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070 Farmington, NM

Form 3160-3
(September 2001)

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER	5. Lease Serial No. NMNM102886
	6. If Indian, Allottee or Tribe Name N/A
	7. If Unit or CA Agreement, Name and No. N/A
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone	8. Lease Name and Well No. WF Federal 11 #1
2. Name of Operator Richardson Operating Company	9. API Well No. 30-045-32268
3a. Address 3100 La Plata Hwy, Farm.,NM	3b. Phone No. *(include area code)* 564-3100
	10. Field and Pool, or Exploratory Harper Hill PC/Basin Fr. Coal
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface 1740' FNL & 670' FEL At proposed prod. zone Same	11. Sec., T., R., M., or Blk. and Survey or Area H Sec. 11-T30N-R14W, NMPM
14. Distance in miles and direction from nearest town or post office* 6 miles NW of Farmington, NM	12. County or Parish San Juan / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 670'	16. No. of Acres in lease 315.03 / 17. Spacing Unit dedicated to this well NE/4-PC 155.03 Acres E/2-FC 315.03 Acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1690'	19. Proposed Depth 1850' / 20. BLM/BIA Bond No. on file BLM Nationwide #158293308
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5942' GL	22. Approximate date work will start* Upon approval / 23. Estimated duration 2 Weeks

MAY 2004
OIL CONS. DIV.
DIST. 3

24. Attachments

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)* Paul Lehrman	Date 4-1-04
Title Petroleum Landman		
Approved by *(Signature)* /s/ Manuel Montoya	Name *(Printed/Typed)*	Date 5-24-04
Title AFM	Office FFO	

Application approval does not warrant or certify the 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.

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 reverse)*

NMOCD

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

State of New Mexico
Energy. Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe. NM 87505

Form C - 102

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070 FARMINGTON, NM

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-045-32268	78160	Harper Hill Fruitland Sand PC (Gas)

Property Code	Property Name	Well Number
34000	WF Federal II	1

OGRID No.	Operator Name	Elevation
19219	RICHARDSON OPERATING COMPANY	5942'

Surface Location

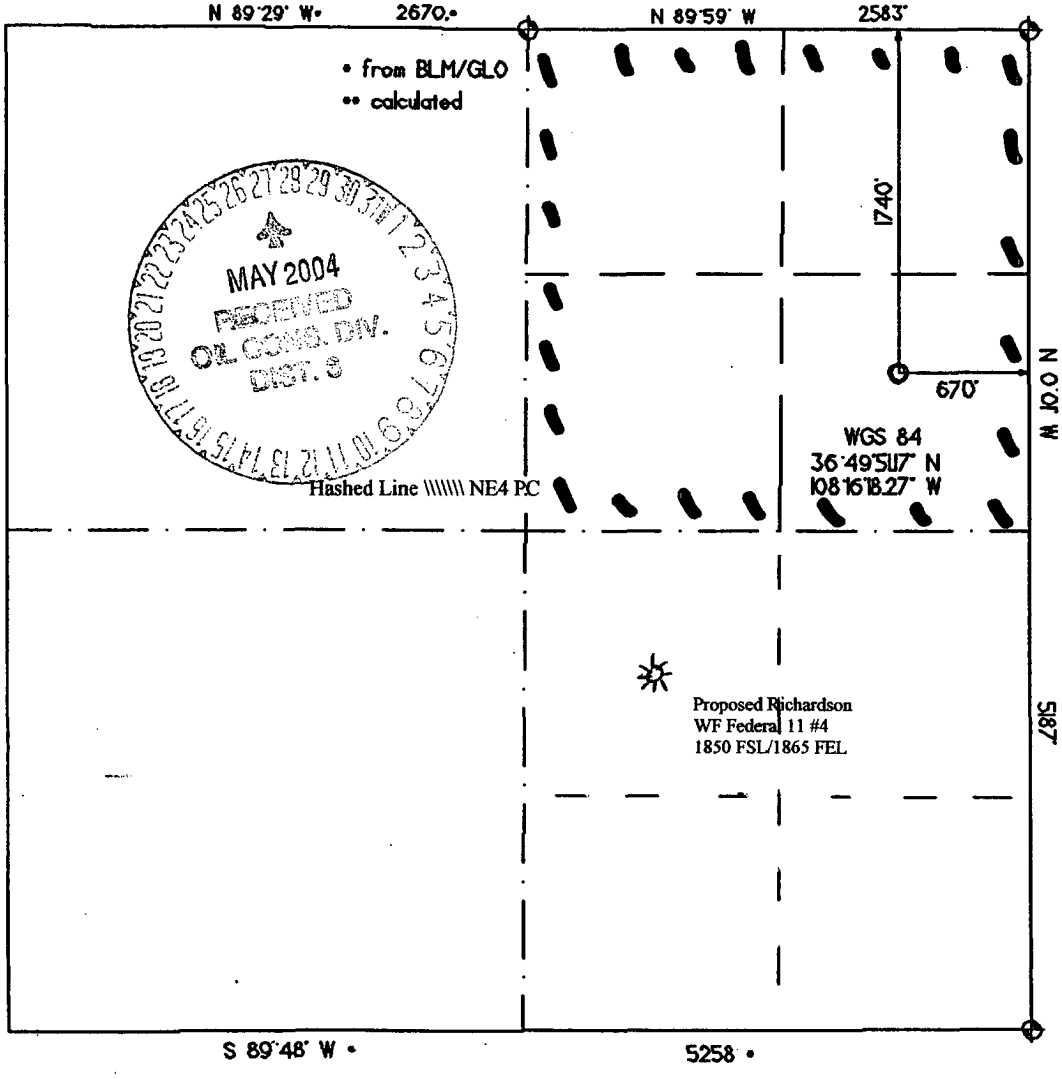
UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from>	North/South	Feet from>	East/West	County
H	II	30 N.	14 W.		1740'	NORTH	670'	EAST	SAN JUAN

Bottom Hole Location If Different From Surface

UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from>	North/South	Feet from>	East/West	County

Dedication	Joint ?	Consolidation	Order No.
NE/4 155.03			

NO ALLOWABLE WILL 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 that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name: Paul Lehrman

Title: Landman

Date: 4-1-04

SURVEYOR CERTIFICATION

I hereby certify that the well location 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.

Date of Survey

rev: 03/03/04

Signature and Seal of Professional Surveyor

GERALD S. HUDDLESTON
NEW MEXICO
6844
REGISTERED LAND SURVEYOR

State of New Mexico
Energy. Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe. NM 87505

Form C - 102

RECEIVED
04 APR -4
Farmington, NM

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number	Pool Code	Pool Name
30-045-	71629	Basin Fruitland Coal

Property Code	Property Name	Well Number
	WF Federal II	1

OGRID No.	Operator Name	Elevation
19219	RICHARDSON OPERATING COMPANY	5942'

Surface Location

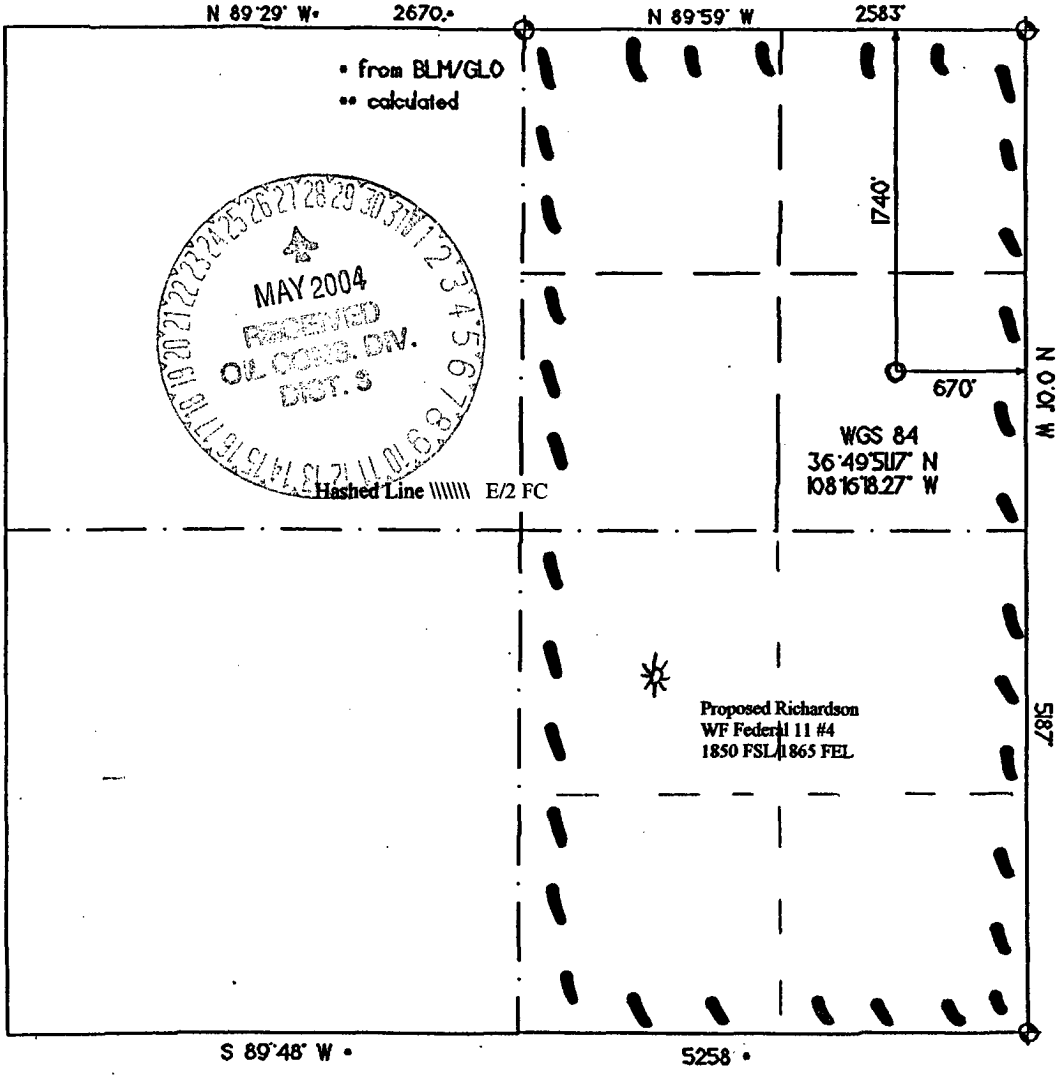
UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from>	North/South	Feet from>	East/West	County
H	11	30 N.	14 W.		1740'	NORTH	670'	EAST	SAN JUAN

Bottom Hole Location If Different From Surface

UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from>	North/South	Feet from>	East/West	County

Dedication	Joint ?	Consolidation	Order No.
E/2 315.08			

NO ALLOWABLE WILL 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 that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: [signature]

Printed Name: Paul Lehrman

Title: Landman

Date: 4-1-04

SURVEYOR CERTIFICATION

I hereby certify that the well location 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.

Date of Survey

rev: 03/03/04

Signature and Seal of Professional Surveyor:

GERALD S. HUDDLESTON
NEW MEXICO
6844
REGISTERED LAND SURVEYOR

[signature]

Richardson Operating Company
WF Federal 11 #1
1740' FNL & 670' FEL
Section 11, T30N, R14W, NMPM
San Juan County, New Mexico

DRILLING PROGRAM

1. ESTIMATED FORMATION TOPS:

Formation	GL Depth	KB Depth	Subsea Elevation
Ojo Alamo Ss	645'	650'	+5,297'
Kirtland Shale	820'	825'	+5,122'
Fruitland Fm	1245'	1250'	+4,697'
Basal Fruitland Coal	1670'	1675'	+4,272'
Pictured Cliffs Ss	1685'	1690'	+4,257'
Total Depth (TD)*	1850'	1855'	+4,092'

*All elevations reflect the ungraded ground level of 5,942'

2. NOTABLE ZONES:

Gas Zones	Water Zones	Coal Zones
Fruitland	Fruitland Coal	Fruitland Coal
Pictured Cliffs		

Water zones will be protected with casing, cement, and water based mud. Fresh water encountered during drilling will be recorded by depth. Centralizers will be run through usable water zones to ensure that the casing is centralized through these zones. Number of centralizers will be based on API standards. A turbulizing centralizer will be run to ensure an adequate cement procedure just below the base of the lowest usable water zone. Oil and gas shows will be tested for commercial potential based on the well site representatives recommendations.

3. PRESSURE CONTROL:

The drilling contract has not yet been awarded, thus the exact BOP model to be used is unknown. (A typical 2,000 psi model has been attached to the end of the drilling program.) Double ram or annular system with a rotating head will be used. All ram preventers and related equipment will be hydraulically tested at nipple up and after any use under pressure to 1000 psi.

Blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. BOP equipment will include a floor safety valve and choke manifold rated to 2000 psi. Maximum expected pressure is less than 1000 psi.

4. CASING AND CEMENTING PROGRAM:

Hole Size	O.D.	Weight (lb/ft)	Grade	Age	GL Setting Depth
8 ¾"	7"	20	J-55	New	120'
6 ¼"	4 ½"	10.5	J-55	New	1850'

Surface casing will be cemented to surface with ≈36 cu.ft. (≈~~60~~ 31 sx) Class B + 2% CaCl. Volume is based on 100% excess, yield of 1.18 cu.ft./sk, and slurry weight of 15.6 ppg. WOC = 12 hours. Pressure test surface casing to 600 psi for 30 minutes.

Production casing hole will first be cleaned of rock chips by circulating at least 150% of hole volume with drilling fluid to surface. Thirty barrels of fresh water will then be circulated. Lead with ≈150 cu.ft. (≈75 sx) Class B with 2% metasilicate (yield = 2.06 cu.ft./sk, slurry weight = 12.5 ppg). Tail in with ≈115 cu.ft. (≈100 sx) Class B with 2% CaCl (yield = 1.18 cu.ft./sk, weight = 15.6 ppg). Total cement volume is ≈~~265~~ 273 cu.ft. based on 100% excess and circulating to surface.

Production casing will have 4 ½" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Six centralizers will be spaced every other joint starting above the shoe. Six turbolizers will be placed every other joint starting from the top of the well.

5. MUD PROGRAM:

Surface casing hole will be drilled with fresh water mud. Production casing hole will be drilled with a fresh water polymer mud. Weighting material will be drill solids or, if needed, barite. Maximum expected mud weight will be 8.7 ppg. Sufficient material to maintain mud properties, control lost circulation, and contain a blowout will be available at the well while drilling.

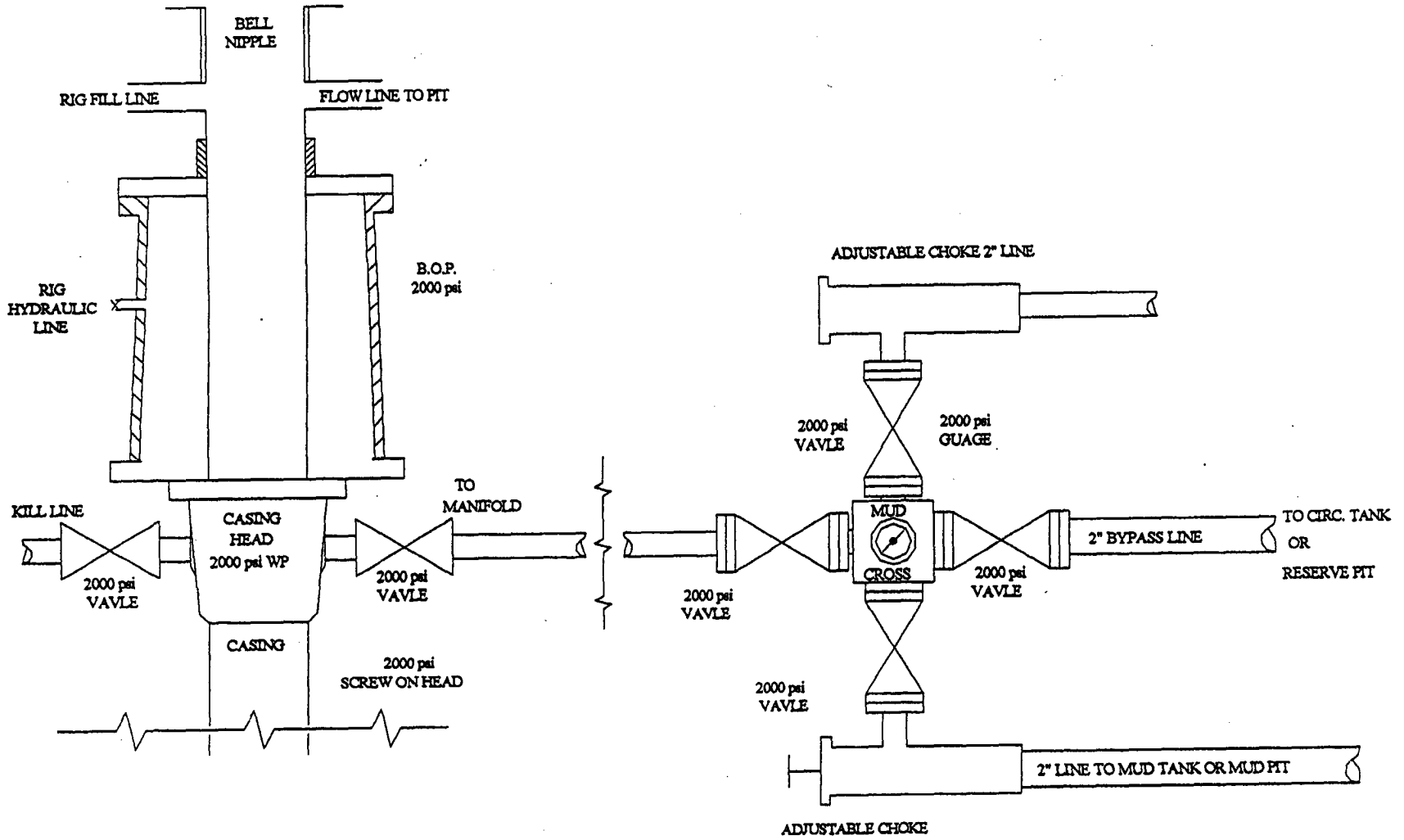
6. CORING, TESTING, & LOGGING:

No cores or DSTs are planned. A cased hole CNL/GR will be run from TD to surface.

7. DOWNHOLE CONDITIONS:

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum pressure will be approximately ≈520 psi. Although no hydrogen sulfide is expected while drilling, if encountered appropriate safety measures will be instituted. After the well is in production, if hydrogen sulfide is encountered, appropriate safety measures will be instituted to ensure the safety of the public, Richardson employees, contractors, or anyone expected to work or recreate in the vicinity. This may include, but not be limited to, monitoring, flagging or other measures appropriate for the situation.

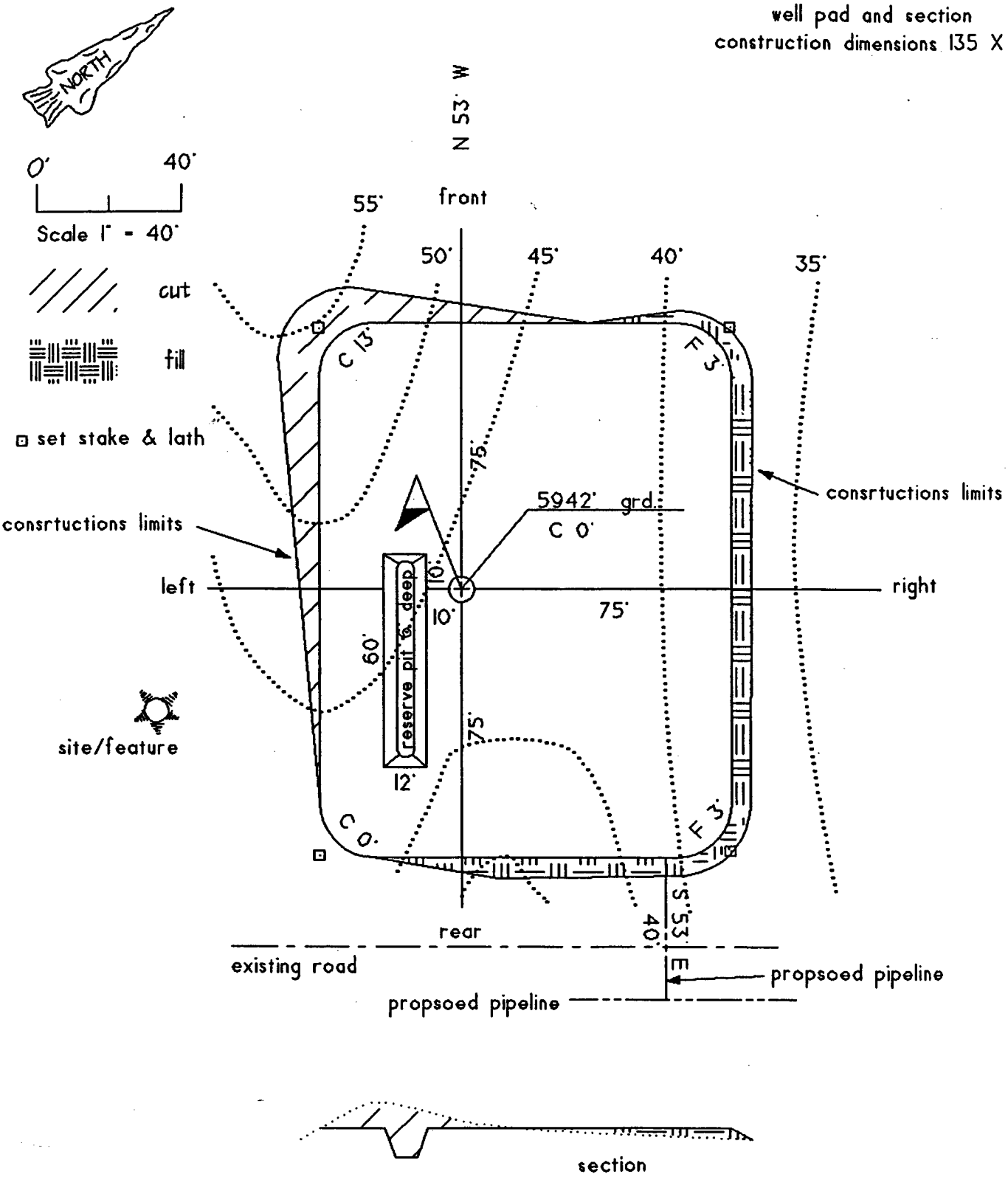
BLOW OUT PREVENTER (B.O.P.)



** 2000 psi Rubber hose will be used from Well Head to Manifold & from Well Head to Kill Line.

WF Federal II # 1

well pad and section
construction dimensions 135 X 170



section