BLOWOUT PREVENTER REQUIREMENTS

Well Name: James E Well No. 3

I. Blowout preventer equipment, installation, testing and responsibilities will be in accordance with Phillips Petroleum Company's Blowout Preventer Standards.

II. Figure Nos. 7-9 or 7-10 (Drawing Attached): Casing String 13-3/8 BOP Size 13-5/8" ; Working Pressure 3000 psi

III. Equipment to be furnished by Contractor:

A. Ram Type BOPs:
   1. No. Required 2
   2. Acceptable Manufacturers & Types
      a. Cameron Iron Works: QRC; F; SS; U
      b. Shaffer Tool Works: B; E; LWS; LWP
      c. Hydril

B. Annular Type BOPs:
   1. No. Required 0
   2. Acceptable Manufacturers & Types
      a. Hydril - GK
      b. Shaffer - Spherical
      c. Cameron - D

C. Preventer Operating Equipment
   1. Hydraulic Pump - air, steam or electrically operated of sufficient volume and pressure capacity to close the largest ram type preventer in less than 30 seconds. Electrically operated pump must be equipped with explosion proof motor and controls.
   2. Manifold with a control valve for each preventer.
   3. A Hydril or equivalent regulator for each annular type preventer.
   4. Accumulator of sufficient volume and pressure capacity to close all preventers in the assembly without recharging. If the pump in C.1. is incapable of recharging the accumulator in excess of 1500 psi, a separate pump capable of this is to be furnished.
   5. Remote control panel with a station for each preventer control valve.
   6. Steel piping to connect hydraulic closing units to preventers.
   7. Choke manifold with seamless steel piping and flanged or clamp hub connections. Choke manifold assembly and piping sizes as specified, on the attached drawing. All working lines, except hydraulic closing lines, shall have flanged or clamp hub connections to preventers, spools and casing heads.
   8. Full opening drill string safety valve (I.D. equal or larger than I.D. of tool joint in use). Working pressure to equal or exceed specified BOP working pressure. O.D. and configuration such that valve can be run in the hole with adequate clearance.
   9. Full opening upper Kelly cock. Working pressure to equal or exceed specified BOP working pressure.