

RECEIVED

SUBMIT IN TRIPLICATE\*  
(Other instructions on  
reverse side)

C-SF  
30-015-25839  
Form approved.  
Budget Bureau No. 1004-0136  
Expires August 31, 1985

DEC 04 '87  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

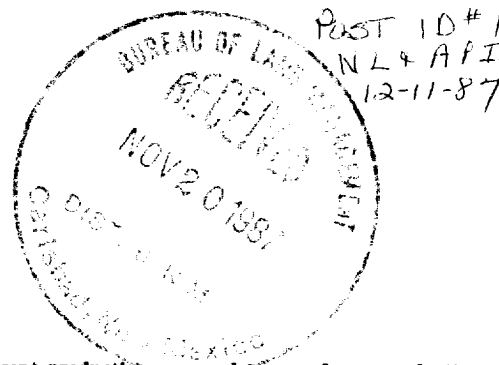
1a. TYPE OF WORK <b>ARTESIAN, OFFICE</b>			5. LEASE DESIGNATION AND SERIAL NO. NM-28096		
b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME NA		
DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>			7. UNIT AGREEMENT NAME NA		
2. NAME OF OPERATOR ARCO Oil and Gas Co.			8. FARM OR LEASE NAME Swearingen Deep 14 Fed.		
3. ADDRESS OF OPERATOR Box 1610, Midland, TX 79702			9. WELL NO. 1		
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface 660' FSL & 1980' FWL (Unit Letter N) At proposed prod. zone Same as above.			10. FIELD AND POOL, OR WILDCAT Wildcat <u>Bone Springs</u>		
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 10 miles Southeast of Loco Hills, New Mexico			11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 14-18S-31E		
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. 660' FSL (Also to nearest drig. unit line, if any)		16. NO. OF ACRES IN LEASE 360	17. NO. OF ACRES ASSIGNED TO THIS WELL 40		12. COUNTY OR PARISH Eddy
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. NA		19. PROPOSED DEPTH 9200'	20. ROTARY OR CABLE TOOLS Rotary		13. STATE NM
21. ELEVATIONS (Show whether DF, RT, GR, etc.) GR 3694.2' (ungraded)					22. APPROX. DATE WORK WILL START* December 1, 1987

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	54.5# K-55	400'	450 sx <u>circ</u>
11"	8-5/8"	24# K-55	2400'	1000 sx <u>circ</u>
7-7/8"	5-1/2"	17# N-80	9200'	1150 sx TOC @ <u>±2200'</u>

Propose to drill Bone Springs wildcat well and test for commercial production.

Blowout preventor program attached.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zones and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventor program, if any.

24. SIGNED John D. Swanson TITLE Drilling Engineer DATE 11-17-87  
(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE 12-3-87  
CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side

**NEW MEXICO OIL CONSERVATION COM. SSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

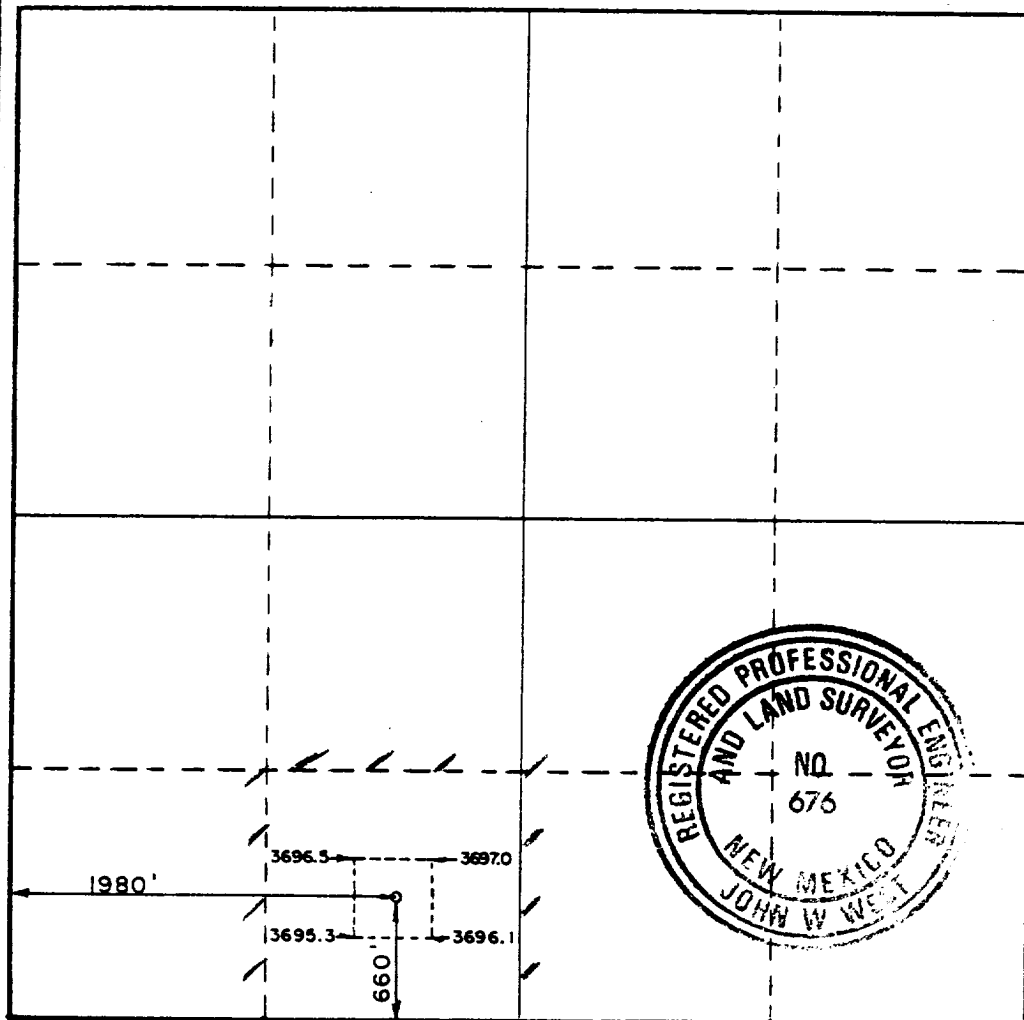
Operator <b>Arco Oil &amp; Gas Co.</b>			Lease <b>Swearingen Deep 14 Fed.</b>		Well No. <b>1</b>
Unit Letter <b>N</b>	Section <b>14</b>	Township <b>18 South</b>	Range <b>31 East</b>	County <b>Eddy</b>	
Actual Footage Location of Well: <b>1980</b> feet from the <b>West</b> line and <b>660</b> feet from the <b>South</b> line					
Ground Level Elev. <b>3694.2</b>	Producing Formation <b>Bone Springs</b>		Pool <b>Wildcat Bone Springs</b>	Dedicated Acreage: <b>40</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



**CERTIFICATION**

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name *J. D. Swanson*  
 Position Drilling Engineer  
 Company ARCO Oil and Gas Company  
 Date November 18, 1987

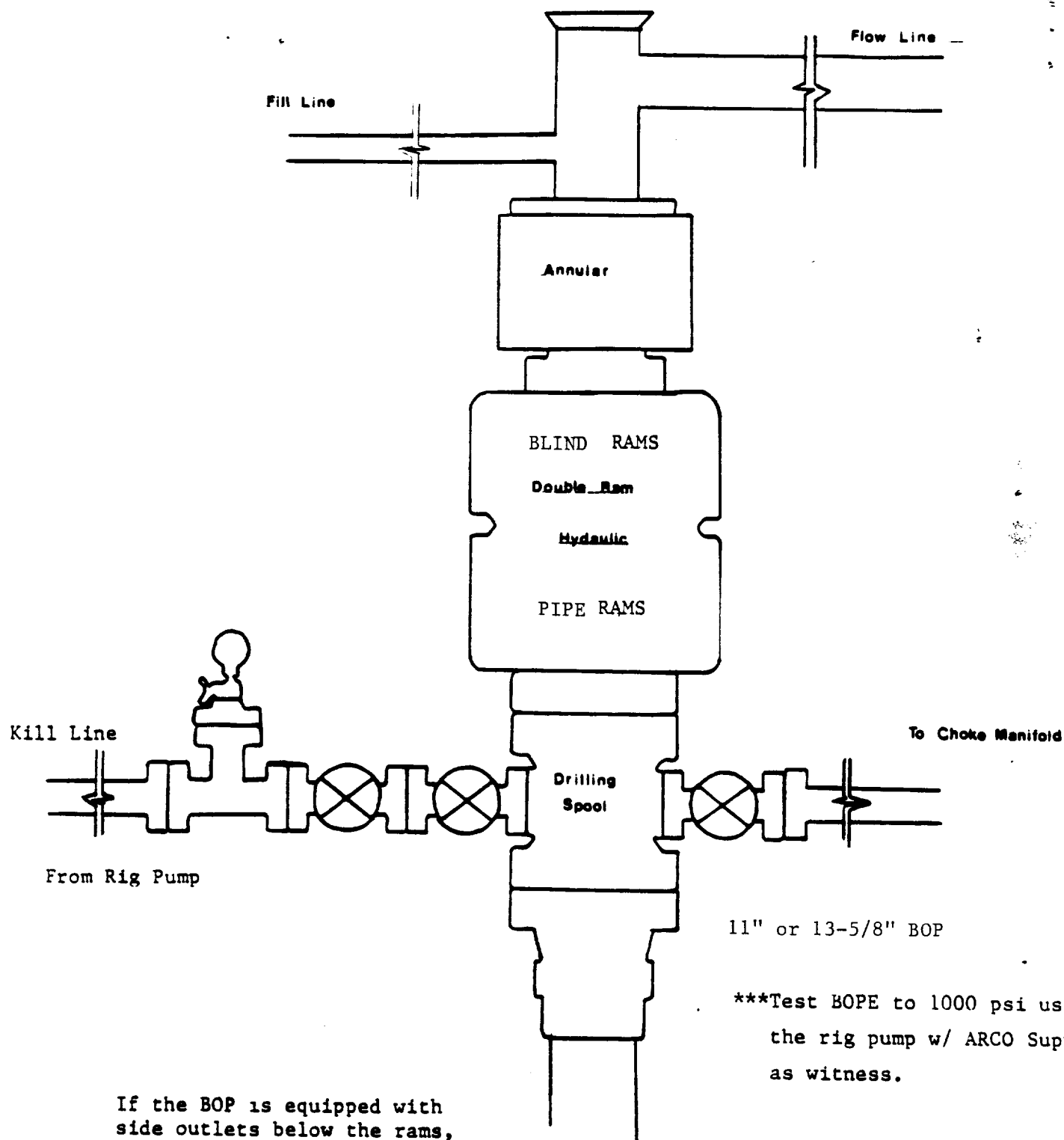
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
November 10, 1987

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST, 676  
RONALD J. EIDSON, 3239

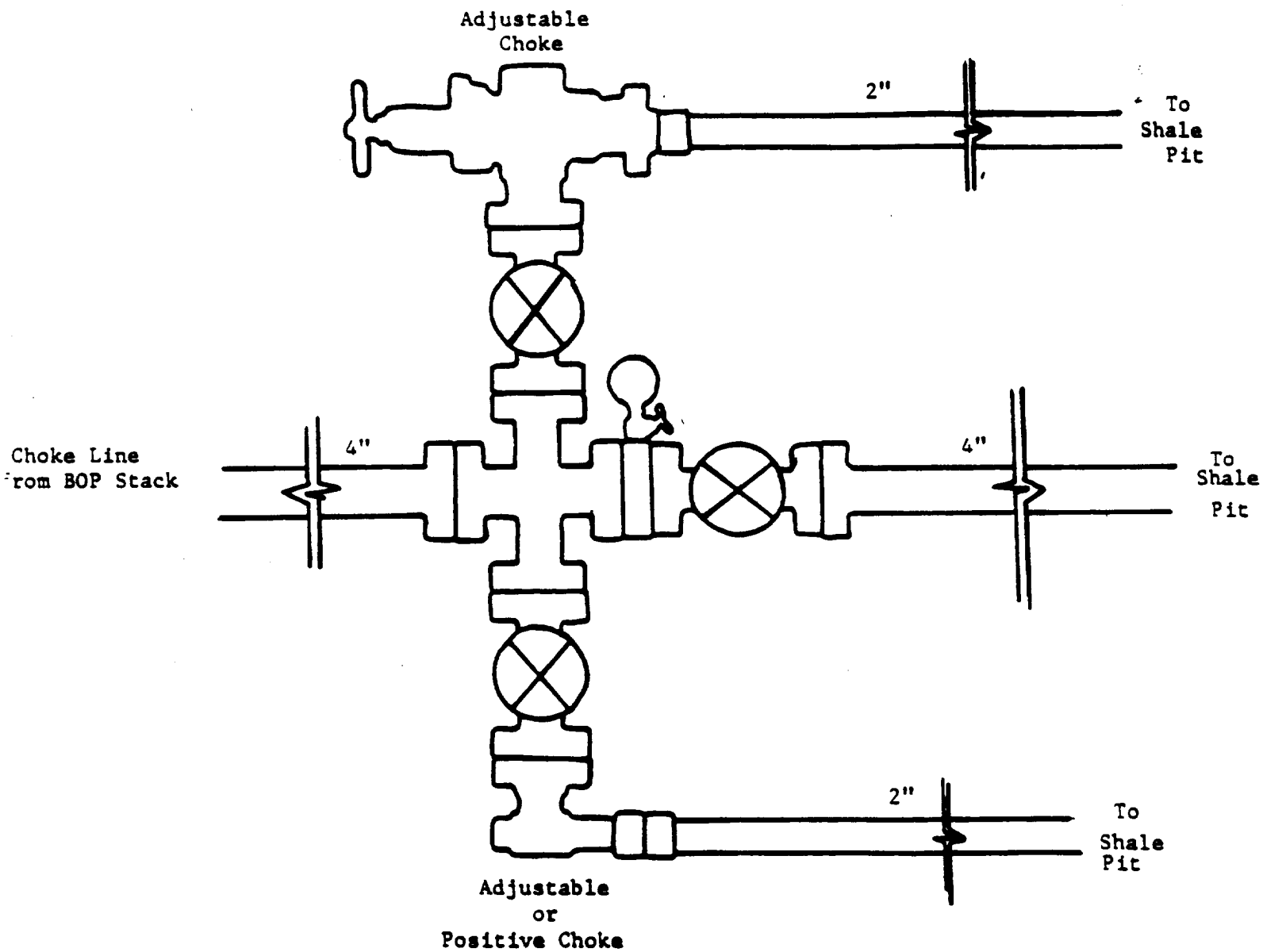
ARCO Oil & Gas  
3000 psi WP BOP Stack  
SRA



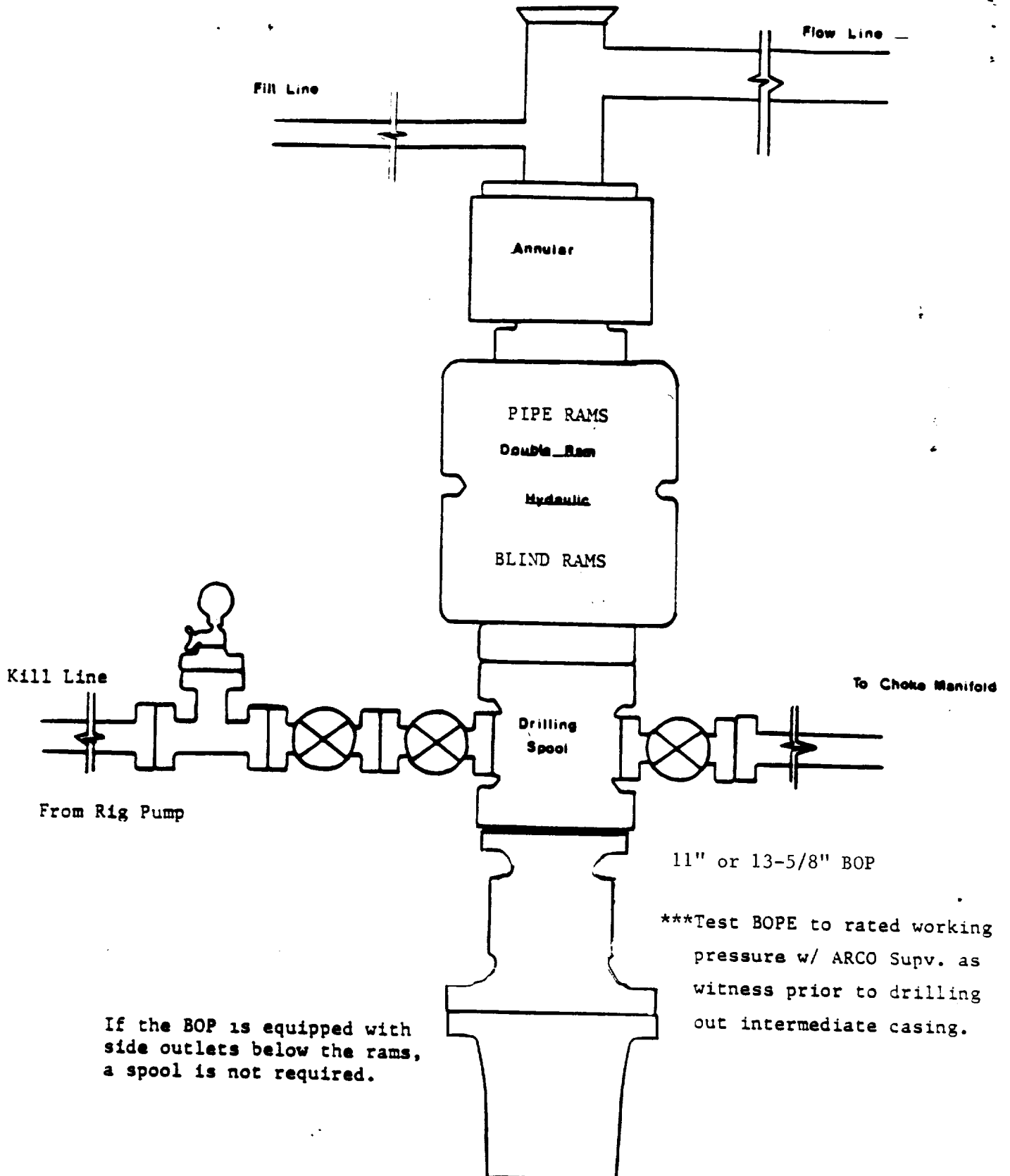
\*\*\*Test BOPE to 1000 psi using  
the rig pump w/ ARCO Supv.  
as witness.

If the BOP is equipped with  
side outlets below the rams,  
a spool is not required.

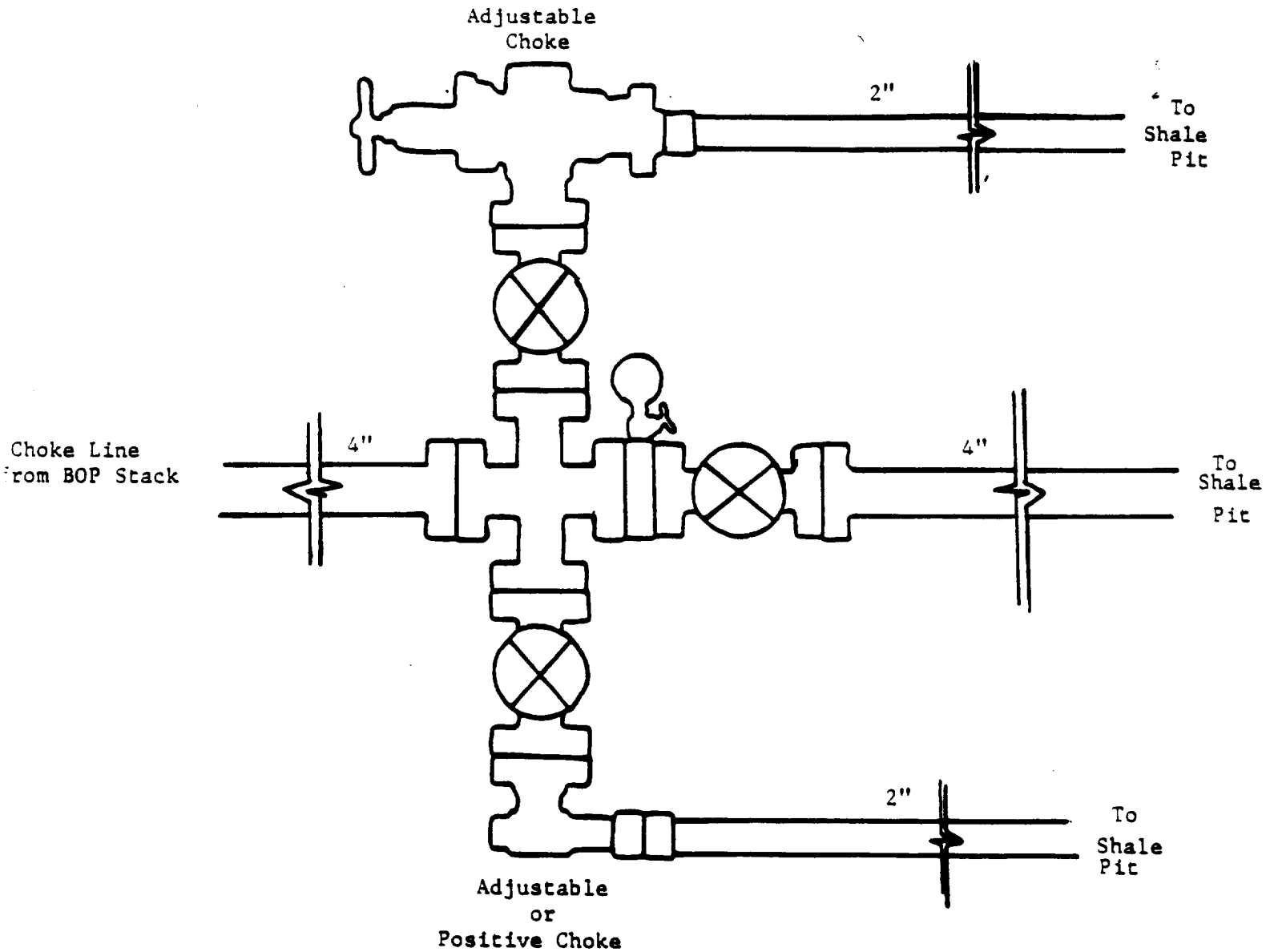
ARCO Oil & Gas  
3000psi WP Choke Manifold



ARCO Oil & Gas  
3000 psi WP BOP Stack  
S R<sub>g</sub> A



ARCO Oil & Gas  
3000psi WP Choke Manifold



To supplement USGS Form 3160-3, "Application for Permit to Drill, Deepen or Plugback", the following additional information is submitted to comply with USGS Order NTL-6.

Operator: ARCO Oil and Gas Company

Lease & Well No.: Swearingen Deep "14" Federal #1

Location: Unit Letter N

Section 14, T18S, R31E

Eddy County, New Mexico

Lease, New Mexico NM-28096

Development well \_\_\_\_\_ Exploratory well   X  

1. See Well Location and Acreage Dedication Plat Form C-102.
2. See Form 3160-3 for elevation above sea level of unprepared location.
3. The geologic name of the surface formation is as follows: Querecho Plains Aeolian material with loose sandy loams and commonly harbor calcareous gravels.
4. The type of drilling tools and associated equipment to be utilized will be rotary.
5. The proposed drilling depth will be 9200'
6. The estimated tops of important geologic markers are as follows:

TOS	1400'	Queen	3400'
BOS	2050'	San Andres	4300'
Yates	2300'	Bone Springs	6350'
7. The estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to encountered are as follows:

Bone Springs Sand 7750' Oil
8. The proposed casing program including the size, grade and weight-per-foot of each string has been indicated on Form 3160-3. All strings of casing will be new.
9. See Form 3160-3 for amount of cement.
10. The pressure control diagram is attached to Form 3160-3. The following additional information about the pressure control equipment is as follows:

13-3/8" Casing:

Size:	13-5/8" or 11" 3000 psi WP double ram hydraulic
Pressure Ratings:	3000 psi WP, 6000 psi Test
Testing Procedure:	Pressure up to 1000 psi before drilling out casing.
Testing Frequency:	Test upon installation, daily operational checks, and on all trips. The kill lines will be flushed after cementing.

8-5/8" Casing:

Size: 13-5/8" or 11" 3000 psi WP double ram hydraulic  
Pressure Ratings: 3000 psi WP, 6000 psi Test  
Testing Procedure: Pressure all BOPE to rated working pressure using independent testing company.  
Testing Frequency: (Same as above)

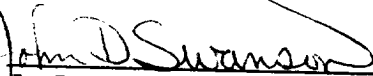
11. The type and characteristics of the proposed circulating medium or mediums to be employed for rotary drilling, and the quantities and types of mud and weighting material to be maintained will be as follows:

0 - 400'	FW Spud Mud, 8.6 ppg
400' - 2400'	SBW, 10 ppg
2400' - 7200'	FW Clear Fluid, 8.5 ppg
7200' - 9200'	FW Polymer Mud, 9.0 ppg

12. The testing, logging and coring program will be as follows:

<u>Drill Stem Test</u>	<u>Logs</u>	<u>Coring</u>
One Open Hole	OPEN HOLE:	2-60' Cores
Drill Stem Test in	GR/DIL/MSFL	cut in the
the Bone Springs Sand	GR/CNL/FDC/Cal	Bone Springs Sand
below $\pm 7750'$	GR/BHCS/Cal	below 7750'

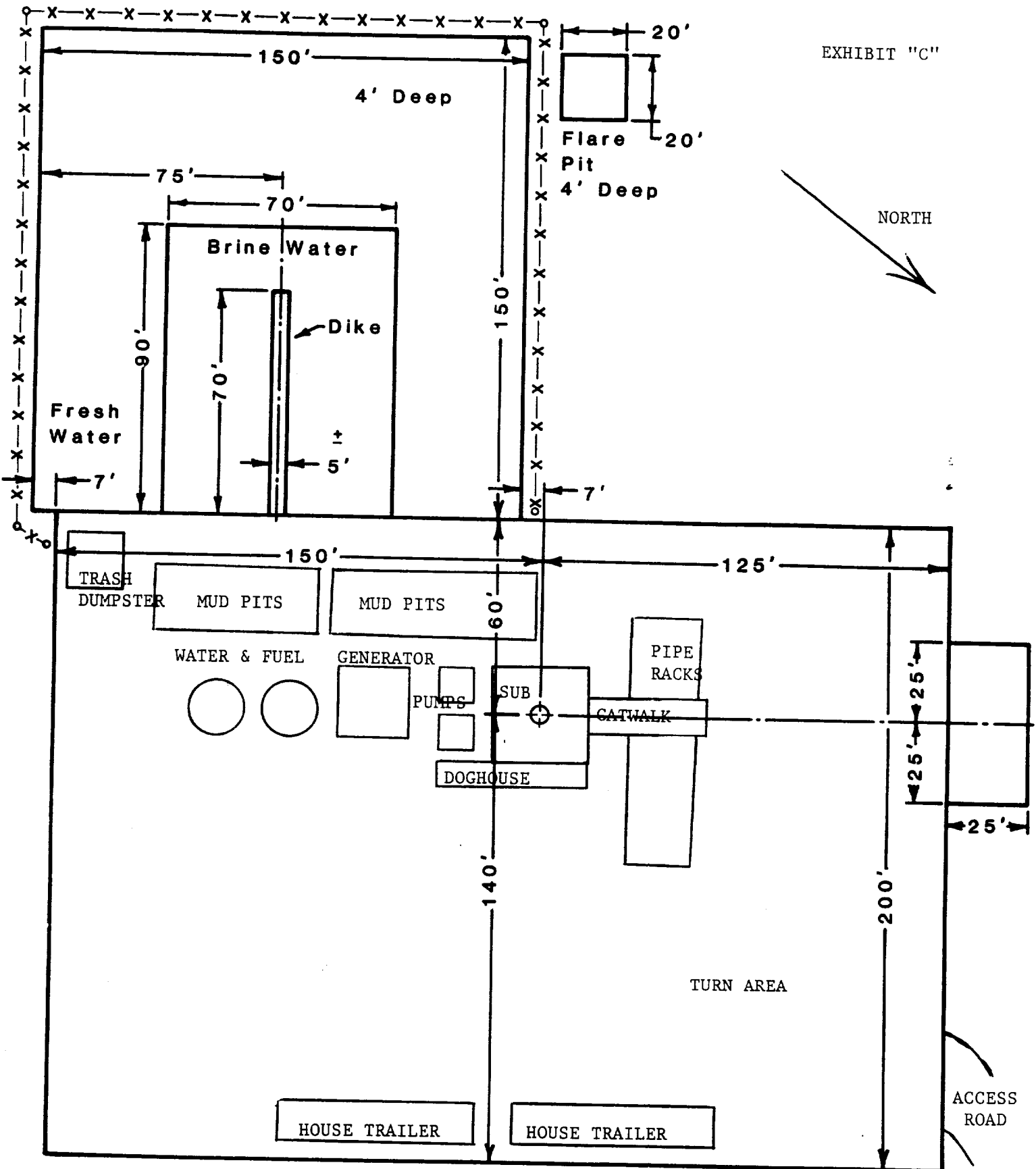
13. There are no abnormal pressures or temperatures expected to be encountered.
14. The anticipated starting date (construction) will be December 1, 1987 and completion date approximately January 20, 1988.
15. The auxiliary equipment to be used will consist of the following: Kelly cocks and a sub on floor with full opening valve, to be used when needed. A mud logging unit will be used in the interval from 2500' - 9200'.

  
J. D. Swanson  
Drilling Engineer



# TYPICAL LOCATION LAYOUT FOR WELL 6000' OR GREATER IN DEPTH

Eddy and Lea County, New Mexico



NOTE: LOCATION MAY BE EXTENDED TO ACCOMMODATE PRODUCTION FACILITIES.

EXHIBIT "A"  
PROPOSED ACCESS AND AREA ROADS  
SWEARINGEN DEEP "14" FEDERAL # 1

