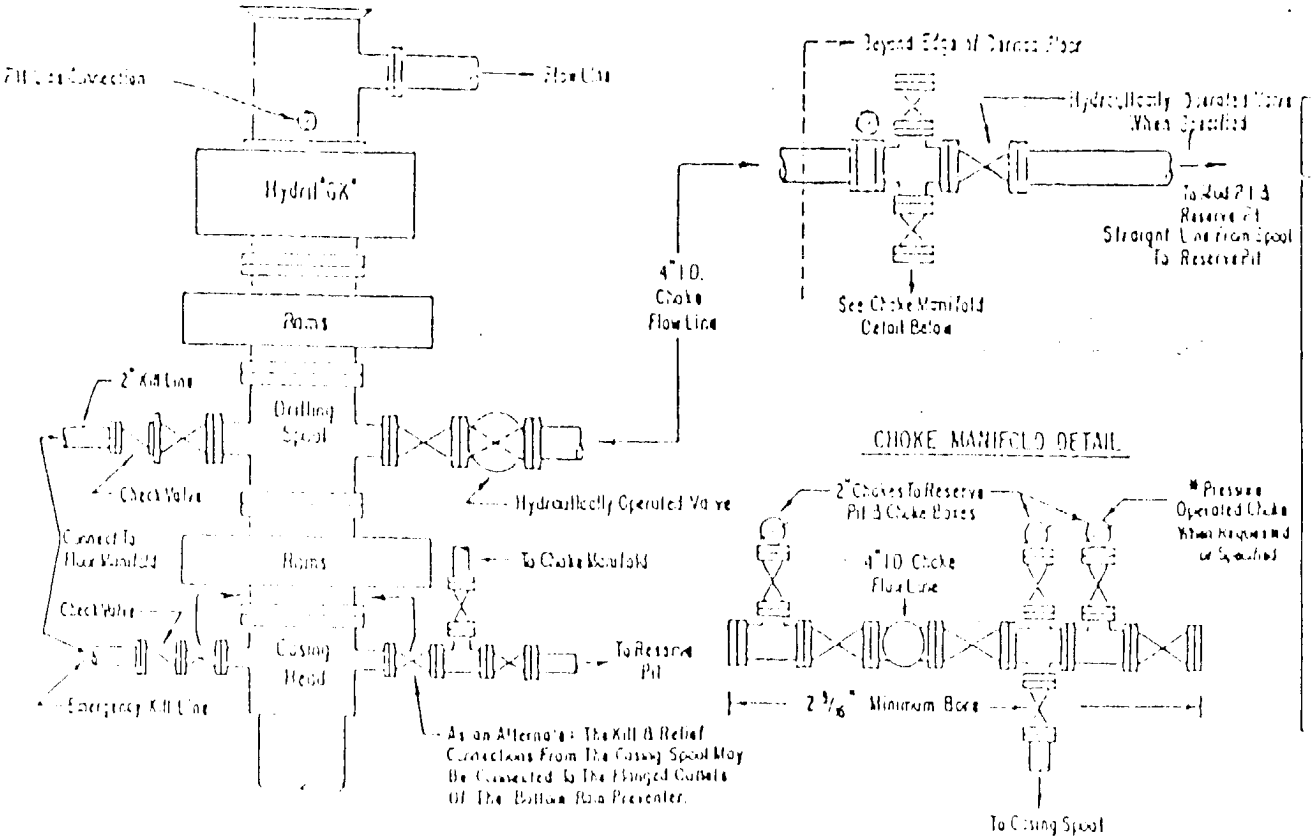
DRAWING NO. 1
Revised April, 1971



ADDITIONS - DELETIONS - CHANGES
SPECIFY

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 Hydril "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 correct in size, the flanged outlets of the ram preventers 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 sufficient to install a rotating blowout preventer.

Minimum operating equipment for the preventers or hydraulically operated valves shall be as follows: (1) Multiple pumps, driven by a continuous source of power, capable of fluid charging the total accumulator volume from the nitrogen precharge pressure to the rated pressure within [illegible] minutes. Also, the pumps are to be connected to the hydraulic operating system which is to be a closed system. (2) Accumulators with a precharge of nitrogen of not less than 750 PSI and connected so as to receive the aforementioned fluid charge. With the charging pumps shut down, the pressurized fluid will be stored in the accumulators and must be sufficient to close all the pressure operated devices simultaneously within [illegible] seconds, after closure, the remaining accumulator pressure shall be not less than 1000 PSI with the remaining accumulator fluid volume at least [illegible] percent of the original. (3) When requested, an additional source of power, remote and equivalent, is to be available to operate the closure pumps. There shall be additional pumps operated by separate power and equal in performance capabilities.

The choke manifold and remote choke manifold shall have a separate control for each pressure operated device. Controls are to be located, 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 non-pressure [illegible]. Drill Engineer #22-28 hydraulic oil, or equivalent or better, is to be used as the fluid to operate the hydraulic equipment.

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 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 line 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 derrick substructure. All other valves are to be equipped with handles.