


UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work DRILL		5. Lease Number NM-86497	
1b. Type of Well GAS		6. If Indian, All. or Tribe	
2. Operator MERIDIAN OIL 14538		7. Unit Agreement Name	
3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700		8. Farm or Lease Name 13486 Black Diamond Com 20 9. Well Number 1	
4. Location of Well 120' FNL, 120' FWL at surface 4816' FNL, 2310' FWL at total depth Latitude 36° 48' 22", Longitude 108° 26' 54"		10. Field, Pool, Wildcat Waterflow Gallup EXT. 11. Sec., Twn, Rge, Mer. D Sec 20, T-30-N, R-15-W NMPM	
14. Distance in Miles from Nearest Town 3.5 miles from Waterflow, NM		12. County San Juan	
15. Distance from Proposed Location to Nearest Property or Lease Line 120'		13. State NM	
16. Acres in Lease 1805.77		17. Acres Assigned to Well 320 W/2 Unit	
18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 2000'		20. Rotary or Cable Tools Rotary	
19. Proposed Depth 4300' TVD; 9038' MD		22. Approx. Date Work will Start 2nd quarter 1993	
21. Elevations (DF, FT, GR, Etc.) 5361' GR			
23. Proposed Casing and Cementing Program See Operations Plan attached			
24. Authorized by:  Regional Drilling Engineer		Date <u>6/8/93</u>	

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY _____ TITLE _____ DATE _____

Archaeological Report submitted 3-3-93
Threatened and Endangered Species Report submitted 3-21-93
NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

Handwritten: Harold C. 104 for C.P.
A-9702-A
(2)

APPROVED
AS AMENDED

JUN 18 1993
DISTRICT MANAGER

RECEIVED
BLM
Form C-102
Revised 1-1-59

DIRECTOR
P.O. Box 1980, Hobbs, NM 88240

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

93 JUN 10 PM 3:22

DISTRICT II
P.O. Drawer DD, Arama, NM 88210

070 FARMINGTON, NM

DISTRICT II
1000 Rio Grande Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Meridian Oil Inc.		Lease Black Diamond Com 20.		Well No. 1
Unit Letter D	Section 20	Township 30 North	Range 15 West	County San Juan
Actual Footage Location of Well:				
120	feet from the	North	line and	120
			feet from the	West
Ground level Elev. 5361'	Producing Formation Gallup	Flow Waterflow	Estimated Average 320	Acres

1. Outline the acreage dedicated to the subject well by colored pencil or ink on the plot below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been considered by communication, lease-pooling, etc.?
- ☒ Yes ☐ No If answer is "yes" type of communication will obtain communitization agreement

If answer is "no" list the crimes and exact descriptions which have actually been committed. (Use reverse side of this form if necessary).

No allowance will be assigned to the wall until all interests have been consolidated (by commutation, purchase, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.

2643.26'

2614.22'

120'

120'

2627.46'

2632.08'

USA NM-86497

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JUN 23 1983

OIL CON. DIV. 1

DIST. 3

20

OPERATOR CERTIFICATION

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

Deputy Sheriff

Peggy Bradfield

Printed Name
Regulatory Representative

Possession
Meridian Oil Inc.

Company

Data

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

2-12-95
Date Surveyed: C. EDWARDS
Name: C. EDWARDS
Signature: [Signature]
Print Name: C. EDWARDS

Signature _____
Print Name _____

3357

June 8, 1993

OPERATIONS PLAN

Well Name: Black Diamond Com 20 #1
Location: 120'FNL, 120'FWL Section 20, T-30-N, R-15-W
 San Juan County, New Mexico
 Latitude 36° 48' 22", Longitude 108° 26' 54"
Formation: Waterflow Gallup
Elevation: 5361'GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	Lewis	707'	
Chacra	707'	982'	gas
Mesa Verde	982'	1557'	salt water
Cliff House	1557'	1606'	salt water
Menefee	1606'	2760'	salt water
Point Lookout	2760'	2938'	salt water
Mancos	2938'	3801'	
Niobrara Gallup	3801'	4050'	oil
Waterflow	4110'	4249'	oil
Niobrara Carlilse	4249'	4249'	oil
Juana Lopez	4249'	4300' TVD	oil

Total Depth (Pilot Hole) 4300' TVD

Total Depth (Lateral) 4093' TVD 9038' MD

Logging Program: DIL-GR from TD to surface.

Mud Program:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Vis.</u>	<u>Fluid Loss</u>
0- 300'	Spud	8.4-8.9	40-50	no control
300- 4300' MD	Non-dispersed	8.4-9.0	30-60	no control

Drilling:

Surface/Intermediate Hole:

Drill to surface casing point of 300' and set 10 3/4" casing. Mud drill from 300' to total depth. The well will be a pilot hole vertically drilled to 4300', plugged back to approximately 3579' for a kick off point depth of 3579'. At this point the well will deviate at 12.0 degrees/100 feet to 80 degrees at 4349' MD. Planned azimuth is 155 degrees, but may be adjusted due to fracture identification log (FMS) data. At intermediate TD of 4349' MD, 4067' TVD, 7 5/8", 26.4#, K-55 casing will be run from 3579' MD (KOP) to surface. 7 5/8", 29.7# N-80 casing will be set from 4349' MD to 3579' MD (KOP).

<u>TVD</u>	<u>MD</u>	<u>Vertical Section</u>	<u>Hole Size</u>	<u>Notes</u>	<u>Depth</u>
300'	300'	0'	14 3/4"	10 3/4" casing set	300'
3579'	3579'	0'	9 7/8"	7 5/8", 26.4# K-55	0-3579'
4067'	4349'	507'	9 7/8"	7 5/8", 29.7# N-80	3579-4349'

Production Hole:

Drill out cement/shoe of 7 5/8" casing, unload hole with air/mist. Drill with air/mist building at 3 degrees/100' to 90 degrees in Target Pay at 4085' TVD (4598'MD). Hold 90 degrees to total depth of 9038' MD. Run 4 1/2" perforated and plugged liner from 3380' MD to 9038' MD.

<u>TVD</u>	<u>MD</u>	<u>Vertical Section</u>	<u>Hole Size</u>	<u>Notes</u>
4067'	4349'	507'	6-1/2"	Mud system
4067'	4349'	507'	6-1/2"	Begin air/mist drilling
4093'	9038'	4793'	6-1/2"	Run 4 1/2" liner 3380-9038

See attached General Well Plan, Figure 1.

See attached Directional Plan, Figure 2

NOTE: The wellbore will not be open in the pay zone outside the legal window.

See attached Legal Window Blow Up, Figure 3

See attached Wellbore Plan, Figure 4

Materials:

Casing Program:

<u>Hole Size (inches)</u>	<u>Measured Depth (ft)</u>	<u>TVD (ft)</u>	<u>Casing Size (in)</u>	<u>Weight (lbs/ft)</u>	<u>Grade</u>
14 3/4"	300'	300'	10 3/4"	40.5	K-55
9 7/8"	3579'	3579'	7 5/8"	26.4	K-55
9 7/8"	4349'	4067'	7 5/8"	29.7	N-80
6 1/2"	9038'	4093'	4 1/2"	10.5	K-55

Casing Equipment:

10 3/4" surface casing - sawtooth guide shoe.

7 5/8" intermediate casing - cement nose guide shoe on bottom, float collar one joint off bottom.

Centralizers spaced as follows: one centralizer every fourth joint per Onshore Order #2.

4 1/2" production liner - 7 5/8" x 4 1/2" liner hanger, guide shoe.

Tubing: 4050' of 2 3/8", 4.7#, J-55 8rd EUE tubing with a seating nipple one joint off bottom and an expendable check valve on bottom.

Wellhead Equipment:

10 3/4" x 7 5/8" x 2 3/8" - 11" (2000 psi) wellhead assembly.

Cementing

- 10 3/4" surface casing - use 350 sx of Class "G" cement with 1/4#/sx flocele and 3% calcium chloride (413 cu.ft. of slurry, 100% excess to circulate to surface). WOC 12 hrs. Test casing to 500 psi.
- 7 5/8" intermediate casing - lead with 990 sx 65/35 Class "B" poz with 6% gel, 3% extender, 1% fluid loss additive and 0.25#/sx cellophane flakes. Tail with 100 sx Class "B" with 0.25#/sx cellophane flakes (1868 cu.ft. of slurry), 100% excess to circulate to surface.
- 4 1/2" production liner - Pre-perforated and plugged liner will be set from 3380' to 9038'. Pre-perforated pipe sections will be placed across productive zones in lateral.

BOP and Tests

Surface to intermediate TD - 11", 3000 psi minimum double gate BOP stack. An annular blowout preventer may also be installed (Reference Figure #5). Prior to drilling out surface casing, test rams and casing to 500 psi for 30 minutes.

Intermediate TD to Total Depth - 11" nominal, 3000 psi (minimum) double gate BOP stack. An annular blowout preventer will also be installed (Reference Figure #5). Prior to drilling out intermediate casing, test rams and casing to 1500 psi (minimum) for 30 minutes.

Completion Operations - 7 1/16" nominal, 3000 psi (minimum) double gate BOP stack as above (see Figure #5).

Surface to Total Depth - choke manifold (Reference Figure #6).

Pipe rams will be actuated at least once each day and blind rams will be actuated once each trip to test proper functioning. A kelly cock valve and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional Information

- This oil and associated gas is dedicated.
- The West half of Section 20 is dedicated to this well.
- New casing will be utilized.
- Pipe movement (reciprocation) will be done if hole conditions permit.
- No abnormal pressure zones are expected.
- A copy of NMOCD Order R-9702-A approving this well is attached.

BLACK DIAMOND COM 20 #1 NW/NW 20-T30N-R15W

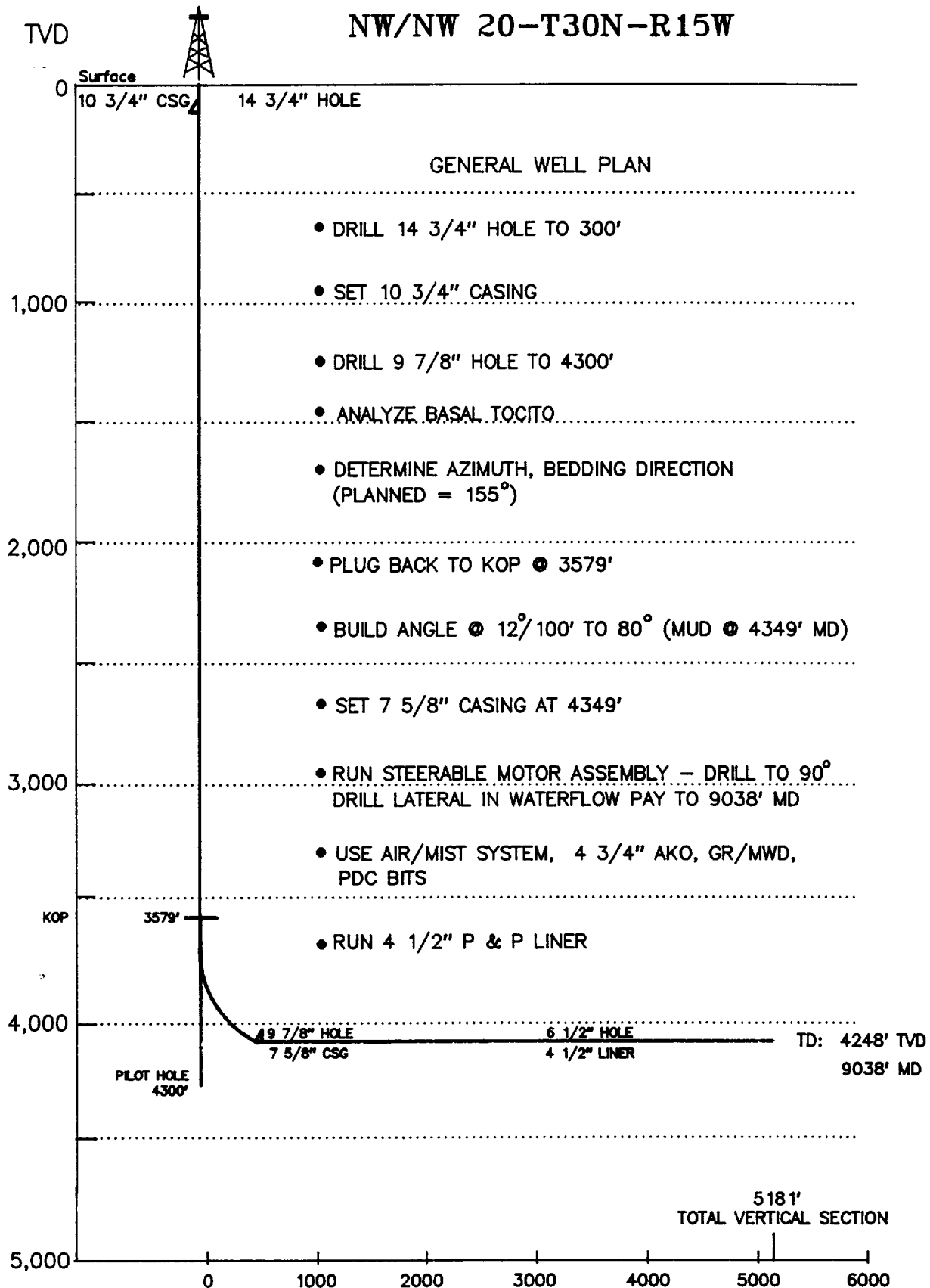


FIGURE #1

BLACK DIAMOND COM #20-1 PROPOSED DIRECTIONAL WELL PLAN

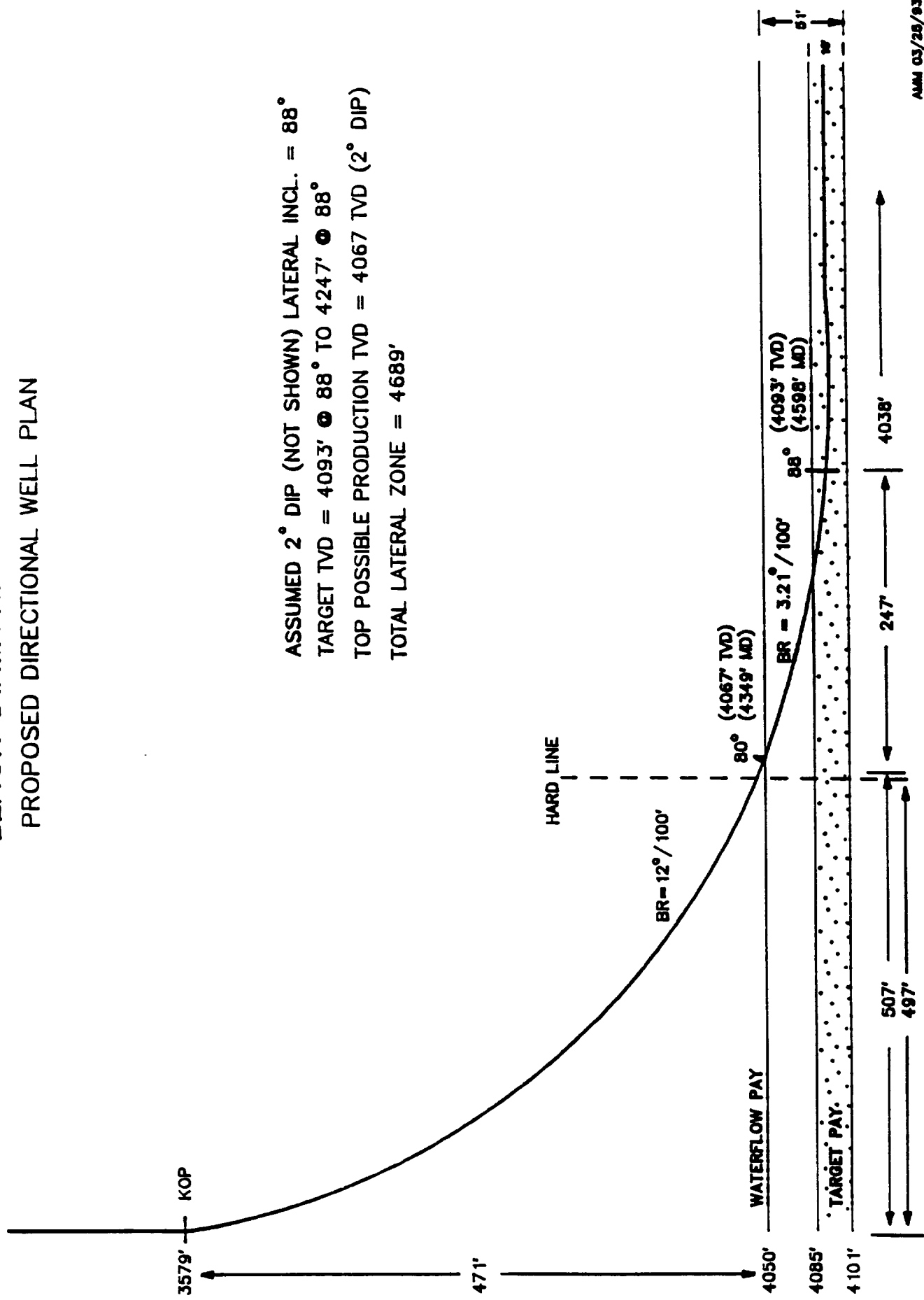


FIGURE #2

BLACK DIAMOND COM #20-1
LEGAL WINDOW BLOW-UP

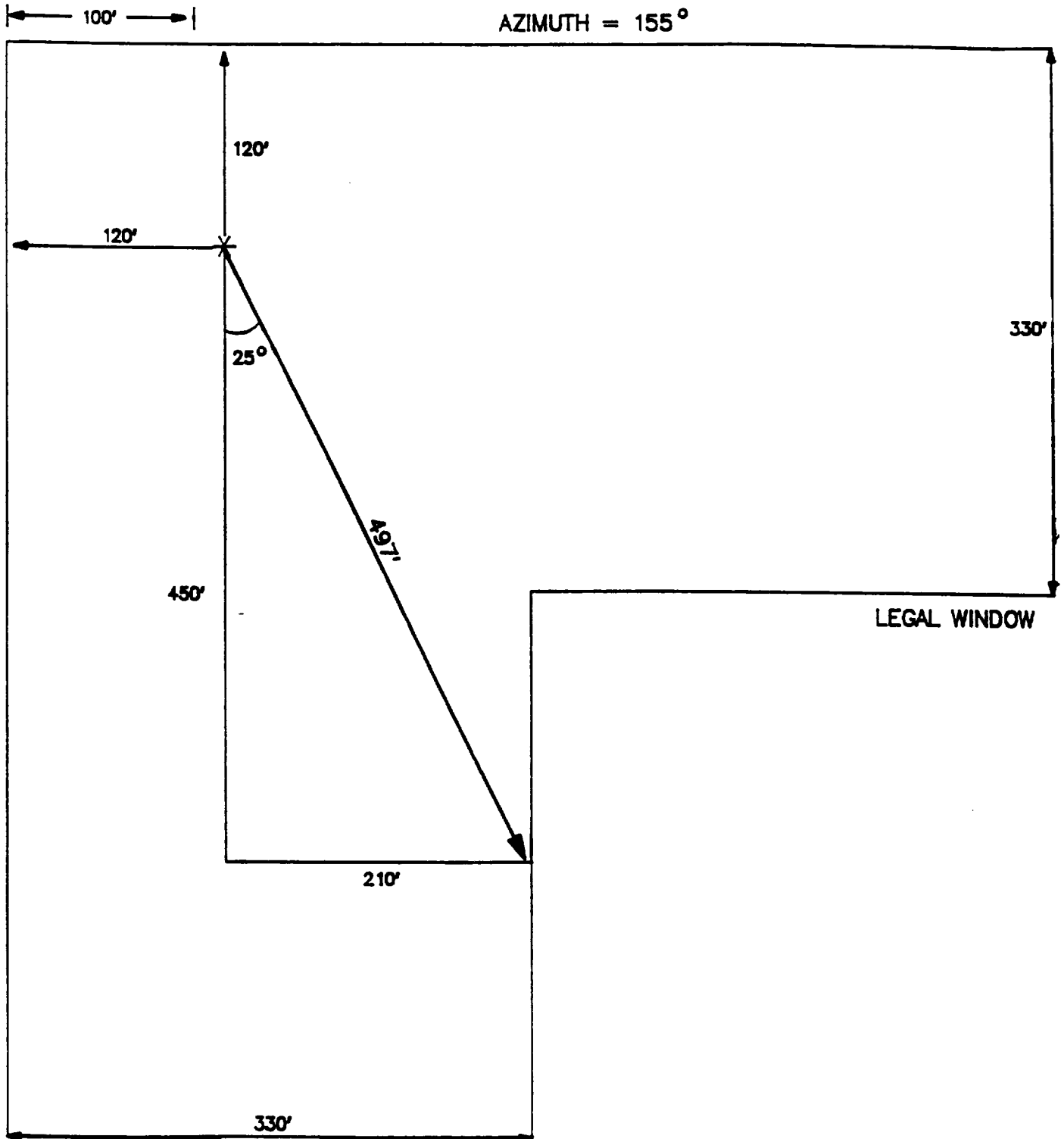


FIGURE #3

BLACK DIAMOND COM 20-1
SEC 20, T30N-R15W

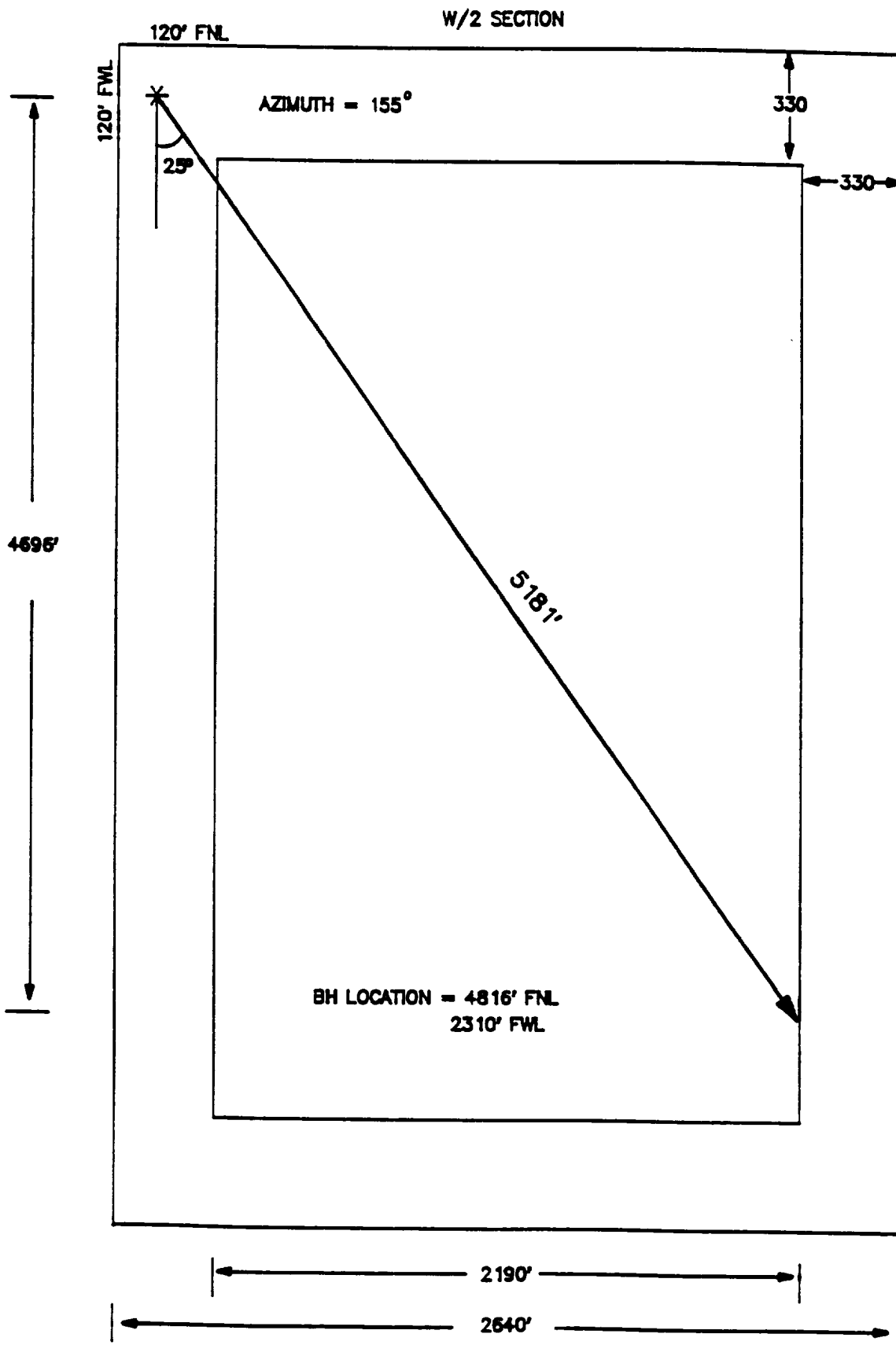
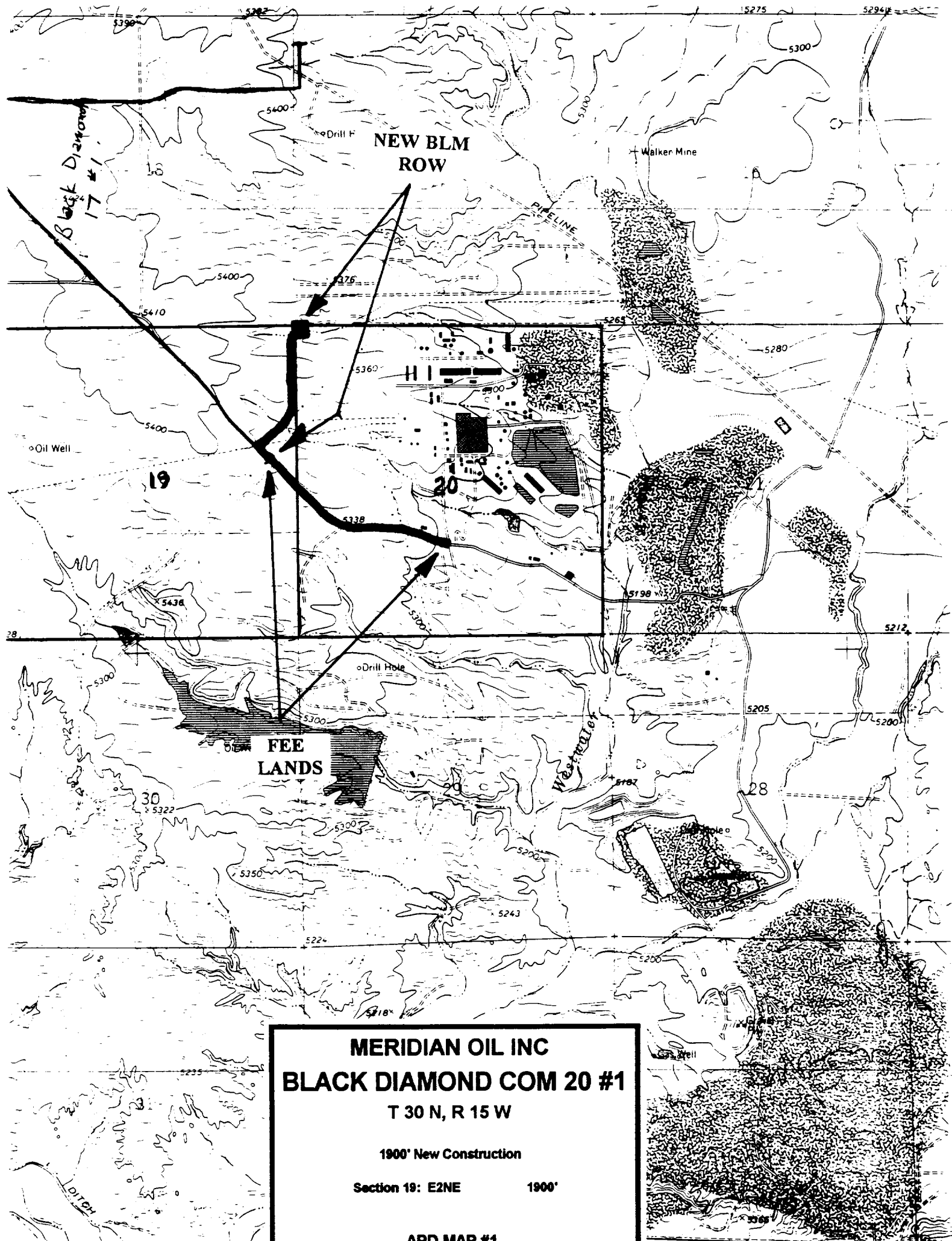


FIGURE #4



MERIDIAN OIL INC
BLACK DIAMOND COM 20 #1

T 30 N, R 15 W

1900' New Construction

Section 19: E2NE

1900'

APD MAP #1