ATS-08-233

PLEASE EXPEDITE

This location was originally approved Dec. 27 2005 for one year. Now the company has a rig available on Jan. 15 2008 and would like to proceed with drilling.

Form 3160-3
(April 2004)

OCD-HOBBS 258

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

(RESUBMITTAL)

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM-65441

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. (24344)
MADERA "25" FEDERAL # 2

2. Name of Operator (9338)
GREAT WESTERN DRILLING COMPANY (CARY BILLINGSLEY 432-682-5241)

9. API Well No.
30-025-38767

3a. Address
P. O. BOX 1659 MIDLAND, TEXAS 79702

3b. Phone No. *(include area code)*
432-682-5241

10. Field and Pool, or Exploratory
JABALINA ATOKA-SW GAS

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 700' FNL & 1100' FEL SECTION 25 T26S-R34E LEA CO. NM
At proposed prod. zone SAME Unit A

11. Sec., T. R. M. or Blk. and Survey or Area
SECTION 25 T26S-R34E

14. Distance in miles and direction from nearest town or post office*
Approximately 15 miles Southwest of Jal New Mexico

12. County or Parish
LEA CO.

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
700'	1280	320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
2200'	16,000'	NM-0996 NATION WIDE
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3193' GL	WHEN APPROVED	60 Days

24. Attachments

RECEIVED
FEB 13 2008
HOBBS OCD

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Joe T. Janica	Joe T. Janica	12/13/07

Title: Permit Engineer

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ James Stovall	/s/ James Stovall	FEB 12 2008

Title: FIELD MANAGER

Office: CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Carlsbad Controlled Water Basin

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised JUNE 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-38767	79123	JABALINA-ATOKA SOUTHWEST (GAS)

Property Code	Property Name	Well Number
24344	MADERA "25" FEDERAL	2

OGRID No.	Operator Name	Elevation
9338	GREAT WESTERN DRILLING COMPANY	3193'

Surface Location

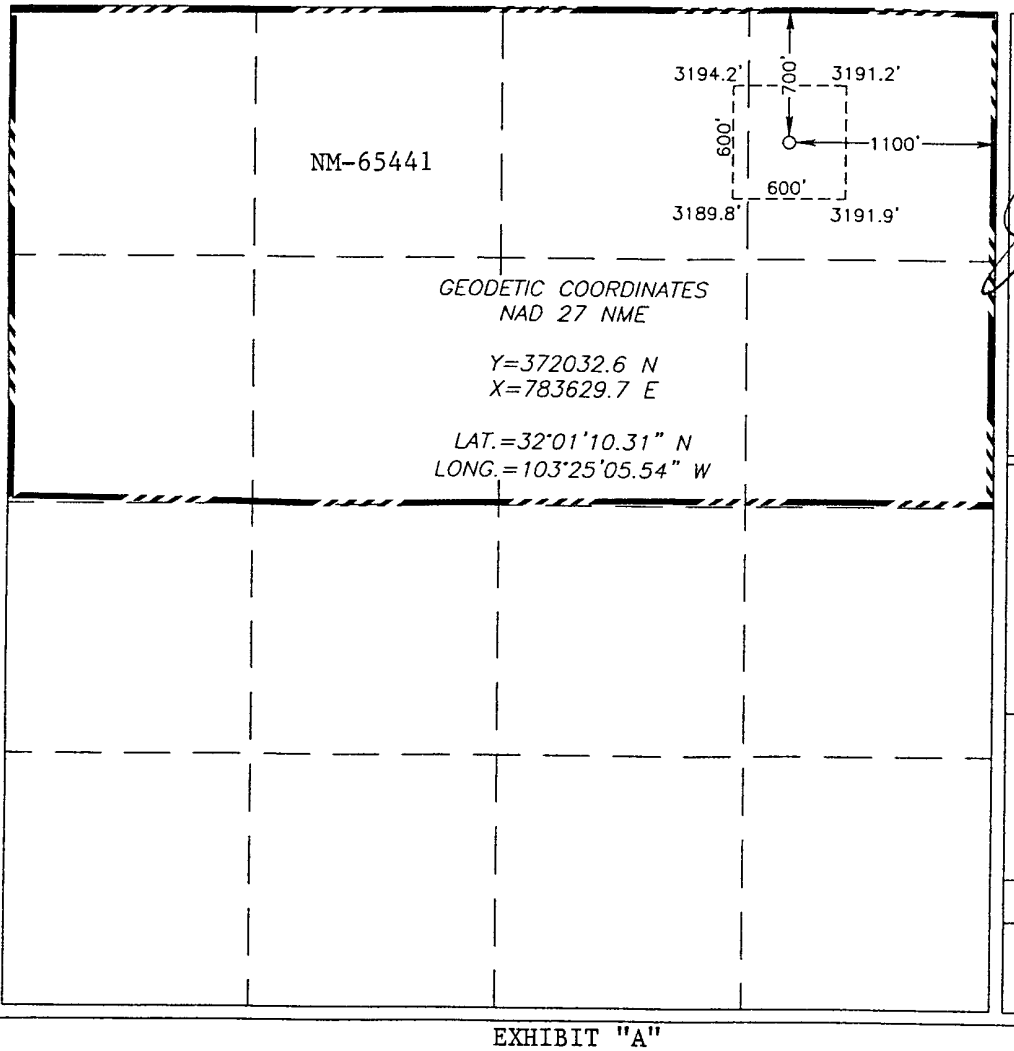
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	25	26-S	34-E		700	NORTH	1100	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

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

Signature

Joe T. Janica
Printed Name

Permit Engineer
Title

12/13/07
Date

SURVEYOR CERTIFICATION

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 supervison, and that the same is true and correct to the best of my belief.

GARY C. EIDSON
NEW MEXICO
SEPTEMBER 25, 2005
12641
REGISTERED PROFESSIONAL SURVEYOR
LA

Date Surveyed
Signature & Seal of Professional Surveyor

10/3/05

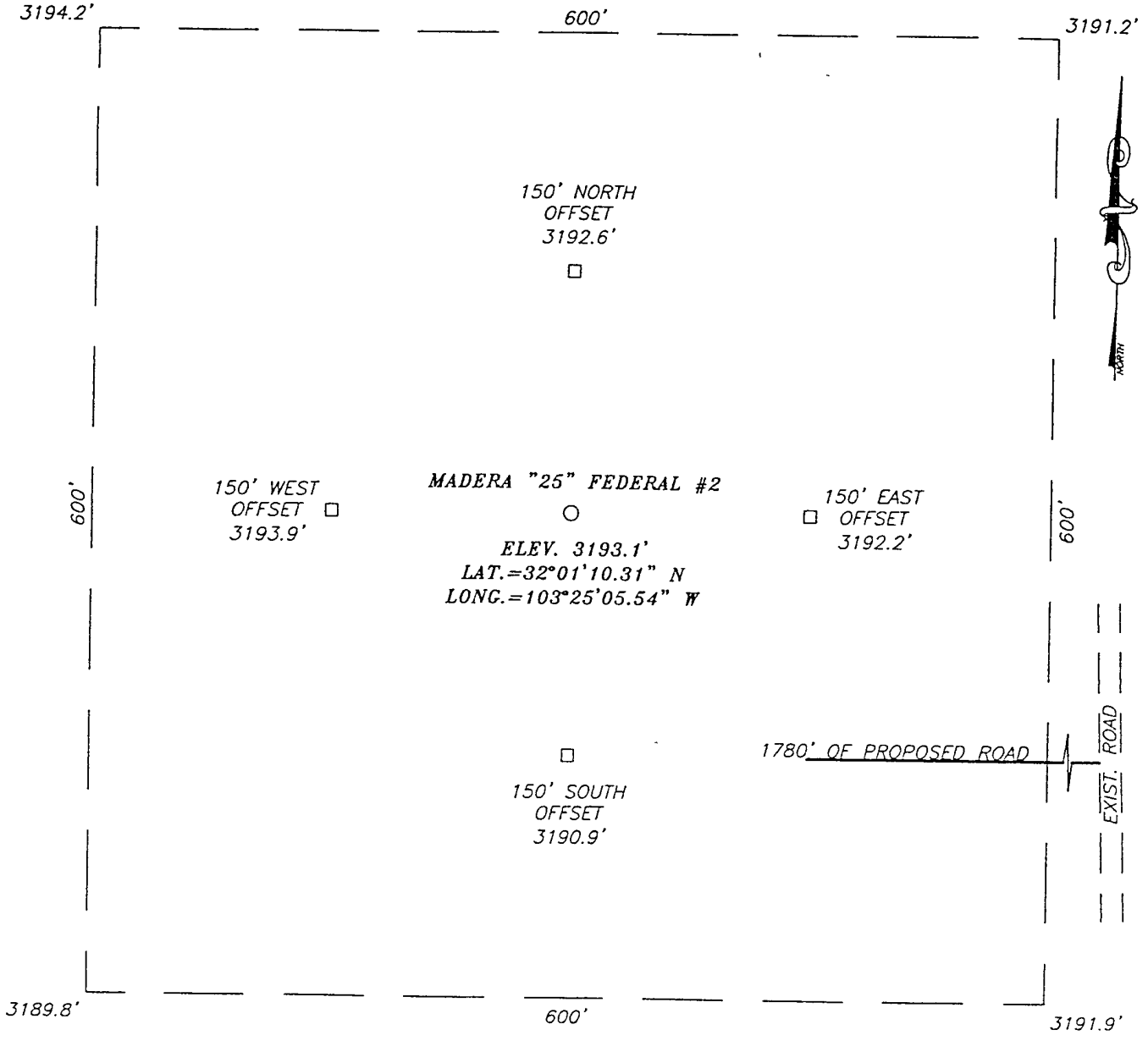
05.11.1464

Certificate No. GARY EIDSON 12641

EXHIBIT "A"

SECTION 25, TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. #205 (FRYING PAN RD.) AND BECKHAM RD. GO WEST ON BECKHAM RD. APPROX. 2.2 MILES TO BECKHAM RANCH TO A "Y" INTERSECTION. GO LEFT AROUND RANCH HOUSE WEST APPROX. 3.0 MILES. TURN RIGHT AND GO NORTH APPROX. 0.35 MILES. TURN LEFT AND GO WEST APPROX. 1.3 MILES TO A LEASE ROAD ON THE RIGHT. GO NORTH ACROSS 2 GATES. ROAD TURNS TO THE LEFT (WEST) APPROX. 0.52 MILES. TURN LEFT AND GO SOUTH APPROX. 0.62 MILES TO A PROPOSED ROAD SURVEY ON THE RIGHT. THIS LOCATION IS APPROX. 1780 FEET WEST.

100 0 100 200 Feet

Scale: 1"=100'

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO

HOBBS, N.M. 88240

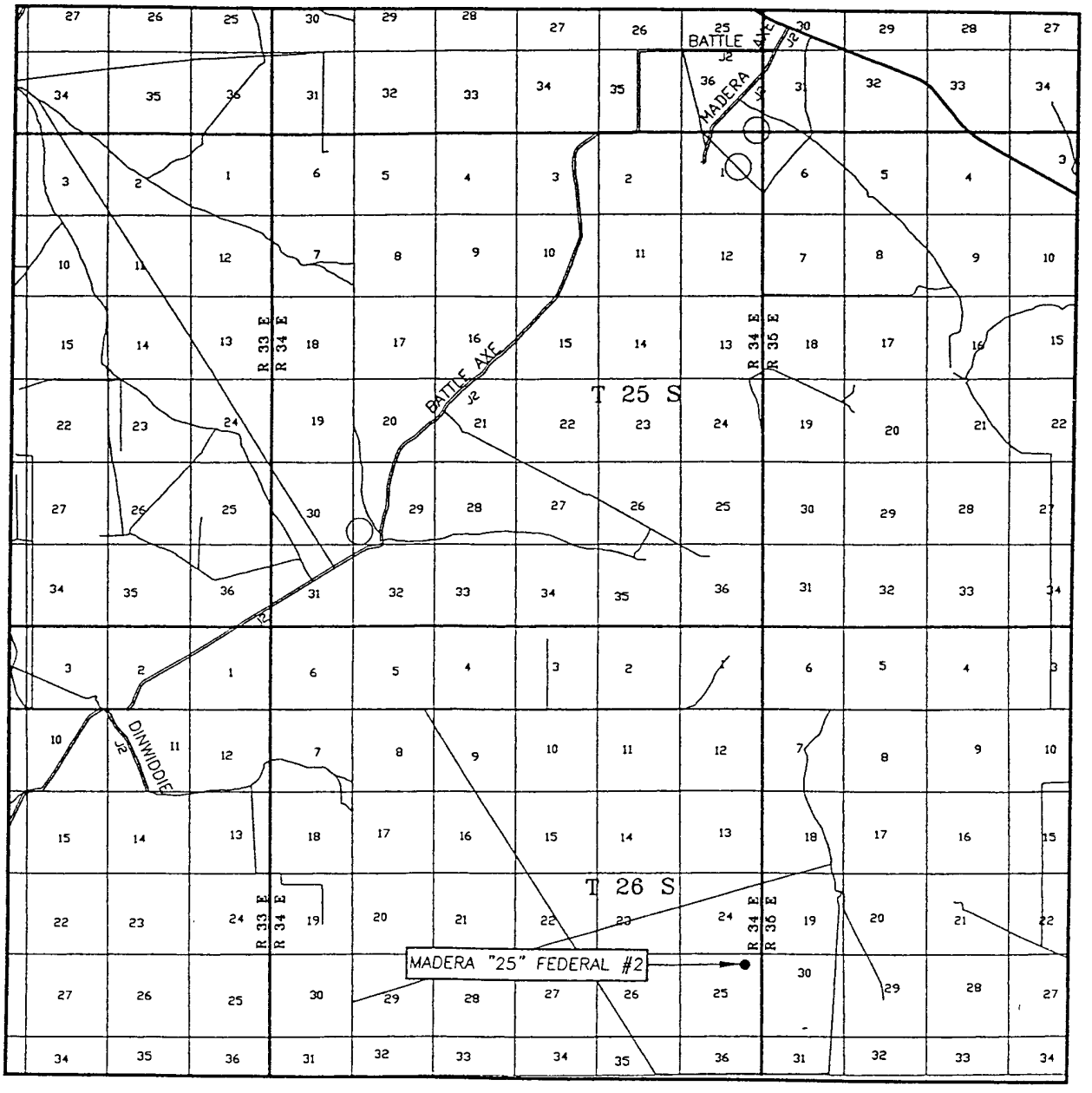
(505) 393-3117

GREAT WESTERN DRILLING COMPANY

MADERA "25" FEDERAL #2 WELL
LOCATED 700 FEET FROM THE NORTH LINE
AND 1100 FEET FROM THE EAST LINE OF SECTION 25,
TOWNSHIP 26 SOUTH, RANGE 34 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

Survey Date: 9/23/05	Sheet 1 of 1 Sheets		
W.O. Number: 05.11.1464	Dr By: LA	Rev 1:N/A	
Date: 9/27/05	Disk: CD#4	05111464	Scale: 1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 25 TWP. 26-S RGE. 34-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 700' FNL & 1100' FEL

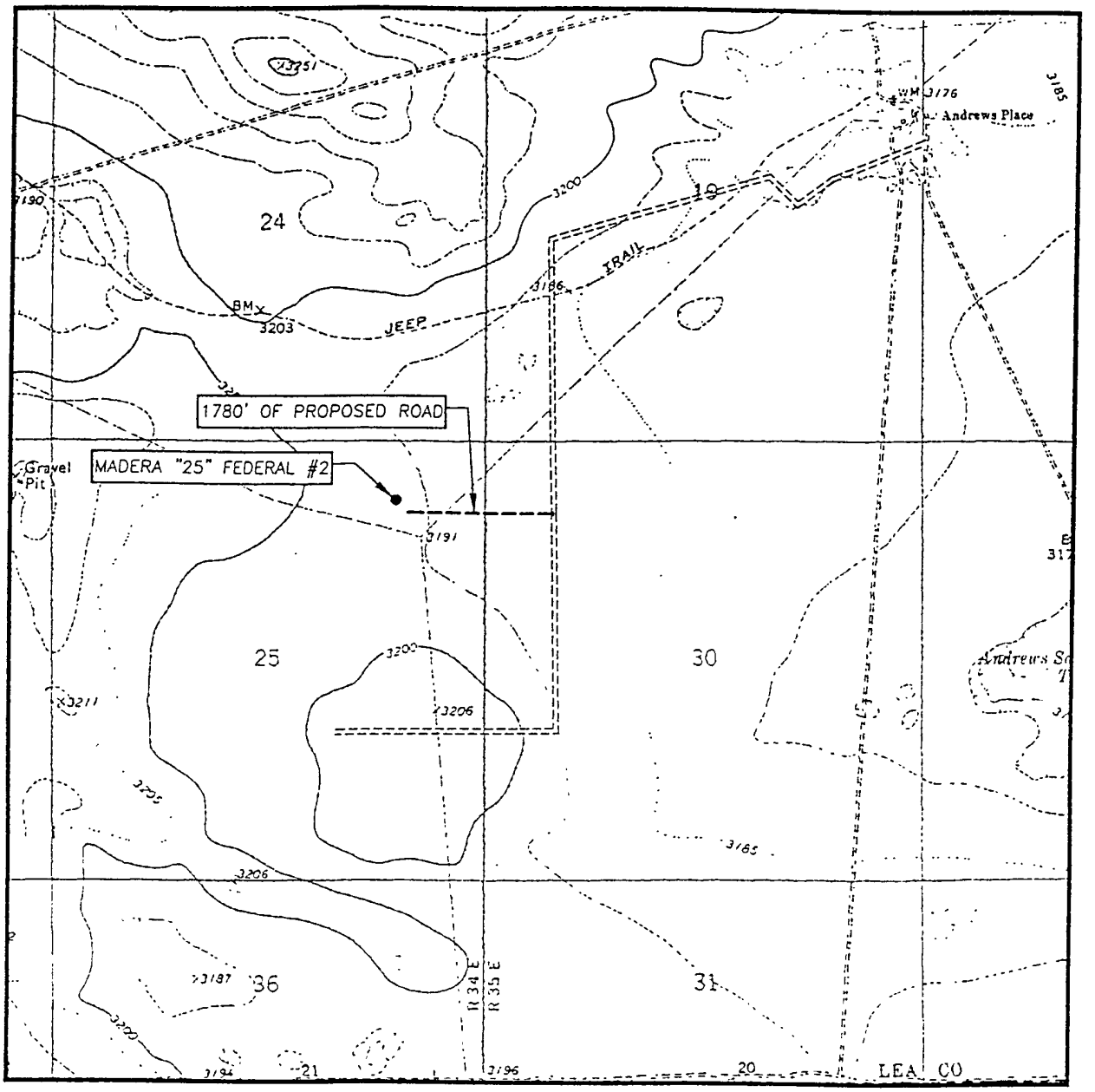
ELEVATION 3193'

OPERATOR GREAT WESTERN DRILLING COMPANY

LEASE MADERA "25" FEDERAL

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
ANDREWS PLACE, N.M. – 10'

SEC. 25 TWP. 26-S RGE. 34-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 700' FNL & 1100' FEL

ELEVATION 3193'

OPERATOR GREAT WESTERN DRILLING COMPANY

LEASE MADERA "25" FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
ANDREWS PLACE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

APPLICATION TO DRILL

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL # 2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

Carlsbad copy
Replace

In response to questions asked under Section II of Bulliten NTL-6, the following information on the above will be provided.

1. LOCATION: 700' FNL & 1100' FEL SECTION 25 T26S-R34E LEA CO. NEW MEXICO

2. ELEVATION ABOVE SEA LEVEL: 3193' GL

3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternery Aeolian Deposits.

4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.

5. PROPOSED DRILLING DEPTH: 16,000'

6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	800'	Wolfcamp	12,550'
Yates	2365'	Strawn	14,600'
San Andres	3620'	Atoka Lime	15,000'
1st Bone Spring Sd.	9470'	Atoka Sand	15,200'
		TD	16,000'

7. POSSIBLE MINERAL BEARING FORMATIONS:

Bone Spring	Oil	Strawn	Gas
Wolfcamp	Oil	Atoka	Gas

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	OD OF CASING	WEIGHT	THREAD	COLLAR	GRADE	
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-1000'	13 3/8"	54.5#	8-R	ST&C	K-55	New
12¼"	0-5340'	9 5/8"	36# 40#	8-R	ST&C	J-55 HCK-55	New
8½"	0-13,400'	7"	26# 32#	BUTRESS 8-R	BT&C LT&C	N-80	New
6 1/8"	13,400'-16,000'	4½"	15.1#	8-R	LT&C	N-80	New

Design Factors: Burst 1.0, Joint Strength 8-R 1.8 Bo... Yield 1.5
Butress 1.6

per operator 1/22/08

APPLICATION TO DRILL

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL # 2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

9. CASING SETTING DEPTHS & CEMENTING:

20"	CONDUCTOR	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Set ~~5340'~~ 1000' of 13 3/8" 54.5# K-55 ST&C casing. Cement with 1000 Sx. of of Class "C" cement + ¼# Flocele/Sx. + 2% CaCl, Yield 1.32, circulate cement to surface.
9 5/8"	Intermediate	Set 5340' of 9 5/8" 36&40# J-55 & HCK-55 ST&C casing. Cement with 1500 Sx of 65./35 Class "C" POZ+ 6% Gel, + 5% Salt Yield 2.09, tail in with 500 Sx. of Class "C" cement + 1% CaCl, Yield 1.32. Circulate to surface.
7"	2nd Intermediate	Set 13,400' of 7" 26 & 32# BT&C, LT&C casing. Cement with 1550 Sx. of Class "H" cement + 1.0% Fl additive, + .15% + .25disp + retarder as necessary. Estimate TOC 3000' from surface. 1.62 per oper 1/22/08 mc
4½"	Prod Liner	set a 3000' 4½" liner from TD back to 13,000'. 3000' of 4½" 15.1# LT&C N-80 Liner, cement with 300 Sx. of Class "H" cement + .3% Hal413 +.2% Hal 344, + SSA-1 + 25% SSA-2 + 10#/Sx. HiDens + .2% SA5431 + .4% SCR100, + .4% HR2. Yield 1.38 cement to top of liner.

10. PRESSURE CONTROL EQUIPMENT:

Exhibit "E" shows a 1500 series 5000 PSI working pressure B.O.P. to be installed on the 13 3/8" casing. B.O.P. will be tested to API specifications prior to drilling casing shoe. This 5000 PSI B.O.P. will remain on the hole till the 7" casing is run. Exhibit "F" shows a 10,000 PSI working pressure B.O.P. to be installed after the 7" casing is run and cemented and prior to drilling the Strawn. Exhibit "E-1" shows a 5000 PSI choke manifold and closing unit. Exhibit "F-1" shows a 10,000 PSI choke manifold and closing unit. The B.O.P.s will be operated at least once in each 24 hour period and the blind rams will be operated when the drill pipe is out of hole on trips. High pressure gas may be encountered in the Strawn. Mud weight will be increased in order to control this pressure.

12. LOGGING, CORING, AND TESTING PROGRAM:

A. Open hole logs : Dual Laterolog, SNP, LDT, MSFL, Gamma Ray, Caliper from TD back to 4000'.

B. Cased hole logs: Gamma Ray, Neutron from 5340' to surface.

C. Rig up mud logger on hole at 4000' and keep on hole to TD.

D. No cores are planned at this time, DST's may be run if shows dictate.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H^2S in this area. If H^2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 9500± PSI, and Estimated BHT 215°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 60 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Atoka formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialed as a gas well.

APPLICATION TO DRILL

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL # 2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.

2. Drill 17½" hole to 1000'. Run and set 1000' of 13 3/8" 54.5# J-55 ST&C casing. Cement with 1000 Sx. of Class "C" cement + ¼# Flocele/Sx, + 2% CaCl, (Yield 1.34) circulate cement to surface.

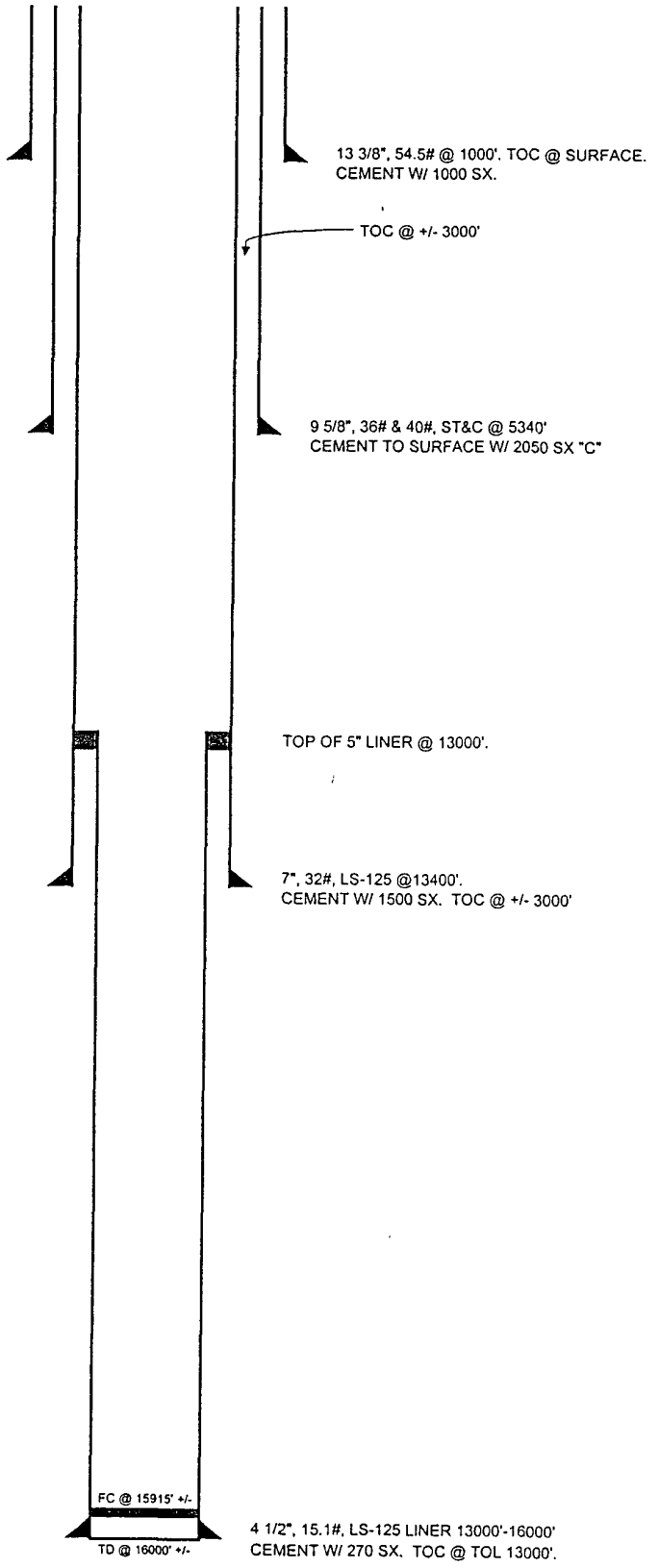
3. Drill 12¼" hole to 5340'. Run and set 5340' of 9 5/8" as follows: 2140' of 9 5/8" 40# S-80 ST&C, 3200' of 9 5/8" 36# J-55 ST&C casing. Cement with 2050 Sx. of Class "C" cement + ¼# Flocele/Sx. + 2% CaCl, (Yield 1.34). Circulate cement to surface.

4. Drill 8 3/4" hole to 13,400'. Run and set 13,400' of 7" 32# LS-125 LT&C casing. Cement with 1000 Sx. of Class "C" + additives, (Yield 1.5) tail in with 500 Sx. of Class "C" cement + 2% CaCl, +¼# Flocele/Sx. (Yield 1.34). Estimate top of cement 3000'±.

5. Drill 6 3/4" hole to 16,000'. Run and set 3000' of 4½" 15.1# LS-125 LT&C liner from 16,000' to 13,000'. Cement with 270 Sx. of Class "H" cement + additives (Yield 1.18) bring cement to top of liner.

MADERA "25" FEDERAL #2

700' FNL & 1100' FEL
SEC 25, T26S-R34E
LEA COUNTY, NEW MEXICO
GL 3193'
API # 30-025-

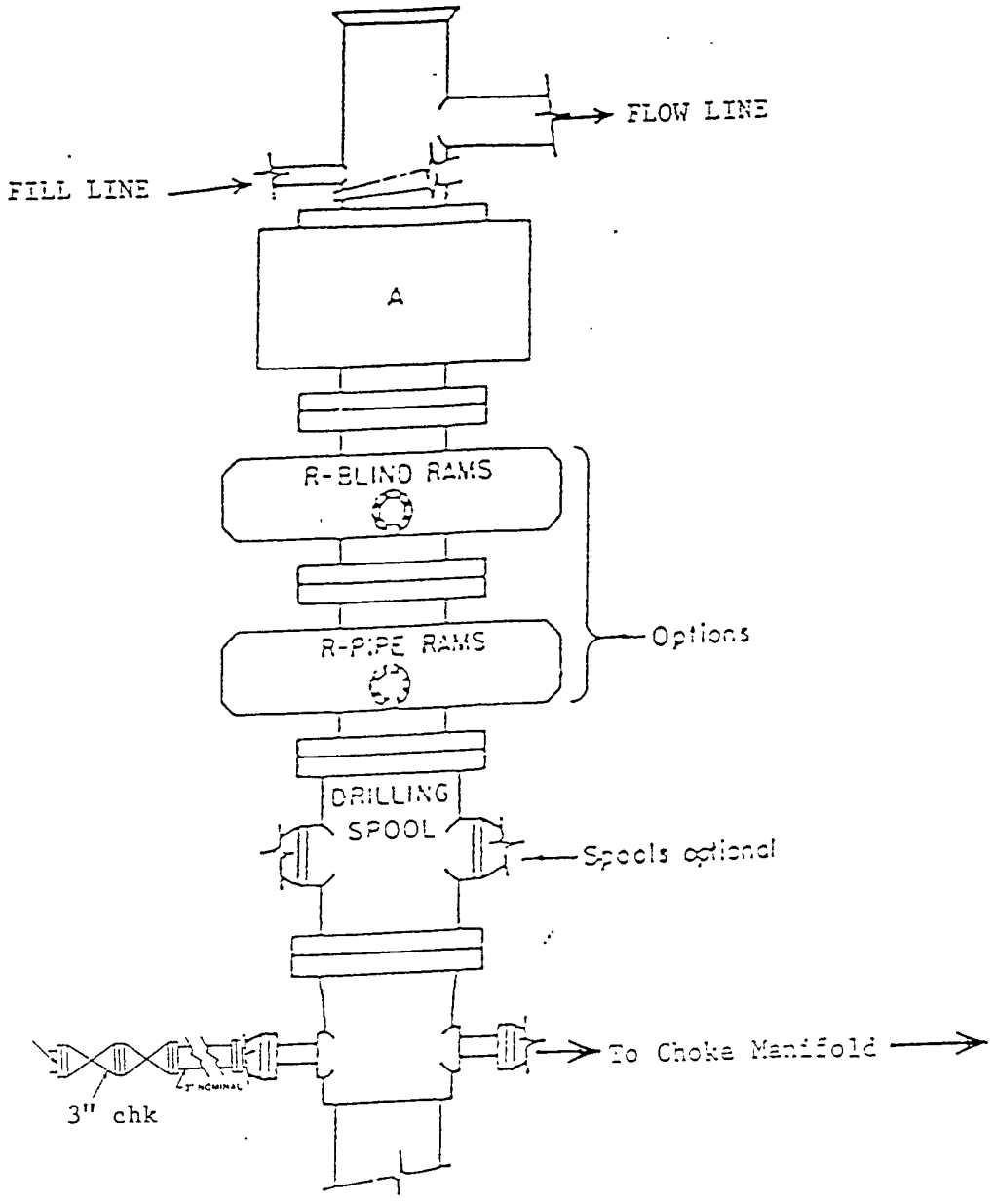


CNB 10/14/2005

Casing Design per operator 1/31/2008:

Hole Size	Interval	Size	Weight	Thread	Collar	Grade
26"	0-40'	20"	NA	NA	NA	Conductor
17.5"	0-1000'	13.375"	54.5	8-R	STC	K-55
12.25"	0-3100'	9.625"	36	8-R	STC	K-55
12.25"	1500-4600'	9.625"	36	8-R	STC	HCK-55
12.25"	4600-5340'	9.625"	40	8-R	STC	HCK-55
8.75"	0-13400'	7"	29	8-R	LTC	HCP-110
6.75"	13000-16000'	4.5"	15.1	8-R	LTC	Q-125

WWI 013108



ARRANGEMENT SRRA

1500 SERIES
5000 PSI WP

EXHIBIT "E"
SKETCH OF B.O.P. TO BE USED ON
5000 PSI

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL #2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

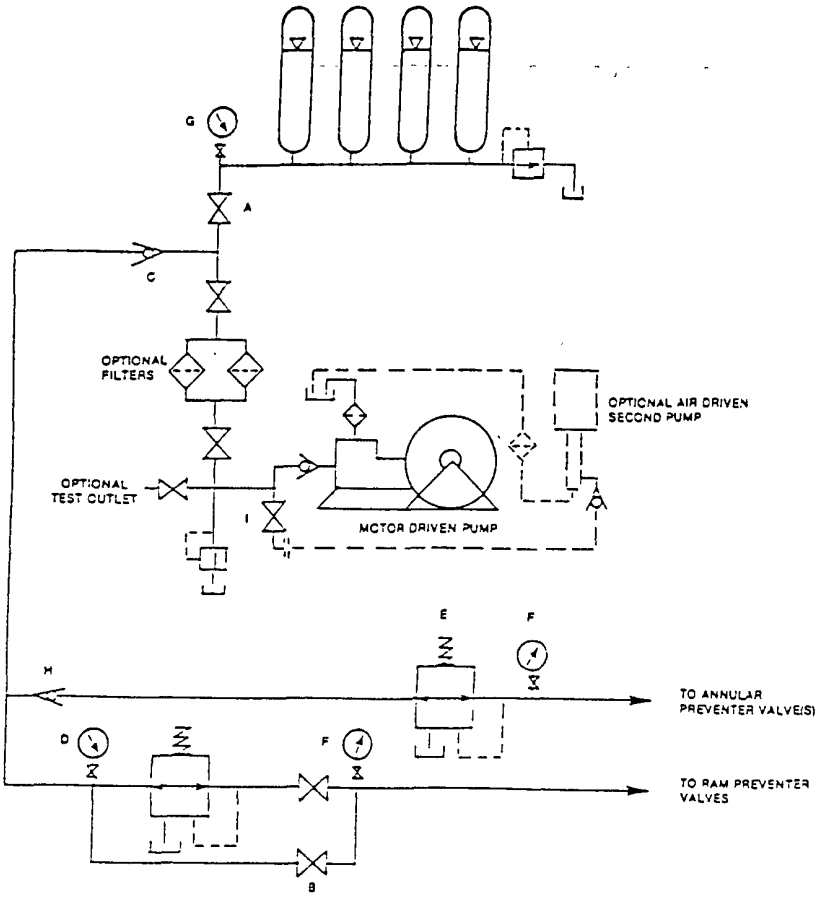
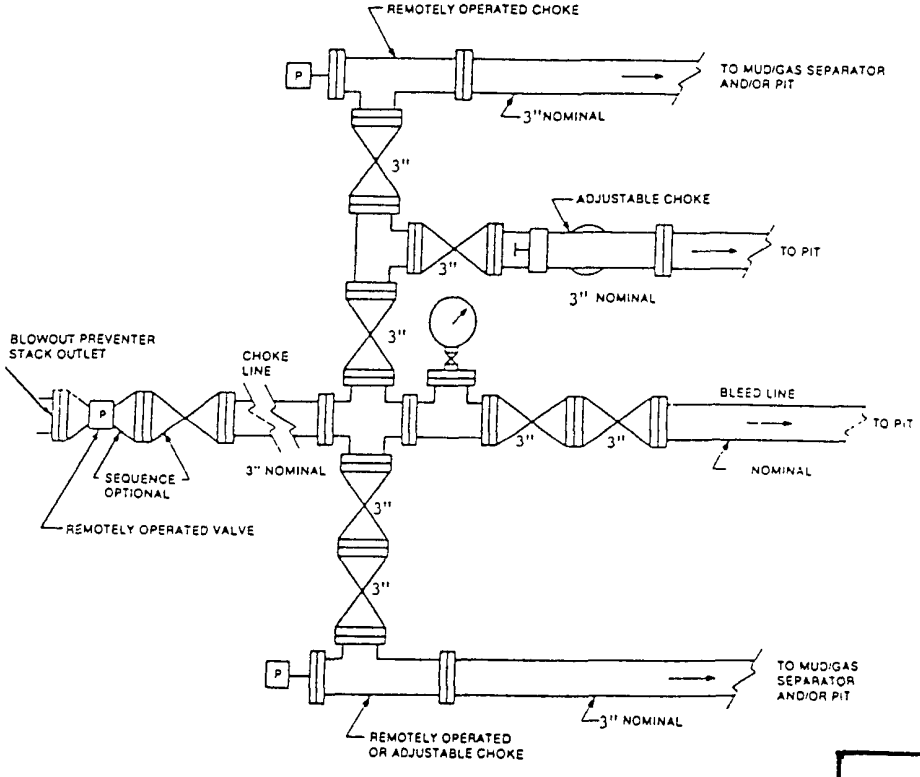


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.



10M manifold (2 man chokes / remote)

FIGURE K4-3. Typical choke manifold assembly for 10M and 15M rated working pressure service — surface installation.

EXHIBIT "E-1"
CHOKE MANIFOLD & CLOSING UNIT

GREAT WESTERN DRILLING COMPANY
MADERAL "25" FEDERAL #2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

MADERA "25" FEDERAL #2
UNIT "A" SECTION 25

PROPOSED 10-M BOPE AND CHOKE ARRANGEMENT

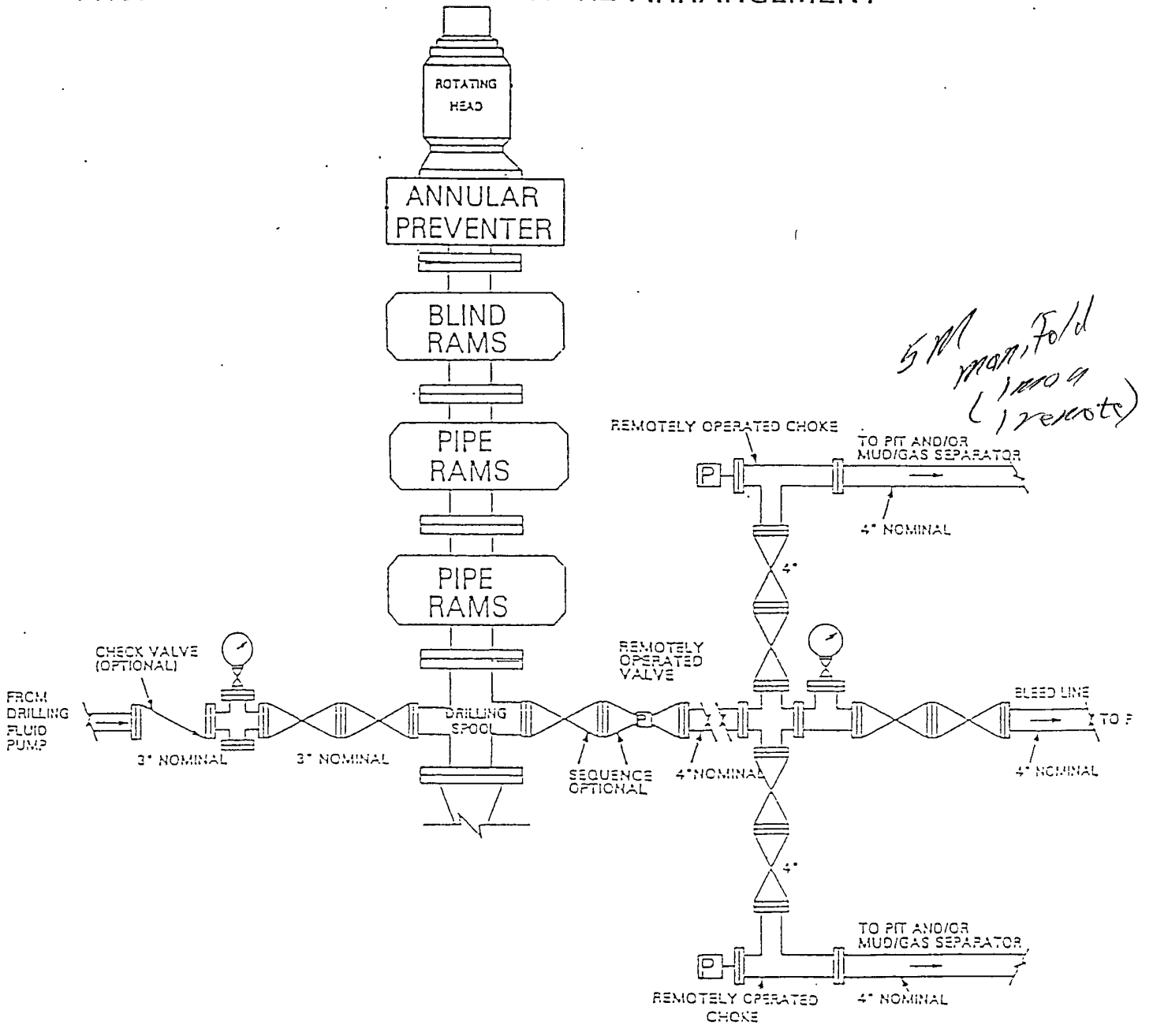


EXHIBIT "F"
SKETCH OF B.O.P. TO BE USED ON
10,000 PSI
GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL #2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

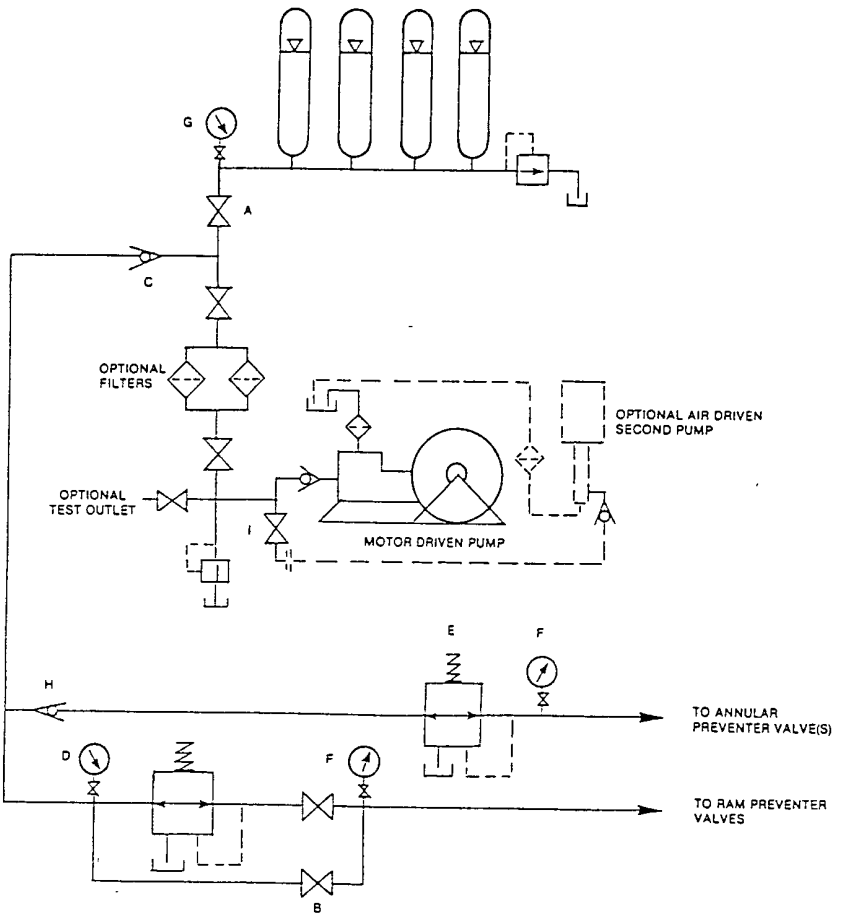


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

EXHIBIT "F-1"
SKETCH OF ACCUMULATOR
SYSTEM AND COMPONENTS

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL #2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

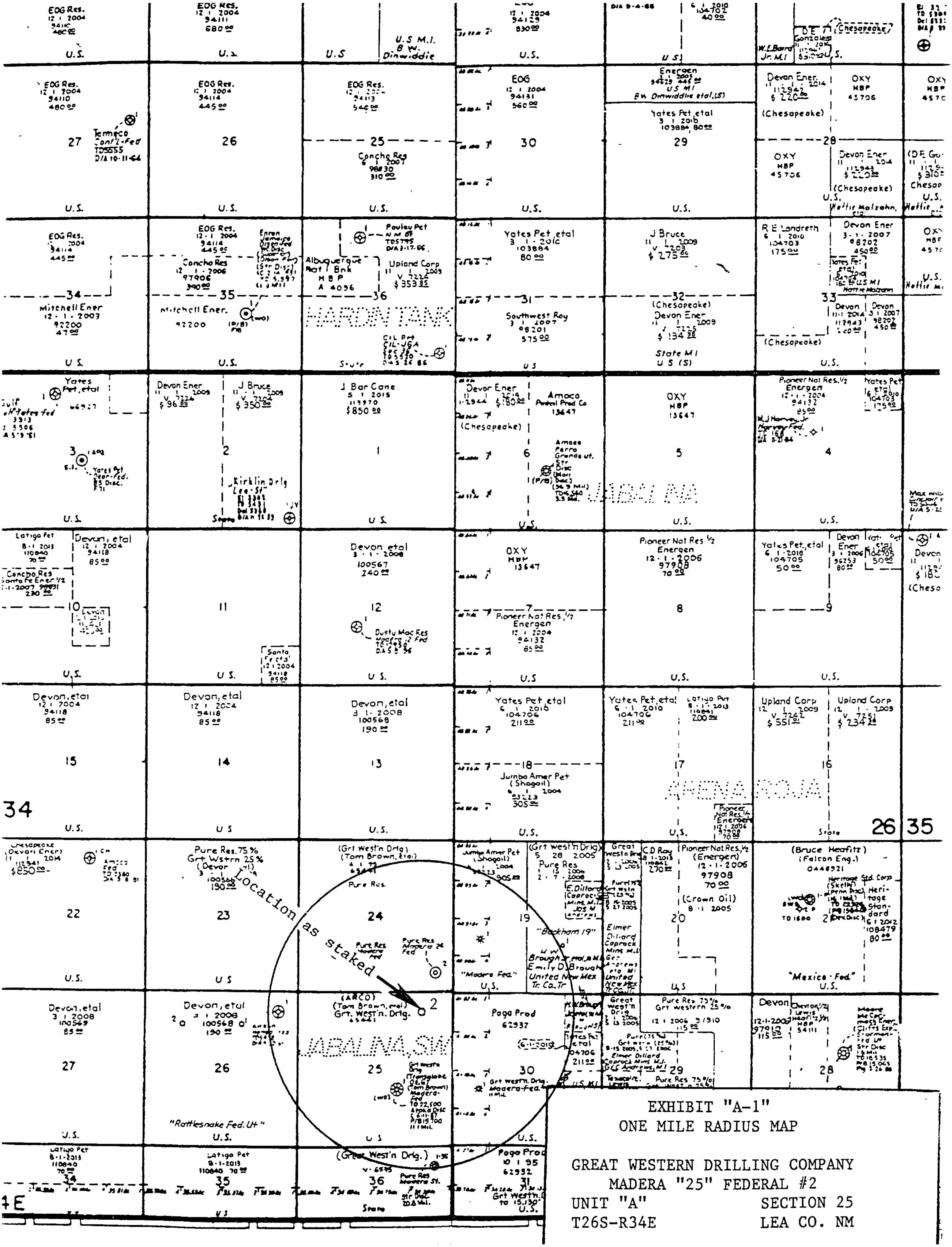


EXHIBIT "A-1"

ONE MILE RADIUS MAP

GREAT WESTERN DRILLING COMPANY

MADERA "25" FEDERAL #2

UNIT "A" SECTION 25

T26S-R34E LEA CO. NM

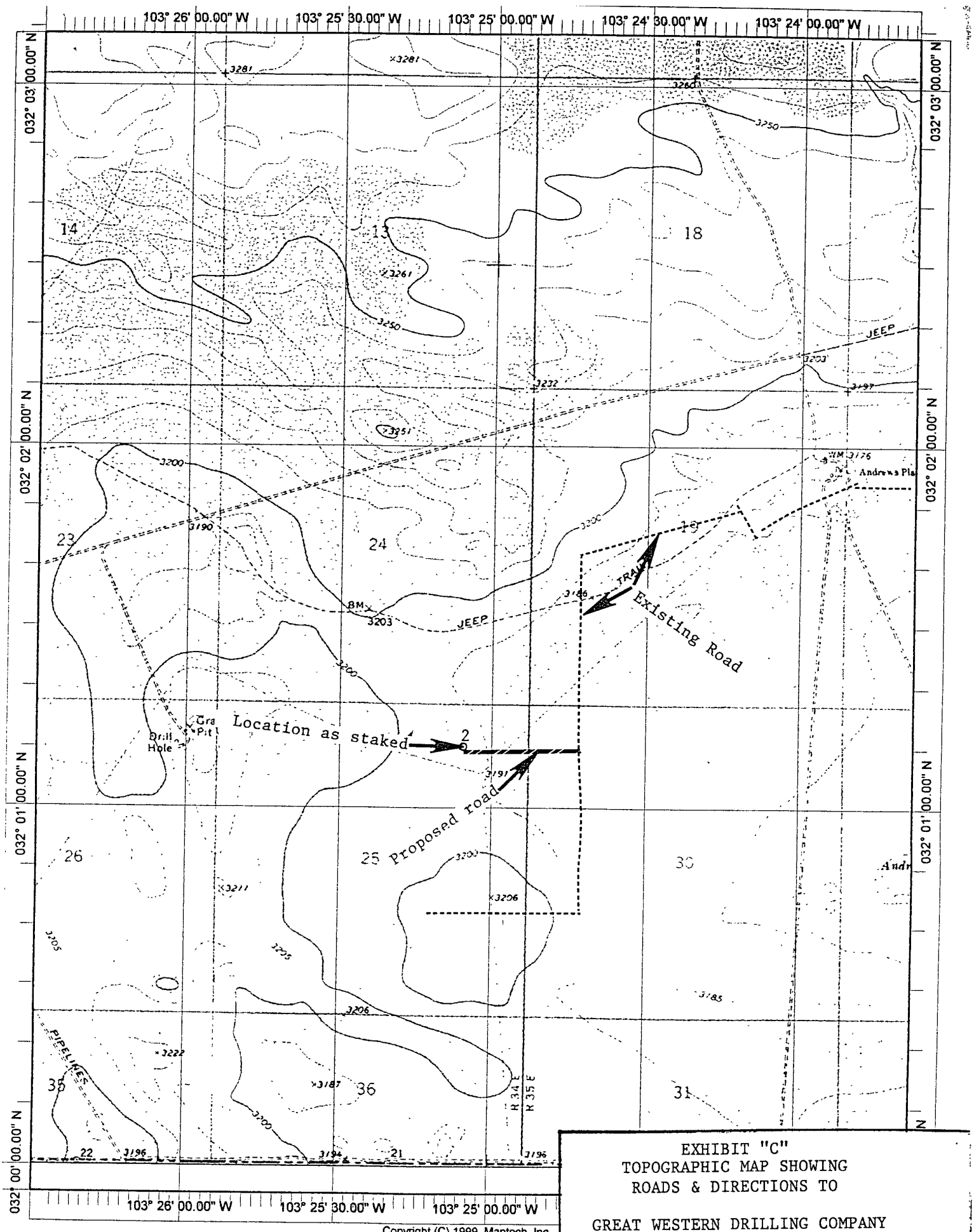


EXHIBIT "C"
TOPOGRAPHIC MAP SHOWING
ROADS & DIRECTIONS TO

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL #2
UNIT "A" SECTION 25
T26S-R34E LEA CO. NM

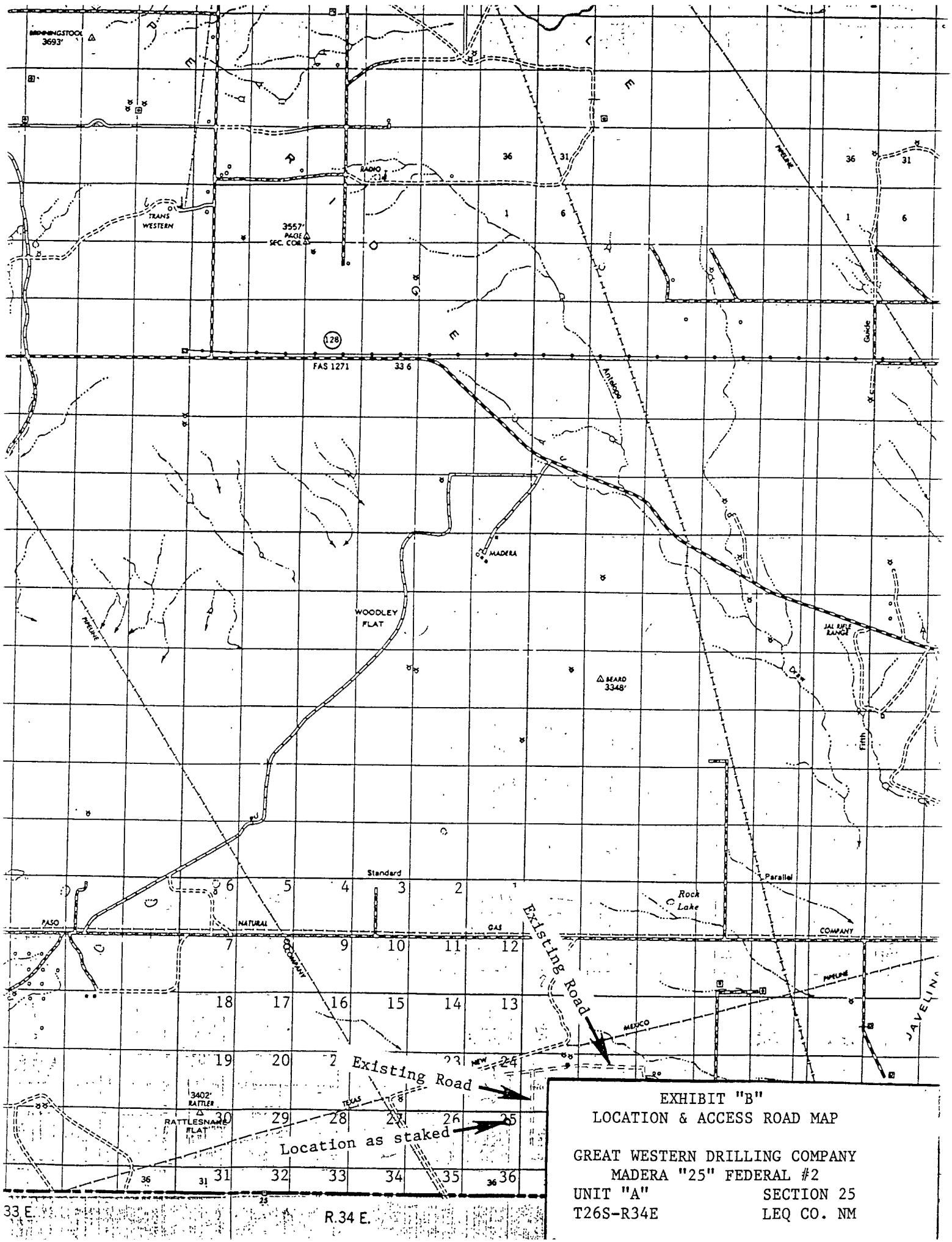


EXHIBIT "B"
LOCATION & ACCESS ROAD MAP

GREAT WESTERN DRILLING COMPANY
MADERA "25" FEDERAL #2
UNIT "A" SECTION 25
T26S-R34E LEQ CO. NM

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Great Western Drilling Company
LEASE NO.:	NM 65441
WELL NAME & NO.:	2-Madera 25 Federal
SURFACE HOLE FOOTAGE:	700' FNL & 1100' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 25, T. 26 S., R 34 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
Lesser Prairie Chicken
☐ **Construction**
Notification
Topsoil
Reserve Pit
Federal Mineral Material Pits
Well Pads
Roads
☐ **Road Section Diagram**
☒ **Drilling**
☐ **Production (Post Drilling)**
Well Structures & Facilities
☐ **Reserve Pit Closure/Interim Reclamation**
☐ **Final Abandonment/Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 15 through June 15 annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 8 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. RESERVE PITS

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 165' X 120' on the North side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

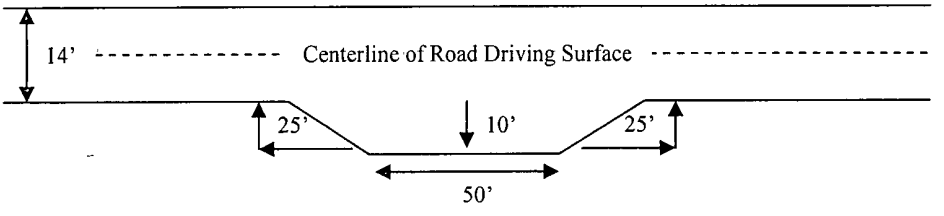
Ditching

Ditching shall be required on both sides of the road.

Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

Standard Turnout – Plan View

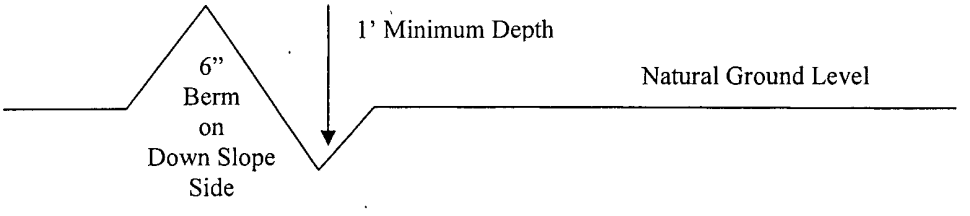


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

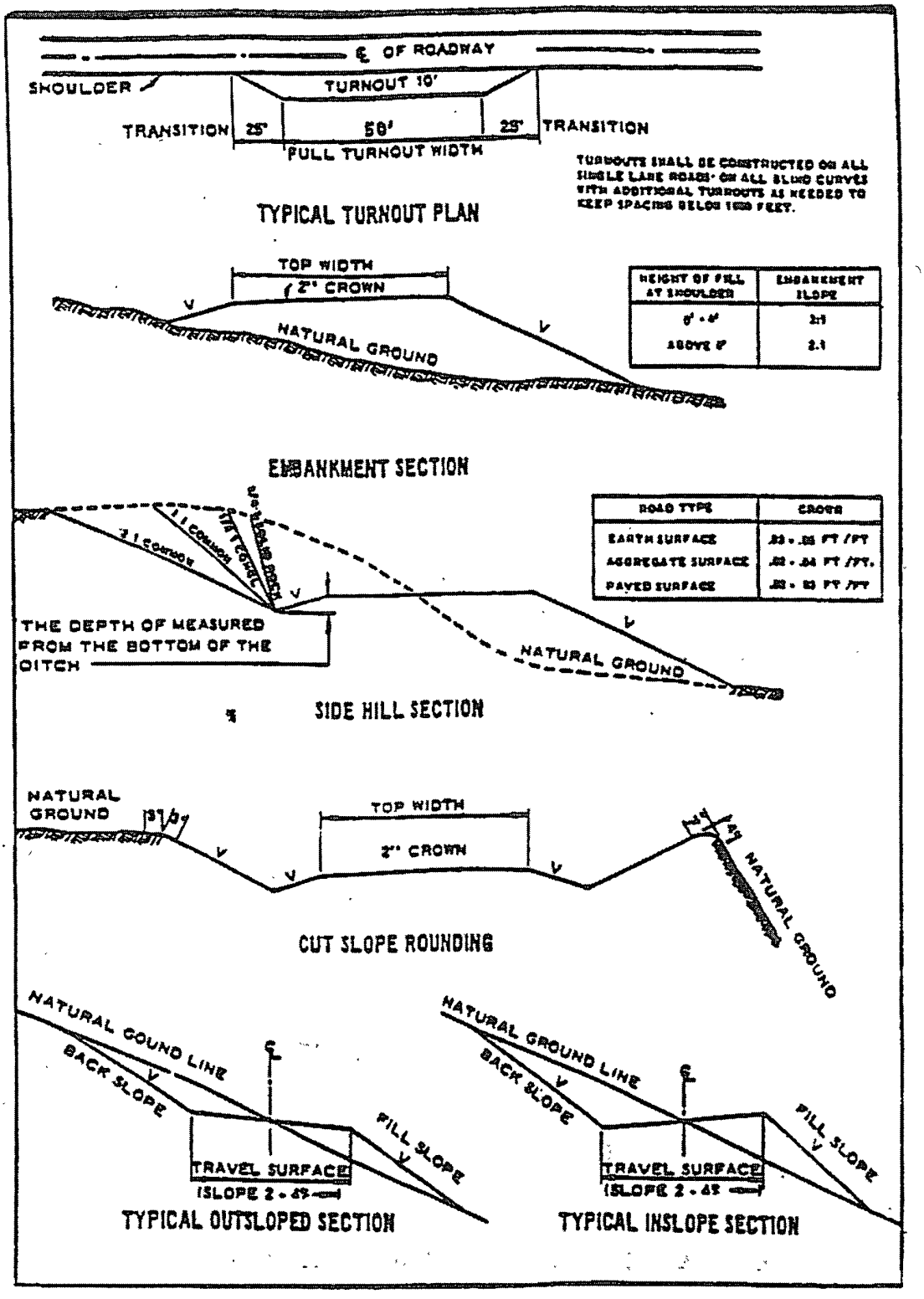
A gate shall be constructed and fastened securely to H-braces.

Fence Requirement
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Bone Spring** formation.

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

1. The **13-3/8** inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 1000** feet and cemented to the surface.

   a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

   b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement). **Please provide WOC times to inspector for cement slurries.**

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial action will be done prior to drilling out that string.

Possible lost circulation in the shallow zones.
Possible high pressure gas bursts in the Wolfcamp formation and high pressure in the Pennsylvanian section.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a-d above. **Please provide WOC times to inspector for cement slurries.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.

3. The minimum required fill of cement behind the **7** inch intermediate casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Please provide WOC times to inspector for cement slurries.**

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i.

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:

   ☒ Cement to come to top of liner. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. The tests shall be done by an independent service company.

b. The results of the test shall be reported to the appropriate BLM office.

c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

Engineer on call phone (after hours): Carlsbad: (575) 706-2779

WWI 011708

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

B. RESERVE PIT CLOSURE

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The see mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

(Insert Seed Mixture Here)

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.