

A journey with



Heavy Lift in the Lift?

KIVI NIRIA – Delft, 13 October 2011

Transportation APL STP Buoy

Batam (Indonesia) – Rio de Janeiro (Brazil)

Introduction

Engineering

Happy-D type

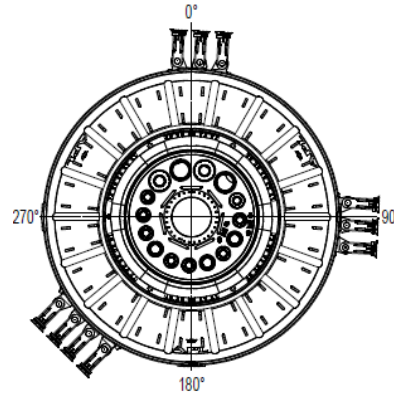
Loading Batam

Discharging Brazil

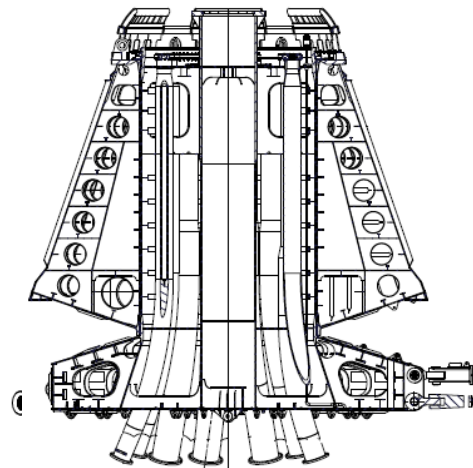
End



Buoy details



- Buoy weight: 705 mton
- OGX Waimea Field offshore Brazil
- Design: APL (NOV)
- Manufacturer: Profab (Batam)



- Dimensions:

Diameter = 13,5 m

Height = 13.7 m (excl BLSM)

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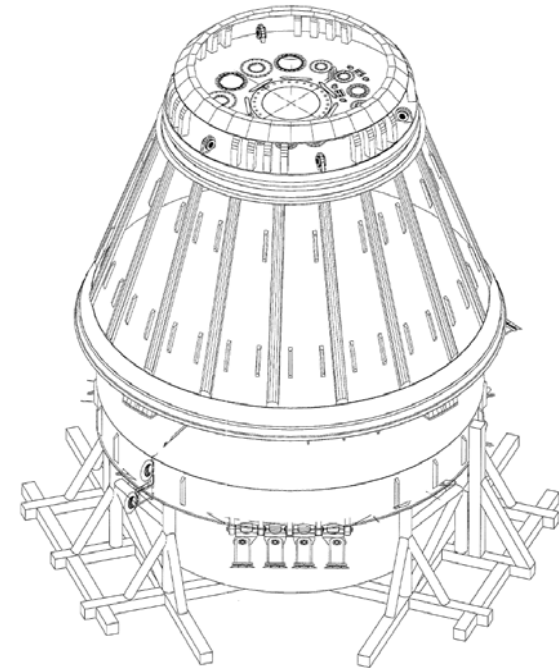
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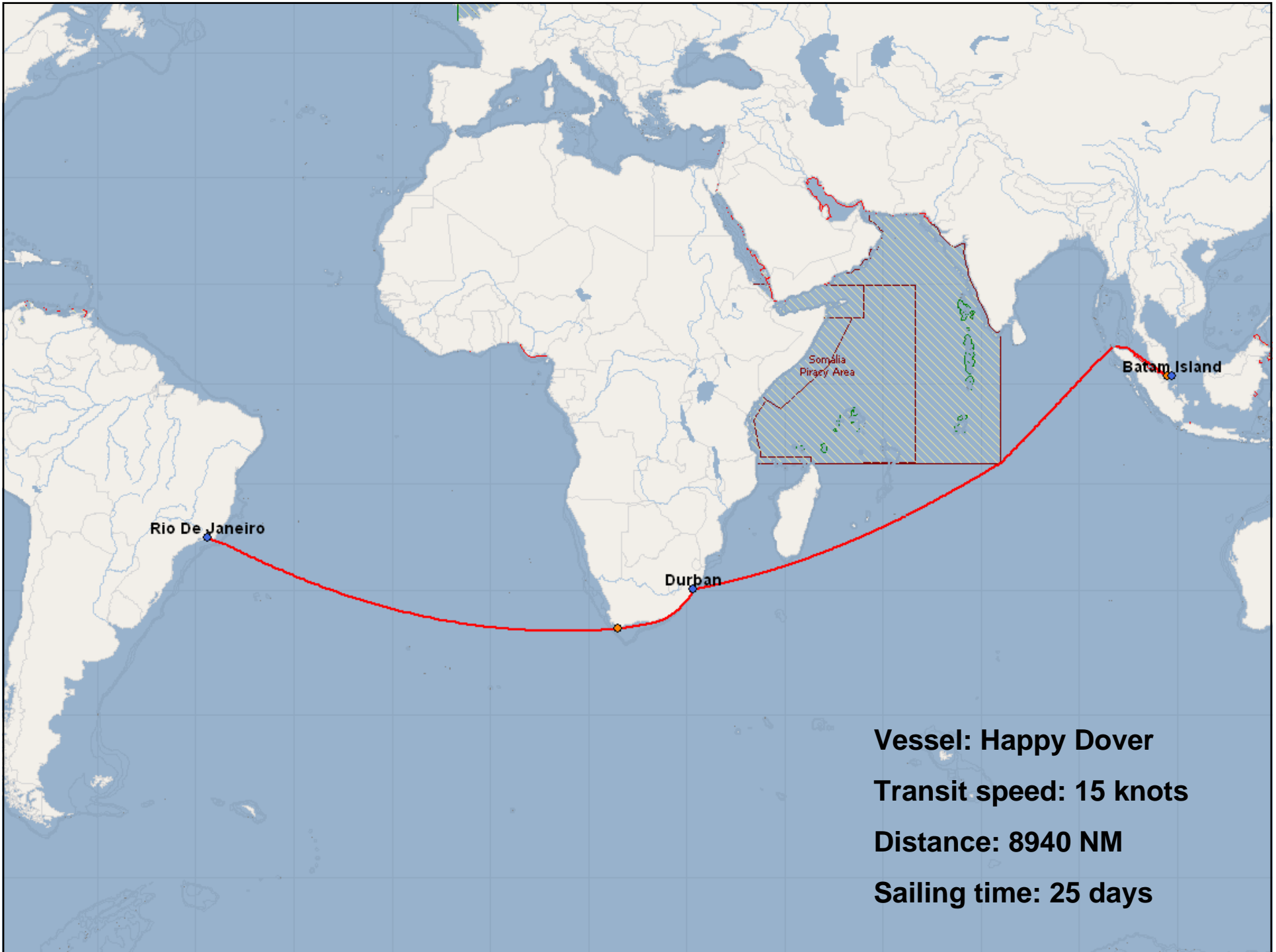
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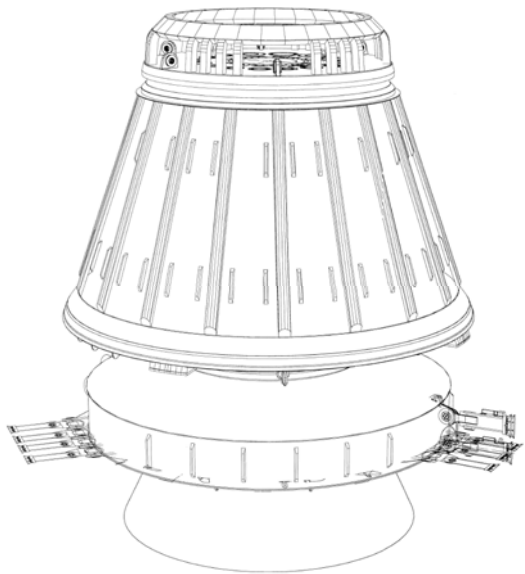


Transportation APL STP Buoy

Batam (Indonesia) – Rio de Janeiro (Brazil)

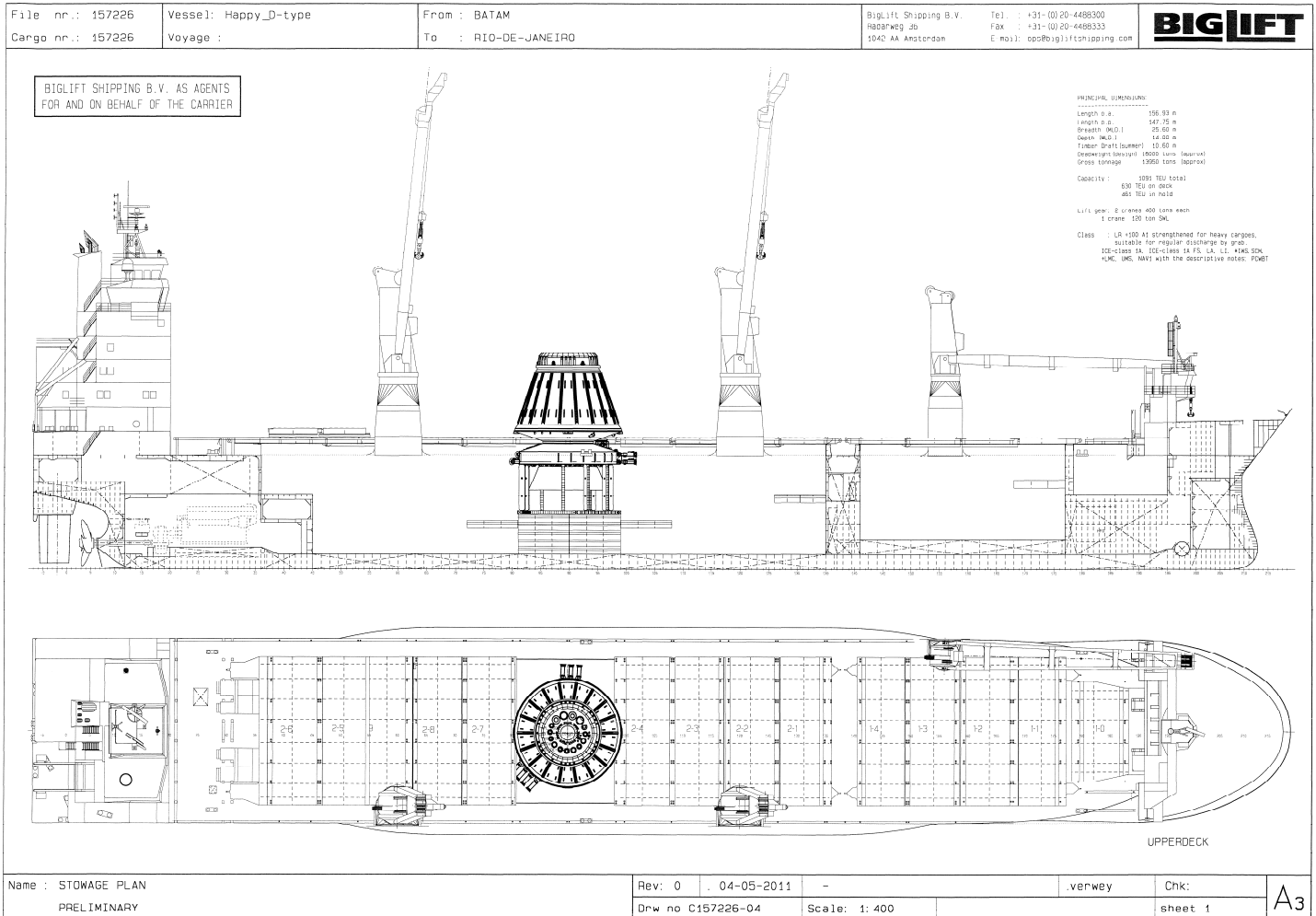


CAD-model STP buoy



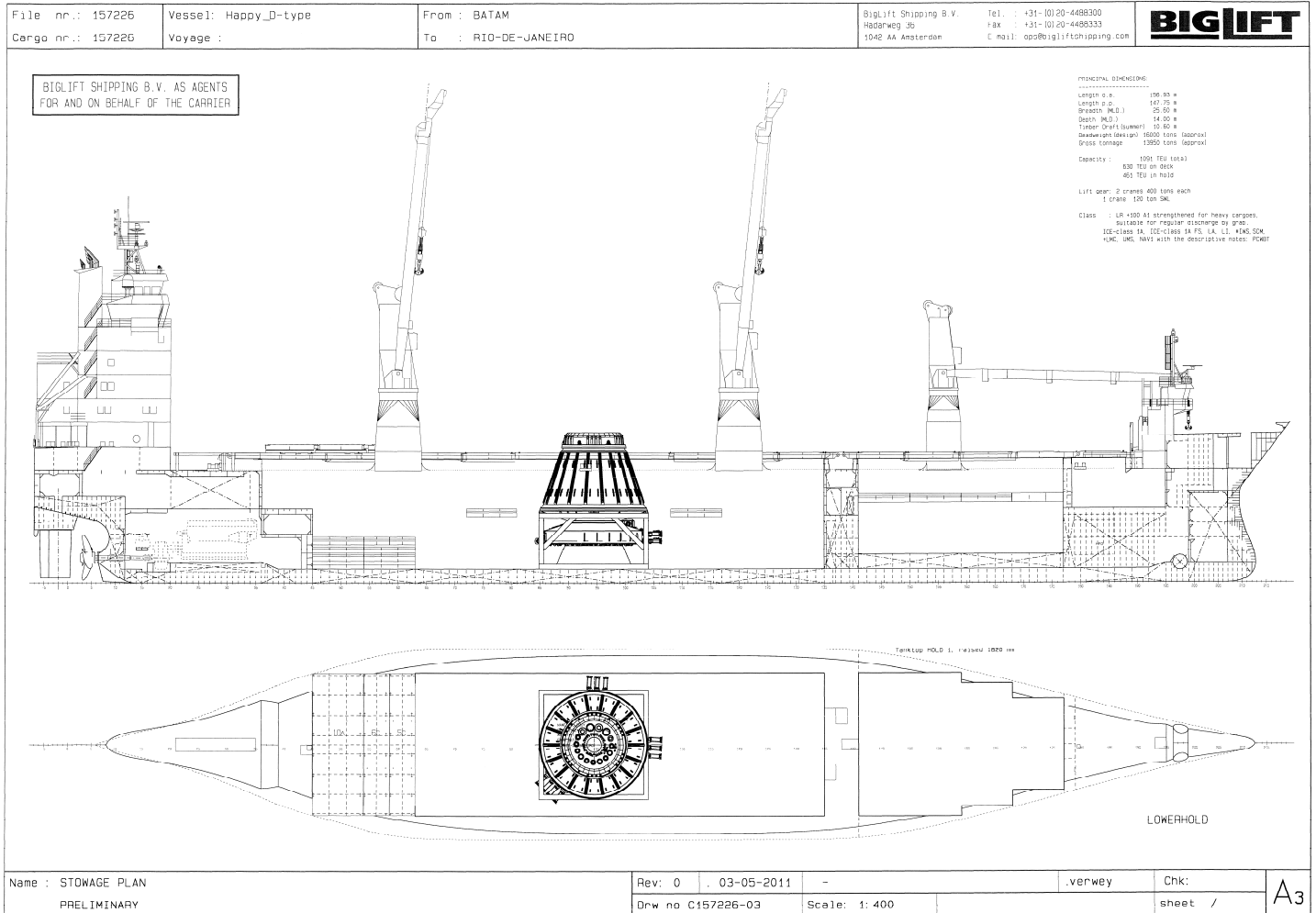
Grillage concepts

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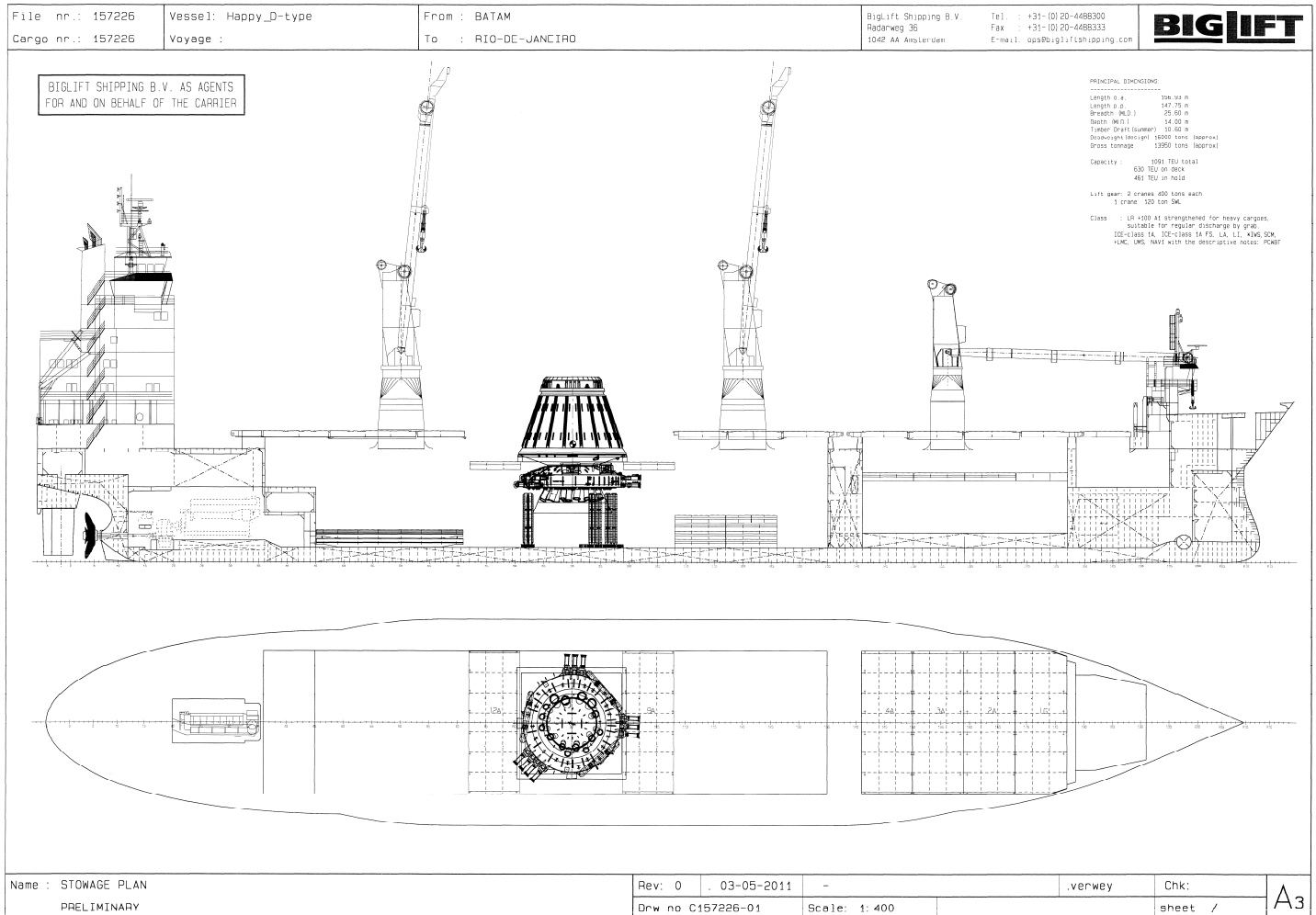
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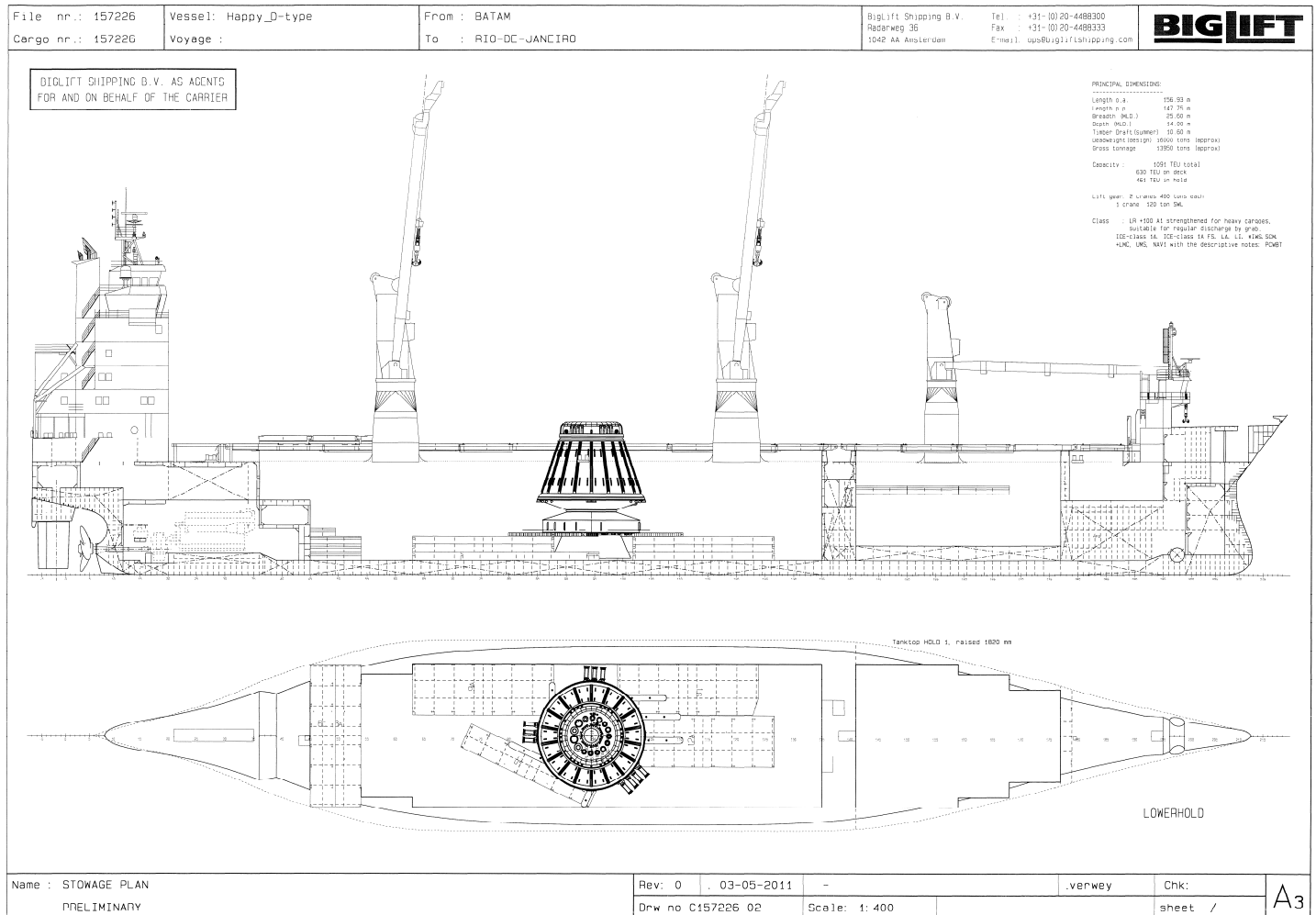
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Grillage concepts

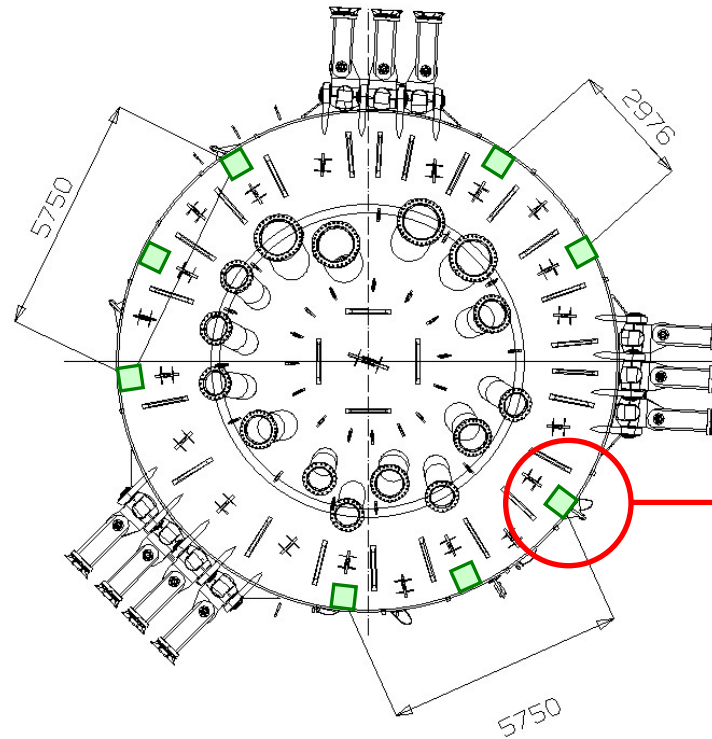
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Requirements APL

FOOT PRINT BUOY

8 Support pads to be used for transportation



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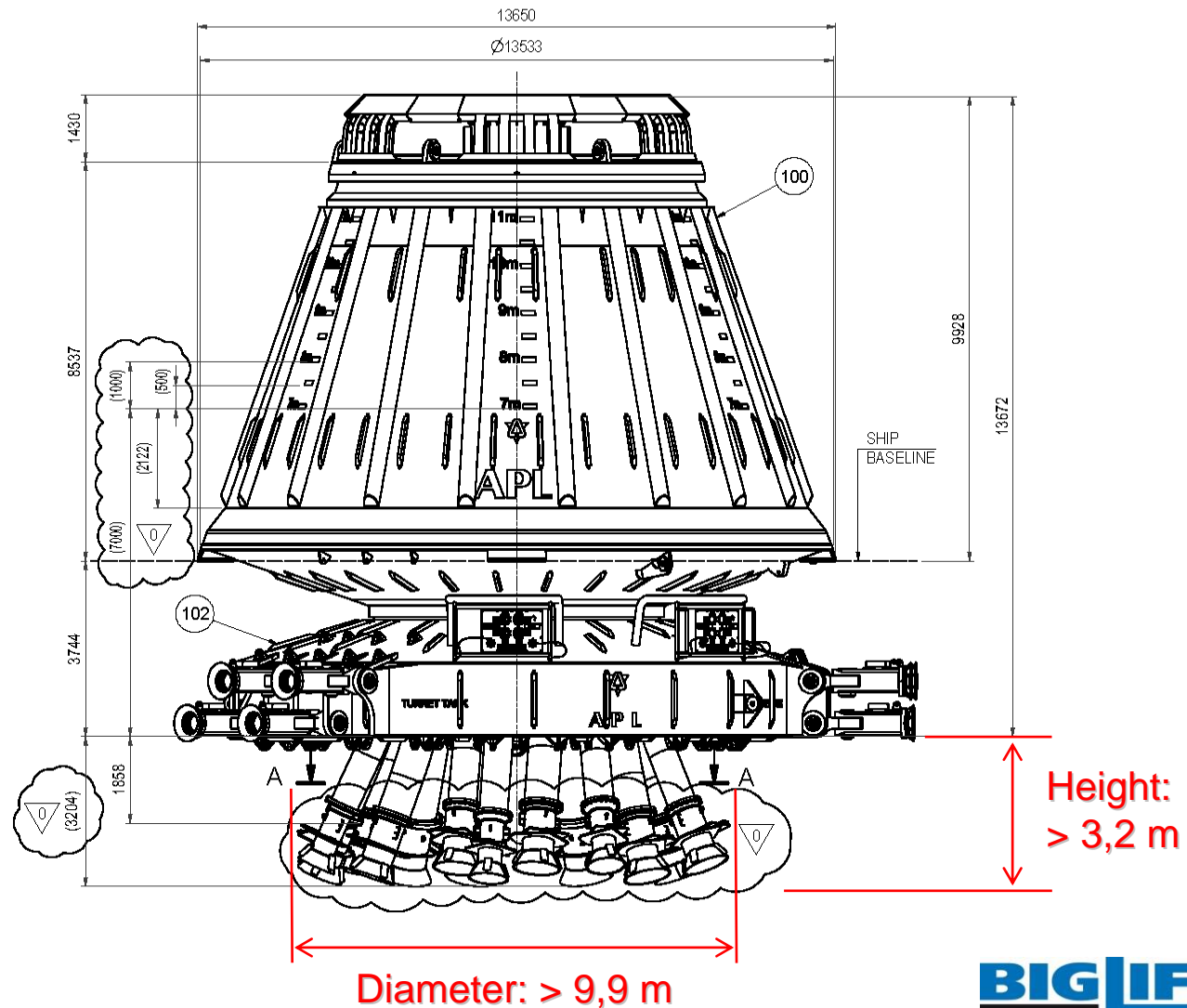
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Requirements APL

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BIGLIFT

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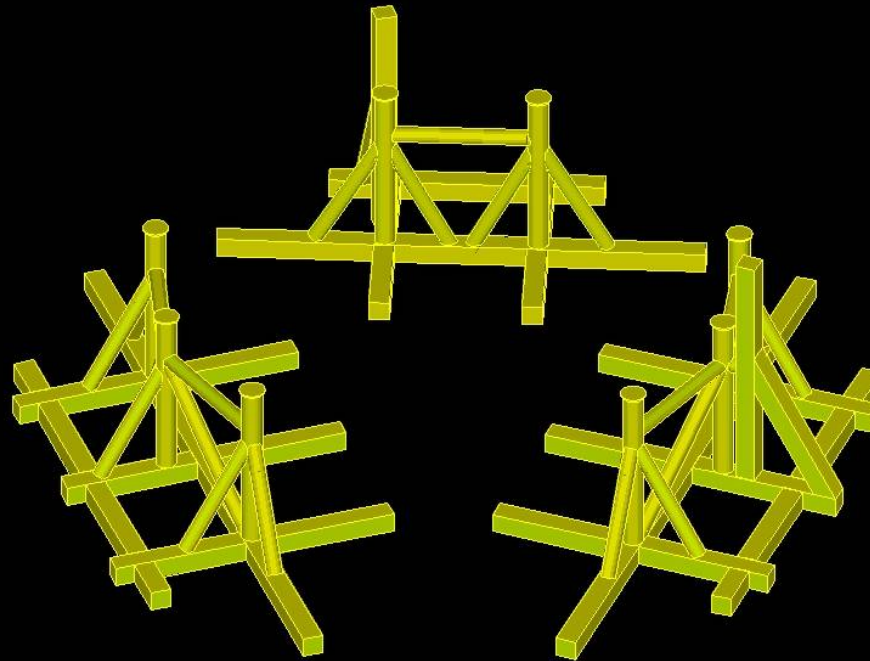
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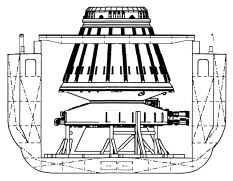
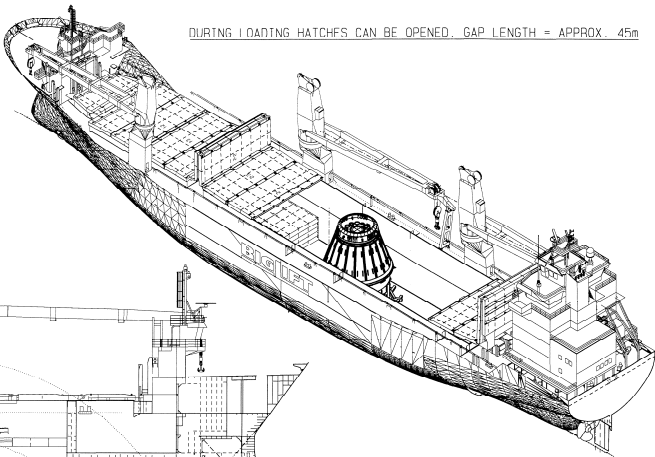
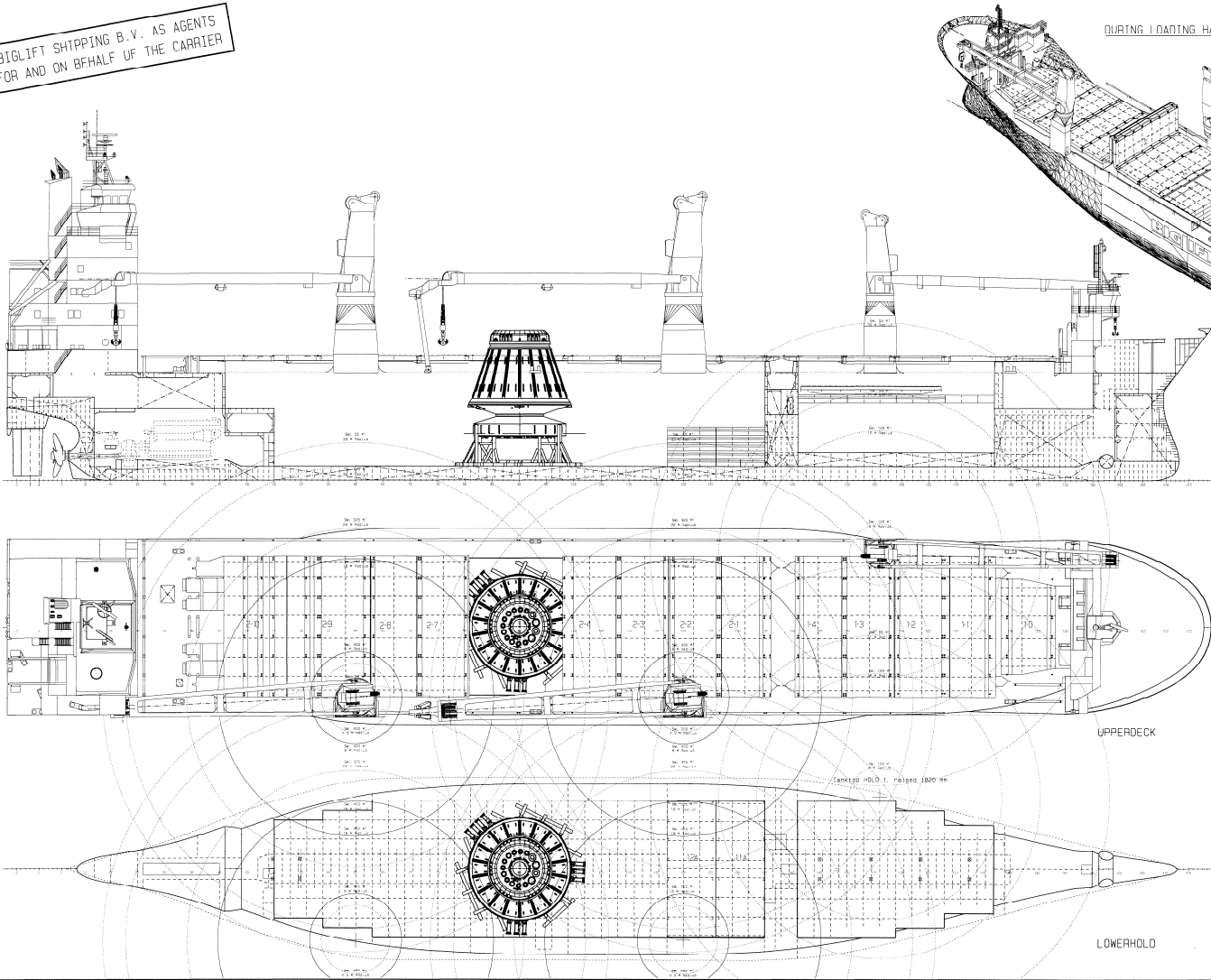
End



File nr.: 157226	Vessel: HAPPY_D-TYPE	From : BATAM	BigLift Shipping B.V. Radarweg 36 1042 AA Amsterdam	Tel. : +31- (0)20-4488300 Fax : +31- (0)20-4488333 E-mail: ops@bigliftshipping.com	BIGLIFT
Cargo nr.: 157226	Voyage :	To : RIO-DE-JANEIRO			

BIGLIFT SHIPPING B.V. AS AGENTS
FOR AND ON BEHALF OF THE CARRIER

DURING LOADING HATCHES CAN BE OPENED. GAP LENGTH = APPROX. 45m



MIDSHIP SECTION

PRINCIPAL DIMENSIONS:

- Length o.a. 156.93 m
- Length D.P. 147.75 m
- Breadth (M.D.) 25.60 m
- Depth (M.D.) 14.00 m
- Timber Draft (summer) 10.60 m

Deadweight (design) 16000 tons (approx)
Gross tonnage 13950 tons (approx)

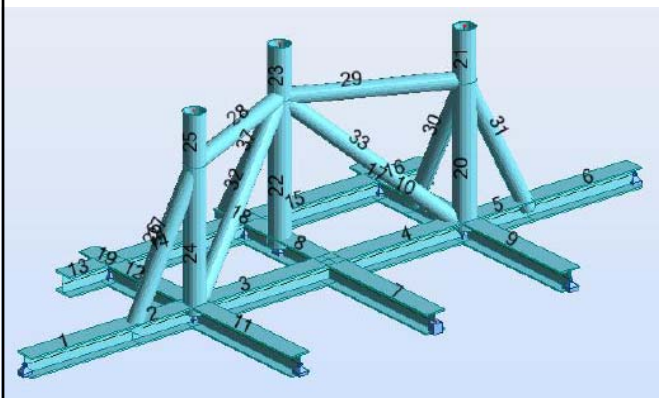
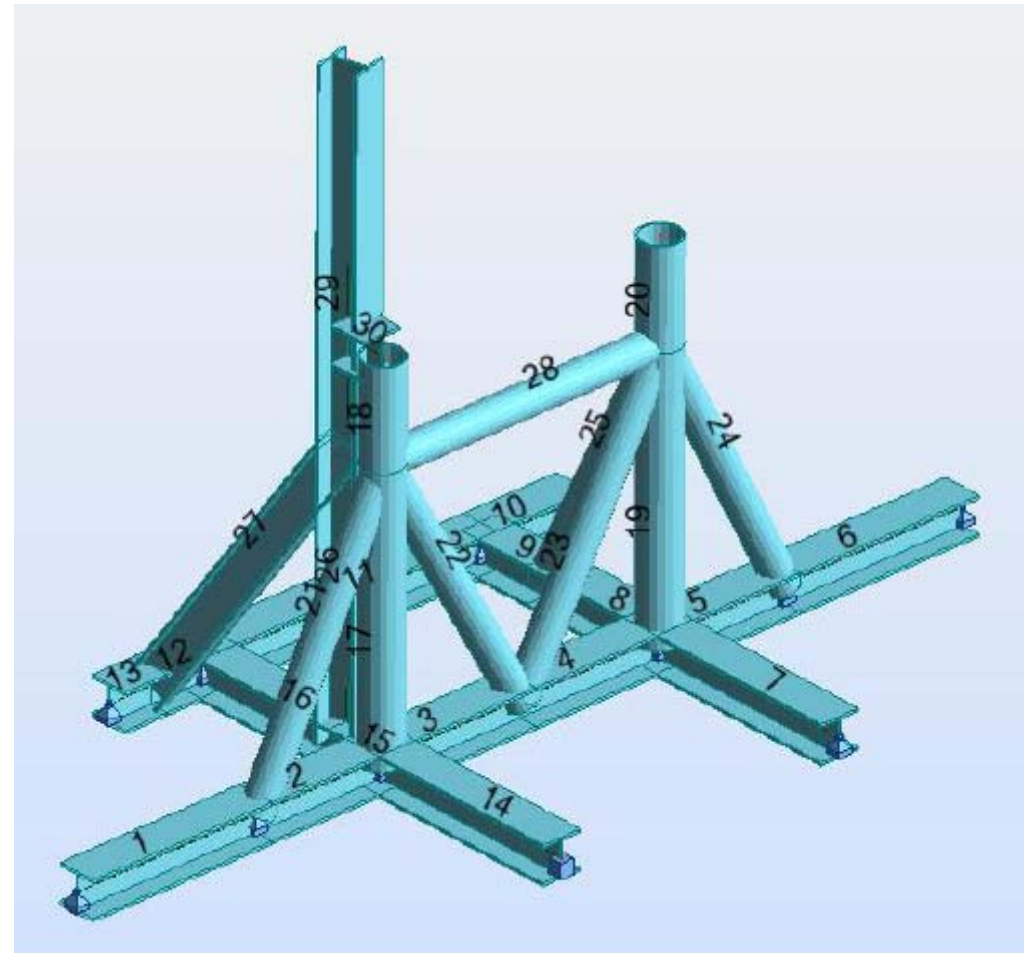
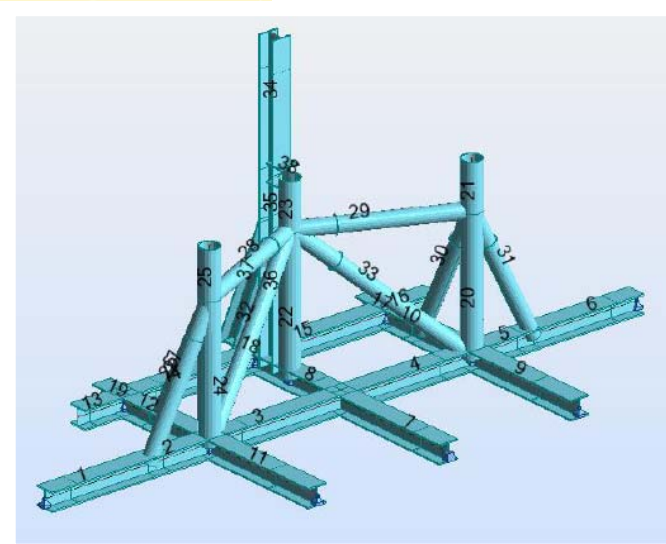
Capacity : 1091 TEU (total)
630 TEU on deck
461 TEU in hold

Lift gear: 2 cranes 400 tons each
1 crane 120 ton SWL

Class : LR +100 A1 strengthened for heavy cargoes,
suitable for regular discharge by grab.
ICE-class 1A, TCE-class 1A FS, LA, LI, *IWS, SCM,
*LMC, UMS, NAVI with the descriptive notes: PCWB1

Name : STOWAGE PLAN PRELIMINARY	Rev: B	04-08-2011	Rem.: BUOY ON TANKTOP	wender	Chk:	A3
	Drw no	C157226-06	Scale: 1: 500		sheet -	

FEM analysis



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Happy D-type

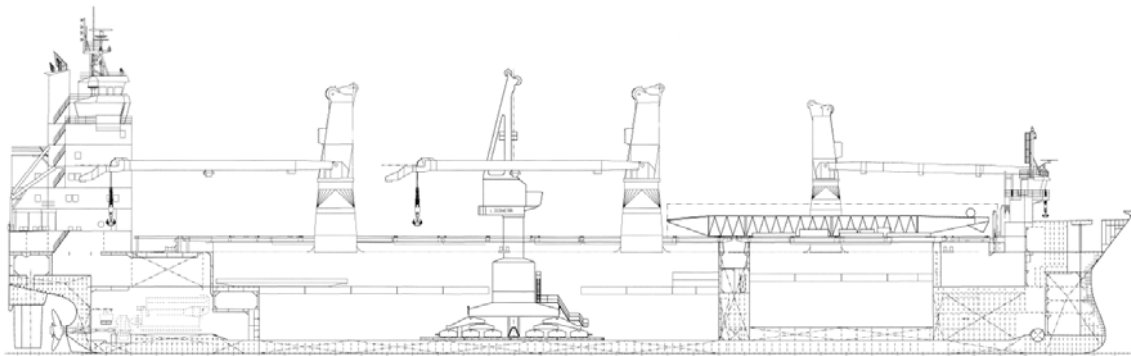
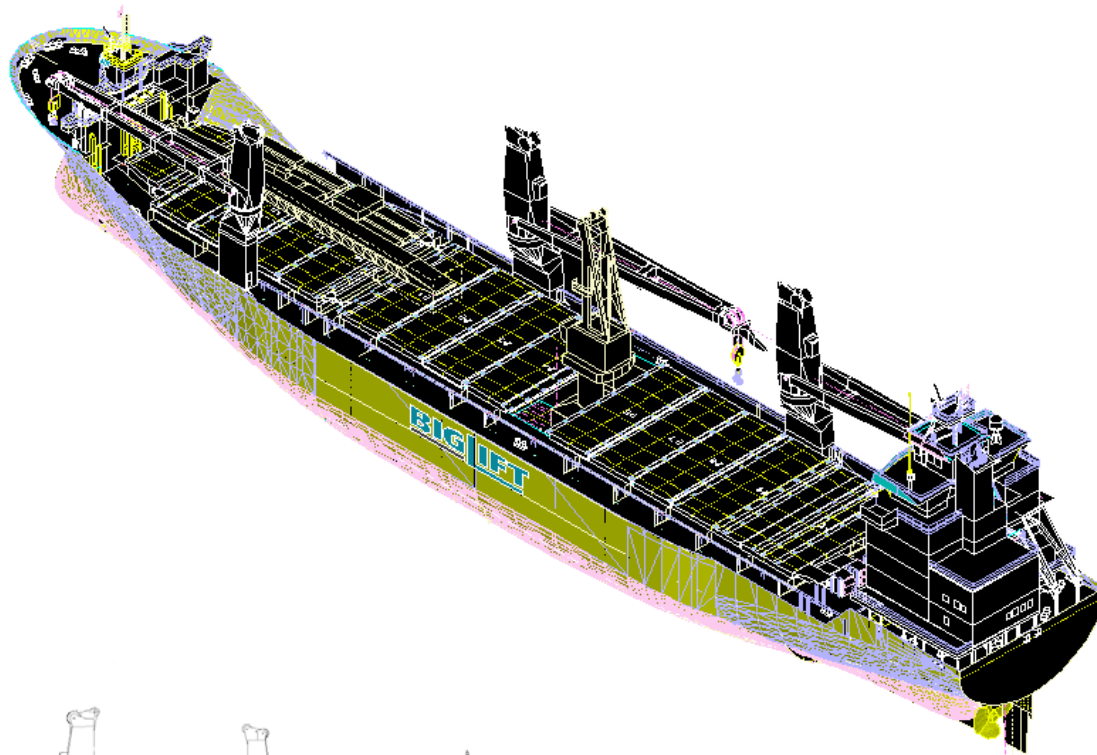
- Ships:
 - Happy Delta
 - Happy Diamond
 - Happy Dover
 - Happy Dragon
 - Happy Dynamic
- 2 x 400 mt & 1x120 mt SWL
- Loa: 157 m
- Boa: 25.6 m
- Draft: 10.3/ 7 m
- Dwt : 17.500 ton
- Speed: 17 kn
- Ice class



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Happy D-type: open-top sailing

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Happy D-type: open-top sailing

- Ships allowed to sail with hatch covers removed
- Installation of portable bilge pumps required

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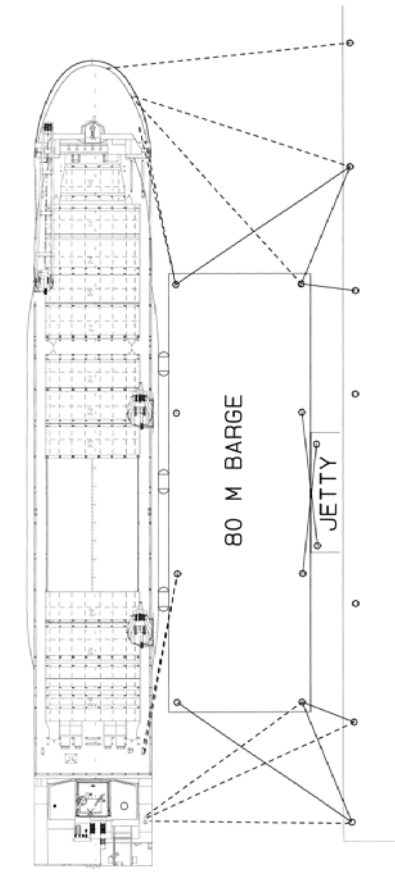
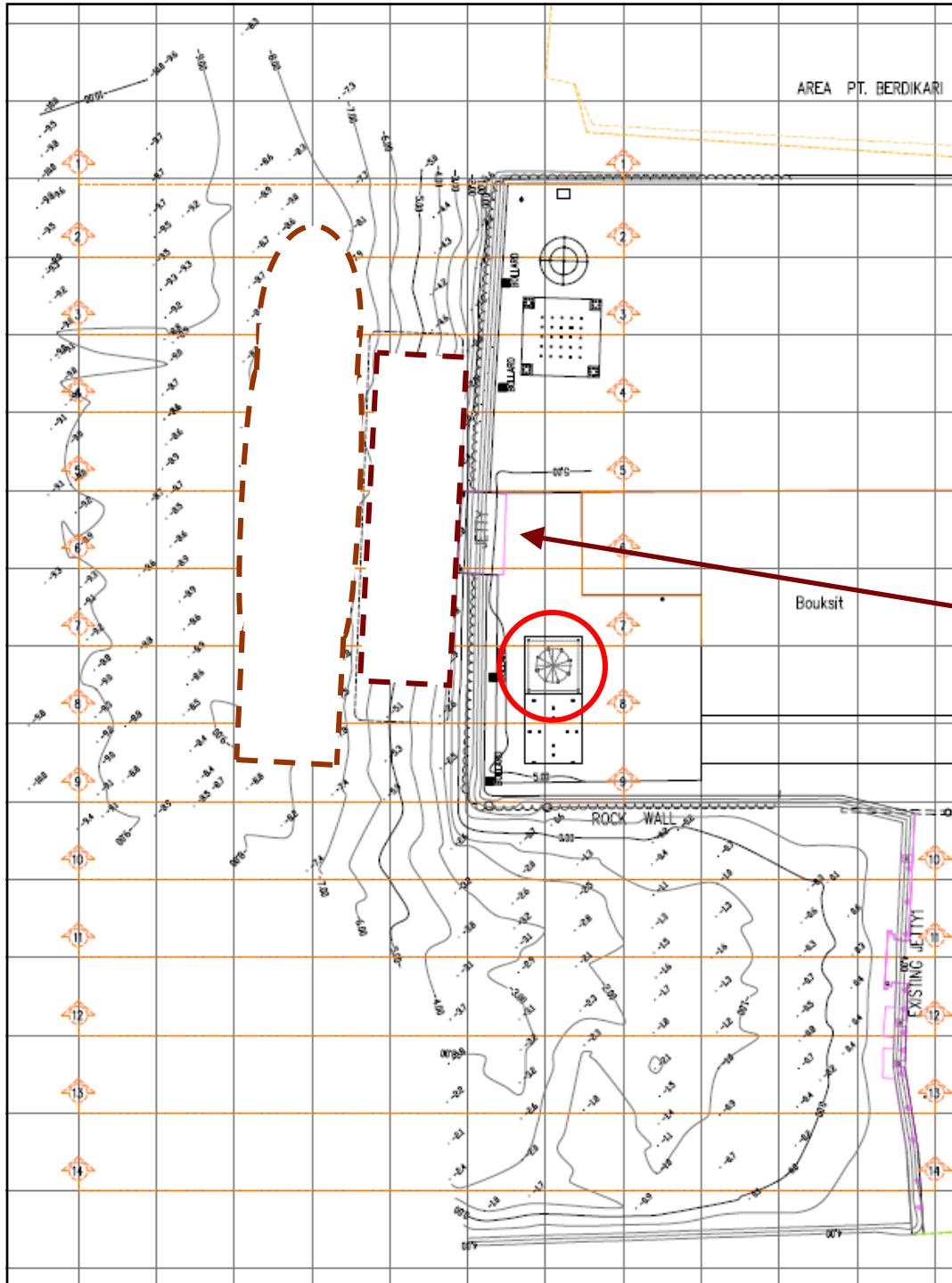
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Loading Batam (Indonesia)



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Loading Batam (Indonesia)

500 mton shackles required for lifting

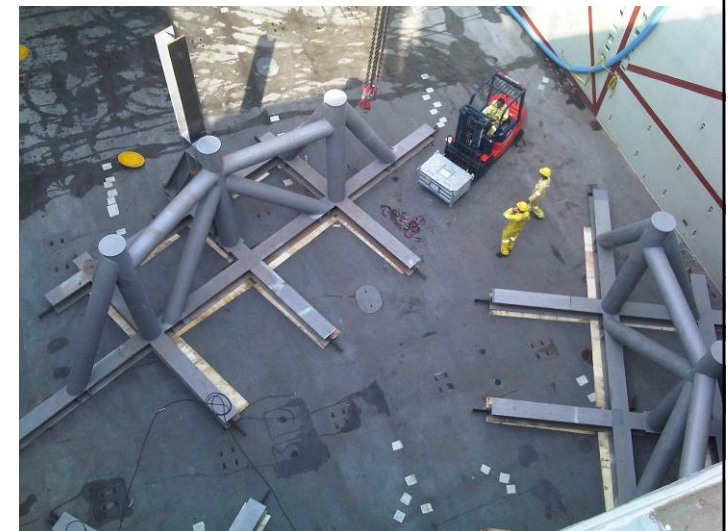
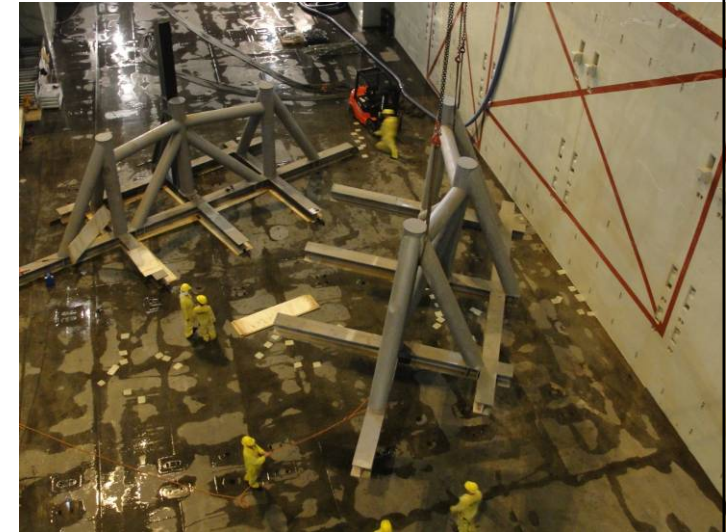
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Loading Batam (Indonesia)

Loading of 3x grillage structures

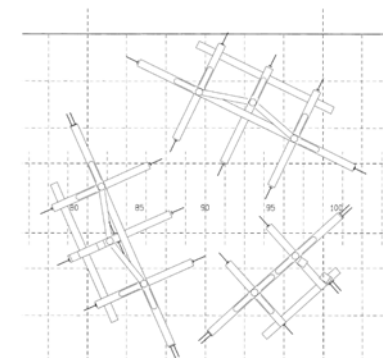
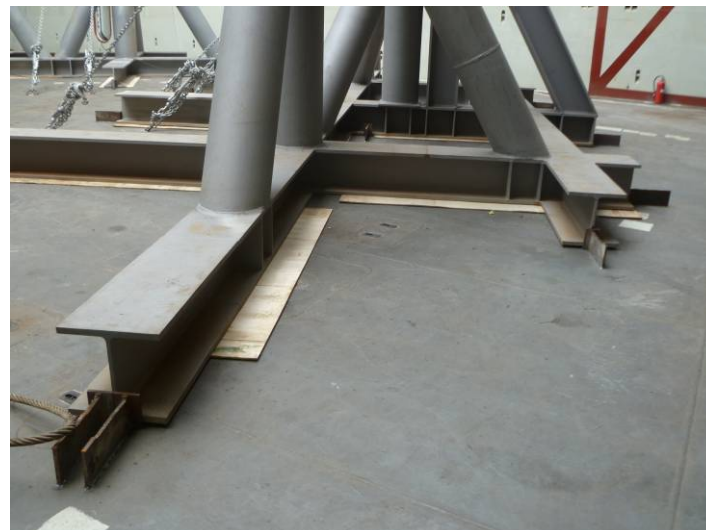


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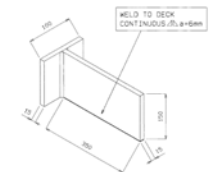
Loading Batam (Indonesia)

Seafastening of grillage

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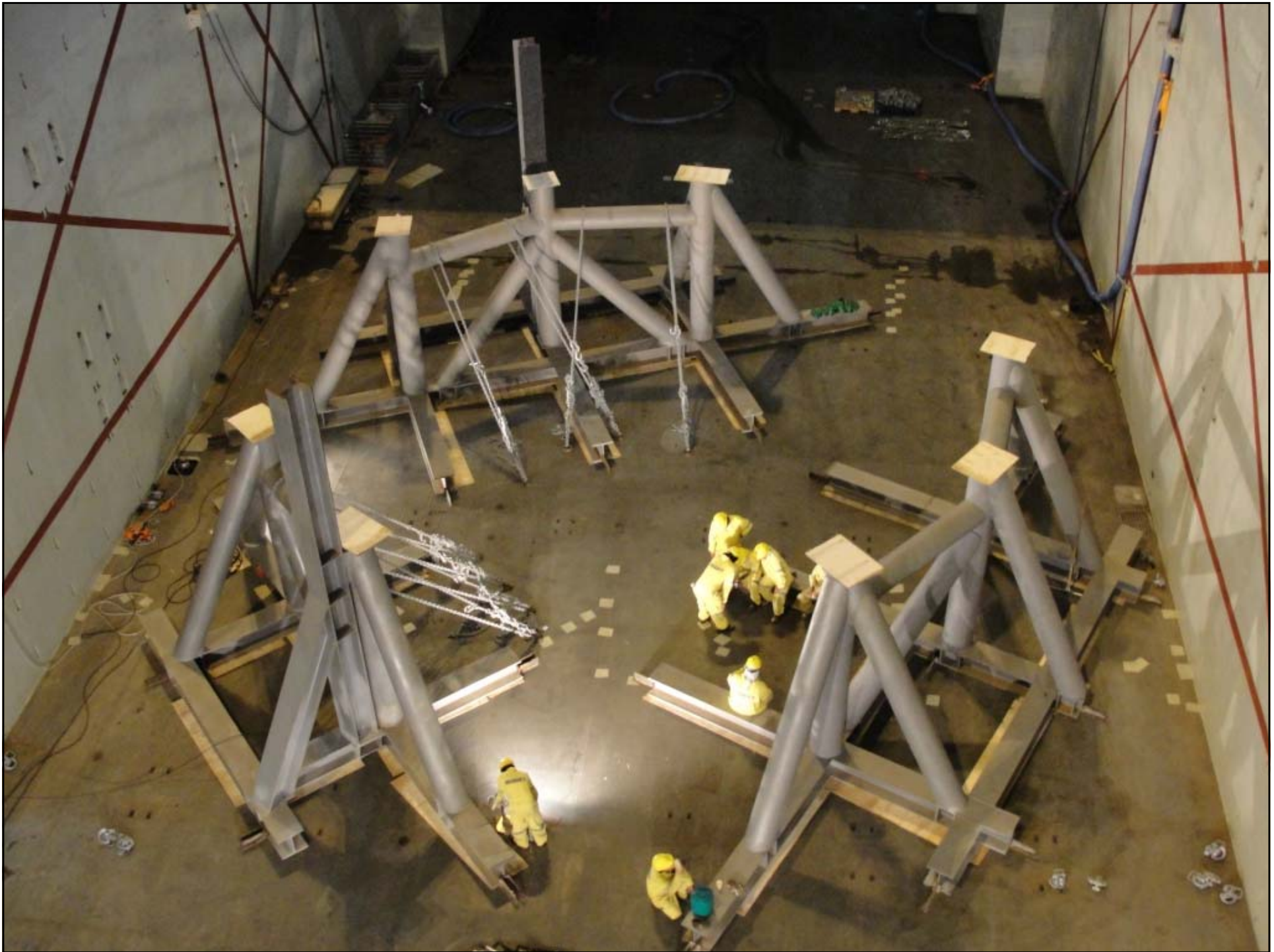


TYPICAL SHEARPLATE
SEE: SH-1-0
REQ. NUMBER = 30pcs



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Loading Batam (Indonesia)

Sheerleg PW L-1501 (Pacific Workboats)

Lifting capacity: 1500 mton at 27.9 m

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Loading Batam

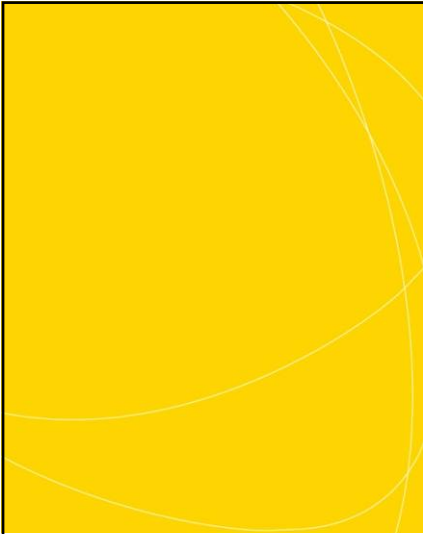
Discharging Brazil

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Loading Batam (Indonesia)

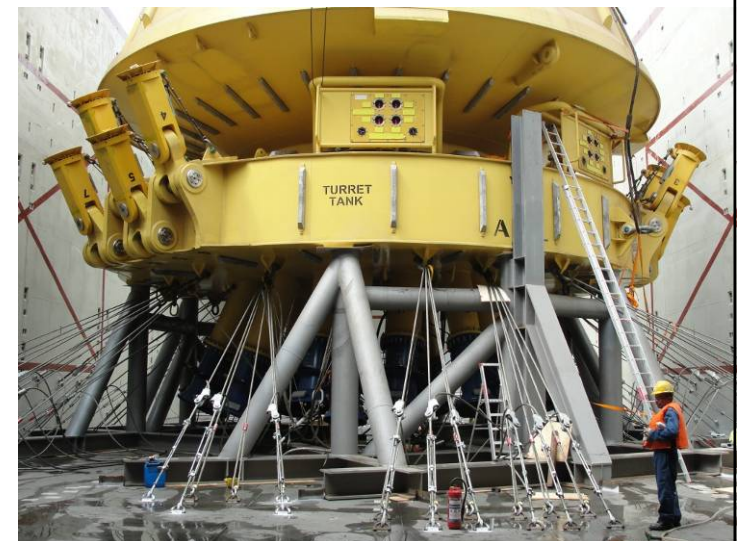
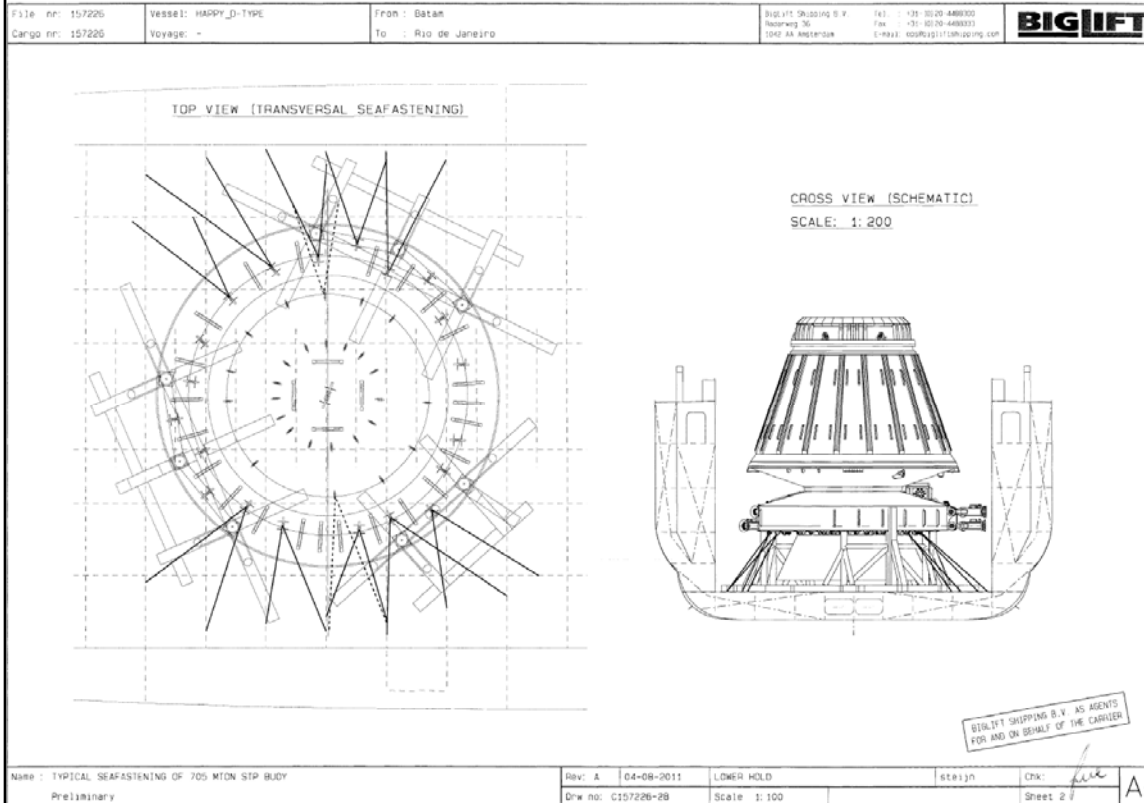
Lifting of STP buoy



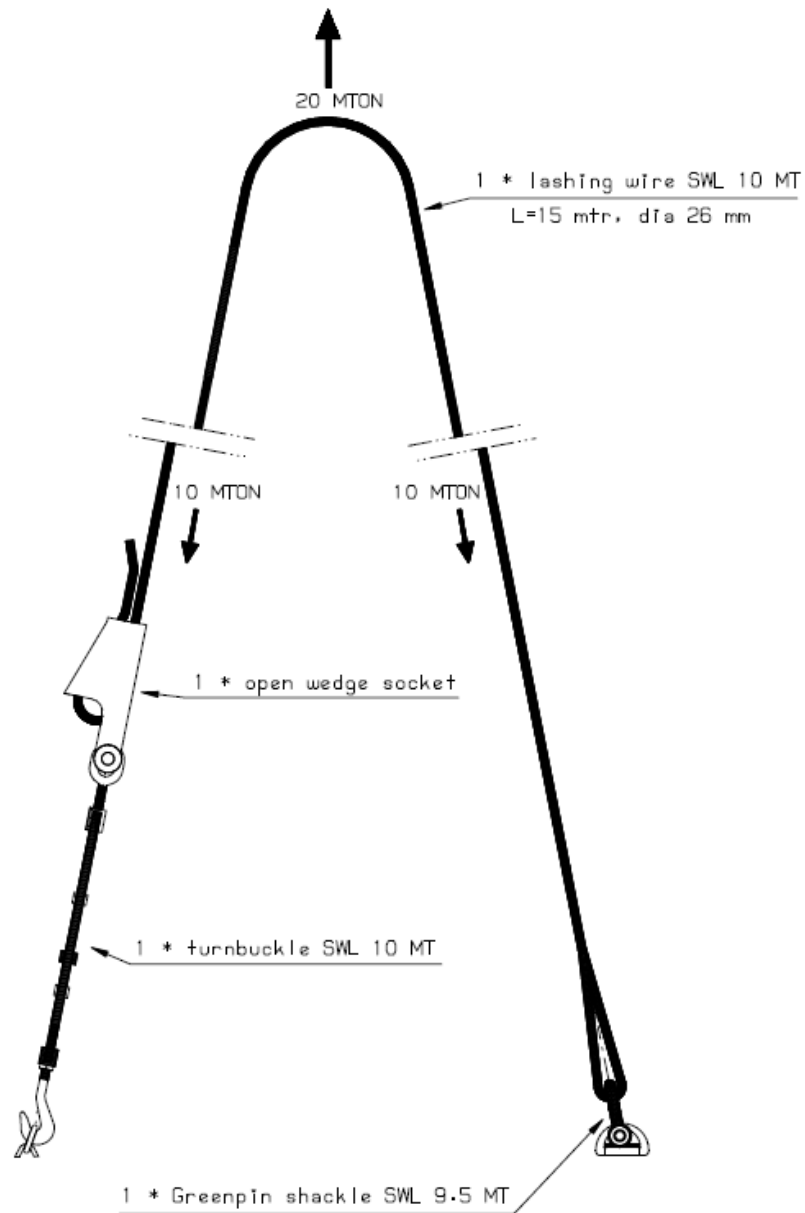
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Loading Batam (Indonesia)

Seafastening of STP buoy



Typical lashing system





Anchorage Rio de Janeiro

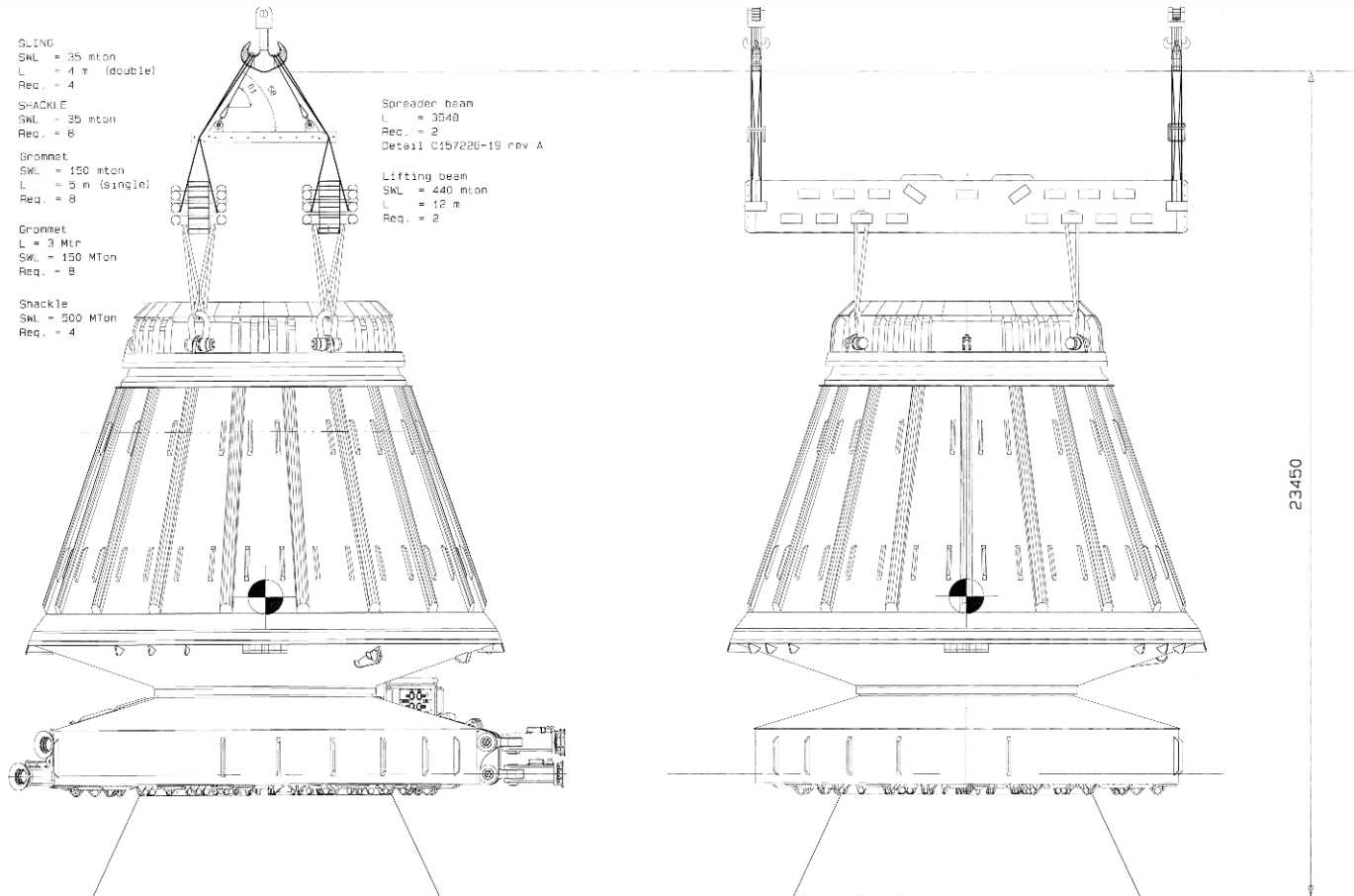
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Discharging Rio de Janeiro

Rigging arrangement for discharging STP buoy

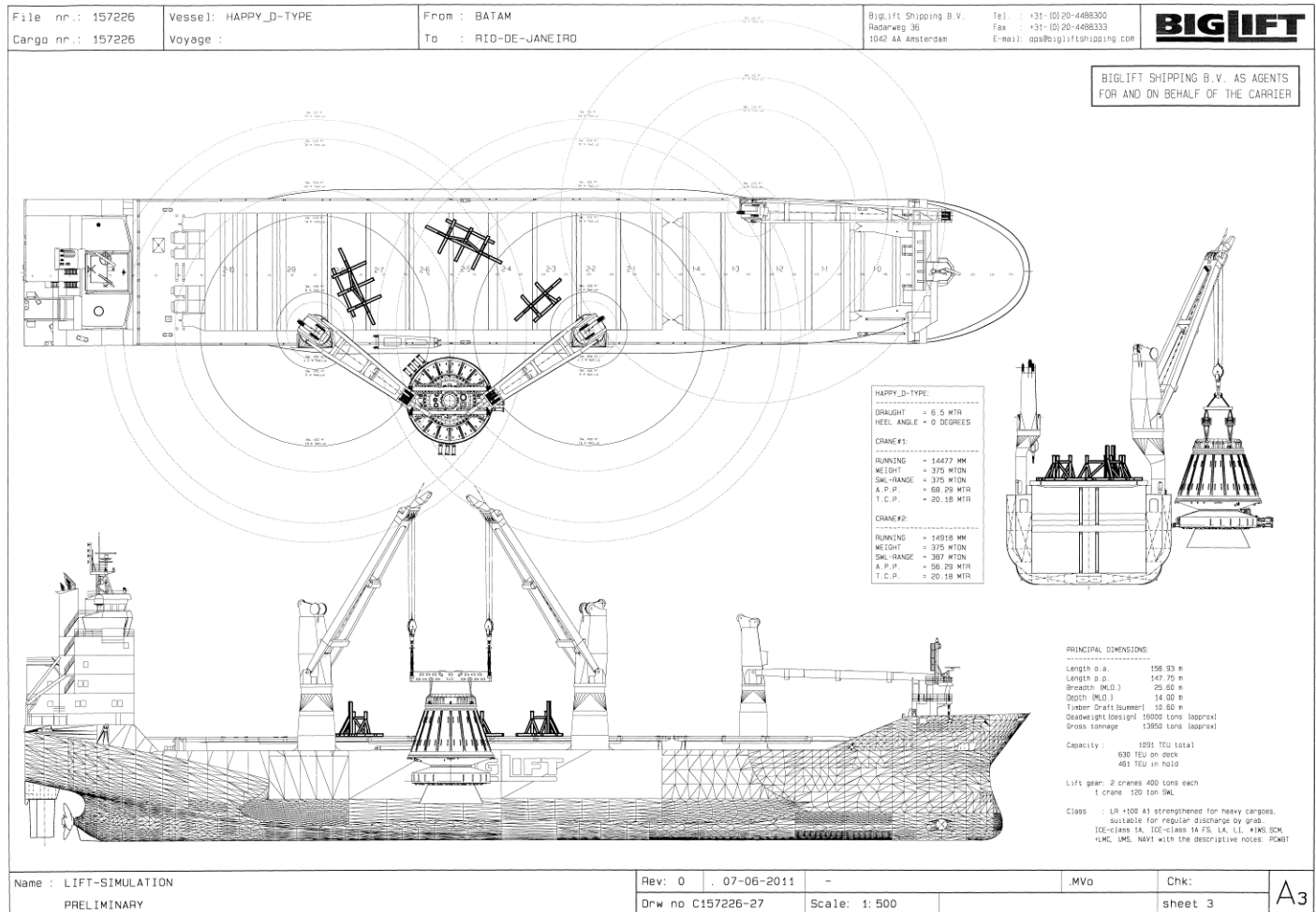


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Discharging Rio de Janeiro

Lifting simulation of discharge operation

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Discharging Rio de Janeiro

Animation of discharge operation





Thank you for your kind attention



MV Happy Dover at anchorage

Guanabara Bay, Rio de Janeiro, October 2011

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