GOURLEY FEDERAL COM. #1
660' FNL, 1980' FEL, SEC 28, T22S, R28E
EDDY COUNTY, NEW MEXICO

1. The geologic name of the surface formation is: Recent

2. The estimated tops of important geologic markers are:

| | |
|---|---|
| Castile | 2580' |
| Bell Canyon | 2620' |
| Cherry Canyon | 3330' |
| Brushy Canyon | 4500' |
| Dean | 9400' |
| Wolfcamp | 9840' |
| Strawn | 11090' |
| Atoka | 11180' |
| Morrow | 11430' |

3. The estimated depths at which anticipated water, oil, gas or other mineral bearing strata are expected to be encountered are:

Water - Surface water above 350'
Gas and Oil - Wolfcamp, Strawn, Atoka, and Morrow are all possible hydrocarbon bearing zones.

4. The proposed casing program including size, grade, and weight per foot of each string (and whether new or used) is as follows:

| String | Size/Weight/Grade | Condition | Depth Interval |
|---|---|---|---|
| Conductor | 30"/ | New | 0 - 40' |
| Surface | 20"/94 ppf/K-55 STC | New | 0 - 350' |
| Intermediate* | 13-3/8"/61 ppf/K-55 BTC | New or 2nd Cl | 0 - 2700' |
| Production/ Protection* | 9-5/8"/43.5 ppf/P110 LTC | New or 2nd Cl | 0 - 2800' |
| | 9-5/8"/43.5 ppf/S00 95 LTC | New or 2nd Cl | 2800 - 9400' |
| | 9-5/8"/47.0 ppf/S00 95 LTC | New of 2nd Cl | 9400 - 10800' |
| Liner* | 7-5/8"/33.7 ppf/S00 95 FL4S | New or 2nd Cl | 10300 - 11500' |
| Liner* | 5"/15.0 ppf/S00 95 LTC | New or 2nd Cl | 11000 - 12600' |

*Casing string run will be at least as strong as string shown. Actual pipe run may be different depending on casing available at time.

5. Exxon's minimum specifications for pressure control equipment is as follows:

A. Casinghead equipment:

"A" Section: Flanged type 3000 psi WP for 13-3/8" x 9-5/8" casing program.
"B" Section: Flanged type 5000 psi WP for 9-5/8" x possible 7-5/8" casing program.
Tubinghead: Flanged type 10,000 psi WP for dual 2-3/8" tubing strings.

B. Blowout preventers: Refer to attached drawings and equipment listings for BOP stacks and choke manifolds titled Types IIB, IIIA, and VI.

C. BOP control unit: Unit will be hydraulically operated and have at least three and as many as five control stations, as required for operation.

D. Testing: When installed on 13-3/8" and 9-5/8" casings the BOP stack will be tested at a low pressure (200-300 psi) and to at least 2000 psi. At approximately weekly intervals, the stack will be tested to 1000 psi. An operational test of the BOPs is to be performed on each round trip (but not more than once each day); the annular and pipe ram preventers will be closed on drill pipe, and the blind rams will be closed while pipe is out of the stack.

6. The types and characteristics of the drilling fluids to be employed are:

| Depth Interval (FT) | Mud Type | Mud * Wt (ppg) | Funnel Vis sec/qt | PV cp | WL cc | Solids % | YP #/100 ft$^2$ | pH |
|---|---|---|---|---|---|---|---|---|
| 0 - 350 | FW spud mud | ---------- | Uncontrolled | ---------- | | | | |
| 350 - 3000 | BW | 10.0 | 28 | - | - | - | - | 10.5+ |
| 3000 - 9000 | Cut BW | 9.8 | 28 | - | - | - | - | 10.5+ |
| 9000 - 10800 | BWM | 10.0-10.2 | 38-40 | 7-15 | - | 12 | 10-20 | 10.5+ |
| 10800 - 11500 | BWM | 13.0 | 55-60 | 12-26 | 10 | 20 | 7-17 | 10.5+ |
| 11500 - TD | BWM | 11.6 | 38-46 | 9-21 | 10 | 15 | 9-18 | 10.5+ |

*Mud weight and viscosity will be maintained at levels compatible with operating conditions. Not less than 200 bbls of fluid will be in pits and adequate barite for weight control will be stocked on location.

7. Auxiliary control equipment will be available as follows:

A. Kelly cocks - Upper and lower will be installed on the kelly.

B. Safety Valve - Full opening ball type to fit each type and size of drill pipe in use will be available on the rig floor, in open position for stabbing into the drill pipe when the kelly is not in the string.

C. Pit volume totalizer to monitor mud pits - Surface casing to TD.

D. Trip tank to insure that the hole is full and takes the proper amounts of fluid on trips - Surface casing to TD.

E. A float at the bit will not be used unless conditions dictate.

8. The testing and logging program for the well is as follows:

2600' to TD - DLL, MSFL
2600' to TD - FDC, CNL, GR, CAL
0 to 2600' - CNL, GR
(9840') Wolfcamp - DST hydrocarbon shows
(11180') Atoka - DST hydrocarbon shows
2500' to TD - 10' drill cutting samples
9800' to TD - Mud logger

Proposed completion program and equipment set ups for each possible interval are detailed on separate sheets.

9. No abnormal temperatures or $H_2S$ hazards are expected at this location or during drilling of this well. Potential pay zones do not contain either of these hazards in comparable offset field wells.

Abnormal pressure is expected in the Strawn-Atoka sequences beginning at about 11000'. This hazard will be controlled through the use of weighted muds, pressure control systems and the setting of a liner prior to drilling out into lower pressured zones at deeper depths.

10. It is anticipated that the drilling operations will begin on Dec. 1, 1979 and be completed in approximately 78 days. Completion operations will then commence and should take approximately 32 days.

MJW/clp
10/29/79

GOURLEY FEDERAL COM. #1
PLANNED COMPLETION PROCEDURE

I. Morrow Sandstone

A. Perforate through tubing with approximately 1000 psi differential pressure into the wellbore in a mild clay stabilized acid with iron sequestering agents.

B. Acidize and/or fracture stimulate as required (estimate 8000 gallons acid with 300 scf/bbl nitrogen).

I. Atoka Sandstone

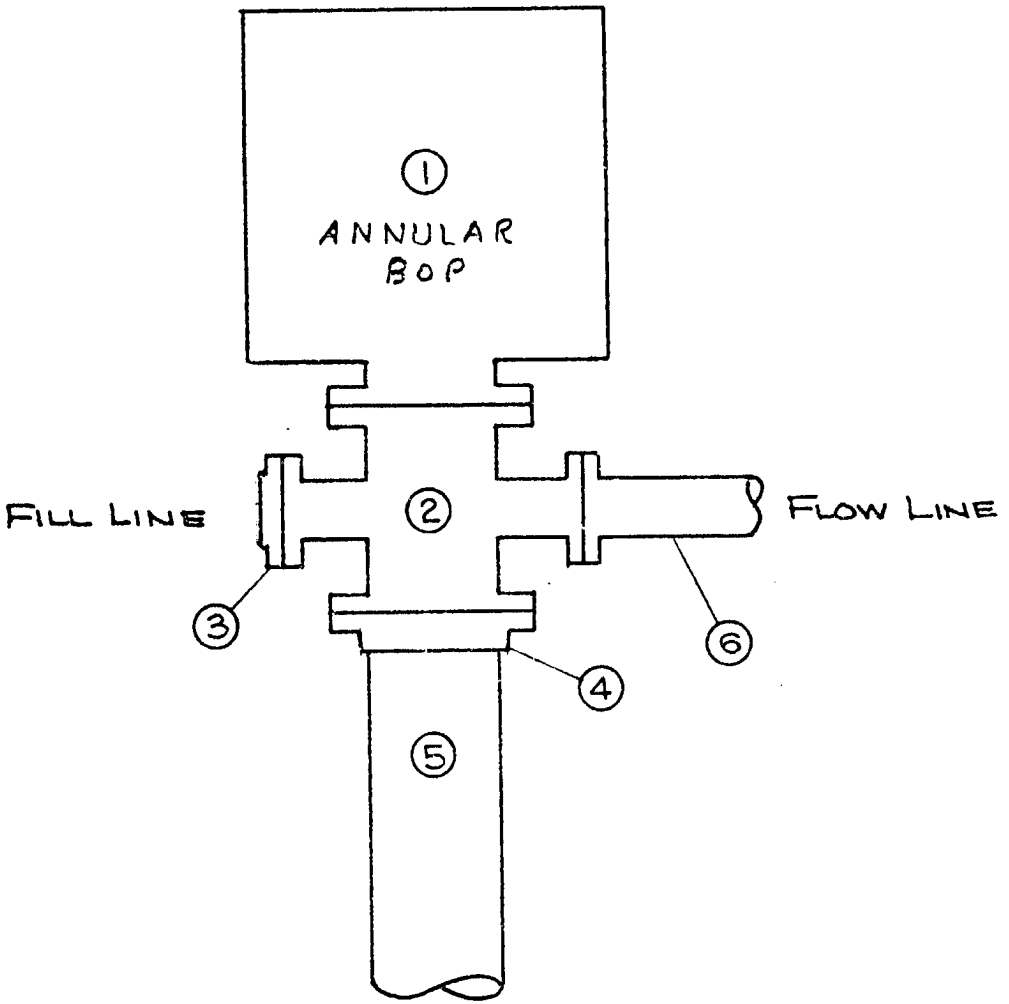
A. Perforate as above.

B. Stimulate as above and as required for this specific interval. (estimate 8000 gallons acid with 300 scf/bbl nitrogen).

MJW/clp

# MIDLAND DRILLING ORGANIZATION
# BLOWOUT PREVENTER SPECIFICATION
# TYPE VI

20" SURFACE &
30" CONDUCTOR




## EQUIPMENT FOR FLOW DIVERSION

1. HYDRIL OR SHAFFER
2. FLANGED SPOOL
3. THREADED FLANGE
4. SLIP-ON OR THREADED FLANGE
5. CONDUCTOR
6. FLOWLINE



9/15/73

B. NOUT PREVENTER SPECIFICATION
EQUIPMENT DESCRIPTION

TYPE III-A
9-5/8" CASING

All equipment shall be at least 3,000 psi WP or higher unless otherwise specified.

1. Rotating type BOP, 3,000 psi minimum WP.
2. Hydril or Shaffer bag type preventer.
3. Ram type pressure operated preventer with pipe rams. Use large size pipe rams when drilling with a tapered string. Use blind rams when drilling with a tapered string and formation is overbalanced.
4. Flanged spool with two 4-inch side outlets.
5. 4-inch flanged plug or gate valve.
6. 4-inch flanged tee.
7. 4-inch flanged plug or gate valve.
8. 4-inch flanged pressure operated gate valve.
9. Ram type pressure operated preventer with blind rams. Use small size pipe rams when drilling with a tapered drill string.
10. Ram type pressure operated preventer with pipe rams. Use large size pipe rams when drilling with tapered string.
11. Flanged type casing head (furnished by Exxon).
12. 2-inch flanged plug or gate valves (furnished by Exxon).
13. 2-inch threaded flange (furnished by Exxon).
14. 2-inch tapped bull plug (furnished by Exxon).
15. Needle valve (furnished by Exxon).
16. 4-inch flanged spacer spool.
17. 4-inch by 2-inch flanged cross.
18. 2-inch flanged plug or gate valve.
19. 2-inch flanged adjustable choke. Replace with flanged 2-inch tee if a remote controlled choke is installed downstream.
20. 4-inch x 4-inch spacer flange w/1-inch tap.
21. 1-inch x 4-inch XXH nipple.
22. 1-inch valve.
23. Cameron (or equal.) 0-6000 psi gage.
24. 2-inch flanged spacer spool.
25. 6-inch or 4-inch pipe, 300' to pit, anchored.
26. 2-1/2-inch line to separator.
27. 2-inch weld neck flange.
28. 2-1/2-inch x 2-inch sch. 80 concentric weld reducer.
29. 2-1/2-inch pipe.
30. Pressure operated adjustable choke (furnished by Exxon).
31. 2-1/2-inch S.E. gate valve.
32. 2-1/2-inch tee.
33. 2-1/2-inch pipe, 300' to pit, anchored.
34. 2-inch threaded flange (EUE) or weld neck flange w/Weco Fig. 1502 2" 15,000 psi free flow buttress weld wing union.
35. 4-inch flanged tee.
36. 3-inch (minimum) hose. (Furnished by Exxon).
37. Trip tank. (Furnished by Exxon).
38. 6-inch 3,000 psi minimum WP manual or pressure operated gate valve.

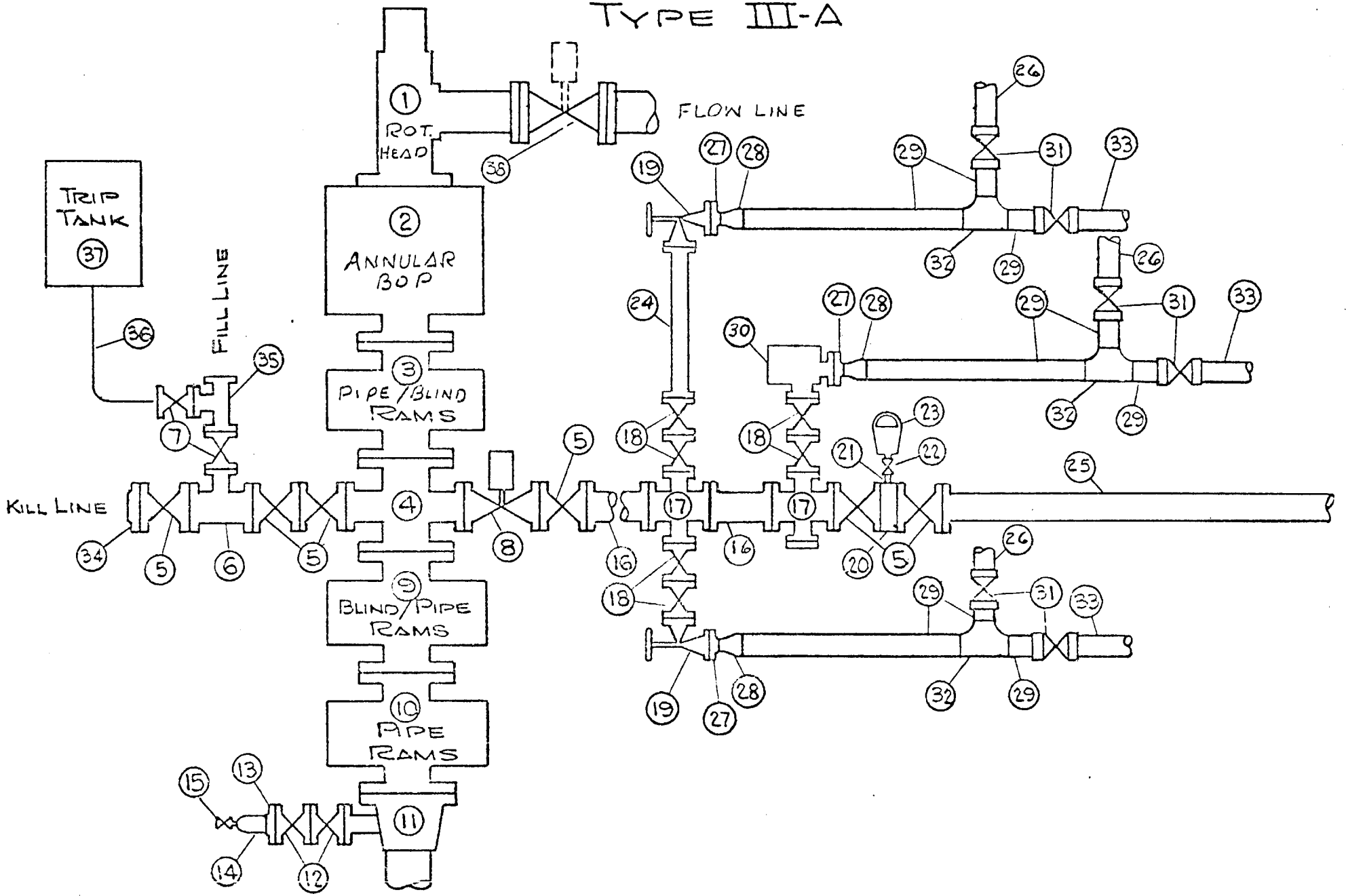
NOTES:

1. Items 9 and 10 may be replaced with double ram type preventer. Any side outlets shall be double valved or blind flanged.
2. Only type U, LWS and QRC ram type preventers with secondary seals are acceptable.
3. The two valves next to the stack on the kill and fill line to be closed unless string is being pulled.
4. Kill line is for emergency use only. This connection shall not be used for filling.
5. Replacement rams for each size drill pipe in use and blind rams shall be on location at all times.

# MIDLAND DRILLING ORGANIZATION

## BLOWOUT PREVENTER SPECIFICATION

## TYPE III-A






9/15/73

BLOWOUT PREVENTER SPECIFICATION
EQUIPMENT DESCRIPTION

TYPE II-B

13-3/8" CASING

All equipment should be at least 3,000 psi WP or higher unless otherwise specified.

1. Rotating BOP.
2. Hydril or Shaffer bag type preventer.
3. Ram type pressure operated blowout preventer with blind rams.
4. Flanged spool with one 4-inch and one 2-inch (minimum) outlet.
5. 2-inch (minimum) flanged plug or gate valve.
6. 2-inch by 2-inch by 2-inch (minimum) flanged tee.
7. 4-inch pressure operated gate valve.
8. 4-inch flanged gate or plug valve.
9. Ram type pressure operated blowout preventer with pipe rams.
10. Flanged type casing head with one side outlet (furnished by Exxon).
11. 2-inch threaded (or flanged) plug or gate valve (furnished by Exxon). Flanged on 5000# WP, threaded on 3000# WP or less.
12. Needle valve (furnished by Exxon).
13. 2-inch nipple (furnished by Exxon).
14. Tapped bull plug (furnished by Exxon).
15. 4-inch flanged spacer spool.
16. 4-inch by 2-inch by 2-inch by 2-inch flanged cross.
17. 2-inch flanged plug or gate valve.
18. 2-inch flanged adjustable choke.
19. 2-inch threaded flange.
20. 2-inch XXH nipple.
21. 2-inch forged steel 90° Ell.
22. Cameron (or equal.) threaded pressure gage.
23. Threaded flange.
24. 6-inch manual or pressure operated gate valve.
35. 2-inch flanged tee.
36. 3-inch (minimum) hose. (Furnished by Exxon).
37. Trip tank. (Furnished by Exxon).
38. 2-inch flanged plug or gate valve.
39. 2-1/2-inch pipe, 300' to pit, anchored.
40. 2-1/2-inch SE valve.
41. 2-1/2-inch line to steel pit or separator.

NOTES:

1. Items 3, 4 and 9 may be replaced with double ram type preventer with side outlets between the rams.

2. The two valves next to the stack on the fill and kill line to be closed unless drill sting is being pulled.

3. Kill line is for emergency use only. This connection shall not be used for filling.

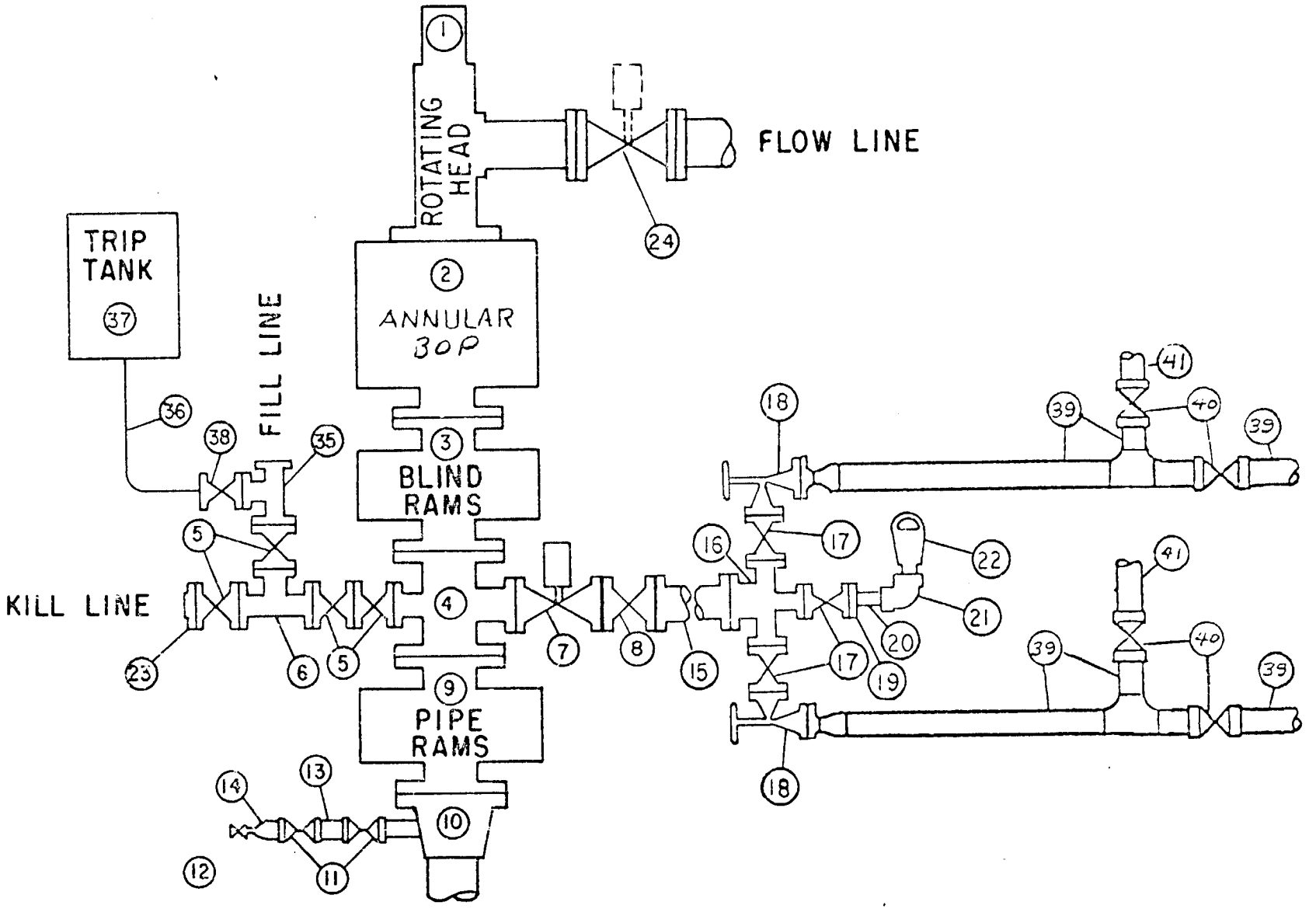
4. Replacement pipe rams and blind rams shall be on location at all times.

5. Only type U, LWS and QRC ram type preventers with secondary seals are acceptable for 5000 psi WP and higher BOP stacks.

6. Type E ram-type BOP's with factory modified side outlets may be used on 3000 psi and lower WP BOP stacks.

MIDLAND DRILLING ORGANIZATION.

# BLOWOUT PREVENTER SPECIFICATION
## TYPE II - B






Rev. 11-1-77