

ATS-08-70

OCD-FOFBS

Form 3160-3  
(August 2007)

# Split Estate

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No 1004-0137  
Expires July 31, 2010

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMLC-013430 NM13430
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator COG Operating, LLC		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 550 West Texas, Suite 1300 Midland, TX 79701	3b. Phone No. (include area code) (432)- 685-9158	8. Lease Name and Well No. <b>&lt;3752&gt;</b> Eagle Feather Federal #2
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 660' FNL & 1630' FEL, Unit <b>B</b> At proposed prod. zone Capitan Controlled Water Basin		9. API Well No. 30-025-38885
14. Distance in miles and direction from nearest town or post office* Approximately 8 miles southwest of Jal, New Mexico		10. Field and Pool, or Exploratory Pawnee; Strawn (Gas) <b>&lt;82670&gt;</b>
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 660	16. No. of acres in lease 320	11. Sec., T. R. M. or Blk. and Survey or Area Sec 21, T26S, R36E
17. Spacing Unit dedicated to this well 320	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft N/A	12. County or Parish Lea Co.
19. Proposed Depth 13,800	20. BLM/BIA Bond No. on file NMB 000215	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2927' GL	22. Approximate date work will start* 02/15/2008	23. Estimated duration 60 Days

### 24. Attachments

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

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

25. Signature	Name (Printed/Typed) Dwaine Moore	Date 01/09/2008
Title Agent for COG Operating LLC		

Approved by (Signature) /s/ James Stovall	Name (Printed/Typed)	Date MAY 1 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.

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.

(Continued on page 2)

\*(Instructions on page 2)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

RECEIVED

MAY 05 2008

HOBBS OCD

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

**44. Additional Information**

Please provide any additional pertinent information.

**\*\* An agreement with Mr. Beckham has been reached\*\***

I hereby certify that the foregoing is true and correct.

**45. Name\***

HEATHER \_ RICHARDSON

**46. Title**

AGENT

**47. Date\*** (MM/DD/YYYY)

12/10/2007

**48. Signature\***

*You have the ability to sign this form only if a SmartCard or digital certificate has been issued to you.*

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.

## STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

C.O.G. Operating, LLC (229137)  
550 W. Texas Avenue, Ste. 1300  
Midland, TX 79701

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No – Surface Location: NM NMLC # ~~0~~13430

Well Name: **Eagle Feather Federal #2**

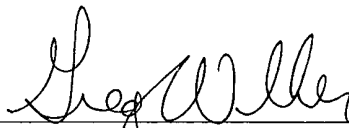
Legal Description of Land: SL: 660' FNL & 1630' FEL, Unit H  
Sec 21, T26S, R36E  
Lea County, New Mexico

Formation(s) (if applicable): Wildcat Strawn

Bond Coverage: \$25,000 statewide bond of C.O.G. Operating, LLC

BLM Bond File No: NMB 000215

1/7/2008  
Date

  
Greg Wilkes  
C.O.G. Operating, LLC

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 October 12, 2005

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-025-38885</b>		Pool Code <b>82670</b>	Pool Name <b>Pawnee; Strawn (Gas)</b>
Property Code <b>37152</b>	Property Name <b>EAGLE FEATHER FEDERAL</b>		Well Number <b>2</b>
OGRID No. <b>229137</b>	Operator Name <b>C.O.G. OPERATING L.L.C.</b>		Elevation <b>2927'</b>

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>B</b>	<b>21</b>	<b>26 S</b>	<b>36 E</b>		<b>660</b>	<b>NORTH</b>	<b>1630</b>	<b>EAST</b>	<b>LEA</b>

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 <b>320</b>		Joint or Infill	Consolidation Code		Order No.				

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

<p><b>SURFACE LOCATION</b> LAT.: N 32°02'00.27" LONG.: W103°16'04.02" N.: 377821.0 E.: 871833.7 (NAD-83)</p>	<p>2927.6' - 2929.2' 1630' 2926.6' - 2925.0'</p>	<p><b>OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>[Signature]</i> Date: <b>12/31/07</b></p> <p>Printed Name: <b>Dwaine Moore</b> Agent For <b>C.O.G.</b></p>
	<p><b>SURVEYOR CERTIFICATION</b> 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 belief.</p> <p><b>OCTOBER 18, 2007</b></p> <p>Date Surveyed: <b>10/18/07</b> Signature: <i>[Signature]</i> Seal of Professional Surveyor Certificate No. <b>695</b></p> <p>Certificate No. <b>Gary L. Jones 7977</b></p> <p><b>BASIN SURVEYS</b></p>	

**ATTACHMENT TO FORM 3160-3**  
**COG Operating, LLC**  
**Eagle Feather Federal #2**  
**SL: 660' FNL & 1630' FEL, Unit H**  
**Sec 21, T26S, R36E**  
**Lea County, NM**

1. Proration Unit Spacing: 320 Acres
2. Ground Elevation: 2927'
3. Proposed Depths: MD = 13,800'
4. Estimated tops of geological markers:

Tansil Dolo/ RB	3200'
Yates	3385'
Seven Rivers	3425'
Delaware	5300'
BS Lime	7700'
3 <sup>rd</sup> BS Sand	11300'
Wolfcamp	11650'
Strawn LS	11900'
Strawn Pay	12000'
B/Strawn- T/Atoka	13600'

5. Possible mineral bearing formations:

Tansil Dolo/ RB	3200'	oil
Yates	3385'	oil
Seven Rivers	3425'	oil
Delaware	5300'	oil
BS Lime	7700'	oil
3 <sup>rd</sup> BS Sand	11300'	oil
Wolfcamp	11650'	gas
Strawn LS	11900'	gas
Strawn Pay	12000'	gas
B/Strawn- T/Atoka	13600'	gas

6. Casing Program

<u>Hole size</u>	<u>Interval</u>	<u>OD of Casing</u>	<u>Weight</u>	<u>Cond.</u>	<u>Collar</u>	<u>Grade</u>	<u>TOC</u>
17-1/2"	0' - 1400'	13-3/8"	48#	new	STC	H40	Surface
Collapse sf - 1.15, Burst sf - 2.58, Tension sf - 4.79							
12-1/4"	0' - 5300'	9-5/8"	40#	new	LTC	HCK-J55	Surface
Collapse sf - 1.50, Burst sf - 1.40, Tension sf - 2.65							
8 3/4"	0 - 11900'	7"	26#	new	LTC	HCP-110	5000'
Collapse sf - 1.34, Burst sf - 1.71, Tension sf - 2.24							
6 1/8"	11700'-13800'	4 1/2"	13.5#	new	LTC	<del>HCP</del> -110	11,000'
Collapse sf - 1.26, Burst sf - 1.44, Tension sf - 11.92							

*per operator  
7/10/08*

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**Eagle Feather Federal #2**  
**SL: 660' FNL & 1630' FEL, Unit H**  
**Sec 21, T26S, R36E**  
**Lea County, NM**

**7. Cement Program**

13 3/8" Surface Casing set at +/- 1400', Circ to Surf with +/- Lead: 850 sx Class "C" + additives (yield 1.97) and Tail: 200 sx Class "C" + additives (yield 1.34)

9 5/8" Intermediate Casing set at +/- 5300', Circ. to Surf with +/- Lead: 850 sx Class "C" + additives (yield 2.45) and Tail: 200 sx Class "C" + additives (yield 1.32)

7" Intermediate Casing set at +/- 11900', Cement with +/- 1050 sx. Class "H" + additives (yield 1.30) Cac'd TDC 5,000'

4 1/2" Production Liner set from 11,700 to 13,800. Cement w/ +/- 225 sx Class H + additives (yield 1.18)

**8. Pressure Control Equipment:**

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 1350 psi w/ rig pump.

After setting 9 5/8" casing and installing 5000 psi casing spool, NU 5000 psi double ram BOP and 5000 psi annular BOP. Test double ram BOP and manifold to 4000 psi w/ clear fluid and annular to 2500 psi using an independent tester.

After setting 7" casing and installing 5000 psi casing spool, NU 5000 psi double ram BOP and 5000 psi annular BOP. Test double ram BOP and manifold to 4000 psi w/ clear fluid and annular to 2500 psi using an independent tester.

**9. Proposed Mud Circulating System**

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 1400'	8.4- 9.2	32- 34	NC	Fresh water to drill out surface plugs
1400' - 5300"	10.0- 10.2	28-30	NC	Brine/ Sweeps.
5300' - 11900'	8.4- 9.4	28-30	NC	Cut/ Brine/ Sweeps
11,900- 13,800	10.0- 12.0	38-40	8	Weighted Brine/ Polymer/ Starch.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

**10. Auxiliary Well Control and Monitoring Equipment**

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

**ATTACHMENT TO FORM 3160-3  
COG Operating, LLC  
Eagle Feather Federal #2  
SL: 660' FNL & 1630' FEL, Unit H  
Sec 21, T26S, R36E  
Lea County, NM**

11. Logging, Testing and Coring Program:

- A. The mud logging program will consist of 10' samples from 5300' to TD.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Open hole logs: Litho Density/Comp Nuetron/High Res Laterlog/BHC Sonic/GR/Caliper from TD of 8 3/4" hole to first intermediate casing and from TD of 6 1/8" hole to TD of second intermediate.

12. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. Low levels of Hydrogen sulfide have been monitored in producing wells in the area. Therefore, H2S may be present during drilling operations. An H2S plan is attached to the Drilling Program. No lost circulation is expected to occur. Estimated BHP of 8600 psi and BHT of 180 deg.

13. Anticipated Starting Date

Drilling operations will commence approximately on February 15, 2008 with drilling and completion operations lasting approximately 60 days.

**COG OPERATING LLC  
BOP Testing Procedures While Drilling**

- 1. Familiarize all rig personnel with BOP equipment and kick detection. Record all data on Kill Sheets. Update every tour including depth and pump pressure w/ 2 reduced pump rates and pressures for each pump.**
- 2. Conduct daily BOP drills until all crews are familiar with procedures, then conduct at least every three days. When drilling below intermediate and tripping for bit, conduct BOP drill with BHA inside casing.**
- 3. Operate double ram BOP pipe rams, HCR and superchoke daily. Close annular twice per week. Operate blind rams and pipe rams on every trip. Record closing times for all BOP equipment on daily drilling report.**
- 4. Keep hole full at all times while tripping or logging.**
- 5. Always use upper and lower kelly cocks when drilling.**
- 6. Report any problems with BOP equipment to company man immediately.**



# Drilling Prognosis

November 15, 2007

Operator: COG OPERATING LLC Field: Wildcat (Strawn)  
Well: Eagle Feather Federal #2 API: 30 - 025 -  
APD: \_\_\_\_\_ AFE: \_\_\_\_\_

## General Information

Location: 660' FNL & 1650' FEL, Section 21 - T26S - R36E Lea County, New Mexico

Elevation: \_\_\_\_\_ ' GL TD: 13,800' RKB: \_\_\_\_\_

Objective: Strawn Drilling Contractor: \_\_\_\_\_

Contractor Office: \_\_\_\_\_ Superintendent: \_\_\_\_\_

Toolpushers: \_\_\_\_\_ Cell: \_\_\_\_\_

COG Supervisors: \_\_\_\_\_ Cell: \_\_\_\_\_

## Drilling Program

Hole Size	Depth	Casing	Weight	Grade	Connect	Cement	TOC
17½"	1400'	13 3/8"	48.0	H-40	STC	1000 sx	Surface
12¼"	5300'	9 5/8"	40.0	HCK & J-55	LTC	1350 sx	Surface
8¾"	11,250'	7"	26.0	HCP-110	LTC	750 sx	5000'
6 1/8"	<del>12,250'</del> 13,800	4½"	13.5	HCP-110	LTC	200 sx	11,000'

## Wellhead / BOPE

Wellhead	13 5/8" - 3K SOW	13 5/8" - 3K x 11" - 5K	11" - 5K x 7 1/16" - 10K
BOPE	SRRA	13 5/8" - 5K Stack to 11,250'	7 1/16" - 10K Stack 11,250' - TD

## Mud Program

Interval	Type	MW	VIS	FL
0' - 1400'	FW - Spud	8.4 - 9.2	32 - 34	NC
1400' - 5300'	Brine / Sweeps	10.0 - 10.2	28 - 30	NC
5300' - 11,250'	Cut Brine / Sweeps	8.4 - 9.4	28 - 30	NC
11,250' - <del>12,200'</del> 13,800	Weighted Brine / Polymer / Starch	10.0 - 12.0	38 - 40	8

Company: COG Operating LLC Office: \_\_\_\_\_

Engineer: Greg Wilkes 432-685-4341

**Geological Data**Geologist: Ted GawloskiPhone: 432-685-4361**Estimated Formation Tops: (Est RKB = ')**

Formation	Subsea	MD	Formation	Subsea	MD
Rustler			Cherry Canyon		
T/Salt			BS Lime		7700'
B/Salt			3 <sup>rd</sup> BS Sand		11,300'
Tansil Dolo / RB		3200'	Wolfcamp		11,650'
Yates		3385'	Strawn LS		11,900'
Seven Rivers		3425'	Strawn Pay		12,000'
San Andres			B/Strawn - T/Atoka		13,600'
Delaware		5300'	TD		13,800'

**Evaluation Program**Mud Logs: int. csg. - TDMud Logger: Faulks & Assoc., Midland, TXPhone: 432-553-8445DST / Coring Intervals: None AnticipatedE-Log Suite: PEX, LOT-CNL-GR, HRLA-GR, FMI (Strawn), diphole sonicLogging Company: SchlumbergerContact: Bruce Robertson (Midland)Location: Hobbs, NMPhone: 432-571-4631**Completion**

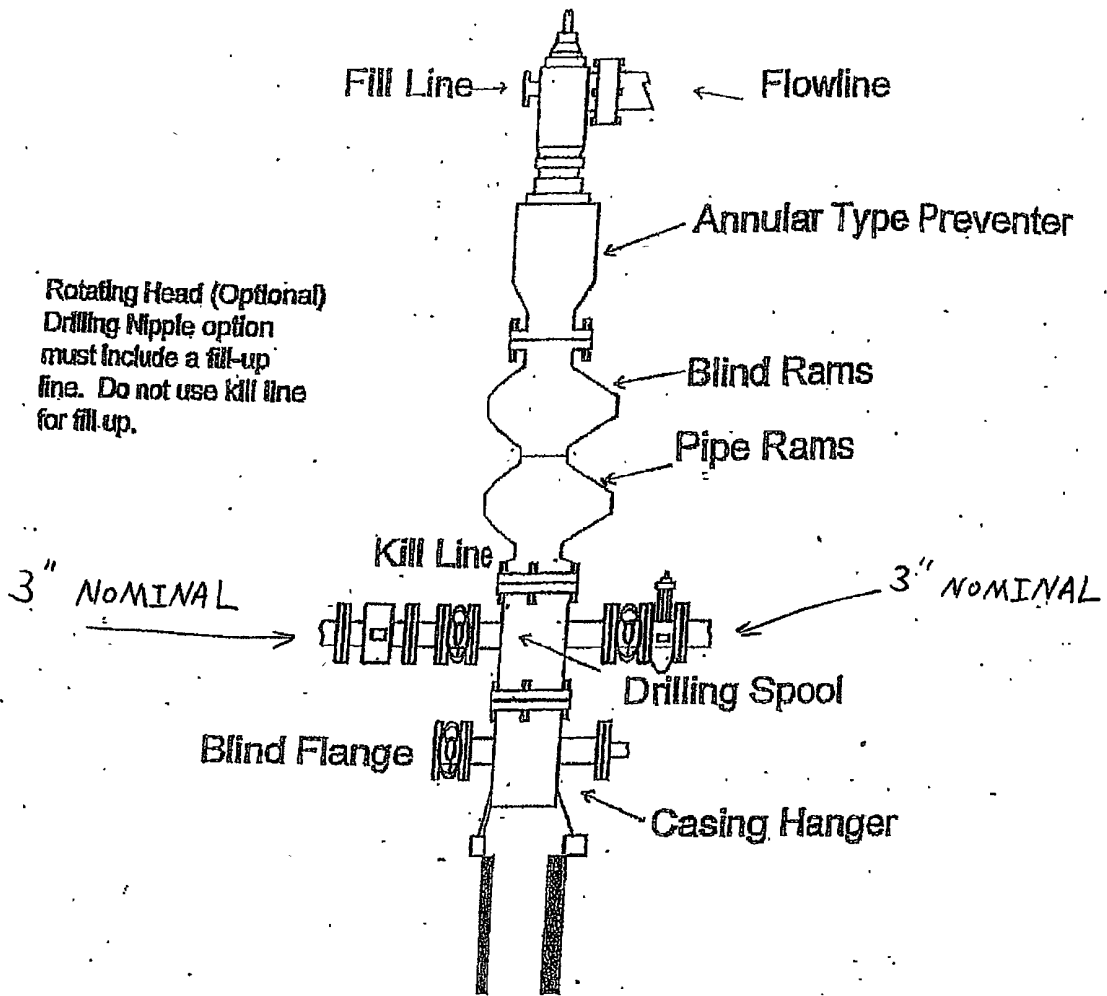
Single Strawn gas well; 4½" production casing set to TD; selectively perfed in Strawn and fraced via 4½" casing.

**Emergency Contacts / Notifications**


**Directions**

EXHIBIT "G"

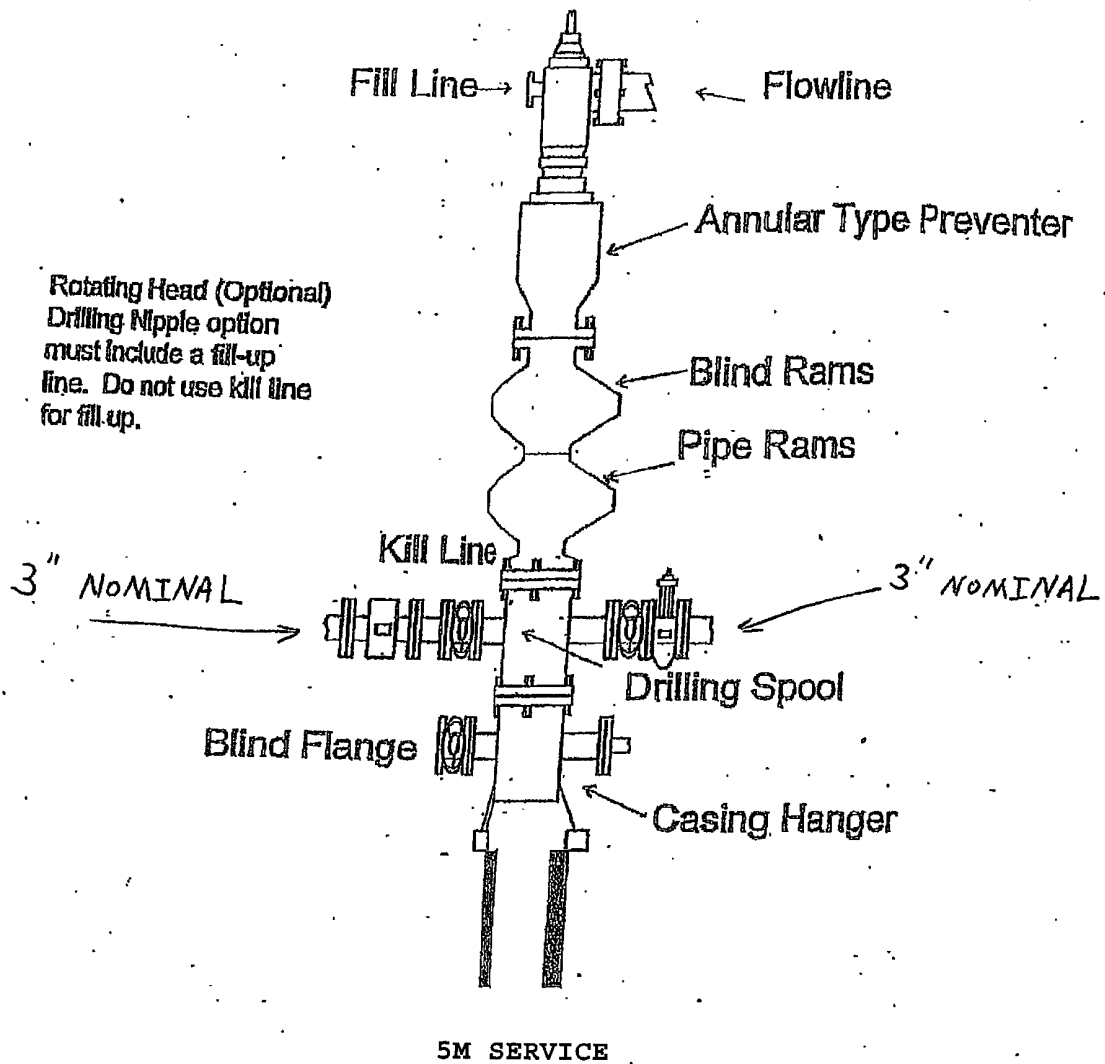
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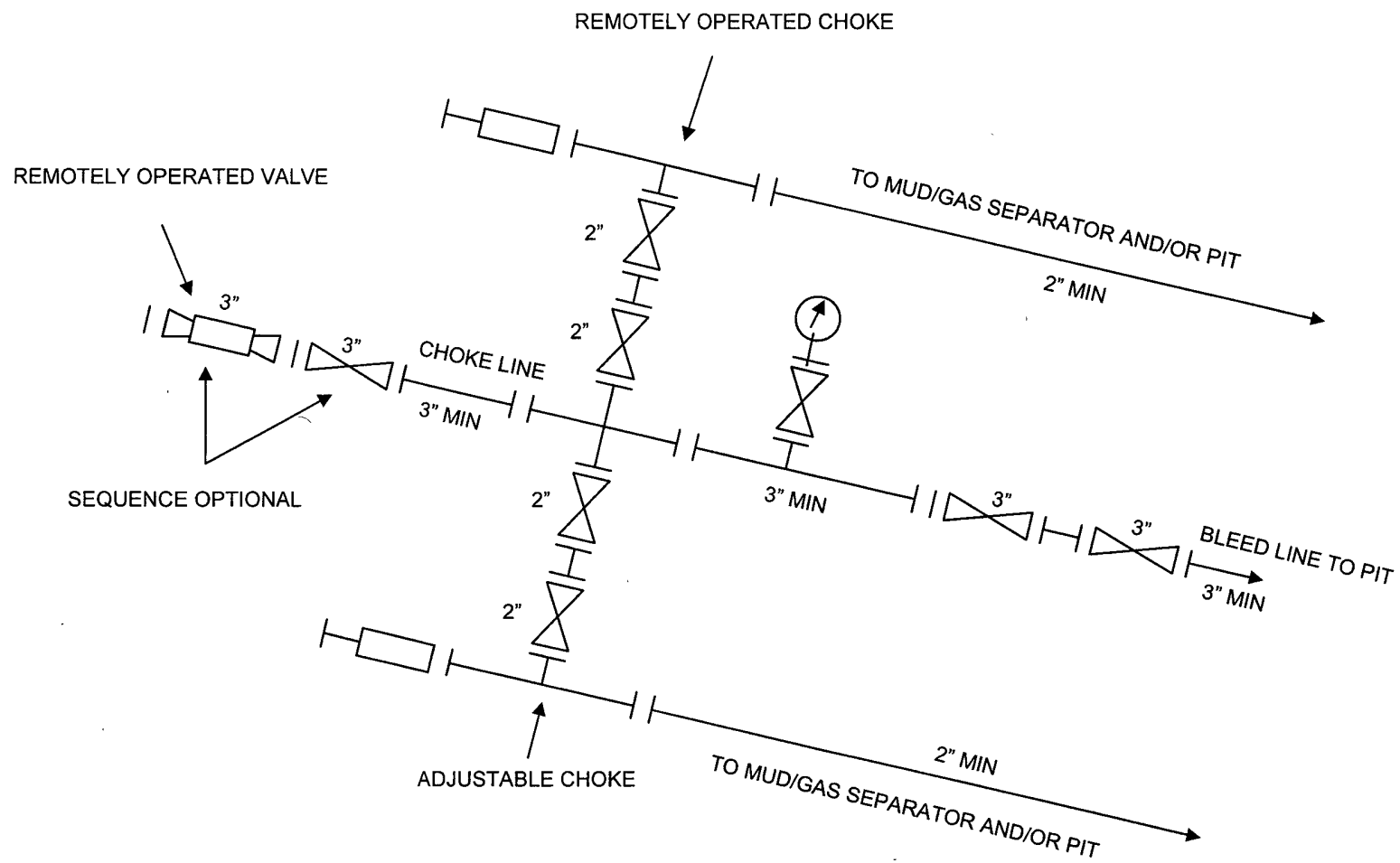


900 SERIES

3M

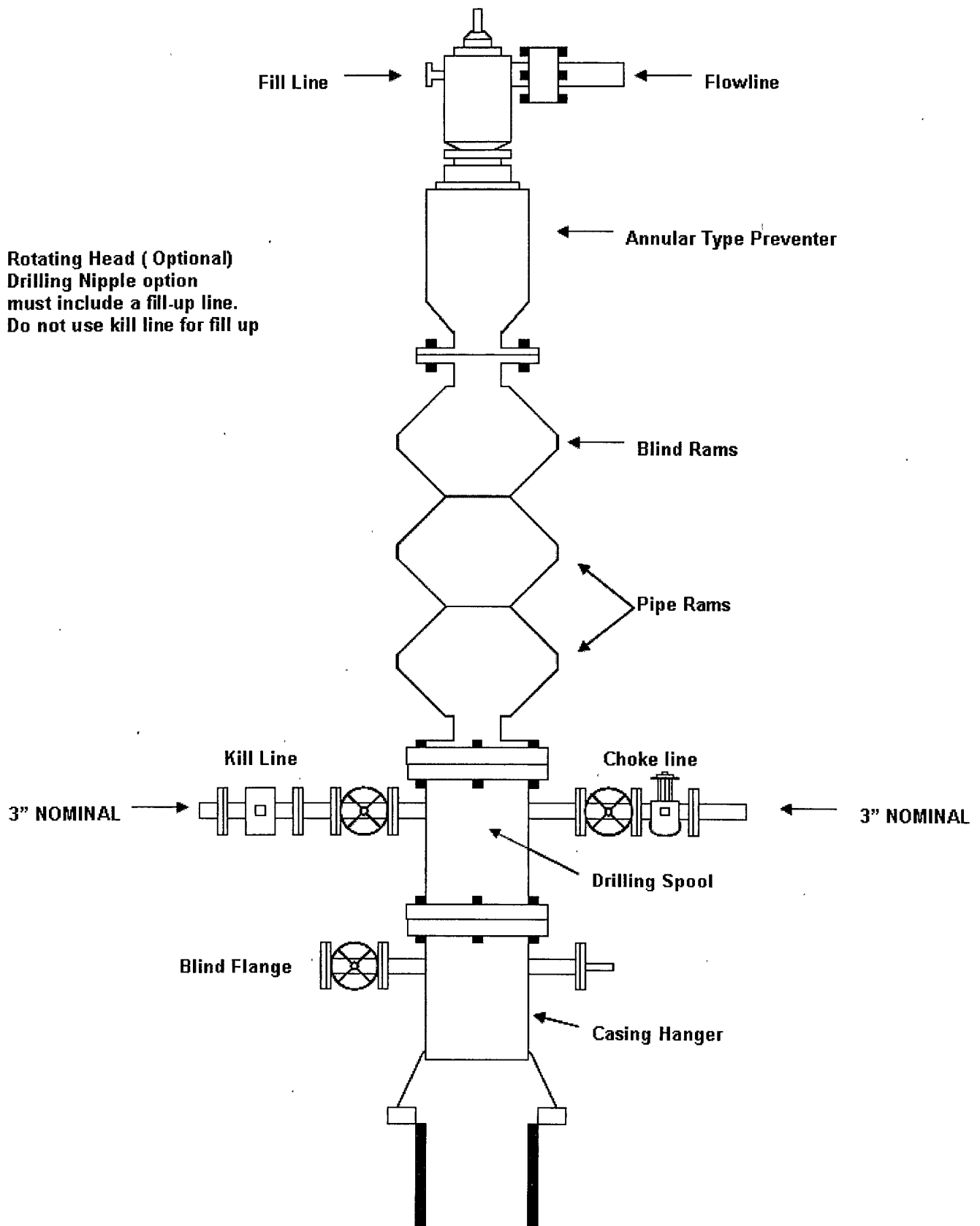
# BOPE SCHEMATIC



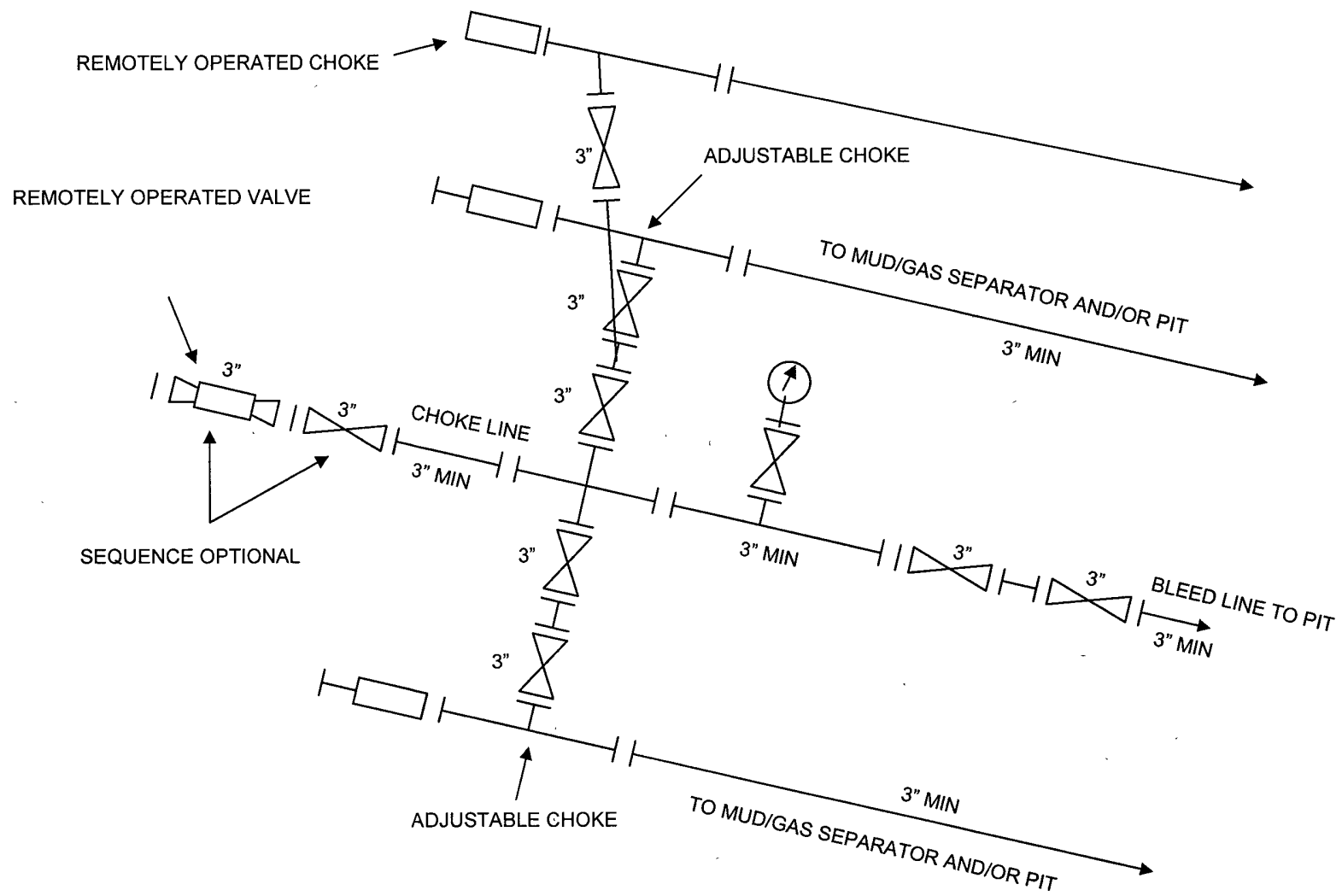


**5M CHOKES MANIFOLD EQUIPMENT – CONFIGURATION OF CHOKES MAY VARY**

# BOPE SCHEMATIC

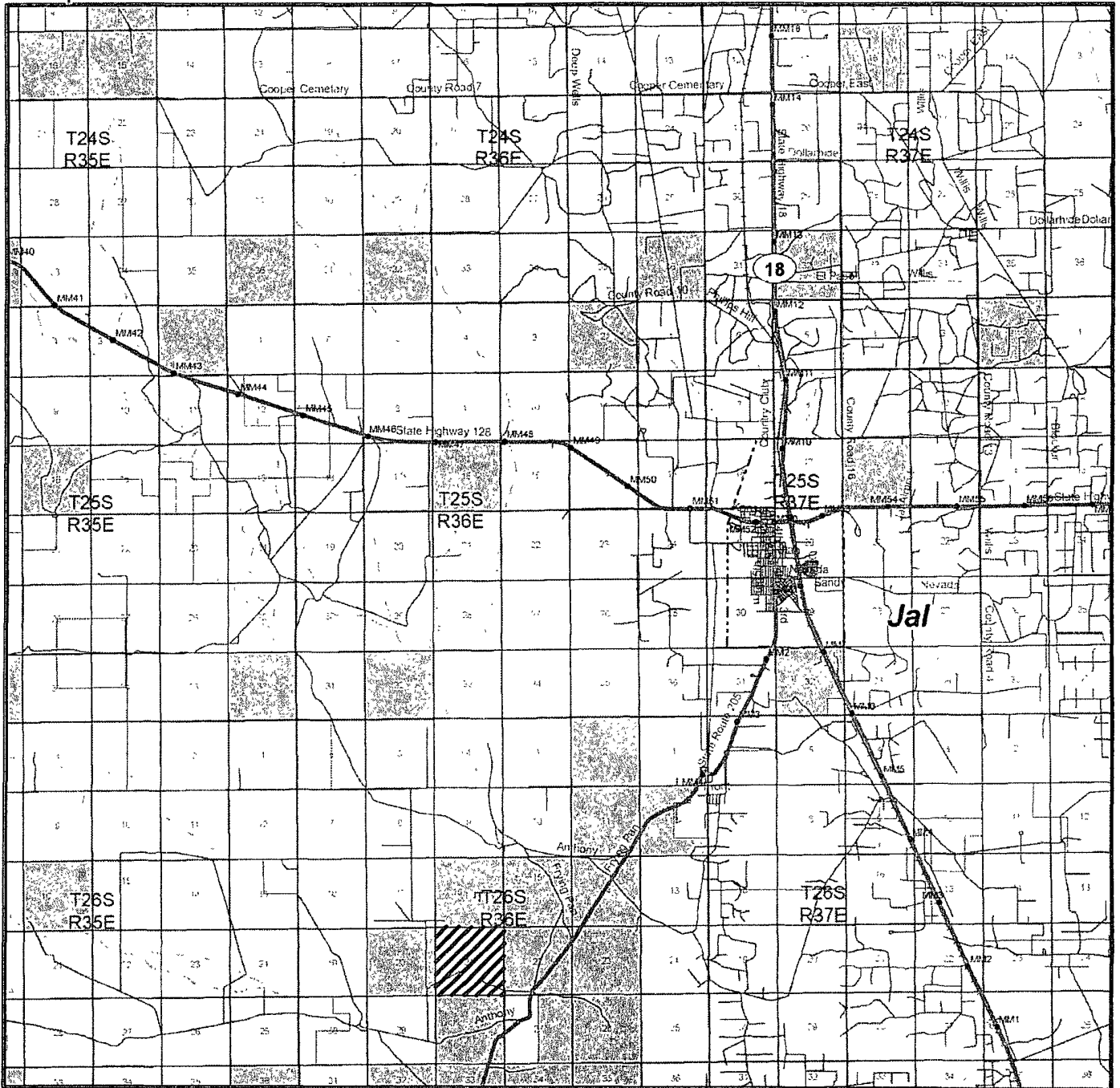


10M & 15M SERVICE

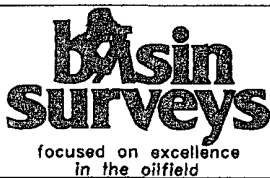


**10 AND 15M CHOKE MANIFOLD EQUIPMENT – CONFIGURATION OF CHOKES MAY VARY**

## EXHIBIT "B"



EAGLE FEATHER FEDERAL #2  
Located at 660' FNL and 1630' FEL  
Section 21, Township 26 South, Range 36 East,  
N.M.P.M., Lea County, New Mexico.



P.O. Box 1786  
1120 N. West County Rd.  
Hobbs, New Mexico 88241  
(505) 393-7316 - Office  
(505) 392-3074 - Fax  
basinsurveys.com

W.O. Number: JMS 18695TR

Survey Date: 10-18-2007

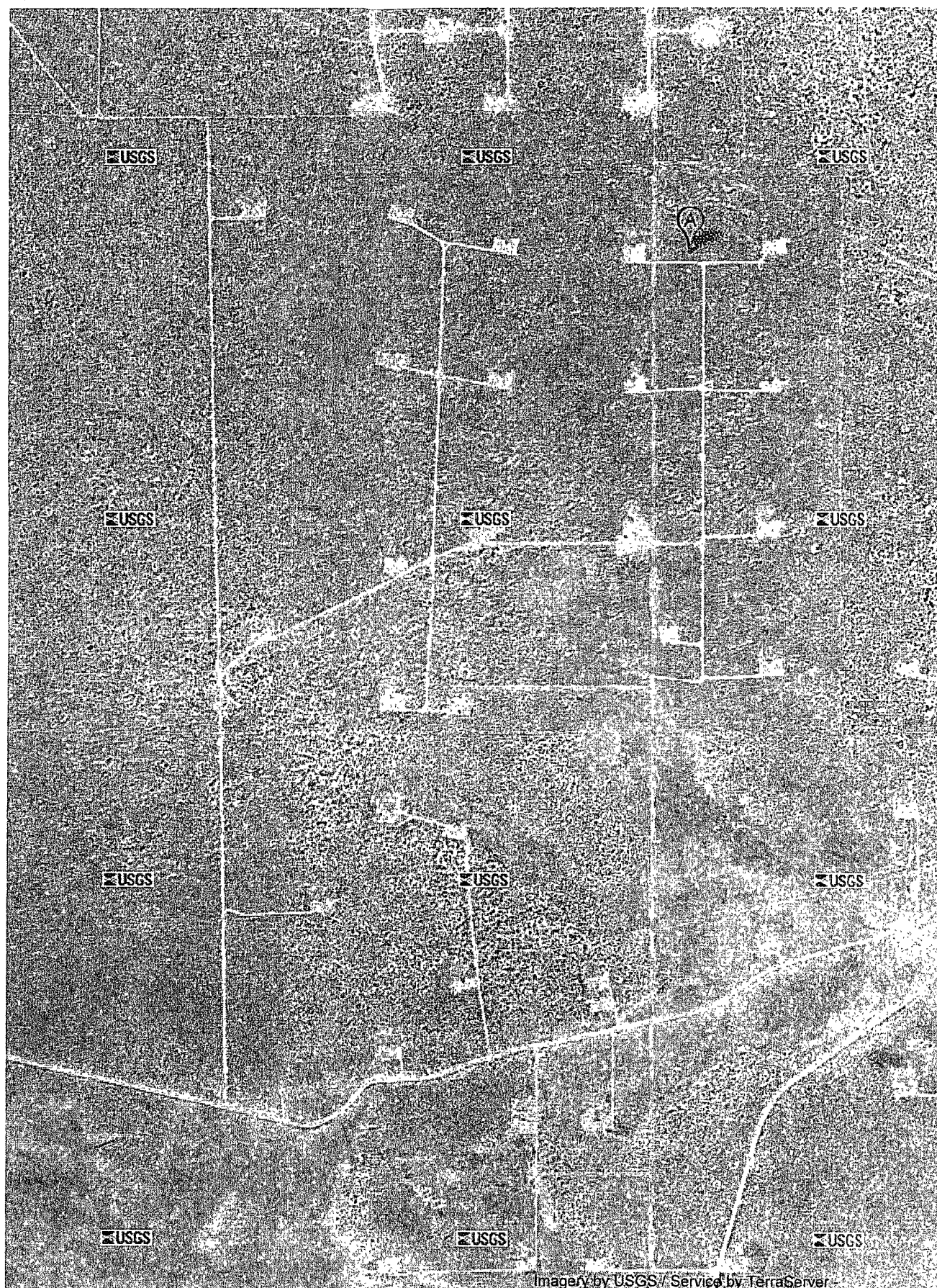
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Date: 10-19-2007

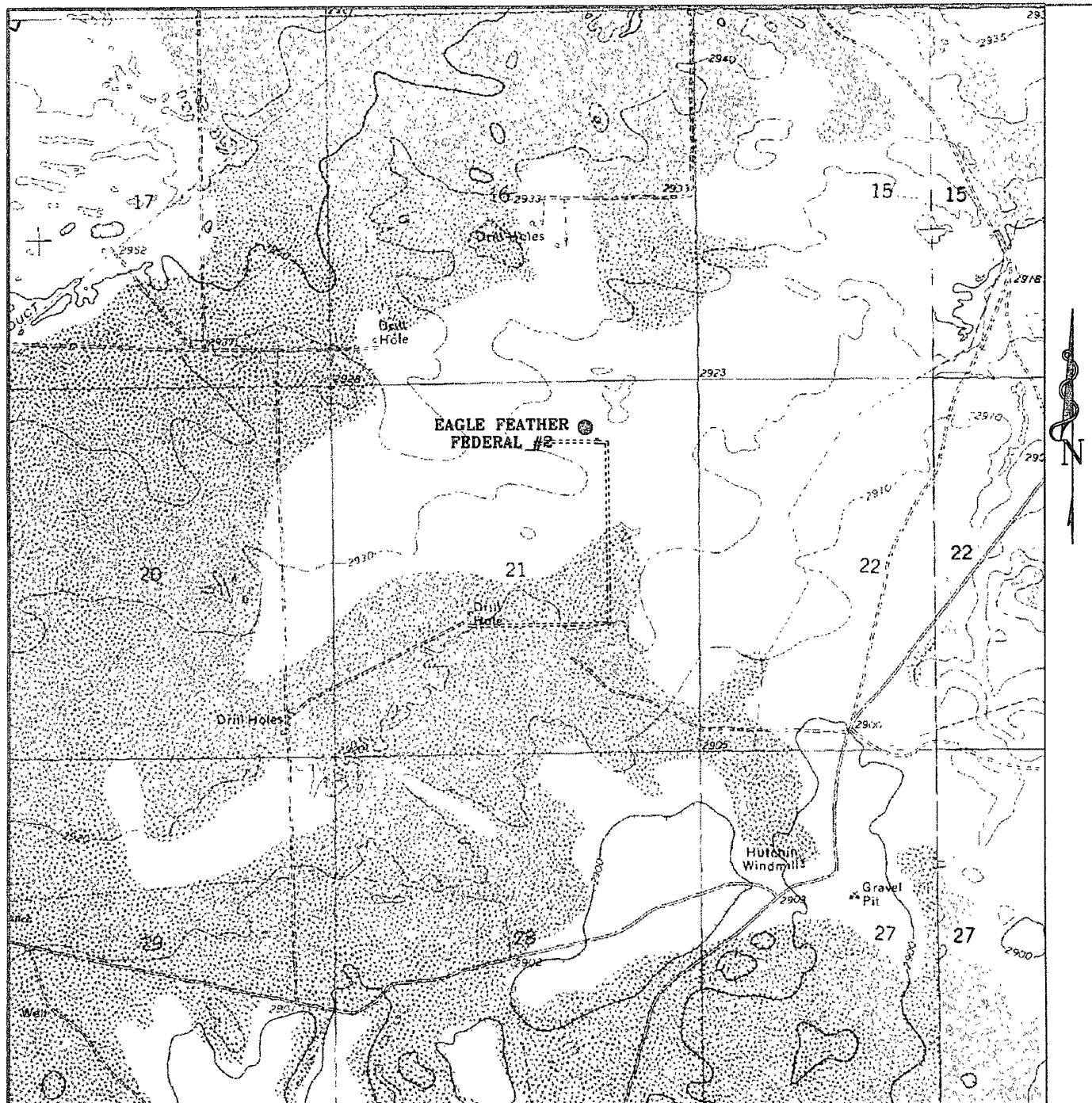
C.O.G.  
OPERATING  
L.L.C.



EXHIBIT "C"



# EXHIBIT "D"



## EAGLE FEATHER FEDERAL #2

Located at 660' FNL and 1630 FEL

Section 21, Township 26 South, Range 36 East,  
N.M.P.M., Lea County, New Mexico.



focused on excellence  
in the oilfield

P.O. Box 1786  
1120 N. West County Rd.  
Hobbs, New Mexico 88241  
(505) 393-7316 - Office  
(505) 392-3074 - Fax  
basinsurveys.com

W.O. Number: JMS 18695T

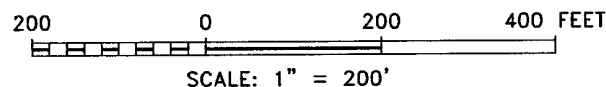
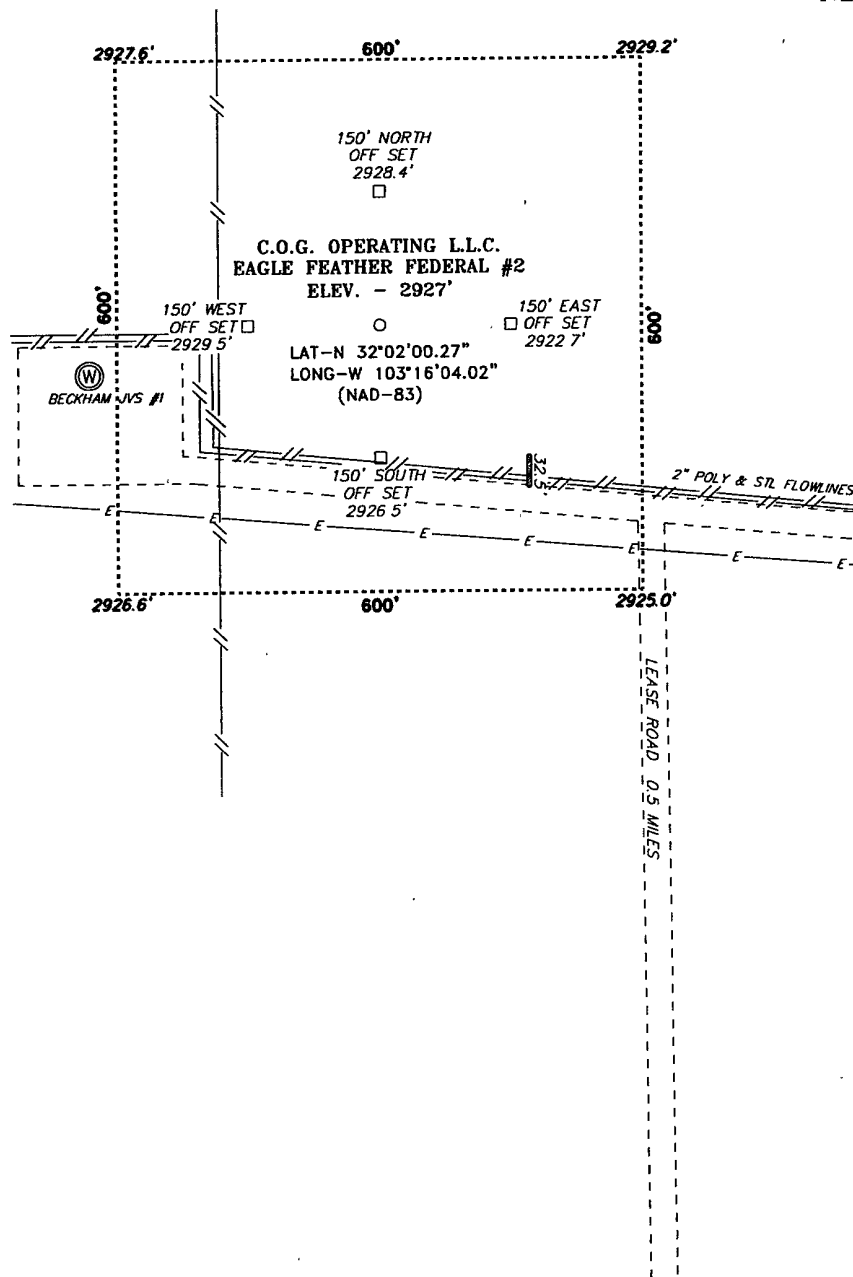
Survey Date: 10-18-2007

Scale: 1" = 2000'

Date: 10-19-2007

**C.O.G.  
OPERATING  
L.L.C.**

SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



**C.O.G. OPERATING L.L.C.**

REF: EAGLE FEATHER FEDERAL #2 / Well Pad Topo

THE EAGLE FEATHER FEDERAL #2 LOCATED 660' FROM  
THE NORTH LINE AND 1630' FROM THE EAST LINE OF  
SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

**DIRECTIONS TO LOCATION:**

FROM THE JUNCTION OF CO. RD. FRYINGPAN AND CO. RD. BECKHAM RANCH, GO WEST ON BECKHAM RANCH FOR 1.4 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH WINDING EAST FOR 1.5 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 0.5 MILES TO LEASE ROAD, ON LEASE ROAD GO WEST TO PROPOSED LEASE ROAD AND LOCATION.

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 18695

Drawn By: J. M. SMALL

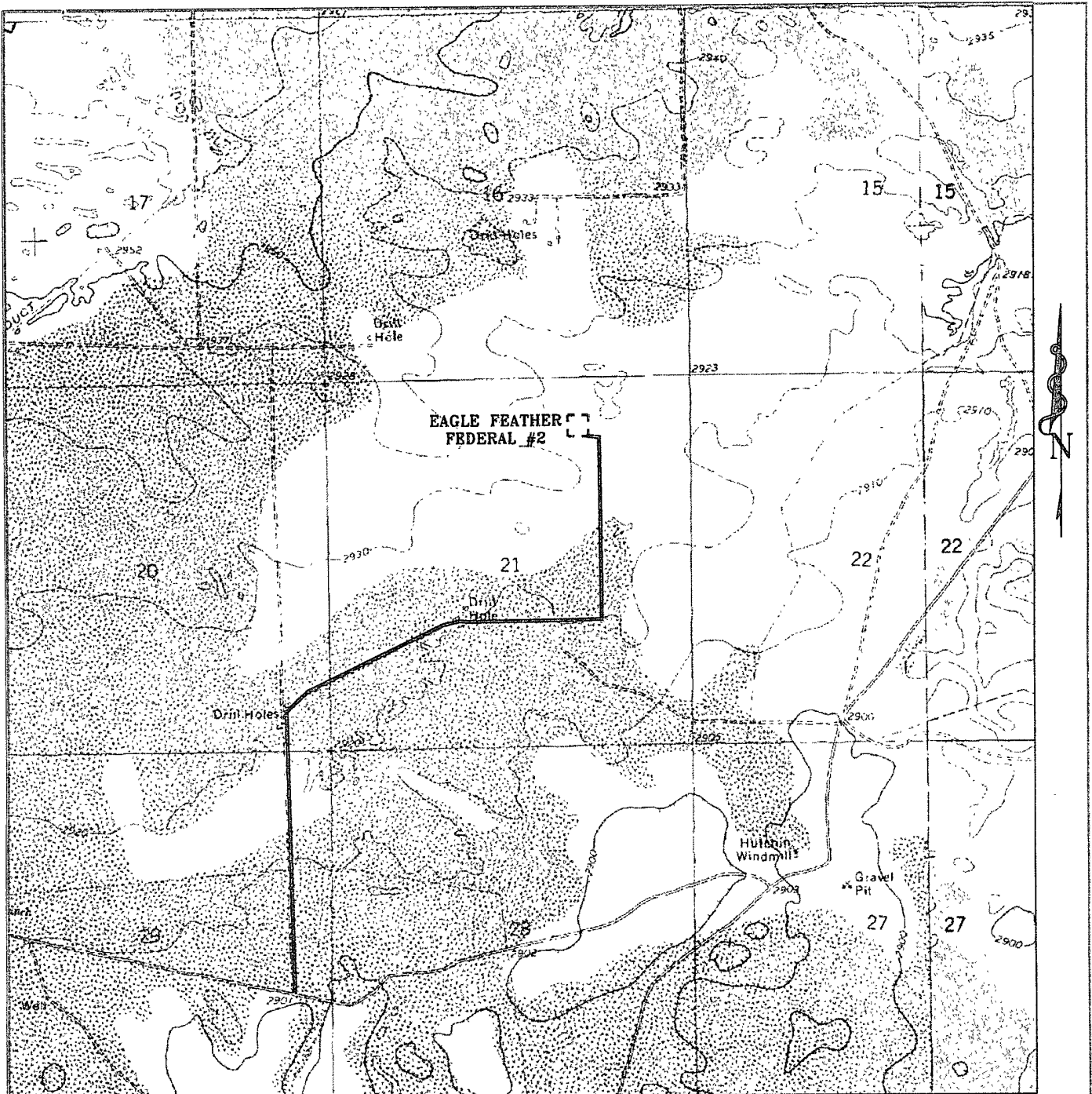
Date: 10-19-2007

Disk: JMS 18695W

Survey Date: 10-18-2007

Sheet 1 of 1 Sheets

# Exhibit "E-2"



**PROPOSED LEASE ROAD TO THE EAGLE FEATHER FEDERAL #2**  
 Section 21, Township 26 South, Range 36 East,  
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basin-surveys.com

W.O. Number: JMS 18695TT

Survey Date: 10-18-2007

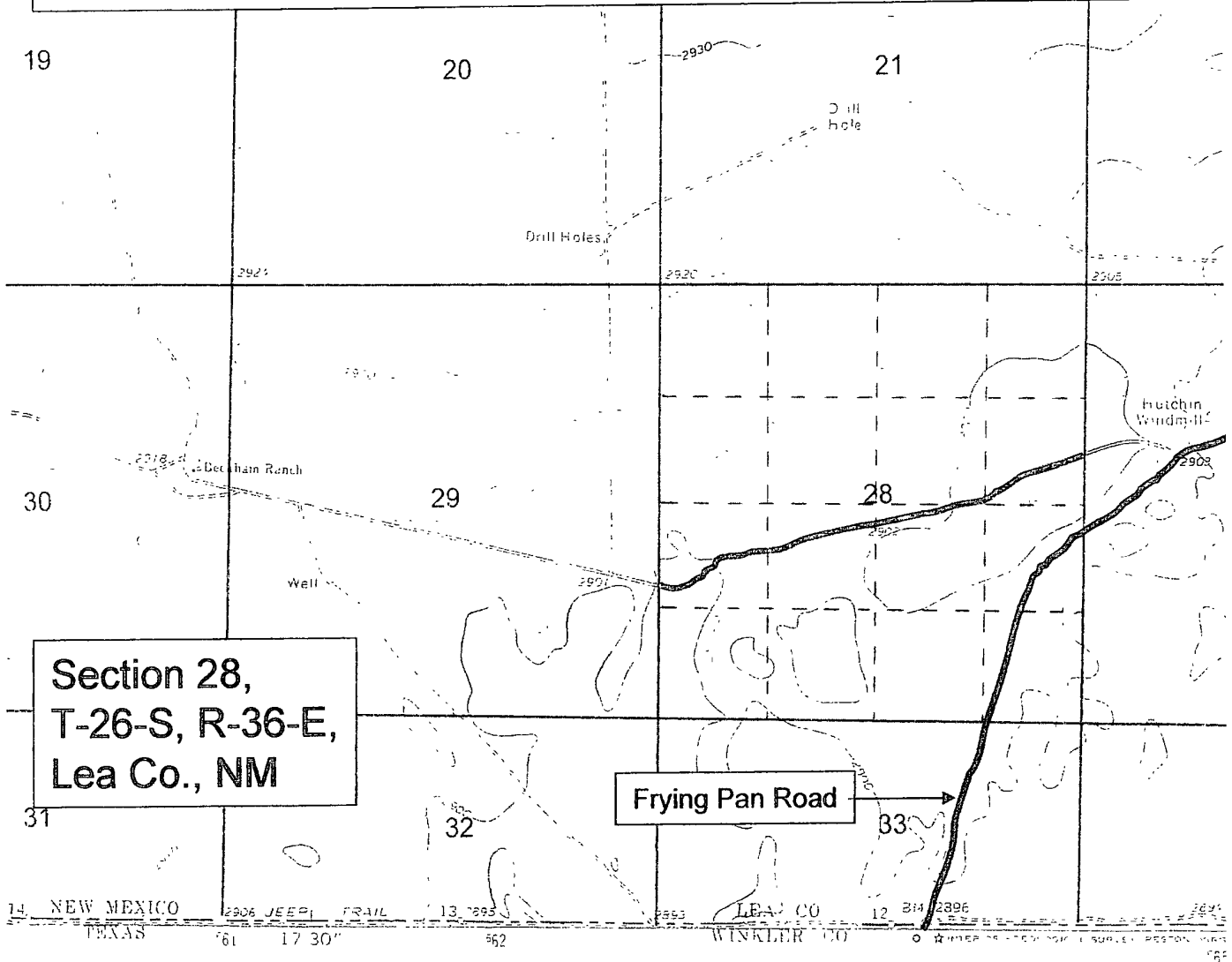
Scale: 1" = 2000'

Date: 10-19-2007

**C.O.G.  
 OPERATING  
 L.L.C.**

Proposed access route across an existing roadway situated on State of New Mexico lands in Section 28, T-26S, R-36-E, Lea Co., NM for ingress and egress to COG Operating LLC's Eagle Feather Federal #2, located in Sec 21, T-26-S, R-36-E, Lea Co., NM.

Location	Footage	Rods	Miles	Acres
SE/4NE/4	1,400'	84.85	0.26	0.64
SW/4NE/4	400'	24.24	0.08	0.19
NW/4SE/4	1,000'	60.61	0.19	0.46
NE/4SW/4	1,400'	84.85	0.26	0.64
NW/4SW/4	1,550'	93.94	0.30	0.71
Totals	5,750'	348.49	1.09	2.64



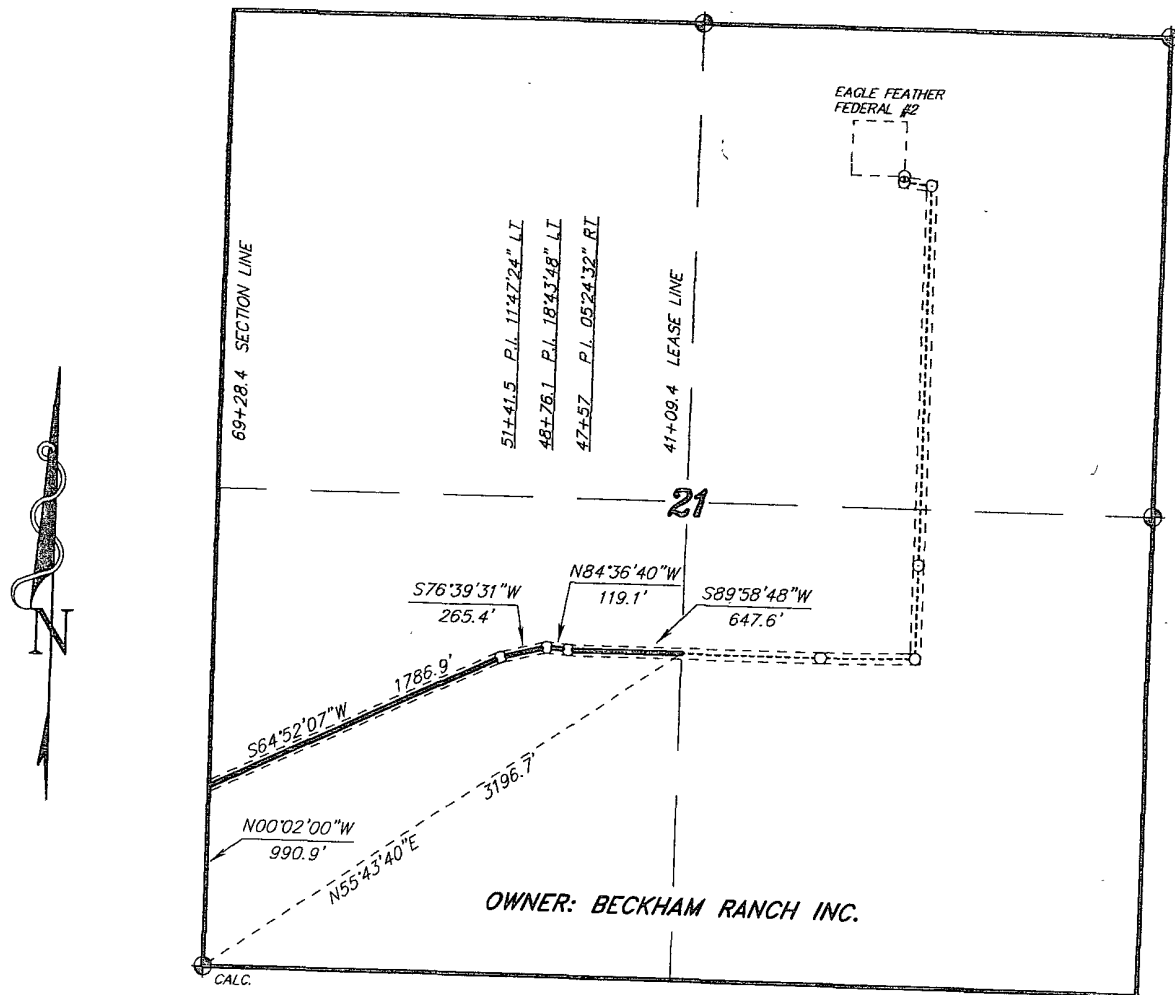
Section 28,  
T-26-S, R-36-E,  
Lea Co., NM

Frying Pan Road

ROAD CLASSIFICATION



SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.

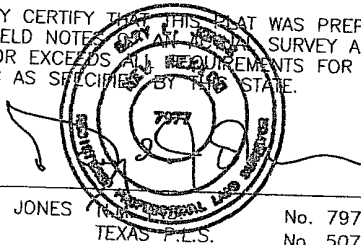


LEGAL DESCRIPTION

A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT WHICH LIES N.55°43'40\"E, 3196.7 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 21; THENCE S.89°58'48\"W, 647.6 FEET; THENCE N.84°36'40\"W, 119.1 FEET; THENCE S.76°39'31\"W, 265.4 FEET; THENCE S.64°52'07\"W, 1786.9 FEET TO A POINT ON THE WEST SECTION LINE WHICH LIES N.00°02'00\"W, 990.9 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 21. SAID STRIP OF LAND BEING 2819.0 FEET OR 170.85 RODS IN LENGTH.

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF A REAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THE STATE.



GARY L. JONES  
TEXAS P.L.S. No. 7977  
No. 5074

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

1000 0 1000 2000 FEET

**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE EAGLE FEATHER FEDERAL #2

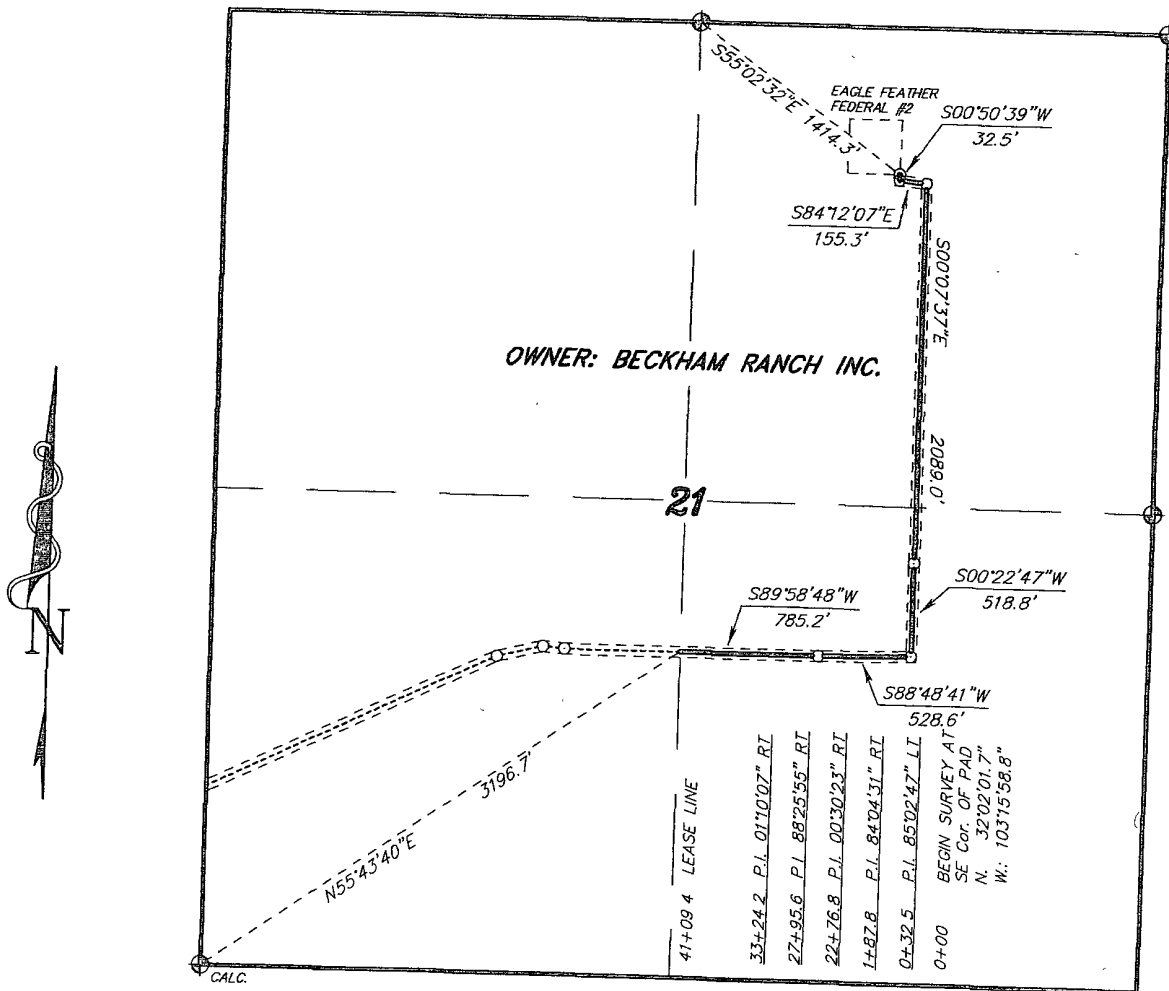
A LEASE ROAD CROSSING FEE LAND IN  
SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 18695 Drawn By: J. M. SMALL

Date: 10-19-2007 Disk: JMS 18695R

Survey Date: 10-18-2007 Sheet 1 of 4 Sheets

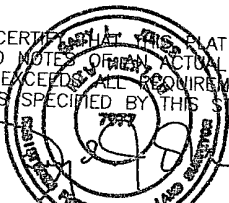
SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



**LEGAL DESCRIPTION**

A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.  
BEGINNING AT A POINT WHICH LIES S.55°02'32"E., 1414.3 FEET FROM THE NORTH QUARTER CORNER OF SAID SECTION 21; THENCE S.00°50'39"W., 32.5 FEET; THENCE S.84°12'07"E., 155.3 FEET; THENCE S.00°07'37"E., 2089.0 FEET; THENCE S.00°22'47"W., 518.8 FEET; THENCE S.88°48'41"W., 528.6 FEET; THENCE S.89°58'48"W., 785.2 FEET TO A POINT ON THE WEST LEASE LINE WHICH LIES N.55°43'40"E., 3196.7 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 21. SAID STRIP OF LAND BEING 4109.4 FEET OR 249.05 RODS IN LENGTH.

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES N.M.P.S. No. 7977  
TEXAS P.L.S. No. 5074

1000 0 1000 2000 FEET

**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE EAGLE FEATHER FEDERAL #2

A LEASE ROAD CROSSING FEE LAND IN  
SECTION 21, TOWNSHIP 26 SOUTH, RANGE 36 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

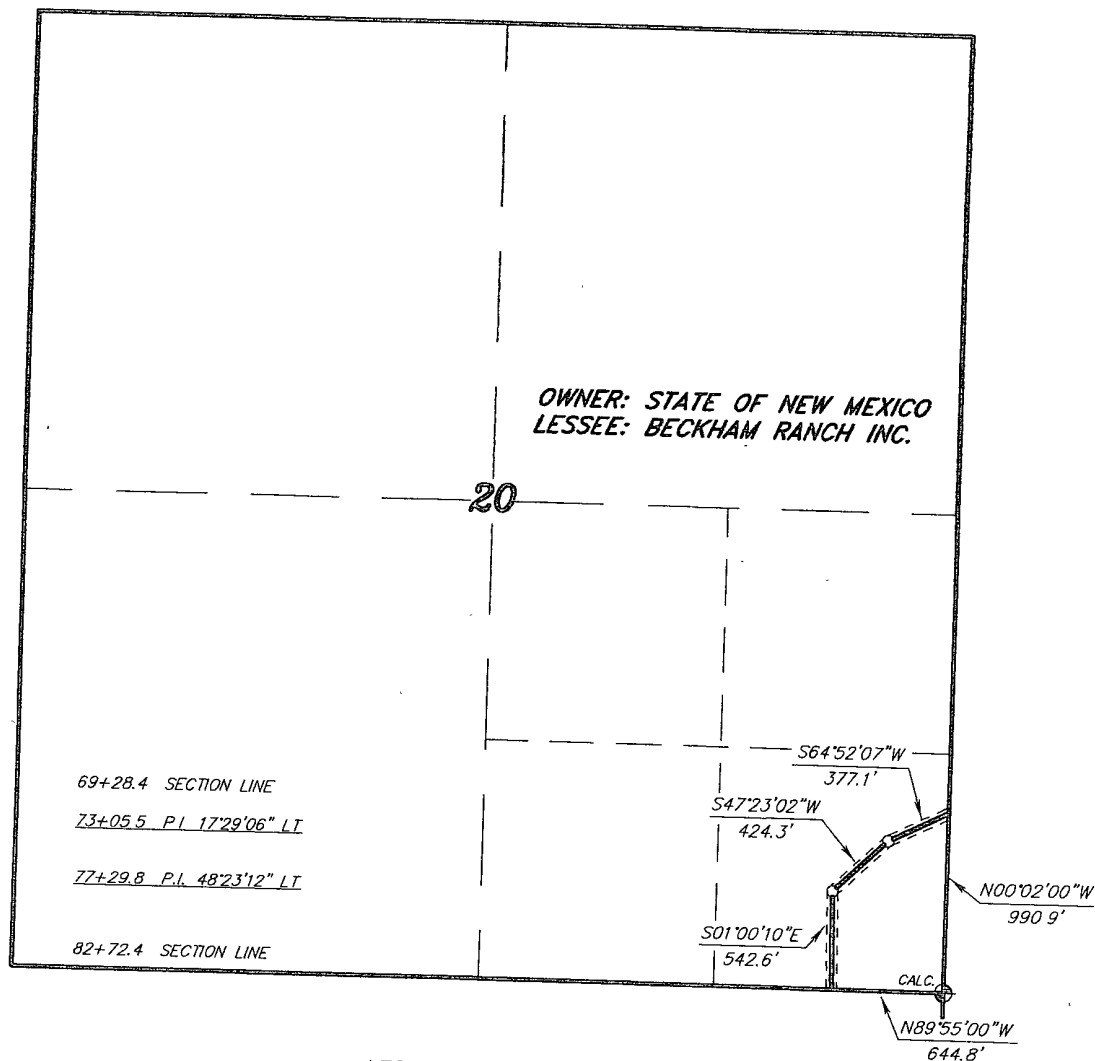
**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number. 18695 Drawn By: J. M. SMALL

Date: 10-19-2007 Disk: JMS 18695R

Survey Date: 10-18-2007 Sheet 2 of 4 Sheets

SECTION 20, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



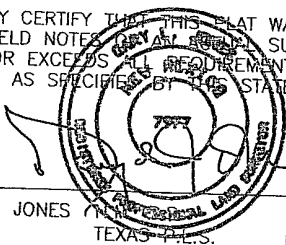
LEGAL DESCRIPTION

A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 20, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT ON THE EAST SECTION LINE WHICH LIES N.00°02'00"W., 990.9 FEET FROM THE SOUTHEAST CORNER OF SAID SECTION 20; THENCE S.64°52'07"W., 377.1 FEET; THENCE S.47°23'02"W., 424.3 FEET; THENCE S.01°00'10"E., 542.6 FEET TO A POINT ON THE SOUTH SECTION LINE WHICH LIES N.89°55'00"W., 644.8 FEET FROM THE SOUTHEAST CORNER OF SAID SECTION 20. SAID STRIP OF LAND BEING 1344.0 FEET OR 81.45 RODS IN LENGTH AND CONTAINING 0.62 ACRES, MORE OR LESS, AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

$$SE/4 \text{ SE/4} = 81.45 \text{ RODS} = 0.62 \text{ ACRES}$$

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF A SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THE STATE.



GARY L. JONES  
TEXAS P.L.S.  
No. 7977  
No. 5074

1000 0 1000 2000 FEET

**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE EAGLE FEATHER FEDERAL #2

A LEASE ROAD CROSSING STATE LAND IN  
SECTION 20, TOWNSHIP 26 SOUTH, RANGE 36 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

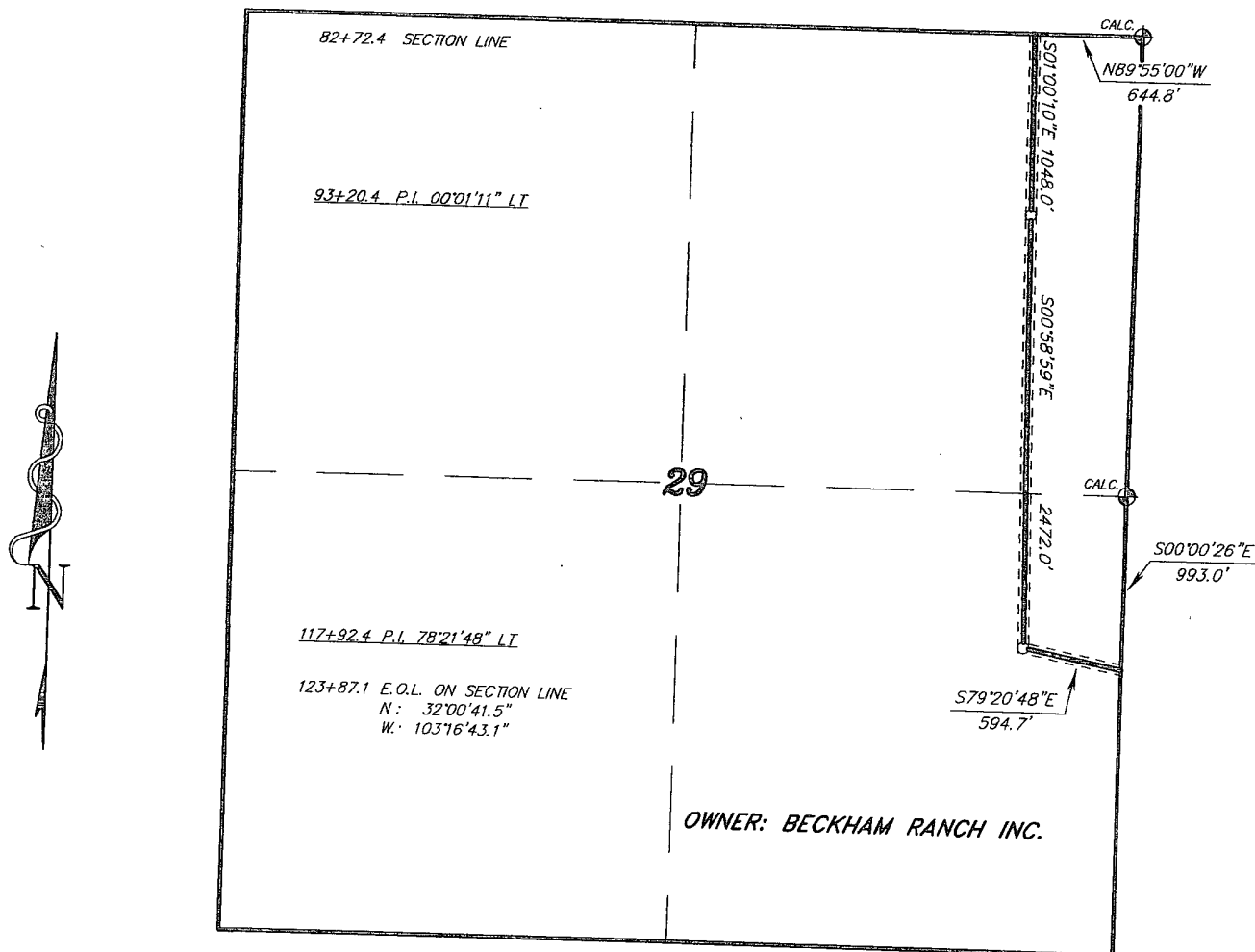
W.O. Number: 18695 Drawn By: J. M. SMALL

Date: 10-19-2007 Disk: JMS 18695R

Survey Date: 10-18-2007 Sheet 3 of 4 Sheets



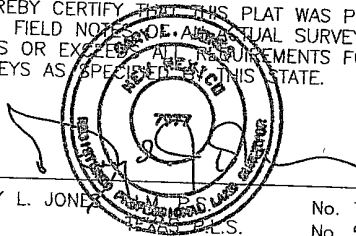
SECTION 29, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 29, TOWNSHIP 26 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY. BEGINNING AT A POINT ON THE NORTH SECTION LINE WHICH LIES N.89°55'00\"W., 644.8 FEET FROM THE NORTHEAST CORNER OF SAID SECTION 29; THENCE S.01°00'10\"E., 1048.0 FEET; THENCE S.00°58'59\"E., 2472.0 FEET TO THE END OF THIS LINE WHICH LIES S.33°29'37\"W., 1058.9 FEET FROM THE EAST QUARTER CORNER OF SAID SECTION 29. SAID STRIP OF LAND BEING 3520.0 FEET OR 213.33 RODS IN LENGTH.

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF A FIELD SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES

No. 7977  
No. 5074

1000 0 1000 2000 FEET

**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE EAGLE FEATHER FEDERAL #2

A LEASE ROAD CROSSING FEE LAND IN  
SECTION 29, TOWNSHIP 26 SOUTH, RANGE 36 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 18695

Drawn By: J. M. SMALL

Date: 10-19-2007

Disk: JMS 18695R

Survey Date: 10-18-2007

Sheet 4 of 4 Sheets

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating, LLC
LEASE NO.:	NM13430
WELL NAME & NO.:	Eagle Feather Federal No. 2
SURFACE HOLE FOOTAGE:	660' FNL & 1630' FEL
BOTTOM HOLE FOOTAGE	Same
LOCATION:	Section 21, T. 26 S., R 36 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)**
- ☐ **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 Hobbs Field Station at (505) 393-3612 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**

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

### **C. RESERVE PITS**

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

The reserve pit shall be constructed 160' X 160' 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.

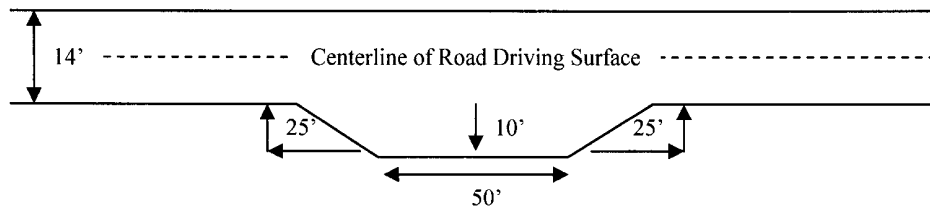
### **Ditching**

Ditching shall be required on the uphill side 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

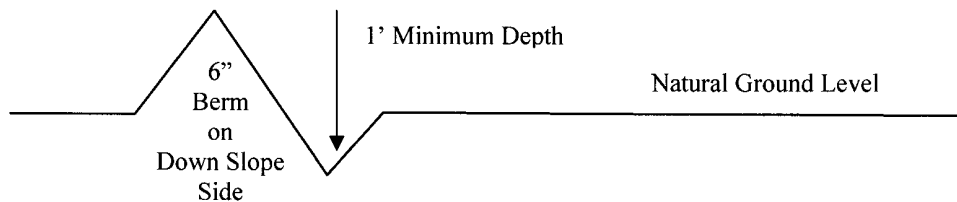


### Drainage

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:

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

### 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.

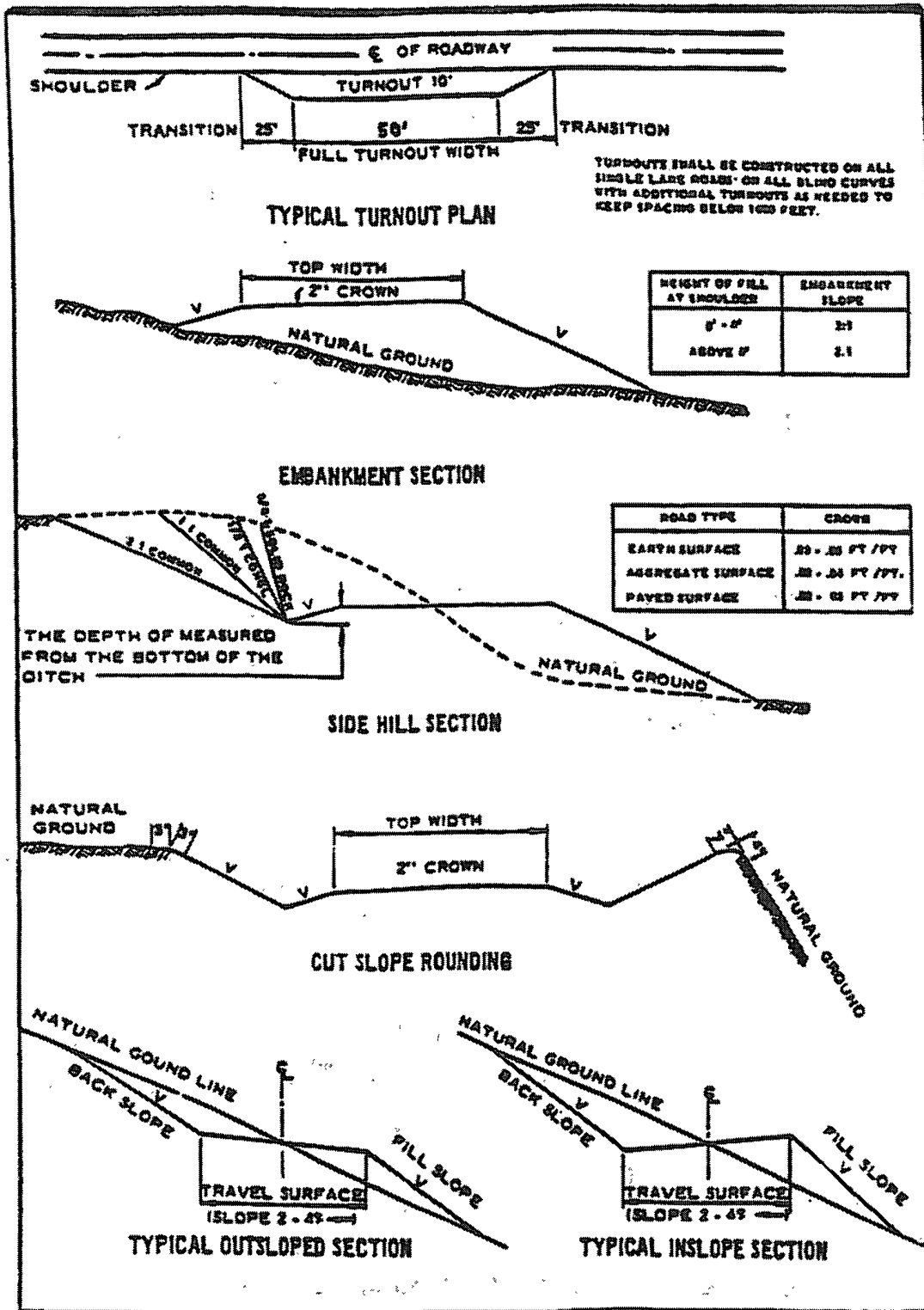
The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**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. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
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**

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Possible lost circulation in the Red Beds.**

**Possible lost circulation and water flows in the Artesia Group.**

1. The 13-3/8 inch surface casing shall be set **at approximately 1400 feet (a minimum of 25 feet into the Rustler Anhydrite and 25' above the salt)** and cemented to the surface.

**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing.**

- 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).
  - 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 cementing will be done prior to drilling out that string.
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.

**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing.**

**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 production casing is:

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

**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 casing is:

☒ Cement 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **5000 (5M)** psi.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7"** second intermediate casing shoe shall be **10,000 (10M)** psi.
5. 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.
  - f. A variance to test the surface casing and BOP/BOPE to the reduced pressure of **1000** psi with the rig pumps is approved.

#### **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.

**WWI 041008**

## **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 seed 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:

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

\*Pounds of pure live seed:

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



## **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.