30-015-26765

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM-33437

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

7. UNIT AGREEMENT NAME:

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME: PMS 8 Federal

2. NAME OF OPERATOR: Amoco Production Company ✓

9. WELL NO.: 5

3. ADDRESS OF OPERATOR: P. O. Box 3092, Houston, TX 77253

RECEIVED
JUN 17 1991
O. C. D.
ARTESIA, OFFICE

10. FIELD AND POOL, OR WILDCAT: Shugart Bone Springs, North

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 835' FNL X 710' FWL Ut. D
At proposed prod. zone

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 8, T-18-S, R31E, NMPM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 6.5 miles SE of Loco Hills, NM

12. COUNTY OR PARISH: Eddy — 13. STATE: NM

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	17. NO. OF ACRES ASSIGNED TO THIS WELL
710'		40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
	8600'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3668.8

22. APPROX. DATE WORK WILL START*: 6/15/91

23. 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"	48 & 54.5#	350'	500 sx Cir. to Surface
12-1/4"	8-5/8"	32#	2150'	1200 sx Cir. to Surface
7-7/8"	5-1/2"	15.5 & 17#	8600'	1350 sx Tie back to 1500'

Propose to drill and equip well in the Bone Springs formation. After reaching TD, logs will be run and evaluated. Perforate and Stimulate as necessary in attempting commercial production.

Mud Program: 0-400' Fresh water and native mud
400-2150' Brine water
2150-8000' Fresh water
8000-TD LSND

Post ID-1
6-14-91
New Loc + API

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone 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 preventer program, if any.

24.

SIGNED Kim A. Colson TITLE Asst. Admin. Analyst DATE 5/7/91

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE 6/7/91

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

OIL CONSERVATION DIVISIO.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-7

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

Operator	Lease	Well No.
Amoco Production Company	PMS 8 Federal	5

Unit Letter	Section	Township	Range	County
D	8	18 South	31 East	Eddy

Actual Footage Location of Well: 835 feet from the North line and 710 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3668.8	Bone Springs	Shugart Bone Springs, North	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

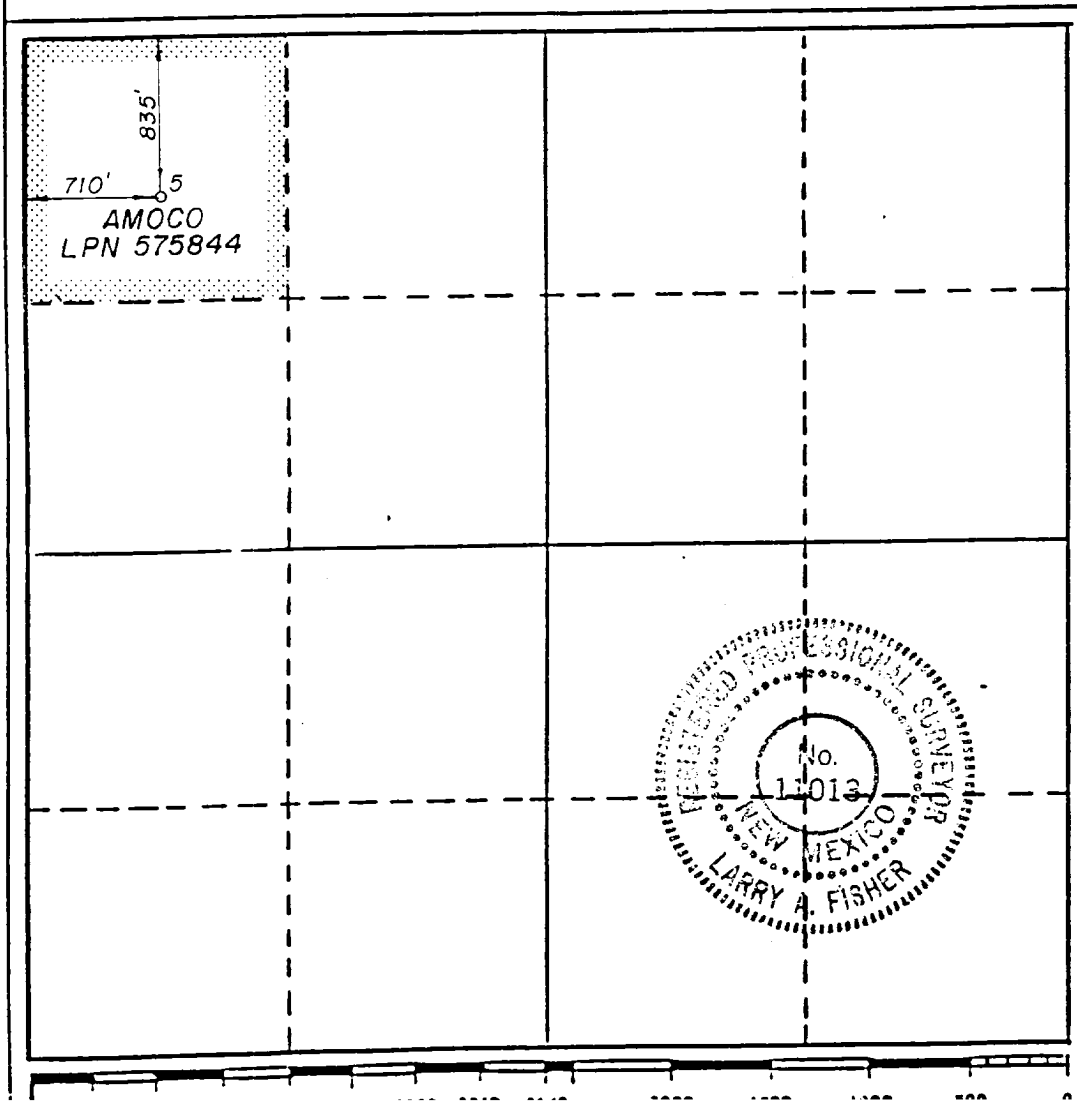
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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 Division



CERTIFICATION

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

Kim A. Colvin
Name

Asst. Administrative Analyst
Position

Amoco Production Company
Company

4-29-91
Date

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
February 1, 1991

Registered Land Surveyor
Larry A. Fisher

Certificate No.
11013

APPLICATION FOR PERMIT TO DRILL
AMOCO PRODUCTION COMPANY
PMS 8 FEDERAL 5, 6, 7

PMS "8" Federal #5 - 835'FNL & 710'FWL, Sec. 8, T18S, R31E, NMPM, Eddy County, NM

PMS "8" Federal #6 - 1930'FNL & 2032'FWL, Sec. 8, T18S, R31E, NMPM Eddy County, NM

PMS "8" Federal #7 - 660'FNL & 3300'FWL, Sec. 8. T18S, R31E, NMPM, Eddy County, NM

In conjunction with Form 3160-3, Application for Permit to Drill, Amoco Production Company submits the following items of pertinent information in accordance with Onshore Oil & Gas Order Nos. 1&2, and with all other applicable federal and state regulations.

1. The geologic surface formation is of Permian Age.

2. Estimated tops of geologic markers are as follows:

Queen	3000'
Penrose	3300'
Grayburg	3600'
San Andres	3900'
Deleware	4400'
Bone Springs	5200'

3. The estimated depths at which water, oil, or gas formations are expected to be encountered:

* - Water: 150' & 300'
** - Oil or gas: Bone Springs - 8000'-8500'

*Ground water to be protected by 13-3/8" surface casing with cement circulated to the surface.

**Potentially productive horizons to be protected by 5-1/2" production casing with cement tied back to approximately 1500'.

4. Proposed Casing Program: See Form 3160-3 and Attachment #1

5. Pressure Control Equipment: See Attachment #2

6. Mud Program: See Attachment #3

7. Auxiliary Equipment: Upper Kelly Cock, Full Opening Stabbing Valve.

8. Testing, Logging, and Coring Programs:

-Electric Logs:
Dual Induction Laterlog
Neutron Porosity Log
Gamma Ray/Caliper Log
Proximity - Microlog

-No DSTS or Cores

9. Abnormal Pressures, Temperatures, or Other Hazards:

-Lost circulation is anticipated in the surface and intermediate intervals of the hole. (0' to 2100')
-Deviation control problems anticipated 5000' to 6500' intervals.

10. Anticipated Starting Date: As soon as possible.

Jesse Lopez, Jr.
PT&S USA Drilling
Amoco Production Company, Houston

Drilling, Casing, and Cementing Program

1. Drill 17-1/2" hole to 400 ± To Protect Fresh Water Sands.

2. Run 13 3/8", 48# & 54.5# K-55 casing & cement with 500 sx. Class "C" with 2% CaCl and 1/4 #/sack flocele. Run Texas Pattern Guide Shoe with a float collar and centralizers.

3. Nipple up and install BOP's. Test casing to 1000 psi after 18 hours and drill out cement.

4. Drill 12-1/4" hole to 2150' thru Yates. Anticipated lost circulation zone at 800' to 2000' with possibility of dry drilling.

5. Run & Cement 8-5/8" 32# K-55 casing with 1000 sxs Class "C"/poz 65/35 with 2% Gel, 2% CaCl, and 1/4 #/sk flocele. Tail in with 200 sxs. Class "C" containing 2% CaCl. Run guide shoe and float collar 2 joints above shoe. Run centralizers at the shoe and float collar and curry 4th, joint from the shoe to surface.

6. Nipple up and install BOP's. Test casing to 1000' psi for 30 minutes after WOC 18 hours and drill out cement.

7. Drill 7-7/8" hole to TD at 8600±. A fresh water mud system will be used to 8000'. At that point the system will be mudded up to 8.6 to 9.0 #/gal to condition the hole for logging. Run Formation Density-Compensated Neutron - Gamma Ray Log, Dual Induction-Laterlog, and Microlaterolog.

8. Run 5-1/2", 15.5# & 17# K-55 casing and cement with 1000 sx. 65/35 Pozmix Class "H", containing 4% gel, 10% salt, and .5% friction reducer. Tail in with 350 sks, Class H with 10% salt. Use guide shoe and float collar, and 12-15 centralizers where necessary. Use top and bottom rubber plugs, displace cement with clean, fresh water treated with 2% KCL.

9. Perforations, acid job, and additional stimulation to be determined after completion.

Attachment No. 1

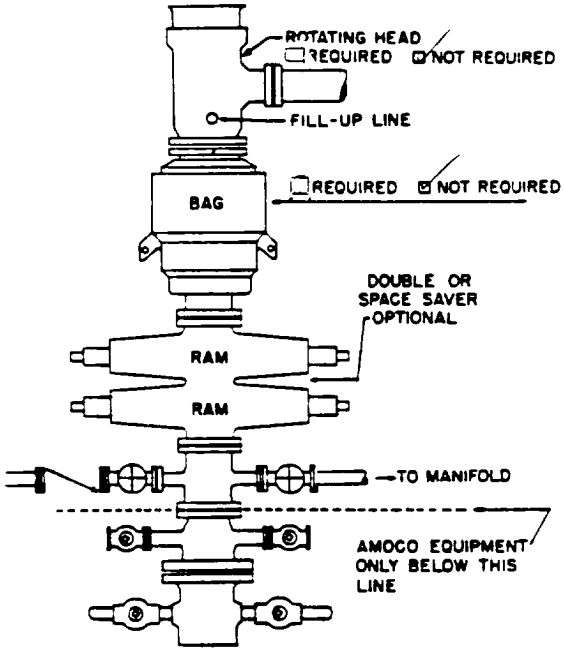
ATTACHMENT
3000# W.P. BOP STACK

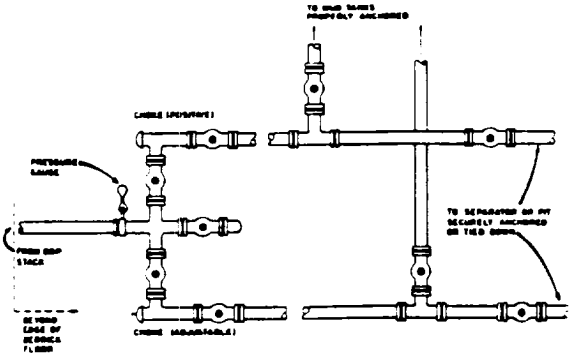
1. BOP's to be fluid operated. BOP's and all fittings must be in good condition and rated at 3,000 psi w.p. minimum.
2. Equipment through which bit must pass shall be at least as large as casing size being drilled through.
3. Upper kelly cock is required and shall be 3,000 psi w.p. minimum. Lower kelly cock is (required)(not required).
4. Hydril or comparable safety valve shall be available on rig floor with connection or subs to fit any tool joint in the string. Valve to be full bore 3,000 psi w.p. minimum.
5. Hydril or equivalent drill pipe back pressure valve is (required)(not required).
6. All equipment upstream of chokes, including kill line equipment shall be flanged or clamped and of a test pressure no less than that of the blowout preventer. All valves upstream of choke shall be 3" or 4" gate valves Cameron Type "F" or equivalent. All equipment downstream of chokes may be flanged or screw end gate or plug. Pressure gauge will be Cameron or equivalent. Line from spool to manifold cross and chokes to be a minimum of 3", straight and short as possible with minimum bends. Choke manifold must be positioned outside of substructure. Manifold, header and all lines must be adequately supported and properly anchored. Two inch (2") lines and valves are permitted downstream of chokes and on the kill line. All valves designated for H_2S service are (required) (not required). Chokes will be one positive and one adjustable.
7. Blowout preventer closing unit equipment to include accumulator capable of closing, opening and closing the bag and pipe rams with a minimum remaining pressure of 1200 psi. After closure, the remaining fluid volume will be at least 50 percent of original volume. Two independent sources of pump power are required on each closing unit installation and shall meet all IADC specifications. Operating time for closing unit shall not be greater than one minute with charging pump shut down. Time test must be witnessed by Amoco representative while nippling up and test results reported on IADC report. Failure to meet these conditions will necessitate corrective action by contractor and retesting all at contractor's expense.
8. The accumulator must be located at least 50 feet from the well. Blowout preventer controls must be properly labeled. Floor control valves are (required)(not required).
9. Fluid lines from accumulator to BOP's and all remote control fluid lines (if applicable) shall be steel, and rated at or above maximum accumulator pressure. Lines shall be routed in bundles and adequately protected from damage.
10. Fill up line must be steel. Kill line cannot be used for fill up line.
11. Use rams in following positions: *

	Drilling	Running Casing
Upper Ram	Drill Pipe	Casing
Lower Ram	Blind	Blind

* Amoco District Manager may reverse location of rams.

12. Extentions and hand wheels to be installed and braced at all times.





Attachment No. 2

Drilling Fluid Program

Surface: Spud with fresh water native spud mud system. Add paper and other non-toxic LCM to combat seepage and lost circulation. Complete loss of circulation is possible, If this occurs, we will drill "dry" to our surface target of 400'.

Intermediate: Drill out from under surface csg, with saturated brine water using hole sweeps as necessary for hole cleaning. Complete loss of circulation is possible. If this occurs, we will drill "blind" to 2150', and then pump a viscous pill to ensure a good cement bond up to the depth of the lost circulation zone.

Production: Drill out from under intermediate csg. with fresh water using an addition of a selective flocculent at the flowline to aid in the removal of drill solids. Mud up as hole conditions dictate at approximately 8000' with a fresh water LSND system. Maintain solids content less than 5% to minimize mud weights.

Weight	8.6-8.8 ppg
Viscosity	30-34 sec./qt.
Water Loss	15-20 cc/30 min.

Mud program may additionally be altered as conditions dictate.

Attachment No. 3

SURFACE UTILIZATION PLAN
AMOCO PRODUCTION COMPANY
PMS "8" FEDERAL 5, 6, 7

Prepared by Jesse Lopez, Jr.
PT&S USA Drilling
Houston, Texas

PMS "8" Federal #5 - 835'FNL & 710'FWL, Sec. 8, T18S, R31E, NMPM, Eddy County, NM

PMS "8" Federal #6 - 1930'FNL & 2032'FWL, Sec. 8, T18S, R31E, NMPM, Eddy County, NM

PMS "8" Federal #7 - 660'FNL & 3300'FWL, Sec. 8, T18S, R31E, NMPM, Eddy County, NM

1. EXISTING ROADS

Area map, Exhibit "A", is a reproduction of the U.S.G.S. Loco Hills, New Mexico 7.5 minutes quadrangle, Existing and proposed roads are shown on the exhibit. All roads shall be maintained in a condition equal that which existed prior to the start of construction.

A. Exhibit "A" shows the proposed development well site as staked.

B. From Hobbs, New Mexico travel 15 miles west on U.S. Highway 62/180 to County Road #529. Travel Northwest 31 miles on 529 to County Road #222. Turn South on 222 and travel 3 miles to lease road. Turn back west to proposed locations. See Exhibit "B".

2. PLANNED ACCESS ROADS

Approximately 1700 ft. of new access road will be constructed with 6" of caliche watered & compacted.

A. This material will be obtained from a local source.

3. LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS

A. All existing wells within a 1 mile radius are shown on Exhibit "C".

4. LOCATION OF TANK BATTERIES AND FLOW LINES

If, upon completion, the well is a producer, the production facilities (i.e. tanks, separators, & treaters) will be located on the existing pad. See Exhibit "D" for locations of powerlines and flowlines.

5. LOCATION AND TYPE ON WATER SUPPLY

Water will be purchased locally from a private source and trucked over the access roads by a commercial hauler.

6. SOURCE OF CONSTRUCTION MATERIALS

If needed, construction materials will be obtained from the drill site's excavations or from a local source. These materials will be transported over the access route as shown on Exhibit "A".

7. METHODS FOR HANDLING WASTE DISPOSAL

A. 1. Drill cuttings will be disposed of in the reserve pit.

2. Trash, waste paper, and garbage will be contained in a fenced trash trailer, fenced with mesh wire to prevent wind-scattering during storage. When the rig moves out, all trash and debris left at the site will be hauled to a licensed dump site.

3. Salts/mud chemicals remaining after completion of the well will be picked up by the supplier, including broken sacks.

4. Sewage from trailer houses will be hauled off by a licensed sewage disposal company, A "porta John" will be provided for the rig crews. This will be properly maintained during the drilling operations and removed upon completion of the well.

5. Chemicals remaining after completion of the well will be stored in the manufacturers containers and picked up by the supplier.

B. Remaining drilling fluids will be allowed to evaporate in the reserve pit until the pit is dry enough for backfilling. In the event drilling fluids will not evaporate in a reasonable period of time they will be transported by tank truck to a state approved disposal site.

Water produced during testing of the well will be disposed of in the reserve pit. Oil produced during testing of the well will be stored in test tanks until sold and hauled from the site.ANCILLARY FACILITIES

No camps or airstrips will be constructed.

9. WELL SITE LAYOUT

A. Exhibit "E" (Scale 1" - 100') shows the proposed well site layouts.

B. The reserve pit is to be lined with PVC or polyethylene liner. The pit liner will be 6 mils thick. Pit liner will extend a minimum, 2'-00" over the reserve pits dikes where the liner will be anchored down.

C. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

10. PLANS FOR RESTORATION OF SURFACE

Rehabilition of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recontoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

11. OTHER INFORMATION

A cultural resources survey on the area was completed recently by the Agency for Conservation Archeology (ACA) at Eastern New Mexico University and is attached.

12. OPERATIONS REPRESENTATIVE

Amoco field representative for contact regarding compliance with the Surface Use Plan is:

J. D. Huckaby, Production Foreman
P.O. Box 1348
Artesia, NM 88210
Office Phone (505) 746-2285

13. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Amoco Production Company and its contractors/subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

NAME: W D Cattlett

DATE: 5/3/91

TITLE: Manager Field Operations

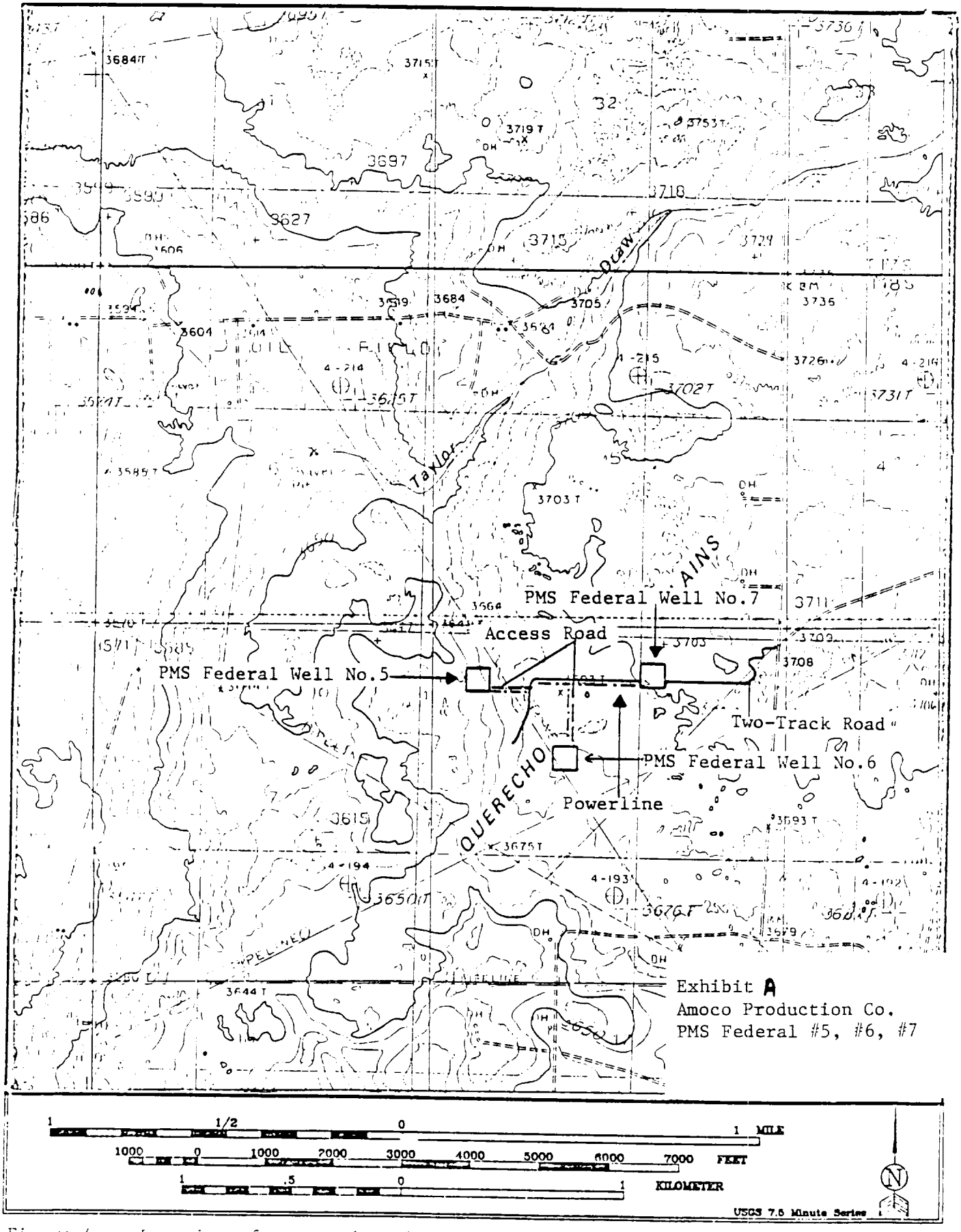


Figure 4. Location of proposed well s, access roads and powerline access in Section 8, T18S, R31E, NMPM, Eddy County, New Mexico.

Map Reference: USGS Loco Hills, New Mexico Quaduangle, 7.5 minute series, 1985

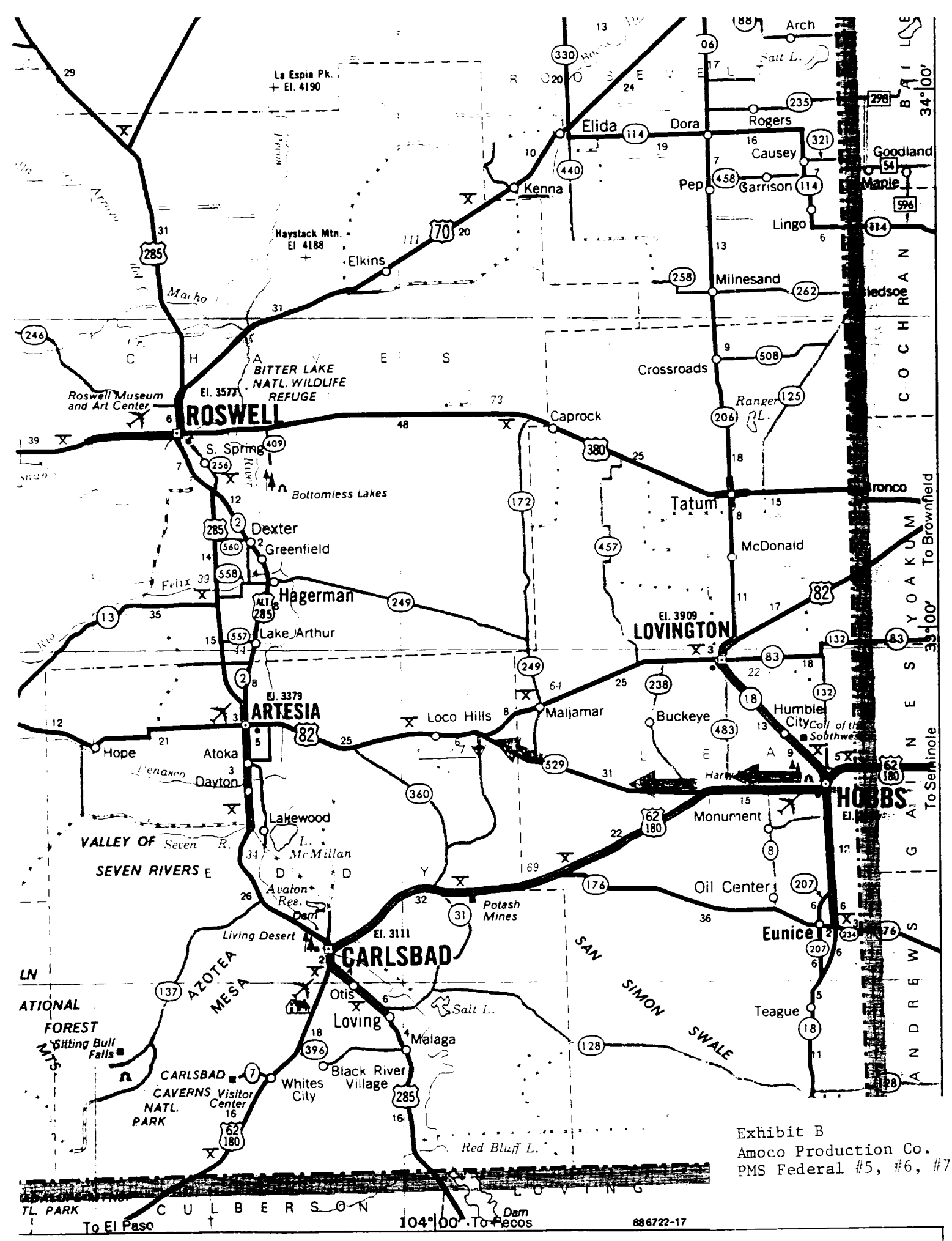
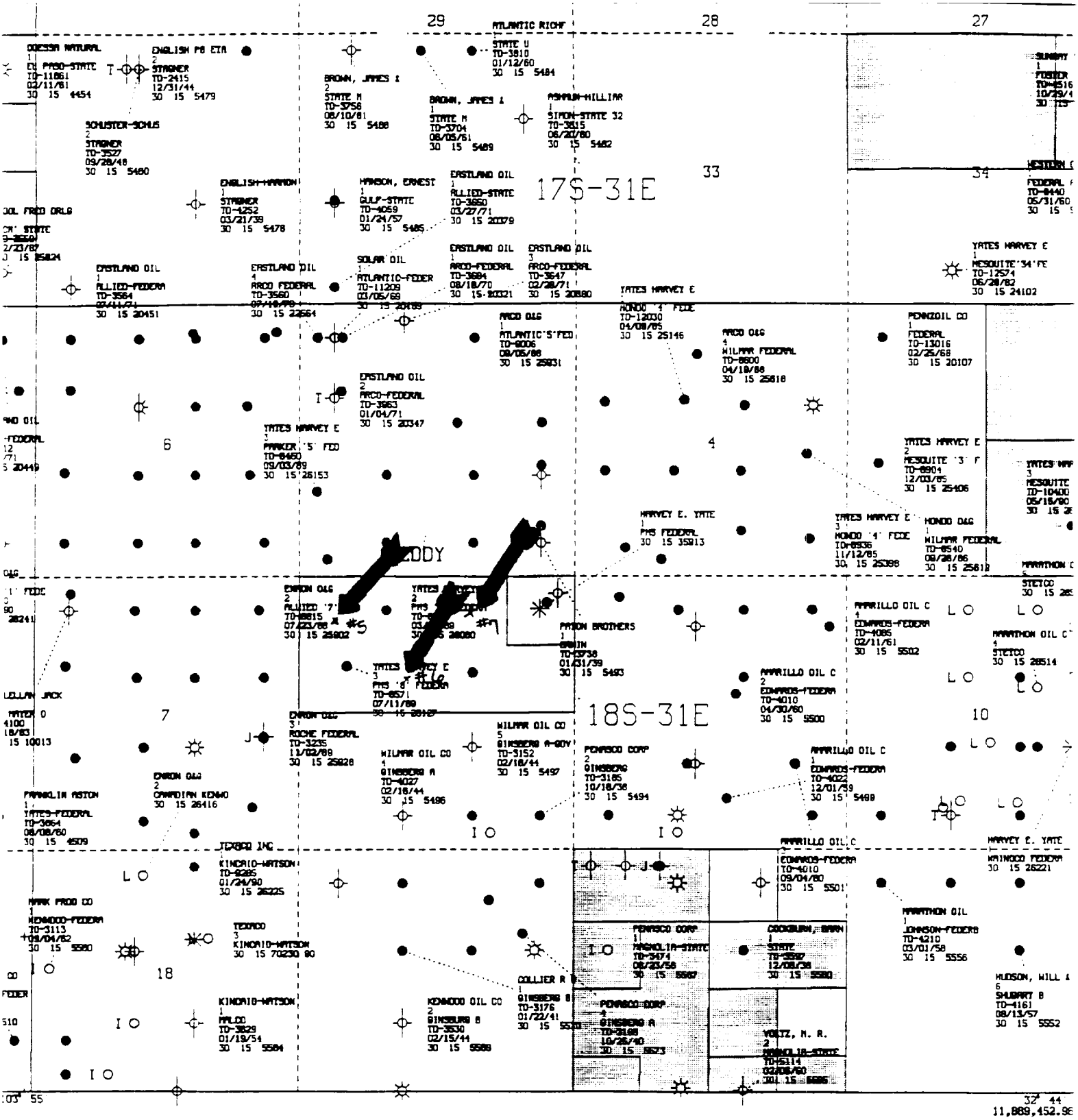


Exhibit B
Amoco Production Co.
PMS Federal #5, #6, #7

...GE LOG: Distances shown are computed over Controlled ... opposite the number assigned to the other. For example—Carls-



AMOCO PRODUCTION COMPANY
SHUGART NORTH BONE SPRINGS

Exhibit C

HORIZONTAL DATUM NAD27

Amoco Production Company

ENGINEERING CHART

FILE

APPN

DATE 5/1/91

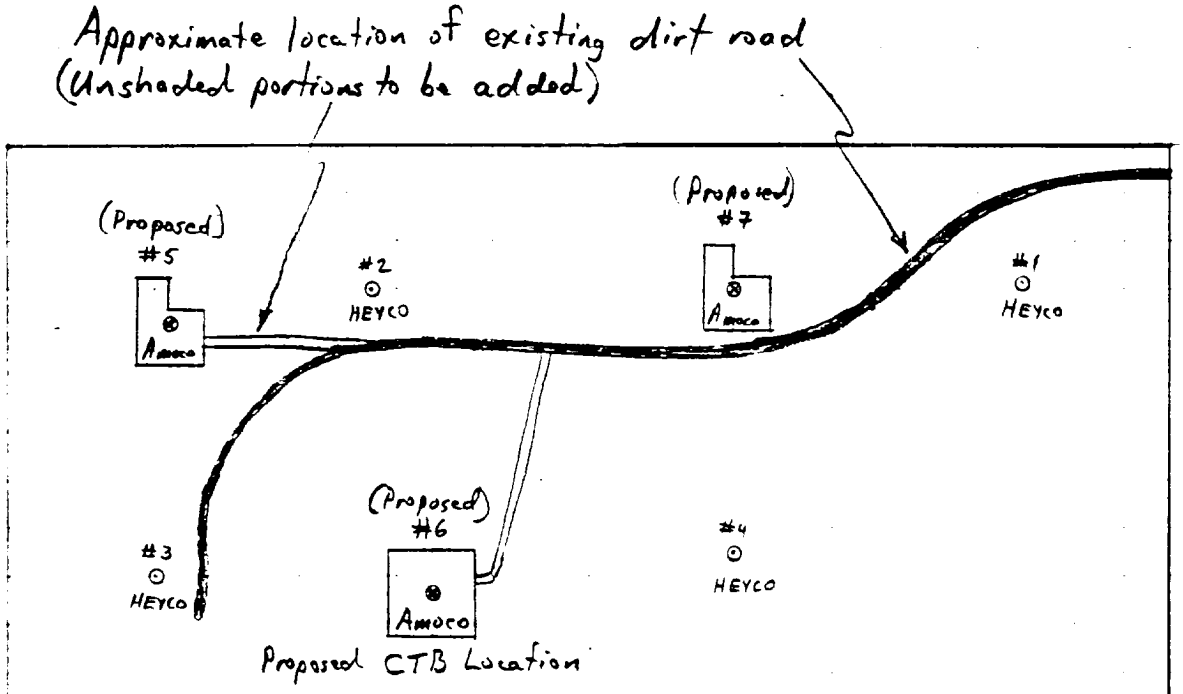
BY LAL

Scale: 1" = 880'

SUBJECT PMS 8 Federal Lease

Well Locations with in Section 8 of

T-18-S, R-31-E, Eddy County, NM



Well Locations

(HEYCO)	#1 :	635' FNL x 685' FEL
	#2 :	660' FNL x 1650' FWL
	#3 :	1980' FNL x 660' FWL
	#4 :	1880' FNL x 1980' FEL
(Amoco)	#5 :	835' FNL x 710' FWL
	#6 :	1930' FNL x 2032' FWL
	#7 :	660' FNL x 3300' FWL

Sect 8, T-18-S, R-31-E
Eddy County, NM

Note: Flowlines from #5 and #7 to CTB will be located next to road.

Exhibit D (1)

ıoco Production Company

ENGINEERING CHART

FILE

APPN

DATE 5/1/91

BY CAL

SUBJECT PMS 8 Federal Lease

Centralized Tank Battery - Plot Plan

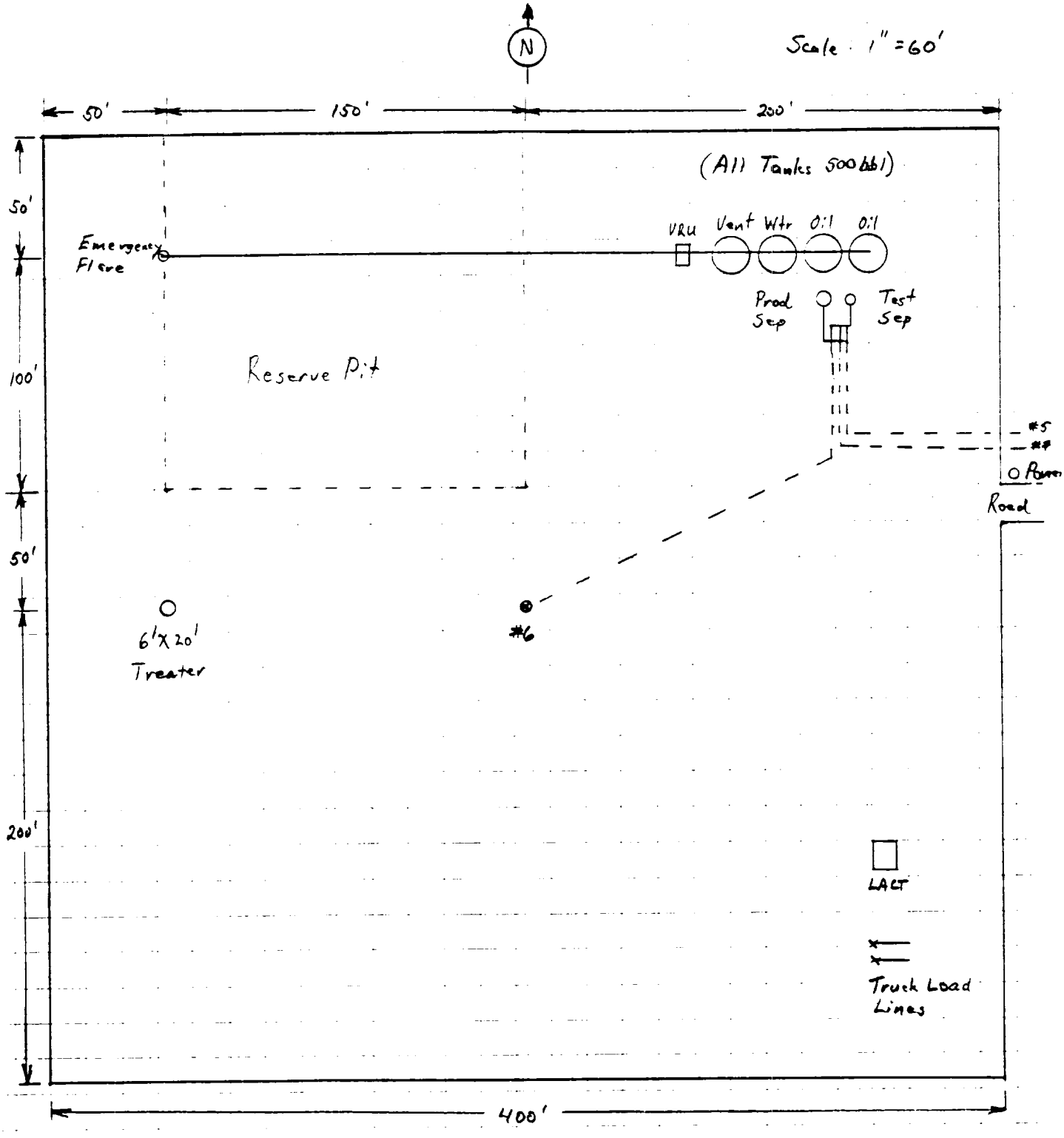
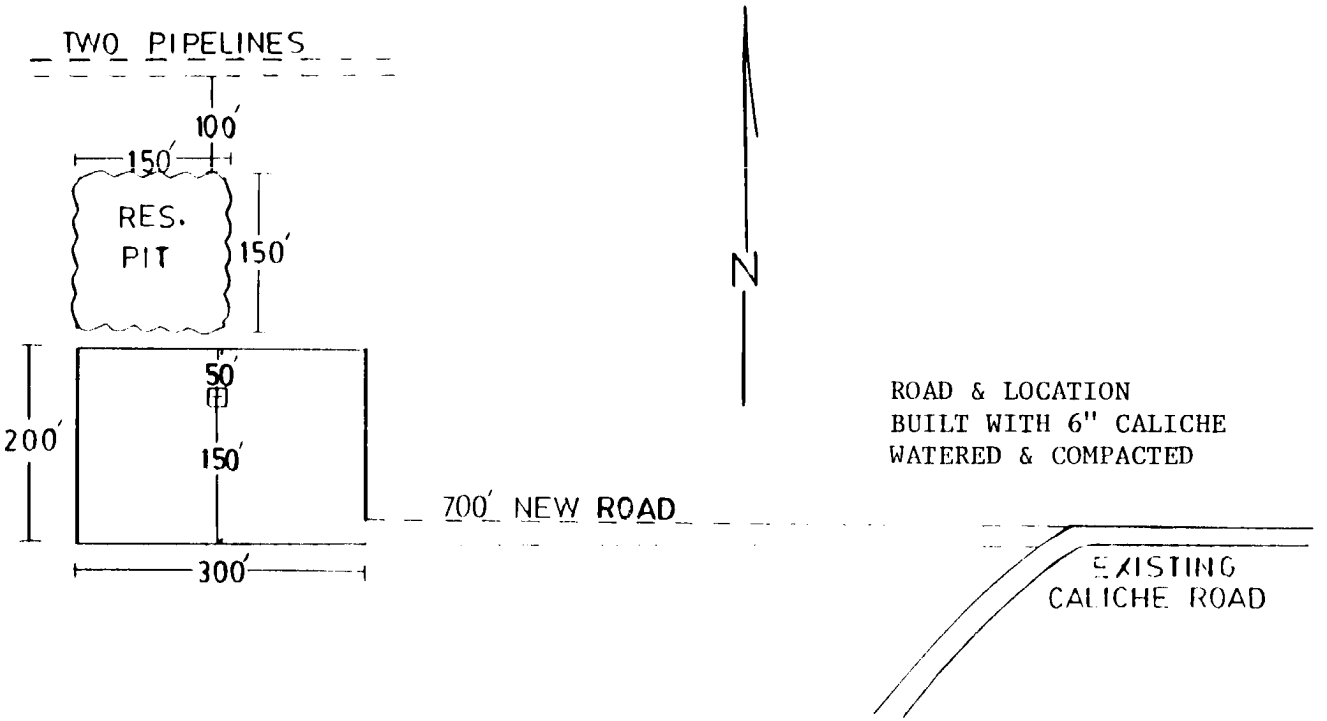


Exhibit D (2)

Form 371 2-86

PMS 8 FED WELL #5



SCALE: 1/2" = 100'

Exhibit E1

PMS 8 FED WELL #6

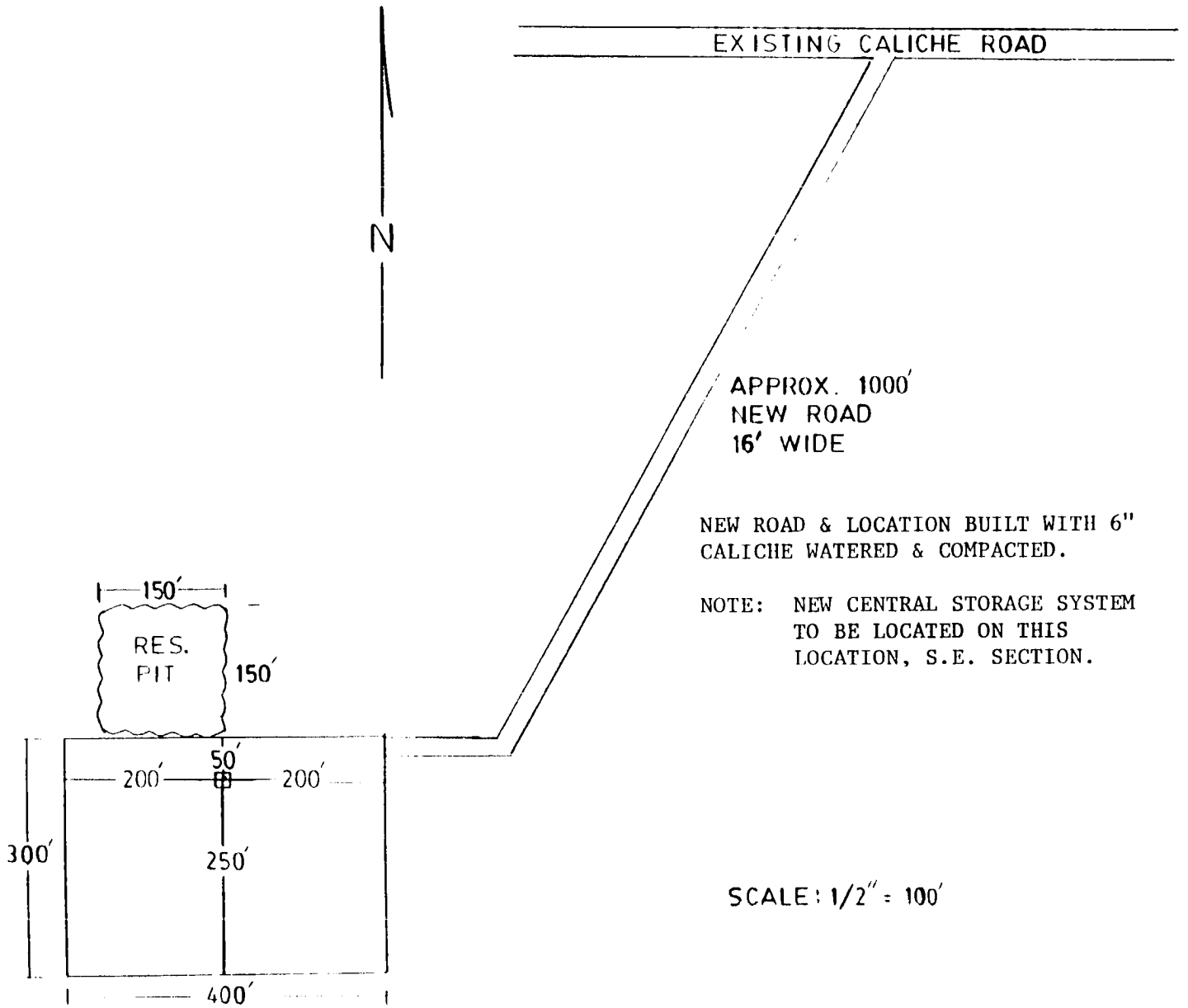
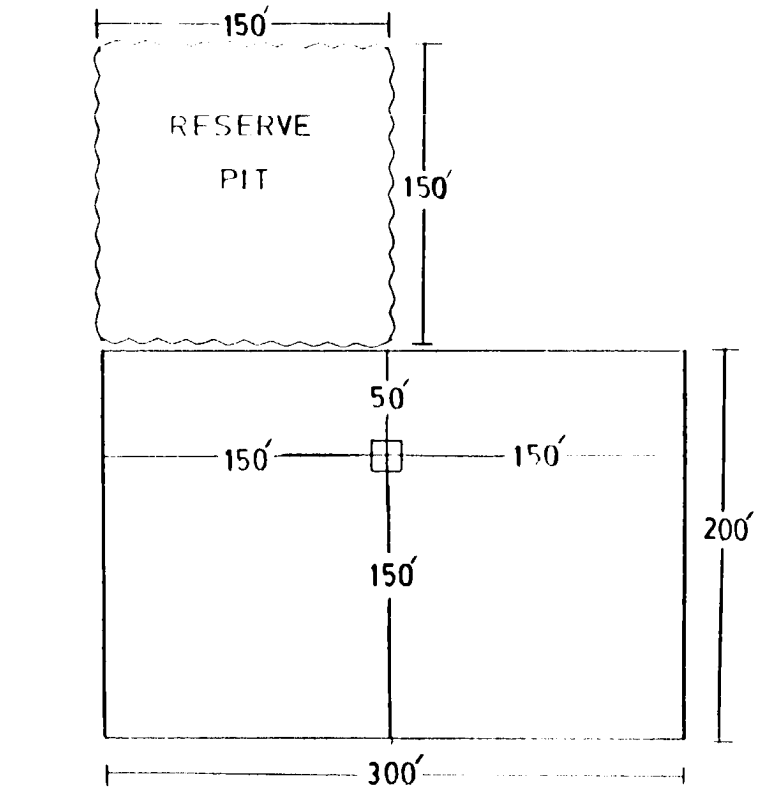


Exhibit E2

PMS 8 FED WELL #7

NOT

LOCATION - BUILT WITH 6" CALICHE
WATERED & COMPACTED.
NO ROAD REQUIRED TO
LOCATION.



SCALE: 1" - 100'

Exhibit E3