

**PROJECT DIVISION****BUDGETARY OFFER**

<b>Sr. No.</b>	<b>Description</b>	<b>Qty.</b>	<b>Unit</b>	<b>Rate</b>	<b>Amount</b>
1	Supplying of MS Tail Tube & it' s Ballast Ø770 od x 12mm Thick Plate for bottom fitting 10mm Thick stiffener for bottom plate ( cutting as per requirement) Ø406 OD x Ø 392 ID 772mm Long Centre Pipe Ø750 OD x Ø 730 ID 830mm Long Centre Pipe RCC Ballast – 500 Kg.	6.00	No.		
2	Supplying of MS Super Structure.	2.00	No.		
3	Supplying of MS Top Marker.	6.00	No.		
4	Supplying of Marine Lantern Range upto 05 Nautical miles (Green/Red colour indication)	6.00	No.		
5	Supplying of Radar Reflector.	6.00	No.		
6	Supplying of Chain Jointer. (As per Drawing - IRS/IACS approved)	6.00	No.		
7	Supplying of D' Shackle 32mm Size. (IRS Approved)	84.00	No.		
8	Supplying of Swivel 32 mm Size. (IRS approved)	6.00	No.		
9	Supplying of Mooring Chain of M.S. stadlink U-2 grade of 32mm Size (IRS Approved)	366.00	R.Mt.		
10	Supply/Mfg. of SS 316 material like Nut, Bolt & washer etc. The Price includes labour & raw material in all respect. Min. Material 1 Kg.	120.00	Kg.		
11	5 MT Dry Anchor	6.00	No.		
12	Supplying of Float.	24.00	No.		

Note: the above rates are excl. of GST

**Signature of the Contractor**

### **Technical Specifications: -**

#### **(1) MS Tail Tube & it' s Ballast: -**

- MS Tail Tube & it' s Ballast Size: -  
Ø770 od x 12mm Thick MS Plate for bottom fitting  
10mm Thick stiffener for bottom plate (cutting as per requirement)  
Ø406 OD x Ø 392 ID 772mm Long Centre Pipe  
Qq Ø750 OD x Ø 730 ID 830mm Long Centre Pipe  
RCC Ballast – 500 Kg
- The MS Tail Tube &its ballast will be supplied, if required during entire year.
- The MS Tail Tube &its ballast should be supply as old one
- Measurement will be taken and paid per No's basis for actual tail tube &its ballast supplied.

#### **(2) Super Structure: -**

- Item includes supply of buoys super structure as old one green or red as required.
- The superstructure shall be high elasticity and light weight is manufactured with closed-cell polyethylene solid foam sheet (no water absorption) and projected with a layer of colored polyurethane elastomer.
- The superstructure of the buoy should be designed to have suitable ladder with step and ring for the safety of the person attending in any weather condition at sea.
- The super structure should be conforming to IALA
- Thickness – 10 mm
- Measurement will be taken and paid per Nos. basis for actual super structure supplied.

#### **(3) Top Marker**

- Item includes supply of buoys GRP TOP Marker as old one as per IALA system red or green as required.
- Measurement will be taken and paid per Nos basis for actual top marker supplied.

#### **(4) Marine Lantern**

Item includes supply of buoys Marine Lantern as old one as per IALA system red or greed as required

- Specification of Marine Lanterns: -  
Range: 5 NM  
Voltage: DC 9 to 30  
Visibility: - 360 °Horizon  
Lens Type: Single Piece molded polycarbonate  
Lens Dia: - 140 mm Min  
Vertical Divergence: - 7 ° Min  
Flasher: inbuilt selectable 256 codes conforming to IALA  
Monitoring &Control: - Capable for remote monitoring  
Lantern Housing: - Suitable for Marine Environment IP 65  
Weight: - < 5 Kg  
Relative Humidity: 100 % Condensing  
Wind: - Designed to withstand speeds in excess of 75 kmph  
Light intensity automatically adjusts with flash character  
Battery will continue to charge between -40°C and +65°C

- Battery technology and advanced charging algorithm

Excellent battery life in hot climates

Excellent battery capacity in cold climates

Excellent battery tolerance to becoming flat

- Large solar cell capacity 8W or 16W

- Make: - VLB 5x SS as old one

- The guaranty for the marine lantern is 01 year from the date of installation.

Measurement will be taken and paid per No's basis for actual marine lantern supplied.

#### **(5) Radar Reflector**

- Item includes supply of buoys Radar Reflector as old one as per IALA system red or green as required
- Radar Reflector is made in 6 segment for better & accurate reflection.
- The material used is non-corrosive aluminum sheeting with appropriate paint system.
- Color: - White
- Height: - 10-12 Kg
- Measurement will be taken and paid per Nos basis for actual radar reflector supplied.

#### **(6) Chain Jointer (As per Drawing) IRS/IACS approved**

- Item includes supply of buoys Chain Jointer as old one as per IALA system.
- The Chain Jointer will be IRS/IACS approved.

Measurement will be taken and paid per No's basis for Chain Jointer supplied as old one.

#### **(7) D' Shackle 32mm Size IRS/IACS Approved**

- Item includes supply of buoys Bolt Shackles as old one as per IALA system.
- The D Shackles will be IRS/IACS approved.
- Features: Longer service life, Rugged in construction, High resistance to corrosion
- The shackle material must be an alloyed or un-alloyed special steel in accordance with Indian Standard whose technical requirements are:  
Tensile strength  $R_m \geq 850 \text{ MPa}$   
Break elongation  $A_5 \geq 12\%$   
Reduction of area  $Z \geq 40\%$   
Impact toughness  $K_v = 58 \text{ J (0°C)}$   
Brinell hardness  $HB \geq 280$
- The chemical composition of the steel must be such that the above technical requirements are met after handling.  
The following alloying elements shall not be exceeded:  
 $C \leq 0,45\%$   
 $Si \leq 0,45\%$   
 $P \leq 0,04\%$   
 $S \leq 0,04\%$
- $Mn \leq 1,90\%$
- A certificate of the composition of the material must be provided.
- Measurement will be taken and paid per No's basis for Shackle supplied.

#### **(8) Swivel 32 mm Size (IRS/IACS approved)**

- Item includes supply of buoys Bolt Shackles as old one as per IALA system.
- The Swivel will be IRS/IACS approved.
- Measurement will be taken and paid per No's basis for Swivel supplied as old one.

**(9) Mooring Chain 32mm Size (IRS Approved)**

- Item includes supply of buoys Bolt Shackles as old one as per IALA system.
- The D Shackles will be IRS/IACS approved.
- Features: Longer service life, Rugged in construction, High resistance to corrosion
- The chain material must be alloyed or unalloyed tempered steel in accordance with IRS Register of Shipping quality class/IACS.

Tensile strength  $R_m \geq 640 \text{ MPa}$

Break elongation  $A_5 \geq 15\%$

Reduction of area  $Z \geq 40\%$

Impact toughness  $K_v = 58 \text{ J } (0^\circ\text{C})$

$K_v = 49 \text{ J } (0^\circ\text{C})$ , at weld

Brinell hardness  $HB \geq 220$

- The chemical composition of the steel must be such that the above technical requirements are met after tempering and that the composition is suitable for the welding method to be used.

The following alloying elements shall not be exceeded:

$C \leq 0,33\%$

$Si = 0,20 \dots 0,35\%$

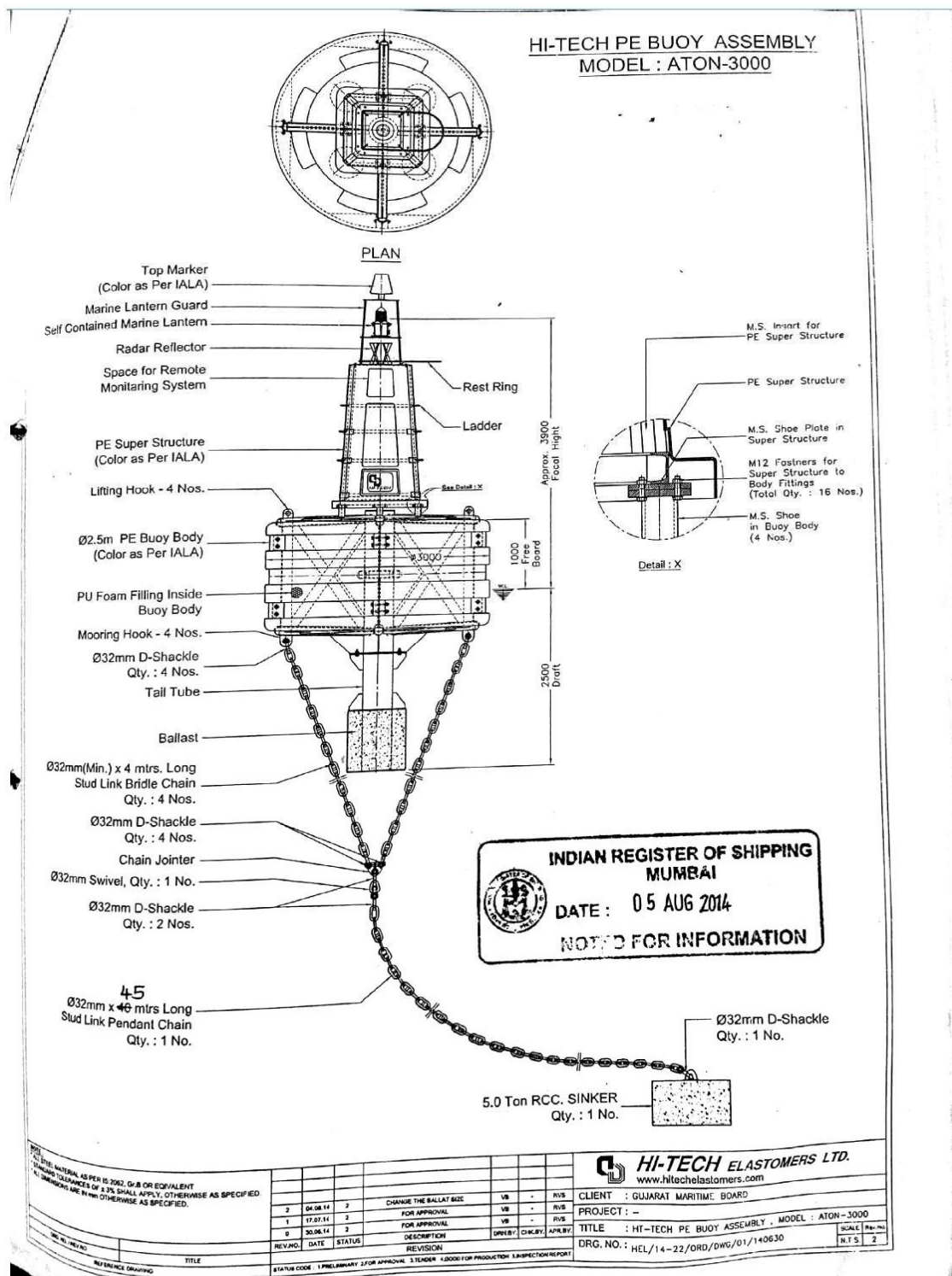
$P \leq 0,04\%$

$S \leq 0,04\%$

$Mn \leq 1,90\%$

**Signature of the Contractor**

# Annexure-III



Signature of the Contractor