MINIMUM BLOWOUT PREVENTER EQUIPMENT REQUIREMENTS

(ATTACHME NO. _____ TO BID SHEET AND W . SPECIFICATIONS)

3000 PSI WORKING PRESSURE

TO BE INSTALLED AFTER SETTING 13 3/8 INCH CASING

No.	Item	Min. Size	Type	Press. Rating	Furnished By Contr.	
1.	Flow Line	8"	Weld	125		
2.	Fill Up Line	2"	Thd or Weld	125		
3.	Bell Nipple	12"	Weld	125		
4.	Rotating Head					
5.	Hydraulically Operated Gate Valve					
6.	Blooie Line					
7.	Bag Preventer	12"	Flanged	3000		
8.	Hydraulically Operated Ram Preventer					
9.	Drilling Spool with 2 in. and 2 in. Side Outlets	12"	Flanged	3000		
10.	Preventers Side Outlets _____ in. and _____ in. Use as alternate to No. 9 above.					
11.	Gate Valve	2"	Flanged	3000		
12.	Hydraulically Operated Gate Valve (HCR Valve)					
13.	Line to Choke Manifold	2"	Flanged	3000		
14.	Gate Valve	2"	Flanged	3000		
15.	Hydraulically Operated Gate Valve					
16.	Check Valve					
17.	Drilling Spool with _____ in. and _____ in. Side outlets					
18.	Preventer Side Outlets _____ in. and _____ in.					
19.	Gate Valve					
20.	Hydraulically Operated Gate Valve					
21.	Relief Line					
22.	Wear Flange or Bushing					
23.	Kill Line to accessible location approx. _____ ft. from rig. (MINIMUM DISTANCE)					
24.	Gate Valve					
25.	Kill Line to rig pump manifold	2"	Flanged	3000		
26.	_____ Way Cross, _____ in. x _____ in. x _____ in x _____ in.					
27.	Tee, in. x in. x in.					
28.	Bull Plug					
29.	Casing Spool					
30.	Gate Valve					
31.	Casing Spool					
32.	Gate Valve					
33.	Pressure Gauge					
34.	Casing Head					
35.	Gate Valve					
36.	Gate Valve					

Line sizes to be inside diameter.

Valves, spools and preventers sizes to be bore dimension.

EXHIBIT F

AMERIND OIL CO.
HAGER NO. 1
McVay Drilling Company Rig No. 8
Lea County, New Mexico

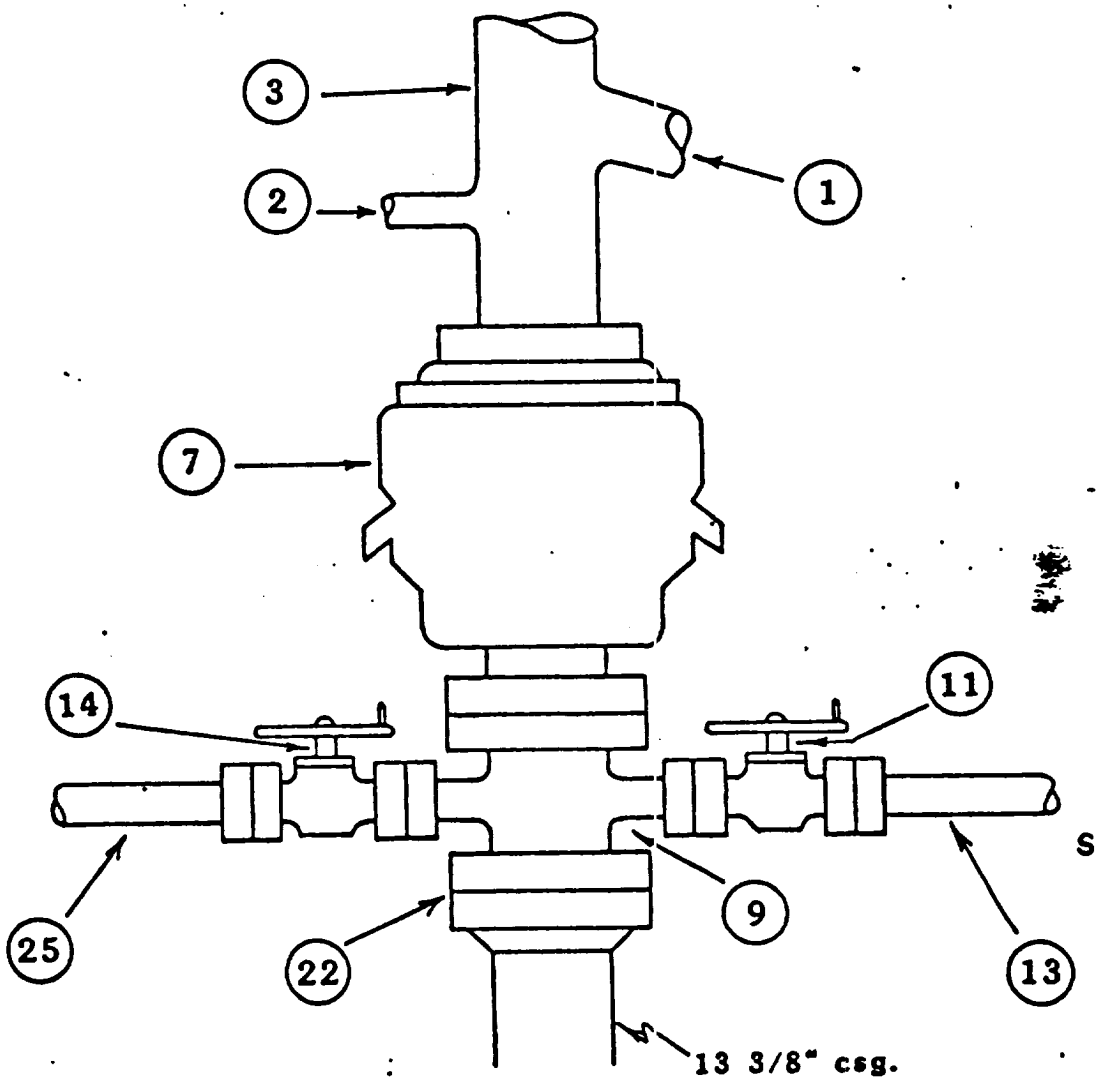
AUXILIARY EQUIPMENT TO BE FURNISHED BY CONTRACTOR OR PZL AS CHECKED (X).

Item	Furnished By	
	Contr.	
Automatic Accumulator and Master Control. See below for details.		
Remote set of closing unit controls with 2 stations.		
Bag Preventer Pressure Regulating Control Valve on remote station		
Kelly Cocks: Upper - Make _____ Press. Rating 3000 Full Opening		
Lower - Make _____ Press. Rating 3000 Full Opening		
Inside Blowout Preventer: Gray/Shaffer _____ PSI WP		
Drop-In (Hydrill) _____ PSI WP		
Full Opening Ball Valve for each size drill pipe in use (Extra Lower Kelly Valves) 3000 PSI WP (Full Opening)		
Circulating Head for each type and size of tool joint in use		
_____ Ft. of 2 in. steel hose (Chickson) _____ PSI WP		
Blind/Shear Rams		

ACCUMULATOR AND MASTER CONTROL SPECIFICATIONS

REQUIREMENTS CHECKED (X) SHALL APPLY.

x	Item
X	Accumulator Volume 80 gal., 3000 PSI WP Unit
X	Power for Pumps: Air X Air and Electric
X	Sufficient Capacity to Recharge Complete Unit in 6 Minutes Pumps Capacity _____ Gal/Min. at _____ PSI
X	Number of Control Valves Required (at lease 3 for rig floor and remote units)
X	Pressure Regulator Valve to control pressure on bag preventer
X	Control Valves on both Master and Remote Control properly labeled with name of respective function and open and closed clearly marked.
X	Blind Ram control on both Master and Remote Control protected to avoid accidental activation. These control handles are not to be locked in position, however, as this could prevent activation from the remote station.
X	Hydraulic Lines from Accumulator to Hydraulic Device to be 0.9 in. minimum ID and have 3000 PSI minimum working pressure.
X	Pressure Gauges showing accumulator pressure, manifold pressure, pressure on bag preventer and air supply pressure on both master and remote control stations.
	-Bottled Nitrogen _____ Bottles _____ ft. each at _____ PSI manifold to bypass accumulator and operate BOP directly.


3
2
1
7
14
11
EXTEND
BEYOND
SUBSTRUCTUR
25
22
9
13
13 3/8" csg.

CHECK LIST AND DRAWING (ATTACHED)

MINIMUM BLOWOUT PREVENTER EQUIPMENT REQUIREMENTS

(ATTACHMENT NO. _____ TO BID SHEET AND WELL SPECIFICATIONS)

3000 PSI WORKING PRESSURE

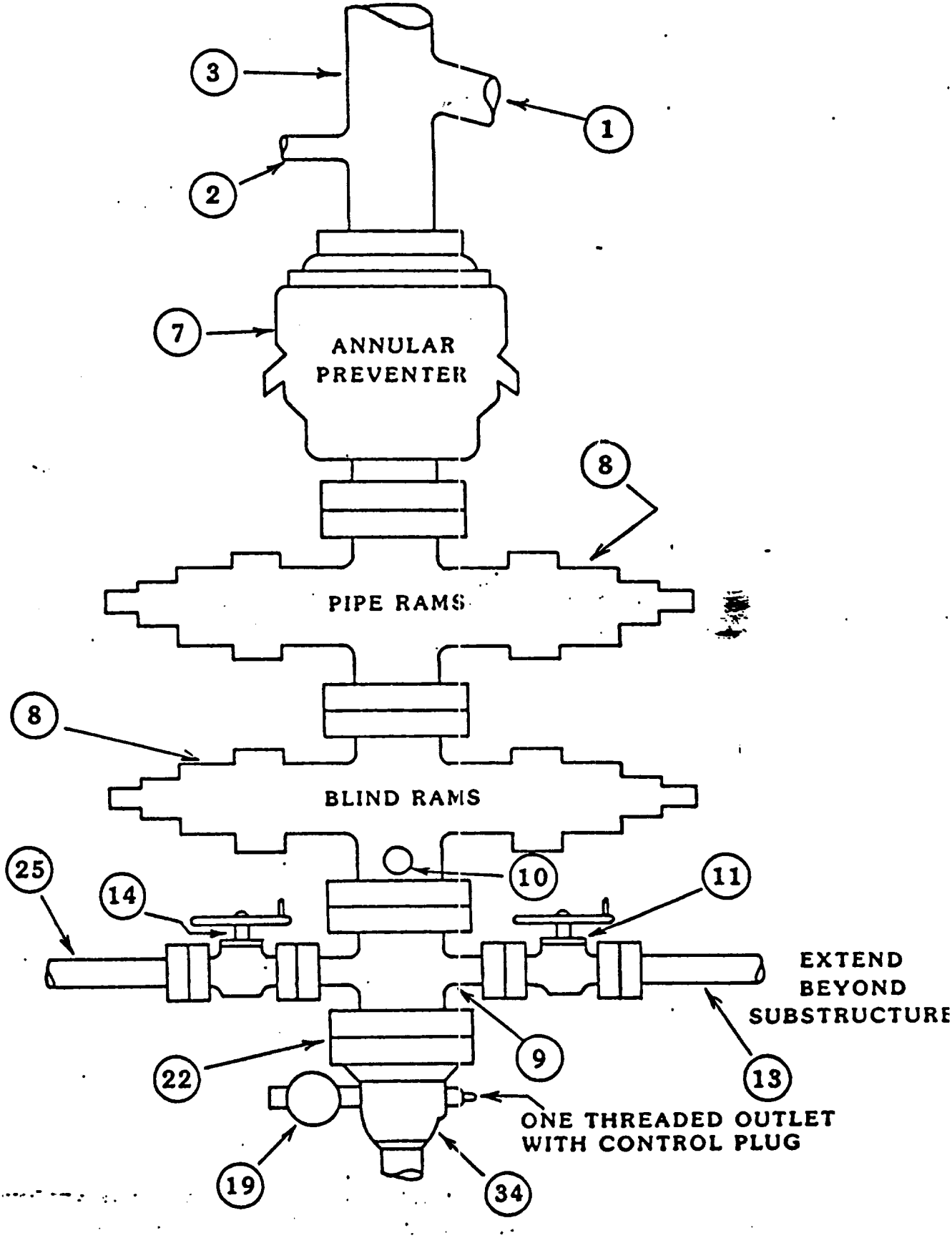
TO BE INSTALLED AFTER SETTING 8 5/8 INCH CASING

No.	Item	Min. Size #	Type	Press. Rating	Furnished By Contr.	
1.	Flow Line	8"	Weld	125		
2.	Fill Up Line	2"	Thd or Weld	125		
3.	Bell Nipple	8"	Weld	125		
4.	Rotating Head					
5.	Hydraulically Operated Gate Valve					
6.	Blooie Line					
7.	Bag Preventer	8"	Flanged	3000		
8.	Hydraulically Operated Ram Preventer					
9.	Drilling Spool with 2 in. and 2 in. Side Outlets	8"	Flanged	3000		
10.	Preventers Side Outlets 2 in. and 2 in. Use as alternate to No. 9 above.	8"	Flanged	3000		
11.	Gate Valve	2"	Flanged	3000		
12.	Hydraulically Operated Gate Valve (HCR Valve)					
13.	Line to Choke Manifold	2"	Flanged	3000		
14.	Gate Valve	2"	Flanged	3000		
15.	Hydraulically Operated Gate Valve					
16.	Check Valve					
17.	Drilling Spool with _____ in. and _____ in. Side outlets					
18.	Preventer Side Outlets _____ in. and _____ in.					
19.	Gate Valve	2"	Flanged	3000		
20.	Hydraulically Operated Gate Valve					
21.	Relief Line					
22.	Wear Flange or Bushing					
23.	Kill Line to accessible location approx. _____ ft. from rig. (MINIMUM DISTANCE)					
24.	Gate Valve					
25.	Kill Line to rig pump manifold	2"	Flanged	3000		
26.	_____ Way Cross, _____ in. x _____ in. x _____ in x _____ in.					
27.	Tee, in. x in. x in.					
28.	Bull Plug					
29.	Casing Spool					
30.	Gate Valve					
31.	Casing Spool					
32.	Gate Valve					
33.	Pressure Gauge					
34.	Casing Head	8"	Flanged	3000		
35.	Gate Valve					
36.	Gate Valve					

Line sizes to be inside diameter.

Valves, spools and preventers sizes to be bore dimension.

EXHIBIT G


3
1
2
7
ANNULAR
PREVENTER
8
PIPE RAMS
8
BLIND RAMS
25
14
10
11
EXTEND
BEYOND
SUBSTRUCTURE
22
9
13
ONE THREADED OUTLET
WITH CONTROL PLUG
19
34

GENERAL EQUIPMENT SPECIFICATIONS & INSTALLATION INSTRUCTIONS

1. All connections on the BOP stack shall be flanged or bolted ring clamp of comparable rating.

2. Flanges to be API 6B or 6BX and ring gaskets shall be API RX or BX.

3. All drilling spools are to be forged steel construction. Spools constructed from pipe are not acceptable.

4. The fill-up line shall not be connected to any side outlet below the uppermost preventer.

5. Replacement parts for the BOP equipment shall be obtained from the original manufacturer.

6. BOP stack shall be properly braced to rig substructure by turnbuckled lines or rods.

7. Connections on the kill line, choke lines and choke manifold:

   [X] May be threaded, welded, flanged or bolted ring clamp.

   [ ] Shall be either flanged or bolted ring clamp of comparable rating.

8. All gate valves must be equipped with hand wheels.

9. Choke and kill lines are to be seamless steel pipe having a minimum working pressure that is based on 80% of the API minimum internal yield pressure rating of that pipe.

10. The kill line shall not be used as a fill-up line.

11. All choke lines must be as straight as possible with no abrupt bends or turns.

12. All choke lines are to be securely anchored.

13. Steel hose (chicksons) are not to be used in any part of the choke manifold.

14. The accumulator unit and master set of controls shall be located at ground level, a minimum of 75 ft. from the wellbore. The remote set of controls is to be located near the drillers position on the rig floor.

15. All hydraulic lines between the accumulator and any hydraulically operated device shall be of seamless steel pipe and swing joints. Rubber hoses are not permitted. Short lengths of high pressure hose are permitted in lines connecting the remote station to the valve actuating cylinders on the master control unit.

16. Housing and heating should be provided for accumulator, blowout preventers and choke manifold where conditions warra

17. All drill string blowout prevention equipment must be maintained in good operating condition and stored in an orderly condition on the rig floor.

18. Operating wrenches for the drill string BOP equipment are to be kept in full view near the driller's position.

19. Contractor to make no connection to casing head side outlets except by orders of PZL.

20. Keep on rig:

    (a) One spare set of pipe rams, complete with packing rubbers for each size of drill pipe in use.

    (b) Replacement parts for all manual adjustable chokes along with the necessary tools for changing parts.

21. When a rotating head is in use on the BOP stack, dresser sleeve connections in the flowline are not permitted.

22. Hand wheels and extensions (outside the substructure) shall be installed for operating the locking screws on all ram preventers and hydraulically operated gate valves on the choke and kill lines. If the installation of these extensions create a safety hazard or for some avoidable reason cannot be properly installed, a hand crank or wrench should be readily available to operate the locking screws.

23. When a wear bushing is required, only the lock-in type shall be used.

24. Waterlines and valves shall be connected and ready for use on all internal combustion engine exhausts.

25. The cellar is to be kept jetted and the preventer stack and choke manifold washed down at all times.

26. All valves are to be lubricated at regular intervals.

27. All valves are to be clearly identified as being open or closed.

28. Proper alignment of the rig with the center line or the BOP stack and casing shall be maintained at all times.

29. All flange bolts on the stack, kill line and choke manifold should be tightened at least once each week.

CHECKLIST AND DRAWING

MINIMUM CHOKE MANIFOLD EQUIPMENT REQUIREMENTS

(ATTACHMENT ... TO BID SHEET AND WELL SPECIFICATIONS)

3000 PSI WORKING PRESSURE

TO BE INSTALLED AFTER SETTING 8 5/8 INCH CASING

No.	Item	Min. Size	Type	Press. Rating	Furnished By Contr.	
1.	Choke Line from BOP stock (same as Item No. 13 on Attachment 2	2"	Weld or Flanged	3000		
2.	4 Way Cross, in. x in. x in. x in.	2"	Flanged	3000		
3.	Gate Valve	1 13/16"	Flanged	3000		
4.	Pressure Sensor					
5.	Pressure Gauge	1"	Threaded	3000		
6.	Gate Valve	2"	Flanged	3000		
7.	Gate Valve	2"	Flanged	3000		
8.	Gate Valve	2"	Flanged	3000		
9.	Tee x in. x in x in.					
10.	Way Cross, in. x in x in. x in.					
11.	Adjustable Choke	2"	Flanged	3000		
12.	Positive Choke	2"	Flanged	3000		
13.	Hydraulically Operated Choke					
14.	Forged Extension Spool					
15.	Hydraulically Operated Gate Valve					
16.	Hydraulically Operated Gate Valve					
17.	Line to Low Pressure Header	2"	Weld or Thread	1000		
18.	Line to Low Pressure Header	2"	Weld or Thread	1000		
19.	Line to Burn Pit	2"	Weld or Thread	1000		
20.	Line to Burn Pit	2"	Weld or Thread	1000		
21.	Line to Reserve Pit	2"	Weld or Thread	1000		
22.	Line to Mud Pit	2"	Weld or Thread	1000		
23.	Line to Mud/Gas Separator					
24.	Header					
25.	Header					
26.	Gate Valve	2"	Flanged	1000		
27.	Gate Valve	2"	Flanged	1000		
28.	Gate Valve	2"	Flanged	1000		
29.	Gate Valve	2"	Flanged	1000		
30.	Gate Valve					
31.	Gate Valve					
32.	Base for Choke Manifold					
33.	Block Tee, in. x in. x in. x					
34.	Tee 2 in. x 2 in. x 2 in. x	2"	Flanged	1000		
35.	Tee 2 in. x 2 in. x 2 in. x	2"	Flanged	1000		
36.	Operating Consoles for Hydraulic Choke					
37.	Line to Low Pressure Header					
38.	Line to Reserve Pit					
39.	Line to Mud/Gas Separator					
40.	Line to Mud/Gas Separator					
41.	Line to Burn Pit					
42.	Forged Extension Spool					
43.	Way Cross, in. x in. x in. x in. x					
44.	Gate Valve					
45.	Gate Valve					
46.	Gate Valve					

Line size to be inside diameter.

Valve, Spools and preventers to be bore dimension.

Header size to be outside diameter.

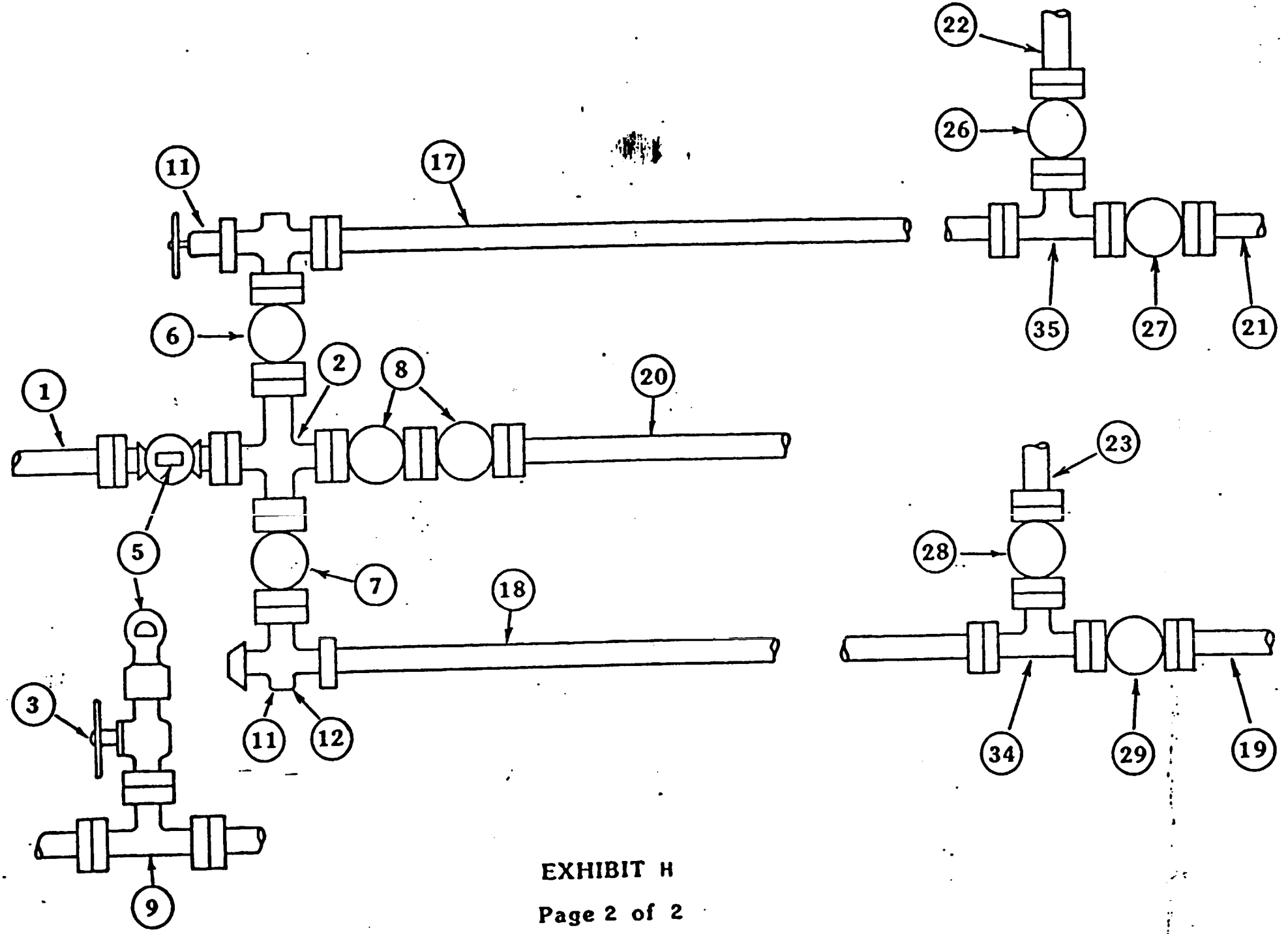


EXHIBIT H