30-015-27261

Form 3160-3
(December 1990)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires: December 31, 1991

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: ~~NM~~-069159 A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME: Big Eddy Unit

8. FARM OR LEASE NAME, WELL NO.: Big Eddy Unit #117

9. API WELL NO.:

10. FIELD AND POOL, OR WILDCAT: E. Herradura - Delaware Pool

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 25, T22S, R28E

12. COUNTY OR PARISH: Eddy

13. STATE: NM

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

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

RECEIVED
DEC 31 1992
O. C. D.
ARTESIA, OFFICE

2. NAME OF OPERATOR: Bass Enterprises Production Company ✓

3. ADDRESS AND TELEPHONE NO.: P.O. Box 2760, Midland, Texas 79702 915-683-2277

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 330' FWL & 330' FSL Section 25, T22S, R28E
At proposed prod. zone: Same UNIT M

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 5 miles NE/Loving, NM

| 15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) | 16. NO. OF ACRES IN LEASE | 17. NO. OF ACRES ASSIGNED TO THIS WELL |
|---|---|---|
| 330' | 640 | 40 |
| **18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.** | **19. PROPOSED DEPTH** | **20. ROTARY OR CABLE TOOLS** |
| 1320' | 6650' | rotary |

21. ELEVATIONS (Show whether DF, RT, GR, etc.): ~~3125'~~ 3124.7' GL

22. APPROX. DATE WORK WILL START*: upon approval

23. PROPOSED CASING AND CEMENTING PROGRAM — Secretary's Potash

| SIZE OF HOLE | GRADE, SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|---|---|---|---|---|
| * 15" | 11-3/4" | 42# | 450' | 370 sx circ to surface |
| ** 11" | 8-5/8" | 24# | 2700' | 975 sx ~~tie back to 250~~ CIRCULATE |
| 7-7/8" | 5-1/2" | 14# and 15.5# | 6650' | 695 sx tie back to 2450' |

* Surface to be set in the Rustler Anhydrite.
** Intermediate to be set @ ±2700' in the Lamar Lime.

Drilling procedure, BOPE diagram, anticipated tops and surface use plans attached.

POST 10-
-3-93
NEW OCD

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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 Keith E. Bucy TITLE Div Drlg and Prod Supt DATE 10-28-92

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

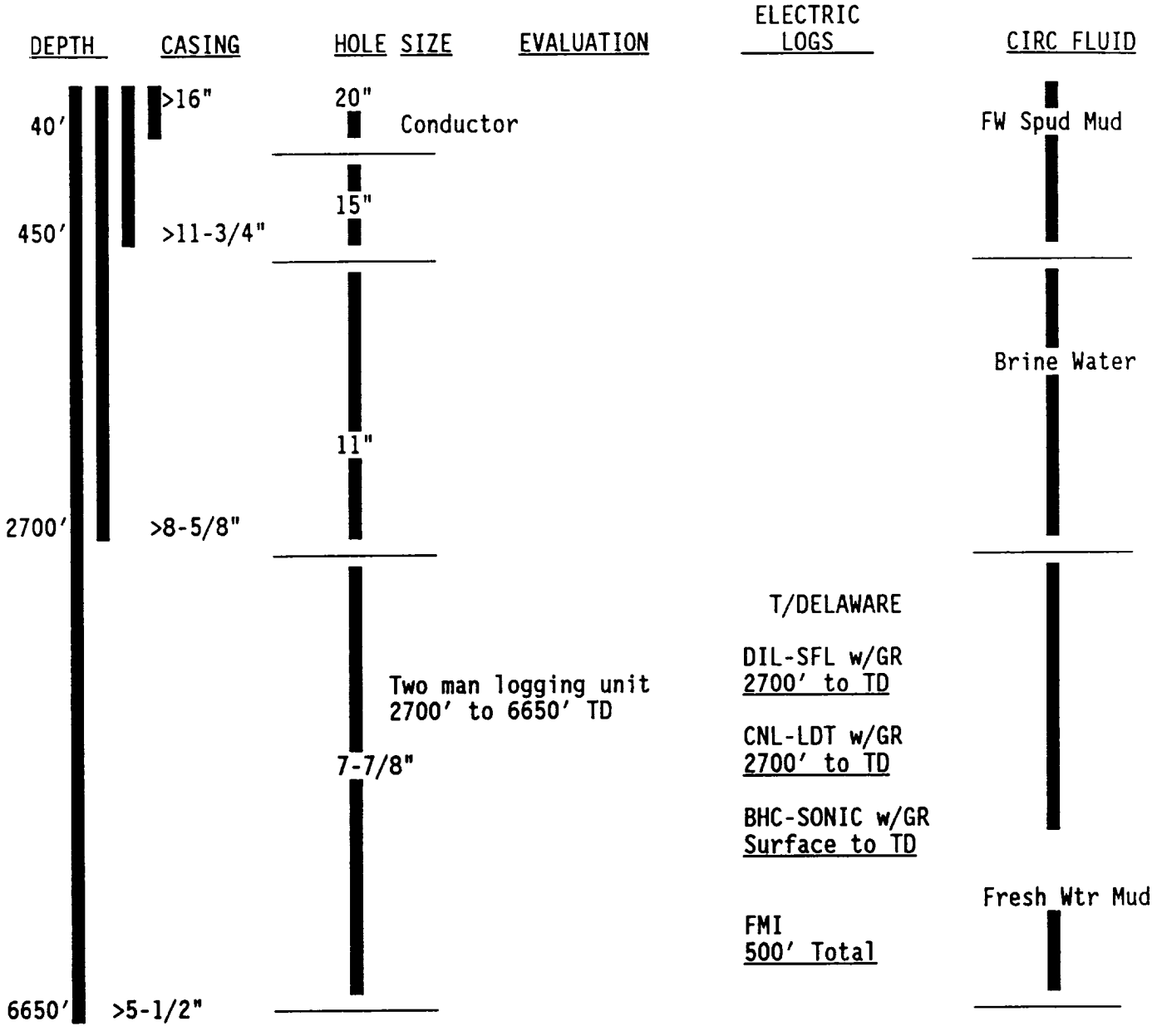
APPROVED BY _____ TITLE _____ DATE 12-23-92

*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

# BIG EDDY UNIT #117

BASS ENTERPRISES PRODUCTION COMPANY
October 28, 1992




MJE:sjw

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

# OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

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

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

## WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

| | | | | |
|---|---|---|---|---|
| Operator: BASS ENTERPRISES PRODUCTION COMPANY | | | Lease: BIG EDDY UNIT | Well No.: 117 |
| Unit Letter: M | Section: 25 | Township: 22 SOUTH | Range: 28 EAST NMPM | County: EDDY |
| Actual Footage Location of Well: 330 feet from the SOUTH line and 330 feet from the WEST line | | | | |
| Ground Level Elev.: 3124.9' | Producing Formation: Delaware | | Pool: E. Herradura - Delaware | Dedicated Acreage: 40 Acres |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

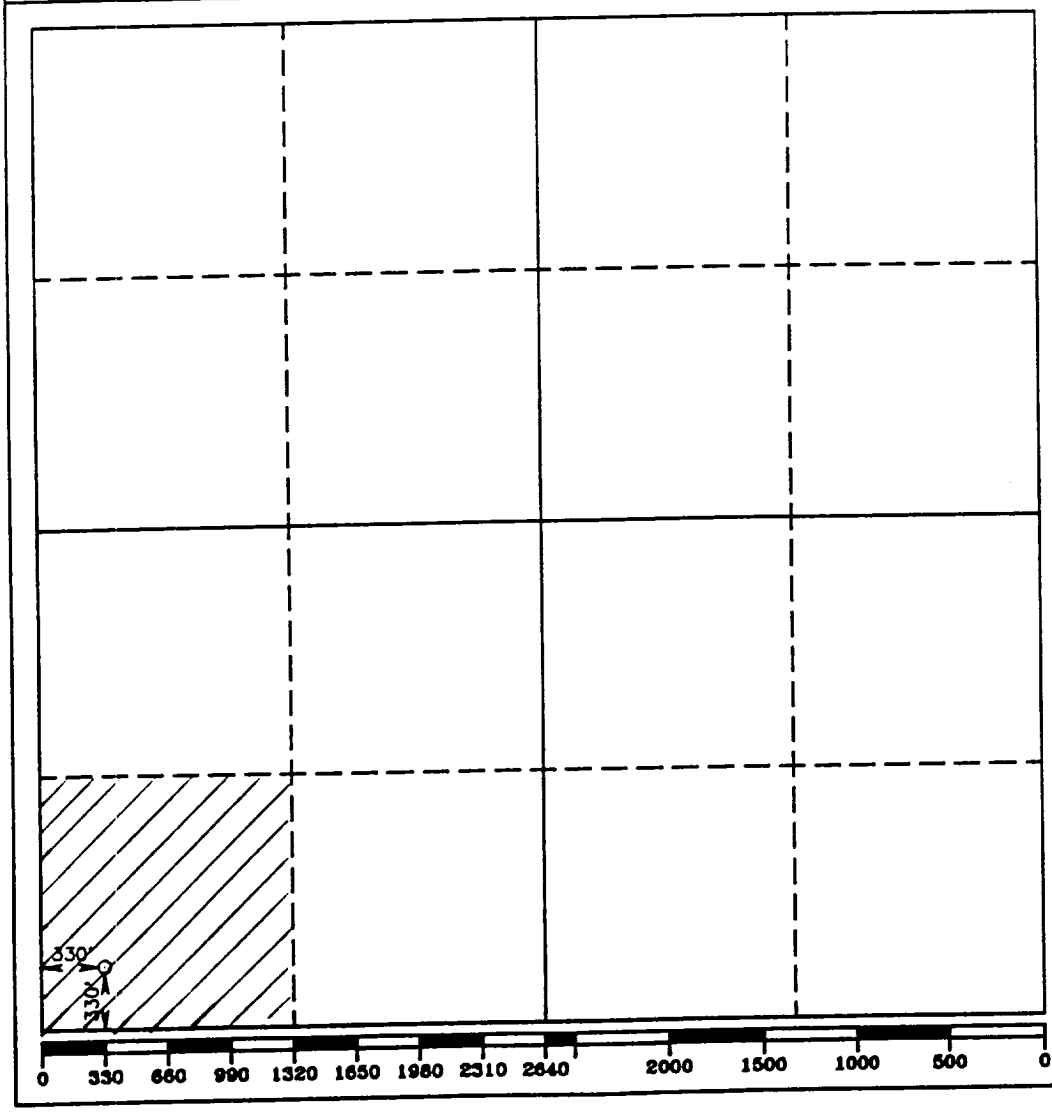
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest 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 of owners and tract descriptions which have actually been consolidated. (Use reverse side of this form necessary. _____

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




### OPERATOR CERTIFICATION

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

Signature: Keith E. Bucy

Printed Name: Keith E. Bucy

Position: Div Drlg and Prod Supt

Company: Bass Enterprises Prod Co

Date: 10-28-92

### 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 supervison, and that the same is true and correct to the best of my knowledge and belief.*

Date Surveyed: SEPTEMBER 17, 1992

Signature & Seal of Professional Surveyor

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL SURVEYOR

Certificate No. JOHN W. WEST 676
RONALD J. EIDSON 3239
GARY L. JONES 7977

92-11-1362

# MULTI-POINT SURFACE USE PLAN

**NAME OF WELL: BIG EDDY UNIT #117**

LEGAL DESCRIPTION - SURFACE: 330' FWL & 330' FSL, Section 25, T-22-S, R-28-E, Eddy County, New Mexico.

**POINT 1: EXISTING ROADS**

A) Proposed Well Site Location:

See Exhibit "A".

B) Existing Roads:

From Carlsbad, go east on U.S. 62-180 for approx 2 miles. Go approx 7 miles south down U.S. Refinery Road. Turn NE 1-1/2 mile. Turn NW to Big Eddy Unit #116 location, then go west 1/4 mile to the location.

C) Existing Road Maintenance or Improvement Plan:

See Exhibit "A".

**POINT 2: NEW PLANNED ACCESS ROUTE**

A) Route Location:

See Exhibit "B". The new road will be 12' wide and approximately 1300' long. The road will be constructed of watered and compacted caliche.

B) Width

Not applicable.

C) Maximum Grade

Not applicable.

D) Turnouts

None.

E) Culverts, Cattle Guards, and Surfacing Equipment

None.

**POINT 3: LOCATION OF EXISTING WELLS**

Exhibit "A" indicates existing wells within the surrounding area.

**POINT 4: LOCATION OF EXISTING OR PROPOSED FACILITIES**

A) Existing facilities within one mile owned or controlled by lessee/operator:

None

B) New Facilities in the Event of Production:

Additional production facilities will be installed as required.

C) Rehabilitation of Disturbed Areas Unnecessary for Production:

Following the construction of production facilities, those access areas required for continued production will be graded to provide drainage and minimize erosion. The areas unnecessary for use will be graded to blend in the surrounding topography - See Point 10.

**POINT 5: LOCATION AND TYPE OF WATER SUPPLY**

A) Location and Type of Water Supply

Fresh water and brine will be hauled from the city of Carlsbad. Brine water will be hauled from Champion Brine Water Station, 3.5 miles east and 2.5 miles south of Carlsbad.

B) Water Transportation System

Water hauling to the location will be over the existing and proposed roads.

**POINT 6: SOURCE OF CONSTRUCTION MATERIALS**

A) Materials

Existing materials will be used for road and location.

B) Land Ownership

Federally owned.

C) Materials Foreign to the Site

No construction materials foreign to this area are anticipated for this drill site.

D) Access Roads

In this area, no additional caliche is anticipated.

**POINT 7: METHODS FOR HANDLING WASTE MATERIAL**

A) Cuttings

Cuttings will be contained in the reserve pit.

B) Drilling Fluids

Drilling fluids will be contained in the reserve pit.

C) Produced Fluids

Water production will be contained in the reserve pit.

Hydrocarbon fluid or other fluids that may be produced during testing will be retained in test tanks. Prior to cleanup operations, any hydrocarbon material in the reserve pit will be removed by skimming or burning as the situation would dictate.

D) Sewage

Current laws and regulations pertaining to the disposal of human waste will be complied with.

E) Garbage

Portable containers will be utilized for garbage disposal during the drilling of this well.

F) Cleanup of Well Site

Upon release of the drilling rig, the surface of the drilling pad will be graded to accommodate a completion rig if testing indicates potential productive zones. In any case, the "mouse" hole and the "rat" hole will be covered. The reserve pit will be fenced and the fence maintained until the pit is backfilled. Reasonable cleanup will be performed prior to the final restoration of the site.

**POINT 8: ANCILLARY FACILITIES**

None required

**POINT 9: WELL SITE LAYOUT**

A) Rig Orientation and Layout

Exhibit "C" shows the dimensions of the well pad and reserve pits, and the location of major rig components. Only minor leveling of the well site will be required. No significant cuts or fills will be necessary.

B) Locations of Pits and Access Road

See Exhibits "A" and "C"

C) Lining of the Pits

The reserve pit will be lined with plastic.

**POINT 10: PLANS FOR RESTORATION OF THE SURFACE**

A) Reserve Pit Cleanup

A pit will be fenced at the time of rig release and shall be maintained until the pit is backfilled. Previous to backfill operations, any hydrocarbon material on the pit surface shall be removed. The fluids and solids contained in the pit shall be backfilled with soil excavated from the site and soil adjacent to the reserve pit. The restored surface of the pit shall be contoured to prevent impoundment of surface water flow. Water- bars will be constructed as needed to prevent excessive erosion. Topsoil, as available, shall be placed over the restored surface in a uniform layer. The area will be seeded according to the Bureau of Land Management stipulations during the appropriate season following restoration.

B) Restoration Plans - Production Developed

The reserve pit will be backfilled and restored as described above under Item A. In addition, those areas not required for production will be graded to blend with the surrounding topography. Topsoil, as available, will be placed upon those areas and seeded. The portion of the site required for production will be graded to minimize erosion and provide access during inclement conditions. Following depletion and abandonment of the site, restoration procedures will be those that follow under Item C.

C) Restoration Plans - No Production Developed

The reserve pit will be restored as described above. With no production developed, the entire surface disturbed by construction of the well site will be restored. The site will be contoured to blend with the surrounding topography and provide drainage of surface water. The topsoil, as available, shall be replaced in a uniform layer and seeded accordingly to the Bureau of Land Management's stipulations.

D) Rehabilitations Timetable

Upon completion of drilling operations, the initial cleanup of the site will be performed as soon as weather and site conditions allow economic execution of the work.

**POINT 11: OTHER INFORMATION**

A) Terrain

Relatively flat.

B) Soil

Caliche and sand.

C) Vegetation

Sparse, primarily grasses and mesquite with very little grass.

D) Surface Use

Primarily grazing.

E) Surface Water

There are no ponds, lakes, streams, or rivers within several miles of the wellsite.

F) Water Wells

None known

G) Residences and Buildings

None

H) Historical Sites

None observed

I) Archeological Resources

An archeological survey will be obtained for this area. Before any construction begins, a full and complete archeological survey will be submitted to the Bureau of Land Management. Any location or construction conflicts will be resolved before construction begins.

J) Surface Ownership

The well site and new access road is on Federally owned land.

K) Well signs will be posted at the drilling site.

L) Open Pits

All pits containing liquid or mud will be fenced and bird-netted.

**POINT 12: OPERATOR'S FIELD REPRESENTATIVE**

(Field personnel responsible for compliance with development plan for surface use).

DRILLING
Keith E. Bucy
Box 2760
Midland, Texas 79702
(915) 683-2277

PRODUCTION
Mike Waygood
1012 West Pierce, Suite F
Carlsbad, New Mexico 88220
(505) 887-7329

Keith E. Bucy
Box 2760
Midland, Texas 79702
(915) 683-2277

**POINT 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 currently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Bass Enterprises Production Co. and it's contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

10/29/92
Date

Keith E. Bucy

MJE:sjw

# EIGHT POINT DRILLING PROGRAM
# BASS ENTERPRISES PRODUCTION CO.

**NAME OF WELL: BIG EDDY UNIT #117**

LEGAL DESCRIPTION - SURFACE: 330' FWL & 330' FSL, Section 25, T-22-S, R-28-E, Eddy County, New Mexico.

**POINT 1: ESTIMATED FORMATION TOPS**

(SEE NO. 2 BELOW)

**POINT 2: WATER, OIL GAS AND/OR MINERAL BEARING FORMATIONS**

Anticipated Formation Tops: KB 3139' (est)
GL 3125'

| FORMATION | ESTIMATED TOP FROM KB | ESTIMATED SUBSEA TOP | BEARING |
|---|---|---|---|
| T/Rustler | 389' | +2750 | Barren |
| B/Salt | 2559' | +580 | Barren |
| T/Delaware | 2779' | +360 | Oil/Gas |
| T/Lower Brushy Canyon | 6029' | -2890 | Oil/Gas |
| T/Bone Spring Lime | 6349' | -3210 | Oil/Gas |
| TD | 6650' | -3511 | Oil/Gas |

**POINT 3: CASING PROGRAM**

| TYPE | INTERVALS | PURPOSE | CONDITION |
|---|---|---|---|
| 16" | 0' - 40' | Conductor | Contractor Discretion |
| 11-3/4" 42# H-40 ST&C | 0' - 450' | Surface | New |
| 8-5/8" 24# K-55 & S-80 ST&C | 0' - 2700' | Intermediate | New |
| 5-1/2" 14-15.5# K-55 LT&C | 0' - 6650' | Production | New |

See Exhibit D - (Casing Design)

**POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAMS)**

A BOP equivalent to Diagram 1 will be nippled up on the surface casinghead. The BOP stack, choke, kill lines, kelly cocks, inside BOP, etc. will be hydro-tested to the lowest rated working pressure of the equipment being tested. In addition to the rated working pressure test, a low pressure (200 psi) test will be required. These tests will be performed:

a) Upon installation
b) After any component changes
c) Thirty days after a previous test
d) As required by well conditions

A function test to insure that the preventers are operating correctly will be performed on each trip.

## POINT 5: MUD PROGRAM

| DEPTH | MUD TYPE | WEIGHT | FV | PV | YP | FL | Ph |
|---|---|---|---|---|---|---|---|
| 0' - 450' | FW Spud Mud | 8.5-9.2 | 35-40 | NC | NC | NC | NC |
| 450' - 2700' | BW | 9.6-10.0 | 29-30 | NC | NC | NC | NC |
| 2700' - 6650' | FW Mud | 8.6-8.8 | 34-40 | 10-14 | 12-18 | <5 | 9-9.5 |

## POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

Drill stem tests are not anticipated.

B) LOGGING

GR-CNL-LDT, GR-DIL-MSFL run from TD (6650') to 2700', GR-Sonic run from TD (6650') to surface. FMI over Delaware Sands of interest ±500' total.

C) CORING

Rotary Sidewall Cores (25) are anticipated.

D) CEMENT

| INTERVAL | AMOUNT SXS | FT OF FILL | TYPE | GALS/SX | PPG | FT/SX |
|---|---|---|---|---|---|---|
| Surface | 370 (100% excess circ to surface) | 450 | Class "C" with 2% CaCl2 and 1/4 ppg Cello-Flake | 6.3 | 14.8 | 1.32 |
| Intermediate | 975 (100% excess w/TOC @ 250') (See stips) | 2700 | Class "C" with Salt | 6.3 | 14.8 | 1.32 |
| Production | 695 (25% excess) | 4200 | Class "C" w/additives to control water loss | 10.6 | 13.2 | 1.92 |

E) DIRECTIONAL DRILLING

No directional services anticipated.

## POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware section.

Est BHP 2000-2400 psi, Est BHT 112 max

Lost circulation is not anticipated in this area.

H2S in this area is less than 100 ppm.

Deviation can be a problem between 500' and 1000' and will be monitored closely.

**POINT 8: OTHER PERTINENT INFORMATION**

A) Auxiliary Equipment

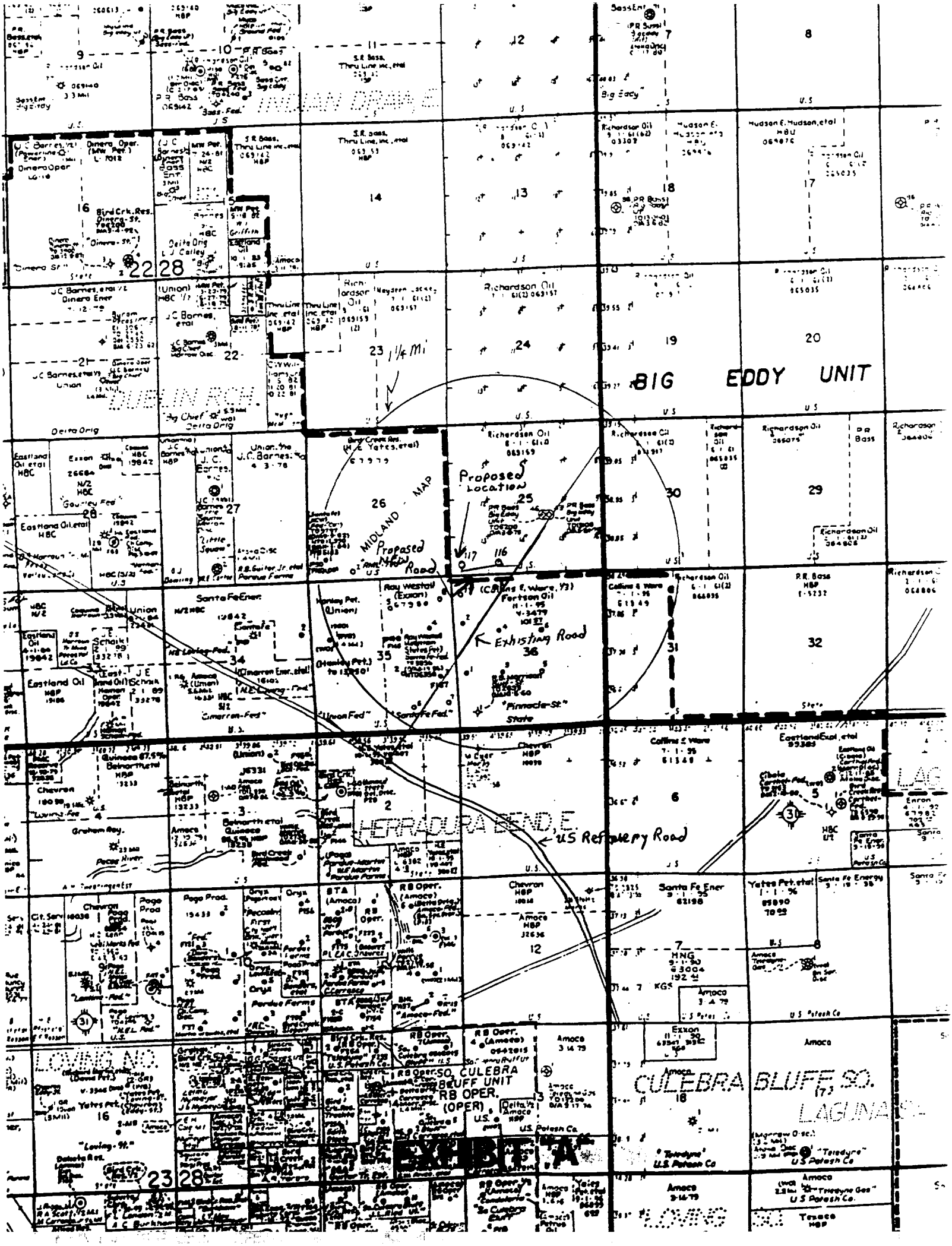
Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

B) Anticipated Starting Date

Upon approval

15 days drilling operations

5 days completion operations


BIG EDDY UNIT
1/4 Mi
MIDLAND MAP
Proposed Location
Proposed Access Road
Existing Road
US Refinery Road
HERRADURA BEND
CULEBRA BLUFF UNIT
RB OPER. (OPER)
CULEBRA BLUFF SO.
LAGUNA
EXHIBIT "A"

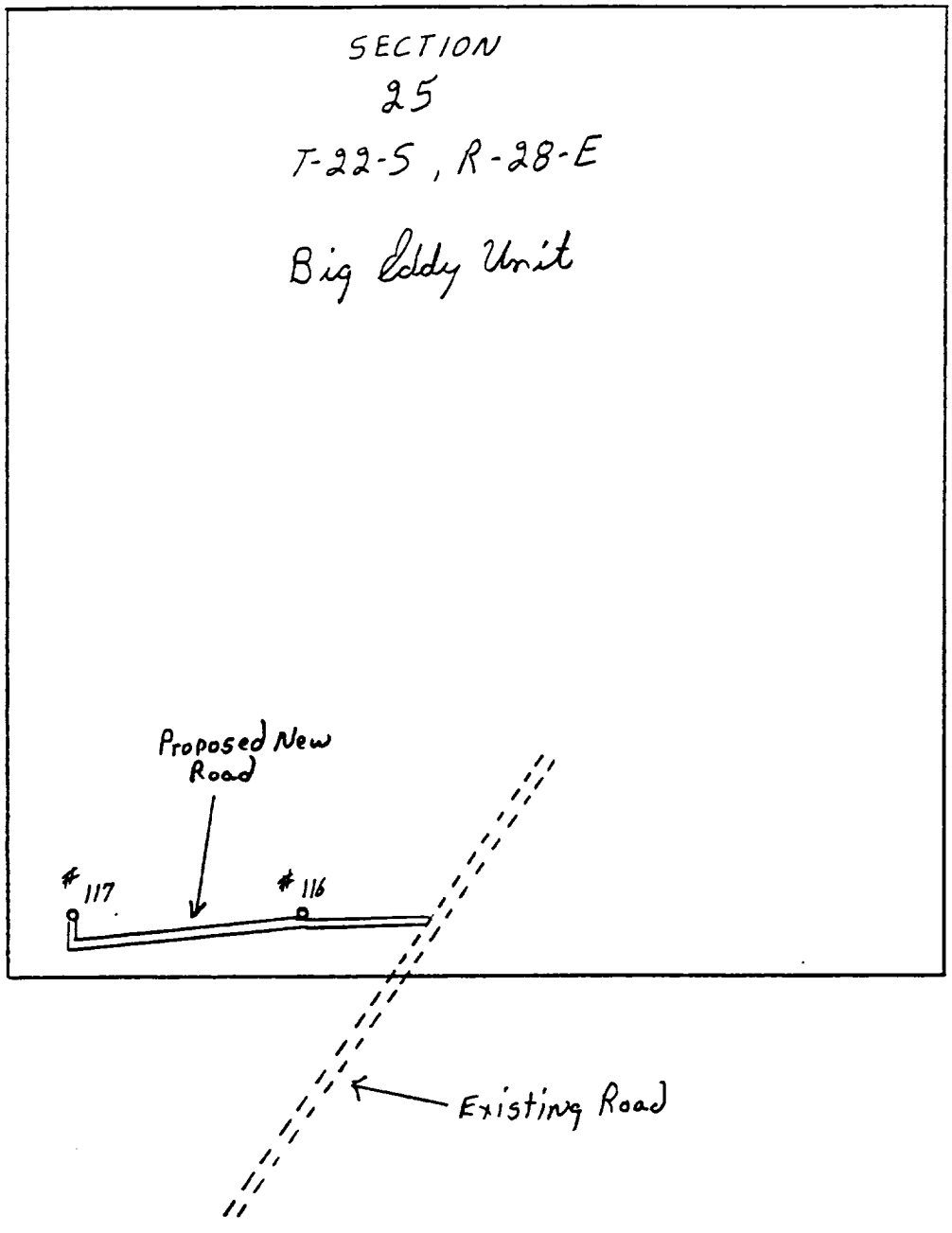

SECTION
25
T-22-S , R-28-E
Big Eddy Unit
Proposed New Road
#117
#116
Existing Road

**EXHIBIT "B"**

Bass Enterprises
Big Eddy Unit #117

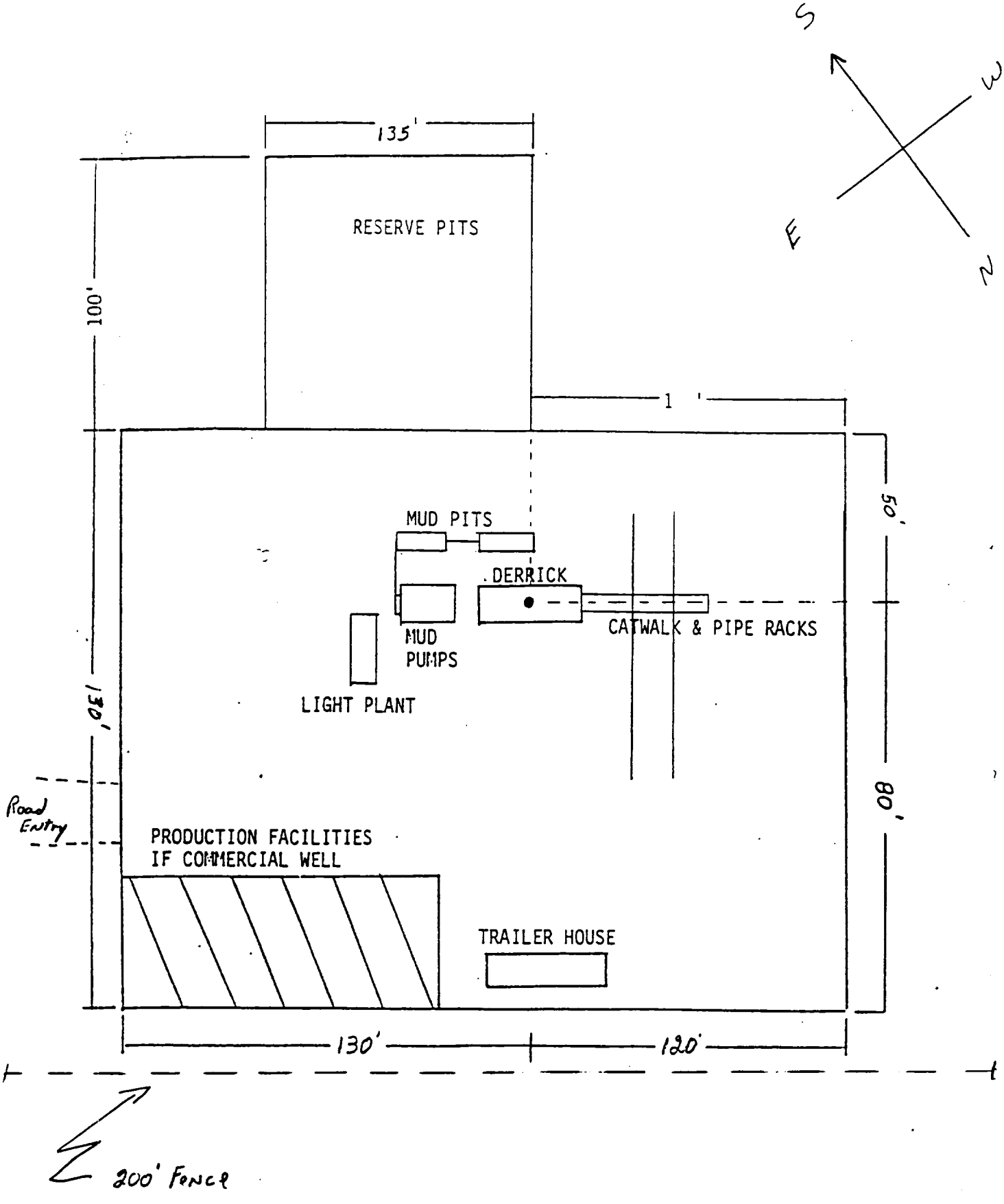



**EXHIBIT "C"**

DATE: 10/14/92

# BIG EDDY UNIT" NO. 117
## SURFACE CASING

| 1st TAPER CASING PARAMETERS | | TOTAL DEPTH | 450 |
|---|---|---|---|
| SIZE (inches) | 11.750 | TOP DEPTH OF TAPER(ft) | 0 |
| WEIGHT (lbs/ft) | 42.00 | BOTTOM DEPTH OF TAPER(ft) | 450 |
| GRADE | H-40 | MAX FLUID GRADIENT (ppg) | 9.5 |
| LONG OR SHORT THREAD | ST&C | AXIAL LOAD FACTOR "X" | 0.000 |
| INT. DIAMETER (inches) | 11.084 | AXIAL LOAD FACTOR "Y" | 1.000 |
| DRIFT DIAMETER (inches) | 10.928 | ANTICIPATED PSI @ SETTING | 221.9 |
| TENSION (lbs) | 307,000 | | |
| COLLAPSE (psi) | 1,070 | | |
| BURST (psi) | 1,980 | NET FOOTAGE = | 450 |

| | | |
|---|---|---|
| TENSION-1.6 design factor<br>TENSION/(DEPTH*WEIGHT) | 16.243 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |
| COLLAPSE-1.0 design factor<br>(COLLAPSE * Y)/(PSI/FT * DEPTH) | 4.823 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |
| BURST-1.0 design factor<br>BURST/(.75*BHP+2.5 #/gal) | 8.808 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |

EXHIBIT D-1

# BIG EDDY UNIT NO. 117
## INTERMEDIATE CASING

1st TAPER CASING PARAMETERS

TOTAL DEPTH 2,700

| | | | |
|---|---|---|---|
| SIZE (inches) | 8.625 | TOP DEPTH OF TAPER(ft) | 0 |
| WEIGHT (lbs/ft) | 24.00 | BOTTOM DEPTH OF TAPER(ft) | 2,500 |
| GRADE | K-55 | MAX FLUID GRADIENT (ppg) | 10 |
| LONG OR SHORT THREAD | ST&C | AXIAL LOAD FACTOR "X" | 0.018 |
| INT. DIAMETER (inches) | 8.097 | AXIAL LOAD FACTOR "Y" | 0.995 |
| DRIFT DIAMETER (inches) | 7.972 | ANTICIPATED PSI @ SETTING | 1297.5 |
| TENSION (lbs) | 263,000 | | |
| COLLAPSE (psi) | 1,370 | | |
| BURST (psi) | 2,950 | NET FOOTAGE = | 2500 |

| | | |
|---|---|---|
| TENSION-1.6 design factor<br>TENSION/(DEPTH*WEIGHT) | 4.059 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |
| COLLAPSE-1.0 design factor<br>(COLLAPSE * Y)/(PSI/FT * DEPTH) | 1.051 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |
| BURST-1.0 design factor<br>BURST/(.75*BHP+2.5 #/gal) | 2.145 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |

2nd TAPER CASING PARAMETERS

| | | | |
|---|---|---|---|
| SIZE (inches) | 8.625 | TOP DEPTH OF TAPER(ft) | 2500 |
| WEIGHT (lbs/ft) | 24.00 | BOTTOM DEPTH OF TAPER(ft) | 2700 |
| GRADE | S-80 | MAX FLUID GRADIENT (ppg) | 10 |
| LONG OR SHORT THREAD | ST&C | AXIAL LOAD FACTOR "X" | 0.000 |
| INT. DIAMETER (inches) | 8.097 | AXIAL LOAD FACTOR "Y" | 1.000 |
| DRIFT DIAMETER (inches) | 7.972 | ANTICIPATED PSI @ SETTING | 1401.3 |
| TENSION (lbs) | 326,000 | | |
| COLLAPSE (psi) | 1,780 | | |
| BURST (psi) | 2,950 | NET FOOTAGE = | 200 |

| | | |
|---|---|---|
| TENSION-1.6 design factor<br>TENSION/(DEPTH*WEIGHT) | 67.917 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |
| COLLAPSE-1.0 design factor<br>(COLLAPSE * Y)/(PSI/FT * DEPTH) | 1.270 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |
| BURST-1.0 design factor<br>BURST/(.75*BHP+2.5 #/gal) | 2.105 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT |

**EXHIBIT D-2**

DATE: 10/15/92

# BIG EDDY UNIT # 117

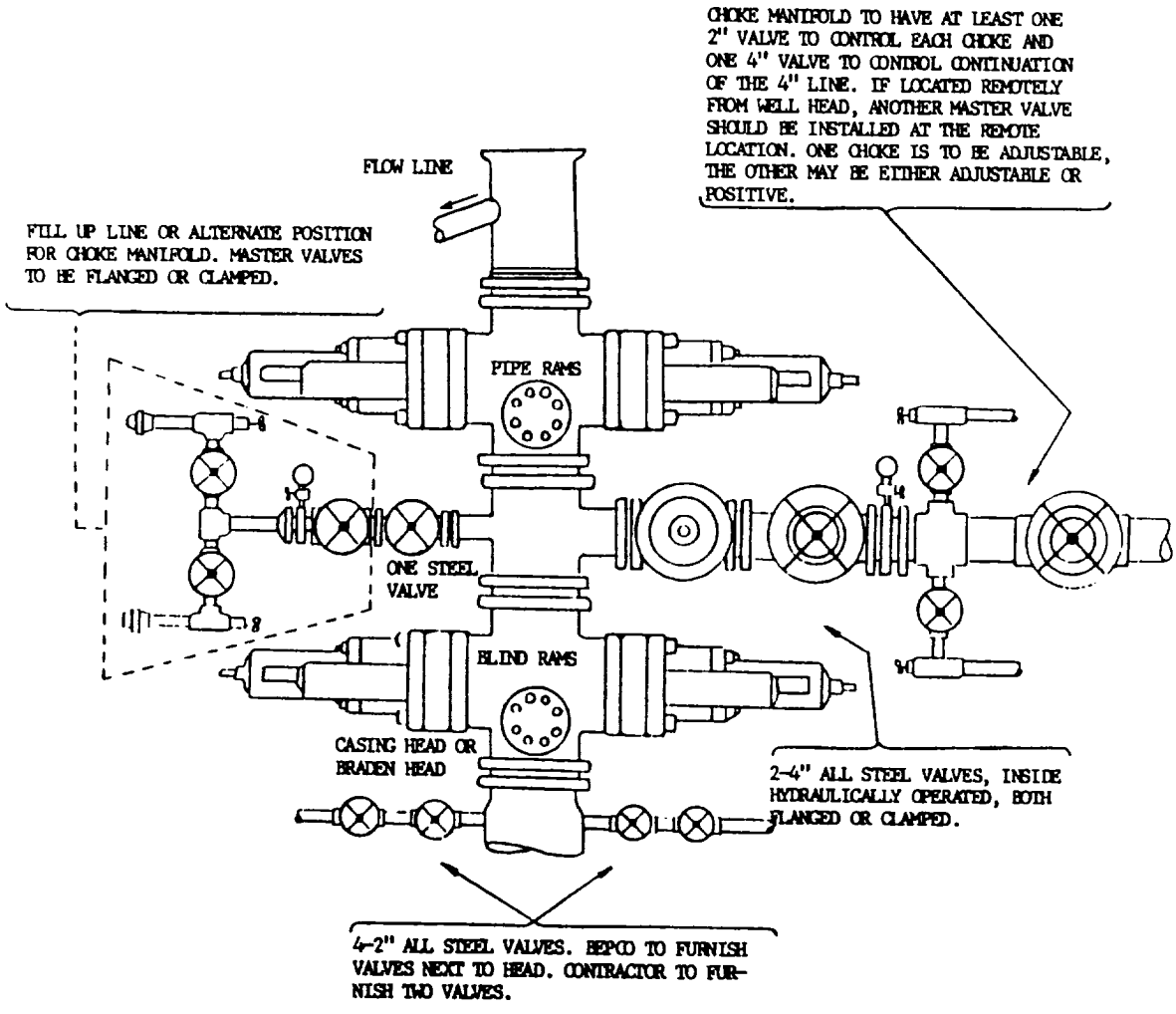
| 1st TAPER CASING PARAMETERS | | TOTAL DEPTH | 6,650 |
|---|---|---|---|
| SIZE (inches) | 5.500 | TOP DEPTH OF TAPER(ft) | 0 |
| WEIGHT (lbs/ft) | 14.00 | BOTTOM DEPTH OF TAPER(ft) | 5,800 |
| GRADE | K-55 | MAX FLUID GRADIENT (ppg) | 10 |
| LONG OR SHORT THREAD | ST&C | AXIAL LOAD FACTOR "X" | 0.077 |
| INT. DIAMETER (inches) | 5.012 | AXIAL LOAD FACTOR "Y" | 0.977 |
| DRIFT DIAMETER (inches) | 4.887 | ANTICIPATED PSI @ SETTING | 3010.2 |
| TENSION (lbs) | 172,000 | | |
| COLLAPSE (psi) | 3,120 | | |
| BURST (psi) | 4,270 | NET FOOTAGE = | 5800 |
| TENSION-1.6 design factor TENSION/(DEPTH*WEIGHT) | 1.823 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT | |
| COLLAPSE-1.0 design factor (COLLAPSE * Y)/(PSI/FT * DEPTH) | 1.013 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT | |
| BURST-1.0 design factor BURST/(.75*BHP+2.5 #/gal) | 1.278 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT | |

| 2nd TAPER CASING PARAMETERS | | | |
|---|---|---|---|
| SIZE (inches) | 5.500 | TOP DEPTH OF TAPER(ft) | 5800 |
| WEIGHT (lbs/ft) | 15.50 | BOTTOM DEPTH OF TAPER(ft) | 6650 |
| GRADE | K-55 | MAX FLUID GRADIENT (ppg) | 10 |
| LONG OR SHORT THREAD | LT&C | AXIAL LOAD FACTOR "X" | 0.000 |
| INT. DIAMETER (inches) | 4.950 | AXIAL LOAD FACTOR "Y" | 1.000 |
| DRIFT DIAMETER (inches) | 4.825 | ANTICIPATED PSI @ SETTING | 3451.4 |
| TENSION (lbs) | 239,000 | | |
| COLLAPSE (psi) | 4,040 | | |
| BURST (psi) | 4,810 | NET FOOTAGE = | 850 |
| TENSION-1.6 design factor TENSION/(DEPTH*WEIGHT) | 18.140 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT | |
| COLLAPSE-1.0 design factor (COLLAPSE * Y)/(PSI/FT * DEPTH) | 1.171 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT | |
| BURST-1.0 design factor BURST/(.75*BHP+2.5 #/gal) | 1.394 | DESIGN EXCEEDS SAFTEY FACTOR REQUIREMENT | |

**EXHIBIT D 3**

# DIAGRAM 1

## 3000 psi BOP STACK




THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

A. Conditions may be met by either (1) an annular blowout preventer on top and blind rams below with a choke spool between them, (2) Pipe rams on top and blind rams below with a choke spool between them, (3) A dual blowout preventer with pipe rams on top and blind rams below with a side outlet between the rams at least four inches diameter.

B. Openings between rams to be flanged, studded or clamped.

C. All connections from operating manifold to preventers to be all steel hose or tube a minimum of one inch in diameter.

D. The available closing pressure shall be at least 15% in excess of that required with sufficient volume to operate (close, open, and re-close) the preventers.

E. All connections to and from preventers to have a pressure rating equivalent to that of the BOPs.

F. Manual controls to be installed before drilling cement plug.

G. Kelly cock to be installed on kelly.

H. Inside blowout preventer to be available on rig floor.

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BEPCO III

TWO CLOSURE HYDRAULIC BLOWOUT PREVENTERS