API # 30-003-20016

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM 61418

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: --

8. FARM OR LEASE NAME: SWEPI et al MANGUS MOUNTAINS FEDERAL

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: WILDCAT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW/4 SW/4 Sec. 21 T3S-R15W

12. COUNTY OR PARISH: Catron

13. STATE: NM

1a. TYPE OF WORK: DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [XX] GAS WELL [ ] OTHER — SINGLE ZONE [XX] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: SHELL WESTERN E&P INC.

3. ADDRESS OF OPERATOR: P. O. BOX 576 ATTN: A. J. Fore, HOUSTON, TX 77001

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 8465' SOUTH & 11,083' EAST OF NW CORNER OF SEC. 18. NO CORNERS
At proposed prod. zone: OF SEC. 21 WERE LOCATED.
(Est) 506' FWL & 2197' FSL Sec. 21

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 25 Miles South of Quemado, NM.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): (Est) 506'

16. NO. OF ACRES IN LEASE: 8320

17. NO. OF ACRES ASSIGNED TO THIS WELL: 40

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: First well

19. PROPOSED DEPTH: 7700'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 9034' Gr.

22. APPROX. DATE WORK WILL START*: Upon receipt of permit.

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
	See Attachment B			

ATTACHMENTS:

A. Survey Plat
B. Drilling Program
C. BOP Schematic
D. Choke Manifold Schematic
E. Surface Use Program
F. Road and Well Location Map
G. Drill Pad Layout
H. Cross Section of Drilling Pad & Reserve Pit
I. Production Facility Sketch
J. Copy of Surface Use Stipulations

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 A. J. Fore TITLE Supervisor Regulatory & Permitting DATE August 19, 1987

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY S/Phil Kirk TITLE Area Manager DATE SEP 3 1987

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL OF THIS APPLICATION 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.

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

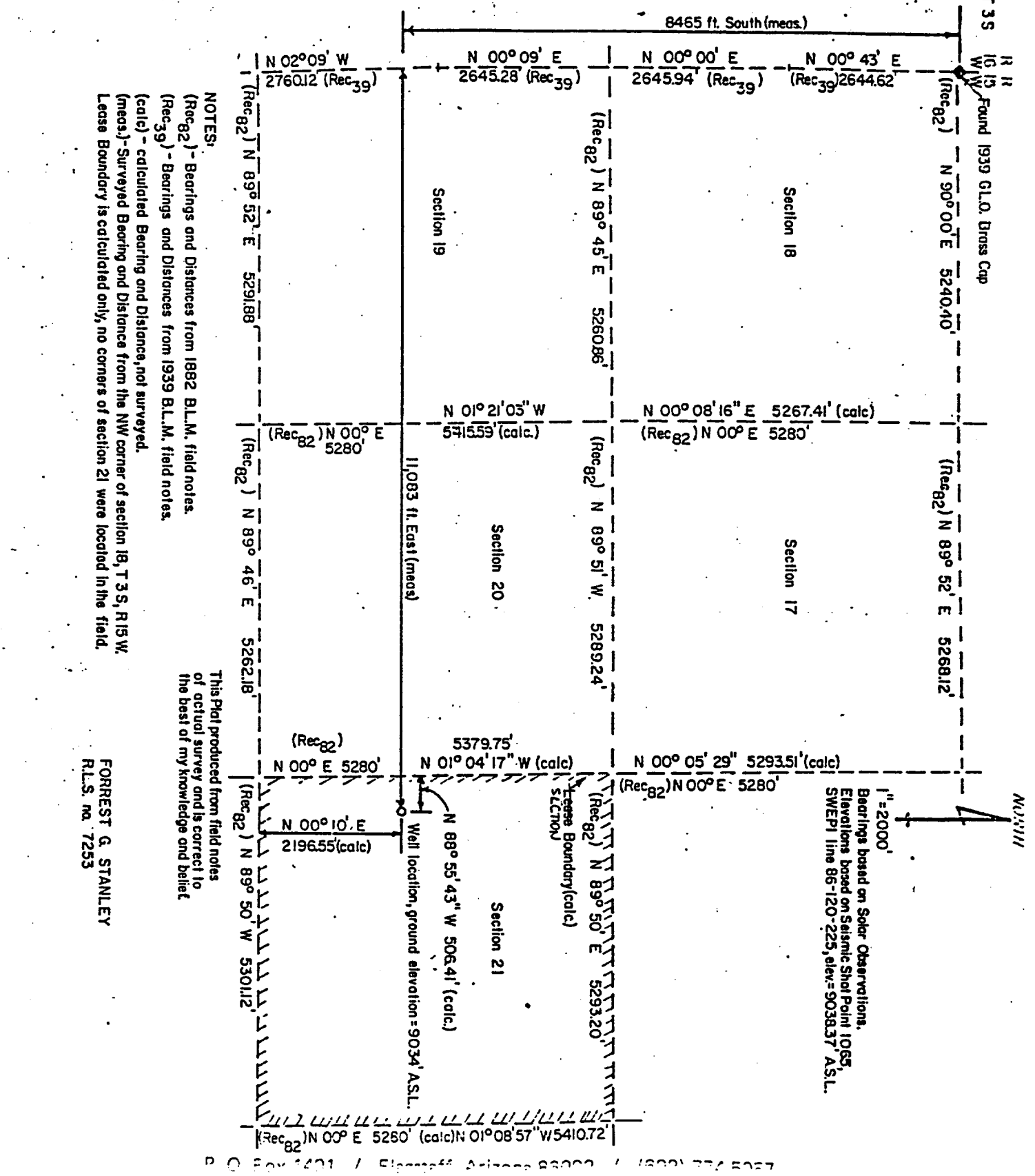
Northland Exploration Surveys, Inc.

SWEPI et al Mangas Mountains Federal no. 1

located in

Section 21, T 3 S, R 15 W, N.M.P.M.

CATRON COUNTY, New Mexico



NOTES:
(Rec82) - Bearings and Distances from 1882 B.L.M. field notes.
(Rec39) - Bearings and Distances from 1939 B.L.M. field notes.
(calc) - calculated Bearing and Distance, not surveyed.
(meas.) - Surveyed Bearing and Distance from the NW corner of section 18, T 3 S, R 15 W.
Lease Boundary is calculated only, no corners of section 21 were located in the field.

This Plat produced from field notes of actual survey and is correct to the best of my knowledge and belief.

FORREST G. STANLEY
R.L.S. no. 7253

P. O. Box 1421 / Flagstaff, Arizona 86002 / (602) 774-5057

). Plans for Surface Restoration

Restoration will be in compliance with USFS stipulations.

a. Trailers will carefully be removed from their sites and the septic tanks removed. The area will be cleaned and leveled back to its original countour. Any bare spots will be re-seeded to USFS specification.

All liquids will be removed from the Reserve Pit and hauled to an approved disposal site. The solids will be tested for toxicity. If they are found to be non-toxic, exposed edges of the plastic liner will be removed, then rock and dirt, retained during site construction, used to bridge over the pit area. If the solids are found to be toxic, they too will be hauled to an approved disposal site.

c. The drill pad will be used for testing equipment if the well is a success (See Attachment I). If the well is a dry hole, the location will be cleaned and covered with enough soil to support grass, then seeded per USFS requirements. The cellar would be filled and leveled with the exception of the dry hole marker.

11. Surface Ownership

The well site is located on USFS land and the access road is maintained by USFS.

12. Other Information

A cultural resource survey was conducted by Northland Research, Inc. on July 25, 1987 under BLM Permit No. 22-2920-87-E. No previous sites have been recorded in the immediate area and no cultural resource of any kind were located as a result of this survey. Copies of the report have been mailed directly to USFS/BLM offices.

13. Lessee's or Operator's Representative and Certification

J. L. Clark
Shell Western E&P Inc.
Western Division
P. O. Box 576
Houston, TX 77001
Tel.: (713) 870-2966

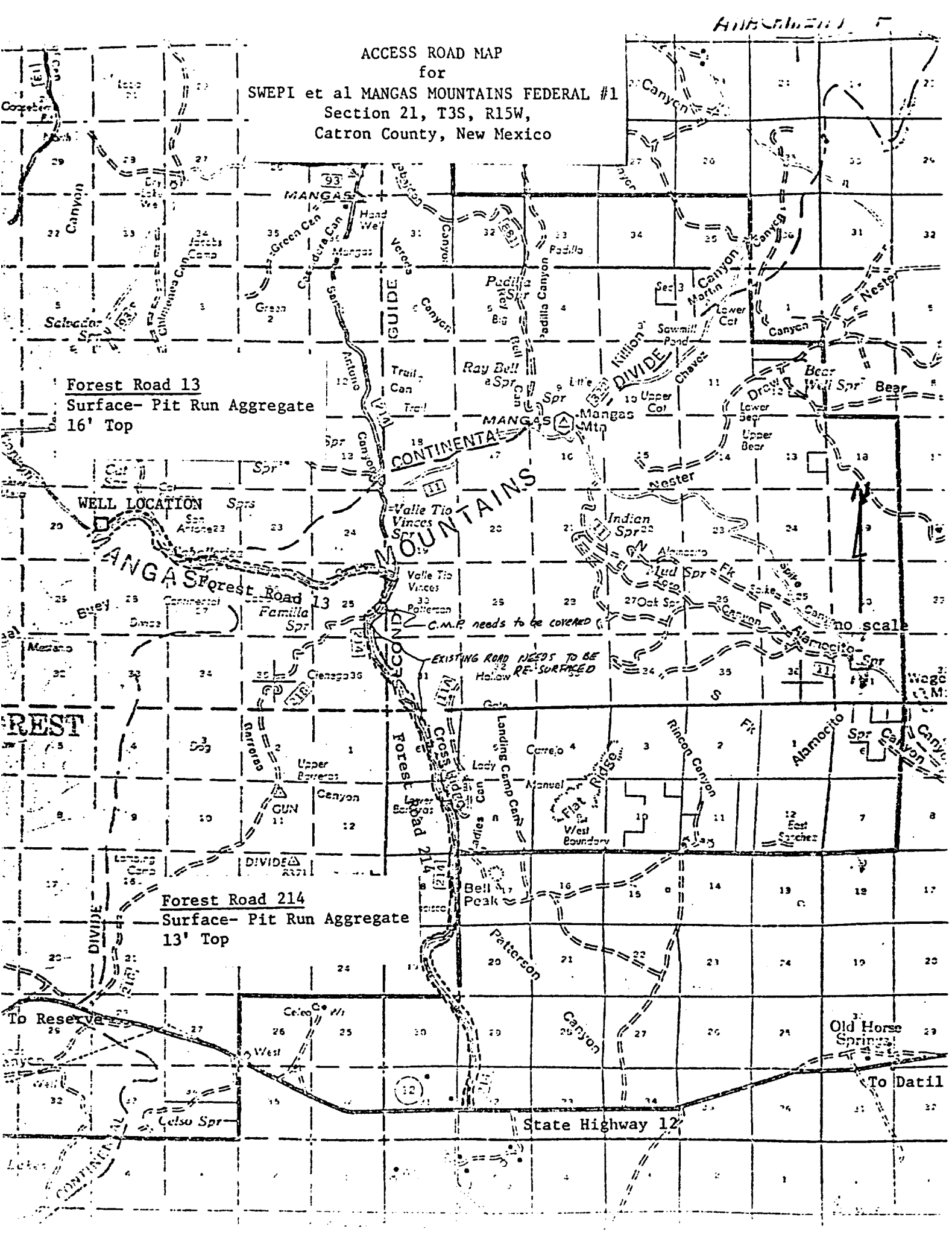
A. J. Fore
Shell Western E&P Inc.
Western Division
P. O. Box 576
Houston, TX 77001
Tel.: (713) 870-3787

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 preformed by Shell Western E&P Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

8/20/87
Date

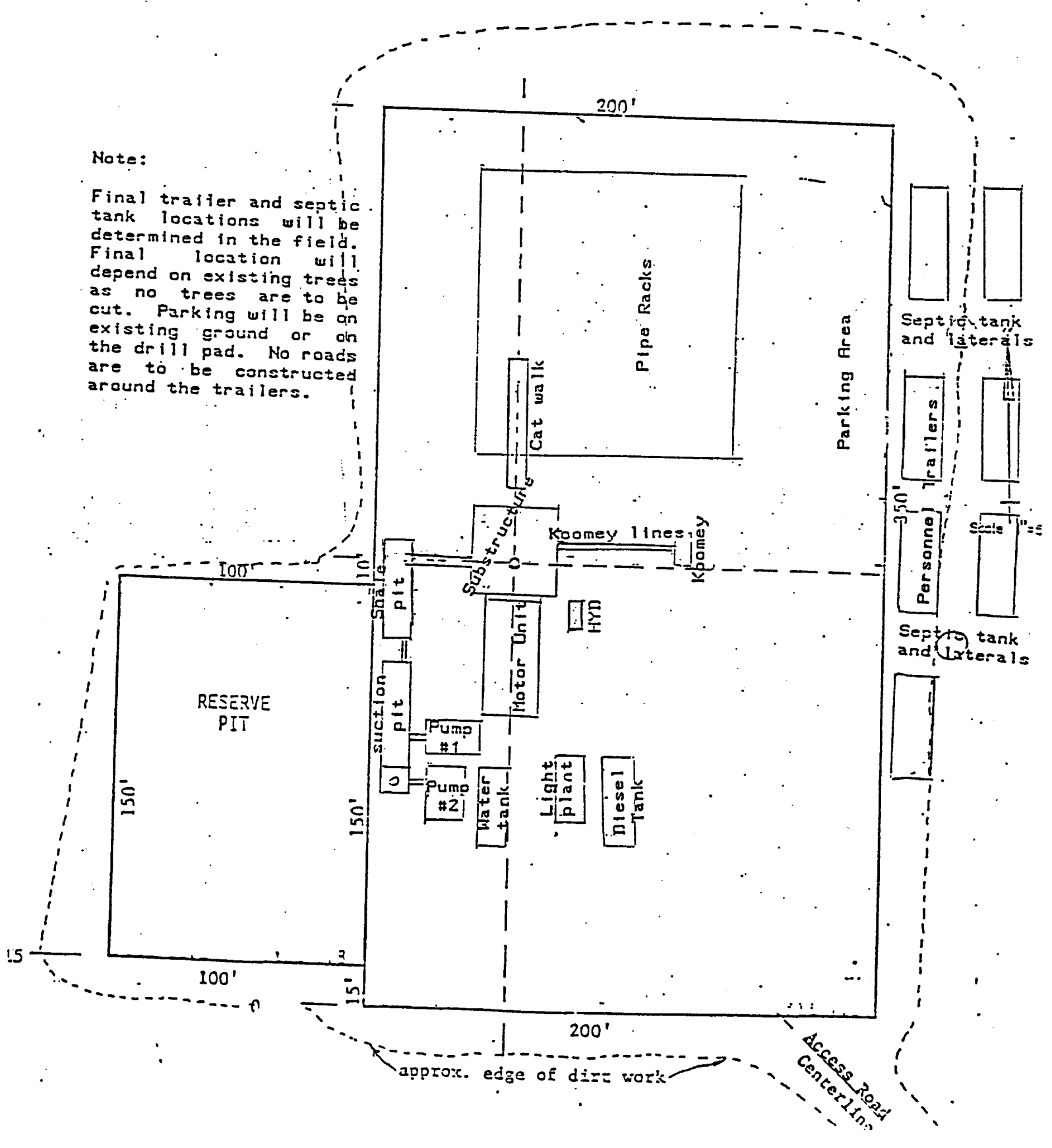
A. J. Fore
Supervisor Regulatory & Permitting

ACCESS ROAD MAP
for
SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W,
Catron County, New Mexico



DRILL PAD LAYOUT

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W, Catron County, New Mexico



ATTACHMENT #

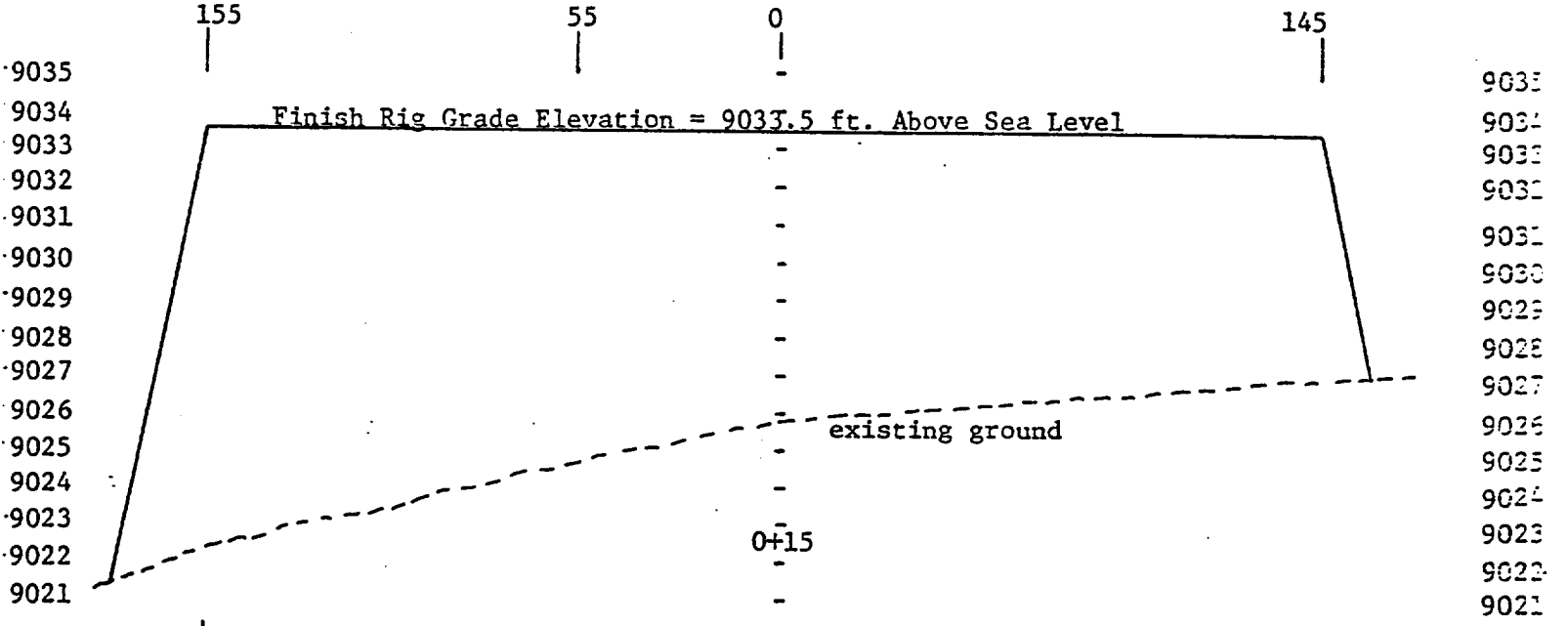
Northland Exploration Surveys, Inc.

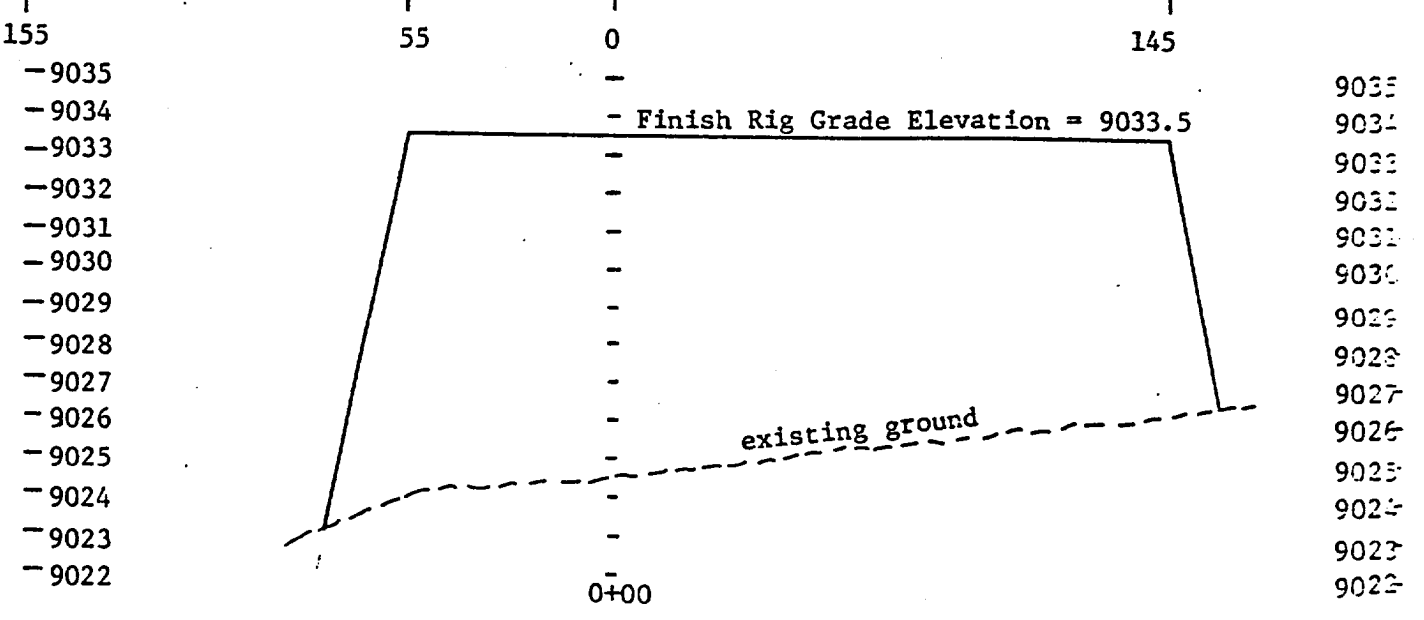
DRILL PAD PROFILE

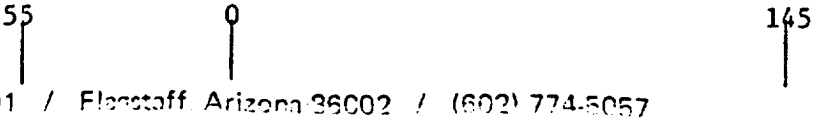
SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W,
Catron County, New Mexico

SCALE: Horiz. 1"= 50'
Vert. 1"= 5'

NOTE: Rig Grade Elevation is estimated, finish elevation may vary.







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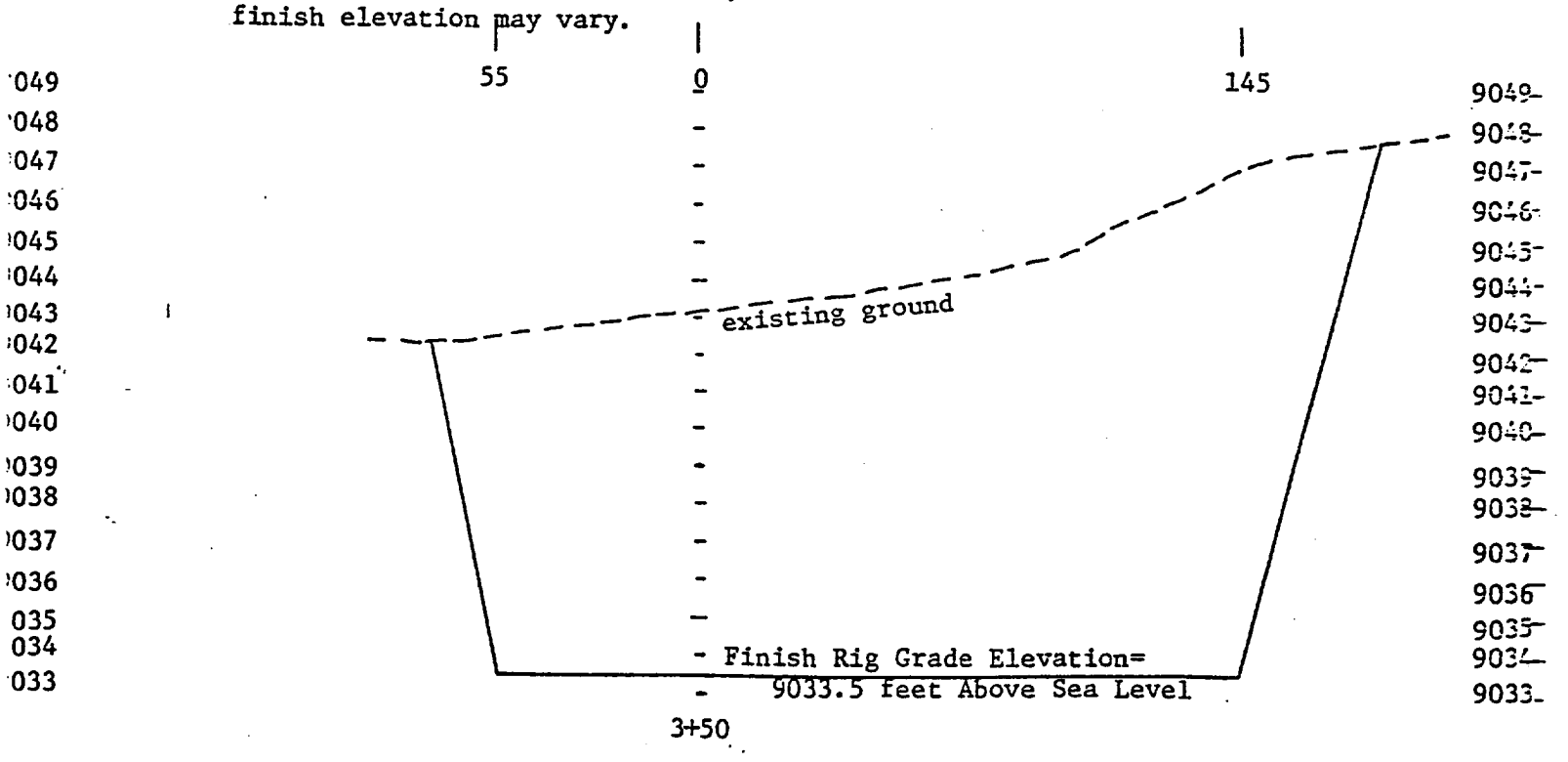
Northland Exploration Surveys, Inc.

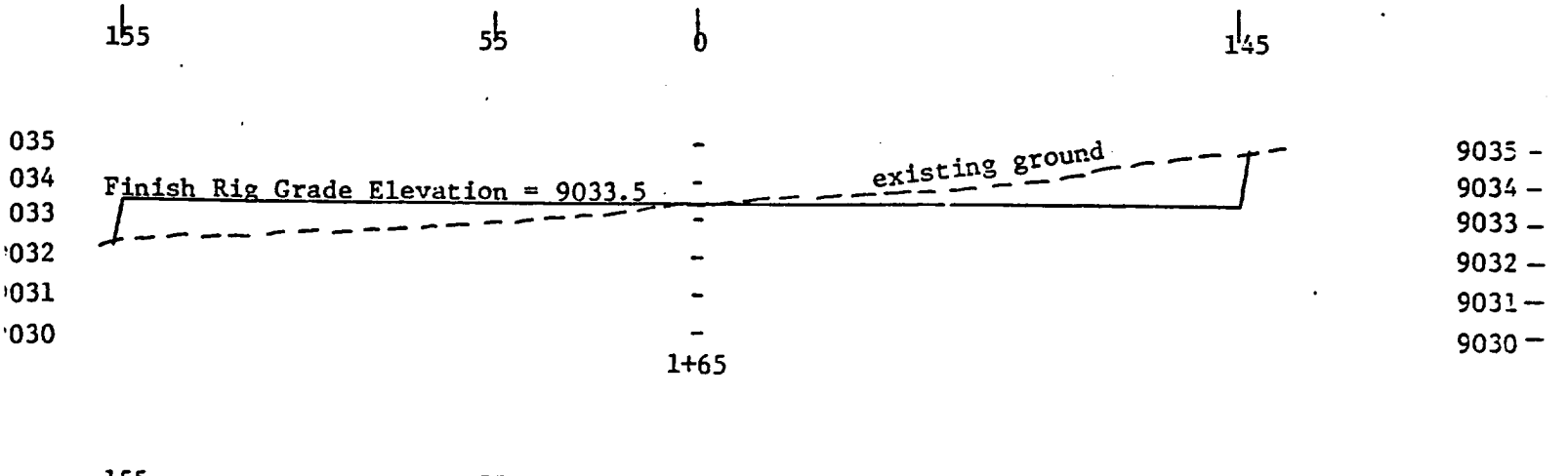
DRILL PAD PROFILE pg.2

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W,
Catron County, New Mexico

SCALE: Horiz. 1"=50'
Vert. 1"=5'

NOTE: Rig Grade Elevation is estimated, finish elevation may vary.





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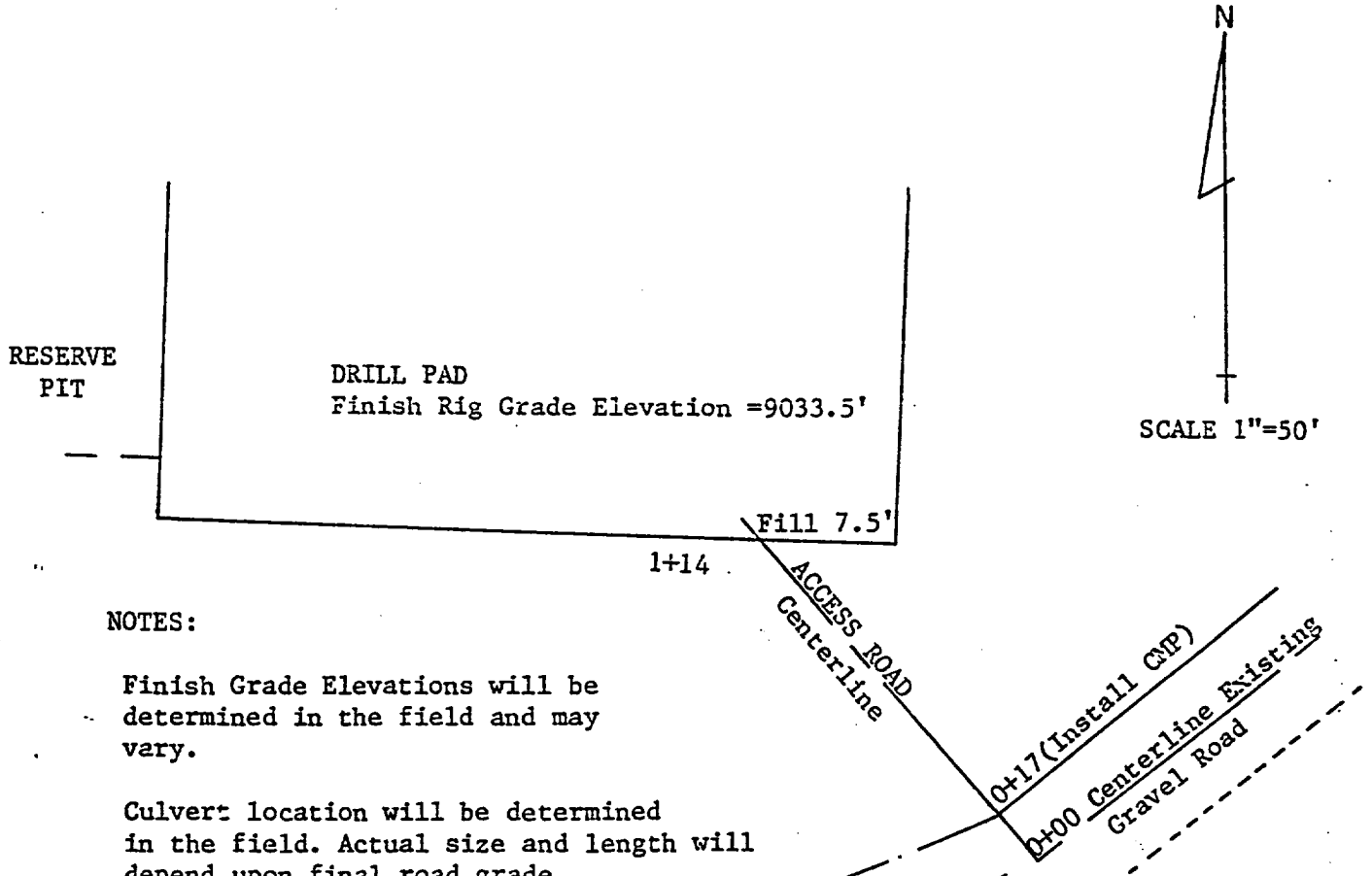
Northland Exploration Surveys, Inc.

ACCESS ROAD LOCATION and PROFILE

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W, Catron County, New Mexico



NOTES:

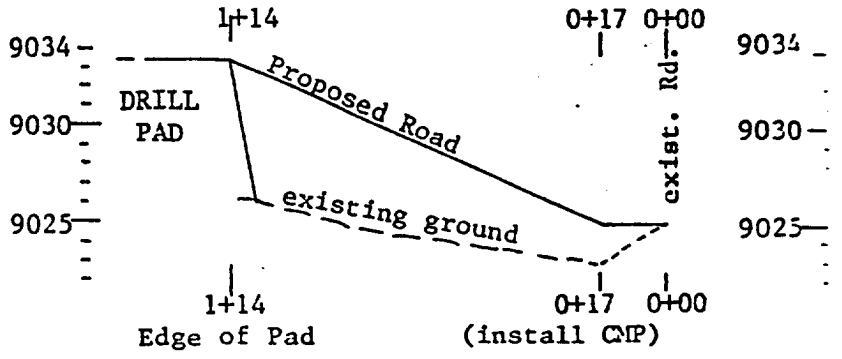
Finish Grade Elevations will be determined in the field and may vary.

Culvert location will be determined in the field. Actual size and length will depend upon final road grade.

ESTIMATED QUANTITIES

FILL 950 cubic yards

Profile of Access Road



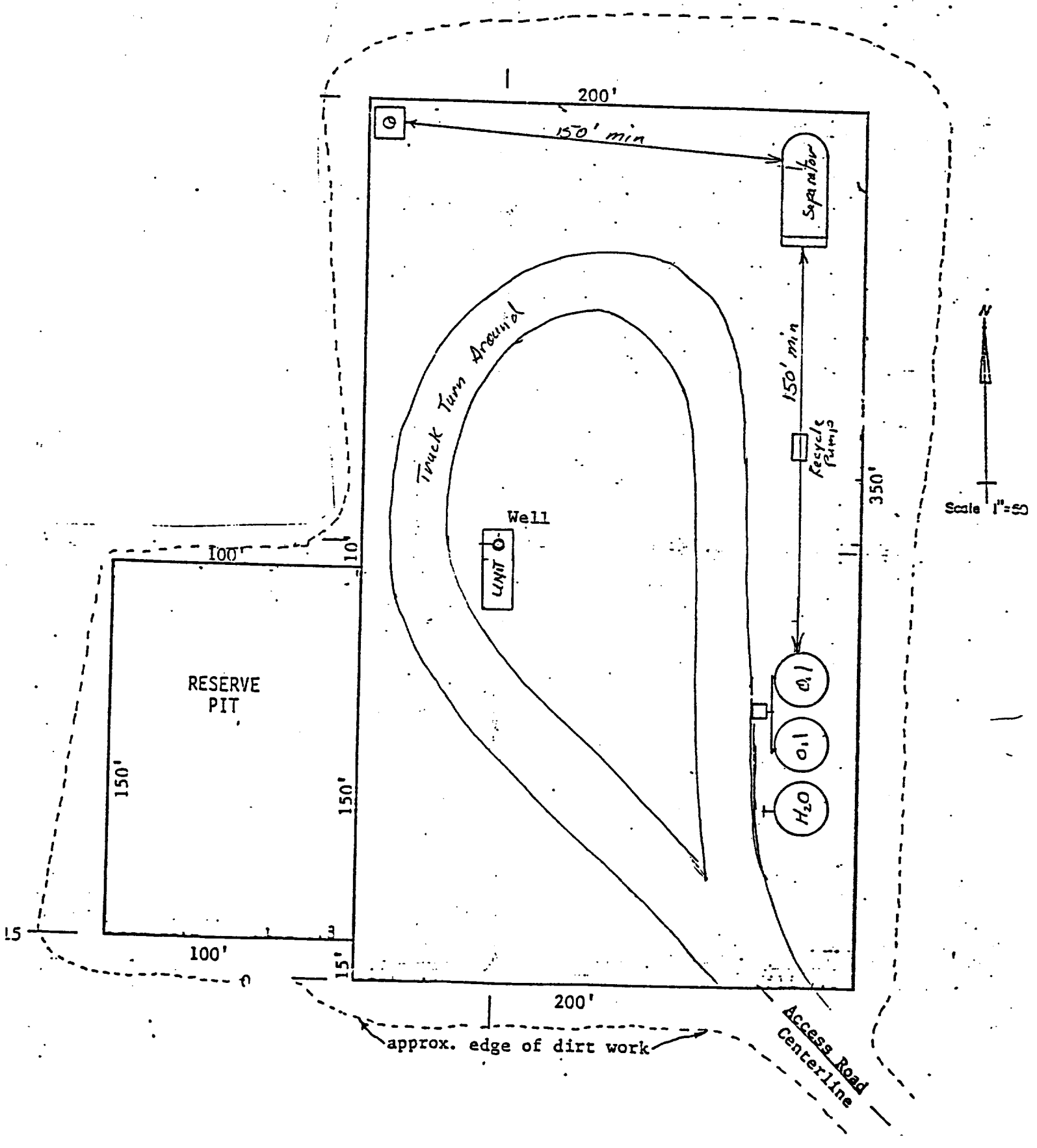
SCALE: Horiz. 1"=50'
Vert. 1"=10'

P. O. Box 1401 / Flagstaff, Arizona 86002 / (602) 774-5057

PRODUCTION FACILITIES SKETCH

ATTACHMENT I

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W, Catron County, New Mexico



SURFACE USE STIPULATIONS

SWEPI et al Mangas Mountains
Federal No. 1

Located in

Section 21, T 3 S R 15 W,
N.M.P.M.

USDA Forest Service
Apache National Forest

Quemado Ranger District

Catron County, New Mexico

I. Access Roads and Location.

A. A road use permit will be issued for existing roads. Stipulations contained in the road use permit will be followed. A road condition survey and a road use estimation will be done prior to the issue of the road use permit.

B. Unless otherwise approved, the driving surface on all new acess roads will be limited to 20 feet in width, and total disturbance will be limited to 35 feet, excluding turnouts.

C. Water bars will be constructed on the access road to the well location and conform to Forest Service specifications. The maximum slope distance between water bars will be:

% Slope	Slope Distance
Less than 1%	400 feet
1% - 5%	300 feet
5% - 15%	200 feet
15% - 25%	100 feet
Greater than 25%	50 feet

When the access road is graded, water bars will be left in the road or replaced immediately upon completion of grading.

D. Prior to crossing any fence located on Federal land, or any fence between Federal land and Private land, the Lessee shall contact the Forest Service or Owner of said fence and offer them the opportunity to be present when the fence is cut in order to satisfy himself that it is adequately braced and tied off in accordance with the attached drawing. (See Appendix A). All cut fences are to be tied to the braces prior to cutting. The opening will be protected as necessary during construction to prevent the escape of livestock. A temporary closure will be installed on all cut fences the same day the fence is cut. A permanent cattleguard will be installed and maintained in the cut fence unless otherwise stipulated in writing. A twelve-foot gate will be installed adjacent to all cattleguards.

E. An eight-foot wide fireline, cut to mineral soil, will be constructed around the perimiter of the site location unless otherwise stipulated in writing. The fireline will be water barred to the same specifications as access roads. (refer to I-C).

F. A culvert of sufficient size will be placed where a drainage crosses any access road.

G. Surface disturbance and vehicular traffic will be limited to the approved location and approved access road.

H. No gravel or other related materials from new or existing pits on federal land will be used in construction of roads, well sites, etc., without prior approval from the Forest Service. A permit to haul materials from designated pits is required to use material found on Federal land.

I. The source of water and approval to use it for the camp and drilling will be permitted under a Special Use Permit when the source of water is located on Forest Service lands. All State water right laws will be followed and stipulation for any drilling, pumping, pipelines, etc., will be spelled out in the Special Use Permit.

J. The cut slope and toe of fill shall fall between a 3:1 and a 4:1 ratio. Top soil will be placed on cut slopes and toe of the fill. Erosion of these slopes will be prevented by either contour trenching or by mulching.

K. Well area and lease premises will be maintained in a workmanlike manner with due regard to safety, conservation and apperance. All waste associated with oil and gas operations will be contained, removed and deposited in an approved disposal site. The lessee will obtain the necessary disposal permits from the appropriate agencies.

L. Either chemical toilets or an approved septic system will be used for sewage disposal at the camp and well sites.

M. Camp areas will be situated so as to blend in with the environment. A natural setting, with minimal timber removed for access and safety, will be utilized rather than clearing the entire camp area.

N. Mud pits will be contructed so as not to leak, break, or allow discharge of liquids. The bottom of the reserve pit shall not be in fill material. Pits are not to be located in natural drainages. Pit walls are to be "walked down" by a crawler-type tractor and lined with an impervious material prior to use.

O. Boulders that are excavated during access road and drill pad construction will be placed adjacent to the reserve pit. These boulders will be placed into the reserve pit and buried after the pit has been drained.

P. All unguarded pits containing liquids will be fenced. Drilling pits will be fenced on three sides and once the rig leaves the location, the fourth side will be fenced. Fencing must be constructed so as to be elk-proof (minimum six-foot woven wire). Liquids in pits will be hauled to an approved disposal well. (This office will be notified 24 hours prior to fluid hauling). Drill cuttings and other solid waste in pits will be tested for toxicity. Toxic material will be removed to an approved disposal site. Any plastic material used to line pits must be removed to below ground level before boulders are placed in the pit or the pits are covered. Under no circumstances will pits be cut and drained.

Q. Berms or firewalls will be constructed around all storage facilities sufficient in size to contain the storage capacity of the tanks.

R. Any proposed use of pesticide, herbicide or other possible hazardous chemical on Federal land shall be cleared for use by the Forest Service prior to application.

S. When production starts, pump jacks, storage tanks, surface accumulators and other surface equipment will be painted an environmentally acceptable color.

T. All live and dead trees marked with paint marks above and below stump height within access corridors, well pad, reserve pit, and camp site locations are considered to have commercial value and will be paid for at applicable rates determined by standard Forest Service methods. Trees so marked and cut shall be limbed and stems shall be yarded to the nearest Forest road where by they shall be stacked in such a manner as to allow for loading onto transport vehicles. Care shall be taken to keep residual trees as undamaged a practically possible. All other woody material to be removed from access corridor, well pad, reserve pit and campsite areas shall be piled. (See Appendix B for specifications). If a large volume of slash is encountered, provisions will be made to haul excess slash and stumps to a previously designated area where it will either be piled or buried.

II. Cultural Resources.

A. The Lessee shall not commence construction on the lease until a cultural resource inventory has been approved by the Forest Service.

B. Lessee shall protect all known and identified historic or prehistoric sites, buildings, objects, and properties related to American history, architecture, archeology and culture against destruction, removal or damage during Lessee's operations. The Lessee shall immediately notify the Forest Service if damage occurs to any cultural resource and halt all work until authorized to proceed. All provisions of the Region 3 Cultural Resources Damage Assessment Handbook are incorporated herein. Copy of this handbook is available at the local Forest Service Office.

C. In the event any Historic or Prehistoric sites, buildings, objects or properties not previously identified are found by either party, all work shall be suspended and the discovery promptly reported to the other party. The Forest Service will then specify what action is to be taken.

III. Reseeding and Abandonment.

A. All surface areas disturbed during drilling activities and not used for production activities will be rehabilitated when the drilling activities are completed, and/or the location is abandoned.

B. Rehabilitation will consist of:

1. Ripping the surface of the well pad to 6 inches and placing 4 inches of top soil on all the portions of the pad that are not going to be used for production. All cut and fill slopes will again be checked for erosion and stabilized by either contour trenching or by mulching.

2. Ripping to six inch depth all access roads and firelines not considered necessary for well production, or the management of the natural resources. After ripping, water bars will be installed as stated in I-C. All ripped surfaces are to be protected from vehicular travel by construction of a dead-end ditch and earthen barricade at the entrance to the road or fireline.

3. Seeding all disturbed areas including the well pad, access roads, site, reserve pits, etc. with the appropriate seed mixture as shown on the attached Appendix C. - Mixture Specifications. Seeding will be done using a "cyclone" type handseeder or a similar power driven broadcast seeder. The seed will be covered by dragging the area with a harrow or similar device following the application of the seed. Reseeding will be done the first June following the completion of drilling, and/or upon abandoning the location. The Lessee/Operator will be required to make subsequent seedings until the area is covered with substantial vegetation or litter to prevent erosion.

Appendix B

Machine Piling.

Slash shall be piled in accordance with the following requirements:

1. A minimum of 95% of slash, measured in tons per acre, using National Fuels Classification and Inventory System, August 1974, as supplemented by Region 3, shall be piled for burning.

2. Unless location and clearing limits are otherwise agreed to between Lessee and Forest Service, piles shall be located within cleared areas or within natural openings. Unless otherwise agreed, minimum spacing between edge of each pile and crown edge of adjacent live trees 9 inches d.b.h. and larger shall not be less than the average diameter of each pile.

Unless otherwise agreed between Lessee and Forest Service, slash will not be moved more than 500 feet to meet above pile location requirement.

Piles shall not be made below highwater mark of perennial or intermittent stream courses. Slash shall not be piled on or allowed to remain in drainage ditches or on permanent roads.

3. Piles shall be compact and dirt-free, with most of the smaller slash on the bottom to the extent that 85% burning consumption may be accomplished. Unless otherwise agreed, piles shall not exceed about 33 feet in average diameter and shall not be less than about 12 feet in average diameter. Pile height shall not be less than about 6 feet and should be as close to one-half pile diameter as practical. All slash greater than 4 inches in diameter, which protrudes about 4 feet or more from outer edge of pile shall be bucked off and placed on pile.

Appendix C

Seed Mixture Specification.

1. Seed Mix No. 1 - Quemado R.D. above 7500 ft. elevation

Species	Pounds in Mixture for 1 Acre
Western Wheatgrass	10.0 X acres = lbs. to buy
Orchardgrass	1.6 X acres = lbs. to buy
Smooth Brome	4.6 X acres = lbs. to buy
Yellow Blossom Sweet Clover	.5 X acres = lbs. to buy

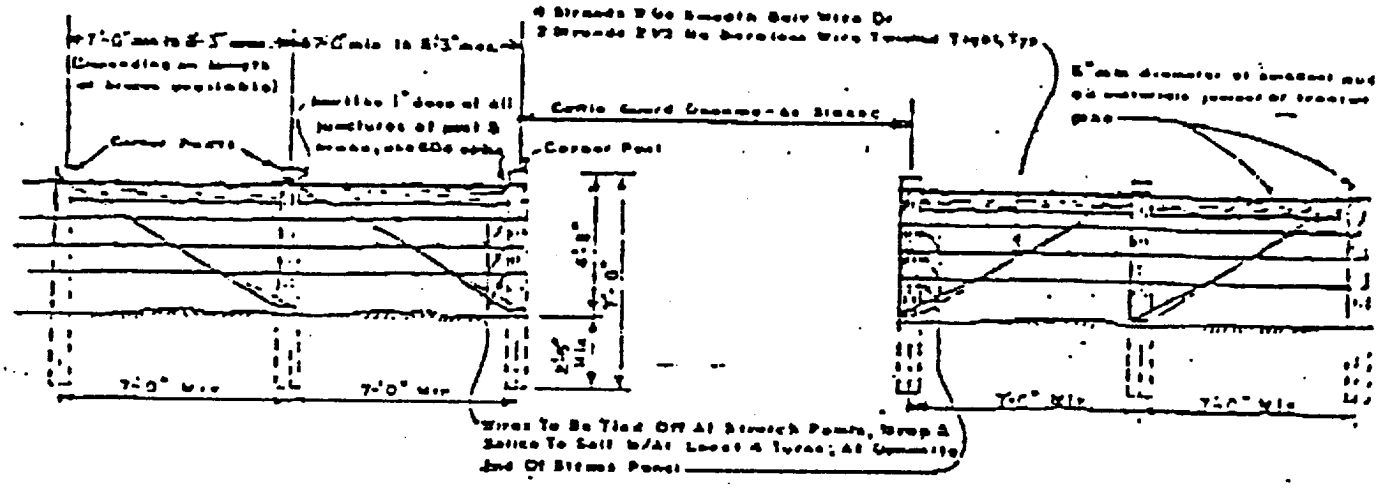
Seed at 50 seeds per square foot = 16.7 lbs/acre.

2. Seed Mix No. 2 - Quemado R.D. below 7500 ft. elevation

Species	Pounds in Mixture for 1 Acre
Paiute Orchardgrass	1.6 X acres = lbs. to buy
Blue grama	3.8 X acres = lbs. to buy
Crested Wheatgrass	4.0 X acres = lbs. to buy
Yellow Blossom Sweet Clover	.5 X acres = lbs. to buy
Winterfat (Seed Alone)	2.0 X acres = lbs. to buy

Seed mixture at 50 seeds per square foot =10.0 lbs/acre.
Seed Winterfat at 7 seeds per square foot = 2 lbs/acre.

APPENDIX A



Stipulations:

1. A 12' gate must be installed between the cattleguard and brace assemblies on which ever side of the cattleguard is most convenient. If the gate is made of wire it must have at least four horizontal strands of barb wire, with at least four 3" diameter vertical wood stays evenly spaced. When the gate is closed the wires must be taut.

2. All cattleguards must have wings installed on both ends to prevent livestock from stepping around the ends. Cattleguards must be at least 8' wide, the length is left to the discretion of the operator. They must be set on concrete or pressure treated wood bases to prevent them from sinking. (If you will install the bases at least 12" above the surrounding contour, and provide drainage through the open area under the cattleguard, you will not have to clean them so often).

3. All cattleguards must have clearly visible identification marks welded into them indicating the ownership and well name and number associated with the cattleguard.

ATTACHMENT B

SWEPI et al MANGUS MOUNTAINS FEDERAL #1
NW SW SECTION 21-T3S-R15W
CATRON COUNTY, NEW MEXICO

Drilling Program (First Revision)
Onshore Oil & Gas Order No. 1

1. Estimated Tops of Important Geologic Markers

Base Basalt	500'
Baca	2200'
Cretaceous	4250'
Triassic	4410'
San Andres	4860'
Glorieta	5200'
Yeso	5490'
Abo	6710'
Pre-Cambrian	7500'
TD	7700'

2. Estimated Depths of Anticipated Water, Oil, Gas or Minerals

San Andres	4860'-5200'	Oil
Glorieta	5200'-5490'	Oil
Yeso	5490'-6710'	Oil

3. Minimum Pressure Control Equipment

Attachment C is a schematic diagram of the minimum blowout preventer equipment to be used. The BOP's will be hydraulically tested to the full working pressure after nippling up and after any use under pressure. Additional pressure tests will be performed periodically (at least every 30 days) on the BOP equipment. Pipe rams will be operationally checked each 24-hour period, as will blind rams each time the pipe is pulled out of the hole. Such checks will be noted on daily drilling reports. Accessories to the BOP include a kelly cock, floor safety valve, drill string BOP, and choke manifold with 2000 psi or greater pressure rating. Attachment D is a schematic diagram of the minimum choke manifold to be used.

4. Proposed Casing and Cementing Program

All casing strings (except the conductor casing) will be pressure tested (0.2 psi/foot or 1000 psi, whichever is greater) prior to drilling the plug after cementing.

a. Conductor: Cemented at 80' with redimix.

b. Surface casing: New 11-3/4" 42# H-40 STC at 500-1000' (depth subject to change depending on hole problems in the Basalt) in 14-3/4" hole. Sufficient cement to circulate to surface. Approximately 350 sacks light cement with 1% $CaCl_2$ and 1/4 lb/sk cellophane flakes followed by 200 sacks Class C cement with 2% $CaCl_2$ and 1/4 lb/sk cellophane flakes. Drill out with an 11" bit and drill to the top of the San Andres at approximately 4860'. At this point, reduce hole size to 7-7/8".

c. Intermediate casing (this is a contingency string and will be used in the event of hole problems or lost circulation): New 8-5/8" 32# K-55 STC from surface to 500'; new 8-5/8" 24# K-55 STC from 500'-5525' in an 11" hole. If this casing is run, the 7-7/8" hole will be opened to 11" from the top of the San Andres to casing point. Sufficient cement will be pumped to cover any potentially productive zones with top of cement a minimum of 500' above the shoe. Cement slurries are estimated at approximately 175 sacks light cement (with retarder if necessary) followed by 100 sacks Class C cement.

d. Production casing (if warranted by shows, logs): New 5-1/2" 14# K-55 STC from surface to approximately 5800'; new 5-1/2" 15.5# K-55 STC from approximately 5800' to 7700' in a 7-7/8" hole. Sufficient cement will be pumped to covery any potentially productive zones with top of cement a minimum of 500' above the shoe. Anticipated cement volumes is approximately 450 sacks 50/50 Poz with fluid loss control agent (retarder and salt if necessary).

5. Proposed Circulating Medium

a. Spud mud from surface to 1000' with sufficient viscosity to provide hole cleaning. Mud weight 8.4-8.8 ppg (subject to change depending on the Basalt).

b. Fresh water, low solids nondispersed system from 1000'-5525'. Mud weight 8.6-9.0 ppg; water loss $\leq$ 10 cc beginning at 4000'.

c. Fresh water, low solids nondispersed system from 5525'-TD if no salt is encountered in the Yeso. If there is salt in the Yeso, a brine starch system will be used. Mud weight 8.6-10.2 ppg, depending on whether salt is encountered. Water loss $\leq$ 10 cc.

Note: Mud material (including weighting material), not less than that needed to make a mud volume equal to the calculated active downhole and surface capacity, will be maintained at the drill site for emergency use. The mud monitoring system will consist of a flow sensor and pit level indicators.

6. Proposed Coring, Testing, and Logging Program

a. Coring: 150' in San Andres
30' in Glorieta
270' in Yeso

b. Testing: Potential DST's in the San Andres and the Yeso.

c. Logs: Run #1 from 5525' to 1000' with GR to surface (if 8-5/8" casing is run or if salt is encountered in the Yeso; if neither of these instances occur, there will be one logging run from TD to 1000' with GR to surface).

GR/DIT-E/SP; NGT/LDT/CNTG/AMS; Array Sonic; SHDT; VSP; Sidewall Samples; Gearhart Core Driller (optional)

Run #2 from TD to 5525'

GR/DLL/MSFL: NGT/LDT/CNTG/AMS; Array Sonic; SHDT; VSP; Sidewall Samples; Gearhart Core Driller (optional)

7. Expected Bottom Hole Pressure and Potential Hazards

a. Expected BHP: 3600 psi (hydropressured or underpressured)

b. Anticipated abnormal temperatures: A temperature gradient in the range of $2^{\circ}F/100$ ft.

c. Hydrogen sulfide potential: This test is not expected to penetrate any formation containing hydrogen sulfide in hazardous quantities. However, due to limited offset information in the area, precautions for H_2S will be taken.

8. Duration of Operations

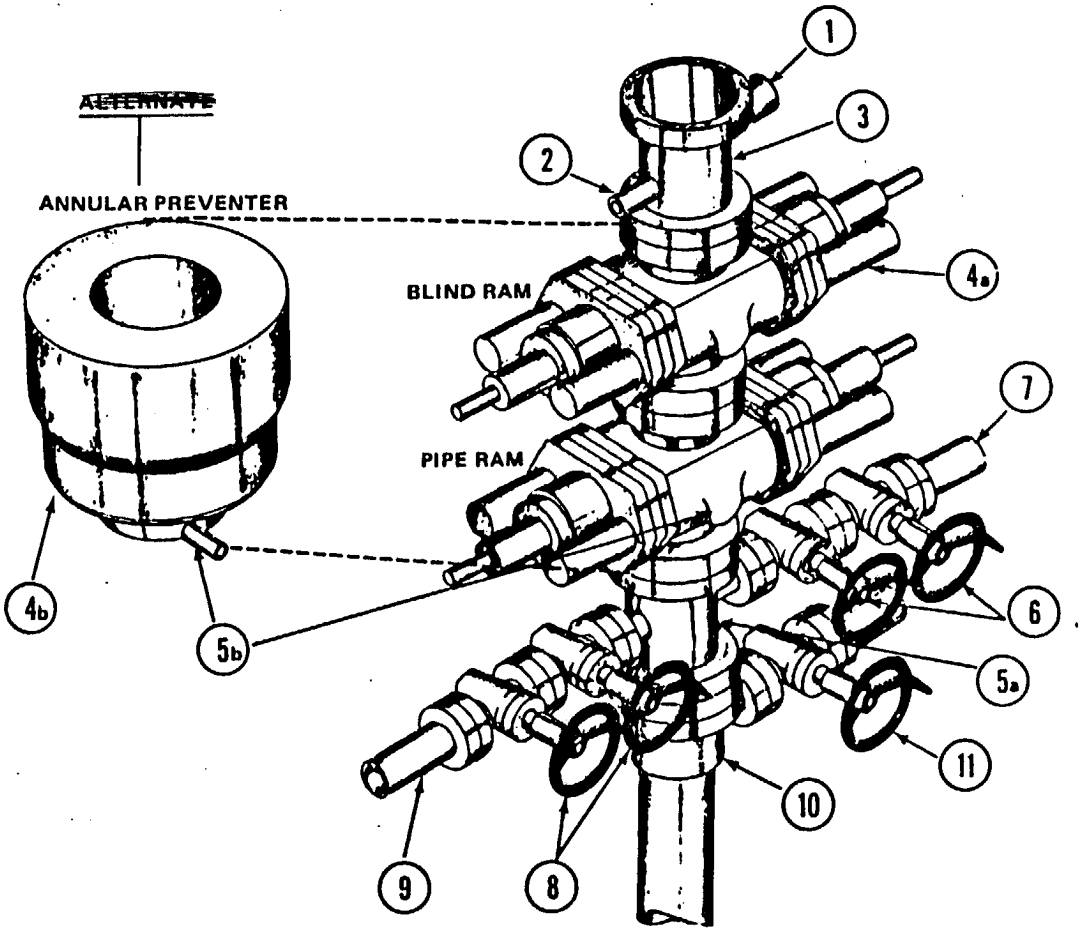
Location building operations are anticipated to take 1-2 weeks. Drilling operations are expected to take 45-55 days (including possible P&A operations). Completion/testing operations (if warranted) are anticipated to take approximately 30 days.

DRAWING & CHECK LIST 102
SHELL CLASS 2M
SURFACE INSTALLATIONS NORMAL

SHELL MINIMUM BOP STACK REQUIREMENTS			
No.	Item	Min. I.D.	Min. Nominal
1	Flowline		
2	Fill up line		2"
3	Drilling nipple		
4a	Two single or one dual hydraulically operated rams*		
	—— or ——		
4b	Annular Preventer		
5a	Drilling spool with 2" and 2" outlets		
	—— or ——		
5b	2" outlets in ram or annular preventer. Run kill line and choke line from these outlets. (Alternate to 5a above.)		
6	Gate Valves	2-1/16"	
7	Line to choke manifold		2"
8	Gate Valves	2-1/16"	
9	Line to rig mud pump manifold		2"
10	Casing spool		
11	Gate Valve	1-13/16"	

OPTIONAL			
12	Wear flange or bore protector		

*For well servicing – not mandatory to be hydraulically operated.

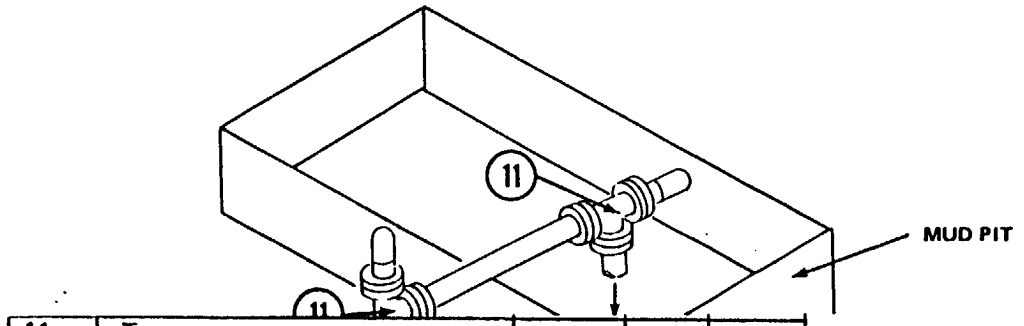


NOTE: Second wing valve on choke (6) and kill (8) lines not mandatory unless drilling below 2,000'.

ATTACHMENT C

MINIMUM CHOKE MANIFOLD
DRAWING NO. 201
SHELL CLASS 2M
SURFACE INSTALLATION NORMAL

ATTACHMENT D



11	Tee		2"	2000
12	Line to Reserve Pit		2"	500
13	Gate Valve	1 13/16"		2000
14	Line to Reserve pit		2"	500

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating. Low pressure lines downstream from a choke can contain screwed connections.
2. All flanges to be API 6B and ring gaskets shall be API RX.
3. All lines shall be securely anchored.
4. Choke to be equipped with tungsten carbide seat and needle and replacement parts shall be available on location.
5. Line from drilling spool to choke manifold to be straight as possible. Line downstream from chokes shall make turns by large radius bend or 90° bends using bull plugged tees.
6. Discharge line from choke, and choke bypass, should vent as far as practical from the well.
7. Additional specifications for Sour Service and Air/Gas Service are given in Shell Well Control Manual, Appendix 6.17 and Appendix 6.18

ATTACHMENT E

SWEPI et al MANGUS MOUNTAIN FEDERAL #1
NW SW SECTION 21-T3S-R15W
CATRON COUNTY, NEW MEXICO

SURFACE USE PROGRAM
ONSHORE OIL & GAS ORDER NO. 1

1. Existing Roads

a. The proposed route to the location is to go West of Horse Springs on HWY 12 approx. 8 miles then North on Forest Road 214 7 1/2 miles then West 4 miles on Forest Road 13 to the location. See Attachment F. A road use permit is being requested for Forest roads.

b. Existing roads used will be maintained in as good or better condition than presently exists. No changes will be made in any Forest maintained roads with the exception of repair and improvement to a damaged drain pipe. During rig move, the wings of cattle guards may have to be layed back to allow passage of wide loads. A guard will be posted while the wings are down and they will be immediately replaced in as good or better condition than they previously were.

c. Road traffic on the access roads during drilling of the subject well will include the following:

1. The rig move will consist of 13 to 15 truck loads. Three loads will be of approx. 80,000# while the remainder will be from 10 to 30,000#.

2. Surface casing hauled to the location will consist of two trucks of approx 46,000# (1 day).

3. Production casing (if run) will consist of 4 trucks of approx. 109,000# (1 day).

4. Cement hauled on two occasions will consist of 3 trucks weighing approx. 80,000# each.

5. One mud truck will deliver mud once each week, weight approx. 30,000#.

6. Other daily traffic will be limited, probably consisting of 3 or 4 pick-ups or passenger cars in and out daily. On special occasions other light traffic such as logging trucks, testing trucks and other delivery trucks will be in and out of the location.

2. Access Roads to be Constructed

This drill site is located adjacent to an existing Forest maintained road and only approx. 150 feet of entrance road will be constructed. The newly constructed road will be of the same standard as the location.

3. Existing wells

There are no wells within one mile of this location.

4. Existing and/or Proposed Production Facilities

a. On well pad - All production facilities will be located on the well pad as illustrated on attachment I.

b. Off well pad - No facilities will be off the well pad.

5. Location and Type of Water Supply for Drilling.

A water well will be drilled to supply water for drilling. The well will be located in the general area of the rig, however the exact location will depend upon where water can be located. In any case, a special use permit will be obtained for the water well.

The water will be piped to the drill site along existing forest roads where possible. No alteration or disturbance will occur. One or two booster stations may be required to pump the water if the water wells elevation differs greatly from that of the rig. The booster stations would normally be placed on the roadway turn-outs to prevent disturbance.

Upon completion of drilling activity, all production equipment will be removed from the water well and the Forest Service given the option to take ownership. If USFS does not wish to retain the well, it will be properly plugged and abandoned. All of the water line will be taken up and any accidental disturbance repaired.

6. Construction Materials

All gravel and dirt will be taken from existing pits in the National Forest. After permitting, normal compensation will be made for materials removed from the pits.

7. Waste Disposal Methods.

The disposition of all waste materials will be by methods outlined in USFS stipulations (1-K & L).

8. Ancillary Facilities

None required

9. Well Site Layout

a. Attachment G is the drill pad layout illustrating the location of drilling equipment, trailers, pits, etc. The setting for the trailers is off the drill pad per USFS direction. Trailers will be worked into the adjoining wooded area in such a way as to minimize damage to trees and to prevent the enlargement of the pad to accommodate them. Septic tanks and lateral lines will be placed in locations to best service the trailers and where damage will be least.

b. Attachment H are Drill Site Profiles illustrating the cross section of the drill pad and entrance road.

c. Pits will be constructed per USGS stipulations (1-N, O and P). The pit will be lined with a double thick 10 mil nylon reinforced plastic liner. Pits will be fenced per USFS stipulations (1-P).

d. During construction, rocks and soil removed from the pad area will be stacked close to the reserve pit for use in reclamation. Timber will be purchased from USFS, cut and stacked in a spot designated by USFS. Slash and stumps will be stacked. Burning of the stacked debris will be done under the direct supervision of USFS.

e. Stipulations concerning firelines and fire sensitive matters will strictly be adhered to.

10. Plans for Surface Restoration

Restoration will be in compliance with USFS stipulations.

a. Trailers will carefully be removed from their sites and the septic tanks removed. The area will be cleaned and leveled back to its original countour. Any bare spots will be re-seeded to USFS specification.

All liquids will be removed from the Reserve Pit and hauled to an approved disposal site. The solids will be tested for toxicity. If they are found to be non-toxic, exposed edges of the plastic liner will be removed, then rock and dirt, retained during site construction, used to bridge over the pit area. If the solids are found to be toxic, they too will be hauled to an approved disposal site.

c. The drill pad will be used for testing equipment if the well is a success (See Attachment I). If the well is a dry hole, the location will be cleaned and covered with enough soil to support grass, then seeded per USFS requirements. The cellar would be filled and leveled with the exception of the dry hole marker.

11. Surface Ownership

The well site is located on USFS land and the access road is maintained by USFS.

12. Other Information

A cultural resource survey was conducted by Northland Research, Inc. on July 25, 1987 under BLM Permit No. 22-2920-87-E. No previous sites have been recorded in the immediate area and no cultural resource of any kind were located as a result of this survey. Copies of the report have been mailed directly to USFS/BLM offices.

13. Lessee's or Operator's Representative and Certification

J. L. Clark
Shell Western E&P Inc.
Western Division
P. O. Box 576
Houston, TX 77001
Tel.: (713) 870-2966

A. J. Fore
Shell Western E&P Inc.
Western Division
P. O. Box 576
Houston, TX 77001
Tel.: (713) 870-3787

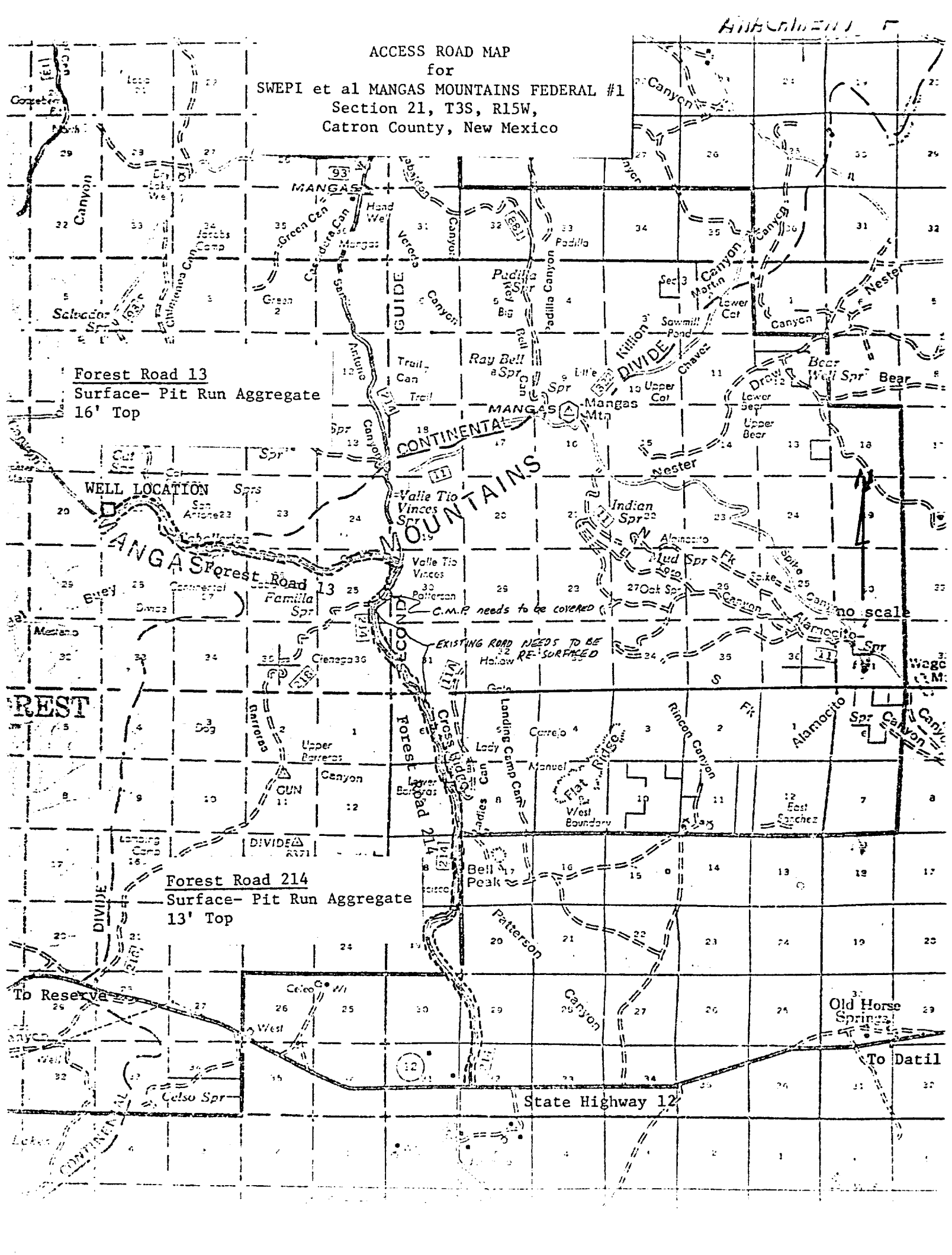
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be preformed by Shell Western E&P Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

8/20/87
Date

A. J. Fore
Supervisor Regulatory & Permitting

ATTACHMENT F

ACCESS ROAD MAP
for
SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W,
Catron County, New Mexico



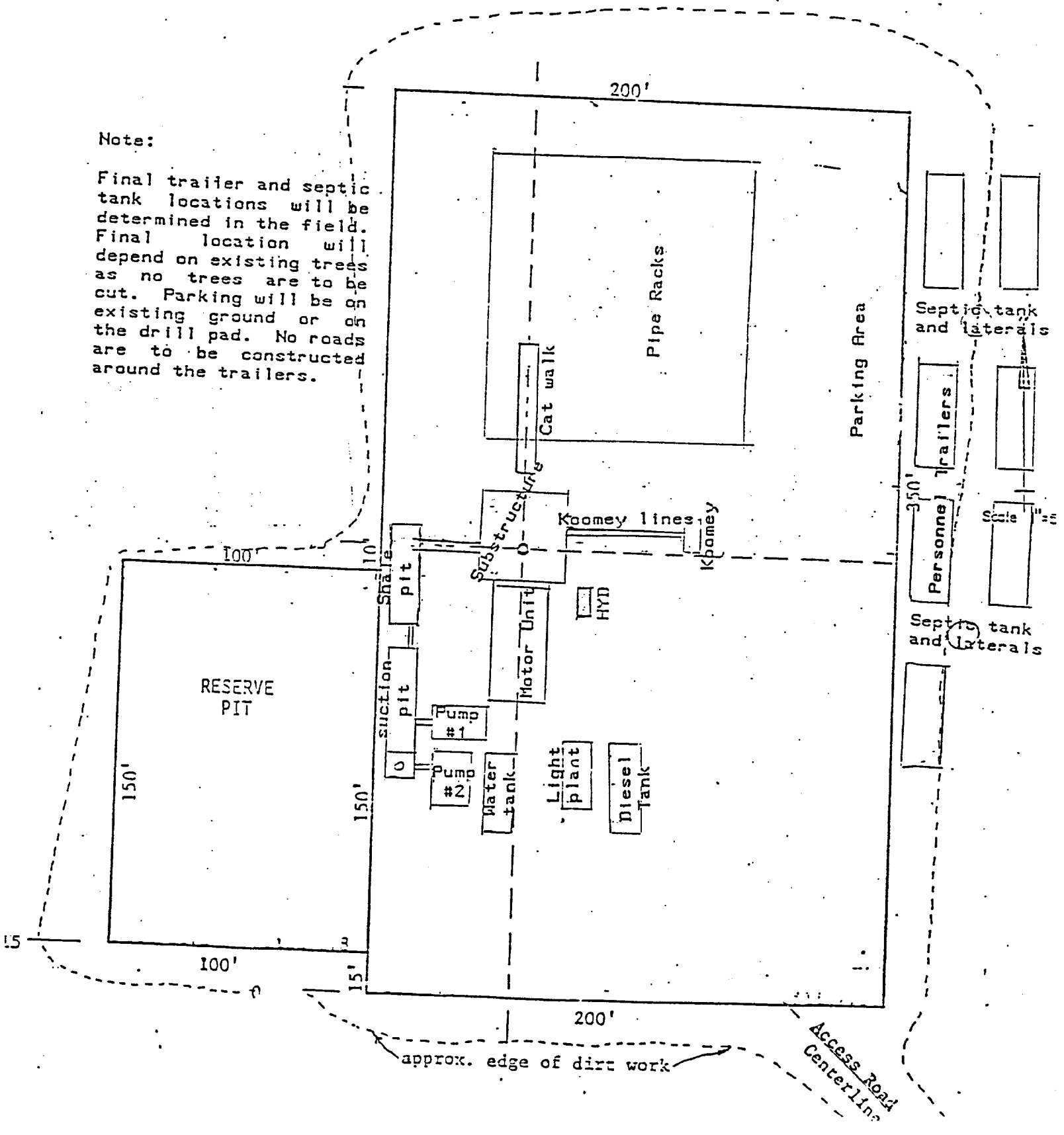
ATTACHMENT G

DRILL PAD LAYOUT

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W, Catron County, New Mexico

Note:

Final trailer and septic tank locations will be determined in the field. Final location will depend on existing trees as no trees are to be cut. Parking will be on existing ground or on the drill pad. No roads are to be constructed around the trailers.



ATTACHMENT #

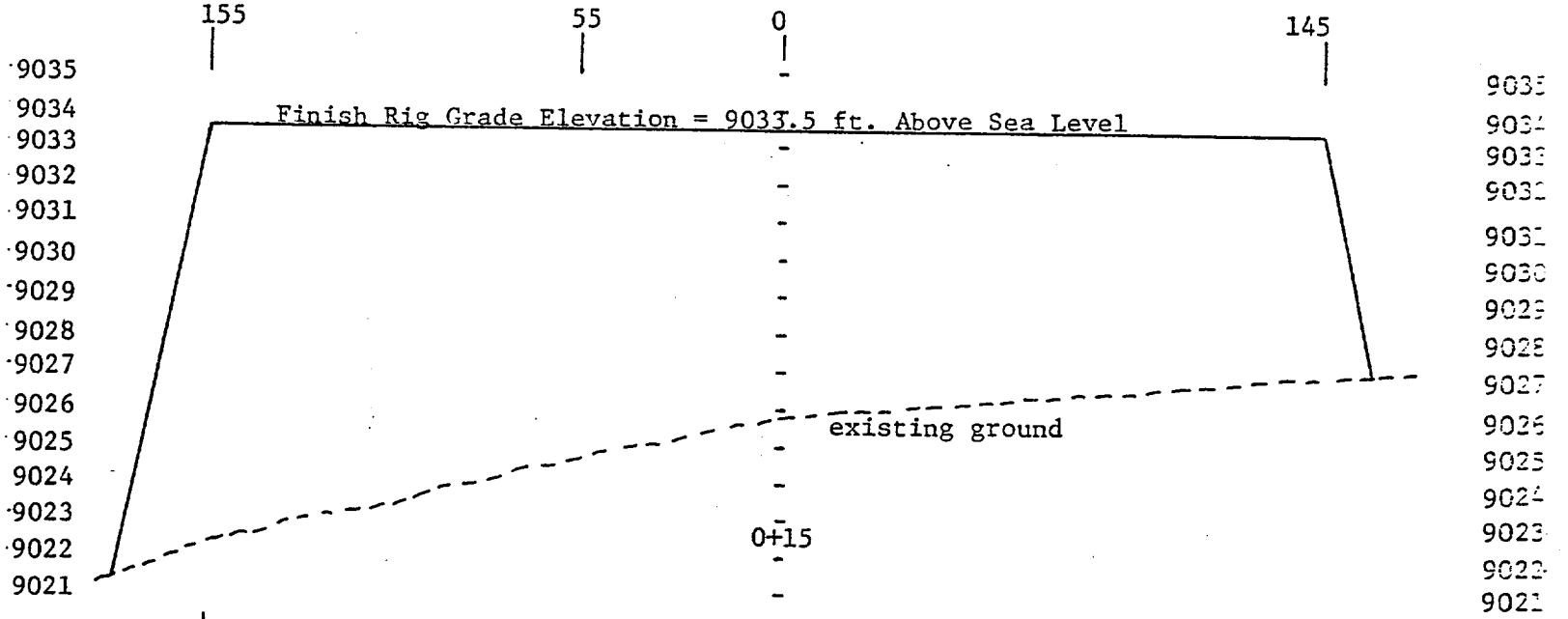
Northland Exploration Surveys, Inc.

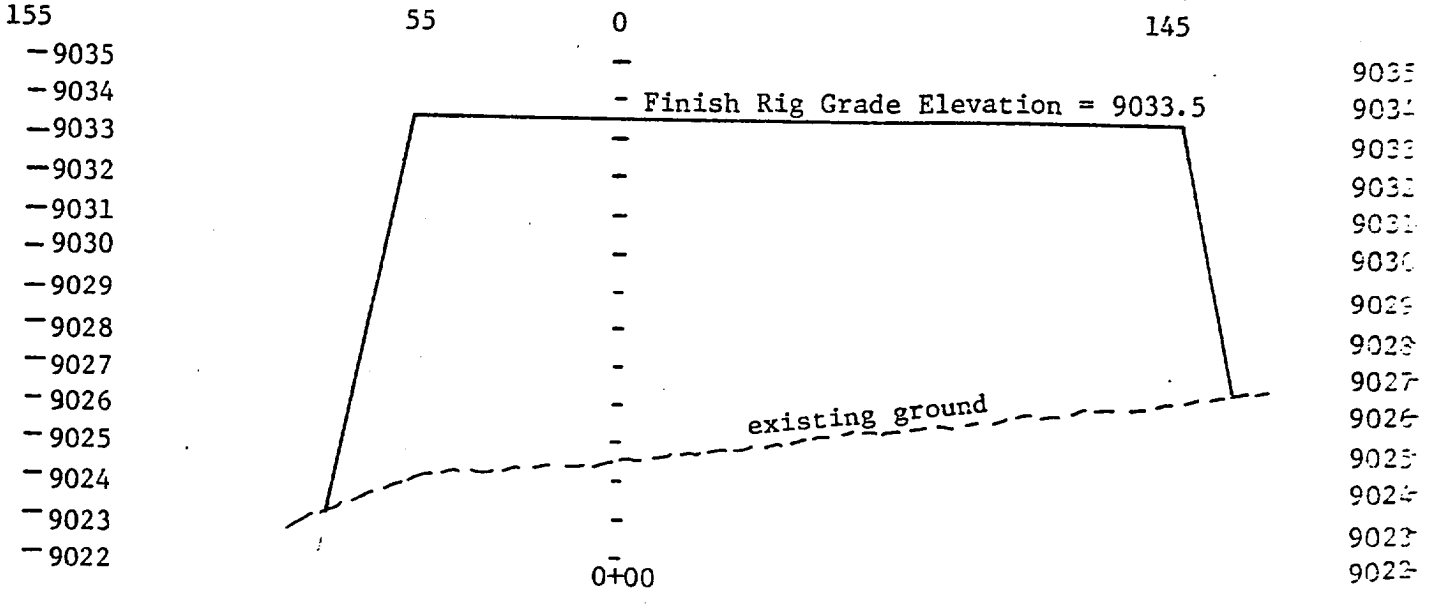
DRILL PAD PROFILE

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W,
Catron County, New Mexico

SCALE: Horiz. 1"= 50'
Vert. 1"= 5'

NOTE: Rig Grade Elevation is estimated, finish elevation may vary.





P. O. Box 1401 / Flagstaff, Arizona 86002 / (602) 774-5057

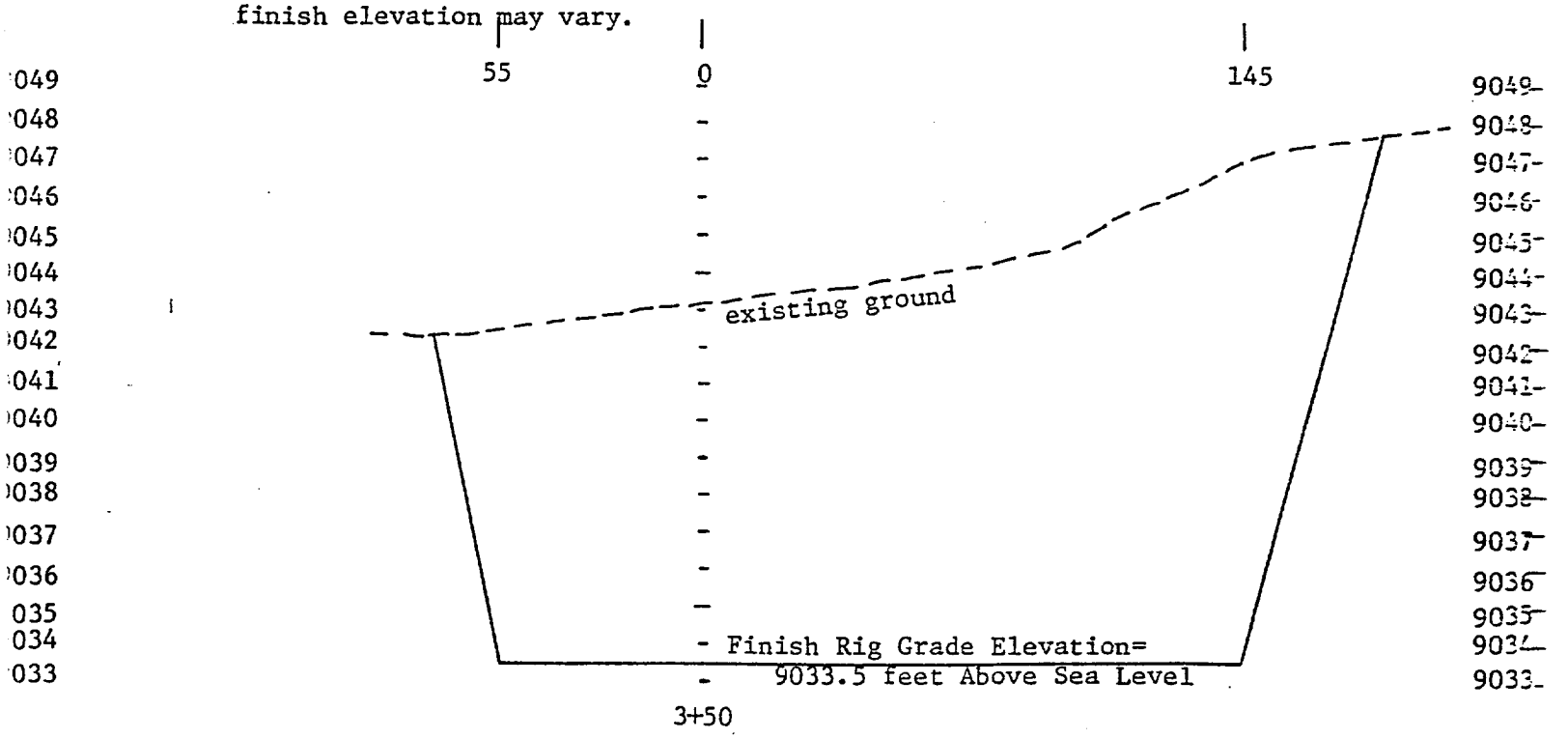
Northland Exploration Surveys, Inc.

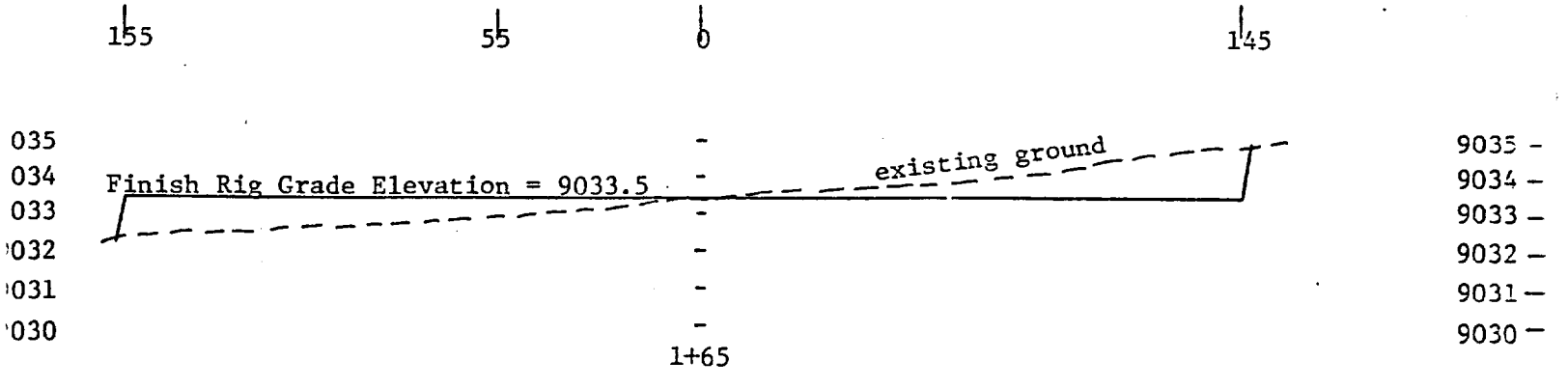
DRILL PAD PROFILE pg.2

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W,
Catron County, New Mexico

SCALE: Horiz. 1"=50'
Vert. 1"=5'

NOTE: Rig Grade Elevation is estimated, finish elevation may vary.



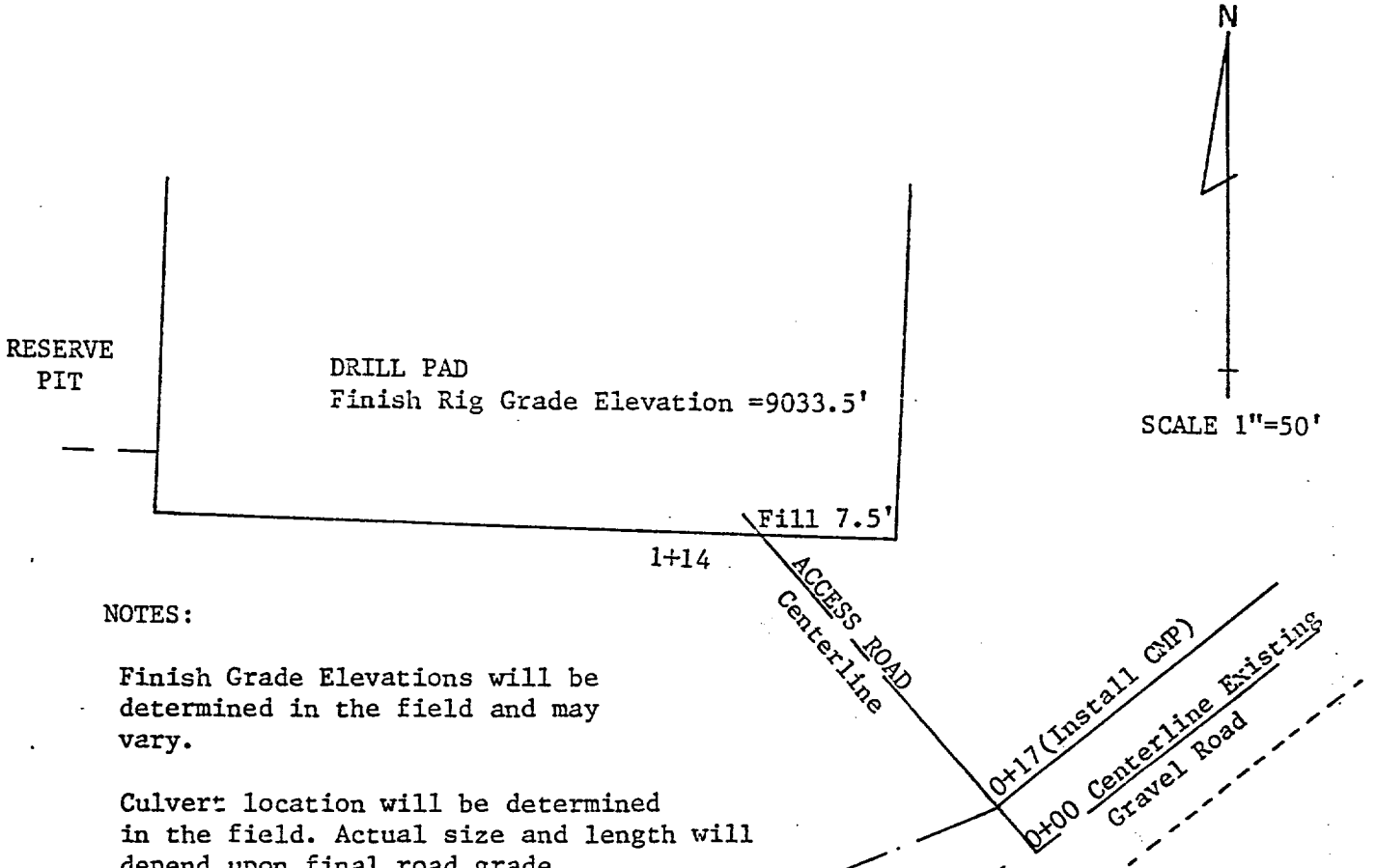


P. O. Box 1401 / Flagstaff, Arizona 86002 / (602) 774-5057

Northland Exploration Surveys, Inc.

ACCESS ROAD LOCATION and PROFILE

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W, Catron County, New Mexico



NOTES:

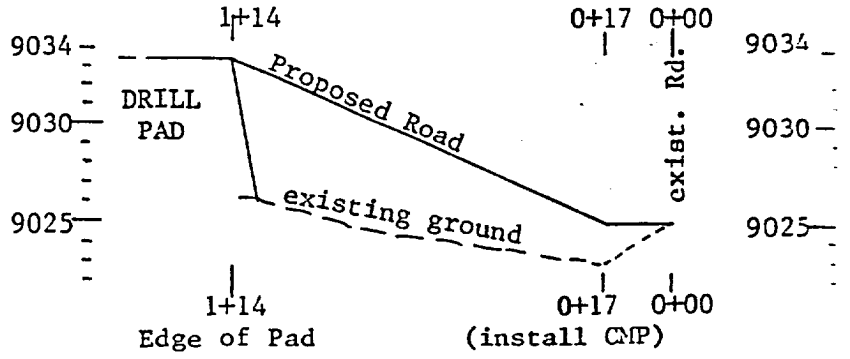
Finish Grade Elevations will be determined in the field and may vary.

Culvert location will be determined in the field. Actual size and length will depend upon final road grade.

ESTIMATED QUANTITIES

FILL 950 cubic yards

Profile of Access Road



SCALE: Horiz. 1"=50'
Vert. 1"=10'

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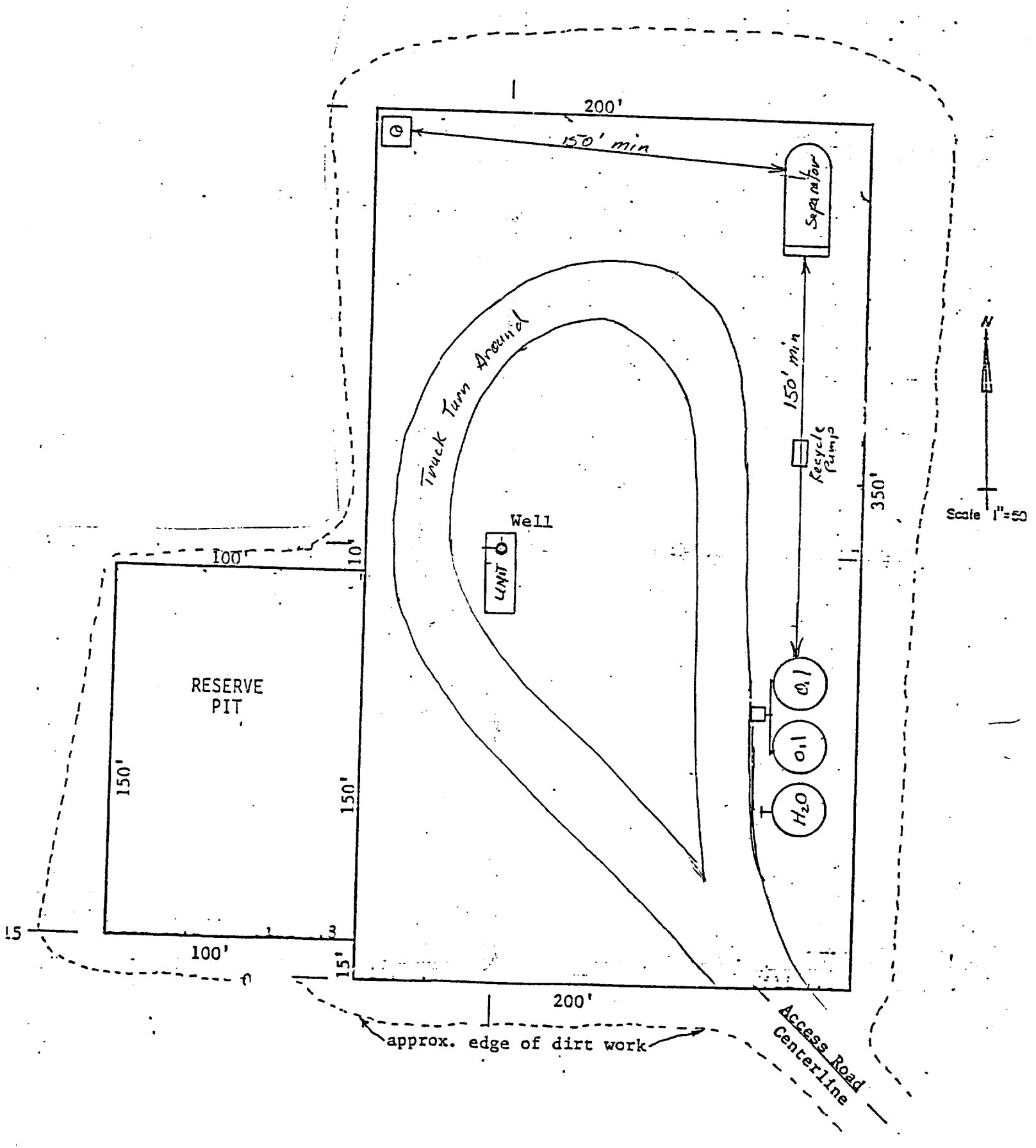
PRODUCTION FACILITIES SKETCH

ATTACHMENT I

SWEPI et al MANGAS MOUNTAINS FEDERAL #1
Section 21, T3S, R15W, Catron County, New Mexico



SURFACE USE STIPULATIONS

SWEPI et al Mangas Mountains
Federal No. 1

Located in

Section 21, T 3 S R 15 W,
N.M.P.M.

USDA Forest Service
Apache National Forest

Quemado Ranger District

Catron County, New Mexico

I. Access Roads and Location.

A. A road use permit will be issued for existing roads. Stipulations contained in the road use permit will be followed. A road condition survey and a road use estimation will be done prior to the issue of the road use permit.

B. Unless otherwise approved, the driving surface on all new acess roads will be limited to 20 feet in width, and total disturbance will be limited to 35 feet, excluding turnouts.

C. Water bars will be constructed on the access road to the well location and conform to Forest Service specifications. The maximum slope distance between water bars will be:

% Slope	Slope Distance
Less than 1%	400 feet
1% - 5%	300 feet
5% - 15%	200 feet
15% - 25%	100 feet
Greater than 25%	50 feet

When the access road is graded, water bars will be left in the road or replaced immediately upon completion of grading.

D. Prior to crossing any fence located on Federal land, or any fence between Federal land and Private land, the Lessee shall contact the Forest Service or Owner of said fence and offer them the opportunity to be present when the fence is cut in order to satisfy himself that it is adequately braced and tied off in accordance with the attached drawing. (See Appendix A). All cut fences are to be tied to the braces prior to cutting. The opening will be protected as necessary during construction to prevent the escape of livestock. A temporary closure will be installed on all cut fences the same day the fence is cut. A permanent cattleguard will be installed and maintained in the cut fence unless otherwise stipulated in writing. A twelve-foot gate will be installed adjacent to all cattleguards.

E. An eight-foot wide fireline, cut to mineral soil, will be constructed around the perimiter of the site location unless otherwise stipulated in writing. The fireline will be water barred to the same specifications as access roads. (refer to I-C).

F. A culvert of sufficient size will be placed where a drainage crosses any access road.

G. Surface disturbance and vehicular traffic will be limited to the approved location and approved access road.

H. No gravel or other related materials from new or existing pits on federal land will be used in construction of roads, well sites, etc., without prior approval from the Forest Service. A permit to haul materials from designated pits is required to use material found on Federal land.

I. The source of water and approval to use it for the camp and drilling will be permitted under a Special Use Permit when the source of water is located on Forest Service lands. All State water right laws will be followed and stipulation for any drilling, pumping, pipelines, etc., will be spelled out in the Special Use Permit.

J. The cut slope and toe of fill shall fall between a 3:1 and a 4:1 ratio. Top soil will be placed on cut slopes and toe of the fill. Erosion of these slopes will be prevented by either contour trenching or by mulching.

K. Well area and lease premises will be maintained in a workmanlike manner with due regard to safety, conservation and apperance. All waste associated with oil and gas operations will be contained, removed and deposited in an approved disposal site. The lessee will obtain the necessary disposal permits from the appropriate agencies.

L. Either chemical toilets or an approved septic system will be used for sewage disposal at the camp and well sites.

M. Camp areas will be situated so as to blend in with the environment. A natural setting, with minimal timber removed for access and safety, will be utilized rather than clearing the entire camp area.

N. Mud pits will be contructed so as not to leak, break, or allow discharge of liquids. The bottom of the reserve pit shall not be in fill material. Pits are not to be located in natural drainages. Pit walls are to be "walked down" by a crawler-type tractor and lined with an impervious material prior to use.

O. Boulders that are excavated during access road and drill pad construction will be placed adjacent to the reserve pit. These boulders will be placed into the reserve pit and buried after the pit has been drained.

P. All unguarded pits containing liquids will be fenced. Drilling pits will be fenced on three sides and once the rig leaves the location, the fourth side will be fenced. Fencing must be constructed so as to be elk-proof (minimum six-foot woven wire). Liquids in pits will be hauled to an approved disposal well. (This office will be notified 24 hours prior to fluid hauling). Drill cuttings and other solid waste in pits will be tested for toxicity. Toxic material will be removed to an approved disposal site. Any plastic material used to line pits must be removed to below ground level before boulders are placed in the pit or the pits are covered. Under no circumstances will pits be cut and drained.

Q. Berms or firewalls will be constructed around all storage facilities sufficient in size to contain the storage capacity of the tanks.

R. Any proposed use of pesticide, herbicide or other possible hazardous chemical on Federal land shall be cleared for use by the Forest Service prior to application.

S. When production starts, pump jacks, storage tanks, surface accumulators and other surface equipment will be painted an environmentally acceptable color.

T. All live and dead trees marked with paint marks above and below stump height within access corridors, well pad, reserve pit, and camp site locations are considered to have commercial value and will be paid for at applicable rates determined by standard Forest Service methods. Trees so marked and cut shall be limbed and stems shall be yarded to the nearest Forest road where by they shall be stacked in such a manner as to allow for loading onto transport vehicles. Care shall be taken to keep residual trees as undamaged a practically possible. All other woody material to be removed from access corridor, well pad, reserve pit and campsite areas shall be piled. (See Appendix B for specifications). If a large volume of slash is encountered, provisions will be made to haul excess slash and stumps to a previously designated area where it will either be piled or buried.

II. Cultural Resources.

A. The Lessee shall not commence construction on the lease until a cultural resource inventory has been approved by the Forest Service.

B. Lessee shall protect all known and identified historic or prehistoric sites, buildings, objects, and properties related to American history, architecture, archeology and culture against destruction, removal or damage during Lessee's operations. The Lessee shall immediately notify the Forest Service if damage occurs to any cultural resource and halt all work until authorized to proceed. All provisions of the Region 3 Cultural Resources Damage Assessment Handbook are incorporated herein. Copy of this handbook is available at the local Forest Service Office.

C. In the event any Historic or Prehistoric sites, buildings, objects or properties not previously identified are found by either party, all work shall be suspended and the discovery promptly reported to the other party. The Forest Service will then specify what action is to be taken.

III. Reseeding and Abandonment.

A. All surface areas disturbed during drilling activities and not used for production activities will be rehabilitated when the drilling activities are completed, and/or the location is abandoned.

B. Rehabilitation will consist of:

1. Ripping the surface of the well pad to 6 inches and placing 4 inches of top soil on all the portions of the pad that are not going to be used for production. All cut and fill slopes will again be checked for erosion and stabilized by either contour trenching or by mulching.

2. Ripping to six inch depth all access roads and firelines not considered necessary for well production, or the management of the natural resources. After ripping, water bars will be installed as stated in I-C. All ripped surfaces are to be protected from vehicular travel by construction of a dead-end ditch and earthen barricade at the entrance to the road or fireline.

3. Seeding all disturbed areas including the well pad, access roads, site, reserve pits, etc. with the appropriate seed mixture as shown on the attached Appendix C. - Mixture Specifications. Seeding will be done using a "cyclone" type handseeder or a similar power driven broadcast seeder. The seed will be covered by dragging the area with a harrow or similar device following the application of the seed. Reseeding will be done the first June following the completion of drilling, and/or upon abandoning the location. The Lessee/Operator will be required to make subsequent seedings until the area is covered with substantial vegetation or litter to prevent erosion.

Appendix B

Machine Piling.

Slash shall be piled in accordance with the following requirements:

1. A minimum of 95% of slash, measured in tons per acre, using National Fuels Classification and Inventory System, August 1974, as supplemented by Region 3, shall be piled for burning.

2. Unless location and clearing limits are otherwise agreed to between Lessee and Forest Service, piles shall be located within cleared areas or within natural openings. Unless otherwise agreed, minimum spacing between edge of each pile and crown edge of adjacent live trees 9 inches d.b.h. and larger shall not be less than the average diameter of each pile.

Unless otherwise agreed between Lessee and Forest Service, slash will not be moved more than 500 feet to meet above pile location requirement.

Piles shall not be made below highwater mark of perennial or intermittent stream courses. Slash shall not be piled on or allowed to remain in drainage ditches or on permanent roads.

3. Piles shall be compact and dirt-free, with most of the smaller slash on the bottom to the extent that 85% burning consumption may be accomplished. Unless otherwise agreed, piles shall not exceed about 33 feet in average diameter and shall not be less than about 12 feet in average diameter. Pile height shall not be less than about 6 feet and should be as close to one-half pile diameter as practical. All slash greater than 4 inches in diameter, which protrudes about 4 feet or more from outer edge of pile shall be bucked off and placed on pile.

Appendix C

Seed Mixture Specification.

1. Seed Mix No. 1 - Quemado R.D. above 7500 ft. elevation

Species	Pounds in Mixture for 1 Acre
Western Wheatgrass	10.0 X acres = lbs. to buy
Orchardgrass	1.6 X acres = lbs. to buy
Smooth Brome	4.6 X acres = lbs. to buy
Yellow Blossom Sweet Clover	.5 X acres = lbs. to buy

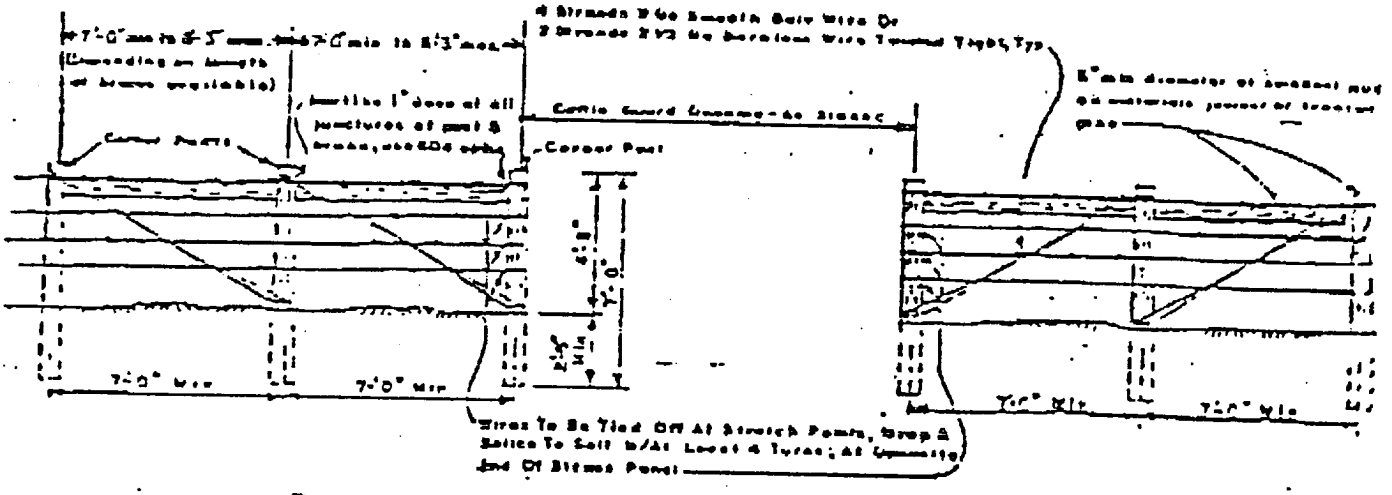
Seed at 50 seeds per square foot = 16.7 lbs/acre.

2. Seed Mix No. 2 - Quemado R.D. below 7500 ft. elevation

Species	Pounds in Mixture for 1 Acre
Paiute Orchardgrass	1.6 X acres = lbs. to buy
Blue grama	3.8 X acres = lbs. to buy
Crested Wheatgrass	4.0 X acres = lbs. to buy
Yellow Blossom Sweet Clover	.5 X acres = lbs. to buy
Winterfat (Seed Alone)	2.0 X acres = lbs. to buy

Seed mixture at 50 seeds per square foot =10.0 lbs/acre.
Seed Winterfat at 7 seeds per square foot = 2 lbs/acre.

APPENDIX A



Stipulations:

1. A 12' gate must be installed between the cattleguard and brace assemblies on which ever side of the cattleguard is most convenient. If the gate is made of wire it must have at least four horizontal strands of barb wire, with at least four 3" diameter vertical wood stays evenly spaced. When the gate is closed the wires must be taut.

2. All cattleguards must have wings installed on both ends to prevent livestock from stepping around the ends. Cattleguards must be at least 8' wide, the length is left to the discretion of the operator. They must be set on concrete or pressure treated wood bases to prevent them from sinking. (If you will install the bases at least 12" above the surrounding contour, and provide drainage through the open area under the cattleguard, you will not have to clean them so often).

3. All cattleguards must have clearly visible identification marks welded into them indicating the ownership and well name and number associated with the cattleguard.

Appendix C

Seed Mixture Specification.

1. Seed Mix No. 1 – Quemado R.D. above 7500 ft. elevation

Species	Pounds in Mixture for 1 Acre
Western Wheatgrass	10.0 X acres = lbs. to buy
Orchardgrass	1.6 X acres = lbs. to buy
Smooth Brome	4.6 X acres = lbs. to buy
Yellow Blossom Sweet Clover	.5 X acres = lbs. to buy

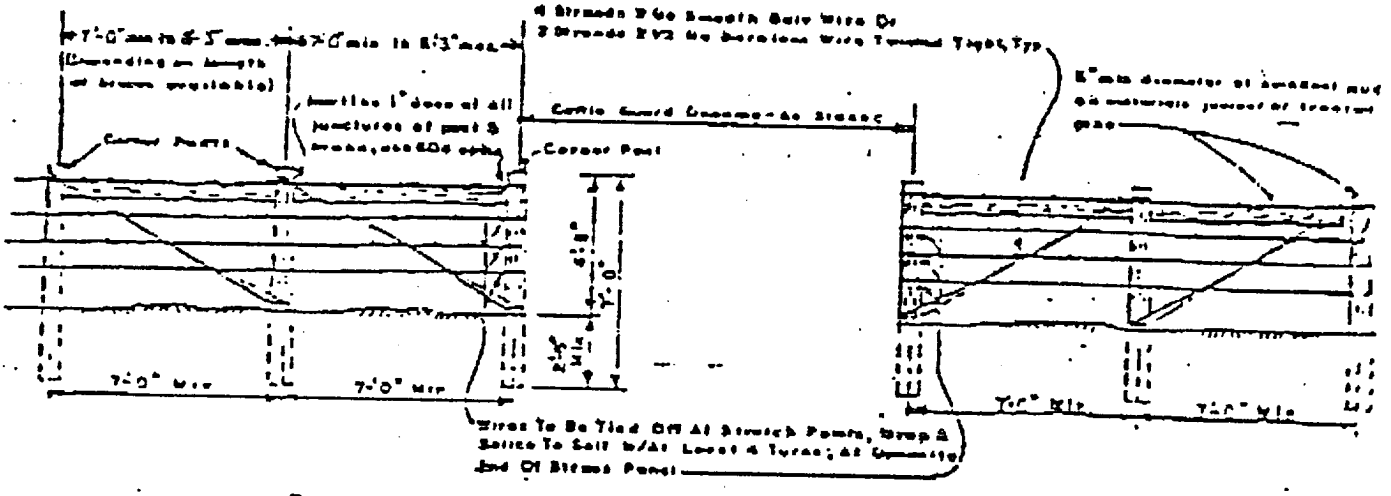
Seed at 50 seeds per square foot = 16.7 lbs/acre.

2. Seed Mix No. 2 – Quemado R.D. below 7500 ft. elevation

Species	Pounds in Mixture for 1 Acre
Paiute Orchardgrass	1.6 X acres = lbs. to buy
Blue grama	3.8 X acres = lbs. to buy
Crested Wheatgrass	4.0 X acres = lbs. to buy
Yellow Blossom Sweet Clover	.5 X acres = lbs. to buy
Winterfat (Seed Alone)	2.0 X acres = lbs. to buy

Seed mixture at 50 seeds per square foot =10.0 lbs/acre.
Seed Winterfat at 7 seeds per square foot = 2 lbs/acre.

APPENDIX A



Stipulations:

1. A 12' gate must be installed between the cattleguard and brace assemblies on which ever side of the cattleguard is most convenient. If the gate is made of wire it must have at least four horizontal strands of barb wire, with at least four 3" diameter vertical wood stays evenly spaced. When the gate is closed the wires must be taut.

2. All cattleguards must have wings installed on both ends to prevent livestock from stepping around the ends. Cattleguards must be at least 8' wide, the length is left to the discretion of the operator. They must be set on concrete or pressure treated wood bases to prevent them from sinking. (If you will install the bases at least 12" above the surrounding contour, and provide drainage through the open area under the cattleguard, you will not have to clean them so often).

3. All cattleguards must have clearly visible identification marks welded into them indicating the ownership and well name and number associated with the cattleguard.