SPECIFICATION FOR

330’X 90’X21’DECK CARGO BARGE

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REFERENCE ONLY

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SECTION 1 - GENERAL

1.1 Intent & Definition

This specification together with the drawings is to describe the construction of an unmanned cargo barge suitably equipped for carry deck cargo for unrestricted services.

1.2 General Description

The vessel is to be all welded structure with three (3) skegs.
The hull is to be divided by nine (9) transverse watertight bulkheads and two (2) longitudinal watertight bulkheads into twenty-nine (29) compartments.

1.3 Principal Particulars

Length overall	330′-0″ （100.65m）
Bean moulded	90′-0″ (27.45m)
Depth moulded	21′-0″ (6.41m)
Deck Loading	15.0 T/M2

1.4 Classification

The vessel is designed suitable for registration as a deck cargo barge and constructed in accordance with the latest rules and regulations of American Bureau of Shipping (ABS, hereinafter referred to as Class) for Unrestricted Services and to their special survey to hull for Class for Unmanned Deck Cargo Barge, with scantlings reviewed and approved for ballasting in all tanks by ABS. In addition .if required by ABS approved drawings.

Notation Symbol: ABS A1+ Barge.

1.5 Certification & Registration

The following Original certificates should be supplied to the Owner in duplicate before the delivery of the vessel in Shanghai for the Buyer's registration purposes. Should original and the duplicated copies not available, certified true copy is not acceptable:

1) Builder Certificate;
2) Class Certificate;
3) Safety Construction Certificate;
4) Tonnage Certificate;
5) Loadline Certificate;
6) Stability Booklet (2sets).

1.6 Welding

Except where specified otherwise, electric welding shall be employed in the construction of the vessel. All electrodes used shall be of type approved by the classification society. Automatic welding method to be used as far as possible throughout construction where possible. Structure

should be pre-fabricated in assemblies and sub-assemblies to give the, maximum possible amount of down hand welding. Welding schedules to meet classification requirement/standard.

1.7 Materials & Workmanship

All material and workmanship are of the good quality .All steel plates, section, full forging and castings are to meet ABS Classification.

1.8 Inspection

Throughout the construction period and at anytime prior to the delivery, the classifications Surveys and Owner's representatives are to be given free access, within normal working hours, to the builder's yard for supervision and inspection.

1.9 Test

Prior to the delivery, the hull and other fittings are to be thoroughly tested to be satisfaction of the classification's attending surveyor.

1.10 Stability

A lightship measurement will be conducted which will ascertain the lightship weight and the vertical centre of gravity at lightship condition, is to be carried out by the Builder's with the presence of the classification surveyor. Based on these results, a stability report is to be prepared by Consultant.

1.11 Delivery

Delivery of the vessel is to be taken afloat at a mutually agreed site after completion.

1.12 List of Drawings

On completion, Two (2) sets of the following〝As-Built〞drawings in prints as approved by the classification are to be supplied, if necessary:

i). General Arrangement;
ii). Construction Drawing;
iii). Skeg Details;
iv). Welding Schedule;
v). Stability booklet;
vi). Draft Marks;

SECTION 2 - STRUCTURE

2.1 General

The steel hull and deck erection are of all welded construction. Longitudinal framing system is used. The deck scantlings are to be designed to suit 15T/M^2 loading.

2.2 Plating

Deck	14.0MM
Bottom	14.0MM
Side	12.0MM
Longitudinal BHD	8.0MM
Transverse BHD	9.0MM

2.3 Longitudinal

Deck longitudinal	L150x90x12
Bottom longitudinal	L150x90x9
Side longitudinal	L125x75x9
Long. BHD longitudinal	L125x75x7
Transv. BHD stiff.	L125x75x7

2.4 Transverse Webs

Deck transverse	600x10+100FLG
Deck girder	600x9+100FLG
Bottom transverse	500x9+100FLG
Bottom girder	500x9+100FLG
Side transverse	600x10+100FLG
Long. BHD transverse	500x9+100FLG
Transv. BHD vertical web	500x9+100FLG
Transv. BHD horizontal web	500x9+100FLG

2.5 Stanchions

Vertical	H300x300x84.5Kg/M
Diagonals	FL150x150x15/FL200x200x16

SECTION 3 – Deck Machinery & Equipment

3.1 General

All deck machinery and equipment are supplied by Seller and installed to meet Classification's requirements.

3.2 Deck Fittings

Mooring Bollards

Eight (8) mooring bollards of 12′ N.B. Heavy Duty Pipe are fitted on main deck as shown on the GENERAL ARRANGEMENT PLAN.

Fender/Lugs

Suitable numbers of used tires to with 1.5M diameter. The numbers are shown on drawing. Suitable

no. of small lugs of 15.8mm c/w doublers 15.8mm for lashing go portable tyre fenders welded to deck are to be provided along the sides of the vessel at approximately 3.6m apart.

Towing Brackets

Four (4) 80SWL Smite towing brackets are fitted on main deck Fwd & Aft (P&S).

Anchor winch

One (1) diesel-driven anchor winch of approximately 10 tonnes capacity, the drum shall be capable of stowing 200m x 41mm dia. galvanized wire rope. Anchor - One (1) 2100kg Stockless Bower Anchor.

Winch house

Winch house with windows to be provided.

Anchor Wire Rope

200m x 41mm dia. Anchor galvanized wire rope with dia. 32mm x 3m stud link chain to be supplied and installed.

Chain Stopper-One (1) unit chain stopper to suit the chain size to be fitted.

Manhole

One (1) manhole is to be provided for each tank and void compartments, size of manhole to be 600mm x 400mm clear opening and the center tank manhole have sunk manhole cover. Studs and nuts to be 316 stainless steel.

Navigation Lights

A complete set of navigation lights are to be provided as follows:

*stern light *Bow light (p&s)

Sideboards

the1.8M high door at the front of the sideboard.

1).Sideboard:

L:	87.84m×25.01m×4.27m
Plate	8mm
Longitudinal	L100x75x7/L125x75x9
Stays	H200X200X49.9Kg/M

SECTION 4 – PAINTING & CATHODIC PROTECTION

4.1 Painting

All steel material of hull and all steel materials of sideboard are to be sand blasted.

All part of steel materials are to be cleaned to as a high standard as possible in order to remove all the dust prior to painting with marine primer. All steel surfaces are to be free from grease and free from

moisture before priming coats are applied. All coats are to thoroughly dry before further coats are applied on top.

4.2 CATHODIC PROTECTION

Fifty (50) zinc anodes(15kg/pc) are to be fitted to protect the external hull below the waterline against corrosion.