

**750 HP x 400,000 lbs. HOOK LOAD  
TRAILER MOUNTED  
DRILLING/WORKOVER RIG  
(ALL U.S.A. MANUFACTURE)**



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## SECTION 1

### TRAILER AND DRAWWORKS (NEW)

<u>ITEM QTY.</u>	<u>DESCRIPTION</u>
<b>1.1.</b>	<b>TRAILER</b>
One (1)	One (1) S&S Trailer.  <b>Features:</b> The 100,000 lb. quad suspension trailer comes complete with Sixteen (16) 315/80R22.5 tires. The trailer deck is covered with safety tread plate. The front of the trailer is equipped with two (2) hydraulic leveling/lifting jacks and two (2) mechanical jacks. Two (2) belly jacks are located in the middle of the trailer and two (2) hydraulic leveling jacks are located at the rear of the trailer. Trailer also comes complete with folding diamond grip walkways, handrails, and removable stairs located on both sides of the trailer.
<b>1.1.1</b>	<b>RUNNING GEAR (4-AXLE)</b>
One (1)	100,000 lb. 4-axle trailer with Holland TRM-4100 (or equivalent) mechanical suspension, complete with Sixteen (16) 315/80R22.5 tires.
<b>1.1.2</b>	<b>HIGHWAY EQUIPMENT</b>
One (1)	Highway equipment lighting package.  <b>Features:</b> Highway lighting package comes with rear turn signal lights, clearance lights, stop/brake lights, and reflectors. All wires are routed through cable hangers located in the trailer frame and shielded to protect the wires from damage.
<b>1.1.3</b>	<b>LIFTING LEVELING JACKS</b>
Four (4)	Hydraulic, and Four (4) manual jacks, complete with pedestals, to be used for leveling and supporting trailer during rig operations.

ITEM QTY	DESCRIPTION
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**1.2 FUEL SYSTEM**

One (1) Rig fuel system.  
**Features:**  
 One (1) 100-gallon fuel tank mounted on rig trailer, complete with piping to rig engines.

**1.3. WINCHES**

Two (2) 12,000 lbs. hydraulic winches (Model PD-12C-1). Includes 325 ft. of ½ in. winch line.

One (1) 6,000 lbs. hydraulic winch (boom pole)

**1.3.1 DEADLINE ANCHOR**

One (1) S&S deadline anchor, 50,000#, for 1-1/8 in. wireline, deck mounted. For compression-type hydraulic weight indicator load cell (customer to furnish load cell).

**1.4 ENGINES**

Two (2) Detroit Diesel Series 60 diesel engines, 14.0 L, with intermittent rating of 475 BHP @ 2,100 RPM each.

**Features:**

The Detroit Diesel Series 60 is a six-cylinder, turbocharged, and air-to-air aftercooled engine. This fully integrated heavy-duty diesel engine with electronic controls has excellent fuel consumption, durability, and low emissions. The engine comes complete with:

- |   |                                |
|---|--------------------------------|
| • Air start motor   | • Muffler                      |
| • Rig Saver   | • Spark Arrestor               |
| • EPA Nonroad<br>Emmissions Certified                         | • Direct Drive, Suction<br>Fan |
| • Air Filter  | • Water Filter                 |
| • Heavy Duty Low<br>Profile Radiator                          | • Air Compressor               |
| • Transmission Oil Cooler                                     | • Tachometer                   |
| • Flywheel adapter for<br>Allison 5000 series<br>transmission | • Control Panel                |

**ITEM QTY****DESCRIPTION****Specifications:**

Rated Power Output

- 550 BHP at 2,100 RPM Each

**Engine Options:**

<i>Yes</i>	<i>No</i>	
	X	Two (2) Caterpillar engines – Model C 15 ACERT, 540 BHP EA.
	X	Two (2) air fan clutch assemblies in lieu of direct drive fan (Use with Caterpillar Engines only)
	X	Two (2) Webasto engine preheaters
	X	Two (2) circulating block heaters
	X	Two (2) oil pan heaters
	X	Steel engine hood over both engines (covering radiator, engine and transmission)
	X	Four (4) steel side covers
	X	High ambient radiators

**1.4.1****TRANSMISSION**

Two (2) Allison Model M5610H series straight through transmissions.

**Features:**

Instrumentation: One (1) pressure gauge, One (1) temperature gauge per transmission, mounted on engine gauge panel, operator's side.

**1.4.2****PTO**

Two (2) Chelsea power take off, transmission mounted, and pneumatically controlled.

**1.4.3****COMPOUND**

One (1) S&S two-engine, chain driven compound with mechanical disconnects.

<b>ITEM QTY</b>	<b>DESCRIPTION</b>
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**1.4.4 RIGHT ANGLE GEARBOX**

One (1) S&S right angle gearbox supplies power to drawworks and comes complete with reversing box to drive rotary table with Fawick 16VC600 clutch (or equivalent)

**1.5. DRAWWORKS**

One (1) S&S Model CE750DD New Style double drum drawworks, with the following standard equipment.

**Features:**

The Model CE750DD drawworks consists of double drum, double shaft drawworks mounted on a heavy-duty framework with sheet metal covers. Auxiliary braking is achieved with an Eaton WCBD-424 Assist Brake.

**Specifications:**

**Main Drum:**

Model:	S&S CE750DD
Drum Size:	19-7/8 in. x 35-1/2 in.
Lebus Grooving:	1-1/8 in.
Drum Clutch:	Eaton Model 37VC650 (or equivalent)
Brake Size:	44 x 11, c/w brake bands & brake linkage
Drawworks speeds:	Five forward, one reverse (through engine transmission)
Inner Drum Drive Chain	1-3/4 in. pitch, triple strand
Input Drive Chain	1-1/2 in pitch, triple strand
Cooling:	Water circulating
Auxiliary Brake:	Wichita Model 236 Assist Brake (or equivalent)

**Sandline Drum:**

Model:	S&S CE750DD
Drum Size:	13 in. x 42 in.
Drum Capacity:	17,000 ft of 9/16 in
Wireline Size:	9/16 in
Drum Clutch:	Eaton Model 26CB525 (or equivalent)

ITEM QTY	DESCRIPTION
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Brake Size:	42 x 8, brake rims c/w brake bands
Inner Drum Drive Chain:	1-3/4 in pitch, triple strand
Input Drive Chain:	1-1/2 in pitch, triple strand
Cooling:	Provisions for splash cooling

**1.5.1 DRAWWORKS ASSIST BRAKE**

One (1) Wichita Model 236 (or equivalent) Assist Brake, water cooled, with piping to edge of drillers side of the trailer for external water source (water source & charge pump, customer supplied).

**1.5.2 BRAKE WATER COOLING MANIFOLD FOR MAIN DRUM AND AUXILIARY BRAKE COOLING**

One (1) Water-cooling system manifold for cooling main drum band brakes and auxiliary water brake, complete with all necessary piping to edge of unit and controls. Includes connection for outside water supply (Water source and charge pump not supplied with unit)

**1.5.3 CONTROL PANEL**

One (1) S&S control panel adjustable for 19 ft. substructure floor height.

**Controls**

- Hydraulic pump (on/off) (air)
- Gear selector, transmission (air)
- Emergency stop (air)
- Engine stop (air)
- Fast idle (air)
- Horn (air)
- Two (2) 12,000 lb Winches (up/down) (air/hyd)
- One (1) 6,000 lb winch (boom pole) (up/down) (air/hyd)
- Slips (in/out) (air)
- Slips air regulator (air)
- Hoist (up/down) (air)
- Assist brake (air)
- Rotary table (air)

**Gauges**

- Main air pressure
- Hydraulic pressure
- Make up tong cylinder pressure
- Break-out tong cylinder pressure
- Slips air pressure

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<b>ITEM QTY</b>	<b>DESCRIPTION</b>
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**1.6. CROWN SAVER**

One (1) Automatic Crown Saver safety shutoff device to limit block travel, installed on drawworks, automatically disengages clutch and sets main drum brake when block comes too close to crown block (or required travel is reached).

**1.7 AIR SYSTEMS**

One (1) Rig air system.

**Features:**

Air supply for normal rig operation, equipment consists of:

- Engine mounted air compressor, One (1) mounted on each engine
- Air receiver system
- Air dryer
- Pneumatic plumbing, (valves, drains, lubricators, filters and gauges).

**1.8 HYDRAULIC SYSTEM**

One (1) Rig hydraulic system.

**Features:**

Hydraulic system supplies power for trailer operations:

- Hydraulic winches
- Power tongs circuit
- Mast raising cylinders
- Telescoping cylinders
- Trailer leveling cylinders
- Make and Brake cylinders
- Mast locking system

**Equipment consists of:**

- One (1), 340 gal. hydraulic tank
- Two (2) hydraulic pumps, each mounted on the twin engines, rated at a capacity of 50 gpm each
- Hydraulic return filter, filler/breather, all related valves, pressure gauge, and hydraulic control valves
- Tong Pressure Control

*\*Hydraulic system installed on both engines for failsafe operations.*

<b>ITEM QTY</b>	<b>DESCRIPTION</b>
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<b>1.10.</b>	<b>DRILL LINE SPOOL RACK</b>
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One (1)	Drill line spool rack for 3,000 ft of 1-1/8 in. drill line (mechanical) mounted on rig trailer near gooseneck with steel storage spool (less wireline).
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## SECTION 2

### TELESCOPING MAST (NEW)

<u>ITEM QTY</u>	<u>DESCRIPTION</u>
2.1	<b>MAST</b>
One (1)	<p>S&amp;S 118 ft. x 400,000 lbs. guyed telescoping mast with fixed base; hollow structural steel framing, designed and built in accordance with API 4F, using three dimensional non-linear dynamic finite element software. Maximum mast hook load capacity is 400,000 lbs. on ten (10) lines. Mast is manufactured with all HSS construction for minimum weight and maximum stability.</p> <p><b>Features:</b></p> <p>The mast is equipped with a ladder mounted on the off-driller's side. The safety platform, handrails, and a fall arrest post are included with the crown frame assembly. The mast is equipped with block cradle and two (2) belly lines &amp; two (2) load lines.</p> <p>Two (2) 3-stage hydraulic cylinders (chrome plated) are used for raising the mast and are equipped with safety chokes to prevent freefall in the event of a complete loss of hydraulic pressure. The mast incorporates Two (2) single acting, chromed, telescoping cylinders for raising the top section.</p> <p>The crown platform provides safety when servicing crown sheaves. The crown block assembly comes with:</p> <ul style="list-style-type: none"><li>• Four (4) 30 in. Fleet sheaves – grooved for 1 1/8 in. drill line</li><li>• One (1) 42 in. Fastline sheave – grooved for 1 1/8 in. drill line</li><li>• One (1) 30 in. Deadline sheave – grooved for 1 1/8 in. drill line</li></ul> <p>The crown block assembly uses all steel sheaves.</p> <p>The sheaves are mounted on tapered roller bearing inserts, thus bearing failure will not damage the sheave. The fittings are provided for individual greasing of bearings.</p> <p><b>Specifications:</b></p> <p>Capacity: 400,000 lbs. w/ ten (10) lines</p>

**ITEM QTY****DESCRIPTION**

Height: 118 ft.  
 Line String Up: Ten (10)  
 Wind Load: Per API 4F  
**Mast Options:**

<i>Yes</i>	<i>No</i>		
X		Sandline sheave in mast to accommodate double drum drawworks	Included
	X	Two (2) flag poles	
	X	Mounting bracket and piping for tong raising ram	
	X	Customer nameplate on crown basket	
	X	Hard pipe hydraulic lines for power Kelly spinner to the off-operator's side of mast (Note: Customer to specify size of supply and return lines)	
X		Line sheave under racking board for use with customer's manual tong counterweights.	Included
	X	Lightning conductor rod and cable	
X		Off-driller's side boom pole	Included
X		Standpipe 4 in. 5,000 PSI c/w gooseneck at the top and unions at top and bottom of standpipe (no valves or gauges included)	Included
X		Guylines for internal guying	Included
	X	Top Drive torque tube hanging lug	
	X	DBI Sala (or equivalent) fall arrest	
	X	DBI Sala (or equivalent) climber assist	
	X	Drilling Line, 3,000 ft. of 1-1/8 in, 6 x 19 class (Domestic)	
	X	Sand line 17,000 ft of 9/16 in x x 7 FC (Domestic)	

**2.1.1**

One (1)

**RACKING BOARD**

Automatic erecting racking board

Welded fingers with 5 in. spacing for 4-1/2 in drill pipe.

**Specifications:**

- Capacity for:
- 11,500 ft of 4-1/2" (or 3 1/2") drill pipe with 6-1/4 in. tool joint
- Positioned for use with Range II tubulars in doubles
- Complete with rear escape access door

**ITEM QTY****DESCRIPTION**

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**2.1.2****MAKE-UP AND BREAK OUT ASSEMBLY****Features:**

- Unit comes with Two (2) 4 in. x 96 in. hydraulic cylinders, sheaves, rollers, and cables
- Make and break cylinders mounted on back of mast
- Hydraulic controls for make up and breakout functions, mounted over driller's console with automatic centering at end of cylinder stroke

### SECTION 3

#### SUBSTRUCTURE

<u>ITEM QTY</u>	<u>DESCRIPTION</u>
3.1 One (1)	<p>18'-6" HIGH PARALLELOGRAM SUBSTRUCTURES.</p> <p>Maximum rotary (casing) load is 400,000 lbs. simultaneous with a setback load of 250,000 lbs. for a total of 650,000 lbs. substructure capacity.</p> <p>The Substructure is raised to operating position using the traveling block/hook after the mast is raised. It parallelograms from front to back.</p> <p>The substructure is composed of:</p> <ul style="list-style-type: none"><li>- Main Base Assembly at ground level with top and bottom stiffened plate for ground loading distribution at bottom and equipment set down area on top.</li><li>- Transverse Members extending 30'-0" Driller's to Off-Driller's sides for lateral stability.</li><li>- Drill Floor Structures including folding wing decks for walkway on D.S. and O.D.S. sides. Setback area is covered with wood for drill pipe end protection. This area is fully plated underneath the wood and supported with structural beams to support full setback load.</li><li>- Handrails all around Drill Floor with chain link in way of V-Door Ramp.</li><li>- Two (2) Stairs with Handrails for Drill Floor access/egress.</li><li>- V-Door Ramp</li><li>- All Pins, Safety Pins and Handrails for assembly.</li><li>- Four (4) part Sling Lines for raising Drill Floor</li><li>- Four (4) part Sling Lines for raising Drill Floor.</li></ul>

## SECTION 4

### MUD SYSTEM

<b>ITEM</b>	<b>QTY</b>	<b>DESCRIPTION</b>
<b>4.1</b>	Two (2)	<p>800HP triplex mud pumps, unitized with 800 HP Engines. (Refurbished)</p> <p>Fluid end complete with pistons and liners, flanged suction manifold, discharge manifold with flanged connections and discharge strainer cross.</p> <p>Includes discharge pulsation dampeners, flanged gate valves spring loaded relief valves with adjustable pressure setting up to 5000psi.</p> <p>Includes pump pressure gauge, hydraulic seat puller assembly with pump, hose and heads to fit valve seats in above pumps.</p>
<b>4.2</b>	One (1)	<p>Mud Tank System composed of two (2) individual tanks with a total capacity of 900 BBLs.</p>
<b>4.3</b>	Two (2)	<p>Shale Shaker, motors, starters and wiring to be explosion proof.</p>
<b>4.4</b>	Seven (7)	<p>Mud agitators, driven by 10 HP explosion proof A.C. motors each with suitable gear box, coupling and guard. The exact number of units will depend on the final number of compartments requiring agitation (Refurbished).</p>
<b>4.5</b>	One (1)	<p>Vertical Atmospheric Degasser (NEW).</p>
<b>4.6</b>	One (1)	<p>Desander with two (2) each 12" diameter polyurethane cyclones rated at 800-1000 gpm. (NEW)</p>
<b>4.7</b>	One (1)	<p>Desilter with twelve (12) polyurethane cyclones rated at 800-1000 gpm. (NEW)</p>
<b>4.8</b>	One (1) Lot	<p>High Pressure and Low Pressure Mud Line Piping System</p>

## SECTION 5

### INSTRUMENTATION (NEW)

<b>ITEM</b>	<b>QTY</b>	<b>DESCRIPTION</b>
5.1	One (1)	SPM Meter with Totalize Counter
5.2	One (1)	Rotary Torque Indicator
5.3	One (1)	Tong Torque Indicator
5.4	One (1)	Weight Indicator
5.5	One (1)	Pump Pressure Indicator
5.6	Seven (7)	Recorder to measure: Bit Weight Rate of Penetration Rotary Table RPM Rotary Table Torque Pump SPM Pump Pressure Pump Return Flow

## SECTION 6

### INDEPENDENT ENGINE/GENERATOR SET AND COMPRESSOR (NEW)

<b>ITEM</b>	<b>QTY</b>	<b>DESCRIPTION</b>
<b>6.1</b>	Two (2)	Caterpillar D3412 diesel engines, 475 HP (Refurbished)
<b>6.2</b>	Two (2)	Air compressor rated at 125 psig powered by 40 HP, 3 phase, 60 HZ electric motor unitized and mounted on steel skid base. (NEW)
<b>6.3</b>	One (1)	Air Dryer (NEW)
<b>6.4</b>	One (1)	Cold Start Engine (NEW)
<b>6.5</b>	One (1)	200 Gal. Air Receivers, 125 psi complete with relief valve pressure gage and automatic water ejector tap (NEW)
<b>6.6</b>	One (1)	Utility building to house above equipment (NEW)

## SECTION 7

### BOP EQUIPMENT

<b>ITEM</b>	<b>QTY</b>	<b>DESCRIPTION</b>
7.1	One (1)	11" x 5000 psi Shaffer (or Equal) Annular BOP (Refurbished)
7.2	One (1)	11" x 5000 psi Shaffer (or Equal) Double BOP (Refurbished)
7.3	One (1)	11" x 5000 psi Drilling Spool (NEW)
7.4	One (1)	Control System, (4) Stations, (8) Bottles with Electric Triplex Pump powered by (1) 20 HP Electric Explosion Proof Motor and (1) Air Pump Rated at 9 gallons per minute. (NEW)
7.5	One (1)	5000 psi Choke and Kill Manifold with (5) 2 -1/16" x 5000# and two (2) 3 1/16" Manual Valves, (2) Adjustable Chokes, (1) Buffer Tank, all mounted on (1) Skid with Atmospheric Separator. (NEW)

## SECTION 8

### DRILL STRINGS TUBULARS

<b>ITEM</b>	<b>QTY</b>	<b>DESCRIPTION</b>
<b>8.1</b>	8,000 FT.	3 ½" Drill Pipe, Class 1, Grade E Nominal Weight 13.3 (NEW)
<b>8.2</b>	600 FT.	6" D.C, 2 13/16 O.D., 144 KG/M 6 3/8" T.J. 4 ½" IF Thread Type (NEW)

## SECTION 9

### PIPE HANDLING TOOLS (REFURBISHED)

<u>ITEM QTY</u>	<u>DESCRIPTION</u>
9.1	3 ½" D.P. Elevator Web Wilson center latch elevator rated capacity 150 tons with safety latch.
9.2	Links 2 ¼" 108" Web Wilson links rated capacity 250 tons.
9.3	D.P. Slips Slips for 3 ½" O.D. Drill pipe type Varco
9.4	Casing Elevators Web Wilson side door elevators, rated capacity 200 tons with safety latch for sizes 13 3/8, 9 5/8, 7" O.D.
9.5	Tubing Elevators Web Wilson center latch, rated capacity 100 tons, bored for 2 7/8" O.D. tubing.
9.6	Casing Slips Varco type multi-segment casing slips for 13 3/8", 8 5/8", 7" casing
9.7	Drill Collar Slips Varco type multi-segment D.C. slips
9.8	Safety Clamps
9.9	D.C. Elevators Web Wilson Type side door elevator complete with safety latch
9.10	Rotary Tongs Web Wilson type, extra heavy duty rotary and casing tongs with standard lever and hanger assembly less lug jaws. 3 ½"-4 ½" 4"-5 ¼" 5"-7 ¼" 6 7/8"-8 5/8" 9"-10 ¾" 13 3/8" -14 3/8"

## SECTION 10

### MISCELLANEOUS

<b>ITEM</b>	<b>QTY</b>	<b>DESCRIPTION</b>
<b>10.1</b>	One (1)	200 T Block/Hook Combination Grooved for 1 $\frac{1}{8}$ " Wireline (REFURBISHED)
<b>10.2</b>	One (1)	200 T Swivel (REFURBISHED)
<b>10.3</b>	One (1)	5 $\frac{1}{4}$ " Hex Kelly with Drive Bushings (NEW)
<b>10.4</b>	One (1)	Hydraulic Kelly Spinner (NEW)
<b>10.5</b>	One (1)	9000 Gallons Fuel Tank (NEW)
<b>10.6</b>	One (1)	200 BBL Water Tank (NEW)
<b>10.7</b>	One (1)	45 Ft. Catwalk (NEW)
<b>10.8</b>	One (1)	4 Ft. Wide V-Door Ramp (NEW)
<b>10.9</b>	One (1)	Deadline Anchor (See Section 1.3.1)
<b>10.10</b>	One (1)	Oilwell 27 $\frac{1}{2}$ " Rotary Table (Refurbished)

**END OF EQUIPMENT INVENTORY**