

Scanned
OCS G24240
SN 13814+13815
18557+18558
update

CORRECTED

In Reply Refer To: MS 5232

April 5, 2012

Ms. Teri Halvorson
BP America, INC.
200 Westlake Park Boulevard #453
Houston, Texas 77079

Dear Ms. Halvorson:

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

Application Type: Right-of-Way Modification
Application Date: November 30, 2011
Supplemental Data Date(s): March 20, 2012
Work Description: Modification-Add Two Umbilical's

Segment Number(s)	Size (inches)	Length (feet)	Service	From	To
13814	05-10	53,378	Bulk Oil	Sled N-1 Mississippi Canyon Block 383 OCS-G07937	Nakika Platform A Mississippi Canyon Block 474 OCS-UNLEASE
13815	16	53,378	Casing	Sled N-1 Mississippi Canyon Block 383 OCS-G07937	Nakika Platform A Mississippi Canyon Block 474 OCS-UNLEASE
18557	06	25,813	Umbilical	Nakika Platform A Mississippi Canyon Block 474 OCS-G26259	A-5 SUTA Mississippi Canyon Block 429 OCS-G07944
18558	05	36,940	Umbilical	K-4 UTA Mississippi Canyon Block 429 OCS-G07944	K-4 UTA Mississippi Canyon Block 383 OCS-G07937

Assigned Right-of-Way Number: OCS-G24240

Pursuant to 30 CFR 250.1000(b), your application is hereby approved.

A 200-foot wide right-of-way to operate and maintain

1. A 10-3/4 inch X 16-inch "pipe-in-pipe" pipeline (Segment Nos. 13814, 13815), each 10.1 miles in length, to transport bulk oil from Kepler Well K-2 SLED N-1 in Block 383, through Blocks 427, 428, 429, and 473, to Platform A in Block 474, all located in the Mississippi Canyon Area
2. One 5-inch Electro-Hydraulic and Chemical Injection Umbilical (K12) (Segment No. 13816), 37546 feet in length, from Ariel Well #4 in Block 429 to Kepler Wells 1 & 2 in Block 383 located in Mississippi Canyon;
3. One 5-inch Electro Hydraulic and Chemical Injection Umbilical (A1) (Segment No. 13817), 13982 feet in length, from Nakika FPS in Block 474 to Ariel Well #1 SLED in Block 429 located in Mississippi Canyon Area;
4. One 5-inch Electro-Hydraulic and Chemical Umbilical (A3) (Segment No. 13818), 7717 feet in length, from Ariel Well #1 to Ariel Well #3 in Block 429 located in Mississippi Canyon Area;
5. One 5-inch Electro-Hydraulic and Chemical Injection Umbilical (A4) (Segment No. 13819), 28478 feet in length, from Nakika FPS in Block 474 through Block 430 to sub Sea Well No. 4 in Block 429, all in Mississippi Canyon Area;
6. One 4-inch Kepler Gas Lift Umbilical (Segment No. 13820) from Ariel Well #1 in Block 429 to Kepler Tie-in SLED in Block 473 located in Mississippi Canyon Area,
7. One 6.32 inch Electro-Hydraulic and chemical umbilical (A5) (Segment No. 18557), 29,723 feet long, from Nakika FPS in Block 474 through Block 430 to A-5 UTA in Block 429, all in Mississippi Canyon Area; and
8. One 5.00 inch Electro-Hydraulic and chemical umbilical (Segment No. 18558), 30,940 feet long, from K-4 UTA in Block 429 through Blocks 385 and 384, to a K-4 UTA in MC 383.

The approval is subject to the following:

Our review indicates that your proposed activities are in the vicinity of the live unexploded German torpedo listed in the Enclosure, a feature that represents a significant archaeological resource and an extreme hazard. In accordance with 30 CFR 250.1007(a)(5), you must ensure that all seafloor disturbing actions resulting from the proposed activities avoid the torpedo by a distance greater than that listed in the Enclosure. You must submit anchor position plats, at a scale of 1-in. = 1,000-ft. with DGPS accuracy, with your pipeline construction report required by 30 CFR 250.1008(b). These plats must depict the "as-placed" location of all anchors, anchor chains, cables, and wire ropes on the seafloor (including sweep) and demonstrate that the feature was not physically impacted and was avoided by the construction activities. If no anchoring activities were conducted during pipeline construction, provide a statement to that effect in lieu of the required anchor position plats.

Segment No.	MAOP (psig)	MAOP Determination
13814	5590	Hydrostatic Test Pressure

You shall submit written notification to this office within 30 days of the completion of the pipeline modification. This notification shall include the

date the modification was completed and an indication that the modification was completed as approved.

Sincerely,

(org. sgd.) B. Hunter

Nick Wetzel
Regional Supervisor
Regional Field Operations

Enclosure

bcc: 1502-01 Segment No. 13814, 13815, 18557 and 18558 ROW OCS-G24240 (MS 5232)
1502-01 ROW OCS-G24240 (Scanning) (MS 5033)

BHunter:ttg:4/5/2012:BP-13814.corrected

Enclosure No. 1

Side-Scan Sonar Targets

Area/ Block	Magnetometer Association	Dimensions LxWxH(Feet)	Coordinates	Minimum Avoidance Distance(Feet)
MC 474	YES	28x3x	X= 1230726.862 Y= 10357318.459 LAT= 28.534613 LON= -88.276314	500



*SN 18557 umb
18558 umb*
Kemper Howe
Land Manager
Deepwater Gulf of Mexico

BP Exploration & Production Inc.
200 Westlake Park Boulevard
Houston, Texas 77079
Telephone: 281-366-1278
Email: kemper.howe@bp.com

Scanning

November 30, 2011

Mr. Michael J. Saucier
Regional Supervisor - Office of Field Operations
U.S. Department of the Interior
Bureau of Safety and Environmental Enforcement
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Minerals Management Service
RECEIVED
DEC 09 2011

Attention: Pipeline Section - MS 5232

Office of Field Operations
Pipeline Section

**Re: Na Kika Phase 3 – Ariel and Kepler Umbilicals
Right-of-Way Modification Application to add A-5 & K-4 Umbilicals
Associated with Right-of-Way Pipeline Segment 13815, G24240
Mississippi Canyon Area, Gulf of Mexico, Federal Waters**

Gentlemen:

Pursuant to Title 30, Part 250, Subpart J - Pipelines and Pipeline Rights-of-Way, BP Exploration & Production Inc. (hereafter called BP) received approval by letter dated August 26, 2002, for the construction, maintenance, and operation of right-of-way Pipeline, Segment No. 13815, and associated Umbilical Segment Numbers 13816, 13817, 13818, 13819, and 13820 located in the Mississippi Canyon Area (MC). The Pipeline Segment was assigned Right-of-Way (ROW) lease G24240.

BP proposes to modify the existing ROW grant to install, operate, and maintain a new umbilical system consisting of two new electro-hydraulic steel tube umbilicals, A-5 and K-4, as appurtenances to the existing pipeline. The new system will be installed to replace the existing A-4 / K-12 umbilical system to service the existing three wells (K-1, K-2, and A-4) and the two new wells (A-5, K-4). An application to decommission the existing A-4 / K-12 umbilicals will be submitted under separate cover at a later date once the new system has been installed and in service. In addition, Supplemental DOCDs and DWOPs will be submitted under separate cover to address the new wells to be drilled and additional subsea infrastructure. The 6.32-inch OD A-5 main umbilical is designed for dynamic service with an ordered length of 35,800-ft. Flying leads will be used to interconnect the A-5 Main UTA to the A-5 SDU and A-5 infield UTA and distribute functionality to the existing A-4 and new A-5 wells. The 5.07-inch OD K-4 in-field umbilical, with a UTA on each end, will carry functionality from the A-5 in-field UTA to the K-4 in-field UTA, with an ordered length of 38,000-ft. Flying leads will be used to interconnect the K-4 in-field UTA to the K-4 SDU and distribute functionality to the K-1 and K-2 wells, as well as the new K-4 well.

Each umbilical has its own route and will not be attached to the ROW pipeline. The A-5 main umbilical essentially follows the route of the existing A-4 umbilical (segment 13819), originating at MC 474, crosses MC 430 and terminates subsea in MC 429 to the A-5 main UTA in the Ariel field. The K-4 in-field umbilical will essentially follow the route of the existing K-12 umbilical (segment 13816), originating at MC 429, crosses MC 385, 384 and terminates subsea in MC 383 to the K-4 in-field UTA in the Kepler field.

In accordance with applicable regulations, BP has forwarded information regarding the proposed project by Federal Express, to each designated oil and gas operator, ROW or easement holder whose lease, ROW or easement is so affected. A list of such designated operators, ROW or easement holders are included in Section 3.6 of the enclosed application. BP has requested a Letter of No Objection and said letters will be kept on file or submitted to your office upon request.

A detailed description of the proposed umbilical system can be found in the attached application. The application contains plats as required by 30 CFR §250.1007 (a) and includes associated digital location data required by NTL 2009-G15. This application also includes, in separate binders, copies of shallow hazards survey reports including an Archaeological report for each proposed umbilical route.

BP hereby requests a waiver from NTL 2008-G05, Section VI.B, which requires the buoing of all existing pipeline(s) and other potential hazards located within 150 meters (490 feet) of the proposed operations. Utilizing the on-board graphic system during construction operations, BP will comply with the recommended avoidance criteria of any magnetic anomalies identified in the C&C Technologies, Inc. Proposed Umbilical Route Survey, September 2011. } ok

Umbilical installation is scheduled to begin mid-February 2012. The total installation and pre-commissioning time frame is estimated at four (4) weeks utilizing a DP umbilical-lay vessel and using conventional marine umbilical installation methods. Additional support vessels may be used to assist in the installation of certain subsea components. The work will be conducted out of the Core Yard shorebase located in Theodore, Alabama.

Pursuant to 30 CFR §250.1011, BP Exploration & Production Inc. maintains a \$300,000 bond (in addition to the general lease surety bond coverage required in 30 CFR 256, Subpart I) that guarantees compliance with all the terms and conditions of the ROW BP holds in an OCS area.

In accordance with 30 CFR §250.1015 (a) we have included a receipt showing payment of \$3865 as a non-refundable filing fee for the processing of this ROW pipeline modification application. Rentals required by §250.1012 (a) and (d) do not apply to umbilical routes used as ROW appurtenances.

The primary shorebase for this project will be located in Theodore, Alabama with a secondary shorebase located in Fourchon, Louisiana. As required by the Coastal Zone Management Program for OCS ROW pipeline modification applications as described in NTL 2007-G20, a copy of this pipeline application with all attachments, consistency certifications, CZM policy reviews, and a request for concurrence have been submitted by express mail to each state affected by the proposed ROW. A copy of the correspondence letters and express mail receipts are enclosed.

In accordance with 30 CFR §250.1015 (d), we have included four copies of a completed Nondiscrimination in Employment form.

*Right-of-Way Modification Application to add A-5 & K-4 Umbilicals
Associated with Right-of-Way Pipeline Segment 13815, OCS-G 24240
Mississippi Canyon Area, Gulf of Mexico, Federal Waters*

Page 3

The company's contact on technical points will be:

Steve Koepke
200 Westlake Park Blvd. #WL4 -599C
Houston, TX 77079
Direct: 281-366-2038
steve.koepke@bp.com

The company's contact on permitting inquiries and all approval documents will be:

Teri Halverson
200 Westlake Park Blvd. #WL4-471A
Houston, TX 77079
Direct: 281-366-6292
teri.halverson@bp.com

Please refer to your New Orleans Miscellaneous File No. 02481 for a copy of a resolution approved by the Board of Directors authorizing the undersigned to sign for and on behalf of BP Exploration & Production Inc.

Sincerely,



Kemper Howe
Attorney-in-Fact

Halverson, Teri

From: paygovadmin@mail.doc.twai.gov
Sent: Tuesday, November 29, 2011 5:19 PM
To: Halverson, Teri
Subject: Pay.Gov Payment Confirmation

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

Transaction Summary

Application Name: BSEE Pipeline ROW Modification Application - BY Pay.gov Tracking ID:
255354U5 Agency Tracking ID: 74259272675 Transaction Type: Sale Transaction Date: Nov 29, 2011
6:19:03 PM

Account Holder Name: Teri Halverson
Transaction Amount: \$3,865.00
Billing Address: 200 Westlake Park Blvd.
Billing Address 2: WL4-471A
City: Houston
State/Province: TX
Zip/Postal Code: 77079
Country: USA
Card Type: AmericanExpress
Card Number: *****1002

Region : Gulf of Mexico
Contact: Teri Halverson 281-366-6292
Company /Co No: BP Exploration Production Inc., 02481 Pipeline Segment No.: 13815 Originating
Area/Block: Mississippi Canyon MC, 474 Terminating Area/Block: Mississippi Canyon MC, 383

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT**

NON-DISCRIMINATION IN EMPLOYMENT

As a condition precedent to the approval of the granting of the subject pipeline right-of-way, the grantee, BP Exploration & Production Inc., 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, to the extent applicable, 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 of Grantee
Attorney-in-Fact



Date

Hunter, Bradley

From: Halverson, Teri [teri.halverson@bp.com]
Sent: Wednesday, January 11, 2012 10:12 AM
To: Hunter, Bradley
Subject: ROW PL Modification - Segments 18557 & 18558 (NaKika Phase III)
Attachments: Shell PL Crossing Agreement.zip

Mr. Hunter -

Thank you for your inquiry. Please find attached a copy the pipeline crossing agreement between Shell and BP for the above referenced umbilical installations.

<<Shell PL Crossing Agreement.zip>>

Teri Halverson

Project Regulatory Advisor
BP Exploration & Production Inc.
281.366.6292 (office)
281.221.5225 (cell)

"Out of clutter, find Simplicity. From discord, find Harmony. In the middle of difficulty lies Opportunity." Albert Einstein

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BP Exploration & Production Inc.
200 Westlake Park Blvd.
Houston, Texas 77079
Phone: 281-366-0288
Fax: 281-366-7569
E-Mail: Janet.Aceves@bp.com

November 22, 2011

VIA FEDERAL EXPRESS

Shell Pipeline Company LP
777 Walker Street
Houston, Texas 77002

Attn: Ms. Sharon Bevers

**RE: Right-of-Way Modification Application
Crossing Pipeline on Lease OCS-G 09808
Mississippi Canyon Block 430**

Dear Ms. Bevers:

BP Exploration & Production Inc. ("BP") is in the process of submitting a right-of-way application to the BOEM for the installation of a 6.32-inch electro-hydraulic steel tube umbilical to be installed along the routes identified on the attached plats. Please note, a portion of the proposed umbilical crosses Shell's 18-inch pipeline (S-13543) on lease OCS-G 09808 (MC 430). The attached documents provide a description of the umbilical configuration.

In order to expedite processing the proposed right-of-way application, BP hereby requests that Shell indicate that it has no objection to BP's proposed right-of-way application by executing this letter in the space provided below and returning one executed copy to my attention. We plan to begin the umbilical installation by mid-February 2012; therefore, your prompt attention to this matter will be appreciated. If you have any questions, please call me at the above number.

Yours truly,

Janet Aceves
Land Negotiator

**ACKNOWLEDGEMENT OF NO OBJECTION TO PROPOSED UMBILICAL CROSSING SHELL'S
PIPELINE ON LEASE MC 430**

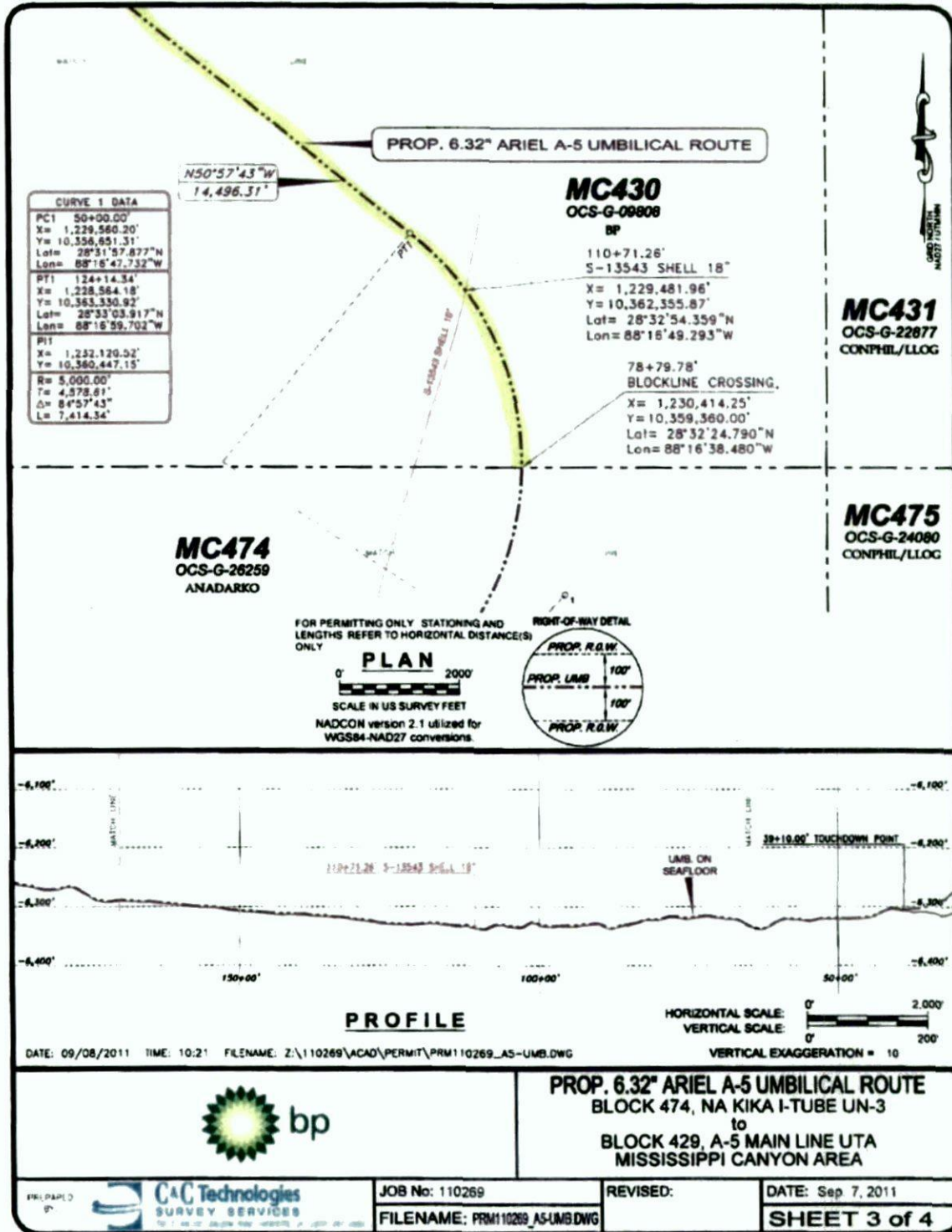
Shell Pipeline Company LP

Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

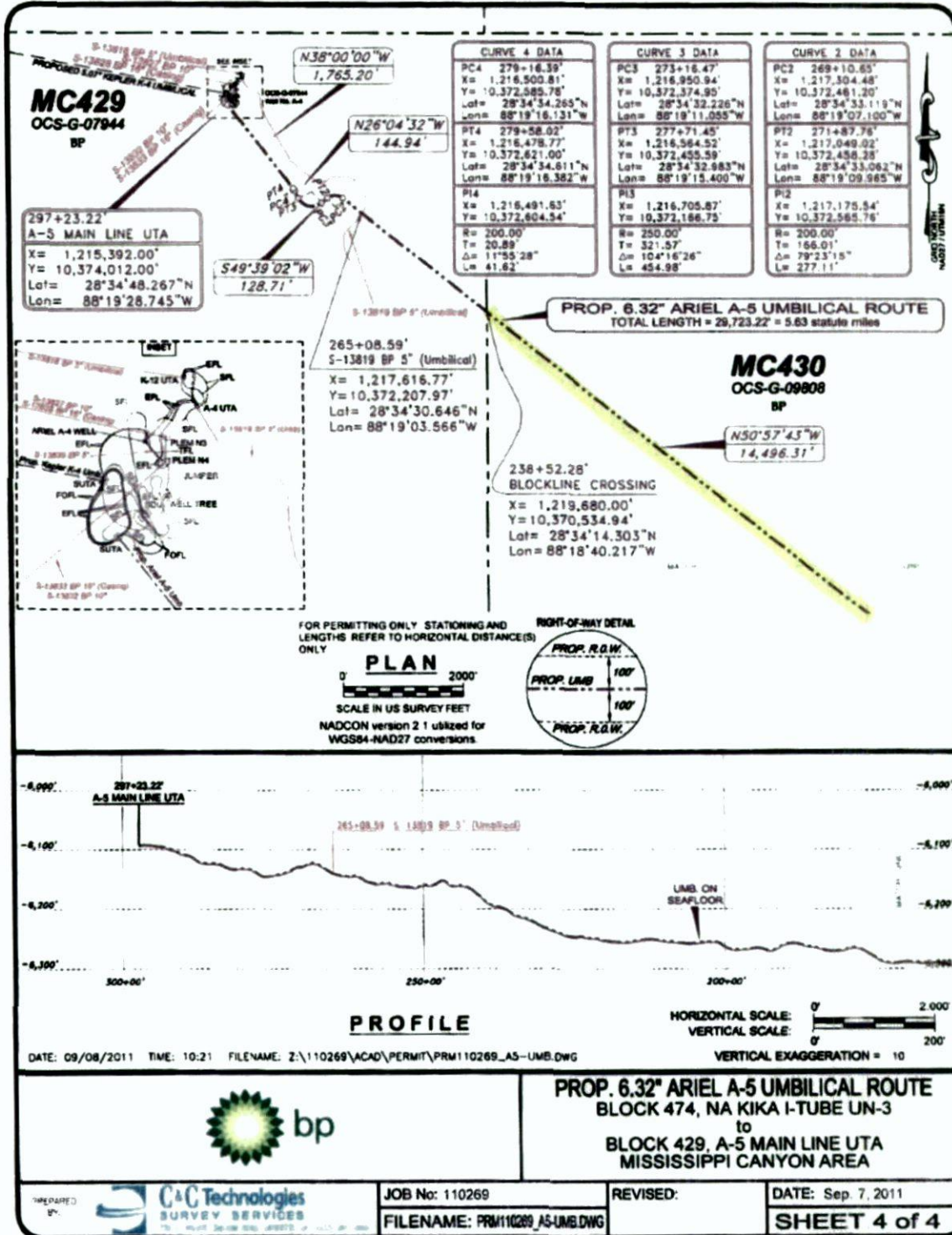


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3.0 30 CFR 250 SUBPART J REQUIREMENTS

3.1 Section 1 §250.1007 (a)(1) – PLATs

Umbilical alignment drawings are included in Appendix A. PLATs are included in Appendix C.

3.2 Section 2 §250.1007 (a)(2) – A-5/K-4 Umbilical Description

A new umbilical system consisting of two new electro-hydraulic steel tube umbilicals A-5 and K-4 will be installed to replace the existing A-4/K-12 umbilical system to service the existing three wells (K-1, K-2, A-4) and the two new wells (A-5, K-4).

3.2.1 A-5 Main Umbilical

The A-5 main umbilical will be designed for dynamic service and will be suspended in a lazy wave configuration from the existing 18-in NE3 I-tube, mounted on the northeast column of the Na Kika platform. The NE3 I-tube has an angled flange at the base that provides a 5 degree departure angle which eliminates the possibility of clashing. The route of the A-5 main umbilical essentially follows the route of the existing A-4 umbilical (segment 13819) and terminates subsea at a main A-5 UTA in the Ariel field. From the main A-5 UTA flying leads will be used to distribute the hydraulics, chemicals, power and communications to the A-5 SDU, to the A-5 infield UTA location and from the A-5 SDU and A-5 infield UTA to the trees at the existing A-4 and new A-5 wells. The same umbilical cross-sectional design shall be used for both the dynamic and static portion of the main umbilical.

The cross section details of the A-5 main umbilical are included in Appendix B. The A-5 main umbilical has an ordered length of 35,800-ft, with an outer diameter (OD) of 6.32-in and contains twenty five (25) super duplex metal tubes, five (5) armored electrical quads and three (3) fiber optic bundles containing twenty four (24) fibers per bundle as shown in Table 3-1.

Table 3-1: Na Kika Phase 3 Main Umbilical (A-5 Main)

Line No.	Line ID.	Line Function	Line Size (ID)	Design Pressure or Rating	Storage/Delivery Fluid
1	LP1	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
2	LP2	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
3	HP1	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
4	HP2	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
5	MeOH1	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
6	MeOH2	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
7	MeOH3	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
8	MeOH4	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
9	MeOH5	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
10	MeOH6	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50



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Line No.	Line ID.	Line Function	Line Size (ID)	Design Pressure or Rating	Storage/Delivery Fluid
11	MeOH7	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
12	AMON	Annulus Monitor	3/4"	10,000 psi	MEG/Water 50/50
13	CI1	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
14	CI2	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
15	CI3	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
16	CI4	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
17	CI5	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
18	CI6	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
19	CI7	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
20	AI1	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
21	AI2	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
22	AI3	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
23	SP1	Spare	1/2"	10,000 psi	Transaqua HT
24	SP2	Spare	1/2"	10,000 psi	Transaqua HT
25	SP3	Spare	3/4"	10,000 psi	MEG/Water 50/50
26	PA	Armored Quad Power Cable	10 mm ²	1kV	-
27	PB	Armored Quad Power Cable	10 mm ²	1kV	-
28	PC	Armored Quad Power Cable	10 mm ²	1kV	-
29	PD	Armored Quad Power Cable	10 mm ²	1kV	-
30	PE	Armored Quad Power Cable	10 mm ²	1kV	-
31	FA	Single mode Fiber Optic Cable	24-Fiber	-	-
32	FB	Single mode Fiber Optic Cable	24-Fiber	-	-
33	FC	Single mode Fiber Optic Cable	24-Fiber	-	-

3.2.2 K-4 Infield Umbilical

The K-4 infield umbilical with a UTA on each end will essentially follow the route of the existing Ariel to Kepler K-12 umbilical (segment 13816) and carry functionality from the A-5 infield UTA to the K-4 infield UTA. Flying leads will be used to interconnect the K-4 infield UTA to the K-4 SDU and distribute functionality to the K-1 and K-2 wells, as well as the new K-4 well.

The cross section details of the K-4 infield umbilical are included in Appendix B. The K-4 infield umbilical has an ordered length of 38,000-ft, an outer diameter (OD) of 5.07-in containing nineteen (19) super duplex metal tubes, five (5) armored electrical quads and two (2) fiber optic bundles containing twenty four (24) fibers per bundle as shown in Table 3-2.



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Table 3-2: Na Kika Phase 3 Infield Umbilical (K-4 Infield)

Line No.	Line ID.	Line Function	Line Size (ID)	Design Pressure or Rating	Storage/Delivery Fluid
1	LP1	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
2	LP2	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
3	HP1	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
4	HP2	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
5	MeOH3	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
6	MeOH4	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
7	MeOH5	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
8	MeOH6	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
9	MeOH7	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
10	AMON	Annulus Monitor	3/4"	10,000 psi	MEG/Water 50/50
11	CI3	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
12	CI4	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
13	CI5	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
14	CI6	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
15	CI7	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
16	AI1	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
17	AI2	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
18	AI3	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
19	SP3	Spare	3/4"	10,000 psi	MEG/Water 50/50
20	PA	Armored Quad Power Cable	10 mm ²	1kV	-
21	PB	Armored Quad Power Cable	10 mm ²	1kV	-
22	PC	Armored Quad Power Cable	10 mm ²	1kV	-
23	PD	Armored Quad Power Cable	10 mm ²	1kV	-
24	PE	Armored Quad Power Cable	10 mm ²	1kV	-
25	FA	Single mode Fiber Optic Cable	24-Fiber	-	-
26	FB	Single mode Fiber Optic Cable	24-Fiber	-	-

3.3 Section 3 §250.1007 (a)(3) – General Information

3.3.1 Design Life

The design life for the A-5 main umbilical and K-4 infield umbilical is 20 years.

3.3.2 Material

All tube material is Super Duplex material (UNS S39274) with a 1.3mm wall thickness for 1/2-in ID tubes and a 2.02 mm wall thickness for 3/4-in ID tubes,

**SHELL PIPELINE COMPANY LP (SPLC)
GENERAL CROSSING AND ANCHORING GUIDELINES FOR SPLC PIPELINES
OFFSHORE GULF OF MEXICO**

1. Work plans must be submitted to SPLC for review a minimum of 14 days prior to commencing any construction activity across SPLC's pipelines or within SPLC's pipeline rights of way. All pipelines constructed across an SPLC pipeline must be installed in accordance with either of the crossing drawings contained herein, depending on whether the pipeline is to be installed in < 200' or > 200' water depth.
2. At least seven days prior to commencing any construction activity in the immediate vicinity of an SPLC pipeline, the Company crossing the SPLC line will notify Magellan Marine International's Operations Manager at (504) 835-3009 so that a Magellan Marine employee, on SPLC's behalf, can be present during the construction activities.
3. Magellan Marine or its designated alternate will be afforded the opportunity to be present on board the lay barge during any company's construction of a pipeline across an SPLC pipeline. Magellan Marine will be allowed to witness any pipeline position survey and be given the opportunity to be present on board the survey vessel during survey operations. A copy of a video survey of all pipeline conditions during the survey should be made available. Magellan Marine shall be given the opportunity to visually inspect and approve all anchor pre-set riggings, including chain shackles, triplates (or equivalent) and buoys.
4. SPLC or its representative should be allowed to witness the pre-set deployment of anchors. SPLC or its representative shall also be allowed to do the following when installing the anchoring system for a deep water (greater than 1,000 feet) location:
 - a. Record bollard pull load cell reading during anchor pre-set proceeding;
 - b. Monitor mooring system hook up procedures;
 - c. Monitor deployment of all other anchors;
 - d. Record base line anchor tension for all anchors after final positioning;
 - e. Confirm line of communications for any change in drilling rig status while on location;
 - f. Witness the retrieval of any and all anchors.
5. The company's anchor-handling tug will have a satellite position system accurate to within five meters. When setting and weighing anchors, anchor positions will be plotted to determine the extent of anchor slippage. All anchors placed across an SPLC pipeline will be located a minimum horizontal distance of 1,000 feet from SPLC's pipeline, and all anchors not crossing an SPLC pipeline will be located a minimum horizontal distance of 800 feet from SPLC's pipeline. All anchors shall be weighted vertically from their stationary positions to a height of not less than one-half the distance between the ocean floor and sea level before the anchors move laterally in water depths greater than 100 feet; in water depths less than 100 feet the anchor shall be weighted to the surface before moved laterally. **(This paragraph is not applicable if dynamically positioned vessels (DPV) are utilized during the crossing operations.)**

6. Whether the company uses divers or a remote operated vehicle (ROV) to inspect the crossing locations, the company agrees that Magellan Marine or its designated alternate will be notified at least seven days prior to inspection operations and will be given the opportunity to be present on board the vessel during the periods of diver and/or ROV inspection.
7. If the company intends to cross an SPLC pipeline with another pipeline, the company agrees to temporarily remove, raise or lower its pipeline, whichever is preferable, at the company's expense and at no cost or liability to SPLC, should it become necessary and for all times it should become necessary for SPLC to alter, repair, replace, relocate, change the size of, or remove SPLC's pipeline which the company intends to cross, for a period of time while SPLC's operations are in progress,
8. Within 90 days following completion of the pipeline across SPLC's pipeline, the company will furnish to SPLC, at the above address, a reproducible "as-built" drawing of the crossings.
9. Should Paragraph #5 be applicable, within 90 days following completion of construction, the company will furnish to SPLC, at the above address, anchor coordinates drawings showing the locations where all anchors were set and picked up within 1,000 feet of SPLC's pipeline, which drawings will be used to show if anchor slippage has occurred which may endanger the SPLC pipeline. The anchor locations will also be shown in a table on the as-built drawings.
10. The company shall defend, indemnify and hold harmless SPLC, its parent, associated and affiliated companies, its and their agents, employees, officers, directors, insurers, successors and assigns from and against any loss, damage, claim, suit liability, judgment and expenses (including attorneys' fees and other costs of litigation), and any fines, penalties and assessments arising out of injury, disease or death of persons (including that of the employees of the company or SPLC or their contractors and subcontractors), damage to or loss of any property (including that of the company or SPLC or their contractors and subcontractors), lost product and/or lost business due to interference with SPLC's pipeline, and any environmental harm, or damages to natural resources, caused by, arising out of or resulting from, either directly or indirectly, the activities of the company and its contractors in the construction, operation and maintenance of the company's facilities across the SPLC pipeline or within SPLC's pipeline rights of way.
11. For notification purposes, the following should be contacted:

SPLC's Maintenance Supervisor

Kelly Angelette

985-858-2570 office

985-688-7446 cell

kelly.angelette@shell.com

SPLC's On-site Representative

Magellan Marine Int'l.
504-835-3009 office
mmi-no@magellanmarine.com

Emergency Response Notification

SPLC Control Center
800-852-8144
713-241-0648



VIA UPS OVERNIGHT
Tracking No. 1Z 770 071 01 9926 2050

November 29, 2011

Ms. Janet Aceves
BP Exploration & Production Inc.
200 Westlake Park Blvd.
Houston, TX 77079

Via E-Mail: Janet.Aceves@bp.com

Shell Pipeline Company LP
Land and Permitting
Two Shell Plaza - # 1571
777 Walker Street
Houston, TX 77002
Tel (713) 241-0457
Fax (713) 241-0271

Dear Ms. Aceves:

**Re: MISSISSIPPI CANYON BLOCK 340, OFFSHORE LOUISIANA
18-INCH NAKIKA PIPELINE OCS-G-23074, SEGMENT NO. 13543
SPLC GOM FILE NO. 10-035H**

**INSTALLATION OF A 6.32-INCH ELECTRO-HYDRAULIC STEEL TUBE
UMBILICAL
BP EXPLORATION & PRODUCTION INC. - PIPELINE CROSSING
AGREEMENT**

Shell Pipeline Company LP ("SPLC") is in receipt of your letter dated November 22, 2011 outlining BP Exploration & Production Inc.'s ("BP") proposed installation of a 6.32-inch electro-hydraulic steel tube umbilical across SPLC's above referenced pipeline located in Mississippi Canyon Block 430, OCS-G-23074, Segment No. 13543.

SPLC objects to BP's plans unless BP agrees to and satisfies the following requirements:

1. At least seven days prior to commencing any pipe lay activity in the vicinity of the captioned Pipelines, BP will notify Magellan Marine Int'l. ("Magellan") Operations Manager at (504) 835-3009 so that a Magellan employee, on SPLC's behalf, can be present during the operations.
2. BP will accomplish the crossing in accordance with SPLC's Drawing No.SD-62276 attached hereto and made a part hereto. In the event the SPLC pipeline is exposed at the crossing location, BP shall install all separation materials (sandbags and mats) prior to constructing its pipeline across SPLC's pipeline.
3. BP agrees that Magellan or its designated alternate will be afforded the opportunity to be present on board the lay/burial barge during BP's construction of its pipeline across SPLC's pipeline.

4. BP agrees to supply SPLC with the proposed Anchor Plats prior to the start of the project, for review.
5. BP's anchor-handling tug will have a satellite position system accurate to within five meters. When setting and weighing anchors, anchor positions will be plotted to determine the extent of anchor slippage. All anchors placed across SPLC's pipeline will be located a minimum horizontal distance of 1,000 feet from SPLC's pipeline, and all anchors not crossing SPLC's pipeline will be located a minimum horizontal distance of 800 feet from SPLC's pipeline. All anchors shall be weighted vertically from their stationary positions to a height of not less than one-half the distance between the ocean floor and sea level before the anchors move laterally in water depths greater than 100 feet; in water depths less than 100 feet the anchor shall be weighted to the surface before moved laterally. **(This paragraph is not applicable if dynamically positioned vessels (DPV) are utilized during the crossing operations).**
6. Should Paragraph 5 be applicable, within 90 days following completion of construction, BP will furnish SPLC, at the above address, anchor coordinates drawings showing the locations where all anchors were set and picked up within 1,000 feet of SPLC's pipeline, which drawings will be used to show if anchor slippage has occurred which may endanger SPLC's pipeline.
7. No mechanical jetting equipment will be used closer than 100 feet perpendicular either side of SPLC's pipeline. BP agrees to locate and mark the crossing location with sonar reflectors or surface buoys to verify the exact crossing location. BP agrees to supply SPLC with the proposed set of procedures on the jetting and diving operations for SPLC's review and approval.
8. Whether BP uses divers or a remote operated vehicle ("ROV") to inspect the crossing location, BP agrees that Magellan or its designated alternate will be notified at least seven days prior to inspection operations and will be given the opportunity to be present on board the vessel during the periods of diver and/or ROV inspection.
9. In the event SPLC's 18-inch pipeline is damaged or its operations otherwise disrupted as a result of the construction, installation, operation, maintenance, repair or removal of the 6.32-inch electro-hydraulic steel tube umbilical, BP agrees to reimburse SPLC for (a) any and all expenses incurred by SPLC to repair and return the 18-inch pipeline to its original condition to SPLC's satisfaction, (b) the value of any gas or condensate, or both, lost from the 18-inch pipeline, (c) the cost of cleaning up and disposing of any product spilled from the 18-inch pipeline, (d) the payment of all claims, fines or penalties paid to individuals, governmental agencies, or any other entity, and (e) the cost of hydrostatic tests for the 18-inch pipeline, SPLC believes its integrity is in doubt.

10. Should SPLC find it necessary at any time in the future to raise, expose, or otherwise alter its 18-inch pipeline from beneath BP's proposed 6.32-inch umbilical at or near the crossing locations for maintenance, replacement, inspection or any other reason, BP, at its sole cost, risk, and expense, agrees to take such measures as necessary, including reduction of pressure, on BP's proposed 6.32-inch umbilical. SPLC shall not be liable to BP for any loss of revenue due to BP's adjustment of its 6.32-inch umbilical.
11. All damages to the 18-inch pipeline, including damage to the protective coating, due to the crossings by BP, will be repaired to the satisfaction of SPLC's Authorized Representative at BP's sole risk, cost and expense.
12. BP shall defend, indemnify and hold harmless SPLC, its parents, associated and affiliated companies, its and their agents, employees, officers, directors, insurers, successors and assigns from and against any loss, damage, claim, suit liability, judgment and expense (including attorneys' fees or other costs of litigation), and any fines, penalties and assessments arising out of injury, disease or death of persons (including that of the employees of BP, SPLC, or their contractors and subcontractors), damage to or loss of any property (including that of BP, SPLC or their contractors and subcontractors), **lost product and/or lost business due to interference with SPLC's pipeline**, and any environmental harm, or damages to natural resources, caused by, arising out of or resulting from, either directly or indirectly, the activities of BP and its agents, employees and contractors in connection with the activities covered in this agreement.

THE INDEMNITY OBLIGATIONS SET FORTH IN THIS SECTION 12 SHALL APPLY EVEN THOUGH AN EVENT GIVING RISE TO THE INDEMNITY MAY BE CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT), STRICT LIABILITY OR OTHER LEGAL FAULT OR LIABILITY OF THE INDEMNIFIED PARTY, BUT NOT TO THE EXTENT CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THE INDEMNIFIED PARTY.

13. Unless waived by this letter agreement or unless instructed otherwise by SPLC's on-site representative, BP, its agents, contractors, or subcontractors will observe **SPLC's General Crossing and Anchoring Guidelines for SPLC Pipeline, Offshore Gulf of Mexico ("Guidelines")**(copy attached). In the event of a conflict between this Pipeline Crossing Agreement and the Guidelines, the terms of this Pipeline Crossing Agreement shall prevail.
14. This conditional approval covers only BP's proposed pipeline across the 18-inch pipeline, OCS-G 23074, Segment No. 13543 located in Mississippi Canyon Block 430, and in no way, implies SPLC's consent to BP crossing of other facilities, pipelines, or any other assets that may be owned, leased, and/or operated by SPLC or any of their associated or affiliated companies.

Please indicate BP Exploration & Production Inc.'s acceptance of the above by having the proper authority date and sign this letter in the spaces provided and return the original to the undersigned at the above address.

Sincerely,



Sharon L. Bevers
Land Agent
Shell Pipeline Company LP

Enclosures

AGREED TO AND ACCEPTED THIS 7th DAY OF December, 2011

BP EXPLORATION & PRODUCTION INC.

BY: 

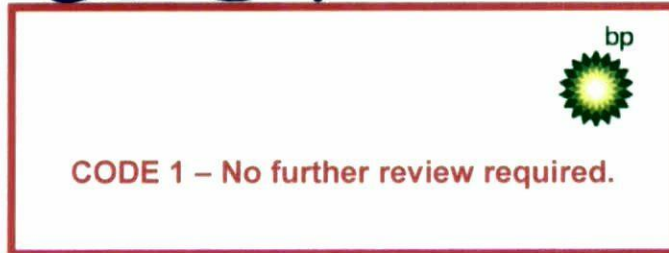
NAME: STEVEN KOEPIKE

TITLE: PROJECT MANAGER

Enclosure

cc: Alex Alvarado – Via UPS Overnight 1Z 770 071 01 9777 4868
Bureau of Safety and Environmental Enforcement
1201 Elmwood Park Boulevard (MS 5232)
New Orleans, LA 70123-2394

cc: Shell Pipeline Company LP
Mike L. Smith, Sr. Facility Engineer, New Orleans, LA
Kelly Angelette, Maintenance Supervisor, Gibson, LA
Eric Schwartz, Facility Engineer, New Orleans, LA
Magellan Marine Int'l., Metairie, LA



Right-of-Way Modification
 Permit Application
 Na Kika Phase 3
 A-5 and K-4 Umbilicals
 Proposed Appurtenances to
 Pipeline Segment 13815
 Right-of-Way Grant OCS-G 24240

BP Document No: NKPH3-15-RG-PE-000046

BP Rev.	Date	Description	Prepared By	Checked By	Approved By	BP Reviewed	BP Approved
3	22 Nov 11	Issued for Construction	BW	JM	TR		
2	16 Nov 11	Issued for Construction	BW	JM	TR	SK	SK
1	19 Sep 11	Issued for Construction	BW	JM	TR	SK	
0	23 Feb 11	Issued for Construction	BW	TL	SJ	SK	
D	3 Feb 11	Issued for Approval	BW	TL	SJ	SK	
C	20 Oct 10	Issued for Approval	GUP	BW	JP	SK	
B	11 May 10	Issued for Approval	GUP	BW	JP	SK	
A	7 May 10	Issued for IDC	GUP	BW	JP		

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REVISION HISTORY SHEET

Revision	Date	Description of Change
A	7 May 10	Issued for IDC
B	11 May 10	Issued for Approval
C	20 Oct 10	Issued for Approval
D	3 Feb 11	Updated nomenclature of A-5 Main umbilical throughout document
0	22 Feb 11	IFC – Issued for Construction
1	19 Sep 11	Survey completed and inserted Kepler alignment sheets rev 1 and revised PLATS
2	16 Nov 11	Revised document title, sections 3.3.4 & 3.5. Added section 4.1. Changed globally BOEMRE to BSEE. Added crossings table and statement. Added to NTL list. Updated Appendix A1 to rev 1 drawing.
3	22 Nov 11	Revise title to 3.3.5



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1.0 GENERAL INFORMATION

This right-of-way modification application is for the A-5/K-4 umbilical system.

The existing Na Kika subsea field development consists of six independent fields: Kepler (MC 383) and Ariel (MC 429) in the north, East Anstey (MC 608), Herschel (MC 520), Coulomb (MC 667 and MC 613) and Fourier (MC 522 and MC 566) in the south. These fields are developed via subsea tiebacks to the centrally located Na Kika semi-submersible host facility in MC 474 at a water depth of approximately 6,290 feet. Kepler, Ariel and Herschel fields are predominantly oil; while the Fourier, East Anstey and Coulomb fields are predominantly gas. BP and Shell each have interest in the platform facilities, the Ariel, Fourier, Kepler and East Anstey fields.

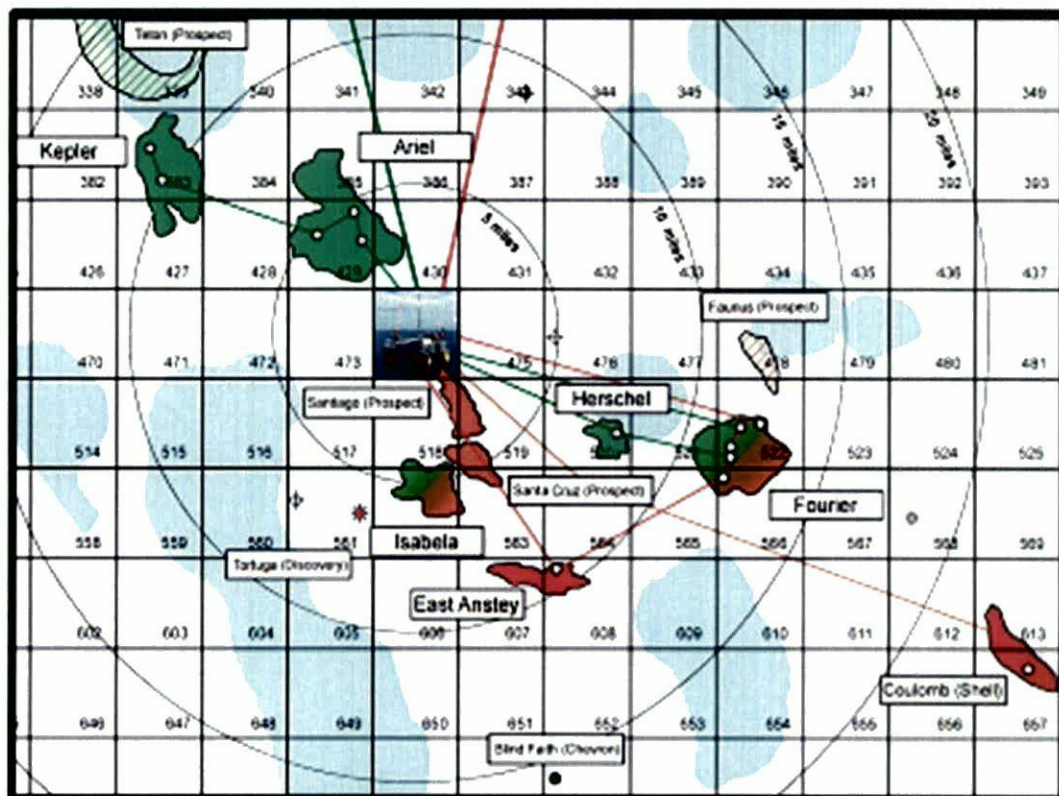


Figure 1-1: Na Kika Area Infrastructure

The north oil flowloop transports production from five (5) wells in the Ariel and Kepler fields to the Na Kika platform. The Ariel A-4 well, Kepler K-1 and K-2 wells are controlled using the A-4 umbilical (segment 13819) and K-12 umbilical (segment 13816). The A-1 and A-3 wells are controlled using the A-1 umbilical (segment 13817) and the A-3 umbilical (segment 13818).

BP Exploration & Production Inc. proposes the drilling of two new wells, Ariel A-5 and Kepler K-4, and the installation of a new A-5/K-4 umbilical system to bring controls to the new wells. Additionally, the controls for existing wells A-4, K-1 and K-2 will be changed



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over from the existing A-4/K-12 umbilical system to the new A-5/K-4 umbilical system. An illustration of this development is shown in Figure 1-2.

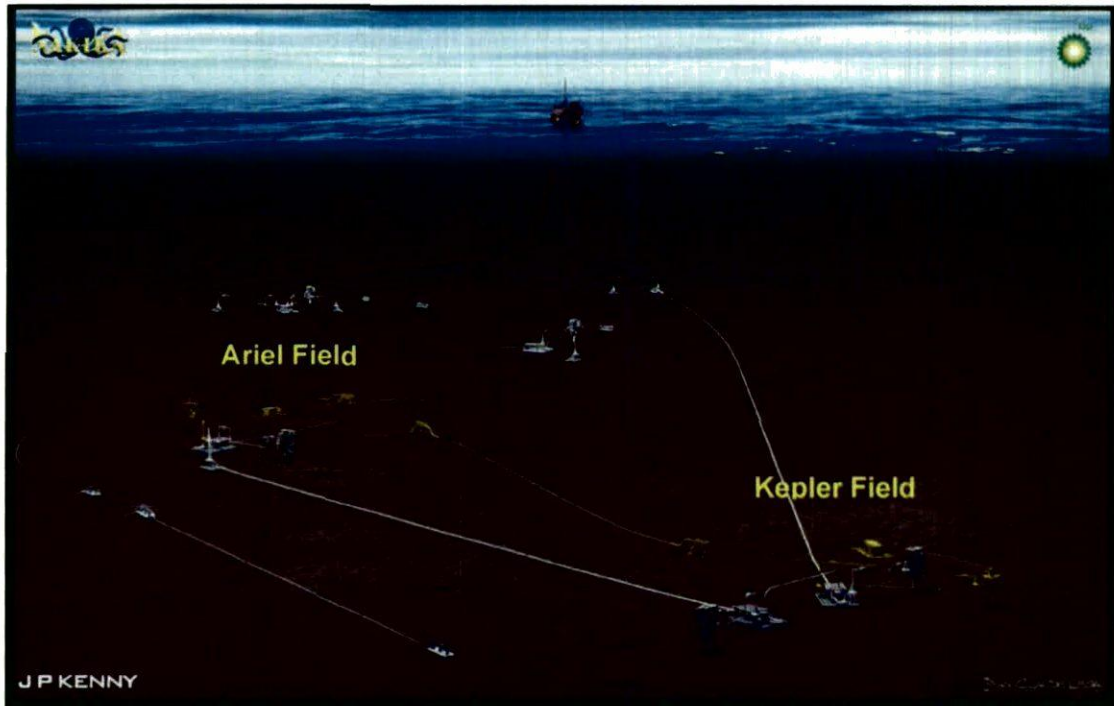


Figure 1-2: Ariel and Kepler Field Location Drawing

2.0 ACRONYMS

Table 2-1: Acronym List

Acronym	Description/Definition
BSEE	Bureau of Safety and Environmental Enforcement
CVA	Certified Verification Agent
EFL	Electrical Flying Lead
FOFL	Fiber Optic Flying Lead
GOM	Gulf of Mexico
ID	Internal Diameter
MC	Mississippi Canyon
MeOH	Methanol
OD	Outer Diameter
SDU	Subsea Distribution Unit
SFL	Steel Flying Lead
UTA	Umbilical Termination Assembly



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3.0 30 CFR 250 SUBPART J REQUIREMENTS

3.1 Section 1 §250.1007 (a)(1) – PLATs

Umbilical alignment drawings are included in Appendix A. PLATs are included in Appendix C.

3.2 Section 2 §250.1007 (a)(2) – A-5/K-4 Umbilical Description

A new umbilical system consisting of two new electro-hydraulic steel tube umbilicals A-5 and K-4 will be installed to replace the existing A-4/K-12 umbilical system to service the existing three wells (K-1, K-2, A-4) and the two new wells (A-5, K-4).

3.2.1 A-5 Main Umbilical

The A-5 main umbilical will be designed for dynamic service and will be suspended in a lazy wave configuration from the existing 18-in NE3 I-tube, mounted on the northeast column of the Na Kika platform. The NE3 I-tube has an angled flange at the base that provides a 5 degree departure angle which eliminates the possibility of clashing. The route of the A-5 main umbilical essentially follows the route of the existing A-4 umbilical (segment 13819) and terminates subsea at a main A-5 UTA in the Ariel field. From the main A-5 UTA flying leads will be used to distribute the hydraulics, chemicals, power and communications to the A-5 SDU, to the A-5 infield UTA location and from the A-5 SDU and A-5 infield UTA to the trees at the existing A-4 and new A-5 wells. The same umbilical cross-sectional design shall be used for both the dynamic and static portion of the main umbilical.

The cross section details of the A-5 main umbilical are included in Appendix B. The A-5 main umbilical has an ordered length of 35,800-ft, with an outer diameter (OD) of 6.32-in and contains twenty five (25) super duplex metal tubes, five (5) armored electrical quads and three (3) fiber optic bundles containing twenty four (24) fibers per bundle as shown in Table 3-1.

Table 3-1: Na Kika Phase 3 Main Umbilical (A-5 Main)

Line No.	Line ID.	Line Function	Line Size (ID)	Design Pressure or Rating	Storage/Delivery Fluid
1	LP1	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
2	LP2	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
3	HP1	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
4	HP2	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
5	MeOH1	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
6	MeOH2	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
7	MeOH3	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
8	MeOH4	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
9	MeOH5	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
10	MeOH6	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50



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Line No.	Line ID.	Line Function	Line Size (ID)	Design Pressure or Rating	Storage/Delivery Fluid
11	MeOH7	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
12	AMON	Annulus Monitor	3/4"	10,000 psi	MEG/Water 50/50
13	CI1	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
14	CI2	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
15	CI3	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
16	CI4	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
17	CI5	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
18	CI6	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
19	CI7	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
20	AI1	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
21	AI2	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
22	AI3	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
23	SP1	Spare	1/2"	10,000 psi	Transaqua HT
24	SP2	Spare	1/2"	10,000 psi	Transaqua HT
25	SP3	Spare	3/4"	10,000 psi	MEG/Water 50/50
26	PA	Armored Quad Power Cable	10 mm ²	1kV	-
27	PB	Armored Quad Power Cable	10 mm ²	1kV	-
28	PC	Armored Quad Power Cable	10 mm ²	1kV	-
29	PD	Armored Quad Power Cable	10 mm ²	1kV	-
30	PE	Armored Quad Power Cable	10 mm ²	1kV	-
31	FA	Single mode Fiber Optic Cable	24-Fiber	-	-
32	FB	Single mode Fiber Optic Cable	24-Fiber	-	-
33	FC	Single mode Fiber Optic Cable	24-Fiber	-	-

3.2.2 K-4 Infield Umbilical

The K-4 infield umbilical with a UTA on each end will essentially follow the route of the existing Ariel to Kepler K-12 umbilical (segment 13816) and carry functionality from the A-5 infield UTA to the K-4 infield UTA. Flying leads will be used to interconnect the K-4 infield UTA to the K-4 SDU and distribute functionality to the K-1 and K-2 wells, as well as the new K-4 well.

The cross section details of the K-4 infield umbilical are included in Appendix B. The K-4 infield umbilical has an ordered length of 38,000-ft, an outer diameter (OD) of 5.07-in containing nineteen (19) super duplex metal tubes, five (5) armored electrical quads and two (2) fiber optic bundles containing twenty four (24) fibers per bundle as shown in Table 3-2.



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Table 3-2: Na Kika Phase 3 Infield Umbilical (K-4 Infield)

Line No.	Line ID.	Line Function	Line Size (ID)	Design Pressure or Rating	Storage/Delivery Fluid
1	LP1	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
2	LP2	Low Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
3	HP1	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
4	HP2	High Pressure Hydraulic Control (SCM)	1/2"	10,000 psi	Transaqua HT
5	MeOH3	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
6	MeOH4	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
7	MeOH5	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
8	MeOH6	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
9	MeOH7	Methanol Injection	3/4"	10,000 psi	MEG/Water 50/50
10	AMON	Annulus Monitor	3/4"	10,000 psi	MEG/Water 50/50
11	CI3	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
12	CI4	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
13	CI5	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
14	CI6	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
15	CI7	Corrosion Inhibitor	1/2"	10,000 psi	MEG/Water 50/50
16	AI1	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
17	AI2	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
18	AI3	Asphaltene Inhibitor (DH)	1/2"	10,000 psi	MEG/Water 50/50
19	SP3	Spare	3/4"	10,000 psi	MEG/Water 50/50
20	PA	Armored Quad Power Cable	10 mm ²	1kV	-
21	PB	Armored Quad Power Cable	10 mm ²	1kV	-
22	PC	Armored Quad Power Cable	10 mm ²	1kV	-
23	PD	Armored Quad Power Cable	10 mm ²	1kV	-
24	PE	Armored Quad Power Cable	10 mm ²	1kV	-
25	FA	Single mode Fiber Optic Cable	24-Fiber	-	-
26	FB	Single mode Fiber Optic Cable	24-Fiber	-	-

3.3 Section 3 §250.1007 (a)(3) – General Information

3.3.1 Design Life

The design life for the A-5 main umbilical and K-4 infield umbilical is 20 years.

3.3.2 Material

All tube material is Super Duplex material (UNS S39274) with a 1.3mm wall thickness for 1/2-in ID tubes and a 2.02 mm wall thickness for 3/4-in ID tubes,



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3.3.3 Weight

The weights of the umbilicals are presented in Table 3-3.

Table 3-3: Umbilical Weight

Section	Weight in Air Empty (lb/ft), Lines filled	Submerged Weight (lb/ft) Interstices Flooded, Lines filled
Main Umbilical	25.00	13.50
Infield Umbilical	18.10	10.70

3.3.4 Construction Information and Schedule

Installation is scheduled for mid-February 2012. The total installation and pre-commissioning time frame is estimated at four (4) weeks.

3.3.5 Pipeline Crossings and Protection

In accordance with applicable regulations, each designated oil and gas operator, ROW or easement holder whose lease, ROW or easement is so affected by the proposed umbilical routes will be notified. A list of such designated operators, ROW or easement holders are included in Section 3.6 of the enclosed application. A Letter of No Objection will be requested and said letters will be kept on file or submitted upon request.

Pipelines/cable crossed by the Ariel A-5 and Kepler K-4 umbilical routes are notated in Table 3-4.

Table 3-4: Pipeline Crossings

Segment No.	Block	X-Coordinate (ft)	Y-Coordinate (ft)	Water Depth (ft)	Route
S-13543 Shell 18"	MC430	1,229,481.96	10,362,355.87	6,340	Ariel A-5
S-13819 BP 5"	MC429	1,217,616.77	10,372,207.97	6,140	Ariel A-5
S-17364 BP 2" (cable)	MC 384	1,199,689.03	10,377,171.67	5,970	Kepler K-4

During installation and operation the umbilical is protected as follows:

1. Pipeline and Umbilical Crossings

Umbilicals over pipeline crossings are to be protected with a concrete mattress or other protection offering minimum 6-in (152 mm) separation between the umbilical and pipeline.

Umbilical over umbilical crossings may be protected as described above or may be protected using a device that is attached to the umbilical during lay. This device may be applied to the outside of the umbilical where it crosses another umbilical. The device shall be rated for the installed water depth and cover a minimum of 328-ft (100 m) length on the umbilical. The midpoint of the device shall be as close as possible to the crossing point. The device shall have a minimum thickness of 2-in (50 mm).



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2. Marking of Hazards

A state-of-the-art positioning system (e.g. differential global positioning system) will be utilized on the umbilical-lay vessel as an alternative to marker buoys. A PLAT with a minimum scale of 1:2,000 depicting the location of the proposed activity, any existing pipelines and other hazards in the area will be provided to the key personnel on the umbilical-lay vessel associated with the operations.

3. Burial Requirement

No burial is required for the umbilical system.

4. Fairway or Anchorage Area Crossing

The proposed umbilical herein does not cross a fairway or anchorage area.

3.4 Section 4 §250.1007 (a)(4)-Additional Design Precautions

Analysis has shown that adjacent umbilicals have sufficient clearances to prevent clashing for both installation and operation throughout design life. The umbilical will not carry hydrocarbons and no CVA analysis will be performed.

3.5 Section 5 §250.1007 (a)(5)-Shallow Hazard Survey Analysis

C&C Technologies, Inc. conducted an AUV Survey in Mississippi Canyon Area Blocks 474, 430, 429, 385, 384, 383 in September 2011 for the A-5 and K-4 umbilical routes. A site clearance report that evaluates the seafloor and subsurface geologic and manmade features and conditions, prepared in accordance with NTL 2008-G05, for the proposed umbilical routes is included as an enclosure in this pipeline application.

In accordance with the requirements of NTL No. 2008-G05, up-to-date information will be input into a state-of-the-art, real-time navigational positioning system. The system will be used to depict all existing pipelines and other potential hazards located within 150 meters of the operation.

BP expressly agrees 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 or area of operation, 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 resources from damage until said Director has given directions as to its preservation.



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3.6 Section 6 §250.1015 (c)-List of Lessees and Lease Term Holders

The following information was provided by BSEE fast facts:

(<http://www.gomr.mms.gov/homepg/fastfacts/fastfacts.html>)

Mississippi Canyon 474	Kerr-McGee Oil & Gas Corporation OCS-G-26259
Mississippi Canyon 430	BP Exploration & Production Inc., 50%; Shell Offshore, Inc., 50%; OCS-G-09808
Mississippi Canyon 429	BP Exploration & Production Inc., 50%; Shell Offshore, Inc., 50%; OCS-G-07944
Mississippi Canyon 385	BP Exploration & Production Inc., 50%; Shell Offshore, Inc., 50%; OCS-G-07938
Mississippi Canyon 384	Marubeni Oil and Gas (USA), Inc. OCS-G-26250
Mississippi Canyon 383	BP Exploration & Production Inc., 50%; Shell Offshore, Inc., 50%; OCS-G-07937

4.0 NOTICE TO LESSEE (NTL) REQUIREMENTS

4.1 NTL No. 2008-G05-Shallow Hazards Program

Up-to-date information will be input into a state-of-the-art, real-time navigational positioning system. The system will be used to depict all existing pipelines and other potential hazards located within 150 meters of the operation.

4.2 NTL No. 2009-G40-Deepwater Benthic Communities

In accordance with NTL No. 2009-G40 Deepwater Benthic Communities the statement is made that there are no disturbances within 250 feet of chemosynthetic communities.



Project Title: Na Kika Phase 3
Project Description: Ariel and Kepler Tie-In and Fourier Manifold
Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

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Appendix A:

Umbilical Alignment Drawings



Project Title: Na Kika Phase 3
Project Description: Ariel and Kepler Tie-In and Fourier Manifold
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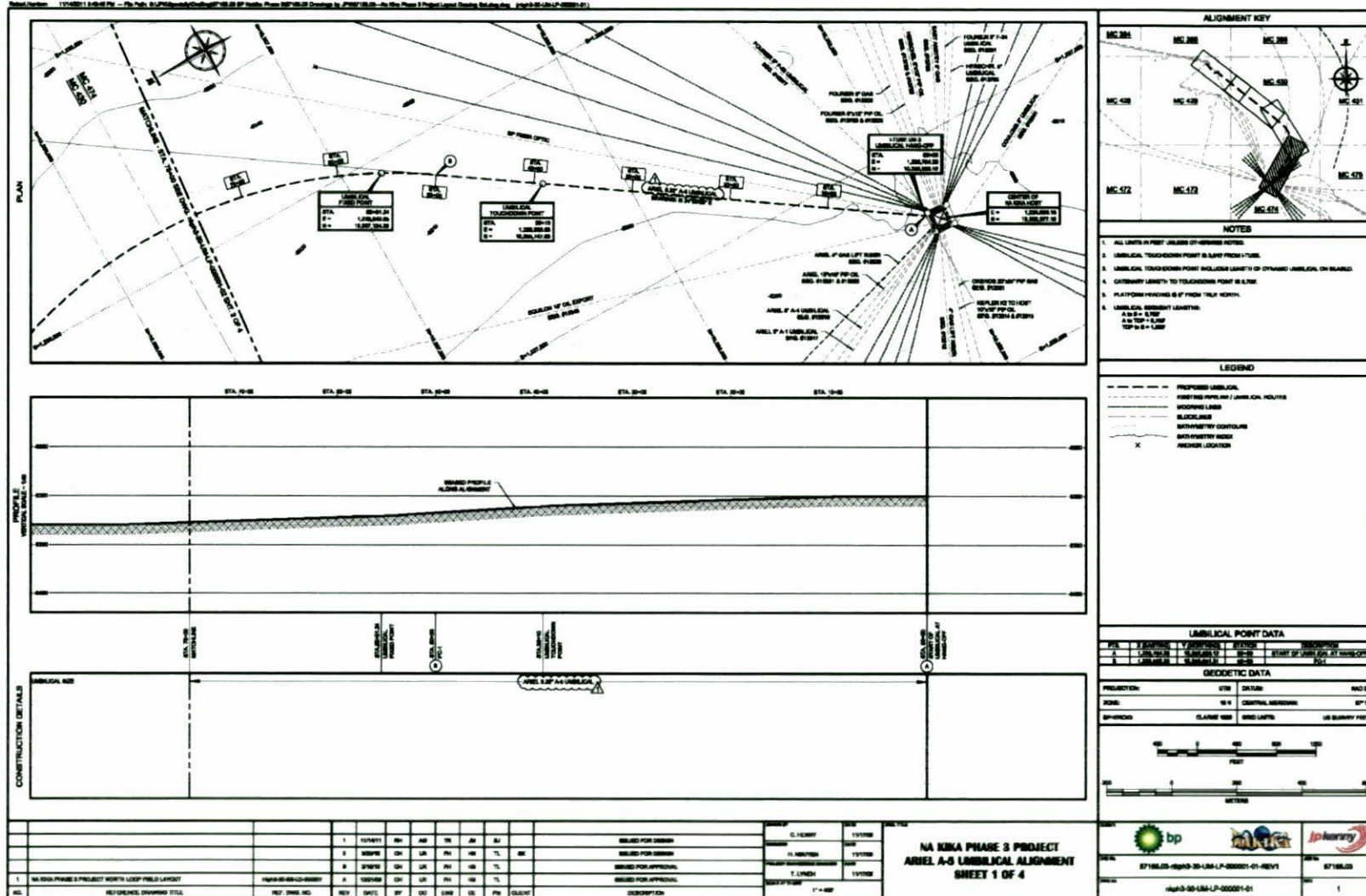
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Appendix A-1:

A-5 Main Umbilical Alignment Drawing

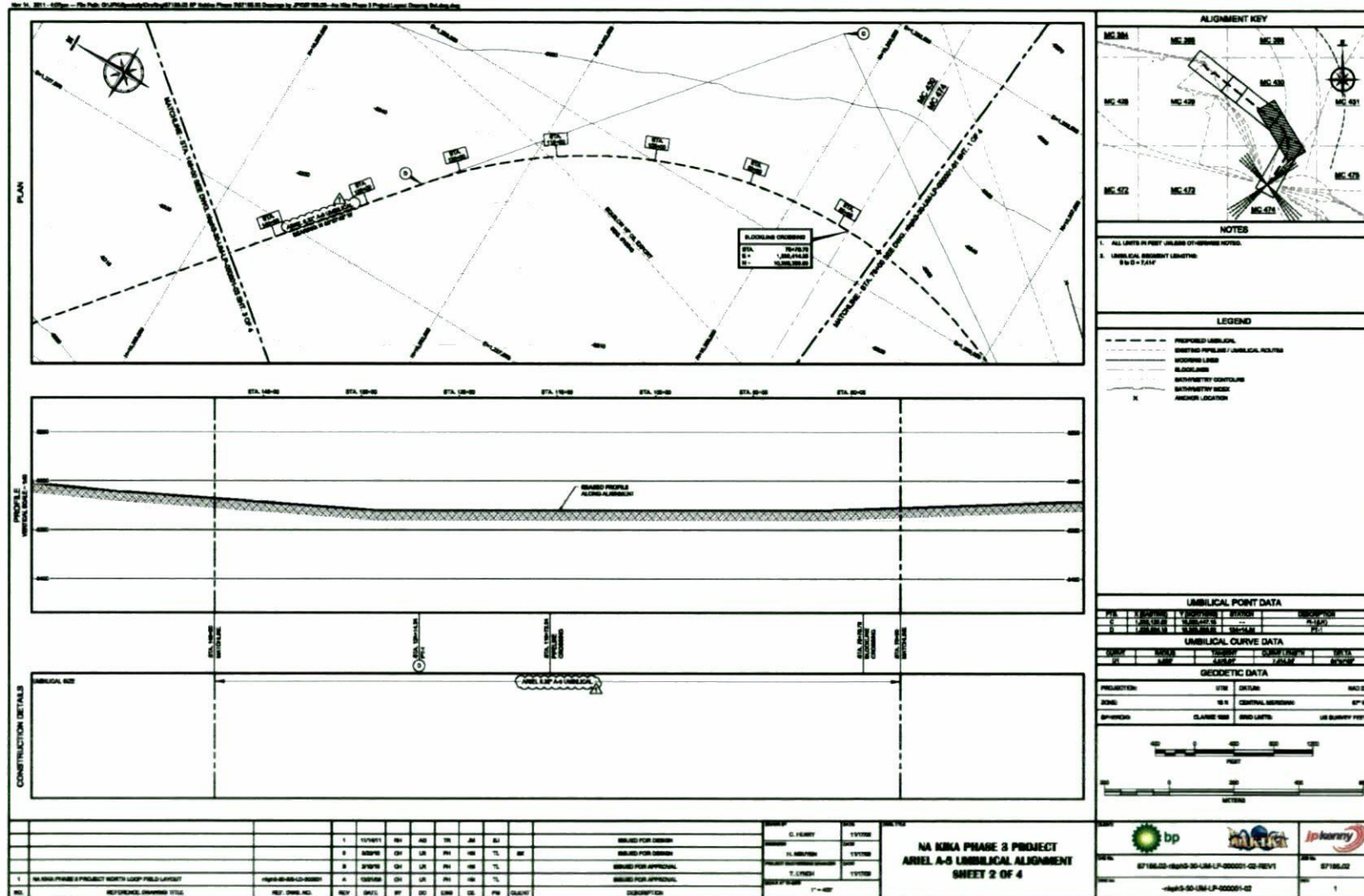


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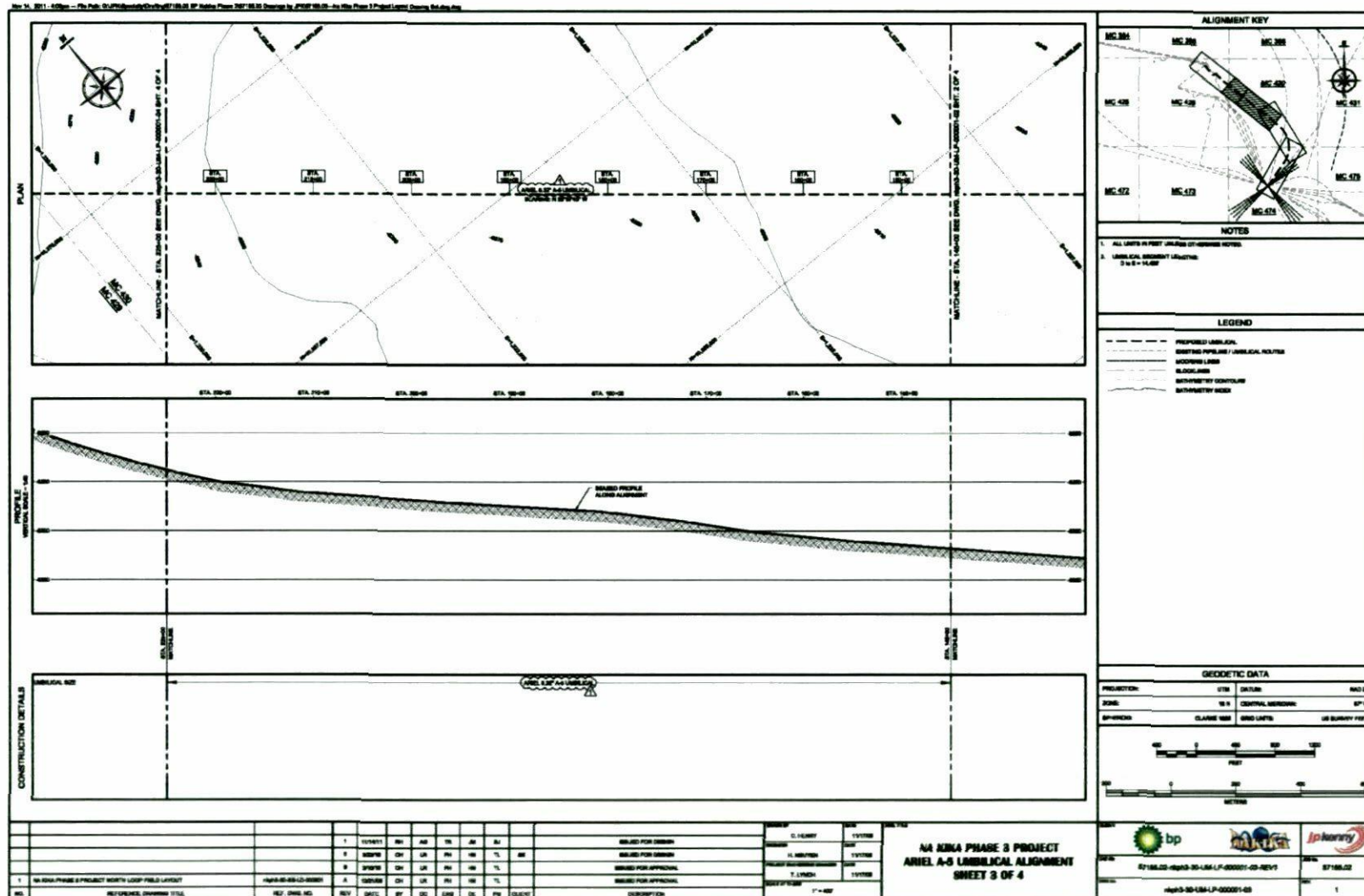


Project Title: Na Kika Phase 3
 Project Description: Ariel and Kepler Tie-In and Fourier Manifold
 Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

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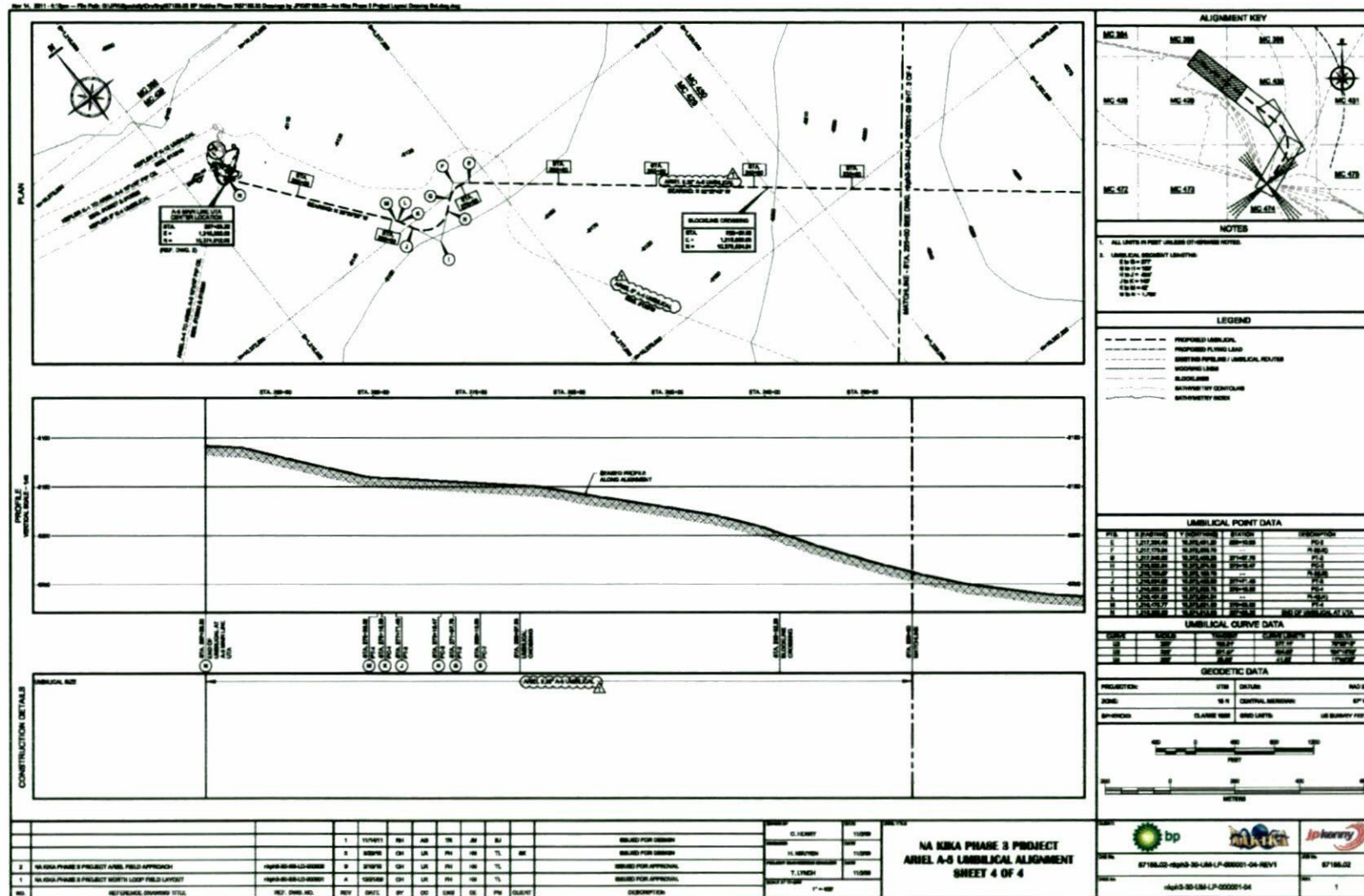


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Project Title: Na Kika Phase 3
Project Description: Ariel and Kepler Tie-In and Fourier Manifold
Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

BP Doc. No.: NKPH3-15-RG-PE-000046

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Appendix A-2:

K-4 In-field Umbilical Alignment Drawing

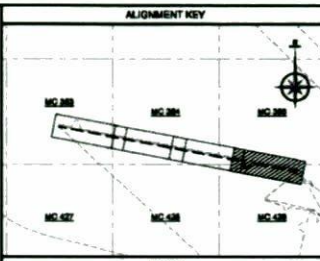
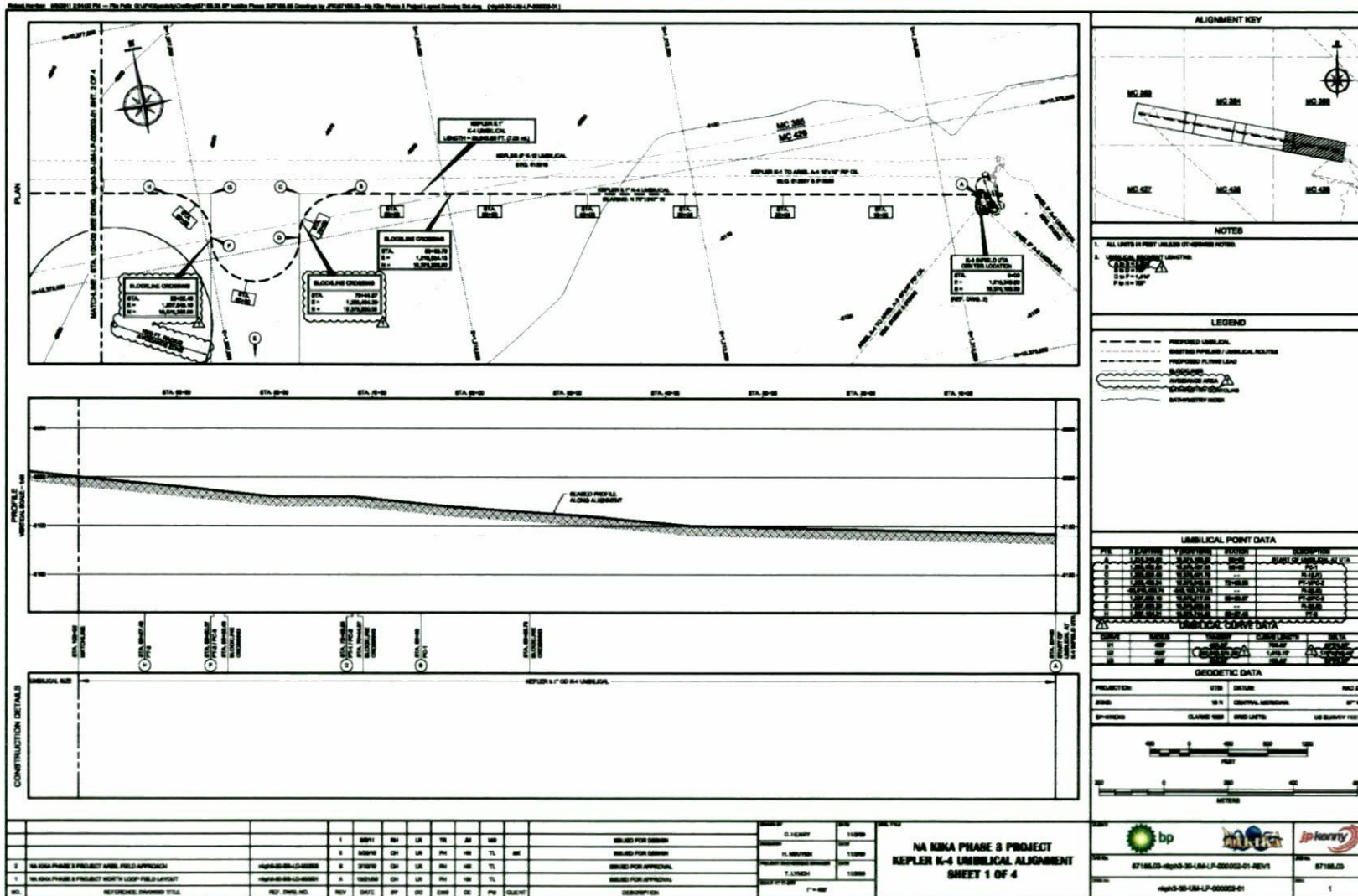


Project Title: Na Kika Phase 3
 Project Description: Ariel and Kepler Tie-In and Fourier Manifold
 Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

BP Doc. No.: NKPH3-15-RG-PE-000046
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NOTES

1. ALL LINES IN PROFILE UNLESS OTHERWISE NOTED.

2. UMBILICAL PROFILE LENGTHS:
 1" = 100' HORIZ.
 1" = 10' VERT.



UMBILICAL POINT DATA

PTS	STATION	VERTICALE	STATUS	DESCRIPTION
A	1,000.00	100.00	START	UMBI. K-4
B	1,000.00	100.00	START	UMBI. K-4
C	1,000.00	100.00	START	UMBI. K-4
D	1,000.00	100.00	START	UMBI. K-4
E	1,000.00	100.00	START	UMBI. K-4
F	1,000.00	100.00	START	UMBI. K-4
G	1,000.00	100.00	START	UMBI. K-4
H	1,000.00	100.00	START	UMBI. K-4
I	1,000.00	100.00	START	UMBI. K-4
J	1,000.00	100.00	START	UMBI. K-4

UMBILICAL CURVE DATA

STATION	CHORD BEARING	CHORD LENGTH	ARC LENGTH	CHORD CURVATURE	ARC CURVATURE
1	100.00	100.00	100.00	100.00	100.00
2	100.00	100.00	100.00	100.00	100.00
3	100.00	100.00	100.00	100.00	100.00



NO.	DESCRIPTION	DATE	BY	CHECKED BY	STATUS
1	DESIGNED FOR CONSTRUCTION	01/15/15	JL	JA	REVISED
2	DESIGNED FOR CONSTRUCTION	01/15/15	JL	JA	REVISED
3	DESIGNED FOR CONSTRUCTION	01/15/15	JL	JA	REVISED
4	DESIGNED FOR CONSTRUCTION	01/15/15	JL	JA	REVISED
5	DESIGNED FOR CONSTRUCTION	01/15/15	JL	JA	REVISED

**NA KIKI PHASE 3 PROJECT
 KEPLER K-4 UMBILICAL ALIGNMENT
 SHEET 1 OF 4**

Logos for BP, Jp, and Kepply.

DATE: 07/16/15
 PROJECT: NA KIKI PHASE 3 PROJECT
 SHEET: 19 OF 36

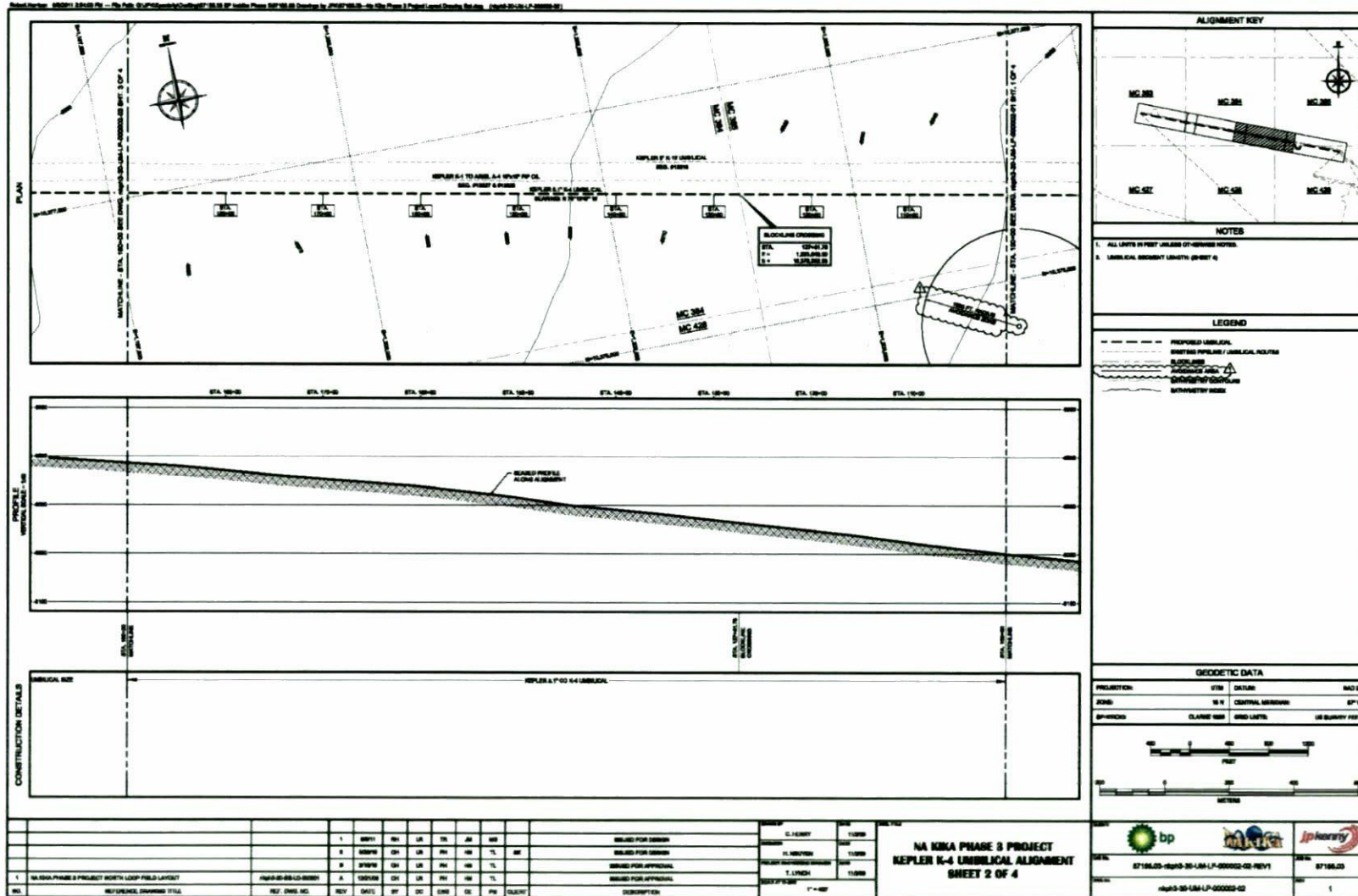


Project Title: Na Kika Phase 3
 Project Description: Ariel and Kepler Tie-In and Fourier Manifold
 Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

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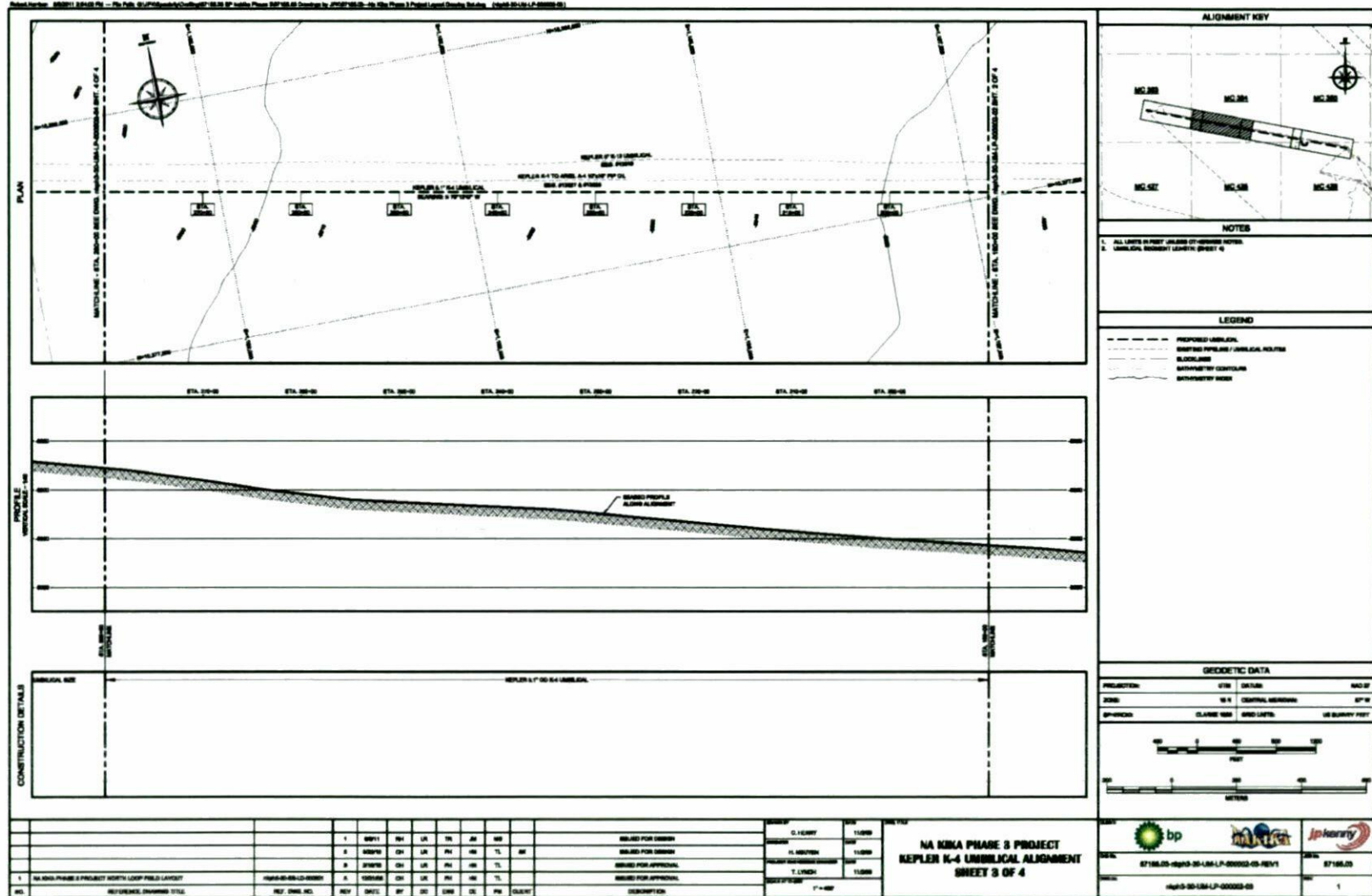


Project Title: Na Kika Phase 3
 Project Description: Ariel and Kepler Tie-In and Fourier Manifold
 Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

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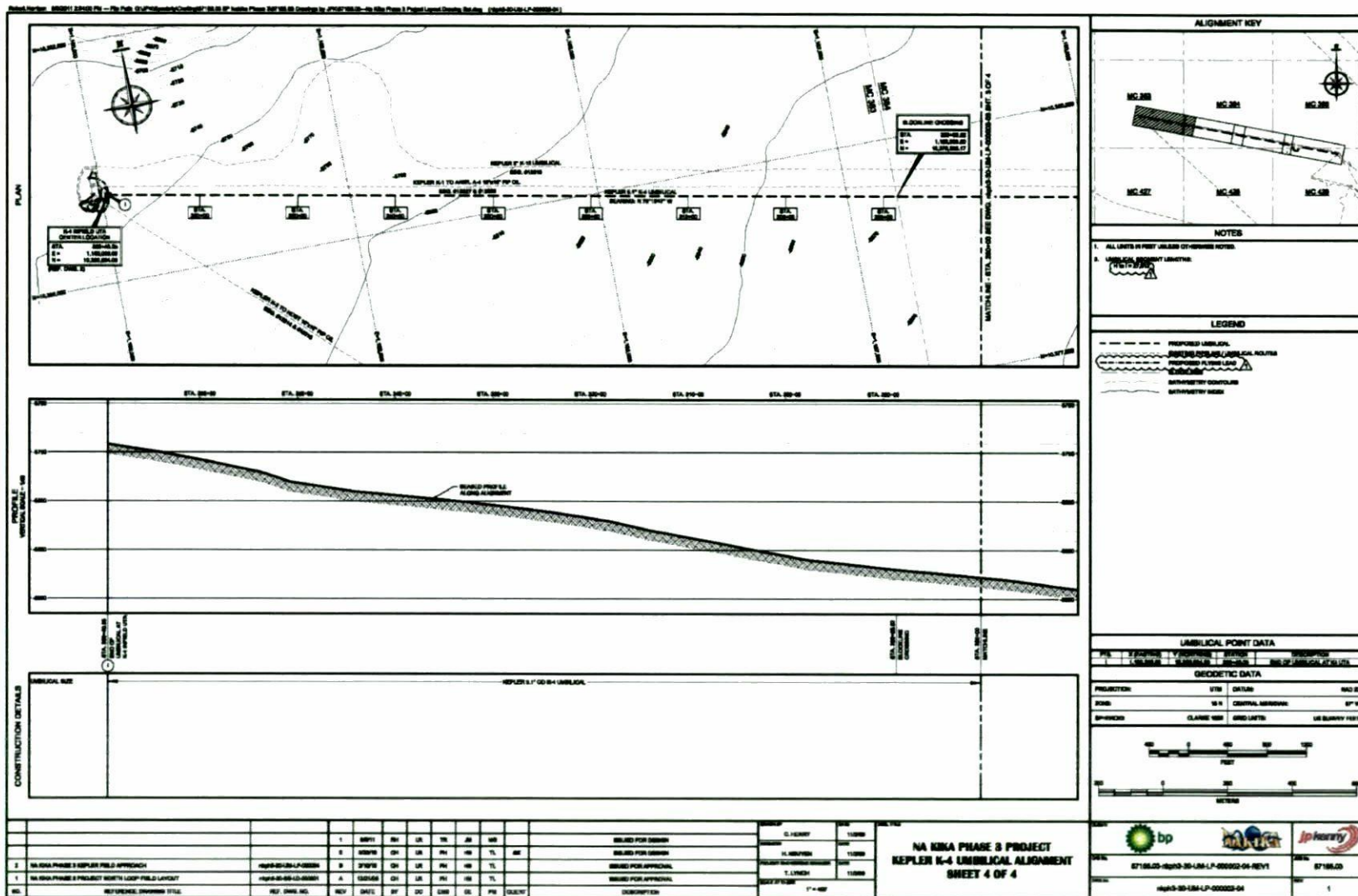


Project Title: Na Kika Phase 3
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Appendix B:

Umbilical Cross Section Drawings



Project Title: Na Kika Phase 3
Project Description: Ariel and Kepler Tie-In and Fourier Manifold
Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

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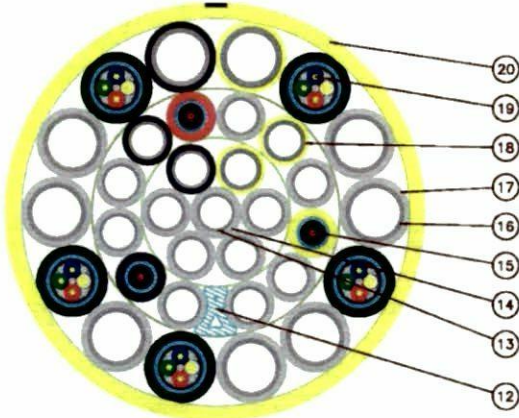
Appendix B-1:

A-5 Main Umbilical Cross Section Drawing

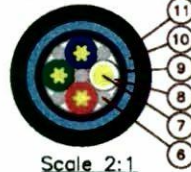


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TOPSIDE VIEW TOWARDS SUBSEA

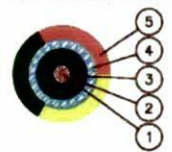


Detail B - 10mm² Quad. 1kV



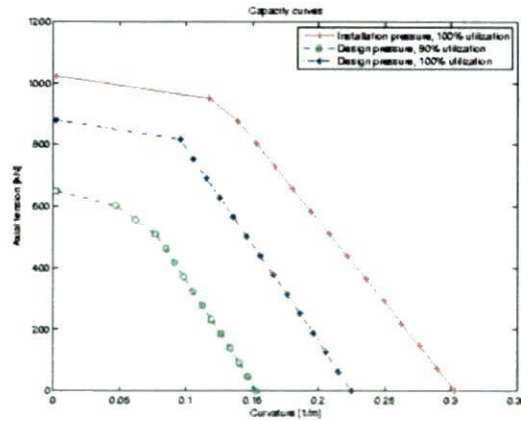
Scale 2:1

Detail A - Fiber Optic



Scale 2:1

LINE ID NUMBER	LINE TYPE	LINE DESCRIPTION	UMBI. C.A. TUBE I.D.	UMBI. C.A. I.D. (INCHES)	UMBI. C.A. TUBE PRE-INFLATION PRESS.	UMBI. C.A. TUBE PRE-INFLATION PRESS.	UMBI. C.A. ELEC. I.D. (INCHES)
A	LP1	1/2"	10 000 psi	Transique HT			
A	LP2	1/2"	10 000 psi	Transique HT			
A	HP1	1/2"	10 000 psi	Transique HT			
A	HP2	1/2"	10 000 psi	Transique HT			
A	C1	1/2"	10 000 psi	SO/SO MEG/Water			
A	C2	1/2"	10 000 psi	SO/SO MEG/Water			
A	C3	1/2"	10 000 psi	SO/SO MEG/Water			
A	C4	1/2"	10 000 psi	SO/SO MEG/Water			
A	C5	1/2"	10 000 psi	SO/SO MEG/Water			
A	C6	1/2"	10 000 psi	SO/SO MEG/Water			
A	C7	1/2"	10 000 psi	SO/SO MEG/Water			
A	A1	1/2"	10 000 psi	SO/SO MEG/Water			
A	A2	1/2"	10 000 psi	SO/SO MEG/Water			
A	A3	1/2"	10 000 psi	SO/SO MEG/Water			
A	SP1	1/2"	10 000 psi	Transique HT			
A	SP2	1/2"	10 000 psi	Transique HT			
B	SP3	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC01	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC02	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC03	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC04	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC05	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC06	3/4"	10 000 psi	SO/SO MEG/Water			
B	ARC07	3/4"	10 000 psi	SO/SO MEG/Water			
C	FA						10mm ² Quad
C	FB						10mm ² Quad
C	FC						10mm ² Quad
C	FD						10mm ² Quad
C	FE						10mm ² Quad
D	FA						14.5M F.881
D	FB						14.5M F.881
D	FC						14.5M F.881



Mechanical Data:

	SI Units	US Units
Outer diameter	[mm]	[inch]
Mass (empty)	[kg]	[lb]
Mass (filled)	[kg]	[lb]
Mass (filled & Routed)	[kg]	[lb]
Submerged weight (empty)	[kg/m]	[lb/ft]
Submerged weight (filled)	[kg/m]	[lb/ft]
Submerged weight (filled & Routed)	[kg/m]	[lb/ft]
Specific weight in sea water	[kg/m ³]	[lb/ft ³]
Submerged weight to diameter ratio		

	SI Units	US Units
MIT utilization factor of 100%SMYS	[kN]	[kips]
Min. breaking load (No bending, 100% UTS)	[kN]	[kips]
MBR (static load no tension)	[m]	[ft]
Axial stiffness	[kN]	[kips]
Bending stiffness	[kNm ²]	[kips-ft ²]
Torsion stiffness	[kNm ²]	[kips-ft ²]
Minimum Bend Radius(MBR) Storage	[m]	[ft]
Minimum Bend Radius(MBR) Installation		See Figure

NOTES:

- REF DOCS:
 • Technical Description - 10mm² Quad Umbilical Specification Doc.No. 20367-179-00-21708
 • Technical Description - Fiber Optic Umbilical Specification Doc.No. 20367-179-00-21708
 • Cross Section Analysis Report, Naika phase 3 Umbilical Doc.No. 20367-179-00-21708
 • Verification Test Report, Naika Umbilical Doc.No. 20367-179-00-21708
 • Design Specification, Umbilical System Doc.No. 20367-179-00-21708
 • Design Detail, Naika Phase 3 Umbilical System Doc.No. 20367-179-00-21708

NO	DESCRIPTION	OD	WT
20	1 HDPE OUTER SHEATH	64.0/2.11"	186 +/- 3
19	5 ELECTRICAL 10mm ² QUAD, 1kV, ARMOURED		25.7/0.89"
18	15 HDPE TUBE SHEAT	1.6/0.053"	16.8/0.798"
17	8 HDPE SHEATH	1.6/0.051"	25.7/1.09"
16	8 3/4" 10000 psi 50 STEEL TUBE	2.02/0.08"	23.09/0.909"
15	3 FIBER OPTIC CABLE, ARMOURED, 24 BH FIBERS		16.8/0.798"
14	1 HDPE TUBE SHEATH	2.1/0.083"	16.8/0.798"
13	16 1/2" 10000 psi 50 STEEL TUBE	1.30/0.051"	16.1/0.602"
12	1 PROFILED FILLER		
11	OUTER SHEATH	2.7/0.106"	26.7/0.054"
10	25 GALVANNEUR WIRE (ROUND)	1.6/0.053"	21.1/0.831"
9	1 INNER SHEATH (HDPE)	1.6/0.053"	17.8/0.702"
8	4 INSULATION, HDPE, COLOUR CODED	1.1/0.041"	6.0/0.236"
7	4 10mm ² ANNEALED STRANDED CONDUCTOR		3.6/0.134"
6	5 FILLER ELEMENT (PVC)		2.6/0.099"
5	1 OUTER SHEATH, HDPE	2.7/0.106"	16.8/0.798"
4	21 GALV ANNEALED WIRE (ROUND)	1.6/0.053"	13.2/0.507"
3	1 INNER SHEATH, HDPE	3.15/0.124"	16.0/0.364"
2	1 STEEL TUBE AISI 316	6.2/0.0279"	3.7/0.146"
1	24 OPTICAL FIBRES, SINGLE MODE 6.0/0.2		

Detail A

ITEM	QTY.	DESCRIPTION	NON THROUSS	NON DIAMETER
03	18.05.10	ISSUED FOR CONSTRUCTION	BOH	BOH
04	20.05.10	ISSUED FOR APPROVAL	BOH	BOH
05	27.01.10	ISSUED FOR APPROVAL	BOH	BOH
02	27.11.08	ISSUED FOR APPROVAL	BOH	BOH
01	08.11.08	ISSUED FOR IFC	BOH	BOH

DATE: 15/08/15
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

BP SPS UMBILICAL DELIVERY PROJECTS
 CROSS SECTION DRAWING
 NAKIKA PHASE 3
 A5 MAIN UMBILICAL

36367-ETU-XC-204866 1/1



Project Title: Na Kika Phase 3
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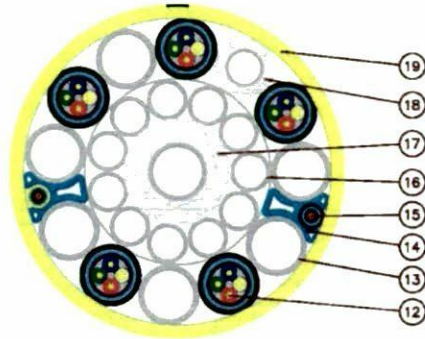
Appendix B-2:

K-4 In-field Umbilical Cross Section Drawing

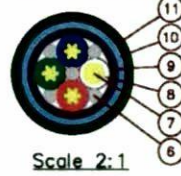


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VIEW FROM NEAR ARIAL END TOWARDS FAR KEPLER END

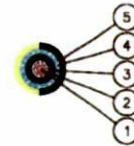


Detail B - 10mm² Quad, 1kV



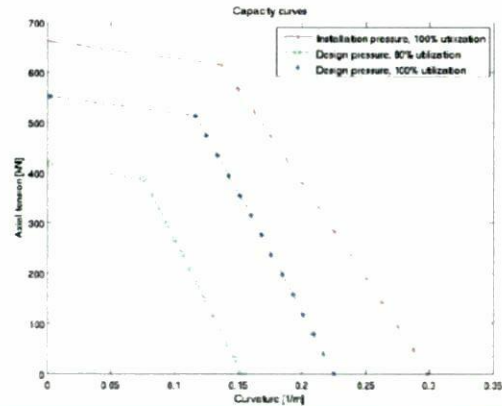
Scale 2:1

Detail A - Fiber Optic



Scale 2:1

LINE ID NUMBER	LINE TYPE	LINE DESCRIPTION	UMBILICAL TUBE SIZE	UMBILICAL WORKING PRESSURE	UMBILICAL TUBE FILL/PURGATION FLUID	UMBILICAL ELECTRICAL AND FO ELEMENTS
A	LP1	1/2"	10 000 psi	Transaque HT		
A	LP2	1/2"	10 000 psi	Transaque HT		
A	HP1	1/2"	10 000 psi	Transaque HT		
A	HP2	1/2"	10 000 psi	Transaque HT		
A	CI3	1/2"	10 000 psi	50/50 MEG/Water		
A	CI4	1/2"	10 000 psi	50/50 MEG/Water		
A	CI5	1/2"	10 000 psi	50/50 MEG/Water		
A	CI6	1/2"	10 000 psi	50/50 MEG/Water		
A	CI7	1/2"	10 000 psi	50/50 MEG/Water		
A	AI1	1/2"	10 000 psi	50/50 MEG/Water		
A	AI2	1/2"	10 000 psi	50/50 MEG/Water		
A	AI3	1/2"	10 000 psi	50/50 MEG/Water		
B	SP3	3/4"	10 000 psi	50/50 MEG/Water		
B	AMON	3/4"	10 000 psi	50/50 MEG/Water		
B	MEOH3	3/4"	10 000 psi	50/50 MEG/Water		
B	MEOH4	3/4"	10 000 psi	50/50 MEG/Water		
B	MEOH5	3/4"	10 000 psi	50/50 MEG/Water		
B	MEOH6	3/4"	10 000 psi	50/50 MEG/Water		
B	MEOH7	3/4"	10 000 psi	50/50 MEG/Water		
C	FA					10mm ² CBQAD
C	FB					10mm ² CBQAD
C	FC					10mm ² CBQAD
C	FD					10mm ² CBQAD
C	FE					10mm ² CBQAD
D	FA					24 3M FIBER
E	FB					



Mechanical Data

	SI Units	US Units
Outer diameter	[mm]	120.00 [inch]
Mass (empty)	[kg]	22.23 [lbm]
Mass (filled)	[kg]	27.50 [lbm]
Mass (filled & Rooded)	[kg]	26.18 [lbm]
Submerged weight (empty)	[kg]	0.80 [lbm]
Submerged weight (filled)	[kg]	1.13 [lbm]
Submerged weight (filled & Rooded)	[kg]	1.06 [lbm]
Specific weight in sea water	[kg/m ³]	
Submerged weight to diameter ratio:	[kg/m ²]	25.20 [lbm/ft ²]

	SI Units	US Units
MHT utilization factor of 100% SMYS	[kN]	581.00 [kip]
Min. breaking load (No bending, 100% LTS)	[kN]	629.00 [kip]
MHR elastic limit (no tension)	[kN]	3.35 [kip]
Axial stiffness	[kN/m]	345 [kip/in]
Bending stiffness	[kNm ²]	12.25 [kip-ft ²]
Torsion stiffness	[kNm ²]	18.00 [kip-ft ²]
Minimum Bend Radius(MBR) Storage	[m]	
Minimum Bend Radius(MBR) Installation		See Figure

- NOTES:
 REF. DOCS:
 • Technical Description - 10mm² Quad Nalika Phase 3 Inlet and Infield (Unfilled) Doc.No.36367-TY-00-0000
 • Technical Description - Fiber Optic Elements Nalika Phase 3 Inlet (Unfilled) Doc.No.36367-TY-00-0178
 • Cross Section Analysis Report, Nalika Infield Umbilical Doc.No.36367-TY-00-0179
 • Verification Test Report, Nalika Umbilical Doc.No.36367-TY-00-0178
 • Design Specifications, Umbilical System Doc.No.36367-TY-00-0171
 • Design Nalika Phase 3 Umbilical System Doc.No.36367-TY-00-0000

19	OUTER SHEATH, HDPE	4.7/0.180"	120mm +/-3
18	1 BREATHER, HDPE	3.0/0.150"	53.1/0.800"
17	1 BREATHER, HDPE	6.7/0.340"	48.8/1.600"
16	12 30 ST. STEEL TUBE, 1/2" 10,000psi	1.0/0.080"	18.30/0.600"
15	2 FIBER OPTIC ELEMENT, ARMORED, 24 FIBERS		10.0/0.300"
14	2 PROFILE FILLER, HDPE		
13	7 30 ST. STEEL TUBE, 3/4" 10,000psi	3.00/0.080"	23.00/0.800"
12	8 ELECTRICAL CABLE, 10mm ² (ARMORED)		33.3/0.917"
11	OUTER SHEATH	1.6/0.063	23.6/0.625
10	26 GALVANNEAL WIRE (ROUND)	1.6/0.063	16.7/0.775
9	1 INNER SHEATH (HDPE)	1.6/0.060"	17.8/0.700"
8	4 INSULATION, HDPE, COLOUR CODED	1.1/0.041"	6.0/0.236"
7	4 10mm ² ANNEALED STRANDED CONDUCTOR		3.6/0.184"
6	8 FILLER ELEMENT (PC)		3.6/0.080"
5	1 OUTER SHEATH, HDPE	6.0/0.236	10.6/0.300"
4	18 GALV ANNEAL WIRE (ROUND)	1.0/0.039	6.0/0.235
3	1 INNER SHEATH, HDPE	3.15/0.124"	16.0/0.284"
2	1 STEEL TUBE AIR 3M	6.2/0.070"	3.7/0.140"
1	24 OPTICAL FIBERS, SINGLE MODE 6.002		

ITEM	QTY.	DESCRIPTION	REV	THICKNESS	NEW DIAMETER			
E1	18.6	ISSUED FOR CONSTRUCTION	BOH	BOH	KES	JHG	3	TT1
E2	18.6	ISSUED FOR APPROVAL	BOH	BOH	KES	JHG	3	TT1
E3	30.8	ISSUED FOR APPROVAL	BOH	BOH	KES	JHG	A	TT1
E4	27.8	ISSUED FOR EDC	BOH	BOH	KES	JHG		

DATE: 12/11/15
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

bp
 BP SPS UMBILICAL DELIVERY PROJECTS
 CROSS SECTION DRAWING
 NALIKA PHASE 3
 K4 INFIELD UMBILICAL
 DRAWING NO: 36367-ETU-XC-204867
 1/1



Project Title: Na Kika Phase 3
Project Description: Ariel and Kepler Tie-In and Fourier Manifold
Document Title: Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

BP Doc. No.: NKPH3-15-RG-PE-000046

BP Revision: 3

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Appendix C:

PLATS



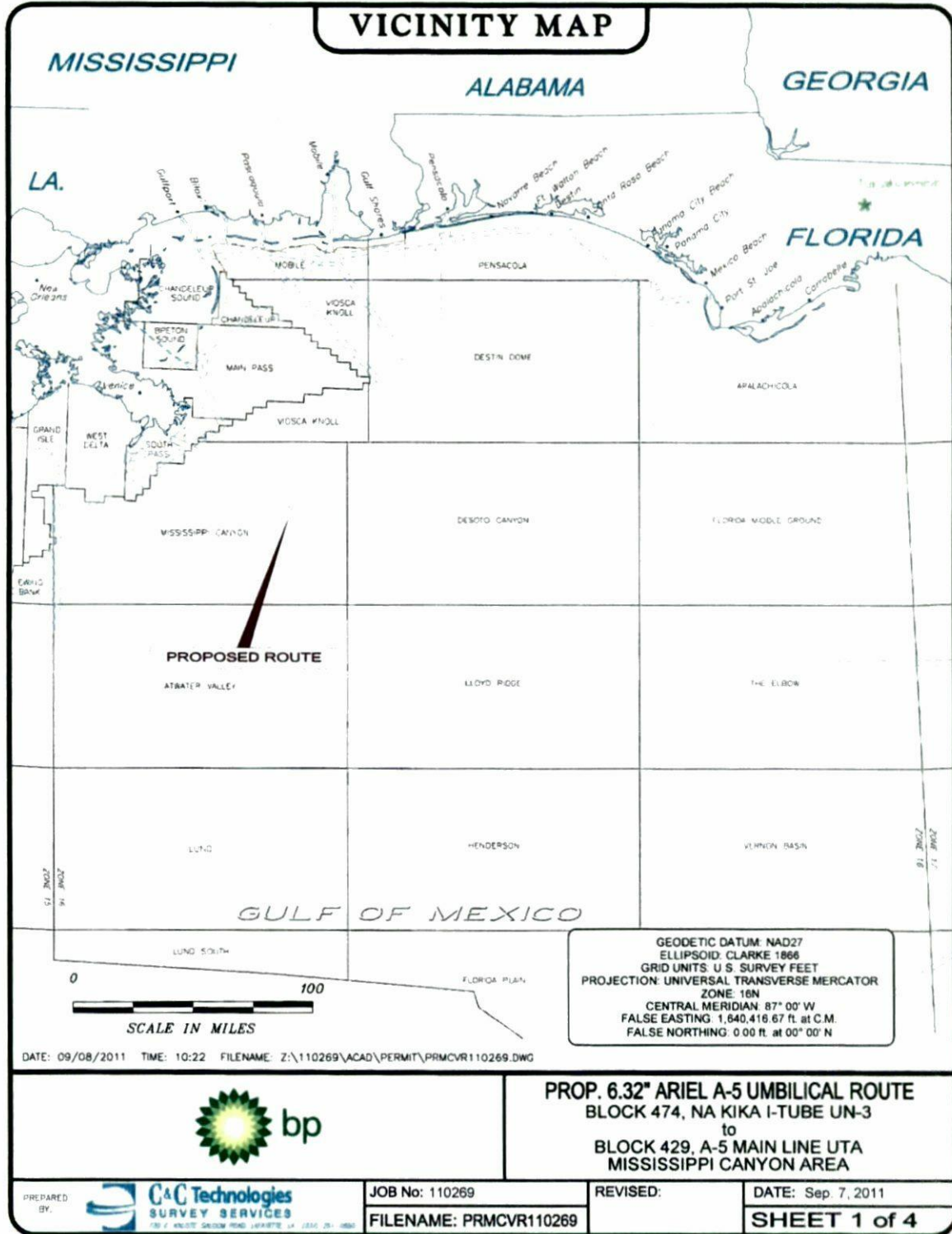
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Project Description:
Document Title:

Na Kika Phase 3
Ariel and Kepler Tie-In and Fourier Manifold
Right-of-Way Modification Permit Application A-5 and K-4 Umbilicals

BP Doc. No.: NKPH3-15-RG-PE-000046
 BP Revision: 3
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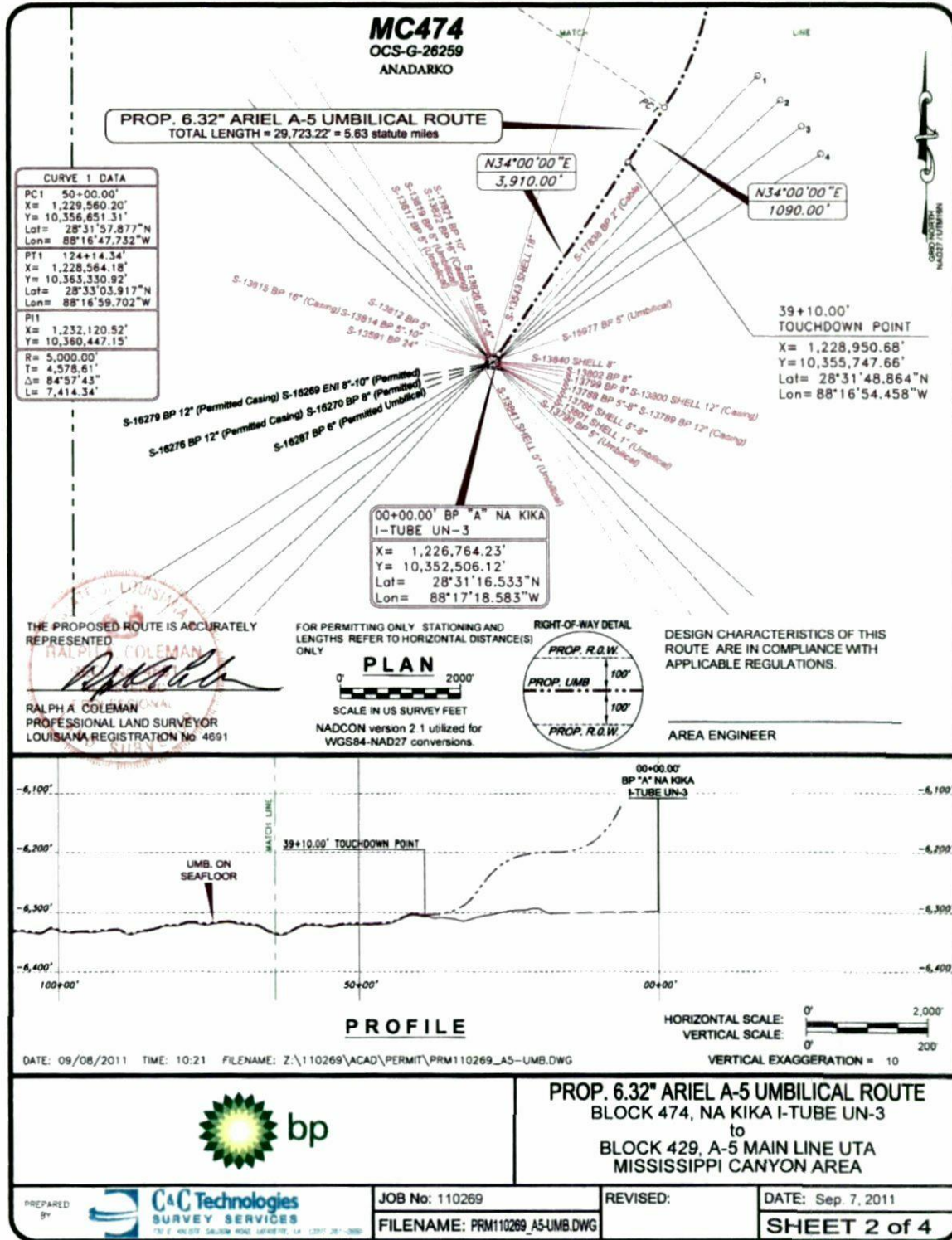
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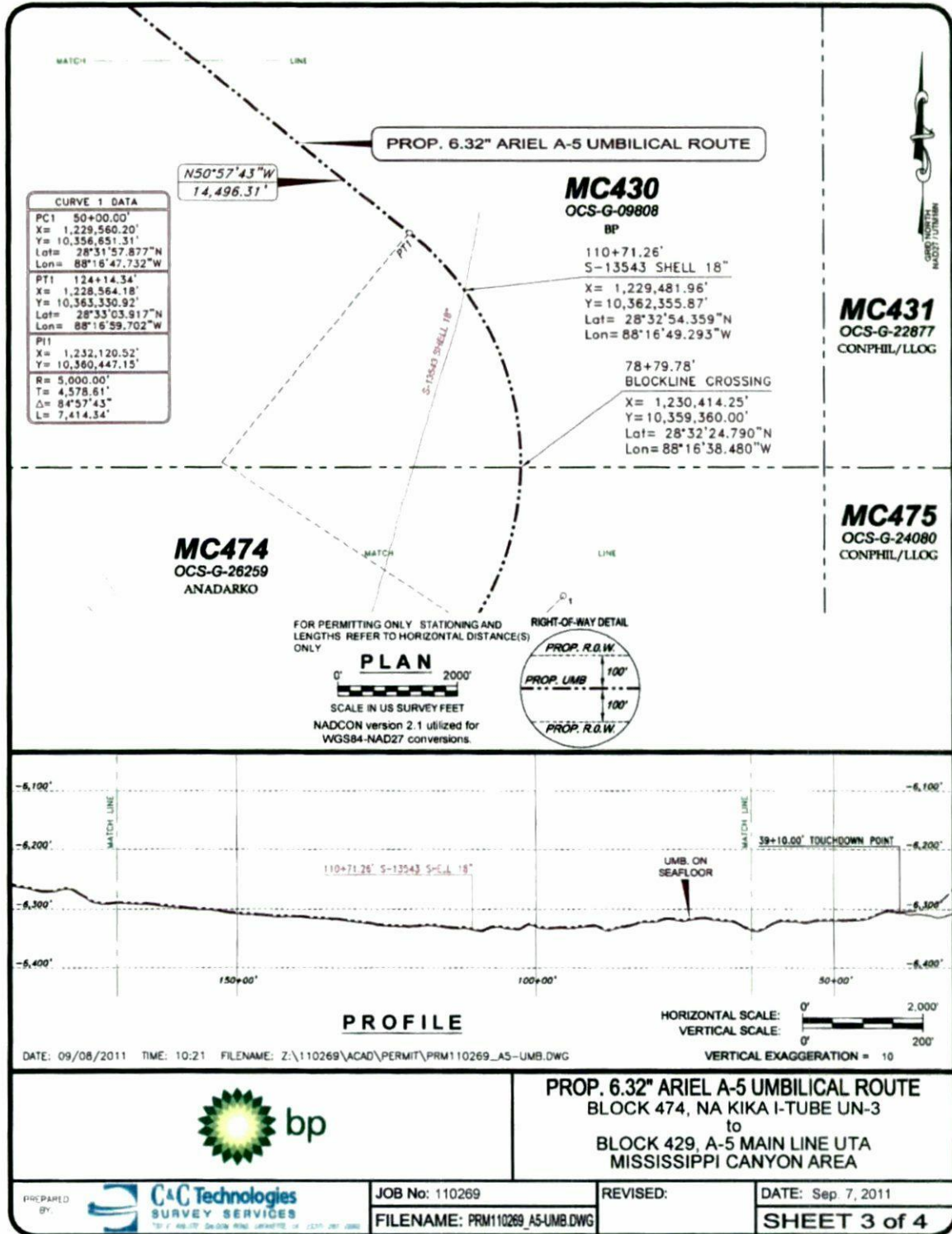
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Ariel and Kepler Tie-In and Fourier Manifold
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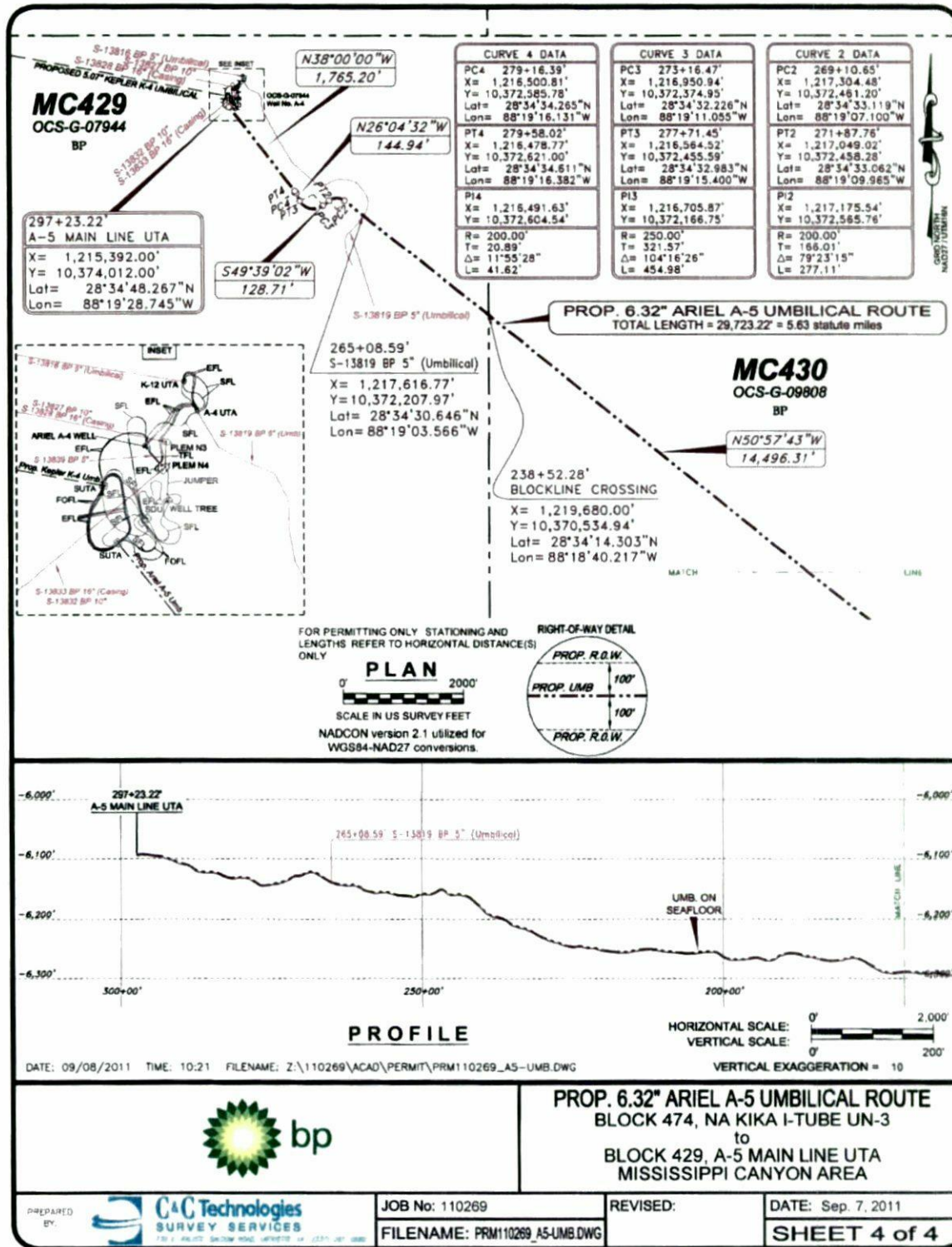
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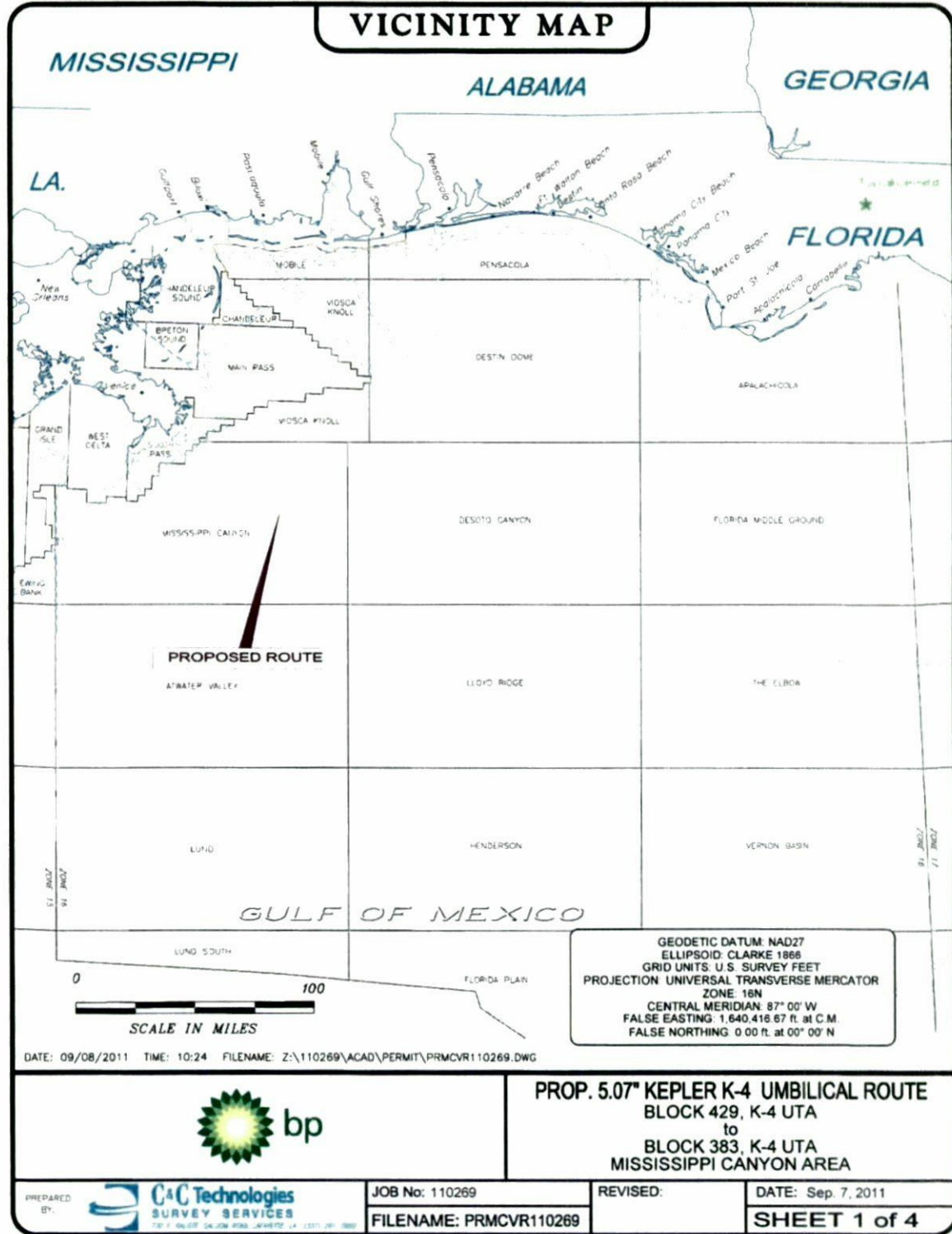
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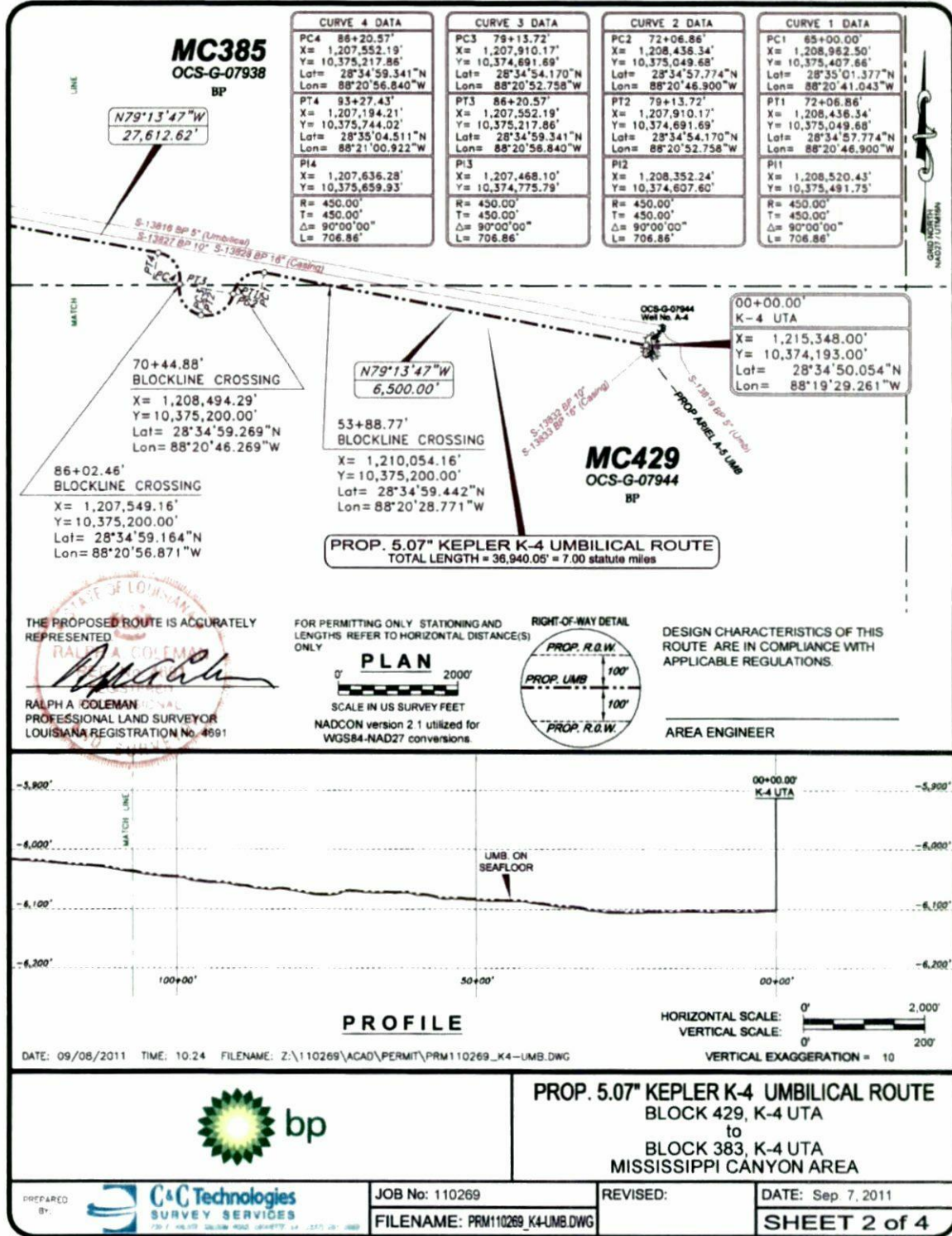
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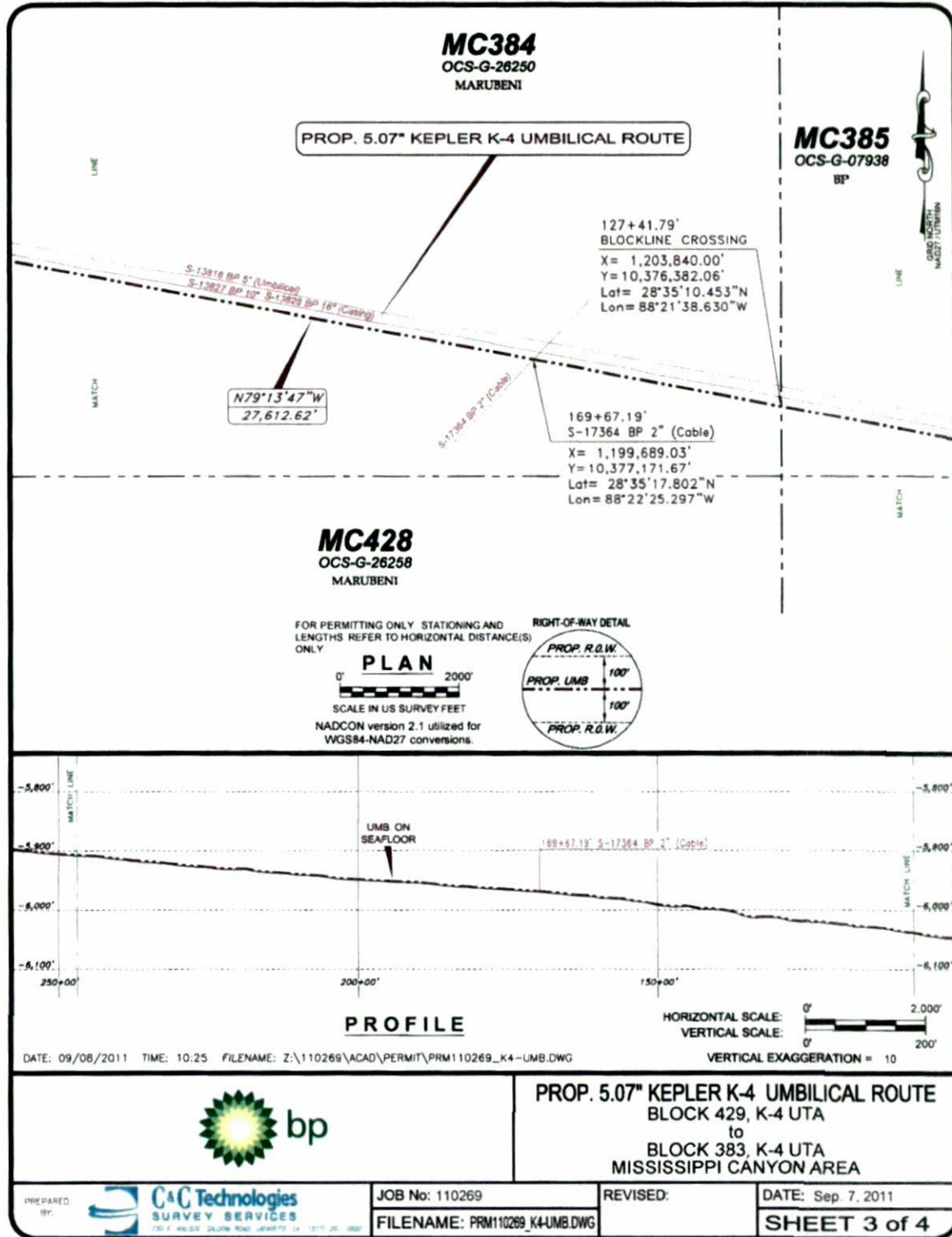
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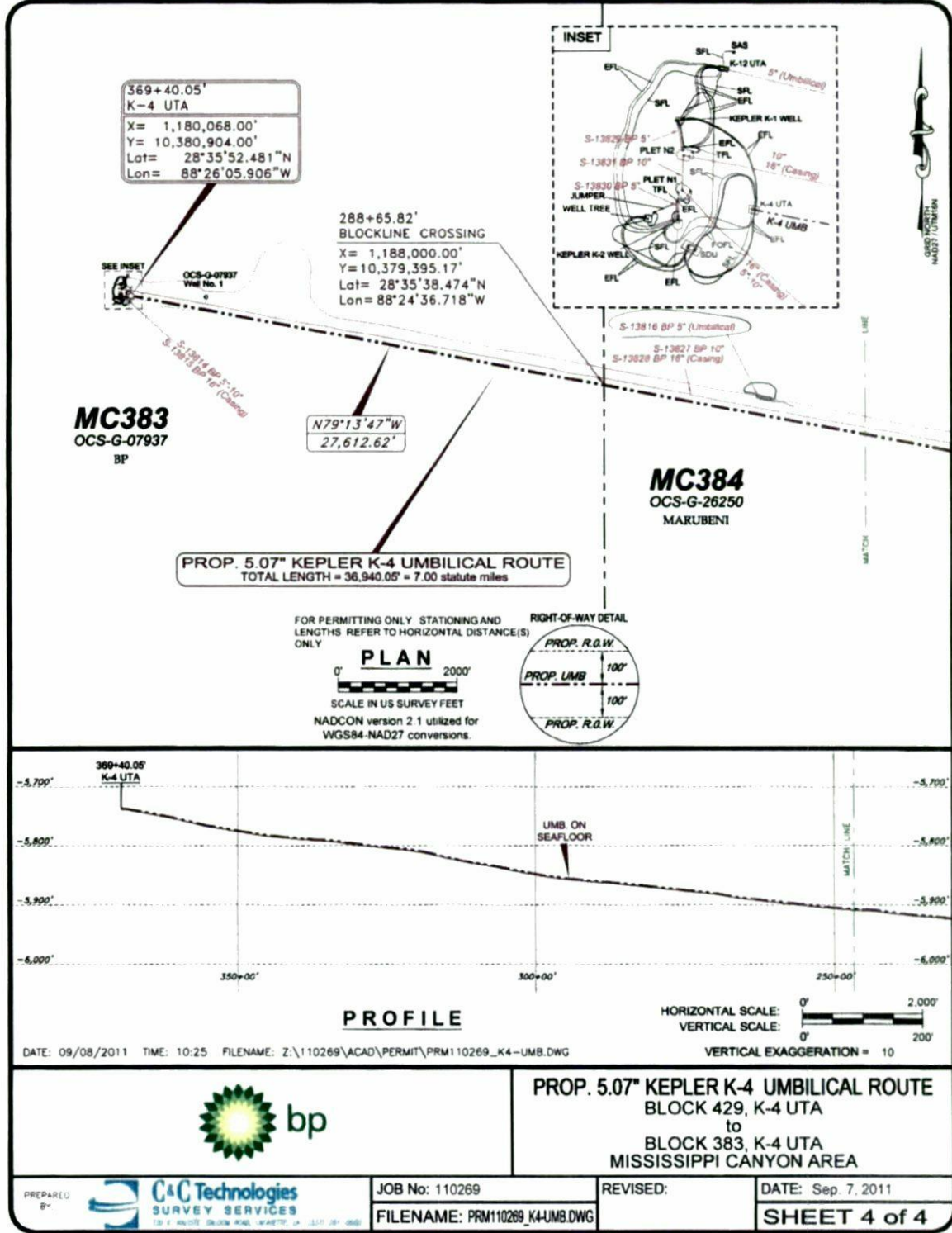
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VIA UPS OVERNIGHT
Tracking No. 1Z 770 071 01 9926 2050

November 29, 2011

Ms. Janet Aceves
BP Exploration & Production Inc.
200 Westlake Park Blvd.
Houston, TX 77079

Via E-Mail: Janet.Aceves@bp.com

Shell Pipeline Company LP

Land and Permitting
Two Shell Plaza - #1571
777 Walker Street
Houston, TX 77002
Tel (713) 241-0457
Fax (713) 241-0271

Minerals Management Service
RECEIVED

NOV 30 2011

Dear Ms. Aceves:

Office of Field Operations
Pipeline Section

**Re: MISSISSIPPI CANYON BLOCK 340, OFFSHORE LOUISIANA
18-INCH NAKIKA PIPELINE OCS-G-23074, SEGMENT NO. 13543
SPLC GOM FILE NO. 10-035H
INSTALLATION OF A 6.32-INCH ELECTRO-HYDRAULIC STEEL TUBE
UMBILICAL
BP EXPLORATION & PRODUCTION INC. - PIPELINE CROSSING
AGREEMENT**

Shell Pipeline Company LP ("SPLC") is in receipt of your letter dated November 22, 2011 outlining BP Exploration & Production Inc.'s ("BP") proposed installation of a 6.32-inch electro-hydraulic steel tube umbilical across SPLC's above referenced pipeline located in Mississippi Canyon Block 430, OCS-G-23074, Segment No. 13543.

SPLC objects to BP's plans unless BP agrees to and satisfies the following requirements:

1. At least seven days prior to commencing any pipe lay activity in the vicinity of the captioned Pipelines, BP will notify Magellan Marine Int'l. ("Magellan") Operations Manager at (504) 835-3009 so that a Magellan employee, on SPLC's behalf, can be present during the operations.
2. BP will accomplish the crossing in accordance with SPLC's Drawing No.SD-62276 attached hereto and made a part hereto. In the event the SPLC pipeline is exposed at the crossing location, BP shall install all separation materials (sandbags and mats) prior to constructing its pipeline across SPLC's pipeline.
3. BP agrees that Magellan or its designated alternate will be afforded the opportunity to be present on board the lay/burial barge during BP's construction of its pipeline across SPLC's pipeline.

4. BP agrees to supply SPLC with the proposed Anchor Plats prior to the start of the project, for review.
5. BP's anchor-handling tug will have a satellite position system accurate to within five meters. When setting and weighing anchors, anchor positions will be plotted to determine the extent of anchor slippage. All anchors placed across SPLC's pipeline will be located a minimum horizontal distance of 1,000 feet from SPLC's pipeline, and all anchors not crossing SPLC's pipeline will be located a minimum horizontal distance of 800 feet from SPLC's pipeline. All anchors shall be weighted vertically from their stationary positions to a height of not less than one-half the distance between the ocean floor and sea level before the anchors move laterally in water depths greater than 100 feet; in water depths less than 100 feet the anchor shall be weighted to the surface before moved laterally. **(This paragraph is not applicable if dynamically positioned vessels (DPV) are utilized during the crossing operations).**
6. Should Paragraph 5 be applicable, within 90 days following completion of construction, BP will furnish SPLC, at the above address, anchor coordinates drawings showing the locations where all anchors were set and picked up within 1,000 feet of SPLC's pipeline, which drawings will be used to show if anchor slippage has occurred which may endanger SPLC's pipeline.
7. No mechanical jetting equipment will be used closer than 100 feet perpendicular either side of SPLC's pipeline. BP agrees to locate and mark the crossing location with sonar reflectors or surface buoys to verify the exact crossing location. BP agrees to supply SPLC with the proposed set of procedures on the jetting and diving operations for SPLC's review and approval.
8. Whether BP uses divers or a remote operated vehicle ("ROV") to inspect the crossing location, BP agrees that Magellan or its designated alternate will be notified at least seven days prior to inspection operations and will be given the opportunity to be present on board the vessel during the periods of diver and/or ROV inspection.
9. In the event SPLC's 18-inch pipeline is damaged or its operations otherwise disrupted as a result of the construction, installation, operation, maintenance, repair or removal of the 6.32-inch electro-hydraulic steel tube umbilical, BP agrees to reimburse SPLC for (a) any and all expenses incurred by SPLC to repair and return the 18-inch pipeline to its original condition to SPLC's satisfaction, (b) the value of any gas or condensate, or both, lost from the 18-inch pipeline, (c) the cost of cleaning up and disposing of any product spilled from the 18-inch pipeline, (d) the payment of all claims, fines or penalties paid to individuals, governmental agencies, or any other entity, and (e) the cost of hydrostatic tests for the 18-inch pipeline, SPLC believes its integrity is in doubt.
10. Should SPLC find it necessary at any time in the future to raise, expose, or otherwise alter its 18-inch pipeline from beneath BP's proposed 6.32-inch umbilical at or near the crossing locations for maintenance, replacement, inspection or any other reason, BP, at its sole cost, risk, and expense, agrees to take such measures as necessary, including reduction of pressure,

on BP's proposed 6.32-inch umbilical. SPLC shall not be liable to BP for any loss of revenue due to BP's adjustment of its 6.32-inch umbilical.

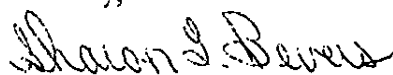
11. All damages to the 18-inch pipeline, including damage to the protective coating, due to the crossings by BP, will be repaired to the satisfaction of SPLC's Authorized Representative at BP's sole risk, cost and expense.
12. BP shall defend, indemnify and hold harmless SPLC, its parents, associated and affiliated companies, its and their agents, employees, officers, directors, insurers, successors and assigns from and against any loss, damage, claim, suit liability, judgment and expense (including attorneys' fees or other costs of litigation), and any fines, penalties and assessments arising out of injury, disease or death of persons (including that of the employees of BP, SPLC, or their contractors and subcontractors), damage to or loss of any property (including that of BP, SPLC or their contractors and subcontractors), **lost product and/or lost business due to interference with SPLC's pipeline**, and any environmental harm, or damages to natural resources, caused by, arising out of or resulting from, either directly or indirectly, the activities of BP and its agents, employees and contractors in connection with the activities covered in this agreement.

THE INDEMNITY OBLIGATIONS SET FORTH IN THIS SECTION 12 SHALL APPLY EVEN THOUGH AN EVENT GIVING RISE TO THE INDEMNITY MAY BE CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT), STRICT LIABILITY OR OTHER LEGAL FAULT OR LIABILITY OF THE INDEMNIFIED PARTY, BUT NOT TO THE EXTENT CAUSED BY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THE INDEMNIFIED PARTY.

13. Unless waived by this letter agreement or unless instructed otherwise by SPLC's on-site representative, BP, its agents, contractors, or subcontractors will observe **SPLC's General Crossing and Anchoring Guidelines for SPLC Pipeline, Offshore Gulf of Mexico** (copy attached).
14. This conditional approval covers only BP's proposed pipeline across the 18-inch pipeline, OCS-G 23074, Segment No. 13543 located in Mississippi Canyon Block 430, and in no way, implies SPLC's consent to BP crossing of other facilities, pipelines, or any other assets that may be owned, leased, and/or operated by SPLC or any of their associated or affiliated companies.

Please indicate BP Exploration & Production Inc.'s acceptance of the above by having the proper authority date and sign this letter in the spaces provided and return the original to the undersigned at the above address.

Sincerely,



Sharon L. Bevers
Land Agent
Shell Pipeline Company LP

Enclosures

AGREED TO AND ACCEPTED THIS _____ DAY OF _____, 2011

BP EXPLORATION & PRODUCTION INC.

BY: _____

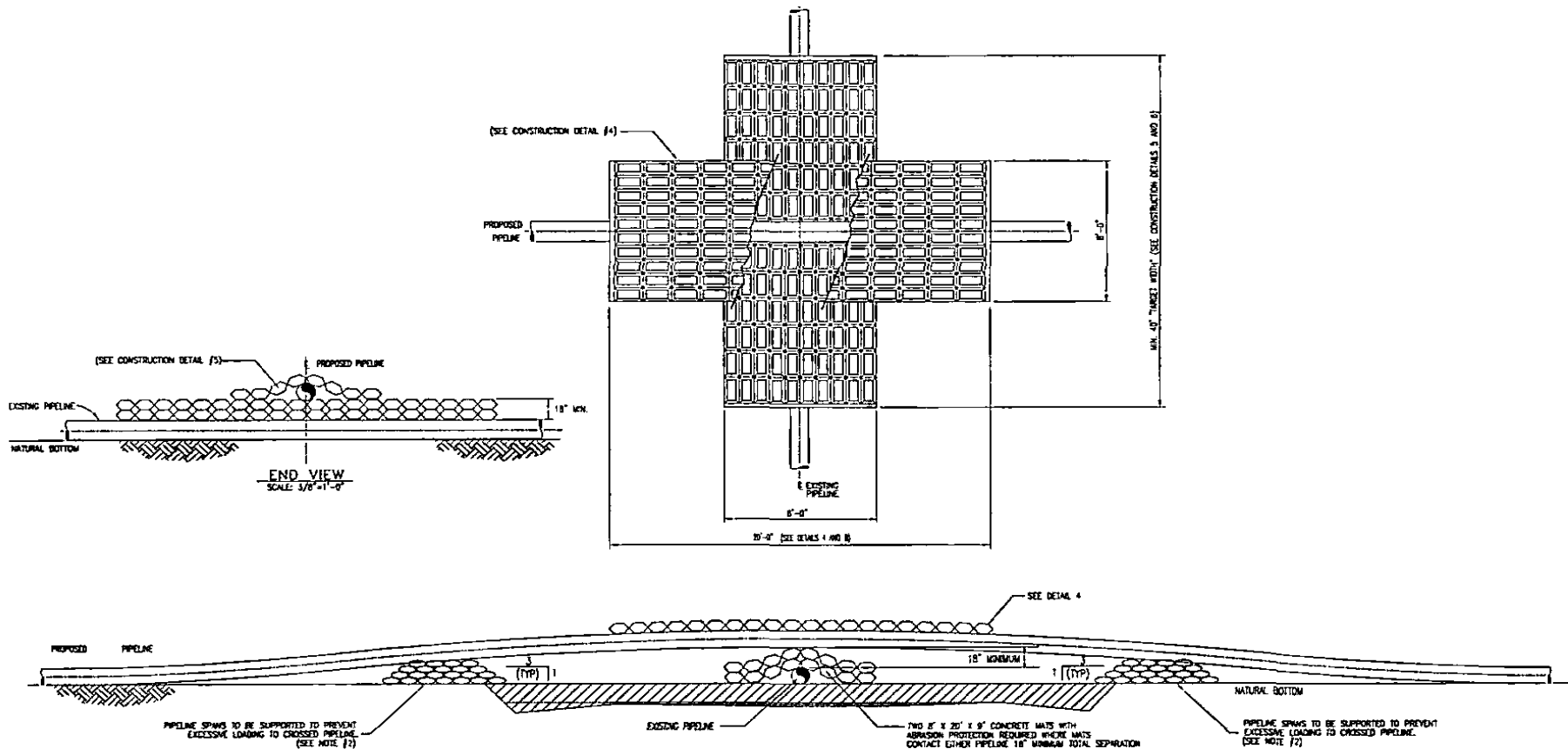
NAME: _____

TITLE: _____

Enclosure

cc: **Alex Alvarado** – Via UPS Overnight **1Z 770 071 01 9777 4868**
Bureau of Safety and Environmental Enforcement
1201 Elmwood Park Boulevard (MS 5232)
New Orleans, LA 70123-2394

cc: Shell Pipeline Company LP
Mike L. Smith, Sr. Facility Engineer, New Orleans, LA
Kelly Angelette, Maintenance Supervisor, Gibson, LA
Eric Schwartz, Facility Engineer, New Orleans, LA
Magellan Marine Int'l, Metairie, LA



- CONSTRUCTION DETAILS**
- 18" MINIMUM SEPARATION REQUIRED.
 - 6' x 20' x 9" CONCRETE MATS WITH ABRASION PROTECTION TO BE USED IN CONTACT WITH BOTH PIPELINES.
 - CONCRETE MATS MAY BE PLACED PARALLEL OR PERPENDICULAR OVER THE EXISTING SHELL PIPELINE. MAT EDGES MUST BE SETTED DOWN TO ASSURE THE CAP MATS REMAIN IN PLACE.
 - 8" x 20" CAP MAT(S) TO BE INSTALLED AS PER THIS AND OPERATOR REQUIREMENTS. (EXTENTS OF CAP MATS TO BE DETERMINED BY WATER DEPTH.)
 - 40' OF EXISTING PIPELINE TO BE COVERED AS MEASURED PERPENDICULAR TO THE ANGLE OF THE CROSSING TO PROVIDE A MINIMUM 40' "LANE" FOR THE LAY BARGE.
 - ACTUAL NUMBER OF MATS AT CROSSING IS DEPENDENT ON THE ANGLE OF APPROACH.
 - SOUND REFLECTORS SHALL BE PLACED ON EACH CORNER OF THE MATS PRIOR TO UPPER LINE CROSSING TO INSURE ACCURATE POSITIONING AT CROSSING.
 - MATS SHALL NOT HANG BELOW THE BOTTOM OF PIPE SUCH THAT THE MAT IS SUPPORTED BY THE PIPE.
 - OVERBOARDING OF MATS SHALL NOT OCCUR DIRECTLY OVER THE SHELL PIPELINE. A MINIMUM OFFSET (EQUVALENT TO THE LESSER OF WATER DEPTH OR 500') MUST BE MAINTAINED.

- NOTES:**
- ANY DEVIATION FROM THIS DRAWING MUST BE APPROVED BY SHELL ENGINEERING.
 - SAND & CEMENT MIXTURE SHALL BE 3 TO 1 PARTS BY WEIGHT. SANDS SHALL BE MADE OF CLOSELY SIFTED MATERIAL WITH A WIPING ACTION. AFTER FILLING THE BAG IS SHALL BE CLOSED BY SEWING OR THE EQUIVALENT BUT NOT BY BUNCHING OR TYING THE END. SIDE SLOPE SHALL BE MINIMUM OF 3 HORIZONTAL TO 1 VERTICAL IN ALL DIRECTIONS.
 - ALL SEPARATION MATERIALS SHALL BE INSTALLED PRIOR TO CROSSING THE SHELL PIPELINE.
 - THE EXISTING PIPELINE MUST BE SUPPORTED AT THE CROSSING--NO CROSSING SHALL BE INSTALLED OVER AN UNSUPPORTED PIPELINE.
 - CONCRETE MATS SHALL BE SUGAR OR SHELL APPROVED EQUIVALENT. ABRASION PROTECTION SHALL BE RUFF-N-BUFF OR SHELL APPROVED EQUIVALENT.

REV	DATE	DESCRIPTION OF REVISION	DESIGN	CHECK	DATE	DESCRIPTION OF REVISION	DESIGN	CHECK	DATE
					03	08/08			
					01	10/03			
					00	03/99			

NO.	DATE	BY	CHKD.	APP.

TYPICAL CROSSING		TYPICAL PIPELINE CROSSING IN WATER DEPTH >200'	
DESIGNED BY	CHKD. BY	DESIGNED BY	CHKD. BY
DATE	DATE	DATE	DATE
<small>THIS DOCUMENT IS CONFIDENTIAL AND IS TO BE KEPT UNDER LOCK AND KEY BY THE OWNER. IT IS TO BE RETURNED TO THE OWNER UPON REQUEST. THE OWNER SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS INFORMATION. THE USER SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS INFORMATION. THE USER SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS INFORMATION.</small>		DATE	DATE
SD - 62276		03	

SHELL PIPELINE COMPANY LP (SPLC)
GENERAL CROSSING AND ANCHORING GUIDELINES FOR SPLC PIPELINES
OFFSHORE GULF OF MEXICO

1. Work plans must be submitted to SPLC for review a minimum of 14 days prior to commencing any construction activity across SPLC's pipelines or within SPLC's pipeline rights of way. All pipelines constructed across an SPLC pipeline must be installed in accordance with either of the crossing drawings contained herein, depending on whether the pipeline is to be installed in < 200' or > 200' water depth.
2. At least seven days prior to commencing any construction activity in the immediate vicinity of an SPLC pipeline, the Company crossing the SPLC line will notify Magellan Marine International's Operations Manager at (504) 835-3009 so that a Magellan Marine employee, on SPLC's behalf, can be present during the construction activities.
3. Magellan Marine or its designated alternate will be afforded the opportunity to be present on board the lay barge during any company's construction of a pipeline across an SPLC pipeline. Magellan Marine will be allowed to witness any pipeline position survey and be given the opportunity to be present on board the survey vessel during survey operations. A copy of a video survey of all pipeline conditions during the survey should be made available. Magellan Marine shall be given the opportunity to visually inspect and approve all anchor pre-set riggings, including chain shackles, triplates (or equivalent) and buoys.
4. SPLC or its representative should be allowed to witness the pre-set deployment of anchors. SPLC or its representative shall also be allowed to do the following when installing the anchoring system for a deep water (greater than 1,000 feet) location:
 - a. Record bollard pull load cell reading during anchor pre-set proceeding;
 - b. Monitor mooring system hook up procedures;
 - c. Monitor deployment of all other anchors;
 - d. Record base line anchor tension for all anchors after final positioning;
 - e. Confirm line of communications for any change in drilling rig status while on location;
 - f. Witness the retrieval of any and all anchors.
5. The company's anchor-handling tug will have a satellite position system accurate to within five meters. When setting and weighing anchors, anchor positions will be plotted to determine the extent of anchor slippage. All anchors placed across an SPLC pipeline will be located a minimum horizontal distance of 1,000 feet from SPLC's pipeline, and all anchors not crossing an SPLC pipeline will be located a minimum horizontal distance of 800 feet from SPLC's pipeline. All anchors shall be weighted vertically from their stationary positions to a height of not less than one-half the distance between the ocean floor and sea level before the anchors move laterally in water depths greater than 100 feet; in water depths less than 100 feet the anchor shall be weighted to the surface before moved laterally. **(This paragraph is not applicable if dynamically positioned vessels (DPV) are utilized during the crossing operations.)**

6. Whether the company uses divers or a remote operated vehicle (ROV) to inspect the crossing locations, the company agrees that Magellan Marine or its designated alternate will be notified at least seven days prior to inspection operations and will be given the opportunity to be present on board the vessel during the periods of diver and/or ROV inspection.
7. If the company intends to cross an SPLC pipeline with another pipeline, the company agrees to temporarily remove, raise or lower its pipeline, whichever is preferable, at the company's expense and at no cost or liability to SPLC, should it become necessary and for all times it should become necessary for SPLC to alter, repair, replace, relocate, change the size of, or remove SPLC's pipeline which the company intends to cross, for a period of time while SPLC's operations are in progress,
8. Within 90 days following completion of the pipeline across SPLC's pipeline, the company will furnish to SPLC, at the above address, a reproducible "as-built" drawing of the crossings.
9. Should Paragraph #5 be applicable, within 90 days following completion of construction, the company will furnish to SPLC, at the above address, anchor coordinates drawings showing the locations where all anchors were set and picked up within 1,000 feet of SPLC's pipeline, which drawings will be used to show if anchor slippage has occurred which may endanger the SPLC pipeline. The anchor locations will also be shown in a table on the as-built drawings.
10. The company shall defend, indemnify and hold harmless SPLC, its parent, associated and affiliated companies, its and their agents, employees, officers, directors, insurers, successors and assigns from and against any loss, damage, claim, suit liability, judgment and expenses (including attorneys' fees and other costs of litigation), and any fines, penalties and assessments arising out of injury, disease or death of persons (including that of the employees of the company or SPLC or their contractors and subcontractors), damage to or loss of any property (including that of the company or SPLC or their contractors and subcontractors), lost product and/or lost business due to interference with SPLC's pipeline, and any environmental harm, or damages to natural resources, caused by, arising out of or resulting from, either directly or indirectly, the activities of the company and its contractors in the construction, operation and maintenance of the company's facilities across the SPLC pipeline or within SPLC's pipeline rights of way.
11. For notification purposes, the following should be contacted:

SPLC's Maintenance Supervisor

Kelly Angelette
985-858-2570 office
985-688-7446 cell
kelly.angelette@shell.com

SPLC's On-site Representative

Magellan Marine Int'l.
504-835-3009 office
mmi-no@magellanmarine.com

Emergency Response Notification

SPLC Control Center
800-852-8144
713-241-0648