

CHECK LIST AND DRAWINGS (ATTACHED)
 MINIMUM BLOWOUT PREVENTER EQUIPMENT REQUIREMENTS
 (ATTACHMENT NO. _____ TO BID SHEET AND WELL SPECIFICATIONS)
 _____ 3000 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. Size	Type	Press. Rating	Furnished By	
					Contr.	Pzl.
1.	Flow Line	8"	Weld	125	X	
2.	Fill Up Line	2"	Thd or Weld	125	X	
3.	Ball Nipple	12"	Weld	125	X	
4.	Rotating Head					
5.	Hydraulically Operated Gate Valve					
6.	Bloos Line					
7.	Bag Preventer	12"	Flanged	3000	X	
8.	Hydraulically Operated Ram Preventer					
9.	Drilling Spool with _____ 2 _____ in. and _____ 2 _____ in. Side Outlets	12"	Flanged	3000	X	
10.	Preventers Side Outlets _____ in. and _____ in. Use as alternate to No. 9 above.					
11.	Gate Valve	2"	Flanged	3000	X	
12.	Hydraulically Operated Gate Valve (HCR Valve)					
13.	Line to Choke Manifold	2"	Flanged	3000	X	
14.	Gate Valve	2"	Flanged	3000	X	
15.	Hydraulically Operated Gate Valve					
16.	Check Valve					
17.	Drilling Spool with _____ in. and _____ in. Side outlets					
18.	Preventer Side Outlets _____ in. and _____ in.					
19.	Gate Valve					
20.	Hydraulically Operated Gate Valve					
21.	Relief Line					
22.	Wear Flange or Bushing					
23.	Kill Line to accessible location approx. _____ ft. from rig. (MINIMUM DISTANCE)					
24.	Gate Valve					
25.	Kill Line to rig pump manifold	2"	Flanged	3000	X	
26.	_____ Way Cross, _____ in. x _____ in. x _____ in x _____ in.					
27.	Tee, _____ in. x _____ in. x _____ in.					
28.	Bull Plug					
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 preventers sizes to be bore dimension.

EXHIBIT F

Item	Furnished By	
	Contr.	Pzl
Automatic Accumulator and Master Control. See below for details.	X	
Remote set of closing unit controls with <u>2</u> stations.	X	
Bag Preventer Pressure Regulating Control Valve on remote station	X	
Kelly Cocks: Upper - Make _____ Press. Rating <u>3000 Full Opening</u>	X	
Lower - Make _____ Press. Rating <u>3000 Full Opening</u>	X	
Inside Blowout Preventer: Gray/Shaffer _____ PSI WP		
Drop-In (Hydrill) _____ PSI WP		
Full Opening Ball Valve for each size drill pipe in use (Extra Lower Kelly Valves) <u>3000</u> PSI WP (Full Opening)-	X	
Circulating Head for each type and size of tool joint in use		
_____ Ft. of 2 in. steel hose (Chickson) _____ PSI WP		
Blind/Shear Rams		

ACCUMULATOR AND MASTER CONTROL SPECIFICATIONS

REQUIREMENTS CHECKED (X) SHALL APPLY:

X	Item
X	Accumulator Volume <u>80</u> gal., <u>3000</u> PSI WP Unit
X	Power for Pumps: <u>Air</u> <u>X</u> Air and Electric
X	Sufficient Capacity to Recharge Complete Unit in 6 Minutes Pumps Capacity _____ Gal/Min. at _____ PSI
X	Number of Control Valves Required (at least <u>3</u> for rig floor and remote units)
X	Pressure Regulator Valve to control pressure on bag preventer
X	Control Valves on both Master and Remote Control properly labeled with name of respective function and open and closed clearly marked.
X	Blind Ram 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.
X	Hydraulic Lines from Accumulator to Hydraulic Device to be <u>0.9</u> in. minimum ID and have <u>3000</u> PSI minimum working pressure.
X	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. each at _____ PSI manifold to bypass accumulator and operate BOP directly.

EXHIBIT F

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