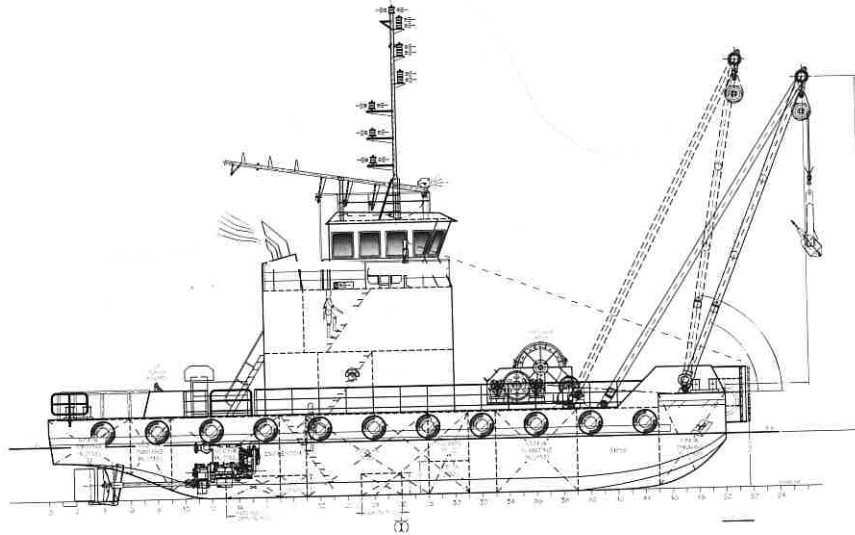


**Re: Specification for one (1) unit of 25M Anchor Handling Work Boat**

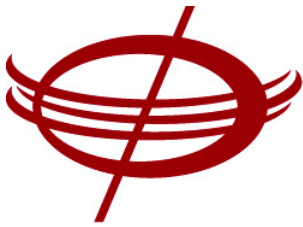


**1) PRINCIPAL SPECIFICATION : -**

L.O.A.	:	25.000M
BREADTH MLD.	:	10.000M
DEPTH MLD.	:	3.000M
DESIGNED DRAFT	:	2.000M
COMPLEMENT	:	8 CREWS
DESIGN SPEED	:	8 KNOTS (Approx.)
F.O. CAPACITY	:	61.70M <sup>3</sup> (Approx.)
F.W. CAPACITY	:	34.20M <sup>3</sup> (Approx.)
F.W. Bunkering	:	88.80M <sup>3</sup> (Approx.)
F.W. Trimming	:	128.00M <sup>3</sup> (Approx.) closed loop system

**2) PROPULSION SYSTEMS : -**

Main Engine & Gearbox	:	Two (2) units x Mitsubishi S6R2-T2MPTK Marine Diesel Engine (Japan) with 720PS @ 1400RPM (NK Class Type Approved Certificate, IMO Tier 2) and NICO MGN90BL Marine Gearbox with Ratio 3.06:1.
Generator	:	One (1) unit x Cummins 6BTA5.9-GM100 Diesel Engine (China) c/w Stamford Marine Alternator <b>90KW</b> , 415V, 3PH, 1500 RPM.
Generator	:	One (1) unit x Cummins 4BTA3.9-GM47 Diesel Engine (China) c/w Stamford Marine Alternator <b>40KW</b> , 415V, 3PH, 1500 RPM.
Propeller & Kort Nozzle	:	Two (2) units of Solid 4 Blades Manganese Bronze Propeller (Dia. 1200mm) completed with Mild Steel Kort Nozzle.



**3) STERN TUBES & SHAFTING : -**

- Water Lubrication Stern Tube with BTC Cutlass Bearing and Bronze Stuffing Box
- Two (2) Length 5-1/2" Dia. Stainless Steel (AISI 316) Tail Shaft.

**4) STEERING GEAR SYSTEMS : -**

- One (1) unit 2.0-tons Electro-Hydraulic Steering Gear with joystick.

**5) DECK MACHINERY & EQUIPMENT : -**

Deck Winch : One (1) unit of 50-tons Deck Winch with 150M wire capacity c/w Towing Winch power pack driven by one unit of diesel engine with 100KW.

An "A" frame Structure (30t SWL) at main deck forward position c/w 30t SWL rigging hardware such as 150m length of 38mm steel wire with soft eye, 30t sheave block, shackles and all other rigging hardware. The A-frame fabrication shall be complete with 3<sup>rd</sup> party NDT and 125% SWL load test report.

Anchor : Two (2) units of 480-Kg Anchor will be supplied and installed

Tugger Winch : Two (2) units of 3-tons Tugger Winch with 150M wire capacity c/w 2 x individual power pack. Tugger winch will function as anchor windlass and complied with class requirement.

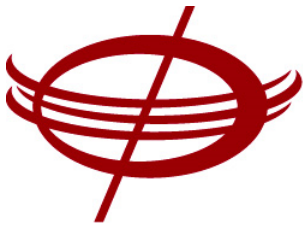
Others : Necessary quantity of Bollards, hatch covers, man-holes, rollers, fairleads to provide. Stern Bollard to be 20t.

**6) PUMPS, PLUMBING & PIPING : -**

- All pumps and pipes are to be arranged according to Good Marine Practice and to meet Classification Requirement.

**Pumps**

- GS / Fire Pump : One (1) unit Euroflo Self-priming Centrifugal Pump of 25m<sup>3</sup>/hr at 20m total head.
- Bilge Pump : One (1) unit Euroflo Self-priming Centrifugal Pump of 25m<sup>3</sup>/hr at 20m total head.



- Fuel Transfer Pump : One (1) unit Koshin Gear Pump of 5.7m<sup>3</sup>/hr at 20m total head.
- FW Cargo Pump : Two (2) units Euroflo Self-priming Centrifugal Pump of 25m<sup>3</sup>/hr at 20m total head
- FW Trimming Pump : One (1) unit Euroflo Self-priming Centrifugal Pump of 25m<sup>3</sup>/hr at 20m total head
- FW Pressure Set : One (1) unit Pedrollo Ejector Pump of 3m<sup>3</sup>/hr at 30m head.
- SW Pressure Set : One (1) unit Pedrollo Ejector Pump of 3m<sup>3</sup>/hr at 30m head.
- Sewage Pump : One (1) unit Euroflo Self-priming Centrifugal Pump of 15m<sup>3</sup>/hr at 15m total head.
- Portable Fire Pump : One (1) unit Self-priming Portable Pump of 25m<sup>3</sup>/hr at 25m total head
- F.O. Hand Pump : One (1) unit 1-1/2" Semi-rotary Hand Pump
- L.O. Hand Pump : One (1) unit 1" Semi-rotary Hand Pump

**Piping**

- Bilge and Ballast Piping - Hot Dip Galvanized Steel Pipe SCH 80
- Fuel Oil Piping - Seamless Steel Pipe SCH 40
- Lube Oil Piping - Seamless Steel Pipe SCH 40
- Portable Water Piping - Seamless Steel Pipe SCH 80
- Sea & Fresh Water Piping - Hot Dip Galvanized Steel Pipe SCH 80
- Other piping systems - Hydraulic system for Deck & Tugger Winches, Drains & Scuppers, Sewage & Plumbing, Filling, Vent & Sounding.
- Pipe Marking and colour code to provide

**7) ELECTRICAL : -**

- All Electrical Cables and accessories (switch boxes, bulbs & etc.) will be of marine type. Running of Electrical Cable to be installed in proper trunking.

**8) WHEEL HOUSE EQUIPMENT : -**

- Steering and control console fitted with instrument panel, main engine cable control (Morse Type), switches for navigation lights, searchlights, floodlights, horn buttons, intercom & PA systems, rudder indicator, and clear view screen wiper.



- One (1) Clear View Screen
- One (1) Clinometer
- One (1) Marine Clock
- One (1) Barometer
- One (1) Ship Set Shaft Tachometer
- One (1) Binoculars 7 x 50
- One (1) set 40-pcs International Code Flags
- One (1) Public Address System
- One (1) Marine Air Horn
- One (1) Search Light 1000W with full 360 deg. Horizontal Rotation
- One (1) High Steering Chair
- One (1) Aldis Lamp
- Black out curtain on wheelhouse.

**9) RADIO & NAVIGATION EQUIPMENT : -**

- One (1) Table Type Magnetic Compass (DAIKO T-150B or equal)
- One (1) SSB Radio (ICOM IC-M710 or equal)
- One (1) VHF-FM Transceivers (ICOM IC-M220 or equal)
- One (1) 24NM Radar (FURUNO-1715 or equal)
- One (1) Echo Sounder (FURUNO FCV-688 or equal)
- One (1) GPS Navigator (FURUNO GP-39 or equal)
- One (1) AIS (SAMYUNG 50N or equal)
- One (1) EPIRB (MCMURDO E-8 or equal)

**10) SHIP COMMUNICATION : -**

- One (1) set Electric Engine Telegraph
- One (1) set PA System with Horn Speaker
- Four (4) units of Wall Mounted Type Intercom (Locates in Wheelhouse, Mess Room, Engine Room & Steering Gear Room)

**11) BRIDGE NAVIGATION WATCH ALARM SYSTEM : -**

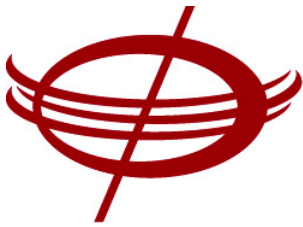
- One (1) set Wheelhouse Watch Alarm Main Unit
- Two (2) sets Flush Type Alarm Panel

**12) NAVIGATION LIGHTS / FIRE FIGHTING EQUIPMENT & LIFE SAVING APPLIANCES : -**

- All in accordance with Classification Society's Specification and requirement of Singapore / Flag of Convenience Government Authority.

**13) LIFE SAVING EQUIPMENT : -**

- Life Saving Equipment will be in accordance the requirement of Singapore Authority for an International Ocean Going Tug with the complement of eight (8) persons, as



- (a) Life-raft : Two (2) x 10-men inflatable life-raft with full emergency pack in rigid fiberglass container conforming to SOLAS 74 Convention and its latest amendment. The life-rafts are to be stowed on the deckhouse top c/w hinge type cradles for quick sideway launching
- (b) Lifebuoy : Eight (8) Lifebuoys will be supplied as follows:-
  - Two (2) with no attachment
  - Two (2) with lifelines
  - Four (4) with self-igniting light
- (c) Lifejacket : Twelve (12) approved type lifejackets c/w whistle to be supplied and stowed one (1) each adjacent to each berth and two (2) in the wheelhouse and two (2) in the engine room
- (d) Pyrotechnics : Will be provided as follows:
  - One (1) Line throwing apparatus
  - Twelve (12) Parachute Distress Rockets
- (e) Retro Reflective : Life Saving Appliances will be fitted with reflective taps.

**14) FIRE FIGHTING EQUIPMENT : -**

- Fire Fighting Equipment will be provided generally in accordance with the classification and Singapore Authority regulations as follows:

(a) Fire Main

Fire main and four (4) 1-1/2" Bronze Hydrants will be installed with one (1) on the raised deck, one (1) on the main deck and two (2) in engine room. 15m canvas fire hose c/w brass coupling and nozzle will be supplied and stowed alongside each hydrant in a protective box.

(b) Fireman's Outfit

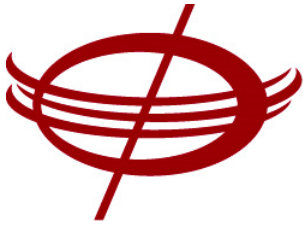
A complete set of fireman's outfit will be provided and consisting of the followings

- i. One (1) aluminum protective clothing
- ii. One (1) breathing apparatus and safety line
- iii. One (1) fireman's axe
- iv. One (1) safety lamp of portable battery type
- v. One (1) set of gloves and boots
- vi. One (1) spare Oxygen Tank Cylinder

(c) Portable Fire-Extinguisher

Fire extinguisher as required by the classification/Singapore Authority will be supplied and installed as follows (as guidance, and subject to approval)

	Position	Qty	Type
i.	Wheelhouse	1	9-kgs dry powder
ii.	Mess Room	2	9-kgs dry powder
iii.	Main Deck accommodation	1	9-kgs dry powder
iv.	Engine room	1	45-Litres foam (On wheel)
		2	9-kgs dry powder



- (d) Fire Bucket  
Three (3) galvanized steel buckets painted in red and marked "FIRE" will be supplied and stowed in convenient location.

**15) ENGINE ROOM : -**

- One (1) 0.25 m<sup>3</sup>/hr Oily Water Separator with 15 ppm Bilge Alarm
- One (1) Engine Room Axial Flow Fan x 24" (supply)
- One (1) Engine Room Axial Flow Fan x 24" (exhaust)
- One (1) Engine Telegraph
- One (1) Tool Bench c/w bench vice
- One (1) 3HP General Air- Compressor with 120L receiver tank

**16) GALLEY & MESS ROOM : -**

Galley Area

- Galley corner fitted with Stainless Steel Sink and Drawers and Shelving below, Dandling Cupboards.
- One (1) Two-Door Stainless Steel Refrigerator
- One (1) unit 8" blower fan
- Three (3) spare power point

Mess Room Area

- One (1) Table with L shape sofa bench sitter
- One (1) Shelving/Console for TV
- Three (3) spare power point

**17) WASHPLACE & TOILET : -**

Three (3) Public Wash-Place & Toilet located in the GA Plan as follows:

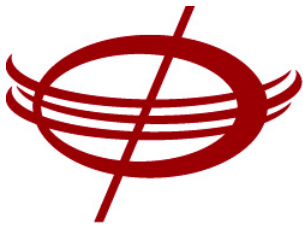
- One (1) Standard Type W.C. (Close-Coupled Water Closet / Ceramic Type)
- One (1) Wash Basin with Fresh Water supplies c/w water tap
- One (1) Shower point with shower handle
- One (1) Wall Mirror
- One (1) unit 8" blower fan

**18) ACCOMMODATION – One (1) x Captain / Master Cabin : -**

- Officer Deck – One (1) Built-in Berth c/w berth light
- Two (2) spare power point (220v)
- One (1) Wardrobe / Cabinet
- One (1) Table with drawers and one (1) chair
- One (1) Stainless steel basin with hot and cold fresh water supplies c/w tap

**19) ACCOMMODATION – One (1) x Chief Engineer & One (1) x Chief Officer Cabin: -**

- Officer Deck – One (1) Built-in Berth c/w berth light
- Two (2) spare power point (220v)
- One (1) Wardrobe / Cabinet
- One (1) Table with drawers and one (1) chair
- One (1) Stainless steel basin with hot and cold fresh water supplies c/w tap



**20) ACCOMMODATION – One (1) x 2<sup>nd</sup> Chief Engineer Cabin: -**

- Main Deck – One (1) Built-in Berth c/w berth light
- Two (2) spare power point (220v)
- One (1) Wardrobe / Cabinet
- One (1) Table with drawers and one (1) chair
- One (1) Stainless steel basin with hot and cold fresh water supplies c/w tap

**21) ACCOMMODATION – Crew Cabin : -**

Two (2) 2-man cabin, situated on the main deck are to be fitted similarly as follows:-

- One (1) Built-in-2 tier Berth c/w berth light
- Two (2) spare power point (220v)
- Two (2) Wardrobe / Cabinet
- One (1) Table with drawers and one (1) chair
- One (1) Stainless steel basin with hot and cold fresh water supplies c/w tap

**22) PARTITION WALL, WALL LINING & CEILING : -**

- All bulkhead linings, paneling and ceilings shall be of approved type hard core arrangement - (low flame spread). Ceiling and sidewall of the wheelhouse to be properly installed with thermal insulation.
- All doorways shall be of approved type fire retarded doors & door for the engine room to be with self closing arrangement.

**23) FENDERS : -**

- 2 sets of vertical D fender at bow pusher knee. Pipe Fender & Tires all round at appropriate places.

**24) PAINTING, HULL FINISH & CATHODIC PROTECTION : -**

- All external surface of bottom and side plating of the steel hull plate to be sweep-blasted/power brushed before applying three (3) coats of marine paints (Hempel Brand) of good ship building practice.
- Void tank to be painted and paint scheme of fresh water potable tanks to be approved.
- Zinc Anodes of suitable numbers (about 35 pcs) are to be of Bolt and Nut type installed to the HULL.





**25) MATERIAL AND SCANTLING : -**

Keel Plate	:	12.00 mm
Bottom Plate	:	10.00 mm
Side Plate	:	10.00 mm
Main Deck Plate	:	9.00 mm
Bulkheads Plate	:	8.00 / 9.00 mm
Bulwark Plate	:	8.00 mm
Superstructure	:	6.00 mm

**26) MAST : -**

- Collapsible

**27) AIR-CONDITIONING : -**

- Eight (8) units Wall Mounted Split Unit Air-Conditioner
  - a) Wheelhouse – 1 x 24,000 BTU
  - b) Mess Room – 1 x 12,000 BTU
  - c) Crew Cabins – 6 x 9,000 BTU

**28) CLASSIFICATION : -**

- Class NKK (**Near Coastal**)
- Buyer is requiring to apply for the necessary exemption from port authority.  
eg: Mast Height, Navigation Light, MLC and etc..

**29) CERTIFICATES : -**

- Builder's Certificate
- Provisional Certificate of Classification
- Tonnage Certificate (Non convention)
- Interim Load Line Certificate
- Interim Cargo Ship Safety Equipment Certificate
- Interim Cargo Ship Safety Construction Certificate
- Interim Cargo Ship Safety Radiotelephony Certificate
- Statement of Fact - Oil Pollution Prevention Equipment

**30) EXCLUSION : -**

- Licence Registration shall be borne by the Buyer.

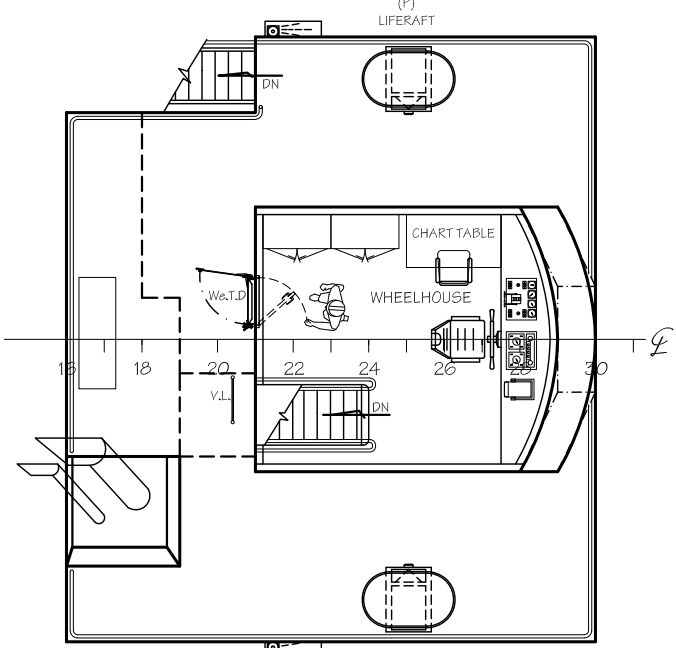
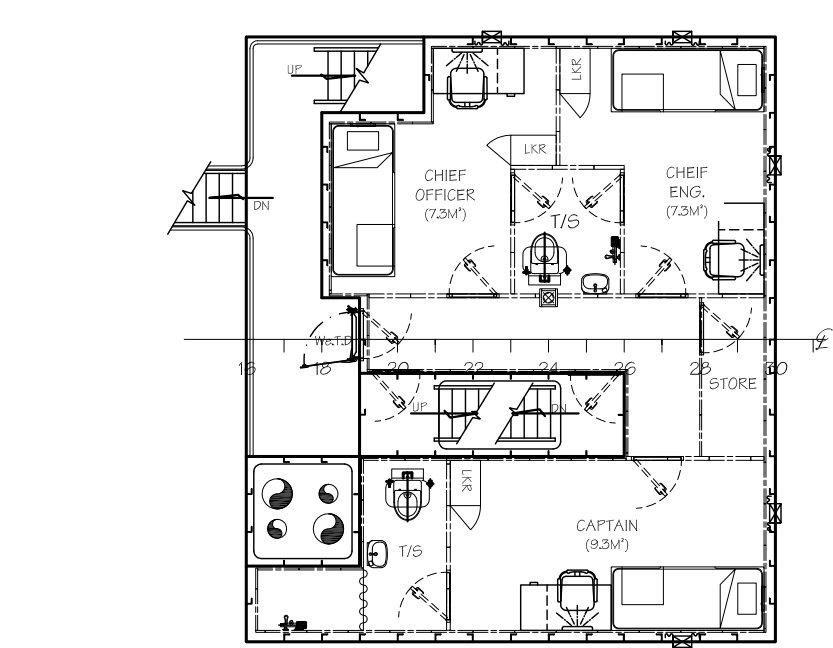
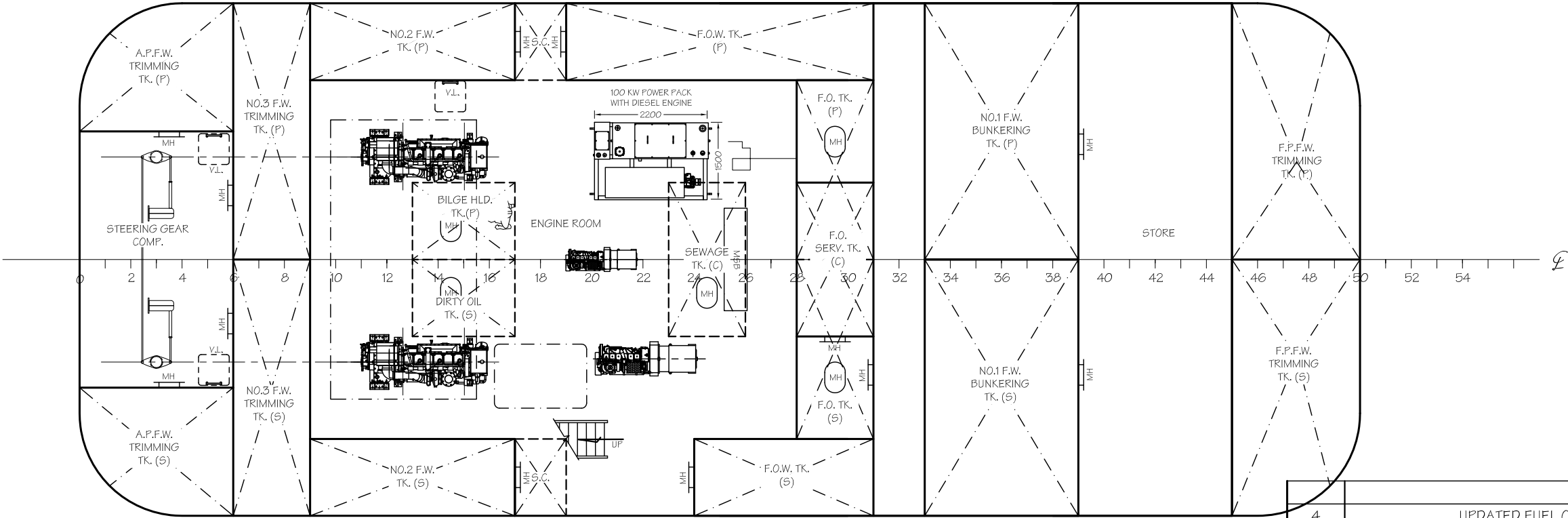
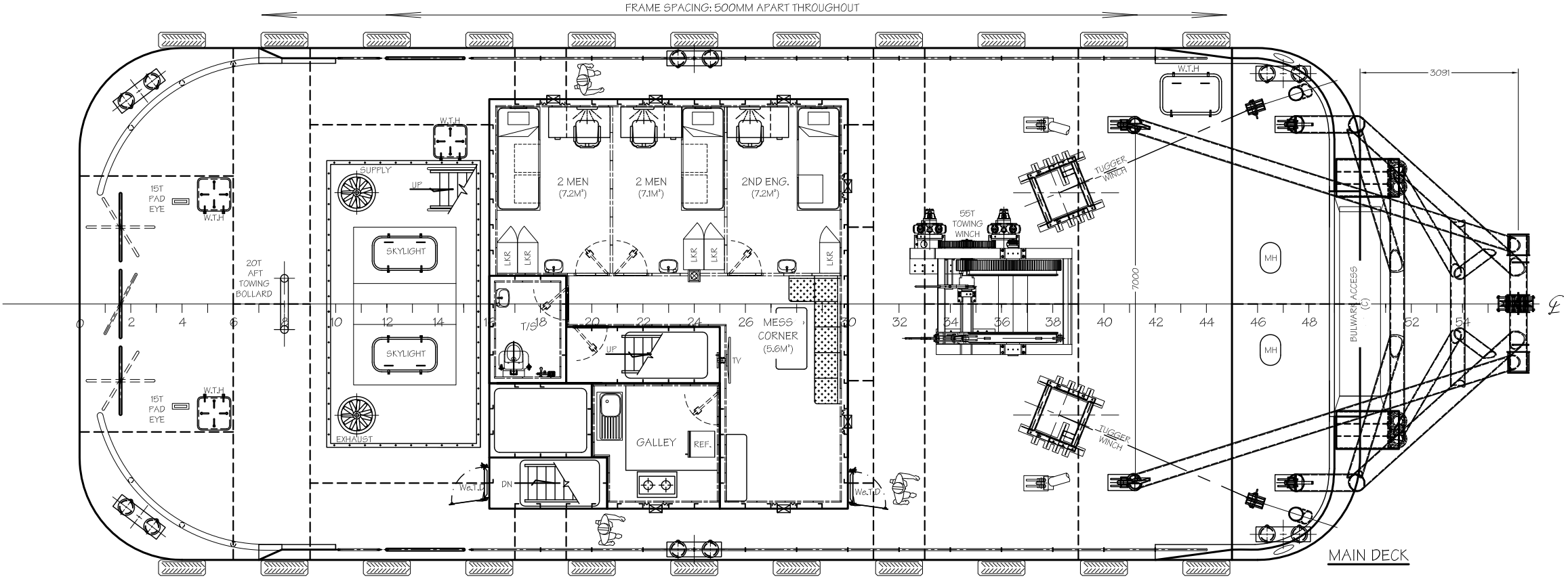
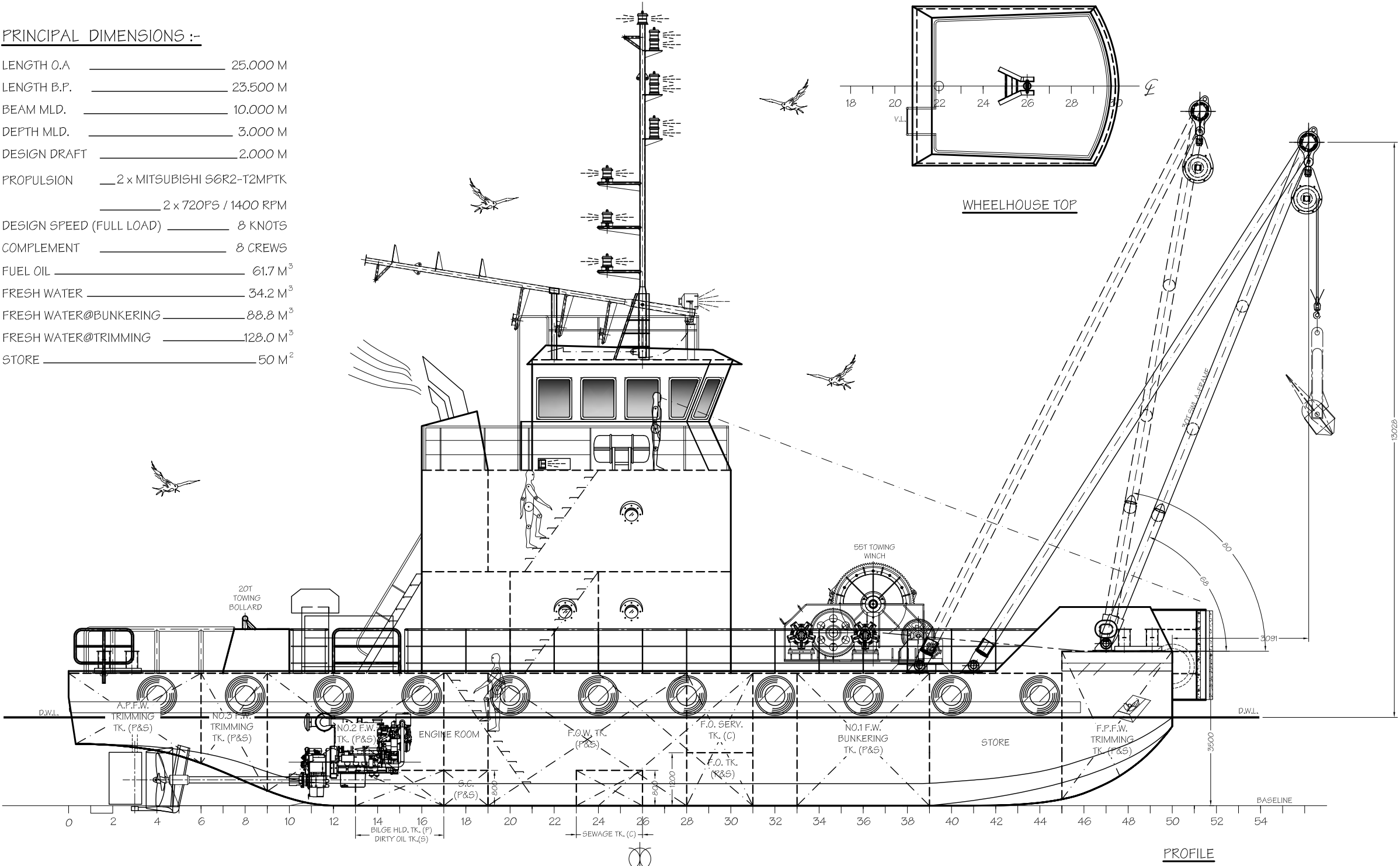
Particulars believed to be correct but not guaranteed. All figures given are approximate only.  
Owner reserves the right to amend specification without further notice.

For any enquiry, please drop us a email at [marketing@amsbach.com.sg](mailto:marketing@amsbach.com.sg).



PRINCIPAL DIMENSIONS :-

LENGTH O.A	25,000 M
LENGTH B.P.	23,500 M
BEAM MLD.	10,000 M
DEPTH MLD.	3,000 M
DESIGN DRAFT	2,000 M
PROPULSION	2 x MITSUBISHI 56R2-T2MPTK
	2 x 720PS / 1400 RPM
DESIGN SPEED (FULL LOAD)	8 KNOTS
COMPLEMENT	8 CREWS
FUEL OIL	61.7 M³
FRESH WATER	34.2 M³
FRESH WATER@BUNKERING	88.8 M³
FRESH WATER@TRIMMING	128.0 M³
STORE	50 M²



4	UPDATED FUEL OIL VOLUME	JONG	19.11.20
3	UPDATED WINCH ARRANGEMENT & HANDRAIL	JONG	03.11.20
M	SWAP D.O. & BILGE HLD. TANK	KONG	03.09.20
2	ISSUED FOR CLASS APPROVAL	JONG	22.06.20
L	UPDATED ACCOMMODATION ARRANGEMENT	JONG	15.05.20
1	ISSUED FOR CLASS APPROVAL	ELIZ	19.11.19
K	UPDATED MH LOCATION & FUNNEL	ELIZ	18.11.19
J	UPDATED AS PER OWNER COMMENTS	ELIZ	29.10.19
I	REMOVED TRIMMING TKS BELOW STORE, AMENDED MAST	KONG	23.10.19
REV.	DESCRIPTION	BY	DATE

PROJECT: <u>25M ANCHOR HANDLING WORKBOAT</u>			
CLIENT:		HULL/PROJECT NO : 89	SCALE: 1:100
DRAWN BY		10 JUN 19	DRAWING NO : NA84-G1
CHECKED BY		10 JUN 19	REV. 4
TITLE: GENERAL ARRANGEMENT			