

HINDUSTAN SHIPYARD LIMITED :: VISAKHAPATNAM – 530 005

**TECHNICAL SPECIFICATION FOR OUTSOURCING OF HULL WORKING DRAWINGS,
PART – LISTS, PRODUCTION DOCUMENTATION, WEIGHT & CENTRE OF GRAVITY OF
BLOCKS & SEATS FOR 50 T TUG FOR KANDLA PORT TRUST. SHIP NO: 11173&74**

1. SCOPE OF WORK OF CONTRACTOR:

1.1 Scope of work for preparation of Working Drawings:

- 1.1.1 The contractor is to prepare detailed working drawings, in A3 size, blockwise, based on the classification drawings supplied by HSL, using the latest version of Autocad Software, as per the paneling arrangement and seating drawings as per details of Equipments supplied by HSL. (List of drawings to be prepared as per the Annexure-A)
- 1.1.2 The drawings are to be dimensionally accurate to scale and are to contain the details of the structure with unique identification of all elements as per HSL practice. Plan views, longitudinal views, transverse views and other relevant views / sections as applicable shall all be drawn to suitable scale. Welding symbols, weld size, end connection details, dimensions for the elements / parts., thickness of the part, element nos., for each part, and such other information as may be considered necessary on the working drawings to aid fabrication, as per HSL standard practice shall be clearly provided.
- 1.1.3 Strengthening in way of foundations and at other locations, as may be required are to be incorporated in the respective drawings as per the information supplied by HSL.
- 1.1.4 Seating drawings and loose tanks are to be prepared separately as per Annexure - A.
- 1.1.5 The drawings prepared by contractor should be dimensionally accurate and contain details of every relevant view and also ensure completeness of all information for execution of work by the yard there from.
- 1.1.6 Drawings are to be submitted to HSL in 2 stages, once upon completion of the drawing and subsequently after incorporating HSL's comments. HSL comments, if any, on the 2nd submission are to be incorporated and final drawing is to be submitted.

2. SCOPE OF WORK FOR PREPARATION OF PARTS-LIST & PRODUCTION DOCUMENTATION:

- 2.1 Parts-list is to be prepared for each working drawing on separate proforma conforming to HSL standard.
- 2.2 Complete 3d model of the ship structure in TribonM3 according to the approved working drawings.
- 2.3 Data of seams, decks, stringers and cranked girders depending on the structure.

- 2.4 Nesting formats block wise/ thickness wise considering the material available with an indication of element number, edge preparation, directions to assemble and a dimensional check for each format.
- 2.5 NC tape files created for processing the elements on CNC gas cutting and plasma cutting machines
- 2.6 PMC (Plan for marking and cutting) for plates other than nested elements with necessary data like Element No.; Thickness; Size of Material required.
- 2.7 Completed Part-list and PMCs are to be forwarded for review and corrections as recommended by HSL are to be carried out, prior to final submission.
- 2.8 Information of rolling sets (at frames) used for rolling and checking all the curved parts in transverse and longitudinal directions.
- 2.9 Details of the straight sections along with end details, directions to assemble.
- 2.10 Forming details for bending shell longitudinals and shell frames along with end details.
- 2.11 Data of jig heights for decks and bottom shell block wise.
- 2.12 Check dimensions are to be identified & prepared for checking dimensional accuracy of panels at prefabrication department.
- 2.13 Tribon Data base (Final).
- 2.14 PMC for foundation drawings and loose tanks.
- 2.15 Necessary extra to the elements where ever required are to be provided.

3. **COMPUTATION OF WEIGHT & CENTRE OF GRAVITY:**

The contractor is to compute the net weight and CG (LCG, VCG & TCG location) of every individual element and also indicate the total weight and CG (LCG, VCG, TCG) of the entire assembly. A comprehensive tabulated booklet containing such information shall be presented block wise and consolidated for entire hull.

4. **GENERAL:**

- 4.1 The contractor shall collect all related drawings from HSL under acknowledgement and return the same after the work is completed.
- 4.2 The contractor shall treat all the information and documentation received from HSL as confidential and shall not divulge the same to any third party.
- 4.3 HSL shall retain the right not to accept a drawing not complying to the requirements.
- 4.4 Steel material available with HSL shall be ascertained by the Contractor prior to commencement of work and sizes of plates and sections shown in the sub-assembly details of structural members detailed on the drawing shall meet the availability.
- 4.5 The contractor should indicate his past experience, infrastructure, Hardware / Software etc., for carrying out this type of work.
- 4.6 The classification drawings and sample working drawings, Part lists, NC formats, PMCs, C.G. Calculations are available with HSL for study at HSL's premises if so desired by the contractor.

4.7 The broad time frame for completion of the total work scope related to each Group is indicated in Annexure-A. Compliance to the same is to be confirmed by the contractor, in the offer document, after careful consideration of paras 4.5 & 4.6. The detailed drawing wise schedules to fit into this action plan is to be drawn out by the contractor subsequent to award of work, mutually discussed and finalized prior to commencement of work.

4.8 HSL reserves the right to split the work amongst different parties group wise or award in such manner to ensure fulfillment of targeted schedules.

5. **INPUTS FROM HSL:**

- List of available steel materials.
- Offset table, Tribon surface file (DML)
- Accommodation Layouts.
- Tank arrangement plan
- Class approved structural drawings.
- Necessary information as relevant to complete the drawing.
- All equipment details.

6. **DELIVERABLES:**

6.1. Final one set of Hull structure / Seatings / Loose tanks and production documentation is to be supplied and tracing papers and soft copies.

6.2. Tribon Database (Complete Project)

PREPARED BY

REVIEWED BY

APPROVED BY

SHIP NO:11173 & 11174 (50T B.P. TUG FOR KANDLA PORT TRUST)

LIST OF WORKING DRAWINGS

Annexure-A

S.NO	BLOCK	DESCRIPTION	DRG. No.	DATE OF ISSUE
1	KEEL	KEEL BLOCK ,T.TOP & BELOW	11103	
2	BLOCK-1	AFT PEAK STRUCTURE	11101	
3	BLOCK-2	STRUCTURE BET. FRS.15& 34	14901	
4	BLOCK 3-1	STRUCTURE BET.FRS.33&42	14902	
5	BLOCK 3-2	STRUCTURE BET.FRS.41&50	14903	
6	BLOCK-4	FORE PEAK. STRUCTURE	15101	
7	BLOCK-5	SUPER STRUCTURE	13101	
8	BLOCK-6	SKEG STRUCTURE	11102	
9	BLOCK-7	SUPPORT PAD FOR DOCKING & PROPELLER PROTECTION GUARD	15102	
10	BLOCKS 8&9	FUNNEL (P&S)	13102	
11	BLOCK-10	BULWARK & STAYS	13103	
12		TOWING HOOK POST	14904	
13		ENCLOSURE FOR MECH.LINKAGES	14906	
14		STIFF.UNDER WHEEL HOUSE DK I.W.O.SIGNAL MAST	13105	
15		HAWSE PIPE/CHAIN PIPE ASSEMBLY	15103	
16		FIXING ARRGT.OF ECHO SOUNDER TRANSDUCER & ROUTING OF CODUIT FOR CABLE	15104	
17		BLOCK DIVISION PLAN	18001	
18		SURVEY & TESTING	18002	
19		ARRGT.& DET. OF MANHOLES	18003	
20		FASTENERS FOR M.H.& H.HCOVERS (ORDER DRG)	18004	

21		M.H & H.H PACKING RINGS (ORDER DRG.)	18005	
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LIST OF SEATING DRAWINGS

Annexure-A

S.NO	DESCRIPTION OF DRAWING	DRG.NO	DATE OF ISSUE
1	SEAT FOR MAIN D.A.SET	10601A	
2	SEAT FOR HARBOUR D.A.SET	10602A	
3	SEAT FOR MAIN AIR COMPRESSORS	10603A	
4	SEAT FOR SHORE CONNECTION CABLE DRUM	10604A	
5	SEAT FOR TRANSFORMERS	10605A	
6	SEAT FOR FIRE/BILGE/GS PUMPS	10606A	
7	SEAT FOR OILY BILGE SEPARATOR	10607A	
8	SEAT FOR MAIN SWITCH BOARD	10608A	
9	SEAT FOR MAIN AIR RECEIVERS	10609A	
10	F.W&S.W HYDROPHORE TANKS & SEAT	10610A	
11	SEAT FOR STANDBY L.O.PUMP	10611A	
12	SEAT FOR F.O.TRANSFER PUMP	10612A	
13	SEAT FOR F.W.CENTRAL COOLERS	10613A	
14	SEAT FOR S.W.STANDBY PUMP	10614A	
15	SEAT FOR F.O.BOOSTER PUMPS	10615A	
16	SEAT FOR HYDRAULIC POWER PACK	10616A	
17	SEAT FOR STANDBY F.W. PUMP	10617A	
18	SEAT FOR WIND LASS	10618A	
19	SEAT FOR INT.SHAFT BEARINGS	10619A	
20	SEAT FOR MAIN ENGINE SILENCERS	10620A	

21	SEAT FOR MOORING CAPSTAN	10621A	
22	SEAT FOR BRIDGE CONSOLE	10622A	
23	SEAT FOR F.W. HYDROPHORE PUMP	10623A	
24	SEAT FOR S.W. HYDROPHORE PUMP	10624A	
25	SEAT FOR BILGE PUMP	10625A	
26	SEAT FOR F.W.EXPANSION TANK	10626A	
27	SEAT FOR ECR CONSOLE	10627A	
28	SEAT & STRENGTHENING FOR RESCUE BOAT DAVIT	10628A	
29	SEAT FOR BATTERY CHARGER	10629A	
30	LIFTING BEAM FOR 1TON TROLLY IN ENGINE ROOM	10630A	