

NAVNAUTIK'S PORTFOLIO ON ATBs



ATBs DESIGNED BY NAVNAUTIK & IN OPERATION

1. 15000 DWT COPPER CONCENTRATE BARGE (SELF UNLOADING)
2. 8000 DWT COAL OIL BARGE (SELF LOADING / UNLOADING)

CONVERSION OF TUG TO ATB

3. TWO TUGS (OCEAN GOING) CONVERTED TO ATB TUGS BY ADDING SPONSON FOR ARTICOUPLER ON FORE DECK.

PROPOSALS FOR CLIENT

- a) 8000T DWT ATB FOR AUSTRALIAN WATERS
- b) 12000T DWT ATB FOR AUSTRALIAN WATERS
- c) 8500T DWT OPEN TOP CONTAINER BARGE (ATB)
- d) 4500T DWT OPEN TOP CONTAINER BARGE (ATB)

1. 15000 DWT COPPER CONCENTRATE BARGE (SELF-UNLOADING)



CLIENT: P. T. FREEPORT INDONESIA, JAKARTA

VESSEL BUILT AT: KEPPEL SINGMARINE PTE. LTD., SINGAPORE

In 1998, a large pusher-barge fleet to be used for a big-scale LIGHTERAGE service was delivered from a Singaporean shipyard to P. T. Freeport Indonesia, Jakarta. All the vessels of this fleet, classed with ABS, were built at Keppel Singmarine Pte. Ltd., Singapore to the designs of Navnautik Pte. Ltd., Singapore. The fleet was planned to load copper ore concentrate from the mine in West Irian, Indonesia, at the port of Tembagapura, south coast of West Irian, aboard of a bulk carrier moored several miles off the shore.



The barge is a covered deck-loading barge of 15,000 DWT equipped with self-unloader system supplied by BMH Marine AB, Sweden. A combined coal/oil barge equipped with BMH self-unloader system belongs to the fleet for supply of fuel to the mine and the loading site. The pusher boats, Tembaga 3 and 4, are powered with two Caterpillar 3606, each developing 2,300 KW at 1,000 RPM, to drive Schottel Rudder propellers SRP 2020.

As the coupler systems organizing the “Fleet”, Taisei Engineering's 2-pin supporting articulate couplers of combined friction- and tooth-engagement type, ARTICOUPLER FRC-300E, were adopted with successful results, because the site of transshipment is fairly rough in the rainy season and connection at the side of the bulk carrier under the influence of waves was expected.

Principal Dimensions

Length Overall : 118.00 m

Breadth Moulded : 30.00 m

Depth Moulded : 9.60 m

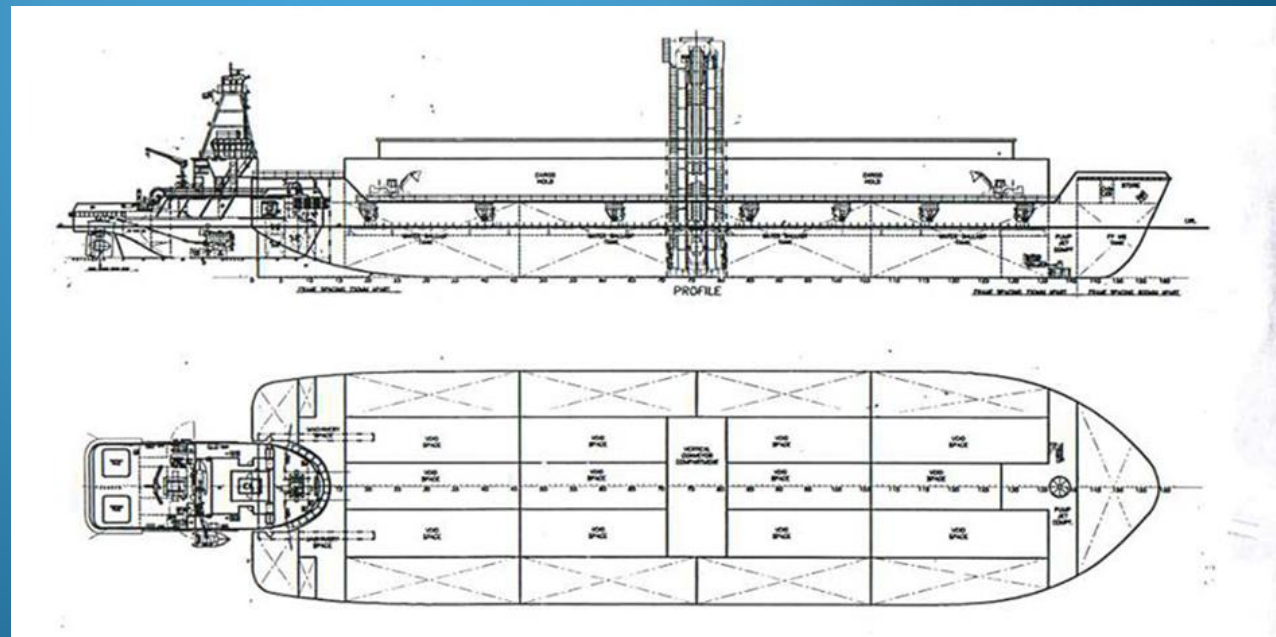
Design Draft : 6.50 m

Class Notation:

ABS + A1 BARGE

Electrical Generating Plant:

Two (2) units diesel generating sets, 350kw/440V/3Ph/60hz capacity each.



2. 8000 DWT COAL OIL BARGE (SELF LOADING / UNLOADING)

MILESTONE
PROJECT

Principal Dimensions

Length Overall : 125.00 m
Breadth moulded : 23.50 m
Depth Moulded : 7.80 m
Design Draft : 4.50 m
Coal Cargo Deadweight : 8000 Tons
Cargo Oil Capacity : 8290 cbm
Fuel Oil Capacity : 111 cbm
Fresh Water Capacity : 111 cbm
Water Ballast Capacity : 8429 cbm

Class Notation

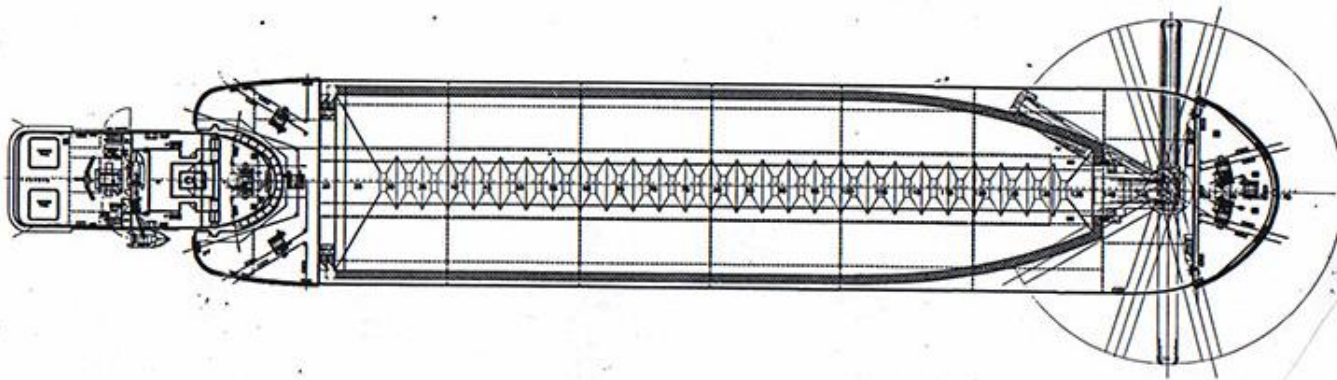
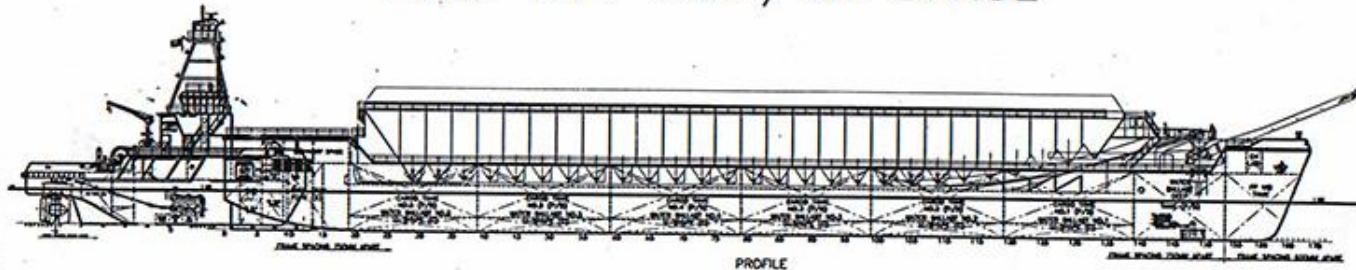
ABS + A1 FUEL OIL TANK BARGE

Electrical Generating Plant

Two (2) units diesel generating sets, 350kw/440V/3Ph/60hz capacity each.



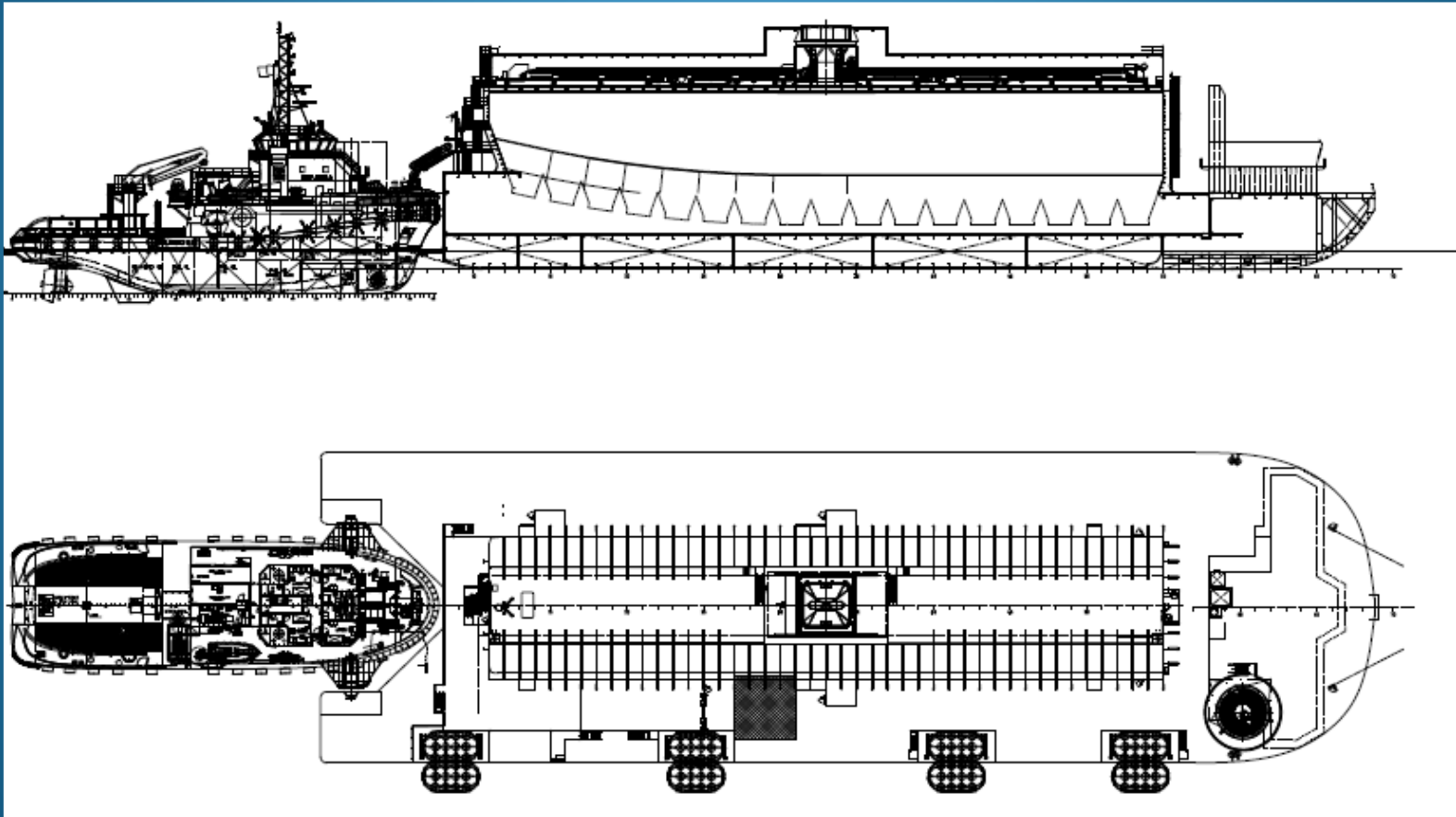
8000 DWT COAL/OIL BARGE



Others

- One (1) unit BMH self-discharging system for copper cargo. Consist of gates, horizontal conveyor system and the conveyor boom with turntable for discharging.
- One (1) unit Pump jet for barge manoeuvring fitted forward (SPJ220 T) driven by one (1) unit marine diesel engine @858kw rating running at 1700 rpm.
- Two (2) units electrical driven water ballast pump of 500 m³/hr capacity each.
- One (1) set of rack attached at aft end of barge notch for Taisei Arti-coupler system

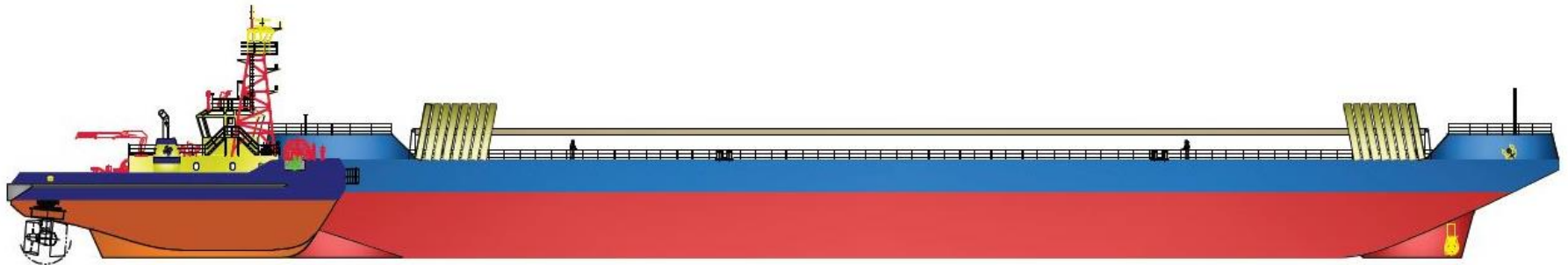
3. CONVERSION OF OCEAN GOING TUG INTO ARTICULATED TUG FOR ATB OPERATIONS



Scope of work includes design (incl stability check) and analysis (FEA) for sponson decks to house the articouple along with all necessary modifications for accommodating other equipment for Articouple system (such as HPU, accumulator unit, etc).

CLIENT PROPOSALS

a) 8000T DWT ATB FOR AUSTRALIAN WATERS



Principal Dimensions

Length, overall	85.00 M
Breadth, moulded	28.00 M
Depth, moulded	7.50 M
Design draught,	5.50 M

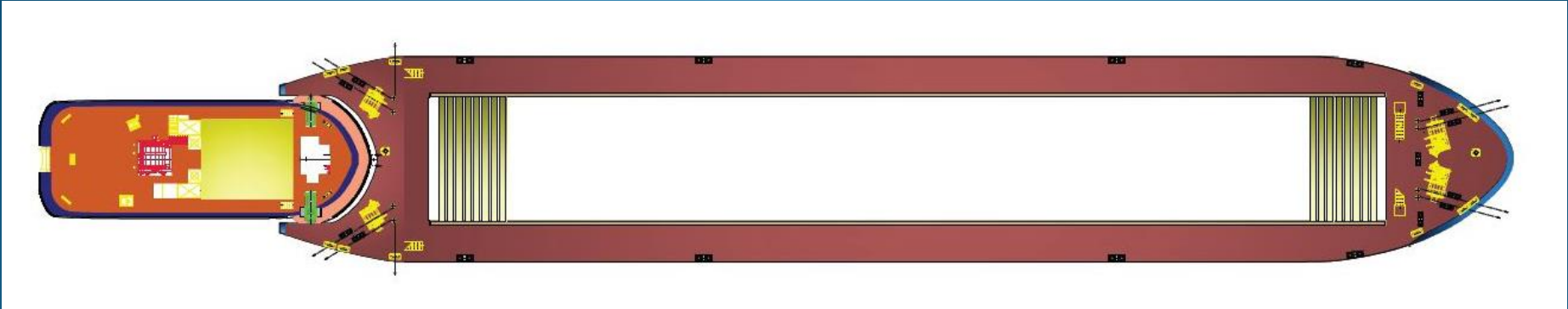
Deadweight and FO Tank Capacity

Deadweight	about	8000 tons
Fuel oil tank	about	50 m ³

Type, Use, Classification, Etc.

The proposed barge is specifically designed for carriage of bulk cargo under ATB (Anti-coupled Tug-Barge) operations in Australian coastal waters.

Classification: LRS – 1, +HULL, Barge, Tug Combined, INWATERSURVEY



Cargo Hold & Cargo Hatches

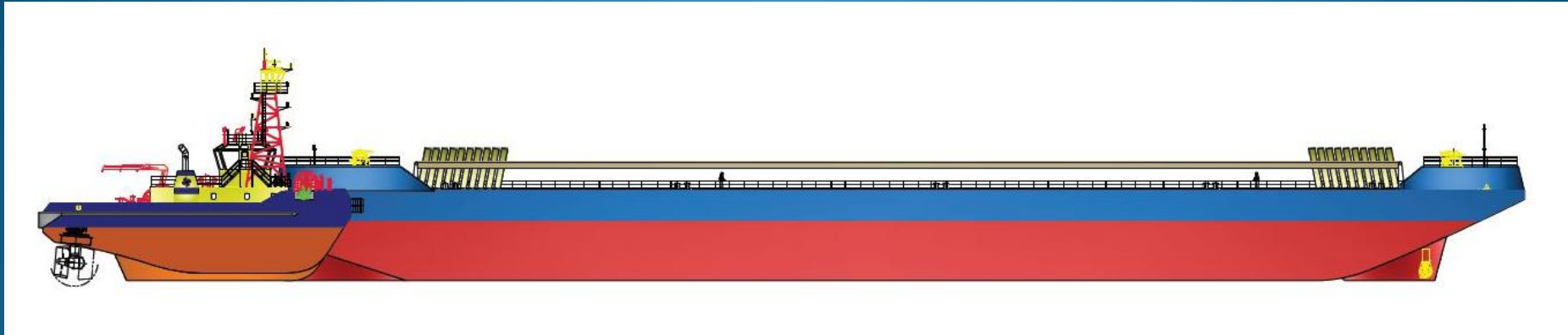
No. of cargo holds	1
Cargo hatch	48.00 M x 20.00 M
Hatch covers	Single-pull type with winches

Deck Machinery

- Windlass / mooring winch 2 sets
Hydraulic motor driven, horizontal type, with 1 gypsy wheel, 1 hawser drum and 1 warping head
6.5 T x 9 M/min (as windlass) / 8 T x 12 M/min (as mooring winch)
- Mooring winch 2 sets
Hydraulic motor driven, horizontal type, with 1 hawser drum and 1 warping head
8 T x 12 M/min
- Hydraulic pump unit 1 set
Electric motor driven, Hydraulic pump, with tank, control valves, etc.

CLIENT PROPOSAL

b) 12000T DWT ATB FOR AUSTRALIAN WATERS



Principal Dimensions

Length, overall	125.40 M
Breadth, moulded	28.00 M
Depth, moulded	9.00 M
Design draught,	6.00 M

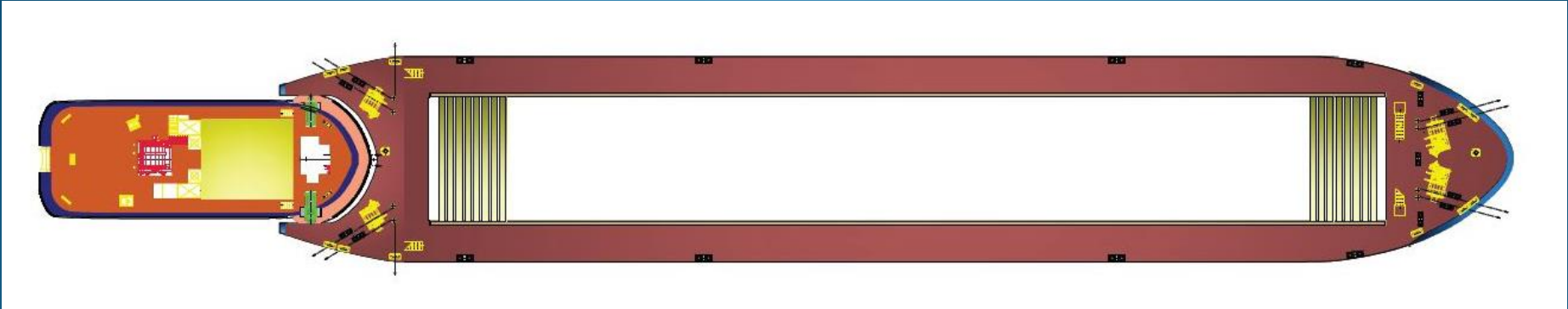
Deadweight and FO Tank Capacity

Deadweight	about 12000 tons
Fuel oil tank	about 50 m ³

Type, Use, Classification, Etc.

The proposed barge is specifically designed for carriage of bulk cargo under ATB (Arti-coupled Tug-Barge) operations in Australian coastal waters.

Classification: LRS – 1, +HULL, Barge, Tug Combined, INWATERSURVEY



Cargo Hold & Cargo Hatches

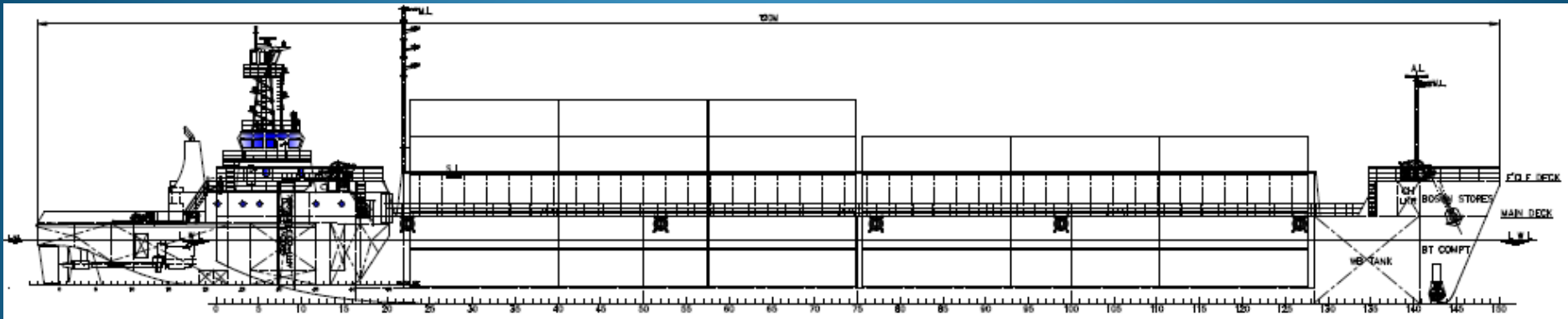
No. of cargo holds	1
Cargo hatch	80.40 M x 18.00 M
Hatch covers	Single-pull type with winches

Deck Machinery

- Windlass / mooring winch 2 sets
Hydraulic motor driven, horizontal type, with 1 gypsy wheel, 1 hawser drum and 1 warping head
8.5 T x 9 M/min (as windlass) / 10 T x 12 M/min (as mooring winch)
- Mooring winch 2 sets
Hydraulic motor driven, horizontal type, with 1 hawser drum and 1 warping head
10 T x 12 M/min
- Hydraulic pump unit 1 set
Electric motor driven, Hydraulic pump, with tank, control valves, etc.

CLIENT PROPOSAL

c) 8500T DWT OPEN TOP CONTAINER BARGE (ATB)



Principal Dimensions and Main Particulars

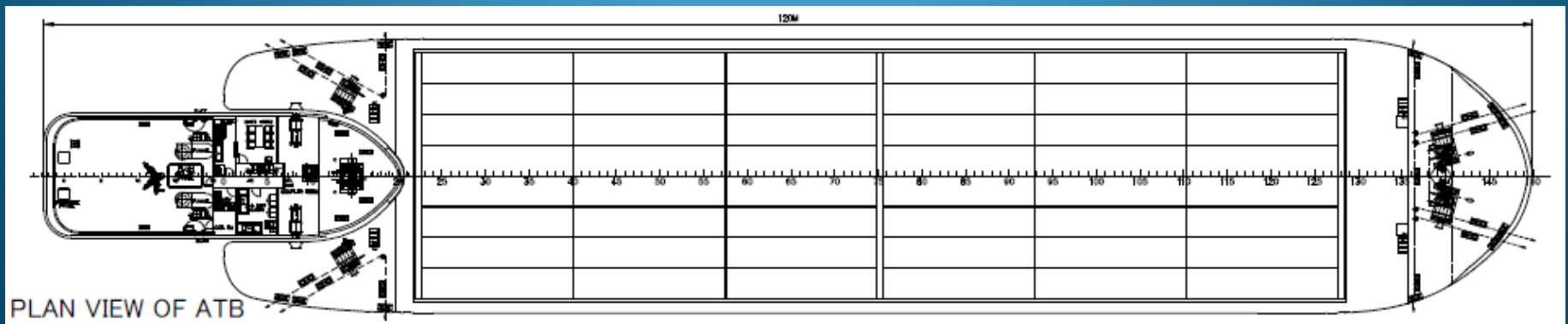
- Length Overall 105.00 m
- Breadth Moulded 22.00 m
- Depth Moulded 7.20 m
- Design Draught 5.20 m
- Container capacity 40' Hi-cube – 216 nos. (@35T / container)
20' standard – 370 nos. (@23T / container)
- Stern configuration to have suitable cutaway to suit attachment of ATB (articulated tug barge) arrangement

Classification

- RINA C + HULL, + MACH, Tug Combined

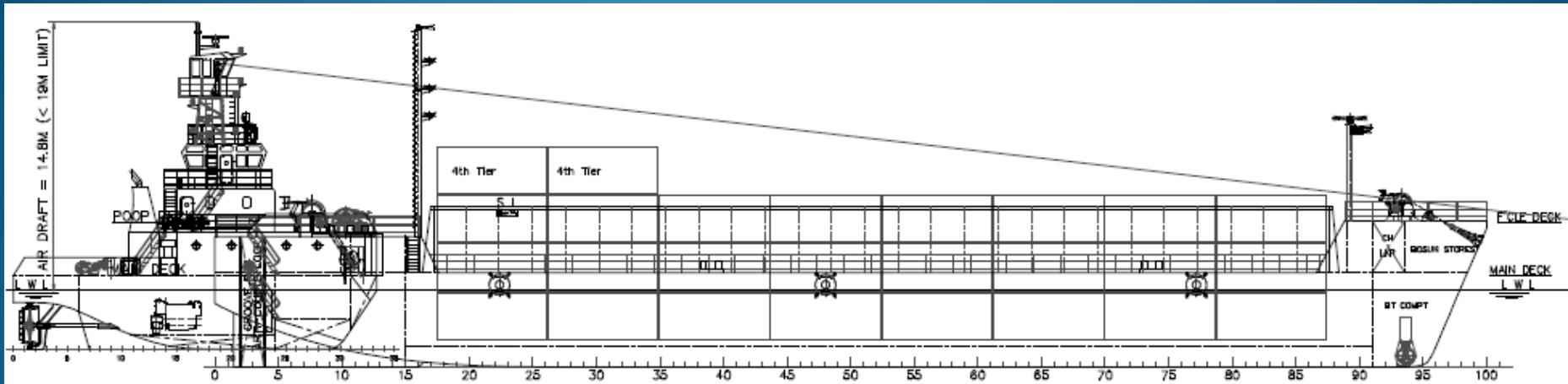
Deck Equipment & Cargo Fittings

- 2 nos. Anchor windlass each with single gypsy (for anchoring purpose), mooring drum & warping head for mooring purpose.
- Two nos. stockless bower type Anchor with suitable chain stopper
- 2 nos. Aft mooring winches as shown on GA
- Double bollards – 21 nos.
- Mooring chocks – 12 nos.
- Mooring ropes and anchor chains to suit required EN.
- Container stowage - Side / bridge support stowage with base cone dovetail locking system.
- Open top (hatch less) container hold.



CLIENT PROPOSAL

d) 4500T DWT OPEN TOP CONTAINER BARGE (ATB)



Principal Dimensions and Main Particulars (Approx.)

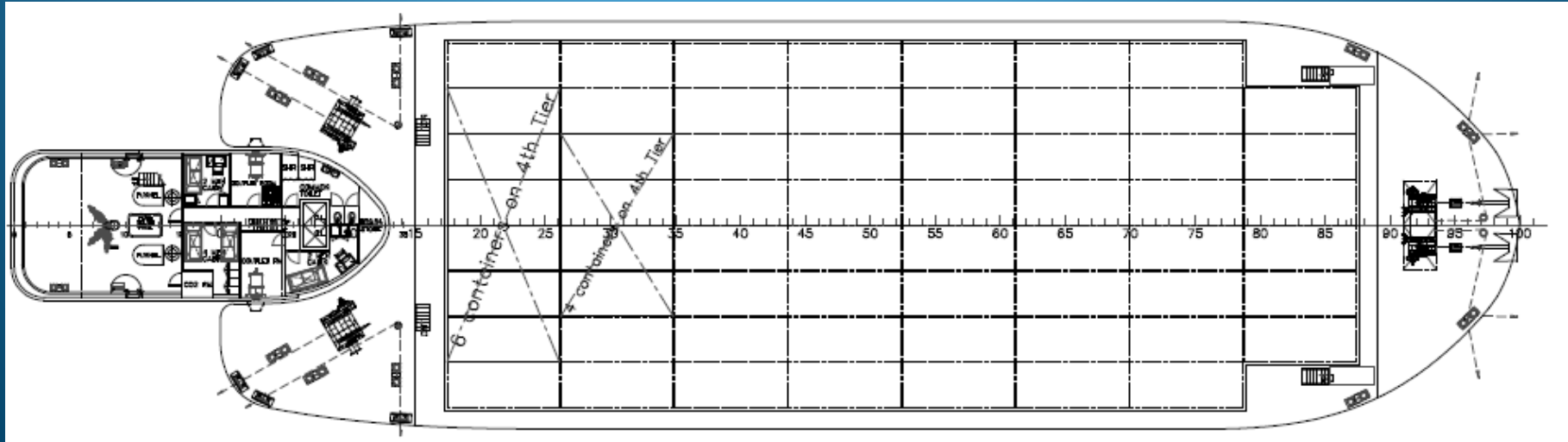
- Length Overall 70.00 m
- Breadth Moulded 22.00 m
- Depth Moulded 5.20 m
- Design Draught 4.20 m
- Container capacity 20' standard – 196 nos. (@23T / container)
- Stern configuration to have suitable cutaway to suit attachment of ATB (articulated tug barge) arrangement

Classification

- RINA C + HULL, + MACH, Barge, Tug Combined

Deck Equipment & Cargo Fittings

- 2 nos. Anchor windlass each with single gypsy (for anchoring purpose), mooring drum & warping head for mooring purpose.
- Two nos. stockless bower type Anchor with suitable chain stopper
- 2 nos. Aft mooring winches as shown on GA
- Double bollards – 10 nos.
- Mooring chocks – 6 nos.
- Mooring ropes and anchor chains to suit required EN.
- Container stowage - Side / bridge support stowage with base cone dovetail locking system.
- Open top (hatch less) container hold



THANK YOU VERY MUCH
FOR YOUR TIME!

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