

RECEIVED

BJ-HUGHES Inc.

JUN 13 1977

CEMENTING AFFIDAVIT

O.C.C.  
ARTESIAN OFFICE

I, Henry Guy, being of lawful age and having full knowledge of the facts herein below set out do state: I am employed by BJ-HUGHES Inc. On 6-7, 19 77. BJ-HUGHES Inc. performed the cementing operation herein described for Atlantic Richfield Co on their Well No. M-101 on the Empire 1260 Lease, located in Eddy County, State of New Mexico.

CASING CEMENTING: Name or type of string was Surface. Information provided by the Customer Company states that the casing was 8 5/8 in. O.D. set in 11 inch hole, and that the casing depth set was 1000 feet. For this job the following materials were used:

<u>400 sx class C Cement</u>	<u>75 lbs Celloflake</u>
<u>2400 lbs Salt</u>	<u>3000 lbs Silsonite</u>
<u>800 lbs Calcium Chloride</u>	

An estimated 100 sacks of excess cement was circulated out of the well.

CEMENT PLUG: Information provided by the Customer Company states that the hole size was \_\_\_\_\_ inches, and the total depth was \_\_\_\_\_ feet. For this job the following materials were used to place plugs as indicated:

Plug from	ft to	ft with	Sacks of
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SIGNED:

Henry Guy

DATE:

6/7/77

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEYSUBMIT IN TRIPLICATE\*  
(Other instructions on reverse)Form approved  
Budget Bureau No. 42-R1425.

30-015-22057

5. LEASE DESIGNATION AND SERIAL NO.

NM 025604

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME  
Empire Abo Pressure  
Maintenance Project

8. FARM OR LEASE NAME

Empire Abo Unit "M"

9. WELL NO.

101

10. FIELD AND POOL, OR WILDCAT

11. SEC., T., R., M., OR BLK.  
AND SURVEY OR AREA

10-18S-27E

12. COUNTY OR PARISH

Eddy

13. STATE

N.M.

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

20. ROTARY OR CABLE TOOLS

Rotary

22. APPROX. DATE WORK WILL START\*

## 1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

## b. TYPE OF WELL

OIL  
WELL ☒GAS  
WELL ☐

OTHER

SINGLE  
ZONE ☒MULTIPLE  
ZONE ☐

## 2. NAME OF OPERATOR

Atlantic Richfield Company

## 3. ADDRESS OF OPERATOR

Box 1710, Hobbs, New Mexico 88240

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

1100' FNL &amp; 2170' FWL (Unit letter C)

FEB 24 1977

At proposed prod. zone

same as above

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

Approx 13 miles East of Artesia, New Mexico

D.C.C.  
ARTESIA, OFFICE

## 15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

## 16. NO. OF ACRES IN LEASE

## 19. PROPOSED DEPTH

6150'

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3506.8' GR

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
11"	8-5/8" OD	24# K-55	1000'	350 sx Circ to surface
7-7/8"	5-1/2" OD	14 & 15# K-55	6150'	1725 sx Circ to surface

Propose to drill an infill development well within the Empire Abo Unit area to more economically recover additional oil reserves and conserve reservoir pressure in accordance with Unit OCC Rules & Regulations.

Blowout Preventer Program attached.

RECEIVED

JAN 27 1977

U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

IN CASE ABOVE DESCRIBE PROPOSED PROGRAM: If proposal is to drill or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen after completion, give description of well, including location and depth, and a description of the blowout preventer program, if any.

## 24.

SIGNED

TITLE Dist. Drlg. Supt.

DATE 1/24/77

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side

FEB 24 1977  
L. E. ...  
ACTING DISTRICT ENGINEER

NE MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form 1077  
Supersedes 1072K  
Effective 10/65

All distances must be from the outer boundaries of the Section

Operator <b>ATLANTIC RICHFIELD COMPANY</b>			Lease <b>Empire Abo Unit "M"</b>		Well <b>101</b>
Unit Letter <b>C</b>	Section <b>10</b>	Township <b>18 South</b>	Range <b>27 East</b>	County <b>Eddy</b>	
Actual Well Location of Well: <b>1100</b> feet from the <b>north</b> line and <b>2170</b> feet from the <b>west</b> line					
Ground Level Elev. <b>3506.8</b>	Producing Formation <b>Abo Reef</b>		Pool <b>Empire Abo</b>		Dedicated Acreage <b>40</b>

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

☒ Yes ☐ No If answer is "yes," type of consolidation Unitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated (Use reverse 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

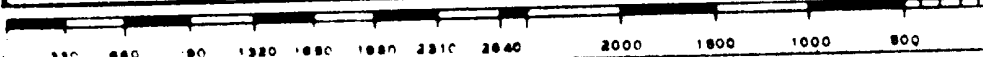
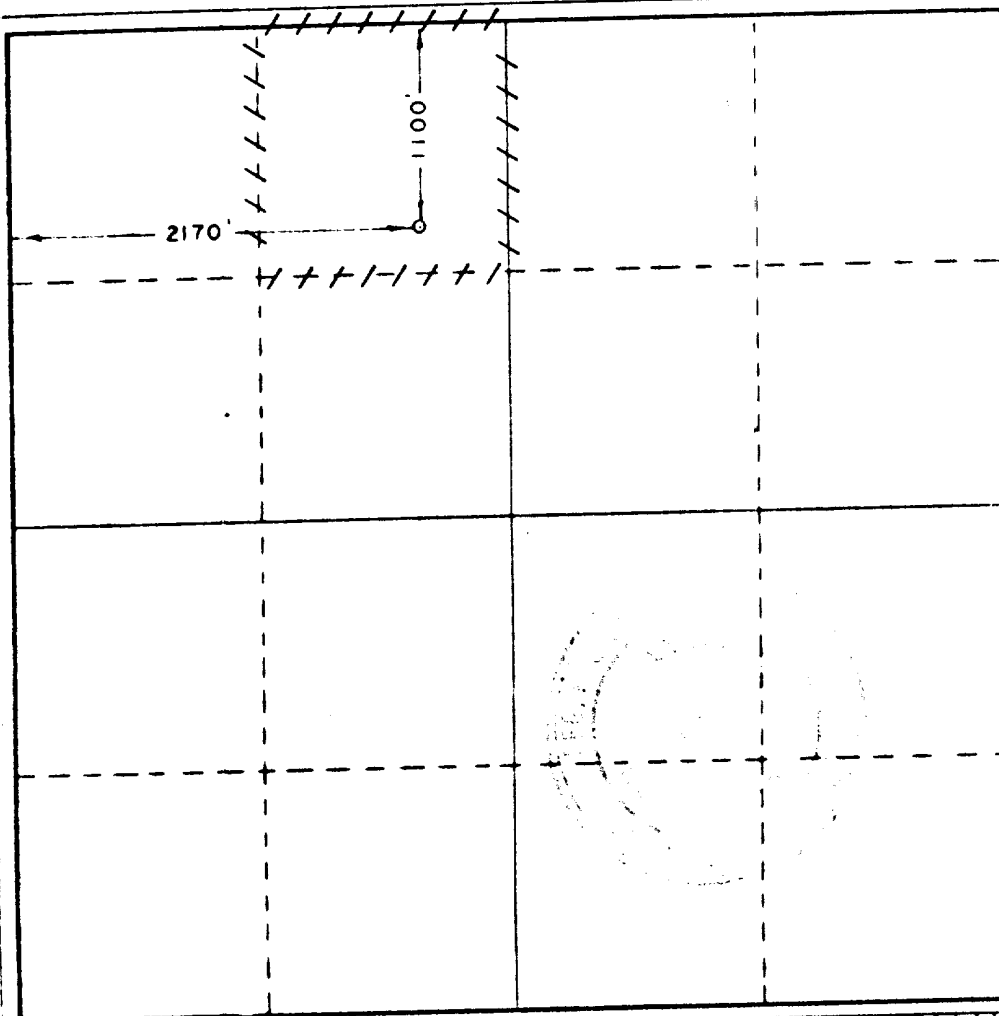
Date 1/24/77  
Signature John W. West  
Position Dist. Drlg. Supt.  
Company Atlantic Richfield Company  
Date 1/24/77

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  
**Sept 30, 1976**

Registered Professional Engineer  
and/or Land Surveyor

Signature John W. West  
Registration No. **676**



To Supplement USGS Form 9-331C "Application for Permit to Drill, Deepen or Plugback", the following additional information is submitted:

Operator: Atlantic Richfield Company  
Lease & Well No: Empire Abo Unit "M" #101  
Location: Unit letter C, 1100' FNL & 2170' FWL  
Section 10-18S-27E, Eddy County, New Mexico

RECEIVED  
FEB 03 1977  
U.S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

1. See Form 9-331C
2. See Form 9-331C
3. The geologic name of the surface formation is: Tertiary with some Triassic exposed.
4. See Form 9-331C
5. See Form 9-331C
6. The estimated tops of important geologic markers are:

Queen 930', San Andres 1857', Glorieta 3325', Abo 5657'

7. The estimated depths at which anticipated water, oil gas or other mineral bearing formations are expected to be encountered are:

Santa Rosa Water Formation	- ± 300'	Brackish
Empire Yates Seven Rivers	- ± 340'	Oil & Gas
Artesia Grayburg Queen SA	- 930'	Oil & Gas
Abo	- 5657'	Oil & Gas

8. The proposed casing program including the size, grade and weight-per-foot of each string has been indicated on Form 9-331C. All strings of casing will be new.
9. See Form 9-331C for amount of cmt. Cl C cmt cont'g 4% gel, 1# flocele, 6# salt/sk & 2% CaCl will be used for cmtg surface csg. Cl C cmt 50:50 pozmix cont'g 2% gel, .6% CFR-2, 8# salt/sk & 5# gilsonite/sk will be used to cmt 1st stage on production string and HLW cmt cont'g 8#/sk salt, followed by Cl C cmt cont'g 8#/sk salt will be used to cmt 2nd stage.
10. The pressure control diagram is attached to Form 9-331C. The following additional information of the pressure control equipment is as follows:

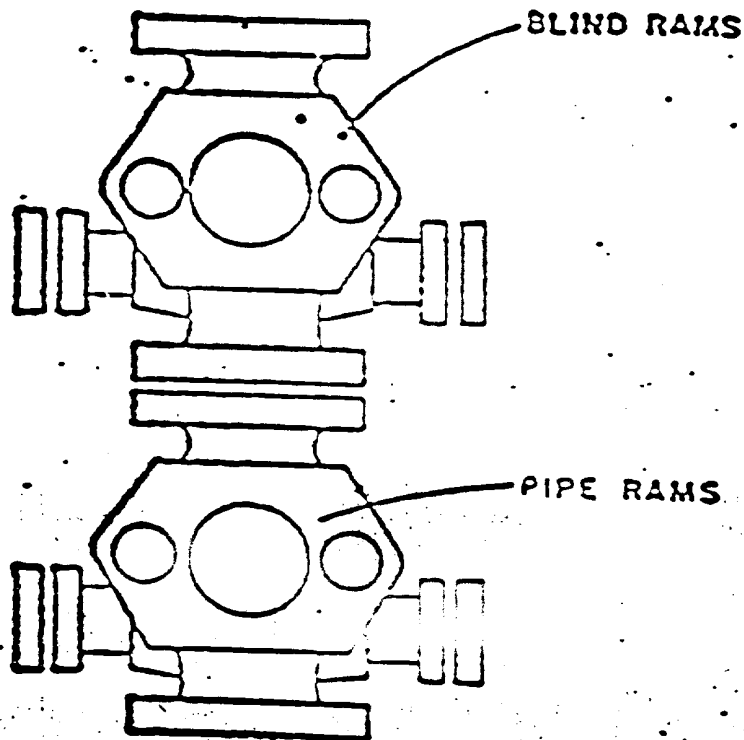
Size: 10"-900 Series - Dbl Hyd Pipe and Blind Rams  
Pressure Ratings (or API Series): 3000# WP, 6000# T  
Testing Procedures: Pressure up to 1500# PSIG before drilling out of casing  
Testing Frequency: Upon installation, daily and on all trips

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:

0-1000' Spud Mud, 1000-5500' Brackish water, 5550-6150' SWG 34-38  
Vis, 5-8 WL, 30,000 PPM salinity

12. The auxiliary equipment to be used will consist of: Kelly cocks and a sub on floor with full opening valve to be used when needed. No mud logging to be performed.
13. The testing, logging and coring programs will be:  
  
GR-DLL w/RXO (MSFL) w/Caliper, GR-Calibrated Neutron, CNL-FDC, Sonic and Tape logs for Coriband Analysis. Straddle tests Abo after logging to locate Gas-Oil contact. There will be no coring.
14. No abnormal pressures or temperatures are expected to be encountered.
15. The starting date will be approx 3/1/77 and will be completed approx 3/15/77.

A handwritten signature in dark ink, appearing to be "J. J. Davis", is written over the bottom of the list. The signature is cursive and somewhat stylized.



ATLANTIC RICHFIELD COMPANY  
Blow Out Preventer Program

Lease Name Empire Abo Unit "M"

Well No. 101

Location 1100' FNL & 2170' FWL

S. C. 10-12S-27E, B. & C. 10-12S-27E

BOP to be tested before installed on well and will be maintained in good working condition during drilling. All wellhead fittings to be of sufficient pressure to operate in a safe manner.

## Multi-Point Surface Use and Operations Plan

Atlantic Richfield Company  
Well No. "M" 101 Empire Abo Unit  
1100' FNL & 2170' FWL Sec 10-T18S-R27E  
Eddy County, New Mexico  
Lease, New Mexico 025604  
Development Well

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completion of the operation so that a complete appraisal can be made of the environmental effects associated with the operation.

### 1. Existing Roads:

- A. Exhibit "A" From Artesia, go east 9 miles on U. S. Highway 82, turn south off Highway 82 on Amoco Gasoline Plant black top road 2.5 miles, turn southwest off black top onto caliche existing road 1.1 miles, turn south .7 miles, east .2 miles, south .1 mile, then east approximately 150' along staked and flagged proposed new road to location.
- B. Exhibit "B" is a plat showing all existing roads within a one mile radius of the wellsite and the planned access road.

### 2. Planned Access Roads:

- A. Length & Width: New road required will be 150' long and 12' wide. This road is labeled and color coded red on Exhibit "B". The center line of the proposed new road from beginning to the wellsite has been staked and flagged with the stakes visible from anyone to the next.
- B. Turnouts: none
- C. Culverts: none
- D. Cuts and Fills: none
- E. Gate, Cattleguards: none

### 3. Location of Existing Wells:

- A. See Exhibit "B" for existing wells within a 1 mile radius of location.

RECEIVED

JAN 27 1977

U. S. GEOLOGICAL SURVEY  
ARTESIA, NEW MEXICO

4. Location of Existing and/or Proposed Facilities:

- A. Location of the existing tank battery and flow lines from well no. 101 are shown on Exhibit "C". The gas injection and salt water disposal lines are buried. The flow lines are not buried.
- B. When the proposed well is completed for production, the location of the new flow line to the existing battery is shown on Exhibit "C". The line will not be buried. The proposed flow line has not been staked and flagged.

5. Location and Type of Water Supply:

- A. Water for drilling will be used from a fresh water well within the Empire Abo Unit boundaries located in Section 6-18S-28E and transported by pipeline to wellsite. The water line will not cause additional surface disturbance and will be removed after drilling is completed.

6. Source of Construction Materials:

- A. Johnson Construction Company, Box 837, Eunice, New Mexico will furnish caliche for surfacing the road and well pad. The source of caliche will be from an existing pit located in SE/4, NW/4, Section 12-18S-27E, Eddy County and royalty fees will be paid by the construction company.

7. Methods of Handling Waste Disposal:

- A. Drill cuttings will be disposed of in the drilling pits.
- B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.
- C. Water produced during tests will be disposed of in the drilling pits. Oil produced during tests will be stored in test tanks until sold.
- D. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- E. Trash, waste paper, garbage and junk will be covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind.
- F. All trash and debris will be buried or removed from the well-site within 30 days after finishing drilling and/or completion operations.



8. Ancillary Facilities: none

9. Wellsite Layout:

- A. Exhibit "D" shows the relative location and dimensions of the well pad, mud pits, reserve pit and location of major rig components.
- B. Only minor levelling of the wellsite will be required. No significant cuts and fills will be necessary.
- C. The reserve pit will be plastic lined.
- D. The pad and pit area has been staked and flagged.

10. Plans for Restoration of the Surface:

- A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. Pits will be filled and location cleaned of all trash and junk to leave the wellsite in an aesthetically pleasing condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. On Federal surface - after abandonment, any special rehabilitation and/or revegetation requirements of the surface management agency will be complied with and accomplished as expeditiously as possible. All pits to be abandoned within 90 days.

11. Other Information:

- A. Topography: Rolling hills
- B. Soil: caliche and sand
- C. Flora and Fauna: Flora consists of cockle burs, needle grass, rag weeds, grease bush, cat claw and native grasses. Fauna consists of coyotes, jack rabbits, cotton tails, kangaroo mice, hawks, quail, dove, field larks and rattlesnakes.
- D. Ponds and Streams: None
- E. Residences and other structures: none
- F. Land Use: Oil and gas production, grazing and hunting in season.
- G. Surface Ownership: BLM

Well No. "M" #101 Empire Abo Unit  
Eddy County, New Mexico  
Page 4

12. Operator's Representative:

The field representative responsible for assuring compliance with the approved surface use and operations plan are as follows:

Name: Jack D. Jones  
Address: Box 1710, Hobbs, New Mexico 88240  
  
Office Phone: (505) 393-7163  
Home Phone: (505) 392-5268

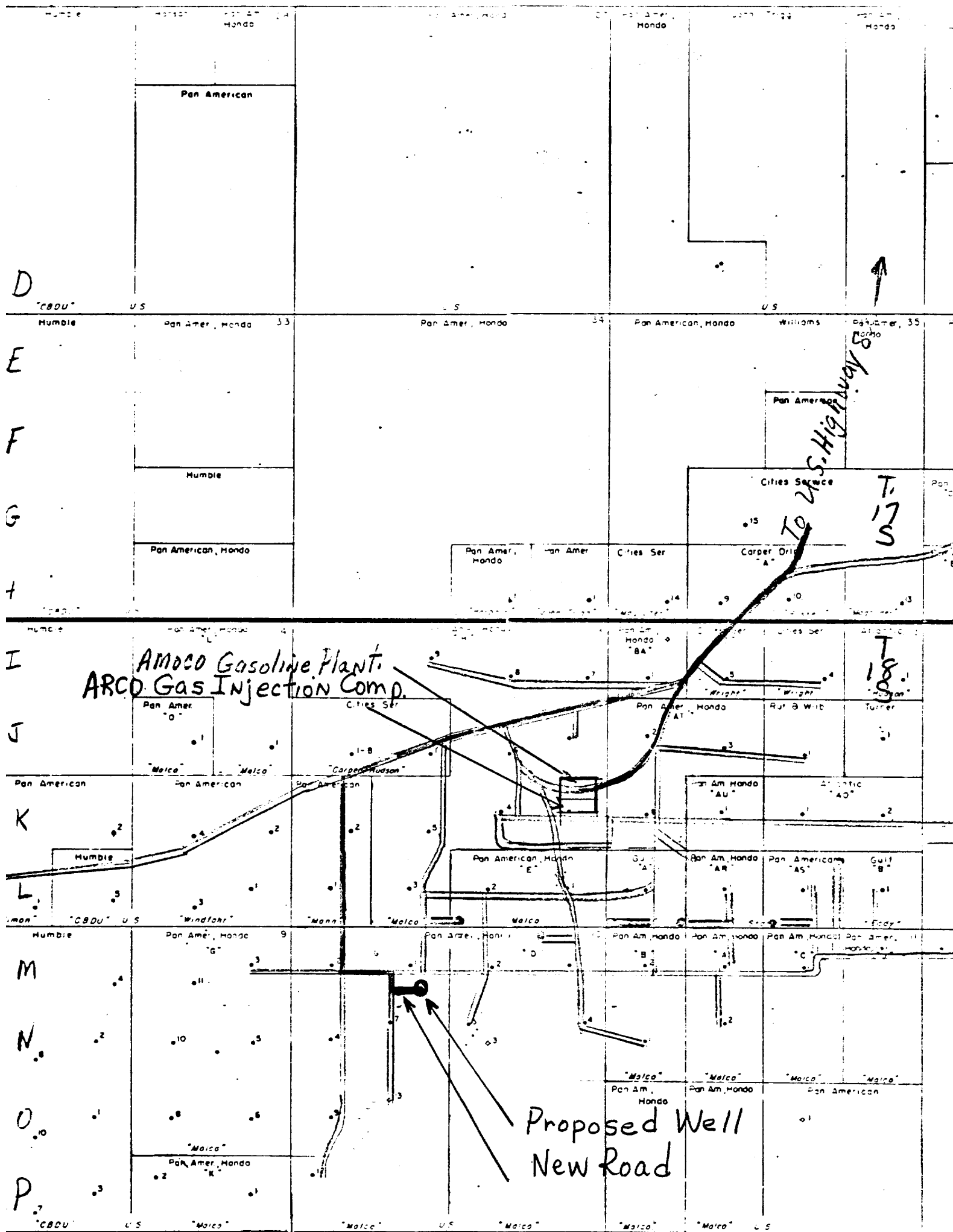
13. Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Atlantic Richfield Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

January 24, 1977

J. D. Jones  
District Drilling Supt.

R 27 E

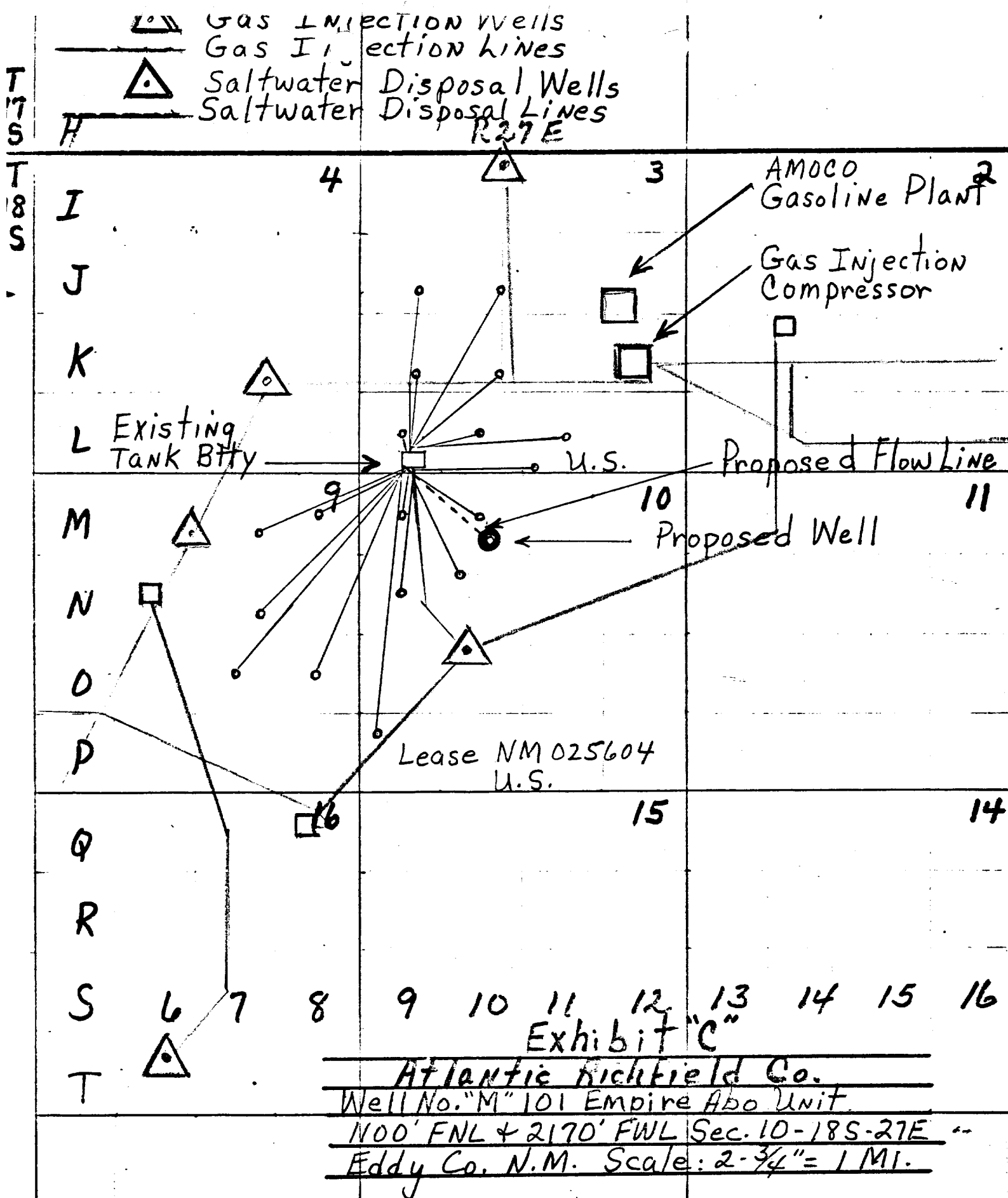


Proposed Well  
New Road

Exhibit "B"

Atlantic Richfield Co.  
Well No. "M" 101 Empire Hb. Unit  
1100' FNL & 2170' FWL Sec. 10-18S-27E  
Eddy County, N.M. Scale: 2 7/8" = 1 Mi.

9 10 11 12 13 14 15 16



Reserve Pit  
75' Pit  
75'

12' Trash Pit

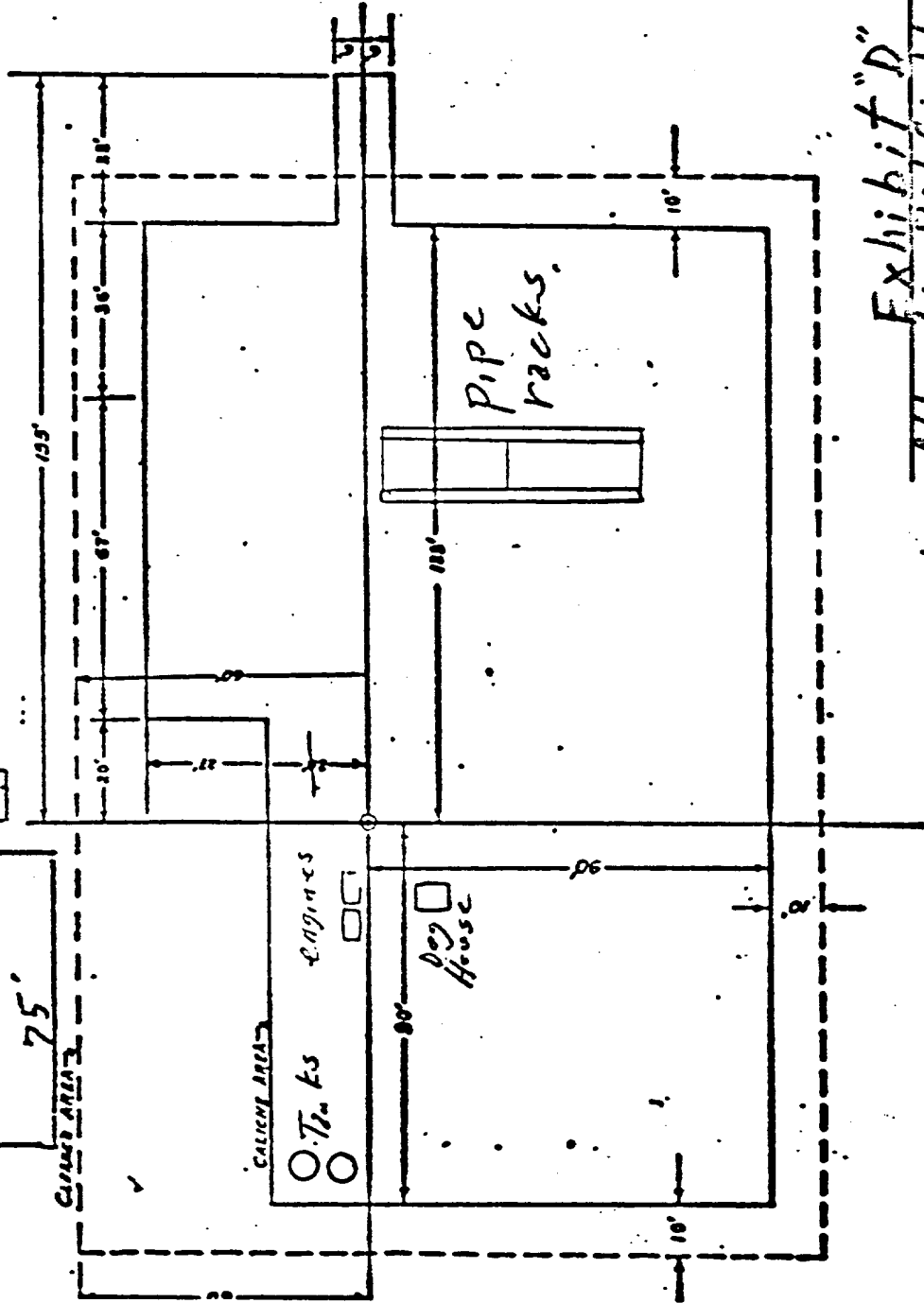


Exhibit "D"  
Atlantic Richfield Co.  
Rig Layout  
Well No. M101 Empire Abo U.  
1100' FNL & 2170' FWL Sec. 10-18S  
Eddy County, N.M.

# SPECIFICATIONS-

## A. LAYOUT

1. CONTRACTOR SHALL FURNISH, HALL, CUM STAIRS, AND COMPACT CALICHE MINIMUM SHALL BE 6" COMPACTED, INSTEP SHALL BE APPLIED AT THE APPROXIMATE RATE OF 1 GALLON PER SQ. FT. IN AREA OUTLINE BY 3 AREA WITH DASHED LINE SHALL BE BUILT WITH PAD.

## ROAD WHERE APPLICABLE

1. ROAD SHALL BE BUILT IN THE RESERVATION AT A MINIMUM OF 12" INCH WITH CURBS AND SLOPE AS TO ACCOMMODATE LOADED TRUCKS. ROAD SHALL BE COVERED WITH 6" COMPACTED USING WATER AT THE RATE OF APPROX. ONE CU YD PER 50 FT.

2. ATLANTIC SHALL FURNISH AT THE LOCAT. A CATTLE GUARD, TIMBER JULES, AND POST. CONTRACTOR SHALL INSTALL CATTLE GUARD. LANDOWNER'S SPECIFICATIONS.

3. EXTRA CALICHE FOR ALL TURNING RADIUS BE ANTICIPATED AND LINEAR MEASUREM. ROAD SHALL INCLUDE SUCH EXTRA CALICHE REQUIREMENTS.

## C. GENERAL

1. DRILLING MAT CONTAINS AN ESTIMATED CU YD. LOOSE MEASUREMENT.  
2. CONTRACTOR SHALL BE RESPONSIBLE ALL ROYALTIES INCLUDING PIT ENTRY FEE, IF ANY.  
3. COLLAR TO BE 8" X 8" WOOD FRAME.

BLUE PRINT SHEET	
NO.	DATE
1	12/1/50
2	1/1/51
3	2/1/51
4	3/1/51
5	4/1/51
6	5/1/51
7	6/1/51
8	7/1/51
9	8/1/51
10	9/1/51
11	10/1/51
12	11/1/51
13	12/1/51
14	1/1/52
15	2/1/52
16	3/1/52
17	4/1/52
18	5/1/52
19	6/1/52
20	7/1/52
21	8/1/52
22	9/1/52
23	10/1/52
24	11/1/52
25	12/1/52
26	1/1/53
27	2/1/53
28	3/1/53
29	4/1/53
30	5/1/53
31	6/1/53
32	7/1/53
33	8/1/53
34	9/1/53
35	10/1/53
36	11/1/53
37	12/1/53
38	1/1/54
39	2/1/54
40	3/1/54
41	4/1/54
42	5/1/54
43	6/1/54
44	7/1/54
45	8/1/54
46	9/1/54
47	10/1/54
48	11/1/54
49	12/1/54
50	1/1/55
51	2/1/55
52	3/1/55
53	4/1/55
54	5/1/55
55	6/1/55
56	7/1/55
57	8/1/55
58	9/1/55
59	10/1/55
60	11/1/55
61	12/1/55
62	1/1/56
63	2/1/56
64	3/1/56
65	4/1/56
66	5/1/56
67	6/1/56
68	7/1/56
69	8/1/56
70	9/1/56
71	10/1/56
72	11/1/56
73	12/1/56
74	1/1/57
75	2/1/57
76	3/1/57
77	4/1/57
78	5/1/57
79	6/1/57
80	7/1/57
81	8/1/57
82	9/1/57
83	10/1/57
84	11/1/57
85	12/1/57
86	1/1/58
87	2/1/58
88	3/1/58
89	4/1/58
90	5/1/58
91	6/1/58
92	7/1/58
93	8/1/58
94	9/1/58
95	10/1/58
96	11/1/58
97	12/1/58
98	1/1/59
99	2/1/59
100	3/1/59

Atlantic Richfield Company  
Drilling and Construction Dept.  
STANDARD DRILLING MAT  
FOR WELLS LESS THAN 1000 FT.

" = 45'