

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. SF 078863	
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME None	
2. NAME OF OPERATOR ARCO Oil & Gas Company Division of Atlantic Richfield Company		7. UNIT AGREEMENT NAME None	
3. ADDRESS OF OPERATOR P. O. Box 5540, Denver, Colorado 80217		8. FARM OR LEASE NAME Krause WN Federal	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*) At surface 790' FEEL & 1520' FWL Section 32 c At proposed prod. zone Approximately same		9. WELL NO. 1E	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 6 3/4 miles north & 1 mile east to Bloomfield, New Mexico		10. FIELD AND POOL, OR WILDCAT Basin Dakota	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 790'		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 32-T28N-R11W	
16. NO. OF ACRES IN LEASE 2560.0		12. COUNTY OR PARISH San Juan	
17. NO. OF ACRES ASSIGNED TO THIS WELL W 320		13. STATE New Mexico	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 2110'		20. ROTARY OR CABLE TOOLS Rotary	
19. PROPOSED DEPTH 6465'		22. APPROX. DATE WORK WILL START* When approved approx. March 10, 1980	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 5898' GL Ungraded			
23. PROPOSED CASING AND CEMENTING PROGRAM			
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH
12 1/4	8 5/8	24#	735'
7 7/8	4 1/2	10.5#	T.D.
		QUANTITY OF CEMENT	
		300 sx	CIRCULATE
		500 sx	

Proposed to drill well to a depth to test the Dakota Formation, setting surface casing thru the Ojo Alamo, and if productive setting production casing. If the Dakota formation is productive will perforate, test and treat if necessary.

Pursuant to the provisions of NTL-6 attached are: Certified Location Plot
Drilling Plan with attachments
Surface use and operation plan
with attachments.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

TITLE Operations Manager

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

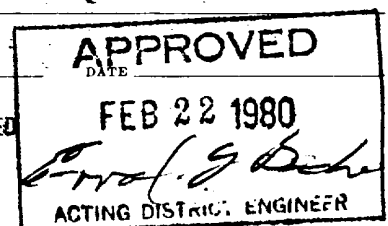
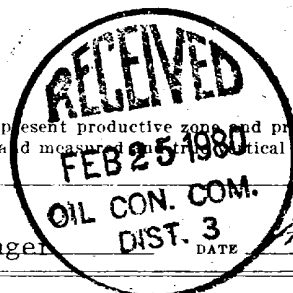
APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

TITLE

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REG. OF THE GEOLOGICAL SURVEY"

NMACC



APPROVED

100-100000

100-100000

All distances must be from the outer boundaries of the Section

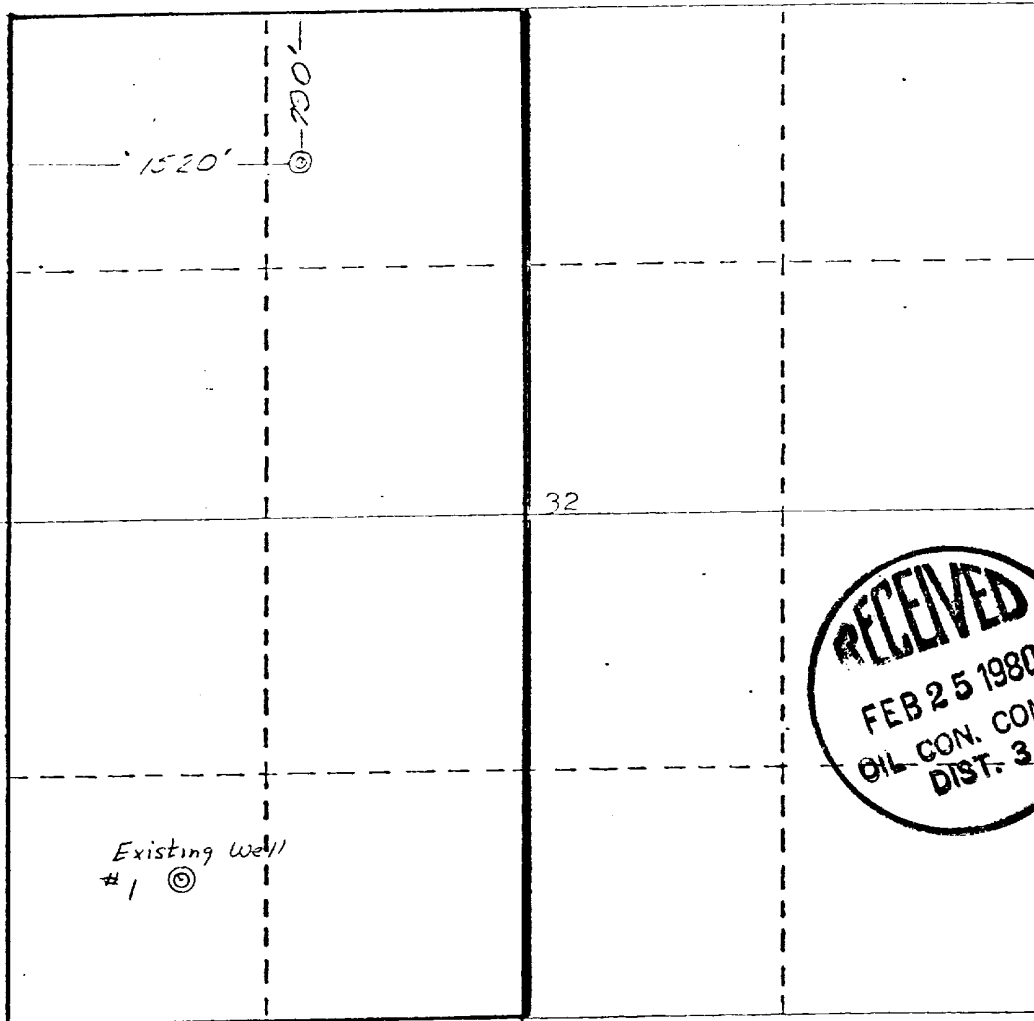
Operator ARCO OIL AND GAS COMPANY			Lease KRAUSE WM FEDERAL		Well No. 1-E
Unit Letter C	Section 32	Township 28 NORTH	Range 11 WEST	County SAN JUAN	
Actual Location of well:					
790 feet from the NORTH line and		1520 feet from the WEST line			
Ground Level Elev. 5898	Producing Formation Dakota	Pool Basin Dakota	Dedicated Acreage: W-320		

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

W. A. Walther, Jr.

Name
W. A. Walther, Jr.
Position
Operations Manager
Company
ARCO Oil & Gas Company
Date
February 6, 1980

I hereby certify that the well location shown on this plat is correct from field notes of the Survey, and that the same is true and correct to the best of my knowledge and belief.

NO 2463
NEW MEXICO
STATE ENGINEER
DATE F. LEASE

Date Surveyed
December 14, 1979

Registered Professional Engineer and/or Land Surveyor

James P. Leese
James P. Leese

Certificate No.

1462

10 150 300 450 600 750 900 1050 1200 1350 1500 1650 1800 1950 2100 2250 2400 2550 2700 2850 3000

DRILLING PLAN

KRAUSE WN FEDERAL #1E

NENW Section 32-T28N-R11W

SAN JUAN COUNTY, NEW MEXICO

1. SURFACE FORMATION: Poison Spider

2. GEOLOGICAL MARKERS:

Ojo Alamo	620"	Upper Mancos	4418'
Kirkland	1165'	Gallup	5313'
Fruitland	1510'	Lower Mancos	5855'
Pictured Cliffs	1725'	Greenhorn	6103'
Lewis	1808'	Graneros	6160'
Chacra	2665'	Dakota	6283'
Cliff House	3273'	Morrison	6413'
Point Lookout	4150'		

3. ANTICIPATED MINERAL BEARING FORMATIONS:

Ojo Alamo	(Poss. water)
Fruitland	(Poss. Gas)
Pictured Cliffs	(Poss. Gas)
Cliff House	(Poss. Gas)
Gallup	(Poss. Gas)
Dakota	(Poss Oil/Gas)

4. CASING PROGRAM:

Surface	to 735'	8-5/8" 24# K55 ST&C,
Production	to T.D.	4-1/2" 10.5# K55, ST&C

5. CONTROL EQUIPMENT: Blowout Preventor - Ram Type, hydraulic operated
Rams - Two: One blind ram and one pipe ram.
Series - 900 (3000#WP, 600#T)
Manufacturer - Cameron or Shaffer
Pressure test at 1000 psi prior to drilling out of casing string.
Operational checks to be made daily and on trips.
Sketch attached.

6. DRILLING FLUIDS:

0	to 735'	Gel and lime to drill surface hole and set casing.
735'	to T.D.	Low solids non-dispersed 9.0-9.1# gal., 38-45 vis., WL 8 cc or less.

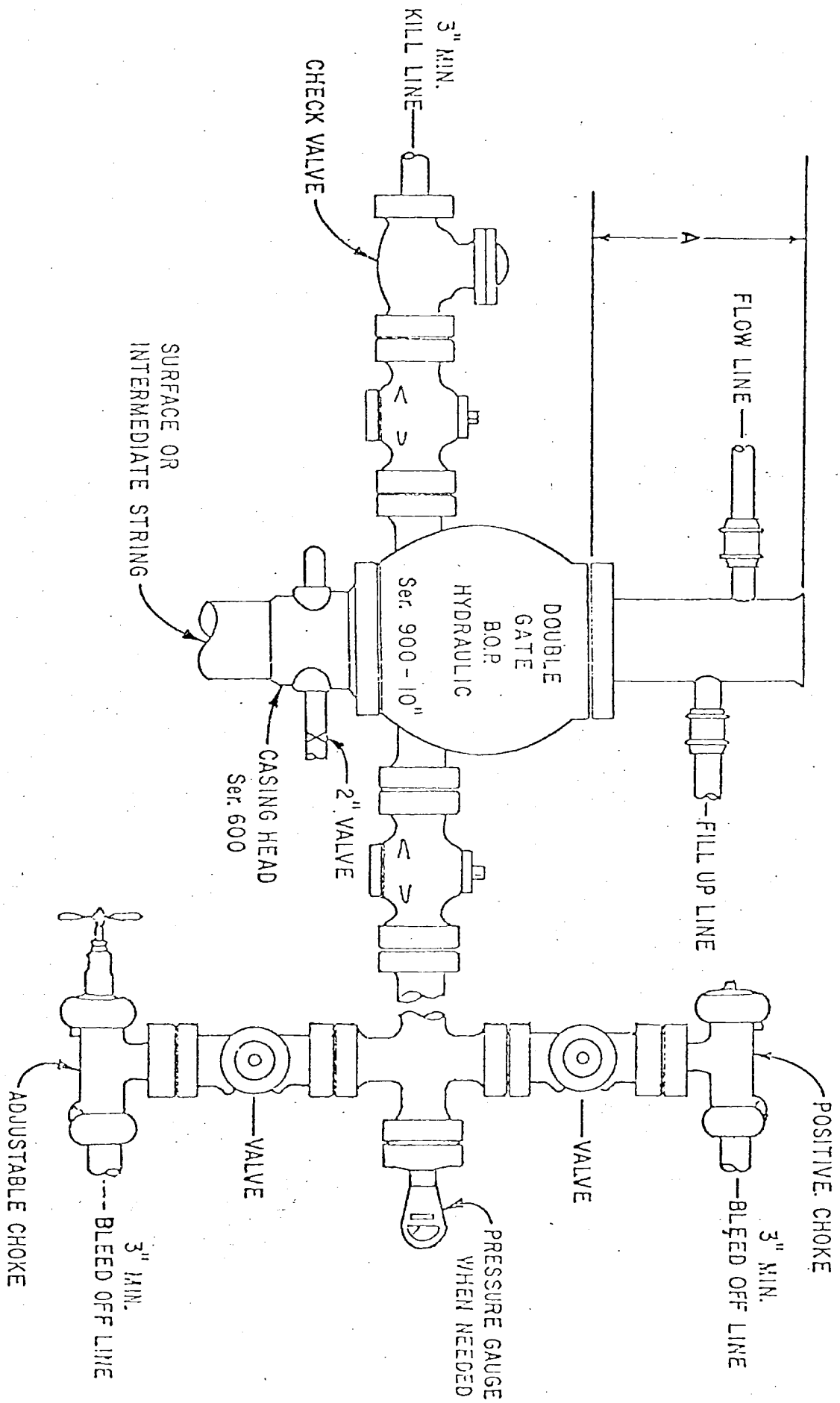
7. AUXILIARY EQUIPMENT: Kelly cock
Sub on floor with full opening valve for use in drill pipe when Kelly is not in the string.

8. TESTING, LOGGING AND CORING: At this time no drill stem tests or cores are planned. However, hole conditions and information obtained while drilling may alter these plans.

9. ABNORMAL PRESSURES, TEMPERATURES, POTENTIAL HAZARDS: There are no abnormal pressures, temperatures or potential hazards in the area. The maximum anticipated pressure is 3600 psi. Weight material will be maintained on location at all times.

10. STARTING DATE - COMPLETION: Dirtwork and road work for this location will require 2 or 3 days. Moving in and rigging up 2 to 3 days. Drilling and completion will require approximately 30 days, for a total of 36 days. In the event of bad weather or other delays this time could be considerably extended.

NTL-6 indicates a minimum of 30 days are required to obtain District Engineer's approval, in which case operations on this well could not be commenced until approximately March 10, 1980. Depending upon rig availability, equipment, weather, etc., this starting date could be extended.



SURFACE USE AND OPERATIONS PLAN

KRAUSE WN FEDERAL #1E

NW 1/4 Section 32-T28N-R11W

N.M.P.M., San Juan County, New Mexico

1. EXISTING ROADS: A portion of topographic map is attached showing the existing roads within a one (1) mile radius of the location (colored green). Main access will be from Bloomfield, New Mexico approximately 5 1/2 miles north. None of the existing roads will require any improvement. However, due to road conditions, weather, etc., these roads will be maintained to whatever extent is required.
2. PLANNED ACCESS ROAD: The planned access road will leave the existing road approximately 1200 feet south of this location. The road will be approximately 18' wide (sufficient to handle drill equipment). The grade will not exceed 8%. There will be no cattle-guards, culverts, fence cuts, etc.
3. LOCATION OF EXISTING WELLS: Existing wells within one (1) mile radius of this location are shown on the attached map.
4. EXISTING AND/OR PROPOSED FACILITIES: ARCO Oil & Gas Company, Division of Atlantic Richfield Company has several existing wells within the area two of them are listed here.

Krause WN Federal #5 SW 1/4 Section 28-T28N-R11W

Krause WN Federal #6 NE 1/4 Section 29-T28N-R11W

The above wells each have 1-300 bbl storage tank and production unit which is located approximately 150' from the well head and is connected to the well with a buried gas line.

There are numerous other Krause WN Federal wells proposed for this area, but due to the drilling rig availability it is not possible at this time to anticipate which wells will be drilled prior to the drilling of this well. The production facilities for this well will be similar to the above wells.

5. WATER SUPPLY: It is anticipated that water will be obtained from the San Juan River approximately 6 1/2 miles north and 1 mile east of this location. The water will be trucked over New Mexico Highway 44, existing roads and the planned access road in item number 2 above.
6. CONSTRUCTION MATERIALS: None anticipated.
7. WASTE DISPOSAL: Cuttings and drilling fluids will be disposed of in the reserve pit. A trash or burn pit will be used to dispose of trash, garbage, etc. If the reserve pit is sufficiently dry when the well is completed, both the reserve and trash pit will be filled. If the reserve pit is not sufficiently dry when the well is completed it will be fenced for the protection of livestock and wildlife to be filled at such time when it is sufficiently dry.

Produced fluids will be disposed of in the reserve pit. Any oil accumulation on the reserve pit during drilling and completion operations will be skimmed off and held in a temporary storage tank for later disposition. Trash and debris cleanup will be commenced as soon as the completion rig moves out.
8. ANCILLARY FACILITIES: None are proposed.
9. WELL SITE LAYOUT: Per the attached sketches. The reserve pit will be approximately 100' by 100' and will be unlined.
10. RESTORATION OF SURFACE: Other than the area needed for operation and production facilities the site will be contoured as near as possible to its original state. Reseeding or any other restoration will be as specified by the Bureau of Indian Affairs and the United States Geological Survey. Any stockpiled topsoil will be distributed over the disturbed area for final grading and reseeded.

11. OTHER INFORMATION: Vegetation in this area consists of scrub cedar, morman tea sage brush, rabbit brush and small amounts of isolated grass. Drainage is northerly into Horn Canyon thence to Kutz Canyon and into the San Juan River.

This location will require a 20' cut on the south sides and a 15' fill on the north side.

The V door of the rig will be to the south with the pits on east side. The nearest dwelling is 5 1/4 miles north and 1 mile east along Highway 44.

To the best of our knowledge there are no domestic water wells in the area.

11. (Con't.) To our knowledge there are no archaeological, cultured, or historical sites in the area which will be involved. However, an archaeological survey will be made and the report submitted as soon as it is received.

With the short period of operation and the restoration of the surface, any disturbance to vegetation and wildlife will be temporary and minimal. It is not anticipated that there will be any substantial impact on the environment.

12. LESSEE'S OR OPERATOR'S REPRESENTATIVE:

W. A. Walther, Jr.
(303) 575-7031
575-7153

C. E. Latchem
(303) 575-7127
575-7152

B. J. Sartain
(303) 575-7035
770-7849


ARCO Oil and Gas Company
Division of Atlantic Richfield Company
P. O. Box 5540
Denver, Colorado 80217

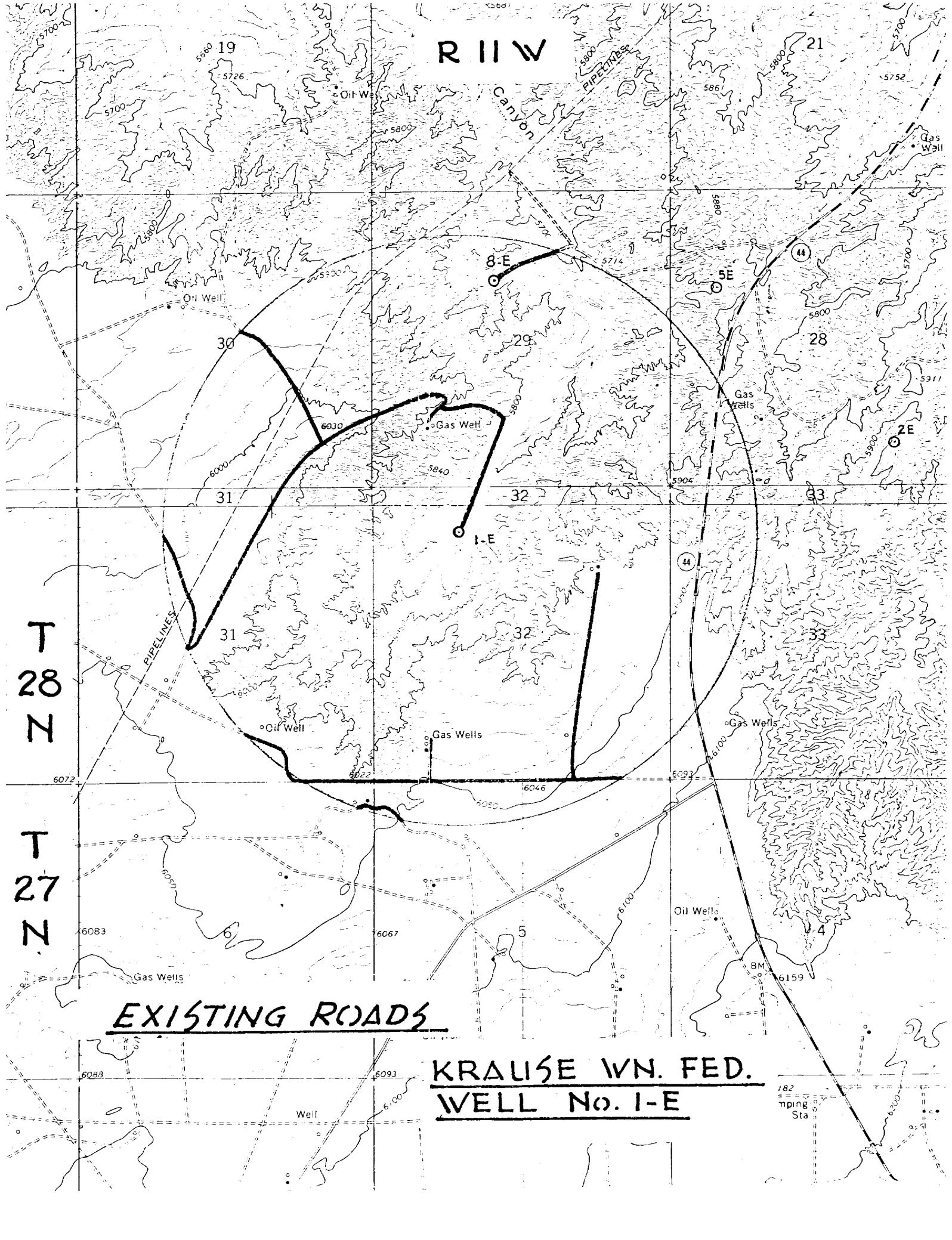
LOCAL REPRESENTATIVE:

J. E. Taylor
ARCO Oil and Gas Company
Division of Atlantic Richfield Company
P. O. Box 2197
Farmington, New Mexico 87401
(505) 325-7527
325-7968

13. CERTIFICATION: I hereby certify that I, or persons under my direct supervision have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist, that the statements made in this plan are to the best of my knowledge true and correct; and that the work associated with the operations proposed herein will be performed by ARCO Oil and Gas Company, Division of Atlantic Richfield Company and its contractors and sub contractors in conformity with this plan and the terms and conditions under which it is approved.

Feb 5, 1980
DATE


W. A. Walther, Jr.
Operations Manager



R I I W

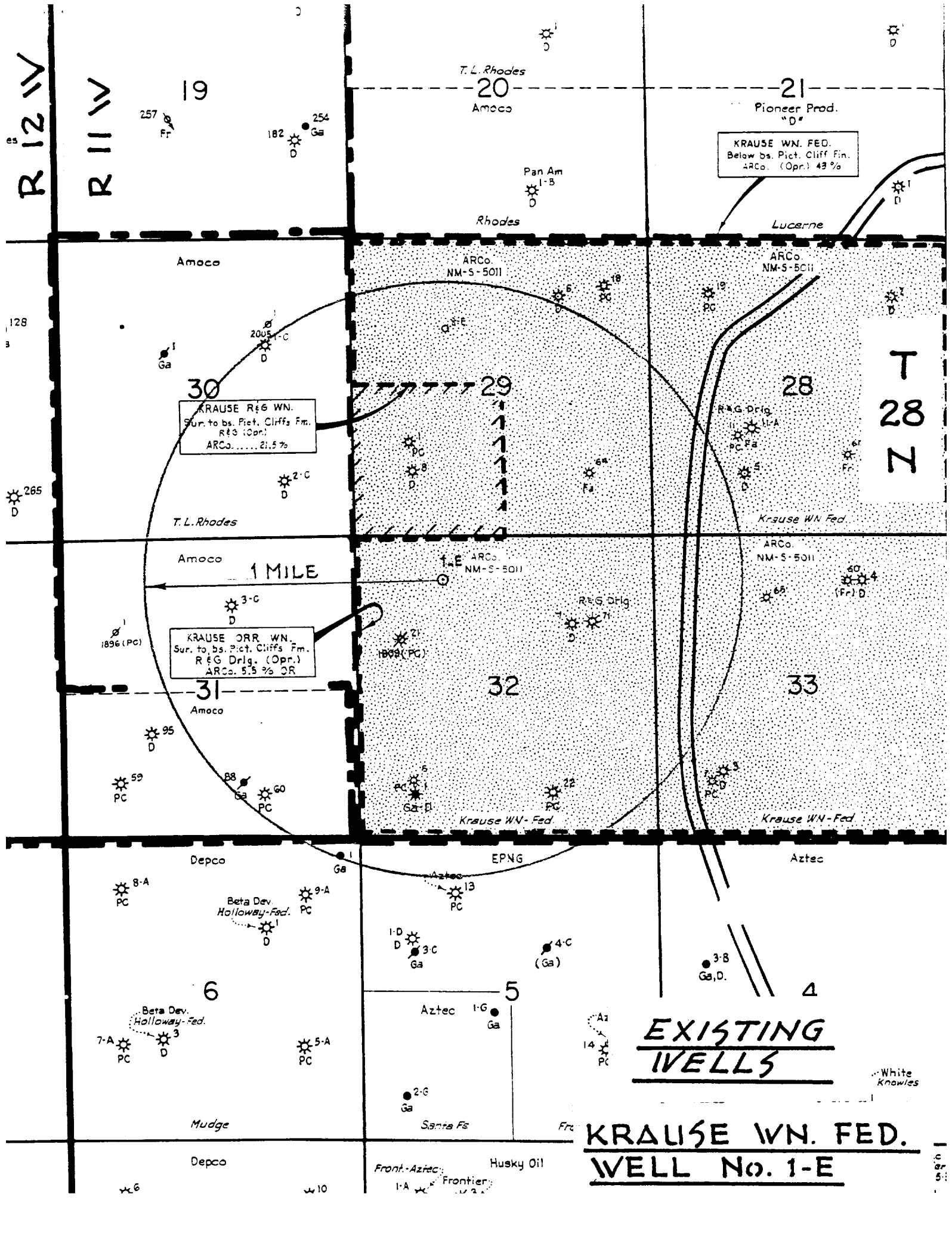
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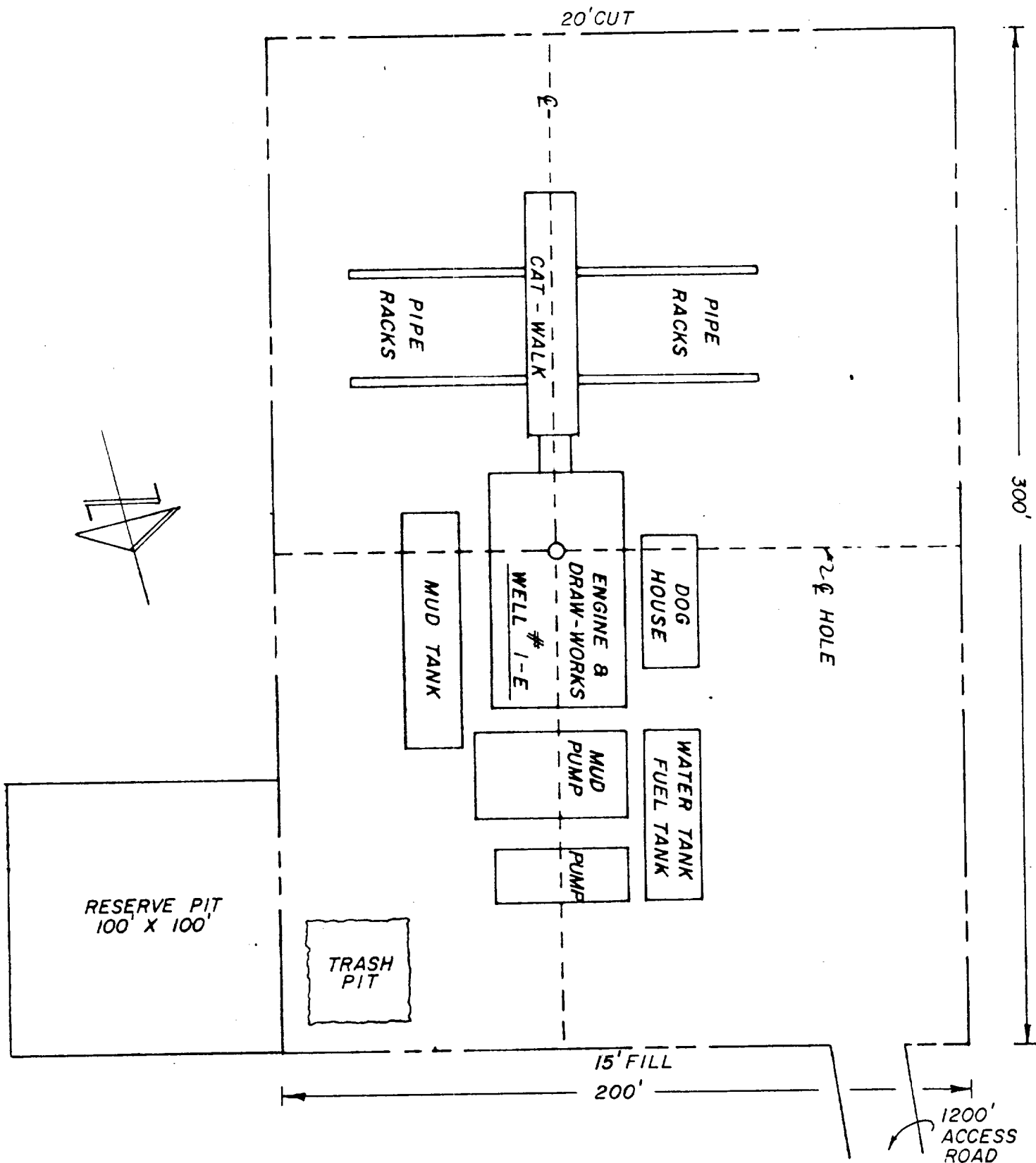
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EXISTING ROADS

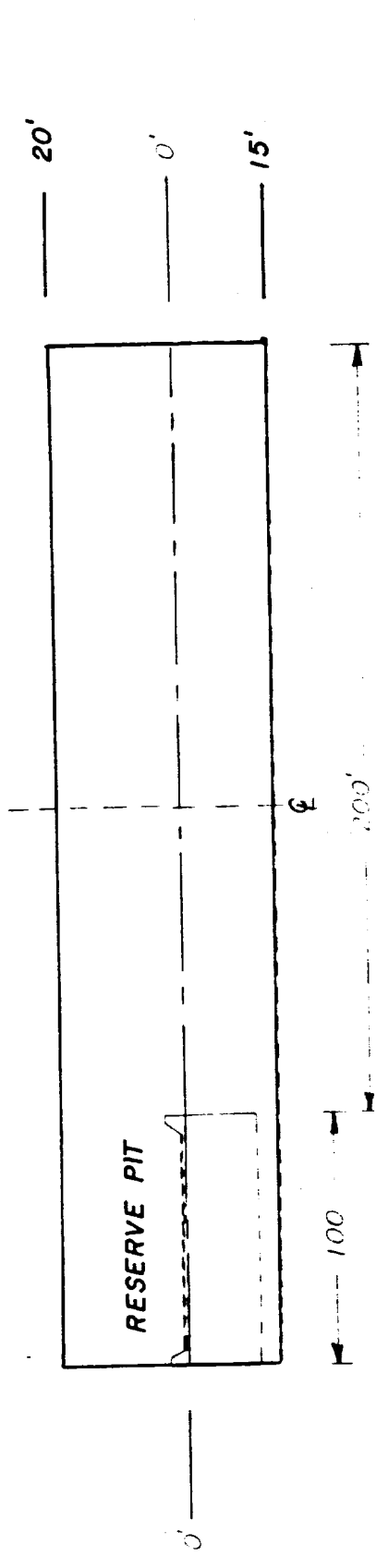
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WELL No. 1-E

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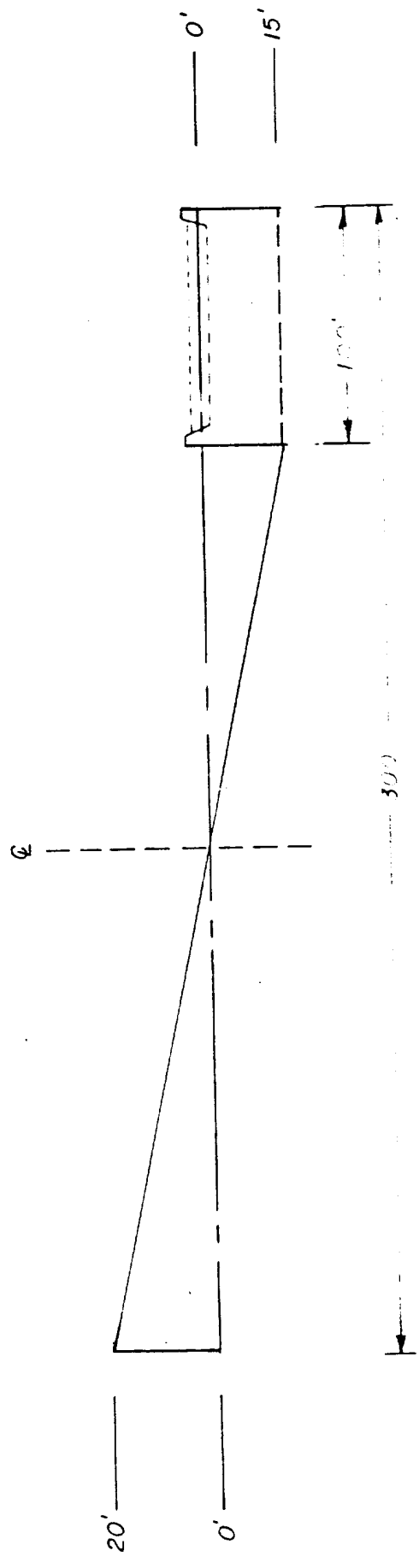




KRAUSE WN FEDERAL No. 1-E
 790' FNL, 1520' FWL, Sec. 32 - 28 N - 11 W



NORTHEAST TO SOUTHWEST



SOUTHEAST TO NORTHWEST

KRAUSE WN FEDERAL
WELL No. 1-E