BASIC DESIGN		180'X70'X14 DECK CARGO /BALLAST TANK BARGE	OWNER:		
			CLASS:	ABS	
DESIGNED		SPECIFICATION	HULL No.		
CHECKED			DWG No.		
APPROVED			PAGE	REV.	SCALE
CHK OF STD.			1/6	A	NTS
VERIFIED					
DATE					

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 service.

1.2 General Description

The vessel is to be all welded structure with two (2) skegs. It is to be of arched beam deck and twin skegs. The main hull is to be divided by six (6) transverse watertight bulkheads and two (2) longitudinal watertight bulkheads into twenty-one (21) ballastable compartments.

1.3 Principal Particulars

Length Overall	:	180ft
Beam moulded	:	70ft
Depth moulded	:	14ft
Deck Loading	:	20.0Tons/M^2

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 Classification) for Unrestricted Services and to their special survey to hull for class for Unmanned Deck Cargo Barge.
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 acceptable:

i) Builder's Certificate;
ii) Classification Certificate;
iii) Safety Construction Certificate;
iv) Tonnage Certificate;
v) Loadline Certificate;

1.6 Welding

Except where specified otherwise, electric welding shall be employed in the construction of the vessel .All welded constructions shall be shown on the approved plans and in accordance with the requirements of the classification Society for construction of steel vessels.

1.7 Materials & Workmanship

All material and workmanship are of the good quality. All steel plates, sections, full forging and castings to meet ABS Classification requirements and supplied with test certificates where required by Classification. All rough edges to be ground smooth.

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 the satisfaction of the classification's attending surveyor.

1.10 Stability

A lightship measurement 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.

Section 2 - Structure

2.1 General

The steel hull and deck erection are of all welding construction. All welding shall be as per class requirement. Longitudinal framing system is used. The deck scantlings are to be designed to suit 20 T/ M^2 loading.

2.2 Plating

Deck	16.0MM
Bottom	12.0MM
Side	12.0MM
Longitudinal BHD	10.0MM
Transverse BHD	10.0MM

2.3 Stiffener (Long.)

Deck	L150X90X12
Bottom	L150X90X9
Side	L125X80X10
Longitudinal Bulkhead	L125X75X9

Transverse BHD	L125X75X9

2.4 Web Flange

Deck	508X10+150FLG
Bottom	410X10+100FLG
Side	380X10+100FLG
Long. BHD	380X10+100FLG
Transverse BHD	380X10+100FLG

2.5 Stanchion & Diagonal

Stanchion	H250x250x9/14
Diagonal	L160x160x14
Bilge Chine	50mm dia. R.B.

SECTION 3 – Deck Machinery & Equipment

3.1 General

All deck machinery and equipment are supplied with certificates by Seller and installed to meet Classification's requirements. Where the equipment specified, supplied by the Owners, the Builder is responsible for the installation, commission or stowage case may be.

3.2 Deck Fittings

1) Mooring Bollards

Eight (8) mooring double bollards of 12" N.B. heavy pipe are fitted on main deck as shown on drawing.

2) Manhole

One (1) flush type watertight manhole is to be provided for each tank compartments. Size of manhole to be 600*400mm clear opening, studs and nuts to be 316 stainless steel.

3) Handrail

Removable handrail to be fitted on the main deck(P&S).

4) Towing Brackets

Four(4) WLL=102T Smit towing brackets are fitted on main deck Fwd and Aft(P&S), and every towing bracket equipped with one fairlead.

5) Winch

One unit of 5T hand operated winch. (ky35) with 1x 680kg stockless bower anchor to be provided.

6) Anchor and Anchor bracket

One (1) 780kg Stockless anchor to be provided.

7) Wire Rope

150m*28mm Dia, galvanized wire rope to be supplied.

8) Tyre Fender

Approx. thirty (30) pieces of Ø900mm old tyres c/w 20mm dia. Galvanised chain, plastic cover and shackles to be provided.

9) Rubber Fender

24pcs of 300mmx300mmx1500mm straight hollow rubber fenders and 8pcs of 300mm x 300mm x 1500mm curving solid rubber fenders to be installed at side shell (P&S).

10) Fender doubles

Flange doubles of size L150X90X10 to be installed along the main deck edge.
FB300X12 flat bar to be fitted at side shell (P&S).

11) Access Ladder

Four (4) set of Access ladder to be fitted at Aft & Fwd(P&S).

12) Navigation Light

A complete sets of solar type navigation lights fitted c/w stands are to be provided, and stern & bow navigation light with support needs to be removable.
*Stern light
*Bow light (p & s)

SECTION 4 – PAINTING & CATHODIC PROTECTION

4.1 Surface Preparation

All steel plates of hull (out of bottom/side/deck plates) are to be sand blasted to S.A.2.5. 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.

Paint workmanship with detailed quality control requirement needs to be provided to ship owner for process inspection.

Paint plan should be provided to the client to show how this paint can achieve the designated marine grade, including below:

- Cleaning standard and control inspection, for example steel plate pre-treatment, module sand-blasting, time control between module sand-blasting and undercoat.
- Give process file for construction on-site corrosion control and inspection.
- Painting specification and process control/inspection.

4.2 Catholic Protection

Forty (40pcs) zinc anodes (15kgs/pc) are to be fitted to protect the external bull below the waterline against corrosion.

Five (5) zinc anodes (15kgs/pc) are to be fitted in each ballastable tanks.