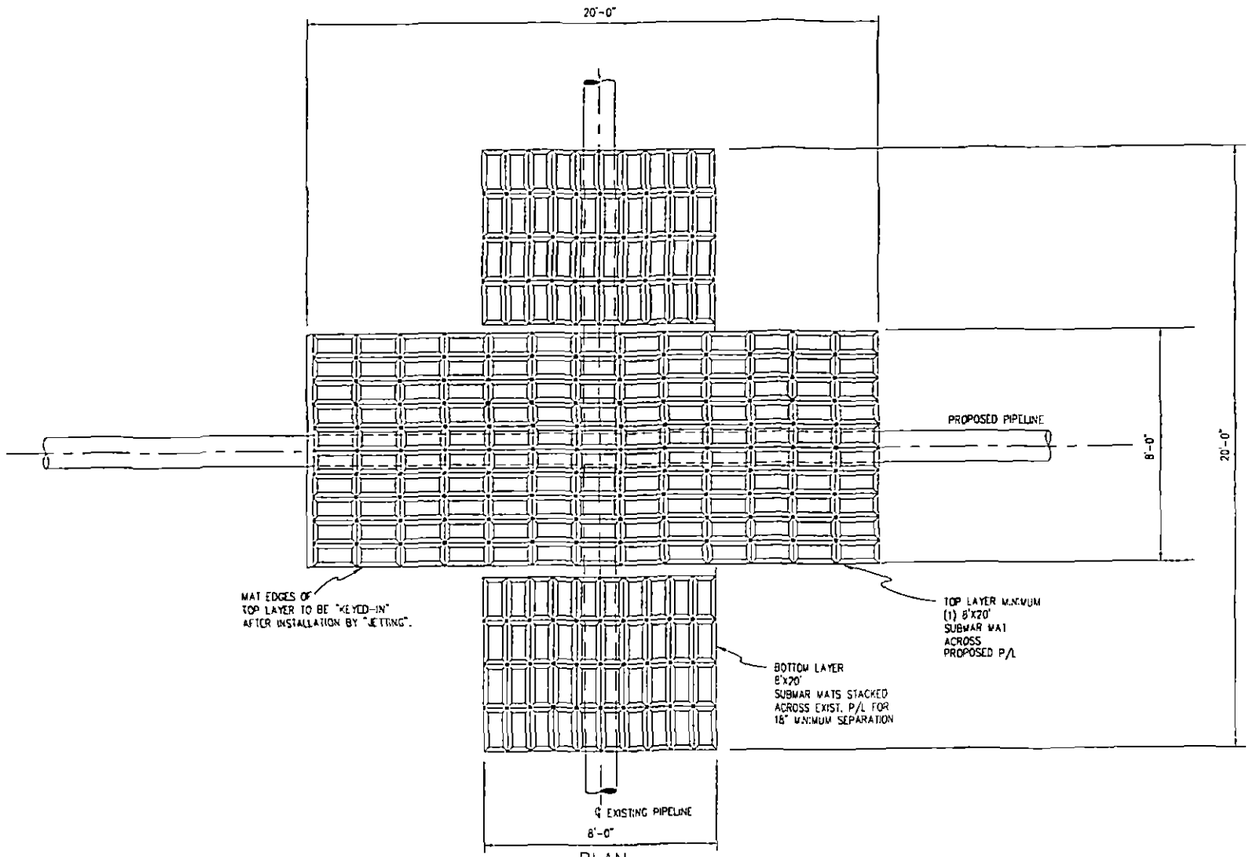
CRIMSON GULF, LLC

SM-58 P/L RE-ROUTE
PLAN AND PROFILE

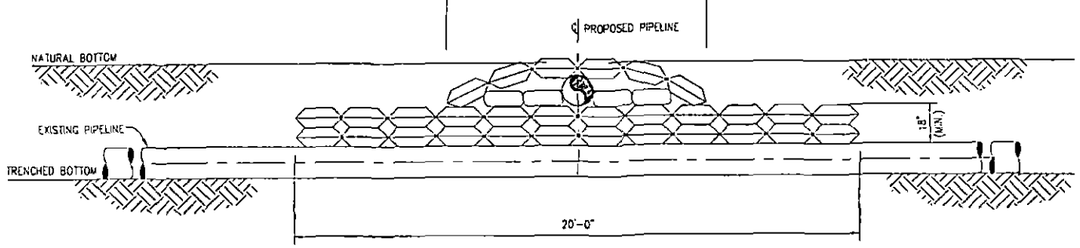
NOTE:

1. ALL CONCRETE MATS TO HAVE "TUFF-N-NUFF" COATING BONDED TO SIDE OF MATS IN CONTACT WITH NON-CONCRETE COATED PIPELINES.

2. CROSSING WILL BE ACCOMPLISHED USING A COMBINATION OF SAND/CEMENT BAGS AND MATS.

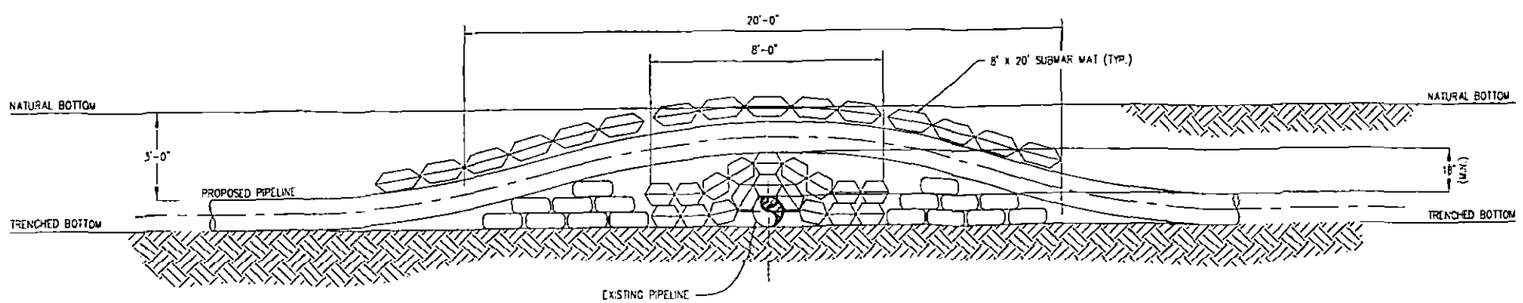


PLAN
CONCRETE MATTED CROSSING
NTS



END VIEW
SCALE: N.T.S.

SAND/CEMENT BAGS



ELEVATION
SCALE: N.T.S

COMMENTS / REMARKS

REV	DATE	DESCRIPTION OF REVISION	DWG NO.	BY	CHK	ELEC	MECH	APP	APP	APP
01	1/13	PIPELINE CROSSING		MB	RC					
00	5/97	ORIGINAL ISSUE	96-103	MSV	JK					

CENTRAL GULF GATHERING SYSTEM

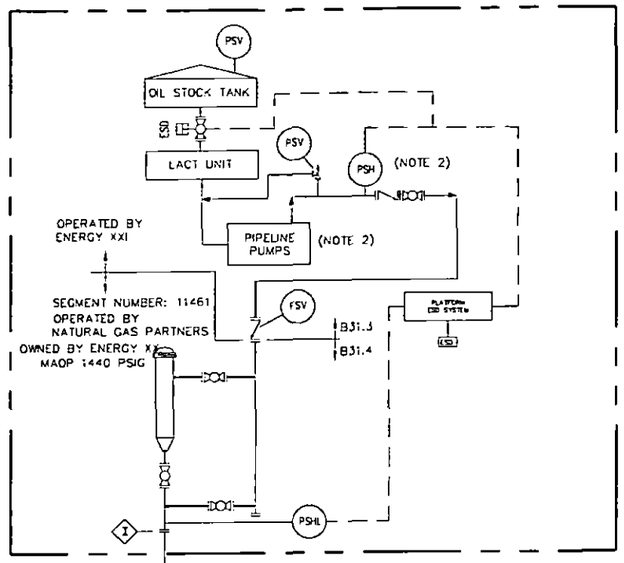
CRIMSON GULF, LLC

SURSEA 12" OIL PIPELINE
PIPELINE CROSSING IN WATER DEPTH LESS THAN 200 FT.

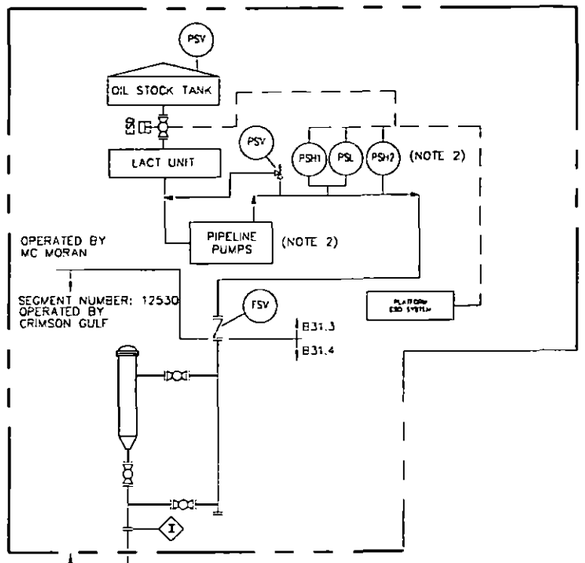
SCALE	AS NOTED	DATE	
DRWN	MSV	5/97	SD - 45879 - REV 00

IV. Pipeline Safety Flow Schematics

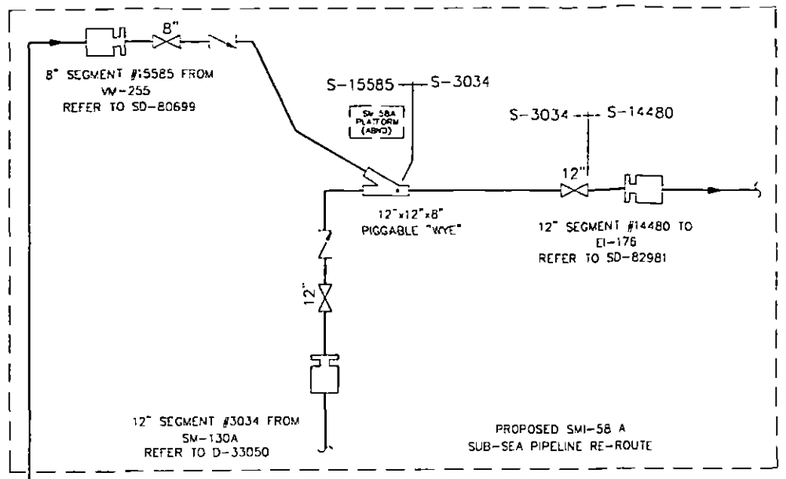
ENERGY XXI
WEST CAMERON BLOCK 498 "B-AUX" PLT.

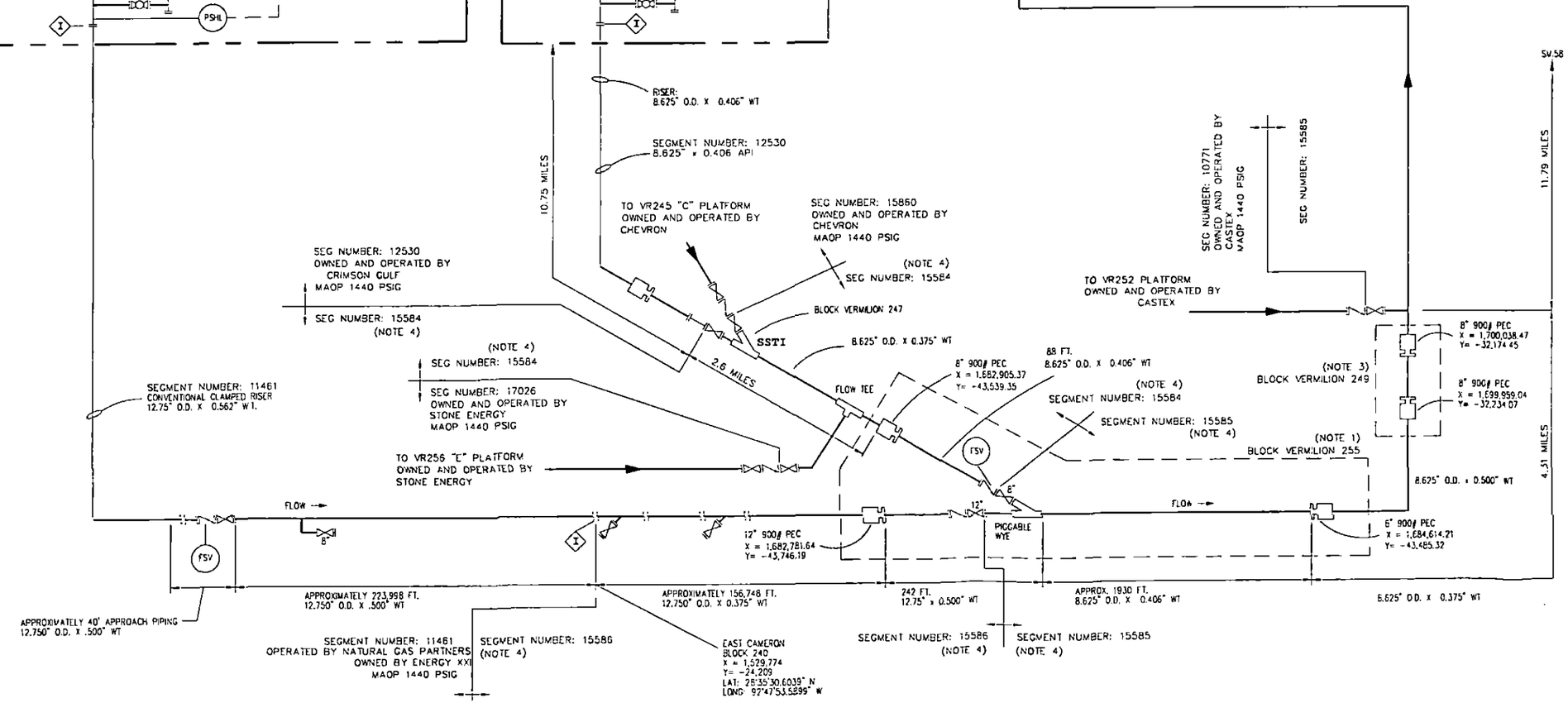


MC MORAN
VERMILION BLOCK 215 "CF" PLT.



CRIMSON GULF
SOUTH MARSH ISLAND BLOCK 58 SUB-SEA PIPELINE RE-ROUTE





NOTES

1. VR255 PLATFORM WAS TOPPLED DURING HURRICANE RITA THE INCOMING LINES FROM WC498 AND VR215 AND THE OUTGOING LINE TO SM58 WERE CUT AND END CONNECTORS INSTALLED TO ALLOW THE INSTALLATION OF REROUTE PIPING AROUND THE TOPPLED VR255 PLATFORM

   PIPE

   A. VERMILION BLOCK 255 "B"
      (1) VR255 SUBSEA RE-ROUTE PIPE:
      8.625" x 0.406" WT API 5L, X-42 SMLS FBE COATED
      12.75" x 0.500" WT API 5L, X-42 SMLS FBE COATED

   VALVES

   A. ALL MAINLINE BLOCK VALVES TO BE ANSI 900# FLANGED END THRU CONDUIT TRUNION MOUNTED BALL VALVES.
   B. CHECK VALVES TO BE ANSI 900# FE THRU CONDUIT FLANGED END WITH EXTERNAL HINGE PIN TO ALLOW REVERSE FLOW.

   FLANGES

   ALL FLANGES TO BE ANSI 900# RTJ AS PER ANSI 16.5

   FITTINGS

   CONNECTORS:
   ANSI 900# RTJ 8" OR 12" SIZES.
   ALL WELD FITTINGS TO BE Y-52 (12") GRB(8")

2. ALL PUMP DISCHARGE PSH AND PSV SETTINGS ARE SET AT OR BELOW MAOP OF THE SYSTEM (1440 PSIG). MAWP OF ALL INJECTION PUMP SYSTEMS ARE RATED TO 1440 PSIG

3. A SPOOL REPAIR WAS MADE IN VR 249 ON 4/06 DUE TO DAMAGE CAUSED BY A DRIFTING DRILLING RIG
   SPOOL PIPE: 8.625" O.D. X 0.406" WT; LENGTH = 100'

4. SEGMENT NUMBERS 15584, 15585, AND 15586 ARE OWNED AND OPERATED BY CRIMSON GULF

   SEGMENT NUMBER: 15584
   TOTAL SEG. LENGTH: APPROX. 2.62 MILES
   MAOP 1440 PSIG

   SEGMENT NUMBER: 15585
   TOTAL SEG. LENGTH: APPROX. 16.50 MILES
   MAOP 1440 PSIG

   SEGMENT NUMBER: 15586
   TOTAL SEG. LENGTH: APPROX. 72.16 MILES
   MAOP 1440 PSIG

5. ALL TOPSIDES PIPING UPSTREAM OF LAUNCHER/RECEIVER VALVING IS ANS B31.3 DESIGN. ALL LAUNCHERS/RECEIVERS, RISERS, & SUBSEA PIPELINES DESIGNED TO ANSI B31.4.

DESIGN DATA & FLOW RATES

DESIGN CODES: DOT 49CFR 195
ANSI B 31.4
ANSI 16D
ANSI 16.5

DESIGN FLUID: CRUDE OIL

MAXIMUM ALLOWABLE OPERATING PRESSURE:
1440 PSIG @ 100°F
NOTE: CRIMSON GULF CENTRAL GULF GATHERING SYSTEM MAOP: 1440 PSIG

ALL INCOMING PIPELINES ARE IN COMPLIANCE WITH API RP 14C

DESIGN OF THE PIPELINE SYSTEM IS EQUAL TO OR EXCEEDS THE REQUIREMENTS OF D.O.T. TITLE 49, PART 195

NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1927, STATE PLANE COORDINATE SYSTEM, LOUISIANA SOUTH ZONE (1702), LAMBERT CONFORMAL CONIC PROJECTION.
2. PIPELINE SEGMENT FROM WC498 TO VR255 WILL BE DERATED TO 1440 PSIG AS THERE IS NO ABILITY TO ISOLATE PRESSURE BETWEEN THIS PIPING SYSTEM AND THE SYSTEM DOWNSTREAM OF VR255.
3. HIGH SETTING TO BE LOWER THAN THE MAOP OF THE CRIMSON CENTRAL GULF GATHERING SYSTEM. (1440 PSIG)

LEGEND:

PSHL PRESSURE SWITCH HIGH & LOW
PSH PRESSURE SWITCH - HIGH
PSL PRESSURE SWITCH - LOW
ESD EMERGENCY SHUT DOWN VALVE
FSV FLOW SAFETY VALVE
PSV PRESSURE SAFETY VALVE
ESD EMERGENCY SHUT DOWN
MECHANICAL END CONNECTOR
ELECTRICAL INSULATING DEVICE

REV	DATE	DESCRIPTION OF REVISION	ES NO.	BY	ENGR	ENGR	APP
02	01-07-13	SMI-58 A PIPELINE RE-ROUTE		JLL	LRC		LRC
01	11-28-06	REVISION PER MMS GUIDELINES	05068	NWP	NWP		MJC
00	11-09-06	ORIGINAL ISSUE		MM	NP		

CENTRAL GULF GATHERING SYSTEM

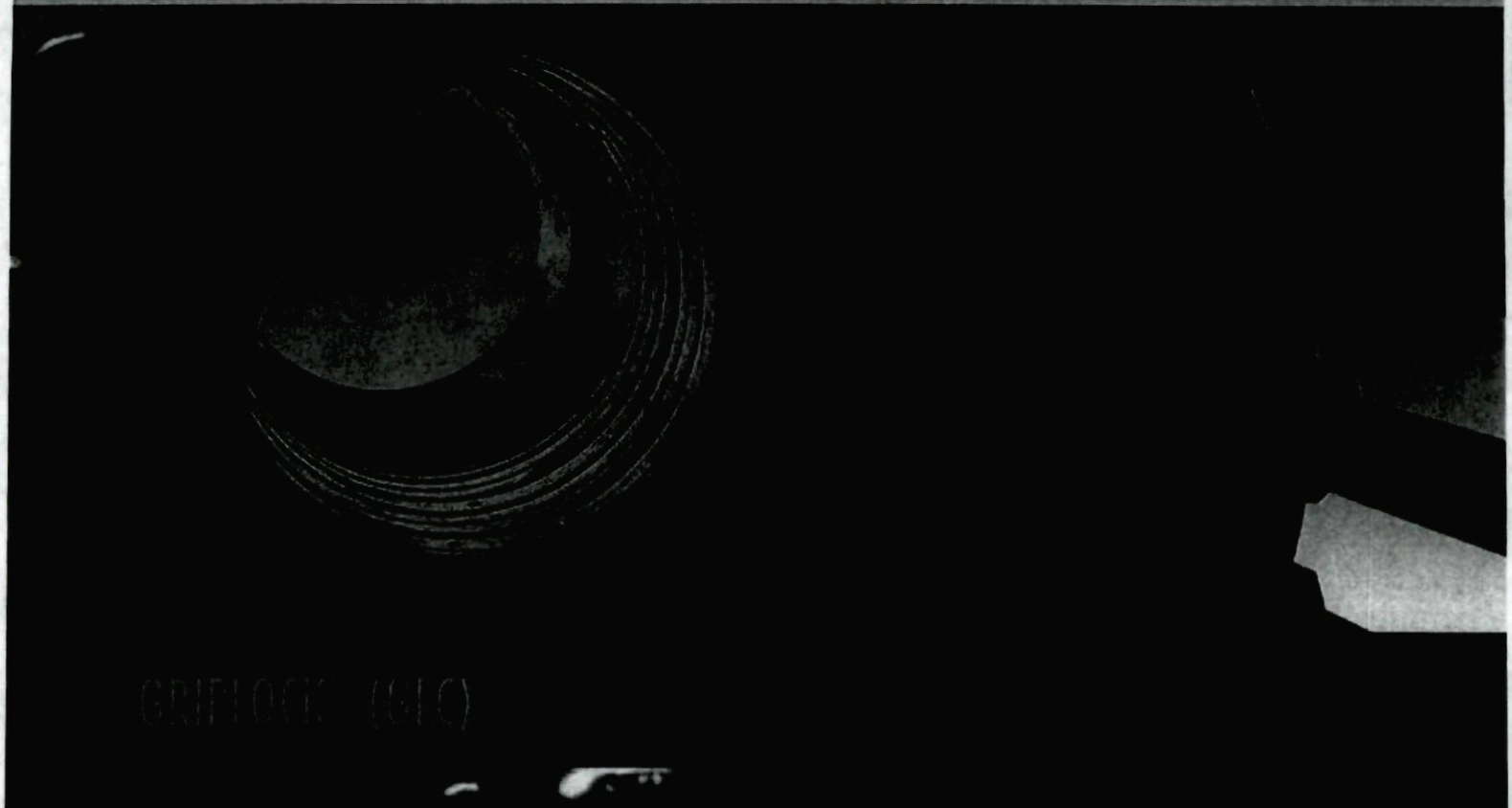
FLOW DIAGRAM / SAFETY SCHEMATIC
CRIMSON GULF 8" OIL PIPELINE
VR-255 RE-ROUTE

SCALE	NONE	DATE	SD - 80699	REVISION
DRAWN	M MARTINEZ	11-08-06		02

V. Pipeline Equipment Brochures

GRIPLOCK™
END CONNECTOR

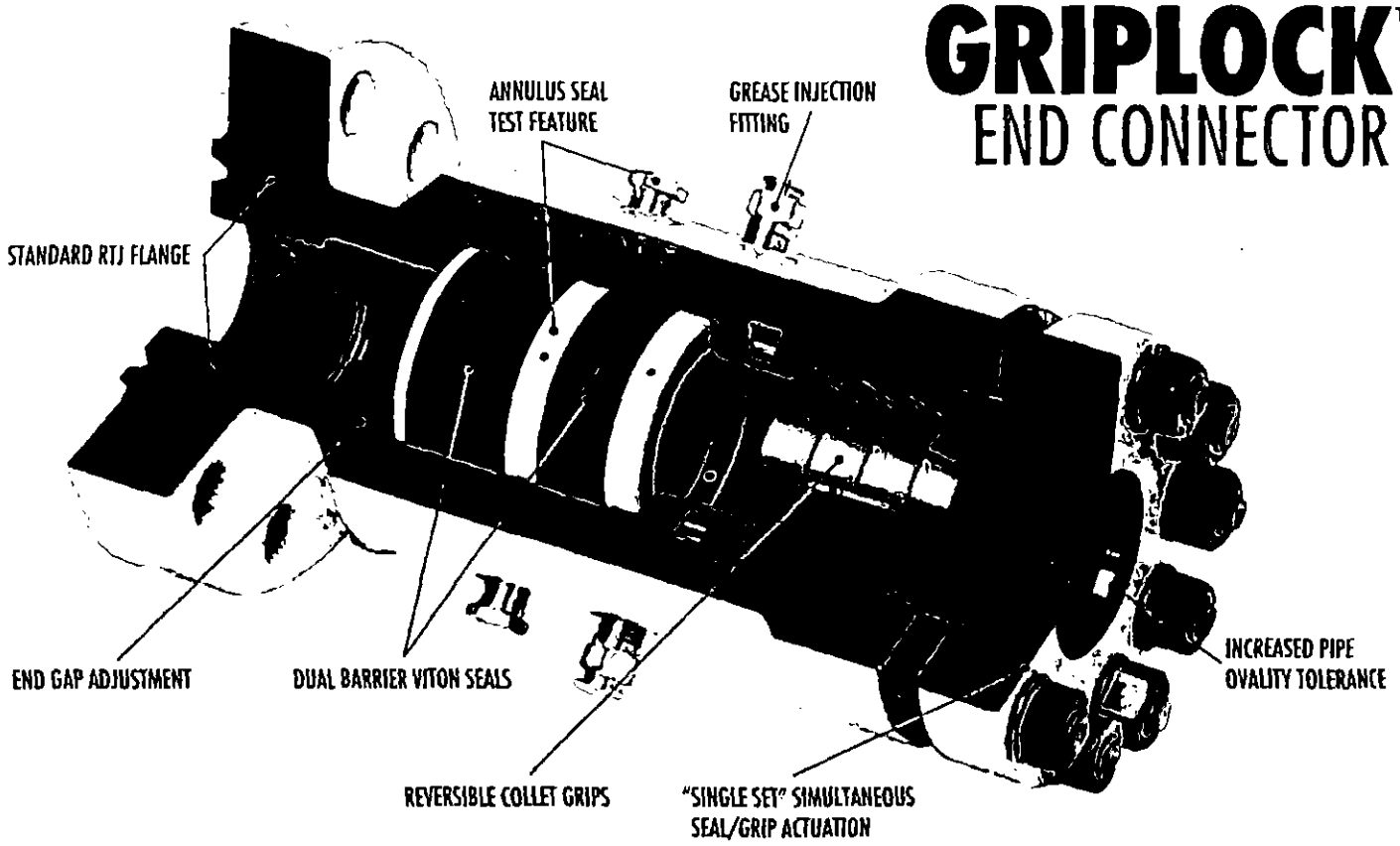
Quality Connector Systems LLC



The GripLock™ Mechanical End Connector is utilized primarily for subsea pipeline repairs, re-routes, and abandonment projects. The GripLock™ mechanical end connector provides subsea pipeline operators with a proven means to permanently attach a flange to a subsea pipeline. Quality Connector Systems, LLC manufactures and maintains an inventory of 2" thru 24" GripLock™ mechanical end connectors, which permits fast turnaround on customer projects.

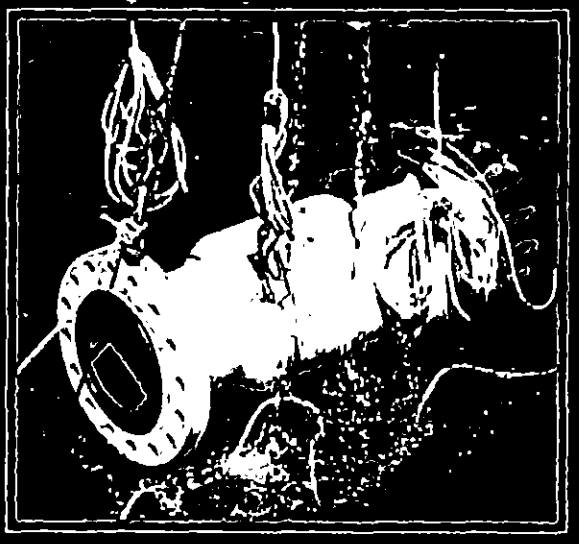
- Collet Grips for unsurpassed structural attachment to the pipe
- Standard Dual Barrier Viton seals for long term integrity
- Standard Annulus seal test feature
- End Gap Adjustment of ½ the pipe diameter or 6", whichever is greater
- Fast reliable "Single-Set" simultaneous seal and grip actuation
- Reversible Collet Grips

GRIPLOCK™ END CONNECTOR



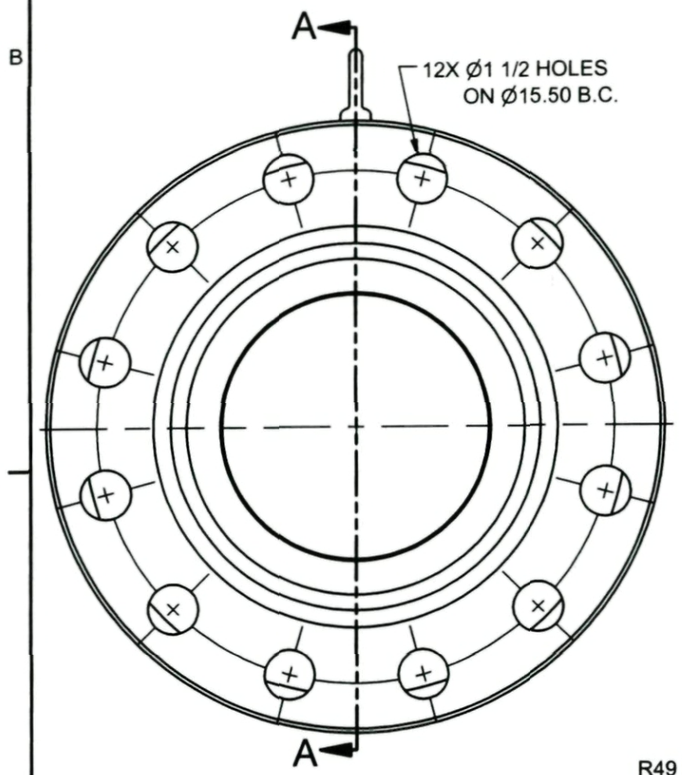
TECHNICAL SPECIFICATIONS

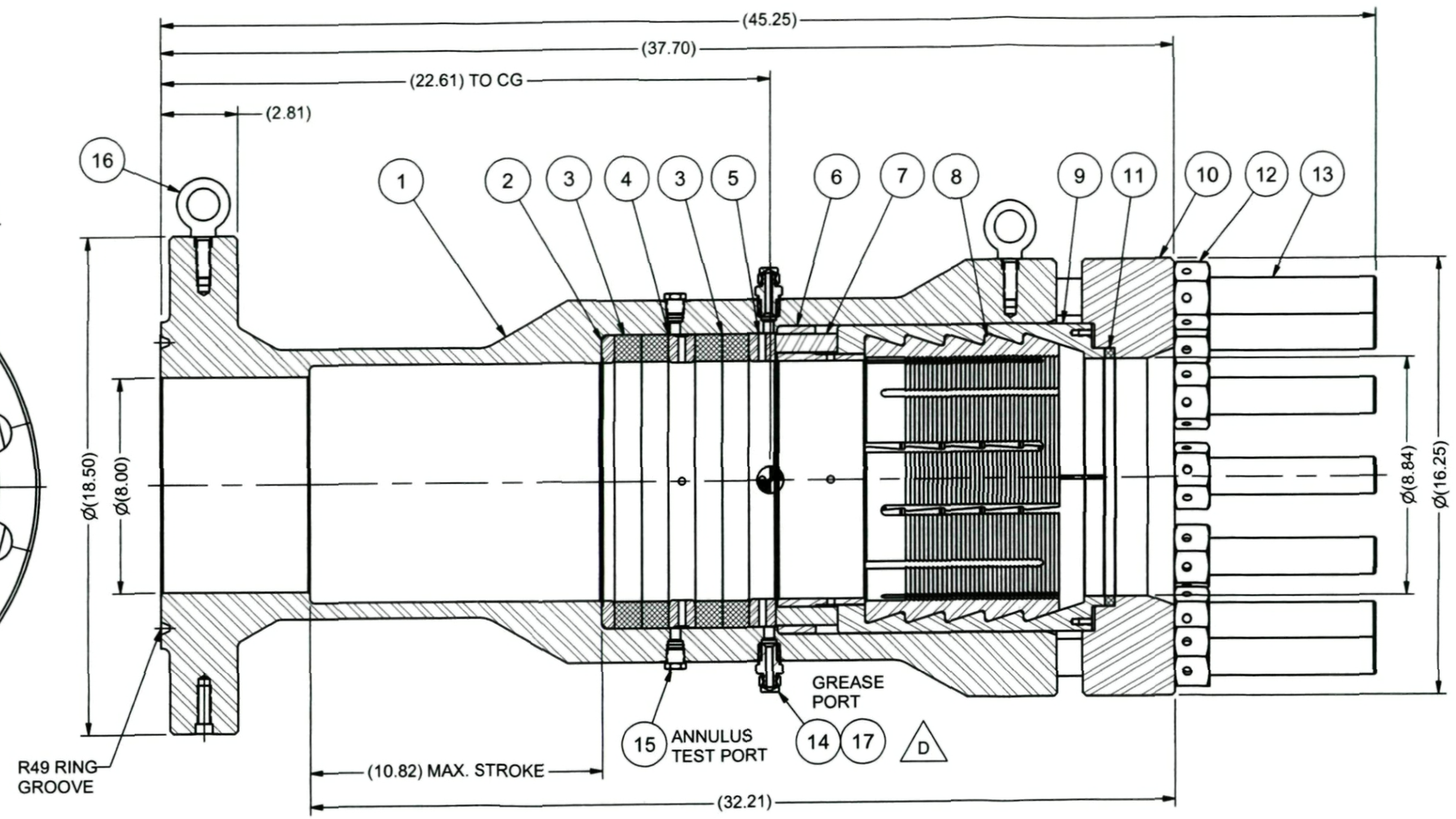
- ASME Sec VIII Div 1, 2 and API 6H compliant design as applicable
- Inboard seals & outboard grips for NACE compliance
- NACE pressure-containing components
- Increased pipe ovality tolerance
- Onsite technicians are available to assist with installation



Quality Connector Systems LLC

7250 W. 43rd Street, Suite 100 | Houston, Texas 77092 | P: 713.920.9800 | F: 713.920.9801 | www.QualityConnectorSystems.com





REV.	DESCRIPTION	DATE	BY
D	Rev. Items 14,17	5/10/08	BK
C	Updated per part mods	17OCT06	JS
B	Updated(No Girder Bands)	25JUL06	RLA
A	Initial Release	-	-

REVISIONS

TOLERANCES
(UNLESS OTHERWISE SPECIFIED)
.X = ± 0.030 .XX =± .015
.XXX = ± 0.005 FRAC=± 1/32
ANGLES = ± 0.25° (0°15')
CONCENTRICITY 0.002 T.I.R.
SURFACE FINISH 125 Ra
BREAK CORNERS 1/64 X 45°
CHAMFER TO THREAD DEPTH ON TAPPED HOLES
DIMENSIONS ARE IN INCHES.

WEIGHT (lbs.) 910

MATERIAL SPECIFICATION

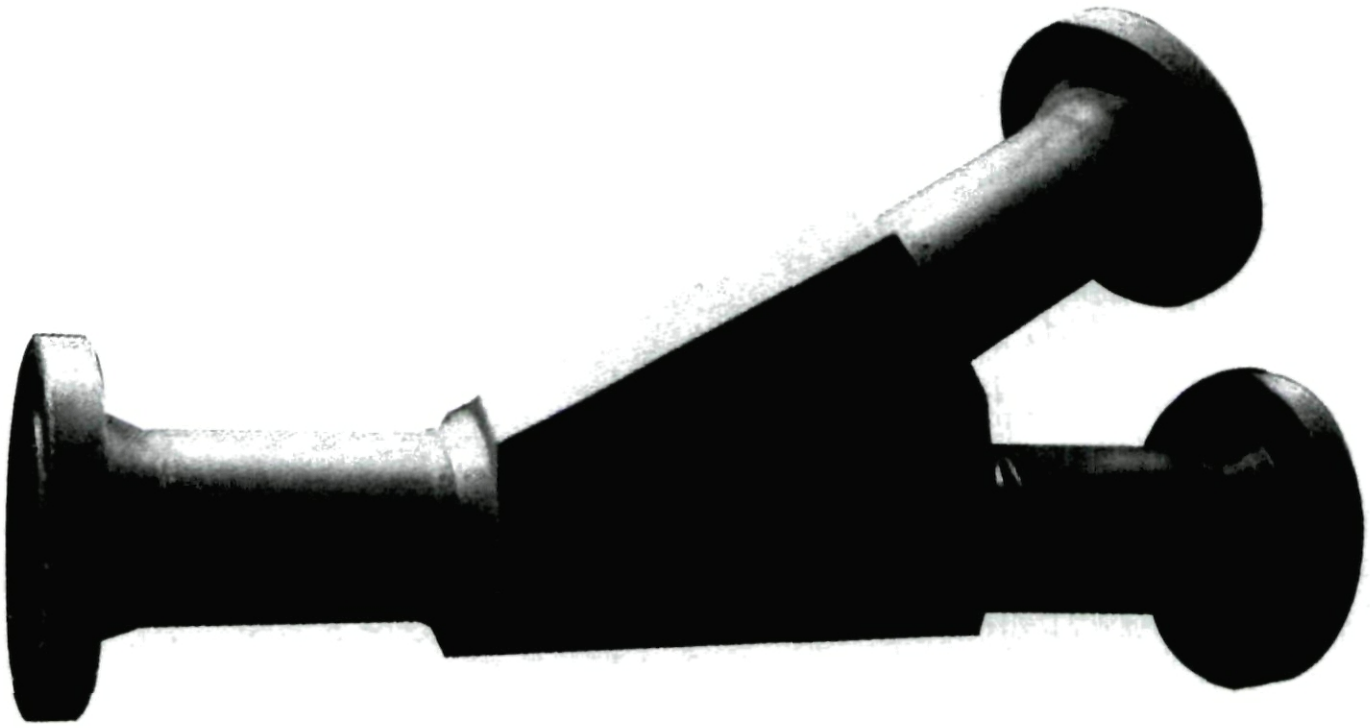
DRAWN BY	J SPARKS	DATE 11/4/2005
CHKD/APP BY	B Hetherwick	DATE 7/25/2006
SCALE	NTS	SHEET 1 of 1

QUALITY CONNECTOR SYSTEMS, LLC
7250 W. 43rd St., Suite 100, Houston, Texas 77092
Tel: 713-920-9800, Fax: 713-920-9801

8" - 900 ANSI GRIPLOCK CONNECTOR GENERAL ARRANGEMENT

DWG. NO. GLC080009A\GAA0809D

Piggable Wye Fitting



Oceaneering's Piggable Wye is a forged or cast fitting that joins pipelines and permits pigging from either inlet branch toward the single outlet. The fitting utilizes a 30° inclusive angle between the inlet bores, an industry accepted intersection for reliable passage of most common pipeline pigs.

The Piggable Wye is available in two basic configurations, Symmetrical and Asymmetrical.

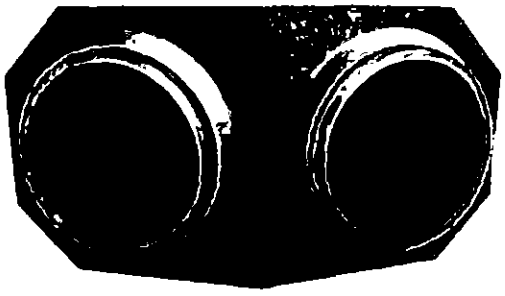
- The inlets and outlets of the basic Piggable Wye terminate with a hub prepared for butt-welding
- The ends can also be supplied with pipe pups for butt-welding or pipe pups with flanges

Symmetrical Piggable Wye Fitting (left) and Asymmetrical Piggable Wye Fitting (right)
A Bi-Directional (Divertible) Piggable Wye design is available upon customer's request

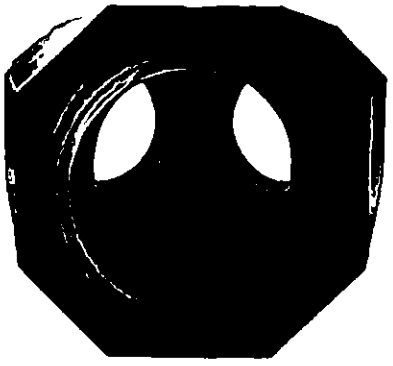
OCEANEERING®

Piggable Wye Fitting Specifications

Design Parameters:



- Nominal Pipe Size (NPS): any API Specification 5L pipe, wall thickness and grade
- Service: Standard (i.e. crude oil, natural gas, hydrocarbons, water or chemical injection, etc.) and Sour (i.e. hydrogen sulfide, carbon dioxide, etc.)
- Design Pressure Rating: up to ANSI Class 2500
- Hydrostatic Test Pressure (min): 1.5 times Design Pressure Rating rounded up to nearest 25 psig
- Hydrostatic Test Duration (min): 1 hr
- Design Temperature Range: 25°F (-4°C) to 250°F (121°C)
- Configuration: Symmetric or Asymmetric
- Inlet/Outlet Ends: Butt-Weld Hubs, Butt-Weld Pipe Pups or Flanged



Material Specifications:

- Body: ASTM A105 or ASTM A694 forging (size and pipeline grade dependent)
- External Coating: Carboline 890 Epoxy Paint System, Safety Yellow Color

Applicable Design Codes, Standards & Specifications (latest editions):

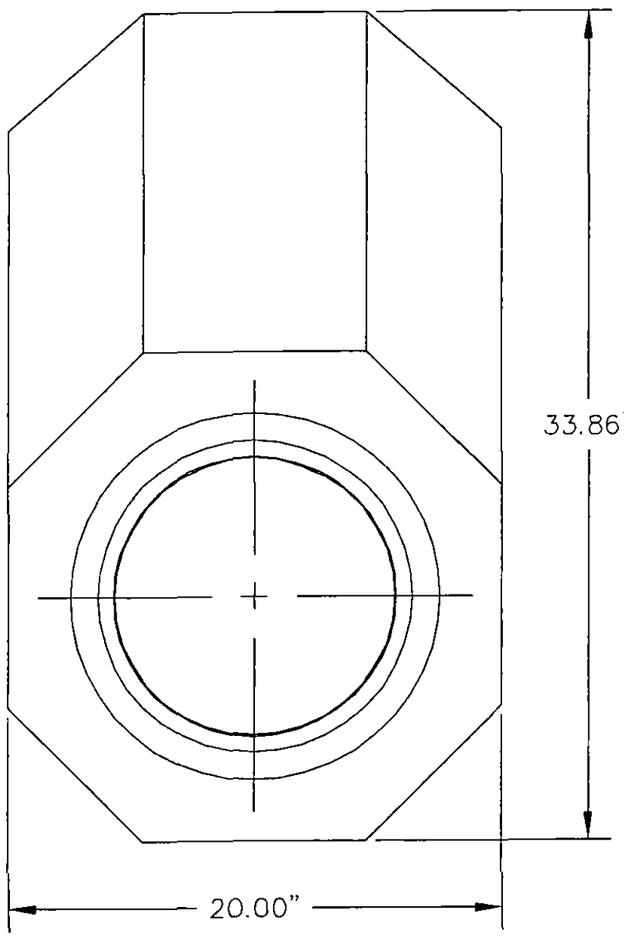
- OIE/PCRS Group Piggable Wye Drawings, Bill of Materials (Controlled Copies) and Vendor Supplied Material Test Reports
- OIE ISO 9001:2000 Quality Assurance - Quality Control Procedures & PCRS Operating Procedures
- ASME Boiler Pressure Vessel Code, Section V Nondestructive Examination
- ASME Boiler Pressure Vessel Code, Section VIII, Division 1 and 2
- ASME Boiler and Pressure Vessel Code, Section IX Welding and Brazing Qualifications (applicable if configured with Pipe Pups or RTJ Flanges)
- ASME B16.5, Pipe Flanges and Flanged Fittings
- ASME B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
- ASME B31.8, Gas Transmission and Distribution Systems
- API SPEC 5L, Specification for Line Pipe
- MSS SP-44, Steel Pipeline Flanges
- NACE MR0175, Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment

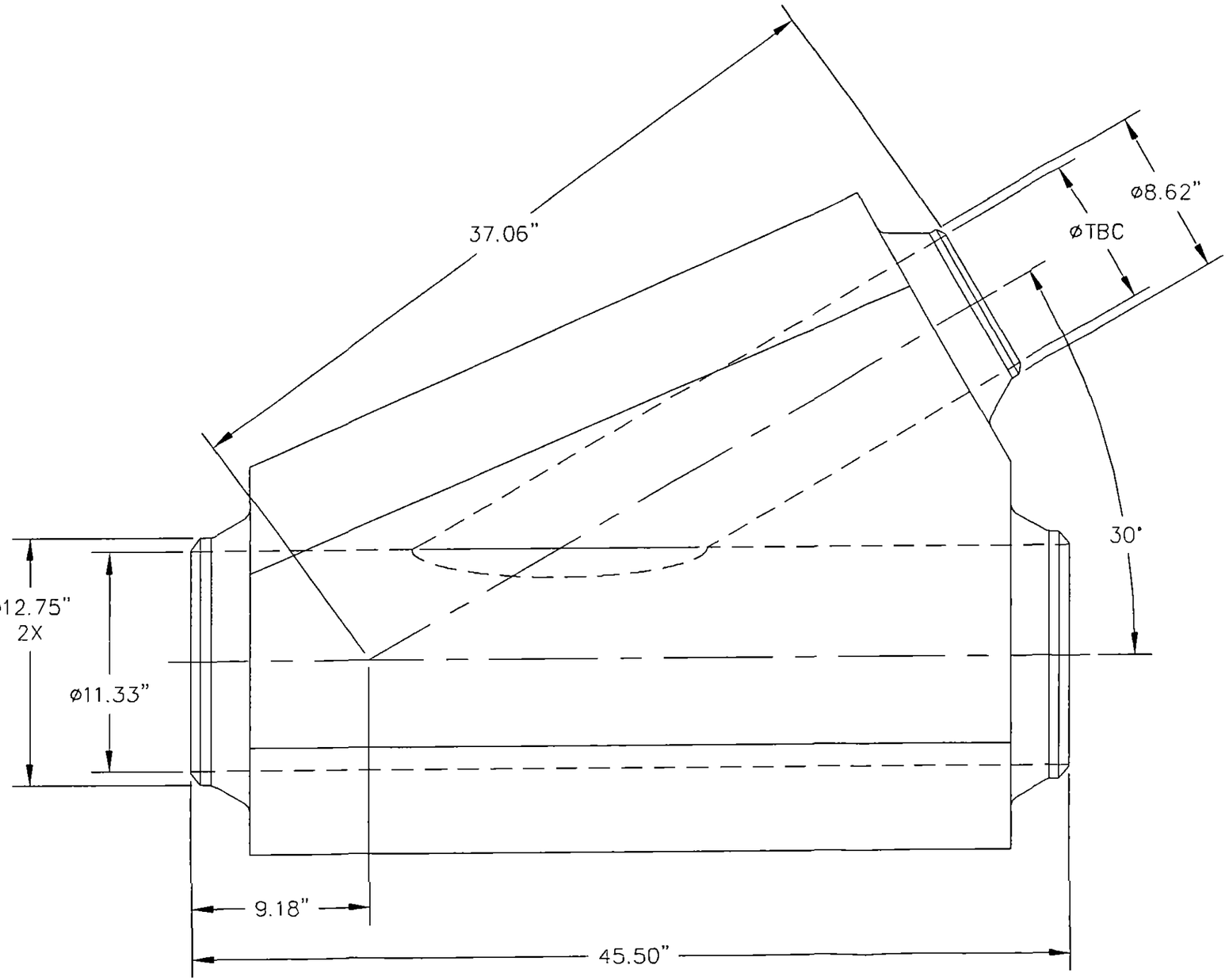
Certifications:

- ISO 9001:2008 - World Certification Services Ltd. - Accredited by UKAS Quality Management
- EN 10204 Section 3.1B (DIN 50049), Inspection Documents for the Delivery of Metallic Products

OCEANEERING®

Oceaneering International, Inc. | Pipeline Connection & Repair Systems (PCRS) | 11911 FM 529 | Houston, TX 77041
Phone: 713.329.4500 | Fax: 713.329.4965 | email: PCRS@oceaneering.com | oceaneering.com/pcrs





NOTES:

AUTOCAD

FORM F1332, REV. H (OIE)

OCEANEERING

OCEANEERING INTERNATIONAL, INC.
WWW.OCEANEERING.COM

TITLE: ASYMMETRIC PIGGABLE WYE
12" NOM (11.33" BORE) X 8" (BORE TBC)
5200 PSI WP/7800 PSI TP

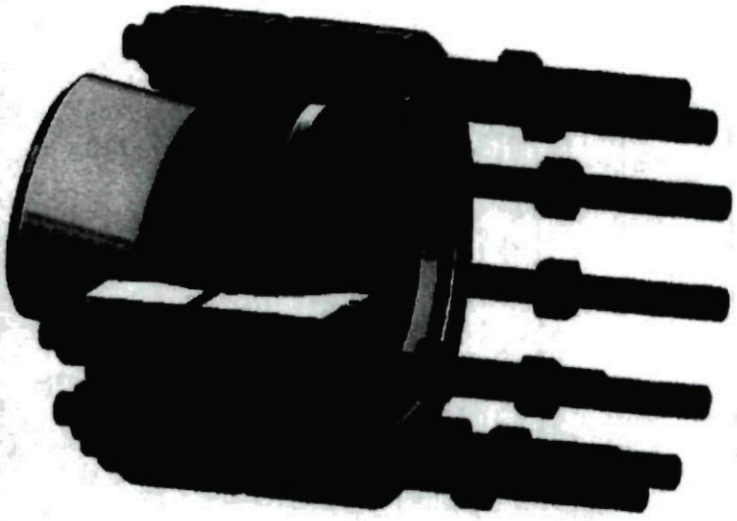
DRAWN: GDOUGLAS	DATE: 23 OCT 06	3RD ANGLE PROJECTION	DO NOT SCALE
ENGR: GDOUGLAS	DATE: 23 OCT 06	SIZE: B	DWG NO: 12-5200-APW
PR MGR: JCHARALAMBIDES	DATE: 23 OCT 06		REV: A
eSIGNATURES ON FILE		SCALE: NTS	WEIGHT: 4050 LBS
			SHEET 1 OF 1

B-CON Misalignment Ball Connector

The B-CON is designed for piping and pipeline systems where the connector must compensate for misalignment of the pipe. The B-CON significantly reduces the time required to install subsea pipeline connections by providing a leak tight metal seal with performance characteristics and versatility that exceed those of welded pipe or conventional flanges. While primarily intended for subsea piping operations, the B-CON is a valuable piece of equipment in any application (above or below water) where misalignment of the pipeline is a problem.

The unique design of the B-CON connector's metal seal allows for up to +/-10° of misalignment in any axial plane from the centerline of the adjoining pipe (20° total misalignment). The metal sealing criteria is the same as that specified by ASME for the ring-joint flanges. Sealing integrity is maintained at any angle of misalignment, with the seal being insensitive to externally applied bending loads at all operating pressures. It is actuated by tightening of the bolts. The tightening locks the ball member into the socket flange, creating a rigid, static leak tight seal.

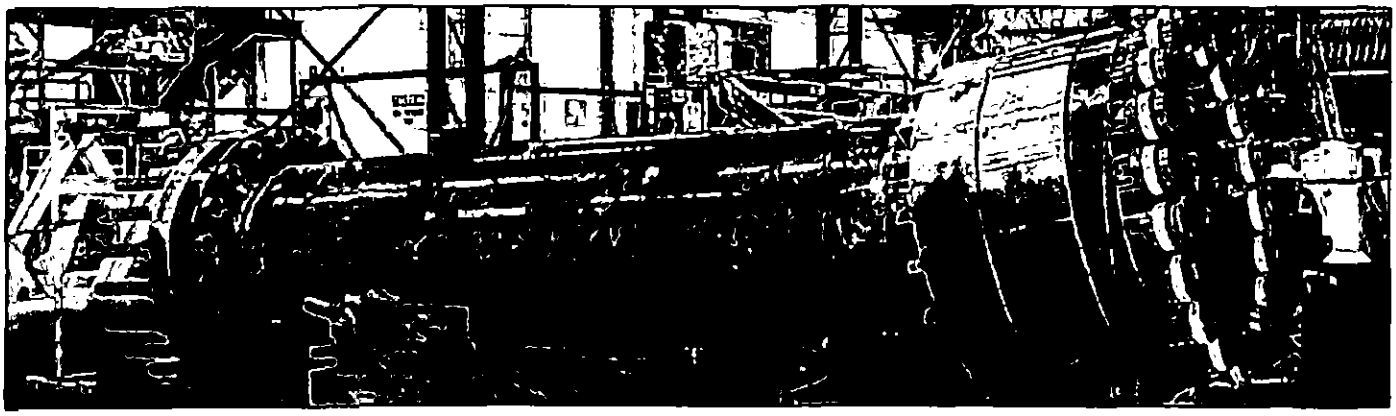
The B-CON meets all Applicable Codes and Standards: ANSI, API, ASME and NACE. It is stocked for pipe sizes ranging from 4-in Nominal Pipe Size (NPS) to 24-in NPS and available in pressure Classes 600 & 900. The B-CON can also be supplied for any pipe size and any pressure rating, upon request.



OCEANEERING®

www.oceaneering.com

B-CON Misalignment Ball Connector Specifications



Design Parameters:

- Nominal Pipe Size (NPS): any API Specification 5Lpipe, wall thickness and grade
- Service: Standard (i.e. crude oil, natural gas, hydrocarbons, water or chemical injection, etc.) and Sour (i.e. hydrogen sulfide, carbon dioxide, etc.)
- Design Pressure Rating and Applicable Dimensions: ASME, MSS or API
- Design Temperature Range: 25°F (-4°C) to 250°F (121°C)

Material Specifications:

- Retaining, RTJ Flange & Ball: ASTM A694 F52 and F60 weldless forging, normalized or to customer specifications
- Metal Seal Ring: AISI C1008 or 316 Stainless Steel, Cadmium Plated
- Mating Studs & Nuts: ASTM A193 Gr. B7 studs & ASTM A194 Gr. 2H heavy hex nuts, all XYLAN coated (i.e. PTFE, dark blue)
- External Coating: Carboline 890 Marine Epoxy Paint System, Safety Yellow Color

Applicable Design Codes, Standards & Specifications (latest editions):

- OIE/PCRS Group B-CON Misalignment Ball Connector Drawings, Bill of Materials (Controlled Copies) and Vendor Supplied Material Test Reports
- OIE ISO 9001:2000 Quality Assurance - Quality Control Procedures & PCRS Operating Procedures
- ASME Boiler Pressure Vessel Code, Section V - Nondestructive Examination
- ASME Boiler Pressure Section VIII, Division 1 and 2
- ASME B16.5 & B16.47, Pipe Flanges and Flanged Fittings
- ASME B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
- API SPEC 5L, Specification for Line Pipe
- API SPEC 6A, Specification for Wellhead and Christmas Tree Equipment
- API SPEC 6H, Specification on End Closures, Connectors and Swivels
- MSS SP-44, Steel Pipeline Flanges
- ASME B18.2.1 Square and Hex Bolts and Screws Inch Series
- ASME B16.20, Metallic Gaskets for Pipe Flanges - Ring Joint, Spiral Wound and Jacketed (Latest Edition)
- NACE MR0175, Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment

Certifications:

- ISO 9001:2008 - World Certification Services Ltd. - Accredited by UKAS Quality Management
- EN10204 Section 3.2 (DIN50049), Inspection Documents for the Delivery of Metallic Products

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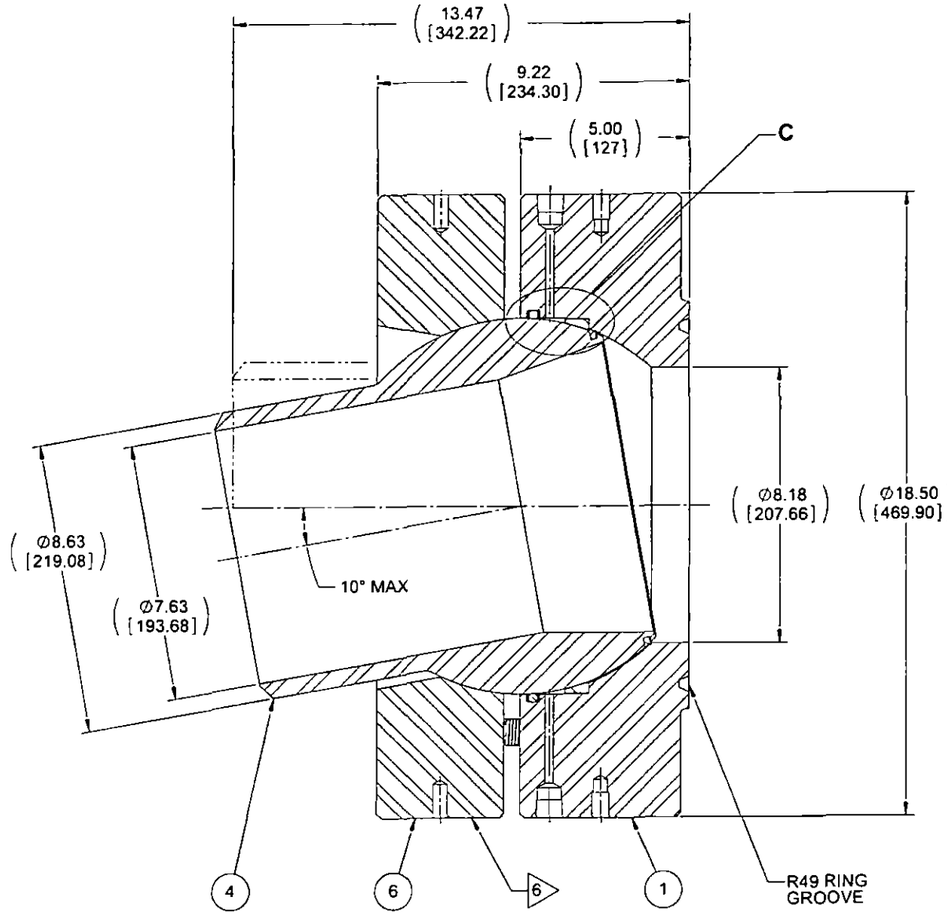
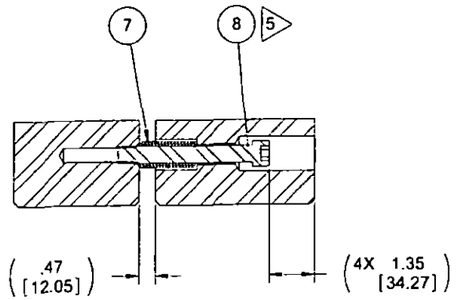
Oceaneering International, Inc. | Pipeline Connection & Repair Systems (PCRS) | 11911 FM 529 | Houston, TX 77041
Phone: 713.329.4500 | Fax: 713.329.4965 | email: PCRS@oceaneering.com | www.oceaneering.com

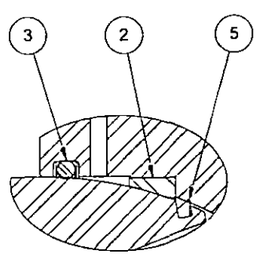
REVISIONS			
LTR	DESCRIPTION	INCORP BY	DATE
AC	REMOVED NOTE 10	JRS	05 OCT 12



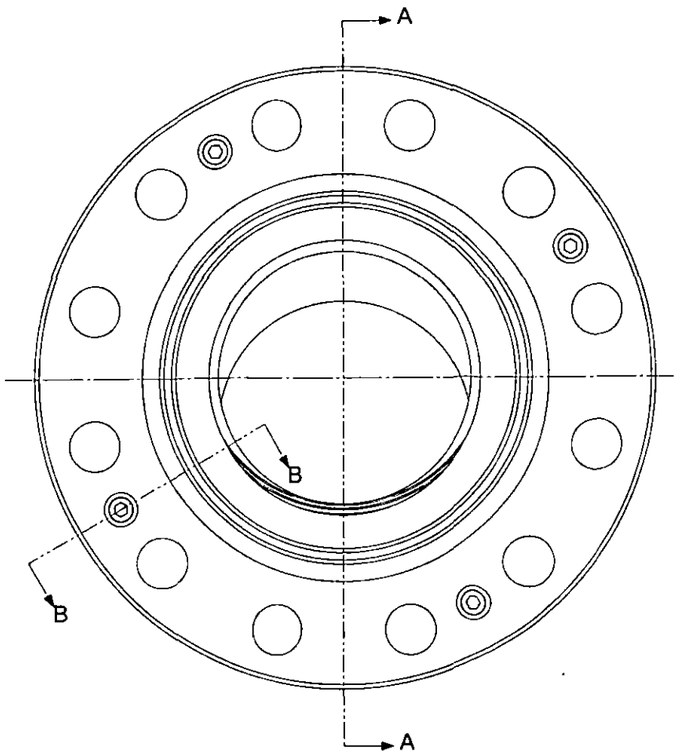
SECTION A-A



SECTION B-B



DETAIL C



9. FOR SEAL INTEGRITY TEST, TENSION 6 STUDS EQUALLY SPACED TO 12,951 LBF [57,609 N].
8. R49 GASKET, .19 [4.83] GAP, 1.375 [34.93] STUD (12), FINAL STUD TENSION = 64,759 LBF [288,062 N].
7. STAMP NAMEPLATE MAX OP "2220", MAX FTP "2220", TEMP RANGE "0 TO 150°F", BODY MAT'L "A694 F60", SEAL MAT'L "C1008".
6. AFFIX NAMEPLATE APPROXIMATELY WHERE INDICATED AFTER COATING. LABEL OVER THE CAPTURE BOLT HOLES.
5. LOCTITE BLUE (MEDIUM STRENGTH) THE CAPTURE BOLTS.
4. COAT INTERNALS WITH SHOP GREASE & SPRAY ID WITH LPS3.
3. COAT PER OIE SPECIFICATION D-0047880.
2. ASSEMBLE AND TEST PER D-0070954. WORKING PRESSURE 2220 PSI [153 BAR], TEST PRESSURE 3330 [230 BAR].
1. ALL DIMENSIONS ARE IN INCHES. VALUES IN [ ] ARE METRIC.

NOTES:

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OCEANEERING INTERNATIONAL, INC.
WWW.OCEANEERING.COM

DRAWN	JSPARKS	DATE: 23 JULY 07
ENGR	DBENSON	DATE 23 JULY 07
PR MGR	DREYNOLDS	DATE: 23 JULY 07
eSIGNATURES ON FILE		

TITLE
8 IN. CLASS 900 .500 WT
BCON MISALIGNMENT FLANGE
GENERAL ASSEMBLY

3RD ANGLE PROJECTION | DO NOT SCALE

SIZE	DWG NO	REV
D	0008900-BCON	AC

SCALE: NTS | WEIGHT: 63 LBS | SHEET 1 OF 1

SOLIDWORKS
FORM F1324, REV D (OIE)

VI. Underwater Survey

Engineering and Hazard Survey

Survey investigation for this proposed project consisted of an on-site diver and Mezotech sonar survey of the proposed pipeline ROW. This survey was conducted in December 2012 by the MV Epic Explorer. A traditional shallow hazard and archaeological survey for pipeline construction was not performed. The resolution of such a survey would be poor or unusable due to the adjacent platform and concentrated pipelines in the survey area.

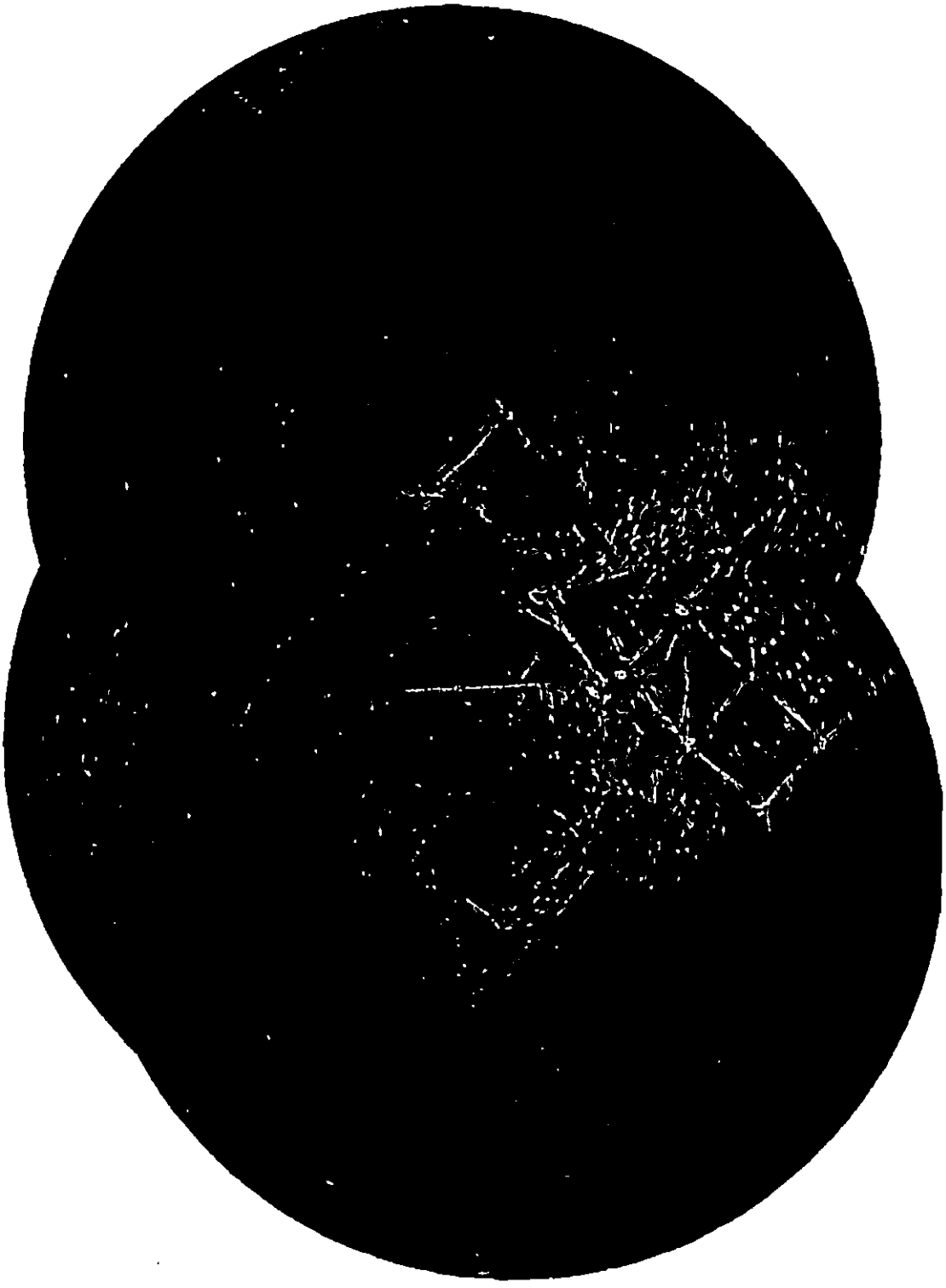
Survey work included the following items:

1. Surveyed existing pipeline Seg #15585, #3034, and #14480 near SM-58 structure for pipeline reroute. Identified each riser on the surface then followed each line down to the tube turn. Positively identify the pipeline routes and obtained accurate survey of each pipeline route, specifically 150' away from the structure where our tie in points will be made. For each of the three segments we identified the field joints and plotted the x and y coordinates to make sure our Grip Lock End connector are not installed on a field joint. A significant amount of debris was identified within 60' of the perimeter of the jacket.

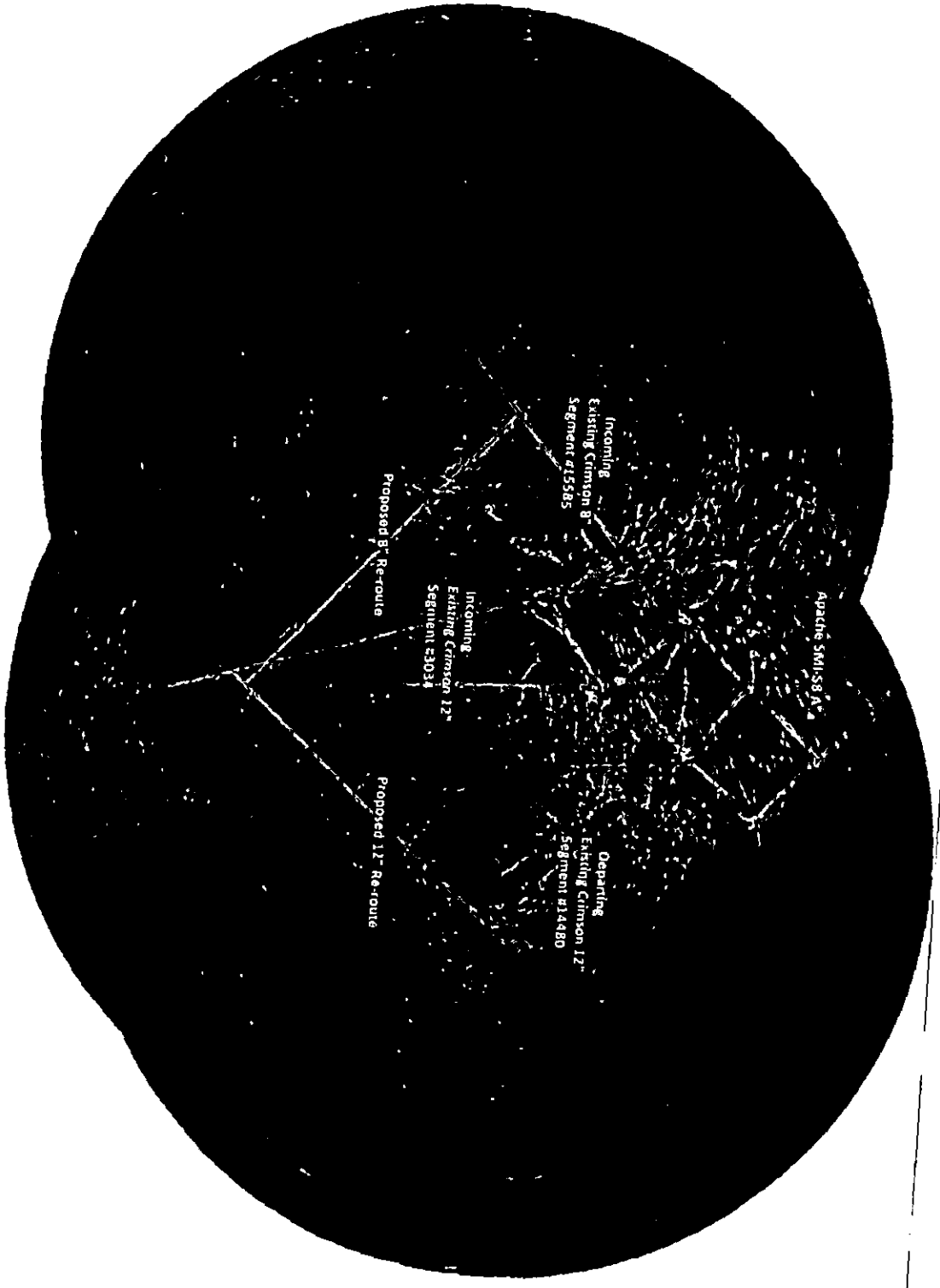
2. Identified the 3 points of intersection (PI) for the proposed pipeline reroute. Installed reflectors at all PI locations.

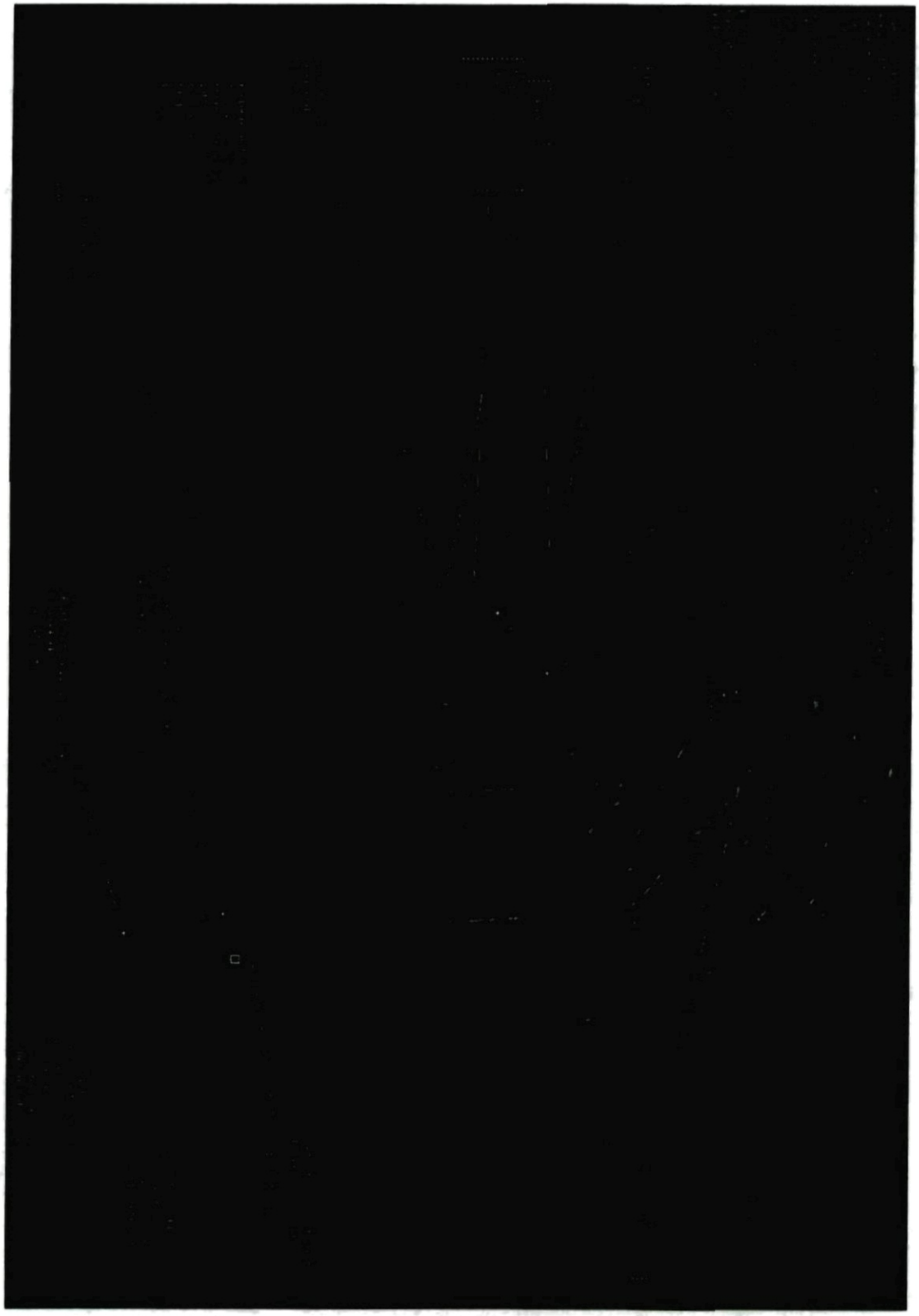
3. Set a tight line to connect all PI locations, which represented the new pipeline reroute.

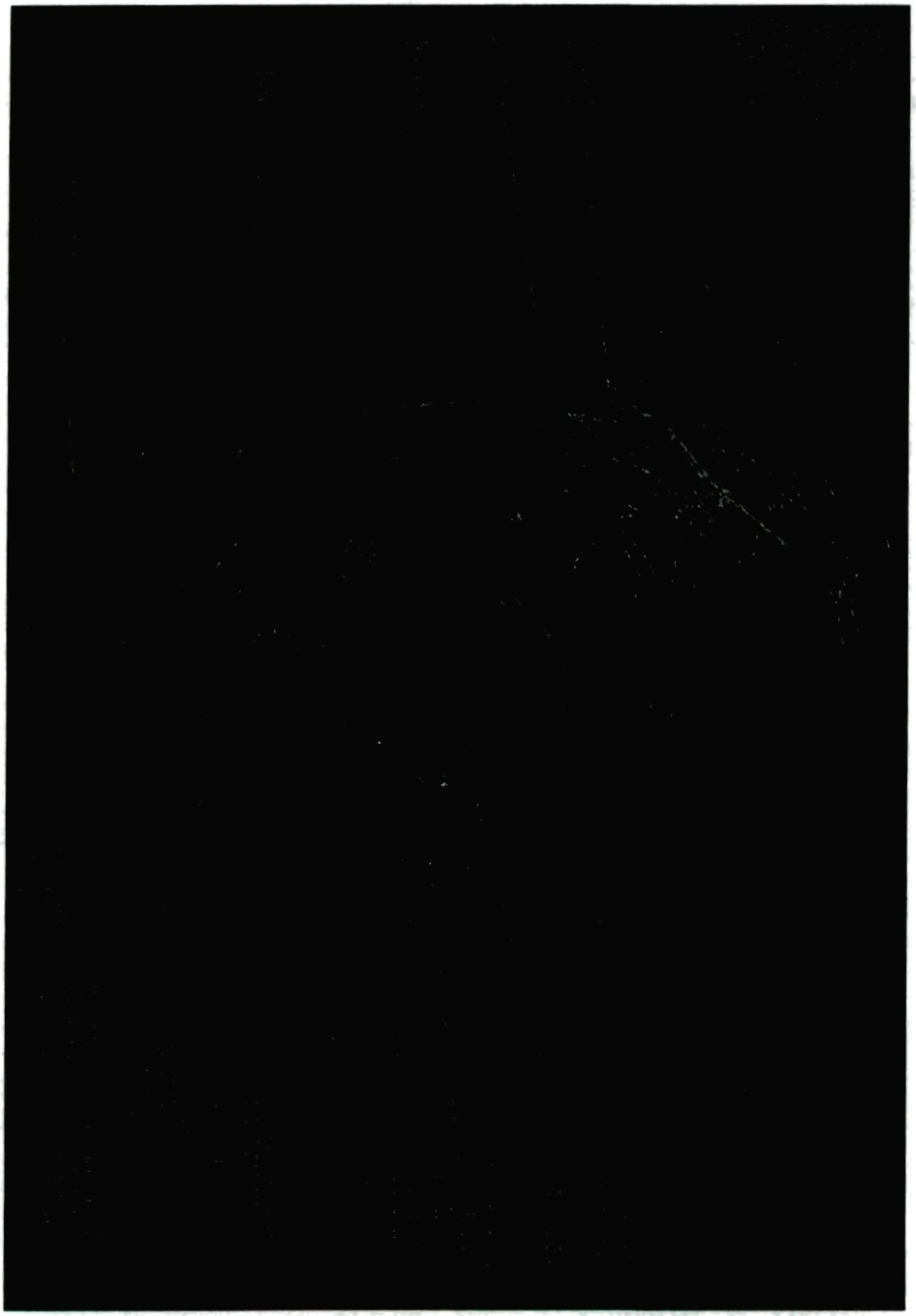
4. Jetted out a 2' deep trench along the new pipeline reroute. Surveyed centerline of the pipeline route and area within 10 feet on each side of route centerline. The proposed reroute located is very clean with minimal debris, the only debris identified and noted was a 1" cable. Divers probed, jet out and used a gradiometer to find the proposed pipeline crossings. All pipeline crossings were identified and surveyed except for Segment #10529. Divers also set reflectors at all pipeline crossings. See Sonar images for data and information obtained during the survey.



BEST AVAILABLE COPY







Crimson Gulf, LLC
SM-58
January 29, 2013

Pipeline Re-route Crossings

In the process of designing the SM-58 PL Re-route an issue was brought up in regards to (4) of the abandoned Apache pipeline's we were going to cross over with the new Crimson piping. Apache Pipeline segments #3240, #3242, #3243 and #5716 were at natural bottom and had no cover at the pipeline crossing locations. Apache Corporation has been notified about this topic and plans to mobilize a dive crew in the next several months to cut and remove 20' sections from these 4 abandoned pipelines in order to provide adequate crossing access. This will allow Crimson to easily bury the new piping 3' below the mud line with no issues at these (4) pipeline crossings.

The other two pipeline crossings for the new Crimson piping are Apache PL segments #10333 and #10529. Both of these pipelines have adequate mud cover, therefore these pipeline crossings will not be an issues. Mats and sand / cement bags will be installed at these pipeline crossings as per dwg no. SD-45879.

Bryan Lee
Chapman Consulting, Inc.
1/29/13

Patton, Frank <frank.patton@bsee.gov>

RE: Crimson Gulf SM 58 Route modifications

Gaby Medrano <gaby.medrano@jccteam.com> Mon, Feb 25, 2013 at 4:02 PM
To: "Patton, Frank" <frank.patton@bsee.gov>

Good afternoon Frank,

In regards to the SM-58 Piping that will be decommissioned (near the platform), see answers to your questions below.

- Both ends of each section of pipeline will be capped with plumbers plugs.
- The ends of each section of piping will be buried to a minimum of 3' below natural bottom.
- The ends of these segments will be covered with concrete mats.
- Yes each of the tube turns will be cut out and recovered on the deck of the dive vessel, to be properly disposed of on the beach. We will cut the tube turn on the pipeline side 20' away from the structure and on the topside will cut 5' above the mud line.

Let me know should you require additional information.

Gaby Medrano

Regulatory Specialist

J. Connor Consulting, Inc.

16225 Park Ten Place #700

Houston, Texas 77084

281-698-8524 office

832-274-7214 cell

gaby.medrano@jccteam.com

From: Patton, Frank [mailto:frank.patton@bsee.gov]
Sent: Monday, February 25, 2013 9:02 AM
To: Gaby Medrano
Subject: Crimson Gulf SM 58 Route modifications

Gaby,

I am reviewing these applications and need some additional information. First, I will give you the segment numbers that will be assigned to the part of each pipeline that is to be abandoned at the SM 58 A platform:

SN 3034 - abn portion will be SN 18879

SN 14480 - abn portion will be SN 18880

SN 15585 - abn portion will be SN 18881

For the decommissioning of each of these new segments I will need the following information:

Will both ends be capped (ie plumbers plugs installed)?

Will both ends of these segments be buried and/or sand bags or mats installed over the ends?

Will the tube turns be cut away from the platform, and above the seafloor and recovered to the surface? (Please include lengths for both measurements).

Thanks,

–
Frank Patton

Petroleum Engineer

BSEE GOM Region

Pipeline Section

504.731.1490

Crimson Gulf, LLC

950 17th Street
Suite 2650

Denver, Colorado 80202

GOM COMPANY#: **3218**

Delaware limited liability company
Modified: 12-Jun-12
Approved: 07-Dec-11

AUTHORIZED TO CONDUCT THE FOLLOWING BUSINESS:

OIL & GAS: Yes
RIGHTS-OF-WAY: Yes
ALTERNATIVE ENERGY: No

AREAWIDE BONDS:

3M DEVEL: No
1M EXPL: No
300K AREAWIDE: No
PIPELINE: No

Supplemt Exempt: No

EEO Plan: No
Debarment: No

Qualification documents were received on December 1, 2011, and approved on December 7, 2011.

Authorized Consultant: Gordon, Arata, McCollam, Duplantis & Eagan, LLC

NAME	TITLE	EXPIR. DATE
Larry W. Alexander	Manager and Chief Operating Officer	
John D. Grier	Manager and Chief Executive Officer	
Robert C. Montgomery	Secretary	

Any Manager and the Secretary of the Company, acting either together or alone, has the power and authority (i) to manage and act on behalf of the Company to the maximum extent permitted by Delaware law (including without limitation to hold, acquire, lease, sublease, trade, exchange, donate, sell, assign, mortgage, encumber, dispose of, abandon or otherwise transfer or alienate any property or interests of the Company, including without limitation mineral leases, rights-of-way and any other movable or immovable property, including without limitation on the Outer Continental Shelf), and (ii) to execute, deliver and perform on behalf of the Company such agreements and instruments as such officer in his or her discretion deems appropriate.

THIS LLC CONSIST OF THE FOLLOWING ENTITIES:

Sole Member - Crimson Pipeline Investors, L.P.

Term: Perpetual

FedEx

March 18,2013

Dear Customer:

The following is the proof-of-delivery for tracking number **794759461647**.

Delivery Information:

Status:	Delivered	**Delivery location:**	2000 W SAM HOUSTON PKWY SUI HOUSTON, TX 77042
Signed for by:	Signature release on file	**Delivery date:**	Feb 15, 2013 09:34
Service type:	FedEx Standard Overnight		
Special Handling:	Deliver Weekday		

NO SIGNATURE IS AVAILABLE
FedEx Express proof-of-delivery details appear below; however, no signature is currently available for this shipment. Please check again later for a signature.

Shipping Information:

Tracking number:	794759461647	**Ship date:**	Feb 14, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
Cheryl Powell
Apache Corporation

Shipper:
Ericka William
J. Connor Consulting, Inc.
16225 Park Ten Place
Suite 700
Houston, TX 77084 US

Reference	Pipeline Modification Apps
Purchase order number:	2995
Invoice number	SM58
Department number	Federal

Thank you for choosing FedEx.