Form 9-331 C
(May 1963)

RECORD COPY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-015-23706

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM - 33277

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

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

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

8. FARM OR LEASE NAME: DERRICK FEDERAL

2. NAME OF OPERATOR: MESA PETROLEUM CO.

9. WELL NO.: 3

3. ADDRESS OF OPERATOR: 1000 VAUGHN BUILDING/MIDLAND, TEXAS 79701

10. FIELD AND POOL, OR WILDCAT: DIAMOND MOUND MORROW

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2045' FSL & 1980' FWL
At proposed prod. zone: SAME

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Unit-S SEC 5, T16S, R28E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 11 MILES SE OF LAKE ARTHUR

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
1980'/667'	840.45	320
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**
2640'	9400'	ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3619.8' GR

22. APPROX. DATE WORK WILL START*: MAY 1, 1981

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#	350'	400 SX/CIRC TO SURFACE
11"	8 5/8"	24#	1900'	1100 SX/CIRC TO SURFACE
7 7/8"	4 1/2"	10.5# &11.6#	9400'	SUFFICIENT TO COVER ALL PAY

Propose to drill 17 1/2" hole to approximately 350' without BOPs. After cementing 13 3/8" casing and nippling up 10" API 3000 psi BOPs, will drill 11" hole to approximately 1900' using fresh water as drilling fluid. Will cement 8 5/8" casing to surface, then drill 7 7/8" hole to total depth using same BOP arrangement as before (hydraulic pipe rams, blind rams and annular bag). Maximum mud weight should not exceed 9.4 ppg based upon nearby well data. See attached reports for other details.

Operator's gas is not dedicated.

Posted APD
API + NL Bond
3-20-81

XC: USGS (6), TLS, HOBBS, LAND, MEC, CEN RCDS, ACCTG, PARTNERS, FILE

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 R.E. Mathis (ow) TITLE REGULATORY COORDINATOR DATE FEBRUARY 20, 1981

(This space for Federal or State office use)

APPROVED

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY (Orig. Sgd.) GEORGE H. STEWART for MAR 9 1981 TITLE _____ DATE MAR 09 1981

CONDITIONS OF APPROVAL, IF ANY:

JAMES A. GILLHAM
DISTRICT SUPERVISOR

*See Instructions On Reverse Side

MEXICO OIL CONSERVATION COMMISSION

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	Lease	Well No.
Mesa Petroleum Co.	Derrick Fed.	3

Unit Letter	Section	Township	Range	County
S	5	16 South	28 East	Eddy

Actual Footage Location of Well: 2045 feet from the South line and 1980 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3619.8	MORROW	~~Undesignated~~ DIAMOND MOUND Morrow	S/2 320 Acres

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

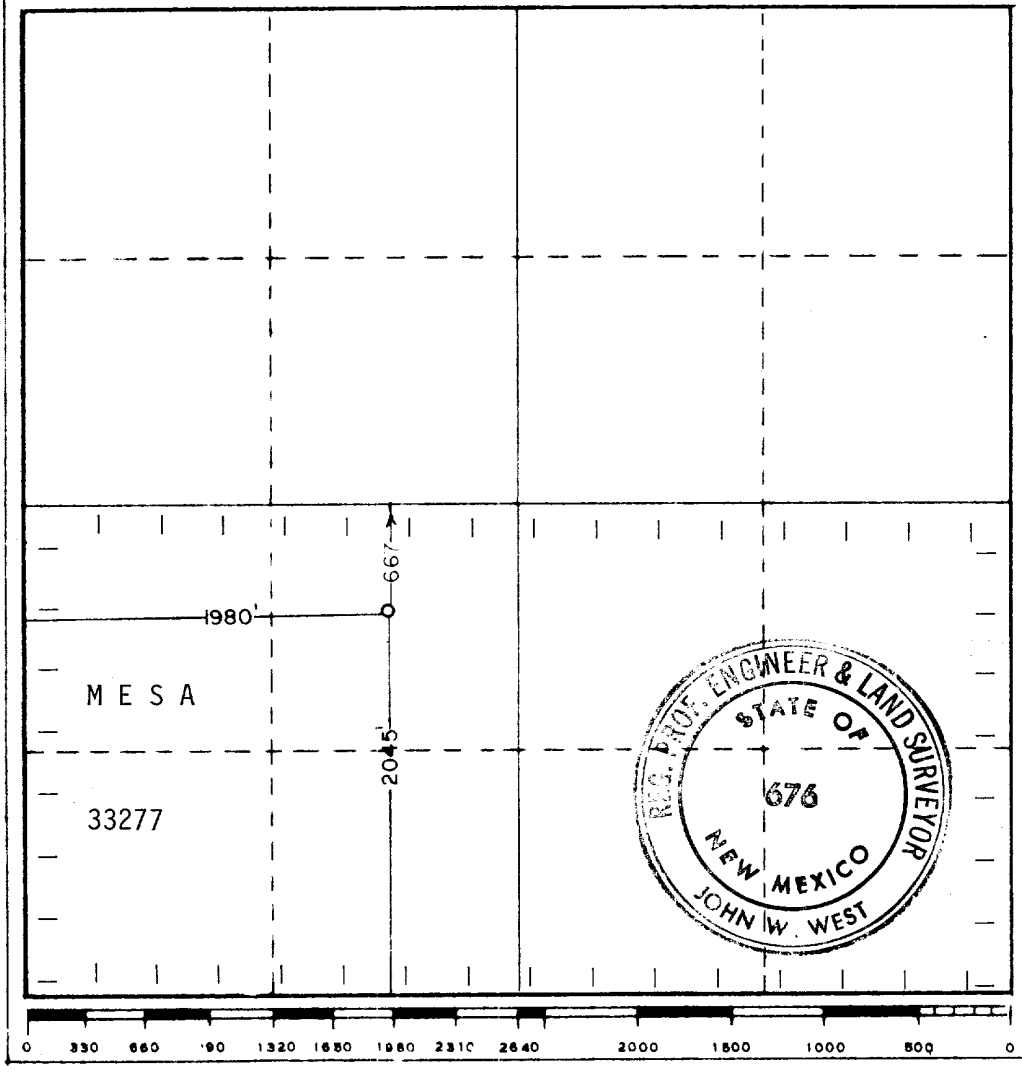
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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 Commission.



CERTIFICATION

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

R E Mathis

Name: R. E. MATHIS

Position: REGULATORY COORDINATOR

Company: MESA PETROLEUM CO.

Date: FEBRUARY 20, 1981

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: 2-7-81

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. JOHN W. WEST 676
PATRICK A. ROMERO 6668
Ronald J. Eidson 3239

APPLICATION FOR DRILLING

MESA PETROLEUM CO.
DERRICK FEDERAL #3
2045' FSL & 1980' FWL SEC 5, T16S, R28E
EDDY COUNTY, NEW MEXICO

LEASE NO: NM 33277

In conjunction with permitting subject well for drilling in Section 5, Township 16 South, Range 28 East, Eddy County, New Mexico, Mesa Petroleum Co. submits the following:

1. The geologic surface formation series is Guadalupian Artesia Group.

2. The estimated tops of geologic markers are as follows:

QUEEN	1002'
SAN ANDRES	1762'
GLORIETTA	2947'
TUBB	4477'
ABO	5257'
WOLFCAMP	6492'
BURSUM	7402'
STRAWN	8462'
ATOKA	8762'
MORROW	8982'
MISS CHESTER SH	9177'
MISS CHESTER LM	9277'
MISS MERAMEC OSAGE	9407'

3. The depth at which water, oil, or gas are expected is:

WATER	3020'
WATER	3520'
WATER	4530'
GAS & WATER	7660'
GAS-LOWER PENN	8470'
GAS-LOWER PENN	8770'
GAS-MORROW	8990'

4. Casing and Blowout Preventer Program:

Surface: 350' of 13 3/8" 48#, H-40, ST&C new casing cemented with 400 sx Class "H" with 1/4# flocele and 2% CaCl or sufficient volume to circulate cement to surface. Will install 12" API 3000 psi WP bradenhead and nipple up 10" API 3000 WP ram type BOPs to drill 11" intermediate hole.

Intermediate: 1900' of 8 5/8" 24#, K-55, ST&C new casing cemented with 200 sx Thixset plus 825 sx LW with 5# gilsonite, 1/4# flocele and 2% CaCl followed by 200 sx Class "C" with 2% CaCl or sufficient volume to circulate cement to bottom of surface casing. Will nipple up 12" API

3000 WP x 10" API 3000 WP casinghead spool and install 10" API 3000 psi WP BOP stack (consisting of 1 pipe ram, 1 blind ram, 1 bag type BOP) to drill 7 7/8" production hole.

Production: 9400' of 4 1/2" 11.6#, K-55, LT&C new casing cemented with sufficient volume (estimated 900 sx) to cover all pay. Cement will be Class "H" with 0.5% fluid loss additivie and 5# KCL.

Choke, kill, and fill lines are indicated on Exhibit I. BOPs will be tested with rig pumps prior to drilling below 8 5/8" casing shoe. BOPs will be tested again by independent concern prior to reaching 6500'. BOPs will be worked once each day, with blind rams worked only on trips.

5. Circulating Medium and Control Equipment:

0' - 350' Spud with fresh water gel flocculated with lime and pretreated with 6-8 lbs/bbl cottenseed hulls, 2-4 lbs/bbl fiber, and 2 lbs/bbl paper for possible severe loss circulation zone 100-200'. If necessary drill without returns, or if full returns cannot be established at casing point mix 150 bbls viscous mud treated with LCM as above and spot on bottom before coming out of the hole to run casing.

350' - 1900' Drill out with fresh water through a controlled section of the reserve pit. Add paper for seepage control or to sweep hole, as needed. At casing point, sweep hole with 150± bbls viscous mud with 6-8 lbs/bbl LCM before coming out of the hole to run casing.

1900' - 6000' Drill out with fresh water through a controlled section of the reserve pit. Use paper, sea mud, and salt water gel slugs to sweep the hole and control seepage, as necessary. To control corrosion maintain pH 8.5 to 9.5 with caustic soda and use corrosion chemicals from 1900' to total depth. A possibility of lost circulation exists at 2700± and 4700±.

6000' - 8600' Circulate steel pits and mud up to 34-36 sec/qt viscosity, 10 to 12cc API filtrate, and 3.0+% KCL with sea mud-salt water gel (2 to 1 ratio) and drispac-cypan after treating hardness with soda ash. Make solids control equipment operative.

8600' - T.D. Maintain viscosity 36-40 sec/qt, API filtrate less than 6cc, and 3.0% KCL with sea mud-salt water gel-drispac-cypan-white starch. Chloride-ion concentration must be greater than 30,000 ppm for logging purposes.

A full opening safety valve, to fit the drill string in use, will be kept on the rig floor at all times. Kelly cock, safety valve, choke and kill lines will be tested at same time that BOP tests are run.

6. There is no coring program planned for this well. It is possible that a drillstem test will be run in the Bursum (7420'-8480'), Strawn (8480'-8780'), and Morrow (9000'-9195'). The logging program will consist of a gamma ray log from total depth to surface. Neutron-density-caliper-and dual induction logs will be run from 1900' to total depth.

7. Maximum anticipated bottom hole pressure is 3300 psi at approximately 8500' based on nearby well data. Mud weight required to offset this pressure is 7.5 ppg. Maximum bottom hole temperature should approach 130° F. No sour gas is expected.

8. Anticipated starting date is May 1, 1981 with completion of drilling operations on May 31, 1981. Completion operations (perforating and stimulation) will immediately follow the drilling operations.

SURFACE USE AND OPERATIONS PLAN

MESA PETROLEUM CO.
DERRICK FEDERAL #3
2045' FSL & 1980' FWL, SEC 5, T16S, R28E
EDDY COUNTY, NEW MEXICO

LEASE NO: NM 33277

The following information and plan is submitted for the subject well by Mesa Petroleum Co.

1. Existing roads in the vicinity of planned well are shown on attached Exhibit II. As shown, the planned well is approximately 10 1/2 miles east-southeast of Lake Arthur, New Mexico. The subject well can be reached by traveling from Lake Arthur 3.3 miles east and south on Highway 507; then 7 miles east on improved county road. At this point, turn south about one mile across gentle sloping terrain to Derrick Federal Com #1, hence due south for .6 miles along fence to proposed location.

2. The planned access road is depicted by attached Exhibits II and III. Grading, and topping with caliche, is all that is planned for the proposed access road. The access road will be 12 feet in width (20' ROW width). A typical cross section is shown by Exhibit IV. There will be no culverts set because elevation change from existing road to proposed location is about 20 feet in 1/2 mile as indicated by Exhibit VI.

3. Exhibit III illustrates all wells within a one mile radius.

4. If the subject well proves commercial, gas separation-process equipment and tank battery will be located on the subject well's drilling pad. There are no gas or oil lines in the immediate area.

5. Both fresh and brine water utilized to drill the subject well will be hauled to location by truck transport over the existing and proposed access road. The source for brine water is near Artesia, New Mexico. The fresh water source is near Lake Arthur.

6. Top soil from the location proper will be stock piled near the location for future re-habilitation use. No surface materials will be disturbed except those necessary for the actual grading - leveling of the drill site and access road. (See Exhibit IV). With the exception of the 6" caliche top coat (compacted), all construction materials will be of local origin. Caliche to be used for topping the roadway and location, is located approximately 4 miles northwest of the proposed location in an existing open pit (NW/SE 25-15-26). The caliche will be transported over the existing and proposed access roadways.

7. Drill cuttings will be accumulated in the earthen reserve pit which will also be plastic lined. After the pit has sufficiently dried following drilling operations, the solids accumulation will be buried. Trash and garbage will be contained in an earthen pit and buried once drilling operations are completed. Sewage will be collected in a pit at least 6' deep below an outside latrine; suitable chemicals will be added to aid decomposition of the waste material. The pit will be back filled following completion of drilling operations. All pits will be fenced with normal fencing material to prevent livestock from entering the area.

8. No ancillary facilities will be constructed.

9. Rig layout and cross section of the planned drilling site are shown on Exhibitis IV and V. The reserve pits will be lined with plastic material.

10. Following completion of drilling operations, all pits will be filled and the area surrounding the location will be leveled or returned to its natural grade. Top soil will be stored near the drillsite and utilized to rehabilitate the location once drilling operations have ceased. If the well is not commercial, the drillsite and new access roadway will be graded to conform to original topography, top soil spread, and the entire location re-seeded. We will re-seed with seed type (and quantities) as recommended by the BLM. All re-seeding will be done with reasonable effort to establish a more attractive soil stabilizing growth of vegetation than what previously existed at the site. Re-seeding will take place at the first opportunity following completion of operations in accordance with the recommended seasonal seeding periods.

11. The area around the drilling site has a gradual sloping trend to the north. The surface supports a sparse growth of grass, sagebrush and greasewood. Domestic livestock are grazed in the area. The proposed roadway in Section 5 and the surface at the location are on federal acreage.

12. The Mesa Petroleum Co. representatives responsible for conducting this drilling operation are:

J. Wootten
P. O. Box 1756
Hobbs, New Mexico 88240
(505) 393-4425 - Office
(505) 393-6033 - Residence

C. C. Wheeler
1000 Vaughn Building
Midland, Texas 79701
(915) 683 - 5391 - Office
(915) 683 - 6123 - Residence

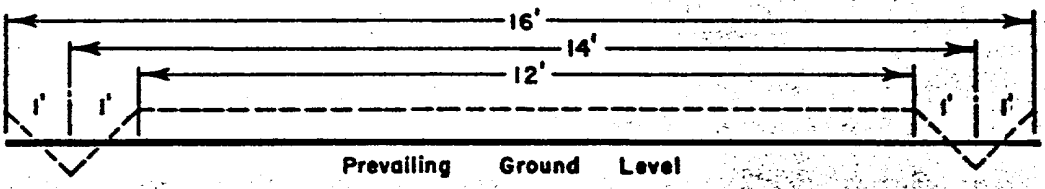
13. CERTIFICATION

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 work associated with the operations proposed herein will be performed by Mesa Petroleum Co. and its' contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

February 20, 1981
Date

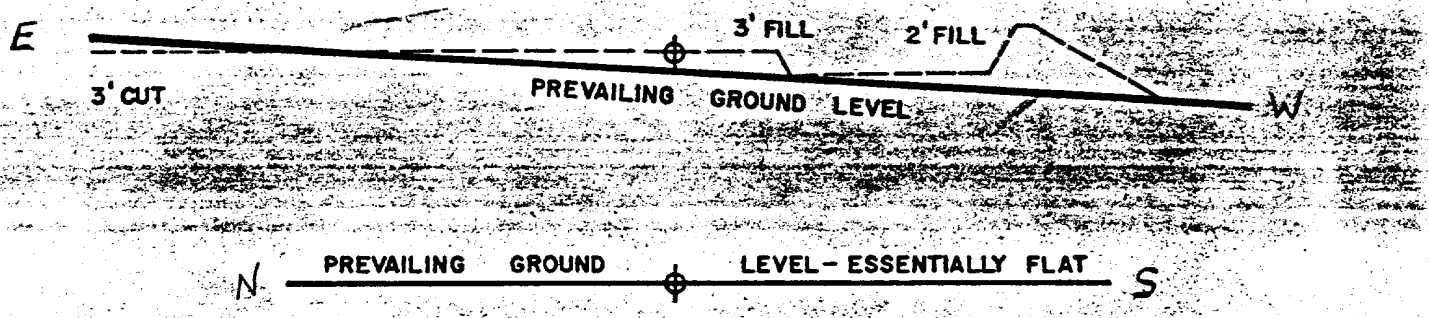
Michael P. Houston
Operations Manager

R - O - W 16'



ROADWAY CROSS SECTION

Horizontal Scale 1" = 3'



LOCATION CROSS SECTION

Horizontal Scale 1" = 50'

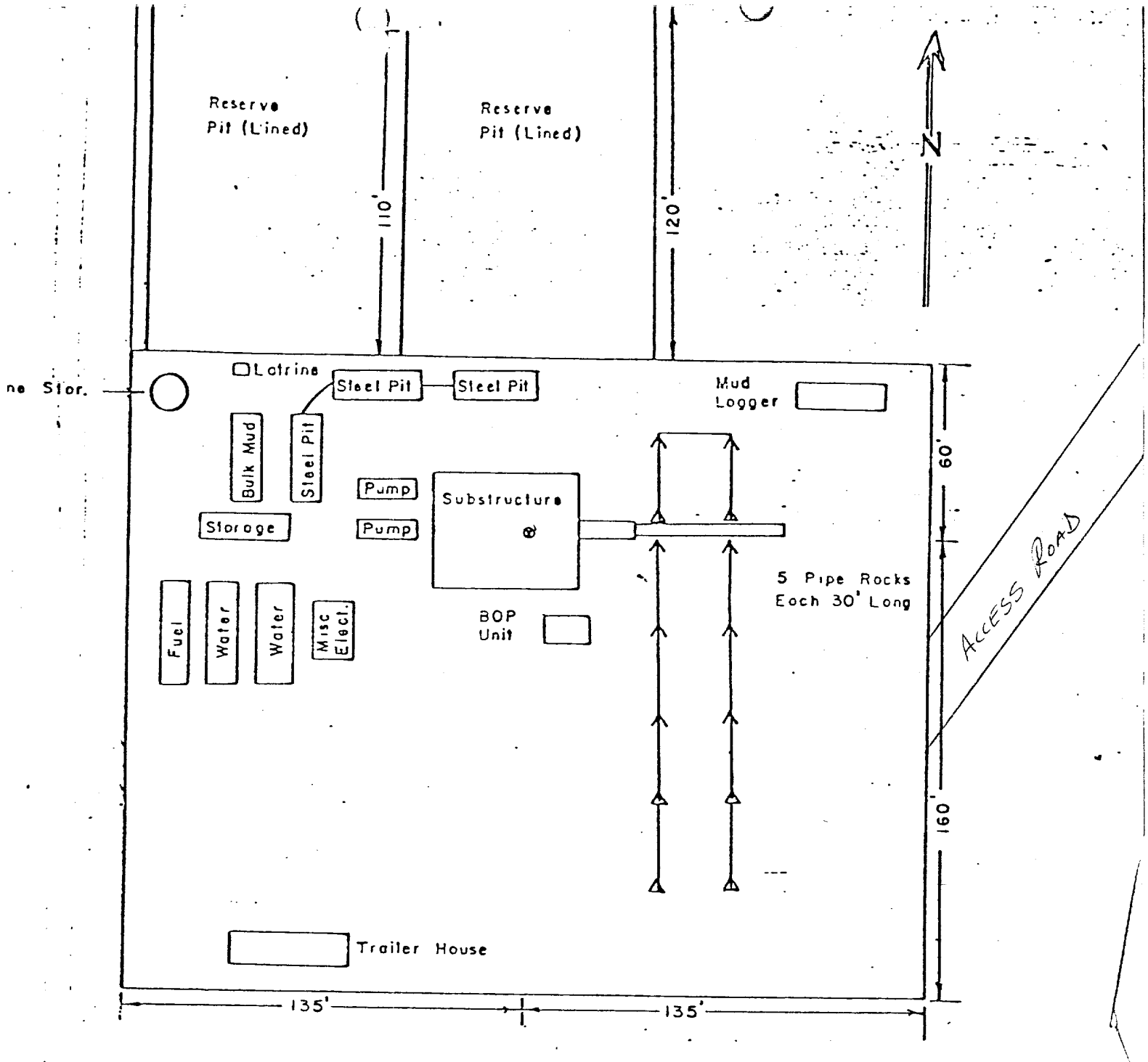
MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT IV

LOCATION CONSTRUCTION

DERRICK FEDERAL #3

BY: REM	DRAWN BY: MLP
DATE: 3-5-80	SCALE: AS NOTED

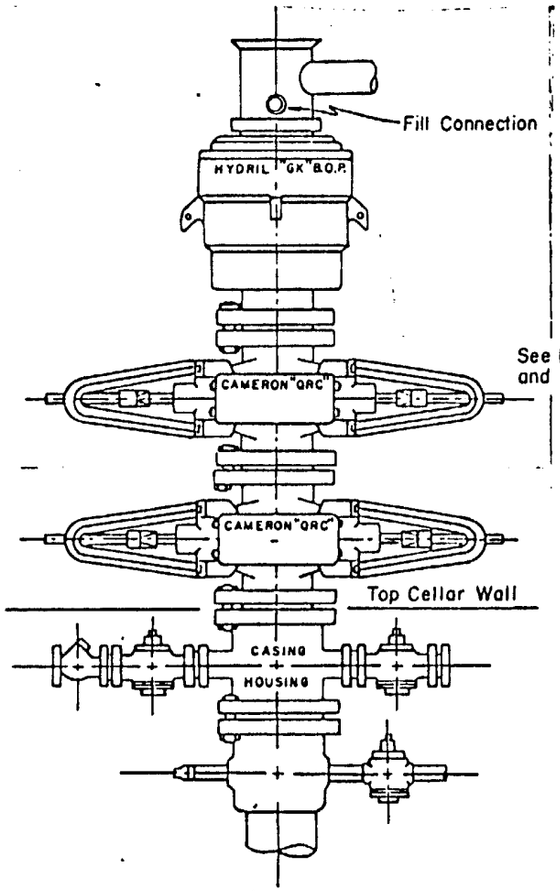


MESA
PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT V

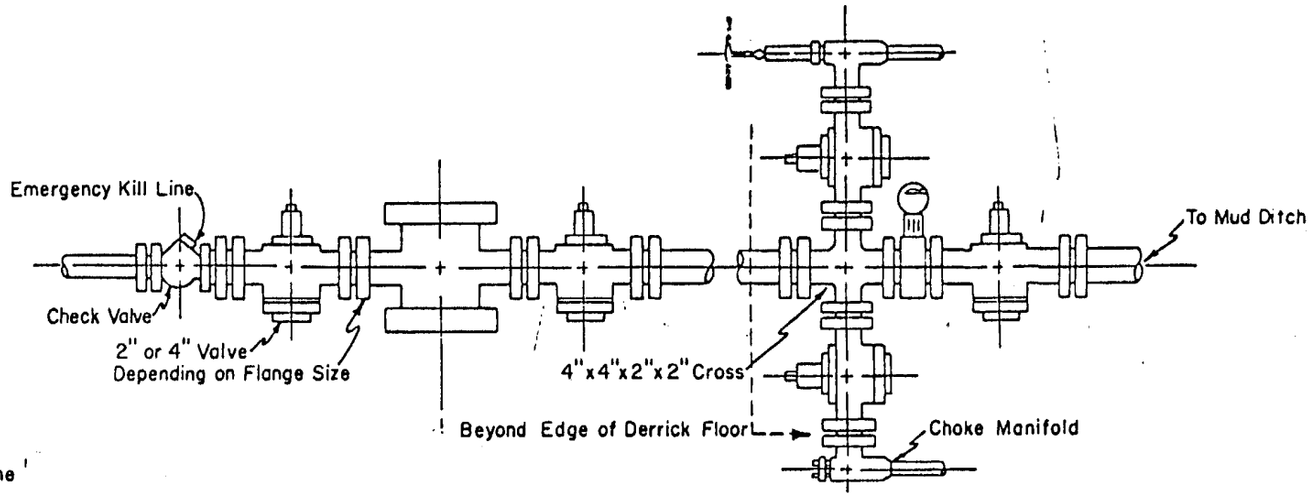
DERRICK FEDERAL #3

Blow-out Preventers hydril and choke manifold are all 900 Series



See Detail of 4" Flow Line and Choke Assembly

3,000 PSI WORKING PRESSURE
BLOW-OUT PREVENTER HOOK-UP



3,000 PSI WORKING PRESSURE
KILL, CHOKE, AND FILL CONNECTIONS

DETAIL OF 4" FLOW LINE CHOKE ASSEMBLY

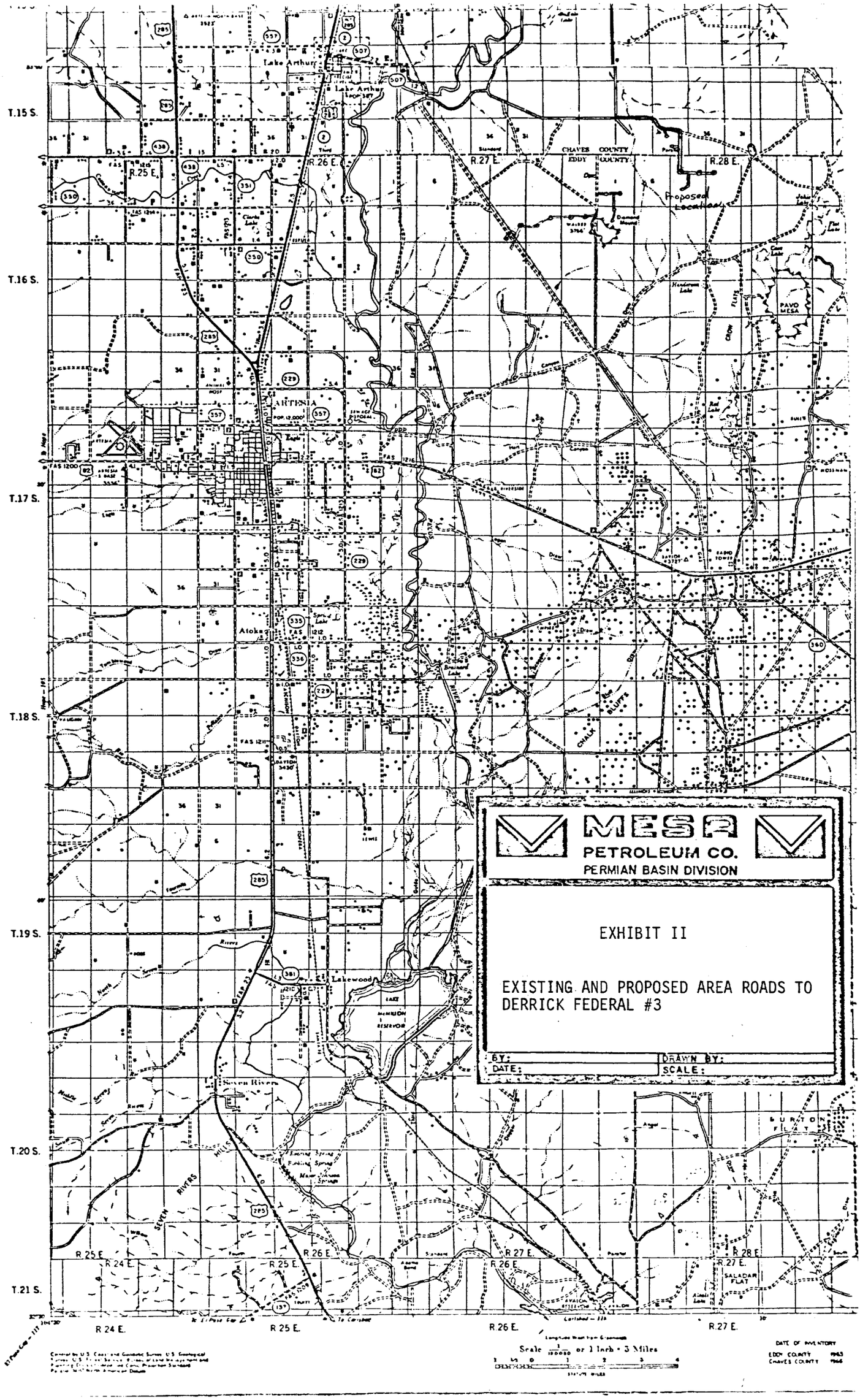
Minimum assembly for 3,000 PSI working pressure will consist of three preventers. The bottom and middle preventers may be Cameron.

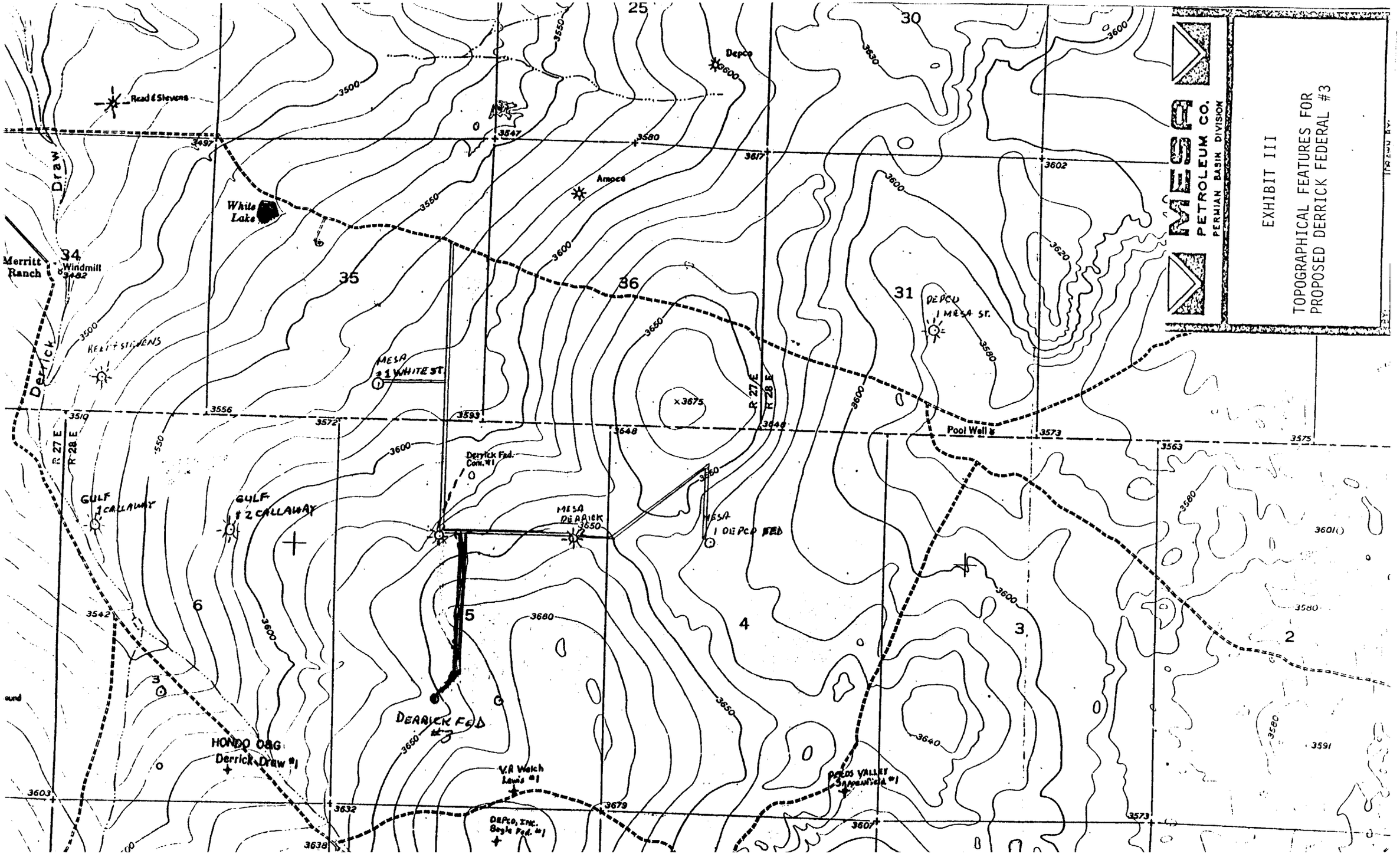
MESA PETROLEUM CO.
PERMIAN BASIN DIVISION

EXHIBIT
I

BLOWOUT PREVENTER SCHEMATIC
for proposed DERRICK FEDERAL #

BY:
DATE:
DRAWN BY:
SCALE:


T.15 S.
T.16 S.
T.17 S.
T.18 S.
T.19 S.
T.20 S.
T.21 S.
R.24 E.
R.25 E.
R.26 E.
R.27 E.
R.28 E.
Lake Arthur
ARTESIA
Atoka
Lakewood
Seven Rivers
CHAVES COUNTY
EDDY COUNTY
Proposed Location
PAVO MESA
BURTON FLAT
SALADAR FLAT
MESA
PETROLEUM CO.
PERMIAN BASIN DIVISION
EXHIBIT II
EXISTING AND PROPOSED AREA ROADS TO DERRICK FEDERAL #3
BY:
DRAWN BY:
DATE:
SCALE:
Scale 1/100000 or 1 Inch = 3 Miles
DATE OF PHOTOGRAPHY
EDDY COUNTY 1965
CHAVES COUNTY 1966


MESA PETROLEUM CO.
PERMIAN BASIN DIVISION
EXHIBIT III
TOPOGRAPHICAL FEATURES FOR
PROPOSED DERRICK FEDERAL #3
Derrick Draw
Merritt Ranch
Windmill
Read & Stevens
White Lake
Depco
Amoco
MESA 1 WHITE ST.
MESA 1 DEPCO ST.
Pool Well
Derrick Fed. Com. #1
GULF 1 CALLAWAY
GULF 2 CALLAWAY
MESA DERRICK
MESA 1 DEPCO FED
DERRICK FED
HONDO O&G Derrick Draw #1
V.R Welch Lewis #1
DEPCO, INC. Eagle Fed. #1
PECOS VALLEY Summerville #1
R 27 E
R 28 E
25
30
35
36
31
6
5
4
3
2