Fill Line Connection —Emergency Kill L'ne Check Valve Floor Manifold onnect to · Check Valve 2" Kill Line Casing Hydril"GK" Drilling Rams Head Rams Spool ę As an Alternate: The Kill & Relief Connections From The Casing Spool May Be Connected To The Flanged Outlets Of The Bottom Ram Proventer. To Chake Manifold Hydrautically Operated Vaive To Reserve Flow Line Flow Line Choke 4 .0 29/16 2"Chokes To Reserve Pit & Choke Boxes See Choke Manifold Beyond Edge of Derrick Floor Minimum Bore — 4" I D. Choke Flow Line Detail Below CHOKE MANIFOLD DETAIL -Hydraulically Operated Valve When Specified To Mud Pit & Reserve Pit Straight Line From Spool To ReservePit When Requested or Specified * Pressure Operated Choke ADDITIONS - DELETIONS - CHANGES SPECIFY

DRAWING NO.3 Revised April, 1971

3000 PSI WORKING PRESSURE BLOWOUT PREVENTER HOOK-UP

The blowout preventer assembly shall consist of one blind ram preventer and one pipe ram preventer, both hydraulically operated; a llydril "GK" preventer; valves; chokes and connections as illustrated. If a tapered drill string is used, a ram preventer must be provided for each size of drill pipe. Casing and tubing rams to fit the preventers are to be available as needed. If corroct in size, the flanged outlets of the ram preventer may be used for connecting to the 4-inch I.D. choke flow line and kill line, except when air or gas drilling. The substructure height shall be suf-

To Casing Spool

Minimum operating equipment for the preventors and hydraulically operated valves shall be as follows: (1) Multiple pumps, driven by a continu-

pumps; or there shall be additional pumps operated by separate power and equal in performance capabilities. the remaining accumulator fluid valume at least ous source of power, capable of fluid charging the total accumulator volume from the nitrogen pressure to its rated pressure within a precharge of nitrogen of not less than 750 PSI and connected so as to receive the oferementioned fluid charge. With the charging pumps shut down, the pressure-operated devices simultaneously within seconds; after closure, the remaining accumulator fluid walking at the pressure-operated devices simultaneously within seconds; after closure, the remaining accumulator fluid walking at the post for the property of the post for the re-operated devices simultaneously within_____seconds; after clasure, the remaining accominition pressure shall be not less than 1000 PSI with percent of the original. (3) When requested, an additional source of power, remote and equivalent, is to be available to operate the above

The closing manifold and remote closing manifold shall have a separate control for each pressure-eperated dovice. Controls are to be labeled, with control handles indicating open and closed positions. A pressure reducer and regulator must be provided for operating the Hydril preventer. When requested, a second pressure reducer shall be available to limit operating fluid pressures to ram preventers. Gulf Legion No. 38 hydraulic oil, an equivalent or better, is to be used as the fluid to operate the hydraulic equipment.

and without sharp bends. Easy and safe access is to be maintained to the choke manifold. All valves are to be selected for operation in the presence of oil, gas, and drilling fluids. The choke flow the valves connected to the drilling spool and all ram type preventers must be equipped with stem extensions, universal joints if needed, and hand wheels which are to extend beyond the edge of The choke manifold, choke flow line, and choke lines are to be supported by metal stands and adequately anchored. The choke flow line and choke lines shall be constructed as straight as possible

* To include derrick floor mounted controls