Super M2 Self-Elevating Drilling Unit

Designer : Friede & Goldman

Builder : TBD

GENERAL

Class	:	ABS
Notation	:	ABS ⊠A1 Self-Elevating Drilling Unit, 2008,CDS 2012,CPS（PSPC）,CRC

➢PRINCIPAL DIMENSIONS

Length o.a.	:	59.745m
Beam o.a.	:	55.78 m
Depth moulded	:	7.62m
Transit Draught	:	4.8m
Hull Material	:	AH36(Main Hull), EH36(Spud can), B(Acc.)
No. of legs	:	3
Leg length	:	125.3m
Spud can diameter:		12.09m
Spud can height	:	4.57m

➢Design Environment

Service area	:	TBA
Water depth	:	91.44m
Air Temperature	:	-10^0C min. to 45^0 ~max.
Humidity:	:	20% min. to 100%max.
Wind Survival Operations		: 100kts
Seawater		
Temperature	:	0^0C min. to 32^0
Density	:	1025 kg/m3 (For design purposes)
Corresponding wave period: 13.5sec		
Wave Height	:	
		15.24m(Survival, of the water depth 300ft);
		16.46m(Survival, of the water depth 250ft)

➢CARGO CAPACITIES

Deck Load	:	9000kips
Pipe rack	:	540lbs/ft²
Main deck (outside pipe rack):		540lbs/ft²
Quarter's deck	:	90lbs/ft²
House Tops	:	150lbs/ft²
Machinery Spaces:		270lbs/ft²
Sack stores	:	540lbs/ft²

➢MACHINERY/PROPULSION

➢Main engines and Generators:		
		CATERPILLAR 3516C HD Offshore Generator Set: 5SET,1530eKW, 600V, 60Hz
➢Emergency	:	CATERPILLAR 3412C Emergency Generator Set: 1 set 550eKW, 480V, 60Hz, 1800rpm
➢Fuel Purifier	:	250 GPH Two (2) ALPHA–LAVAL MAB or equal.
➢Oily Water Sep	:	5m³/h, the max oil content<15ppm.
➢Sewage Plant	:	1 x 110 man capacity, gray & black water.
➢Preload System	:	3 centrifugal, vertical submersible pumps,500m³/h@50m head.
➢FW Generator	:	2 x 30m³/D.
➢Air Compressors:		2 x rig air compressor 1182m3/h@9bar/460V-3P-60HZ/IP44.
		1 x bulk air compressor 1182m3/h @8bar/460V-3P-60HZ/IP44
➢Cargo Pumps	:	2 x Fuel oil transfer pumps, 13m3/h @ 4.5ba RPM 1750 rpm/460V-3P-60HZ/IP55
➢Jacking System	:	NOV-BLM D60H/SUPER MOD2
➢Rack Chock Sys	:	Friede & Goldman ARCOS

➢FIRE FIGHTING & SAFETY

➢Fire Fighting	:	2 x pumps 160 m³/hr @ 7 bar RPM 3500 rpm/460V-3P-60HZ/IP55
➢Life Boats	:	110 person/diesel drive/speed≥6knot 1 x Rescue Boat (6 men)
➢Life Rafts	:	5 x 25 men

➢HELIDECK

1 x Heli-deck suitable for Sikorsky S-61N helicopter

➢NAVIGATION EQUIPMENT

including electronic aids, electronic telecommunications system, radio telecommunication equipment, sensing, indicating and control equipment in accordance with the Regulatory Body requirement.

➢COMMUNICATION EQUIPMENT(GMDSS)

2 INMARSAT C
2 GMDSS RadioMF/HF
3 VHF radios
1 Satellite EPIRB
1 Navtex receiver
6 hand held VHF transceivers
2 Radar Transponders for lifeboats, the other 2 in jacking control room.
1 Aviation VHF installed in the Jacking Control room for Helicopter communications
2 Waterproof VHF radios for use in the Survival Capsules(portable)
2 VHF LOCATED IN JACKING CONTROL ROOM(portable)
2 VHF Radio located in cranes
6 UHF handheld transceiver
1 Fleet Broadband 500

➢ACCOMMODATION

The accommodation and mess facilities are fit for 110 persons. The accommodation shall follow the guidelines for ILO regulations and be able to house 110 men in 4-man cabins (Have Approached Flag state for release).

➢REFRIGERATED STORAGE CAPACITY

Cold store	:	1 x 13 m³ walk in Freezer
Chiller	:	1 x 16 m³ walk in Chiller room
Provisions	:	1 x 25 m³ walk in Provisions room

➢DECK MACHINERY

➢Main Deck Crane	:	1 x 120ft 50ton at 24ft/diesel drive
		1 x 100ft 50ton at 21ft/diesel drive
➢4 Point Moor System	:	4 x Single Drum winches, Brake Hold 1170kN, first layer
➢Anchors	:	4 x anchors, 3.1752T ea
➢Towing Gear	:	bridle , 8m* ∮ 66mm steel chain; Hook-up, 5Ton Air tugger winch Rating, MBL.320T

➢STORE CAPACITIES

Ballast water	:	191,310 ft3 (5,418 m3)
Drill water	:	36,263 ft3 (1,027 m3)
Potable water	:	13,276 ft3 (376 m3)
Brine tank	:	5,049 ft3 (143 m3)
Base oil tank	:	5,049 ft3 (143 m3)
Mud tank	:	25,635 ft3 (726 m3)
Diesel oil	:	23,092ft3 (654 m3)
Misc tank	:	2,471 ft3 (70 m3)

Above are estimated and subjected to change accordingly.

➢**DRILLING PACKAGE**

➢Drill pipe rack sizing: Cantilever beam pipe rack, 272 tonne;
Main Deck pipe rack , 622 tonne.
➢Derrick: MAXIMUM HOOK: 750ST,
CLEARANCE HEIGHT: 160FT
DERRICK BASE: 40FT×35FT
ABS-CDS CERTIFICATION
➢Rotary Table: TSC495H
Max.Continuous torque:35000IB-FT
Insert bowl #1
Insert bowl #2
Insert bowl #3
HYDRAULIC CONTROL
ABS-CDS CERTIFICATION
➢Set-back: 750kips
➢Maximum Cantilever load (Combined Hook+ rotary+ setback):
650kips at 50/15; 1,700kips at 50/0
➢Cantilevered Skid: Cantilever XY skid: 50ft by 15ft
➢Draw-works: TSC D3000 Power:2X1500OEM
ABS-CDS CERTIFICATION
Top Drive: NOV TDS-8SA GEB-20 600VAC MOTOR 1150HP
INTERMITTENT TORQUE RATING:95,000FT-IBS@ 0RPM
MAXIMUM SPEED RATING:14,500FT-IB@270RPM
CONTINUOUS TORQUE RATING:62,250FT-IB@94RPM
ABS-CDS CERTIFICATION
➢Traveling Equipment: 750 short tons Traveling Block.
➢Rig Instrumentation: TSC drilling instrumentation system is completed with local sensors, transmitters, J-boxes, data Hubs, display screen/ system controller, and patented software.
➢Iron Roughneck: NOV TS-120 Pipe handling range: 3 1/2” ~10 ” OD
Max. makeup torque: 100,000 ft-lbs
Max. breakout torque:120,000 ft-lbs
Spinner torque: 3,000 ft-lbs
Frame rotation: 360 degree

➢Camera: Racking/finger board, two (2)
Travelling block, one (1)
Mud pump room, one (1)
V door ramp one (1)
Drill floor, one (1)
BOP area, one (1)
Mud pit, one (1)
Shakers area, one (1)

➢Tubing Equipment: 60.3-mm to 172-mm(2-3/8” to 5”) tubing or drill pipe.

➢**WELL CONTROL EQUIPMENT**

➢**Diverter**
GE KFDJ-500 ,49-1/2” 500PSI
ABS-CDS CERTIFICATION

➢**BOP stack**
CAMERON, 21-1/4” 2000PSI
CAMERON, 13-5/8” 15000PSI
ABS-CDS CERTIFICATION

➢**MUD SYSTEM**

➢**HIGH PRESSURE MUD SYSTEM**
System working pressure: 7,500 psi
System test pressure: 11,250psi

➢**MUD PUMPS**
3 X TSC Work Force -2000hp triplex single mud, Triplex
Mud pump drive motors/pump: 2
-Motor type: Yongji/Fluid end type
-Maximum working pressure: 7,500psi
-Test pressure: 11,250psi
Pump stroke counter type: supersonic
Discharge/suction line ID: 5” & 12” for mud pump
Mud pump pulsation dampener type: diagram Nitrogen type
Reset Relief Valve: 3” Reset Relief Valve
Working flow rate per pump at 90% of max SPM:
Liner size: 5” to 7-1/4”

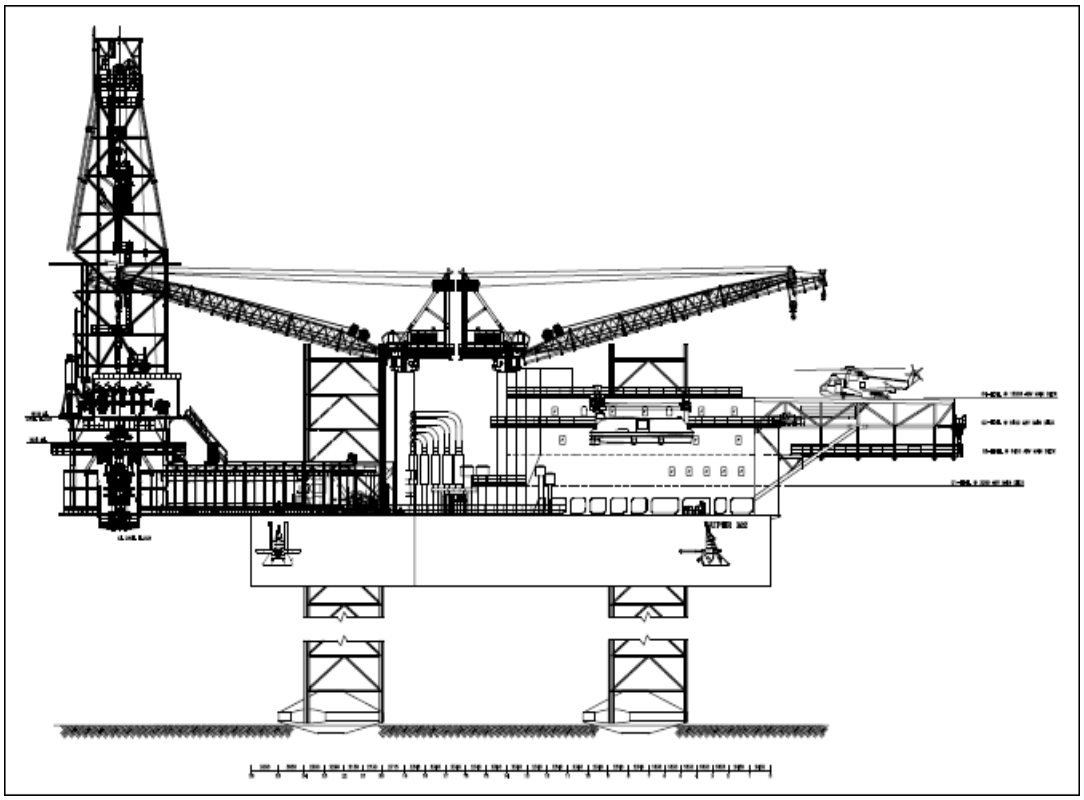
➢**CANTILEVER ALLOWABLE DRILLING/WORK-OVER LOAD**
Cantilever Allowable Drilling/work-over loads indicated are the sum of setback, hook, rotary, and conductor tension loads (in Kips) based on the cantilever assembly weight and center of gravity Any increase in cantilever assembly weight will result in a decrease in the allowable Drilling/Work-over loads.

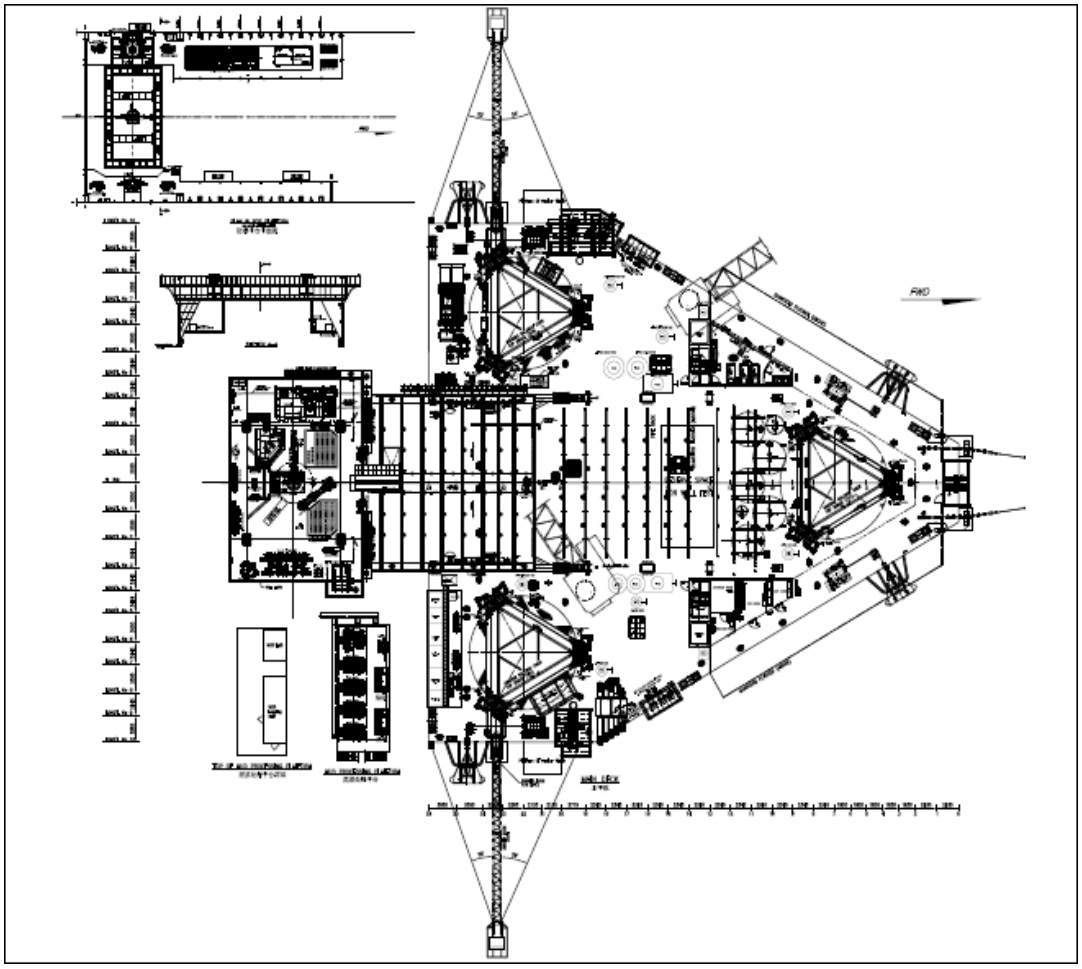
Drill floor offset (B) from Jack-up centerline (feet)

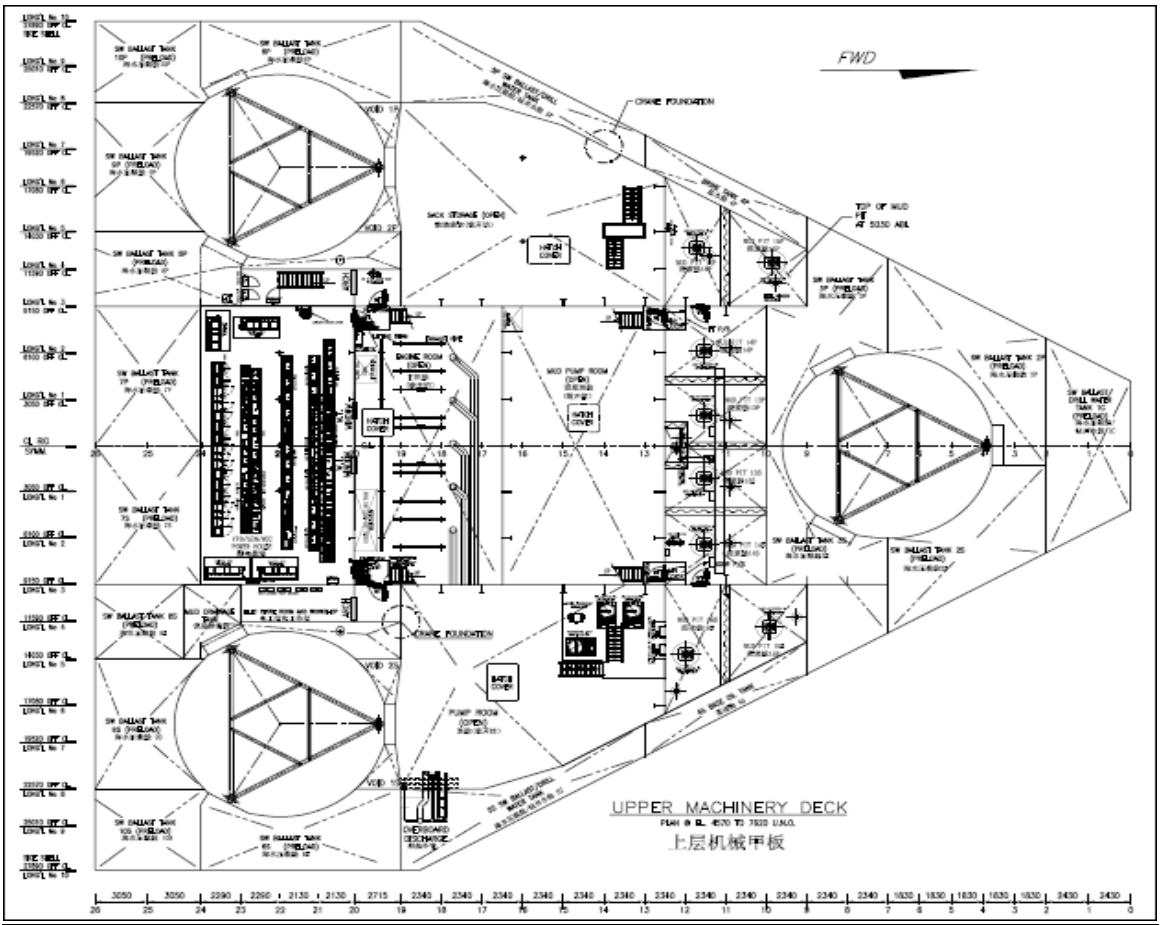
Cantilever outreach (A) (feet)	Starboard (-ve)													Port (+ve)											
	-15.0	-12.0	-10.0	-8.0	-5.0	-2.0	0.0	2.0	5.0	8.0	10.0	12.0	15.0	50.0	49.0	48.0	47.0	46.0	45.0	42.0	40.0	38.0	35.0	34.0	32.0	30.0	28.0	25.0	20.0	15.0
50.0	883	1073	1215	1373	1643	1963	1809	1585	1297	1054	912	784	614																	
49.0	945	1139	1285	1446	1722	2050	1902	1672	1376	1127	982	851	676																	
48.0	1009	1208	1357	1522	1805	2140	1998	1762	1459	1204	1055	920	740																	
47.0	1075	1279	1432	1601	1890	2200	2099	1856	1545	1283	1130	991	807																	
46.0	1145	1353	1510	1683	1979	2200	2200	1954	1634	1365	1208	1066	877																	
45.0	1217	1431	1591	1768	2072	2200	2200	2056	1728	1451	1290	1144	949																	
42.0	1393	1620	1790	1978	2200	2200	2200	2200	1939	1645	1474	1319	1112																	
40.0	1480	1713	1888	2081	2200	2200	2200	2200	2052	1749	1573	1413	1200																	
38.0	1571	1811	1990	2189	2200	2200	2200	2200	2170	1858	1676	1511	1292																	
35.0	1716	1966	2153	2200	2200	2200	2200	2200	2200	2031	1841	1668	1438																	
34.0	1767	2020	2200	2200	2200	2200	2200	2200	2200	2092	1898	1723	1489																	
32.0	1871	2132	2200	2200	2200	2200	2200	2200	2200	2200	2017	1837	1595																	
30.0	1982	2200	2200	2200	2200	2200	2200	2200	2200	2200	2143	1956	1707																	
28.0	2098	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2082	1824																	
25.0	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2012																	
20.0	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200																	
15.0	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200																	

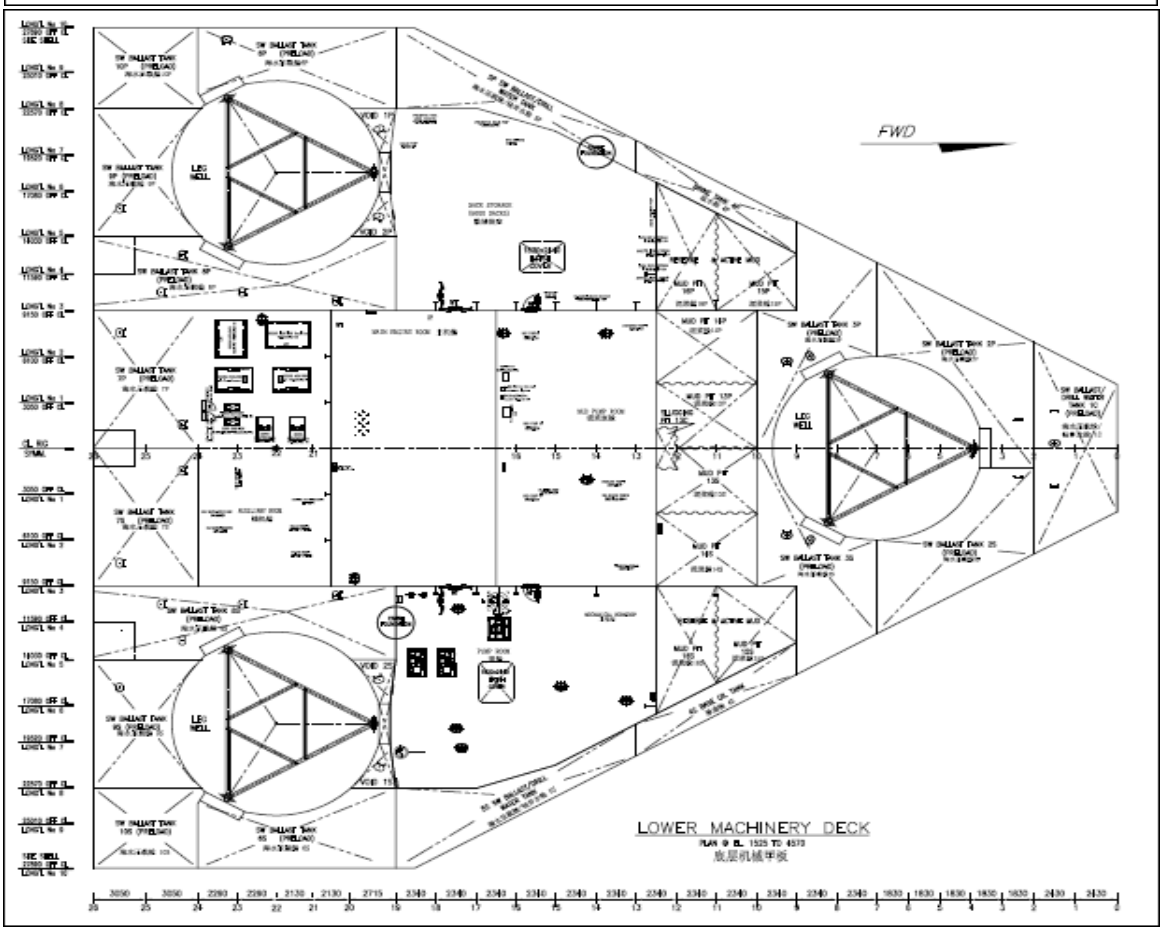
The values in the chart are in kips

Above are estimated and subjected to change accordingly.






FWD
UPPER MACHINERY DECK
PLAN @ EL. 4570 TO 7525 U.N.O.
上层机械甲板


FWD
LOWER MACHINERY DECK
PLAN @ EL. 1525 TO 4570
底层机械甲板