

## STATE "16" No. 2

ATTACHMENT NO. 2  
(See Section 4)  
Page 1 of 1

CHECK LIST AND DRAWINGS (ATTACHED)  
MINIMUM BLOWOUT PREVENTER EQUIPMENT REQUIREMENTS  
(ATTACHMENT NO. 2 TO BID SHEET AND WELL SPECIFICATIONS)  
3,000 PSI WORKING PRESSURE  
TO BE INSTALLED AFTER SETTING 13 3/8 INCH CASING

Contractor or Pzl. to furnish items checked (X). See attached drawing.

| No. | Item                                                                                                | Min.<br>Size * | Type        | Press.<br>Rating | Furnished By |      |
|-----|-----------------------------------------------------------------------------------------------------|----------------|-------------|------------------|--------------|------|
|     |                                                                                                     |                |             |                  | Contr.       | Pzl. |
| 1.  | Flow Line                                                                                           | 8"             | Weld        | 125              | X            |      |
| 2.  | Fill Up Line                                                                                        | 2"             | Thd or Weld | 125              | X            |      |
| 3.  | Bell Nipple                                                                                         | 12 1/2"        | Weld        | 125              | X            |      |
| 4.  | Rotating Head                                                                                       |                |             |                  |              |      |
| 5.  | Hydraulically Operated Gate Valve                                                                   |                |             |                  |              |      |
| 6.  | Blooe Line                                                                                          |                |             |                  |              |      |
| 7.  | Bag Preventer                                                                                       | 12 1/2"        | Flanged     | 3000             | X            |      |
| 8.  | Hydraulically Operated Ram Preventer                                                                |                |             |                  |              |      |
| 9.  | Drilling Spool with <u>2</u> n. and <u>2</u> in.<br>Side Outlets                                    | 12 1/2"        | Flanged     | 3000             | X            |      |
| 10. | Preventer Side Outlets, <u>      </u> n. and <u>      </u> in.<br>Use as alternate to No. 9 above.  |                |             |                  |              |      |
| 11. | Gate Valve                                                                                          | 2"             | Flanged     | 3000             | X            |      |
| 12. | Hydraulically Operated Gate Valve                                                                   |                |             |                  |              |      |
| 13. | Line to Choke Manifold                                                                              | 3"             | Flanged     | 3000             | X            |      |
| 14. | Gate Valve                                                                                          | 2"             | Flanged     | 3000             | X            |      |
| 15. | Hydraulically Operated Gate Valve                                                                   |                |             |                  |              |      |
| 16. | Check Valve                                                                                         |                |             |                  |              |      |
| 17. | Drilling Spool with <u>      </u> in. and <u>      </u> in.<br>side outlets                         |                |             |                  |              |      |
| 18. | Preventer Side Outlets <u>      </u> in. and <u>      </u> in.<br>Use as alternate to No. 17 above. |                |             |                  |              |      |
| 19. | Gate Valve                                                                                          |                |             |                  |              |      |
| 20. | Hydraulically Operated Gate Valve                                                                   |                |             |                  |              |      |
| 21. | Relief Line                                                                                         |                |             |                  |              |      |
| 22. | <del>Wear Flange or Bushing</del> for 13 3/8" csg.                                                  | 12 1/2"        | Threaded    | 3000             | X            |      |
| 23. | Kill Line to accessible location approx. <u>      </u> ft.<br>from rig.                             |                |             |                  |              |      |
| 24. | Gate Valve                                                                                          |                |             |                  |              |      |
| 25. | Kill Line to rig pump manifold                                                                      | 2"             | Flanged     | 3000             | X            |      |
| 26. | <u>      </u> Way Cross, <u>      </u> in. x <u>      </u> in. x <u>      </u> in. x<br>in.         |                |             |                  |              |      |
| 27. | Tee, <u>      </u> in. x <u>      </u> in. x <u>      </u> in.                                      |                |             |                  |              |      |
| 28. | Half Union                                                                                          |                |             |                  |              |      |
| 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.

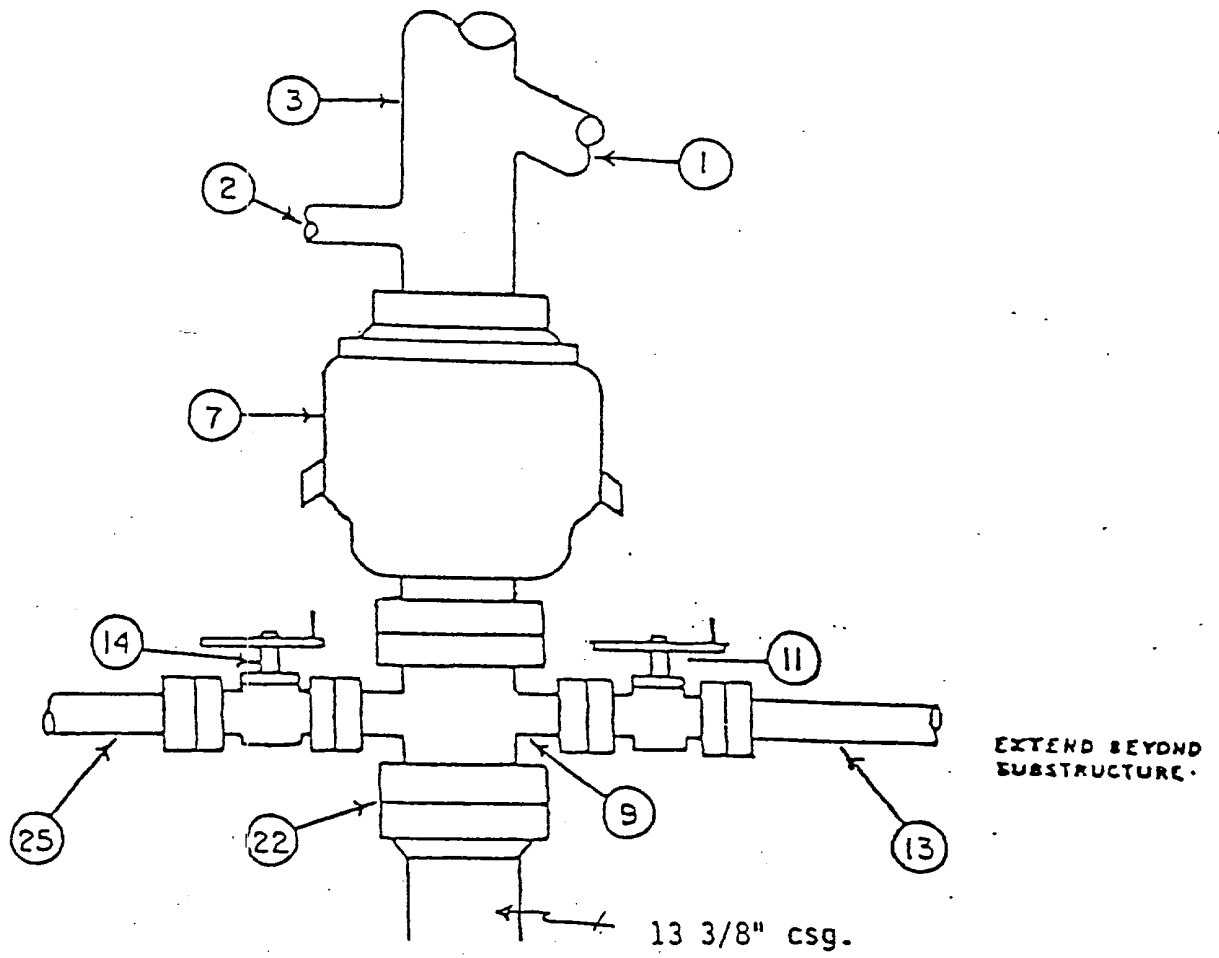
Valves, spools and preventer sizes to be bore dimension.

ACCUMLATOR AND MASTER CONTROL  
SPECIFICATIONS  
REQUIREMENTS CHECKED (X) SHALL APPLY

|                                                        |                                           |                                                              |                                        |                                                                                                             |                                                                    |                                                          |                        |
|--------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------|------------------------|
| Kelly Cocks: Upper - Make _____<br>Press. Rating _____ | Lower - Make _____<br>Press. Rating _____ | Inside Blowout Preventer: Gray/Shafter _____<br>PSI WP _____ | Drop-In (Hydrii) _____<br>PSI WP _____ | Full Opening Ball Valve for each size drill pipe in use<br>(Extra Lower Kelly Valves) _____<br>PSI WP _____ | Circulating Head for each type and size of tool joint in use _____ | Ft. of 2 in. steel hose (Chicksan) _____<br>PSI WP _____ | Blind/Shear Rams _____ |
|--------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------|------------------------|

|                                                                                                                                                                                                                          | ITEM                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Accumulator Volume                                                                                                                                                                                                       | gal., PSI WP Unit       |
| Power for Pumps:                                                                                                                                                                                                         | Air<br>Air and Electric |
| Pumps Capacity                                                                                                                                                                                                           | Gal/Min at PSI          |
| Number of Control Valves Required                                                                                                                                                                                        |                         |
| Pressure Regulator Valve to control pressure on bag preventer                                                                                                                                                            |                         |
| Control Valves on both Master and Remote Control properly labeled with name of respective function and open and closed clearly marked.                                                                                   |                         |
| Blind Rem 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. |                         |
| Hydraulic Lines from Accumulator to Hydraulic Device to be _____ inch minimum ID and have _____ psi minimum working pressure.                                                                                            |                         |
| 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 <sup>3</sup> each at _____ psi manifolded to by-pass accumulator and operate BOP directly.                                                                                             |                         |

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CHECK LIST AND DRAWINGS (ATTACHED)  
 MINIMUM BLOWOUT PREVENTER EQUIPMENT REQUIREMENTS  
 (ATTACHMENT NO. 2 TO BID SHEET AND WELL SPECIFICATIONS)  
3000 PSI WORKING PRESSURE  
 TO BE INSTALLED AFTER SETTING 8 5/8 INCH CASING

Contractor or Pzl. to furnish items checked (X). See attached drawing.

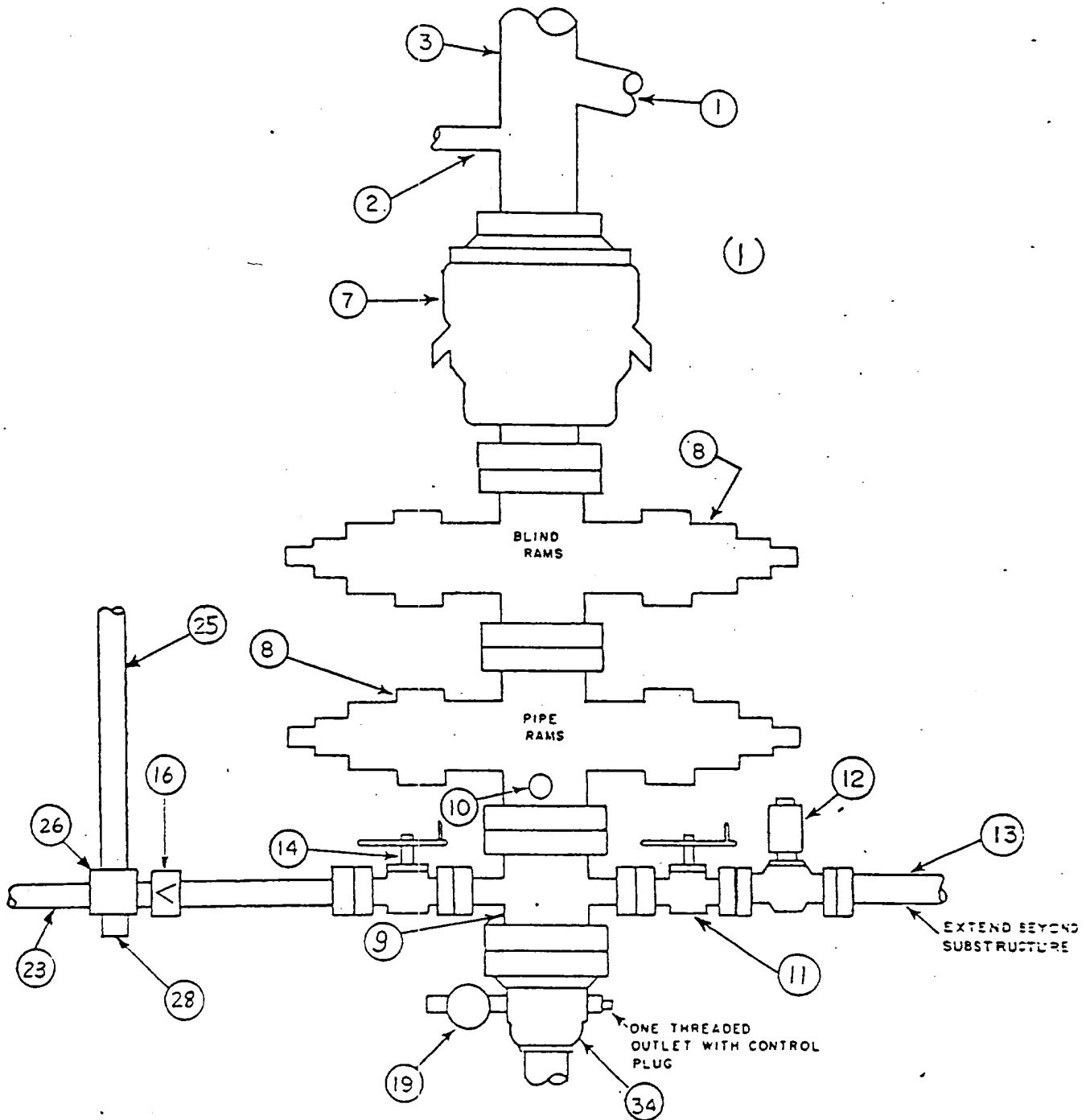
| No. | Item                                                                                      | Min.<br>Size * | Type        | Press.<br>Rating | Furnished By |      |
|-----|-------------------------------------------------------------------------------------------|----------------|-------------|------------------|--------------|------|
|     |                                                                                           |                |             |                  | Contr.       | Pzl. |
| 1.  | Flow Line                                                                                 | 8"             | Welded      | 125              | X            |      |
| 2.  | Fill Up Line                                                                              | 2"             | Thd or Weld | 125              | X            |      |
| 3.  | Bell Nipple                                                                               | 8"             | Weld        | 125              | X            |      |
| 4.  | Rotating Head                                                                             |                |             |                  |              |      |
| 5.  | Hydraulically Operated Gate Valve                                                         |                |             |                  |              |      |
| 6.  | Blooe Line                                                                                |                |             |                  |              |      |
| 7.  | Bag Preventer                                                                             | 8"             | Flange      | 3000             | X            |      |
| 8.  | Hydraulically Operated Ram Preventer                                                      | 8"             | Flange      | 3000             | X            |      |
| 9.  | Drilling Spool with <u>2</u> in. and <u>2</u> in.<br>Side Outlets                         | 8"             | Flange      | 3000             | X            |      |
| 10. | Preventer Side Outlets, <u>2</u> in. and <u>2</u> in.<br>Use as alternate to No. 9 above. | 2"             | Flange      | 3000             | X            |      |
| 11. | Gate Valve                                                                                | 3"             | Flange      | 3000             | X            |      |
| 12. | Hydraulically Operated Gate Valve                                                         | 3"             | Flange      | 3000             | X            |      |
| 13. | Line to Choke Manifold                                                                    | 3"             | Flange      | 3000             | X            |      |
| 14. | Gate Valve                                                                                | 2"             | Flange      | 3000             | X            |      |
| 15. | Hydraulically Operated Gate Valve                                                         |                |             |                  |              |      |
| 16. | Check Valve                                                                               | 2"             | Flange      | 3000             | X            |      |
| 17. | Drilling Spool with _____ in. and _____ in.<br>side outlets                               |                |             |                  |              |      |
| 18. | Preventer Side Outlets _____ in. and _____ in.<br>Use as alternate to No. 17 above.       |                |             |                  |              |      |
| 19. | Gate Valve                                                                                | 2"             | Thd or Flge | 3000             |              | X    |
| 20. | Hydraulically Operated Gate Valve                                                         |                |             |                  |              |      |
| 21. | Relief Line                                                                               |                |             |                  |              |      |
| 22. | Wear Flange or Bushing                                                                    |                |             |                  |              |      |
| 23. | Kill Line to accessible location approx. <u>75</u> ft.<br>from rig. (Minimum Distance)    | 2"             | Thd or Weld | 3000             | X            |      |
| 24. | Gate Valve                                                                                |                |             |                  |              |      |
| 25. | Kill Line to rig pump manifold                                                            | 2"             | Thd or Weld | 3000             | X            |      |
| 26. | <u>4</u> Way Cross, <u>2</u> in. x <u>2</u> in. x <u>2</u> in. x<br><u>2</u> in.          | 2"             | Thd or Weld | 3000             | X            |      |
| 27. | Tee, _____ in. x _____ in. x _____ in.                                                    |                |             |                  |              |      |
| 28. | <del>XXXXXXX</del> Bull Plug                                                              | 2"             | Thd or Weld | 3000             | X            |      |
| 29. | Casing Spool                                                                              |                |             |                  |              |      |
| 30. | Gate Valve                                                                                |                |             |                  |              |      |
| 31. | Casing Spool                                                                              |                |             |                  |              |      |
| 32. | Gate Valve                                                                                |                |             |                  |              |      |
| 33. | Pressure Gauge                                                                            |                |             |                  |              |      |
| 34. | Casing Head                                                                               | 8"             | Flange      | 3000             |              | X    |
| 35. | Gate Valve                                                                                |                |             |                  |              |      |
| 36. | Gate Valve                                                                                |                |             |                  |              |      |

\* Line sizes to be inside diameter.

Valves, spools and preventer sizes to be bore dimension.

These are minimum requirements for this section of the hole; 5000 psi equipment would be alright as long as it will pas a 7 7/8" bit.

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CHECKLIST AND DRAWING  
MINIMUM CHOKE MANIFOLD EQUIPMENT REQUIREMENTS  
(ATTACHMENT 3 TO BID SHEET AND WELL SPECIFICATIONS)

3000 PSI WORKING PRESSURE

TO BE INSTALLED AFTER SETTING 8 5/8 INCH CASING

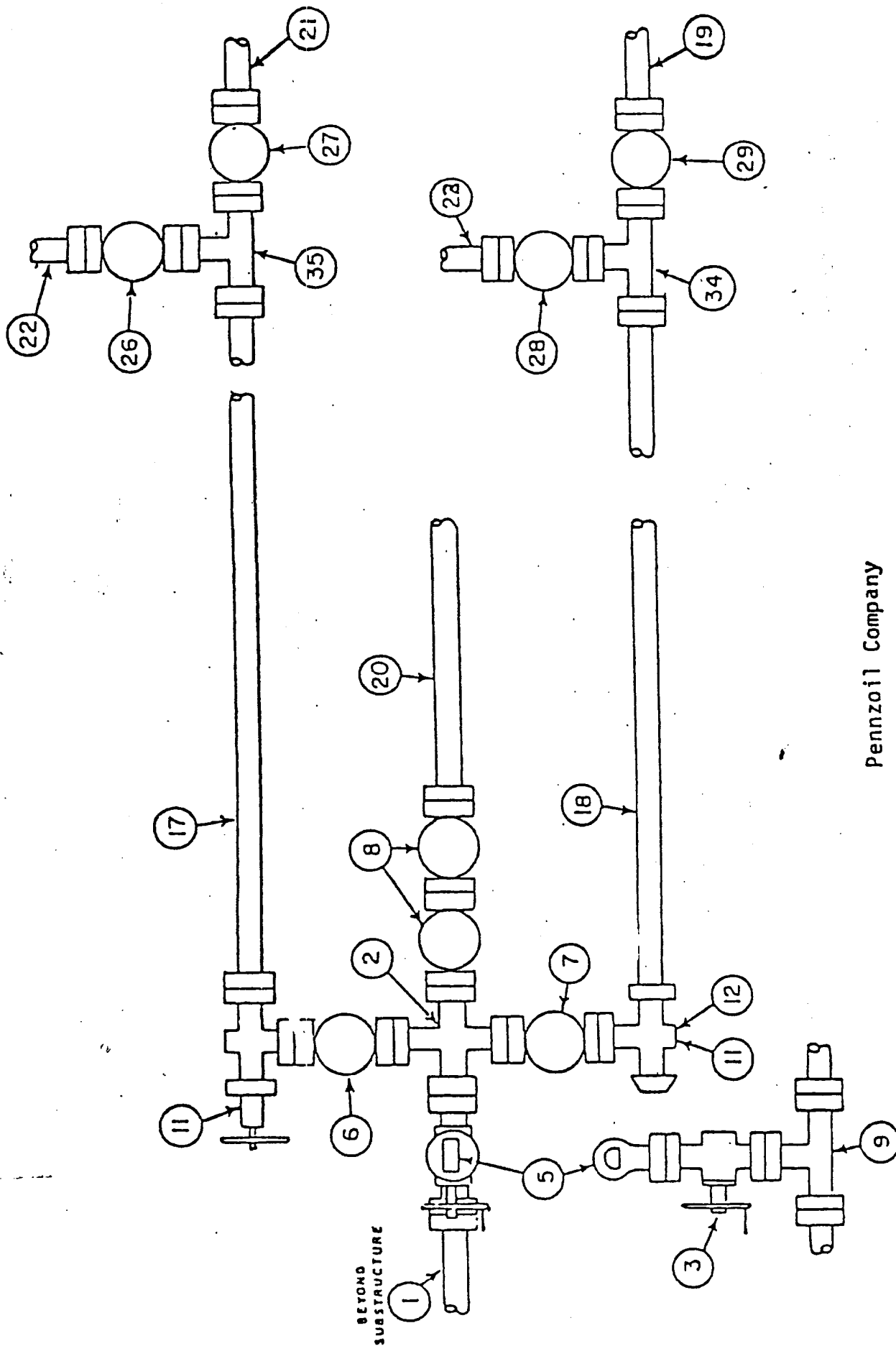
Contractor or Pzl. to furnish items checked (X). See attached drawing..

| No. | Item                                                            | *<br>Min.<br>Size | Type        | Press.<br>Rating | Furnished By |      |
|-----|-----------------------------------------------------------------|-------------------|-------------|------------------|--------------|------|
|     |                                                                 |                   |             |                  | Contr.       | Pzl. |
| 1   | Choke Line from BOP stack (same as Item No. 13 on Attachment 2) | 3"                | Flange      | 3000             | X            |      |
| 2   | Way Cross, 3 in. x 3 in. x 3 in. x 3 in.                        | 3"                | Flange      | 3000             | X            |      |
| 3   | Gate Valve                                                      | 1 13/16           | Flange      | 3000             | X            |      |
| 4   | Pressure Sensor                                                 |                   |             |                  |              |      |
| 5   | Pressure Gauge                                                  | 1"                | Thd         | 3000             | X            |      |
| 6   | Gate Valve                                                      | 2"                | Flange      | 3000             | X            |      |
| 7   | Gate Valve                                                      | 2"                | Flange      | 3000             | X            |      |
| 8   | Gate Valve                                                      | 3"                | Flange      | 3000             | X            |      |
| 9   | Way Cross, in. x in. x in. x in.                                | 2"                | Flange      | 3000             | X            |      |
| 10  | Way Cross, in. x in. x in. x in.                                |                   |             |                  |              |      |
| 11  | Adjustable Choke                                                | 2"                | Flange      | 3000             | X            |      |
| 12  | Positive Choke                                                  |                   |             |                  |              |      |
| 13  | Hydraulically Operated Choke (Super Choke)                      | 2"                | Flange      | 3000             |              | X    |
| 14  | Forged Extension Spool                                          |                   |             |                  |              |      |
| 15  | Hydraulically Operated Gate Valve                               |                   |             |                  |              |      |
| 16  | Hydraulically Operated Gate Valve                               |                   |             |                  |              |      |
| 17  | Line to Low Pressure Header                                     | 2"                | Welded      | 1000             |              | X    |
| 18  | Line to Low Pressure Header                                     | 2"                | Welded      | 1000             |              | X    |
| 19  | Line to Burn Pit                                                | 2"                | Weld or Thd | 1000             |              | X    |
| 20  | Line to Burn Pit                                                | 3"                | Weld        | 1000             |              | X    |
| 21  | Line to Reserve Pit or Burn Pit                                 | 2"                | Weld or Thd | 1000             |              | X    |
| 22  | Line to Mud Pit Mud Gas Sepr.                                   | 2"                | Weld or Thd | 1000             |              | X    |
| 23  | Line to Mud Gas Separator                                       | 2"                | Weld or Thd | 1000             |              | X    |
| 24  | Header                                                          |                   |             |                  |              |      |
| 25  | Header                                                          |                   |             |                  |              |      |
| 26  | Gate Valve or Ball Valve                                        | 2"                | Flange      | 1000             |              | X    |
| 27  | Gate Valve or Ball Valve                                        | 2"                | Flange      | 1000             |              | X    |
| 28  | Gate Valve or Ball Valve                                        | 2"                | Flange      | 1000             |              | X    |
| 29  | Gate Valve or Ball Valve                                        | 2"                | Flange      | 1000             |              | X    |
| 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.                                       | 2"                | Flange      | 1000             |              | X    |
| 35  | Tee 2 in. x 2 in. x 2 in.                                       | 2"                | Flange      | 1000             |              | X    |
| 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.                                |                   |             |                  |              |      |
| 44  | Gate Valve                                                      |                   |             |                  |              |      |
| 45  | Gate Valve                                                      |                   |             |                  |              |      |
| 46  | Gate Valve                                                      |                   |             |                  |              |      |

\* Line sizes to be inside diameter.

Valves, spools and preventer sizes to be bore dimension.

Header size to be outside diameter.



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