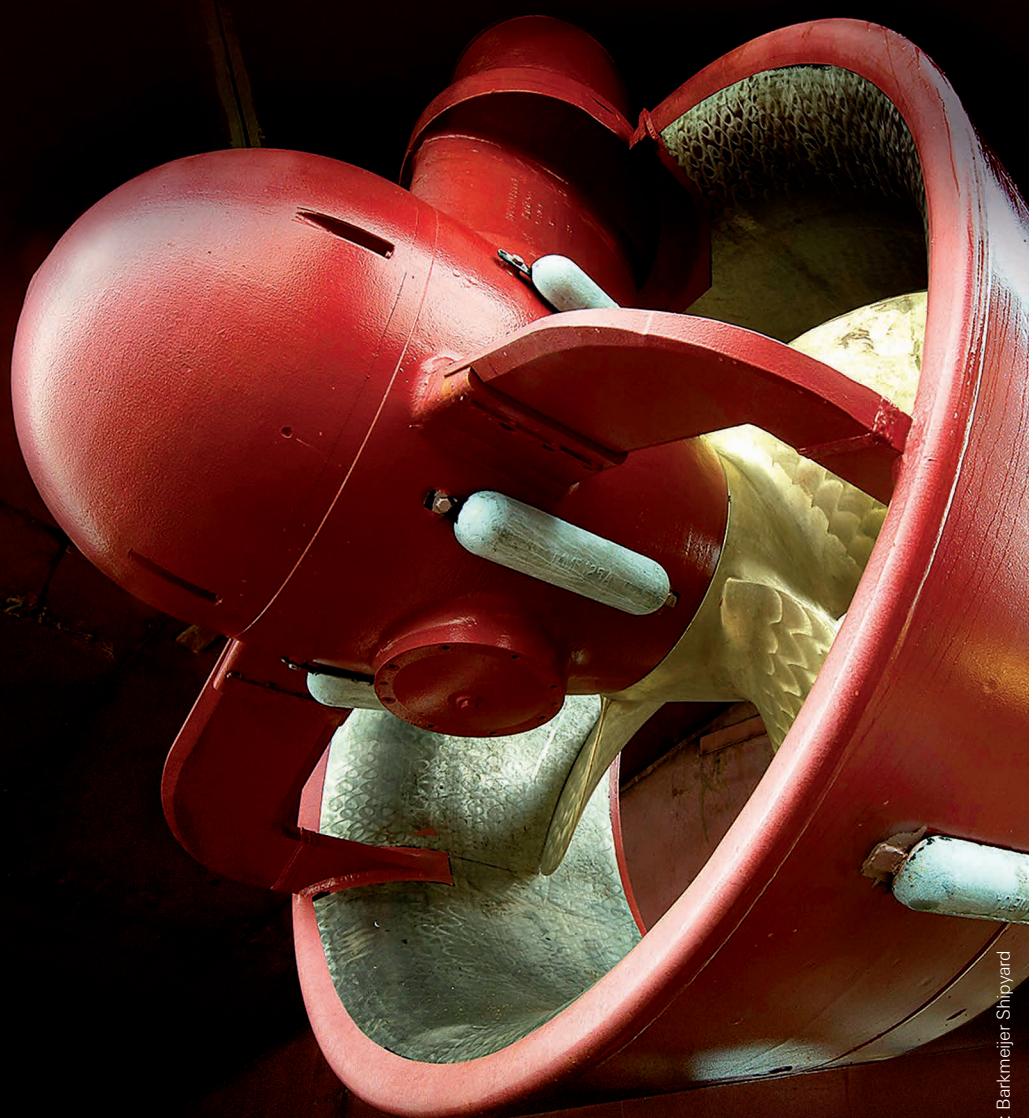


COMMERCIAL CRAFT THRUSTER SYSTEMS



MARINE PROPULSION SYSTEMS
AUGUST 2014

Courtesy of Barkmeijer Shipyard





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ZF MARINE KRIMPEN is a company with more than 35 years experience in building azimuth propulsion units. Over the years, the company has designed, produced and commissioned various models of thrusters, for a multitude of applications around the world. This brought ZF Marine Krimpen the reputation of a reliable and renowned thruster supplier. All ZF marine thruster systems are developed, designed, and produced in-house, built under the umbrella of constant quality control which guarantees the reliability of the product.

THRUSTER PRODUCTS

The current range of thruster products up to a power of 2150 kW comprises:



Well Mounted Azimuth Thrusters



Contra Rotation Azimuth Thrusters



Deck Mounted Azimuth Thrusters



Retractable Azimuth Thrusters



Tunnel Thrusters



Shallow Draught Thrusters

WELL MOUNTED AZIMUTH THRUSTERS

Z-DRIVE Horizontal inputshaft



MODEL	Max. power*		Typical prop. dia. open		Typical prop. dia. nozzle	
	kW	hp	mm	inch	mm	inch
ZF AT 2000 WM-FP	180	241	750	30	700	28
ZF AT 3000 WM-FP	300	402	1050	41	1000	39
ZF AT 400 WM-FP	440	590	1150	45	1100	43
ZF AT 4000 WM-FP	525	704	1350	53	1300	51
ZF AT 5000 WM-FP	825	1105	1700	67	1650	65
ZF AT 6000 WM-FP	1200	1608	1950	77	1900	75
ZF AT 7000 WM-FP	1650	2211	2300	91	2200	87
ZF AT 8000 WM-FP	2000	2680	2500	98	2400	94

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

WELL MOUNTED AZIMUTH THRUSTERS

L-DRIVE Vertical inputshaft



MODEL	Max. power*		Typical prop. dia. open		Typical prop. dia. nozzle	
	kW	hp	mm	inch	mm	inch
ZF AT 2000 WM-FP	200	268	750	30	700	28
ZF AT 3000 WM-FP	300	402	1050	41	1000	39
ZF AT 400 WM-FP	440	590	1200	47	1150	45
ZF AT 4000 WM-FP	525	703	1350	53	1300	51
ZF AT 5000 WM-FP	825	1105	1700	67	1650	65
ZF AT 6000 WM-FP	1200	1608	1950	77	1900	75
ZF AT 7000 WM-FP	1650	2211	2300	91	2200	87
ZF AT 8000 WM-FP	2000	2680	2500	98	2400	94

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

CONTRA ROTATION AZIMUTH THRUSTERS

Z-DRIVE & L-DRIVE



MODEL	Max. power*		Propeller dia. pulling prop.		Propeller dia. pushing prop.	
	kW	hp	mm	inch	mm	inch
ZF AT 2000 WM-CR	150	201	700	28	670	26
ZF AT 3000 WM-CR	300	402	1125	44	1000	39
ZF AT 400 WM-CR	385	516	1000	39	960	38
ZF AT 4000 WM-CR	435	583	1250	49	1150	45
ZF AT 5000 WM-CR	770	1032	1400	55	1250	49

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

Advantages compared to thruster with single propeller:

- Higher efficiency with same propeller diameter.
- Same efficiency with reduced propeller diameter beneficial for shallow-draught applications.
- Reduced noise due to lower blade load.

Typical applications are river going passenger vessels where noise is a critical issue, guaranteeing the comfort on board.

DECK MOUNTED AZIMUTH THRUSTERS

Z-DRIVE Horizontal inputshaft



MODEL	Max. power*		Typical prop. dia. open		Typical prop. dia. nozzle	
	kW	hp	mm	inch	mm	inch
ZF AT 2000 DM-FP	180	241	750	30	700	28
ZF AT 3000 DM-FP	300	402	1050	41	1000	39
ZF AT 400 DM-FP	440	590	1150	45	1100	43
ZF AT 4000 DM-FP	525	703	1350	53	1300	51
ZF AT 5000 DM-FP	825	1105	1700	67	1650	65
ZF AT 6000 DM-FP	1200	1608	2100	83	2050	81

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

RETRACTABLE AZIMUTH THRUSTERS

Z-DRIVE Horizontal inputshaft



MODEL	Max. power*		Typical prop. dia. nozzle	
	kW	hp	mm	inch
ZF AT 2000 RT-FP	180	241	700	28
ZF AT 3000 RT-FP	300	402	1000	39
ZF AT 400 RT-FP	440	590	1100	43
ZF AT 4000 RT-FP	525	703	1300	51
ZF AT 5000 RT-FP	825	1105	1650	65
ZF AT 6000 RT-FP	1200	1608	1900	75
ZF AT 7000 RT-FP	1650	2211	2200	87
ZF AT 8000 RT-FP	2000	2680	2400	94

* Rating subject to classification and application.
Mentioned data for indication purposes only.
Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

RETRACTABLE AZIMUTH THRUSTERS

L-DRIVE Vertical inputshaft



MODEL	Max. power*		Typical prop. dia. nozzle	
	kW	hp	mm	inch
ZF AT 2000 RT-FP	200	268	700	28
ZF AT 3000 RT-FP	300	402	1000	39
ZF AT 400 RT-FP	440	590	1150	45
ZF AT 4000 RT-FP	525	703	1300	51
ZF AT 5000 RT-FP	825	1105	1650	65
ZF AT 6000 RT-FP	1200	1608	1900	75
ZF AT 7000 RT-FP	1650	2211	2200	87
ZF AT 8000 RT-FP	2000	2680	2400	94

* Rating subject to classification and application.
Mentioned data for indication purposes only.
Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

FIXED PITCH TUNNEL THRUSTERS

Z-DRIVE Horizontal inputshaft



MODEL	Max. power*		Typical prop. dia.		Tunnel outer dia.		Tunnel wall thickness stand.		Tunnel lenght stand.	
	kW	hp	mm	inch	mm	inch	mm	inch	mm	inch
ZF TT 1000 FP	100	134	600	24	660	26	15	0,6	1000	39
ZF TT 2000 FP	180	241	700	28	760	30	15	0,6	1000	39
ZF TT 3000 FP	300	402	1050	41	1110	44	15	0,6	1000	39
ZF TT 400 FP	440	590	1150	45	1220	48	15	0,6	1000	39
ZF TT 4000 FP	525	703	1350	53	1420	60	16	0,6	1500	59
ZF TT 5000 FP	825	1105	1650	65	1730	70	18	0,7	2000	79
ZF TT 6000 FP	1200	1608	1900	75	1990	80	20	0,8	2000	79
ZF TT 7000 FP	1650	2211	2300	91	2400	90	22	0,9	2200	80
ZF TT 8000 FP	2000	2680	2450	97	2550	100	22	0,9	2550	100

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

FIXED PITCH TUNNEL THRUSTERS & CONTROLLABLE PITCH TUNNEL THRUSTERS

L-DRIVE Vertical inputshaft



Fixed Pitch Tunnel Thrusters

MODEL	Max. power*		Typical prop. dia.		Tunnel outer dia.		Tunnel wall thickness stand.		Tunnel lenght stand.	
	kW	hp	mm	inch	mm	inch	mm	inch	mm	inch
ZF TT 1000 FP	100	134	600	24	660	26	15	0,6	1000	39
ZF TT 2000 FP	200	268	700	28	760	30	15	0,6	1000	39
ZF TT 3000 FP	300	402	1050	41	1110	44	15	0,6	1000	39
ZF TT 400 FP	440	590	1150	45	1220	48	15	0,6	1000	39
ZF TT 4000 FP	525	703	1350	53	1420	60	16	0,6	1500	59
ZF TT 5000 FP	825	1105	1650	65	1730	70	18	0,7	2000	79
ZF TT 6000 FP	1200	1608	1900	75	1990	80	20	0,8	2000	79
ZF TT 7000 FP	1650	2211	2300	91	2400	90	22	0,9	2200	80
ZF TT 8000 FP	2000	2680	2450	97	2550	100	22	0,9	2550	100

Controllable Pitch Tunnel Thrusters

MODEL	Max. power*		Typical prop. dia.		Tunnel outer dia.		Tunnel wall thickness stand.		Tunnel lenght stand.	
	kW	hp	mm	inch	mm	inch	mm	inch	mm	inch
ZF TT 4000 CP	500	670	1350	53	1425	56	16	0,6	1500	59
ZF TT 5000 CP	850	1139	1650	65	1730	68	18	0,7	2000	79

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

SHALLOW DRAUGHT THRUSTERS

Z-DRIVE & L-DRIVE



MODEL	Max. power*		Diameter outer well appr.		Height of outer well appr.	
	kW	hp	mm	inch	mm	inch
ZF SDT 2000 FP	100	134	1030	41	615	24
ZF SDT 3000 FP	195	261	1460	57	867	34
ZF SDT 4000 FP	350	469	1960	77	1158	46
ZF SDT 5000 FP	575	770	2520	99	1493	59
ZF SDT 6000 FP	825	1105	3060	120	1805	71

* Rating subject to classification and application.

Mentioned data for indication purposes only.

Consult ZF Marine Krimpen's technical staff to determine applicable power for each specific use.

ZF Shallow Draught Thruster

- 360° steering, no thrust deduction in any angle.
- Compact design, water intake and nozzle within one circle.
- Thanks to the unique design a relatively low intake speed of water, reducing the chances of sucking-in foreign objects or debris. Also very safe for divers.

This thruster can be used as:

1. Main Propulsion

on ships required to be able to navigate in shallow waters e.g. ferries, pontoons, landing craft.

2. Auxiliary Propulsion

as steerable thruster for auxiliary or back-up type propulsion e.g. research vessels, offshore platforms, coasters (as 'get-you-home' unit), inland cargo ships.

3. Bow Thruster

as better alternative and also to replace (especially long) tunnel thrusters e.g. work pontoons, freighters (inland and ocean going), sheerlegs, dredgers.

ZF Thruster Systems offers you this thruster in combination with the other range of steerable thrusters (retractable, well mounted and deck mounted propulsion units) and tunnel thrusters.

THRUSTER MOUNTING CONFIGURATIONS

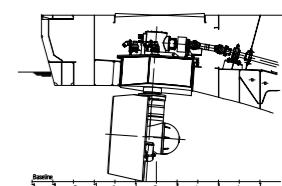


There are three different mounting configurations within the range of the ZF thrusters used for main propulsion.

WELL MOUNTED FROM TOP

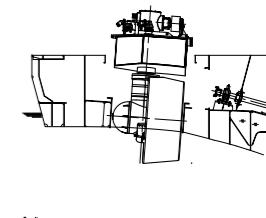
Well mounted top removal

Recommended for ships operating in areas with limited dry-docking facilities. This mounting configuration makes it possible to either install or remove the thruster from the ship while the vessel is still afloat.



Advantages of this configuration are:

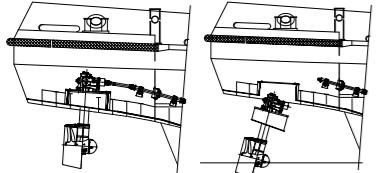
- Easy maintenance or repair is possible since the thruster can be removed from the vessel without the need for dry-docking. This requires a permanent deck hatch or soft patch above the thruster.
- Downtime is limited since repair or replacement of a damaged thruster is easily accomplished in hours.



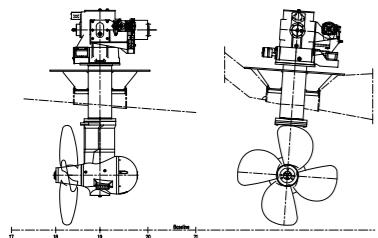
THRUSTER MOUNTING CONFIGURATIONS

WELL MOUNTED FROM BOTTOM

Well mounted bottom removal

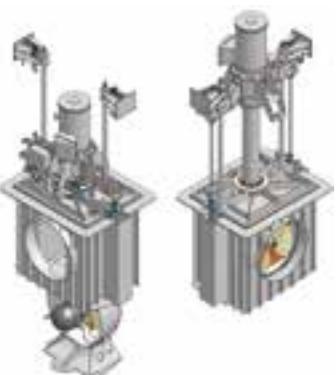


When top mounting isn't possible due to design restrictions in the vessel's construction that make access via a deck hatch above the thruster impossible, the thruster can be installed from below with a bottom mounting flange arrangement. The main advantage of this design is that the thruster can still be withdrawn from the ship if required. Dry-docking of the vessel is usually required, unless it's possible to trim the vessel sufficiently forward to allow the thruster to be removed from below while keeping the outer well flange and thruster upper gearbox above the waterline.



WELD IN

When neither a top mounting nor bottom mounting arrangement is possible or desired, the thruster can be delivered with a suitable welding structure around the vertical stem section, which will be incorporated into the vessel's hull construction and welded into place.



RETRACTABLE AZIMUTH THRUSTERS

A retractable thruster is used for auxiliary propulsion system or to increase the vessel's "station keeping" capabilities. Once deployed below the hull, the thruster operates in full azimuth mode and when retracted, the thruster is completely "parked" inside the hull. A retractable thrusters is most commonly installed in the bow of a vessel where a tunnel can be incorporated into the design of the outer well to allow the thruster to be used as a conventional side thruster when fully retracted in shallow water.



REMovable TUNNEL THRUSTERS

In addition to the conventional tunnel thruster arrangement where the tunnel is welded integral to the vessel's structure with the gearbox bolted directly onto the mounting flange, it is also possible to suspend the thruster in rubber. In this manner the thruster is isolated from the hull and direct contact between tunnel and hull construction is avoided. This reduces "structure borne noise" significantly. The flange arrangement also makes it possible to remove the thruster from the vessel without drydocking, provided that the vessel can be trimmed so the outerwell flange is above the waterline for removal.

REMOTE CONTROL SYSTEM



REMOTE CONTROL SYSTEM

A complete remote control system is a standard item in the ZF scope of supply. It is designed to control a single azimuth thruster and provides follow-up steering- and propulsion control, as well as independent backup- and emergency stop functionality.

The system is capable of interfacing with diesel engines and electric or hydraulic motors as power source for propulsion. For steering the system interfaces with a hydraulic or electric steering system.



REMOTE CONTROL SYSTEM

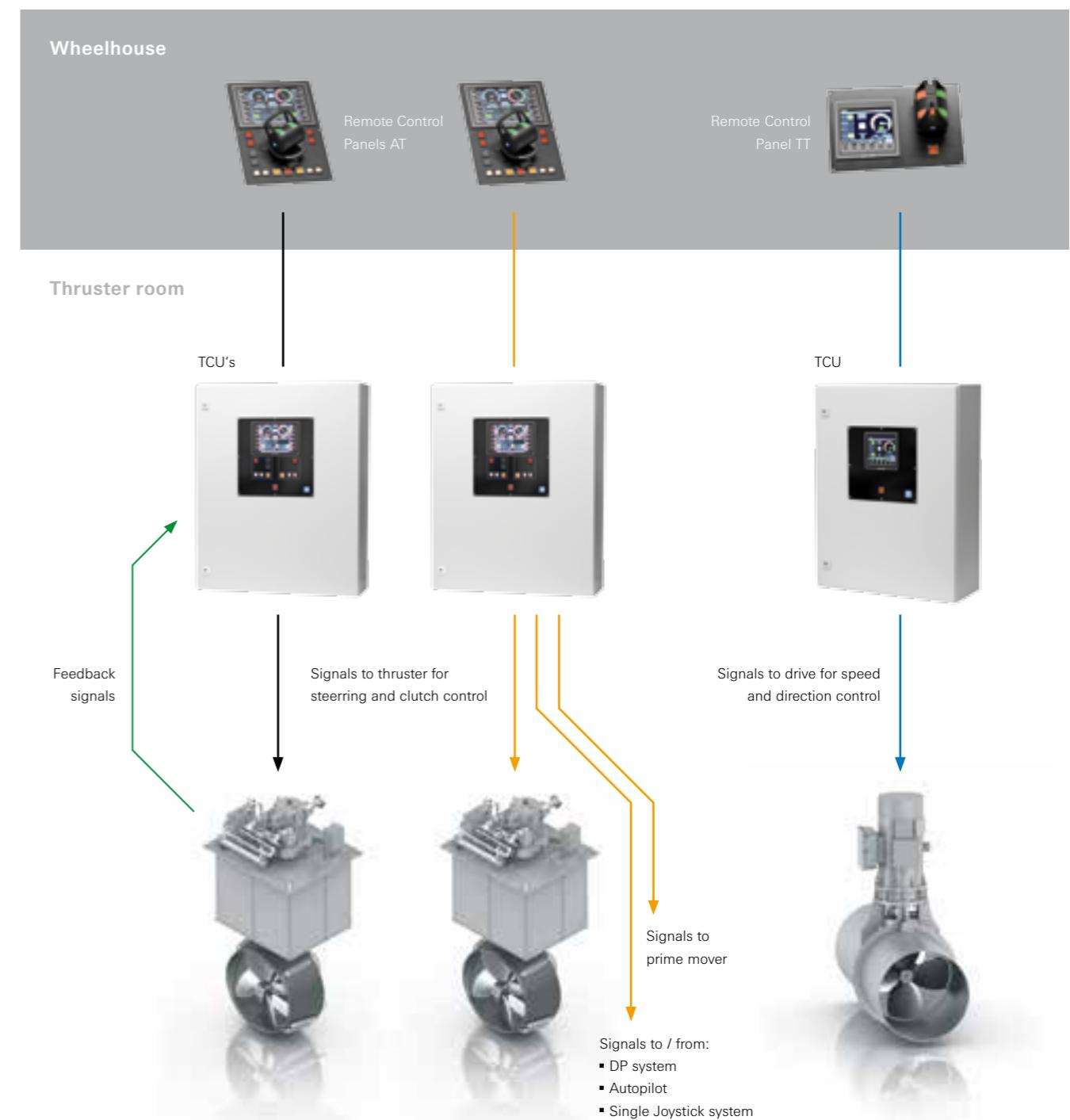


Standard control system consists of a Thruster Control Unit (TCU), which is to be placed in the immediate vicinity of the thruster, and one remote control panel on the bridge. Optionally a number of additional remote control panels can be connected.

The local control facility is mounted on the door of the TCU. The TCU houses the electronics for interfacing with the thruster and power sources for steering and propulsion, as well as vertical positioning.

INTERFACING

Interfacing to several other systems such as Dynamic Positioning, joystick system, auto pilot, Voyage Data Recorder (VDR), alarm- and monitoring etc. can be supplied as an option.



REFERENCES

-
- [WELL MOUNTED AZIMUTH THRUSTERS](#)
 - [CONTRA ROTATION AZIMUTH THRUSTERS](#)
 - [RETRACTABLE AZIMUTH THRUSTERS](#)
 - [DECK MOUNTED AZIMUTH THRUSTERS](#)
 - [TUNNEL THRUSTERS](#)
 - [SHALLOW DRAUGHT THRUSTERS](#)
-

2880T HEAVY FUEL TANKER “NORDEN” – SWEDEN



Length o.a. : 79.95 m

Breadth : 13.40 m

Draught : 5.00 m

ZF-Reference : 5823

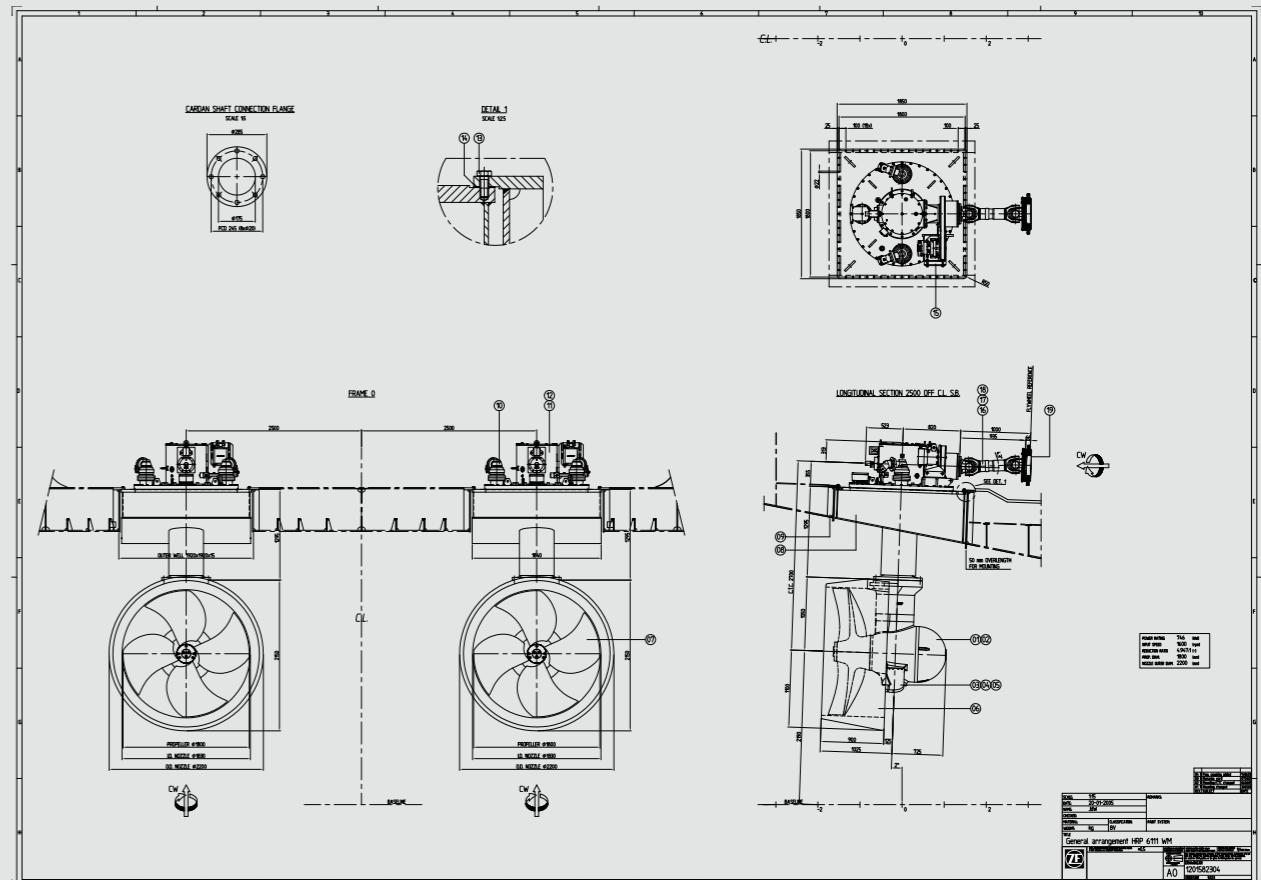
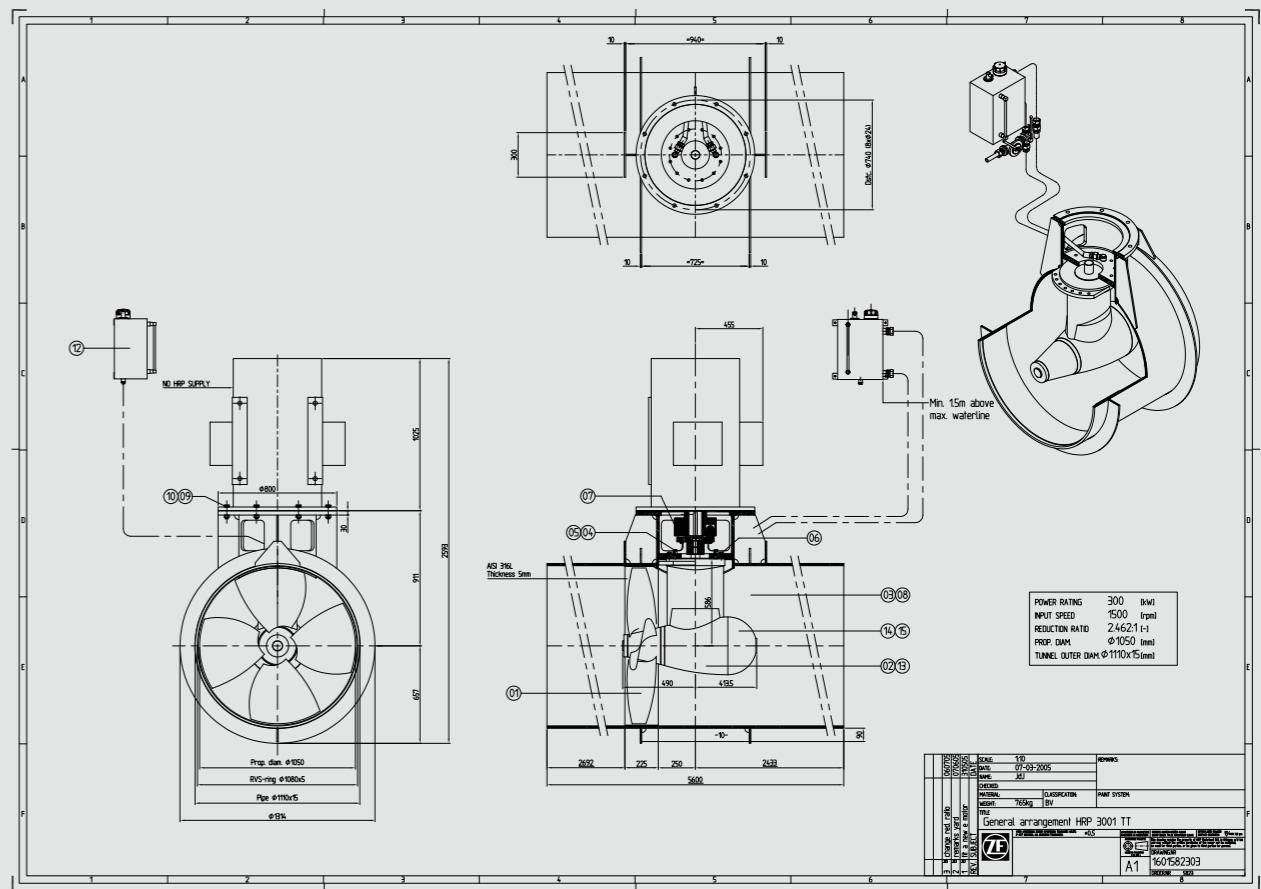
Model : ZF AT 6000 WM-FP / ZF TT 3000 FP

Rated power : 746 kW at 1600 rpm / 300 kW at 1500 rpm

Shipyard : Bodewes Shipyards – the Netherlands

Owner : OljOla AB – Sweden

Equipped with two (2) ZF AT 6111 well mounted azimuth thrusters and one (1) ZT TT 3001 electric driven tunnel thruster.



3000 M³ TANKER VESSEL “BARNOIL” – SPAIN



Length o.a. : 66.00 m

Breadth : 15.00 m

Draught : 5.00 m

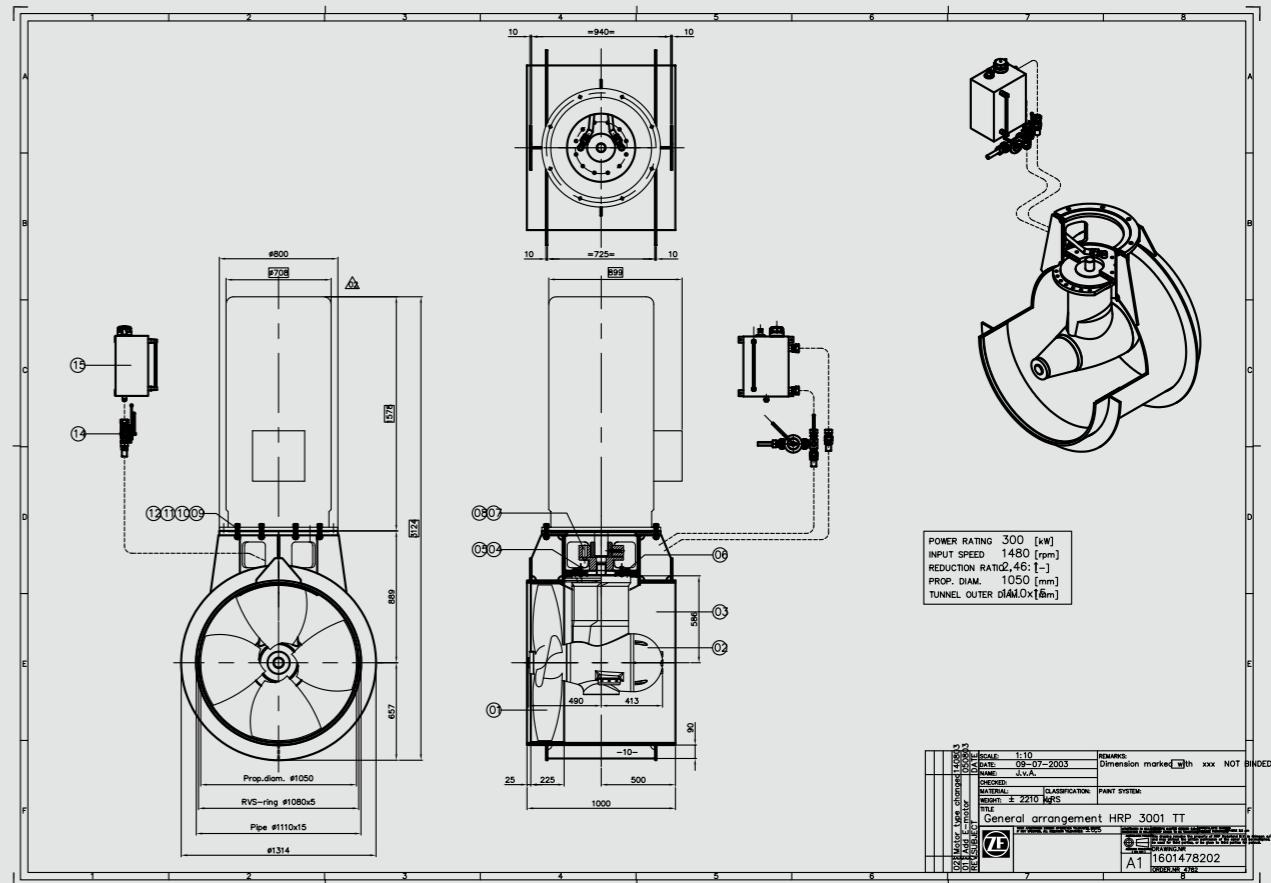
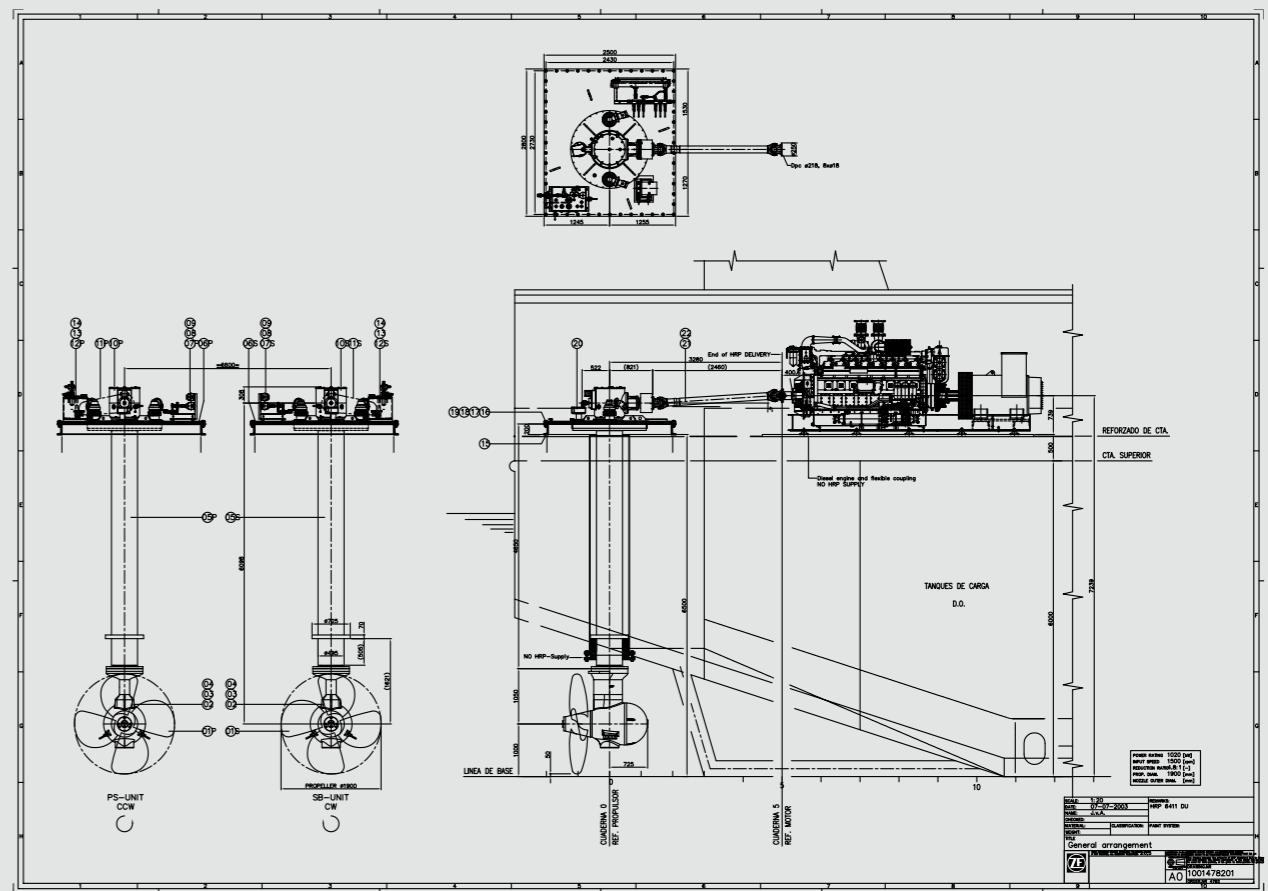
ZF-Reference : 4782

Model : ZF AT 6000 WM-FP / ZF TT 3000 FP

Rated power : 1020 kW at 1500 rpm / 300 kW at 1500 rpm

Supplied to : Astilleros Zamakona – Spain

Equipped with two (2) ZF AT 6411 well mounted azimuth thrusters and one (1) ZF TT 3001 electric driven tunnel thruster.



SUCTION HOPPER DREDGER “HEIN” – NETHERLANDS



Length o.a. : 100.22 m

Breadth : 15.54 m

Draught : 5.00 m

ZF-Reference : 4522

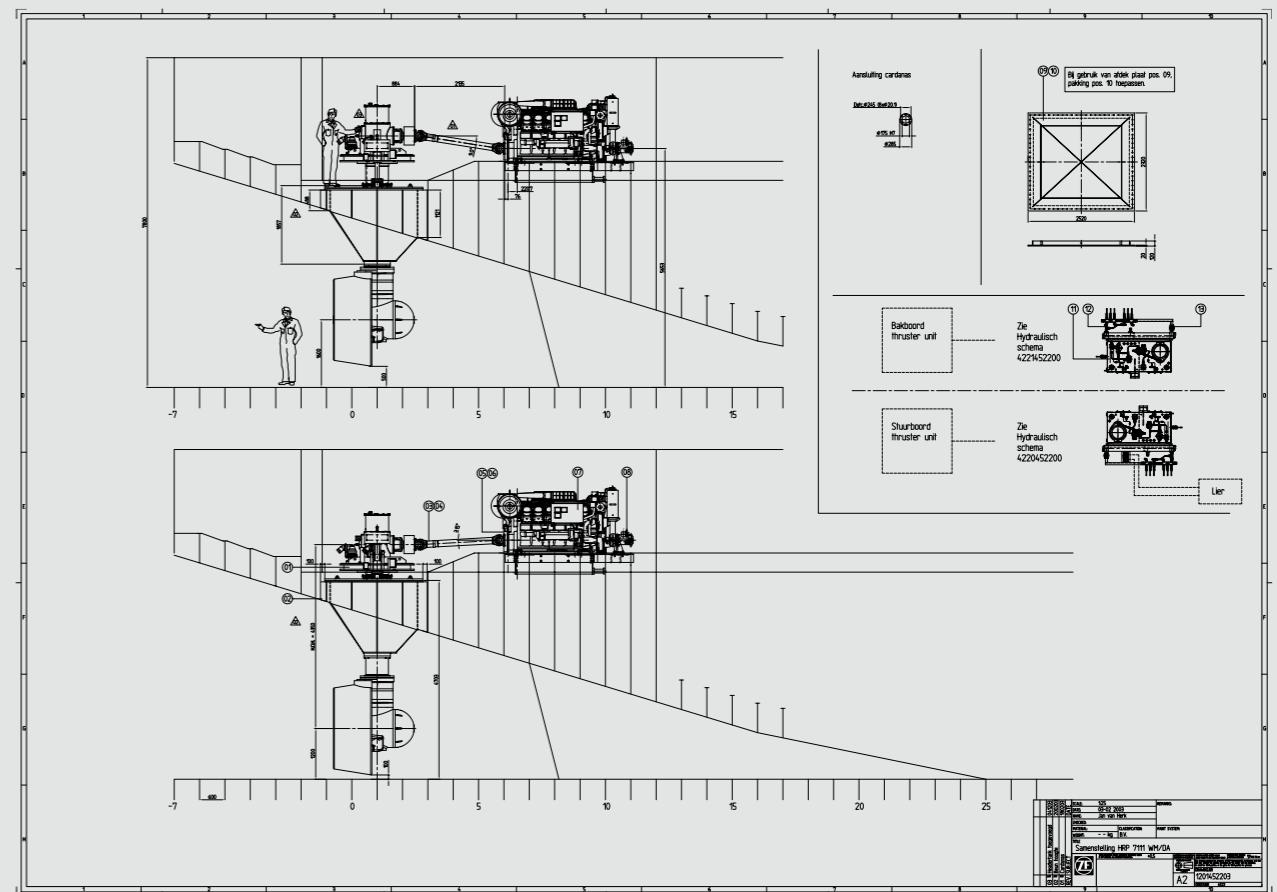
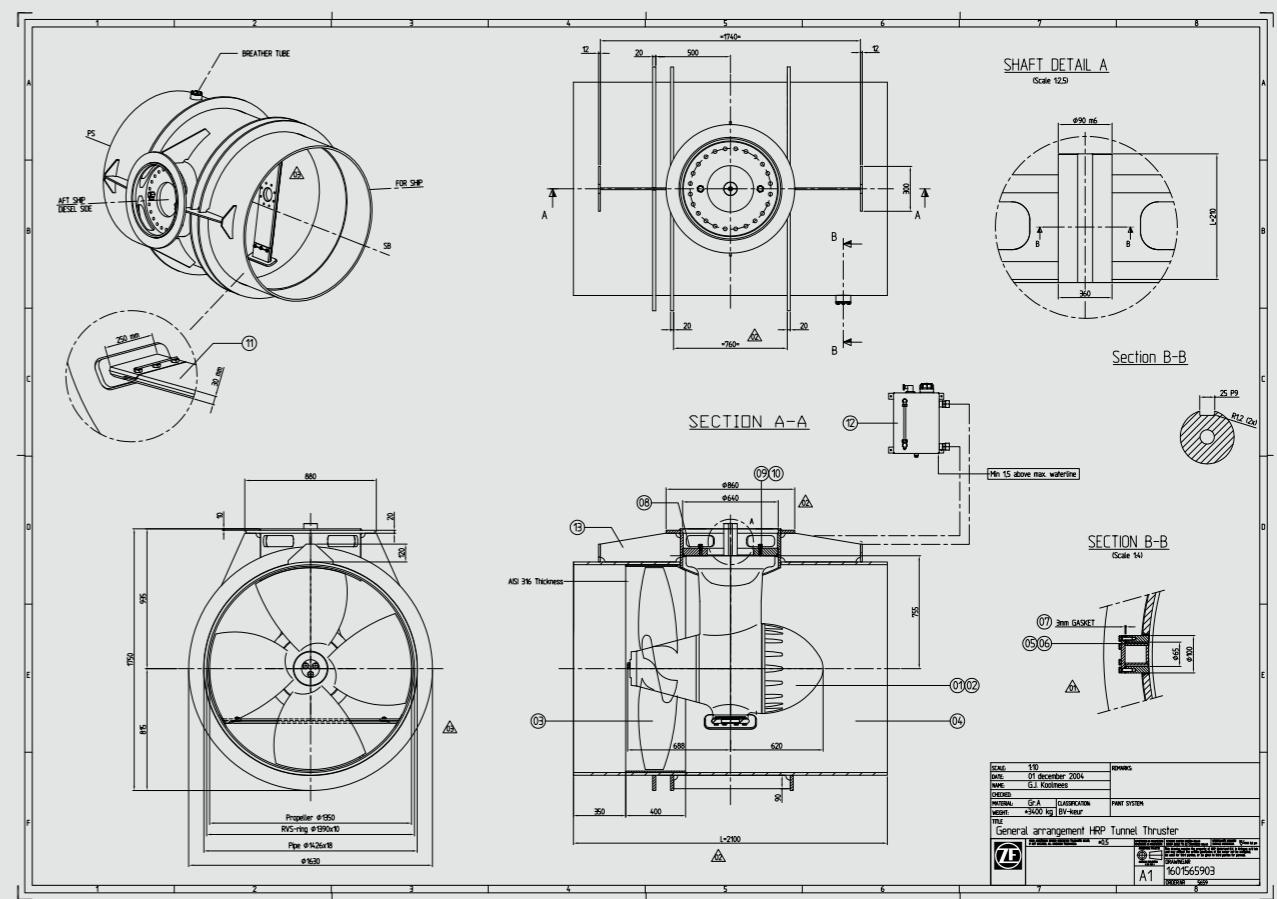
Model : ZF AT 7000 WM-FP (main propulsion) / ZF TT 5000 FP

Rated power : 1250 kW at 1800 rpm / 550 kW at 1225 rpm

Supplied to : Remontowa Shipyard – Poland

Owner : Van der Kamp B.V. – Netherlands

Equipped with two (2) ZF AT 7111 well mounted depth adjustable azimuth thrusters and one (1) ZF TT 5000 tunnel thruster complete with one (1) ZF Multi-Thruster Control System.



MULTI-PURPOSE SUPPORT VESSEL “ZWERVER III” – NETHERLANDS



Length o.a. : 35.10 m

Breadth : 15.00 m

Draught : 2.60 m

ZF-Reference : 10983 / 10984

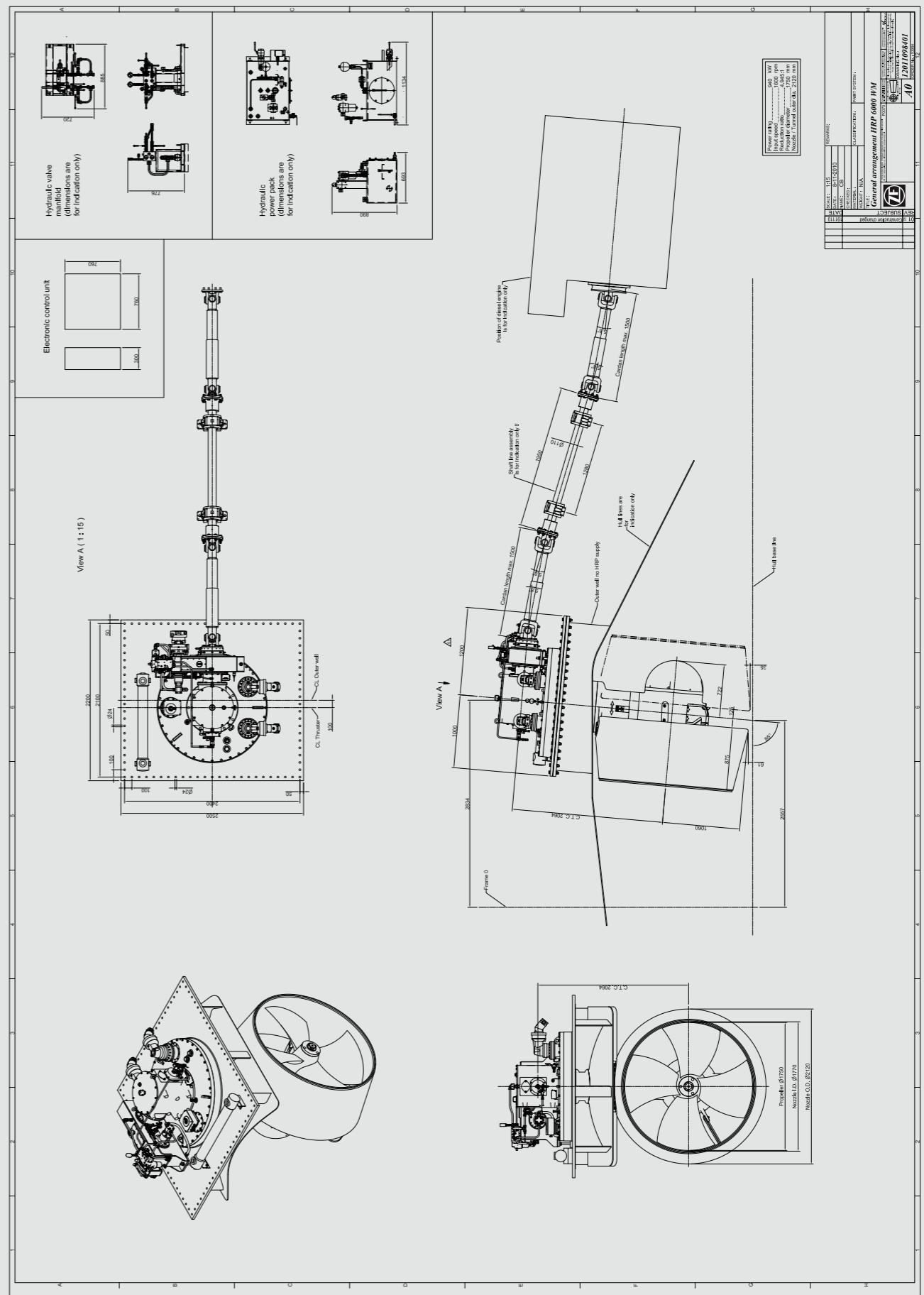
Model : ZF AT 6000 WM-FP / ZF TT 3000 FP

Rated power : 940 kW at 1600 rpm / 220 kW at 1500 rpm

Supplied to : Shipyard Kooiman – Netherlands

Owner : HvS Dredging Support – Netherlands

Equipped with one (1) ZF AT 6311 well mounted azimuth thruster and two (2) ZF TT 3001 hydraulic driven tunnel thrusters.



PUSHER TUG “MV FREEDOM” – USA



Length o.a. : 25.00 m

Breadth : 10.00 m

Draught : 3.30 m

ZF-Reference : 14119

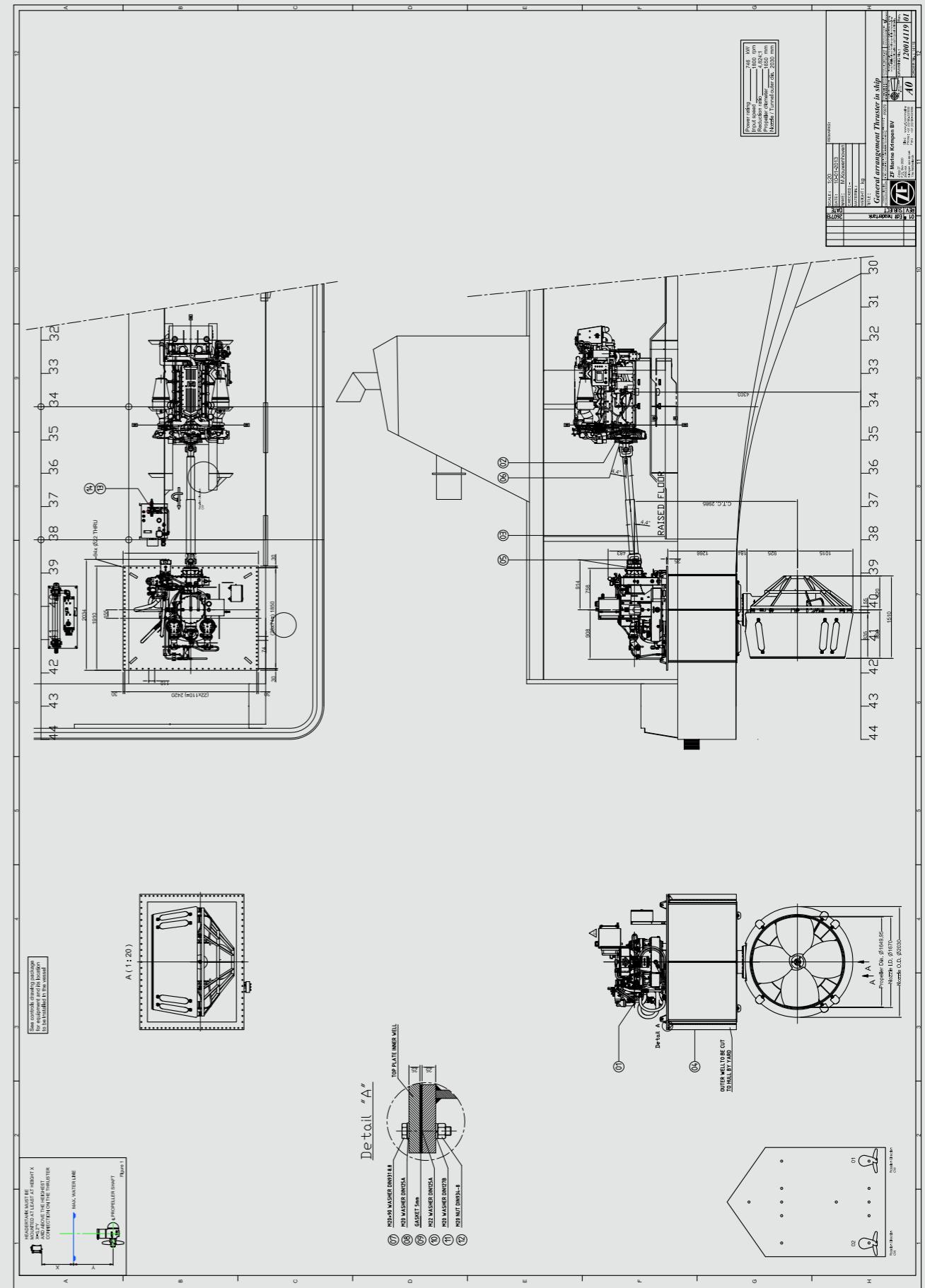
Model : ZF AT 5000 WM-FP

Rated power : 746 kW at 1800 rpm

Shipyard : John Bludworth Ship Yard, LLC – USA

Owner : Enterprise Marine Services – USA

Equipped with two (2) ZF AT 5111
well mounted azimuth thrusters.



70M ACCOMMODATION BARGE “ELISA” – TURKEY



Length o.a. : 70.00 m

Breadth : 20.00 m

Draught : 2.30 m

ZF-Reference : 6158

Model : ZF AT 4000 WM-FP / ZF TT 3000 FP

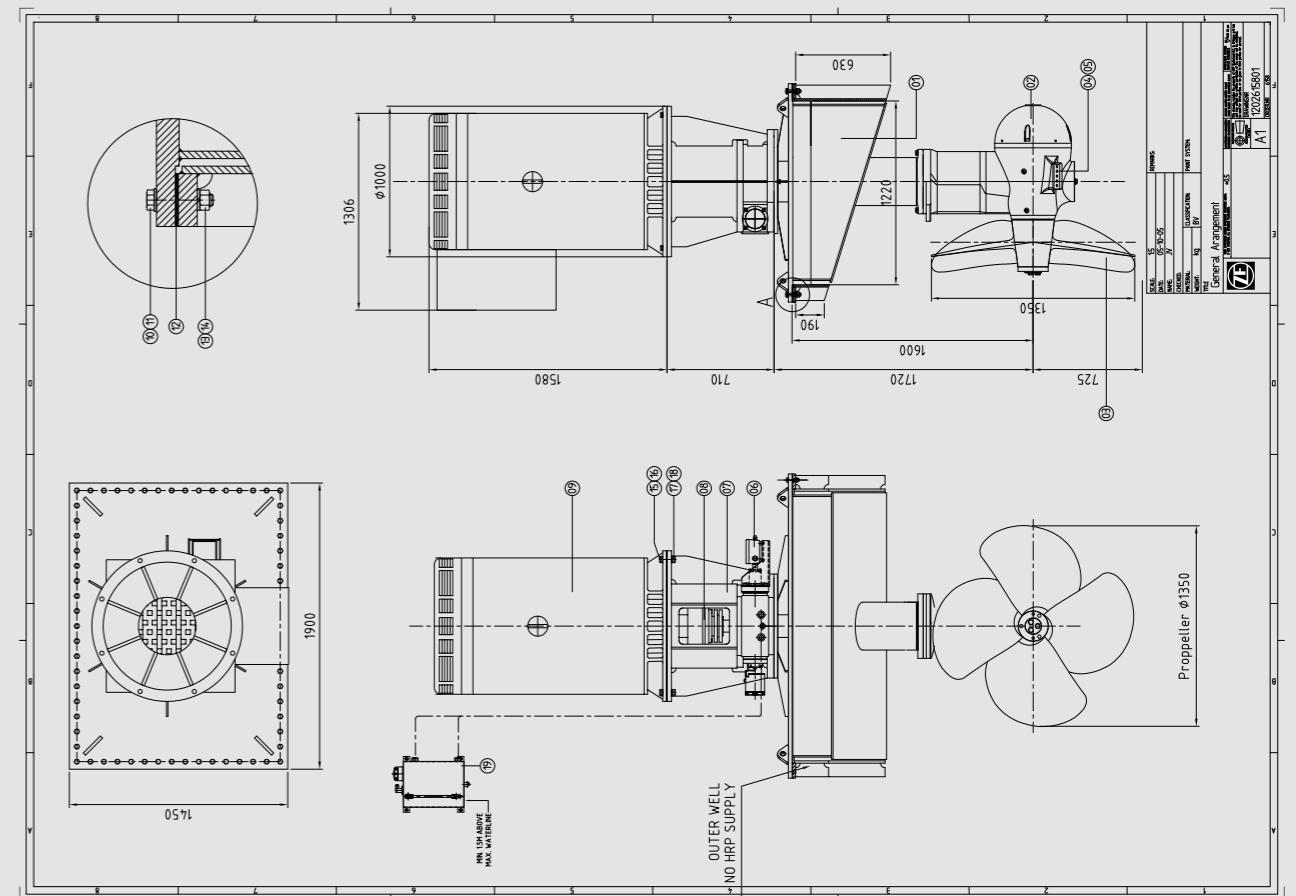
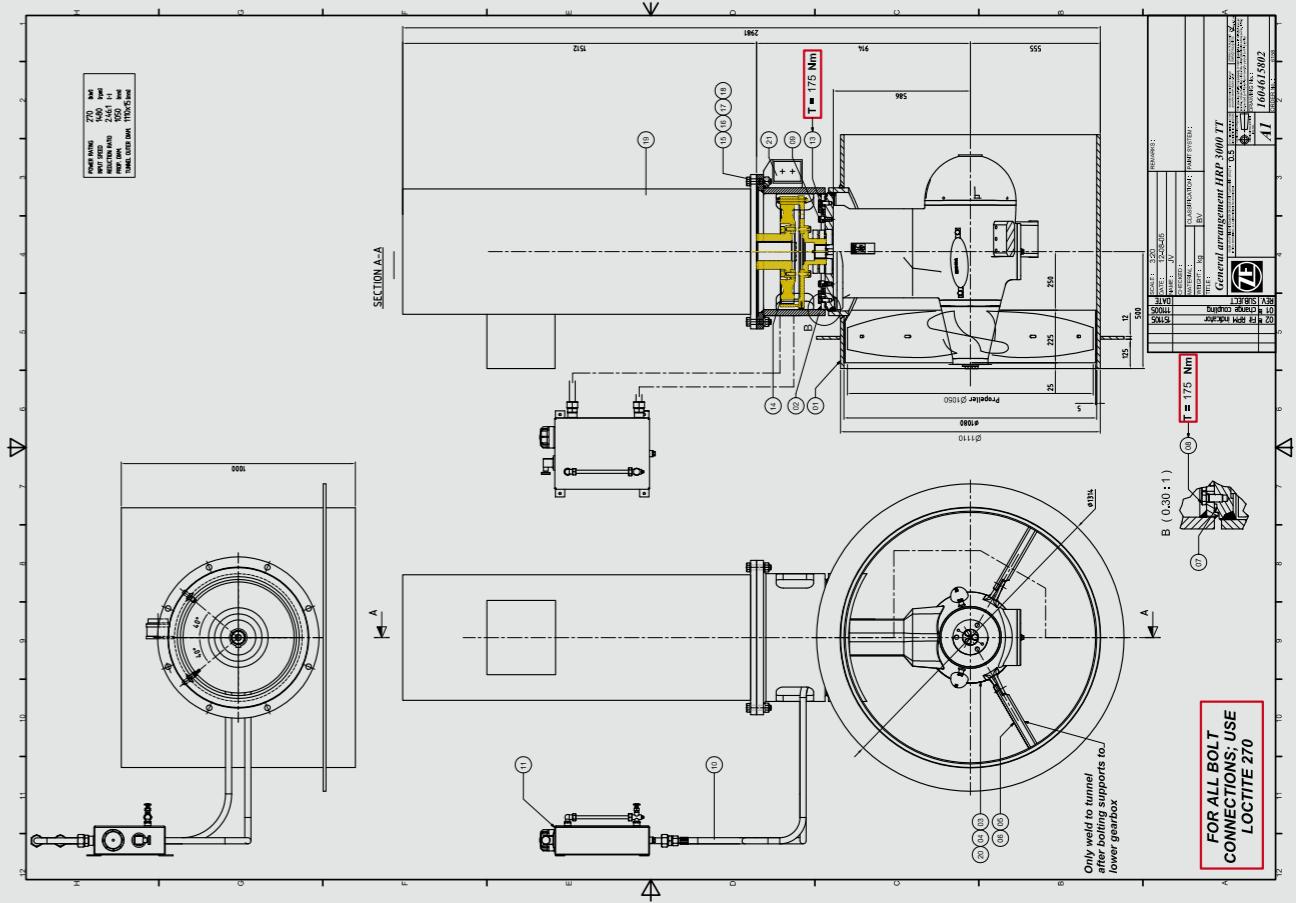
Rated power : 525 kW at 1200 rpm (main)

270 kW at 1500 rpm (tunnel)

Shipyard : Gelibolu Shipyard – Turkey

Owner : ABC Maritime – Switzerland

Equipped with two (2) ZF AT 4011 well mounted azimuth thrusters and one (1) ZF TT 3001 electric driven tunnel thruster.



PIPE LAYING VESSEL “C MASTER” (EX JASCON 5) – NIGERIA



Length o.a. : 140.00 m

Breadth : 40.60 m

Draught : 5.80 m

ZF-Reference : 3701 / 3078

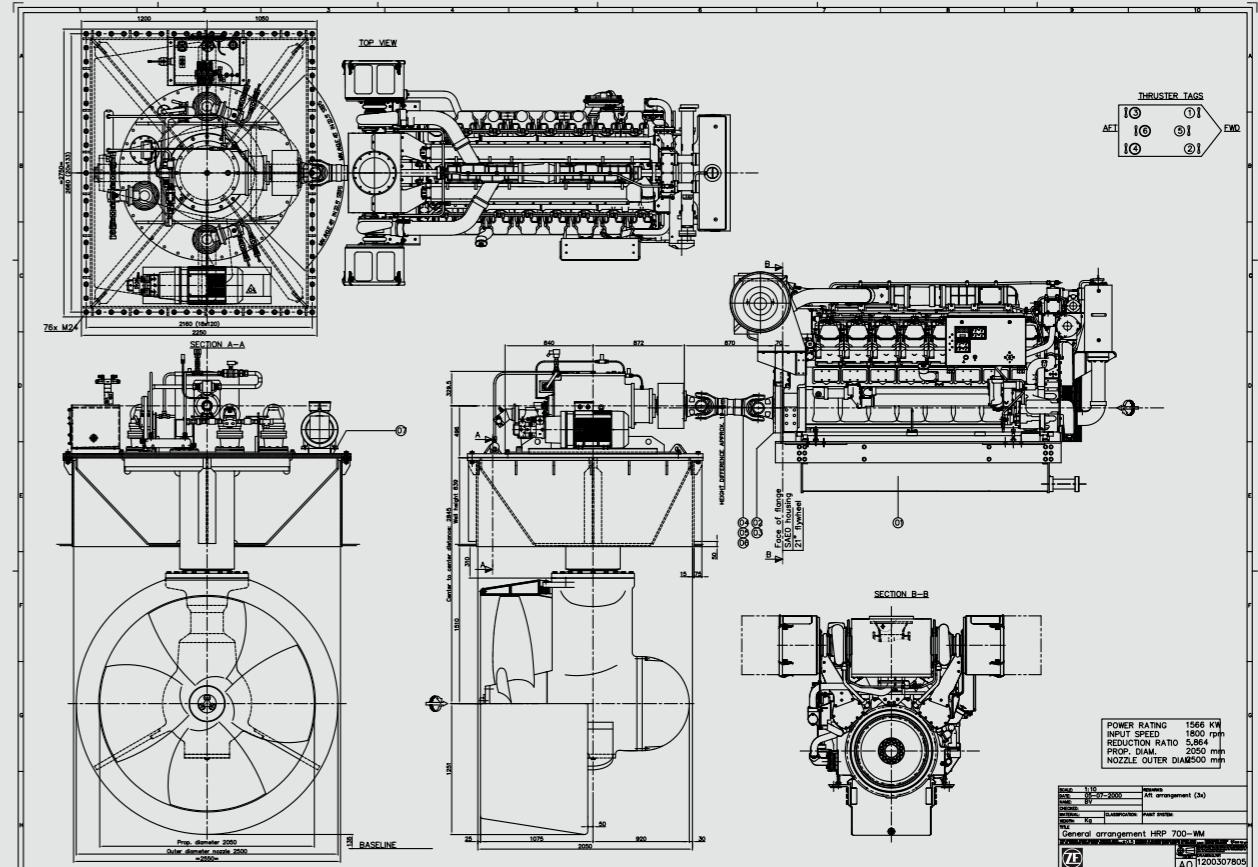
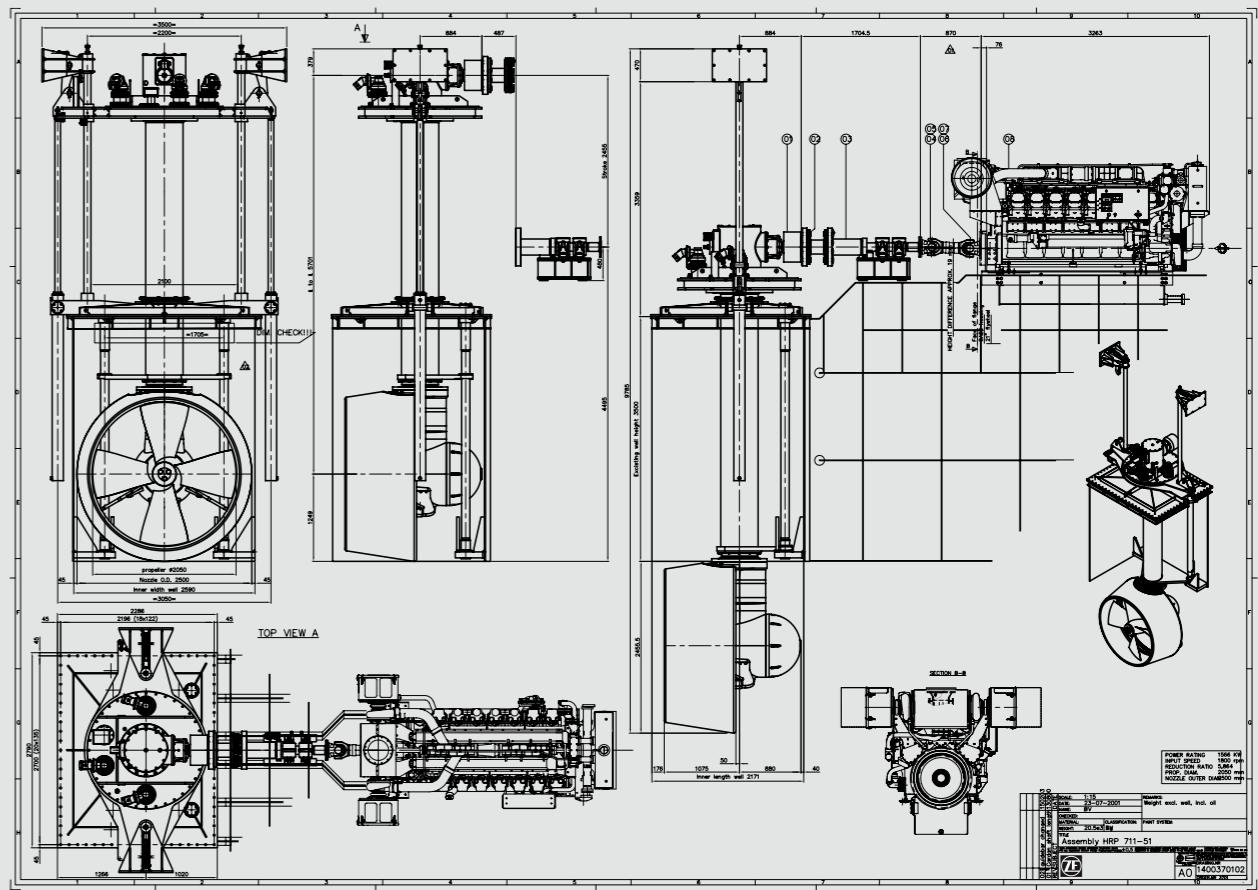
Model : HRP 700

Rated power : 1566 kW at 1800 rpm

Supplied to : Sembawang Shipyard – Singapore

Owner : Kito Enterprises – UAE

Equipped with three (3) HRP 711 well mounted azimuth thrusters (aft) and two (2) HRP 711 retractable azimuth thrusters (midship) and three (3) HRP 711 well mounted azimuth thrusters (fore).



2X STAND-BY "ESVAGT CORONA" & "ESVAGT CAPELLA" – DENMARK



Length o.a. : 44.00 m

Breadth : 11.50 m

Draught : 4.20 m

ZF-Reference : 4838

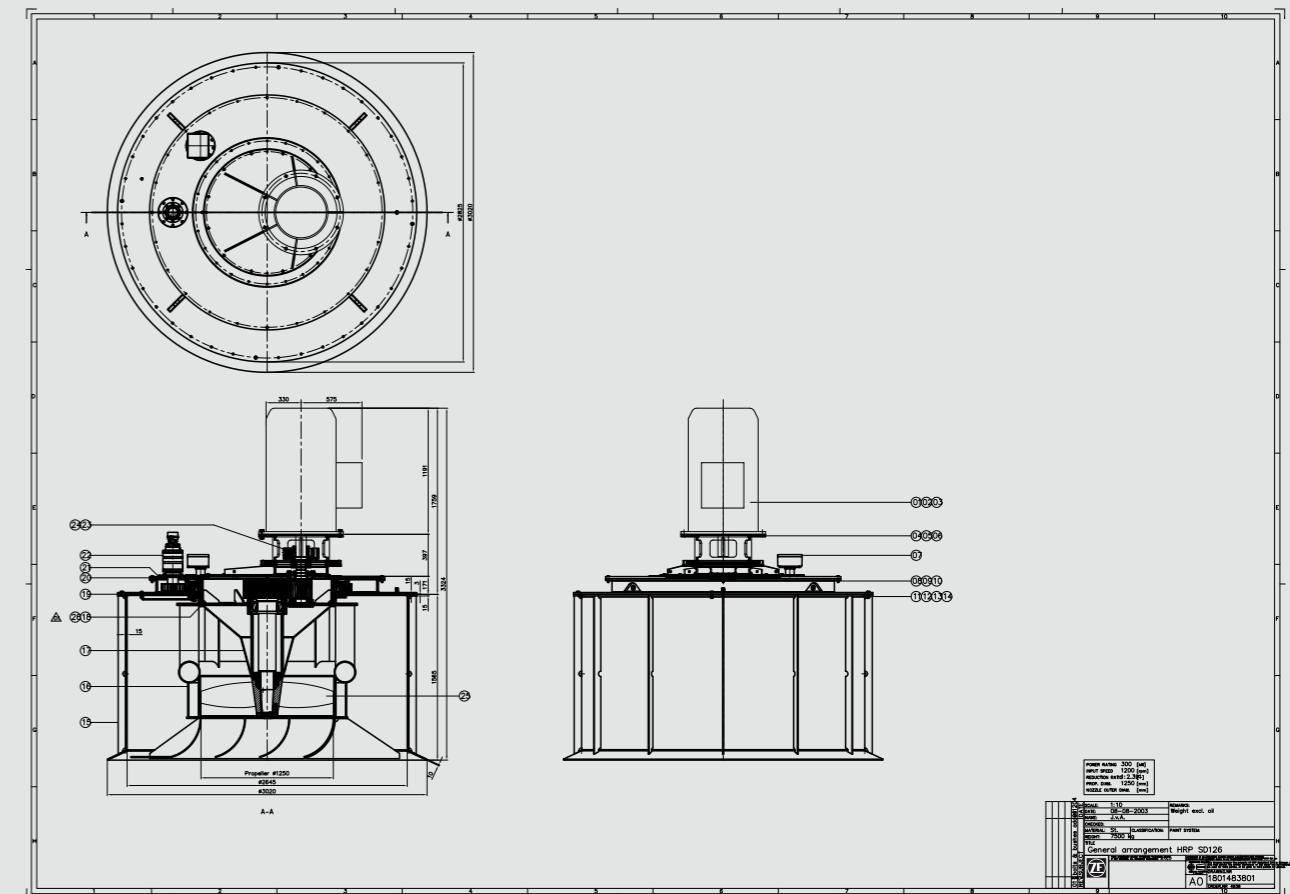
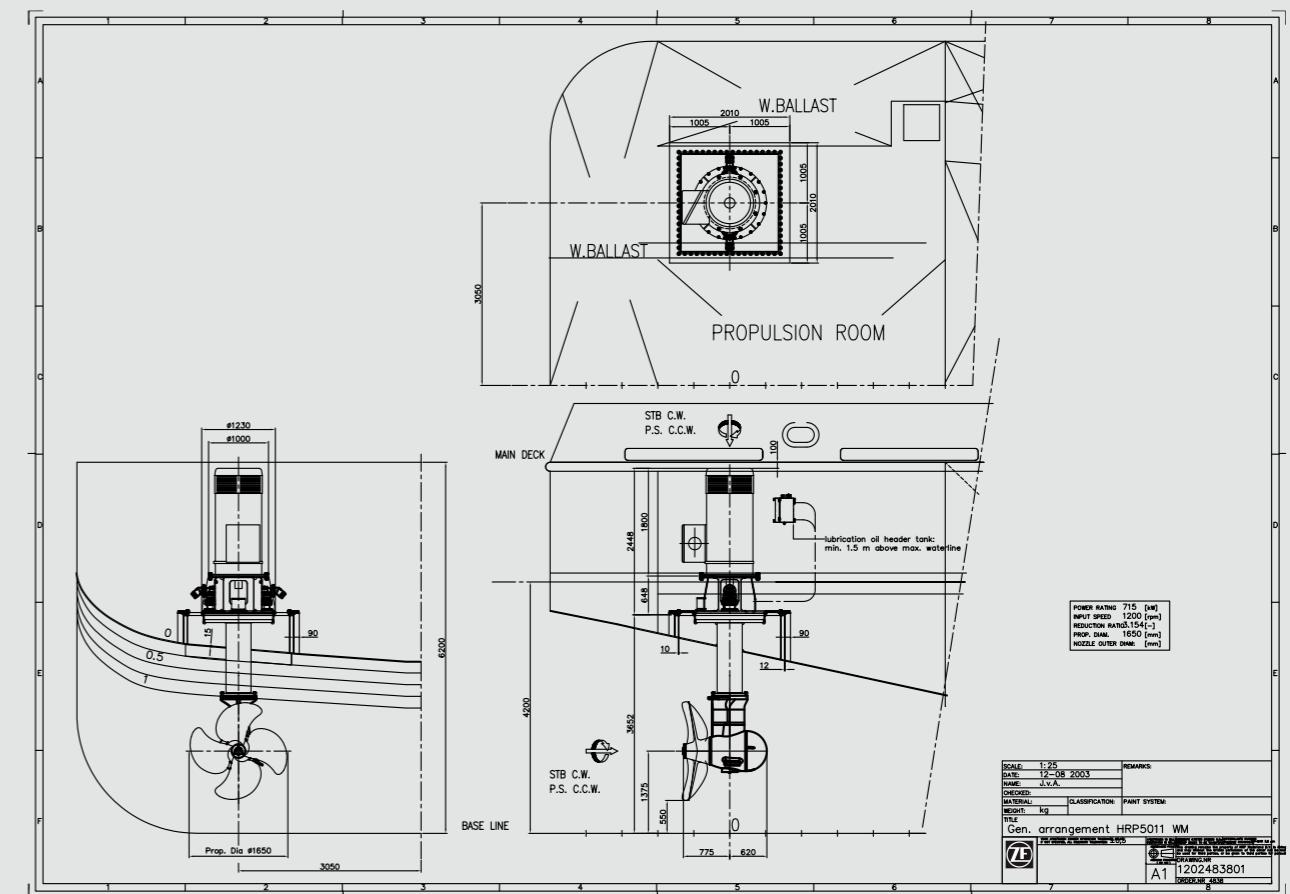
Model : ZF AT 5000 WM-FP / ZF SDT 5000 FP

Rated power : 715 kW at 1200 rpm / 300 kW at 1200 rpm

Supplied to : Astilleros Zamakona – Spain

Owner : Esvagt – Denmark

Equipped with two (2) ZF AT 5011 well mounted azimuth thrusters and one (1) ZF SDT 5010 shallow draught bow thruster.



2300 M³ TRAILING SUCTION HOPPER DREDGER "UKD ORCA" – UK



Length o.a. : 78.00 m

Breadth : 15.85 m

Draught : 4.50 m

ZF-Reference : 8355

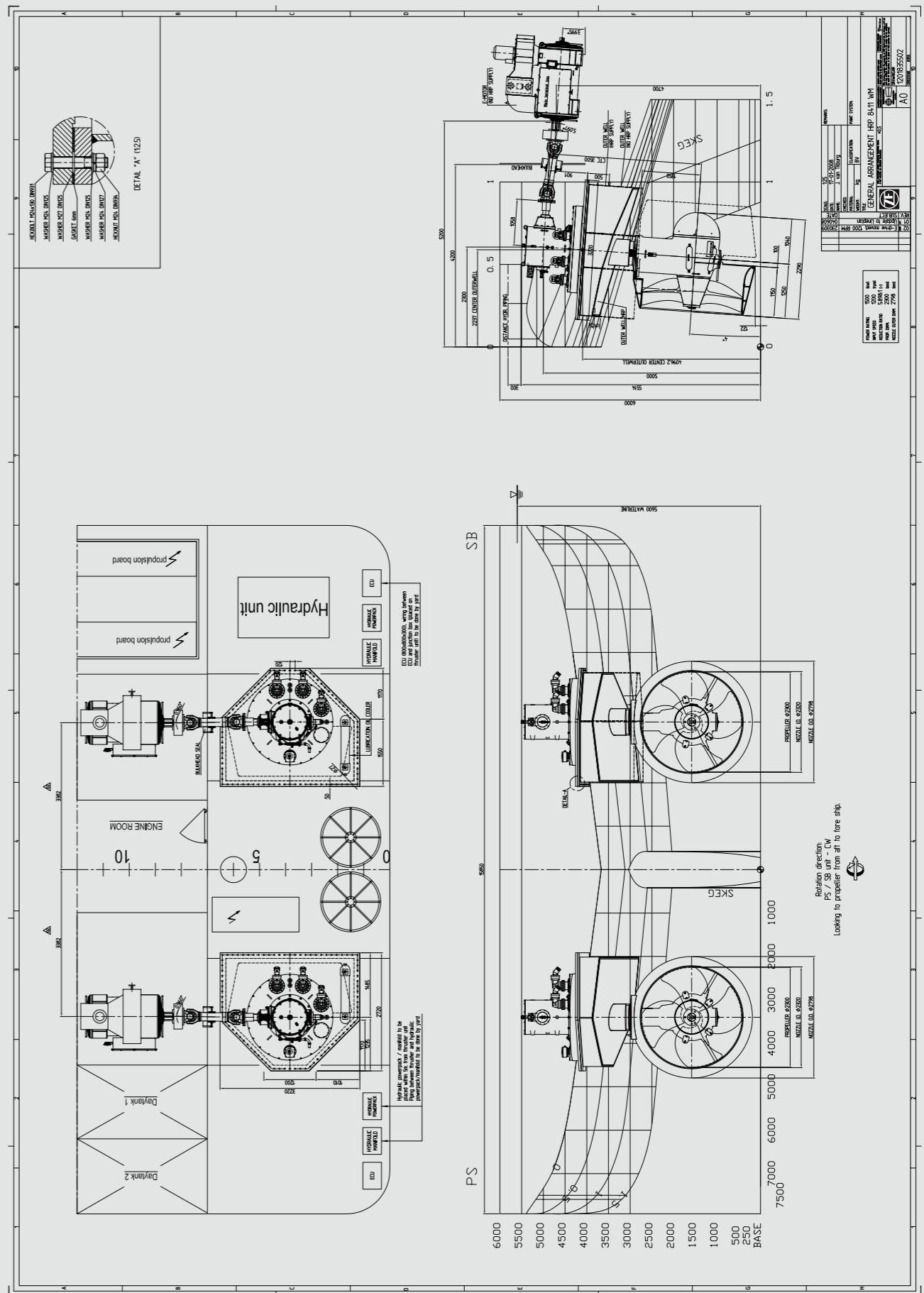
Model : ZF AT 8000 WM-FP / ZF TT 5000 FP

Rated power : 1500 kW at 1200 rpm / 500 kW at 1500 rpm

Supplied to : Barkmeijer – Netherlands

Owner : UK Dredging – UK

Equipped with two (2) ZF AT 8411 well mounted azimuth thrusters and one (1) ZF TT 5003 electric driven tunnel thruster.



THAMES PASSENGER VESSEL "MERCURIA" – UK



Length o.a. : 35.00 m

Breadth : 7.25 m

Draught : 1.40 m

ZF-Reference : 5992

Model : ZF AT 3000 WM-FP

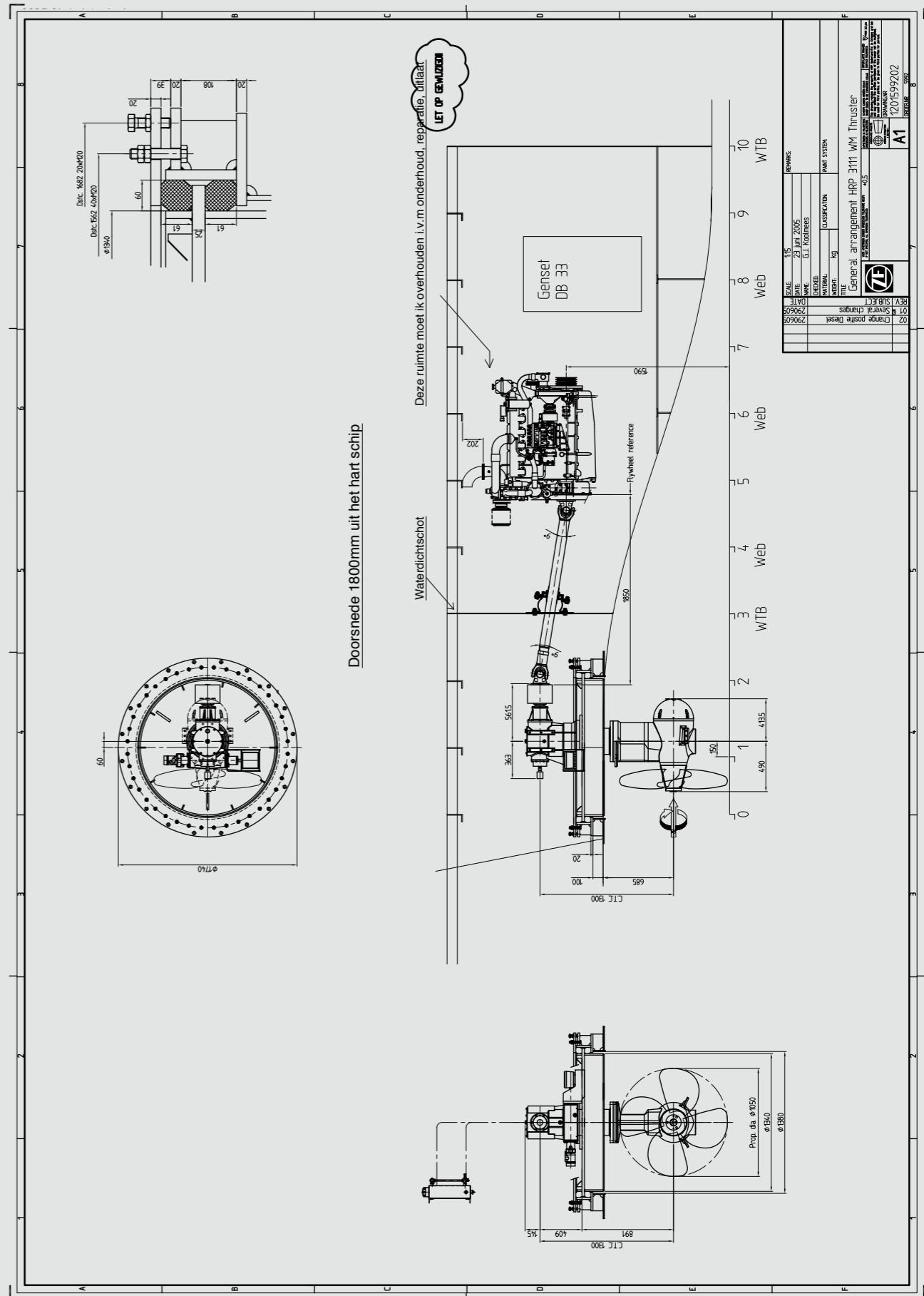
Rated power : 184 kW at 1800 rpm

Supplied to : Tinnemans B.V. – Netherlands

Owner : Westminster Party boats – UK

Equipped with two (2) ZF AT 3111

well mounted azimuth thrusters.



135M RIVER GOING VESSEL “JERO” – NETHERLANDS



Length o.a. : 135.00 m

Breadth : 11.45 m

Draught : 3.00 m

ZF-Reference : 6595

Model : ZF AT 5000 WM-FP

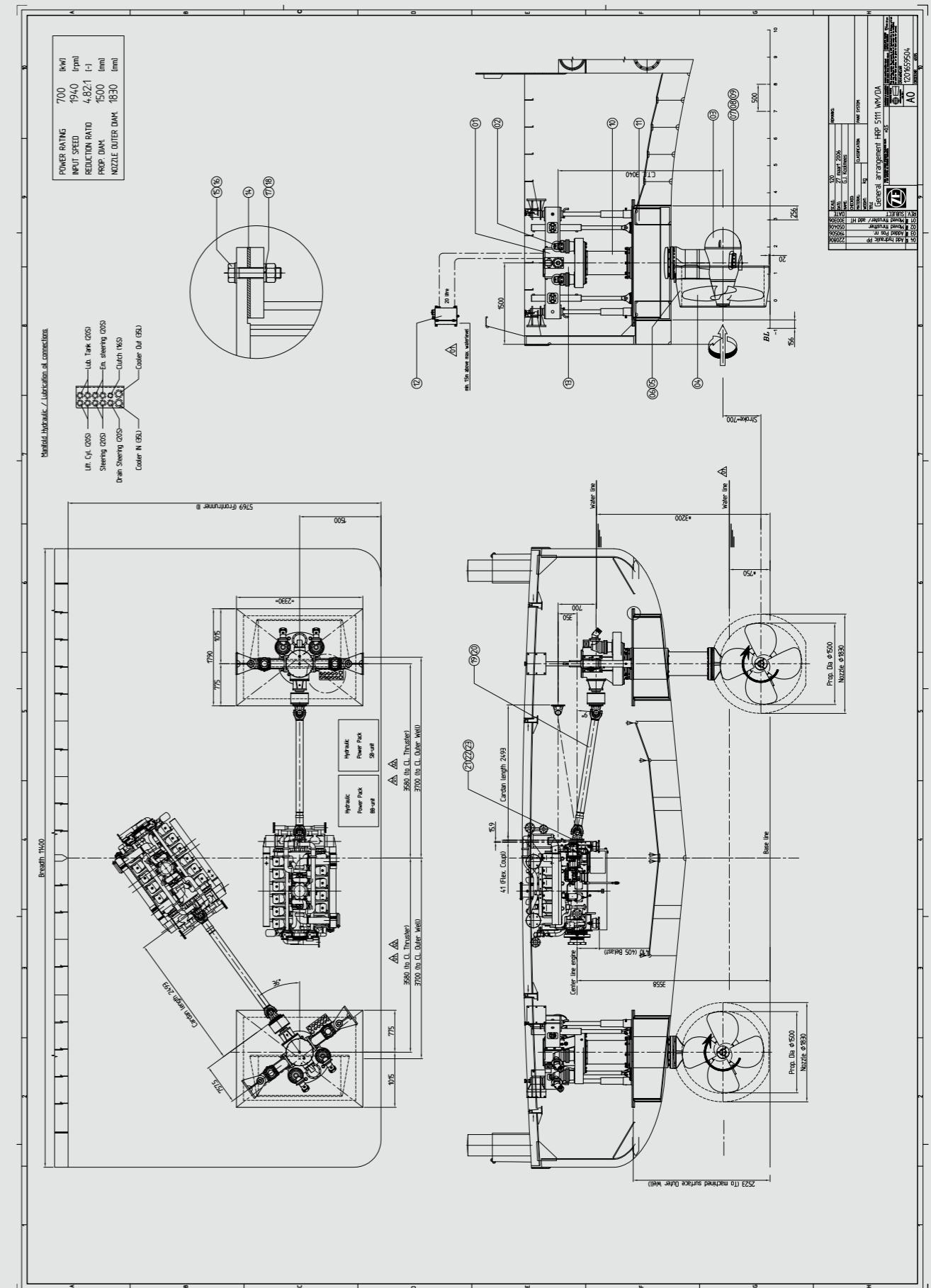
Rated power : 700 kW at 1940 rpm

Supplied to : St. Antonius – Netherlands

Owner : Jero Scheepvaartbedrijf B.V. – Netherlands

Equipped with two (2) ZF AT 5111

well mounted azimuth thrusters.



29M NAVY RESEARCH VESSEL "A 541" & "A 543" – DENMARK



Length o.a. : 28.90 m

Breadth : 6.30 m

Draught : 1.74 m

ZF-Reference : 5770

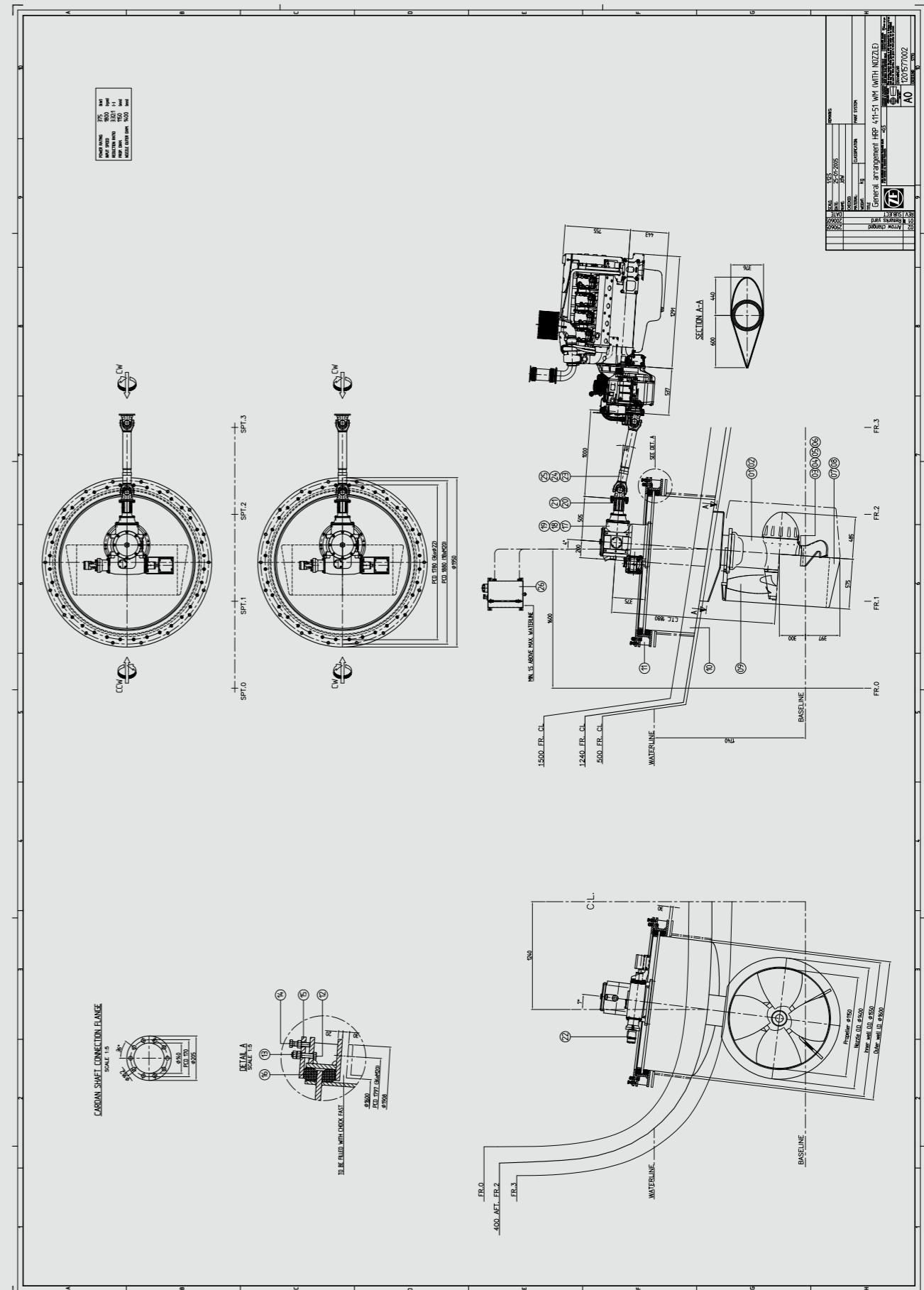
Model : ZF AT 400 WM-FP

Rated power : 375 kW at 1800 rpm

Supplied to : Nordhavn A/S – Denmark

Owner : Danish Navy

Each equipped with two (2) ZF 411-51 well mounted azimuth thrusters complete with Multi-Thruster Control System.



LIFTBOAT “LEWEK LEADER” – SINGAPORE



Length o.a. : 56.00 m

Breadth : 44.00 m

Draught : 3.40 m

ZF-Reference : 7987

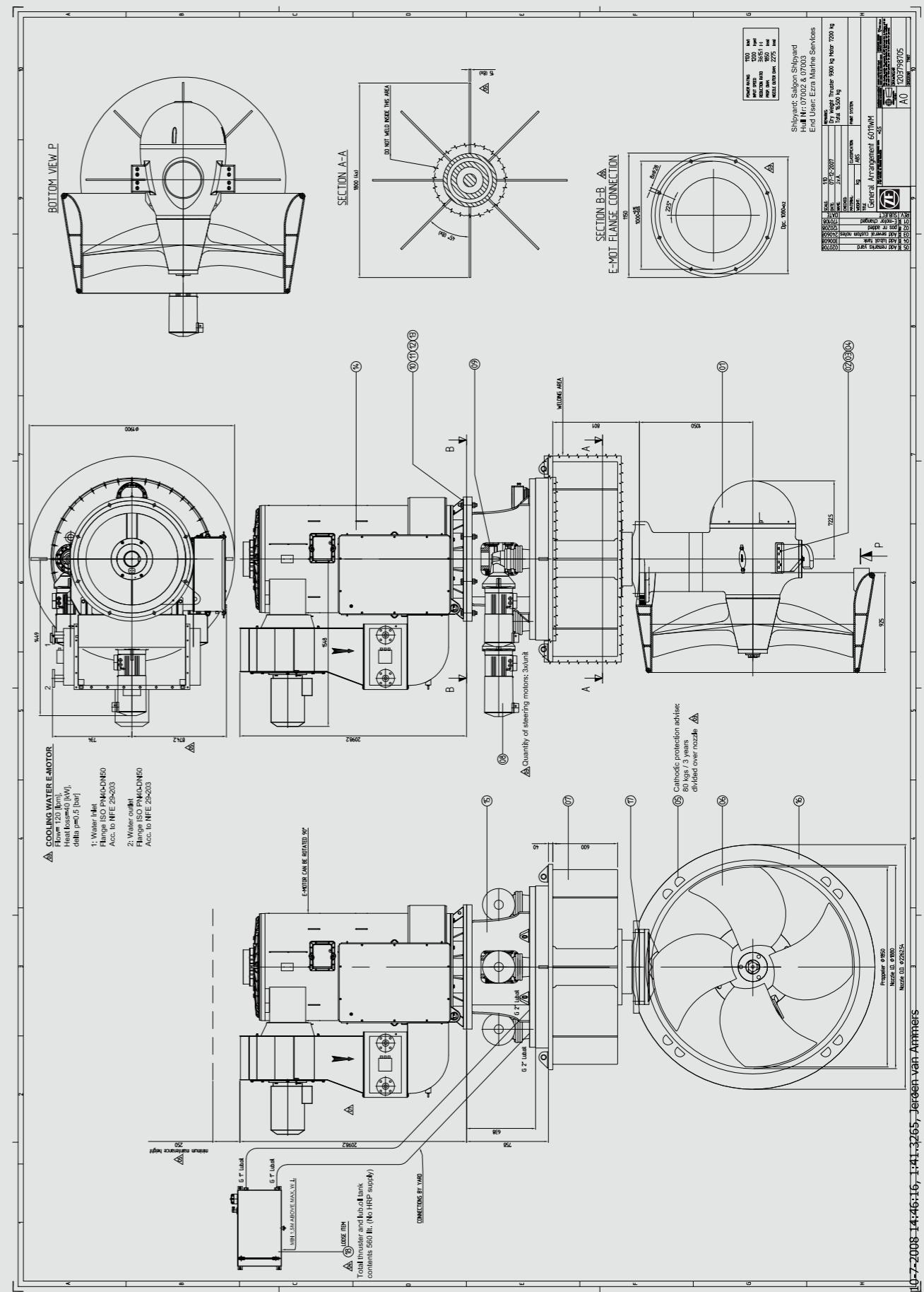
Model : ZF AT 6000 WM-FP / ZF TT 4000 FP

Rated power : 1100 kW at 1200 rpm / 440 kW at 1200 rpm

Supplied to : Ezra Marine Services Pte Ltd

Owner : Teras Cargo Transport – Singapore

Equipped with three (3) ZF AT 6011 well mounted azimuth thrusters and one (1) ZF TT 4001 tunnel thruster.



ASD TUGBOAT “TIGER 6” – HAWAII



Length o.a. : 21.00 m

Breadth : 8.50 m

Draught : 3.50 m

ZF-Reference : 5155

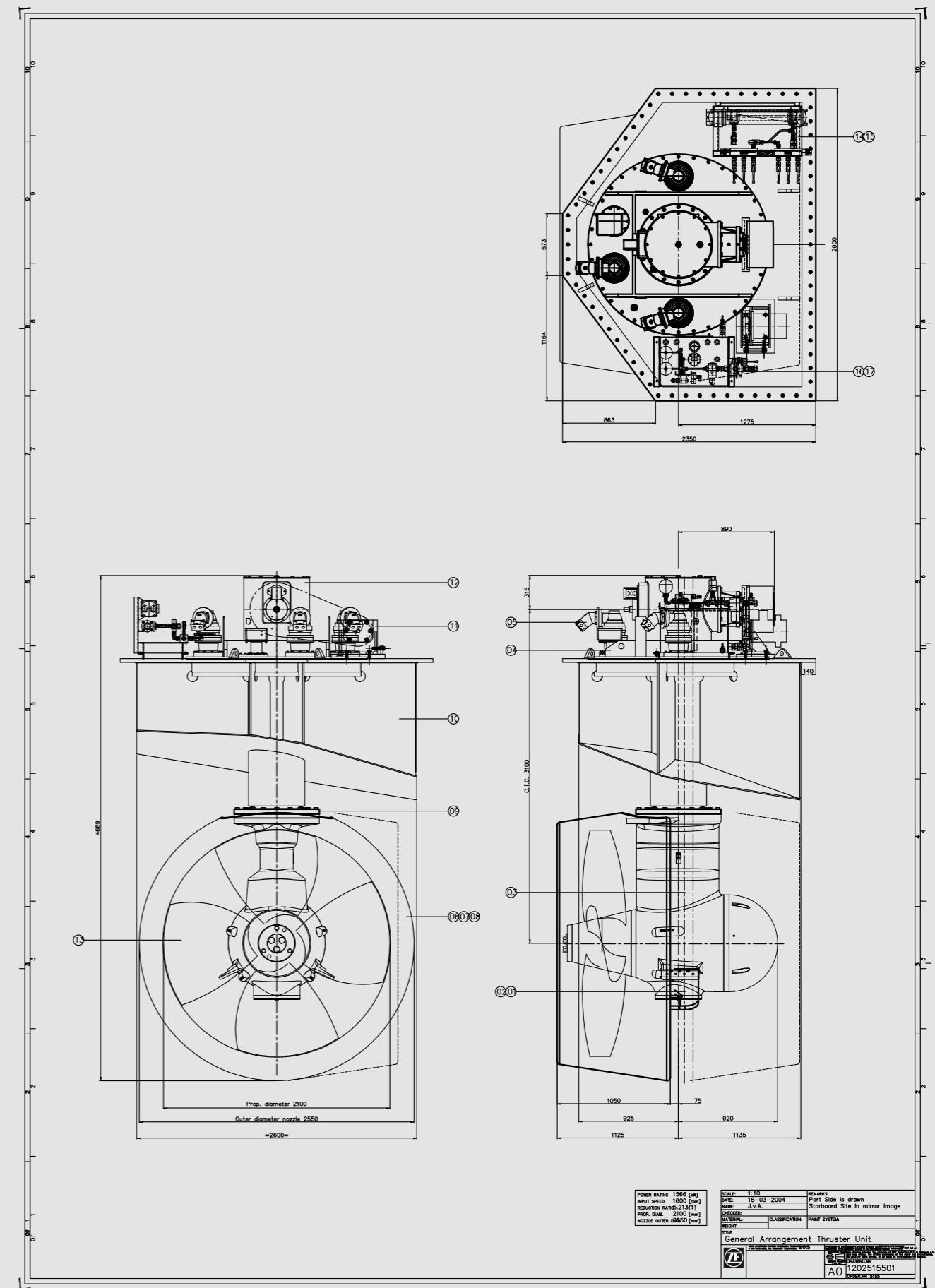
Model : ZF AT 7000 WM-FP

Rated power : 1566 kW at 1600 rpm

Supplied to : P&R Watertaxi – Hawaii

Owner : P&R Watertaxi – Hawaii

Equipped with two (2) ZF AT 7311
well mounted azimuth thrusters.



EXPEDITION TRI-DECK YACHT “IRIE MAN” – ITALY



Length o.a. : 23,90 m

Breadth : 8.00 m

Draught : 2.50 m

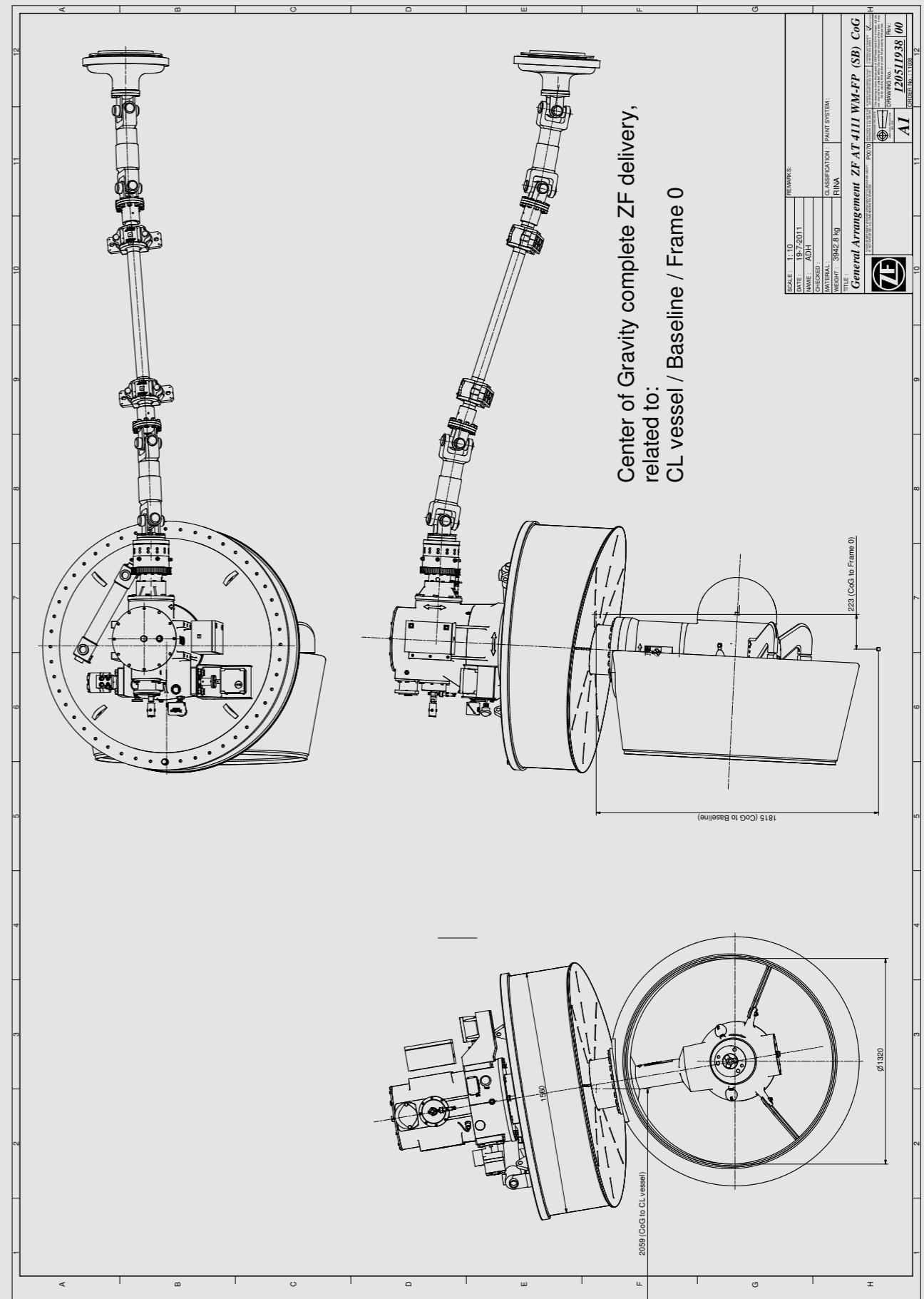
ZF-Reference : 11938

Model : ZF AT 4000 WM-FP / ZF TT 1000 FP

Rated power : 525 kW at 1800 rpm / 75 kW at 1500 rpm

Supplied to : CNC Yachting – Italy

Equipped with two (2) ZF AT 4111 diesel driven well mounted azimuth thrusters and one (1) ZF TT 1001 tunnel thruster in the bow.

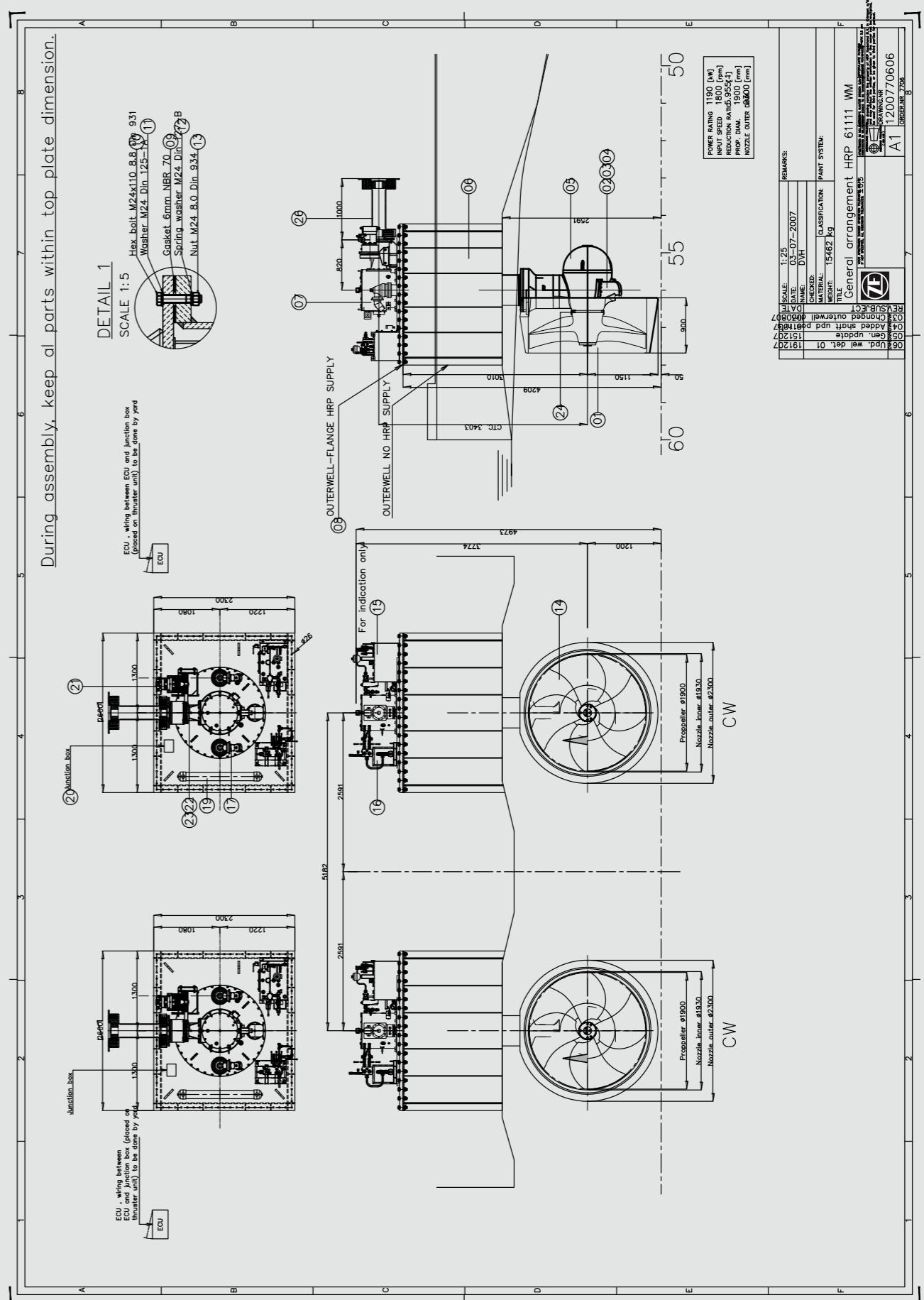


PUSHER TUG “FRANK T. STEGBAUER” – USA



Length o.a. : 120.00 m
Breadth : 34.00 m
Draught : 3.00 m
ZF-Reference : 7706
Model : ZF AT 6000 WM-FP
Rated power : 1190 kW at 1800 rpm
Supplied to : Steiner Shipyard Inc. – USA
Owner : Southern Towing – USA

Equipped with two (2) ZF AT 6111 well mounted azimuth thrusters.



2X 60 TONS BOLLARD PULL TUGS “C DIAMANTE” & “C BRILHANTE” – BRASIL



Length o.a. : 32.00 m

Breadth : 11.60 m

Draught : 3.70 m

ZF-Reference : 7277

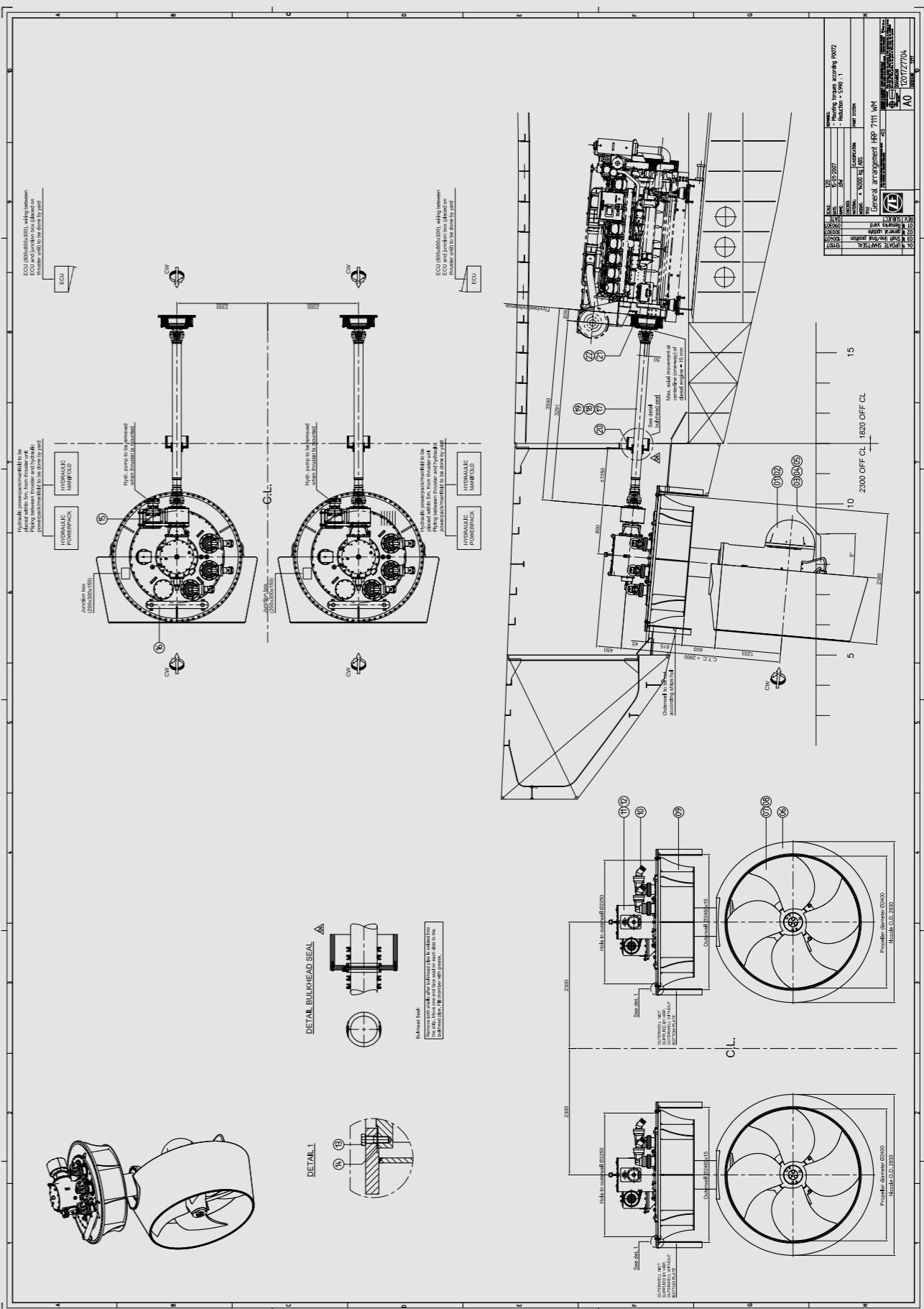
Model : ZF AT 7000 WM-FP

Rated power : 1650 kW at 1800 rpm

Supplied to : Detroit Brasil LTDA – Brasil

Owner : Camorim Servicos Maritimos LTDA – Brasil

Each vessel equipped with two (2) ZF AT 7111
well mounted azimuth thrusters.



45 TONS BOLLARD PULL TUG “SHUSWAP” – CANADA



Length o.a. : 17.67 m

Breadth : 8.58 m

Draught : 3.81 m

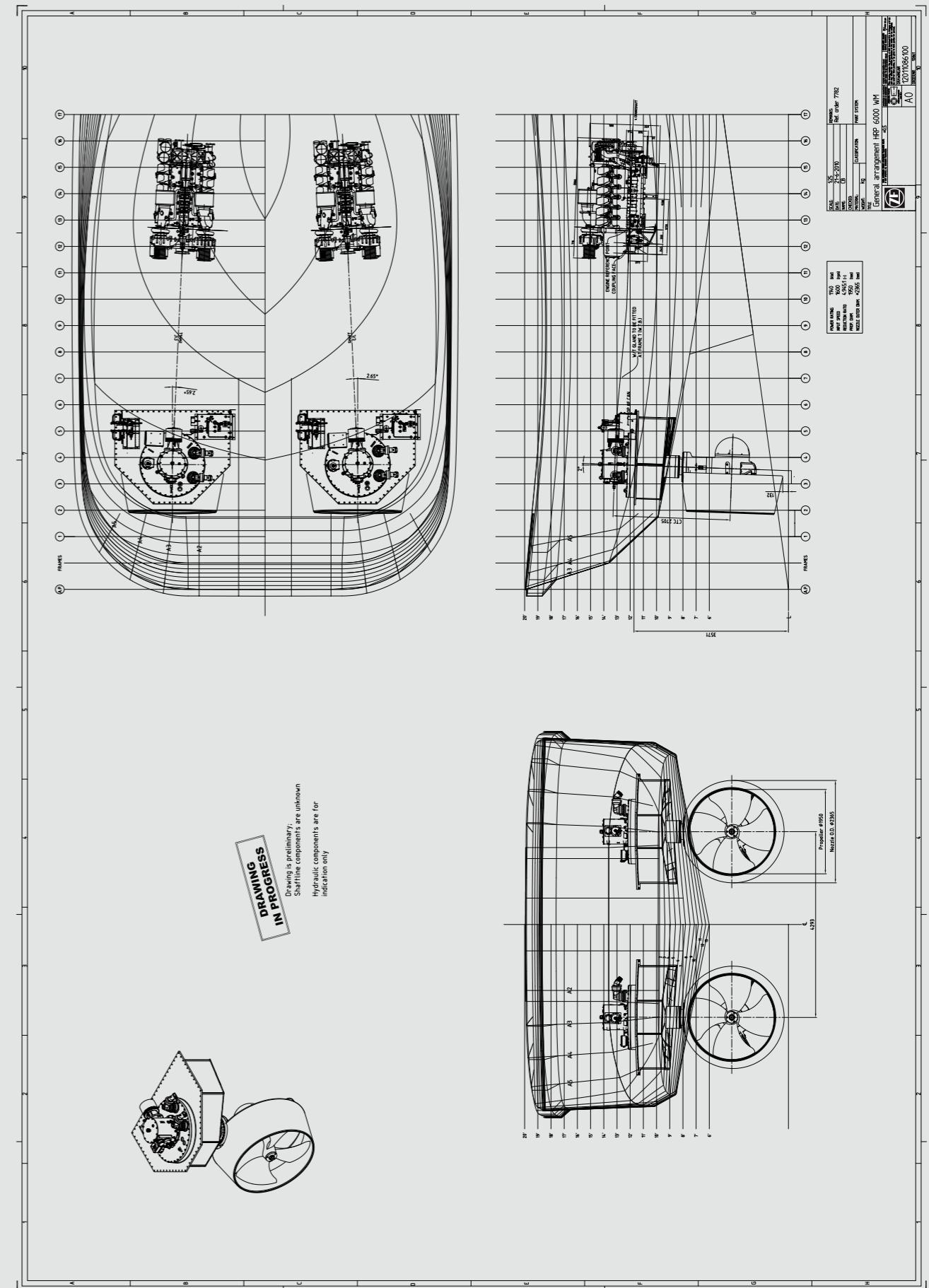
ZF-Reference : 10861

Model : ZF AT 6000 WM-FP

Rated power : 1200 kW at 1600 rpm

Owner : Samson Tug Boats Inc. – Canada

Equipped with two (2) ZF AT 6311
well mounted azimuth thrusters.



PUSHER TUG “BROOKE BANTA” – USA



Length o.a. : 23.00 m

Breadth : 9.00 m

Draught : 2.80 m

ZF-Reference : 9254

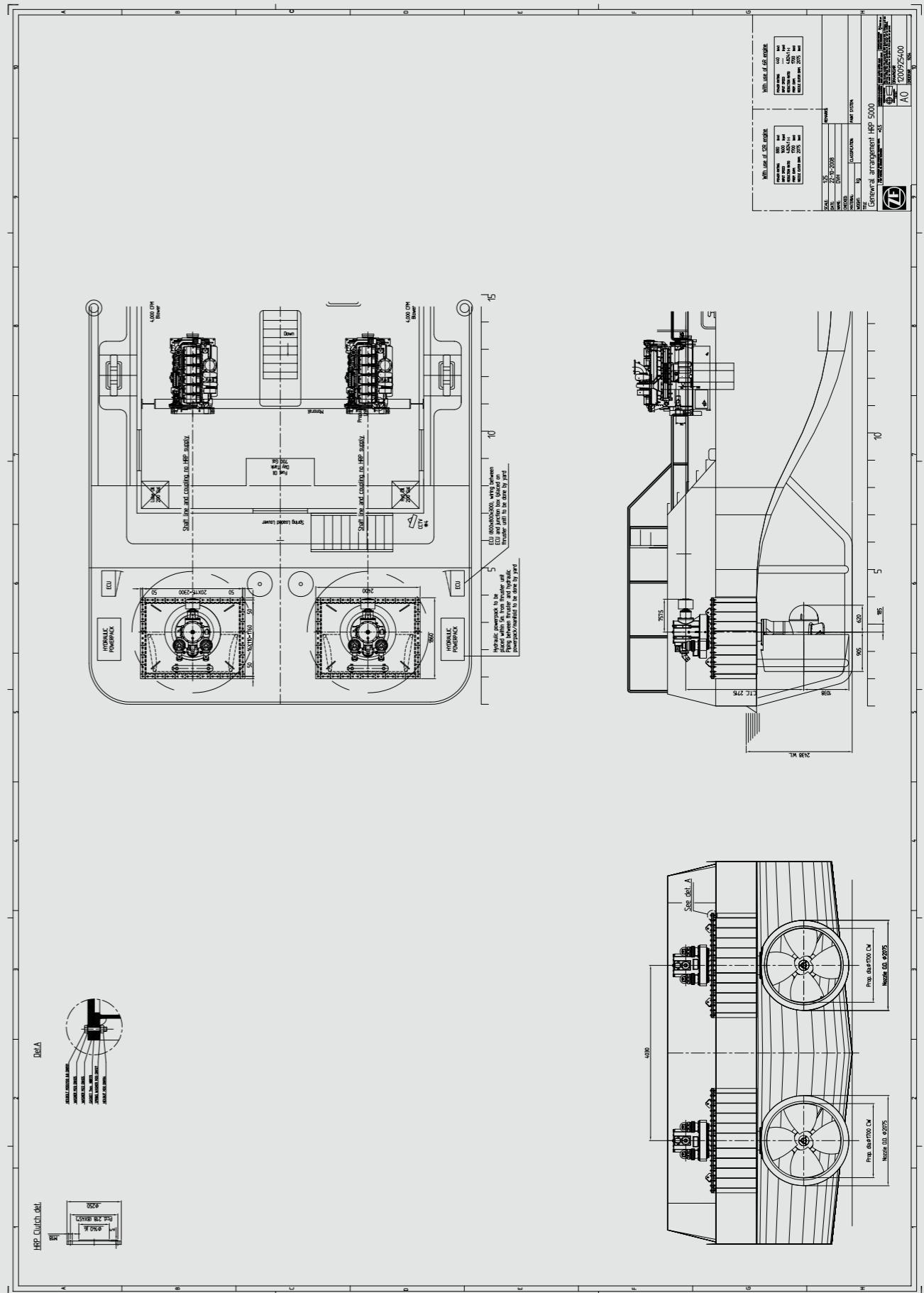
Model : ZF AT 4000 WM-FP

Rated power : 440 kW at 1600 rpm

Supplied to : Chem Carriers LLC – USA

Owner : The Sunshine – USA

Equipped with two (2) ZF AT 4111
well mounted azimuth thrusters.



BALANCE DIPPER “DE NEUS” – BELGIUM



Length o.a. : 53.00 m

Breadth : 19.00 m

Draught : 1.80 m

ZF-Reference : 4230

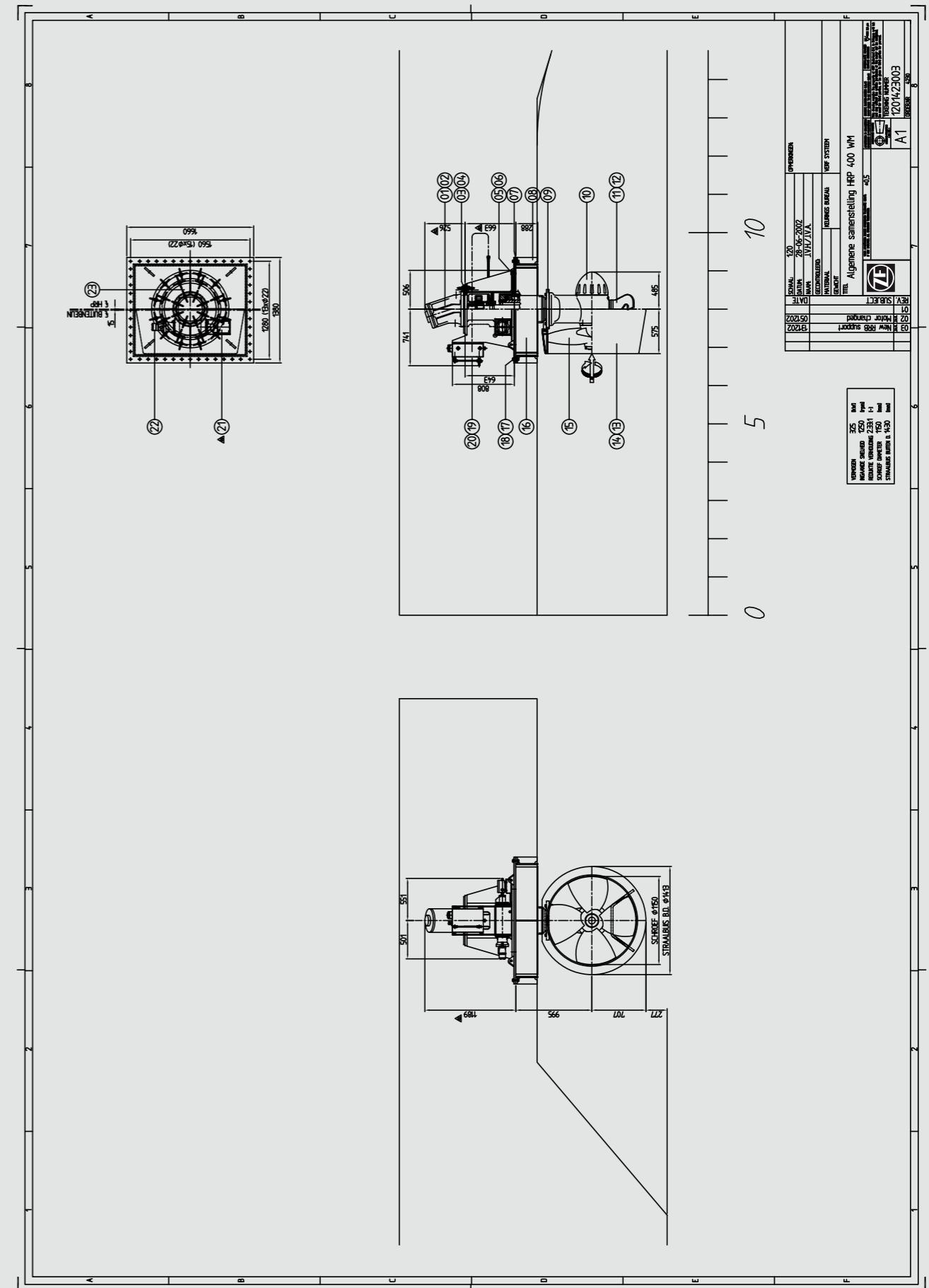
Model : ZF AT 400 WM-FP

Rated power : 325 kW at 1250 rpm

Supplied to : Shipyard de Donge – Netherlands

Owner : Antwerp Harbour Authorities – Belgium

Equipped with two (2) ZF AT 430-50
well mounted azimuth thrusters.



FUEL BARGE “SMIT DUDULA” – SOUTH AFRICA



Length o.a. : 70.00 m

Breadth : 18.28 m

Draught : 3.37 m

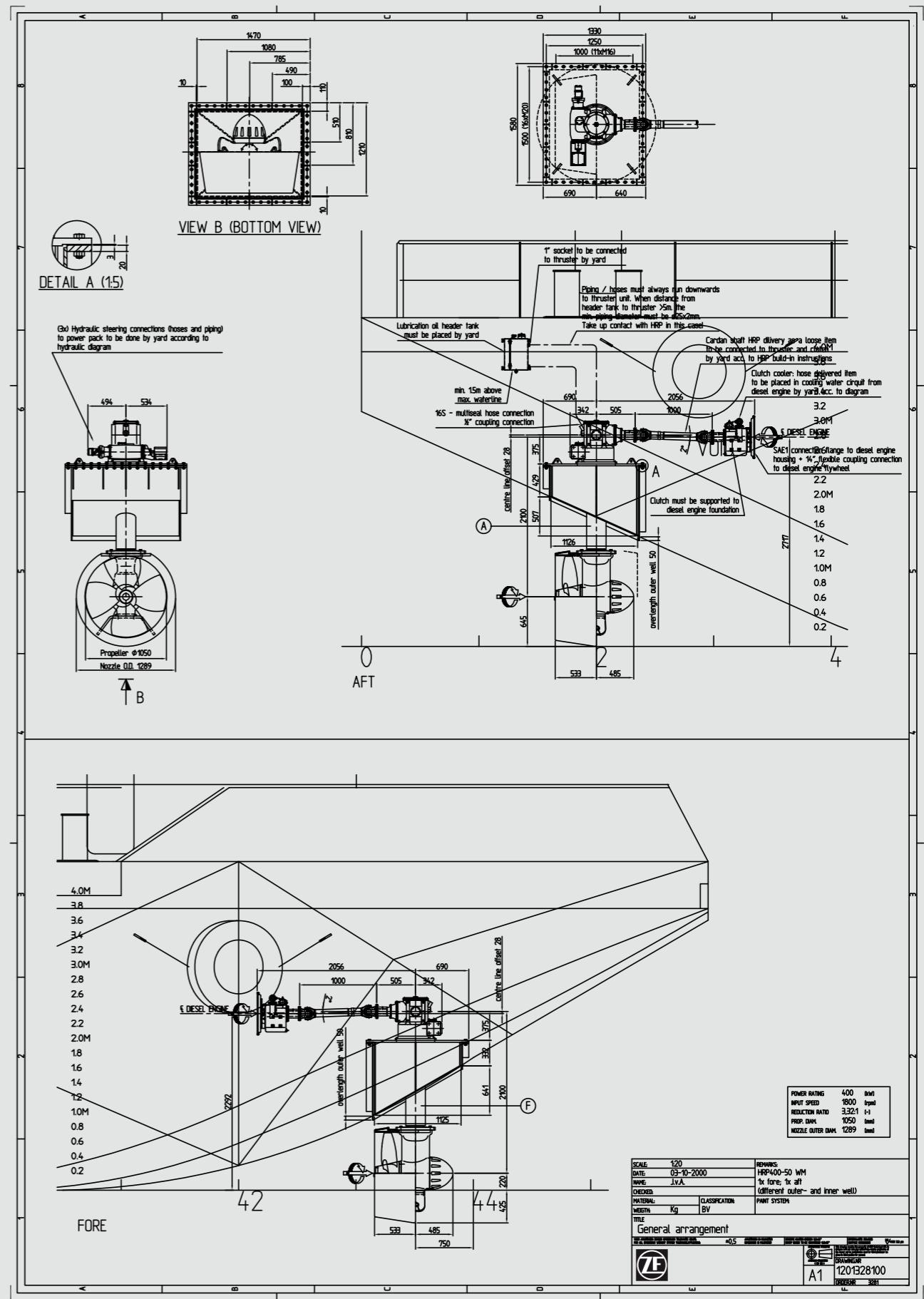
ZF-Reference : 3281

Model : ZF AT 400 WM-FP

Rated power : 400 kW at 1800 rpm

Supplied to : Smit Pentow – South Africa

Equipped with two (2) ZF AT 410-50
well mounted azimuth thrusters.



87M DOUBLE-ENDED FERRY “CRES” – CROATIA



Length o.a. : 87.60 m

Breadth : 17.50 m

Draught : 2.40 m

ZF-Reference : 5716

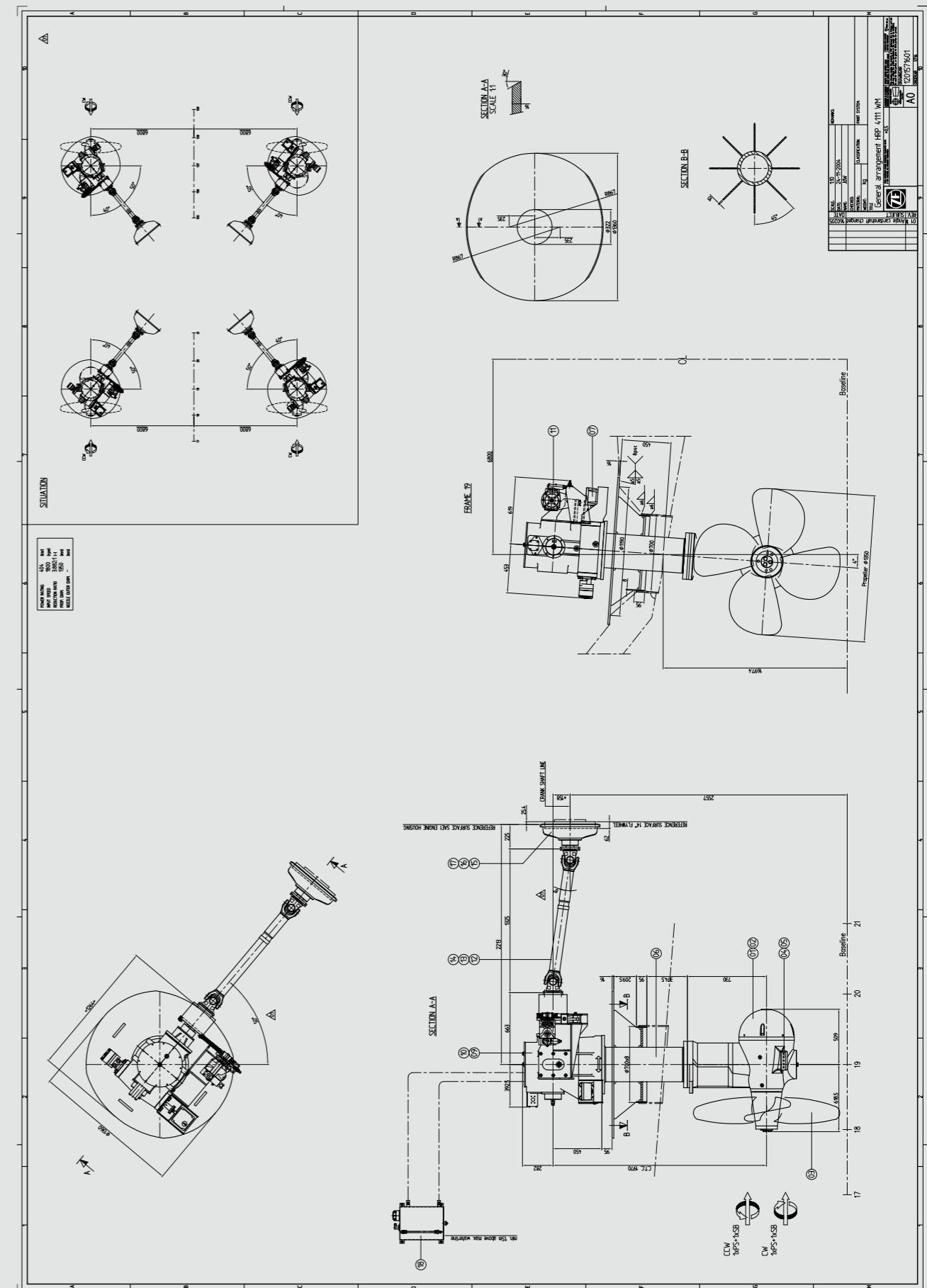
Model : ZF AT 4000 WM-FP

Rated power : 403 kW at 1800 rpm

Supplied to : Brodosplit – Croatia

Owner : JADROLINIJA – Croatia

Equipped with four (4) ZF AT 4111
well mounted azimuth thrusters.

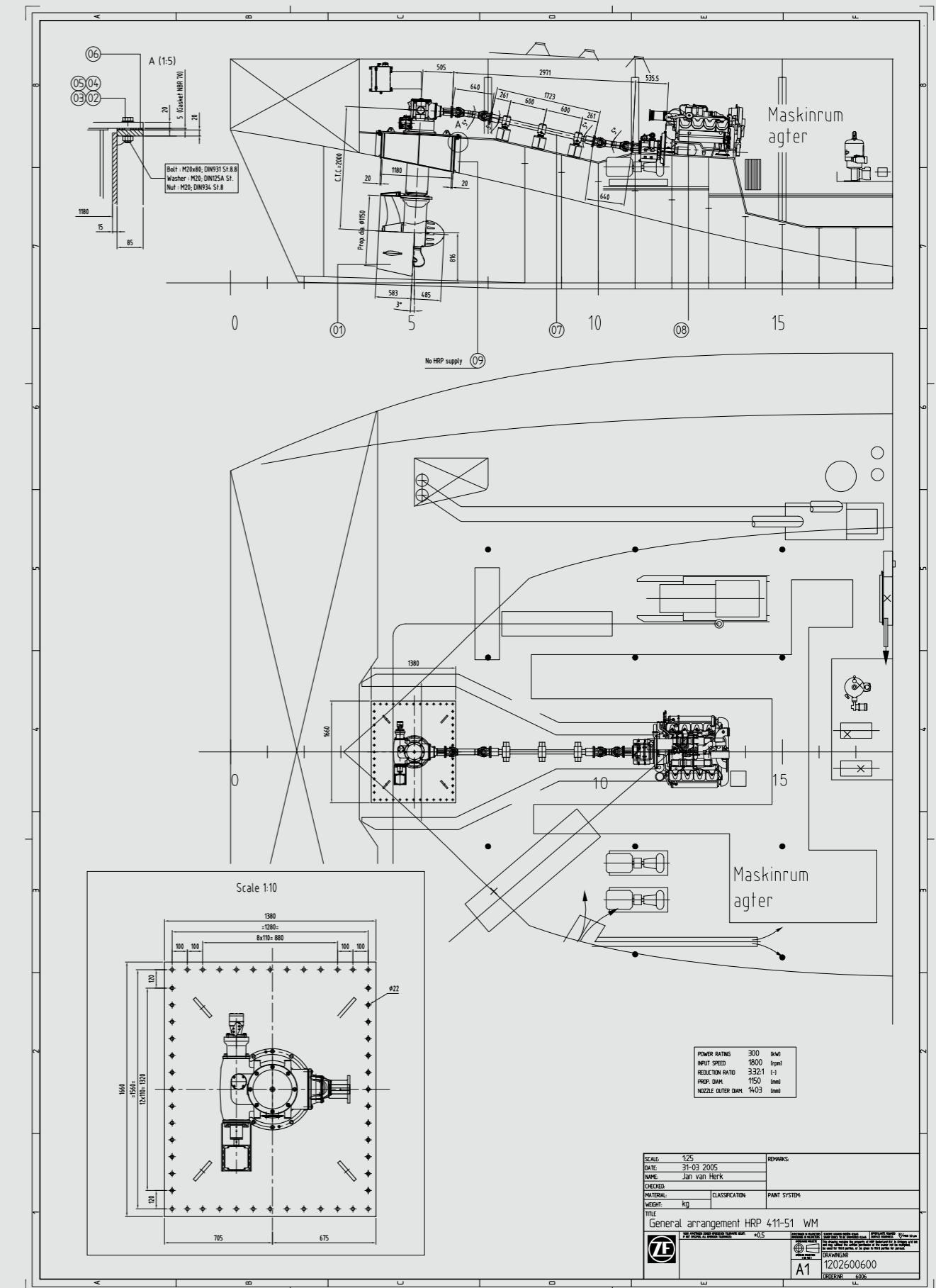


55M CAR/PASSENGER FERRY "MARY" – DENMARK



Length o.a. : 55.00 m
Breadth : 13.00 m
Draught : 2.50 m
ZF-Reference : 6006
Model : ZF AT 400 WM-FP
Rated power : 300 kW at 1800 rpm
Supplied to : Assens Shipyard – Denmark
Owner : Hvalsund – Denmark

Equipped with two (2) ZF AT 411-51 well mounted azimuth thrusters.



41 TONS BOLLARD PULL TRACTOR TUG “ARION” – NETHERLANDS



Length o.a. : 28.00 m

Breadth : 9.00 m

Draught : 5.20 m

ZF-Reference : 10817

Model : ZF AT 6000 WM-FP

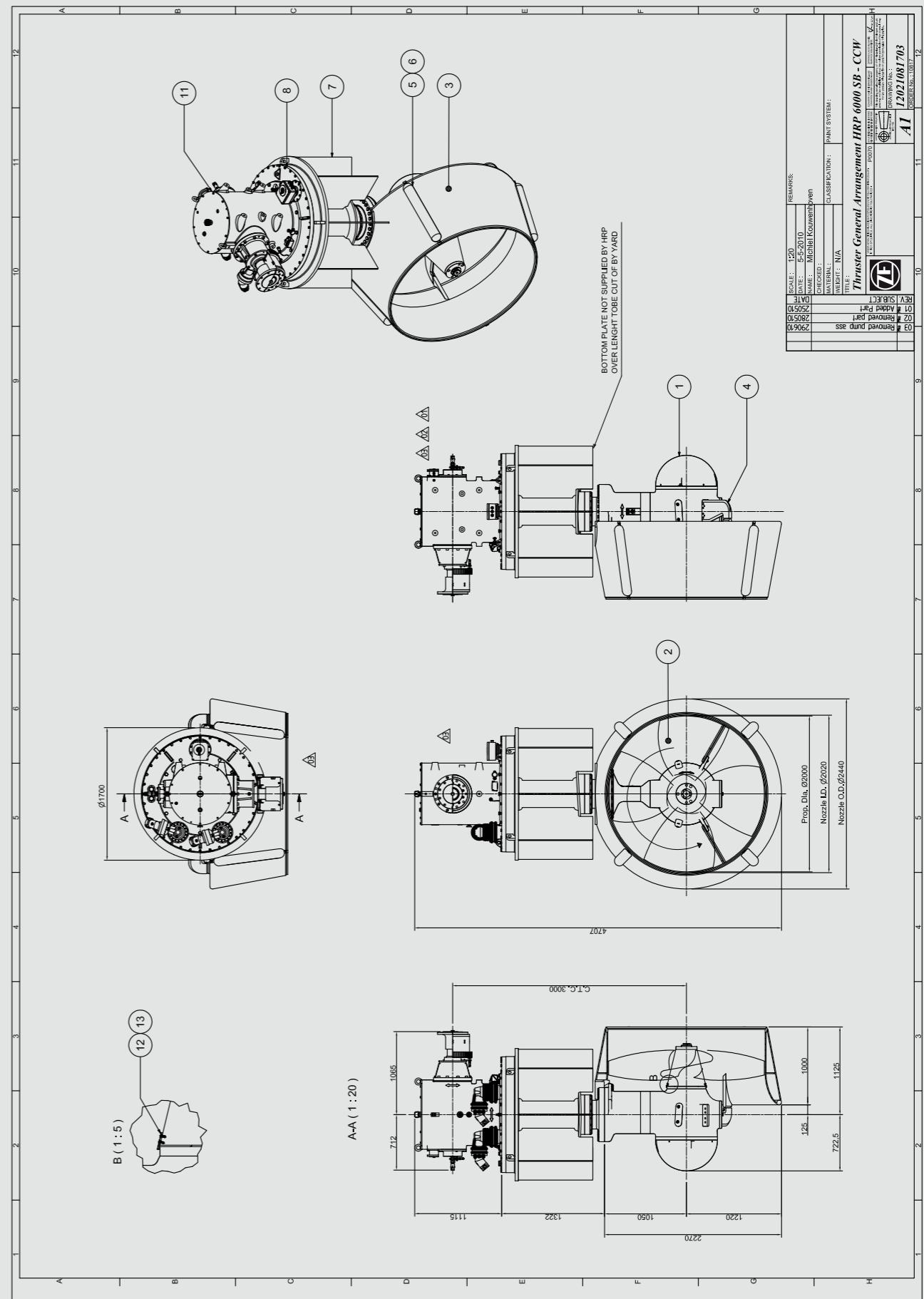
Rated power : 1150 kW at 1000 rpm

Supplied to : Sleepdienst B. Iskes & Zn. BV – Netherlands

Owner : Sleepdienst B. Iskes & Zn. BV – Netherlands

Equipped with two (2) ZF AT 6611

well mounted azimuth thrusters.

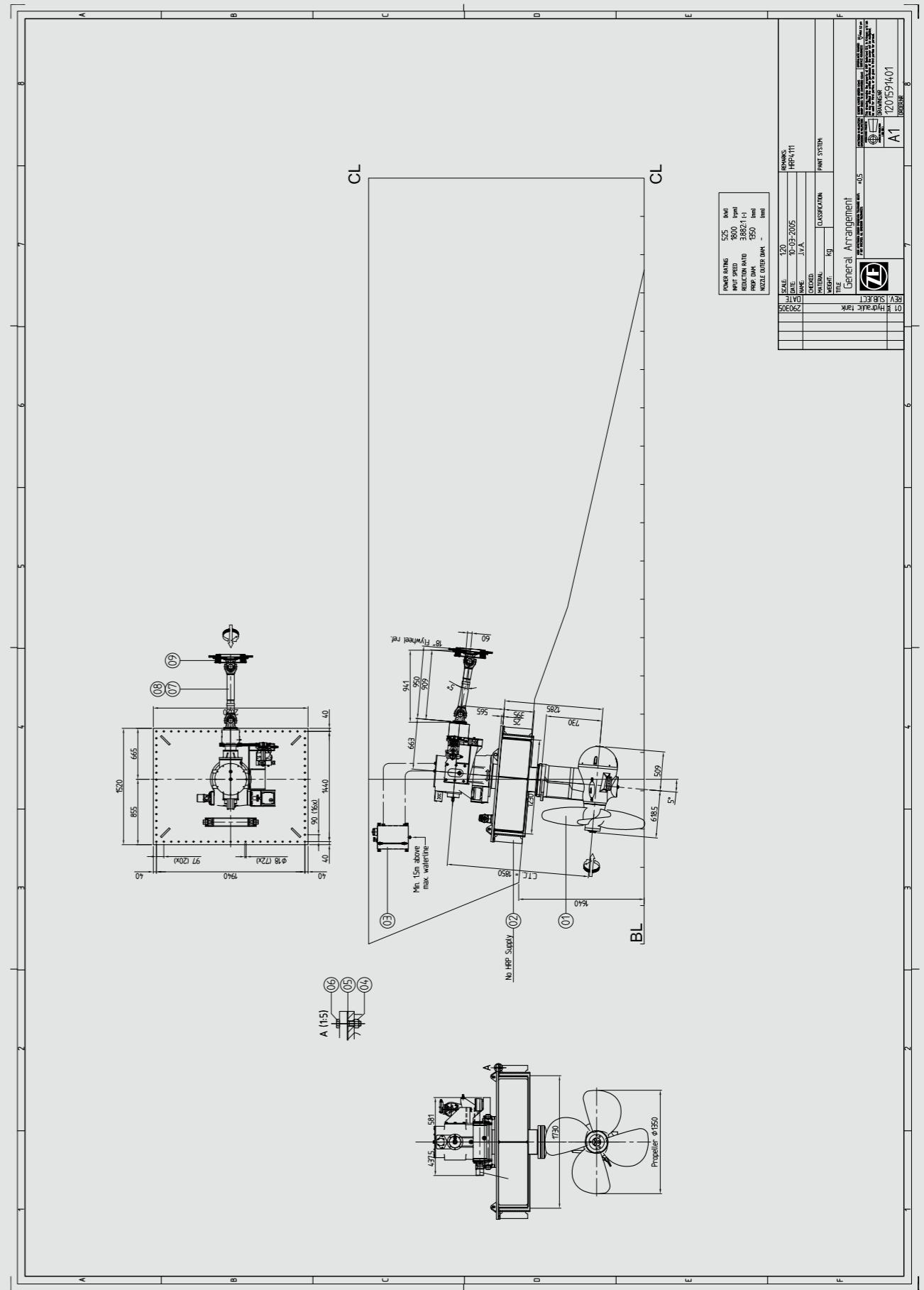


95M CAR/PASSENGER FERRY “GLYKOFLIOUSSA I & II” – GREECE



Length o.a. : 85.00 m
Breadth : 20.00 m
Draught : 2.30 m
ZF-Reference : 5914 / 6742
Model : ZF AT 4000 WM-FP
Rated power : 525 kW at 1800 rpm
Supplied to : F/B Panagiotis TH – Greece
Owner : Mr. Theodoropoulos – Greece

Each vessel equipped with four (4) ZF AT 4111 well mounted azimuth thrusters.



DOUBLE-ENDED FERRY “CHRISTINA” – NETHERLANDS



Length o.a. : 42.66 m

Breadth : 10.50 m

ZF-Reference : 11134

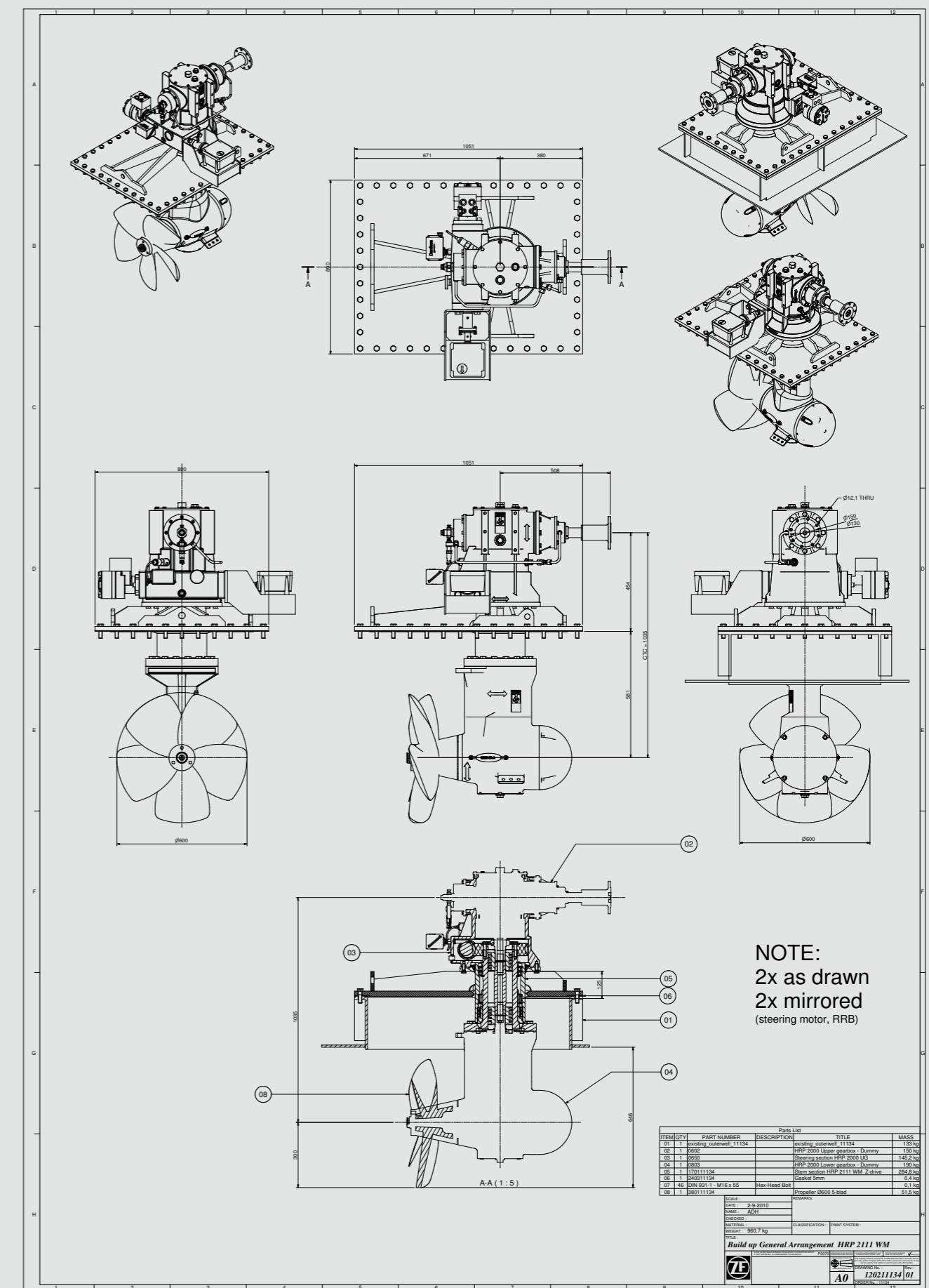
Model : ZF AT 2000 WM-FP

Rated power : 133 kW at 2200 rpm

Owner : Veerbedrijf De Visser B.V. – Netherlands

Equipped with four (4) ZF AT 2111

well mounted azimuth thrusters.



43M DOUBLE-ENDED FERRY “ARAWHITI” – NEW ZEALAND



Length o.a. : 43.00 m

Breadth : 13.00 m

Draught : 1.40 m

ZF-Reference : 5815

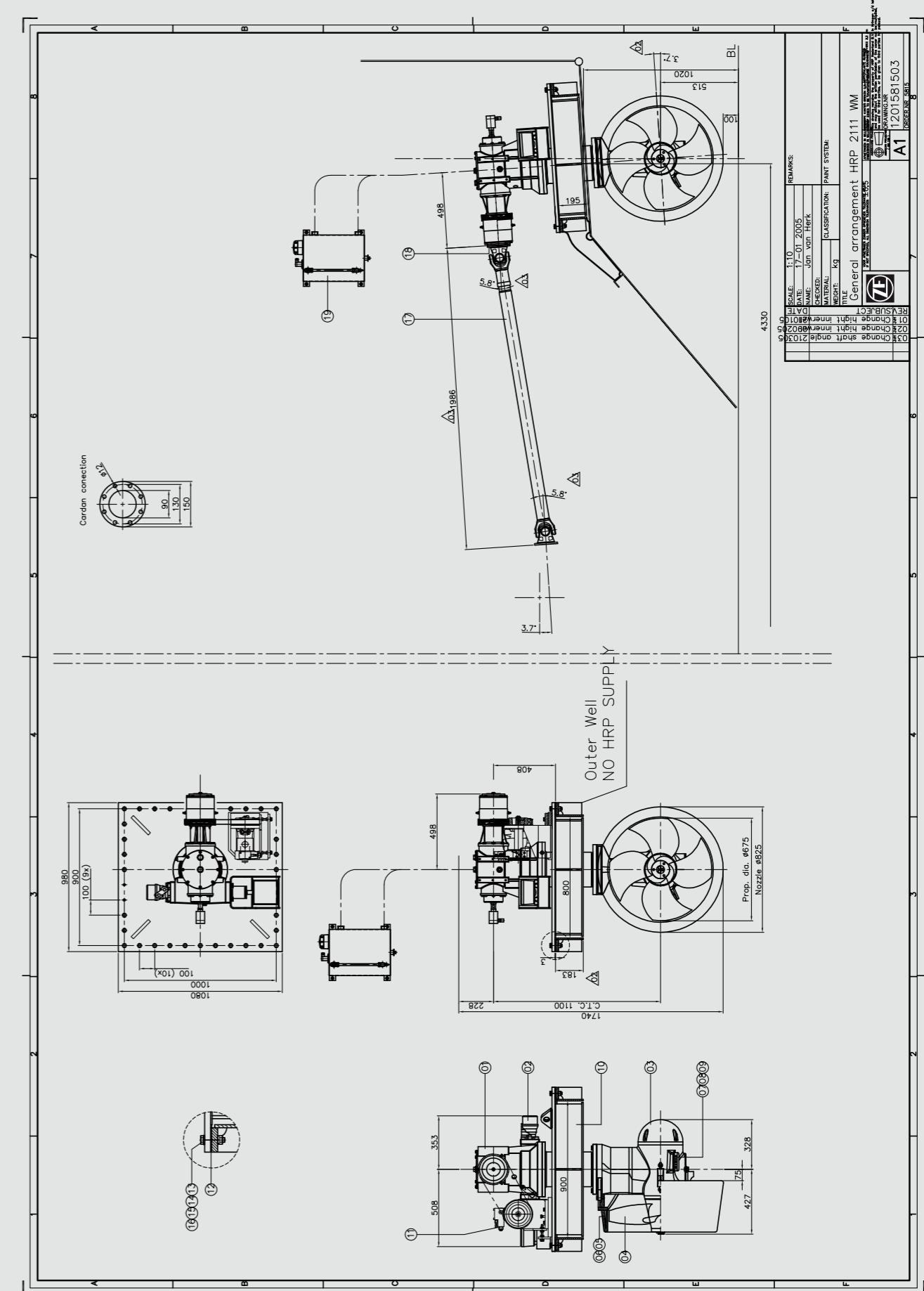
Model : ZF AT 2000 WM-FP

Rated power : 186 kW at 2400 rpm

Supplied to : Shipco Marine Constructors Ltd

Owner : Fullers Bay of Islands

Equipped with two (2) ZF AT 2111
well mounted azimuth thrusters.



BACKHOE DREDGERS "VITRUVIUS" & "MIMAR SINAN" – BELGIUM



Length o.a. : 64.90 m

Breadth : 18.00 m

Draught : 3.35 m

ZF-Reference : 6646

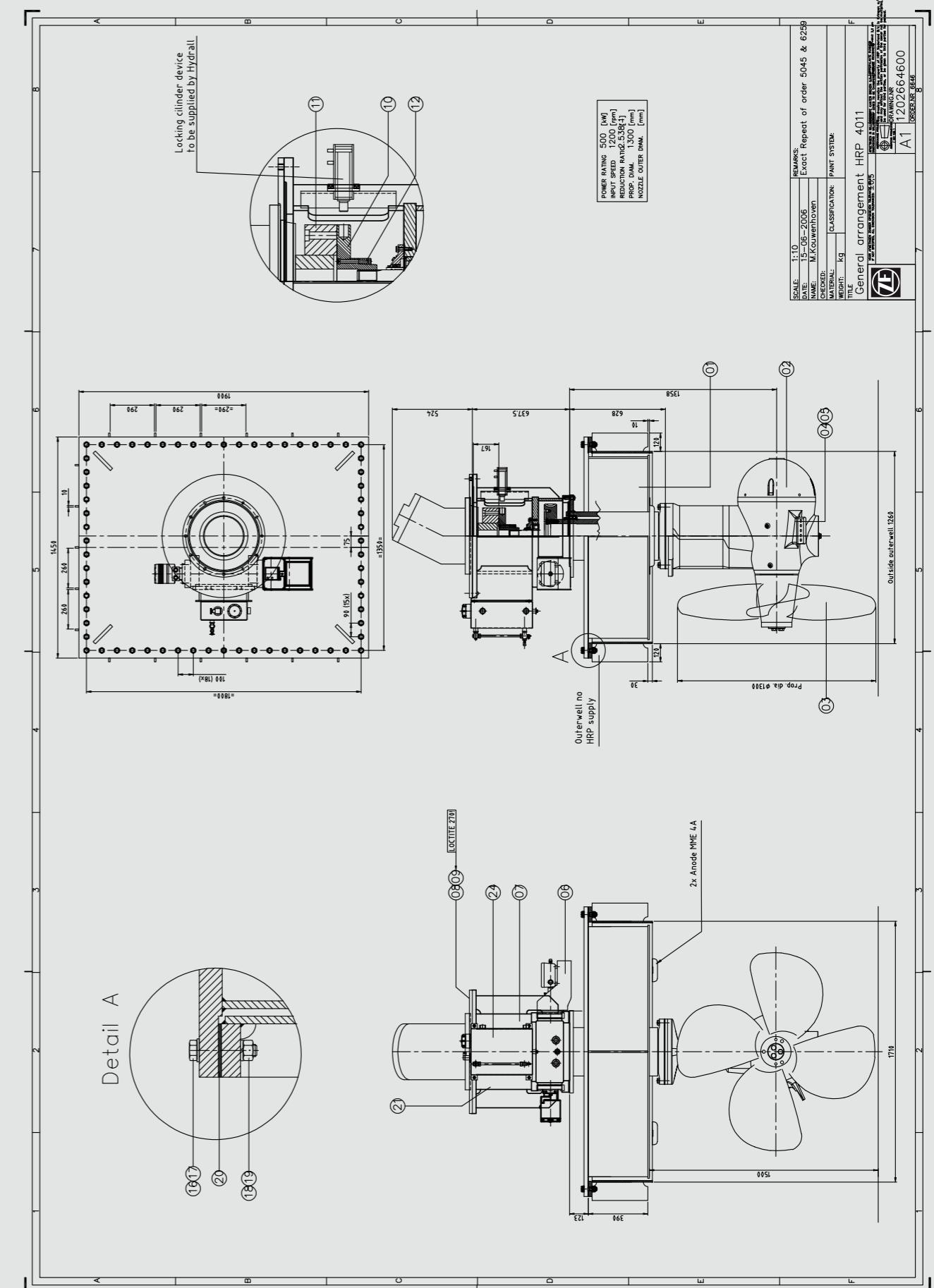
Model : ZF AT 4000 WM-FP

Rated power : 500 kW at 1200 rpm

Supplied to : de Donge Shipyard – Netherlands

Owner : Jan de Nul – Belgium

Equipped with two (2) ZF AT 4011
well mounted azimuth thrusters.



70M PLATFORM SUPPLY VESSEL “DMS COURAGEOUS” – QATAR



Length o.a. : 70.00 m

Breadth : 16.80 m

Draught : 5.70 m

ZF-Reference : 6696

Model : ZF AT 8000 WM-FP

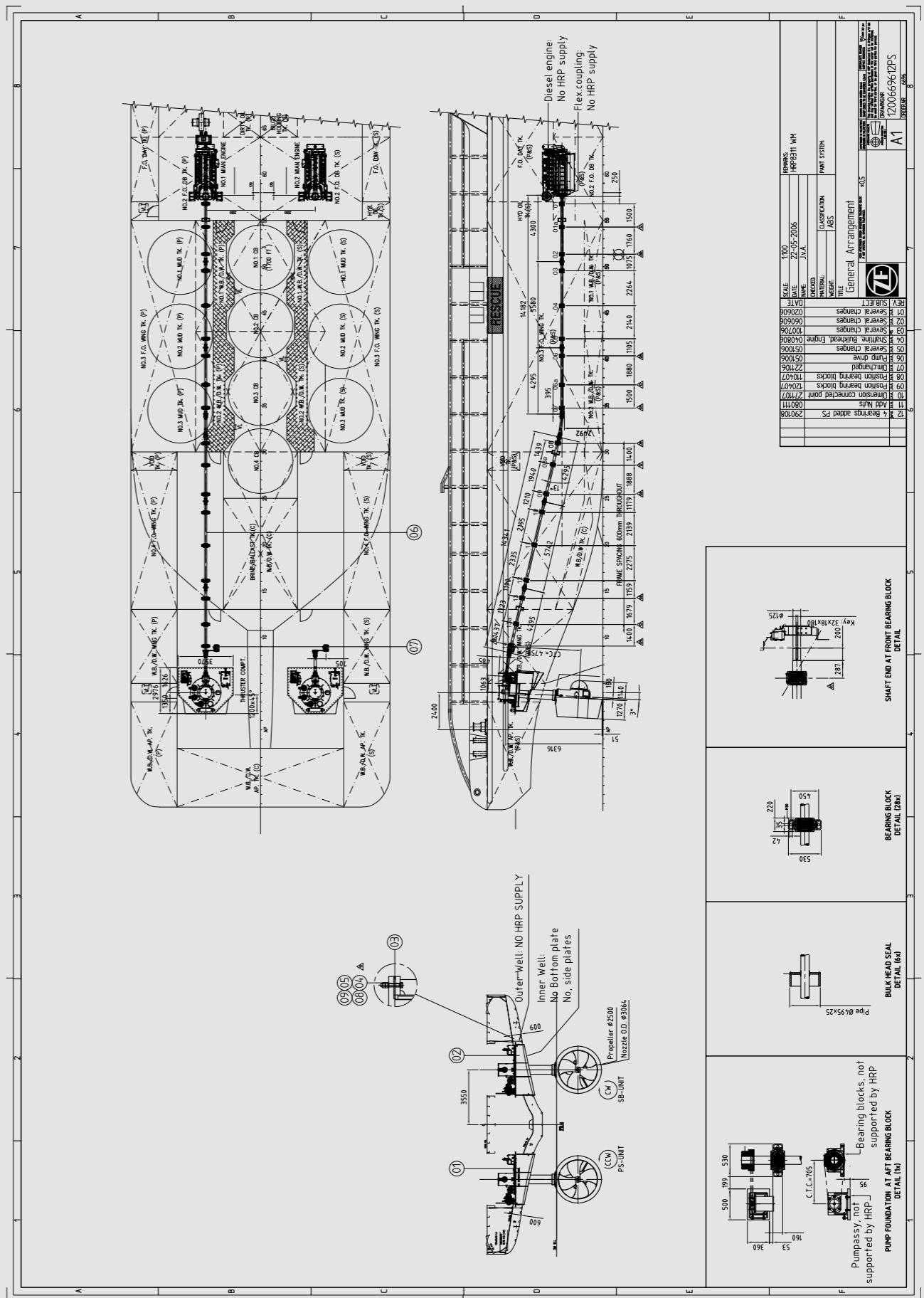
Rated power : 1835 kW at 1600 rpm

Supplied to : Mawei Shipbuilding – China

Owner : Doha Marine Services – Qatar

Equipped with two (2) ZF AT 8311

well mounted azimuth thrusters.



49.5M BUNKER BARGE “GIANNIS ARETI” – GREECE



Length o.a. : 49.50 m

Breadth : 10.00 m

Draught : 3.75 m

ZF-Reference : 6743

Model : ZF AT 4000 WI-FP

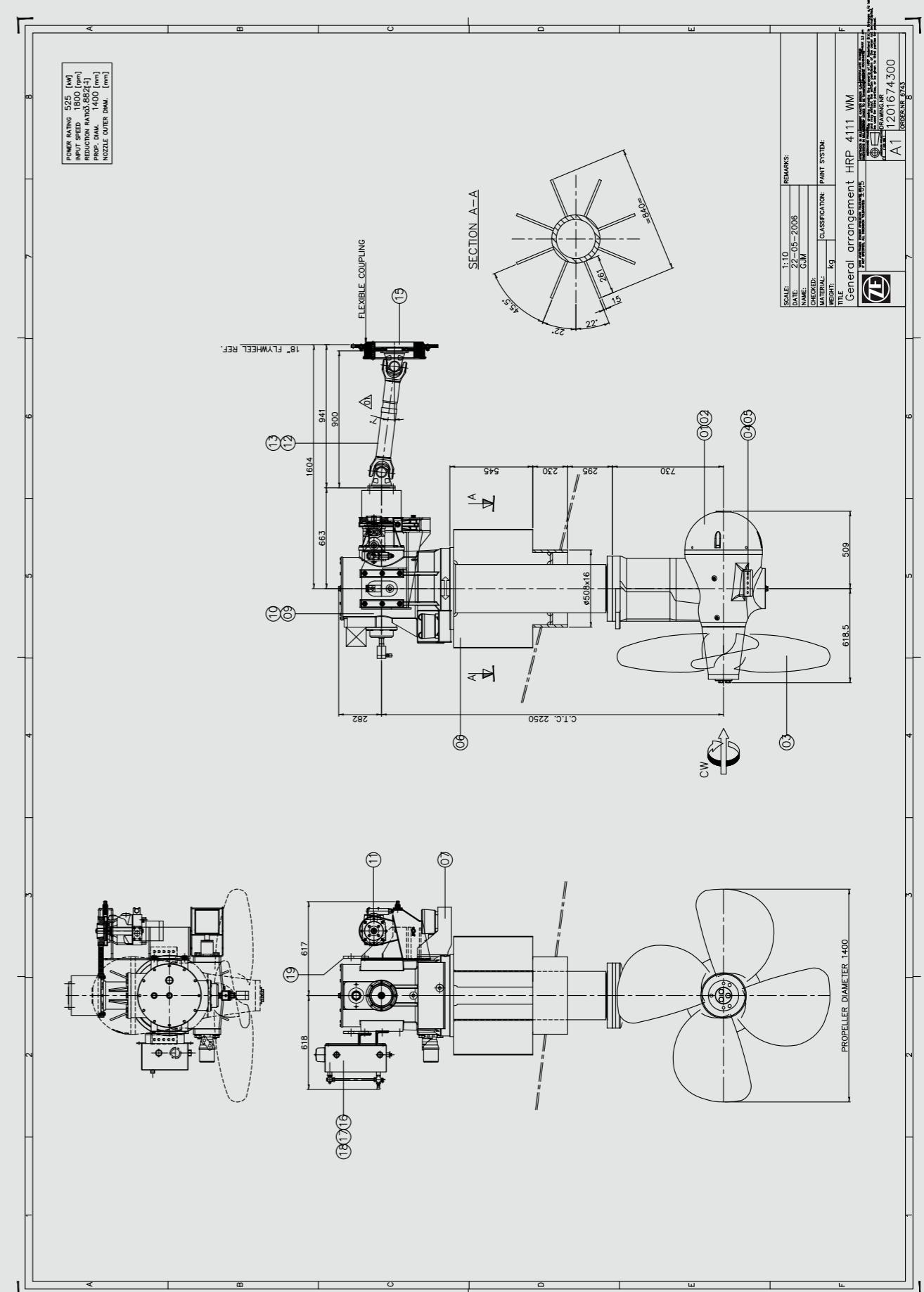
Rated power : 525 kW at 1800 rpm

Supplied to : Amilla Naftiki Eteria – Greece

Owner : Amilla Naftiki Eteria – Greece

Equipped with two (2) ZF AT 4111

weld-in azimuth thrusters.



48M AHTS VESSEL “SWISSCO SUPERIOR” – SINGAPORE



Length o.a. : 48.00 m

Breadth : 10.00 m

Draught : 4.00 m

ZF-Reference : 7121

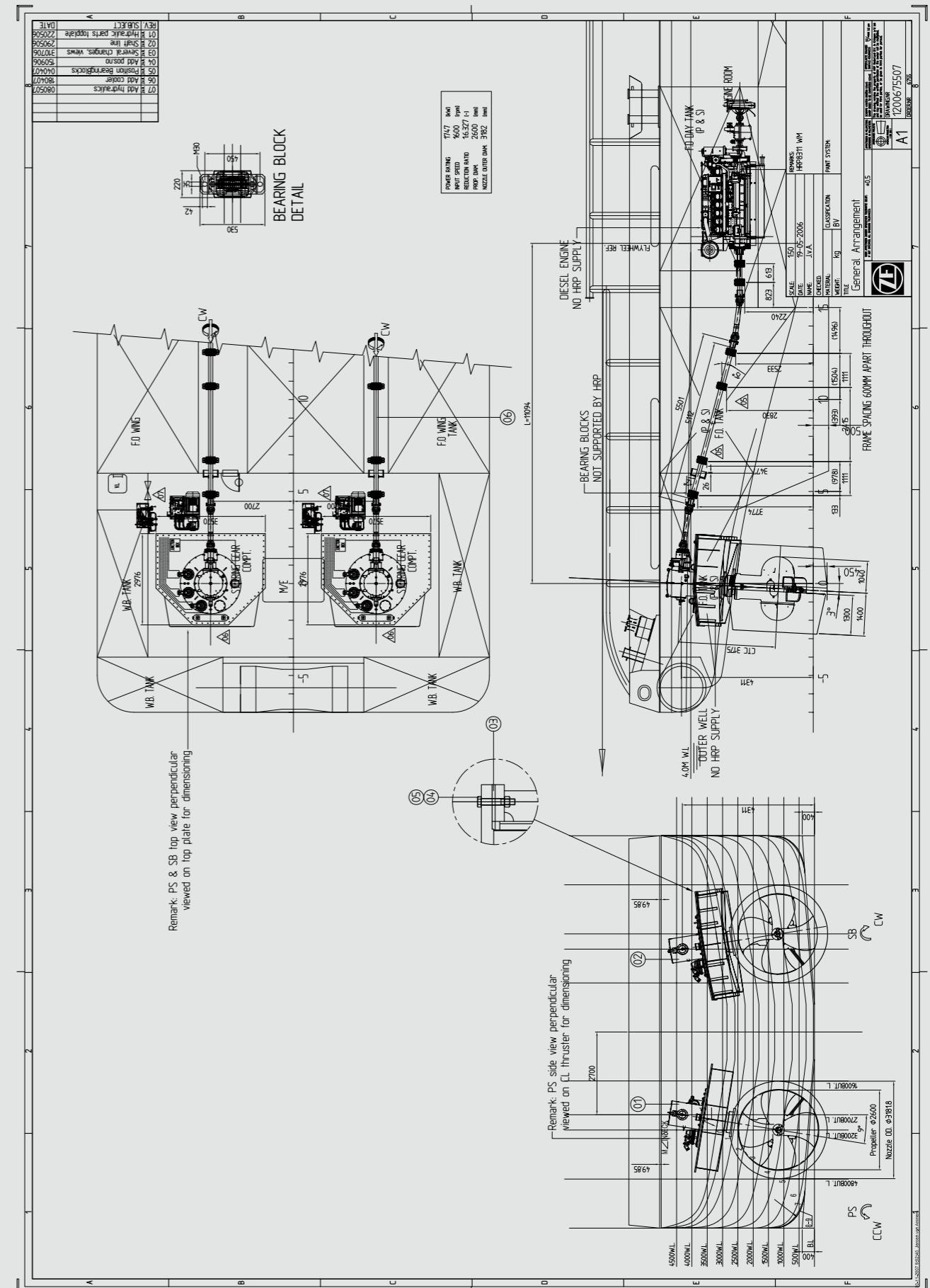
Model : ZT AT 8000 WM-FP / ZF TT 3000 FP

Rated power : 1746 kW at 1600 rpm

Supplied to : Lingshan Shipyard – China

Owner : Swissco Offshore – Singapore

Equipped with two (2) ZF AT 8311 well mounted azimuth thrusters and one (1) ZF TT 3001 tunnel thruster and Multi-Thruster Control System.



CHEMICAL TANKERS "CHEM FLOWER", "ROSE" & "VIOLET" – TURKEY



Length o.a. : 85.00 m

Breadth : 12.60 m

Draught : 5.30 m

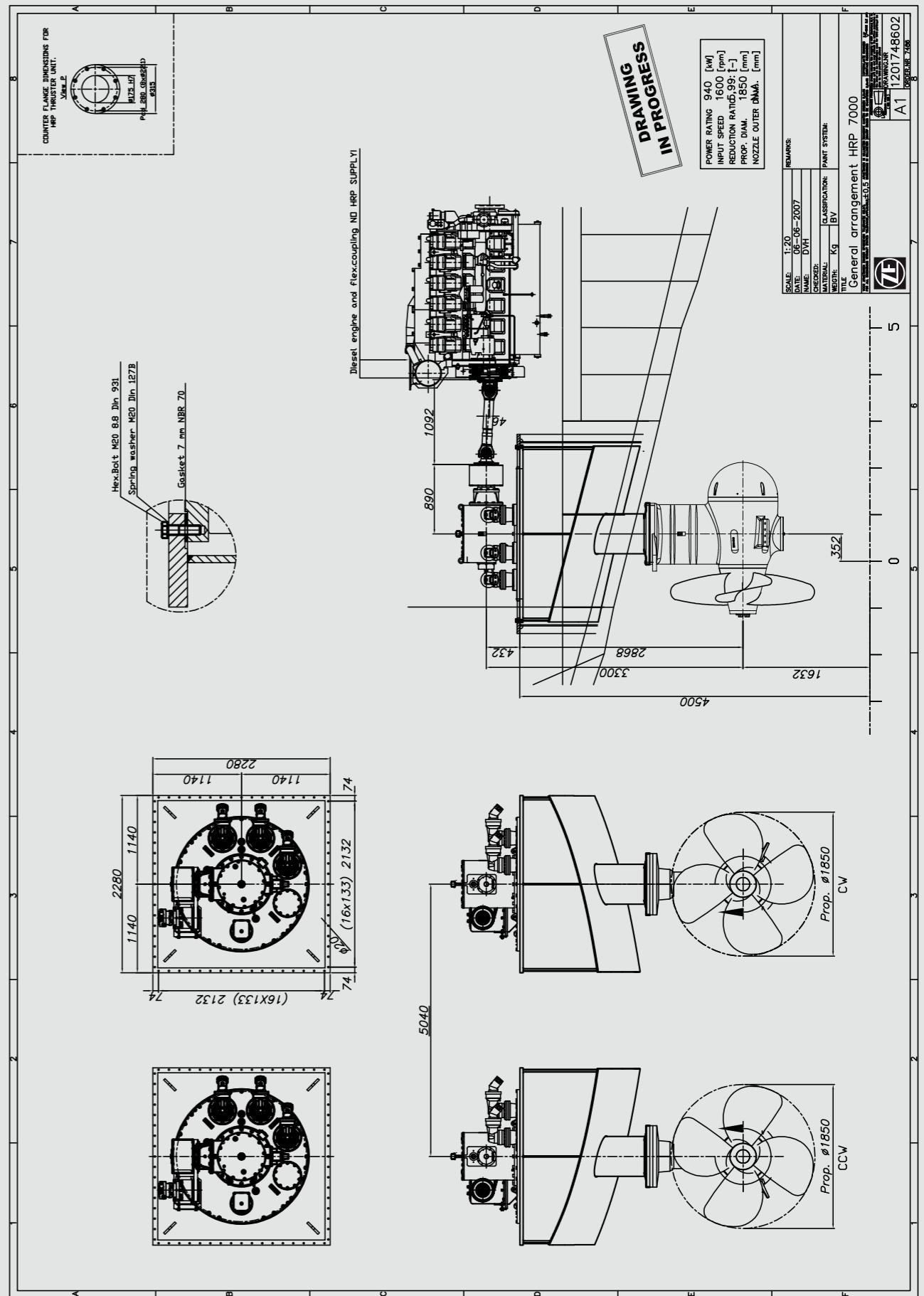
ZF-Reference : 7486 / 7646 / 7647

Model : ZF AT 7000 WM-FP / ZF TT 2000 FP

Rated power : 940 kW at 1600 rpm / 200 kW at 1480 rpm

Supplied to : Cicek SY – Turkey

Each vessel equipped with two (2) ZF AT 7311 well mounted azimuth thrusters with ICE 1B classification and one (1) ZF TT 2001 tunnel thruster, electric driven.



RIVER GOING TANKER VESSEL “TILL DEYmann” – GERMANY



Length o.a. : 109.80 m

Breadth : 11.45 m

Draught : 3.75 m

ZF-Reference : 6303

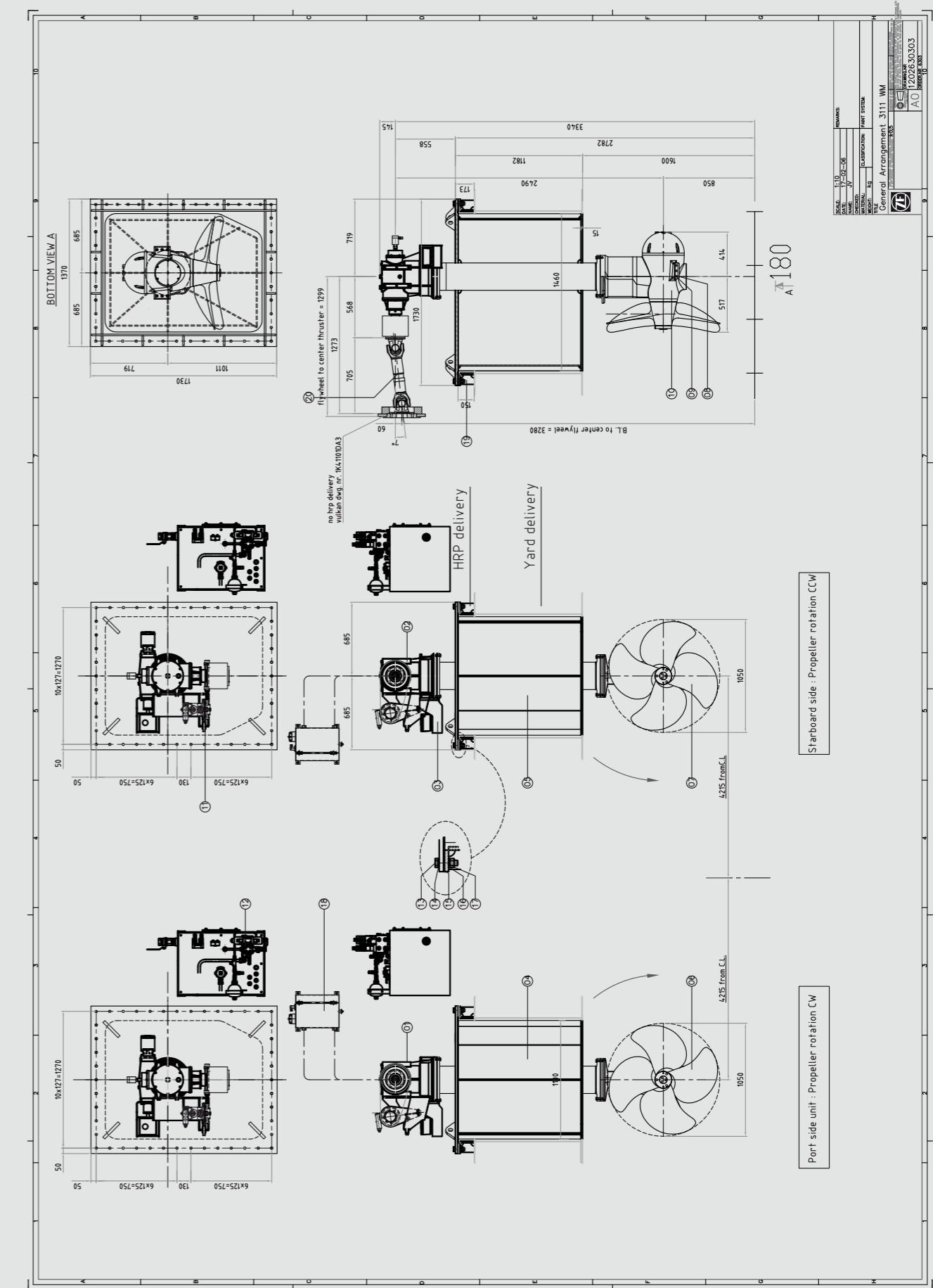
Model : ZF AT 3000 WM-FP / ZF AT 4000 WM-FP

Rated power : 300 / 525 kW at 1800 rpm

Supplied to : Köterwerft – Germany

Owner : Reederei Deymann – Germany

Equipped with two (2) ZF AT 3111 well mounted azimuth thrusters and two (2) ZF AT 4111 well mounted azimuth thrusters.



91M NORDIC FERRY “KANHAVE” – NORWAY



Length o.a. : 91.43 m

Breadth : 16.20 m

Draught : 3.20 m

ZF-Reference : 7656

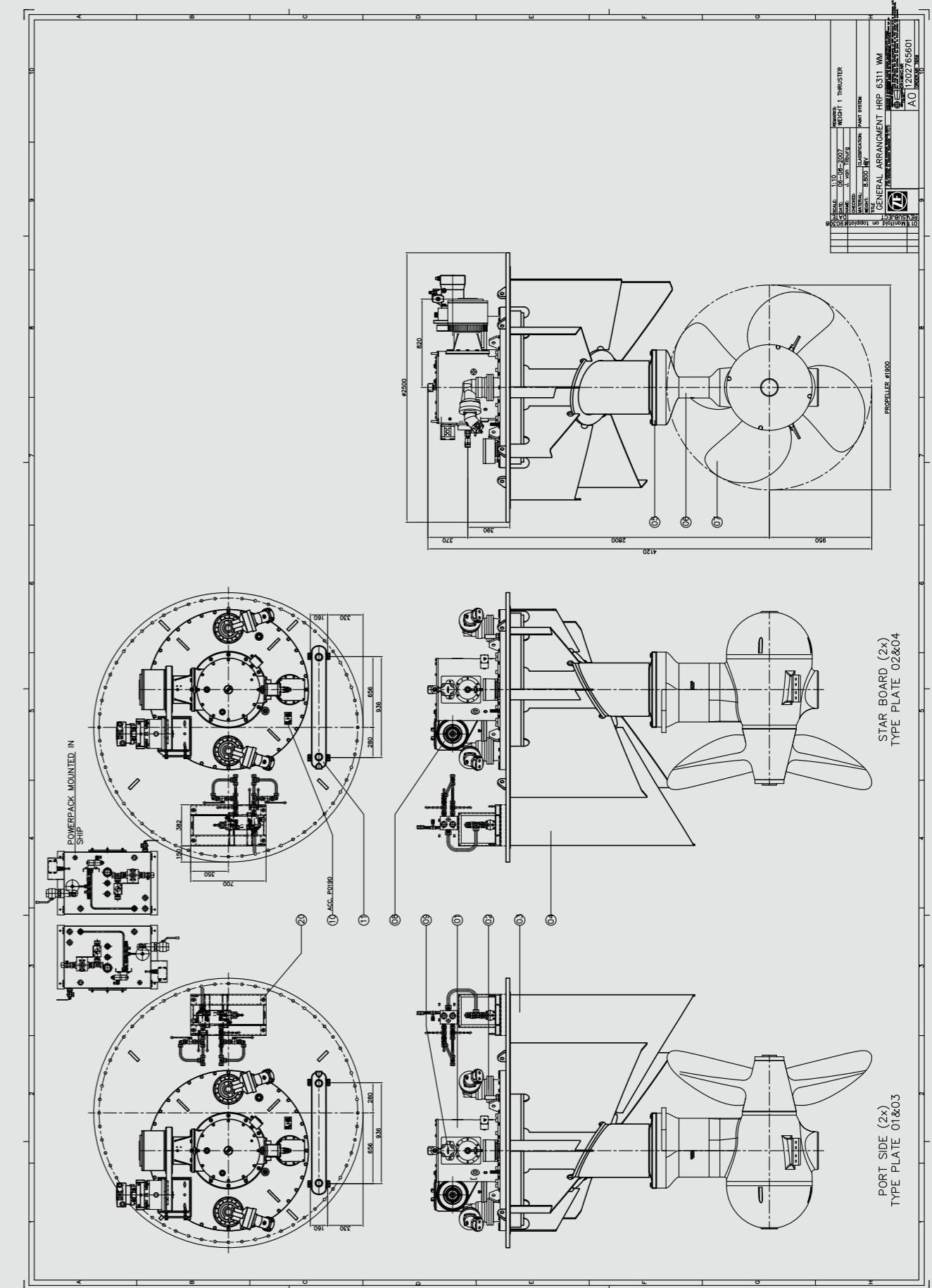
Model : ZF AT 6000 WM-FP

Rated power : 1170 kW at 1600 rpm

Supplied to : Technical Office Petihakis – Greece

Owner : Bornholms Trafikken – Norway

Equipped with four (4) ZF AT 6311 WM-FP
well mounted azimuth thrusters.

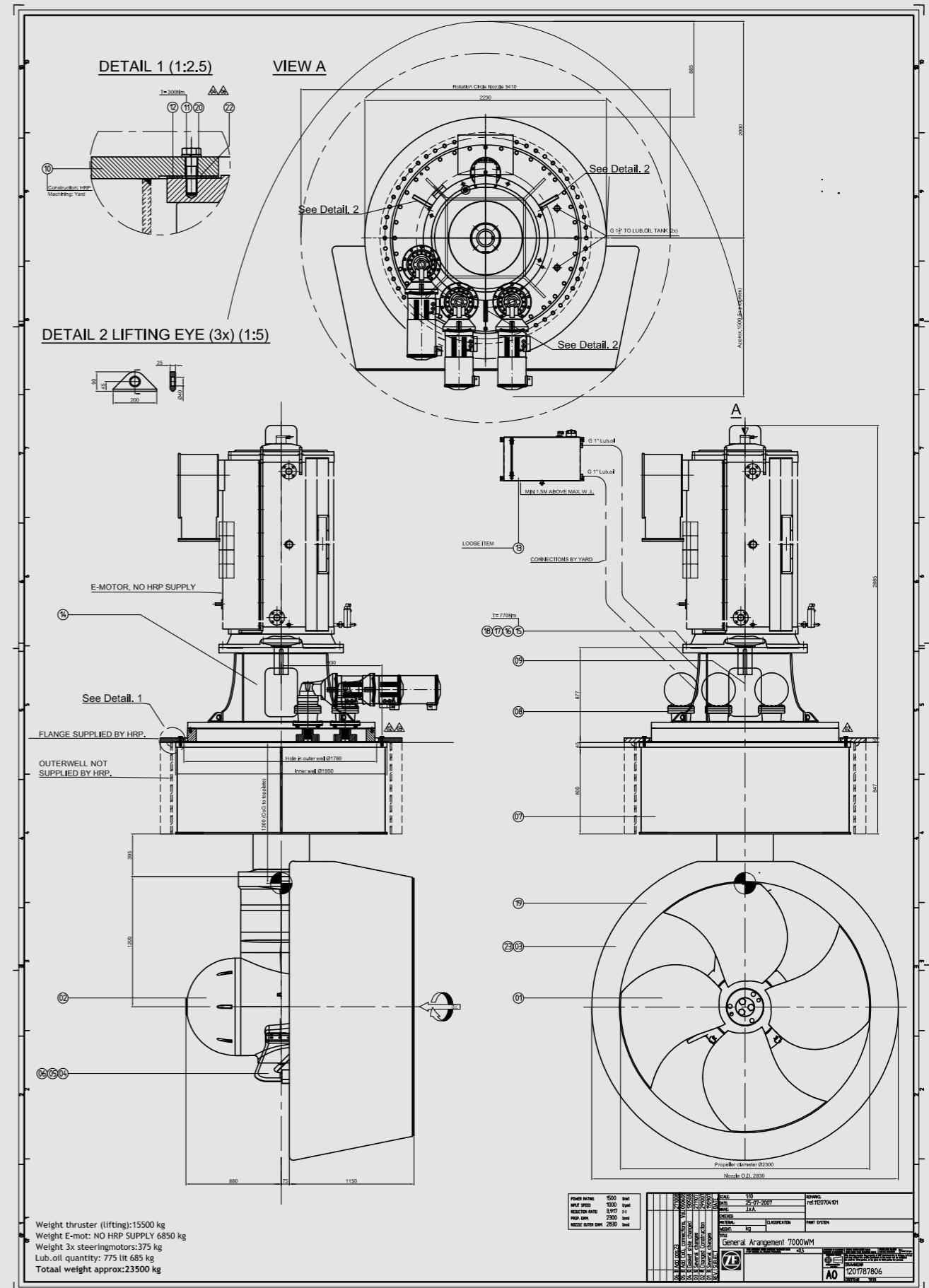


JACK-UP VESSELS "SEAJACKS KRAKEN" & "SEAJACKS LEVIATHAN" – BERMUDA



Length o.a. : 61.00 m
Breadth : 36.00 m
Draught : 6.00 m
ZF-Reference : 7878 & 7879
Model : ZF AT 7000 WM-FP
Rated power : 1500 kW at 1000 rpm
Supplied to : Lamprell Group – Dubai
Owner : Seajacks International Ltd – UK

Each equipped with four (4) ZF AT 7011 well mounted azimuth thrusters.



40M CAR/PASSENGER FERRY “REGINA FLUMINUM II” – NETHERLANDS



Length o.a. : 39.95 m

Breadth : 12.40 m

Draught : 1.55 m

ZF-Reference : 8234

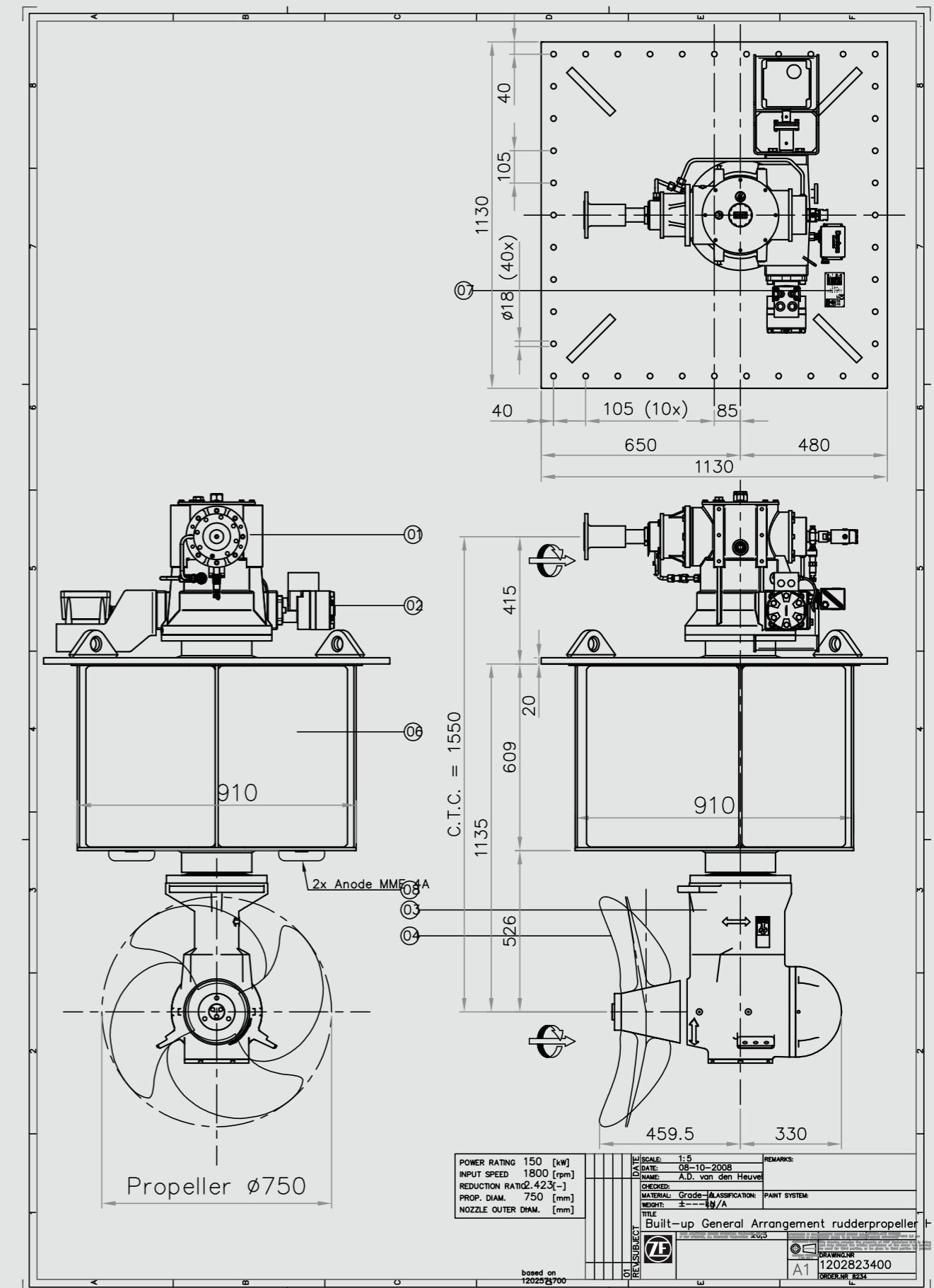
Model : ZF AT 2000 WM-FP

Rated power : 180 kW at 1800 rpm

Supplied to : Shipyard Den Breejen – Netherlands

Owner : Veerdienst Eck & Wiel – Netherlands

Equipped with two (2) ZF AT 2111
well mounted azimuth thrusters.



MULTI-PURPOSE CARGO VESSEL “JAGUAR” – NETHERLANDS



Length o.a. : 107.20 m

Breadth : 16.00 m

Draught : 6.45 m

ZF-Reference : 11535/11536

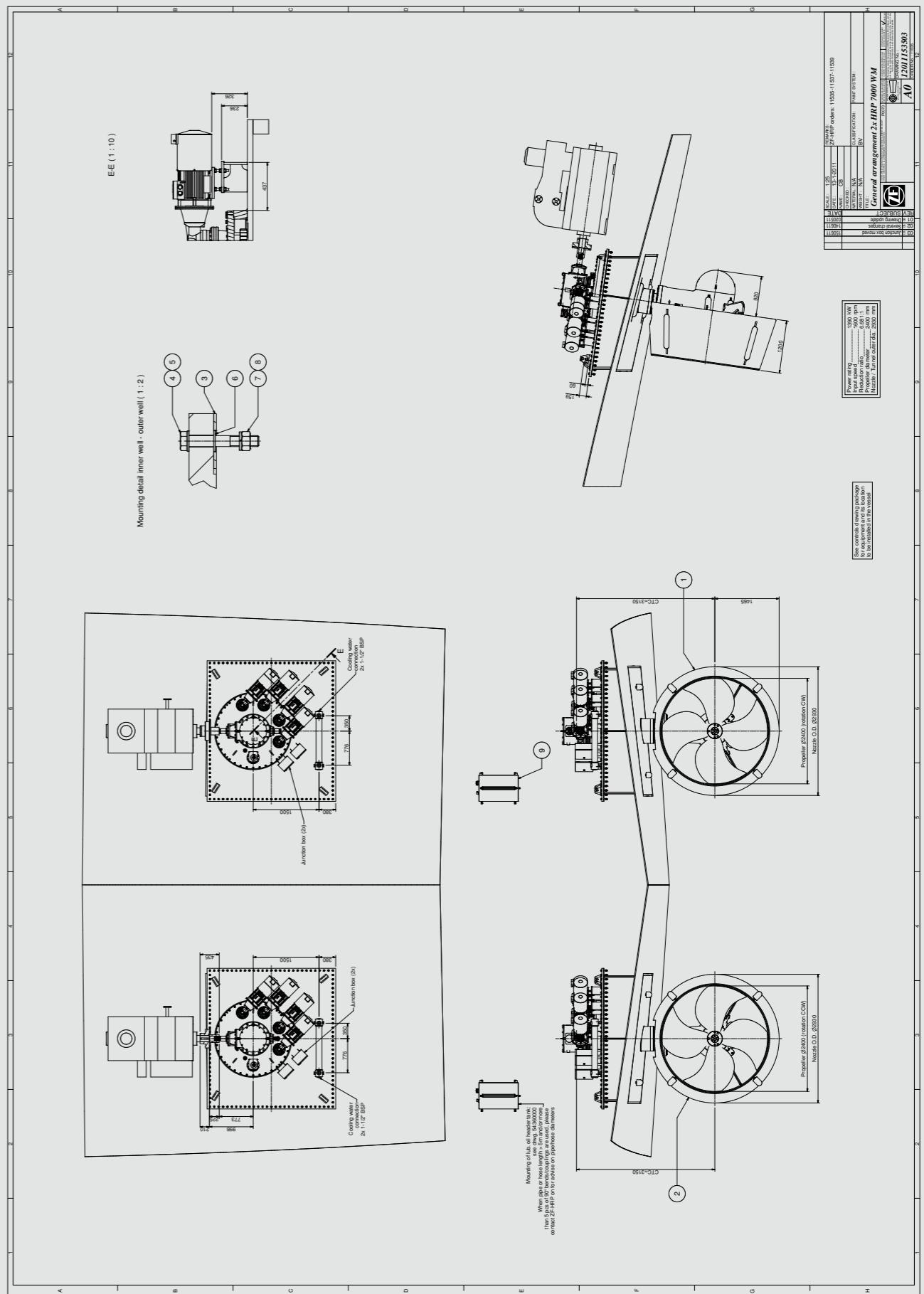
Model : ZF AT 7000 WM-FP & ZF TT 4000 FP

Rated power : 1445 kW at 1800 rpm / 400 kW at 1800 rpm

Supplied to : Shipkits B.V. – Netherlands

Owner : Jaguar Shipping – Netherlands

Equipped with two (2) ZF AT 7111 well mounted azimuth thrusters, electric driven and two (2) ZF TT 4004 tunnel thrusters, electric driven.



MULTI-PURPOSE CARGO VESSEL “ABIS DOVER” – NETHERLANDS



Length o.a. : 107.95 m

Breadth : 16.00 m

Draught : 9.30 m

ZF-Reference : 11537/11538

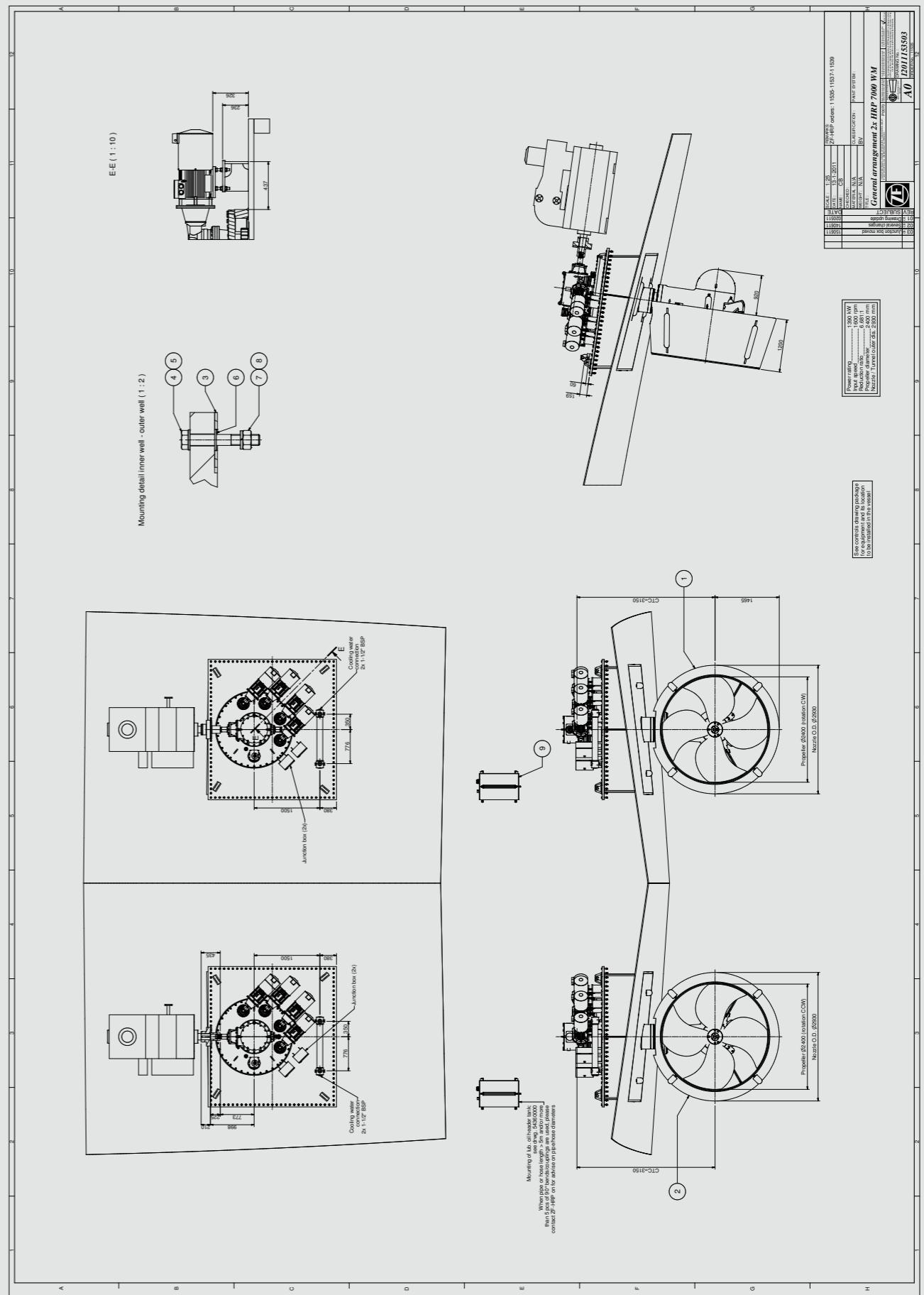
Model : ZF AT 7000 WM-FP & ZF TT 4000 FP

Rated power : 1445 kW at 1800 rpm / 400 kW at 1800 rpm

Supplied to : Shipkits B.V. – Netherlands

Owner : ABIS Shipping – Netherlands

Equipped with two (2) ZF AT 7111 well mounted azimuth thrusters, electric driven and two (2) ZF TT 4004 tunnel thrusters, electric driven.



35 TON FLOAT CRANE BARGE “EXPERT 1” – MALTA



Length o.a. : 40.32 m

Breadth : 20.00 m

Draught : 4.00 m

ZF-Reference : 13704

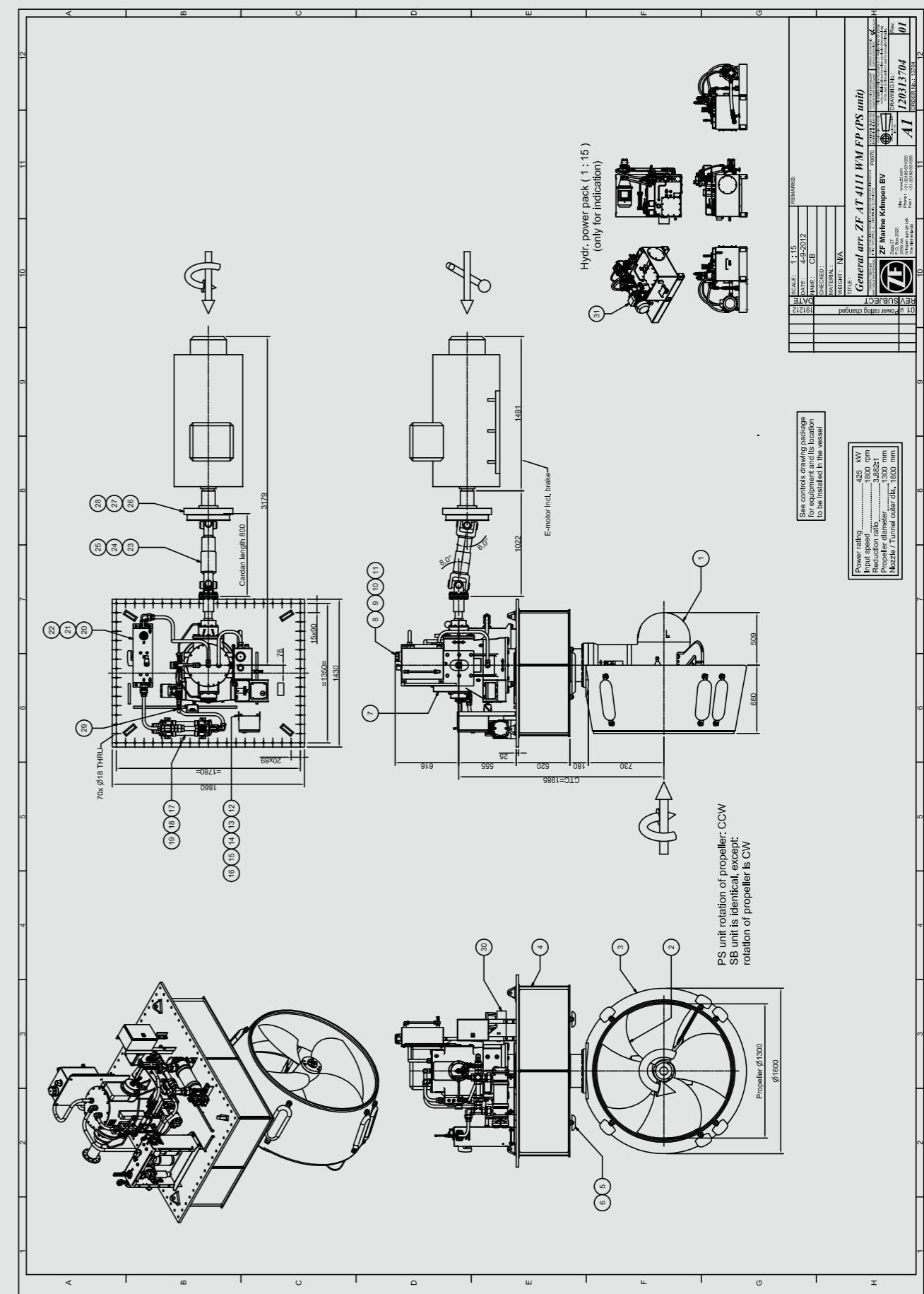
Model : ZF AT 4000 WM-FP

Rated power : 525 kW at 1800 rpm

Supplied to : Ganz Danubius Shipyard – Budapest

Owner : STS Expert Shipping Co. Ltd – Malta

Equipped with two (2) ZF AT 4111
well mounted azimuth thrusters.



ACCOMMODATION JACKUP BARGE “GMS ENDURANCE” – ABU DHABI



Length o.a. : 76.00 m

Breadth : 36.00 m

Draught : 6.00 m

ZF-Reference : 8963

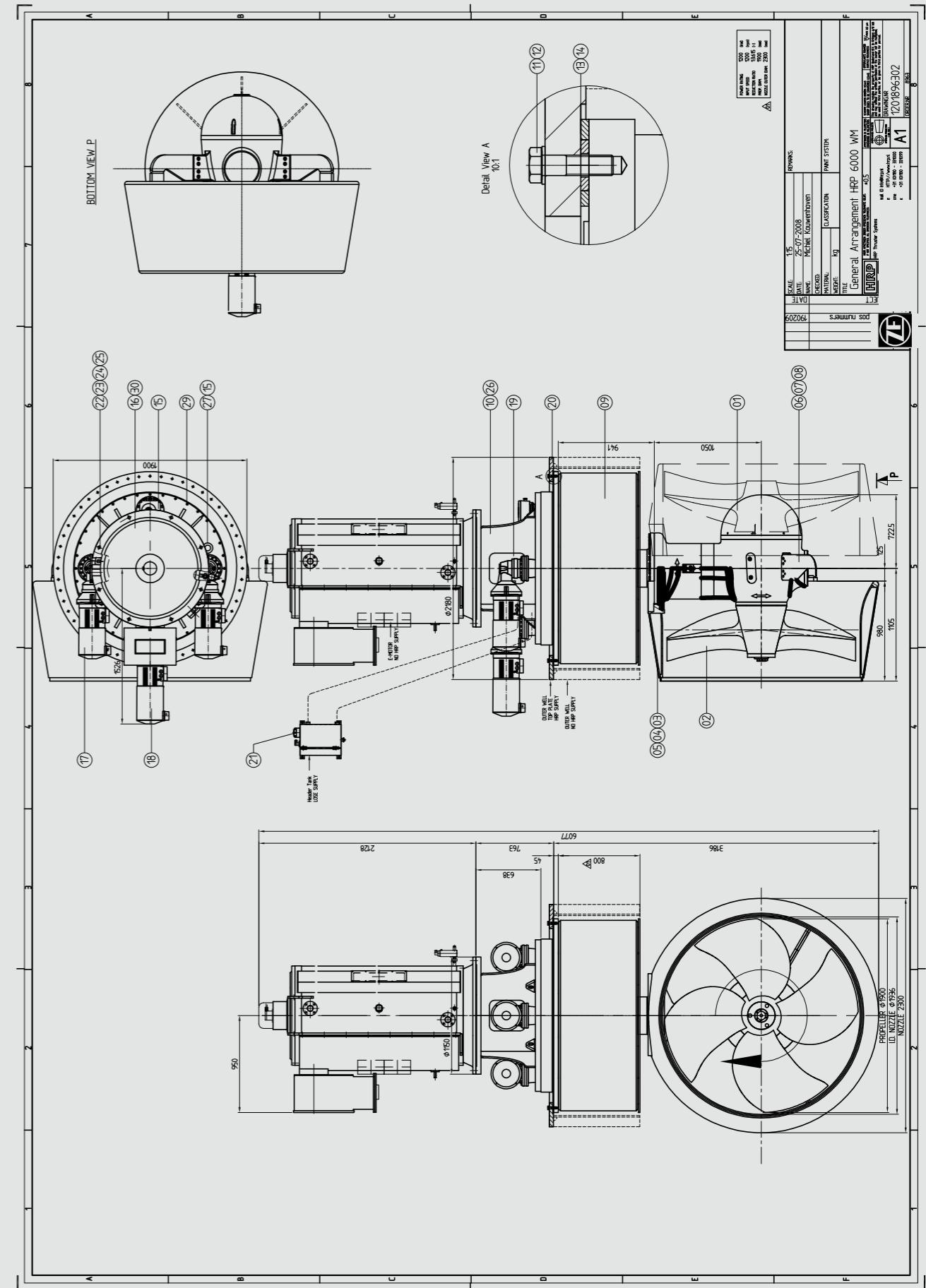
Model : ZF AT 6000 WM-FP

Rated power : 1200 kW at 1200 rpm

Owner : Gulf Marine Services – Abu Dhabi

Equipped with four (4) ZF AT 6011

well mounted azimuth thrusters.



RIVER PUSHER TUG “M/V AMERICAN WAY” – USA



Length o.a. : 23.00 m

Breadth : 9.00 m

ZF-Reference : 14456

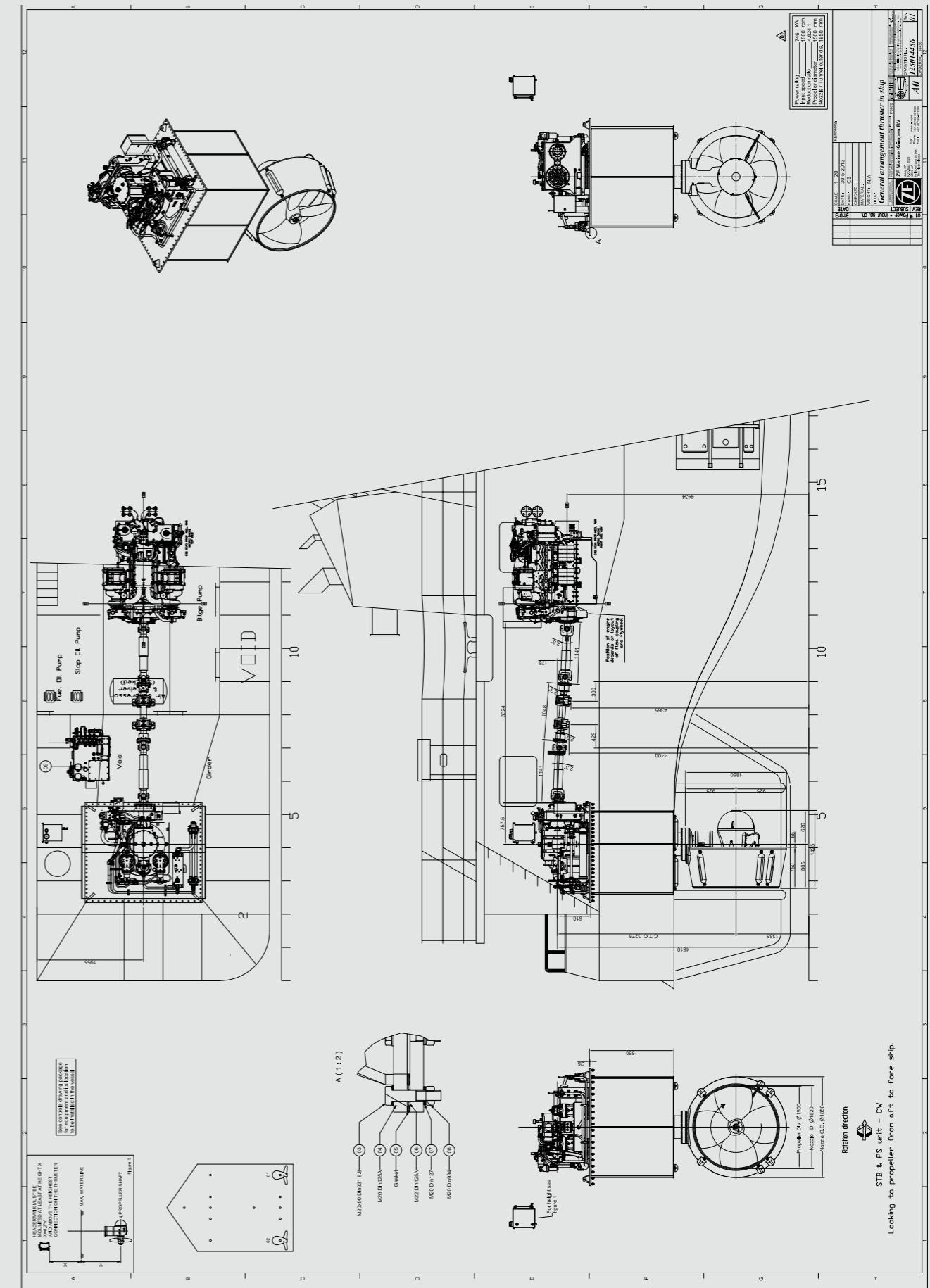
Model : ZF AT 5000 WM-FP

Rated power : 746 kW at 1800 rpm

Shipyard : Steiner Construction – USA

Owner : American Commercial Lines – USA

Equipped with two (2) ZF AT 5111 well mounted azimuth thrusters, diesel driven.



TUG "RENEGADE" (BACKGROUND: "NUMAS WARRIOR") – USA



Length o.a. : 17.00 m

Breadth : 6.00 m

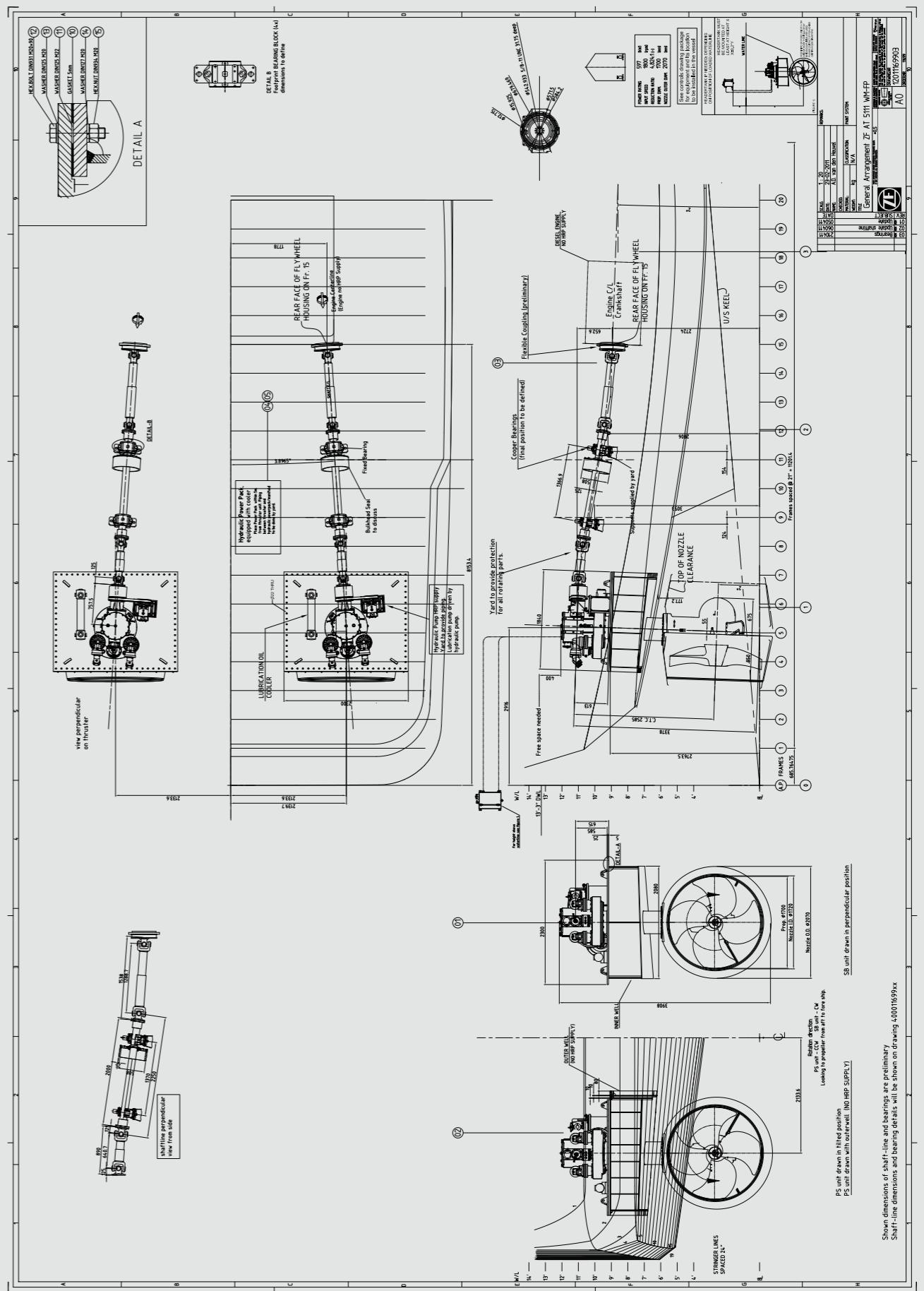
ZF-Reference : 11699

Model : ZF AT 5000 WM-FP

Rated power : 821 kW at 1800 rpm

Owner : Standard Towing LTD – Jack Davies

Equipped with two (2) ZF AT 5111
well mounted azimuth thrusters.



TOWBOAT "Z SHARON" – USA



Length o.a. : 28.00 m

Breadth : 9.00 m

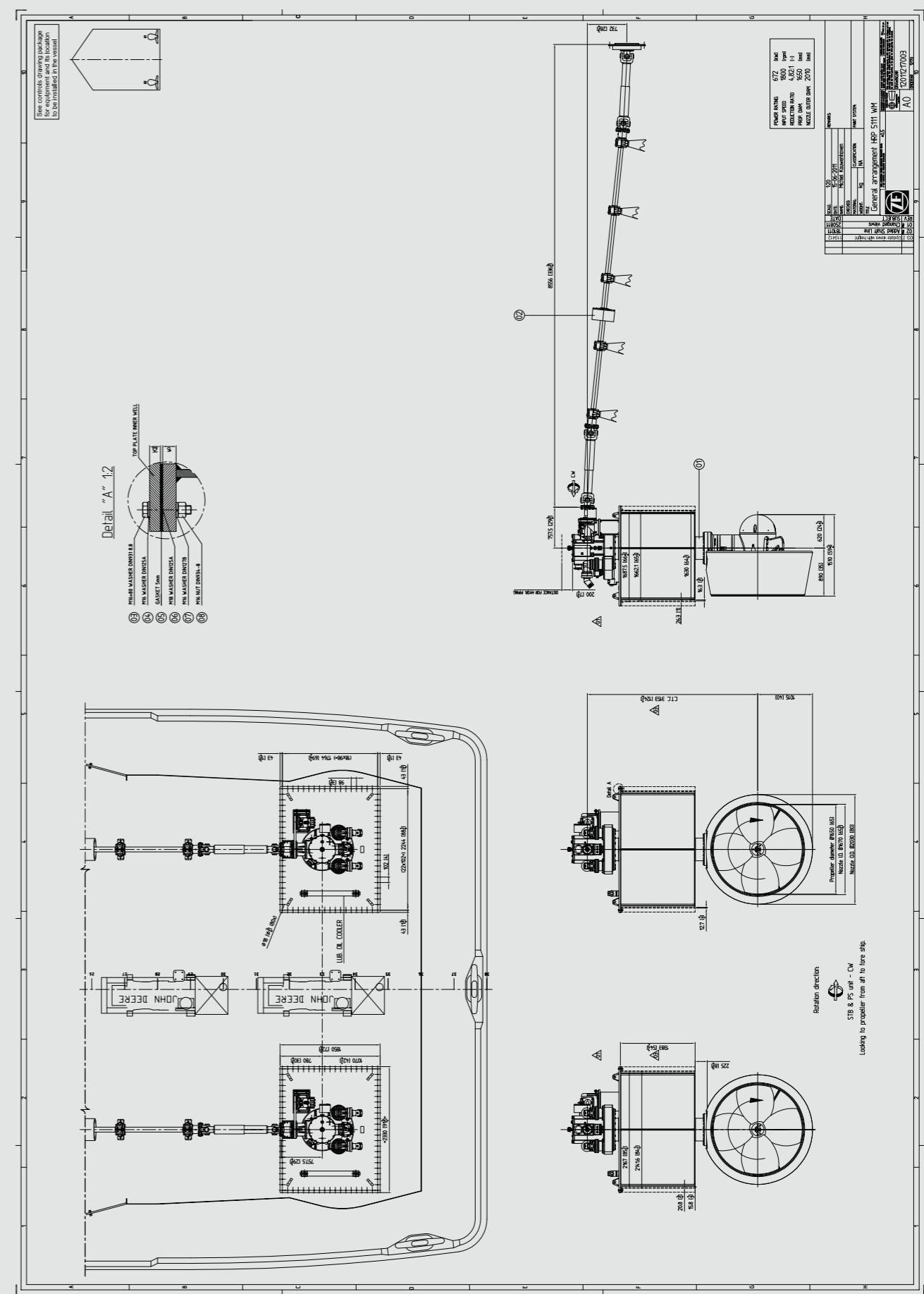
ZF-Reference : 12170

Model : ZF AT 5000 WM-FP

Rated power : 672 kW at 1800 rpm

Owner : DeLoach Marine – USA

Equipped with two (2) ZF AT 5111
well mounted azimuth thrusters.



RIVER CRUISE PASSENGERS VESSEL “SERENADE 1” – NETHERLANDS



Length o.a. : 110.00 m

Breadth : 11.45 m

Draught : 1.55 m

ZF-Reference : 6377

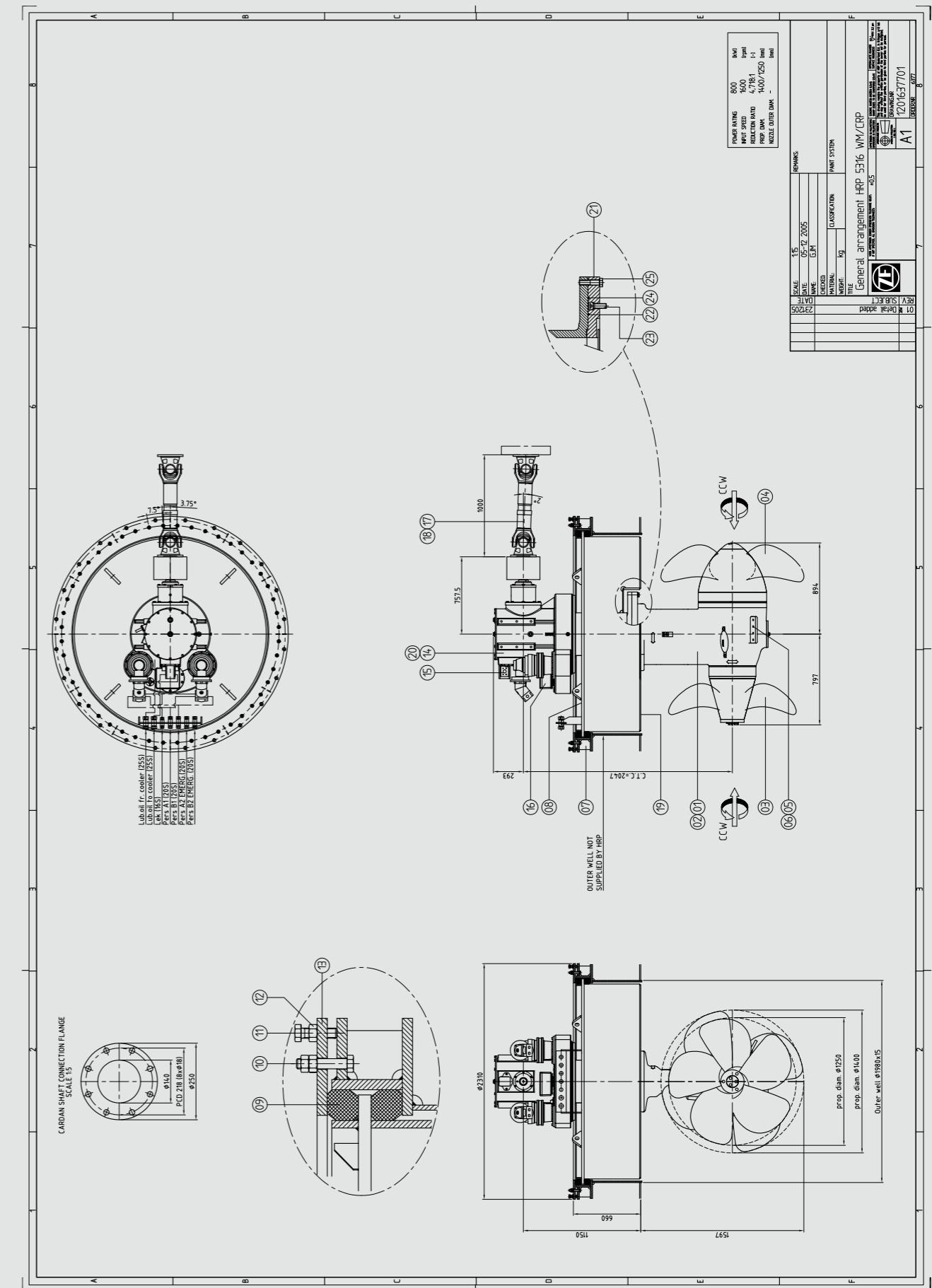
Model : ZF AT 5000 WM-CR

Rated power : 783 kW at 1600 rpm

Supplied to : De Gerlien van Tiem B.V. – Netherlands

Owner : Select Cruise Voyages B.V. – Netherlands

Equipped with two (2) ZF AT 5116 well mounted azimuth thrusters with contra-rotating propellers.



PASSENGERS VESSEL “ERASMUS” – NETHERLANDS



Length o.a. : 30.00 m

Breadth : 5.95 m

Draught : 1.10 m

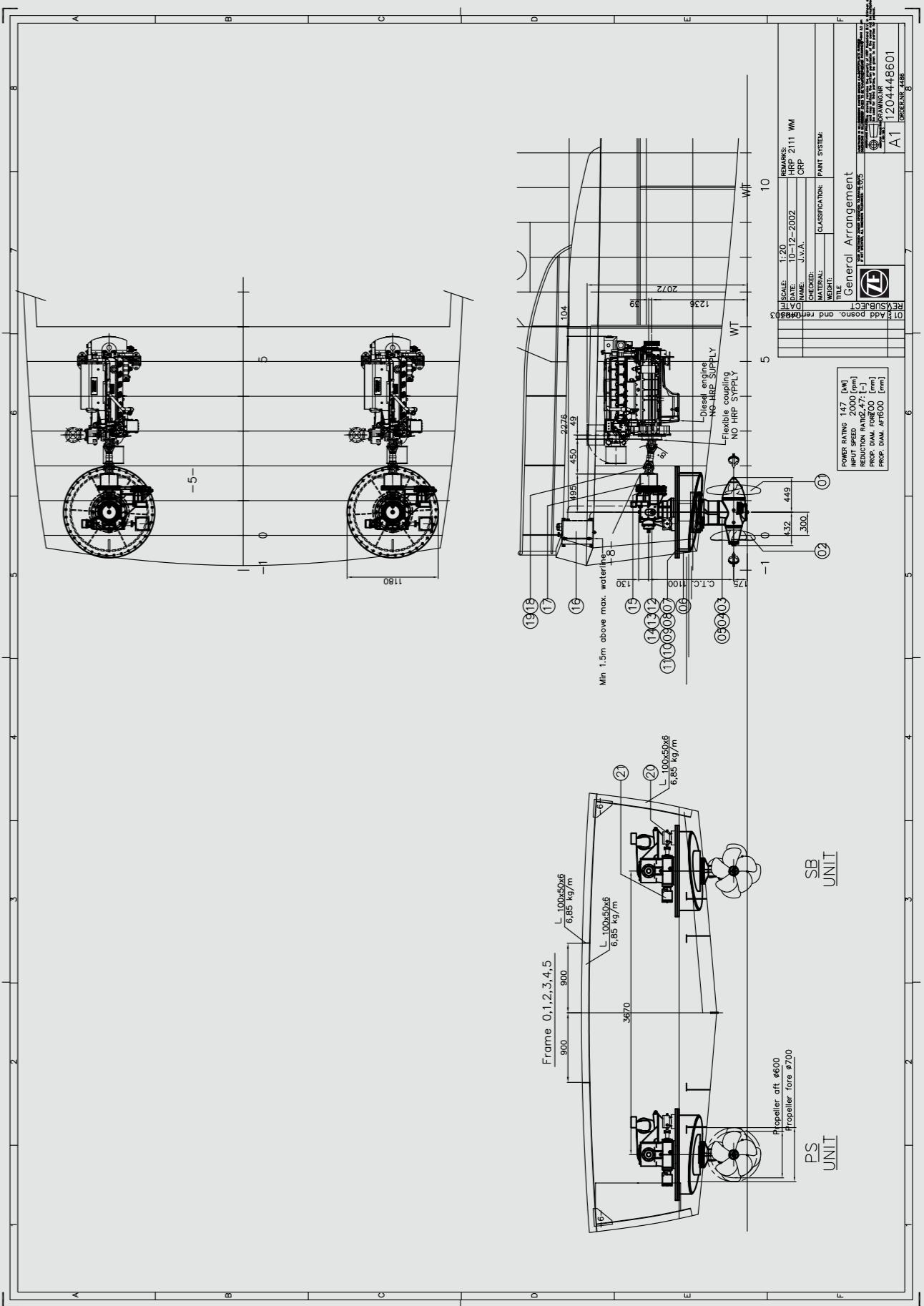
ZF-Reference : 4486

Model : ZF AT 2000 WM-CR

Rated power : 184 kW at 2000 rpm

Supplied to : Rhein und IJssel AG – Switzerland

Equipped with two (2) ZF AT 2111 well mounted azimuth thrusters with contra-rotating propellers.



1180 M³ RIVER GOING TANKER VESSEL “SARDANA” – NETHERLANDS



Length o.a. : 84.70 m

Breadth : 9.98 m

Draught : 3.19 m

ZF-Reference : 5517

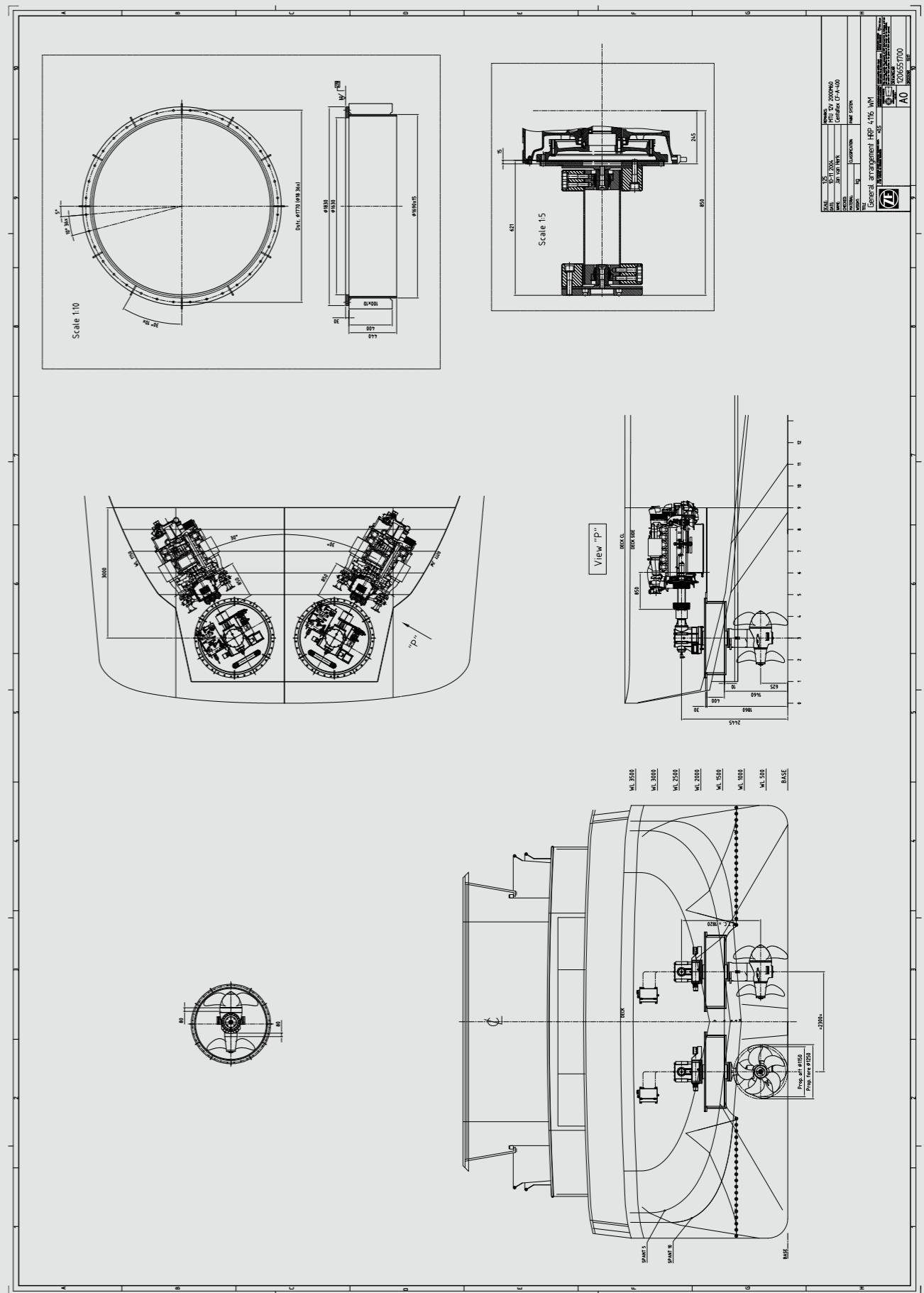
Model : ZF AT 4000 WM-CR

Rated power : 500 kW at 1800 rpm

Supplied to : Scheepswerf L.J. Boer – Netherlands

Owner : Xander Kleine – Netherlands

Equipped with two (2) ZF AT 4116 well mounted azimuth thrusters with contra-rotating propellers.



RIVER CRUISE PASSENGER VESSEL “NESTROY” – SWITZERLAND



Length o.a. : 124.85 m

Breadth : 11.45 m

Draught : 1.55 m

ZF-Reference : 6959

Model : ZF AT 5000 WM-CR

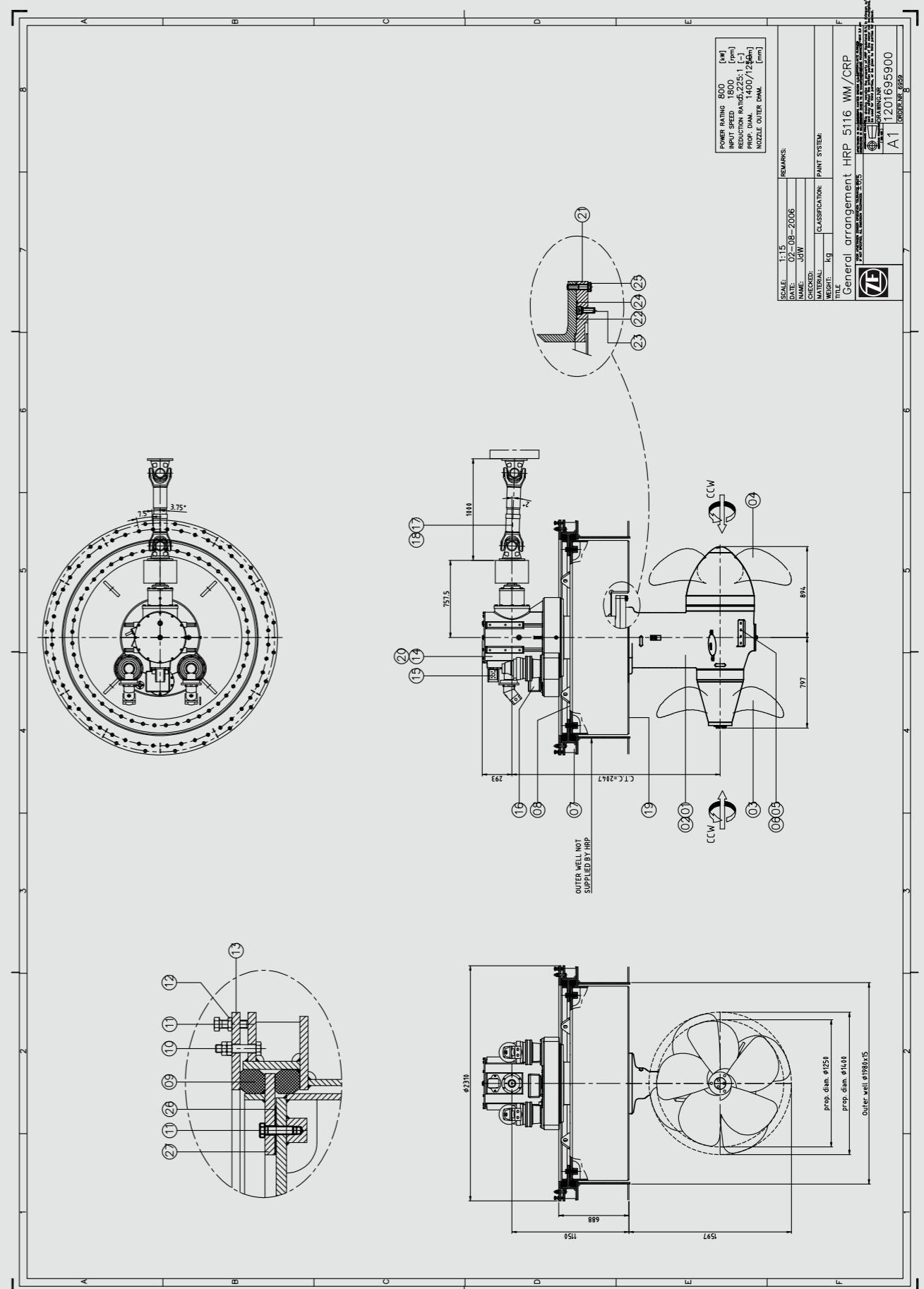
Rated power : 800 kW at 1800 rpm

Supplied to : Den Breejen Shipyard B.V. – Netherlands

Owner : Swiss Cruises International

Kreuzfahrten GmbH (SCI)

Equipped with two (2) ZF AT 5116 well mounted azimuth thrusters with contra-rotating propellers.



81M WIND FARM INSTALLATION VESSEL “ZARATAN” – PANAMA



Length o.a. : 81.00 m

Breadth : 41.00 m

Draught : 7.00 m

ZF-Reference : 11136

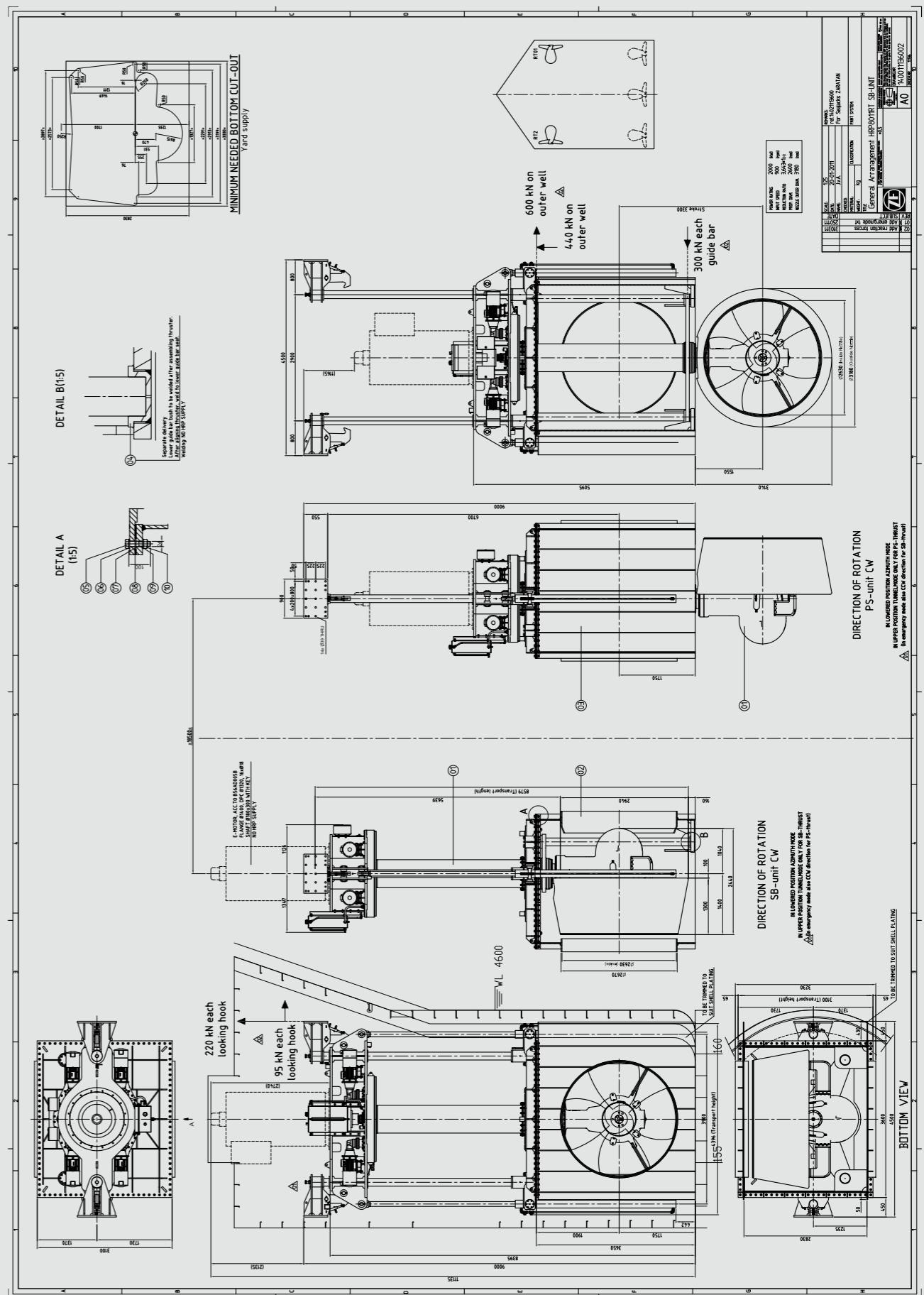
Model : ZF AT 8000 RT-FP / ZF AT 7000 WM-FP

Rated power : 2000 kW at 900 rpm / 1500 kW at 1000 rpm

Supplied to : Lamprell Energy – Dubai

Owner : Seajacks International Ltd – UK

Equipped with two (2) ZF AT 8011 retractable azimuth thrusters and three (3) ZF AT 7011 well mounted azimuth thrusters.



CABLE LAYING VESSEL “STEMAT SPIRIT” – NETHERLANDS



Length o.a. : 90.00 m

Breadth : 28.40 m

Draught : 4.90 m

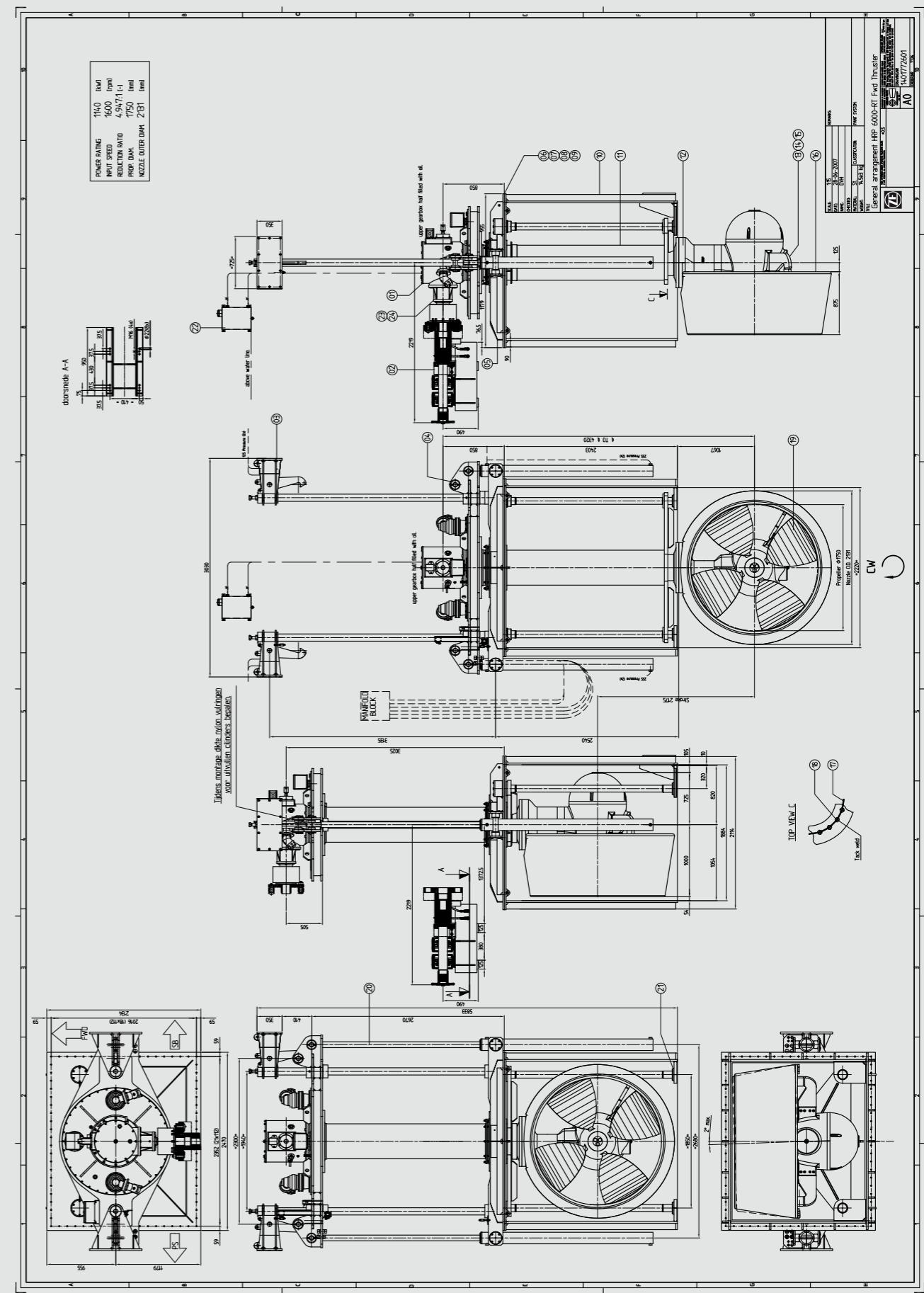
ZF-Reference : 7726

Model : ZF AT 6000 RT-FP / ZF AT 6000 WM-FP / ZF TT 5000 FP

Rated power : 1150 kW at 1600 rpm / 650 kW at 1200 rpm

Owner : Stemat Marine Services – Netherlands

Equipped with two (2) ZF AT 6111 retractable azimuth thrusters,
two (2) ZF AT 6111 well mounted azimuth thrusters and
one (1) ZF TT 5001 tunnel thruster.



SEAGOING SUCTION DREDGER “D'ARTAGNAN” – BELGIUM



Length o.a. : 123.80 m

Breadth : 25.20 m

Draught : 6.20 m

ZF-Reference : 5183

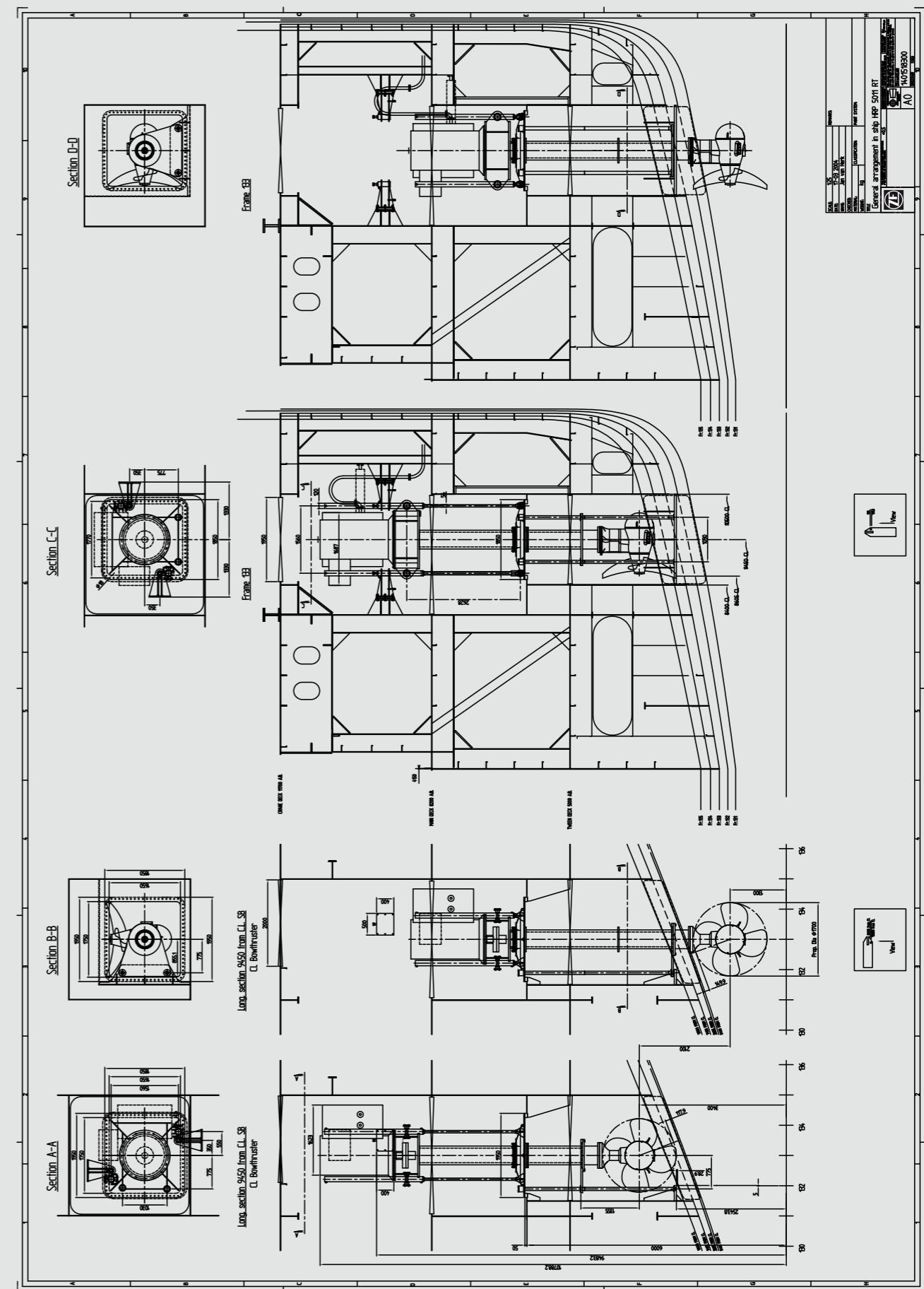
Model : ZF AT 5000 RT-FP

Rated power : 1000 kW at 1500 rpm

Supplied to : IHC – Netherlands

Owner : DEME – Belgium

Equipped with one (1) ZF AT 5011
retractable thruster, electric driven.



4280 GT RESEARCH VESSEL “METEOR” – GERMANY



Length o.a. : 97.50 m

Breadth : 16.50 m

Draught : 5.61 m

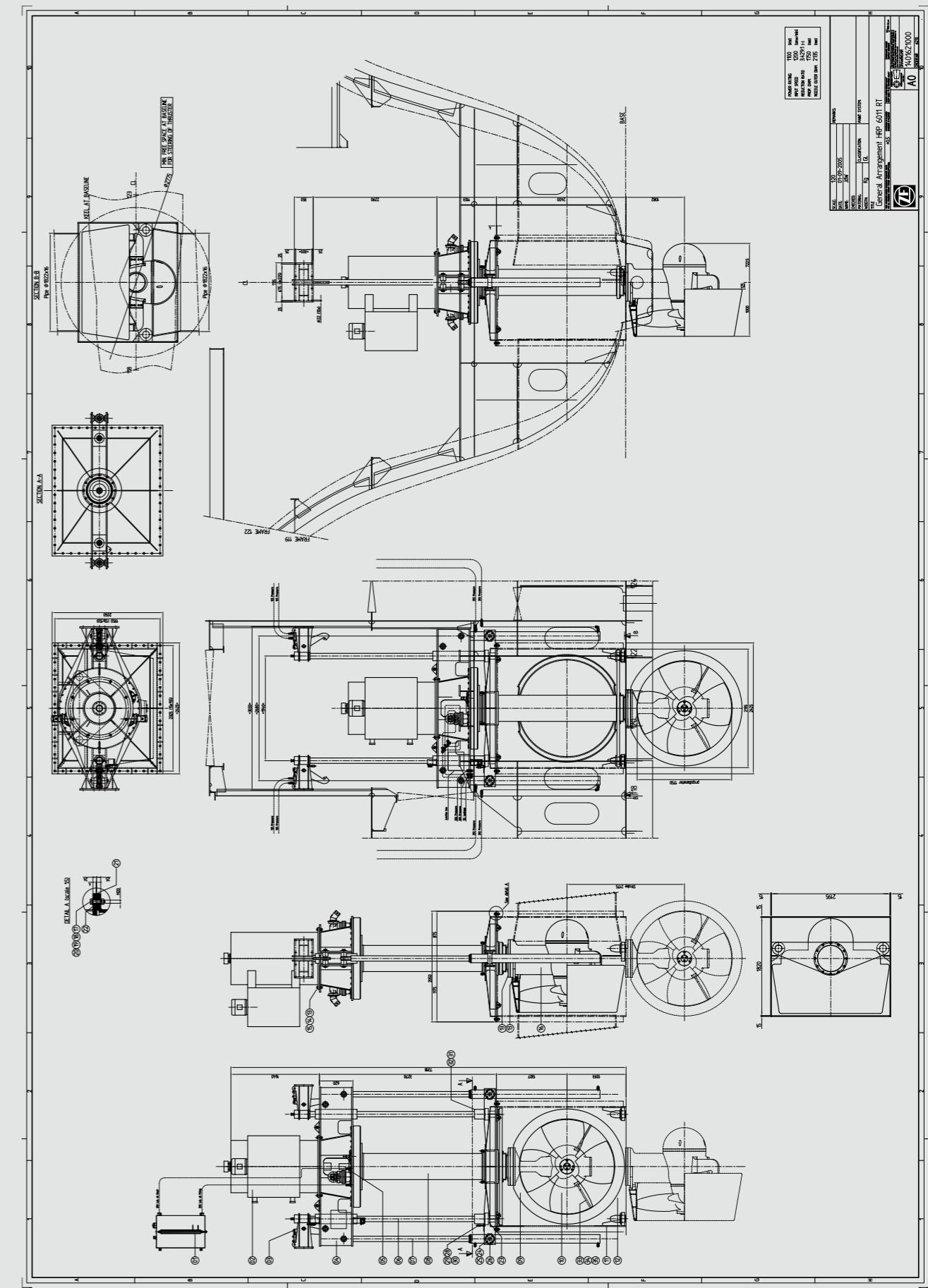
ZF-Reference : 6210

Model : ZF AT 6000 RT-FP

Rated power : 1100 kW at 1200 rpm

Owner : Ministry of Research and Technology – Germany

Equipped with one (1) ZF AT 6011 retractable azimuth thruster with tunnel mode.

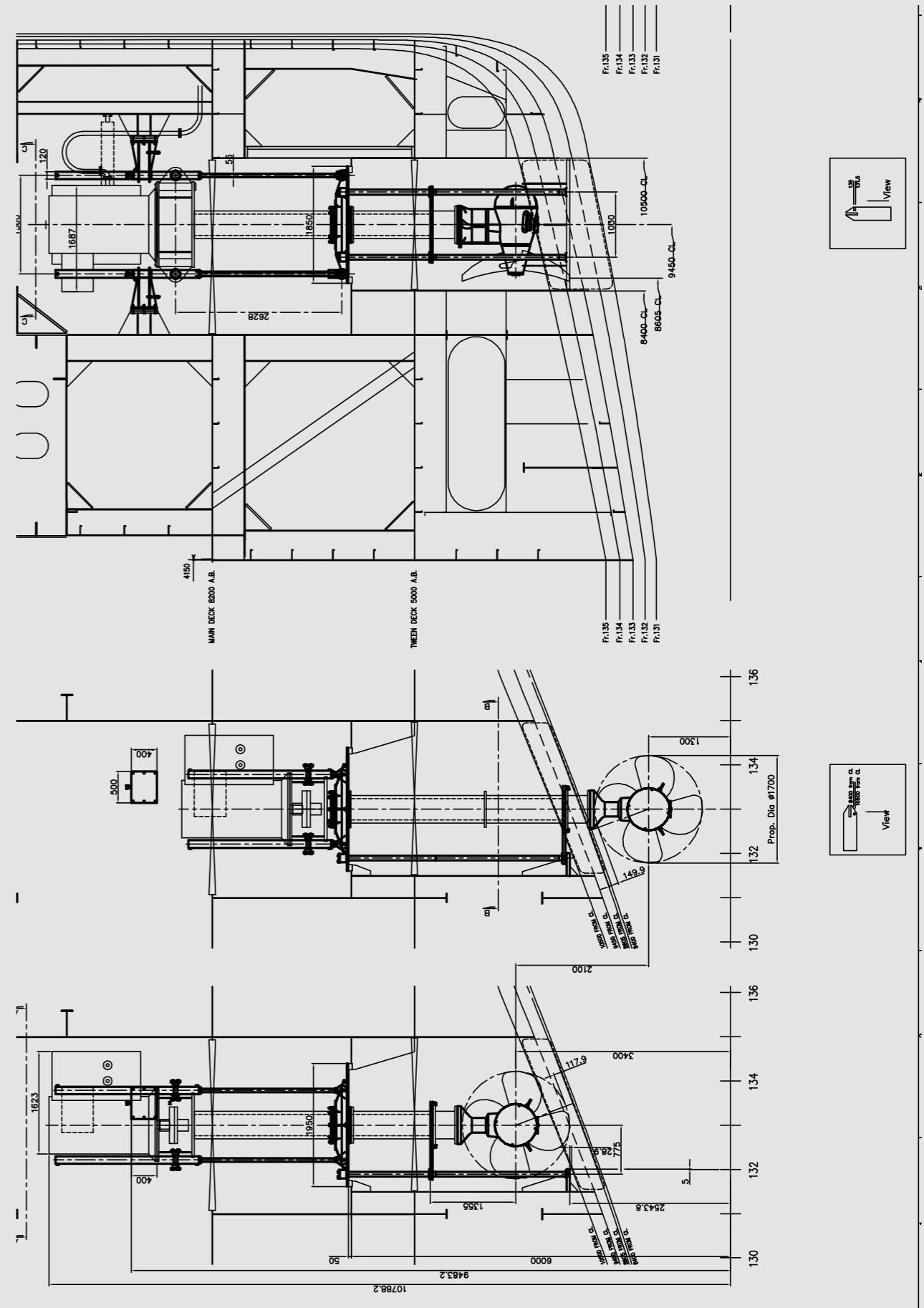


CUTTER SUCTION DREDGER “AMBIORIX” – BELGIUM



Length o.a. : 123.80 m
Breadth : 25.20 m
Draught : 8.20 m
ZF-Reference : 11499
Model : ZF AT 5000 RT-FP
Rated power : 1000 kW at 1650 rpm
Supplied to : IHC Dredgers B.V. – Netherlands
Owner : Deme N.V. – Belgium

Equipped with one (1) ZF AT 5013
retractable azimuth thruster.



STANDBY VESSEL “GRAMPIAN DON” – SPAIN



Length o.a. : 50.70 m

Breadth : 13.00 m

Draught : 4.30 m

ZF-Reference : 11255

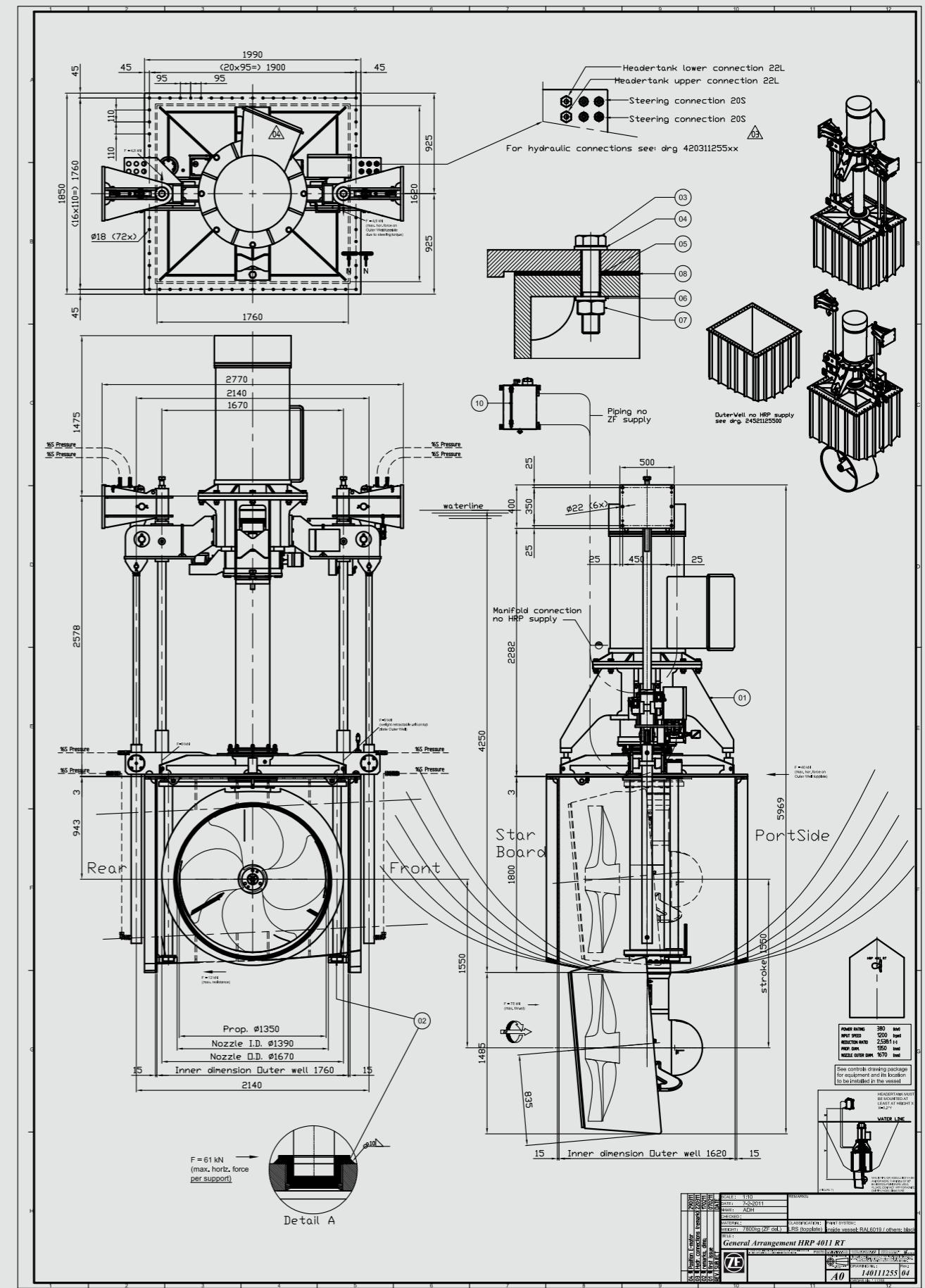
Model : ZF AT 4000 RT-FP

Rated power : 380 kW at 1200 rpm

Supplied to : Astilleros Balenciaga – Spain

Owner : North Star Shipping – Spain

Equipped with one (1) ZF AT 4011
retractable azimuth thruster.



187M RIVER GOING VESSEL “CAMARO I & II” – NETHERLANDS



Length o.a. : 187.00 m

Breadth : 11.45 m

Draught : 3.00 m

ZF-Reference : 4078

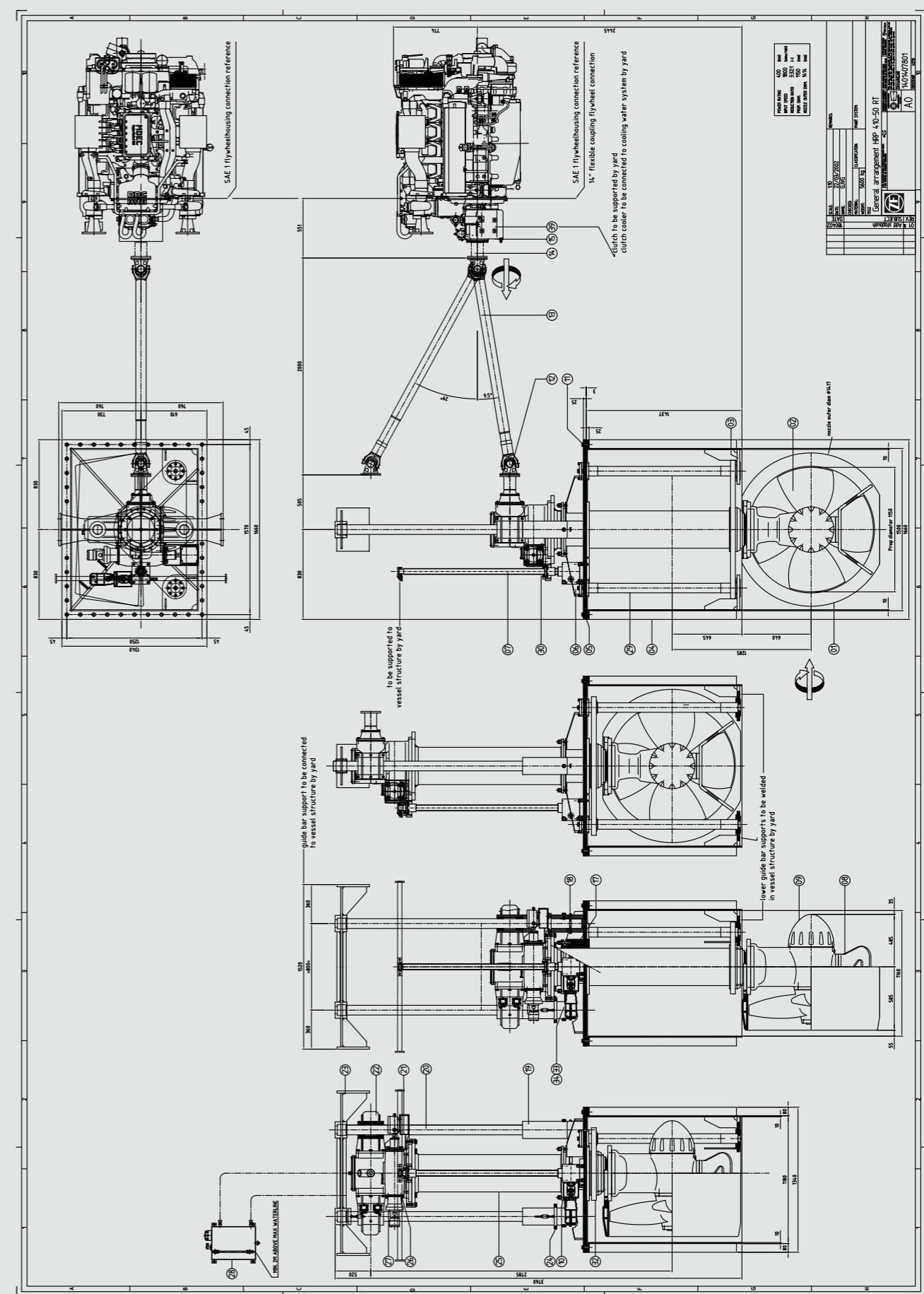
Model : ZF AT 400 RT-FP

Rated power : 400 kW at 1800 rpm

Supplied to : Scheepswerf en Machinefabriek Gebr. Kooiman

Owner : Camaro B.V. – Netherlands

Equipped with one (1) ZF AT 410-50
retractable azimuth thruster.



75M MAINTENANCE & SUPPORT VESSEL “ARMADA FIRMAN 2” – SINGAPORE



Length o.a. : 75.00 m

Breadth : 16.00 m

Draught : 5.95 m

ZF-Reference : 7137

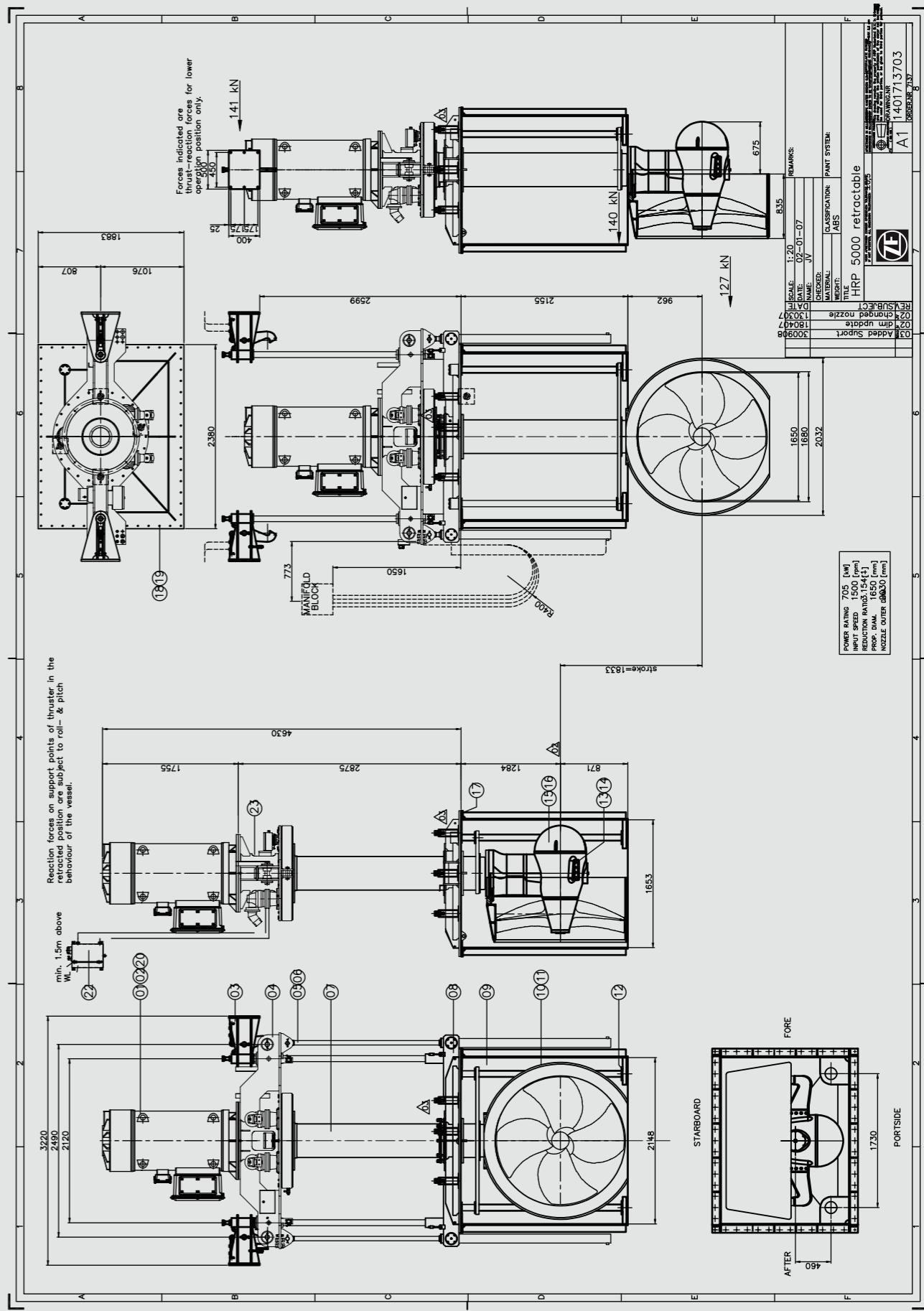
Model : ZF AT 5000 RT-FP / ZF TT 5000 FP

Rated power : 705 kW at 1500 rpm / 735 kW at 1200 rpm

Supplied to : Pan United Shipyard – Singapore

Owner : Bumi Armada Navigation Sdn Bhd – Singapore

Equipped with two (2) ZF AT 5011 retractable azimuth thruster and two (2) ZF TT 5007 tunnel thrusters.

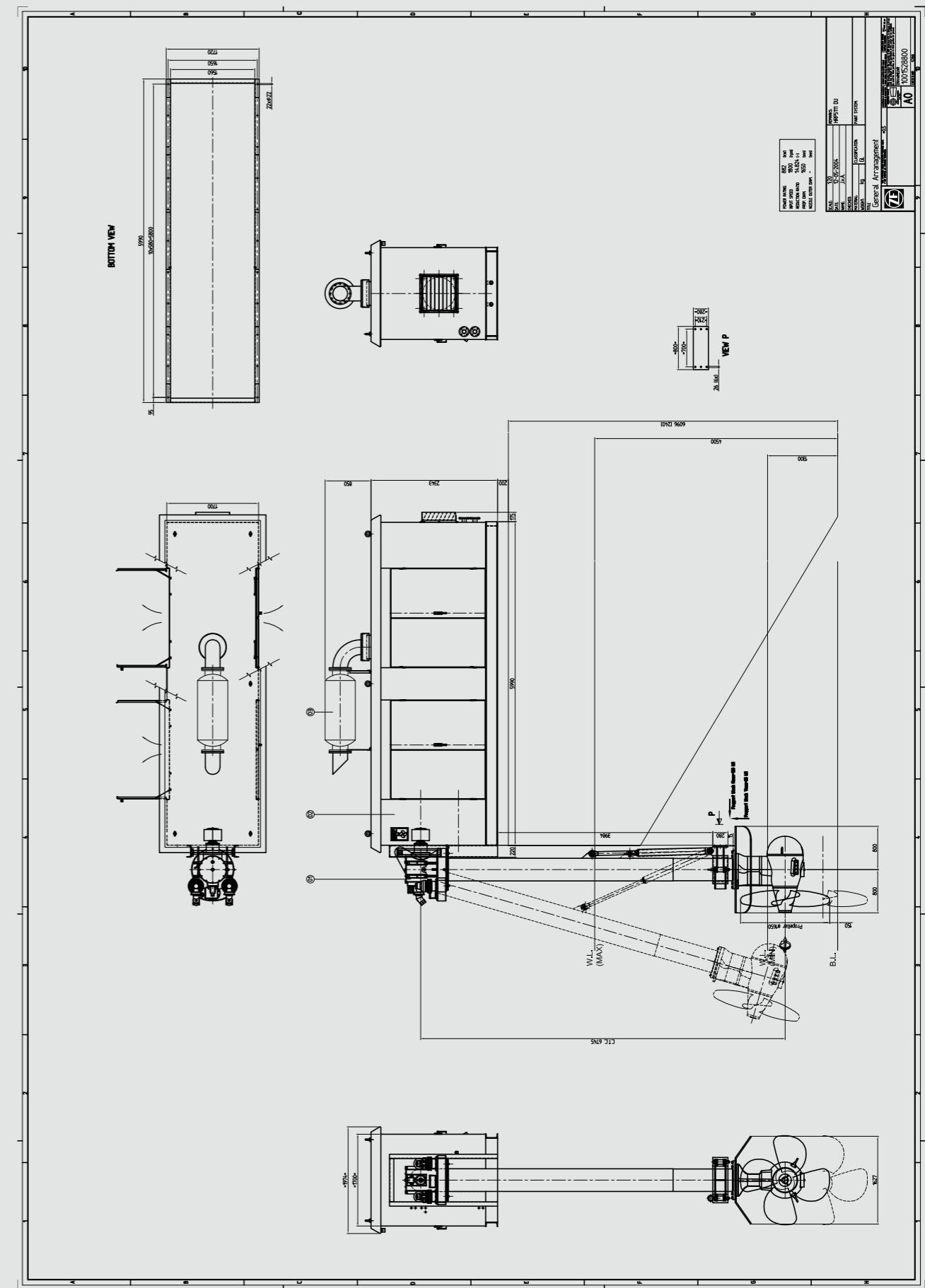


76M TRANSPORT VESSEL “TROPICAL DAWN” – SINGAPORE



Length o.a. : 76.00 m
Breadth : 17.20 m
Draught : 3.00 m
ZF-Reference : 6183
Model : ZF AT 5000 DM-FP
Rated power : 882 kW at 1800 rpm
Supplied to : Sembawang Kimtrans Ltd – Singapore
Owner : Tropical Shipping – Singapore

Equipped with two (2) ZF AT 5111
deck mounted azimuth thrusters.



91M BARGE “ENERGY 7001” – NIGERIA



Length o.a. : 91.00 m

Breadth : 20.00 m

Draught : 3.90 m

ZF-Reference : 10794

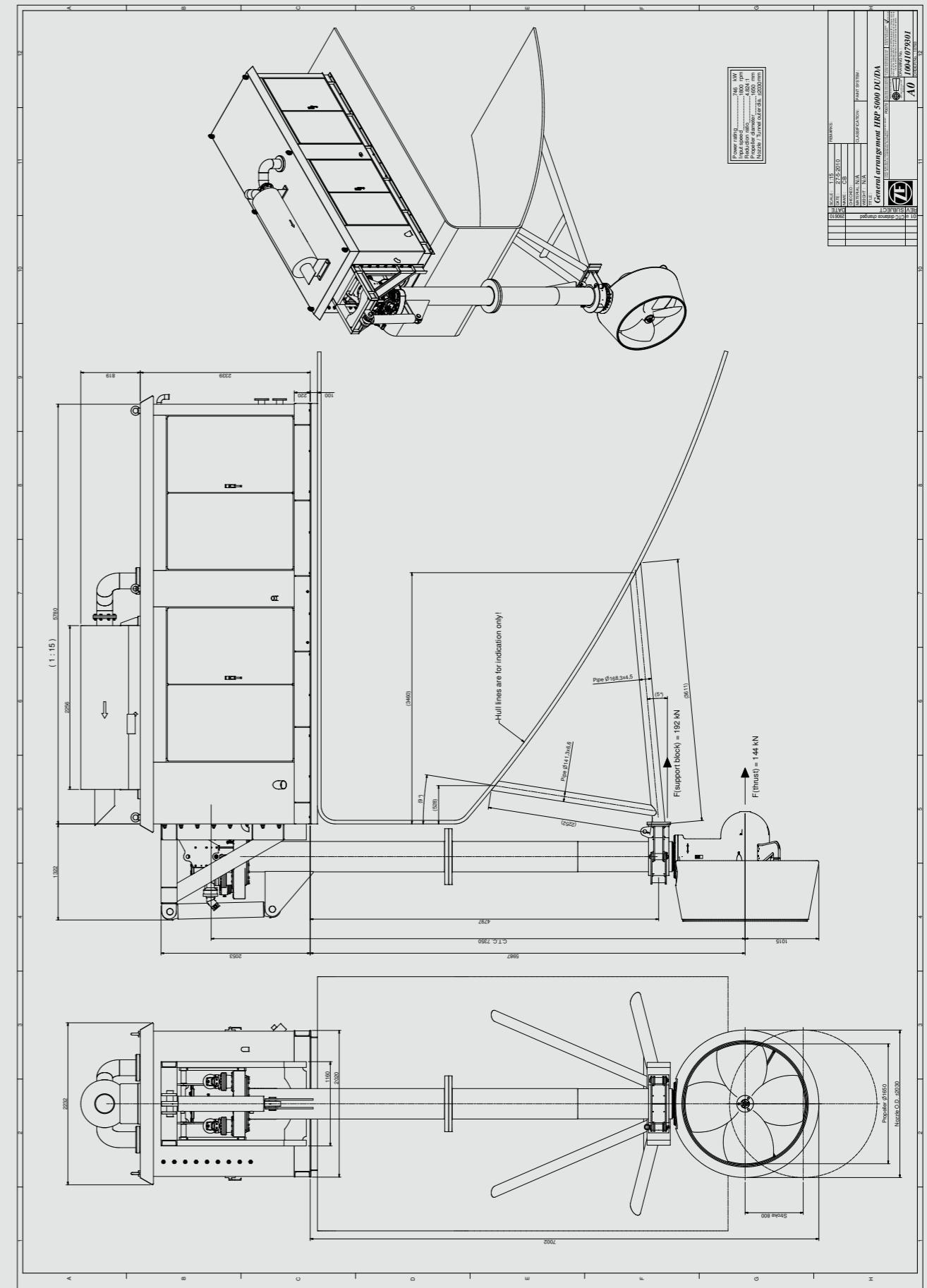
Model : ZF AT 5000 DM-FP

Rated power : 746 kW at 1800 rpm

Supplied to : Maritec NV – Belgium

Owner : Maritec NV – Belgium

Equipped with two (2) ZF AT 5111
deck mounted azimuth thrusters.



4700 DWT COAL BARGES “SINAR BARITO/BORNEO/BANJAR” – INDONESIA



Length o.a. : 82.30 m

Breadth : 21.40 m

Draught : 3.71 m

ZF-Reference : 4401

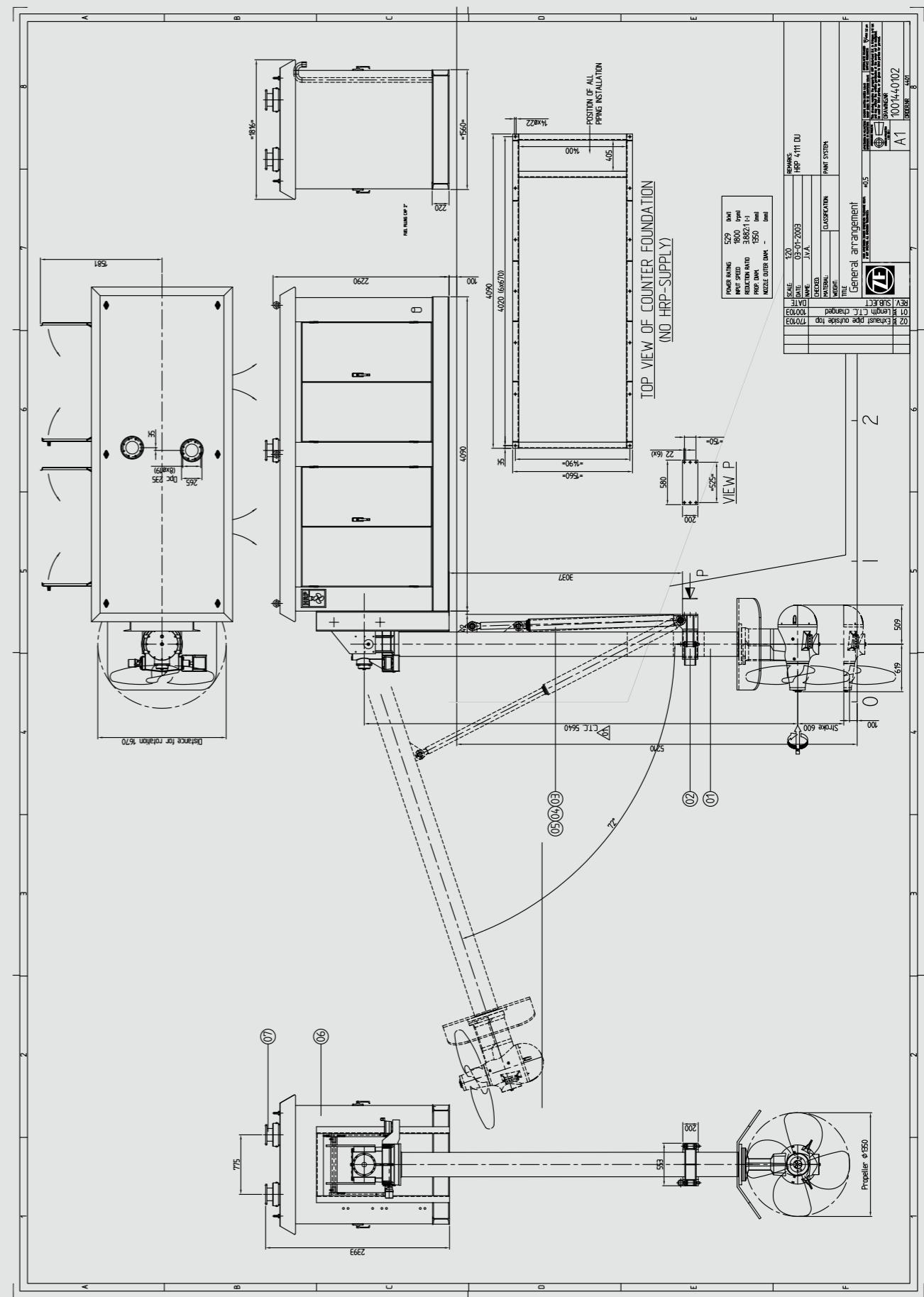
Model : ZF AT 4000 DM-FP

Rated power : 529 kW at 1800 rpm

Supplied to : ASL Shipyard Batam - Indonesia

Owner : PT Cumawis - Indonesia

Equipped with two (2) ZF AT 4111
deck mounted azimuth thrusters.



CEMENT CARRIERS “SHUTTEL 1 & 2” – BELGIUM



Length o.a. : 27.00 m

Breadth : 9.15 m

Draught : 1.00 m

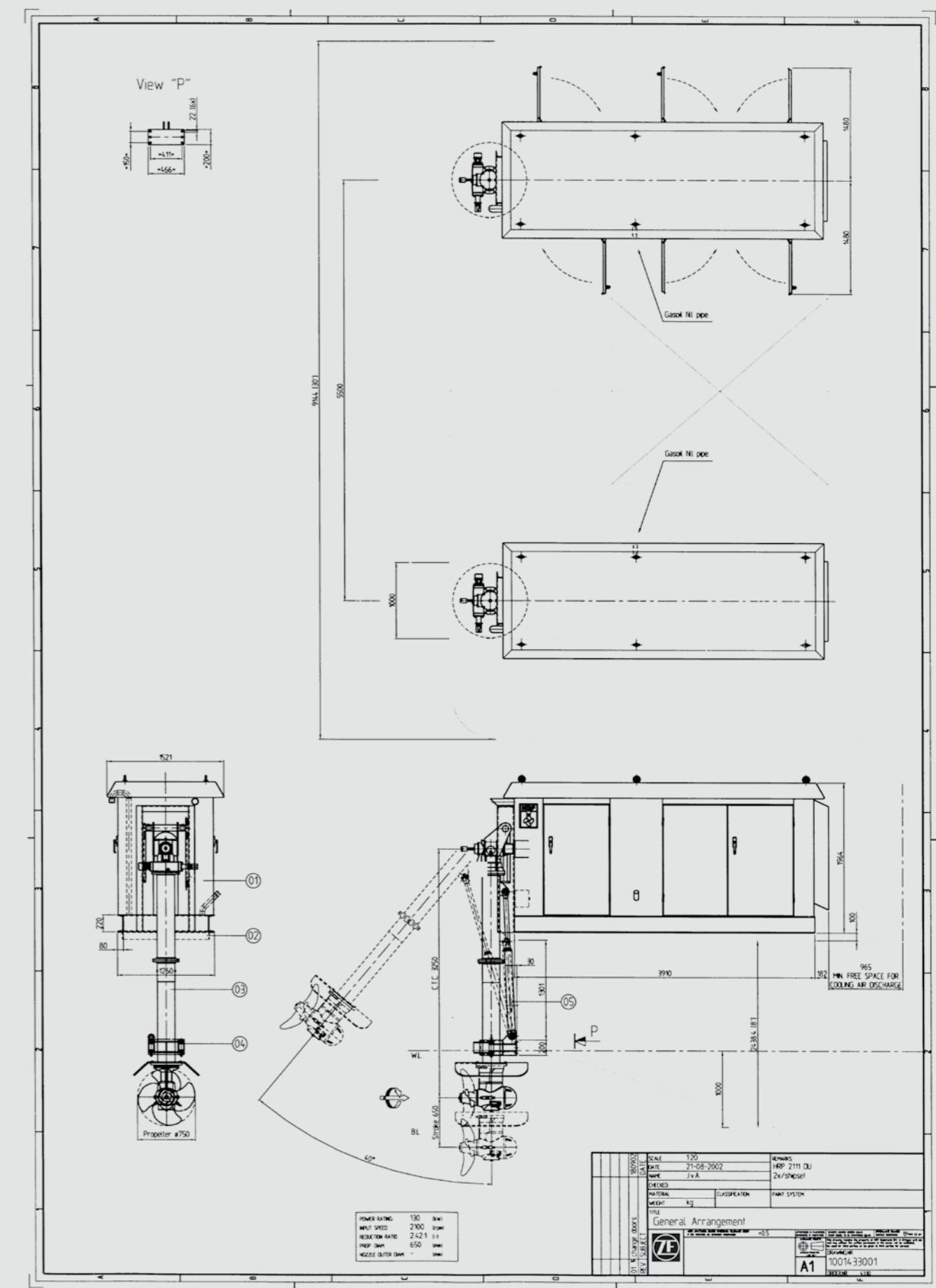
ZF-Reference : 4330

Model : ZF AT 2000 DM-FP

Rated power : 130 kW at 1800 rpm

Supplied to : BESIX – Belgium

Equipped with four (2x2) ZF AT 2111
deck mounted azimuth thrusters.



RIVER CRUISE VESSEL “QUEEN OF THE WEST” – USA



Length o.a. : 67.45 m

Breadth : 16.00 m

Draught : 2.50 m

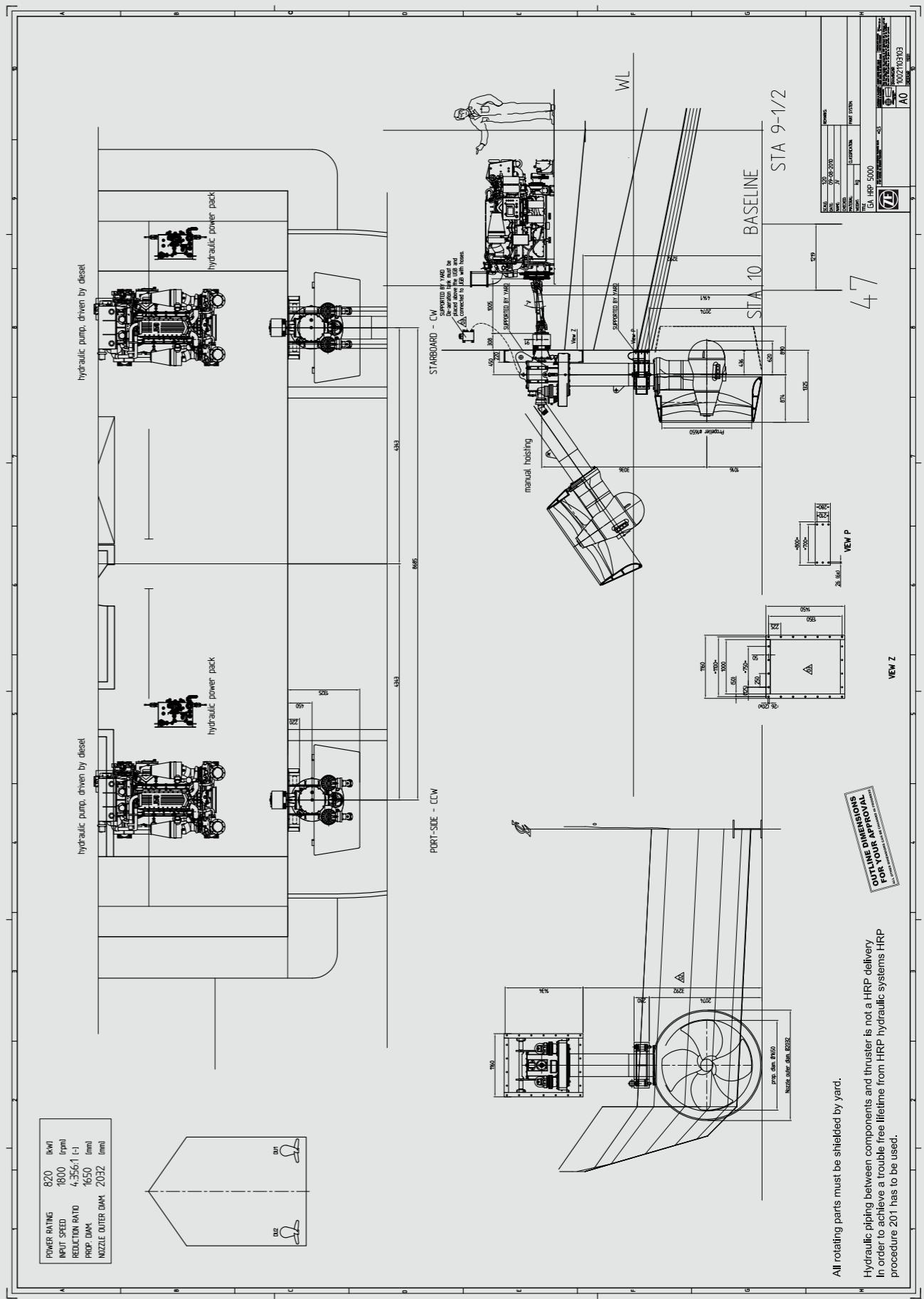
ZF-Reference : 11031

Model : ZF AT 5000 SM-FP

Rated power : 820 kW at 1800 rpm

Owner : River Cruise Vessel – USA

Equipped with two (2) ZF AT 5111
stern mounted azimuth thrusters.



86M PARTY SHIP “OCEAN DIVA” – NETHERLANDS



Length o.a. : 60.30 m

Breadth : 11.30 m

Draught : 3.38 m

ZF-Reference : 4585

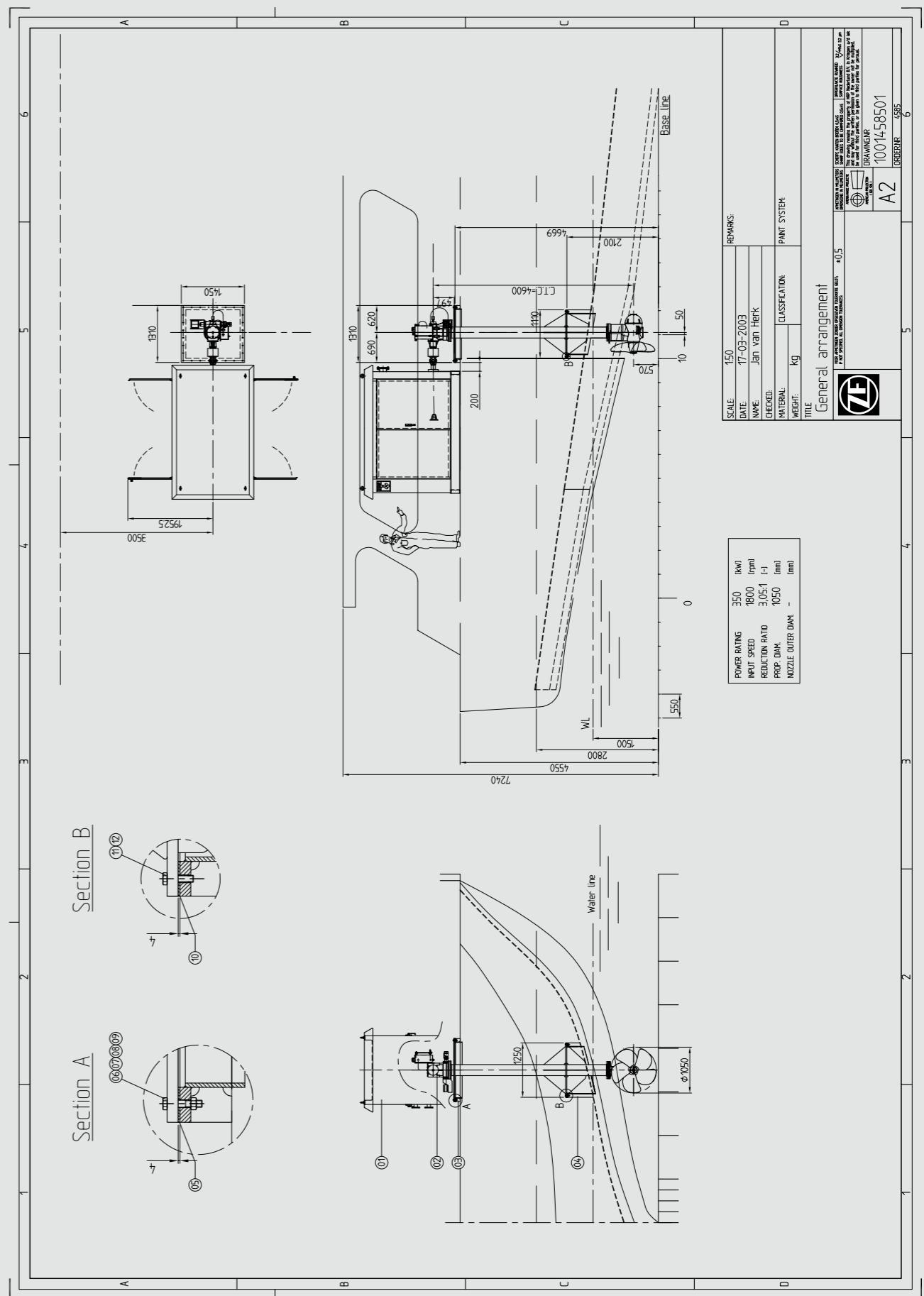
Model : ZF AT 3000 DM-FP / ZF TT 3000 FP

Rated power : 350 kW at 1800 rpm

Supplied to : Volharding Shipyards – Netherlands

Owner : Ocean Diva B.V. – Netherlands

Equipped with two (2) ZF AT 3111 deck mounted azimuth thrusters and one (1) ZF TT 2101 tunnel thruster.



HEAVY LIFT JACK UP “GOLIATH” – LUXEMBOURG



Length o.a. : 55.50 m

Breadth : 32.20 m

Draught : 3.60 m

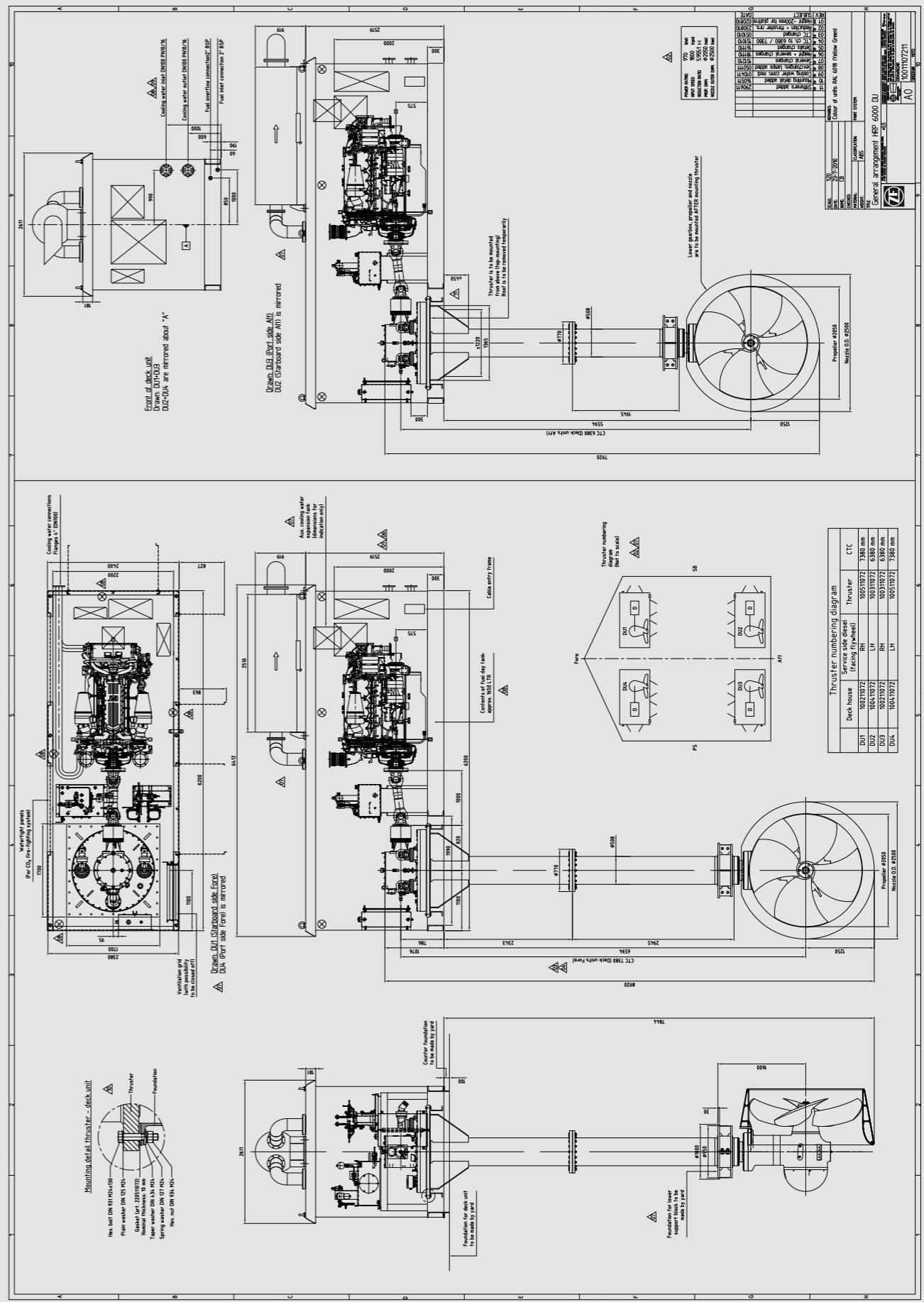
ZF-Reference : 11072

Model : ZF AT 6000 DM-FP

Rated power : 970 kW at 1800 rpm

Owner : Geo Sea – Luxembourg

Equipped with four (4) ZF 6111 deck mounted azimuth thrusters complete with Multi Thruster Control System.



DAMEN MOTOR FERRY 2106 “GOLUBICA” – VUKOVAR, CROATIA



Length o.a. : 22.50 m

Breadth : 6.00 m

Draught : 1.45 m

ZF-Reference : 10552

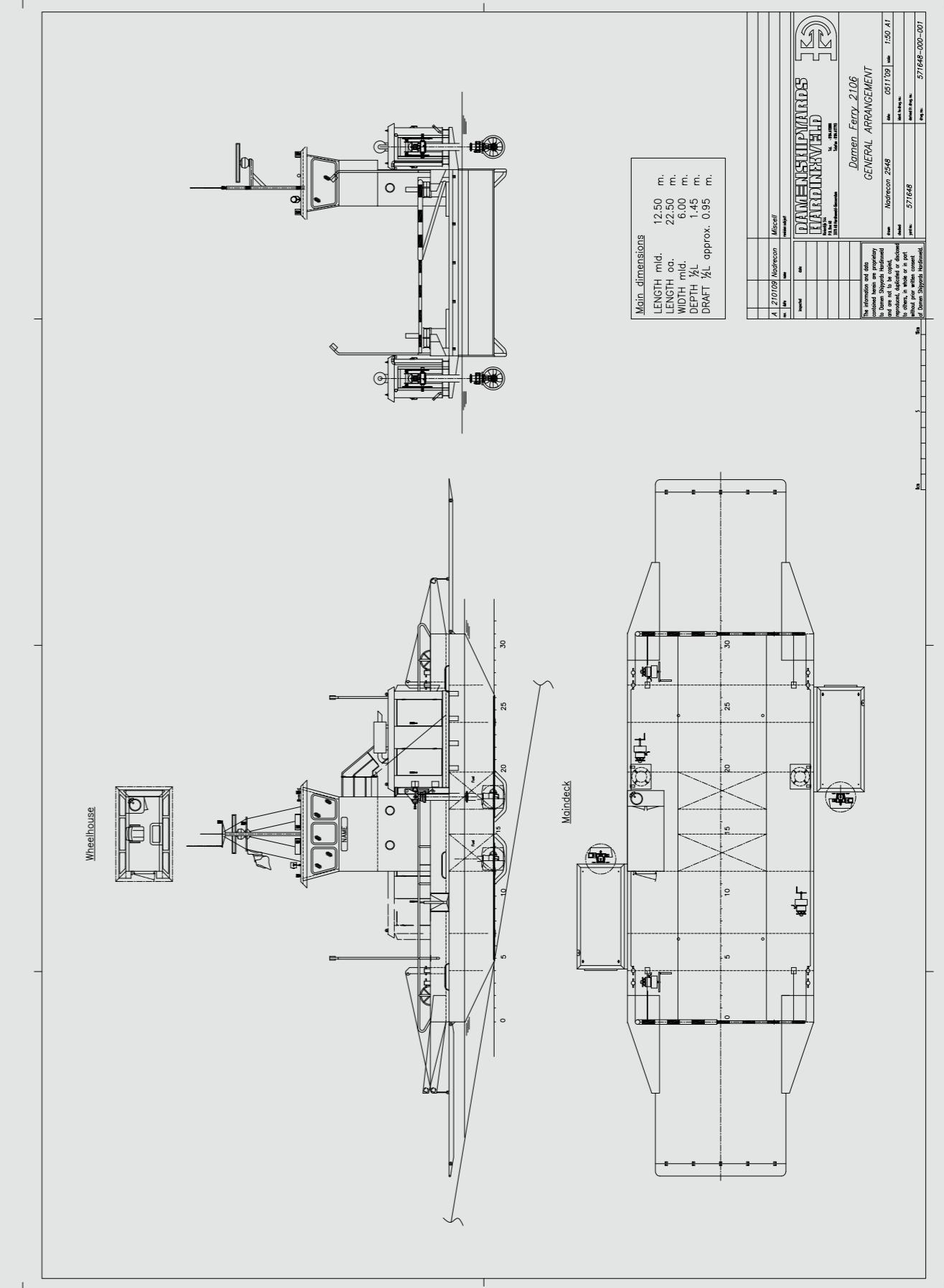
Model : ZF AT 2000 DM-FP

Rated power : 130 kW at 1900 rpm

Supplied to : Damen Shipyard Hardinxveld – Netherlands

Equipped with two (2) ZF AT 2111

deck mounted azimuth thrusters.



LAKE FERRY “PEARL” – UGANDA



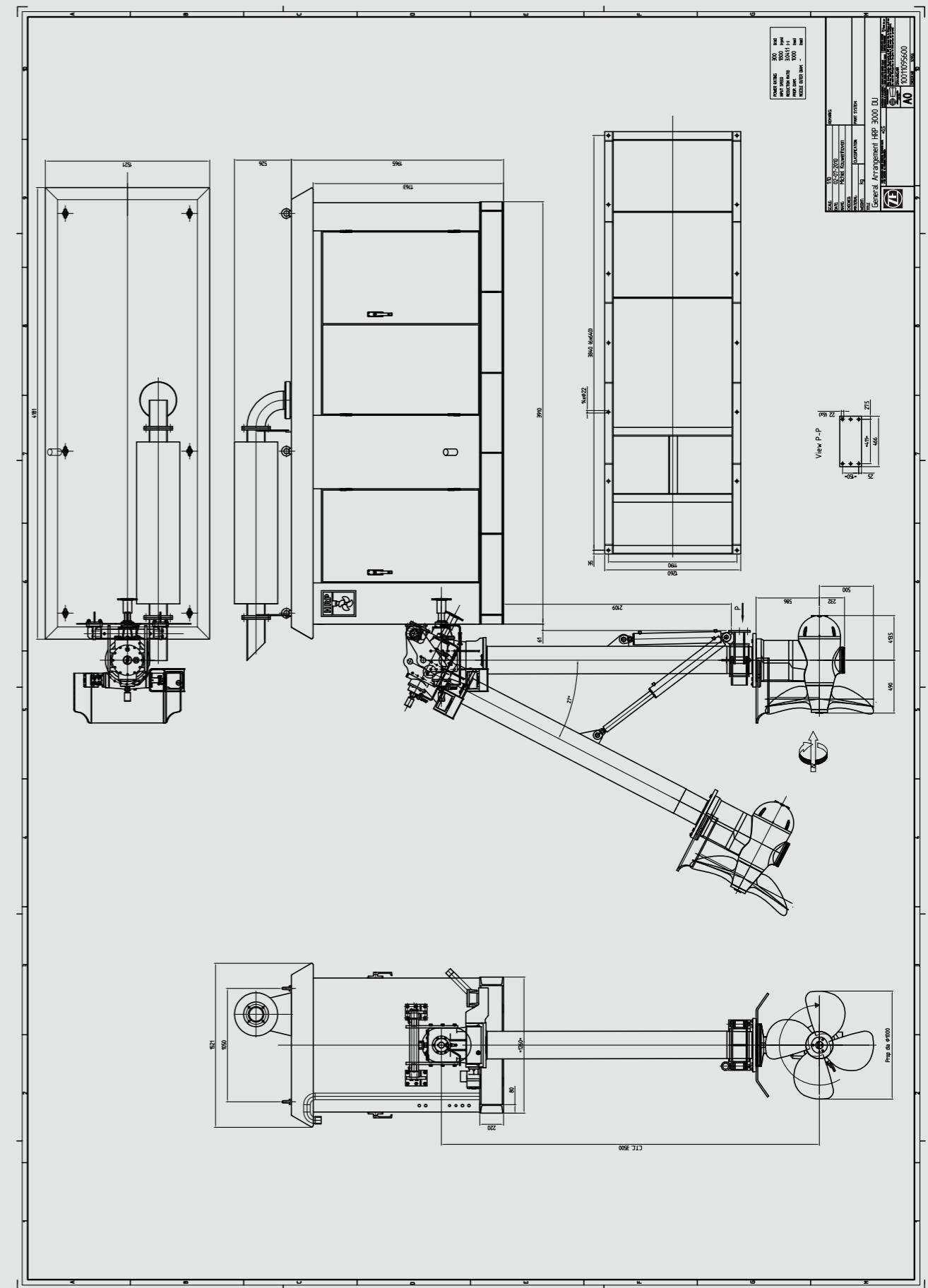
ZF-Reference : 10956

Model : ZF AT 3000 DM-FP

Rated power : 300 kW at 1800 rpm

Supplied to : Songoro Marine Transport Boatyard – Tanzania

Equipped with two (2) ZF AT 3111
deck mounted azimuth thrusters, diesel driven



HEAVY CARGO SHIP “OCEANIC” – NETHERLANDS



Length o.a. : 92.90 m

Breadth : 15.30 m

Draught : 5.60 m

ZF-Reference : 11803

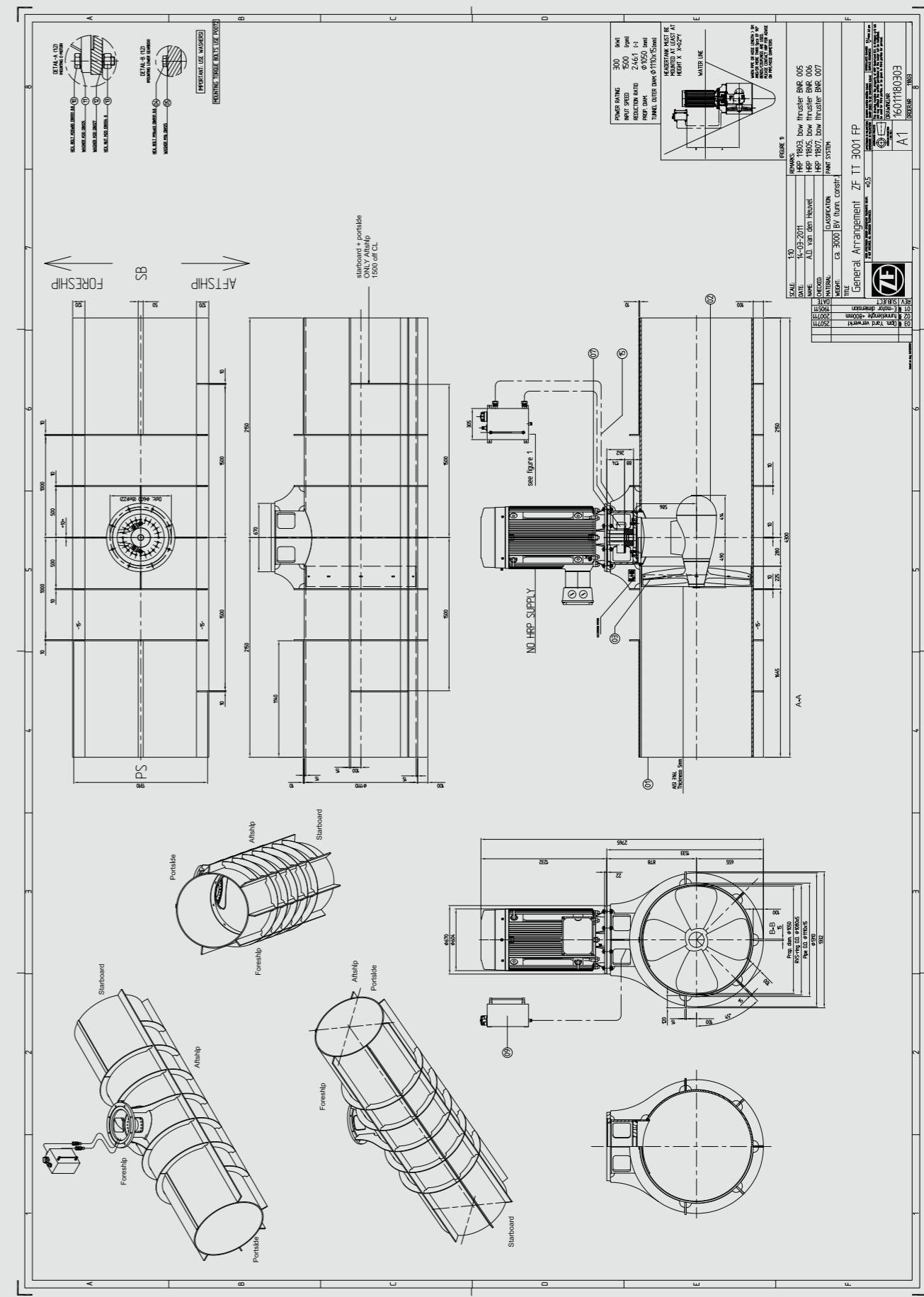
Model : ZF TT 3000 FP

Rated power : 300 kW at 1500 rpm

Supplied to : Hartman Marine Shipbuilding – Netherlands

Owner : Global Seatrade – Netherlands

Equipped with two (2) ZF TT 3001 tunnel thrusters, bow and stern.



CONTAINER VESSELS "MAASSTROOM" & "MERWEDESTROOM" – NETHERLANDS



Length o.a. : 141.60 m

Breadth : 20.60 m

Draught : 7.30 m

ZF-Reference : 4153 / 5016

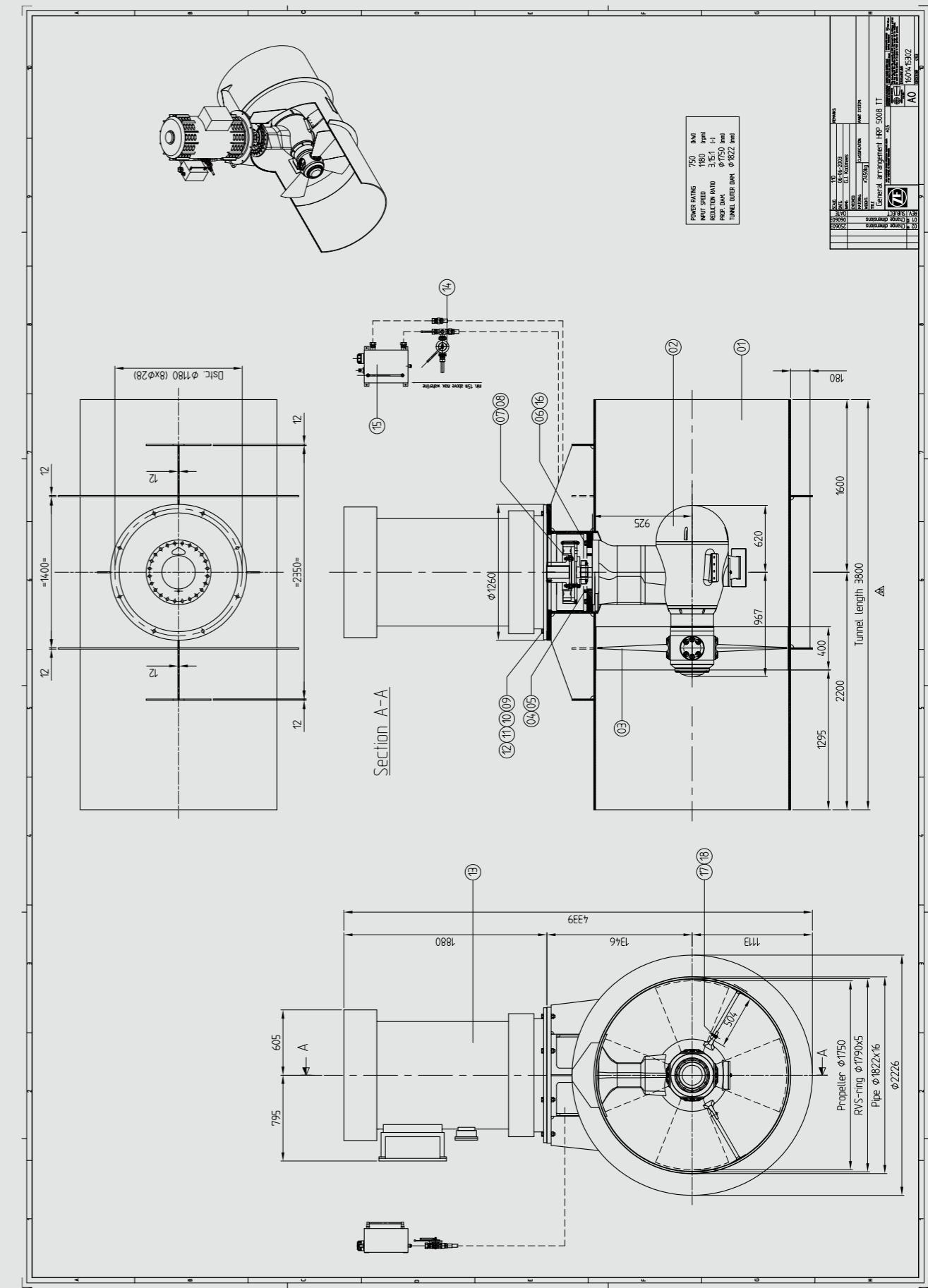
Model : ZF TT 5000 CP

Rated power : 700 kW at 1750 rpm

Supplied to : IHDA Shipbuilding – Netherlands

Owner : Universal Marine – Netherlands

Each vessel equipped with
one (1) ZF TT 5008 tunnel thruster.



96M FERRY “AQUA JEWEL” – GREECE



Length o.a. : 96.00 m

Breadth : 16.80 m

Draught : 4.40 m

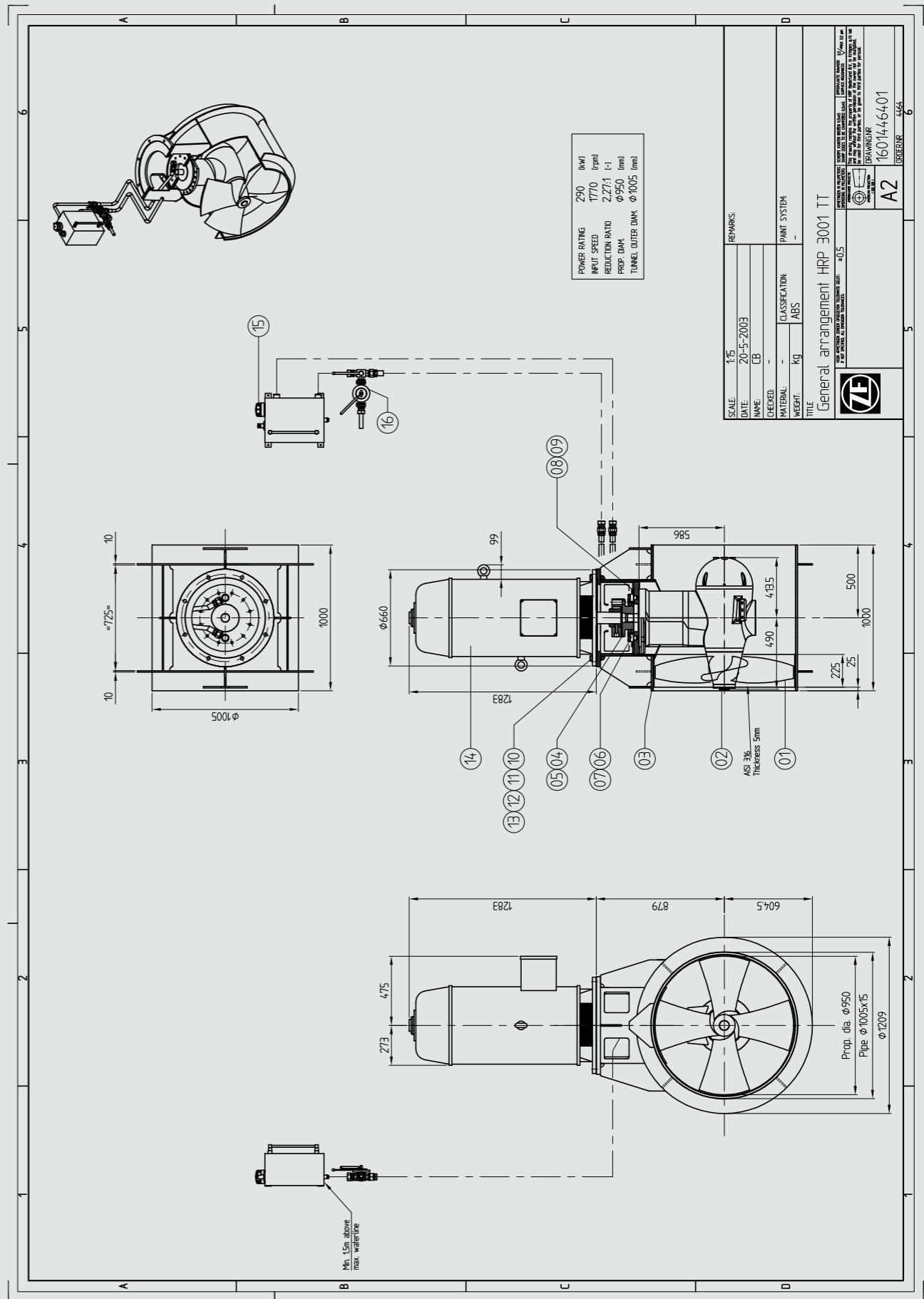
ZF-Reference : 5941

Model : ZF TT 3000 FP

Rated power : 250 kW at 1800 rpm

Supplied to : Alpha Ferries – Greece

Equipped with one (1) electric driven
ZF TT 3001 tunnel thruster.



60M SUPPLY VESSEL “TANJUNG PINANG 1” – MALAYSIA



Length o.a. : 60.00 m

Breadth : 20.00 m

Draught : 5.20 m

ZF-Reference : 6200

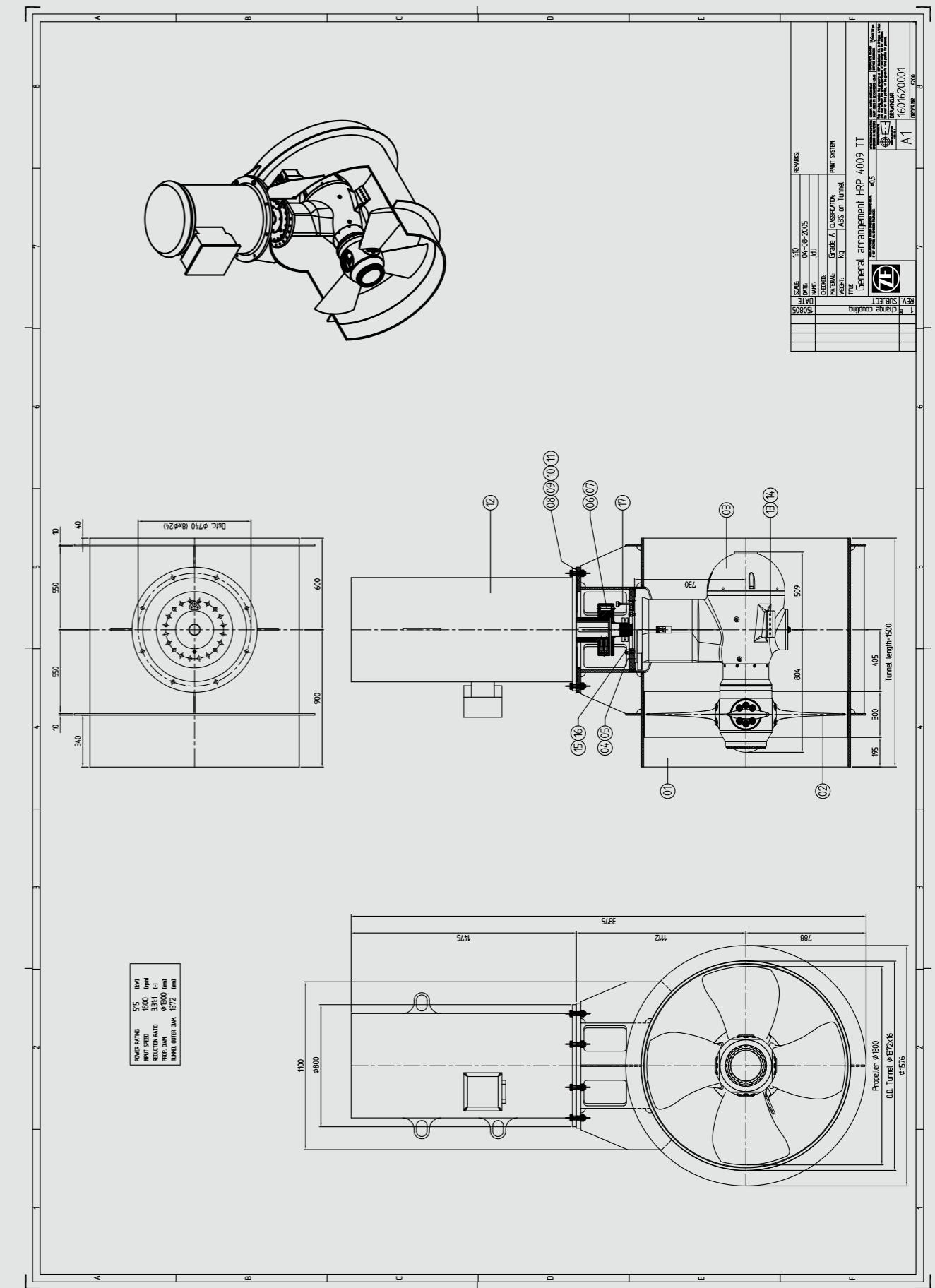
Model : ZF TT 4000 CP

Rated power : 515 kW at 1800 rpm

Supplied to : Muhibbah Marine Engineering – Malaysia

Owner : Tanjung Offshore – Malaysia

Equipped with one (1) ZF TT 4009
tunnel thruster, electric driven.



12.000M³ SUCTION HOPPER DREDGER “CHANG JIANG KOU 01” – CHINA



Length o.a. : 132.00 m

Breadth : 27.30 m

Draught : 8.37 m

ZF-Reference : 10821

Model : ZF TT 5000 CP

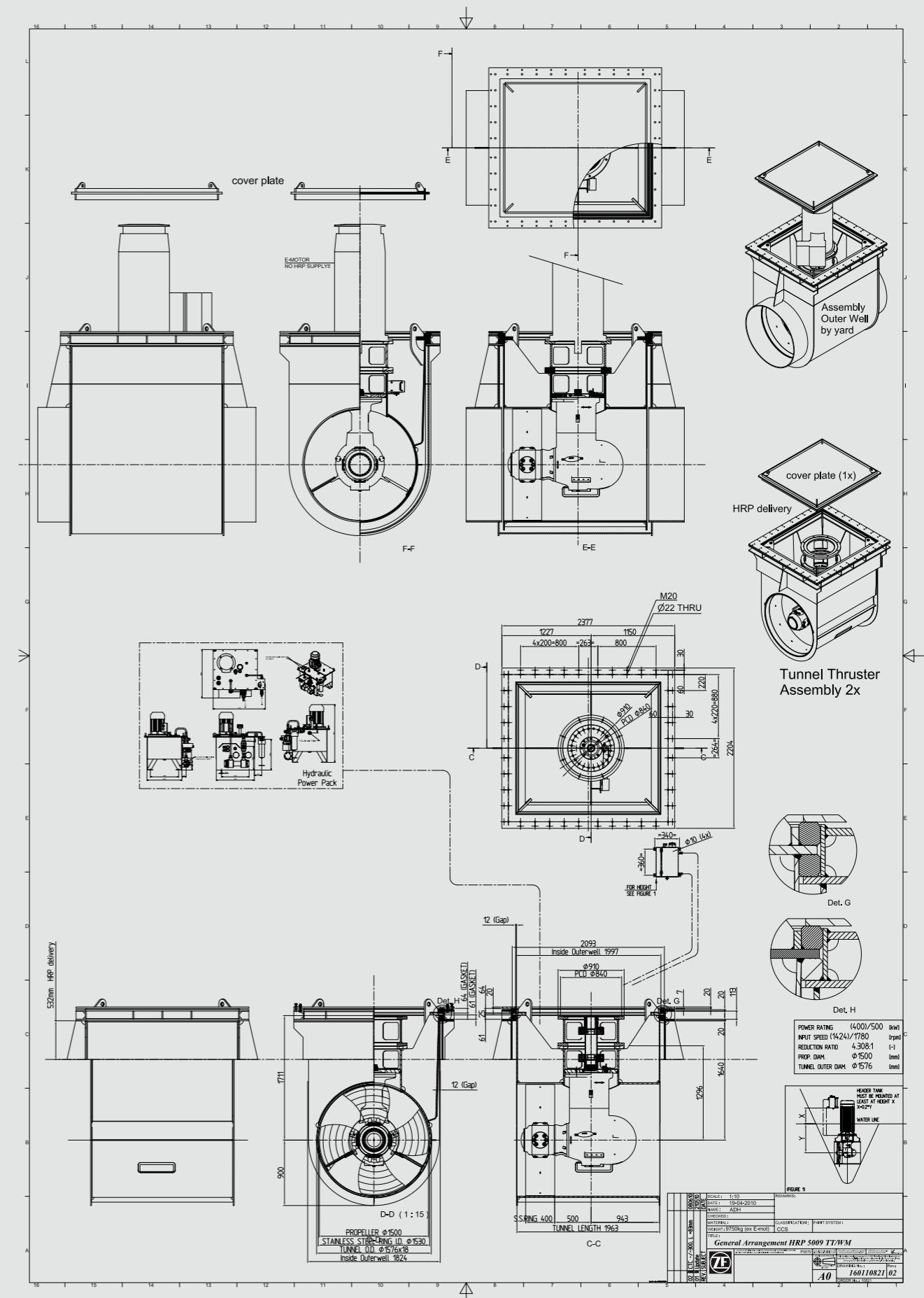
Rated power : 500 kW at 1780 rpm

Supplied to : IHC Dredgers – Netherlands

Owner : Yangtze Estuary Waterway

Administration Bureau MOT – China

Equipped with two (2) ZF TT 5009 WM-CP electric driven controllable pitch tunnel thrusters.

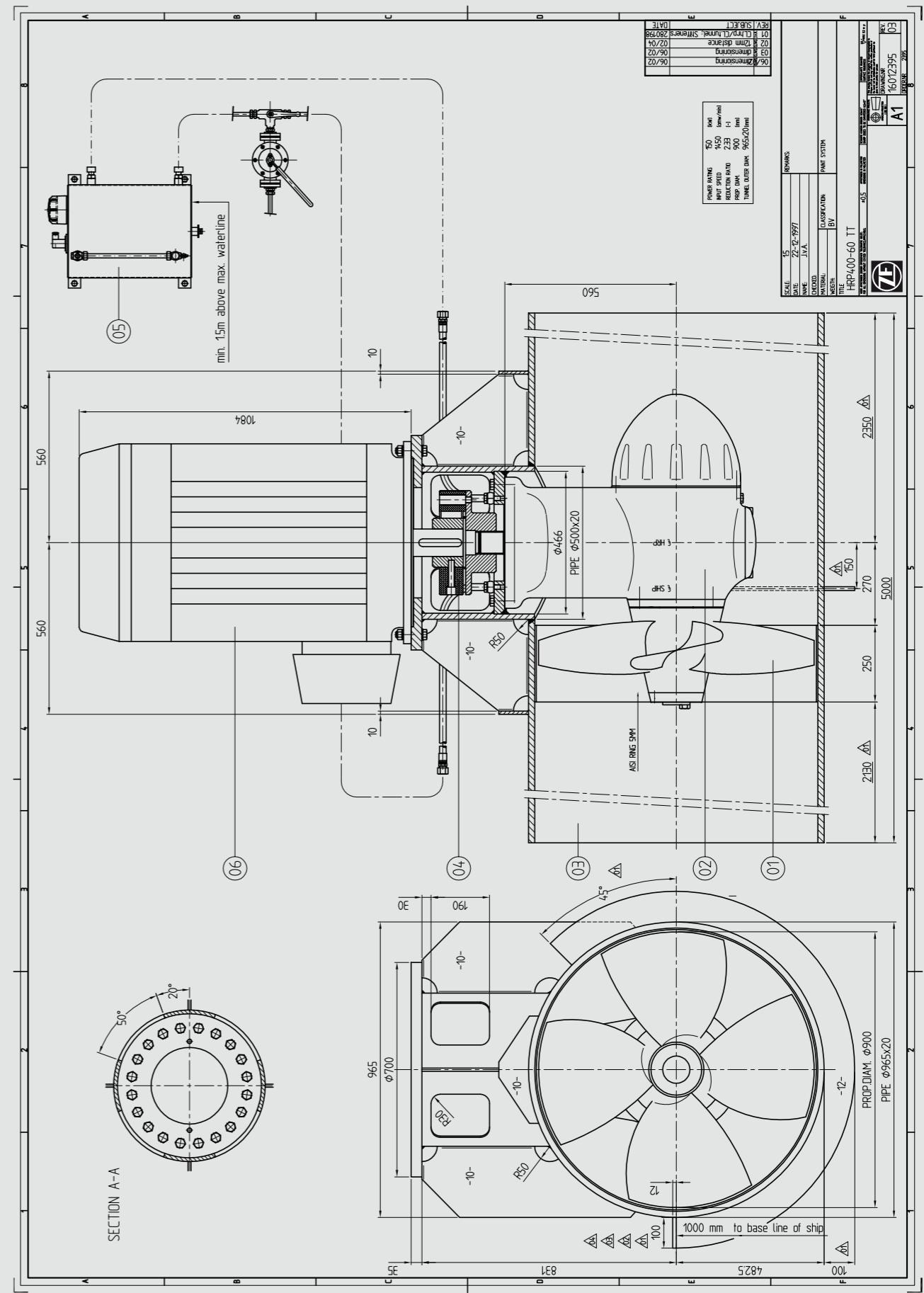


ICEBREAKER SUPPLY VESSEL “ARCTICABORG” – KAZAKHSTAN



Length o.a. : 65.10 m
Breadth : 16.60 m
Draught : 2.90 m
ZF-Reference : 2395
Model : ZF TT 400 FP
Rated power : 150 kW at 1450 rpm (Ice class 1A Super)
Supplied to : Kvearner – Finland
Owner : Royal Wagenborg – Netherlands

Equipped with one (1) ZF TT 401C-FP tunnel thruster.



5400 HP AHSV “MORRISON TIDE” – USA



Length o.a. : 64.00 m

Breadth : 14.00 m

Draught : 4.00 m

ZF-Reference : 5266

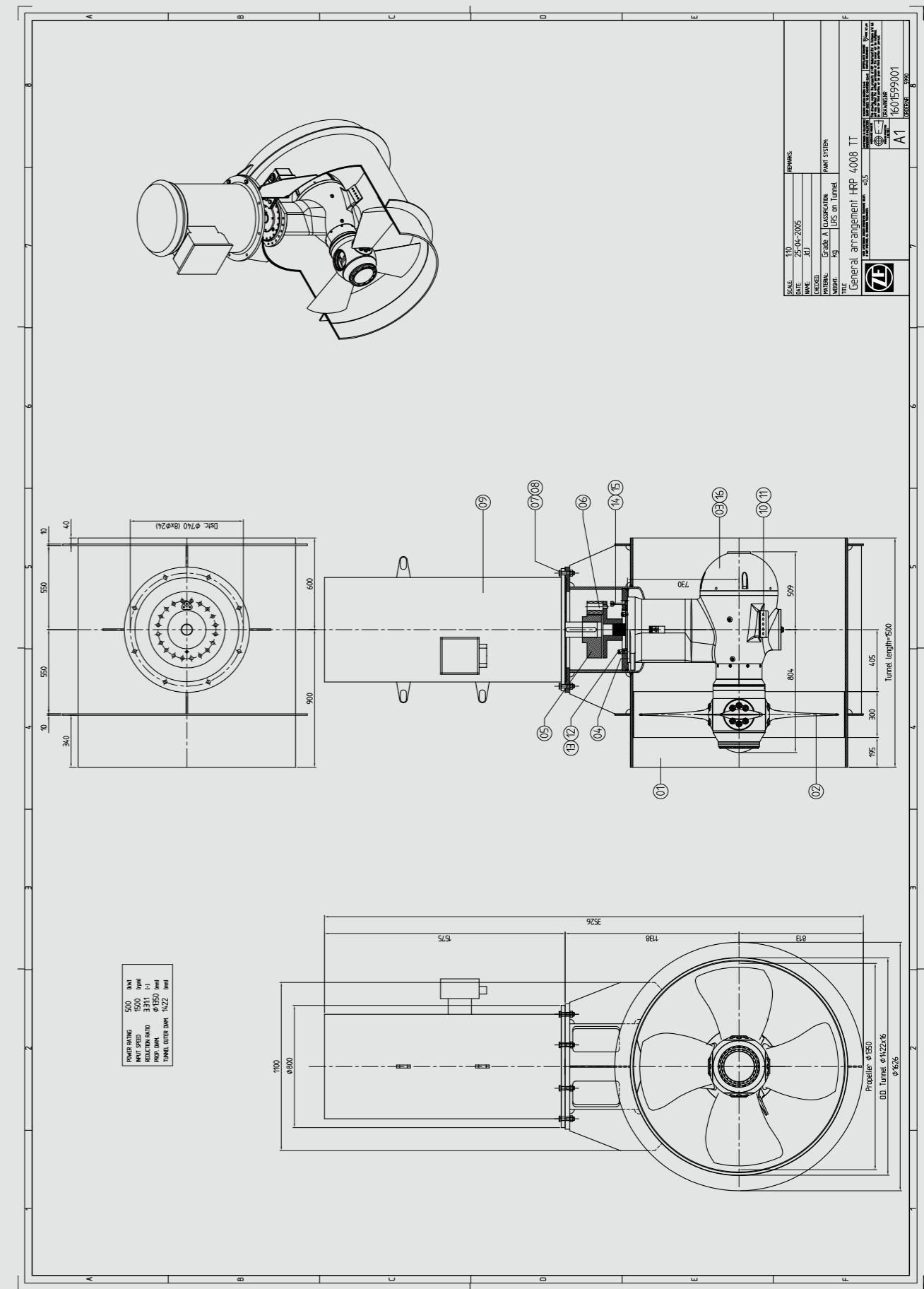
Model : ZF TT 4000 CP

Rated power : 400 kW at 1800 rpm

Supplied to : P.T. Batamec Shipyard – Indonesia

Owner : Tidewater – USA

Equipped with two (2) electric driven ZF TT 4008 controllable pitch tunnel thrusters (bow and stern).



56M NAVY PATROL BOAT “LARRAKIA” – AUSTRALIA



Courtesy of Austal

Length o.a. : 56.80 m

ZF-Reference : 4766

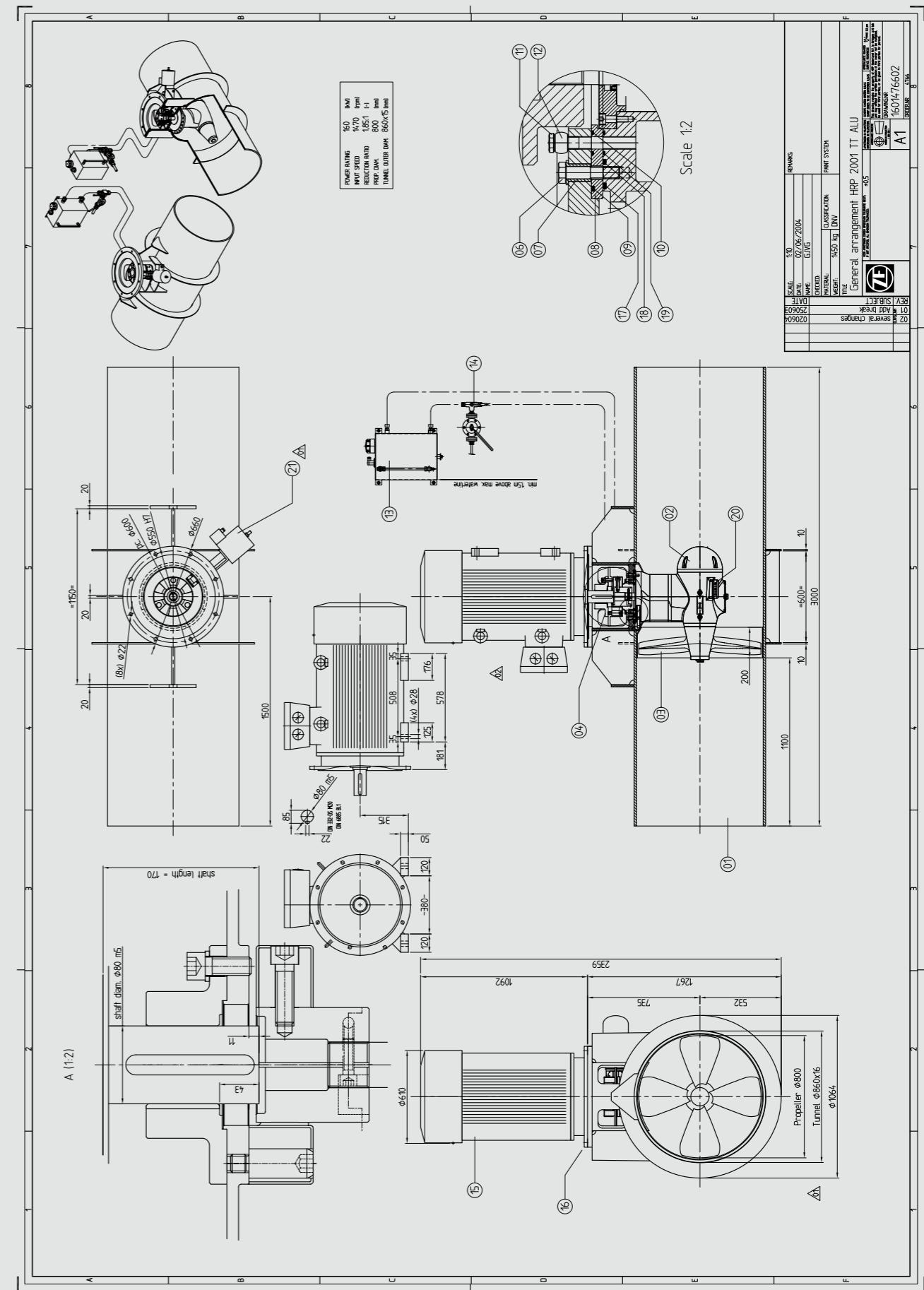
Model : ZF TT 2000 ALU-FP

Rated power : 160 kW

Supplied to : Austral – Australia

Owner : Royal Australian Navy

Equipped with one (1) ZF TT 2001 ALU-FP
electric driven aluminium tunnel thruster.



50M DECK CARGO VESSEL "MERLIN III" – ST. VINCENT & GRENADINES



Length o.a. : 49.80 m

Breadth : 10.90 m

Draught : 2.19 m

ZF-Reference : 4940

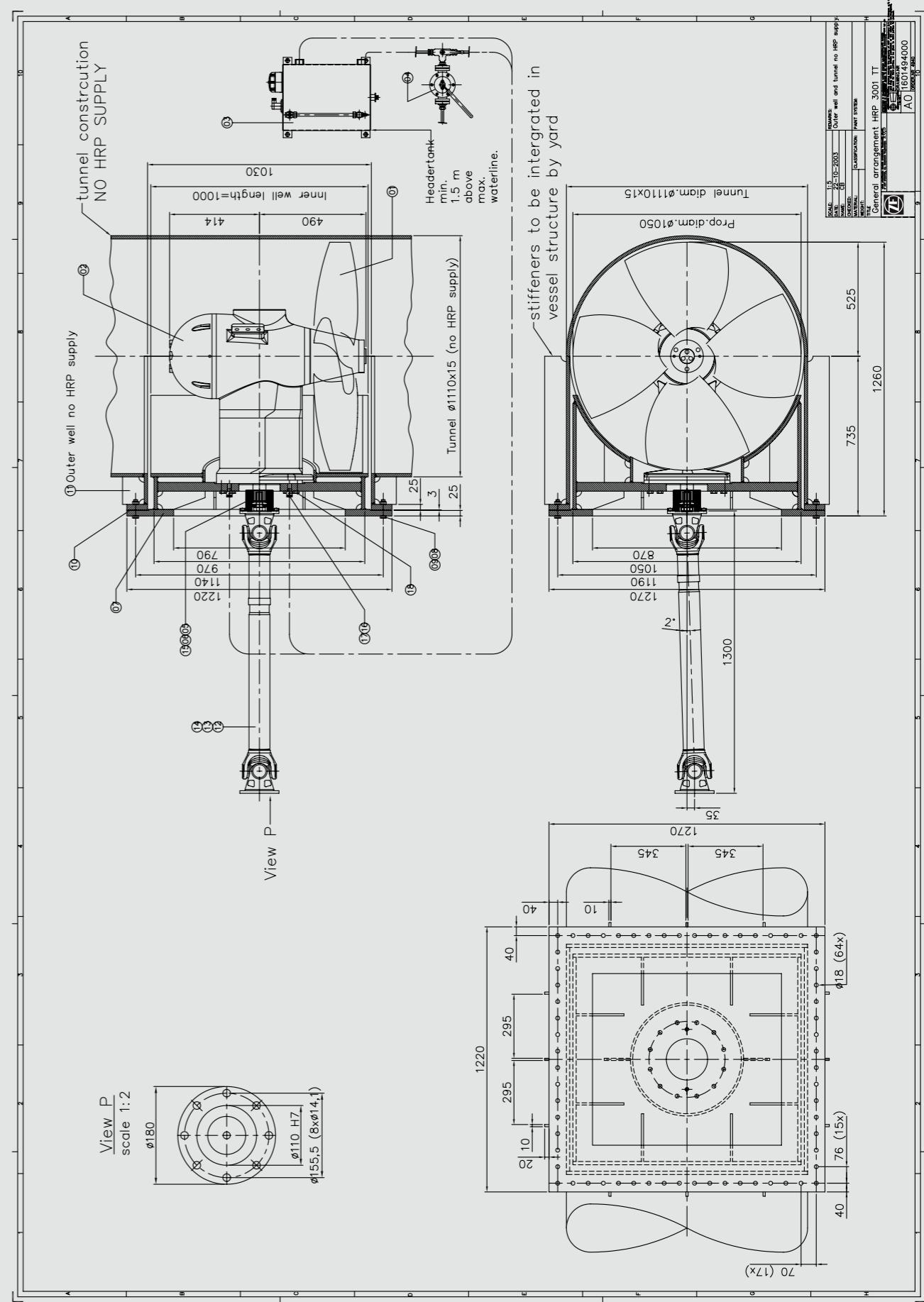
Model : ZF TT 3000 FP

Rated power : 254 kW at 1218 rpm

Supplied to : Gelibolu Shipyard – Turkey

Owner : Arabella Shipping Ltd – Kingstown

Equipped with two (2) diesel driven
ZF TT 3001 tunnel thrusters.



CATAMARAN FERRYBOAT "SPIRIT OF KANGAROO ISLAND" – AUSTRALIA



Length o.a. : 50.40 m

Breadth : 17.80 m

Draught : 2.50 m

ZF-Reference : 4766

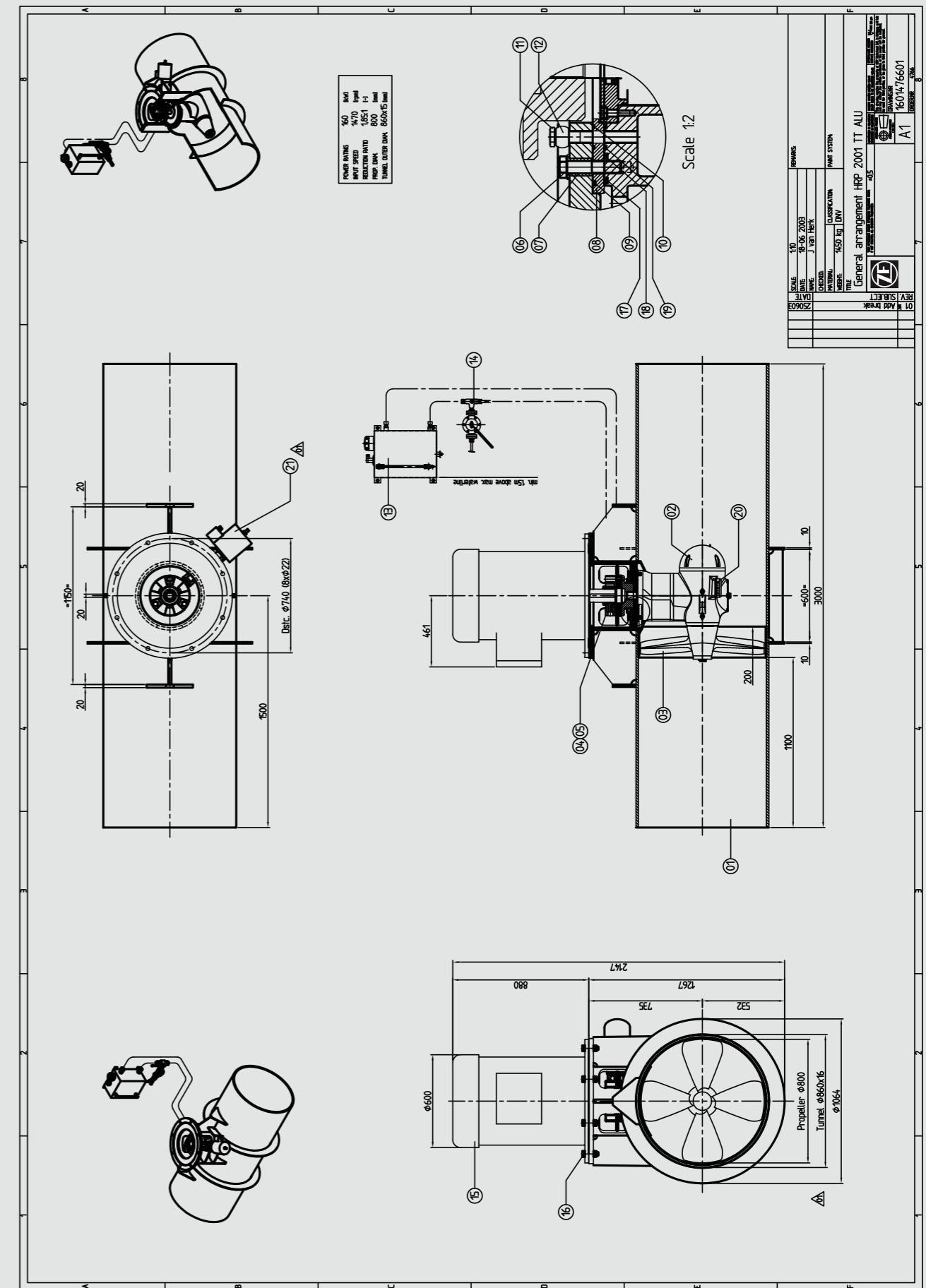
Model : ZF TT 2000 FP

Rated power : 160 kW at 1500 rpm

Supplied to : AUSTAL Ships – Australia

Owner : Sealink Kangaroo Island – Australia

Equipped with two (2) ZF TT 2001
electric driven tunnel thrusters.

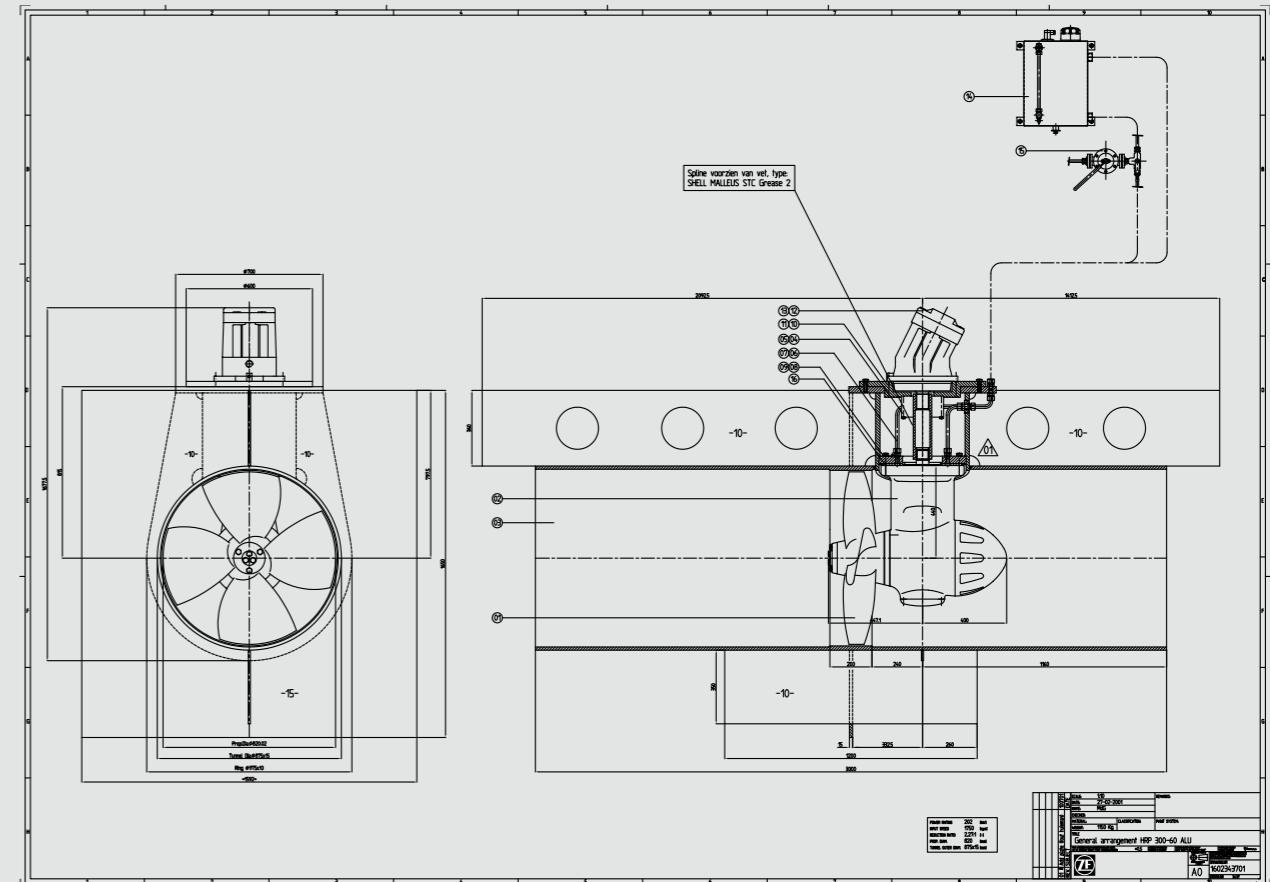
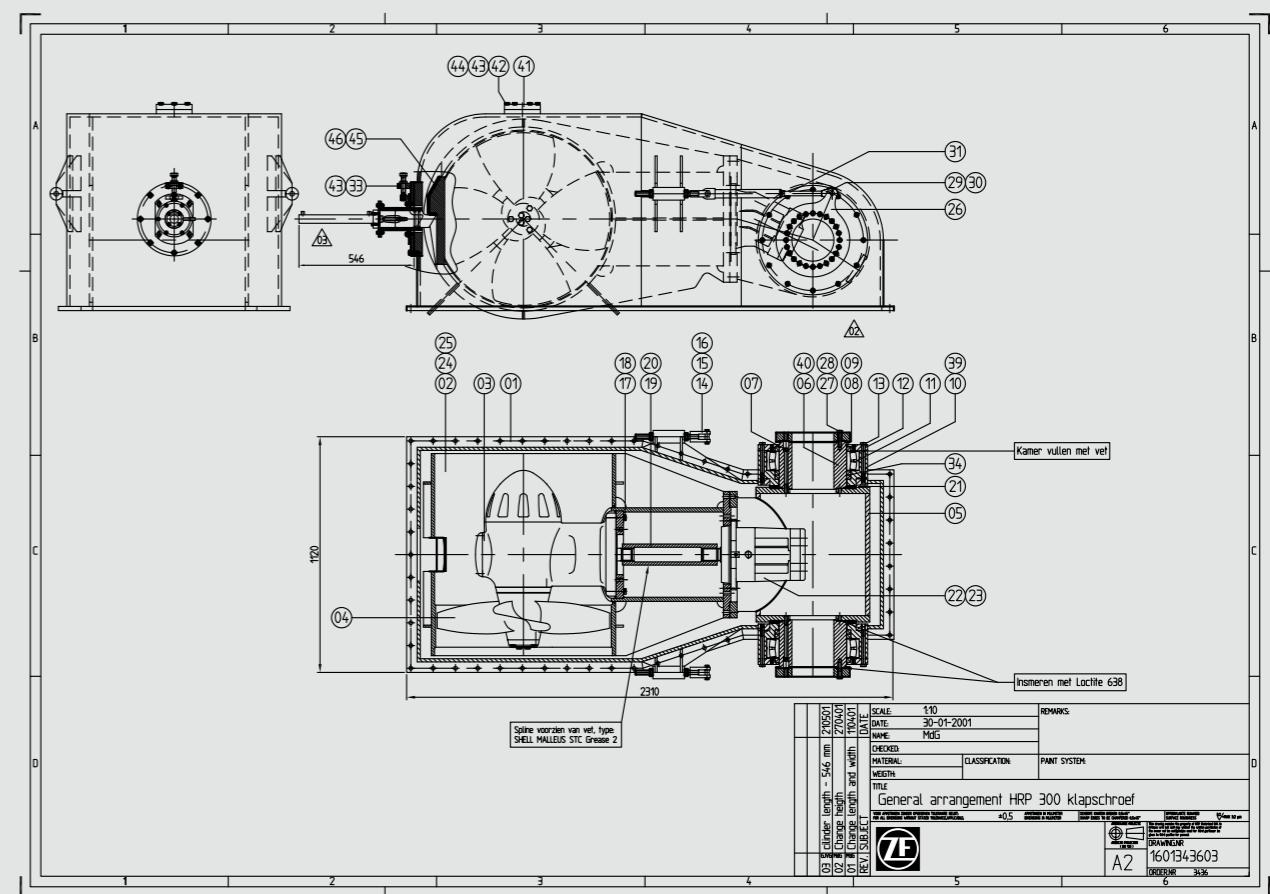


90M THREE MAST SCHOONER “ATHENA” – NETHERLANDS



Length : 90.00 m
Breadth : 12.20 m
Draught : 5.50 m
ZF-Reference : 3436
Model : HRP 300-60
Rated power : 220 kW
Supplied to : Royal Huisman Shipyard – Netherlands

Equipped with two (2) hydraulic driven HRP 300-60 bow and stern tunnel thrusters.

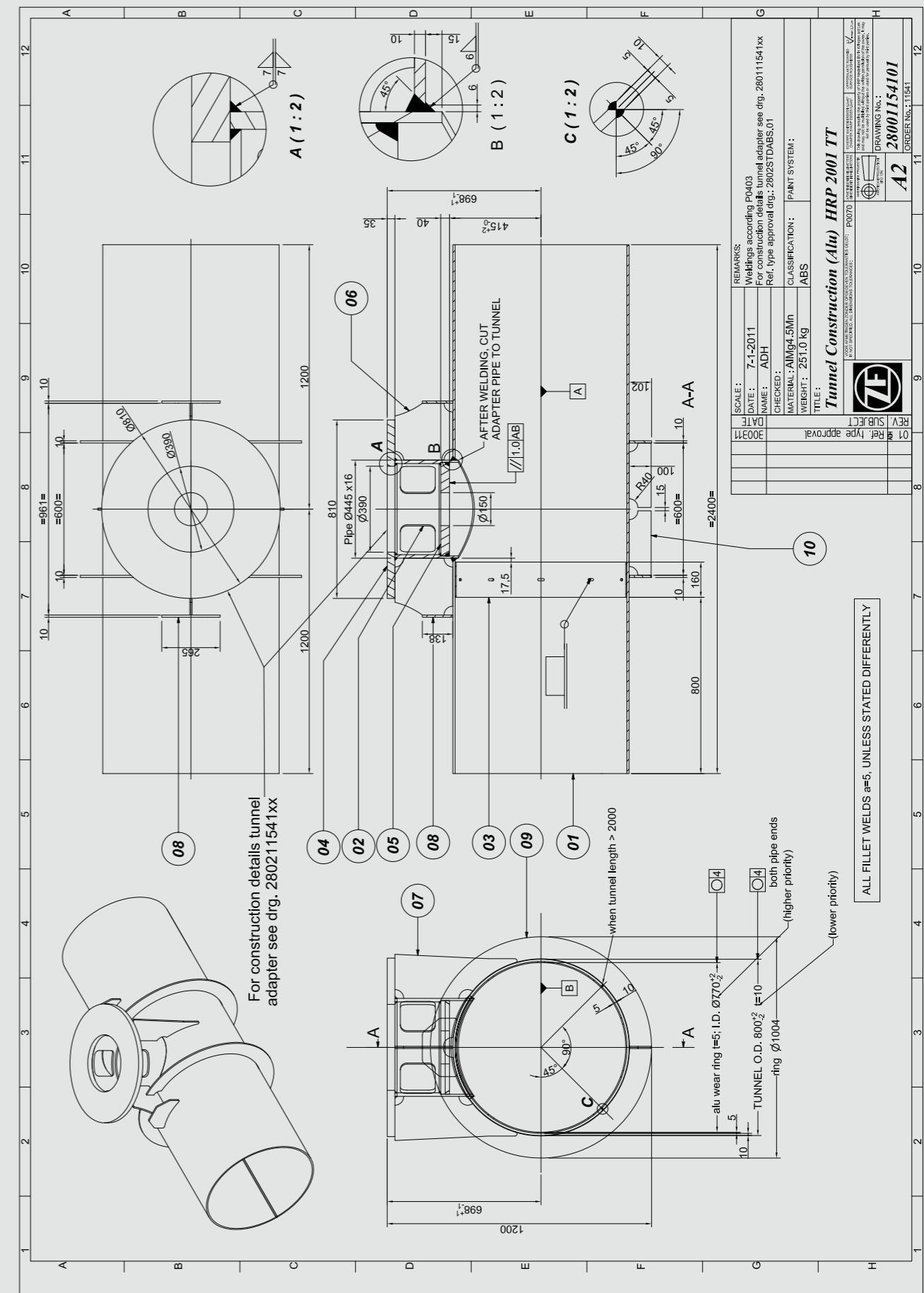


65M ALUMINIUM YACHT “GALATICA STAR” – NETHERLANDS



Length o.a. : 65.00 m
Breadth : 11.30 m
Draught : 3.10 m
ZF-Reference : 11541
Model : ZF TT 2000 ALU-FP
Rated power : 165 kW at 1500 rpm
Supplied to : Heesen Yachts – Netherlands

Equipped with one (1) ZF TT 2001 ALU-FP
electric driven aluminium tunnel thruster.

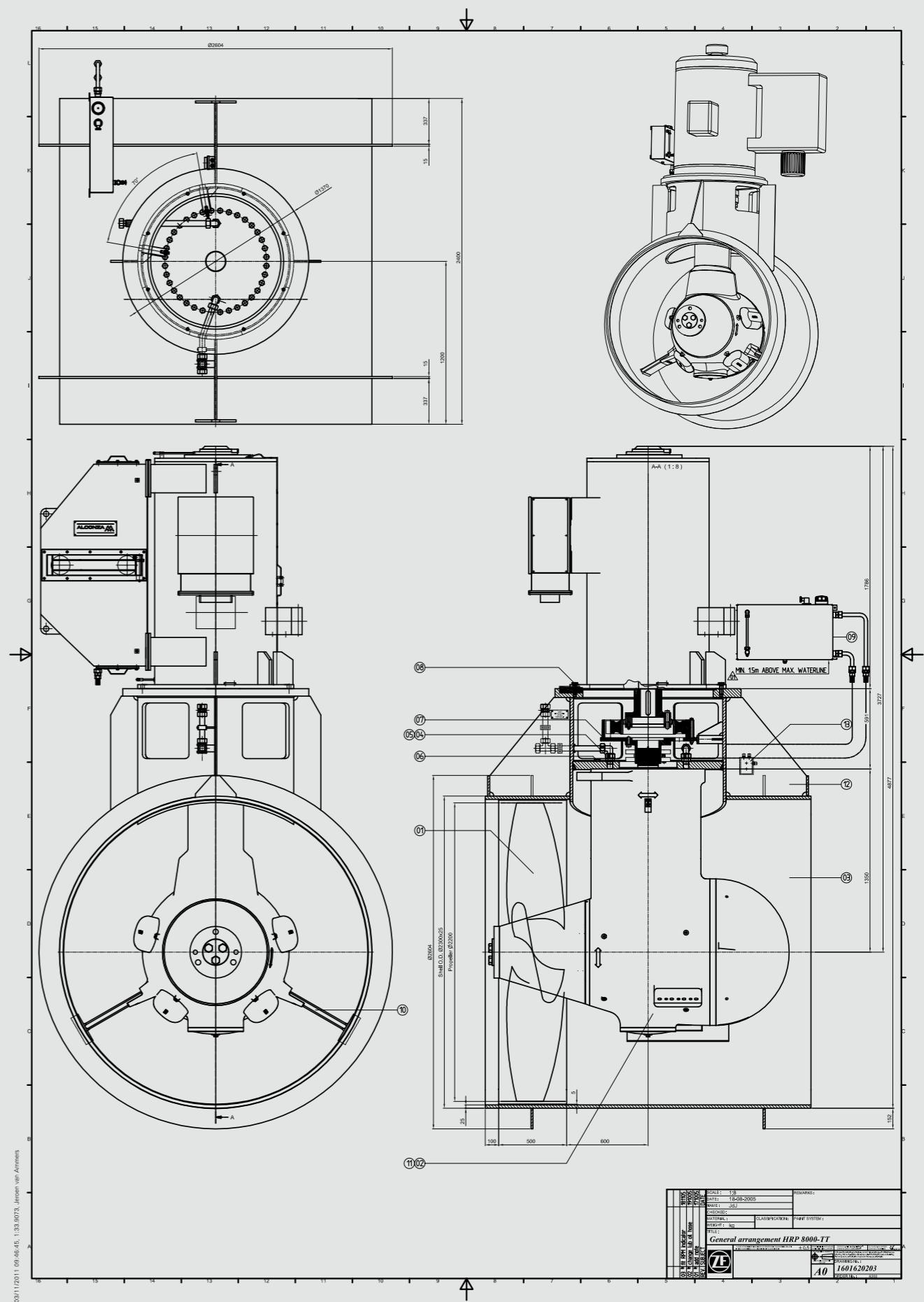


116M ICEBREAKER "MOSKVA" – RUSSIA



Length o.a. : 116.00 m
Breadth : 26.50 m
Draught : 8.50 m
ZF-Reference : 6202
Model : ZF TT 8000 FP
Rated power : 1000 kW at 1200 rpm
Supplied to : Baltiysky Zavod JSC Shipyard
Owner : Rosmorport

Equipped with two (2) ZF TT 8001 fixed pitch tunnel thrusters.



54M YACHT “LEO FUN” – TURKEY



Length o.a. : 53.70 m

Breadth : 9.40 m

Draught : 3.05 m

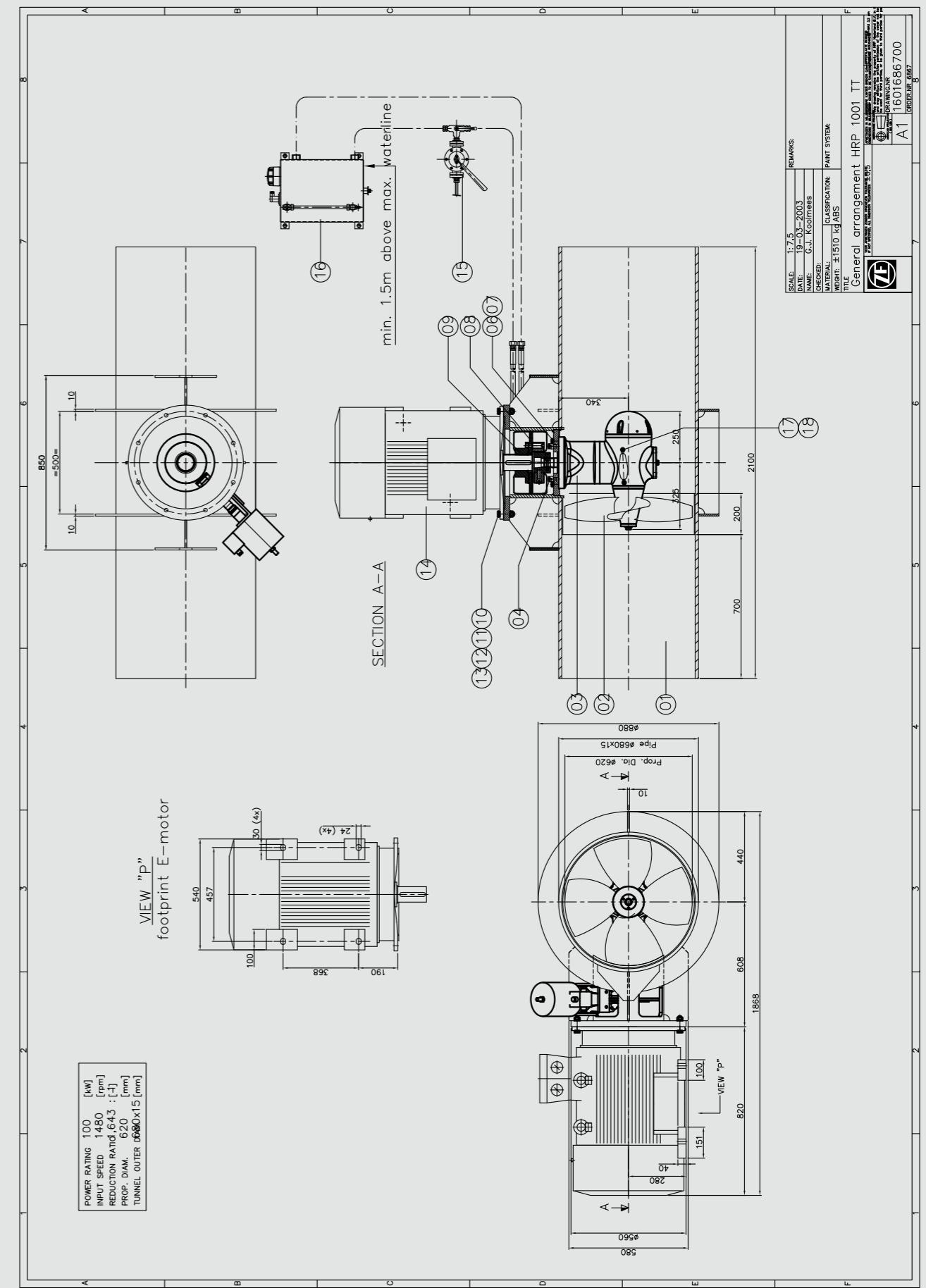
ZF-Reference : 6869

Model : ZF TT 1000 FP

Rated power : 100 kW at 1480 rpm

Supplied to : Proteksan – Turkey

Equipped with one (1) electric driven
ZF TT 1001 tunnel thruster.



MOTOR MEGA YACHT "ULBA" – RUSSIA



Length o.a. : 48.40 m

ZF-Reference : 7842

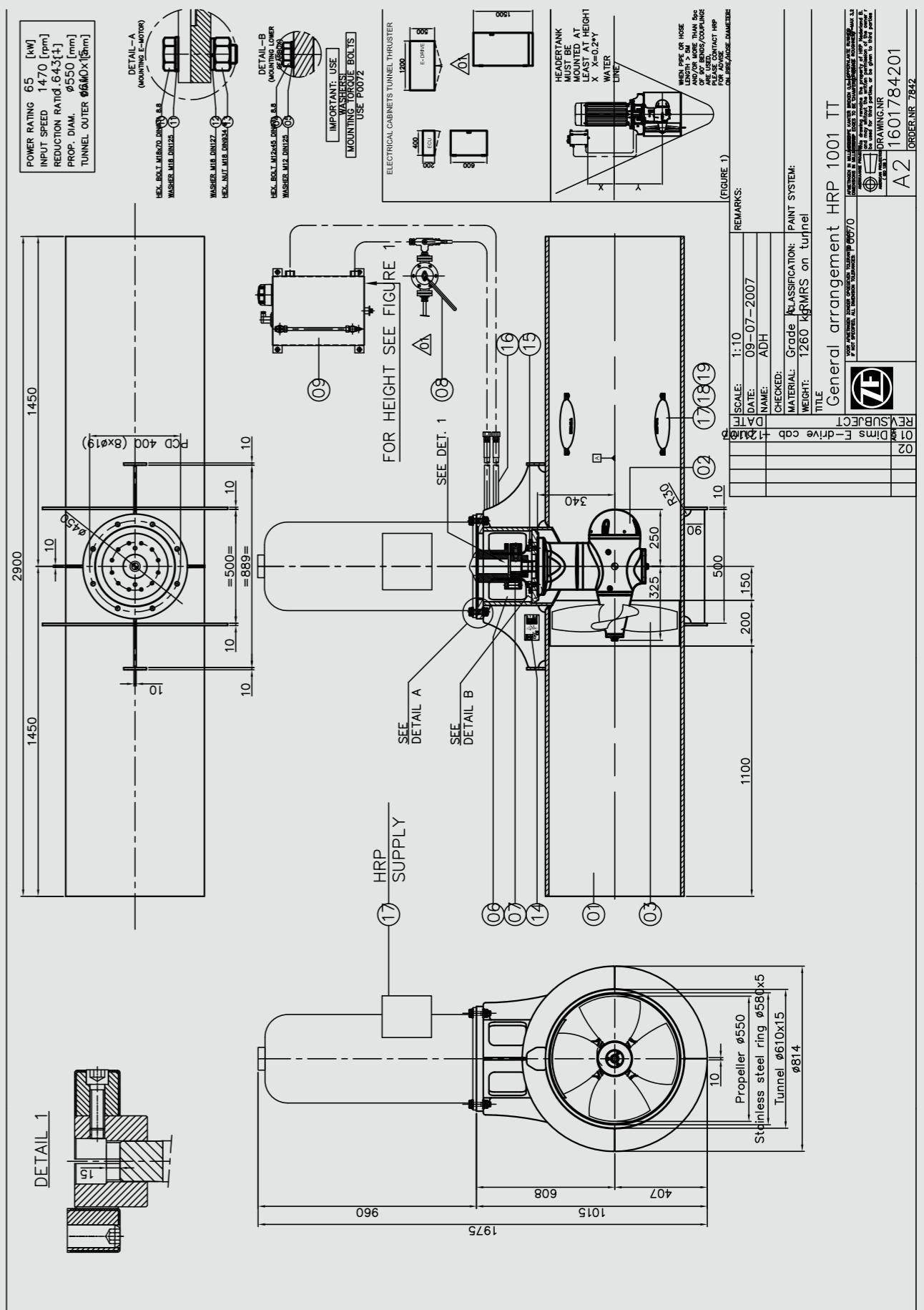
Model : ZF TT 1000 FP

Rated power : 65 kW

Supplied to : Samussky Shipbuilding – Russia

Design : Proline – Ukraine

Equipped with one (1) ZF TT 1001 tunnel thruster.



10.900 DWT OIL/CHEMICAL TANKERS “T. GÖNUL” & “T. SEVGI” – TURKEY



Length o.a. : 131.85 m

Breadth : 18.90 m

Draught : 7.98 m

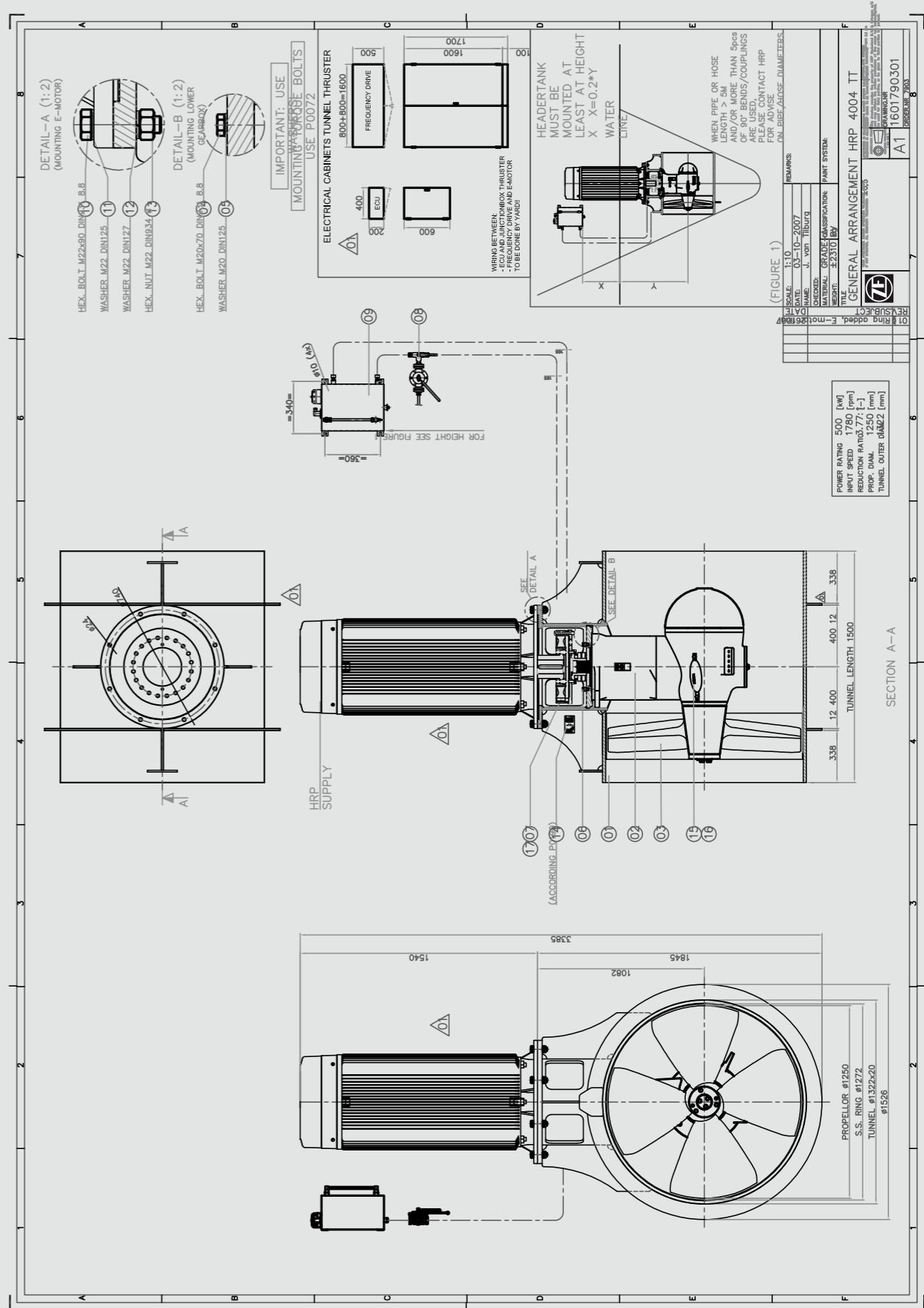
ZF-Reference : 7903

Model : ZF TT 4004 FP

Rated power : 500 kW at 1780 rpm

Supplied to : RMK Marine – Turkey

Each vessel equipped with one (1) ZF TT 4004 electric driven tunnel thruster.



90M TUNA VESSEL “FRANCHE TERRE” – FRANCE



Length o.a. : 90.00 m

Breadth : 14.50 m

Draught : 6.80 m

ZF-Reference : 8270

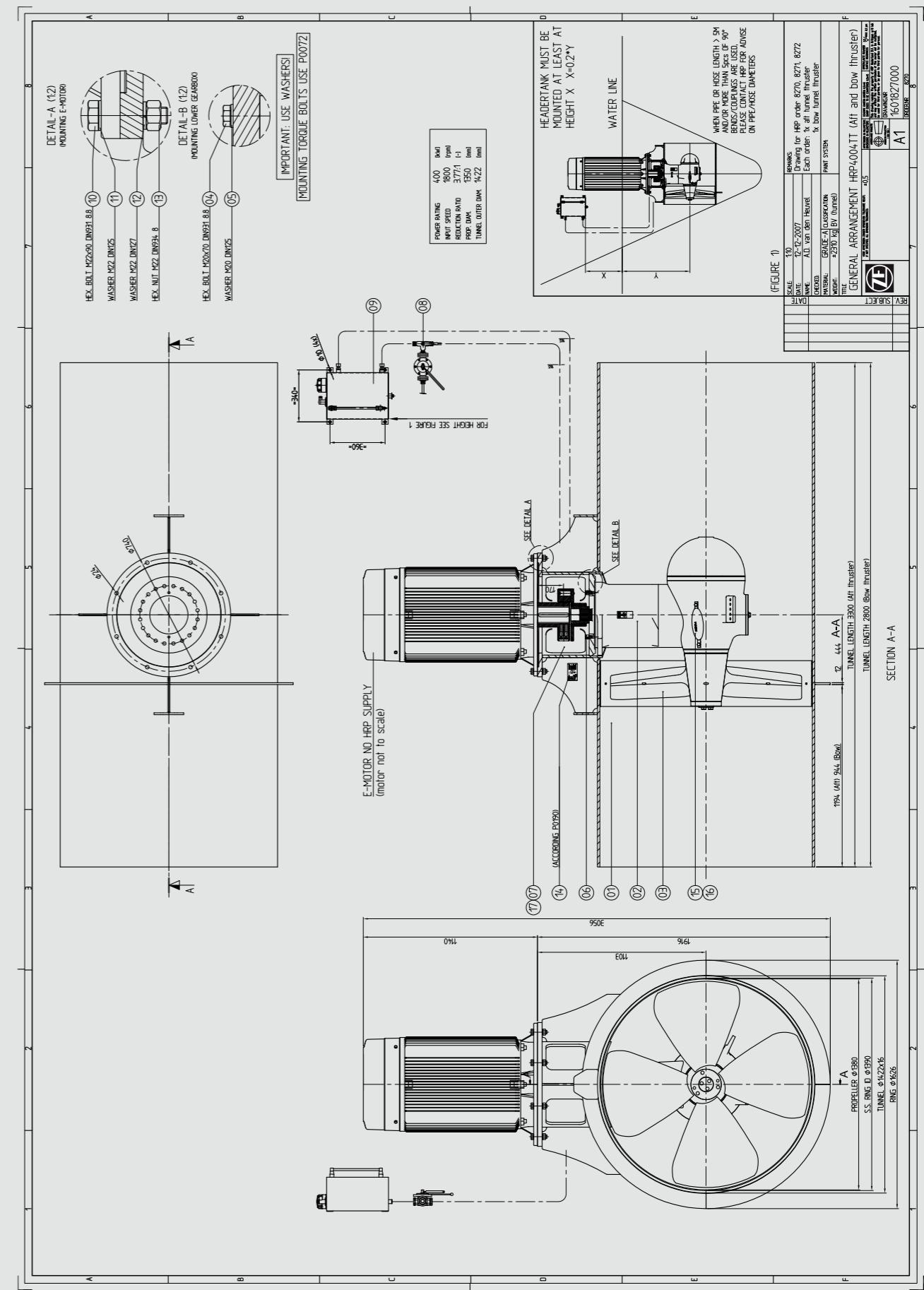
Model : ZF TT 4000 FP

Rated power : 400 kW at 1800 rpm

Supplied to : Chantiers Piriou – France

Owner : SAPMER / Franche Terre

Equipped with two (2) ZF TT 4004
fixed pitch tunnel thrusters.



217M CONTAINER SHIP “LOG-IN JACARANDA” – BRAZIL



Length o.a. : 217.00 m

Breadth : 28.00 m

Draught : 8.90 m

ZF-Reference : 10158

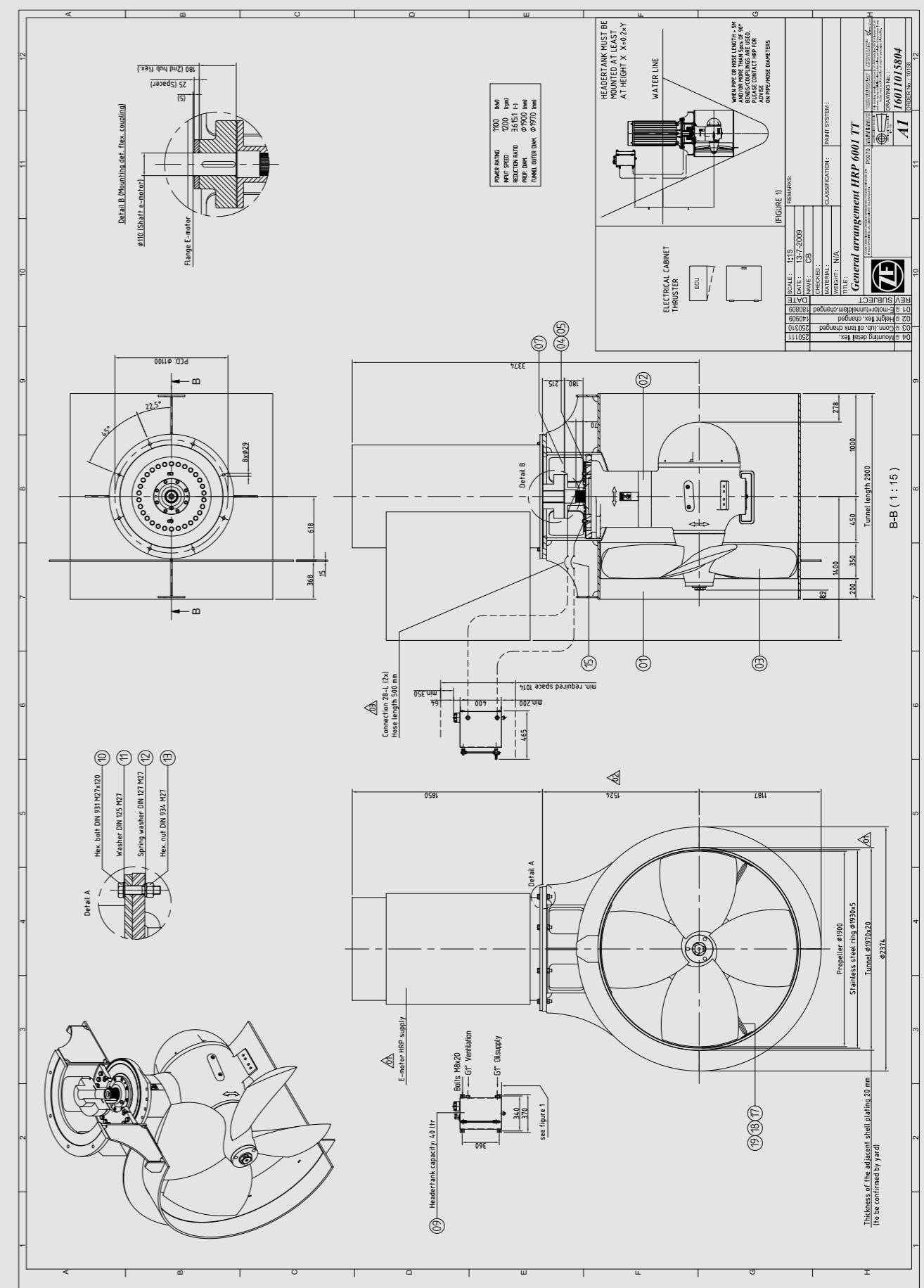
Model : ZF TT 6000 FP

Rated power : 1100 kW at 1200 rpm

Supplied to : Eisa Shipyard, Rio de Janeiro

Owner : Log-In Logistica, Rio de Janeiro

Equipped with one (1) ZF TT 3001
electric driven tunnel thruster.



CUTTER SUCTION DREDGER "AL BAHAR C/D HUTA 12" – SAUDI ARABIA



Length o.a. : 122.50 m

Breadth : 21.70 m

Draught : 6.80 m

ZF-Reference : 14412 / 14413

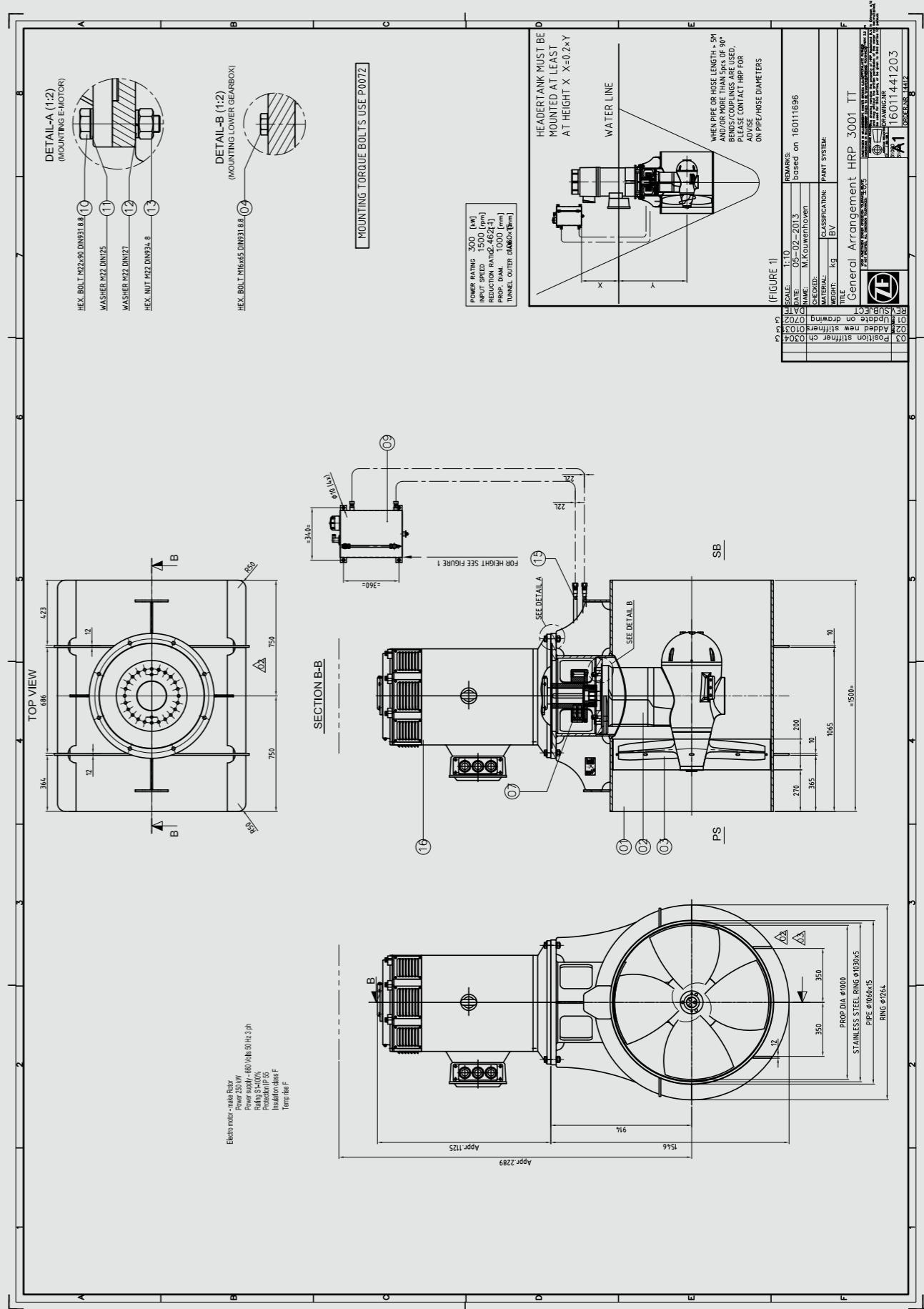
Model : ZF TT 3001 FP / ZF AT 7000 WM-FP

Rated power : 250 kW at 1485 rpm / 1590 kW at 1000 rpm

Supplied to : IHC Holland B.V.

Owner : Huta Marine Works – Saudi Arabia

Equipped with one (1) ZF TT 3001 electric driven tunnel thruster and two (2) ZF AT 7011 well mounted azimuth thrusters.



MULTIPURPOSE SALVAGE VESSEL “MPSV07” – RUSSIA



Length o.a. : 73.00 m

Breadth : 16.60 m

Draught : 6.70 m

ZF-Reference : 14709

Model : ZF TT 7000 FP

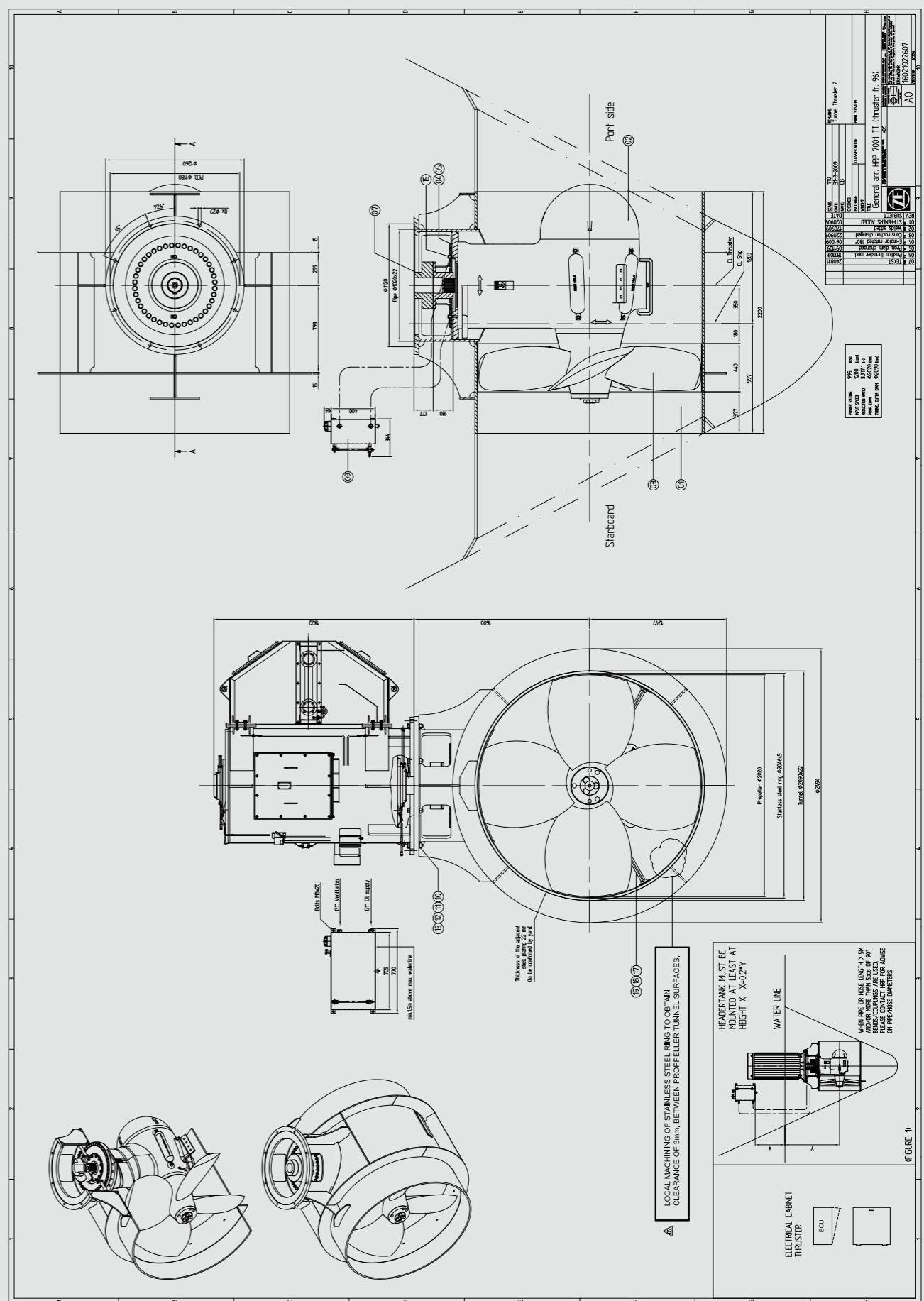
Rated power : 1000 kW at 1200 rpm

Supplied to : Nevsky Shipyard – Russia

Owner : Federal Marine and River Transport Agency –

Russian Federation

Equipped with two (2) ZF TT 7001
fixed pitch tunnel thrusters



59M SUPPLY VESSEL "PERMINT AMAN" & "PERMINT DAMAI" – MALAYSIA



Length o.a. : 59.00 m

Breadth : 13.80 m

Draught : 4.75 m

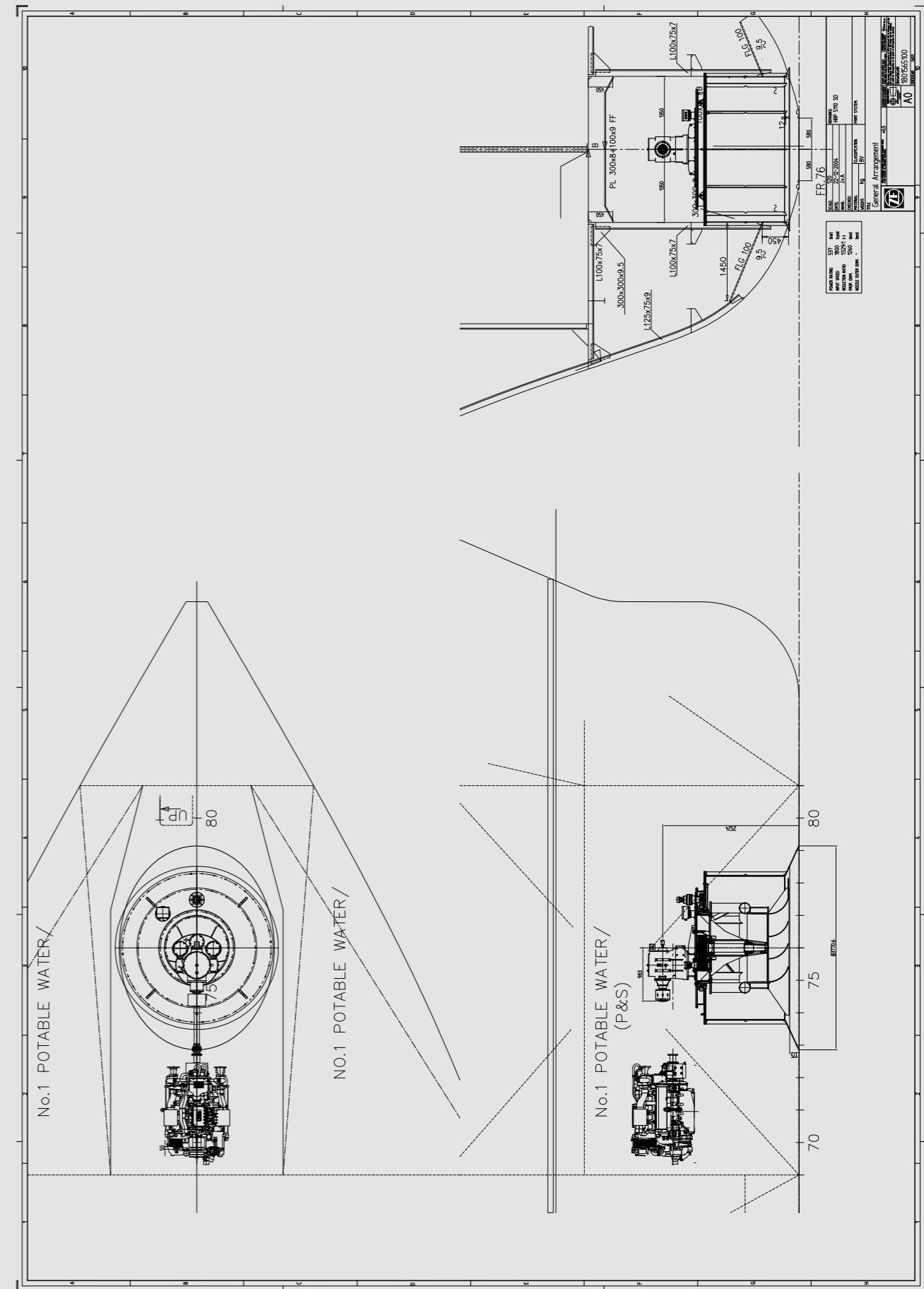
ZF-Reference : 5651

Model : ZF SDT 5000 FP

Rated power : 537 kW at 1800 rpm

Supplied to : Muhibbah Marine Engineering – Malaysia

Equipped with one (1) ZF SDT 5110
shallow draught thruster.



HIGH-PURPOSE/ANCHOR HANDLING VESSEL "SIDI C" – NETHERLANDS



Length o.a. : 32.00 m

Breadth : 11.10 m

Draught : 3.50 m

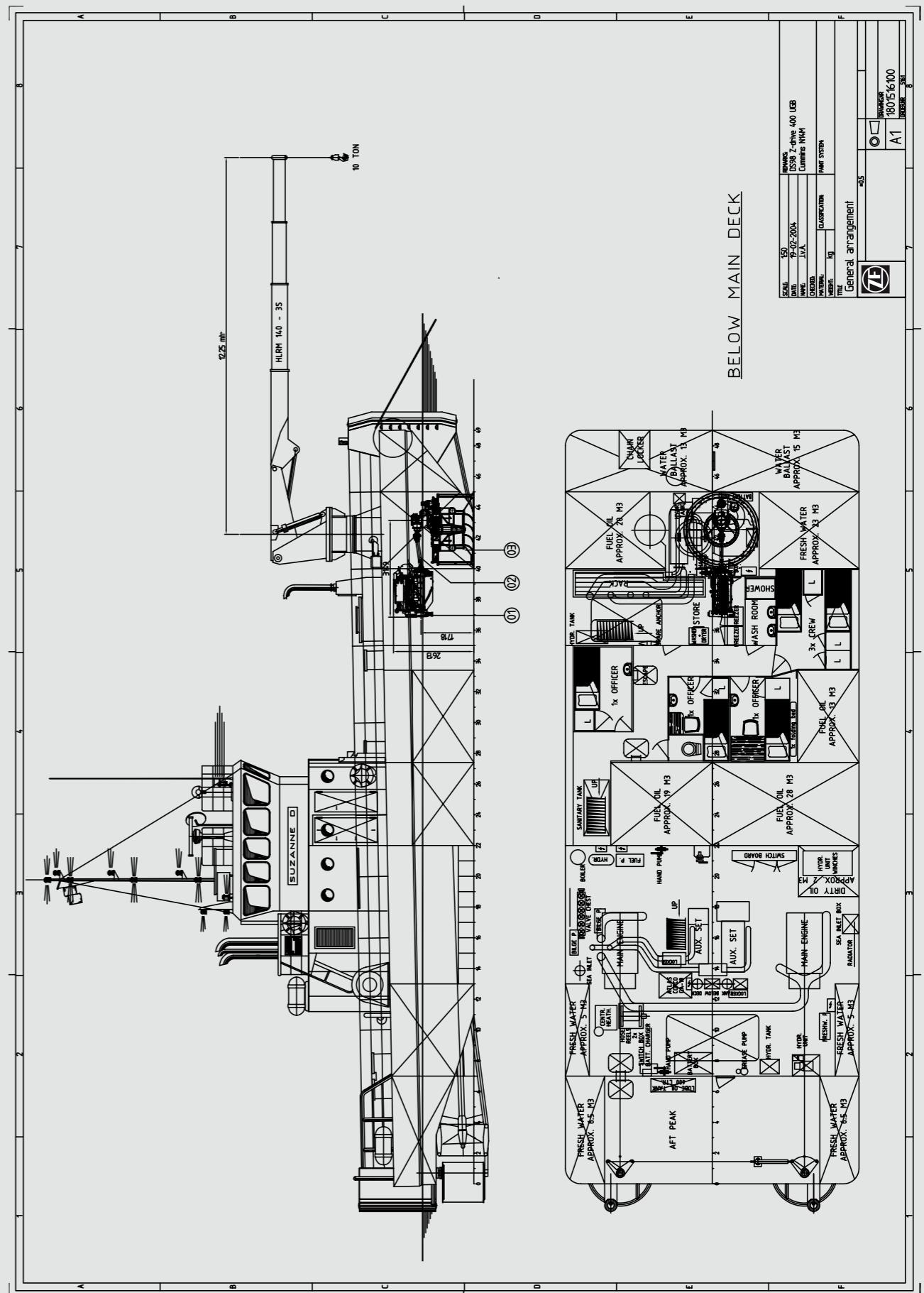
ZF-Reference : 6291

Model : ZF SDT 4000 FP

Rated power : 350 kW at 1800 rpm

Supplied to : Neptune Marine Service B.V. – Netherlands

Equipped with one (1) ZF SDT 4110
shallow draught thruster.



32M MULTIPURPOSE VESSEL DP-2 "ANNA-B" – NETHERLANDS



Length o.a. : 32.00 m

Breadth : 12.00 m

Draught : 3.40 m

ZF-Reference : 13729

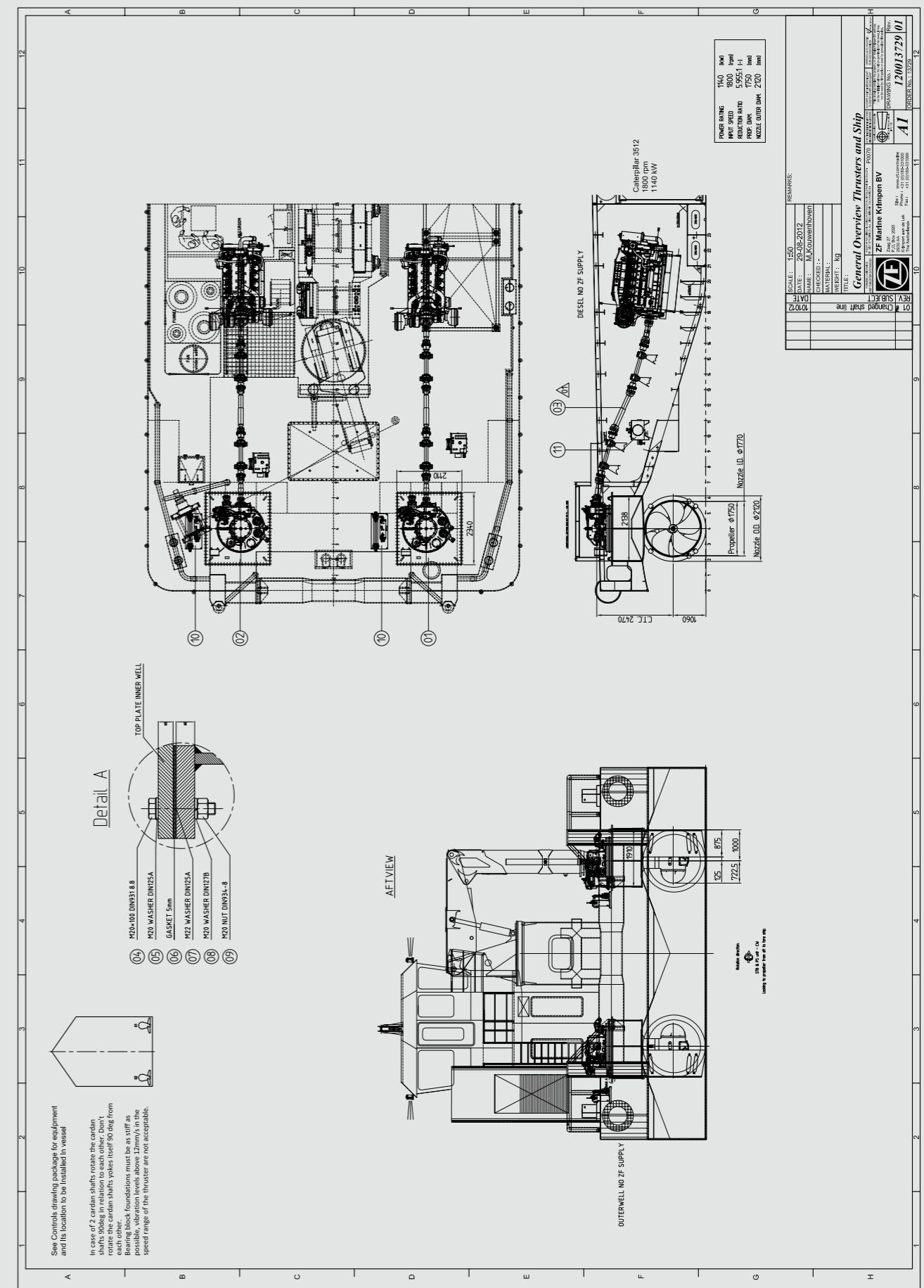
Model : ZF SDT 4000 FP / ZF AT 6000 WM-FP

Rated power : 250 kW at 1200 rpm / 1140 kW at 1800 rpm

Supplied to : Neptune Shipyards B.V.

Owner : Stemat Marine Services – Netherlands

Equipped with two (2) ZF SDT 4010 electrical driven shallow draft thrusters in the bow and two (2) ZF AT 6311 diesel driven well mounted azimuth thrusters in the stern.



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