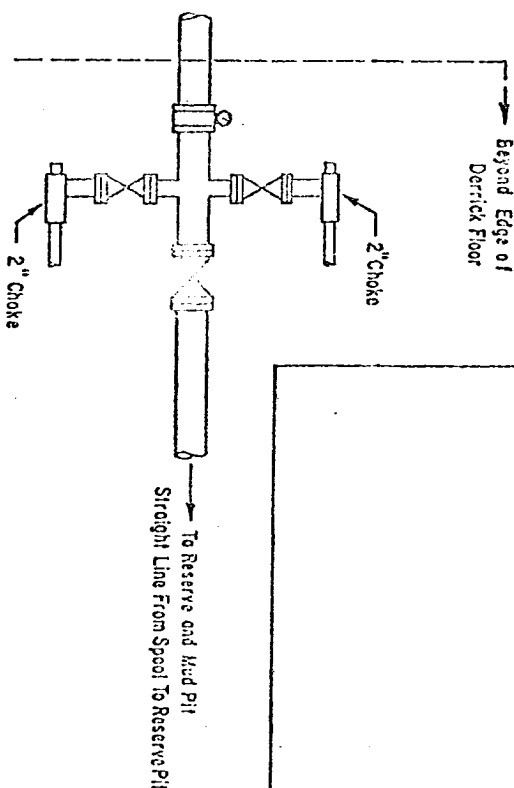


2000 PSI WORKING PRESSURE
BLOWOUT PREVENTER HOOK-UP



7. Blowout preventer assembly shall consist of one fluid ram preventer and one pipe ram preventer, both hydraulically operated; a Shaffer Tool Joint stringer, 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 remain in the preventers are to be avoided as needed. The ram preventer may be used for connecting to the 4-inch I.D. casing or to the 2-inch I.D. structure height shall be sufficient to install a rotating blowout preventer.

Minimum operating equipment for this preventer shall be as follows: (1) Pump (2) driven by a continuous source of power, capable of closing all the pressure-operated devices simultaneously within _____ seconds. The pump (3) is to be connected to a closed type hydraulic operating system. (2) When requested, accumulators with a precharge of nitrogen of not less than 750 PSI and connected so as to receive a fluid charge from the above pump (3). With the charging pump (4) shut down, the pressurized fluid volume stored in the accumulators must be sufficient to close all the pressure-operated devices simultaneously within _____ seconds, after all way, the remaining accumulator pressure shall be not less than 1000 PSI with the remaining accumulator fluid volume of at least _____ percent of its original. (3) When requested, an additional source of power, remote and equivalent, is to be available to operate the above pump (3) or there shall be an additional pump (5) operated by separate power and equal in performance capabilities.

The closing manifold shall have a separate control for each pressure-operated device. Controls are to be labeled, with control handles indicating open and closed positions. A pressure reducer and regulator must be provided if a Hydril preventer is used. Gulf Legion No. 33 hydraulic oil, an 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 valve 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.