15100
MICRO

23 NOV 2005

In Reply To: MS 5232

Ms. Susan Hathcock
Anadarko Petroleum Corporation
P.O. Box 1330

Houston, Texas 77251-1330

Dear Ms. Hathcock:

Reference is made to the following application that has been reviewed by the Minerals Management Service:

Application Type: New Right-of-Way Pipeline
Application Date: April 4, 2005
Supplemental Data Date(s): June 29, 2005, July 6, 2005

Work Description: Create 200-foot wide right-of-way and install, operate, and maintain the following:

One 10-inch pipeline with associated umbilical 25.51 miles in length to transport bulk gas from a subsea manifold in DeSoto Canyon Area Block 621, through DeSoto Canyon Area Blocks 620, 664, 708, 752, 751, 795, 794, 793, and 837 through Mississippi Canyon Area Blocks 877 and 921, and to Mississippi Canyon Area Block 920 Independence Hub Platform.

Assigned Right-of-Way Number: OCS-G26834
Assigned Segment Number: 15100
Umbilical Segment Number: 15101

Pursuant to 43 U.S.C. 1334(e) and 30 CFR 250.1000(d), your application is hereby approved.

The approval is subject to the following:

1) Our review indicates that the proposed pipeline route is in the vicinity of the unidentified side-scan sonar targets listed in the Enclosure, features that may represent significant archaeological resources. In accordance with 30 CFR 250.194(b), you will either (1) conduct an underwater archaeological investigation prior to commencing construction activities to determine whether

these features represent archaeological resources, or (2) ensure that all seafloor disturbing actions avoid the unidentified features by a distance greater than that listed in the Enclosure. Submit lay barge 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) that demonstrate that the features were not physically impacted by the construction activities. If you conduct an underwater archaeological investigation prior to commencing operations, comply with the investigation methodology and reporting requirements found at:
http://www.gomr.mms.gov/homepg/regulate/environ/archaeological/evaulation.html.

2) Our review indicates that the routes to be taken by boats and aircraft in support of your proposed activities are located in or could traverse Eglin Water Test Area Nos. 1 and/or 3. Therefore, please be advised that you will contact Air Armament Center, Encroachment Committee Chairman, 101 West D Avenue, Suite 222, Eglin Air Force Base, Florida 32542-5492 [contact Mr. Robert J. Arnold at (850) 882-4646] concerning the control of electromagnetic emissions and use of boats and aircraft entering into Eglin Water Test Area Nos. 1 and/or 3.

Your request to use navigational positioning equipment to comply with Notice to Lessees and Operators No. 98-20, Section IV.B, is hereby approved.

Segment No.	MAOP (psig)	MAOP Determination
15100	7248	Hydrostatic Test Pressure

Please be reminded that, in accordance with 30 CFR 250.1008(a), you must notify the Regional Supervisor at least 48 hours prior to commencing the installation or relocation of a pipeline or conducting a pressure test on the pipeline. Commencement notification(s) should be faxed to (504) 736-2408.In accordance with 30 CFR 250.1008 (b), you are reminded to submit a report to the Regional Supervisor within 90 days after completion of any pipeline construction. Also in accordance with a Letter to Lessees dated April 18, 1991, a copy of the as-built plat(s) must be submitted to the National Ocean Service, N/CS26 Room 7317, 1315 E-W Highway, Silver Spring, MD 20910-3282

Sincerely,

Orig Sgd A Gobert

Donald C. Howard
Regional Supervisor
Field Operations

Enclosure

bcc: 1502-01 Segment No. 15100, ROW OCS-G26834 (MS 5232)
1502-01 ROW OCS-G26834 (Microfilm) (MS 5033)
~~1502-01 Segment No. 15101, ROW OCS-G26834 (MS 5232)~~
~~1502-01 ROW OCS-G26834 (Microfilm) (MS 5033)~~
MS 5250 New Orleans District w/flow schematic
MS 5232 Cartography

MICRO 15100
15101

Pipeline Review Report

Review : Hazards Review (Geological and Geophysical Unit)

Permit Number: P-15100 **Permit Type:** ROW Application **Submittal Received:** 04/06/2005

Operator : Anadarko Petroleum Corporation

ROW Number : G26834 **Reviewer Received Date:** 04/19/2005 **Review Completed:** 04/19/2005

Segments : 15100, 15101

Reviewer : AHMEDA

Remark :

Item	Response Text
1	***The information is sufficient to perform a review.***
2	***There are no natural hazards.***
3	***There are man-made Hazards.***
4	***General comments:***
13.1	***There are pipeline(s) near the pipeline route which could be damaged during installation.***
13.2	***There are pipeline(s) near the potential anchor locations that could be damaged during or after anchor placement.***
14	***Approval is recommended!***

15100
15101

UNITED STATES GOVERNMENT
MEMORANDUM

Date : 04/18/2005

To : **Geological and Geophysical Analysis Unit (MS 5222)**

From : **Petroleum Engineer, Pipeline Section, Office of Field Operations**
Gulf of Mexico OCS Region (MS 5232)

Subject : **Hazards Review of ROW Application**

Applicant : **00981 Anadarko Petroleum Corporation**

Right-of-Way Number : **G26834**

Right-of-Way Length : **25.51 Mile(s)**

The subject application is attached for your review of the potential hazards associated with the proposed pipeline activities. The pipeline(s) proposed in this application is described as follows:

One 10-inch pipeline with associated umbilical approximately 25.51 miles in length to transport bulk gas from a subsea manifold in Block 621, through Blocks 620, 664, 708, 752, 751, 795, 794, 793, and 837, all in the DeSoto Canyon Area, through Blocks 877 and 921, and to Block 920 Independence Hub Platform all in the Mississippi Canyon Area.

Application Tracking Number: P - 15100

Pipeline segments proposed in this application: 15100, 15101

Your comments and recommendations are requested by : 04-MAY-2005

Manny Gagliano

Ext :

MICKO 15100/101

UNITED STATES GOVERNMENT
MEMORANDUM

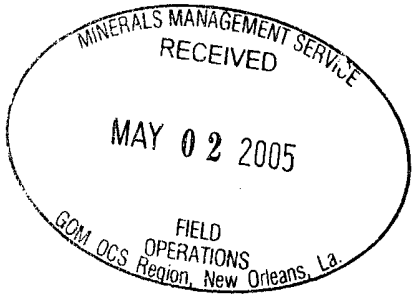
Date : 04/18/2005

To : **Adjudication Section**

From : **Petroleum Engineer, Pipeline Section, Office of Field Operations**
Gulf of Mexico, OCS Region (MS 5232)

Subject : **Adjudication Review of ROW Application**

Applicant : **00981 Anadarko Petroleum Corporation**



Right-of-Way Number : **G26834**

Right-of-Way Length : **25.51 Mile(s)**

Pipeline Segments Proposed in this Application: 15100, 15101

The subject application is attached for your review of the proposed pipeline activities. The Pipeline Proposed in this application is described as follows:

One 10-inch pipeline with associated umbilical approximately 25.51 miles in length to transport bulk gas from a subsea manifold in Block 621, through Blocks 620, 664, 708, 752, 751, 795, 794, 793, and 837, all in the DeSoto Canyon Area, through Blocks 877 and 921, and to Block 920 Independence Hub Platform all in the Mississippi Canyon Area.

Please review the proposed application and company qualifications, and record the results of your review in TIMS.

Your comments and recommendations are requested by : 04-MAY-2005

MD
Manny Gagliano

Ext : 2549

ANADARKO PETROLEUM CORPORATION

MICRO

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

April 4, 2005

Mr. Donald C. Howard, Regional Supervisor Field Operations
Minerals Management Service
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, Louisiana 70123

Attention: Mr. Alex Alvarado
MS 5232

RE: Application for 10-Inch Bulk Gas Right-of-Way Pipeline (Spiderman 10" West Flowline) and associated Umbilical to be installed in the Desoto Canyon and Mississippi Canyon Areas, OCS Federal Waters, initiating in Desoto Canon Area Block 621 and terminating in Mississippi Canyon Area Block 920 at a proposed Floating Production Platform (Independence Hub), Gulf of Mexico, Federal Waters.

Gentlemen,

Pursuant to the authority granted Section 5 (e) the Outer Continental Shelf Lands Act (67 Stat. 462) (43 U.S.C. 1331), as amended (92 Sta. 629), and in compliance with the regulations contained in Title 30 CFR Part 250 Subpart J, Anadarko Petroleum Corporation (Anadarko) is filing this application, in quadruplicate (original and three copies), for a Right-of-Way two hundred feet (200') in width for the construction, maintenance and operation of a 10-inch bulk gas pipeline to be installed in and/or through Desoto Canyon (DC) Area Blocks 621, 620, 664, 708, 752, 751, 795, 794, 793 and 837; Mississippi Canyon (MC) Area Blocks 877, 921, 876 and 920, OCS Federal Waters, Gulf of Mexico. Anadarko agrees that said Right-of-Way, if approved, will be subject to the terms and conditions of said regulations. The associated electric/hydraulic umbilical will be installed in and/or through DC Area Blocks 621, 620, 664, 708, 707, 751, 750, 749, and 793; MC Area Blocks 833, 877, 876 and 920, OCS Federal Waters, Gulf of Mexico.

The bulk gas pipeline, which is approximately 25.51 miles 134,690 feet long, will be utilized to transport bulk gas production from a subsea Manifold, located in DC-621 to the proposed floating production platform located in MC-920. The electric/hydraulic umbilical, which is approximately 25.85 miles 136,475 feet long, will be utilized to provide electric and hydraulic control as well as methanol and chemical injection to subsea wells, located in DC-621 from the proposed floating production platform located in MC-920.

Anadarko will be the designated operator of the subject Right-of-Way bulk gas pipeline. The proposed pipeline will be designed, constructed operated and maintained in accordance with Title 30 CFR Part 250. The pipeline is to be located in a maximum water depth of 8,080 feet and a minimum water depth of 7913 feet. Since the entire pipeline is in water depths in excess of 200 feet, the pipeline will be installed without burial below the seabed.

Installation of the proposed bulk gas pipeline and associated electric/hydraulic umbilical will be accomplished by utilizing a Dynamically Positioned (DP) lay vessel and will not require the use of anchors for positioning. The estimated project duration is a total of 30 days commencing with pipeline installation around November 1, 2005 (21 days), followed by installation of the Steel Catenary Riser (SCR) installation around August 1, 2006 and installation of the umbilical around August 15, 2006. Startup is expected around July 1, 2007.

The operations base for Anadarko is located in Houma, Louisiana. During construction for this project, the base of operations will be Fourchon, Louisiana.

The proposed pipeline crosses fourteen (14) Desoto Canyon and Mississippi Canyon blocks (Desoto Canyon Area Blocks 621, 620, 664, 708, 752, 751, 795, 794, 793 and 837; Mississippi Canyon Area Blocks 877, 921, 876 and 920). Although the proposed pipeline route does not proceed through MC-876, the 200-ft. Right of Way encroaches into the block. The proposed umbilical crosses thirteen (13) Desoto Canyon and Mississippi Canyon blocks (Desoto Canyon Area Blocks 621, 620, 664, 708, 707, 751, 750, 749, and 793; Mississippi Canyon Area Blocks 833, 877, 876 and 920). Neither the pipeline nor the umbilical cross any pipelines. In accordance with applicable regulations, Anadarko has forwarded a copy of this proposed pipeline application by Certified Mail, Return Receipt Requested, to each designated Oil and Gas Lease Operator whose lease is so affected. Copies of these letters and copies of the unsigned requested Return Receipt are attached for reference. A list of Designated Operators and Right-of-Way or Easement Holders is also attached. Copies of the Return Receipts showing dates and signatures as evidence of service upon such Operators and Right-of-Way or Easement Holders will be forwarded to your office upon receipt. In the event Anadarko cannot obtain completed return receipt cards, we understand that a letter from the Lessee expressing no objection to the proposed project is acceptable. In order to expedite the permit process, Anadarko has requested a letter from the Operator expressing no objection to the proposed project. When obtained, these letters will be forwarded to your office.

The proposed route of the Right-of-Way does not adjoin or subsequently cross state-submerged lands.

Anadarko hereby certifies that the proposed activity described in this application complies with and will be conducted in a manner consistent with the Coastal Management Program for the states of Louisiana, Mississippi and Florida. A copy of the letters and consistency certificates are attached for your files.

C&C Technologies conducted a pipeline Pre-Lay Survey and Hazards Study for the proposed Operations. The survey report prepared by C&C Technologies, and submitted with this application, identifies side-scan sonar contacts within the surveyed area. The coordinates of the side scan sonar contacts will be recorded into the installation vessels on-board navigation and position system and avoided during pipelay. Anadarko has reviewed the hazard survey and will comply with all recommendations found therein.

This pipeline will be inspected after installation on the seabed, by use of a Remote Operated Vehicle (ROV), to determine if any spanning has occurred. Any excessive spanning will be rectified by installing adequate supports or Vortex Induced Vibration (VIV) suppression. The location of any spans will be identified, reported, and records maintained in Anadarko's as-built construction report.

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, Anadarko shall report such findings

immediately, to the Director, Gulf of Mexico OCS Region, and make every reasonable effort to preserve and protect the cultural resources from damage until the Director has given directions as to its preservation.

The calculated worst-case discharge for the proposed Right-of-Way Oil Pipeline is less than 1,000 barrels. Worst-case Oil Spill calculations are included in Attachment B, Item No. 22.

Please refer to New Orleans Miscellaneous File No. 981 for a copy of a resolution approved by the Board of Directors authorizing the undersigned to sign for and on behalf of Anadarko. Additionally, Anadarko has an approved $300,000 Right-of-Way Grant Bond (Bond No.945480) on file with the MMS, covering installation of right-of-way pipelines in Federal Waters, Gulf of Mexico.

Applicant agrees to be bound by the foregoing regulations, and further agrees to comply with the application stipulations as set forth in Title 30 CFR 250 (Subpart J).

Anadarko requests the following departures:

1. Anadarko hereby requests a waiver from NTL 98-20, Section IV.B, which requires the buoying 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, Anadarko will comply with the recommended avoidance criteria of any magnetic anomalies found in the Pipeline Pre-Lay Survey Report along the proposed pipeline route.

2. The American National Standards Institute (ANSI) B31.8 design code and 30 CFR 250 will be used in setting the internal design pressure for the steel pipe used in the pipeline and riser. Where ANSI B31.8 does not provide specific guidance, a limit state design philosophy will be adopted. API RP 1111 will be referred to for external pressure collapse calculations, as B31.8 does not adequately address these for deepwater applications. For this reason, Anadarko hereby requests approval for the utilization of API RP 1111 for the design against collapse of the pipeline due to external hydrostatic pressure. Pertinent calculations are included for reference.

3. Anadarko hereby requests a waiver from recording magnetometer data as part of the shallow hazards survey in water depths beyond 600 feet.

In support of our application and for your review and use, the following exhibits have been enclosed herewith and made a part hereof:

1. Attachment A - List of Lease Operators and Right-of-Way Holders
2. Attachment B - Pipeline Design Criteria
3. Attachment C - Signed copies of Nondiscrimination in Employment statement (one original, three copies)
4. General Permit Information:
    a. Attachment D - Vicinity Layout
    b. Attachment E - Route and Profile Maps
    c. Attachment F - Safety Flow Schematic
    d. Attachment G – Steel Catenary Riser at MC-920
    e. Attachment H – Umbilical Data Sheets

5. Attachment I - Copies of Lease and Pipeline crossing "Request for No Objection" letters and requested Return Receipts.
6. Attachments J – Copies of the affected states Consistency Certification and letter of request for determinations.
7. Enclosure 1 – MMS Checklist.
8. Enclosure 2 - Check No.748464 in the amount of $4,300.00, of which $2,350.00 covers the application fee, and $1,950.00 covers five years' rental payment ($390.00 per year) on 25.51 miles of Right-of-Way.
9. Enclosure 3 - High Resolution Geophysical Survey Report (4 copies), plus one CD with ASCII file for the flowline route and umbilical route) prepared by C&C Technologies. Additional copies of the CD are foun in the inside cover of the Survey Report.

Anadarko hereby agrees to keep open at all reasonable times for inspection by the Minerals Management Service, 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.

Contacts on technical points or other information should be directed to:

Susan Hathcock
Anadarko Petroleum Corporation
P.O. Box 1330
Houston, TX 77251-1330
(832) 636-8758
susan_hathcock@anadarko.com

Your efforts to approve the installation of the subject pipeline in a timely fashion would be most appreciated.

Very truly yours,

Richard E. Stites
Agent & Attorney-in-Fact

Attachments and Enclosures

MMS PERMIT APPLICATION

ATTACHMENT A
LIST OF LEASE OPERATORS AND RIGHT OF WAY HOLDERS
ANADARKO PETROLEUM CORPORATION
10-INCH BULK GAS PIPELINE AND UMBILICAL
DESOTO CANYON AREA BLOCK 621 TO MISSISSIPPI CANYON AREA BLOCK 920 PROPOSED PLATFORM

A. Lease Operators

10" Bulk Gas Pipeline

The following lease operators are being notified of the proposed pipeline route in accordance with the "No Objection" requirements:

BLOCK	LEASE	LEASE HOLDER
DC - 621	OCS-G-23529	Anadarko Petroleum Corporation
DC - 620	OCS-G-23528	Anadarko Petroleum Corporation
DC - 664	OCS-G-23532	Marathon Oil Company
DC - 708		Open
DC - 752		Open
DC - 751	OCS-G-25862	Dominion Exploration & Production, Inc.
DC - 795		Open
DC - 794	OCS-G-10470	Murphy Exploration & Production Company - USA
DC - 793	OCS-G-10469	Murphy Exploration & Production Company - USA
DC - 837	OCS-G-10474	Mobil Oil Exploration & Producing Southeast Inc.
MC – 876 (note 1)	OCS-G-21191	Total E&P USA, Inc.
MC - 877		Open
MC - 921	OCS-G-20010	Murphy Exploration & Production Company - USA
MC - 920		Open

Notes: 1. Although the proposed pipeline route does not cross MC-876, the 200-ft. Right of Way encroaches into MC-876. The leaseholder for MC-876 will be notified.

Electric/Hydraulic Umbilical

The following lease operators are being notified of the proposed umbilical route in accordance with the "No Objection" requirements:

BLOCK	LEASE	LEASE HOLDER
DC - 621	OCS-G-23529	Anadarko Petroleum Corporation
DC - 620	OCS-G-23528	Anadarko Petroleum Corporation
DC - 664	OCS-G-23532	Marathon Oil Company
DC - 708		Open
DC - 707		Dominion Exploration & Production, Inc.
DC - 751	OCS-G-25862	Dominion Exploration & Production, Inc.
DC - 750		Open
DC - 749		Open
DC - 793	OCS-G-10469	Murphy Exploration & Production Company - USA
MC - 833	OCS-G-18300	BHP Billiton Petroleum (GOM) Inc.
MC - 877		Open
MC - 876	OCS-G-21191	Total E&P USA, Inc.
MC - 920		Open

MMS PERMIT APPLICATION

ATTACHMENT A

LIST OF LEASE OPERATORS AND RIGHT OF WAY HOLDERS

ANADARKO PETROLEUM CORPORATION

10-INCH BULK GAS PIPELINE AND UMBILICAL

DESOTO CANYON AREA BLOCK 621 TO MISSISSIPPI CANYON AREA BLOCK 920 PROPOSED PLATFORM

B. Pipeline Operators

The following pipeline operators are being notified of the proposed pipeline route in accordance with the "No Objection" requirements:

ROW HOLDER	PIPELINE SIZE/PRODUCT	OCS ROW NO.	SEG. NO.	AREA/BLOCK
None				

MMS PERMIT APPLICATION

ATTACHMENT B
PIPELINE DESIGN CRITERIA
ANADARKO PETROLEUM CORPORATION
10-INCH BULK GAS PIPELINE AND UMBILICAL
DESOTO CANYON AREA BLOCK 621 TO MISSISSIPPI CANYON AREA BLOCK 920 PROPOSED PLATFORM

A. INTRODUCTION

This proposed 10-inch Gas pipeline will be utilized to transport production from the "Spiderman" Field located in the DeSoto Canyon Area, Gulf of Mexico. This pipeline will be part of an overall gathering system for this field, as part of the Independence Project and is shown on the attached Safety Flow Schematic.

B. DESIGN INFORMATION

Design of the flowline system will be in accordance with 30 CFR 250. The maximum wellhead Shut-in Tubing Pressure(SITP) for any source for this pipeline is 7,700 psig, which is less than the design pressure of 8100 psig. When applicable, the effects of external pressure in the design are considered.

1. Product to be transported: Bulk Gas

2. Pipeline and Riser Specifications:

PARAMETER	PIPELINE	STEEL CATENARY RISER (SCR) AT MC - 920
Water Depth Range	8080 to 7913 ft.	0 - 7913 ft.
Length (ft)	125,690 ft. note 1	14,000 ft. (9000 ft. Horiz. Proj.) note 1
Outside Diameter (in)	10.75	10.75
Wall Thickness (in) Buckle Arrestors (in)	0.862 1.000	1.180
Material	API 5L	API 5L
Grade	X-65	X-65

Notes: 1. Total Right of way length is 134,690 ft.

3. Type of Cathodic Protection:

   a. Sacrificial Anode System (480 foot spacing)
   b. Type of Anode: Aluminum-Indium-Zinc Alloy
   c. Two (2) additional anodes will be placed at each end of the pipeline and at each pipeline crossing.
   d. Unit weight of anode: 91.8 lbs
   e. Platform anodes will not be used to protect the pipeline.
   f. Pipeline anode life: 20 years minimum.

   Based on the formula: $Le_{(p/1)} = 3.82 \times 10^4 \times w^o/DIR$

   Where:

   $Le_{(p/1)}$ = Life expectancy (years)
   w^o = Weight of anode unit (lbs)
   D = Diameter of pipe (inches)

I = Separation between anodes (ft)
R = Rate of consumption (lbs/amp year)= 7.42 lbs/amp year

$Le_{(p/1)}$ = $(3.82 \times 10^4)(91.8)/[(10.75)(480)(7.42)]$ = 91.6 years

4. Water Depth: Minimum of 7,913 feet at MC-920 proposed platform
Maximum of 8,080 feet

5. Description of Protective Coating:

a. Pipeline:
Fusion Bonded Epoxy (FBE) -Minimum 14-16 mils
Concrete Weight Coating (CWC) - None.

b. Riser:

Below Water:	Minimum 18 mils of Fusion Bonded Epoxy (FBE) coating plus 2.5 to 4 mils of "Rough Coat" FBE coating. An abrasion resistant coating will be installed for 1000-ft. either side of the SCR touchdown location.
Splash Zone:	0.500 in. of Vulcanized Neoprene
Above Water:	10 mils (3 coat paint system; 2.5 mils Inorganic Zinc, 5 mils Multipurpose Epoxy, 2.5 mils Aliphide Polyurethane)

6. Internal Corrosion Protection: The pipeline will be monitored for corrosion and a chemical injection program instituted if necessary. The pipeline will not be designed for pigging. However, the pipeline will be suitable for pigging if necessary later.

7. Specific Gravity: SG = weight in air (empty) / water displacement (in seawater)

Description:	Air Weight (lb/ft)	Water Displacement (lb/ft)	Sub-merged Empty Weight (lb/ft)	Pipeline/Riser Specific Gravity
PIPELINE Line Pipe: 10.75" O.D. X 0.862" W.T. with FBE Coat.	91.59	40.45	51.14	2.26
SCR 10.75" O.D. X 1.180" W.T. with FBE Coat.	121.20	40.45	80.75	3.00

8. Specific Gravity of Gas (Air = 1.0): 0.65

9. Design Capacity for Pipeline: 210 MMSCFD

Condensate Rate: 2 BBL/MMSCF

10. Flowline System Shut-in Pressure:

The following calculations determine the shut-in pressures between the (+)100-ft. elevation at the host platform (MC-920) and the base of the flowline (-)8,080-ft. For conservatism, the maximum shut-in tubing pressure for any source is utilized and a conservative Methane gas unit weight at shut-in tubing pressure of 15 lb/ft^3 is assumed.

$$\Rightarrow \quad P_{shut-in} = 8{,}100 \text{ psig (Wellhead Shut – in Tubing Pressure)} - (\Delta Elevation\ from \max wd)(\frac{15\ lb}{ft^3})(\frac{ft^2}{144\ in^2})$$

Host Platform + 100 MSL $\Rightarrow$ $P_{shut-in} = 8{,}100$ psig (Wellhead Shut – in Tubing Pressure) $- (8{,}180\,ft)(\frac{15\ lb}{ft^3})(\frac{ft^2}{144\ in^2}) = 7{,}248\ psig$

Riser -0 fsw $\Rightarrow$ $P_{shut-in} = 8{,}100$ psig (Wellhead Shut – in Tubing Pressure) $- (8{,}080\,ft)(\frac{15\ lb}{ft^3})(\frac{ft^2}{144\ in^2}) = 7{,}258\ psig$

Riser - 7913 fsw $\Rightarrow$ $P_{shut-in} = 8{,}100$ psig (Wellhead Shut – in Tubing Pressure) $- (167\,ft)(\frac{15\ lb}{ft^3})(\frac{ft^2}{144\ in^2}) = 8{,}083\ psig$

Flowline - 7913 fsw $\Rightarrow$ $P_{shut-in} = 8{,}100$ psig (Wellhead Shut – in Tubing Pressure) $- (167\,ft)(\frac{15\ lb}{ft^3})(\frac{ft^2}{144\ in^2}) = 8{,}083\ psig$

Flowline - 8,080 fsw $\Rightarrow$ $P_{shut-in} = 8{,}100$ psig (Wellhead Shut – in Tubing Pressure) $- (0\,ft)(\frac{17.48\ lb}{ft^3})(\frac{ft^2}{144\ in^2}) = 8{,}100\ psig$

11. Hydrostatic Test Pressure:

The Hydrostatic Test pressure and duration at the (+) 100-ft elevation at the Host platform will be 9100 psig and 8 hours respectively. This test pressure is based on the meeting 125% of the Maximum Shut-in pressure at any location of the flowline system.

Required Hydrostatic Test Pressure

The hydrostatic test pressure is calculated below to ensure that the minimum required test pressure of 125% of the shut-in tubing pressure at any location within the flowline system is met. The calculations below determine the required hydrostatic test pressures at all locations of the flowline.

Test Pressure at Host Platform + 100 MSL $\Rightarrow$ $P_{req\,hyd} = 7{,}248$ psig x (125%) $= 9{,}060\ psig$

Riser -0 fsw $\Rightarrow$ $P_{req\,hyd} = 7{,}258$ psig x (125%) $= 9{,}073\ psig$

Riser - 7913 fsw $\Rightarrow$ $P_{req\,hyd} = 8{,}083$ psig x (125%) $= 10{,}104\ psig$

Flowline - 7913 fsw $\Rightarrow$ $P_{req\,hyd} = 8{,}083$ psig x (125%) $= 10{,}04\ psig$

Flowline - 8,080 fsw $\Rightarrow$ $P_{req\,hyd} = 8{,}100$ psig x (125%) $= 10{,}125\ psig$

Minimum Hydrostatic Test Pressure

Based on the above calculations, the minimum hydrostatic test pressure at the top of riser ((+) 100-ft) will ensure that the required hydrostatic test pressure at all locations of the flowline are met. The minimum Hydrostatic test pressure of 9,060 psig will be maintained at the (+) 100-ft. elevation. The calculations below show the actual minimum hydrostatic test pressure at all locations along the flowline, accounting for seawater as the hydrotest medium (64 lb/ft^3).

$$\Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} + (\Delta Elevation\ from\ (+)100\,ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right)$$

$$\text{Host Platform} + 100 \text{ MSL} \Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} + (0\,ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}060\ psig$$

$$\text{Riser -0 fsw} \Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} + (100\,ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}104\ psig$$

$$\text{Riser - 7913 fsw} \Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} + (8013ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 12{,}621\ psig$$

$$\text{Flowline - 7913 fsw} \Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} + (8013ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 12{,}621\ psig$$

$$\text{Flowline - 8,080 fsw} \Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} + (8180ft)\left(\frac{04\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 12{,}695\ psig$$

Effective Hydrostatic Test Pressure

Allowing for external pressure differential, the effective hydrostatic test pressure at any location of the flowline are calculated below. This effective hydrostatic test pressure will be utilized to determine the requirement to maintain a hoop stress of less than 95% of the specified minimum yield strength in the flowline system(section 14).

$$\Rightarrow \quad P_{eff\ hyd} = P_{\min hyd} - \text{Water Depth}\ (ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right)$$

$$\text{Host Platform} + 100 \text{ MSL} \Rightarrow \quad P_{\min hyd} = 9{,}060 \text{ psig} - (0\,ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}060\ psig$$

$$\text{Riser -0 fsw} \Rightarrow \quad P_{\min hyd} = 9{,}104 \text{ psig} - (0\,ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}104\ psig$$

$$\text{Riser - 7913 fsw} \Rightarrow \quad P_{\min hyd} = 12{,}621 \text{ psig} - (7913ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}104\ psig$$

$$\text{Flowline - 7913 fsw} \Rightarrow \quad P_{\min hyd} = 12{,}621 \text{ psig} - (7913ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}104\ psig$$

$$\text{Flowline - 8,080 fsw} \Rightarrow \quad P_{\min hyd} = 12{,}695 \text{ psig} - (8080ft)\left(\frac{64\ lb}{ft^3}\right)\left(\frac{ft^2}{144\ in^2}\right) = 9{,}104\ psig$$

12. Internal Design Pressure of Flowline:

The flowline and riser pipe design pressure and subsequent pipe wall thickness requirements are based on the design equation as required in 30CFR250, Subpart J. The maximum shut-in tubing pressure at any wellhead source is 7,700 psig, and the maximum design pressure is 8,100 psig. The calculations below are for:

- Riser (All Locations)
- Flowline (All Locations)

For the Riser and Flowline segments, the minimum water depth is utilized to determine the external pressure, yielding the most conservative result.

Riser (All Locations)

$$t = \frac{(P_i - P_e)D}{2(F)(E)(T)(S)} \Rightarrow$$ 30 CFR 250 , ANSI B31.8 (rearranged)

S = Specified Minimum Yield Strength (SMYS) = 65,000 psi

D = Pipe Outside Diameter= 10.75 in.

F = Construction Design Factor = 0.60 (Riser Pipe per 30 CFR 250)

E = Longitudinal Joint Factor = 1.0 (Seamless Pipe)

T = Temperature Derate Factor = 1.0 (Temp. ≤ 250 °F)

t = Pipe Wall Thickness= 1.180 in

P_i = Internal Design Pressure= 8100 (psig)

P_e = External Pressure = $P_{seawater}$

$$= \left((0 \text{ ft})\left(\frac{64 \text{ lb}}{\text{ft}^3}\right)\left(\frac{\text{ft}^2}{144 \text{ in}^2}\right) \right) = 0 \text{ psig (calculated at minimum water depth)}$$

$$t_{nom} = \frac{\left(8{,}100 \text{ lb/in}^2 - 0 \text{lb/in}^2\right)\left(10.75 \text{ in}\right)}{2\left(0.60\right)\left(1.0\right)\left(1.0\right)\left(65{,}000 \text{lb/in}^2\right)} = 1.12 \text{ in}$$

= 1.18 in Selected ⇒ OK

Pipeline (All Locations)

$$t = \frac{(P_i - P_e)D}{2(F)(E)(T)(S)} \Rightarrow$$ 30 CFR 250 , ANSI B31.8 (rearranged)

S = Specified Minimum Yield Strength (SMYS) = 65,000 psi

D = Pipe Outside Diameter= 10.75 in.

F = Construction Design Factor = 0.72 (Riser Pipe per 30 CFR 250)

E = Longitudinal Joint Factor = 1.0 (Seamless Pipe)

T = Temperature Derate Factor = 1.0 (Temp. ≤ 250 °F)

t = Pipe Wall Thickness= 1.180 in

P_i = Internal Design Pressure= 8100 (psig)

P_e = External Pressure = $P_{seawater}$ (Calculated at minimum water depth)

$$= \left((7913 \text{ ft})\left(\frac{64 \text{ lb}}{\text{ft}^3}\right)\left(\frac{\text{ft}^2}{144 \text{ in}^2}\right) \right) = 3{,}517 \text{ psig}$$

$$t_{nom} = \frac{\left(8{,}100 \text{ lb/in}^2 - 3{,}517 \text{lb/in}^2\right)\left(10.75 \text{ in}\right)}{2\left(0.72\right)\left(1.0\right)\left(1.0\right)\left(65{,}000 \text{lb/in}^2\right)} = 0.526 \text{ in}$$

= 0.862 in Selected ⇒ OK

13. Pipe Design Pressure (P) of Flanges, Fittings and Valves in Pipeline and Riser:

- Valves: API Rating: 10,000 psig
- Flanges, etc: API Rating: 10,000 psig

14. Pipeline Hoop Stress During Hydrotest:

In order to verify that 95% of the material Specified Minimum Yield Strength is not exceeded during hydrotesting, the calculations below were performed for each location along the riser and flowline system. The effective hydrotest pressure determined in section 12 above were utilized.

$$\%\ \text{SMYS at Hydrotest} = \frac{P_{eff\ hyd} D}{2tS} \times 100\%$$

D = Outside Pipe Diameter = 10.75 (in)

t = Pipe Wall Thickness = varies (in) (Riser = 1.18 in, Pipeline = 0.862 in)

S = Specified Minimum Yield Strength (SMYS) = 65,000 psi

$P_{eff\ hyd}$ = EffectiveHydrostaticTestPressure = varies (lb/in2) (refer to section 12 above)

$$\text{Host Platform} + 100\ \text{MSL} \Rightarrow \%\ \text{SMYS at Hydrotest} = \left(\frac{9{,}060\ \text{lb}}{\text{in}^2}\right)\left(\frac{10.75\ \text{in}}{1}\right)\left(\frac{1}{2}\right)\left(\frac{1}{1.18\ \text{in}}\right)\left(\frac{\text{in}^2}{65{,}000\ \text{lb}}\right) \times 100\% = 63.5\%$$

$$\text{Riser -0 fsw} \Rightarrow \%\ \text{SMYS at Hydrotest} = \left(\frac{9{,}104\ \text{lb}}{\text{in}^2}\right)\left(\frac{10.75\ \text{in}}{1}\right)\left(\frac{1}{2}\right)\left(\frac{1}{1.18\ \text{in}}\right)\left(\frac{\text{in}^2}{65{,}000\ \text{lb}}\right) \times 100\% = 63.8\%$$

$$\text{Riser - 7913 fsw} \Rightarrow \%\ \text{SMYS at Hydrotest} = \left(\frac{9{,}104\ \text{lb}}{\text{in}^2}\right)\left(\frac{10.75\ \text{in}}{1}\right)\left(\frac{1}{2}\right)\left(\frac{1}{0.862\ \text{in}}\right)\left(\frac{\text{in}^2}{65{,}000\ \text{lb}}\right) \times 100\% = 87.3\%$$

$$\text{Flowline - 7913 fsw} \Rightarrow \%\ \text{SMYS at Hydrotest} = \left(\frac{9{,}104\ \text{lb}}{\text{in}^2}\right)\left(\frac{10.75\ \text{in}}{1}\right)\left(\frac{1}{2}\right)\left(\frac{1}{0.862\ \text{in}}\right)\left(\frac{\text{in}^2}{65{,}000\ \text{lb}}\right) \times 100\% = 87.3\%$$

$$\text{Flowline - 8,080 fsw} \Rightarrow \%\ \text{SMYS at Hydrotest} = \left(\frac{9{,}104\ \text{lb}}{\text{in}^2}\right)\left(\frac{10.75\ \text{in}}{1}\right)\left(\frac{1}{2}\right)\left(\frac{1}{0.862\ \text{in}}\right)\left(\frac{\text{in}^2}{65{,}000\ \text{lb}}\right) \times 100\% = 87.3\%$$

15. Maximum Allowable Operating Pressure (MAOP):

For this design, the Maximum Allowable Operating Pressure of the flowline and riser will be based on the lesser of the following at each location in the flowline system:

- 80% of Hydrostatic test Pressure (Determined Below)
- Design Pressure (Detemined in Section 12)

MAOP Based on 80% of Hydrostatic Testing

The Maximum Allowable Operating Pressure for this flowline system is based upon the design pressure of 8,100 psig. This pressure, however, would not be experienced for the entire length of the flowline due to the internal and external hydrostatic pressures. The presence of Hydrotest Water, and/or Product Gas can reduce the pressure at the top of the riser significantly. Based upon the fluid

hydrostatic pressure calculations, the situation with the entire pipeline filled with Methane gas is taken as the "worst" case. Although it is extremely unlikely that this condition would ever occur, it would not be possible to have any fluid combination in the flowline that could produce a higher shut-in pressure at the top of the riser. If one assumes that this is in fact the "worst" case, the following calculations show the Maximum Allowable Operating Pressure (MAOP) based upon the "effective" hydrotest pressure at designated location along the flowline system.

$$\text{MAOP} = 80\%\ \text{Effective Hydrotest Pressure} + \text{External Pressure}$$

$$= (P_{eff\ hyd} \times 80\%) + P_e$$

$$P_{eff\ hyd} = P_{1hyd} - H_e \quad \text{(See Section 11 Above)}$$

$$P_e = \text{External Pressure} = (\Delta E_e)(\frac{64lb}{ft^3})(\frac{ft^2}{144in^2})$$

$$\Delta E_e = \textit{Depth}\ \text{of sea water outside pipeline}$$

Host Platform + 100 MSL $\Rightarrow$ $\text{MAOP} = \left[(9{,}060\,psig \times 80\%) + [(0\,ft)(\frac{64lb}{ft^3})(\frac{ft^2}{144in^2})]\right] = 7{,}248\ psig$

Riser -0 fsw $\Rightarrow$ $\text{MAOP} = \left[(9{,}104\,psig \times 80\%) + [(0\,ft)(\frac{64lb}{ft^3})(\frac{ft^2}{144in^2})]\right] = 7{,}283\ psig$

Riser -7913 fsw $\Rightarrow$ $\text{MAOP} = \left[(9{,}104\,psig \times 80\%) + [(7913\,ft)(\frac{64lb}{ft^3})(\frac{ft^2}{144in^2})]\right] = 10{,}800\ psig$

Flowline -7913 fsw $\Rightarrow$ $\text{MAOP} = \left[(9{,}104\,psig \times 80\%) + [(7913\,ft)(\frac{64lb}{ft^3})(\frac{ft^2}{144in^2})]\right] = 10{,}800\ psig$

Flowline -8,080 fsw $\Rightarrow$ $\text{MAOP} = \left[(9{,}104\,psig \times 80\%) + [(8{,}080\,ft)(\frac{64lb}{ft^3})(\frac{ft^2}{144in^2})]\right] = 10{,}874\ psig$

MAOP Evaluation:

Location Along Pipeline	Flowline System Shut-in Pressure (Methane Filled) (psig)	80% Hydrostatic Test Pressure ** (psig)	Design Pressure (psig)	**Maximum Allowable Operating Pressure (MAOP)*** (psig)**
Riser Pipe @ +100' MSL	7,248	7,248	8,100	**7,248**
Riser Pipe @ –0' MSL	7,258	7,283	8,100	**7,283**
Riser Pipe @ –7860' MSL	8,083	10,800	8,100	**8,100**
Flowline @ -7913' MSL	8,083	10,800	8,100	**8,100**
Flowline @ –8080 fsw	8,100	10,874	8,100	**8,100**

* The operating pressure is the pressure seen at the point in the riser/flowline based upon a Methane gas filled flowline system

** The 80% hydrotest pressure is the pressure determined by 80% of the effective hydrostatic test pressure plus the external seawater pressure.

*** The Maximum Allowable Operating Pressure is determined by the minimum of:

a. 80% Hydrostatic Test Pressure
b. Design Pressure

16. Riser Protection: The Steel Catenary Risers(SCR's) will be suspended from the floating production platform. From the top of the SCR, piping for the risers will be located within the confines of the production platform structure and thus protected by the host structure. Therefore, "Riser Guards" will not be required.

17. On Bottom Stability: Stability against effects of water currents and storms has been evaluated. The specific gravity of the operational oil pipeline is more than adequate to ensure on-bottom pipeline stability in these water depths.

18. Pipeline Spanning: A pipeline span analysis has been conducted along the entire route. Although the analysis indicates the possible existence of pipeline spans after installation, these spans are within allowable limits for installation, operation and hydrostatic testing. The analysis accounts for static and dynamic stresses as well as vortex induced vibrations. All stresses for installation, operation and hydrostatic testing are within allowable limits. The potential spans lengths identified are short enough such that Vortex Induced Vibrations (VIV) are not expected. Should spans which exceed allowable limits be found after installation, these will be rectified with placement of intermediate supports, or VIV suppression.

19. Collapse Due to External Pressure: The riser and flowline pipe has been designed to resist collapse due to external pressure. Evaluation has been performed in accordance with API Recommended Practice 1111 (Third Edition). The evaluations for both the riser pipe and flowline pipe were conducted based on the maximum associated water depth. Results are provided below:

Riser Pipe:

P_e = ExternalPressure (Sea Water Hydrostatic Pressure)

$P_e = (D_{H_2O})(\rho\rho_{H_2O})$

D_{H_2O} = Water Depth (ft)

$\rho\rho_{H_2O}$ = Sea Water Density ($64\ {}^{lb}/_{ft^3}$)

$$P_e = \left[(7{,}913\text{ ft})\left(\frac{64\text{ lb}}{\text{ft}^3}\right)\left(\frac{\text{ft}^2}{144\text{ in}^2}\right)\right] = 3{,}517\ {}^{lb}/_{in^2}$$

$P_e = 3{,}517\ psig$

$$P_s = \frac{(P_y)(P_{ins})}{\sqrt{(P_y^{\,2} + P_{ins}^{\,2})}} = \text{Collapse Pressure of Pipe}$$

P_y = Plastic Yield Pressure = $\frac{2St}{D}$

S = Pipe Yield Strength ($^{lb}/_{in^2}$) = 65,000 $^{lb}/_{in^2}$

t = Pipe Wall Thickness (in) = 1.18 in

D = Pipe Outside Diameter (in) = 10.75 in

$$P_y = \left(\frac{2}{1}\right)\left(\frac{65{,}000\text{ lb}}{\text{in}^2}\right)\left(\frac{1.18\text{ in}}{1}\right)\left(\frac{1}{10.75\text{ in}}\right) = 14{,}270\ {}^{lb}/_{in^2}$$

$P_y = 14{,}270$ psi

P_{ins} = Elastic Instability Pressure = $(2.2)(E)\left(\frac{t}{D}\right)^3$

E = Elastic Modulus = 29,000,000 $^{lb}/_{in^2}$ (for steel)

$$P_{ins} = (2.2)\left(\frac{29{,}000{,}000\text{ lb}}{\text{in}^2}\right)\left(\frac{1.18\text{ in}}{10.75\text{ in}}\right)^3 = 84{,}380\ {}^{lb}/_{in^2}$$

$P_{ins} = 84{,}380$ psi

$$P_s = \frac{(14{,}270\ {}^{lb}/_{in^2})(84{,}380\ {}^{lb}/_{in^2})}{\sqrt{((14{,}270\ {}^{lb}/_{in^2})^2 + (84{,}380\ {}^{lb}/_{in^2})^2)}} = 14{,}070\ {}^{lb}/_{in^2}$$

$P_s = 14{,}070$ psi

Safety Factor Against Casing Collapse = $\frac{P_s}{P_e} = \frac{14{,}070\text{ psi}}{3{,}517\text{ psi}} = 4.00 \Rightarrow$ OK: Safety Factors > 1.5 are adequate

Flowline Pipe:

P_e = ExternalPressure (Sea Water Hydrostatic Pressure)

$P_e = (D_{H_2O})(\rho\rho_{H_2O})$

D_{H_2O} = Water Depth (ft)

$\rho\rho_{H_2O}$ = Sea Water Density ($64\ ^{lb}/_{ft^3}$)

$$P_e = \left[(8{,}080\text{ ft})(\frac{64\text{ lb}}{\text{ft}^3})(\frac{\text{ft}^2}{144\text{ in}^2})\right] = 3{,}591\ ^{lb}/_{in^2}$$

$P_e = 3{,}591 psig$

$$P_s = \frac{(P_y)(P_{ins})}{\sqrt{(P_y^{\,2} + P_{ins}^{\,2})}} = \text{Collapse Pressure of Pipe}$$

P_y = Plastic Yield Pressure = $\frac{2St}{D}$

S = Pipe Yield Strength ($^{lb}/_{in^2}$) = 65,000 $^{lb}/_{in^2}$

t = Pipe Wall Thickness (in) = 0.862 in

D = Pipe Outside Diameter (in) = 10.75 in

$$P_y = (\frac{2}{1})(\frac{65{,}000\text{ lb}}{\text{in}^2})(\frac{0.862\text{ in}}{1})(\frac{1}{10.75\text{ in}}) = 10{,}424\ ^{lb}/_{in^2}$$

$P_y = 10{,}424$ psi

P_{ins} = Elastic Instability Pressure = $(2.2)(E)\left(\frac{t}{D}\right)^3$

E = Elastic Modulus = 29,000,000 $^{lb}/_{in^2}$ (for steel)

$$P_{ins} = (2.2)(\frac{29{,}000{,}000\text{ lb}}{\text{in}^2})\left(\frac{0.862\text{ in}}{10.75\text{ in}}\right)^3 = 32{,}894\ ^{lb}/_{in^2}$$

$P_{ins} = 32{,}894$ psi

$$P_s = \frac{(10{,}424\ ^{lb}/_{in^2})(32{,}894\ ^{lb}/_{in^2})}{\sqrt{((10{,}424\ ^{lb}/_{in^2})^2 + (32{,}894\ ^{lb}/_{in^2})^2)}} = 9{,}937\ ^{lb}/_{in^2}$$

$P_s = 9{,}937$ psi

Safety Factor Against Casing Collapse = $\frac{P_s}{P_e} = \frac{9{,}937\text{ psi}}{3{,}591\text{ psi}} = 2.77 \Rightarrow$ OK: Safety Factors > 1.5 are adequate

20. Buckle Arrestors: The riser pipe has been designed to resist a propagating buckle if initiated. The flowline pipe has not been designed to resist a propagating buckle if initiated. The flowline will be installed with buckle arrestors designed to arrest propagating buckles and spaced at 1000-foot spacings.

21. Pipeline Crossings: There are no crossings of existing pipelines associated with this installation.

22. Worst Case Discharge: As this is a "dry" gas flowline, oil spill volumes due to a leak in the flowline system would be minimal. However, the worst case oil spill calculations take into account potential retrograde condensate trapped in the pipeline. The potential "worst case" calculation is summarized below:

System leak detection plus shutdown response time:	1.5 minutes
Predicted oil(condensate) flow rate:	0.291 bbl/min
Flowing volume loss:	1 bbl
Longest untrapped volume:	5 bbl
Worst Case Discharge:	6 bbl

23. Steel Catenary Riser

The riser for this flowline, which connects to a floating semi-submersible production platform will be a Steel Catenary Riser (SCR) connected to the platform hull. The SCR riser will be designed for a minimum life of 20-years with a minimum fatigue life of 200-years, providing a factor of safety against fatigue of 10. In order to reduce the Vortex Induced Vibration contribution to the fatigue damage, Helical Strakes or Fairings will be installed on the upper portions of the riser.

24. Control Umbilical

There will be a control umbilical associated with this pipeline. An umbilical cross section and data sheet are included as an attachment to this permit application.

C. INSTALLATION REQUIREMENTS

The pipeline will be installed in a water depths to 8,080 feet. The pipeline is located in water depths greater than 200 feet, therefore pipeline burial is not required.

The 10-inch line will be electrically isolated from the platforms.

D. CONSTRUCTION INFORMATION

1. Proposed Construction Commencement date is November 1, 2005.

2. Shore Construction Base to be located in Fourchon, Louisiana.

3. The pipeline and spools will be installed by a dynamically positioned S-lay lay vessel. The SCR riser will be installed by a dynamically positioned Derrick Semi Submersible vessel.

4. The pipeline will not be buried.

5. Time Required for Construction: Pipeline :3 weeks (Approx. November/December 2005), SCR Hangoff: 1 week (Approx. August 2006)

Attachment C

UNITED STATES
DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

NONDISCRIMINATION IN EMPLOYMENT

As a condition precedent to the approval of the granting of the subject pipeline right-of-way, the grantee, Anadarko Petroleum Corporation 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.

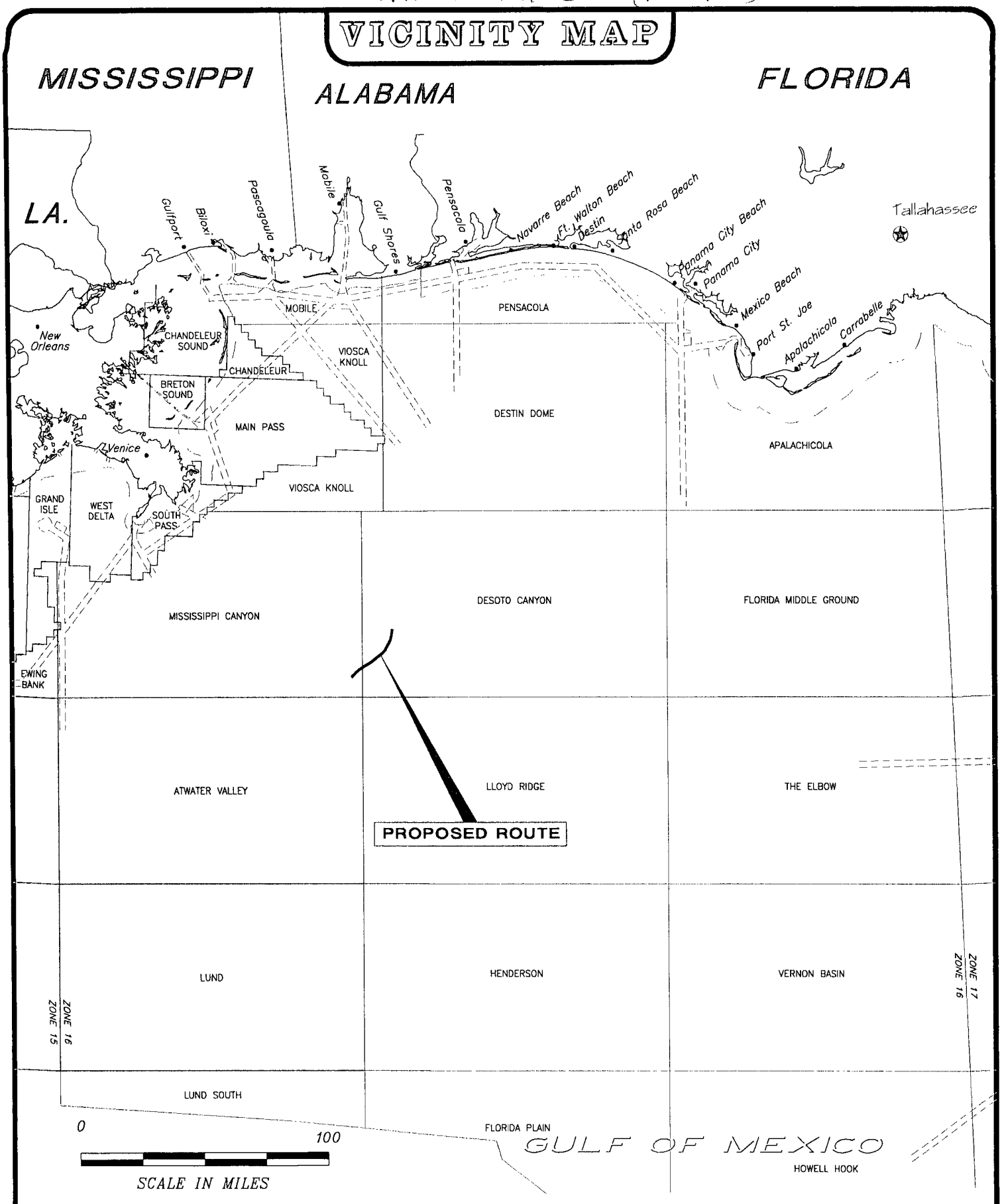
Anadarko Petroleum Corporation - Grantee

Richard E. Stites
Agent & Attorney-in-fact

4/4/05

Date

Attachment D - (10" PL)



DATE: 03/24/2005 TIME: 13:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRMCVR7458.DWG

Anadarko Petroleum Corporation

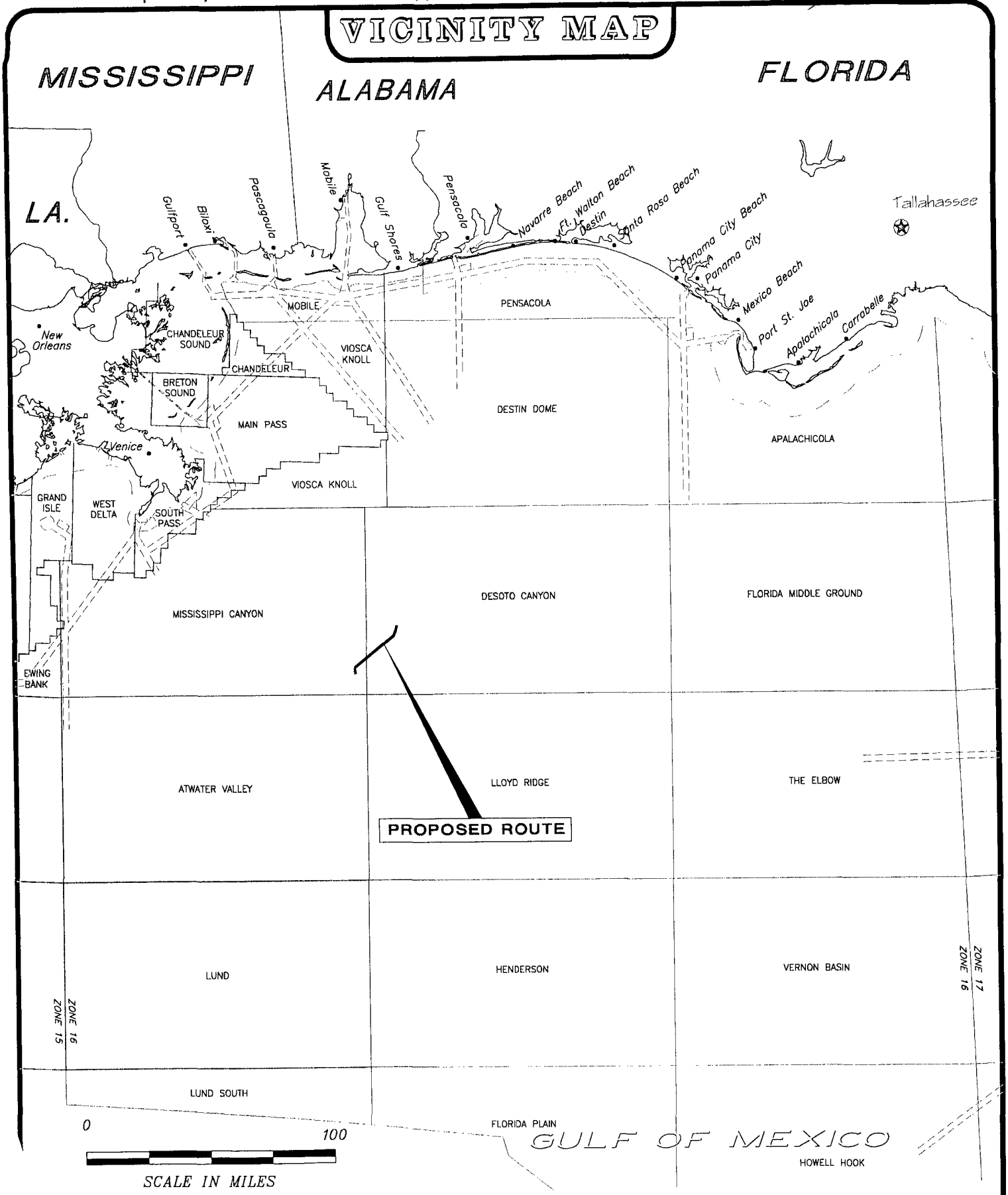
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES	JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
	FILENAME: PRMCVR7458.DWG		SHEET 1 of 13

Attachment D (Umbilical)

VICINITY MAP



ATE: 03/24/2005 TIME: 13:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRMCVR7458.DWG

Anadarko Petroleum Corporation

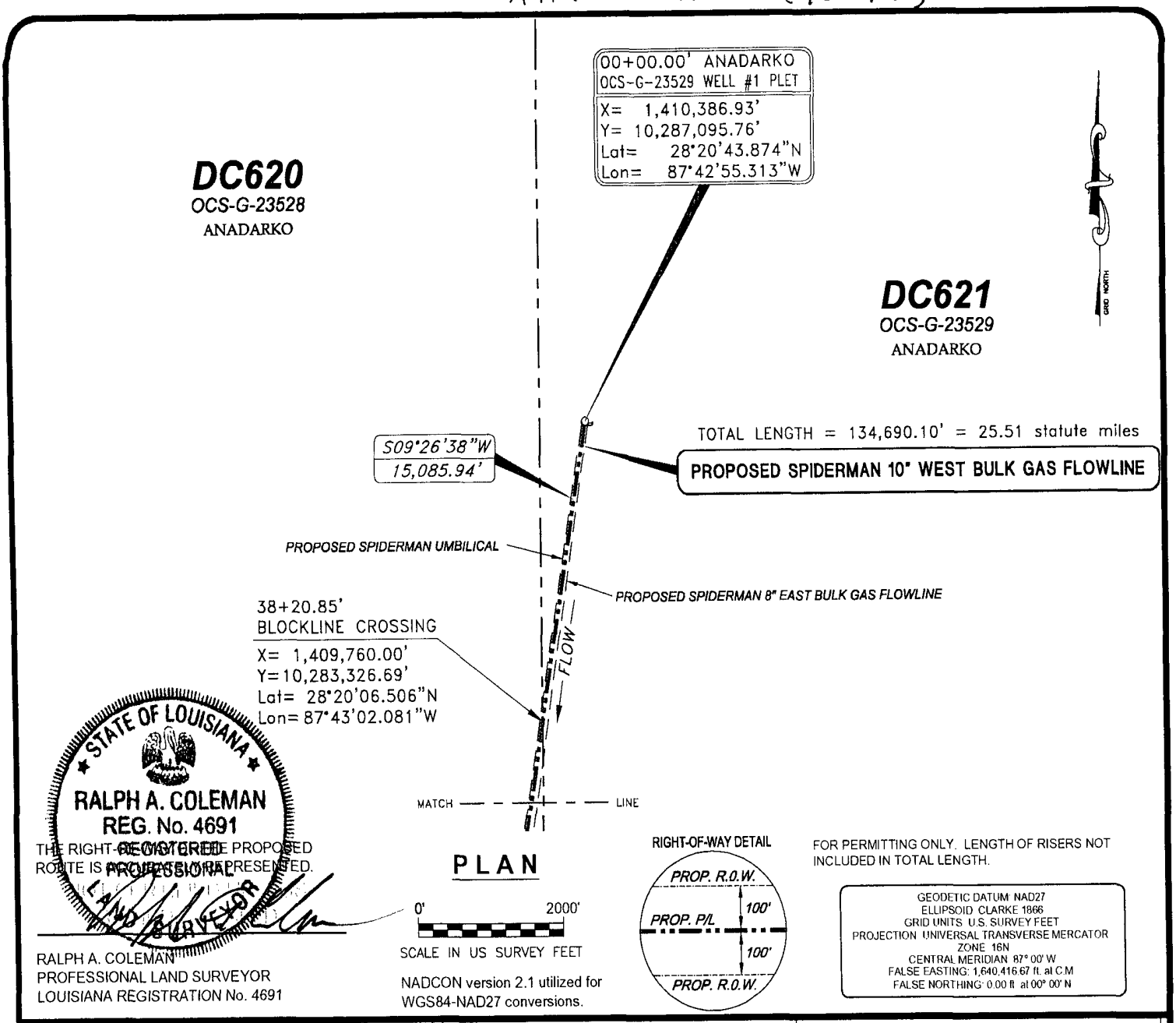
PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

C&C Technologies
SURVEY SERVICES
730 E. KALISTE SALOOM ROAD, LAFAYETTE, LA (337) 261 6656

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRMCVR7458.DWG		SHEET 1 of 13

Attachment E (10" PL)



STATE OF LOUISIANA
RALPH A. COLEMAN
REG. No. 4691
PROFESSIONAL
LAND SURVEYOR

THE RIGHT-OF-WAY FOR THE PROPOSED ROUTE IS ACCURATELY REPRESENTED.

RALPH A. COLEMAN
PROFESSIONAL LAND SURVEYOR
LOUISIANA REGISTRATION No. 4691

PLAN

0' 2000'

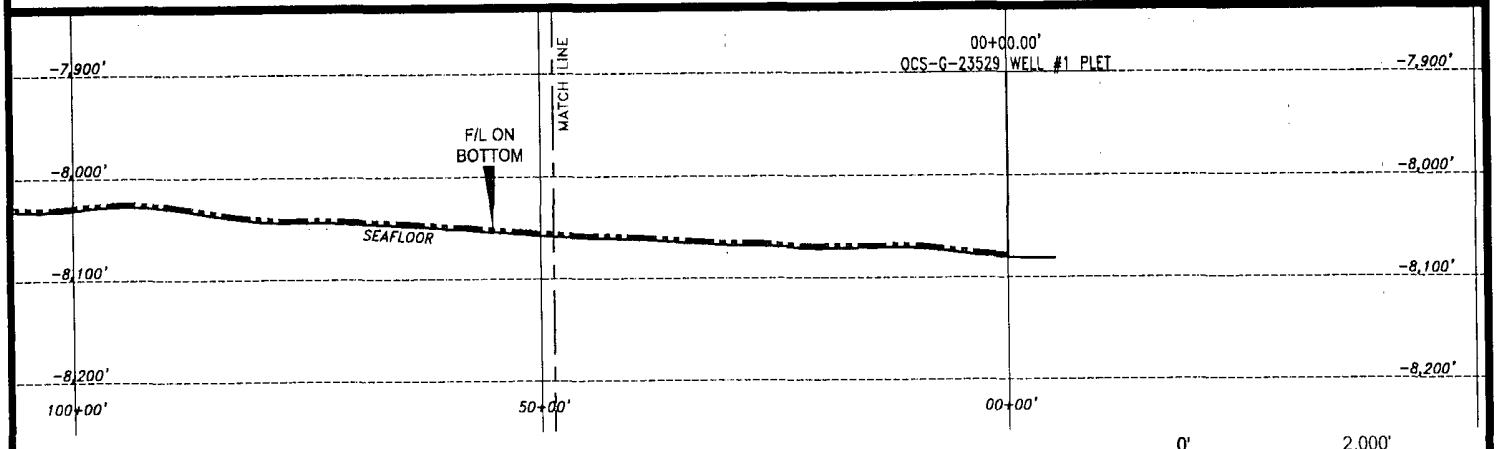
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

DATE: 03/24/2005 TIME: 10:37 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

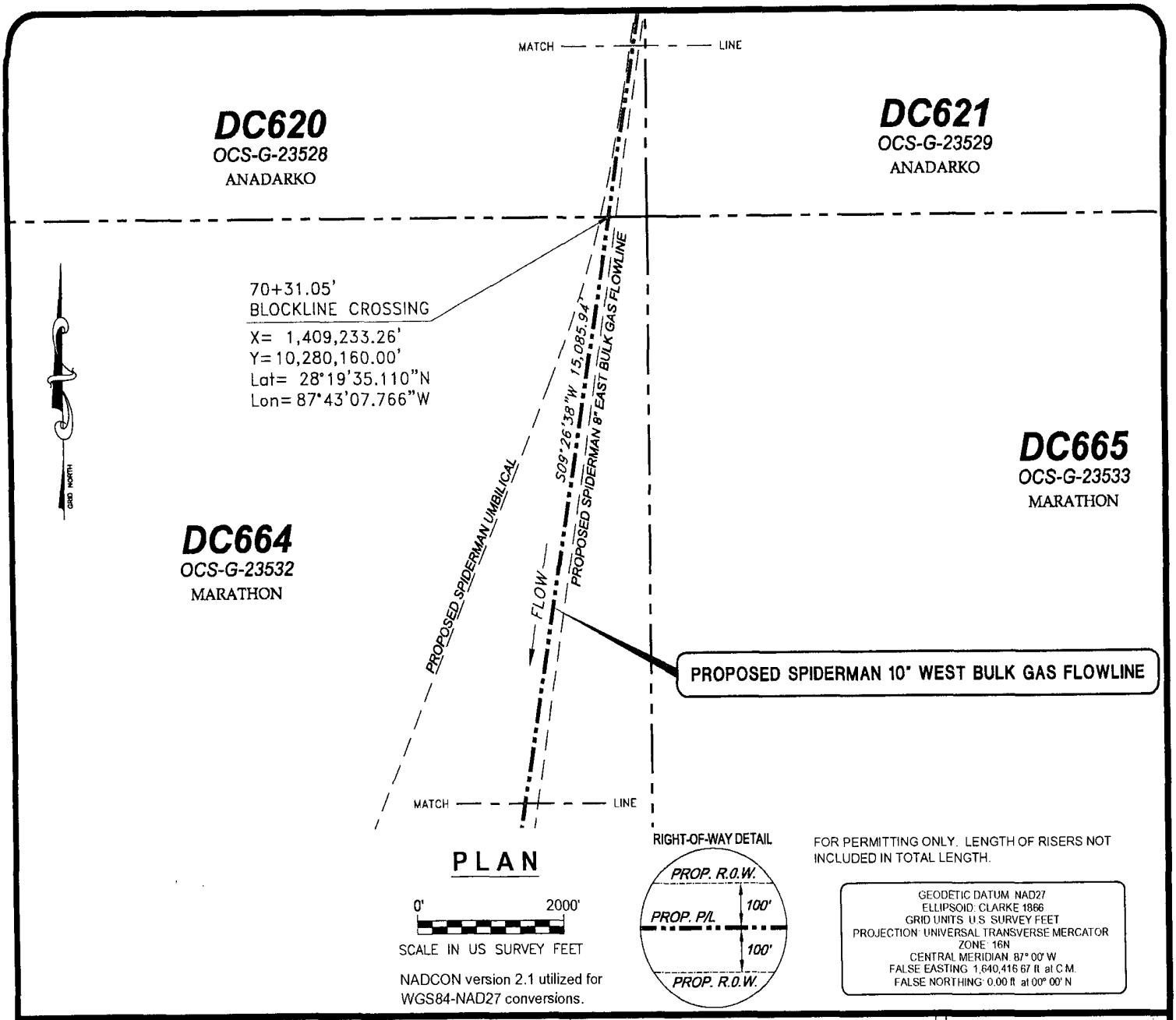
VERTICAL EXAGGERATION = 10

Anadarko Petroleum Corporation

PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES	JOB No: 7458-7589	REVISED:	DATE: 03/24/2005
	FILENAME: PRM7458_SM-F-WEST.DWG		SHEET 2 of 13



PLAN

0' 2000'

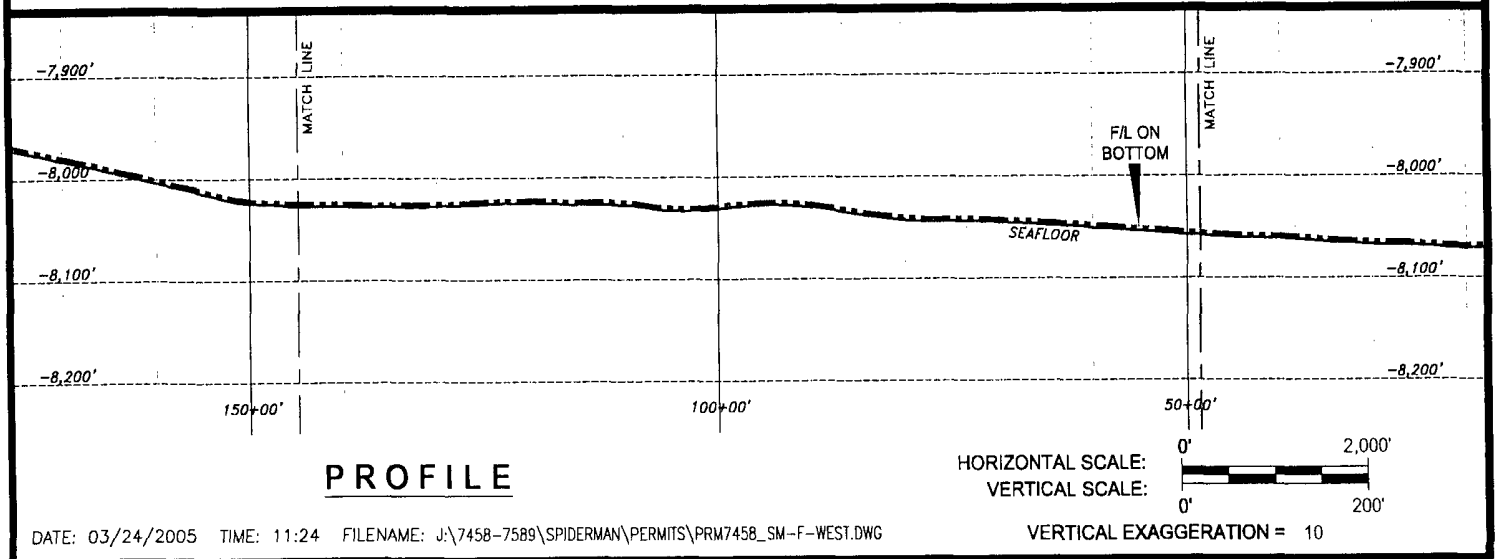
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589

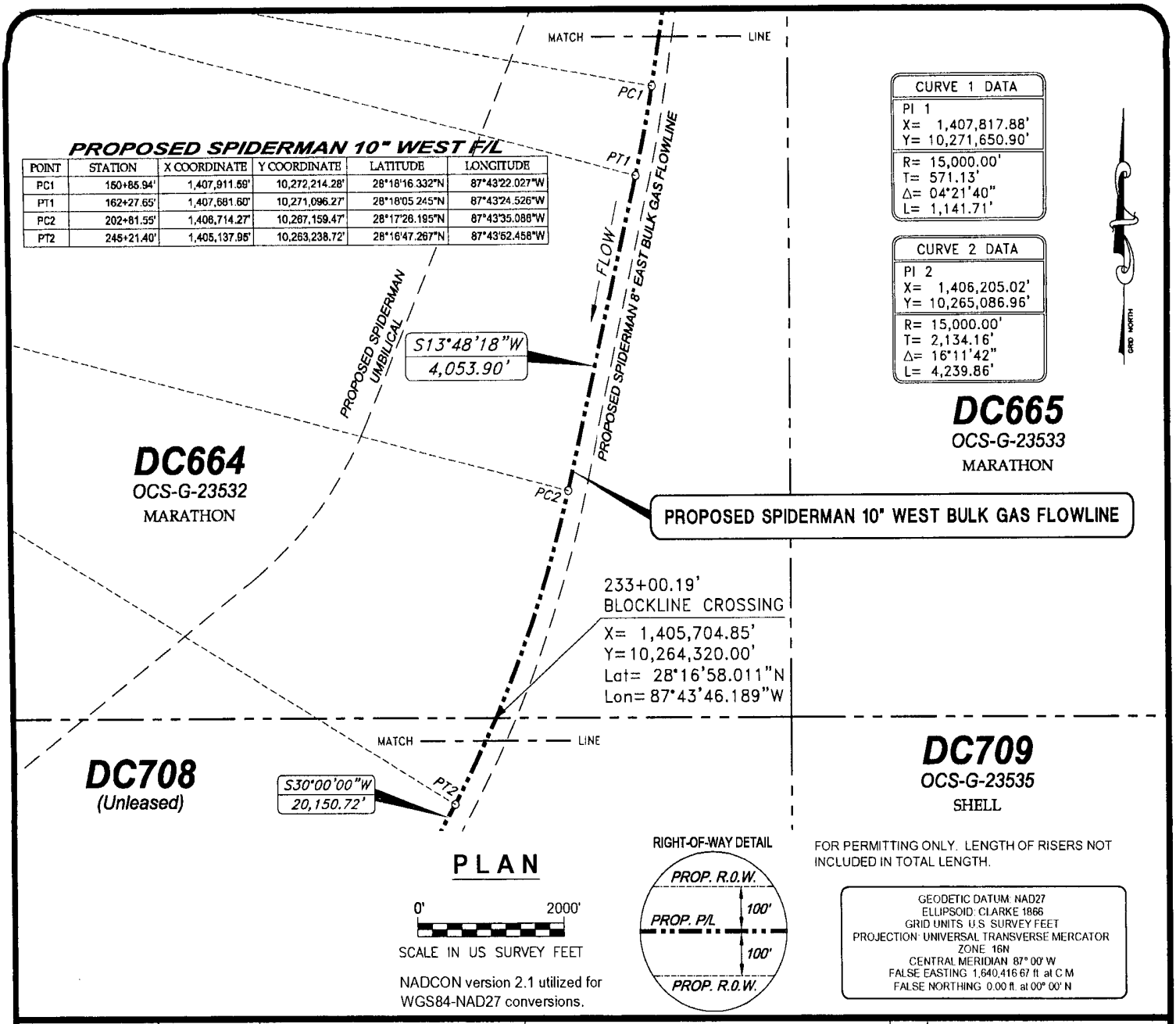
FILENAME: PRM7458 SM-F-WEST.DWG

REVISED:

DATE: 03/24/2005

PROPOSED SPIDERMAN 10" WEST F/L

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC1	150+85.94'	1,407,911.59'	10,272,214.28'	28°18'16.332"N	87°43'22.027"W
PT1	162+27.65'	1,407,681.60'	10,271,096.27'	28°18'05.245"N	87°43'24.526"W
PC2	202+81.55'	1,406,714.27'	10,267,159.47'	28°17'26.195"N	87°43'35.088"W
PT2	245+21.40'	1,405,137.95'	10,263,238.72'	28°16'47.267"N	87°43'52.458"W



PLAN

0' 2000'

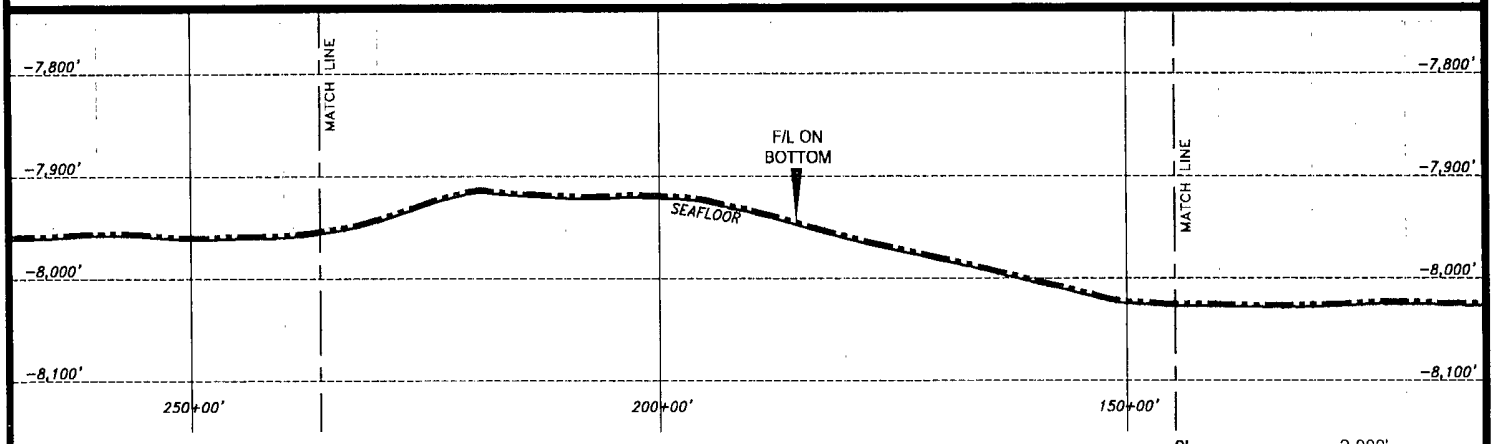
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING 1,640,416.67 ft at C.M.
FALSE NORTHING 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

VERTICAL EXAGGERATION = 10

Anadarko Petroleum Corporation

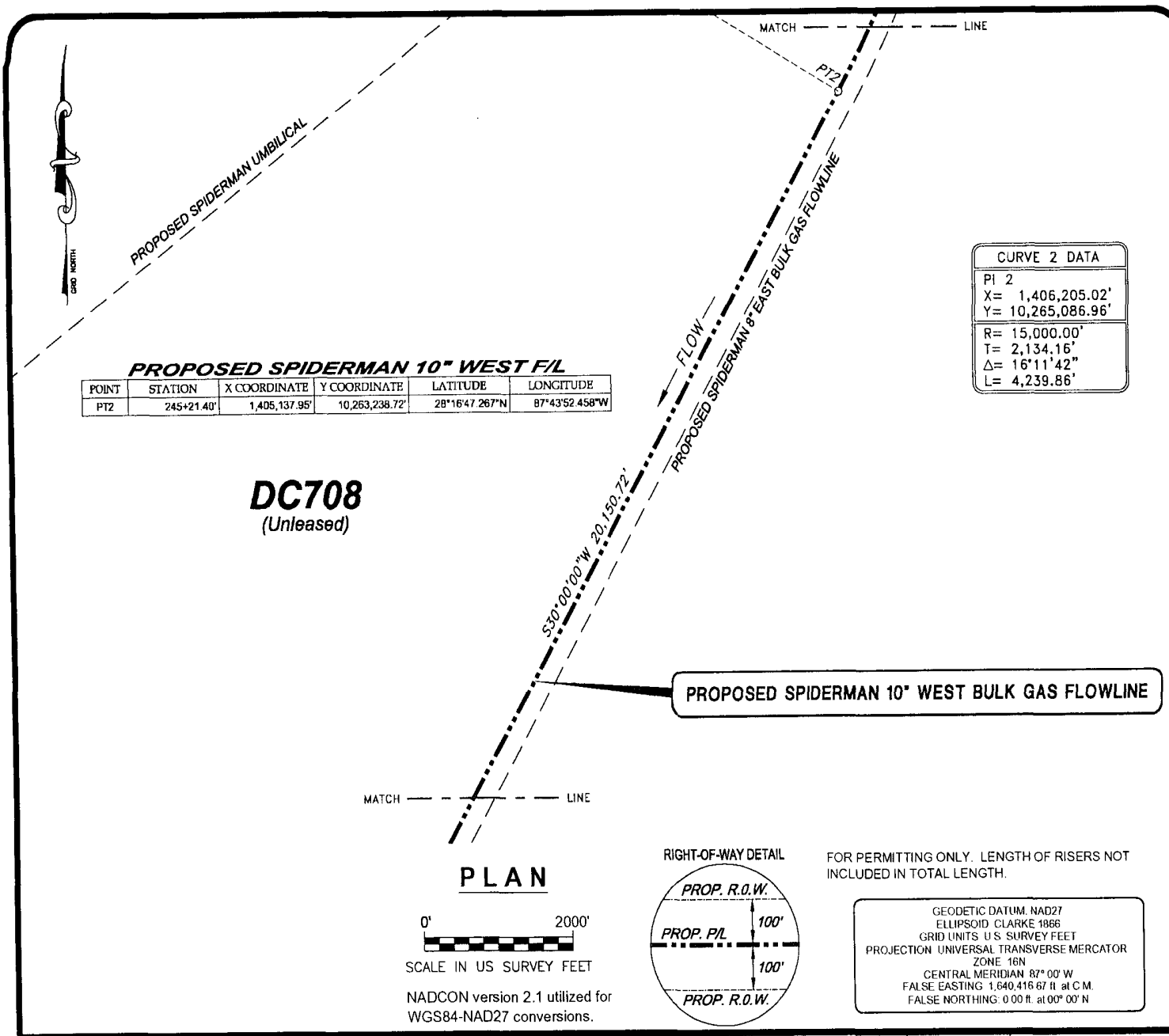
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458 SM-F-WEST.DWG



PROPOSED SPIDERMAN 10" WEST F/L

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PT2	245+21.40'	1,405,137.95'	10,263,238.72'	28°16'47.267"N	87°43'52.458"W

CURVE 2 DATA
PI 2 X= 1,406,205.02' Y= 10,265,086.96'
R= 15,000.00' T= 2,134.16' Δ= 16°11'42" L= 4,239.86'

PLAN

0' 2000'

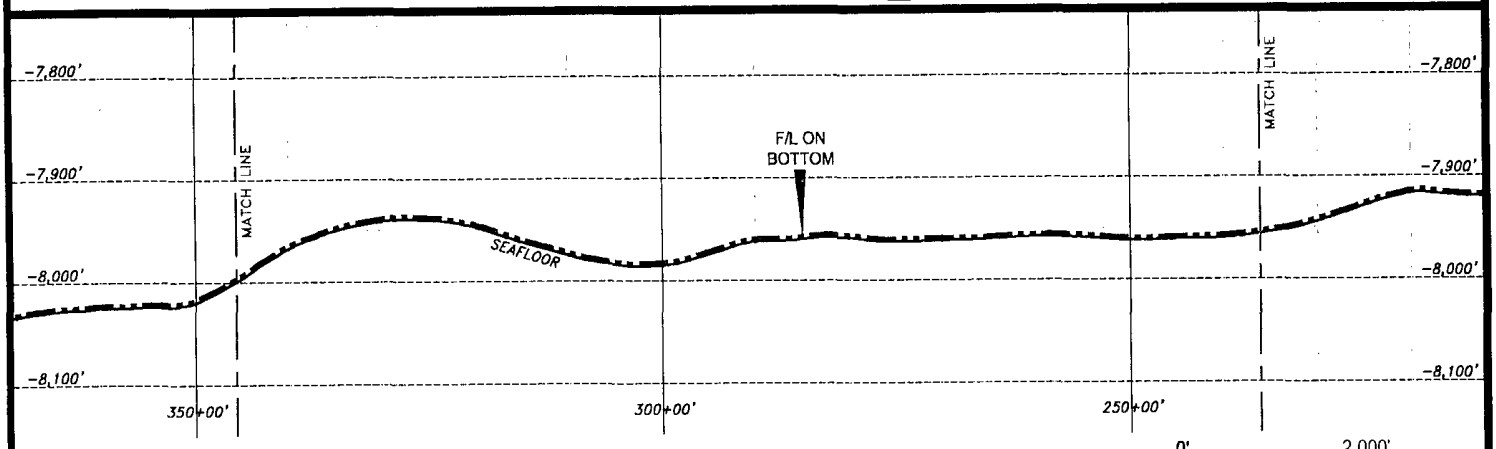
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

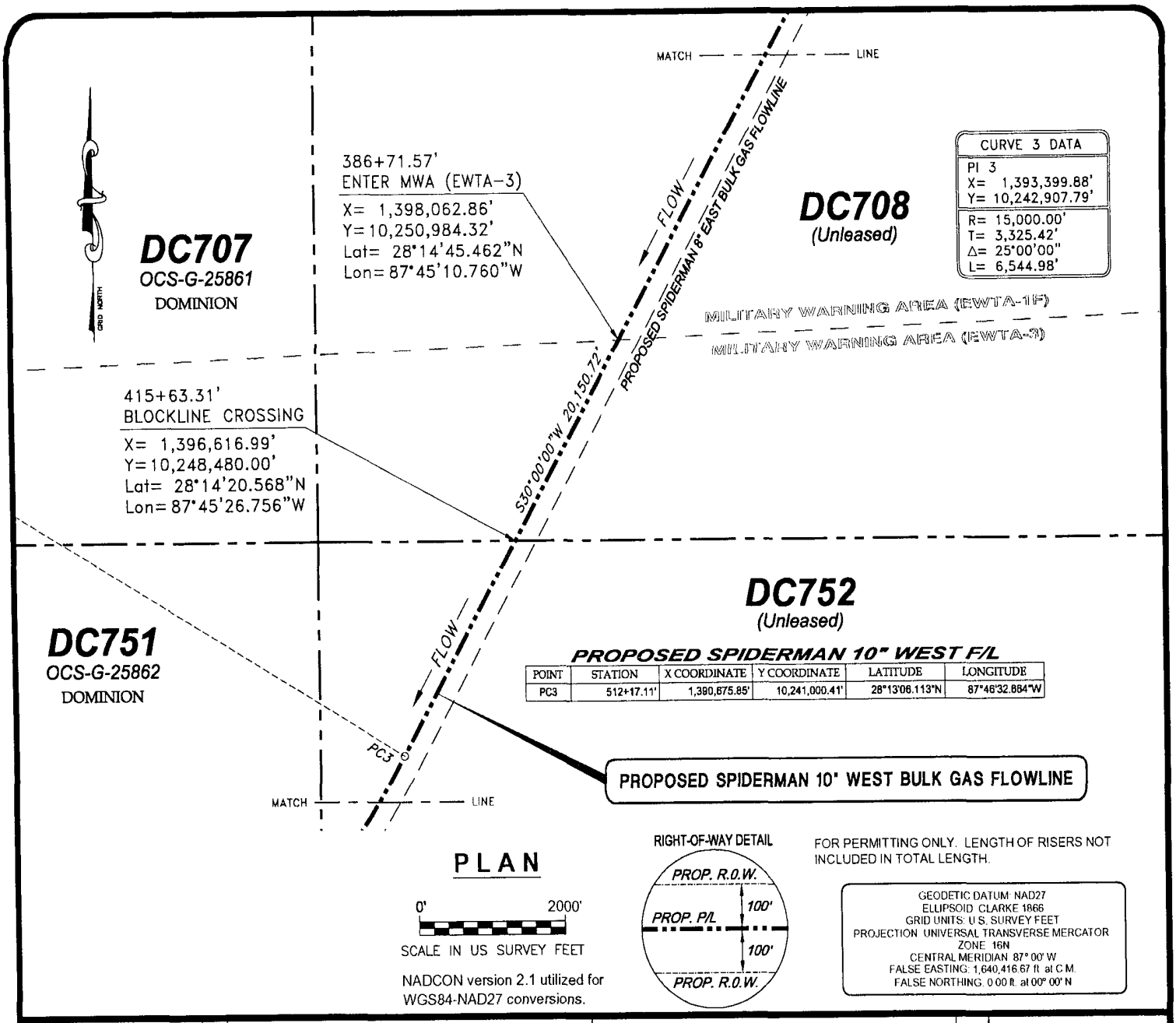
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

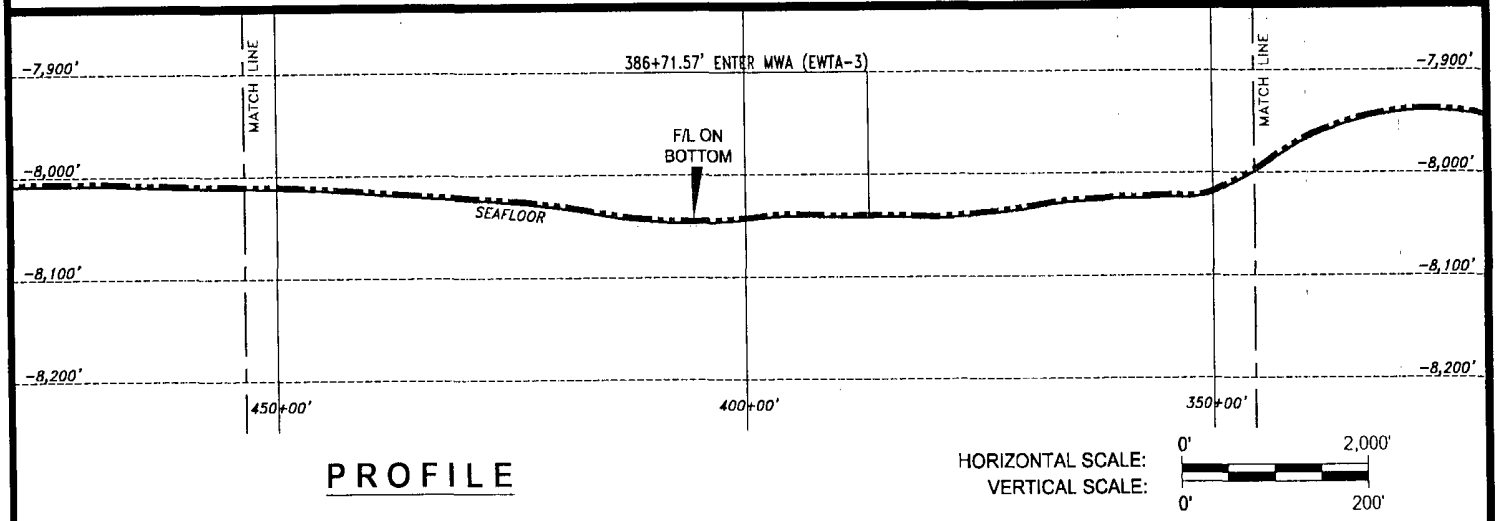
PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458_SM-F-WEST.DWG



POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC3	512+17.11'	1,390,675.85'	10,241,000.41'	28°13'06.113"N	87°46'32.884"W



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

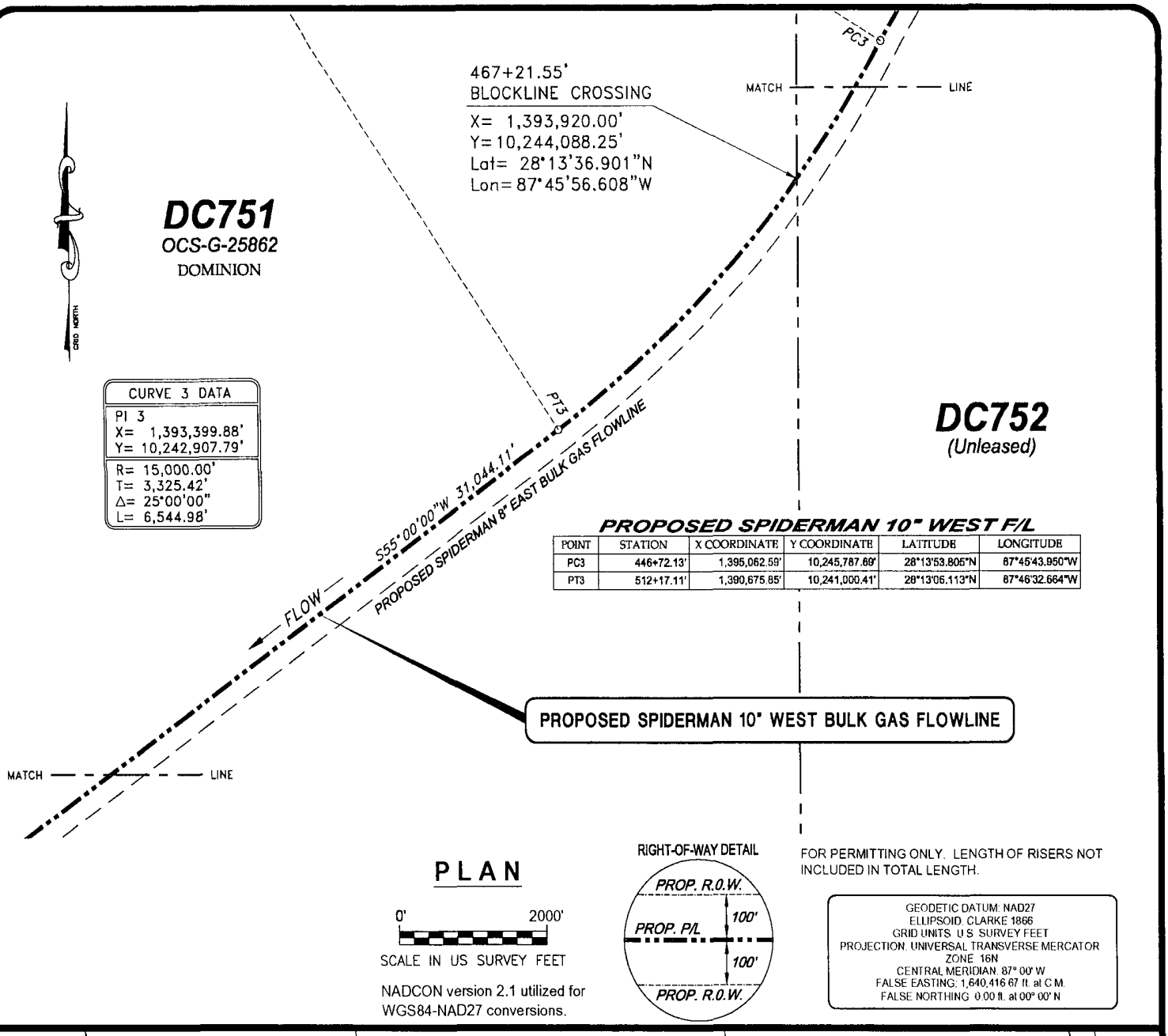
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458_SM-F-WEST.DWG | SHEET 6 of 13



PROPOSED SPIDERMAN 10" WEST F/L

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC3	446+72.13'	1,395,062.59'	10,245,787.69'	28°13'53.805"N	87°45'43.950"W
PT3	512+17.11'	1,390,675.85'	10,241,000.41'	28°13'06.113"N	87°46'32.664"W

PLAN

0' 2000'

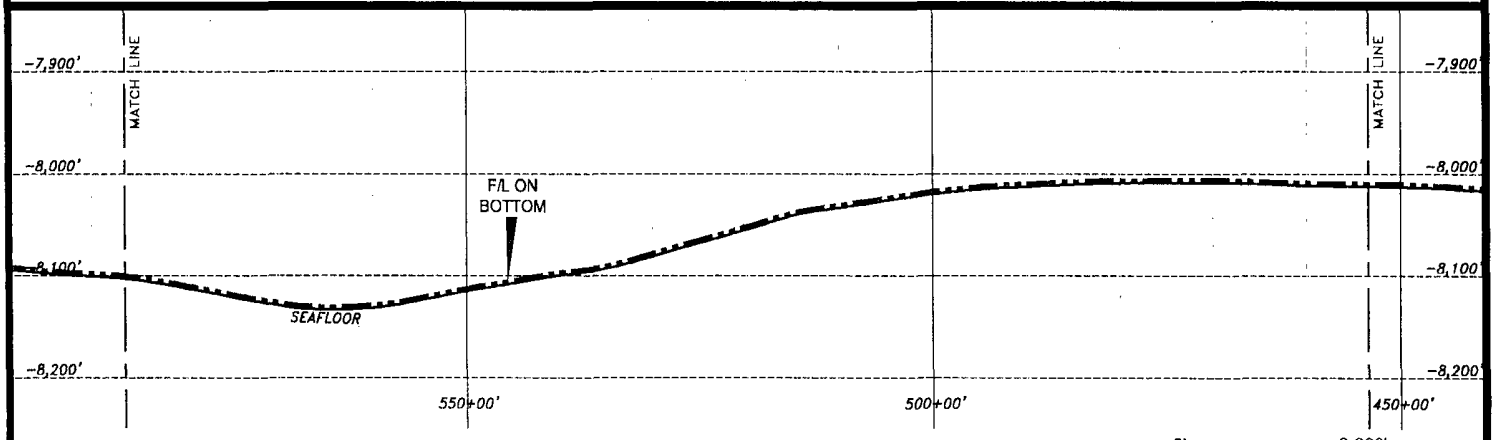
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

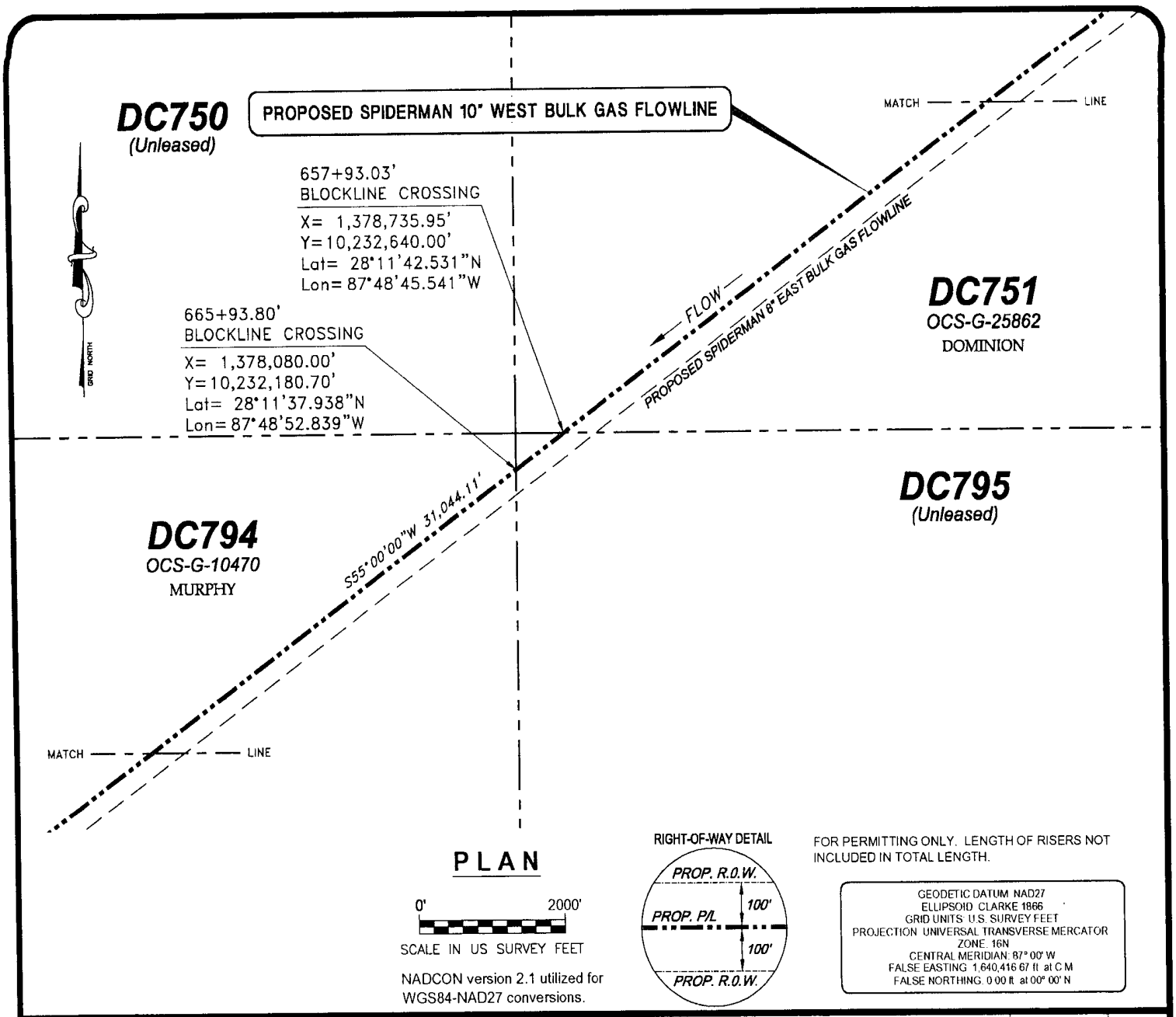
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458_SM-F-WEST.DWG | SHEET 7 of 13



PLAN

0' 2000'

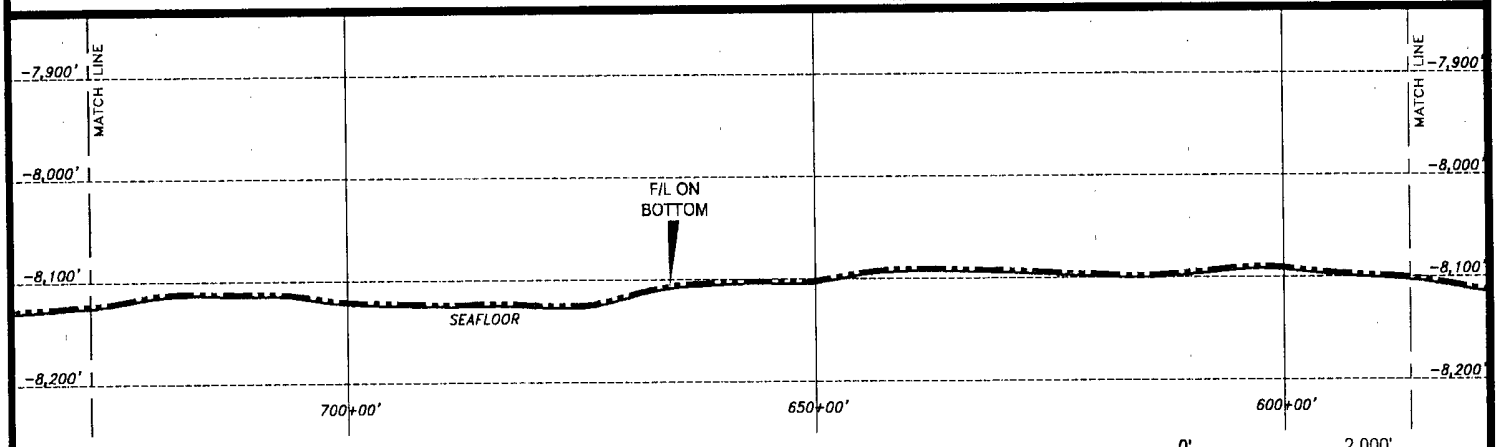
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING 1,640,416.67 ft at C.M.
FALSE NORTHING: 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

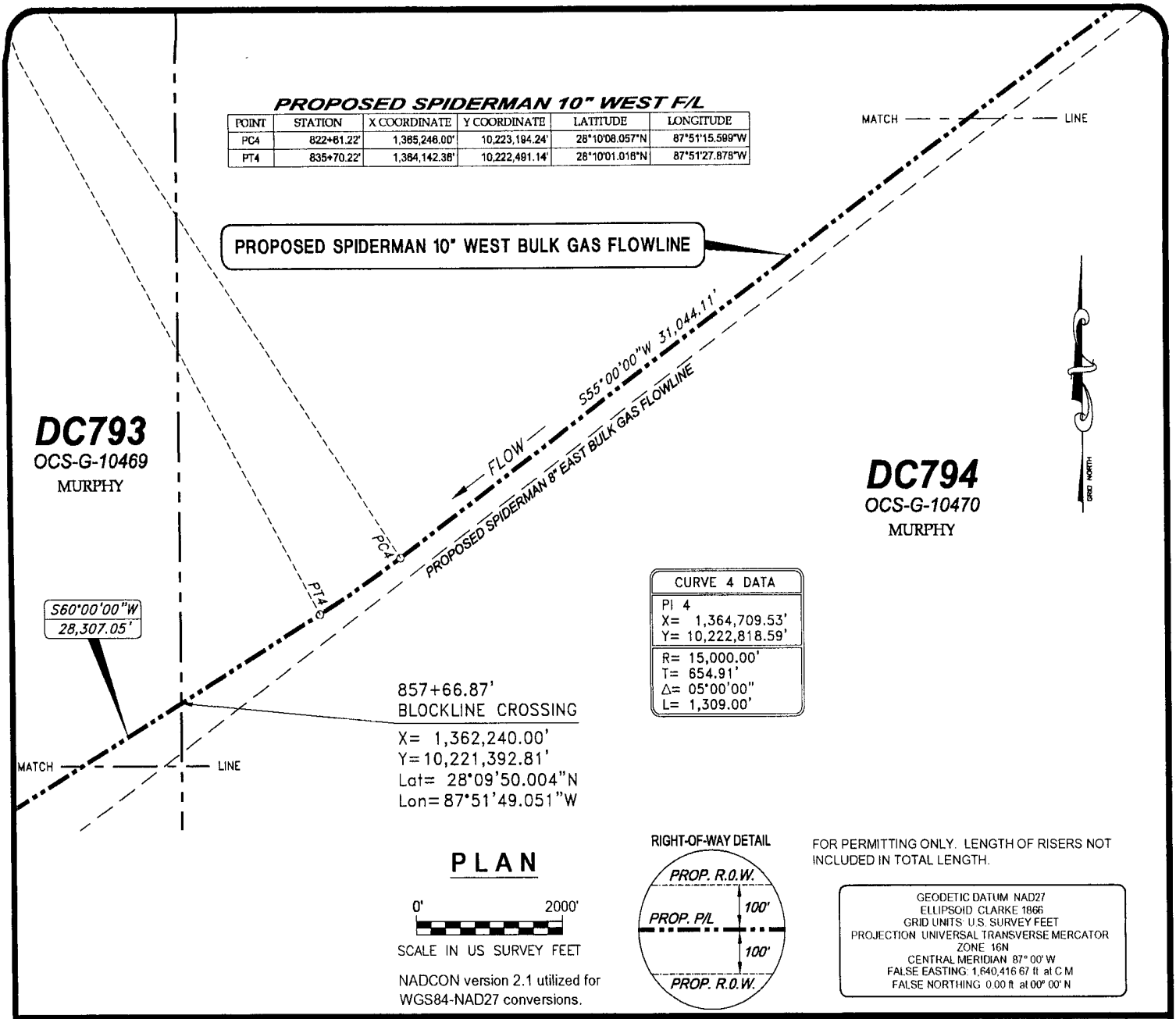
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES	JOB No: 7458-7589	REVISED:	DATE: 03/24/2005
	FILENAME: PRM7458_SM-F-WEST.DWG		SHEET 8 of 13

PROPOSED SPIDERMAN 10" WEST F/L

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC4	822+61.22'	1,365,246.00'	10,223,194.24'	28°10'08.057"N	87°51'15.599"W
PT4	835+70.22'	1,364,142.38'	10,222,491.14'	28°10'01.018"N	87°51'27.878"W



CURVE 4 DATA
PI 4 X= 1,364,709.53' Y= 10,222,818.59'
R= 15,000.00' T= 654.91' Δ= 05°00'00" L= 1,309.00'

PLAN

0' 2000'

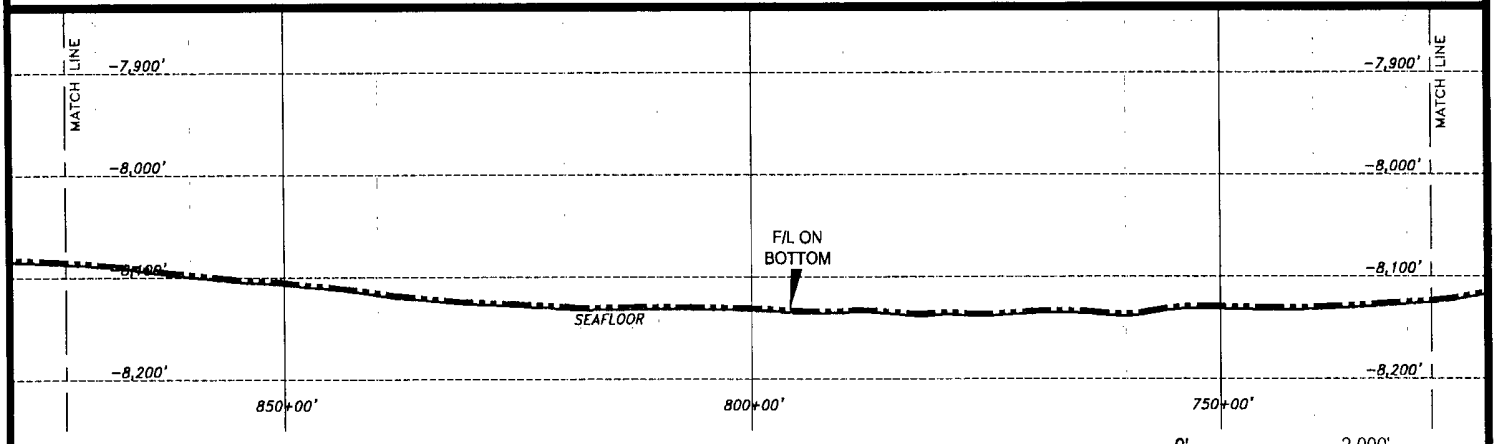
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID CLARKE 1866
GRID UNITS U.S. SURVEY FEET
PROJECTION UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING 1,640,416.67 ft at C.M.
FALSE NORTHING 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

VERTICAL EXAGGERATION = 10

Anadarko Petroleum Corporation

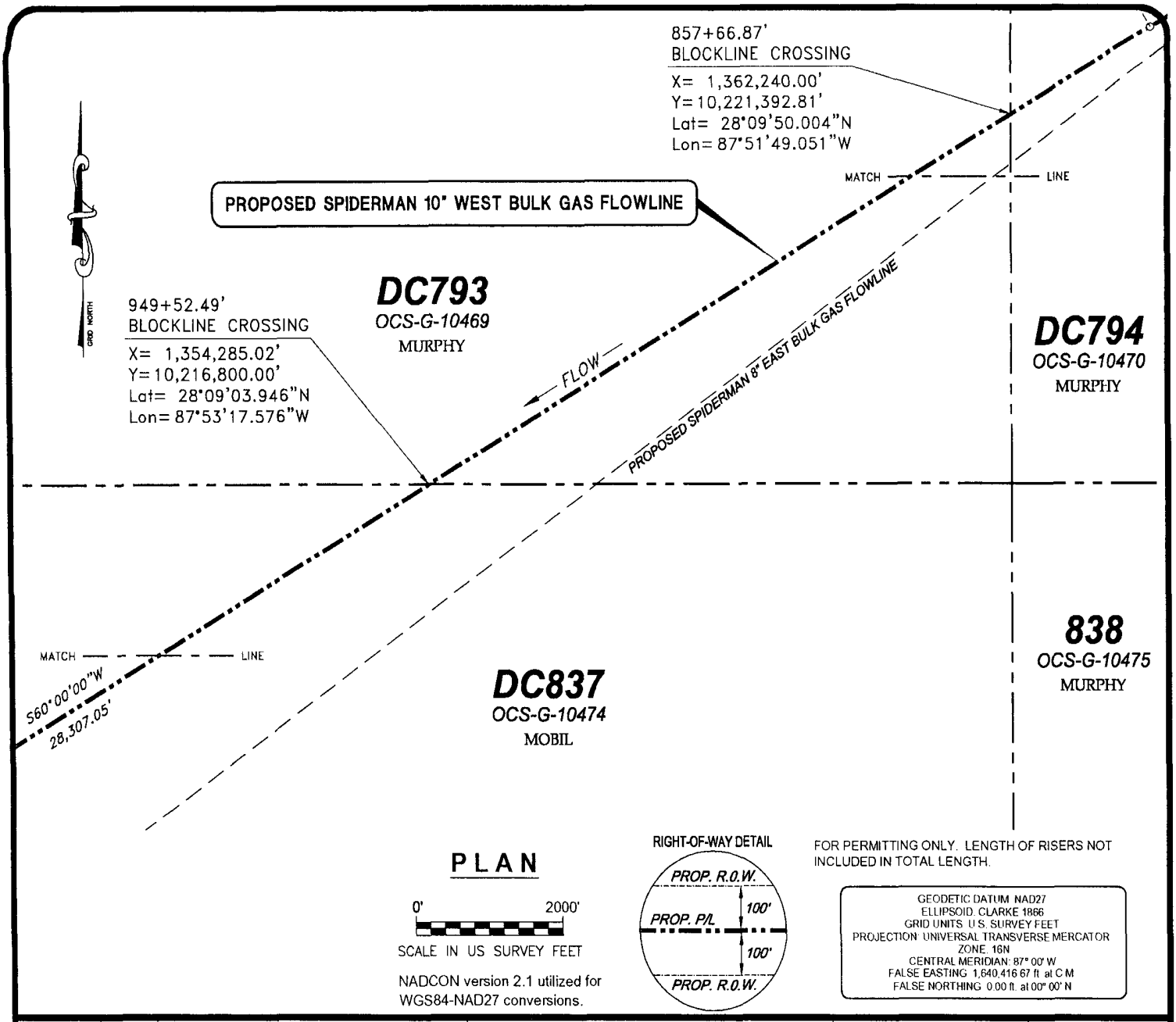
PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458_SM-F-WEST.DWG



PLAN

0' 2000'

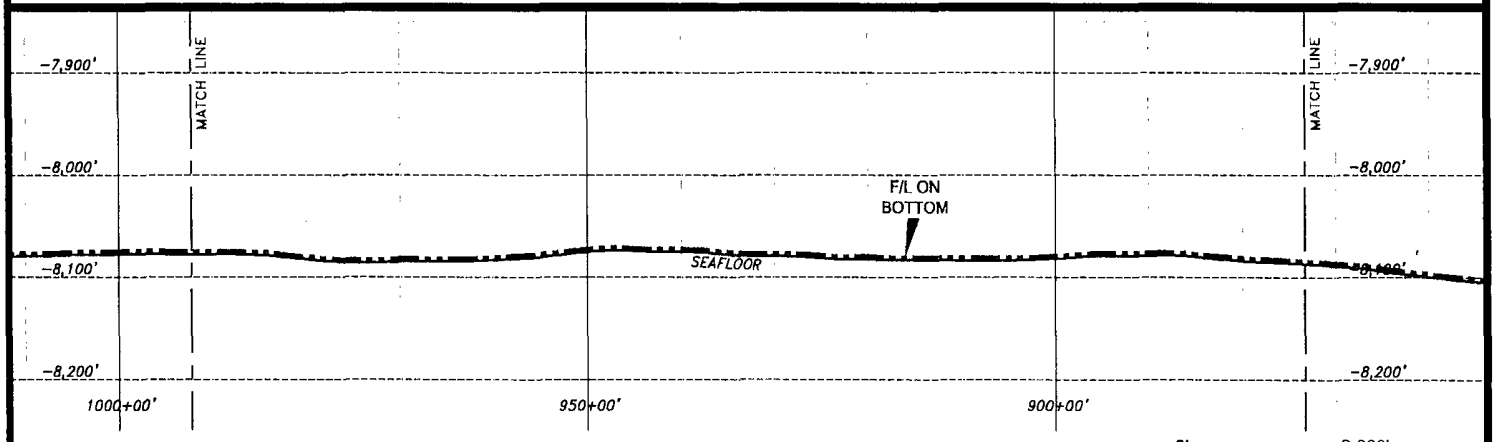
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID CLARKE 1866
GRID UNITS U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING 1,640,416.67 ft at C.M.
FALSE NORTHING 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

PROP. SPIDERMAN 10" WEST BULK GAS F/L

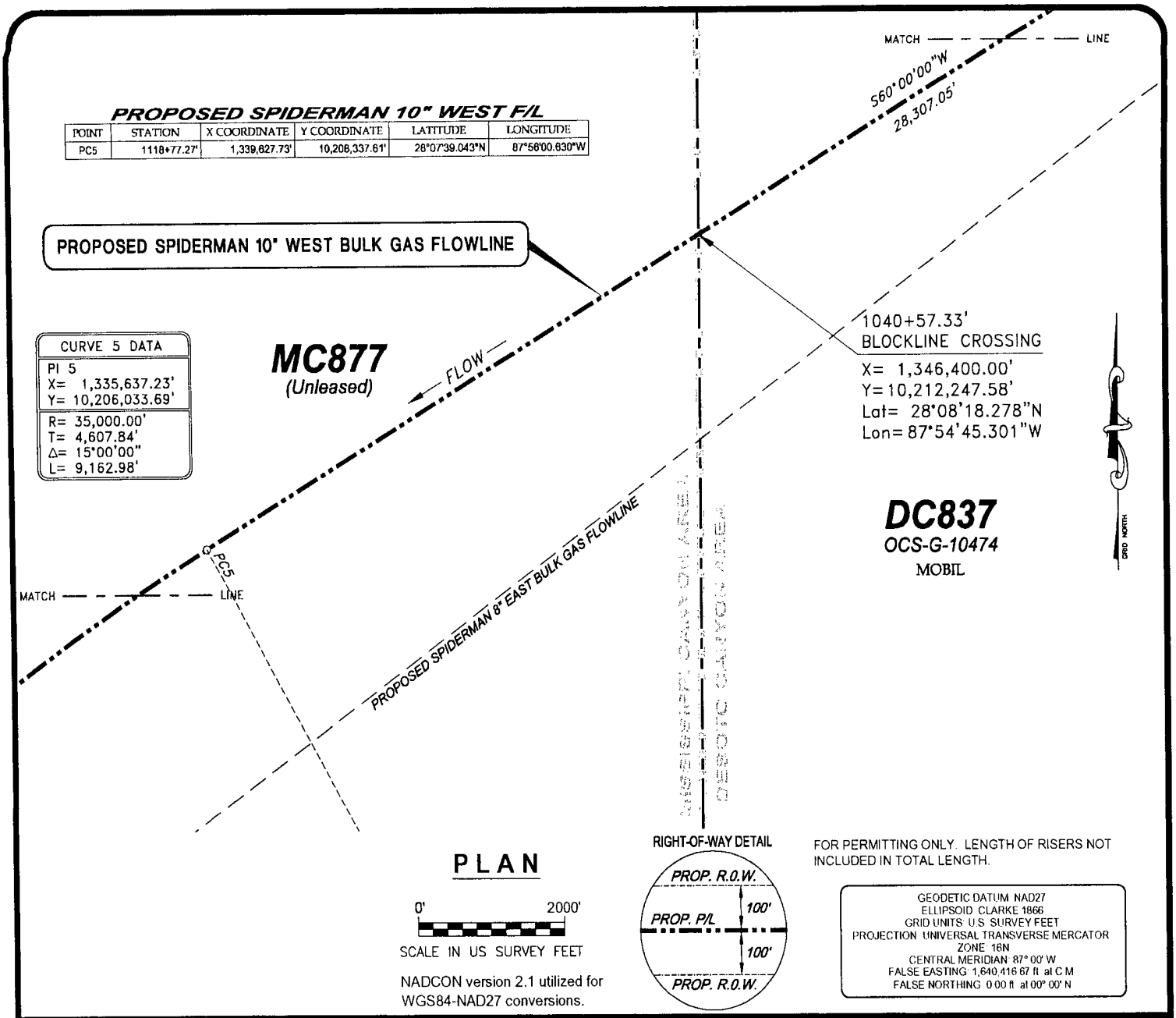
Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589	REVISED:	DATE: 03/24/2005
FILENAME: PRM7458_SM-F-WEST.DWG		SHEET 10 of 13

PROPOSED SPIDERMAN 10" WEST F/L

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC5	1118+77.27'	1,339,627.73'	10,208,337.61'	28°07'39.043"N	87°56'00.630"W



PLAN

0' 2000'

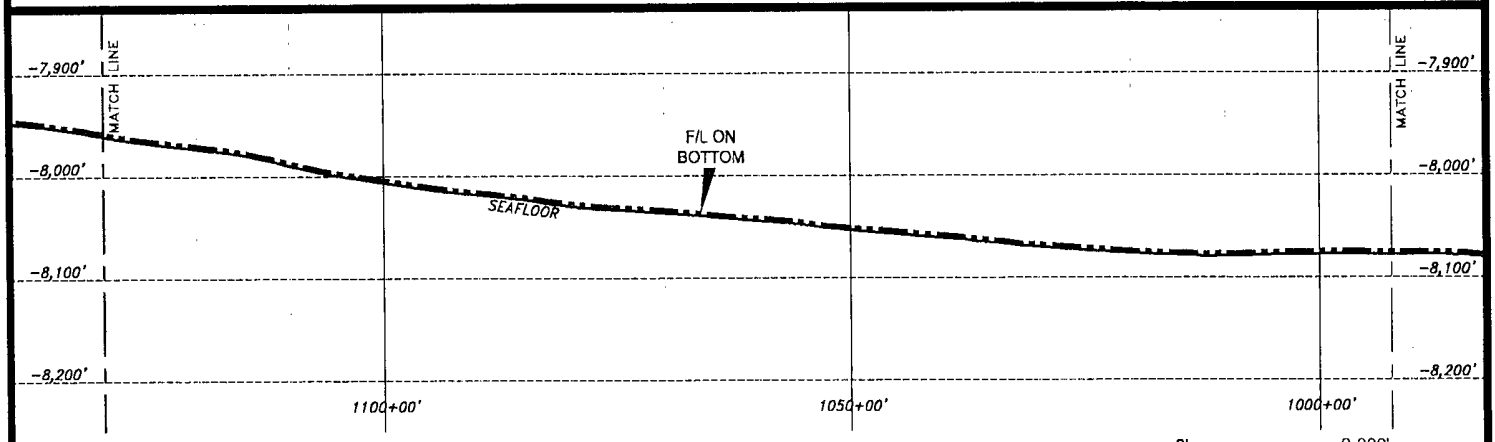
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID CLARKE 1866
GRID UNITS U.S SURVEY FEET
PROJECTION UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING 1,640,416.67 ft at C.M.
FALSE NORTHING 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

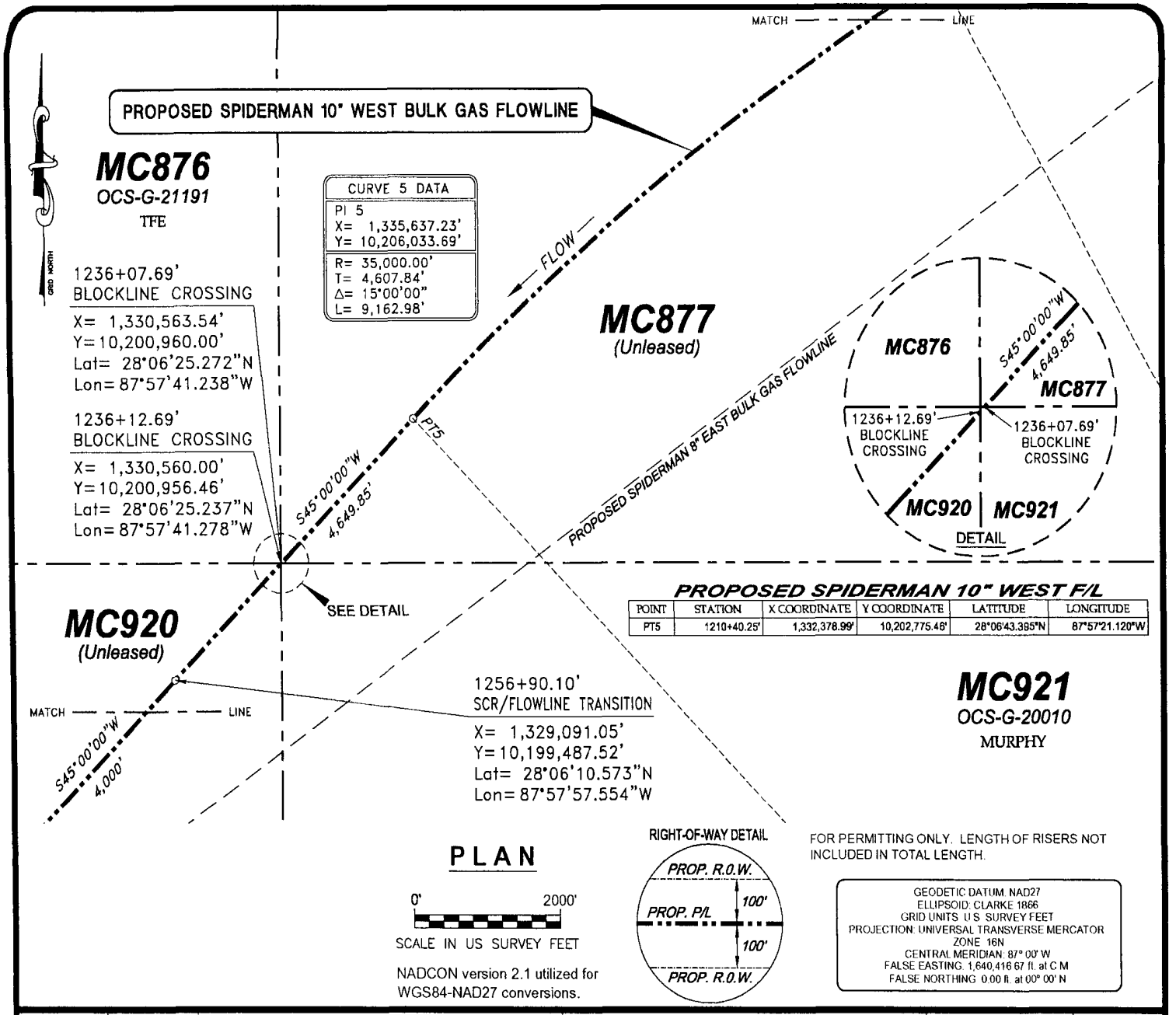
PROP. SPIDERMAN 10" WEST BULK GAS F/L

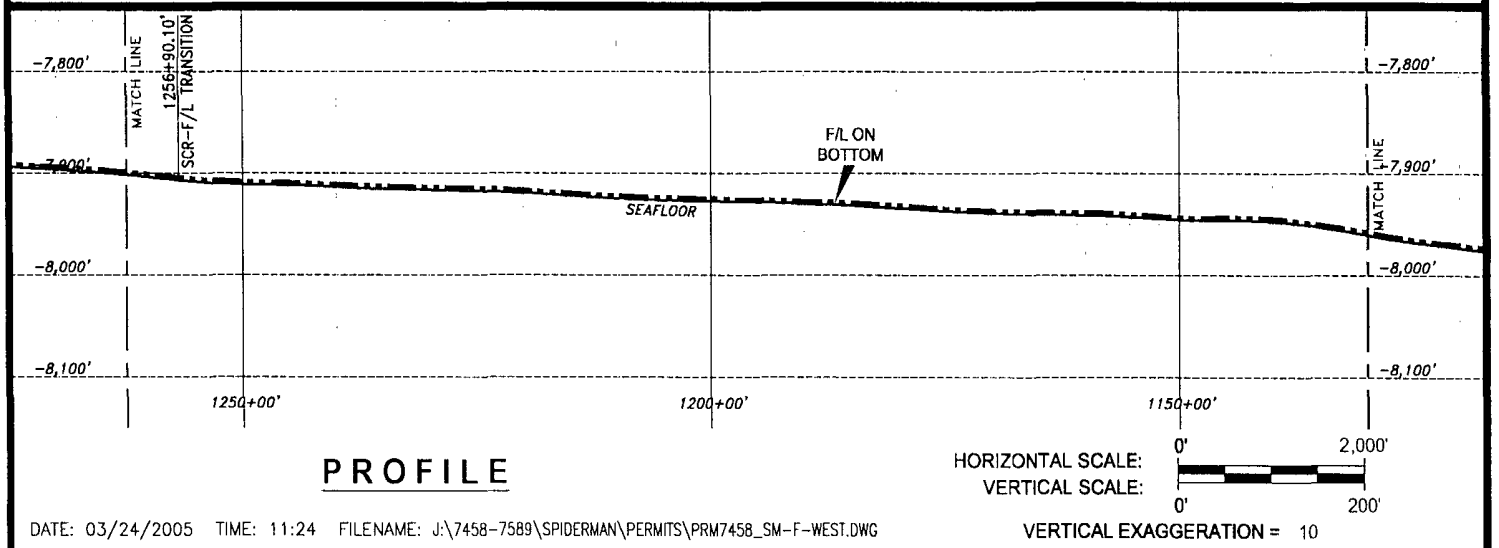
Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458_SM-F-WEST.DWG





DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

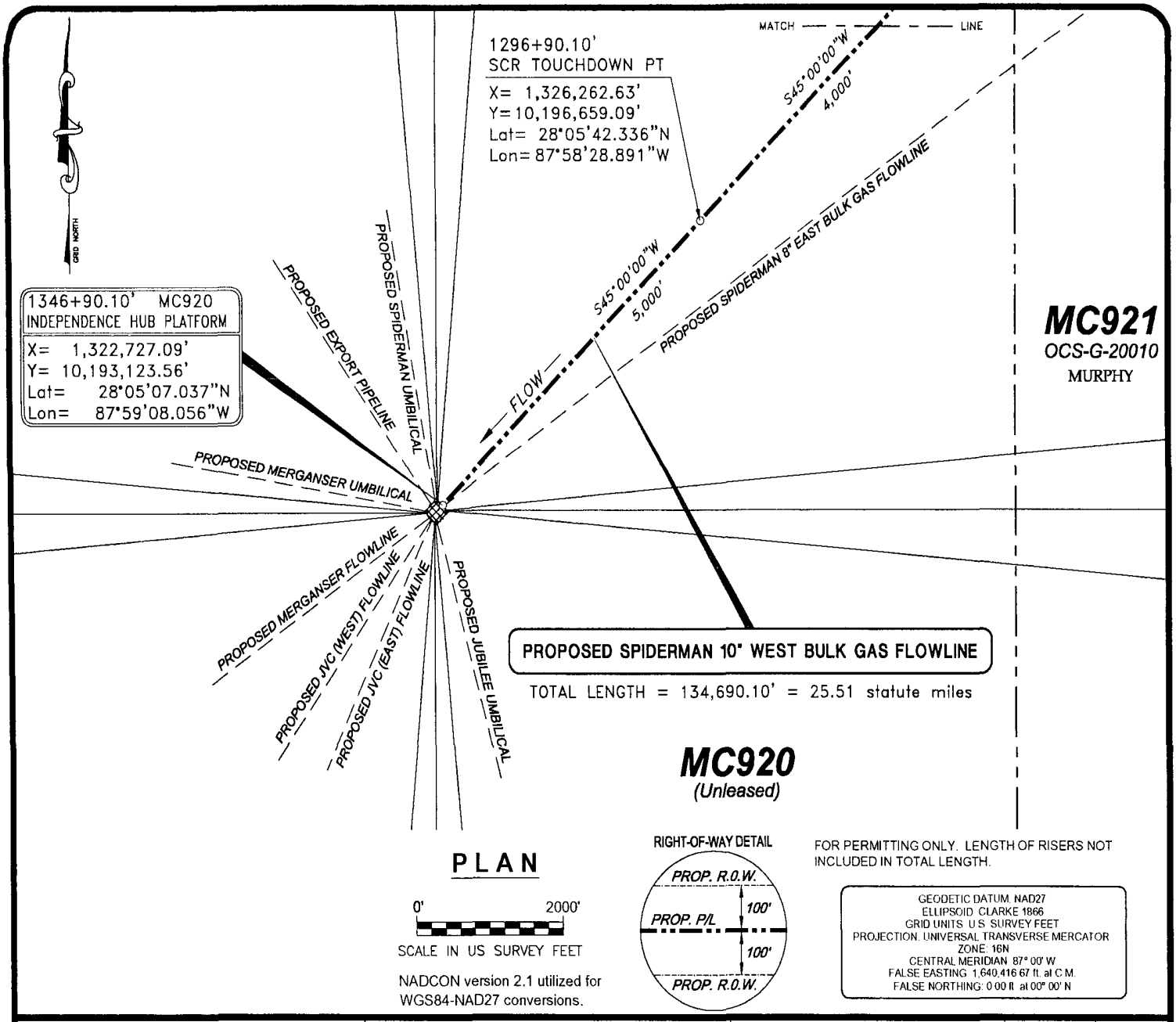
Anadarko Petroleum Corporation

PROP. SPIDERMAN 10" WEST BULK GAS F/L

Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589	REVISED:	DATE: 03/24/2005
FILENAME: PRM7458_SM-F-WEST.DWG		SHEET 12 of 13



PLAN

0' 2000'

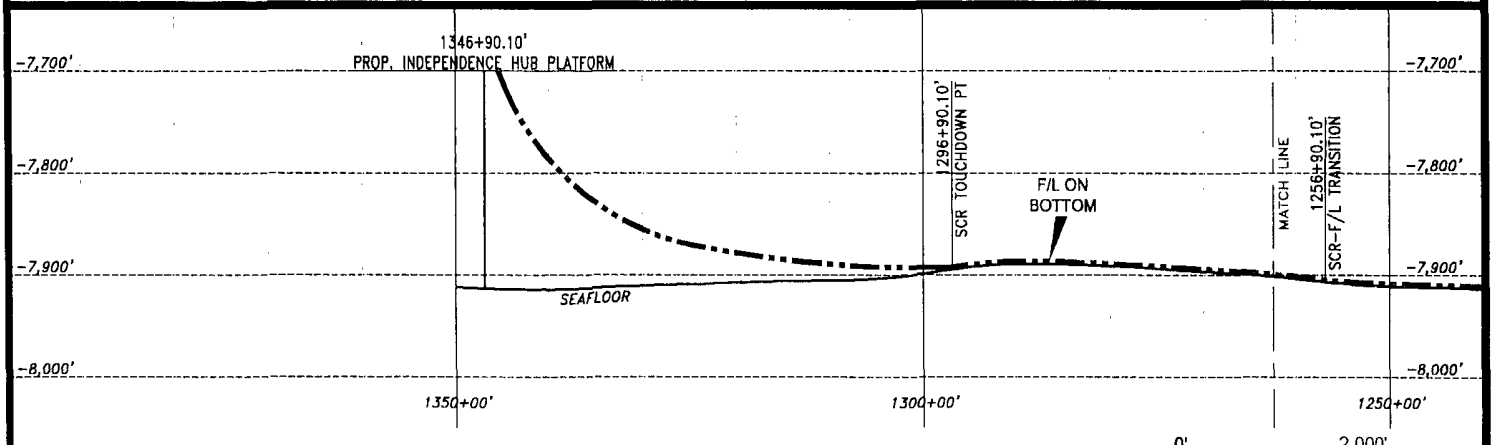
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 11:24 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-F-WEST.DWG

Anadarko Petroleum Corporation

PROP. SPIDERMAN 10" WEST BULK GAS F/L

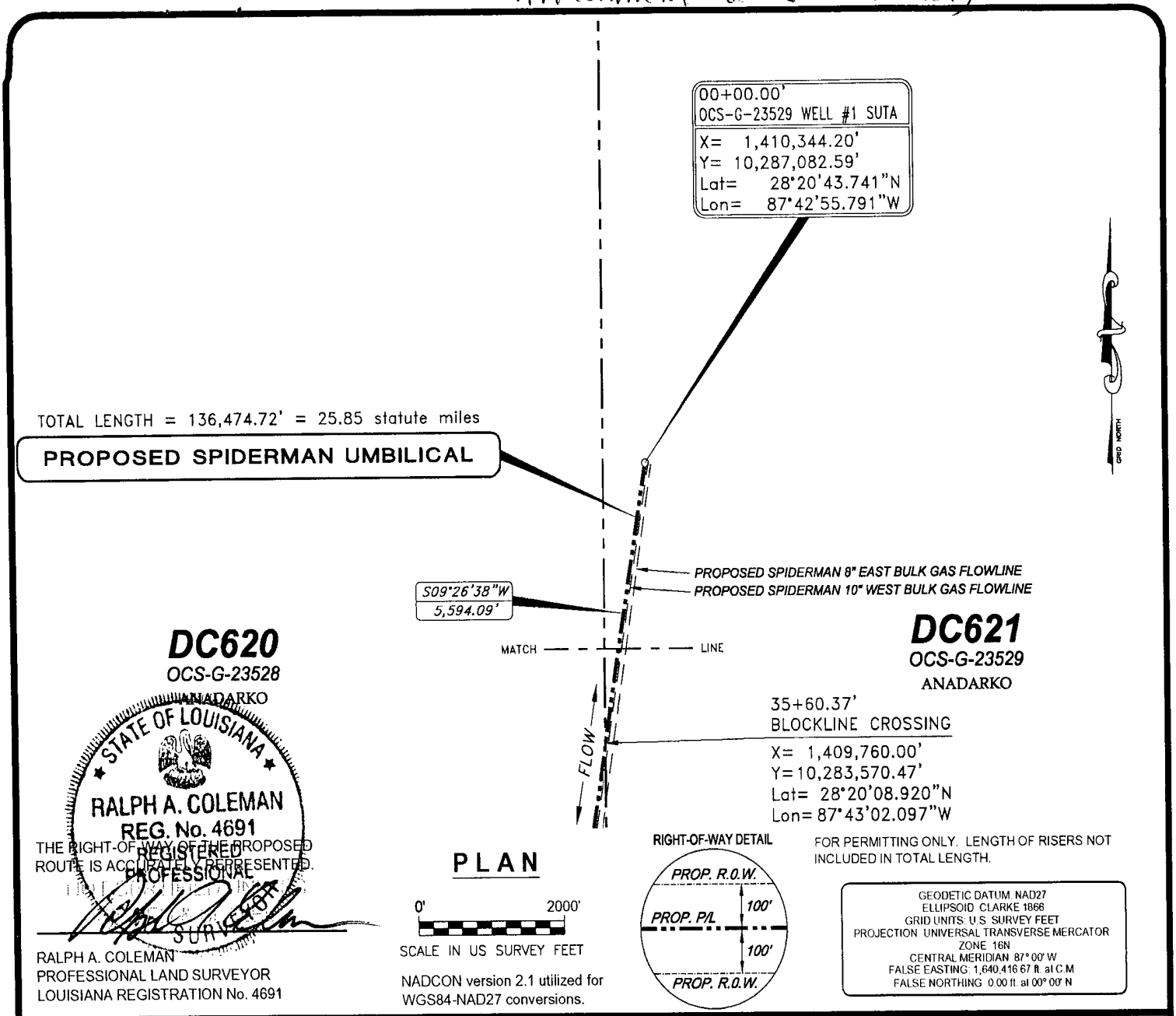
Block 621 Well #1 PLET, Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589 | REVISED: | DATE: 03/24/2005

FILENAME: PRM7458_SM-F-WEST.DWG | SHEET 13 of 13

Attachment E (umbilical)



STATE OF LOUISIANA
RALPH A. COLEMAN
REG. No. 4691
REGISTERED PROFESSIONAL LAND SURVEYOR

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

RALPH A. COLEMAN
PROFESSIONAL LAND SURVEYOR
LOUISIANA REGISTRATION No. 4691

PLAN

0' 2000'

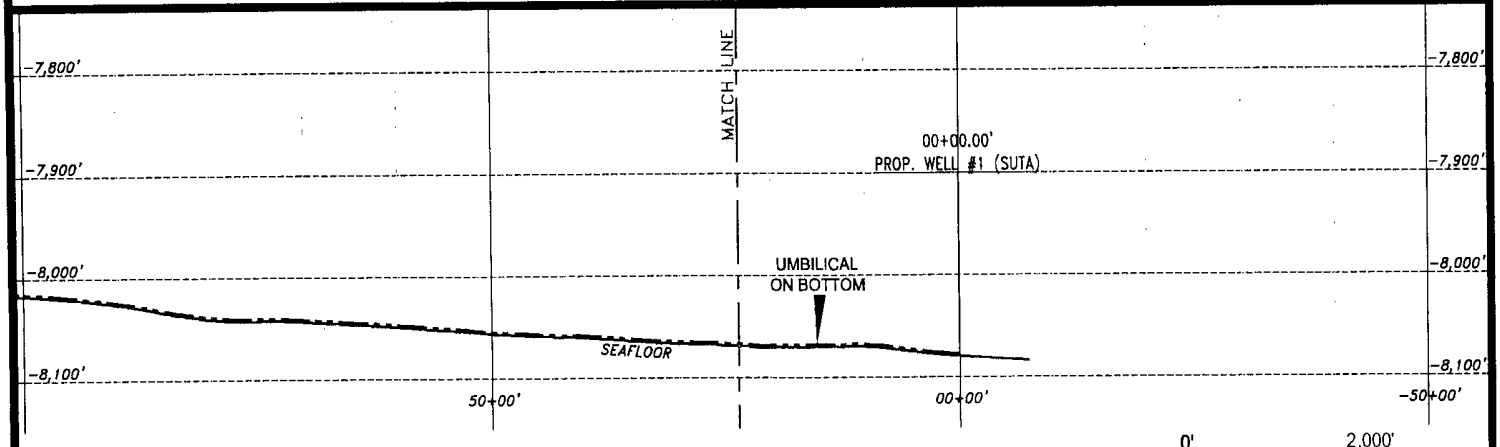
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

VERTICAL EXAGGERATION = 10

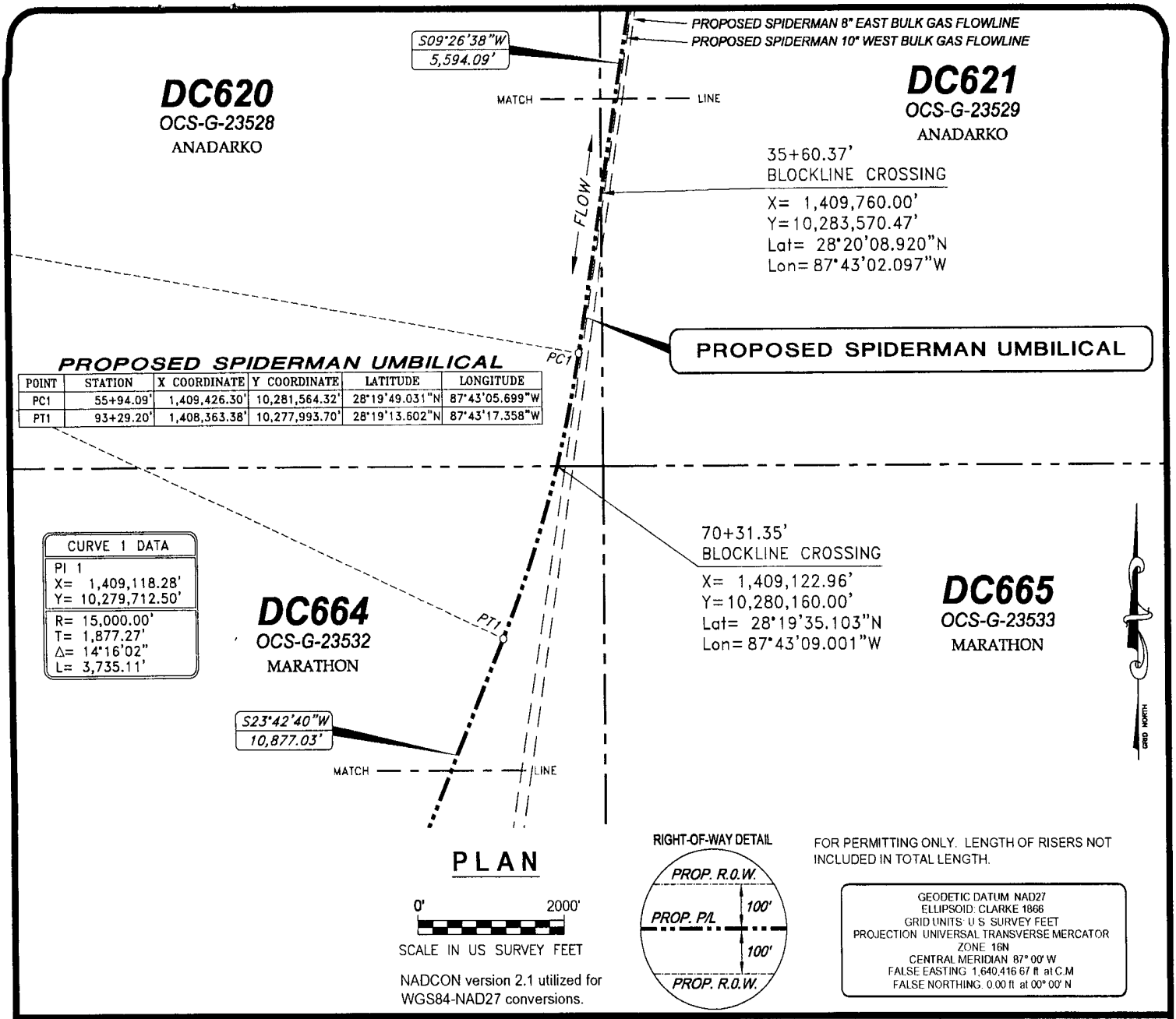
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES
239 E. KALISTE SALOOM ROAD, LAFAYETTE, LA (337) 261-0660

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRM7458_SM-U.DWG		SHEET 2 of 13



PROPOSED SPIDERMAN UMBILICAL

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC1	55+94.09'	1,409,426.30'	10,281,564.32'	28°19'49.031"N	87°43'05.699"W
PT1	93+29.20'	1,408,363.38'	10,277,993.70'	28°19'13.602"N	87°43'17.358"W

CURVE 1 DATA
PI 1 X= 1,409,118.28' Y= 10,279,712.50'
R= 15,000.00' T= 1,877.27' Δ= 14°16'02" L= 3,735.11'

PLAN

0' 2000'

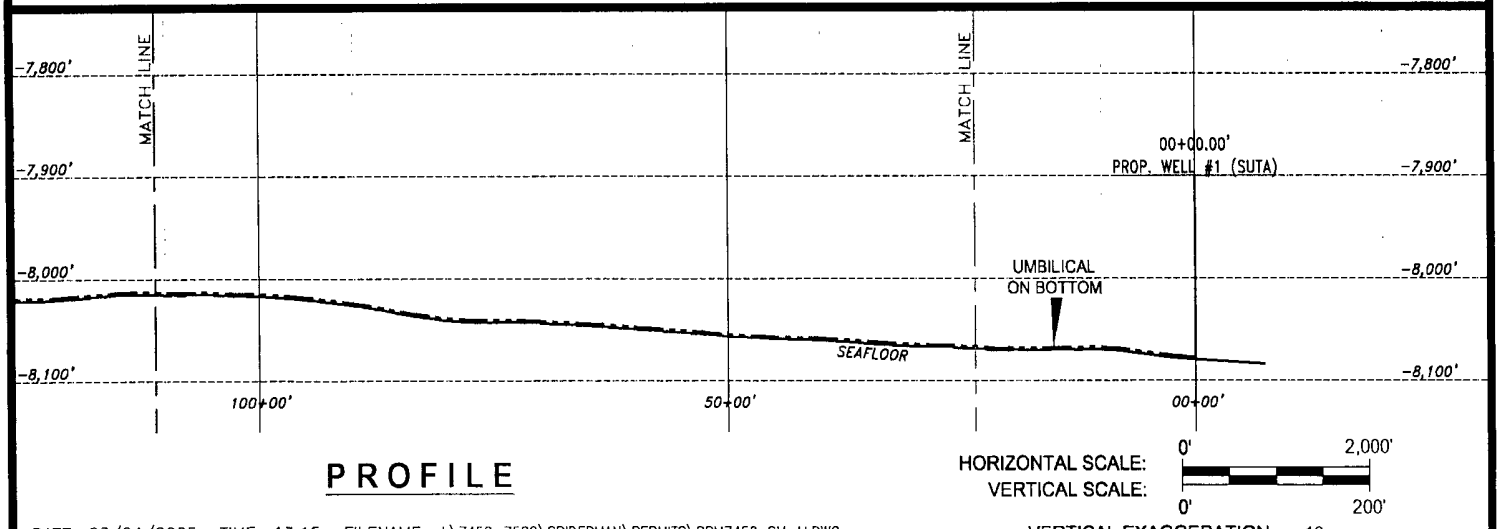
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING 1,640,416.67 ft at C.M.
FALSE NORTHING 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

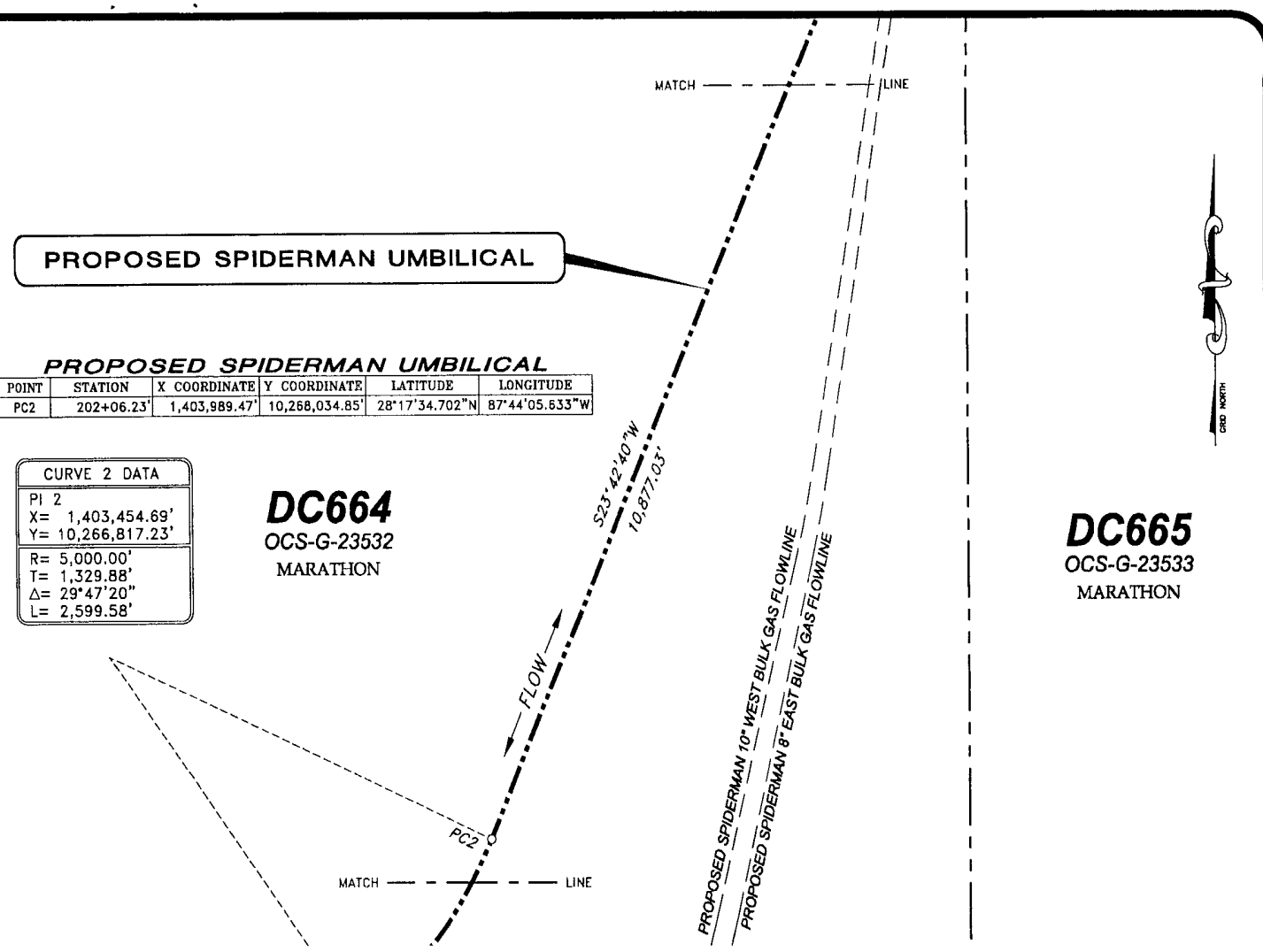
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES
730 E. KALISTE SALOOM ROAD, LAFAYETTE, LA (337) 261-0660

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRM7458_SM-U.DWG		SHEET 3 of 13



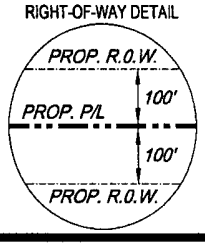
PLAN

0' 2000'

SCALE IN US SURVEY FEET

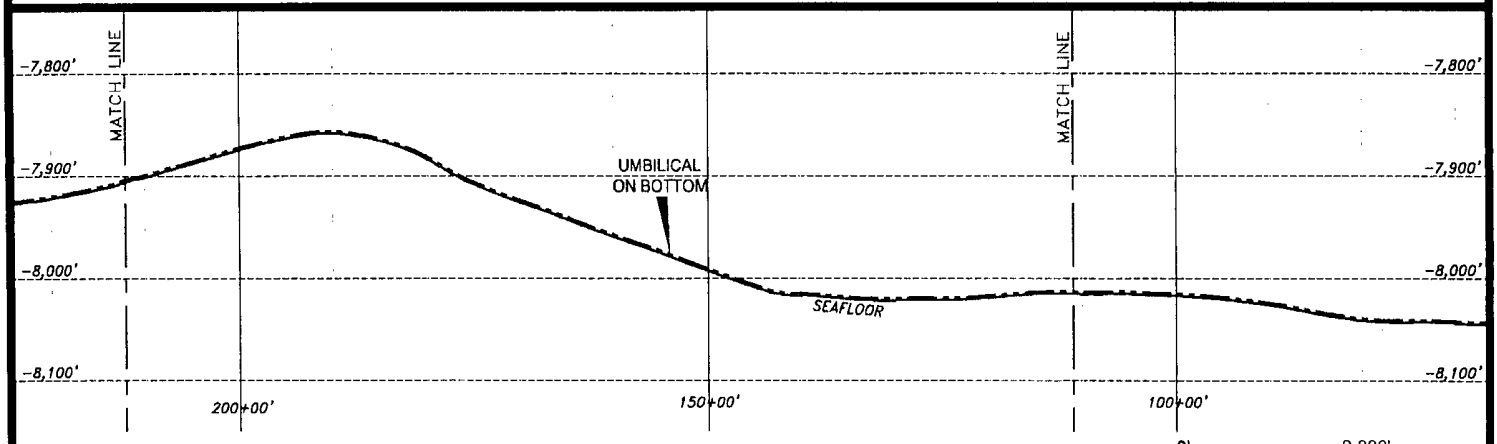
NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL



FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft at C.M.
FALSE NORTHING: 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

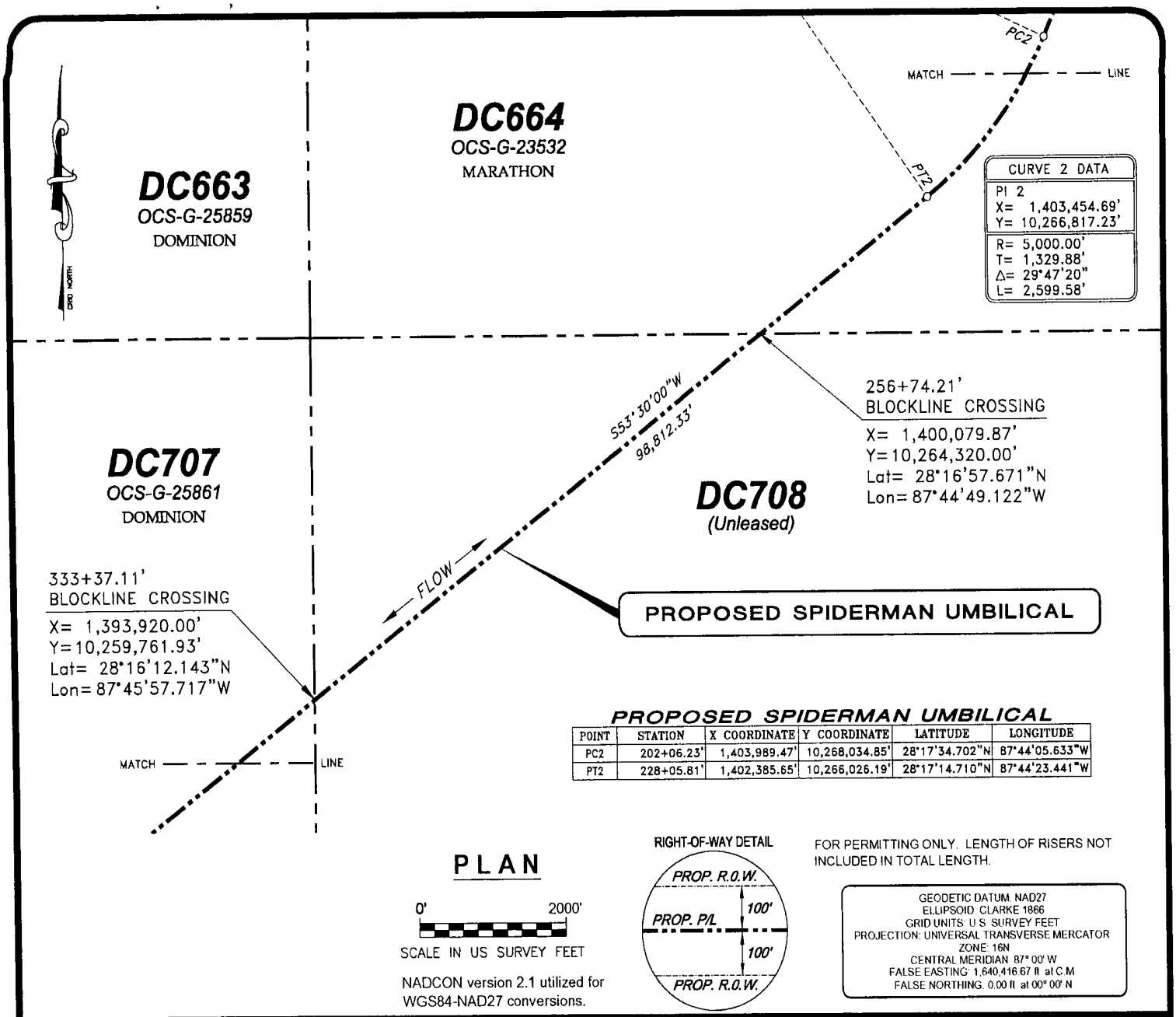
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY:
C&C Technologies
SURVEY SERVICES
730 E. KALISTE SALOOM ROAD, LAFAYETTE, LA (337) 261 0660

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRM7458_SM-U.DWG		SHEET 4 of 13



PROPOSED SPIDERMAN UMBILICAL

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC2	202+06.23'	1,403,989.47'	10,268,034.85'	28°17'34.702"N	87°44'05.633"W
PT2	228+05.81'	1,402,385.65'	10,266,026.19'	28°17'14.710"N	87°44'23.441"W

PLAN

0' 2000'

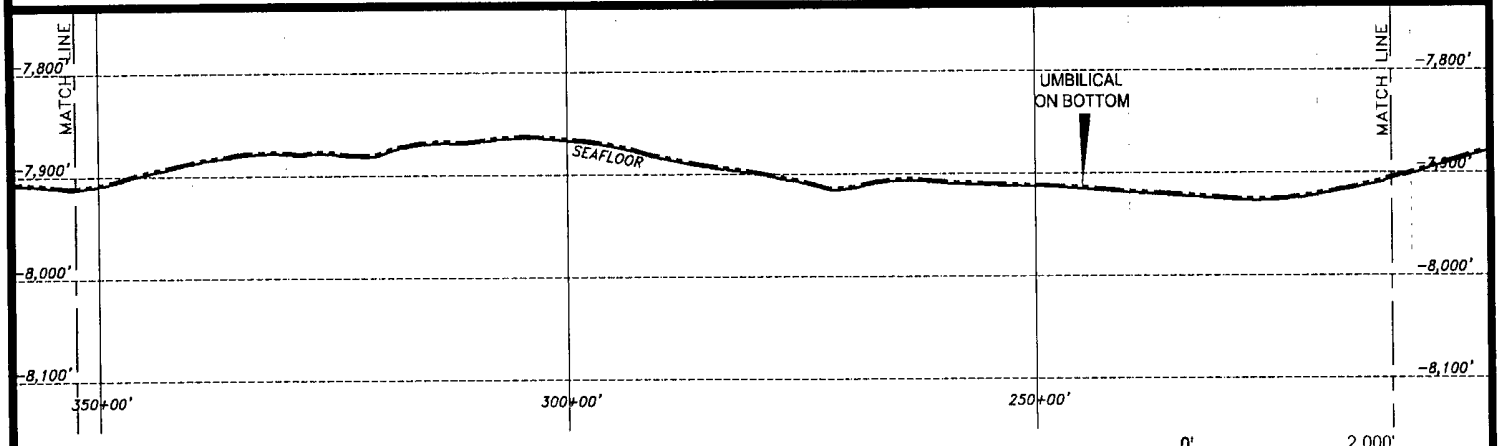
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft at C.M.
FALSE NORTHING: 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY:

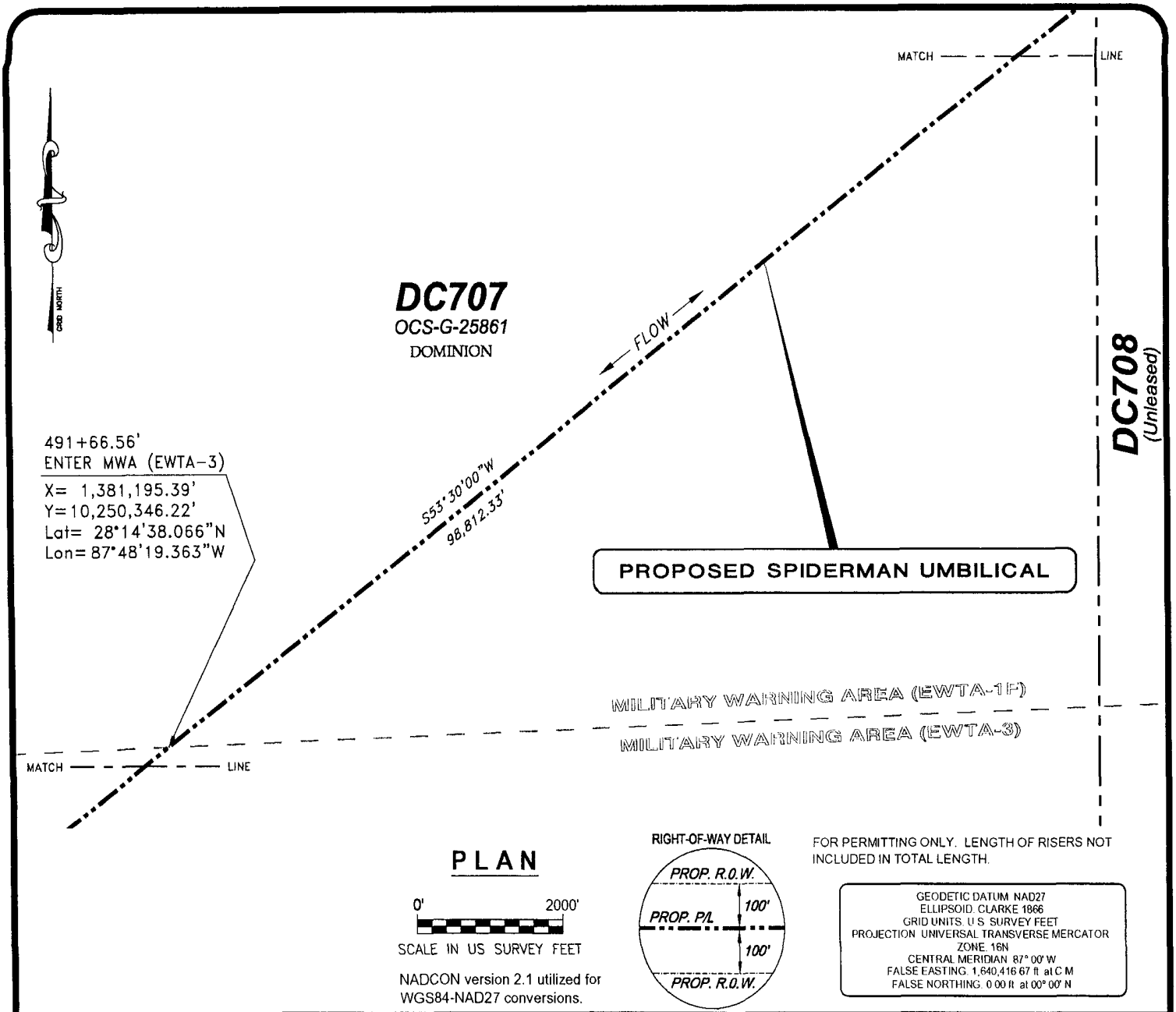
C&C Technologies
SURVEY SERVICES
730 E. KALISTE SALOOM ROAD, LAFAYETTE, LA (337) 261 0663

JOB No: 7458-7589

FILENAME: PRM7458_SM-U.DWG

REVISED:

DATE: March 24, 2005



PLAN

0' 2000'

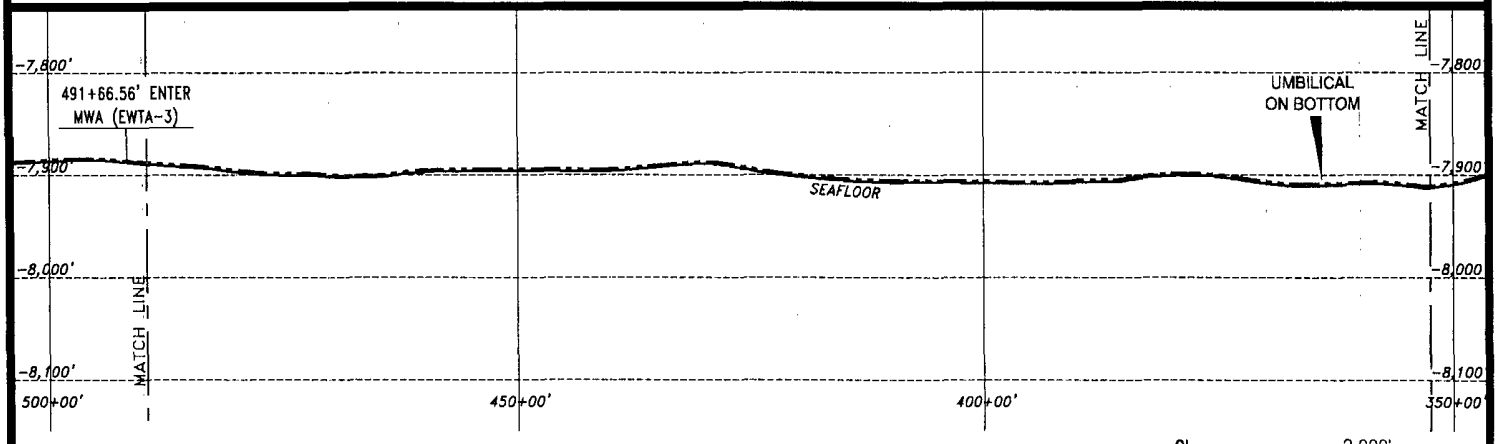
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM NAD27
ELLIPSOID CLARKE 1866
GRID UNITS U S SURVEY FEET
PROJECTION UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN 87° 00' W
FALSE EASTING 1,640,416 67 ft at C M
FALSE NORTHING 0 00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

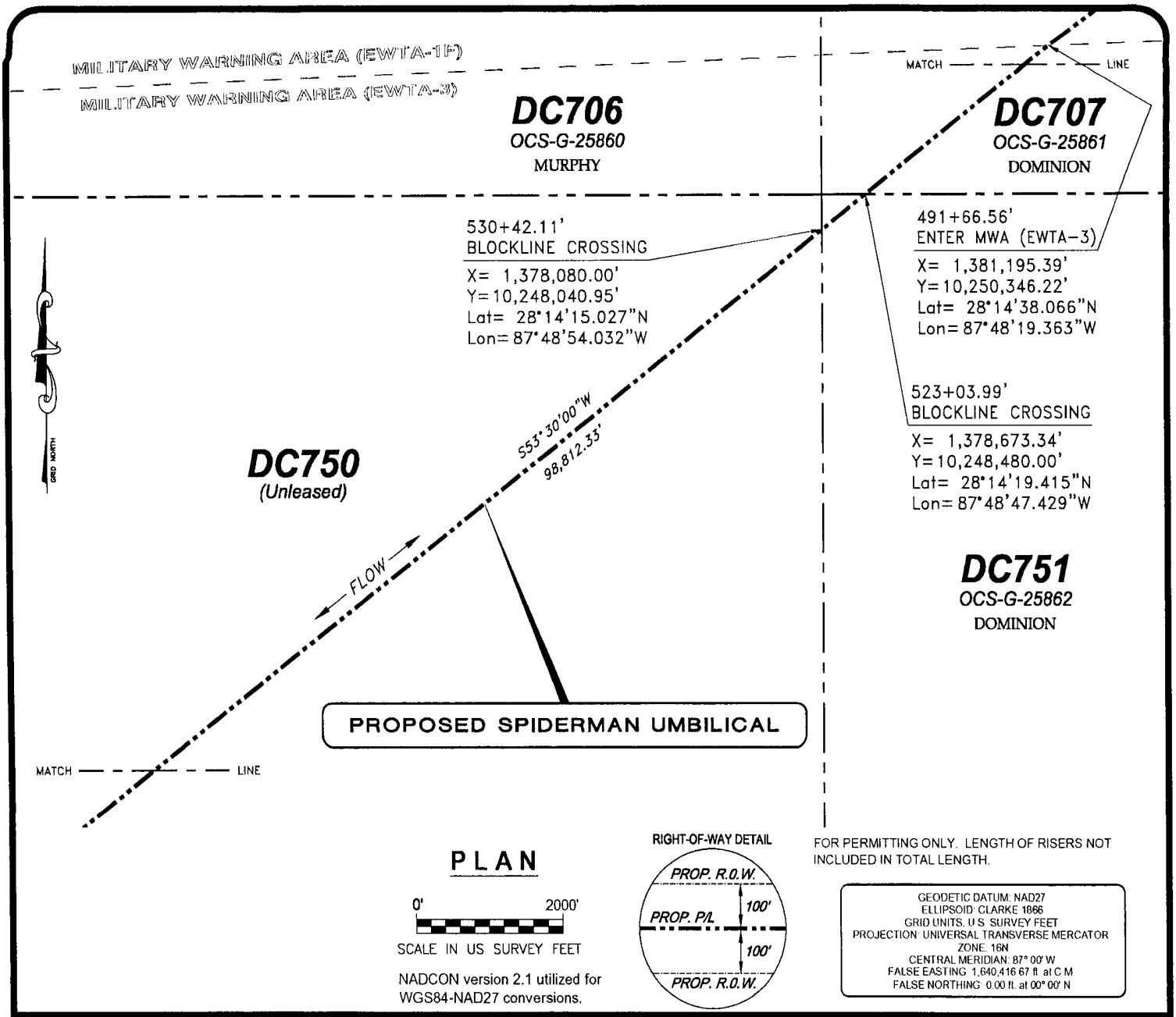
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES
730 E. KALISTE SALOOM ROAD, LAFAYETTE, LA (337) 261 0660

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRM7458_SM-U.DWG		SHEET 6 of 13



PLAN

0' 2000'

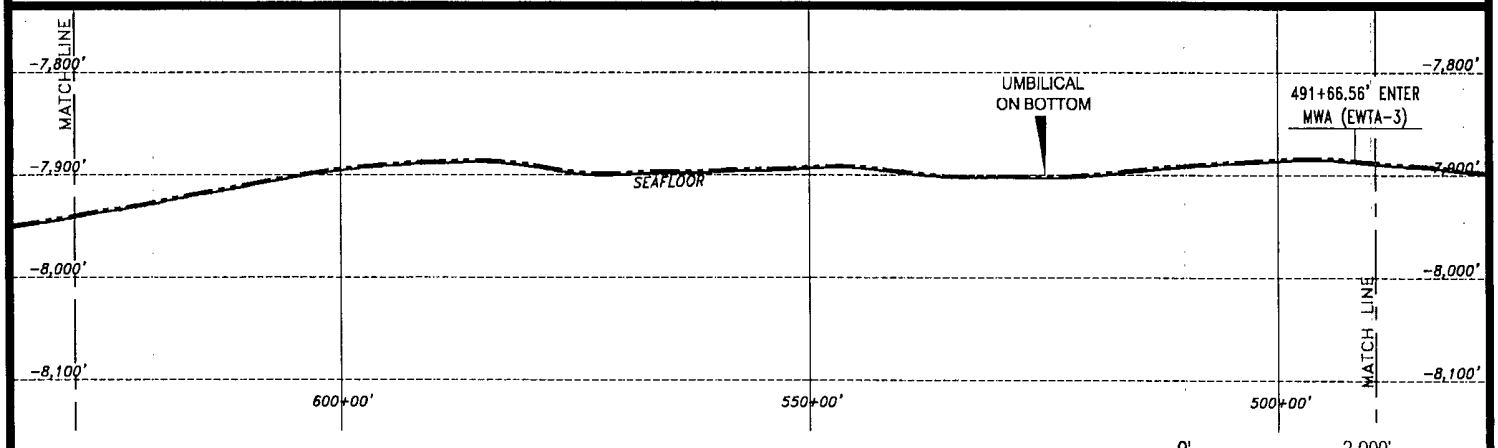
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

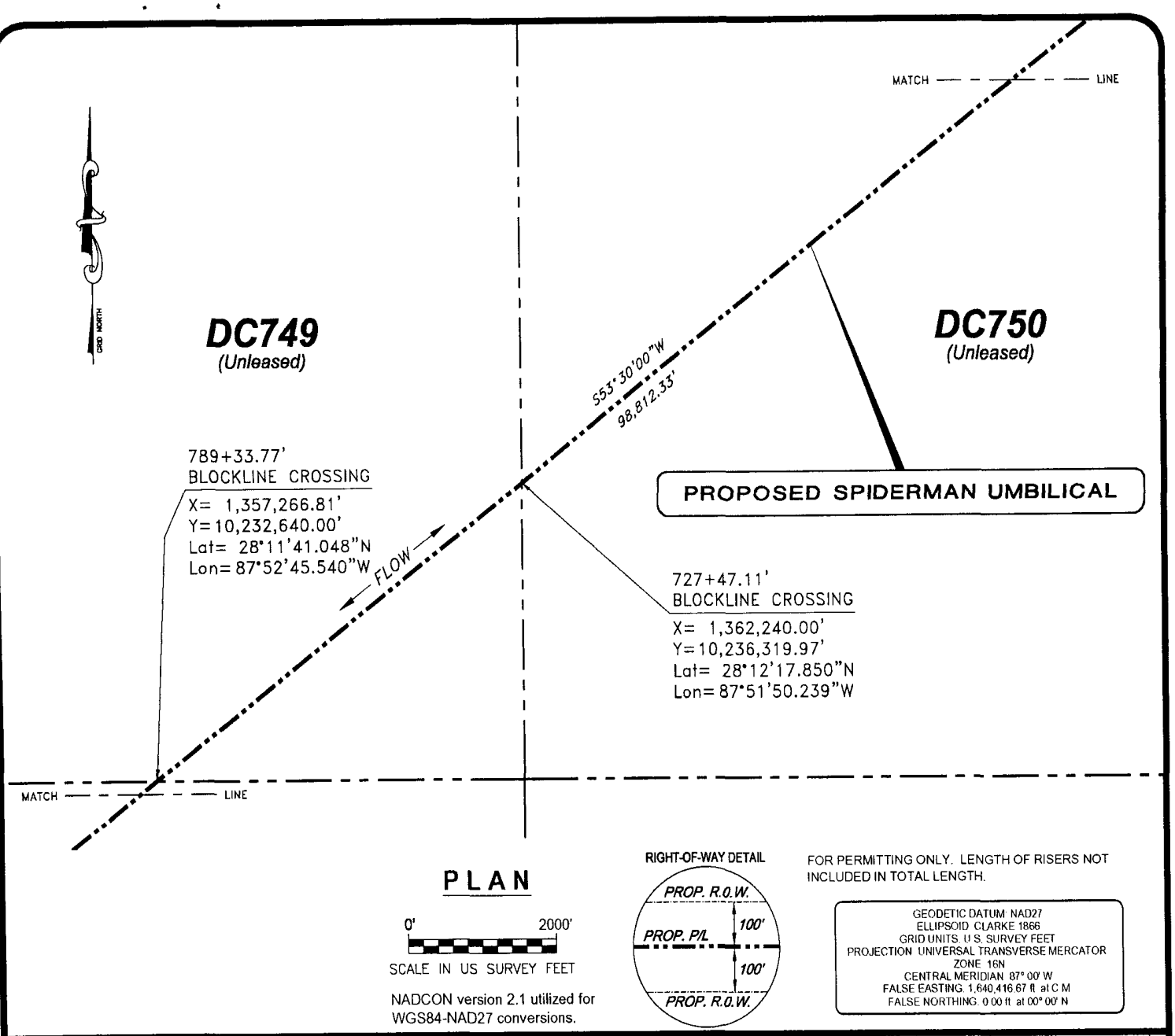
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES 730 E. KALISTE SALOOM ROAD LAFAYETTE, LA (337) 261-0660

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRM7458_SM-U.DWG		SHEET 7 of 13



PLAN

0' 2000'

SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

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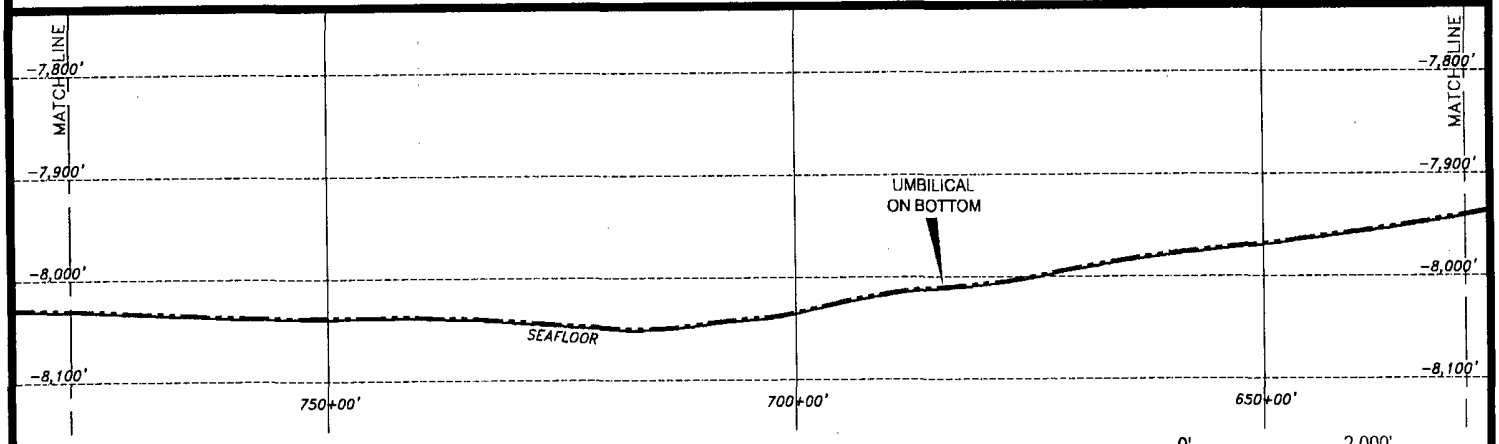
GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
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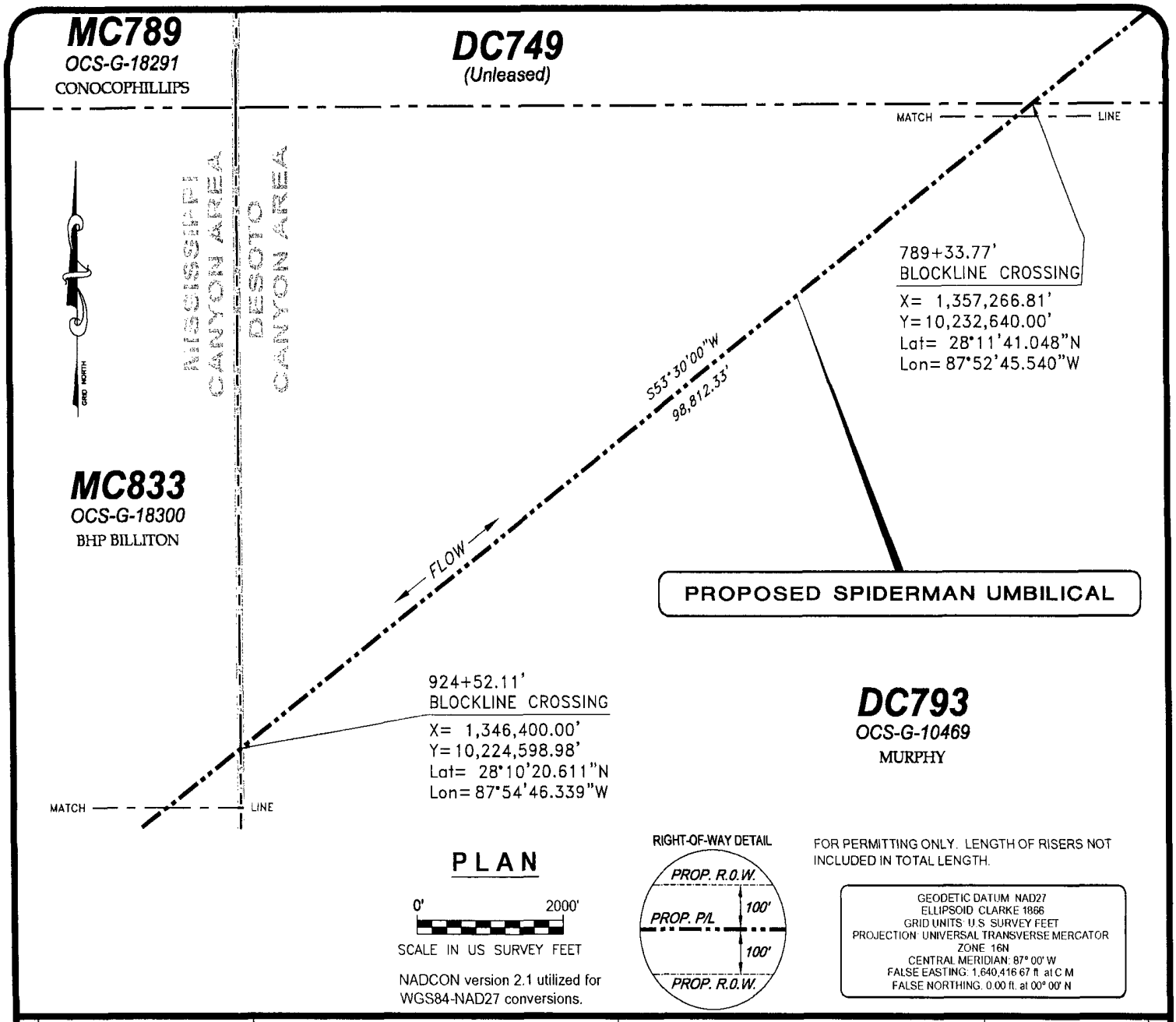
PREPARED BY: C&C Technologies SURVEY SERVICES

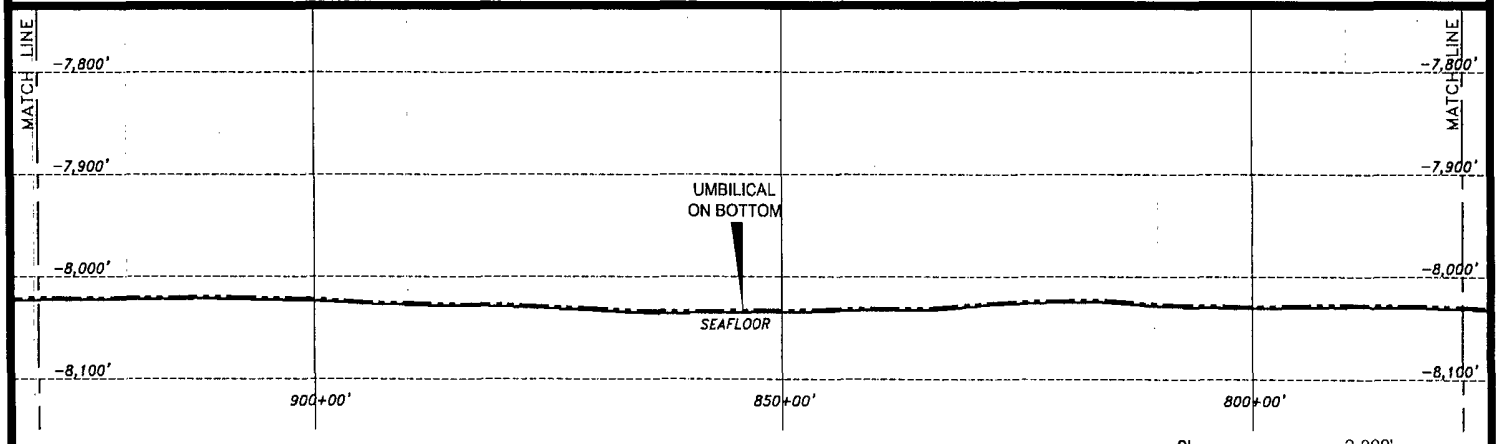
JOB No: 7458-7589

REVISED:

DATE: March 24, 2005

FILENAME: PRM7458 SM-U.DWG





PROFILE

HORIZONTAL SCALE: 0' 2,000'
VERTICAL SCALE: 0' 200'

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

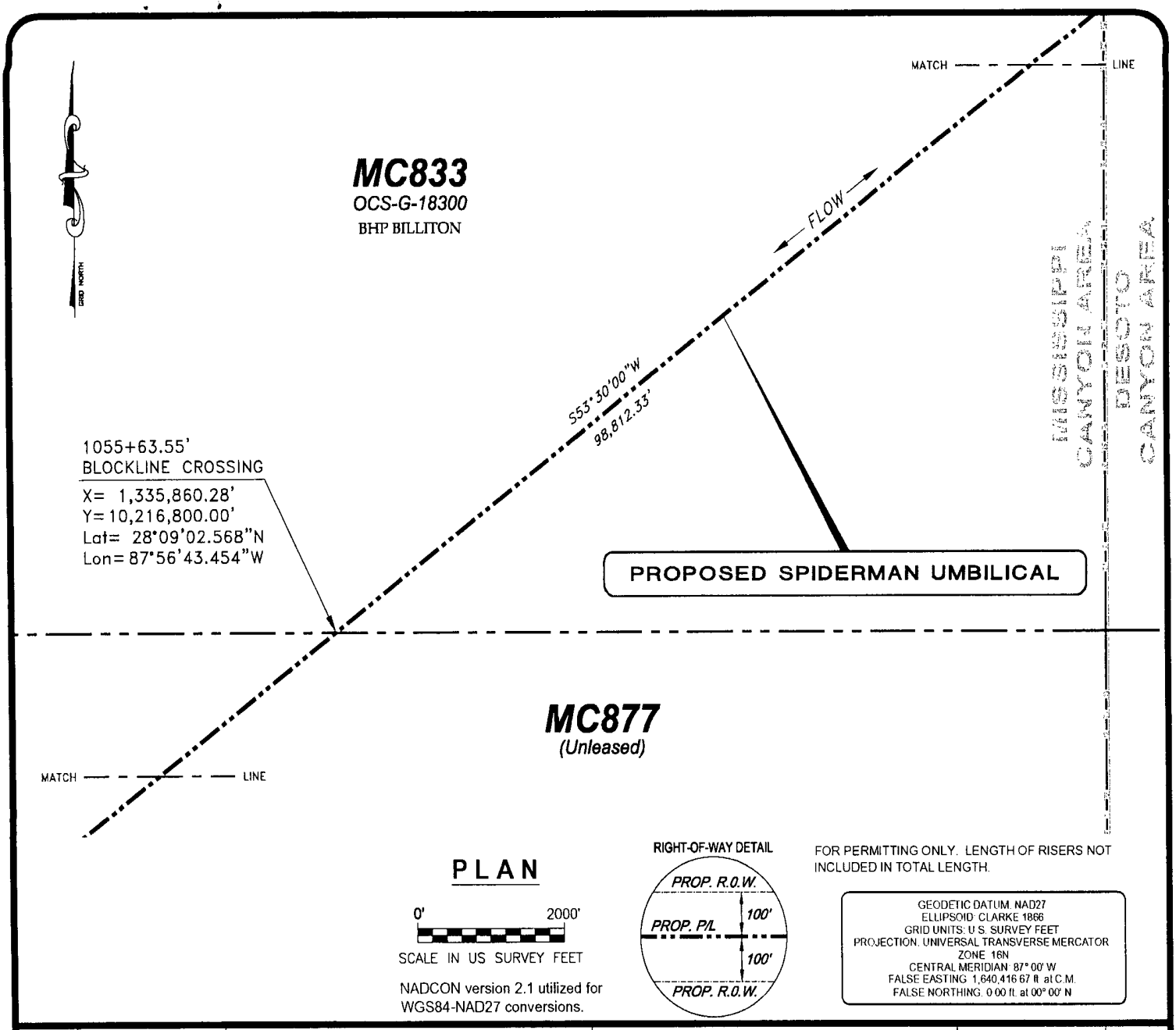
VERTICAL EXAGGERATION = 10

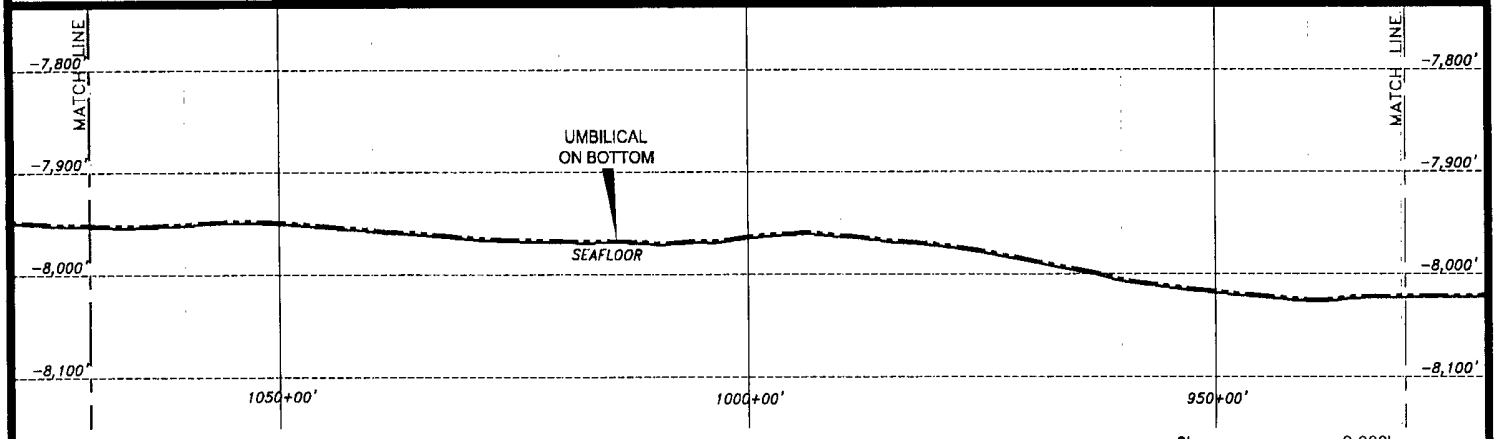
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES	JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
	FILENAME: PRM7458 SM-U.DWG		SHEET 9 of 13





PROFILE

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VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
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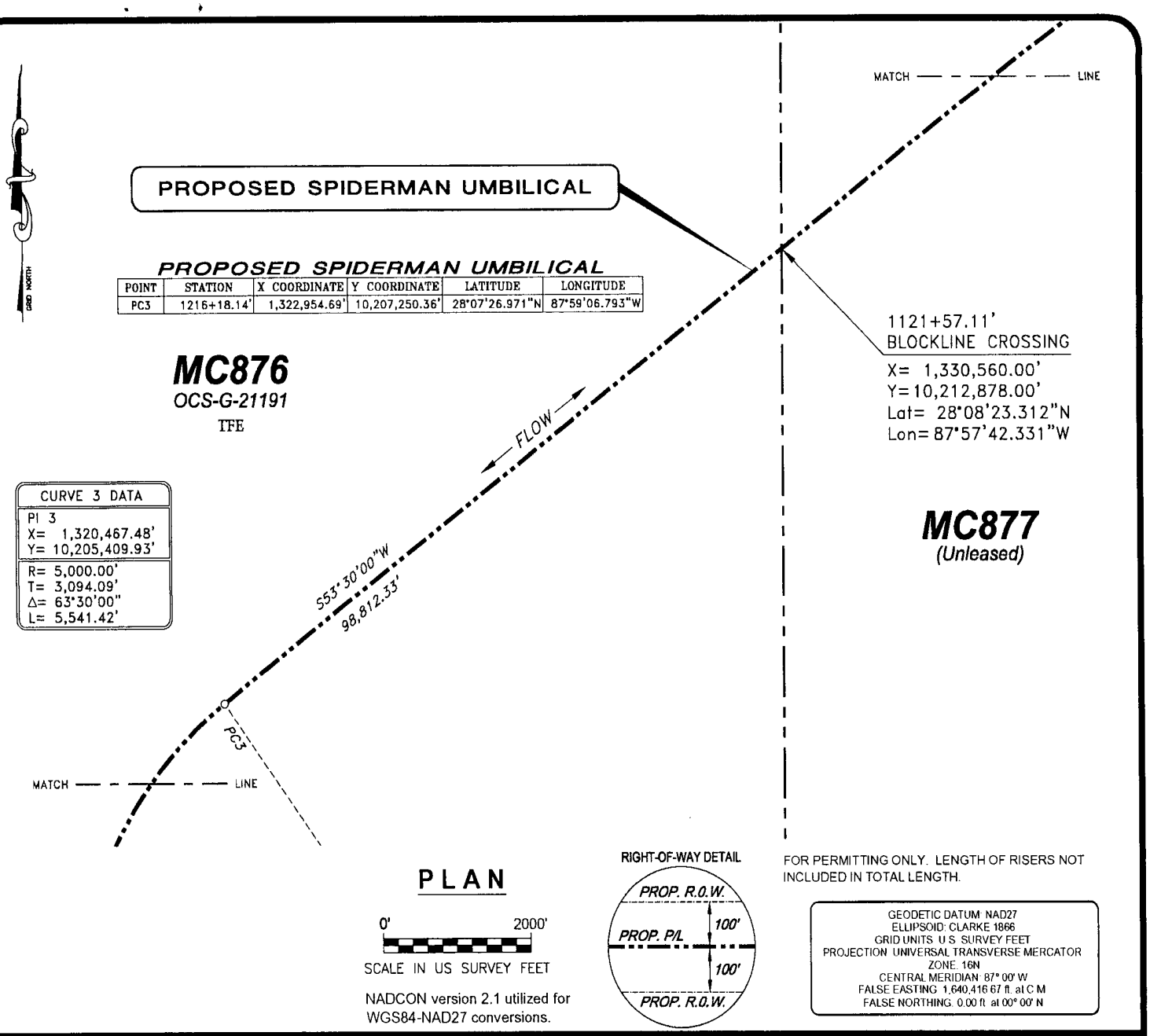
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES

JOB No: 7458-7589
FILENAME: PRM7458 SM-U.DWG
REVISED:
DATE: March 24, 2005
SHEET 10 of 13



PROPOSED SPIDERMAN UMBILICAL

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PC3	1216+18.14'	1,322,954.69'	10,207,250.36'	28°07'26.971"N	87°59'06.793"W

PLAN

0' 2000'

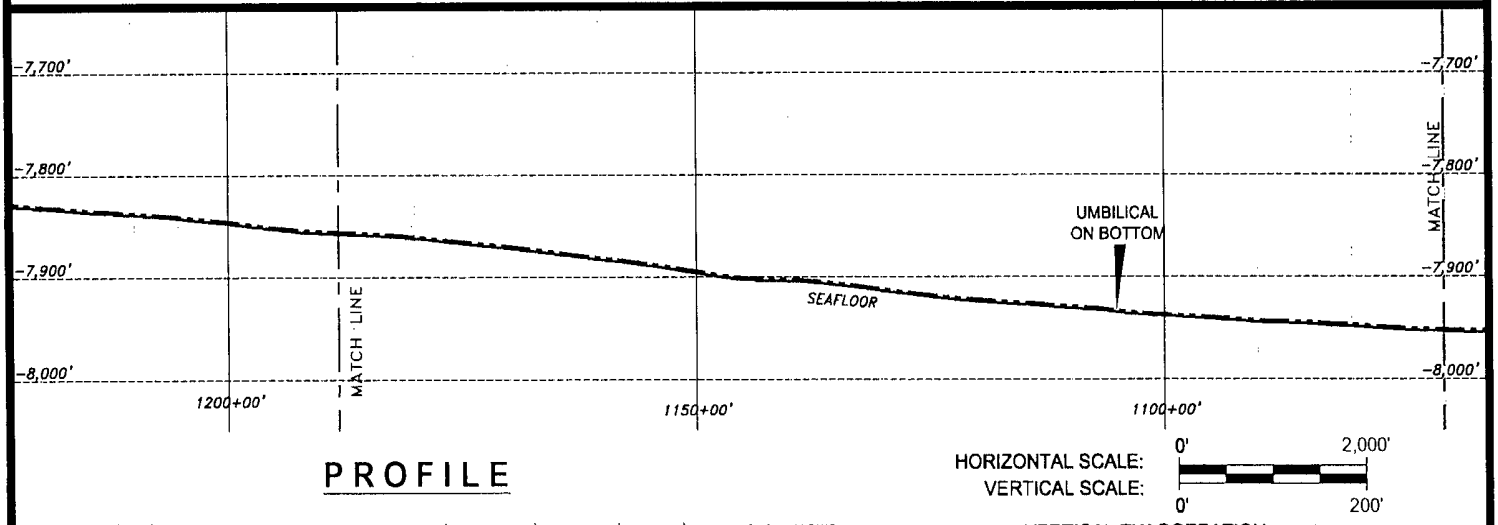
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft. at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

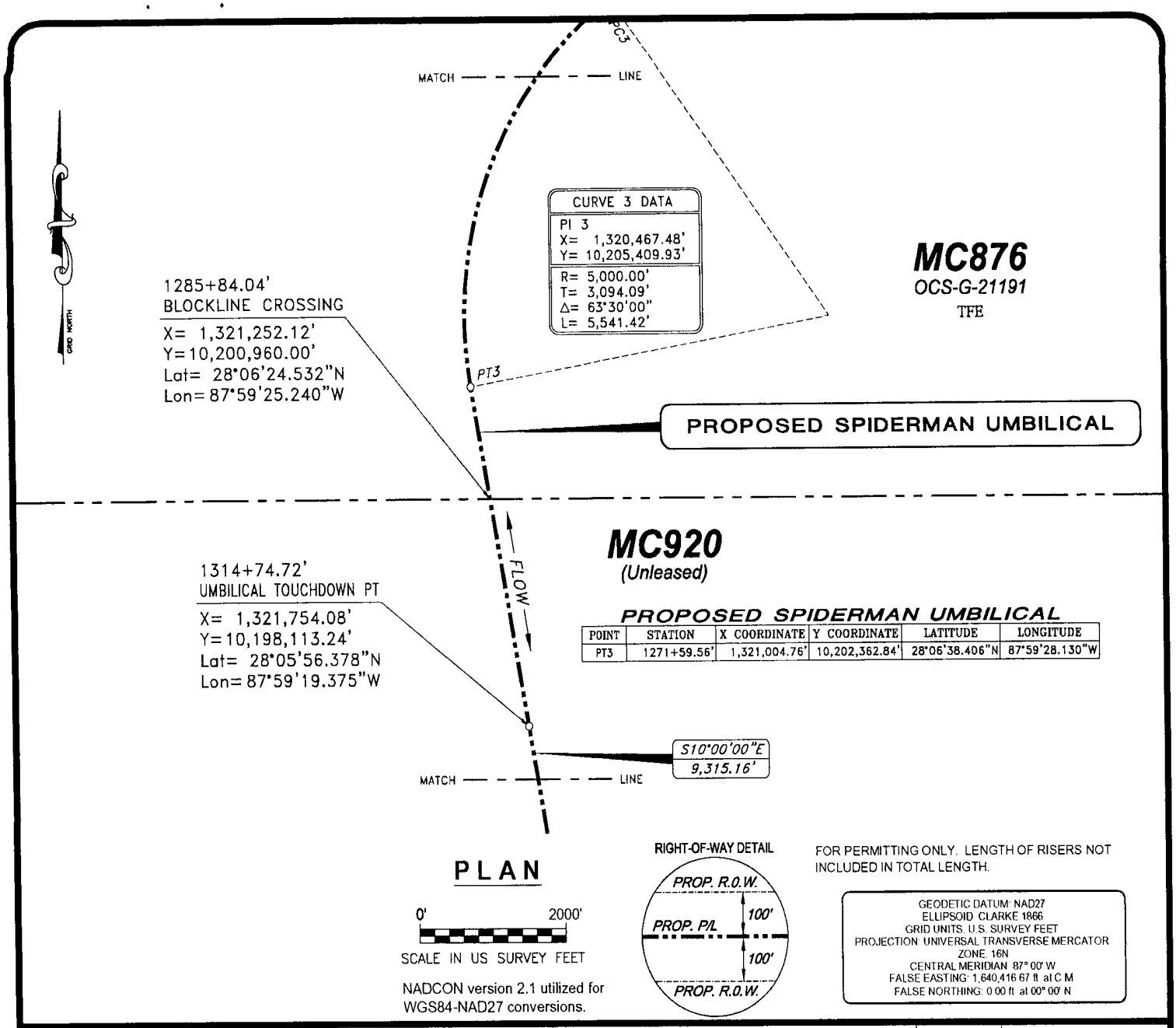
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES 200 E. KALISTE SALOOM ROAD LAFAYETTE, LA (337) 261-0660

JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
FILENAME: PRM7458_SM-U.DWG		SHEET 11 of 13



PROPOSED SPIDERMAN UMBILICAL

POINT	STATION	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE
PT3	1271+59.56'	1,321,004.76'	10,202,362.84'	28°06'38.406"N	87°59'28.130"W

PLAN

0' 2000'

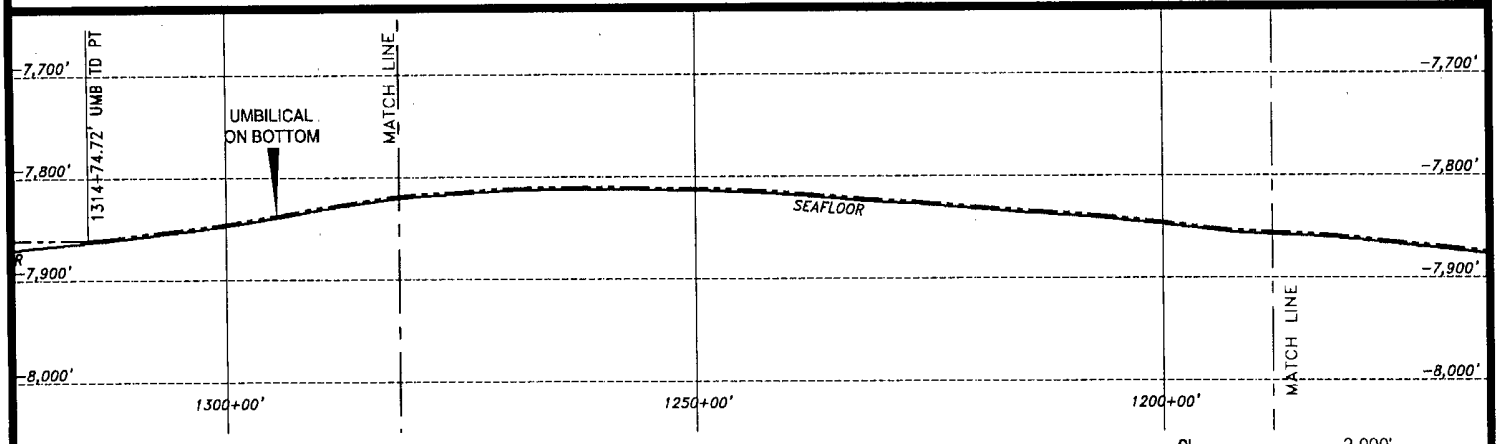
SCALE IN US SURVEY FEET

NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL

FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE: 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft at C.M.
FALSE NORTHING: 0.00 ft at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
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PREPARED BY: C&C Technologies SURVEY SERVICES

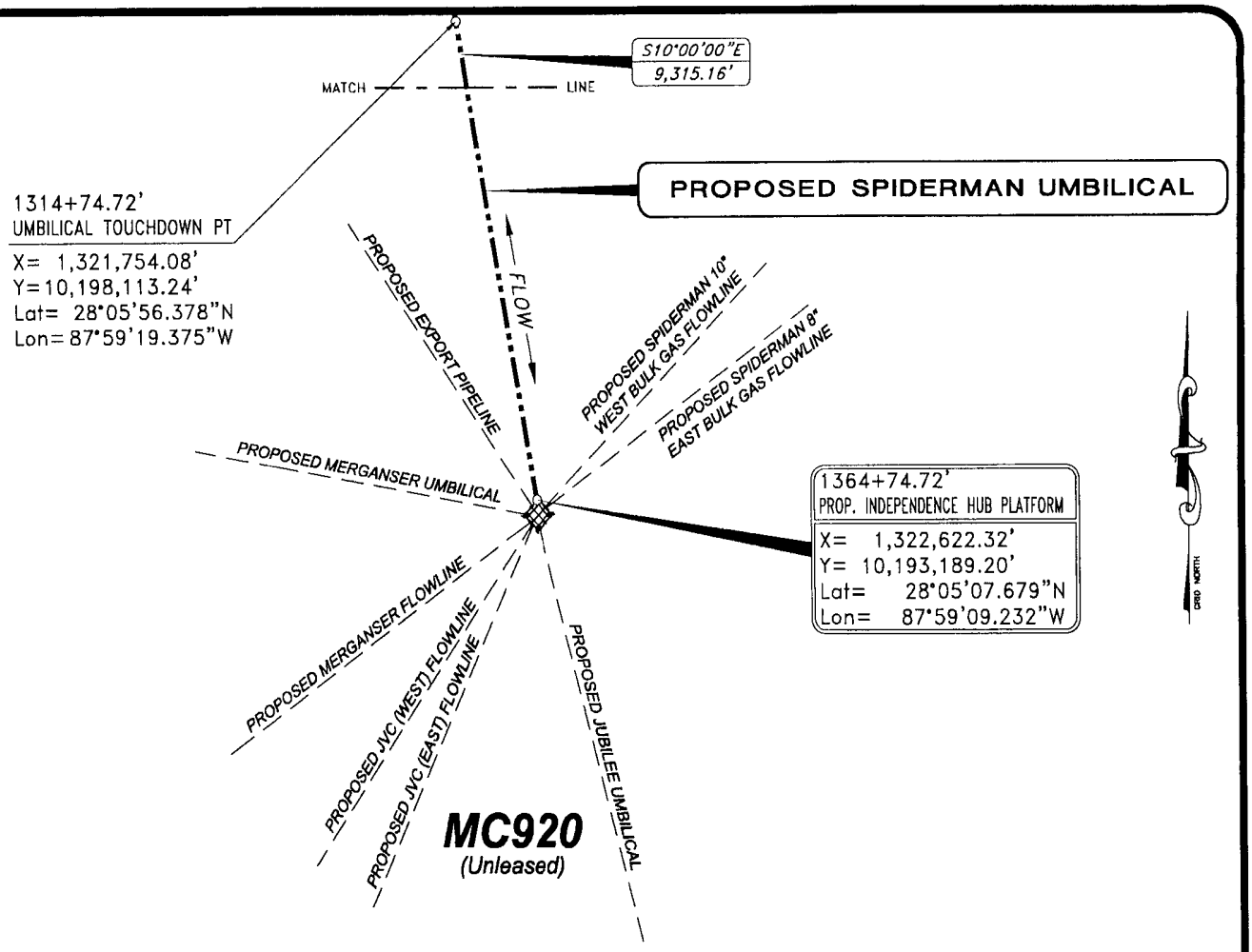
JOB No: 7458-7589

REVISED:

DATE: March 24, 2005

FILENAME: PRM7458 SM-U.DWG

SHEET 12 of 13



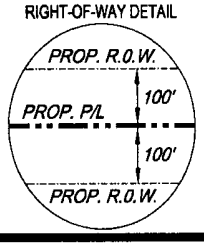
PLAN

0' 2000'

SCALE IN US SURVEY FEET

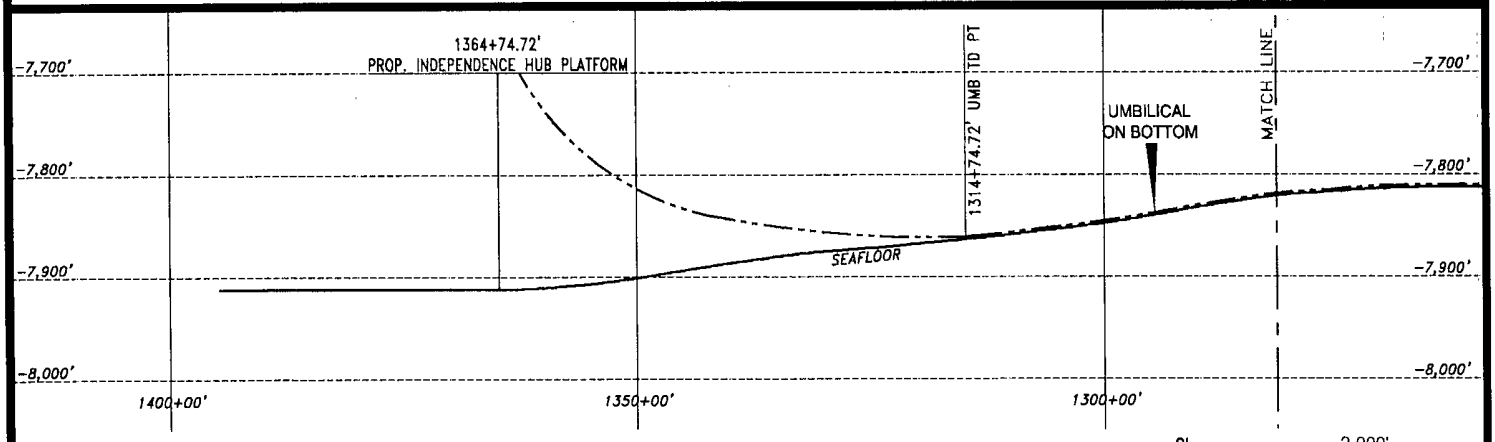
NADCON version 2.1 utilized for WGS84-NAD27 conversions.

RIGHT-OF-WAY DETAIL



FOR PERMITTING ONLY. LENGTH OF RISERS NOT INCLUDED IN TOTAL LENGTH.

GEODETIC DATUM: NAD27
ELLIPSOID: CLARKE 1866
GRID UNITS: U.S. SURVEY FEET
PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
ZONE 16N
CENTRAL MERIDIAN: 87° 00' W
FALSE EASTING: 1,640,416.67 ft at C.M.
FALSE NORTHING: 0.00 ft. at 00° 00' N



PROFILE

HORIZONTAL SCALE: 0' 2,000'

VERTICAL SCALE: 0' 200'

VERTICAL EXAGGERATION = 10

DATE: 03/24/2005 TIME: 13:15 FILENAME: J:\7458-7589\SPIDERMAN\PERMITS\PRM7458_SM-U.DWG

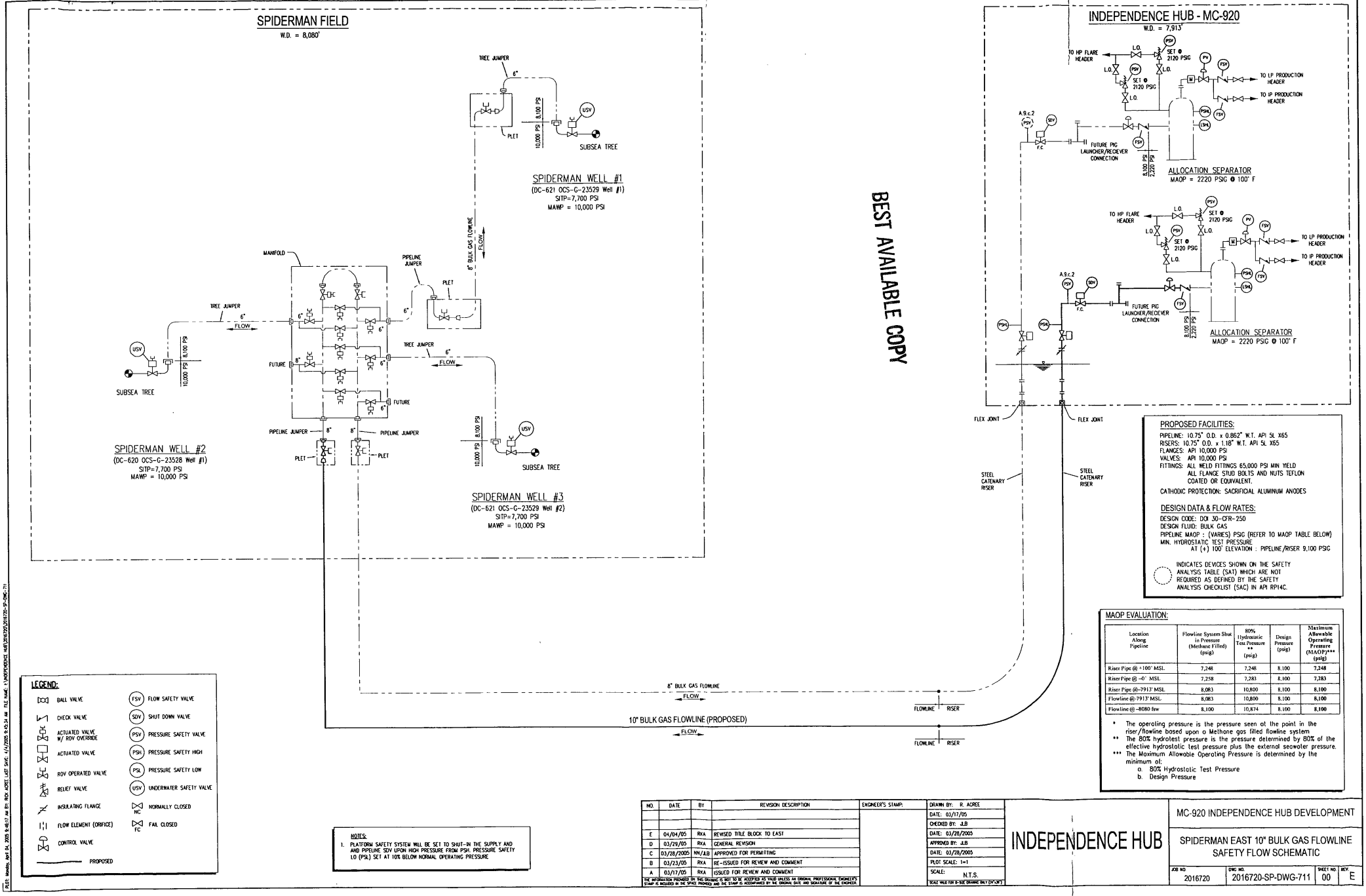
Anadarko Petroleum Corporation

PROPOSED SPIDERMAN UMBILICAL ROUTE

Block 621 Well #1 SUTA Desoto Canyon Area
to
Block 920 Independence Hub Platform
Mississippi Canyon Area

PREPARED BY: C&C Technologies SURVEY SERVICES	JOB No: 7458-7589	REVISED:	DATE: March 24, 2005
	FILENAME: PRM7458 SM-U.DWG		SHEET 13 of 13

Attachment F



BEST AVAILABLE COPY

PROPOSED FACILITIES:

PIPELINE: 10.75" O.D. x 0.862" W.T. API 5L X65
RISERS: 10.75" O.D. x 1.18" W.T. API 5L X65
FLANGES: API 10,000 PSI
VALVES: API 10,000 PSI
FITTINGS: ALL WELD FITTINGS 65,000 PSI MIN YIELD
ALL FLANGE STUD BOLTS AND NUTS TEFLON COATED OR EQUIVALENT.
CATHODIC PROTECTION: SACRIFICIAL ALUMINUM ANODES

DESIGN DATA & FLOW RATES:

DESIGN CODE: DOI 30-CFR-250
DESIGN FLUID: BULK GAS
PIPELINE MAOP : (VARIES) PSIG (REFER TO MAOP TABLE BELOW)
MIN. HYDROSTATIC TEST PRESSURE AT (+) 100' ELEVATION : PIPELINE/RISER 9,100 PSIG

( ) INDICATES DEVICES SHOWN ON THE SAFETY ANALYSIS TABLE (SAT) WHICH ARE NOT REQUIRED AS DEFINED BY THE SAFETY ANALYSIS CHECKLIST (SAC) IN API RP14C.

MAOP EVALUATION:

Location Along Pipeline	Flowline System Shut in Pressure (Methane Filled) (psig)	80% Hydrostatic Test Pressure ** (psig)	Design Pressure (psig)	Maximum Allowable Operating Pressure (MAOP)*** (psig)
Riser Pipe @ +100' MSL	7,248	7,248	8,100	7,248
Riser Pipe @ -0' MSL	7,258	7,283	8,100	7,283
Riser Pipe @-7913' MSL	8,083	10,800	8,100	8,100
Flowline @-7913' MSL	8,083	10,800	8,100	8,100
Flowline @ -8080 fsw	8,100	10,874	8,100	8,100

* The operating pressure is the pressure seen at the point in the riser/flowline based upon a Methane gas filled flowline system
** The 80% hydrotest pressure is the pressure determined by 80% of the effective hydrostatic test pressure plus the external seawater pressure.
*** The Maximum Allowable Operating Pressure is determined by the minimum of:
a. 80% Hydrostatic Test Pressure
b. Design Pressure

LEGEND:

- BALL VALVE
- CHECK VALVE
- ACTUATED VALVE W/ ROV OVERRIDE
- ACTUATED VALVE
- ROV OPERATED VALVE
- RELIEF VALVE
- INSULATING FLANGE
- FLOW ELEMENT (ORIFICE)
- CONTROL VALVE
- PROPOSED
- FSV FLOW SAFETY VALVE
- SDV SHUT DOWN VALVE
- PSV PRESSURE SAFETY VALVE
- PSH PRESSURE SAFETY HIGH
- PSL PRESSURE SAFETY LOW
- USV UNDERWATER SAFETY VALVE
- NC NORMALLY CLOSED
- FC FAIL CLOSED

NOTES:
1. PLATFORM SAFETY SYSTEM WILL BE SET TO SHUT-IN THE SUPPLY AND AND PIPELINE SDV UPON HIGH PRESSURE FROM PSH. PRESSURE SAFETY LO (PSL) SET AT 10% BELOW NORMAL OPERATING PRESSURE

NO.	DATE	BY	REVISION DESCRIPTION
E	04/04/05	RKA	REVISED TITLE BLOCK TO EAST
D	03/29/05	RKA	GENERAL REVISION
C	03/28/2005	MM/JLB	APPROVED FOR PERMITTING
B	03/23/05	RKA	RE-ISSUED FOR REVIEW AND COMMENT
A	03/17/05	RKA	ISSUED FOR REVIEW AND COMMENT

THE INFORMATION PROVIDED ON THIS DRAWING IS NOT TO BE ACCEPTED AS VALID UNLESS AN ORIGINAL PROFESSIONAL ENGINEER'S STAMP IS REQUIRED IN THE SPACE PROVIDED AND THE STAMP IS ACCOMPANIED BY THE ORIGINAL DATE AND SIGNATURE OF THE ENGINEER.

ENGINEER'S STAMP:

DRAWN BY: R. ACREE
DATE: 03/17/05
CHECKED BY: JLB
DATE: 03/28/2005
APPROVED BY: JLB
DATE: 03/28/2005
PLOT SCALE: 1=1
SCALE: N.T.S.
SCALE VALID FOR D-SIZE DRAWING ONLY (24"x36")

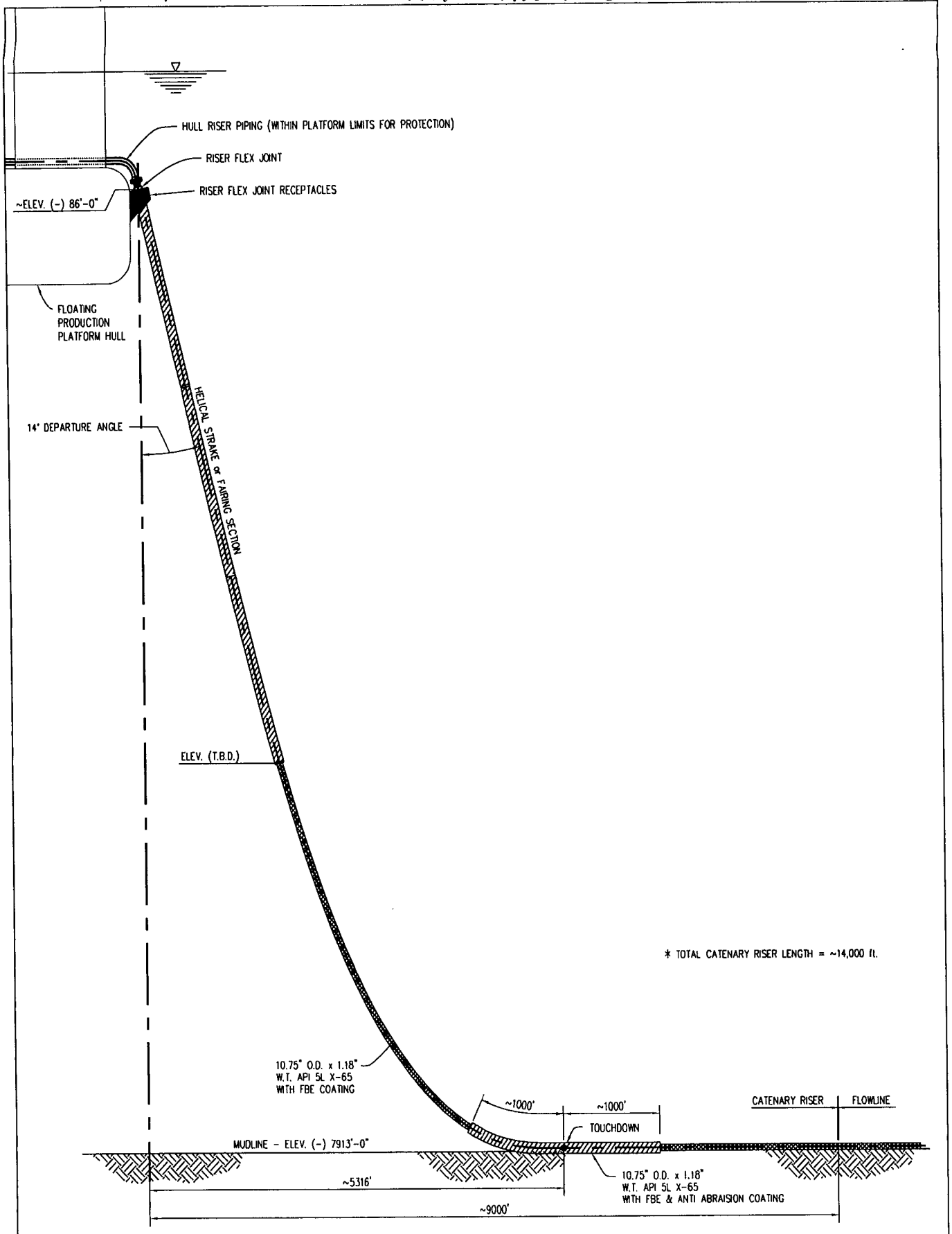
INDEPENDENCE HUB

MC-920 INDEPENDENCE HUB DEVELOPMENT

SPIDERMAN EAST 10" BULK GAS FLOWLINE SAFETY FLOW SCHEMATIC

JOB NO.	DWG NO.	SHEET NO.	REV.
2016720	2016720-SP-DWG-711	00	E

Attachment G

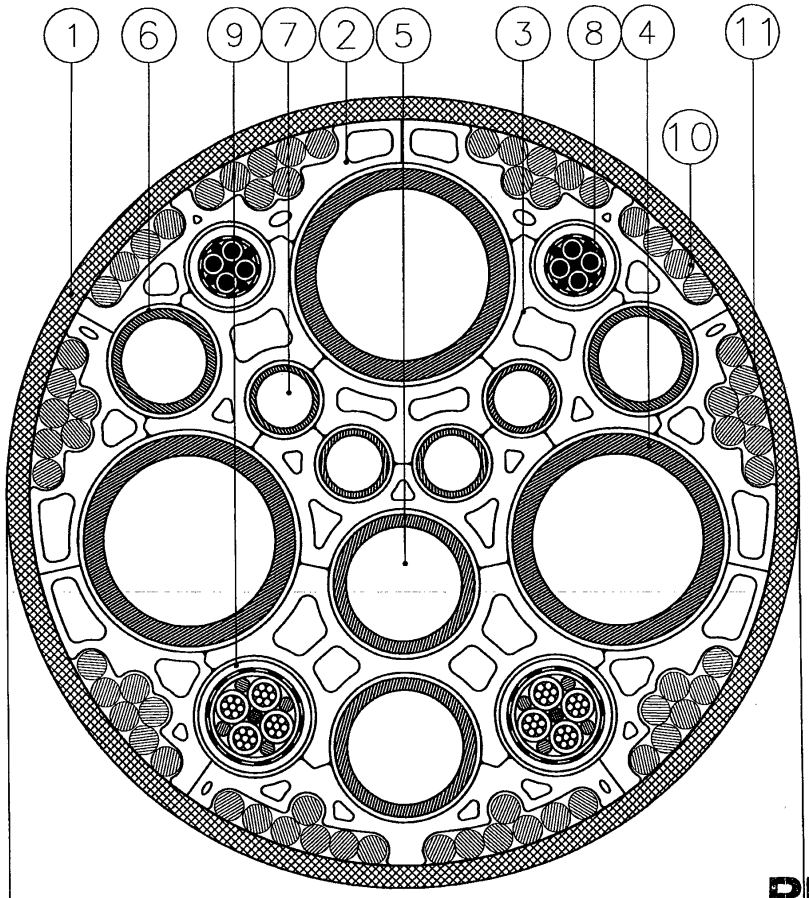


10" ø BULK GAS STEEL CATENARY RISER ELEVATION

SCALE: N.T.S.

INDEPENDENCE HUB	MC-920 INDEPENDENCE HUB DEVELOPMENT	DWG NO. 2016720-SP-DWG-712
		JOB NO. 2016720
	SPIDERMAN 10" BULK GAS FLOWLINE SCR & RISER PROTECTION AT MC-920	SCALE: 1=1
		SCALE VALID FOR A-SIZE DRAWING (8.5" x 11") ONLY. REV. B
DRAWN BY: R. ACREE	ORIGIN. DATE: 03/17/05	REV. DATE: 03/23/05

Attachment H



TECHNICAL DATA

Umbilical weight in air, empty:	373 N/m
Umbilical weight in air, fluid filled:	437 N/m
Umbilical weight in water, fluid filled:	194 N/m
Design tension capacity of umbilical:	1146 kN
Breaking strenght of umbilical:	2228 kN

	11	Bonding				
64	10	Carbon Fibre Rods	OD=6.5 mm			
2	9	Electric Cable	16mm2 TSO OD=23 mm			
2	8	Electric Cable	6mm2 TSO OD=18 mm			
4	7	Steel Tube	1/2" x 1.27 mm 10000 psi			Super Duplex
2	6	Steel Tube	3/4" x 2.05 mm 10000 psi			Super Duplex
2	5	Steel Tube	1" x 2.97mm 10000 psi			Super Duplex
3	4	Steel Tube	1 1/2" x 4.4 mm 10000 psi			Super Duplex
5	3	Intemediate Conduit				PVC
6	2	Outer Conduit				PVC
1	1	Outer Sheathing,				PE
TK/PC Ant./Qn. Best.nr./Purch.No.	Pos. nr. PT.NO	Navn / Type Name / Type	Dimensjon Dimension	Kg/stk. Kg/each	Referanse Reference	Materiale Material

Additional Information/Notes

Date 23.02.2005	Drawn PHG	Checked	Approved

Reason for issue: Issued for IDC

Title: MC-920 POWER HUB
DYNAMIC SPIDERMAN&VORTEX
BASE CASE

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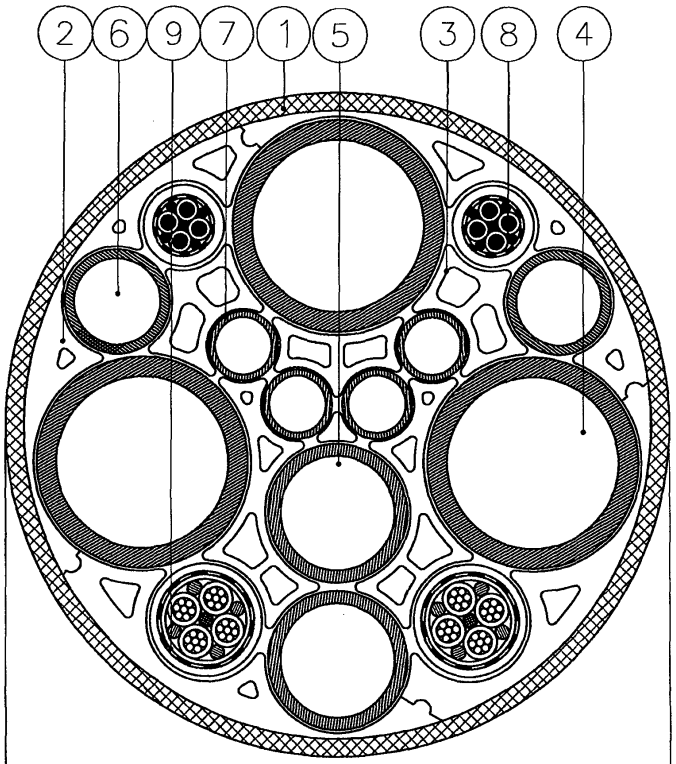
CAD Ref. Autocad | Scale 1:1 | Size A3

Drawing no. 11-MB0261-00 | Rev.no. A | Port no. | Sheet No. 1 / 1

Kværner Oilfield Products a.s
Prof. Kohts vei 8,P.O. Box 84, N-1325 Lysaker Norway

KVÆRNER™



Typ. Ø147mm

TECHNICAL DATA

Umbilical weight in air, empty:	281 N/m
Umbilical weight in air, fluid filled:	336 N/m
Umbilical weight in water, fluid filled:	165 N/m
Design tension capacity of umbilical:	1016 kN
Breaking strenght of umbilical:	1969 kN

2	9	Electric Cable	16mm2 TSΩ OD=23 mm			
2	8	Electric Cable	6mm2 TSΩ OD=18 mm			
4	7	Steel Tube	1/2" x 1.13 mm 10000 psi			Super Duplex
2	6	Steel Tube	3/4" x 1.84 mm 10000 psi			Super Duplex
2	5	Steel Tube	1" x 2.61 mm 10000 psi			Super Duplex
3	4	Steel Tube	1 1/2" x 3.95 mm 10000 psi			Super Duplex
5	3	Intemediate Conduit				PVC
4	2	Outer Conduit				PVC
1	1	Outer Sheathing,				PE
TK/PC Best.nr	Ant./Qty. Purch.No	Pos. n. P.T.NO	Navn / Type Name / Type	Dimensjon Dimension	Kg/stk. Kg/each	Referanse Reference	Materiale Material

Additional Information/Notes

Date 24.02.2005 | Drawn PHG | Checked | Approved

Reason for issue: Issued for IDC

Title: MC-920 POWER HUB SPIDERMAN & VORTEX STATIC & EXTENSION

Drawing no. 11-MB0262-00 | Rev.no. A | Port no.

CAD Ref. Autocad | Scale 1:1 | Size A3 | Sheet No. 1 / 1

Kværner Oilfield Products a.s
Prof. Kohts vei 8,P.O. Box 94, N-1325 Lysaker Norway

KVÆRNER™

ANADARKO PETROLEUM CORPORATION

Attachment I

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

VIA CERTIFIED MAIL – RETURN RECEIPT

April 4, 2005

Marathon Oil Company
5555 San Felipe
Houston, TX 77056

ATTN: Mike Koenig

RE: Application for a 10″ Bulk Gas Right-of-Way Pipeline and associated umbilical to be Installed in and/or Through Block 664 DeSoto Canyon Area, OCS Federal Waters, Gulf of Mexico, Offshore

Mr. Koenig:

In accordance with 30 CFR, Part 250.1010(c), Anadarko Petroleum Corporation hereby gives notice we have made application with the Minerals Management Service to install the referenced 10″ bulk gas right-of-way pipeline with associated umbilical. The proposed pipeline crosses Marathon's DeSoto Canyon Area Block 664 as shown on the attached application.

We hereby request a letter of no objection to this proposal. Please send your response to my attention at the address above. I can be reached at (832) 636-8758 if you have any questions. Your prompt response would be greatly appreciated.

Sincerely,

Susan Hathcock

Susan Hathcock
Supervisor, Regulatory & Environmental

SH:sj

Enclosures

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

VIA CERTIFIED MAIL – RETURN RECEIPT

April 4, 2005

Dominion Exploration and Production, Inc.
1450 Poydras Street
New Orleans, LA 70112-6000

ATTN: Mitch Ackal

RE: Application for a 10" Bulk Gas Right-of-Way Pipeline and associated umbilical to be Installed in and/or Through Blocks 707 and 751 DeSoto Canyon Area, OCS Federal Waters, Gulf of Mexico, Offshore

Mr. Ackal:

In accordance with 30 CFR, Part 250.1010(c), Anadarko Petroleum Corporation hereby gives notice we have made application with the Minerals Management Service to install the referenced 10" bulk gas right-of-way pipeline with associated umbilical. The proposed pipeline crosses Dominion's DeSoto Canyon Area Blocks 707 and 751, as shown on the attached application.

We hereby request a letter of no objection to this proposal. Please send your response to my attention at the address above. I can be reached at (832) 636-8758 if you have any questions. Your prompt response would be greatly appreciated.

Sincerely,

Susan Hathcock
Supervisor, Regulatory & Environmental

SH:sj

Enclosures

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

VIA CERTIFIED MAIL – RETURN RECEIPT

April 4, 2005

Murphy Exploration & Production Company – USA
131 South Robertson
New Orleans, LA 70112

ATTN: Steve Jones

RE: Application for a 10" Bulk Gas Right-of-Way Pipeline and associated umbilical to be Installed in and/or Through Blocks 793 and 794 DeSoto Canyon Area, and Block 921 Mississippi Canyon Area, OCS Federal Waters, Gulf of Mexico, Offshore

Mr. Jones:

In accordance with 30 CFR, Part 250.1010(c), Anadarko Petroleum Corporation hereby gives notice we have made application with the Minerals Management Service to install the referenced 10" bulk gas right-of-way pipeline with associated umbilical. The proposed pipeline crosses Murphy's DeSoto Canyon Area Blocks 793 and 794, and Mississippi Canyon 921, as shown on the attached application.

We hereby request a letter of no objection to this proposal. Please send your response to my attention at the address above. I can be reached at (832) 636-8758 if you have any questions. Your prompt response would be greatly appreciated.

Sincerely,

Susan Hathcock
Supervisor, Regulatory & Environmental

SH:sj

Enclosures

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

VIA CERTIFIED MAIL – RETURN RECEIPT

April 4, 2005

Exxon Mobil
222 Benmar
Houston TX 77060

ATTN: Byron Morris

RE: Application for a 10" Bulk Gas Right-of-Way Pipeline and associated umbilical to be Installed in and/or Through Block 837 DeSoto Canyon Area, OCS Federal Waters, Gulf of Mexico, Offshore

Mr. Morris:

In accordance with 30 CFR, Part 250.1010(c), Anadarko Petroleum Corporation hereby gives notice we have made application with the Minerals Management Service to install the referenced 10" bulk gas right-of-way pipeline with associated umbilical. The proposed pipeline crosses Mobil's DeSoto Canyon Area Block 837, as shown on the attached application.

We hereby request a letter of no objection to this proposal. Please send your response to my attention at the address above. I can be reached at (832) 636-8758 if you have any questions. Your prompt response would be greatly appreciated.

Sincerely,

Susan Hathcock

Susan Hathcock
Supervisor, Regulatory & Environmental

SH:sj

Enclosures

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

VIA CERTIFIED MAIL – RETURN RECEIPT

April 4, 2005

Total E&P USA, Inc.
One Memorial City Plaza
800 Gessner Street, Suite 700
Houston, TX 77024

ATTN: Mark Gregory

RE: Application for a 10" Bulk Gas Right-of-Way Pipeline and associated umbilical to be Installed in and/or Through Block 876 Mississippi Canyon Area, OCS Federal Waters, Gulf of Mexico, Offshore

Mr. Gregory:

In accordance with 30 CFR, Part 250.1010(c), Anadarko Petroleum Corporation hereby gives notice we have made application with the Minerals Management Service to install the referenced 10" bulk gas right-of-way pipeline with associated umbilical. The proposed pipeline crosses Total E&P's Mississippi Canyon Area Block 876 as shown on the attached application.

We hereby request a letter of no objection to this proposal. Please send your response to my attention at the address above. I can be reached at (832) 636-8758 if you have any questions. Your prompt response would be greatly appreciated.

Sincerely,

Susan Hathcock
Supervisor, Regulatory & Environmental

SH:sj

Enclosures

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

VIA CERTIFIED MAIL – RETURN RECEIPT

April 4, 2005

BHP Billiton Petroleum (Deepwater), Inc.
1360 Post Oak Boulevard, Suite 150
Houston, TX 77056-3020

ATTN: Scott Cornwell

RE: Application for a 10" Bulk Gas Right-of-Way Pipeline and associated umbilical to be Installed in and/or Through Block 833 Mississippi Canyon Area, OCS Federal Waters, Gulf of Mexico, Offshore

Mr. Cornwell:

In accordance with 30 CFR, Part 250.1010(c), Anadarko Petroleum Corporation hereby gives notice we have made application with the Minerals Management Service to install the referenced 10" bulk gas right-of-way pipeline with associated umbilical. The proposed pipeline crosses BHP Billiton's Mississippi Canyon Area Block 833 as shown on the attached application.

We hereby request a letter of no objection to this proposal. Please send your response to my attention at the address above. I can be reached at (832) 636-8758 if you have any questions. Your prompt response would be greatly appreciated.

Sincerely,

Susan Hathcock

Susan Hathcock
Supervisor, Regulatory & Environmental

SH:sj

Enclosures

ANADARKO PETROLEUM CORPORATION

Attachment J

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

April 4, 2005

Ms. Lynn Griffin
Coastal Program Administrator
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Stop 47
Tallahassee, FL 32399-3000

RE: CZM Consistency Certification
10" Bulk Gas Pipeline and Associated Umbilical Right-of-Way Application
From Desoto Canyon Block 621 (Spiderman) Well No. 1 PLET to Mississippi Canyon Block 920 Floating Production Platform (Independence Hub)

Gentlemen:

Enclosed are seven (7) copies of Anadarko Petroleum Corporation's application to the Minerals Management Service for an 10" bulk gas pipeline right-of-way to be installed in and/or through Desoto Canyon Blocks 621, 620, 664, 708, 752, 751, 795, 794, 793, and 837 and Mississippi Canyon Blocks 877, 876, 921, and 920. The associated umbilical is to be installed in and/or through Desoto Canyon Blocks 621, 620, 664, 708, 707, 751, 750, 749, and 793, and Mississippi Canyon Blocks 833, 877, 876, and 920. The onshore support base for installation of the pipeline is Fourchon, Louisiana.

If you should have any questions, please call me at 832/636-8758.

Sincerely,

Susan Hathcock

Susan Hathcock
Regulatory & Environmental Coordinator

SH/me

Enclosures (1)

CONSISTENCY CERTIFICATION

Anadarko Petroleum Corporation's Certification of Consistency with the State of Florida Coastal Management Program

INTRODUCTION

This Consistency Certification is an evaluation by Anadarko Petroleum Corporation (APC) of its proposed right-of-way (ROW) pipeline between APC's proposed production subsea facility in Desoto Canyon Area Block 621 and the Independence Hub in Mississippi Canyon Block 920 for any reasonably foreseeable coastal effects on the land, water uses, or natural resources of the coastal zone of Florida, pursuant to the enforceable policies of the Florida Coastal Management Program (FCMP).

APC plans to lay a pipeline and an associated umbilical between its subsea production facility in Desoto Canyon Block 621 and the Independence Hub in Mississippi Canyon Block 920. The pipeline is a 10-inch west flow pipeline. The activities proposed in the ROW pipeline application will occur in outer continental shelf (OCS) waters, offshore Alabama, approximately 136 miles from the nearest Florida shoreline. APC believes that the planned activities will have little, if any, effect beyond the area immediately adjacent to the proposed activity sites, and that the possibility of any impacts to Florida's coastal zone is remote. However, APC has undertaken this consistency evaluation and believes that the proposed activities comply with the enforceable policies of the FCMP and will be conducted in a manner consistent with this Program.

The activities will be conducted in accordance with Minerals Management Service (MMS) and U.S. Environmental Protection Agency (USEPA) regulations, applicable Notices to Lessees (NTLs), conditions in the approved permits, and lease stipulations. All required Federal permits will be obtained, and all activities will be conducted in compliance with such regulations, NTLs, conditions, and stipulations.

CONSISTENCY ANALYSIS

The FCMP is authorized by the Florida Coastal Management Act, Chapter 380, Land and Water Management, Part II, Coastal Planning and Management, of the Florida Statutes. For this consistency certification, APC has analyzed the proposed action in relation to 16 chapters of the Florida Statutes identified by the State as "core enforceable policies" having specific applicability to offshore oil and gas activity:

(1) Chapter 161 – Beach and Shore Preservation
(2) Chapter 252 – Emergency Management
(3) Chapter 253 – State Lands
(4) Chapter 258 – State Parks and Preserves
(5) Chapter 259 – Land Acquisitions for Conservation or Recreation
(6) Chapter 260 – Recreational Trails System
(7) Chapter 267 – Archives, History, and Records Management
(8) Chapter 288 – Commercial Development and Capital Improvements

(9) Chapter 370 – Saltwater Fisheries
(10) Chapter 372 – Wildlife
(11) Chapter 373 – Water Resources
(12) Chapter 375 – Outdoor Recreation and Conservation
(13) Chapter 376 – Pollution Discharge Prevention and Removal
(14) Chapter 377 – Energy Resources
(15) Chapter 403 – Environmental Control
(16) Chapter 582 – Soil and Water Conservation

1. Chapter 161 – Beach and Shore Preservation

The enforceable policies in this chapter recognize that coastal areas are among the State's most valuable natural, aesthetic, and economic resources and that they protect and provide habitat for a variety of plant and animal life. The State is required to protect beach and dune systems from imprudent activities that could weaken, damage, or destroy the integrity of the system, manage coastal sediments to reduce erosion, and restore and maintain critically eroding beaches. The State also designates coastal areas used, or likely to be used, by sea turtles for nesting and prohibits the removal of vegetative cover that binds sand. This chapter includes Part I, Regulation of Construction, Reconstruction, and Other Physical Activity; Part II, Beach and Shore Preservation Districts; and Part III, Coastal Zone Protection.

As APC will be using the existing dock and port facilities in the Port Fourchon, Louisiana area and helicopter facilities in Galliano, Louisiana during the proposed operations, there will be no new construction, dredging, or filling on Florida's lands or waters that could weaken, damage, or destroy the integrity of the system or cause erosion of beaches. In addition, oil spill impacts on Florida beaches and other coastal areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional Oil Spill Response Plan (OSRP), which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions included in APC's plan are consistent with the core policies of protecting beach and dune systems. Therefore, the proposed activities are consistent with Chapter 161.

2. Chapter 252 – Emergency Management

The enforceable policies of this chapter direct the State to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to, and reduce the impacts of natural and manmade disasters; and decrease the time and resources needed to recover from disasters. Disaster mitigation is necessary to ensure the common defense of Floridians' lives and to protect the public peace, health, and safety. The policies provide the means to assist in the prevention or mitigation of emergencies that may be caused or aggravated by the inadequate planning or regulation of facilities and land uses. State agencies are directed to keep land uses and facility construction under continuing study and identify areas that are particularly susceptible to natural or manmade catastrophic occurrences.

The proposed activities do not involve construction or operation of any facilities in the State of Florida. Therefore, a large oil spill is the only emergency that is considered relevant to this

analysis. APC has developed a Sub-Regional OSRP that outlines response actions, inspection and maintenance of response equipment, required spill response drills, governmental notification procedures, inventories of response equipment, response team organization, spill movement monitoring, and contingency plans for oil spill containment, recovery, and removal. An oil spill is highly unlikely to reach Florida waters or shorelines due to (1) the measures detailed in APC's Sub-Regional OSRP and (2) the distance from shore (approximately 136 miles). The precautions included in APC's plan are consistent with the core policies of preparing for and responding to an oil spill and reducing the vulnerability of Florida's people and resources to impacts if such a spill occurred. Therefore, the proposed activities are consistent with Chapter 252.

3. Chapter 253 – State Lands

This chapter, in part, defines State-owned and State-managed lands and grants authority to acquire and lease lands and to grant rights-of-way and easements. The enforceable policies guide the management of State-owned and sovereign submerged lands and property by the Board of Trustees of the Internal Improvement Trust Fund (Trustees). Lands acquired for preservation, conservation, and recreation serve the public interest by contributing to the public health, welfare, and economy. In carrying out the requirements of this statute, the Trustees are directed to take necessary action to fully conserve and protect State lands, maintain natural conditions, protect and enhance natural areas and ecosystems, prevent damage and depredation, and preserve archaeological and historical resources. All submerged lands are considered single-use lands to be maintained in natural condition for the propagation of fish and wildlife and public recreation. Where multiple-uses are permitted, ecosystem integrity, recreational benefits, and wildlife values are conserved and protected.

During the operations along the pipeline/umbilical route between Desoto Canyon Block 621 and Mississippi Canyon Block 920, APC will not seek to lease or acquire rights-of-way across Florida State lands. The proposed operations will be conducted offshore Alabama, and at existing dock and port facilities located in the Port Fourchon, Louisiana area and helicopter facilities at Galliano, Louisiana. There will be no pipeline construction requiring acquisition of rights-of-way or easements on Florida State lands. In addition, oil spill impacts on State-owned and managed lands are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies to fully conserve and protect State lands and other natural areas and ecosystems. Therefore, the proposed activities are consistent with Chapter 253.

4. Chapter 258 – State Parks and Preserves

State parks, aquatic preserves, and recreation areas are acquired to exemplify the State's natural values and to ensure that these values are conserved for all time. Parks and preserves are managed for the non-depleting use, enjoyment, and benefit of Floridians and visitors and to contribute to the State's tourist appeal. Aquatic preserves are recognized as having exceptional biological, aesthetic, and scientific value and are set aside for the benefit of future generations. Disruptive physical activities and polluting discharges are highly restricted in aquatic preserves. State managed wild and scenic rivers possess exceptionally remarkable and unique ecological,

fish and wildlife, and recreational values and are designated for permanent preservation and enhancement for both the present and future.

Chapter 258 specifies limitations on dredge-and-fill activities, discharges, erection of structures, and drilling for oil or gas within aquatic preserves. APC's proposed activities along the proposed pipeline and umbilical route are not within or adjacent to any State parks or aquatic preserves. Hydrostatic testing discharges for the proposed activity will be governed by the National Pollutant Discharge Elimination System (NPDES) General Permit or an Individual Permit; impacts will be localized in deep, offshore waters, and will not have any effect on State parks, aquatic preserves, and recreation areas. Finally, oil spill impacts in these coastal areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of preserving and protecting the natural resources and aesthetic values of Florida's State parks, aquatic preserves, and recreation areas. Therefore, the proposed activities are consistent with Chapter 258.

5. Chapter 259 – Land Acquisitions for Conservation or Recreation

This chapter discusses the "Land Conservation Act" and the acquisition of lands or water areas for preservation, conservation, and recreational purposes. The chapter indicates an area is of special importance to the State if it involves an endangered or natural resource in imminent danger of development, is of unique value to the State, will result in irreparable loss to the State, or will impair the State's ability to manage or protect other State-owned lands. The enforceable policies guide the acquisition and management of lands to conserve and maintain the State's unique natural resources, protect environmental quality, and provide recreation opportunities for the benefit of future generations. Florida's legislature and citizens have made a tremendous financial commitment to long-term land acquisitions that will preserve and restore unique ecosystems, habitats, water resources, and recreational lands.

APC will be using existing dock and port facilities in Port Fourchon, Louisiana and helicopter facilities in Galliano, Louisiana during the proposed activities. Therefore, there will be no new development, construction, dredging, or filling on Florida's lands or waters. In addition, hydrostatic testing discharges for the proposed activity will be governed by the NPDES General Permit or an Individual Permit; impacts will be localized in deep, offshore waters and will not have any effect on Florida lands being acquired or managed for preservation, conservation, or recreational purposes. Finally, oil spill impacts in these coastal areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of managing lands to conserve and maintain the State's unique natural resources, protect environmental quality, and provide recreation opportunities. Therefore, the proposed activities are consistent with Chapter 259.

6. Chapter 260 – Recreational Trails System

This chapter discusses the "Florida Greenways and Trails Act," and the State policies to conserve, develop, and use its natural resources for healthful and recreational purposes by the establishment of a "Florida Greenways and Trails System." The System serves to provide recreational opportunities, including, among others, canoeing, jogging, and historical and archaeological interpretation, by acquiring designated lands and waterways for open space to benefit environmentally sensitive lands and wildlife.

As APC will be using existing dock and port facilities in the Port Fourchon, Louisiana area and helicopter facilities in Galliano, Louisiana, there will be no new construction, dredging, or filling on Florida's lands or waters, and no motorized watercraft will conduct any operations within or adjacent to any defined canoe trail necessary to ensure the safe use of a water body for canoes. Therefore, the proposed activities are consistent with the core policies of Chapter 260.

7. Chapter 267 – Archives, History, and Records Management

This chapter discusses the "Florida Historical Resources Act," the State policy to locate, inventory, and evaluate historic properties, and the preservation by the Division of Historical Resources of the Department of State, of all historical property, including sunken or abandoned ships with intrinsic historical or archaeological value. The enforceable policies recognize the State's rich and unique heritage of historic resources and direct the State to locate, acquire, protect, preserve, operate, and interpret historic and archaeological resources for the benefit of current and future generations of Floridians. Objects or artifacts with intrinsic historic or archaeological value located on, or abandoned on, State-owned lands or State-owned submerged lands belong to the citizens of the State. The Act operates in conjunction with the National Historic Preservation Act of 1966 to require State and Federal agencies to consider the effect of their direct or indirect actions on historic and archaeological resources. These resources cannot be destroyed or altered unless no prudent alternative exists. Unavoidable impacts must be mitigated.

In compliance with MMS NTL 98-20, APC engaged C & C Technologies, Inc. (C&C) to evaluate 3-D seismic data in the preparation of a Shallow Hazards Report, in order to identify and assess the seafloor and shallow geologic conditions along the pipeline/umbilical route.

The blocks along the pipeline/umbilical route are not on the MMS list of blocks determined to have a high probability of either prehistoric or historical archaeological resources. Therefore, no archaeological survey or report is required under NTL 2002-G01. It is highly unlikely that objects or artifacts with intrinsic historic or archaeological value would be affected by APC's activities. Therefore, the proposed activities are consistent with the core policies of Chapter 267.

C&C delineated 77 unidentified sonar targets during the route survey. The locations of all unidentified side-scan sonar contacts as well as manmade features will be noted and avoided during the pipeline and umbilical installation.

8. Chapter 288 – Commercial Development and Capital Improvements

Chapter 288 establishes enforceable policies that promote and develop the general business, trade, and tourism components of the State economy. The policies include requirements to protect and promote the natural, coastal, historical, and cultural tourism assets of the State, foster the development of nature-based tourism and recreation, and upgrade the image of Florida as a quality destination. Natural resource-based tourism and recreational activities are critical sectors of Florida's economy. The needs of the environment must be balanced with the need for growth and economic development.

As APC will be using existing dock and port facilities in the Port Fourchon, Louisiana area and helicopter facilities in Galliano, Louisiana during the proposed operations, there will be no activities conducted in Florida that would affect the general business, trade, or tourism components of the State economy. There will be no project-associated vessel or aircraft traffic in Florida waters, and there are no plans to purchase supplies or equipment in Florida. The project area is at least 136 miles from the nearest Florida shoreline, and activities will not be visible from the coast or Florida State waters. Hydrostatic testing discharges for the proposed activity will be governed by the NPDES General Permit or an Individual Permit; impacts will be localized in deep, offshore waters and will not pollute Florida land or waters. Disposal of trash and debris into the ocean is strictly prohibited, and waste management practices required by MMS under NTL 2003-G11 and Lease Stipulation No. 4 will minimize the chance of trash or debris being lost overboard and subsequently washing up on beaches. Oil spill impacts in Florida coastal areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spilland (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of protecting the natural, coastal, historical, and cultural tourism assets of the State and maintaining the image of Florida as a quality destination. Therefore, the proposed activities are consistent with Chapter 288.

9. Chapter 370 – Saltwater Fisheries

The enforceable policies of this chapter direct the State to conserve and manage its renewable marine fishery resources through the protection and management of marine habitat and saltwater fisheries. The paramount conservation and management objective is the continuing health and abundance of the resource. Best available information must be used to manage and protect the State's marine, crustacean, shellfish, and finfish resources and to regulate the commercial and recreational use of the State's saltwater fisheries to ensure optimum sustained benefits to the people of the State.

Hydrostatic testing discharges will be in compliance with the standards imposed by the NPDES General Permit or an Individual Permit. Water quality is expected to quickly return to normal in the area after operations have been completed. Due to the low toxicity and rapid dispersion of discharges, little or no impact on water column biota is likely, including fish larvae that recruit to nearshore nursery areas.

APC's Sub-Regional OSRP outlines response actions for specific hypothetical spill events. The Sub-Regional OSRP makes provisions for the use of a dispersant by boat or aerial application, but notes that before a dispersant can be applied, Federal and State authorities must grant permission. Additional items that are addressed in the plan include provisions for inspection and maintenance of response equipment; required spill response drills; procedures for spill notification to government agencies; inventories of locally and nationally available response equipment; hierarchy of response team organization; provisions for disposal of wastes; and procedures for monitoring and predicting spill movement. If an oil spill should occur, APC's Sub-Regional OSRP addresses plans and procedures for containment, recovery, and removal. The precautions in APC's plan are consistent with the core policies of conserving and protecting marine habitat and saltwater fisheries and maintaining the continuing health and abundance of the resource. Therefore, APC's proposed activities are consistent with Chapter 370.

10. Chapter 372 – Wildlife

This chapter discusses the "Florida Endangered and Threatened Species Act" and its implementation by the Fish and Wildlife Conservation Commission to conserve and protect the fish and wildlife resources of the State, particularly those species defined as endangered or threatened. The Fish and Wildlife Conservation Commission has established a Wildlife Habitat Program, and a Conservation and Recreation Lands Program Trust Fund, for acquiring and managing lands for the conservation of fish and wildlife. The enforceable policies direct the State to conserve its diverse fish and wildlife resources. Florida has more endangered or threatened species than any other continental state; therefore, the protection of species defined as endangered or threatened is emphasized. State lands that provide habitat needed by these species shall be maintained and enhanced for their value as fish and wildlife habitat. Substances thrown, spilled, drained, or discharged into fresh waters that injure or kill fish are expressly prohibited.

As APC will be using the existing dock and port facilities in the Port Fourchon, Louisiana area and helicopter facilities in Galliano, Louisiana, there will be no new construction, dredging, or filling on Florida's lands or waters to affect wildlife habitats or recreation lands. Hydrostatic testing discharges for the proposed activity will be governed by the NPDES General Permit or an Individual Permit; impacts will be localized in deep, offshore waters and will not pollute Florida land or waters. Disposal of trash and debris into the ocean is strictly prohibited, and waste management practices required by MMS under NTL 2003-G11 and Lease Stipulation No. 4 will minimize the chance of trash or debris being lost overboard and subsequently endangering Florida wildlife. Oil spill impacts in Florida coastal areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of conserving Florida's fish and wildlife resources, including endangered or threatened species. Therefore, the proposed activities are consistent with Chapter 372.

11. Chapter 373 – Water Resources

This chapter establishes enforceable policies that guide the management and protection of water resources, water quality, and environmental quality. The policies address the conservation of surface and ground waters for full beneficial use; sustainable water management; preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians. The State manages and conserves water and related natural resources by determining whether activities will unreasonably consume water, degrade water quality, or adversely affect environmental values such as protected species habitat, recreational pursuits, and marine productivity.

As APC will be using the existing dock and port facilities in the Port Fourchon, Louisiana area and helicopter facilities in Galliano, Louisiana, there will be no usage of Florida water resources and no new construction, dredging, or filling on Florida's lands or waters to affect water quality, protected habitat, recreational pursuits, or marine productivity. Hydrostatic testing discharges for the proposed activity will be governed by the NPDES General Permit or an Individual Permit; impacts will be localized in deep, offshore waters and will not pollute Florida land or waters. In addition, oil spill impacts on Florida water resources are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of conserving surface and ground waters for full beneficial use and protecting natural resources, fish, wildlife, and public lands. Therefore, the proposed activities are consistent with Chapter 373.

12. Chapter 375 – Outdoor Recreation and Conservation

This chapter discusses the "Outdoor Recreation and Conservation Act of 1963" and the responsibility of the Florida Department of Environmental Protection (FDEP) to implement a comprehensive outdoor recreation plan in cooperation with the Fish and Wildlife Conservation Commission and the water management districts. The FDEP participates in the land and water conservation fund program to acquire lands and water areas for outdoor recreation, natural resource conservation, wildlife and forestry management, and water conservation and control. The Act also empowers the Fish and Wildlife Conservation Commission to regulate motor vehicle access and traffic control on public lands.

APC will be using the existing dock and port facilities in the Port Fourchon, Louisiana area and helicopter facilities in Galliano, Louisiana. Therefore, there will be no new construction, dredging, or filling on Florida's lands or waters, and no new vehicle traffic on public lands. In addition, oil spill impacts on Florida conservation, recreation, or resource areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of preserving Florida's lands and water areas for outdoor recreation, conservation, and wildlife management. Therefore, the proposed activities are consistent with Chapter 375.

13. Chapter 376 – Pollution Discharge Prevention and Removal

Chapter 376 declares that the preservation of the seacoast as a source of public and private recreation and the preservation of water and certain lands are matters of the highest urgency and priority and shall be accomplished by maintaining surface and ground water, coastal waters, estuaries, tidal flats, beaches, and public lands adjoining the seacoast in as close to a pristine condition as possible. The discharge of pollutants into or upon any coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoast of the State is declared to be inimical to the paramount interests of the State and is prohibited. The statute provides for hazards and threats of danger and damages resulting from any pollutant discharge to be evaluated, requires the prompt containment and removal of pollution, provides penalties for violations, and ensures the prompt payment of reasonable damages from a discharge. Portions of Chapter 376 serve as a complement to the national contingency plan portions of the Federal Water Pollution Control Act.

APC has prepared a Sub-Regional OSRP as required for the Eastern Planning Area, which must be consistent with the National Contingency Plan, and with the Oil Pollution Act of 1990 (OPA), in order to obtain MMS approval. As APC will be using the existing dock and port facilities in the Port Fourchon, Louisiana area, there will be no transfers between vessels and Florida onshore facilities. As to transfers between offshore facilities and vessels, APC's Sub-Regional OSRP outlines response actions, inspection and maintenance of response equipment, required spill response drills, governmental notification procedures, inventories of response equipment, response team organization, spill movement monitoring, and contingency plans for oil spill containment, recovery, and removal. The precautions in APC's plan are consistent with the core policies of preventing unauthorized pollutant discharges and maintaining surface and ground water, coastal waters, estuaries, tidal flats, beaches, and public lands in as close to a pristine condition as possible. Therefore, the proposed activities are consistent with Chapter 376.

14. Chapter 377 – Energy Resources

The State's policy is to conserve and control the oil and gas resources in the State, including products made from these resources, and to safeguard the health, property, and welfare of Floridians. To accomplish this, Chapter 377 addresses the regulation, planning, and development of the energy resources of the State. The FDEP is authorized to regulate all phases of exploration, drilling, and production of oil, gas, and other petroleum products in the State. This chapter describes the permitting requirements and criteria necessary to drill for and develop oil and gas. FDEP rules ensure that all precautions are taken to prevent the spillage of oil or any other pollutant in all phases of extraction and transportation.

The State explicitly prohibits pollution resulting from drilling and production activities. No person drilling for or producing oil, gas, or other petroleum products may pollute land or water; damage aquatic or marine life, wildlife, birds, or public or private property; or allow any extraneous matter to enter or damage any mineral or freshwater-bearing formation. Penalties for violations of any provisions of this chapter are detailed.

The proposed project does not involve any activities in Florida that are regulated by the FDEP. Hydrostatic testing discharges will be in accordance with the NPDES General Permit or an

Individual Permit; impacts will be localized in deep, offshore waters and will not pollute Florida land or waters, damage wildlife or public or private property, or contaminate any mineral or freshwater-bearing formation. Disposal of trash and debris into the ocean is strictly prohibited, and waste management practices required by MMS under NTL 2003-G11 and Lease Stipulation No. 4 will minimize the chance of trash or debris being lost overboard and subsequently washing up on Florida shorelines or waters. Oil spill impacts in Florida coastal areas are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of safeguarding the health, property, and welfare of Floridians and preventing pollution during offshore activities. Therefore, the proposed activities are consistent with Chapter 377.

15. Chapter 403 – Environmental Control

Chapter 403 establishes enforceable policies that guide environmental control efforts by conserving State waters, protecting and improving water quality for consumption and for the propagation of fish and wildlife, and maintaining air quality to protect human health and plant and animal life. Statutory provisions are enacted to protect the health, peace, safety, and general welfare of the people of the State. The statute provides wide-ranging authority to address various environmental control concerns, including air and water pollution, resource recovery and management, solid and hazardous waste management, drinking water protection, pollution prevention, ecosystem management, and natural gas transmission pipeline siting. Chapter 403 declares that pollution of the air and waters is a menace to public health and is harmful to wildlife, fish, and other aquatic life; that the policy of the State is to conserve, maintain, and improve its waters and air quality, and to develop a comprehensive program for its prevention, abatement, and control of pollution by establishing ambient air and water quality standards.

Projected air emissions for the proposed activities fall well below allowable exemption levels and will not result in onshore ambient air concentrations above significant levels as prescribed in the regulations. Therefore, the proposed activities are consistent with the core policies of Chapter 403.

Hydrostatic testing discharges shall be in compliance with the standards imposed by the USEPA Region IV NPDES General Permit or an Individual Permit. Discharges from project activities may temporarily affect water quality in the immediate vicinity of the operations, but would not affect water quality or wildlife in Florida State waters. Pollution of coastal waters by an oil spill is highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill; and (2) the distance from shore (approximately 136 miles). The precautions in APC's plan are consistent with the core policies of conserving State waters and protecting water and air quality. Therefore, the proposed activities are consistent with Chapter 403.

16. Chapter 582 – Soil and Water Conservation

The enforceable policies in this chapter require the conservation, development, and use of soil and water resources to preserve natural resources and to control and prevent soil erosion. Soil stabilization preserves State and private lands, protects wildlife habitat, maintains water quality, assists in the maintenance of navigable waterways, and prevents the impairment of dams and reservoirs.

The proposed operations will be conducted offshore Alabama, and at APC's existing dock and port facilities located in the Port Fourchon, Louisiana area and helicopter facilities at Galliano, Louisiana. Routine operations will not involve any construction or other activities in Florida that could result in soil erosion. Oil spill impacts on Florida soils are highly unlikely due to (1) the measures detailed in APC's Sub-Regional OSRP, which addresses procedures for containment, recovery, and removal of an oil spill and (2) the distance from shore (approximately 136 miles). Any cleanup or recovery activities in Florida would be conducted using applicable best management practices to minimize soil erosion. The precautions in APC's plan are consistent with the core policies of preserving Florida's natural resources and preventing soil erosion. Therefore, the proposed activities are consistent with Chapter 582.

CERTIFICATION

The proposed activity complies with the enforceable policies of Florida's approved Coastal Management Program and will be conducted in a manner consistent with such Program.

ANADARKO PETROLEUM CORPORATION

L. Susan Hathcock

L. Susan Hathcock
Regulatory & Environmental Coordinator
April 1, 2005

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

April 4, 2005

Coastal Management Division
ATTN: OCS Plans
P. O. Box 44487
Baton Rouge, LA 70804-4487

RE: CZM Consistency Certification
10" Bulk Gas Pipeline and Associated Umbilical Right-of-Way Application
From Desoto Canyon Block 621 (Spiderman) Well No. 1 PLET to Mississippi Canyon Block 920 Floating Production Platform (Independence Hub)

Gentlemen:

Enclosed is a copy of Anadarko Petroleum Corporation's application to the Minerals Management Service for an 10" bulk gas pipeline right-of-way to be installed in and/or through Desoto Canyon Blocks 621, 620, 664, 708, 752, 751, 795, 794, 793, and 837 and Mississippi Canyon Blocks 877, 876, 921, and 920. The associated umbilical is to be installed in and/or through Desoto Canyon Blocks 621, 620, 664, 708, 707, 751, 750, 749, and 793, and Mississippi Canyon Blocks 833, 877, 876, and 920. The onshore support base for installation of the pipeline is Fourchon, Louisiana. Our check in the amount of $300.00 is enclosed covering the processing fee for a federal consistency determination for this right-of-way.

If you should have any questions, please call me at 832/636-8758.

Sincerely,

Susan Hathcock

Susan Hathcock
Regulatory & Environmental Coordinator

SH/me

Enclosures (2)

COASTAL ZONE MANAGEMENT PROGRAM
CONSISTENCY CERTIFICATION

From Desoto Canyon Block 621 Well No. 1 PLET

To Mississippi Canyon Block 920 Floating Production Platform

25.51
Length (miles)

The proposed activities described in detail in this right-of-way pipeline application comply with the enforceable policies of Louisiana's approved Coastal Management Program(s) and will be conducted in a manner consistent with such Program(s).

Anadarko Petroleum Corporation
Right-of-Way Applicant

T. Lucas Hathcock
Certifying Official

4/4/05
Date

ANADARKO PETROLEUM CORPORATION

TEL: (832) 636-1000
P.O. BOX 1330 • HOUSTON, TX 77251-1330

Anadarko

April 4, 2005

Mississippi Department of Marine Resources
Coastal Ecology Office
ATTN: Mike Walker
1141 Bayview Avenue, Suite 101
Biloxi, MS 39530

RE: CZM Consistency Certification
10" Bulk Gas Pipeline and Associated Umbilical Right-of-Way Application
From Desoto Canyon Block 621 (Spiderman) Well No. 1 PLET to Mississippi Canyon Block 920 Floating Production Platform (Independence Hub)

Mr. Walker:

Enclosed is a copy of Anadarko Petroleum Corporation's application to the Minerals Management Service for an 10" bulk gas pipeline right-of-way to be installed in and/or through Desoto Canyon Blocks 621, 620, 664, 708, 752, 751, 795, 794, 793, and 837 and Mississippi Canyon Blocks 877, 876, 921, and 920. The associated umbilical is to be installed in and/or through Desoto Canyon Blocks 621, 620, 664, 708, 707, 751, 750, 749, and 793, and Mississippi Canyon Blocks 833, 877, 876, and 920. The onshore support base for installation of the pipeline is Fourchon, Louisiana.

If you should have any questions, please call me at 832/636-8758.

Sincerely,

Susan Hathcock

Susan Hathcock
Regulatory & Environmental Coordinator

SH/me

Enclosures (1)

COASTAL ZONE MANAGEMENT PROGRAM
CONSISTENCY CERTIFICATION

From Desoto Canyon Block 621 Well No. 1 PLET

To Mississippi Canyon Block 920 Floating Production Platform

25.51
Length (miles)

The proposed activities described in detail in this right-of-way pipeline application comply with the enforceable policies of Mississippi's approved Coastal Management Program(s) and will be conducted in a manner consistent with such Program(s).

Anadarko Petroleum Corporation
Right-of-Way Applicant

Susan Hathcock
Certifying Official

4/4/05
Date

Enclosure 1

	A	B	C	D	E	F	G	H
1	**Right-of-Way Pipeline Application**			Segment No.:				
2								
3	Instructions:							
4	1. Complete one form for the pipeline segment submitted in your application. A ROW							
5	application may only contain one proposed pipeline segment.							
6	2. Complete one form for each unattached umbilical submitted in your application.							
7	3. Provide response/data for all items that are shaded. Other items as required.							
8	4. Provide one original and three identical copies of all application materials.							
9								
10	**Pipeline Route Data**							
11	List all blocks and lease numbers contacted by the pipeline. (Insert rows as needed)	**Area**	**Block No.**	**Lease No.**	**Operator**			
12	(If block is unleased, so note.)	DC	621	OCS-G-23529	Anadarko Petroleum Corporation			
13		DC	620	OCS-G-23528	Anadarko Petroleum Corporation			
14		DC	664	OCS-G-23532	Marathon Oil Company			
15		DC	708	Open				
16		DC	752	Open				
17		DC	751	OCS-G-25862	Dominion Exploration & Production, Inc.			
18		DC	795	Open				
19		DC	794	OCS-G-10470	Murphy Exploration & Production Company, USA			
20		DC	793	OCS-G-10469	Murphy Exploration & Production Company, USA			
21		DC	837	OCS-G-10474	Mobil Oil Exploration & Producting Southeast Inc.			
22		MC	876	OCS-G-21191	Total E&P USA, Inc.			
23		MC	877	Open				
24		MC	921	OCS-G-20010	Murphy Exploration & Production Company, USA			
25		MC	920	Open				
26	**Contact Information**							
27	Applicant company name (ROW permittee/holder)	Anadarko Petroleum Corporation						
28	Name of company representative signing application	Richard E. Stites						
29	Phone No.	832-636-3839						
30	Fax	832-/636-8297						
31	E-Mail	dick_stites@anadarko.com						
32	Mailing address	1201 Lake Robbins Drive						
33		The Woodlands, TX 77380						
34	ROW holder's MMS code (five digit)	00981						
35								
36	Designated operator company name	Anadarko Petroleum Corporation						
37	Phone No.	832-636-8758						
38	Fax	832-636-8208						
39	E-Mail	susan_hathcock@anadarko.com						
40	Mailing address	1201 Lake Robbins Drive						
41		The Woodlands, TX 77380						
42	Operator's MMS code (five digit)	00981						
43								
44	Regulatory contact (Name)	Susan Hathcock						
45	Company name	Anadarko Petroleum Corporation						
46	Phone No.	832-636-8758						
47	Fax	832-636-8208						
48	E-Mail	susan_hathcock@anadarko.com						
49								

	A	B	C	D	E	F	G	H
50	Technical contact (Name)	Dwayne Doiron						
51	Company name	Cypress Consulting						
52	Phone No.	713-816-0247						
53	Fax	281-955-2664						
54	E-Mail	doirond@cc-lc.net						
55								
56	**Fees**							
57	Application fee of $2,350 enclosed? (Required)	Yes						
58	Rental fee of $15 per mile or every fraction thereof enclosed? (Required)	Yes						
59	Right-of-way length (miles) e.g., 7.54	25.51						
60	Total check amount	$4,300.00						
61	Check date	3/31/2005						
62	Check number	748464						
63	Name of financial institution upon which check is written	Mellon Bank N.A.						
64								
65	**Basic Pipeline Data**							
66	Line service, e.g., oil, gas, bulk gas, lift, injection, service, etc.	Gas						
67	Total pipeline length (feet) - excluding riser(s)	134,690						
68	Length of pipeline in Federal waters (feet)	NA						
69	Length of pipeline in State waters (feet/NA)	Yes						
70	Pipeline designed for bi-directional flow? (Y/N)	Yes						
71	Alternate line service, e.g., oil, gas, bulk gas, lift, injection, service, etc.	Yes						
72	Supervisor Control and Data Acquisition system for leak detection installed? (Y/N)	PPA						
73	If yes, system type, e.g., over/short, pressure point analysis, volumetric, etc.							
74								
75	**Pipeline Origin**							
76	Type Facility, e.g., Platform, Well, Subsea Well, PLEM, Subsea Manifold, Subsea Tie-in	Subsea Manifold						
77	Number/Identifier, e.g. A, 1, 4-B, 13336 (Number/Segment Number/Identifier/NA)	NA						
78	Manned platform? (Y/N/NA)	No						
79	Area	Desoto Canyon						
80	Block	621						
81	OCS Lease	OCS-G-23529						
82	Pig launcher? (Y/N)	No						
83	System designed for "smart" pigs? (Y/N/NA)	No						
84								
85	**Pipeline Destination**							
86	Type Facility, e.g., Platform, Well, Subsea Well, PLEM, Subsea Manifold, Subsea Tie-in	Platform						
87	Number/Identifier, e.g. A, 1, 4-B (Number/Segment Number/Identifier/NA)	Proposed						
88	Manned platform? (Y/N/NA)	Yes						
89	Area	Mississippi Canyon						
90	Block	920						
91	OCS Lease	Open						
92	Pig receiver? (Y/N/NA)	No						
93								
94	**Pipeline Appurtenances**							
95	Manifold/subsea templates/etc. along pipeline other than at origin or destination? (Y/N)	No						
96	If yes, specify appurtenant type							
97	If yes, specify appurtenant area and block location, e.g., MP 134							
98								
99	**Construction/Air Quality Data**							
100	Pipeline installation method, e.g., lay barge, DP vessel, jack up	DP Vessel						
101	Maximum anchor spread (feet or NA)	NA						

	A	B	C	D	E	F	G	H
102	Onshore Facility Location	Fourchon						
103	Pipeline construction duration (days)	21						
104	Construction start date (projected)	11/1/2005						
105								
106	**Pipeline product data**							
107	Design maximum flow rate of gas (mmcf/d)	250						
108	Gravity of gas (Air = 1.0)	0.65						
109	Design maximum flow rate of oil/condensate (b/d)	NA						
110	API or specific gravity of oil/condensate	35						
111	H2S concentration (ppm)	0						
112	Maximum anticipated pipeline temperature (degrees F)	140						
113	CO_2 concentration (ppm)							
114	Inhibition program planned? (Y/N)							
115	Hydrates anticipated (Y/N)							
116	Paraffin anticipated (Y/N)							
117								
118	**Submerged Component Design Data**	**Diameter 1**	**Diameter 2**	**Diameter 3**				
119	Outside diameter (inches)	10 3/4						
120	Wall thickness (inches)	0.862						
121	Grade	API-5L X65						
122	Hydrostatic test pressure (psig)	9100 (refer to application)						
123	HTP duration (hours) (Must be equal to or greater than eight)	8						
124	Type external corrosion coating	Fusion Bonded Epoxy						
125	Corrosion coating thickness (mils)	18						
126	Concrete coating density (pcf)	NA						
127	Coating thickness (inches)	NA						
128	Type internal corrosion coating (Type/NA)	NA						
129	Coating thickness (mils) (Mils/NA)	NA						
130	Bare pipe specific gravity	2.26						
131	Weighted pipe specific gravity	2.26						
132	Pipe is non-standard? (Y/N)	NA						
133	If yes, note type, e.g., coil tubing, pipe-in-pipe, flexible pipe, other (specify) (Type/NA)							
134								
135	**Cathodic Protection Design Data**							
136	Design Type, e.g., bracelet anodes, anode sleds	Bracelet Anodes						
137	Anode Type, e.g. Galvalum III, Aluminum, etc.	Aluminum						
138	Net anode weight (pounds)	91						
139	Spacing (feet)	480						
140	Number of anodes	291						
141	Anode life (years)	91.6						
142	Designs for systems other than bracelet anodes required. (Attached/NA)	NA						
143								
144								
145	**Departing Riser Design Data**	**Diameter 1**	**Diameter 2**	**Diameter 3**				
146	Outside diameter (inches)	NA						
147	Wall thickness (inches)	NA						
148	Grade	NA						
149	Hydrostatic test pressure (psig)	NA						
150	HTP duration (hours) (Must be equal to or greater than eight)	Na						
151	splash zone=S.Z.	**Below S.Z.**	**In S.Z.**	**Above S.Z.**				
152	Type external corrosion coating	NA						
153	Coating thickness (mils or inches)	NA						

	A	B	C	D	E	F	G	H
154	Type internal corrosion coating (Type/NA)	NA						
155	Coating thickness (mils) (Mils/NA)	NA						
156	Riser guard design attached? Required if origin is caisson or platform (Y/NA)	NA						
157	Catenary riser? (Y/N)	NA						
158	If yes, VIV reduction, installation tension, anchoring, tension monitoring attached? (Y/NA)	NA						
159								
160	**Receiving Riser Design Data**	**Diameter 1**	**Diameter 2**	**Diameter 3**				
161	Outside diameter (inches)	10 3/4						
162	Wall thickness (inches)	1.18						
163	Grade	API-5L X65						
164	Hydrostatic test pressure (psig)	9100 (refer to application)						
165	HTP duration (hours) (Must be equal to or greater than eight)	8						
166	splash zone=S.Z.	**Below S.Z.**	**In S.Z.**	**Above S.Z.**				
167	Type external corrosion coating	Fusion Bonded Epoxy						
168	Coating thickness (mils or inches)	18						
169	Type internal corrosion coating (Type/NA)	NA						
170	Coating thickness (mils) (Mils/NA)	NA						
171	Riser guard design attached? Required if origin is caisson or platform (Y/NA)	NA						
172	Catenary riser? (Y/N)	Yes						
173	If yes, VIV reduction, installation tension, anchoring, tension monitoring attached? (Y/NA)	Yes						
174								
175	**Flange and Valve Data**							
176	Flange type (ANSI/API)	API						
177	Flange pressure rating (psig)	10,000						
178	Derated pressure rating (psig/NA)	10,000						
179	Valve type (ANSI/API)	API						
180	Valve pressure rating (psig)	10,000						
181	Derated pressure rating (psig/NA)	10,000						
182								
183	**Pipeline Burial Data**							
184	Buried minimum of three feet? Y/N/Self (Burial required if less than 200' water depth)	N						
185	Burial method (jet, plow, self, other(specify))	NA						
186	If self burial, provide seafloor strength in ksf. (Must be less than 0.2 ksf) (kips/NA)	NA						
187	Data supporting self burial attached? (Y/NA)	NA						
188								
189	**Miscellaneous Data**							
190	Non-discrimination in employment form attached? (Required)	Yes						
191								
192	**Oil Spill Financial Responsibility Requirement Determination**							
193	Static Pipeline Volume (Bbls.) If greater than 1,000 then WCD volume required.	14541						
194	Worst case discharge volume (Bbls.) If greater than 1,000 then OSFR required.	6						
195	Proposed Right-of-Way included under company OSFR coverage? (Yes/Pending/NA)	Yes						
196								
197	Certified plat attached? Plat is required.	Yes						
198	Diskette per NTL 98-09 attached? Diskette is required.	Yes						
199								
200	Does pipeline cross into State waters (Y/N)							
201	If yes, State permit required (Attached/Applied For/NA)	NA						
202	If yes, COE permit required (Attached/Applied For/NA)	NA						
203								
204	Minimum water depth (feet below sea level)	7913						
205	Maximum water depth (feet below sea level)	8080						

	A	B	C	D	E	F	G	H
206								
207	Water depth greater than 400 meters? (Y/N)	Yes						
208	If Yes, Chemo study required (see NTL 2000-G20) (Attached/NA)	Attached						
209								
210	Deep Water Operations Plan submitted to MMS? (See NTL 2000-N06) (Y/NA)	Pending submittal						
211	If yes, date submitted (Date/NA)							
212								
213	Pipeline to be towed to location? (Y/N)	No						
214	If yes, dragged on bottom? (Y/N/NA)	NA						
215								
216	Artificial reef in vicinity? (Y/N)	N						
217	If Yes and PL in La., PL must be > 500' away. Confirm Y/NA	NA						
218	Distance to reef (feet).	NA						
219	If Yes and PL in TX., PL must be > seven times water depth away. Confirm Y/NA	NA						
220	Distance to reef (feet).	NA						
221								
222	Hazard Report submitted? (Yes) Hazard Report is required.	Yes						
223								
224	Shallow Hazards Analysis Statement included? (Yes) SHAS is required in cover letter.	Yes						
225								
226	Umbilical associated with pipeline? (Y/N)	Yes						
227	Umbilical type, e.g., hydraulic, electric, other(specify) (Type or NA)	Electric/Hydraulic						
228	Umbilical outside diameter (inches) (Diameter or NA)	5.79						
229	Attached to pipeline? (Y/N/NA; If No, will be assigned a unique segment number)	Yes						
230	If no, separate application form attached? (Yes/NA)							
231								
232	Does pipeline contact anchorage area or fairways? (Y/N)	No						
233	If Yes, burial depth in anchorage areas or fairways consistent with COE permit? (Y/NA)	NA						
234	If yes, COE permit attached? (Y/NA/Pending)	NA						
235								
236	**Pipeline Crossing Data**							
237	Does proposed pipeline cross an existing pipeline (Y/N)	No						
238	If yes, enter noted data, adding data rows as required.	**Operator**	**Segment No.**	**Size (inches)**	**Service**	**Notified?**		
239								
240								
241								
242								
243	If yes, minimum clearance between lines must be 18". (Yes/NA)	NA						
244	If yes and < 500' water depth, must have 3' cover or concrete mats. (Confirm cover or concrete mat.)	NA						
245	If sand bags, slope is 3/1. (Confirm Yes/NA)	NA						
246	If concrete mat, specify manufacturer	NA						
247	If concrete mats, mat edges jetted below mudline. (Yes/NA)	NA						
248	Crossed pipeline operator notified? (Y/N/O O = crossed pipeline owned by applicant)	NA						
249								
250	**H_2S Contingency Plan and Modeling Data**							
251	H_2S Operations Contingency Plan attached as H_2S concentration greater than 20 ppm (Y/Pending/NA)	NA						
252	Air Dispersion Model attached as H_2S concentration greater than 500 ppm (Y/pending/NA)	NA						
253	H_2S Crossing Contingency Plan attached as crossed pipeline carries H_2S in concentrations greater than 20 ppm (Y/Pending/NA)	NA						

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254								
255	**Subsea Tie-in Data**							
256	Does pipeline tie into a subsea pipeline? (Y/N)	No						
257	Ties to existing valve or hot tap? (Identify which/NA)	NA						
258	Segment number of pipeline being tied in to (SN/NA)	NA						
259	MAOP of pipeline being tied in to (MAOP/NA)	NA						
260	If existing valve, letter of no objection from tie-in operator attached? (Yes/NA)	NA						
261	If hot tap, appurtenance application submitted to MMS? (Yes/NA)	NA						
262	Is assembly snag proofed? (Y/NA) Required if less than 500' water depth.	NA						
263	If sand bags used, slope is 3/1 (Y/NA)	NA						
264	If sand bags used, 3' coverage required (Y/NA)	NA						
265								
266	**Surface Tie-in Data**							
267	Does pipeline tie directly into another pipeline at a surface location? (Y/N)	No						
268	Segment number of pipeline being tied in to (SN/NA)	NA						
269	MAOP of pipeline being tied in to (MAOP/NA)	NA						
270								
271	**Spill Response Plan Data**							
272	Type of spill response plan (OSCP/OSRP per NTL 98-30)	OSRP						
273	Date spill plan submitted to MMS							
274	Date spill plan approved (Actual Date or "Pending")	8/10/2004						
275								
276	**Safety Schematic Information**							
277	Pressure source identified? (well, separator, pump, etc.)	Wells						
278	MSP/MAWP/SITP of source shown? (psig)	7,700						
279	Origin/destination specification breaks shown on schematic. (Y/NA)	Yes						
280	Receiving segment number noted? (Segment Number or N/A)	NA						
281	Receiving segment no. MAOP (psig) (MAOP or N/A)	NA						
282	Calculated pipeline MAOP (psig)	Varies-refer to application						
283	Operator responsibility transfer point shown? (Yes/NA)	NA						
284								
285	**Collapse Information (Deepwater Pipelines Only)**							
286	Water depth (feet)	8087						
287	External pressure (psig)	3594						
288	Collapse pressure (psig)	9937						
289	Safety factor	2.76						
290	Collapse calculations are required. (Attached/NA)	Attached						
291								
292	**Safety Design Review**							
293	**Pipeline Origin**							
294	PSHL required at departing end of pipeline (Confirm Yes)	Yes						
295	PSHL must be downstream of choke and/or flow restrictions (Confirm Yes)	Yes						
296	For a well, if MSP > MAOP, a redundant PSH and independent SDVs required (Confirm Yes)	NA						
297	For production equipment, if MSP > MAOP, a redundant PSH with independent SDV is required or a vented PSV is required (Confirm Yes/NA)	NA						
298	If bi-directional flow, SDV required (Confirm Yes/NA)	Yes						
299	If pig trap present, safety equipment can not be bypassed (Confirm True)	NA						
300	If pump on line, must be consistent with API RP 14C A7 (Confirm Yes/NA)	NA						
301	**Pipeline Destination**							
302	If production facility and uni-directional flow, SDV and FSV required (Confirm Yes/NA)	MA						
303	If production facility and bi-directional flow, SDV and PSHL required (Confirm Yes/NA)	Yes						

	A	B	C	D	E	F	G	H
304	If subsea tie-in and uni-directional flow, FSV and block valve required (Confirm Yes/NA)	NA						
305	If subsea tie-in and bi-directional flow, block valve required (Confirm Yes/NA)	MA						
306	If gas lift or water injection flowline on unmanned platform, FSV required (Confirm Yes/NA)	MA						
307	If gas lift or water injection flowline on manned platform, SDV required (Confirm Yes/NA)	MA						
308	If crossover platform (pipeline does not receive production), SDV required at boarding point and PSHL required at departing point (Confirm Yes/NA)	MA						
309	If crossover platform is non-manned and non-production, FSV required (Confirm Yes/NA)	MA						
310								
311	**Departure Data**							
312	Waiver from NTL 98-20 (buoying of hazards) requested? (Y/N)	Yes						
313	Other departures requested? (Y/N)	Yes						
314	If yes, specify.	PI 1111 For Collapse Resistance						
315								
316								
317								
318								
319								
320								
321								
322								
323								
324								
325	**Do Not Enter Data Below This Line - MMS Use Only**							
326								
327	**PIPELINE MASTER ENTRY SHEET**							
328	Name		MMS Engineer entry					
329	Date		MMS Engineer entry					
330	Segment Number		MMS Engineer entry					
331	Right-of-Way Number		MMS Engineer entry					
332	Right-of-Way Permittee							
333	Right-of-Way Permittee Code							
334	Operator	Anadarko Petroleum Corporation						
335	Operator Code	00981						
336	Approval Code	Right-of-Way						
337	Authority Code		MMS Engineer entry					
338	Pipe Size	10 3/4						
339	Product Code		MMS Engineer entry					
340								
341	ORIGIN							
342	Facility Type	Subsea Manifold						
343	Identifier	NA						
344	Area	Desoto Canyon						
345	Block	621						
346	Lease	OCS-G-23529						
347								
348	DESTINATION							
349	Facility Type	Platform						
350	Identifier	Proposed						
351	Area	Mississippi Canyon						
352	Block	920						

	A	B	C	D	E	F	G	H
353	Lease	Open						
354								
355	OCS Segment Length	134,690						
356	State + Federal Pipeline Length	Gas						
357	Cathodic Code	Aluminum						
358	Cathodic Life Time (Years)		MMS Engineer entry					
359	Minimum Water Depth (feet)	7913						
360	Maximum Water Depth (feet)	8080						
361								
362	Buried Designator Flag	N						
363	Bi-directional Flag	Yes						
364	Alternate Service	Yes						
365	Recv Segment No. (Sub-surface)	NA						
366	Recv MAOP	NA						
367	Assigned MAOP		MMS Engineer entry					
368	Pipeline Status Code	Proposed						
369	Right-of-Way Status Code	Pending						
370								
371	Comments		MMS Engineer entry					

Attachment C

UNITED STATES
DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

NONDISCRIMINATION IN EMPLOYMENT

As a condition precedent to the approval of the granting of the subject pipeline right-of-way, the grantee, Anadarko Petroleum Corporation 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:

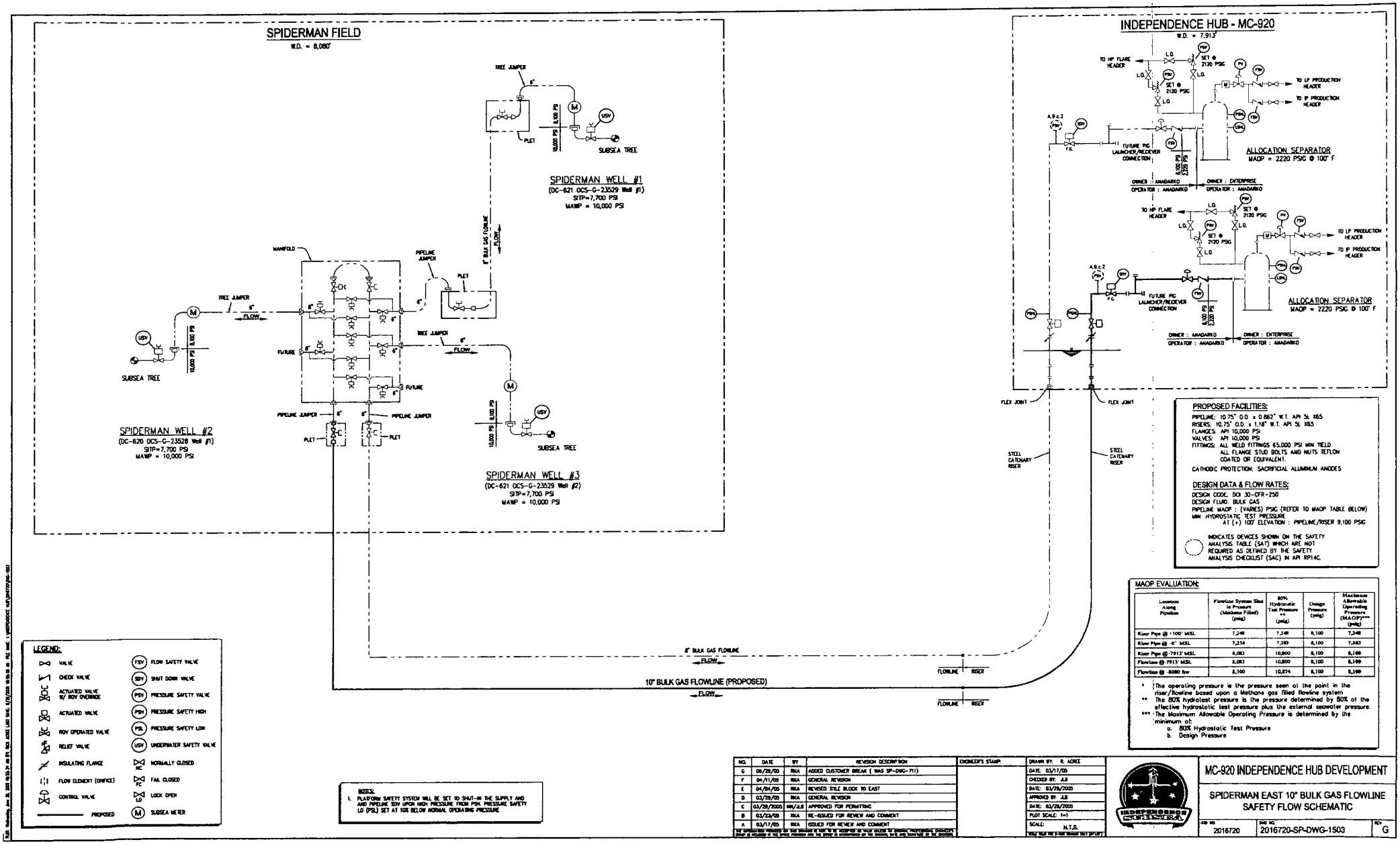
> During the performance under this grant, the grantee shall fully comply with paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended (reprinted in 41 CFR 60-1.4(a)), which are for the purpose of preventing discrimination against persons on the basis of race, color, religion,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

Anadarko Petroleum Corporation - Grantee

Richard E. Stites
Agent & Attorney-in-fact

4/4/05
Date

MICRO



PROPOSED FACILITIES:

PIPELINE: 10.75" O.D. x 0.862" W.T. API 5L X65
RISERS: 10.75" O.D. x 1.18" W.T. API 5L X65
FLANGES: API 10,000 PSI
VALVES: API 10,000 PSI
FITTINGS: ALL WELD FITTINGS 65,000 PSI MIN YIELD
ALL FLANGE STUD BOLTS AND NUTS TEFLON COATED OR EQUIVALENT.
CATHODIC PROTECTION: SACRIFICIAL ALUMINUM ANODES

DESIGN DATA & FLOW RATES:

DESIGN CODE: DOI 30-CFR-250
DESIGN FLUID: BULK GAS
PIPELINE MAOP : (VARIES) PSIG (REFER TO MAOP TABLE BELOW)
MIN HYDROSTATIC TEST PRESSURE
AT (+) 100' ELEVATION : PIPELINE/RISER 9,100 PSIG

INDICATES DEVICES SHOWN ON THE SAFETY ANALYSIS TABLE (SAT) WHICH ARE NOT REQUIRED AS DEFINED BY THE SAFETY ANALYSIS CHECKLIST (SAC) IN API RP14C.

MAOP EVALUATION:

Location Along Pipeline	Flowline System Shut in Pressure (Methane Filled) (psig)	80% Hydrostatic Test Pressure ** (psig)	Design Pressure (psig)	Maximum Allowable Operating Pressure (MAOP)*** (psig)
Riser Pipe @ +100' MSL	7,248	7,248	8,100	7,248
Riser Pipe @ -0' MSL	7,258	7,280	8,100	7,280
Riser Pipe @ -7913' MSL	8,083	10,800	8,100	8,100
Flowline @ 7913' MSL	8,083	10,800	8,100	8,100
Flowline @ -8080 fsw	8,100	10,874	8,100	8,100

* The operating pressure is the pressure seen at the point in the riser/flowline based upon a Methane gas filled flowline system
** The 80% hydrotest pressure is the pressure determined by 80% of the effective hydrostatic test pressure plus the external seawater pressure.
*** The Maximum Allowable Operating Pressure is determined by the minimum of:
a. 80% Hydrostatic Test Pressure
b. Design Pressure

LEGEND:

- VALVE
- CHECK VALVE
- ACTUATED VALVE W/ ROV OVERRIDE
- ACTUATED VALVE
- ROV OPERATED VALVE
- RELIEF VALVE
- INSULATING FLANGE
- FLOW ELEMENT (ORIFICE)
- CONTROL VALVE
- PROPOSED
- FSV FLOW SAFETY VALVE
- SDV SHUT DOWN VALVE
- PSV PRESSURE SAFETY VALVE
- PSH PRESSURE SAFETY HIGH
- PSL PRESSURE SAFETY LOW
- USV UNDERWATER SAFETY VALVE
- NC NORMALLY CLOSED
- FC FAIL CLOSED
- LO LOCK OPEN
- M SUBSEA METER

NOTES:
1. PLATFORM SAFETY SYSTEM WILL BE SET TO SHUT-IN THE SUPPLY AND AND PIPELINE SDV UPON HIGH PRESSURE FROM PSH PRESSURE SAFETY LO (PSL) SET AT 10% BELOW NORMAL OPERATING PRESSURE

NO.	DATE	BY	REVISION DESCRIPTION
G	08/28/05	RKA	ADDED CUSTOMER BREAK (WAS SP-DWG-711)
F	04/11/05	RKA	GENERAL REVISION
E	04/04/05	RKA	REVISED TITLE BLOCK TO EAST
D	03/29/05	RKA	GENERAL REVISION
C	03/28/2005	MK/JJB	APPROVED FOR PERMITTING
B	03/23/05	RKA	RE-ISSUED FOR REVIEW AND COMMENT
A	03/17/05	RKA	ISSUED FOR REVIEW AND COMMENT

ENGINEER'S STAMP

DRAWN BY: R. ACREE
DATE: 03/17/05
CHECKED BY: JJB
DATE: 03/28/2005
APPROVED BY: JJB
DATE: 03/28/2005
PLOT SCALE: 1=1
SCALE: N.T.S.

MC-920 INDEPENDENCE HUB DEVELOPMENT

SPIDERMAN EAST 10" BULK GAS FLOWLINE SAFETY FLOW SCHEMATIC

JOB NO. 2016720
DWG NO. 2016720-SP-DWG-1503
REV. G