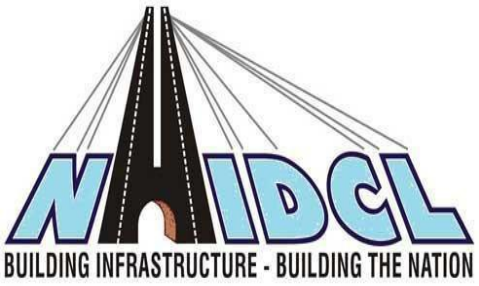
Technical Schedules



NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.

(NHIDCL)

February, 2021

SCHEDULES

Schedule-A

(Clause 1.2 of Appendix B - General Technical Specifications)

Site of the Project

In line with the Government's objective to develop potential tourism destinations, and in order to encourage and promote Cruise Industry as well as Domestic Cruise Travel on Indian rivers and to encourage Private Cruise operators to identify tourists circuits for tourism promotional activities, Inland Waterways Authority of India (IWAI) has proposed setting up of floating steel pontoons and gangways along with other allied activities mentioned herein in this section at the following Four (4) locations, the details of which are as follows:

Loaction details (NW – 2)
Neamati, Jorhat
Bishwanath Ghat, Sonitpur
Jogighopa
Pandu terminal, Pandu

*****_The locations mentioned above are not fixed and the Contractor may be asked to install the facilities within 50km of the above locations, for which no extra cost shall be paid to the Contractor._

The Bidders are further advised to undertake site visits to the aforesaid proposed locations and collect information and details required for the design and installation of the same. It is deemed that the Bidder has visited the locations and collected the required site information and details prior to submitting the Bid. No claim whatsoever shall be entertained in future on this account.

Annex – II

(Schedule-A)

Deleted

Annex - III

(Schedule-A)

Alignment Plans

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Annex – IV

(Schedule-A)

Environment Clearances

As required under the relevant Act (s), provisions and rules in consultantion with NHIDCL and IWAI for which expenses shall be borne by the Contractor. Necessary help will be rendered by the NHIDCL & IWAI.

Schedule - B
Development of the Project

TECHNICAL SPECIFICATIONS:

1. PONTOON

General

General Requirements:

(a) The Pontoon shall be suitable for transit / passenger services and for operations in inland waters and shall be built as per Indian Register of Shipping (IRS) rules / regulations for dumb barge / pontoon applicable to inland waters.

(b) The Pontoons are to be stationed at jetty locations along the river where these would be moored at respective sites via four (4) sets of catenary and anchors. The Contractor shall construct pontoons and install the required structural or outfitting elements, which are required for mooring the pontoons.

(c) Standard shipbuilding practices shall be adapted in the construction. Any material / fitting / equipment or procedure not described or left out of these specifications but considered as normal and necessary for intended services of these Pontoons shall be supplied and fitted by the Contractor without any extra charge.

(d) The Contractor shall be responsible for all the extra work, which arises out of the recommendations, and remarks made by the Classification Society as well as IWT surveyors. **All the arrangements to be fitted on the deck of the Pontoon shall be State of the Art.**

(e) The terms and conditions mentioned in these specifications shall be, in general, final for all contractual obligations. However, items shown on the General Arrangement Drawing (GAD) but not stated or stipulated in these specifications should also be considered. In the event of any inconsistency in the GAD, the specifications should prevail.

Principal Particulars

The main particulars of Pontoons are as given hereunder:

Type of Pontoon	Box Type Steel all welded
Length	35 m
Breadth	8 m
Moulded Depth	1.6 m
Draft	0.7 m

Classification, regulation and certificates

(a) The Pontoon shall be designed and built in accordance with the requirements of the rules and regulations of:

(i) IRS (Indian Register of Shipping) or any other Classification Society who is a member of the International Association of Classification Society (IACS).

(ii) The Inland Vessel Act 1917 (latest amendment thereof).

(b) Detail design and calculations are to be prepared and the same needs to be approved by IRS & ENGINEER IN CHARGE.

(c) The Pontoon shall be built under the inspection of the above mentioned classification society and to be classified as pontoon suitable for inland waterways. The ENGINEER IN CHARGE and its representatives / Classification Society shall also inspect the construction of pontoons and carry out the specification survey. The Contractor shall obtain the following certificates / documents and deliver to the ENGINEER IN CHARGE at the time of delivery of Pontoon. The original certificates with three (3) copies shall be handed over prior to delivery of the Pontoon and shall be kept on board as the case may be.

(i) To be issued by appropriate authorities as applicable for this class of vessel

- Design / Drawing approval
- Inclining Experiment Report
- Trim and Stability booklet
- Certificate of tonnage (GRT/NRT)
- Certificate of Registry
- Official Deadweight Certificates

(ii) To be issued by Classification Society

- Classification Certificate
- All Certificates of machinery and equipment if any.

(iii) To be issued by Contractor

- Builder's Certificate

(iv) To be issued by others (mainly the classification society, MMD, Dock Labour Board and other statutory/recognized agency)

- Certificate for the anchors, chain cables, shackles, hawsers, mooring ropes and equipment.

(d) The pontoon will be registered as per the relevant rules and regulations of Inland Vessel Act, 1917 (latest amendment thereof). All costs and fees for inspection and approval of Class and Regulation Bodies for the above enumerated necessary certificates shall be borne by the Contractor.

Trim and Stability

(a) The Pontoon shall comply with IMO's stability requirements and shall not have any trim by fore in any of the operating loading conditions.

(b) Permanent ballasting will not be allowed. An inclining experiment is to be conducted by the Contractor in the presence of the IWT surveyors and the Engineer In Charge. A detailed trim and stability booklet duly approved by State IWT Directorate shall be submitted to the Engineer In Charge.

(c) The mooring system must sustain pontoons in the maximum expected wind and current speed.

Hull Structure

General

The Pontoon is to be shaped with rounded corners and swims ends. The hull is to be divided into three watertight subdivisions.

Scantlings

(a) The steel to be used is to be of IS 2062 Grade B and classification society shall carry out necessary testing of the samples of steel as required by class. The welding is to be of excellent quality and using high quality electrodes. The hull scantlings are to be not less than given below:

Plating		**Profiles**	
i. Bottom Plating	8 mm	i. Bottom Longitudinal	1A 75 x 75 x 8
ii. Side Plating	6 mm	ii. Side shell stiffeners	1A 65 x 65 x 6
iii. End Bulkheads	6 mm	iii. Deck Longitudinal	1A 65 x 65 x 6
iv. Internal Bulkhead	6 mm	iv. Bulkhead Stiffeners	1A 65 x 65 x 6 / 1A 100 x 100 x 10
v. Deck Plating	6 mm chequered plates		
vi. Tank Boundaries	6 mm		

(b) The Pontoon shall be built with shipbuilding quality steel of IS-2062 Grade "B" with all welded construction. Necessary hull preservation and painting is to be carried out as per the shipbuilding practices and painting scheme mentioned.

(c) In general the hull shall be built of steel from keel to main deck according to the transverse / longitudinal framing system. Scantlings of all structural members shall be as per IRS requirements. Approved shipbuilding quality material is to be used throughout the construction. Sharp comers are to be avoided. Good continuity of structural members in basic hull structure should be maintained.

(d) Flanging of plates and brackets, in general, shall not be allowed. For bolts only drilling is allowed. Before the steel plates and rolled sections are used for construction, rust and mill-scale must be removed by means of sand / grit - blasting. Immediately after the steel sand / grit - blasting, one coat of rich shop anti-corrosive primer with a thickness of minimum 25 microns is to be applied as a temporary protection.

(e) Plate edges should be flame-cut mechanically as much as possible. Welded connections with notches are not allowed.

Bulkhead

All watertight bulkheads shall be plated horizontally. Vertical stiffening shall be provided with the stiffeners spaced as per frame spacing.

Hull Opening, watertight doors and hatches

(a) All hull openings wherever provided shall be in accordance with IRS rules. Watertight doors and hatches are to be provided where necessary and shall comply with the rule requirements.

(b) All manhole and hatches are to be of standard size as per Classification Society rules. Hatches are to have a coaming of at least 450 mm or shall be as per Classification Society Rules for inland vessels and all manholes are to be provided with water tight covers bolted on to 1A 100 x 100 x S profiles welded around the opening. The bolts have to be of at least M16 size.

(c) One drain plug below every tank is to be provided.

Name and draught marks

(a) Name of Pontoon, place of registry and the draft marks should be executed in welded characters and the letters & figures should be cut out of 5 mm thick steel plate.

(b) Name of Pontoons should be executed on bow and stem. In addition, the place of registry should be indicated on the stem.

(c) Draft marks are to be of 3 mm in welded steel plate and painted with at least two coats. They are to be located at intervals of 200 mm vertical (P&S) and at forward aft and amidships. The accuracy of these marking will be checked by the ENGINEER IN CHARGE's representative.

Hull outfit and deck equipment

Anchor and Mooring arrangement

The Pontoon deployed on the river are to encounter current of maximum 2 m/sec during flood season. Therefore, suitable mooring arrangements along with anchors are to be provided for sustaining the above conditions. Detail design and calculation in this regard is to be prepared and same needs to be approved by ENGINEER IN CHARGE & IRS before commencement of works. The winches, anchor chain, mooring ropes and shackles etc. shall be as per the class requirement. The requirement of mooring at shore with appropriate arrangement through steel wire rope of adequate diameter shall also be provided.

Anchor winches

Electrically operated anchor winch of required size to be installed on both sides shall be provided. Winch shall also be suitable for manual operation. The anchor winch shall have one chain pulley / sprocket and one warping head. Lined brakes and couplings to be provided for independent operation of the pulley and the warping head.

Dock machinery

Necessary windlass to be provided for the handling of anchors of 600 kg each. Two numbers hand operated davits of 1.5 ton SWL each to be provided conforming to IS 5386 (1969).

Ladders

One wooden ladder to be provided for embarking / disembarking from pontoon.

Bollards

Adequate double bollards to be provided on the main deck distributed on the port and starboard side for effective mooring. The bollards placed in heavy foundations shall have a height of about 200 mm. Total height of the bollards shall be 500 mm. Deck construction in way of bollards shall be reinforced with increased plating thickness and extra stiffeners.

Fenders

Steel fenders of 300 mm diameter (6 mm thick) are to be provided on either side for 95 percent of the length of pontoon. Rubber fenders of sufficient size are also to be provided on both sides in such a manner that the spacing between them does not exceed 1250 mm. Lugs of not less than 16 mm to tie up these fenders are to be welded to the sides.

Accommodation & other allied facilities

One cabin on deck suitable for two (2) persons for watch & ward and for keeping consumables, stores, etc shall be provided. Placement of cabin shall be such that the working area is kept clear. Further, a provision for passenger shed for sitting arrangement capacity of approx.30 passengers & 7 nos. of umbrella shed (having solar panel at the top) with 5 nos. of seating capacity under each umbrella (both passenger & umbrella shed to be preferably of make of Hollow Circular Tubular structural section and FR grade PVDF PVC Fabric having 5 years Manufacturing Warrantee), railing of 1.0 m height (fabricated out of IS 4923 grade steel) shall be provided at suitable interval for safety parameters & the railing shall have minimum two (2) rows of bars / chains running throughout the pontoon, 2 number of Bio-toilets along with wash basin & water supply arrangement, Life Saving appliances (10 Nos. Lifebuoys and 40 Nos. Life jackets), 3 number of portable Dry powder fire extinguishers of 9 litre capacity for all classes of fire, tactile tiles for visually impaired people, shore connections facilities for electricity and 4 numbers of Solar Lamp Posts shall also be provided.

Quality control, material and workmanship

All materials, equipment, and other necessary fittings used shall be new and of very good marine quality and personnel employed for construction of pontoon should be approved by the Classification. Further, all bolts and nuts should be of an approved standard.

Welding: The Pontoon shall be of all welded steel construction. Welding shall be of high quality and shall be done by a skilled person of the Contractor. Welding procedures shall be in accordance with the rules and regulations of Class / IWT Directorate. Necessary precautions shall be taken to eliminate deformations.

Quality control system

The Contractor shall prepare and submit for the Engineer's approval, not later than 21 days prior to the commencement work, his detailed proposals for a quality control system. The Engineer's written approval of the system shall be obtained prior to commencement of work and the system shall not be altered by the Contractor without the written permission of the Engineer.

The ENGINEER IN CHARGE or the inspector shall check the contractor’s work and notify the contractor of any defects that are found. Such checking shall not affect the contractor’s responsibilities, the ENGINEER IN CHARGE or the inspector may instruct the contractor to search for a defect and to uncover and test any work that the ENGINEER IN CHARGE considers having the defect.
The contractor is solely responsible for carrying out mandatory tests prescribed as per ship building standard practice and for the correctness of the test result whether performed in his laboratory or elsewhere.

If the ENGINEER IN CHARGE asks the contractor to carry out a test not specified in the specification, to check whether any work has a defect and the test shows that it does, the contractor shall pay for the test and any sample and shall accordingly, rectify such defects to the satisfaction of the ENGINEER IN CHARGE.

The quality control system shall clearly indicate, inter alia Contractor's personnel who shall be responsible for quality control and site organization chart; Work log, Data collection and report submission formats.

Inspection, tests and trials

The ENGINEER IN CHARGE's representative shall inspect and carryout specification surveys during the construction of the Pontoon. The Pontoon shall be built under the statutory survey of IWT Directorate and specification survey by ENGINEER IN CHARGE / ENGINEER IN CHARGE's representative.

No construction alteration or modification shall be permitted without specific written approval from the ENGINEER IN CHARGE's or its authorised representatives.

All stages of work against which stage payments are to be made shall be inspected by ENGINEER IN CHARGE's surveyors for certification of the stage completion. All tests shall be pre-arranged and shall be conducted in the presence of the concerned authorities and a report approved by the authorities shall be submitted to the ENGINEER IN CHARGE. Any defect found by the surveyors during the tests and trials shall be rectified by the Contractor at no extra cost.

Two copies of all statutory and test certificates of materials and the equipment's shall be supplied.

Instruction Manual and books

Three sets of instruction books, operation and maintenance manuals, spares catalogues given by the original machinery suppliers for all the equipment / machinery and instrumentation installed on board, shall be supplied to the ENGINEER IN CHARGE / handed over to the ENGINEER IN CHARGE's representative.

Three copies of the list of suppliers of all the fittings and equipment used on the vessel with their addresses and phone / fax numbers shall be supplied to ENGINEER IN CHARGE's representative.

Tank Testing

A suitable tank - testing scheme to check for water - tightness of all tanks and water tight compartments is to be prepared and submitted to the ENGINEER IN CHARGE for approval. All tanks and watertight or oil tight compartments are to be tested in accordance with the class requirements in presence of surveyor & ENGINEER IN CHARGE and shall comply with the rule requirements. The tests must be carried out after the completion of construction and before painting. At the time of testing, all the welds at boundary surfaces shall be clean and free from primer / paint / oil etc. Immediately after testing these entire welded surfaces, which are cleaned of any defects, shall be coated with primer / paint.

Hull Preservation and Painting

The hull is to be cleaned of mill-scale by blast cleaning and coated with an approved good quality primer prior to fabrication. After installation of equipment, auxiliaries etc. damaged paint work is to be repainted in original colours. Painting work shall be executed in accordance with the paint manufacturers recommendations. Copper alloy, aluminium, aluminium alloy, stainless steel, non-ferrous materials and galvanized surfaces shall not be painted unless otherwise specifically required.

Painting scheme in general shall be as given below. Painting scheme for parts or spaces which is not specified in "painting scheme" shall be similar to surrounding space or comparable space.

Painting Scheme

Item No.	Surface	Scheme	Avg. Thickness (Microns)
A.	Bottom/ Underwater hull including all appendage up to 150mm above load water line	1 x Epoxy primer 1 x Coaltar Epoxy 1 x Coaltar Epoxy 1 x Chlorinated Rubber Sealer coat 1 x Chlorinated rubber anti fouling	1 x 25 1 x 100 1 x 100 1 x 30 1 x 100
	Top side areas	1 x Epoxy primer 1 x Coaltar Epoxy 1 x Coaltar Epoxy 1 x Chlorinated rubber Sealer Coat 2 x Chlorinated Rubber finish	1 x 25 1 x 100 1 x 100 1 x 30 2 x 30
	Vessel's name, port of Registry, hull marking	2 x Alkyd gloss finish	2 x 30
B.	Tanks: Fresh water tank	1 x Epoxy primer 2 x Epoxy finish	1 x 25 2 x 100
	Oil Tanks	1 x Mineral Oil	1 Coat
	Aft peak and void space	2 x Bituminous paints	2 x 40
C.	Super Structure, Deck & Others: Exposed steel deck and 150 mm dia around all deck structure and machinery seating	2 x Red lead primer 2 x Non-skid alkyd deck paint	2 x 40 2 x 40

	Top of chequered plates	2 x Red lead primer 2 x Alkyd deck paint	2 x 40 2 x 40
	Steel deck under deck composition	2 x Bituminous solution	2 x 40
	Deck fitting such as bollards, towing posts etc.	2 x Zinc chromate primer 2 x Alkyd gloss finish paint	2 x 40 2 x 40
	Anchor	2 x Bituminous solution	2 x 40
	Air pipes, winch etc.	2 x Zinc chromate primer 2 x Alkyd gloss finish paint	2 x 40
	Outside exposed bulkheads, super structure, hand rail, stanchions, stays and ladders	2 x Zinc chromate primer 2 x Alkyd gloss finish paint	2 x 40 2 x 40
	Davit etc.	2 x Zinc chromate primer 2 x Alkyd gloss finish paint	2 x 40 2 x 40
	Inside steel bulkhead	2 x Zinc chromate primer 2 x Alkyd gloss finish paint	2 x 40 2 x 40
D.	Machinery and Pining		
	Pipes	2 x Zinc chromate primer 2 x Heat and oil resistant alkyd finish paint	2 x 40 2 x 40

Paint specifications and scheme are to be approved by the ENGINEER IN CHARGE. Standard colour coding to be used for pipes. Fuel oil tanks, lubricating Oil tanks and other tanks for oil are to be treated with the oil to be carried in them. Colour scheme is to be approved by ENGINEER IN CHARGE. All small parts, which are exposed to climate, such as railings, sheaves, grating, parts of rigging are to be galvanized.

Galvanized surfaces are to be de-greased and coated with a self-etching primer before painting. The paint specifications for galvanized surface are to be the same as for steel. Prior to boating, Anti- fouling paints are to be applied to the hull outside, up to boot toping area. Non-slip paint is to be applied on the main deck open areas.

Drawings

The Contractor shall prepare all classification / statutory construction / working drawings and as fitted drawings and submit to ENGINEER IN CHARGE for approval. The charges for the approval of the Classification drawings shall be borne by the Contractor. Before delivery of the Pontoon, the Contractor shall submit one set of good quality of transparent films and four (4) prints of all drawings including "As Fitted" drawings.

Three sets of as fitted drawings (for structural, machinery, piping & outfitting), detailed lists of all standard and extra spare parts, inventory tools and additional tools, maintenance, spare parts and other instruction manuals, schemes, calculations, all test reports, trial reports, final trim and stability booklet, etc., necessary for the operation, maintenance and repair of the Pontoon shall be submitted to the ENGINEER IN CHARGE at the time of delivery.

The drawings shall be laminated, framed and fitted on board or handed over to ENGINEER IN CHARGE.

General Arrangement Plan, Safety plan, Bilge, Ballast, Docking plan, Ship's book, an operating manual for the entire Pontoon shall also be made and supplied.

2. GANGWAY

The system shall comprise of a suitable steel enveloped gangway fabricated of floating body segments woven in double layer of height 0.8 m and interconnected with the help of connectors to have a floating surface from pontoon to low waterline both during lean and flood seasons. From low waterline to high bank, the above floating surface rests on firm ground to have a smooth ramp when floating cubes rests on ground during lean season. The same will float during high waters. The above gangway will be made by connecting each segment. The river has flow rate of 0.5 – 4 m/sec, thus suitable anchoring system to hold the entire floating system in place will have to be accommodated which can cater to such high flow rate. A schematic layout is attached for reference at **Annex - B**.

The gangway should have provision of anti-skid aluminium flooring on the gangway with provision of stainless or aluminium or equivalent steel handrails on both the sides with all safety, operational installations in order to give elegant aesthetic look, apart from maintaining robust platform to fulfil operational requirements. Handrail of 1.0 m height shall be provided at suitable interval for safety parameters. The railing shall have minimum two (2) rows of bars / chains running parallel to pontoon side.

The floating material proposed shall meet the following broad technical specifications:

S. No.	Particulars	Details	Remarks
1.	Material for construction for module / block	FRP or HDPE – 5261Z or equivalent	Use of re-cycled material shall not be accepted. Proof of purchase of fresh material to be submitted. Applicable test certificates for the material, from approved laboratory to be submitted. Contractor shall propose the physical parameters of the materials proposed.
2.	Encasing of FRP / HDPE	Material for construction of encasing shall be of steel hot dip galvanized	It should be rust free
3.	Size & Weight of each module / block	To be proposed by the Contractor	
4.	Weight carrying capacity of module / block	360 kg/m2 or more	
5.	Deck / Top Cover	Material shall be of Aluminium and floor finish shall be anti-skid and as approved by ENGINEER IN CHARGE	

6.	Minimum Reserve Buoyancy	25% under design loading conditions	
7.	Connectors	All fasteners / connectors shall be of stainless steel or of same material, as of module / block, as per the directions of ENGINEER IN CHARGE.	
8.	Working Life	15 years or more	
9.	Temperature Resistance Range	-10° to 60° C	
10.	Resistance to Impact, De-gradation, Chemicals, UV rays etc.	High	
11.	Handrails	Fabricated out of IS 4923 grade Steel, 1.0 m high. Reflective stickers to be provided on all the four sides.	
12.	Anchoring	Suitable anchoring / mooring should be provided for stability and alignment of the Floating Gangway as approved by ENGINEER IN CHARGE	
13.	Quality Assurance	Material test certificates, for the applicable parameters / properties, from relevant Govt. approved authority to be submitted.	
14.	Final certification	Final testing at site of the assembly, with respect to stability, safety & operational effectiveness to be done in the presence of IWAI officials.	
15.	Hydrographic data	The Contractor shall take into account the following parameters: **Velocity of flow**: 0.5 - 4 meters/sec **Water level variation vertical**: 8 - 10 meters	

Note: *The Bidder shall visit the proposed locations for providing the described floating gangways with accessories and collect information & details required for the design and installation of the same. It is deemed that the Bidder has visited the location and collected the required site information and details prior to submitting of proposal. No claim whatsoever shall be entertained in future on this account.*

Approach trestle / Gangway

The gangway proposed is floating type with all the specifications, including material of construction, similar to clause 2.3 above. The broad dimensions are tabulated below: -

Length Overall (approx.)	50.0 m
Breadth Overall (approx.)	2.0 m
Free Board Minimum	50% of floating gangway base shall be above water at all times

A suitable number of segments shall be connected through a suitable arrangement to form the complete gangway / walkway to the steel pontoon. The connections of these segments should be such as to adjust to the undulation of the sloping riverbed in low water level as well or necessary levelling of slope may be done prior to installation (if required).

This gangway shall be fixed to the ground at the entrance. A suitable arrangement at pontoon junction shall be made for smooth interchange during flood and lean seasons. The floating gangway shall have provision of 1.0 m high human guard rail of stainless or aluminium or equivalent steel and will have two parallel rows of side bar / chains running through the entire length, which shall be fixed to the sides of this gangway as a safety feature. This gangway must have anti-skid aluminium flooring.

MS Gangway of 5 m x 1.5 m shall be provided in such a manner so that one end is properly anchored/ secured on MS Pontoon with pivot and another end has roller below it. An aluminium chequered plate shall be provided below the roller and below that a suitable rubberized material will be provided.

The gangway shall be equipped with a solar powered Flashing Beacon (white / yellow flashes of 22 - 30 flashing per minute) as approved by the ENGINEER IN CHARGE to ensure night operations.

The pathway will be 2.0 m in width.

Note: *The principal dimensions shown under this clause, are approximate only. Minor variations in the above dimensions would be considered provided the functional requirement of the gangway is met and approved by the ENGINEER IN CHARGE.*

3. ONSHORE FACILITIES

The works to be undertaken as part of Onshore facilities broadly includes the following:

Land Development and Parking Facilities: Development of land and parking facilities of size 30m x 15m

The Contractor shall undertake the following activities as part of this scope of work:

(a) clearance of jungle and levelling of land particularly towards west side of road inside of the terminal area

(b) supply and stacking of good earth at site

(c) filling and levelling of area

(d) **Granular Sub-Base with Coarse Graded Material:** Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor graded on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired.

(e) **Water Bound macadam:** Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stage to proper grade.

(f) Providing base course of 200 mm thick fine sand, including spreading, well ramming, consolidating and finishing smooth etc. all complete as per direction of ENGINEER IN CHARGE.

(g) Providing and laying interlocking concrete block pavement (M40) having thickness 80 mm including carriage and Edge Block/ Edge restraints

(h) arrangement of four (4) number of mooring pins with excavation of earth for pit of size 2m x 2m x 1m and place the wooden wallah of size 1m long and 15cm dia and tying with 25mm steel wire rope in wallah with 2 no's D shackle and there after filling with 50% brick bats and 50% by earth and ramming, consolidating properly, all complete as per direction of ENGINEER IN CHARGE

Approach Road: The Contractor shall undertake design and construction of approach road of length 100m x 3.5m (top width) by providing and laying interlocking concrete block (M30) having thickness of 50mm, complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract.

Porta Cabin of size 40ft x 10ft x 8.5ft for the purpose of waiting area of tourists: The Contractor shall design, supply, transport and install workstation type porta cabin of size 40 ft x 10 ft x 8.5 ft along with all associated items of work i.e. interior, lights, A.C., chair etc., complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The broad technical specifications are enlisted below:

Sr. No.	Components	Description
1	Bottom & Frame Structure	The bottom rail will be formed by 90mm x 90mm of thickness square pipe. Corner post will be of 90x90mm of thickness square pipe. The four corners shall be sufficiently strengthened to facilitate transportation, lifting and shifting. The base frame square pipe made by 90mm x 90mm, 70mm x 70mm & 40mm x 40mm square pipe.
2	Shell	Fabricated from 1.2mm thickness MS corrugated plate duly welded, self draining roof, entry door and windows.
3	Side & End walls	Shall be made out of pressed sections of suitable exterior wall of 1.20mm M.S. sheet
4	Roof	Self draining type roof shall be made of 1.20mm M.S. specially corrugated. The top rail finished with (2" x 2") square hollow tuular sections.
5	Hooks	Specially formed hooks for easy lifting & shifting
6	Inter wall and roof	8mm thickness particle board
7	Insulation	Thermocol (25mm)
8	Bottom Flooring	18mm Ply duly fixed with self tapping screw finished with waterproof PVC Vinyl sheet
9	Main Door	Will be made of corrugated M.S. sheet of 1.20mm standard hatch bolt fitted inside and outside rain guard and door lamp
10	Window	Aluminium sliding window with safety grill / roads & rain guards
11	Wiring	All wiring shall be concealed type
12	Electrical fittings	All electrical fittings in the porta cabin shall be 220-240 Volts, AC 50HZ, LED tube lights (18 watt), one (1) number industrial power input supply socket, provision for split A.C. with 16amp switch & socket (if required), Hi-speed cabin fan with cage, one (1) number MCB, Switch board and 6 Amp Switch & socket
13	Outside Painting	Antirust treatment with red oxide primer and finished with 2 coats of enamel Hi-gloss paint

Porta Cabin of size 20ft x 10ft x 8.5ft for the purpose of pantry of tourists: The Contractor shall design, supply, transport and install workstation type porta cabin of size 20 ft x 10 ft x 8.5 ft along with all associated items of work i.e. interior, lights, A.C., chair etc., complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The broad technical specifications are enlisted below:

Sr. No.	Components	Description
1	Bottom & Frame Structure	The bottom rail will be formed by 70mm x 70mm of thickness square pipe. Corner post will be of 70x70mm of thickness square pipe. The four corners shall be sufficiently strengthened to facilitate transportation, lifting and shifting. The base frame square pipe made by 70mm x 70mm, 50mm x 50mm & 40mm x 40mm square pipe.
2	Shell	Fabricated from 1.2mm thickness MS corrugated plate duly welded, self draining roof, entry door and windows.
3	Side & End walls	Shall be made out of pressed sections of suitable exterior wall of 1.20mm M.S. sheet
4	Roof	Self draining type roof shall be made of 1.20mm M.S. specially corrugated. The top rail finished with (2" x 2") square hollow tuular sections.
5	Hooks	Specially formed hooks for easy lifting & shifting
6	Inter wall and roof	8mm thickness particle board
7	Insulation	Thermocol (25mm)
8	Bottom Flooring	18mm Ply duly fixed with self tapping screw finished with waterproof PVC Vinyl sheet
9	Main Door	Will be made of corrugated M.S. sheet of 1.20mm standard hatch bolt fitted inside and outside rain guard and door lamp
10	Furniture	As per enclosed illustrative drawing
11	Pantry	As per enclosed illustrative drawing
12	Window	Aluminium sliding window with safety grill / roads & rain guards
13	Wiring	All wiring shall be concealed type
14	Electrical fittings	All electrical fittings in the porta cabin shall be 220-240 Volts, AC 50HZ, LED tube lights (18 watt), one (1) number industrial power input supply socket, provision for split A.C. with 16amp switch & socket (if required), Hi-speed cabin fan with cage, one (1) number MCB, Switch board and 6 Amp Switch & socket
15	Outside Painting	Antirust treatment with red oxide primer and finished with 2 coats of enamel Hi-gloss paint

Porta Cabin of size 6ft x 8ft x 8.5ft for the purpose of security cabin: The Contractor shall design, supply, transport and install porta cabin of size 6ft x 8ft x 8.5 ft along with all associated items of work, complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The broad technical specifications are enlisted below:

Sr. No.	Components	Description
1	Bottom & Frame Structure	The bottom rail will be formed by 60mm x 60mm of thickness square pipe. Corner post will be of 60 x 60mm of thickness square pipe. The four corners shall be sufficiently strengthened to facilitate transportation, lifting and shifting. The base frame square pipe made by 50mm x 50mm, 40mm x 40mm & 30mm x 30mm square pipe.
2	Shell	Fabricated from 1.2mm thickness MS corrugated plate duly welded, self draining roof, entry door and windows.
3	Side & End walls	Shall be made out of pressed sections of suitable exterior wall of 1.20mm M.S. sheet
4	Roof	Self draining type roof shall be made of 1.20mm M.S. specially corrugated. The top rail finished with (2" x 2") square hollow tuular sections.
5	Hooks	Specially formed hooks for easy lifting & shifting
6	Inter wall and roof	8mm thickness particle board
7	Insulation	Thermocol (25mm)
8	Bottom Flooring	18mm Ply duly fixed with self tapping screw finished with waterproof PVC Vinyl sheet
9	Main Door	Will be made of corrugated M.S. sheet of 1.20mm standard hatch bolt fitted inside and outside rain guard and door lamp
10	Furniture	As per enclosed illustrative drawing
11	Window	Aluminium sliding window with safety grill / roads & rain guards
12	Wiring	All wiring shall be concealed type
13	Electrical fittings	All electrical fittings in the porta cabin shall be 220-240 Volts, AC 50HZ, LED tube lights (18 watt), one (1) number industrial power input supply socket, Hi-speed cabin fan with cage, one (1) number MCB, Switch board and 6 Amp Switch & socket
15	Outside Painting	Antirust treatment with red oxide primer and finished with 2 coats of enamel Hi-gloss paint

Two (2) number of Bio-toilets: The Contractor shall supply, transport and install two (2) number of bio-toilets, complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The broad technical specifications are enlisted below:

Sr. No.	Components	Description
1	Foundation	Brick foundation as per drawing with depth of 200mm from ground level for anchor / column locations
2	Structure	The structure size should be 1220mm x 915mm Toilet structure height (except foundation structure) – 2025 mm (i.e. plinth top to top roof)
3	Structure wall panels	(a) Each wall shall consists of four (4) sandwich (including top louver panel in each side). Sandwich panel size 650 mm x 995mm (b) All four (4) top wall panel to have single skin louvre panels (150mm) of 0.6mm galvanized plain power coated sheet (c) Each wall panel is to be 40mm thick sandwich panels made of 0.6mm thick, minimum 240 MPa yield strength (YS), minimum 340 ultimate tensile strength (UTS) zero spangled ski passed tension levelled, restriction of hazardous substance compliant, 120 GSM galvanized plain, powder coated cold rolled sheet with insulation (38 mm EPS (Expanded Polystyrene) of density 16 kg/m3) inside it
4	Structure Roofing	Flat roof of 40mm thick sandwich panels made of 0.6mm thick, 275 MPa strength zero spangled skin passed 120 GSM galvanized plain powder coated cold rolled sheet with insulation (38 mm EPS (Expanded Polystyrene) of density 16 kg/m3) inside it
5	Structure Corner Pillars	40mm thick sandwich panels made of made of 0.6mm thick, 275 MPa strength zero spangled skin passed 120 GSM galvanized plain powder coated cold rolled sheet to be used for structure corner pillars
6	Doors	1790mm x 649mm x 40mm thickness (made of 0.6mm galvanized plain powder coated steel) inclusive of standard accessories i.e. 2 nos. of A1 handle (6 inch), 1l drop with plastic bush, 1 No. of A1 tower bolt (6 inch) and SS hinges and screws
7	Ventilation	Powder coated steel ventilation above door (built in singe panel) made of 0.6mm thick, 275 MPa strength zero spangled galvanized plain sheet
8	External / Internal Finish	Pure polyester glossy powder coating
9	Toilet plan & Flooring	2 Ceramic orissa plan with tile flooring
10	Electrical fitting	1 CFL & 1 Modular switch in each compartment and required internal wiring
11	Waste Management	1 Bio-degradable bio-digester FRP tank of 1 cubic meter (1000 Ltrs) capacity including Anaerobic Microbium Inoculum (AMI) connected to both toilets

DG Set: The Contractor shall supply, transport, install, test & commission one (1) number of DG Set of 20kva along with all associated items of work, complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The Contractor shall design and construct a suitable DG shed for the purpose of size 4m x 3m along with suitable provision of ramp / stair and roofing with GI corrugated sheet of reputed make hold on MS black pipe post and MS pipe in roof truss clamped by hooks, nut washers etc., complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract.

Installation of Solar Lights: The Contractor shall supply and install of three (3) number of solar lights along with all allied activities, complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The broad technical specifications are enlisted below:

(a) (i) G.I. Pole (dia-4") - 20' high, (ii) Exide Battery-12 v 40 Amp, (iii) Solar panel (Tata power / Bajaj0 40 w, iv. LED light - 9/12 W, (v) Battery box, sensor etc., and (vi) civil work in erection of pole.

(b) 90W LED Street Lights on existing pole.

(c) Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed /XLPE aluminium conductor cable of 1.1 kV grade as required. 4 x 35 sqmm

(d) Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required. 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire

(e) Providing and fixing MCB of 10 A in streetlight

Providing and fixing Installation of Solar Lights: The Contractor shall supply and install of three

(3) number of solar lights along with all allied activities, complete in all respect to the satisfaction of the ENGINEER IN CHARGE and as per the terms & conditions of the Contract. The broad technical specifications are enlisted below:

(a) Supply and installation of solar lights at the terminal with following accessories:-i. G.I.Pole (dia-4") -20' high, ii. Exide Battery-12 v 40 Amp, iii. Solar panel (Tata power / Bajaj0 40 w, iv. LED light-9/12 W, v. Battery box, sensor etc., vi. Civil work in erection of pole complete.

(b) Supply, fitting and installation of 90W LED Street Lights on existing pole

(c) Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed /XLPE aluminium conductor cable of 1.1 kV grade as required. 4 x 35 sqmm

(d) Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required. 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire

(e) Providing and fixing MCB of 10 A in street light

(f) Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required. (100 A, 16 kA, TPMCCB).

All the dimensions indicated under the head of Onshore facilities are indicative only and shall depend upon the actual site conditions and as per the directions given by the ENGINEER IN CHARGE.

Design Description

The Contractor shall submit detailed design basis report along with detailed calculations, sectional drawings, methodology and BoQ of the support platforms for Porta Cabins, Bio-toilets, DG set, Solar Lights and other allied infrastructure before commencement of works, which shall be reviewed and vetted from reputed & authorized Institutes as per the consent of the ENGINEER IN CHARGE. The Contractor shall coordinate with such professionals & other professionals (if any appointed by the Employer), attend meetings and provide all necessary information drawings and details sufficient enough for systematic review / vetting of the design proposals. The Fee for such Proof checking shall be borne by the Contractor itself.

Concrete

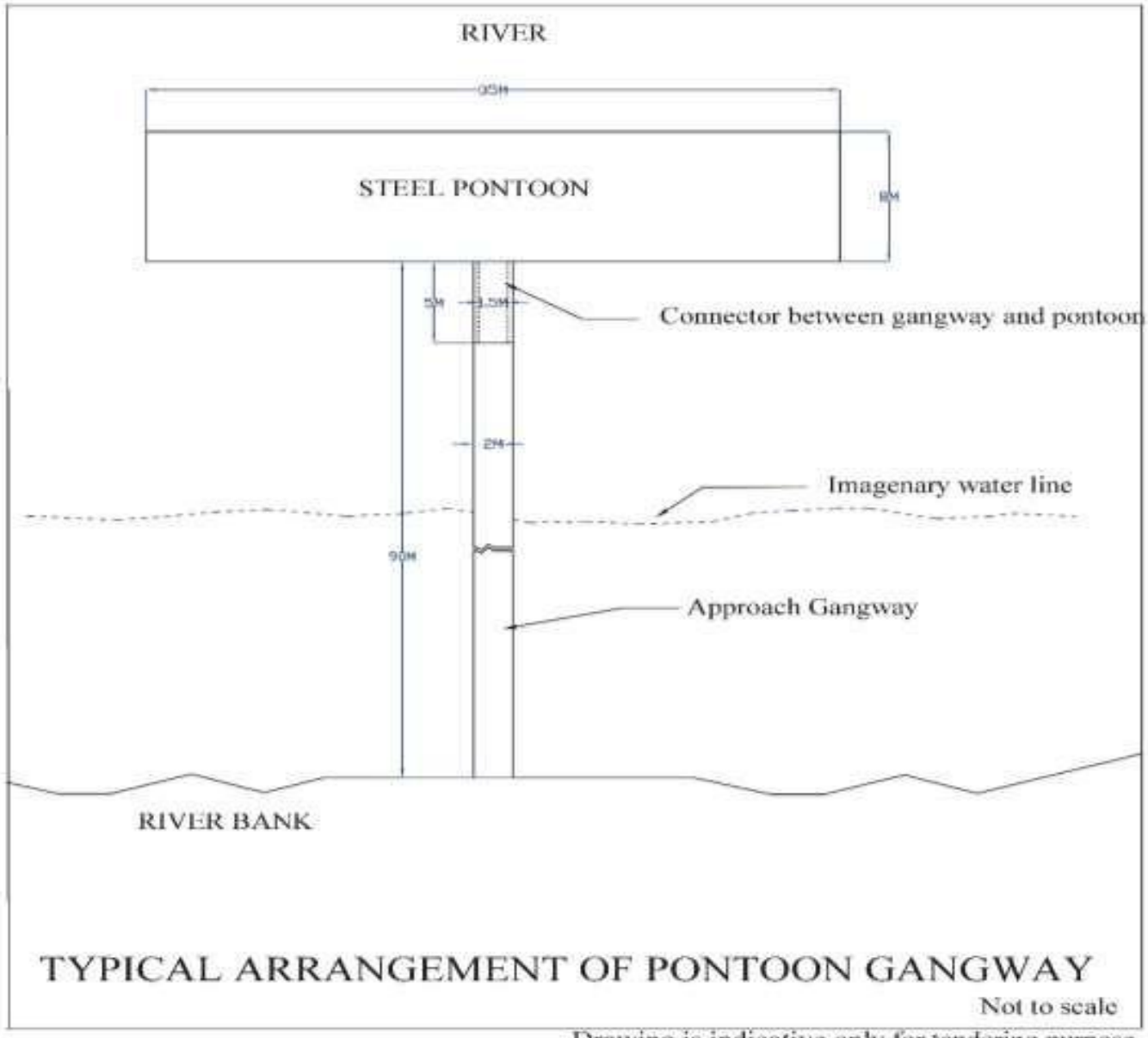
Quality control of concrete shall conform to the requirements of IS 456 or other relevant applicable codes. Concreting process of all structures including in-situ, transported, ready mix concrete, batch mixing plant etc. for manufacturing, supplying, placement and testing shall always comply with the provisions of IS 456 or other relevant applicable codes. Any deviation shall have prior consent of the ENGINEER IN CHARGE. Curing of concrete shall be ensured as per the applicable codes of practice.

Reinforcement

All Reinforcement Steel (TMT Bars) and Structural Steel shall be procured as per specifications mentioned in IS 800: 2007 or other relevant applicable codes duly updated. Independent tests shall be conducted, wherever required, to ensure that the materials procured conform to the specifications. These steel shall be procured only from those firms, which are established, reliable and primary producers of steel, having Integrated Steel Plants (ISP), using iron ore as the basic raw material and having in- house iron rolling facilities, followed by production of liquid steel, as per Ministry of Steel's (Government of India) guidelines.

Note: The number/quantities for different components such as Bio-Toilets etc. mentioned above are tentative and may vary as per site conditions.

ANNEX - B

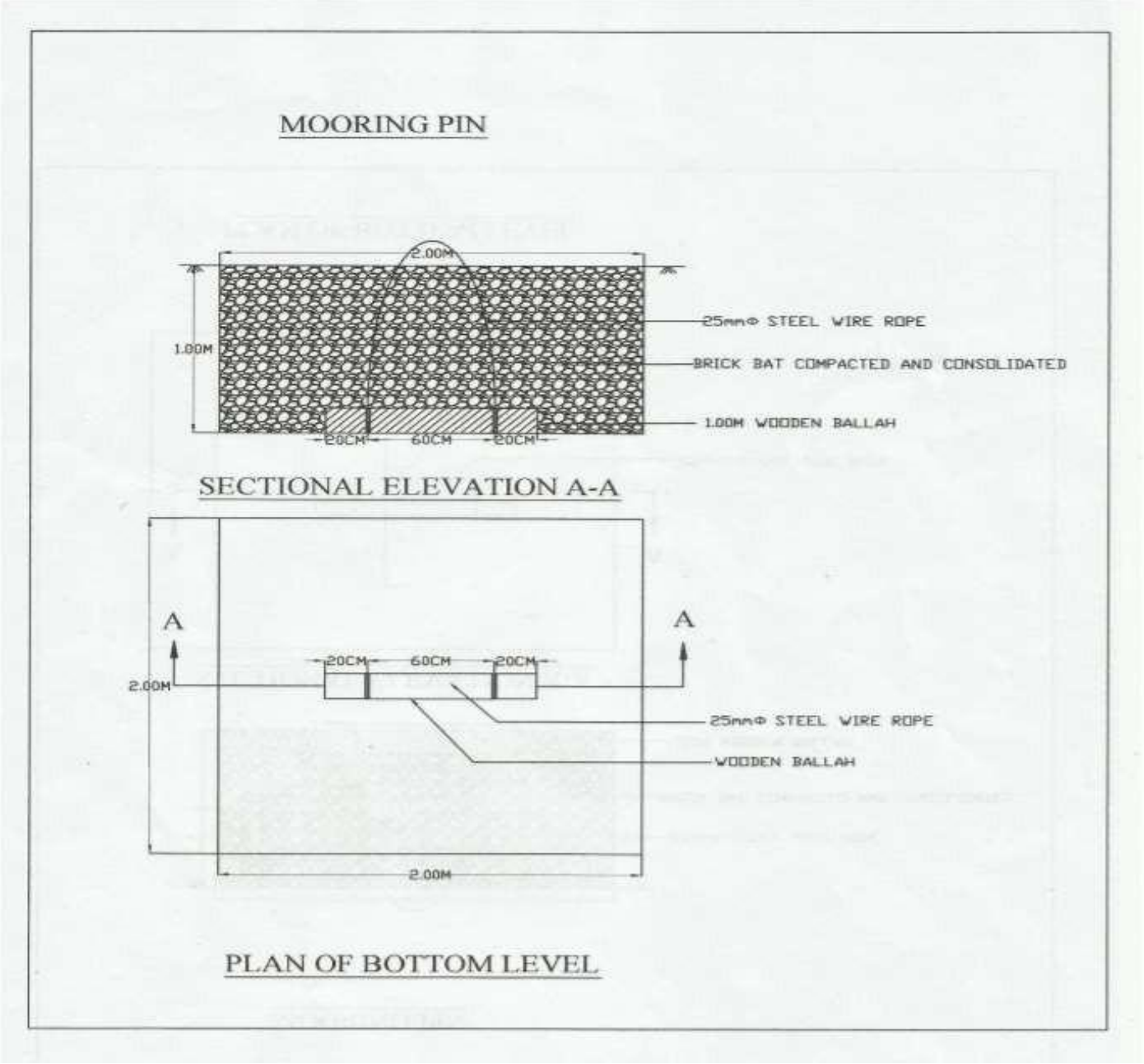


TYPICAL ARRANGEMENT OF PONTOON GANGWAY

Not to scale

Drawing is indicative only for tendering purpose

Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoons and Gangways using suitable Steel Enveloped HDPE / FRP floating material for providing floating Terminal facilities at various locations on NW – 2 (Brahmaputra River) on EPC mode.



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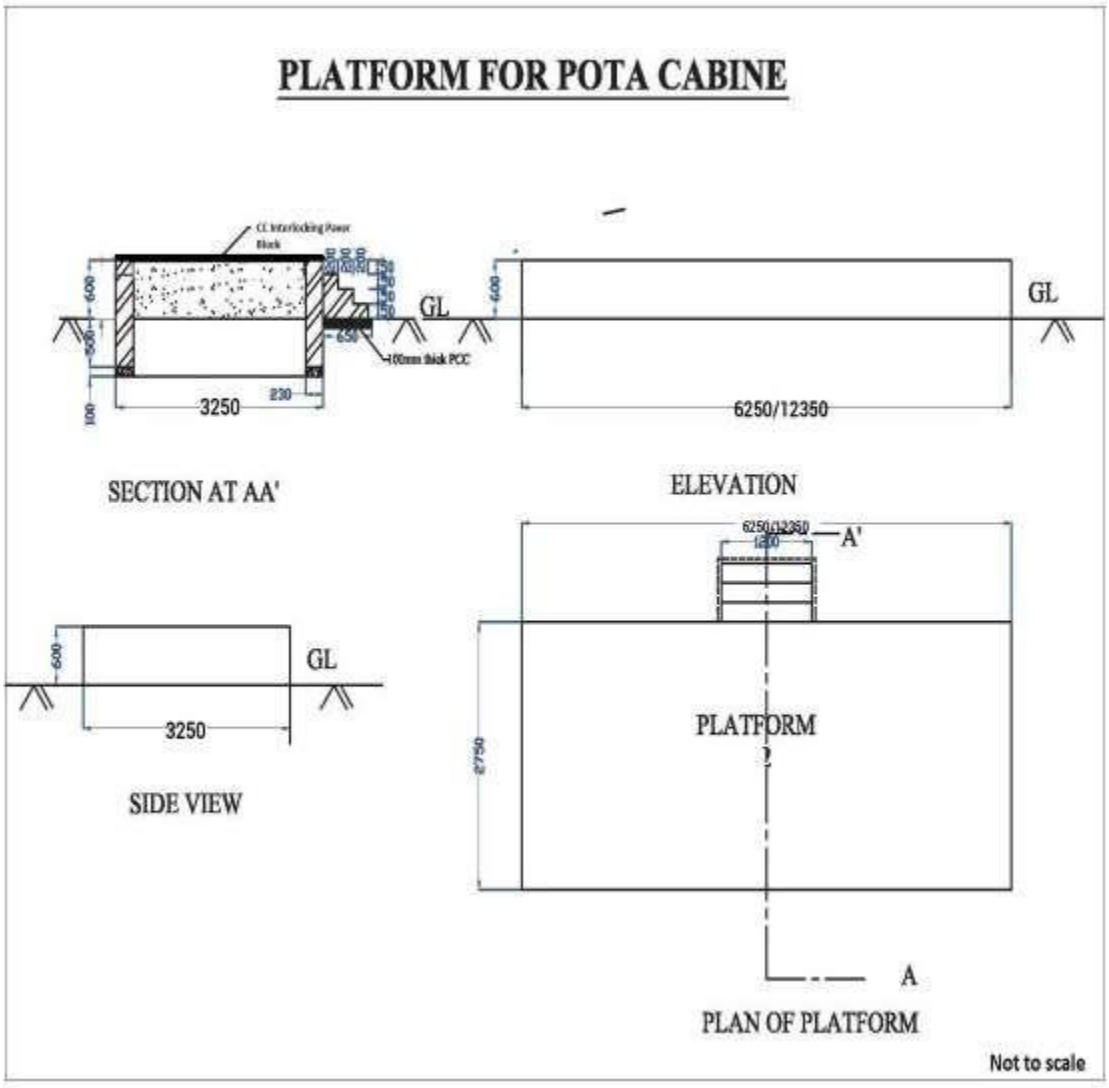

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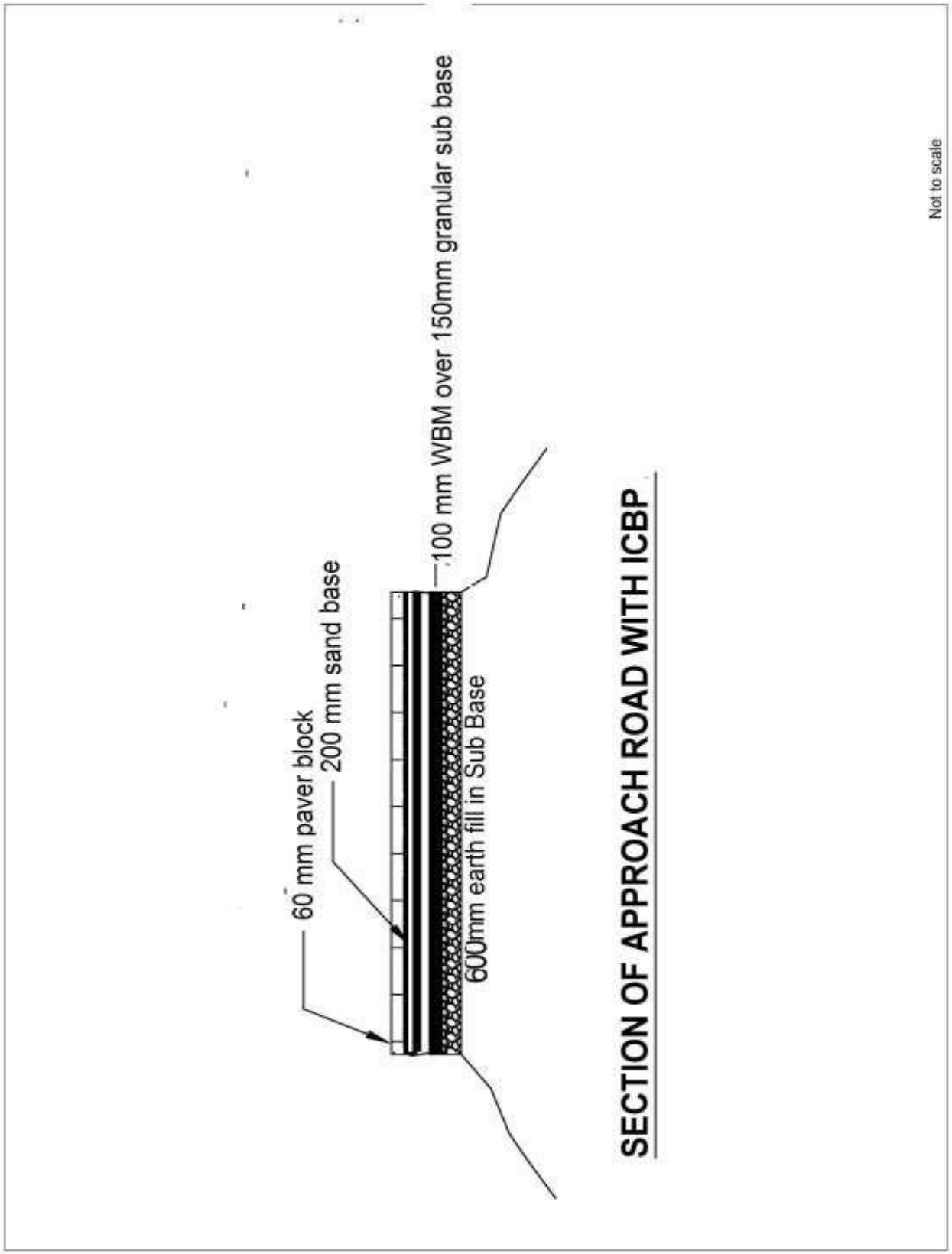


Annex – I

Description of the Project

1. Background and brief about the Project

*"***River Cruise Tourism***"* in India is a fast-growing component of the leisure industry and has significant untapped potential as multiple NWs flow through geographies with rich cultural and wildlife heritage. Through this segment of niche tourism, huge amount of foreign exchange can be earned, and income generated onshore by providing the right policy environment and infrastructure. With the steady development of India's economy, growing middle class and increasing disposable income which could be spent on leisure activities, the overall environment is conducive for the promotion of river cruise tourism within the country. However, due to lack of availability of international standard cruise facilities, promotion efforts and procedural hassles, river cruise tourism in India has been explored to a limited extent.

In line with the Government's objective to develop potential tourism destinations, and in order to encourage and promote Cruise Industry as well as Domestic Cruise Travel on Indian rivers and to encourage Private Cruise operators to identify tourists circuits for tourism promotional activities, IWAI has proposed setting up of floating steel pontoons and gangways along with other allied activities mentioned herein in this section at the following four (4) locations, the details of which are as follows:

Loaction details (NW – 2)
Neamati, Jorhat
Bishwanath Ghat, Sonitpur
Jogighopa
Pandu terminal, Pandu

*****_The locations mentioned above are not fixed and the Contractor may be asked to install the facilities within 50km of the above locations, for which no extra cost shall be paid to the Contractor._

The Bidders are further advised to undertake site visits to the aforesaid proposed locations and collect information and details required for the design and installation of the same. It is deemed that the Bidder has visited the locations and collected the required site information and details prior to submitting the Bid. No claim whatsoever shall be entertained in future on this account.

2. Objective

With the background mentioned above, NHIDCL invites Bids from reputed organizations (hereinafter referred to as "Contractor") having experience primarily in "*Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoons and Gangways using suitable steel enveloped HDPE / FRP floating material along with all associated items of works (including onshore facilities)* as outlined in this tender document."

The Employer's Requirements are that the Contractor shall carryout the Engineering, Design, Procurement of materials, Construction, Supply, Transportation (at the respect sites as mentioned in clause 1.2 above), Installation, Testing & Commissioning of the Pontoon and Gangway, along with all associated items of works (including onshore facilities) as outlined in this tender document. For this purpose, the Contractor shall conduct all necessary field tests and surveys to satisfy / verify himself regarding the correctness of the data furnished vis-à-vis actual condition. No claim whatsoever will be entertained for any variation between the actual site condition met with during the execution of the work and those indicated herein.

The overall responsibility of the Contractor will encompass all the jobs required for carrying out this project from concept to commissioning, adhering to the time schedule, quality parameters and with no time & cost overrun. The Contractor will have to work in close co-ordination with ENGINEER IN CHARGE & his deputed team and all major decisions shall be taken in consultation with them.

3. Scope of Work

The broad scope of work of the Contractor is as below, but not limited to this. In case any associated work is required for successful execution of the project then the Contractor shall also organize the same.

The scope of work shall include but not limited to the following:

Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of four (04) Floating Pontoons of steel (35 m length x 8 m width x 0.7 m Draft / 1.6 m Depth) and four (4) Floating Gangways of suitable steel enveloped HDPE / FRP floating material (50 m length x 2 m width), one (01) each at the locations mentioned in clause 1.2 above, which would be placed near the main shipping channel at the terminals, so as to dock and undock inland vessels for transhipment facilities of Cargo / Personnel through the Gangway to the terminal area. The indicative drawing is at **Annex – A & B**. The Contractor shall also undertake development of the onshore facilities at each location for the items enlisted in the BoQ.

4. Preliminary Works

(a) The Contractor has to work out the detailed design / engineering of Gangways and Pontoons along with onshore facilities for berthing of inland vessels of 30 to 35 m length, duly taking into consideration all the loads and standard shipping practices.

(b) The Contractor shall review the available data and reports if any, pertaining to the works and shall carry out all necessary surveys as required and instructed by ENGINEER IN CHARGE. The Contractor shall also make a detailed analysis of the site and existing facilities available for execution of the works.

(c) The Contractor based upon the surveys and detailed analysis undertaken shall submit preliminary design & final detailed design* along with detailed calculations, sectional drawings, Bill of Quantities (BoQ), work plan & methodology for carrying out the execution of works before commencement of the works at site. The Contractor shall bear all the cost arising out of surveys and detailed analysis.

***For Steel Pontoon & Gangways:** The responsibility of reviewing and vetting the detailed design along with detailed calculations and sectional drawings shall be undertaken from reputed & authorized Classification Societies / Agencies / institutes as per the consent of the Engineer In Charge.*

***For Onshore facilities:** The Contractor shall provide the names of at least three (3) reputed agencies with experience of certifying design & technical specifications and accordingly, conduct quality & safety checks in similar works before commencement of the works. The Engineer In Charge shall approve one of the three (3) agencies to certify design & technical specifications and conduct testing & commissioning for final certification.*

The Contractor shall coordinate with such professionals & other professionals (if any appointed by the Employer), attend meetings and provide all necessary information drawings and details sufficient enough for systematic review / vetting of the design proposals. The Fee for such Proof checking shall be borne by the Contractor.

(d) The Work Plan submitted by the Contractor shall include:

(i) The Works Program – complete work breakdown structure with time schedule and bar chart; and

(ii) Health & Safety Plan to be adhered to during manufacturing, supply, transportation, erections & commissioning

(e) The Contractor after deliberations with the Classification Societies / Agency / Institute & Engineer In Charge shall agree and incorporate the necessary changes in the design, sectional drawings, BoQ, work plan and methodology within the stipulated timelines. The Contractor shall get the design, sectional drawings, BoQ, work plan and methodology approved by the Classification Societies / Agency / Institute & ENGINEER IN CHARGE before commencement of the works and shall accordingly, abide by with the timelines agreed upon.

(f) The Contractor is fully responsible for delivering a safe, sound, durable and satisfactorily functioning State of the Art structure conforming to the project requirements, applicable engineering standards, codes and manuals.

***Note:** The data and information including all drawings provided by the Employer are indicative and for guidance only. These should be re-checked, verified and modified by conducting site investigations to suit the site conditions.*

5. Procurement

(a) The Contractor shall procure and supply all the necessary material, machinery and related necessary items well in advance adhering to the timelines stipulated below in clause 7.0 below.

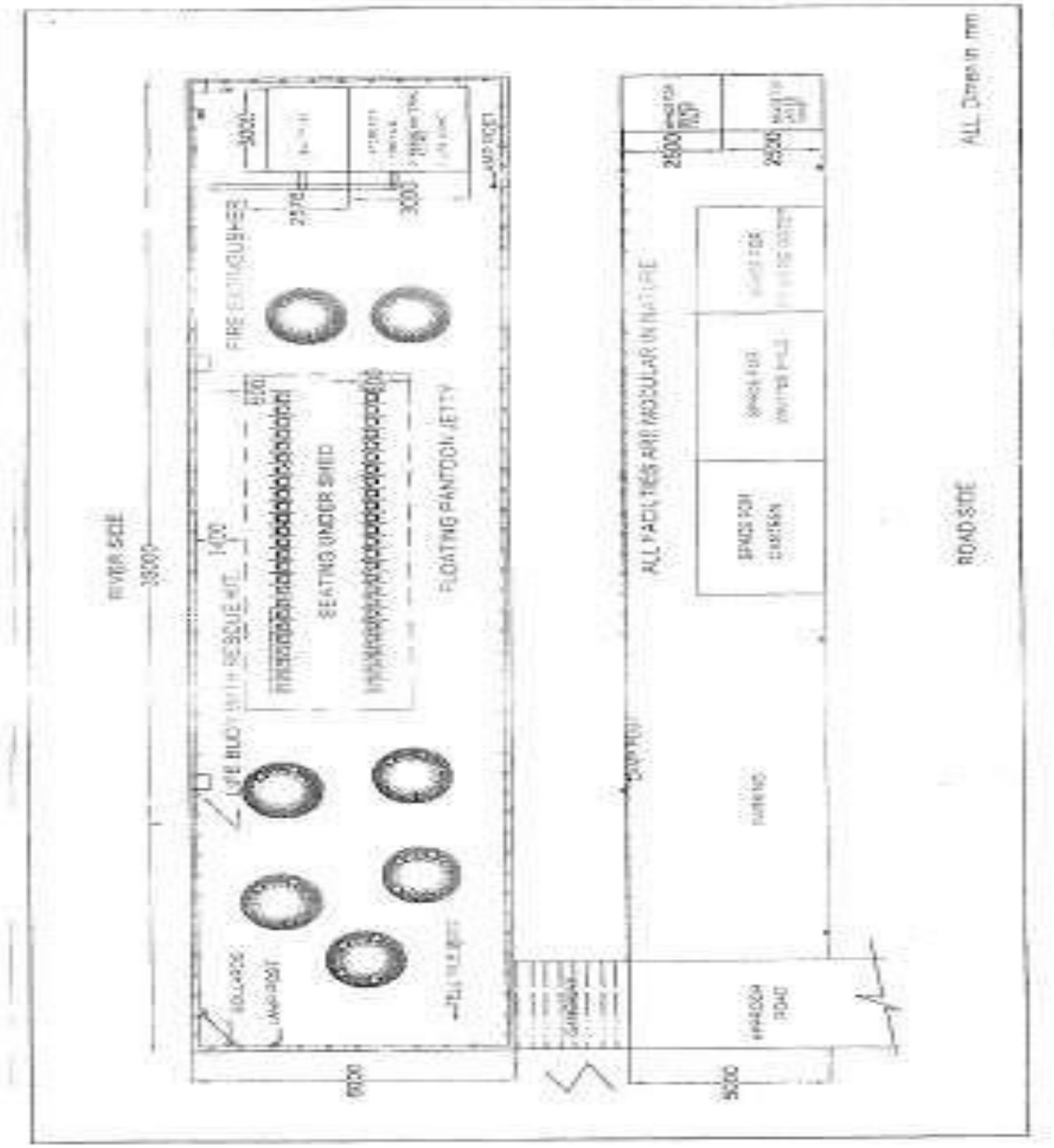
(b) The Contractor shall make its own arrangement for safe storage, handling of material and machinery procured at site.

6 Site Organization

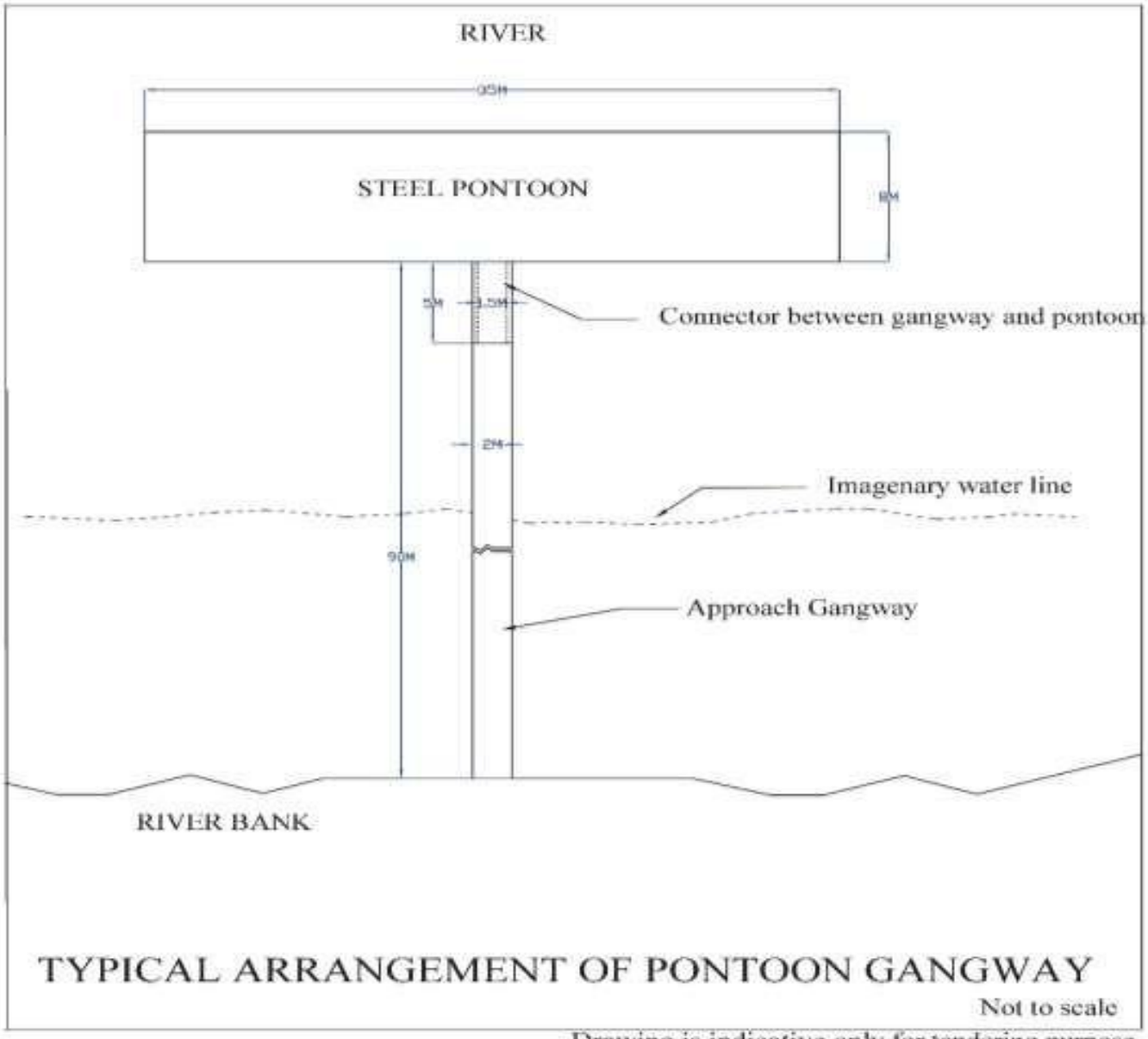
The Contractor shall depute independent well - qualified officers / team, having sufficient experience in execution of all the works under the scope of work of this tender document. If the progress of work is found unsatisfactory during the currency of the Contract, the Contractor shall promptly mobilize additional personnel / resources for ensuring satisfactory progress and timely completion of the proposed work, as per direction of & satisfaction of Engineer In Charge and also obtain necessary clearances to satisfy all the conditions of the contract without extra cost to the Employer.

Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoons and Gangways using suitable Steel Enveloped HDPE / FRP floating material for providing floating Terminal facilities at various locations on NW – 2 (Brahmaputra River) on EPC mode.

ANNEX - A



ANNEX - B



TYPICAL ARRANGEMENT OF PONTOON GANGWAY

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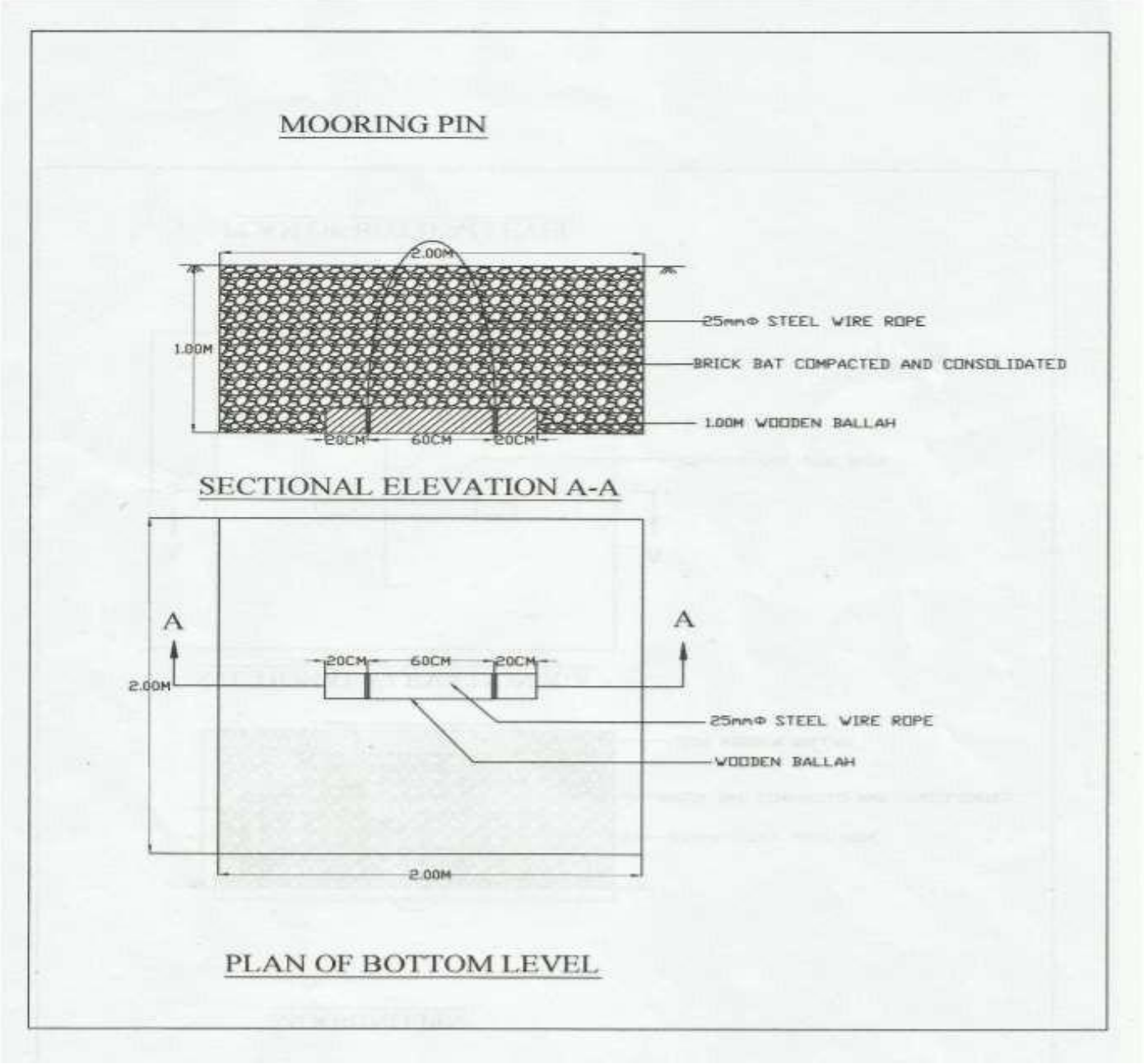

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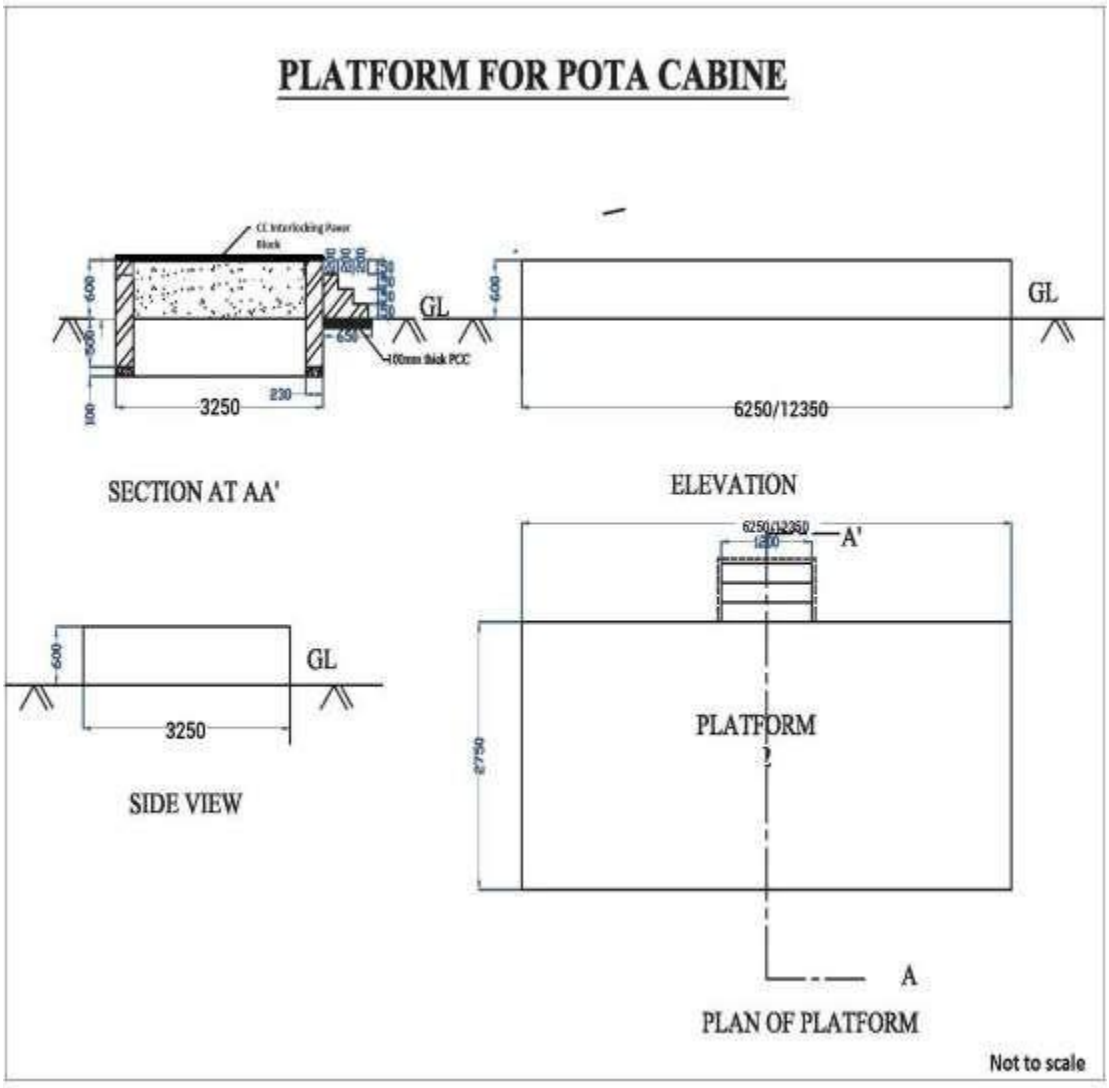

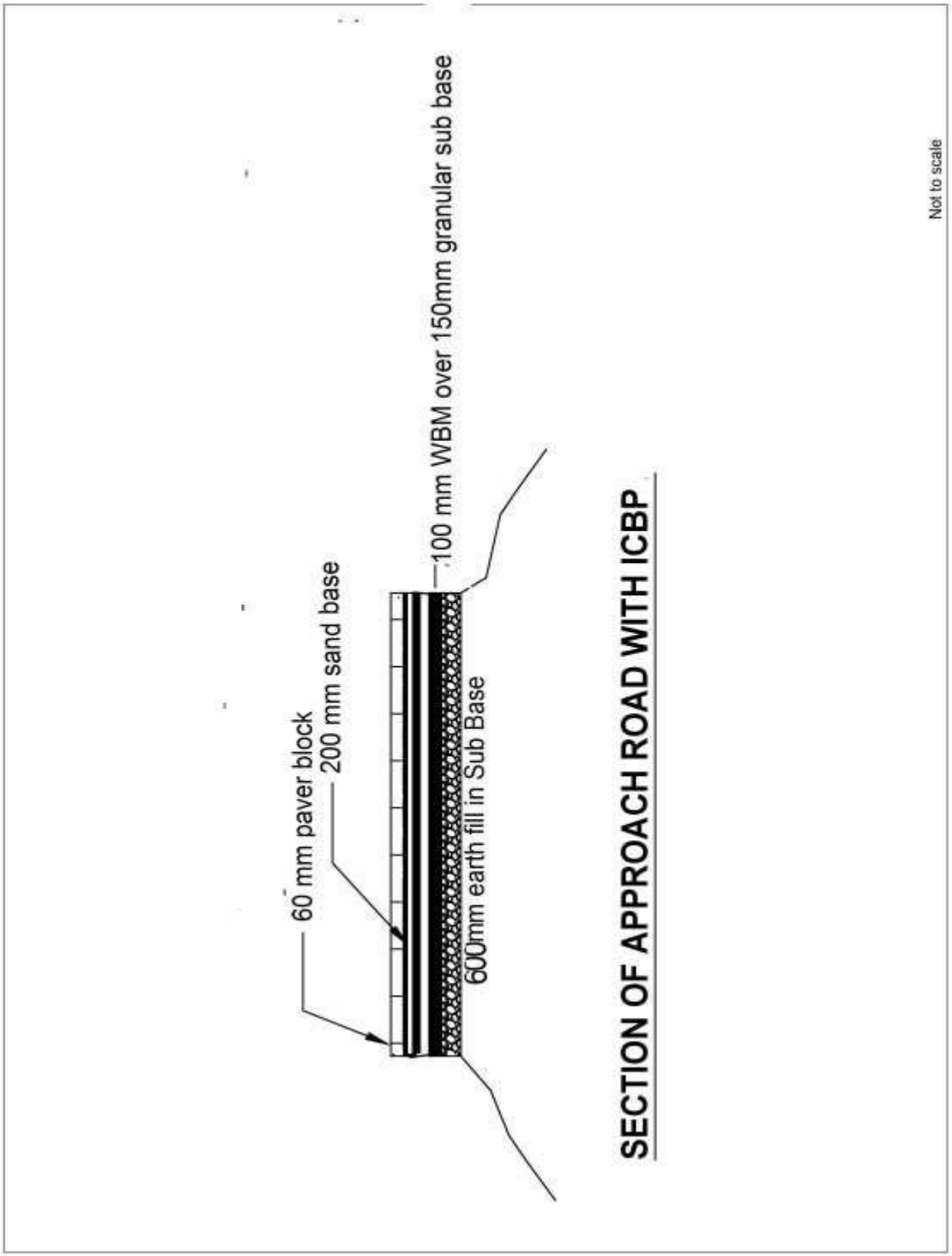

SECTION OF APPROACH ROAD WITH ICBP

Schedule B-1

Electrical Utility

Refer Schedule-B.

Schedule - C

Project Facilities

Refer Schedule-B.

Schedule - D

Specifications and Standards

Refer Schedule-B.

Annex – I

(Schedule-D)

Specifications and Standards for Construction

Refer Schedule-B.

Schedule - E

Maintenance Requirements

Operation & Maintenance

The Contractor shall be responsible for Operation and Maintenance (O&M) of all the facilities installed for a period of 120 months, after completion of all the works as per the Contract and final handing over of the same to the satisfaction of EIC. The Contractor has to man and maintain the pontoon, gangway and onshore facilities installed at each location as per the directions of the EIC.

The Contractor has to ensure for maintaining the pontoon, gangway and onshore facilities by qualified / trained, competency certificate holders and personnel with adequate experience in the relevant field and nature of work.

When the pontoon is berthed or moored, the safety of the pontoon is also to be ensured by the Crew.

The contractual charges are inclusive of all the expenses connected to manning and other contractual obligations.

The work of maintenance of pontoon, gangway and onshore facilities i.e. contract management is outsourced completely and no individual operating the facilities will have any claim for absorption in the Authority on a regular basis for having been engaged for a specific period. On completion of Contract, all the facilities will be handed over to the Authority without any crew or encumbrance

Minimum consolidated emoluments including Statutory allowances: The Contractor has to ensure that the wages are as per Minimum Wages Act and as prevailing in the marine sector depending on their qualification, competency etc. All the statutory allowances such as PF, ESI, Bonus, Group Insurance are to be provided to each staff as prevailing and accordingly, the Contractor has to ensure for opening their deposit with the concerned organization as per the procedure in this regard.

General Upkeep & Maintenance:

(a) General upkeep, maintenance of the pontoon, gangway and onshore facilities shall be Contractor's responsibility. This includes normal routine maintenance and cleanliness of the pontoon, gangway, onshore facilities, proper mooring and berthing, repair work so as to keep the pontoon, gangway and onshore facilities ready and fit for operation. EIC or his representative may inspect without any prior notice in this regard. Details of the repair works as well as maintenance works carried out are also to be recorded in the log-book on completion of each maintenance work.

(b) Repair and maintenance of pontoon and gangway must be attended as per marine practice / guidelines / statutory requirement and maintenance schedule of the manufacturer of machineries, equipment etc.

(c) The cost of statutory dry-docking will be reimbursed by the Authority provided such repairs are carried out with prior permission and sanction to the estimate from the EIC within duration of lay off approved by him.

Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoons and Gangways using suitable Steel Enveloped HDPE / FRP floating material for providing floating Terminal facilities at various locations on NW – 2 (Brahmaputra River) on EPC mode.

Consumables and Stores

All running stores, spare parts, consumables and miscellaneous items required during the O&M period will have to be provided by the Contractor without any extra cost to the Employer. Further, the defects occurring against manufacturing defects, workmanship and serviceability of the various components, individually or compositely to entire work shall be dealt by the Contractor during the O&M period and without any extra cost to the Employer.

Annex -I

(Schedule-E)

Repair/rectification of Defects and deficiencies

The Contractor shall repair and rectify the Defects and deficiencies within the time limit as specified by the Authority.

Schedule – F

Applicable Permits

1. Permits, Licenses or Approvals

The Employer shall (where he is in a position to do so) provide reasonable assistance to facilitate the Contractor at the request of the Contractor but without holding any liability to do so towards the Contractor:

(a) by obtaining copies of the Laws of the Country which are relevant to the Contract but are not readily available;

(b) for the Contractor's applications for any permits, Licences or approvals required by the Laws of the Country:

(c) The Contractor shall, in performing the Contract, comply with the applicable Laws.

(i) the Employer shall have obtained (or shall obtain) the planning, zoning or similar permission for the Permanent works, and any other permissions described in the Specification as having been (or being) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and

(ii) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals for his equipment and manpower as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Employer, harmless against and from the consequences of any failure to do so.

(d) for the export of Contractors Equipment when it is removed from the Site.

All cost related to obtaining of such permits, licenses and approvals shall be borne by the Contractor.

Schedule – G

(Clause 2.21 of RFP)

Annex-I

(Appendix VII of RFP document)

Form of Bank Guarantee

[Performance Security/Additional Performance Security]

Refer Section 2.21 of RFP & Appendix VII of RFP document.

Annex – II

Form for Guarantee for Advance Payment

[National Highways & Infrastructure Development Corporation Limited, New Delhi] WHEREAS:

(A) [name and address of contractor] (hereinafter called the "**Contractor**") has executed an agreement (hereinafter called the "**Agreement**") with the [name and address of the authority], (hereinafter called the "**Authority**") for Construction of Inland Water Transport Terminal, Jogighopa in the state of Assam on Engineering, Procurement and Construction (the "**EPC**") basis, subject to and in accordance with the provisions of theAgreement.

(B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called"AdvancePayment")equal to10%(tenpercent)oftheContractPrice;and that the Advance Payment shall be made in two instalments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such instalment to remain effective till the complete and full repayment of the instalment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} instalment of the Advance Payment is Rs. ------ cr. (Rupees crore) andtheamount of this Guarantee is Rs. ------- cr. (Rupees ------ crore) (the "Guarantee Amount")[$].

(C) We, …….. through ourbranchat (the "Bank") have agreedtofurnish this bank guarantee (hereinafter called the "Guarantee") for the Guarantee Amount.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid instalment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay tothe Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specifiedtherein.

1. A letter from the Authority, under the hand of an officer not below the rank of [General Manager in the National Highways Authority of India], that the Contractor has committed default in the due and faithful performance of all orany of its obligations for the repayment of the instalment of the Advance Payment under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on

[$] The Guarantee Amount should be equivalent to 110% of the value of the applicable instalment.

the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reasonwhatsoever.

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.

6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

7. The Guarantee shall cease to be in force and effect on[$] unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.

8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writingand declares and warrants that it has

[$] Insert a date being 90 (ninety) days after the end of one year from the date of payment of the Advance payment to the Contractor (in accordance with Clause 19.2 of the Agreement).

the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

Signed and sealed this ……. day of ……., 20…… at ……..

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature) (Name) (Designation) (Code Number) (Address)

NOTES:

i. Thebankguaranteeshouldcontainthename,designationandcodenumberofthe officer(s) signing theguarantee.

ii. The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

Annex – III

(Schedule - G)

(Clause 7.5 of Agreement)

Form for Guarantee for Withdrawal of Retention Money

The Managing Director,
National Highways & Infrastructure Development Corporation Limited
New Delhi

WHEREAS:

(A) [name and address of contractor] (hereinafter called the "**Contractor**") has executed an agreement (hereinafter called the "Agreement") with the [name and address of the authority], (hereinafter called the "**Authority**") for the construction of the IWT Terminal at Jogighopa, Assam [National Waterway No. 02] on Engineering, Procurement and Construction (the "**EPC**") basis, subject to and in accordance with the provisions of the Agreement.

(B) In accordance with Clause 7.5.3 of the Agreement, the Contractor may withdraw the retention money (hereinafter called the "**Retention Money**") after furnishing to the Authority a bank guarantee for an amount equal to the proposed withdrawal.

(C) We, …….. through our branch at ……. (the "**Bank**") have agreed to furnish this bank guarantee (hereinafter called the "**Guarantee**") for the amount of Rs. ---------- cr. (Rs.----------crore) (the "**Guarantee Amount**").

NOW, THEREFORE, the Bank hereby unconditionally and irrevocably guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from the Authority, under the hand of an officer not below the rank of General Manager in the National Highways & Infrastructure Development Corporation Limited (NHIDCL) , that the Contractor has committed default in the due and faithful performance of all or any of its obligations for under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in

default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Retention Money and any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Retention Money.

7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

8. The Guarantee shall cease to be in force and effect 90 (ninety) days after the date of the Completion Certificate specified in Clause 12.4 of the Agreement.

9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post

it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

12. This guarantee shall also be operatable at our…….Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

13. The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of NHIDCL, details of which is as under:

S. No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002610
3	Beneficiary Bank Branch	IFSC SYNB0009062
4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Canara Bank (erstwhile Syndicate Bank) transport Bhawan, 1st Parliament Street, New Delhi-110001

Signed and sealed this ……. day of ……., 20…… at ……..

SIGNED, SEALED AND DELIVERED For and on behalf of the Bank by:

(Signature)
(Name)

(Designation) (Code Number) (Address) NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

(ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

Schedule - H

Contract Price Weightages

1.1 The Contract Price for this Agreement is **Rs……. Crores.**

1.2 Proportions of the Contract Price for different components of the Tourist Terminal Jetties Facilities at Jogighopa are specified as below:

S. No.	Item	Weightage in % to the Contract Price	Stage for Payment	Percentage Weightage
(1)	(2)	(3)	(4)	(5)
1.	**Steel Pontoon**	**56.11**	Submission and approval of final detailed design (approved by authorized classification society / agency / institute & Engineer-In-Charge) along with sectional drawings (GFC), work plan & methodology with updation / modifications, if any.	5% of the total amount at Sr. no. 1, Cl no. (3).
			Completion of Keel Laying.	10% of the total amount at Sr. no. 1, Cl no. (3) against irrevocable Bank Guarantee for the same amount which will be returned after successful delivery and handing over of the pontoon at site
			Completion of 50% of hull fabrication & erection at the shipyard.	15% of the total amount at Sr. no. 1, Cl no. (3)
			Completion of 100% of hull fabrication and erection at the shipyard.	20% of the total amount at Sr. no. 1, Cl no. (3)
			Installation of fenders, landing platform, stairs, bollards, facility for 2 nos. crew accommodation, passenger shed for sitting arrangement capacity of 30 passengers approx. & 7 nos. of umbrella shed with 5 nos. of seating capacity under each umbrella, 2 nos. of toilets along with wash basin & water supply arrangement, Life Saving appliances (10 Nos. Lifebuoys and 40 Nos. Life jackets), 3 number of portable Dry powder fire extinguishers of 9 litre capacity for all classes of fire, tactile tiles for visually impaired people, shore connection facilities for electricity and 4 Nos. of Solar Lamp Posts on the Pontoon.	5% of the total amount at Sr. no. 1, Cl no. (3)
			Successful launching of the Pontoon at the shipyard.	10% of the total amount at Sr. no. 1, Cl no. (3)
			Transportation of Pontoon from Shipyard to the respective site.	10% of the total amount at Sr. no. 1, Cl no. (3)
			Testing, commissioning and trial of Pontoon at the respective site.	5% of the total amount at Sr. no. 1, Cl no. (3)
			Satisfactory installation of Pontoon at site along with the certification of inspection authority and final handing over of the same to the Engineer-In-Charge.	10% of the total amount at Sr. no. 1, Cl no. (3)
			Final payment and the modalities beyond completion shall be decided and amount released with the approval and satisfaction of the client i.e Inland Waterways Authority of India (IWAI). Decision of the Competent Authority of NHIDCL shall be final in this regard.	10% of the total amount at Sr. no. 1, Cl no. (3)

S. No.	Item	Weightage in % to the Contract Price	Stage for Payment	Percentage Weightage
(1)	(2)	(3)	(4)	(5)
2.	**HDPE Gangway**	**19.55**	Submission and approval of preliminary design and methodology for installation of Floating Gangway including presentation.	5% of the total amount at Sr. no. 2, Cl no. (3)
			Submission and approval of final detailed design (approved by agency / institute & Engineer-In-Charge) along with sectional drawings (Good for Construction (GFC) drawings), work plan & methodology with updation / modifications, if any.	10% of the total amount at Sr. no. 2, Cl no. (3)
			Procurement of all the components along with accessories & supplying the same at site including on-site inspection by Engineer-In-Charge.	50% of the total amount at Sr. no. 2, Cl no. (3)
			Transportation of Gangway from place of manufacturing to the respective site.	10% of the total amount at Sr. no. 2, Cl no. (3)
			Installation of Gangway along with accessories.	10% of the total amount at Sr. no. 2, Cl no. (3)
			Testing & Commissioning of the Floating Gangway for successful operation.	5% of the total amount at Sr. no. 2, Cl no. (3)
			Final payment and the modalities beyond completion shall be decided and amount released with the approval and satisfaction of the client i.e Inland Waterways Authority of India (IWAI). Decision of the Competent Authority of NHIDCL shall be final in this regard.	10% of the total amount at Sr. no. 2, Cl no. (3)
3.	**Onshore Facilities**	**24.34**	Land Development and Parking Facilities	10% of the total amount at Sr. no. 3, Cl no. (3)
			Approach Road (100m) 3.5m top width and 0.5m height	10% of the total amount at Sr. no. 3, Cl no. (3)
			Porta Cabin of size 40ft x 10ft x 8.5ft for the purpose of waiting area of tourists (Design, Procurement, Transportation, complete in all respects)	15% of the total amount at Sr. no. 3, Cl no. (3)
			Porta Cabin of size 20ft x 10ft x 8.5ft for the purpose of pantry of tourists (Design, Procurement, Transportation, complete in all respects)	15% of the total amount at Sr. no. 3, Cl no. (3)
			Porta Cabin of size 6ft x 8ft x 8.5ft for the purpose of security cabin (Design, Procurement, Transportation, complete in all respects)	15% of the total amount at Sr. no. 3, Cl no. (3)
			Installation of Bio-toilets at each location.	5% of the total amount at Sr. no. 3, Cl no. (3)
			DG Set	5% of the total amount at Sr. no. 3, Cl no. (3)
			Installation of Solar Lights	5% of the total amount at Sr. no. 3, Cl no. (3)
			Water Supply System	5% of the total amount at Sr. no. 3, Cl no. (3)
			Installation of Signages	5% of the total amount at Sr. no. 3, Cl no. (3)
			Final payment and the modalities beyond completion shall be decided and amount released with the approval and satisfaction of the client i.e Inland Waterways Authority of India (IWAI). Decision of the Competent Authority of NHIDCL shall be final in this regard.	10% of the total amount at Sr. no. 3, Cl no. (3)
Total		**100**		

Schedule - I

Drawings

Refer Schedule-B. Drawings shall be prepared by the EPC Contractor at his cost and shall be got approved from the Competent Authority as per requirement.

Annex – I

(Schedule - I)

List of Drawings

Refer Schedule-B. Details in Schedule-B are for rough guidance and the drawings shall be prepared by the EPC Contractor at his cost and shall be got approved from the Competent Authority as per requirement. List shall be provided by the Contractor and shall be submitted to the Competent Authority.

Schedule - J

Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-J for each of the Project Milestones and the Scheduled Completion Date of 14 months from the commencement date, as shown below. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Employer of such compliance along with necessary particulars thereof.

Milestone-1: 7 months from the Commencement Date.

Prior to the occurrence of Milestone-1, the Contractor shall have completed 25% of the total project cost.

Milestone-2: 10 months from the Commencement Date.

Prior to the occurrence of Milestone-2, the Contractor shall have completed 50% of the total project cost.

Milestone-3: 12 months from the Commencement Date.

Prior to the occurrence of Milestone-3, the Contractor shall have completed 75% of the total project cost.

Milestone-4: 14 months from the Commencement Date.

Prior to the occurrence of Milestone-4, the Contractor shall have completed 90% of the total project cost with all clearance and certifications. Final payment and the modalities beyond completion shall be decided and amount released with the approval and satisfaction of the client i.e Inland Waterways Authority of India (IWAI). Decision of the Competent Authority of NHIDCL shall be final in this regard.

Schedule - K

(Clause 12.1 (ii) of Agreement)

Tests on Completion

Refer Clause 12.1 (ii) of Draft Contract Agreement.

Schedule - L

(Clause 12.2 of Agreement)

Completion Certificate

1. I, ……. (Name of the Authority's Engineer), acting as the Authority's Engineer, under and in accordance with the Agreement dated (the"**Agreement**"), for Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoons and Gangways using suitable Steel Enveloped HDPE / FRP floating material for providing floating Terminal facilities at various locations on NW – 2 (Brahmaputra River) on EPC mode (the "**Project**") on Engineering, Procurement and Construction (EPC) basis through (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project with the provisions of the Agreement, and I am satisfied that the Project can be safely and reliably placed in service of the Users thereof.

2. It is certified that, in terms of the aforesaid Agreement, all works forming part of Project have been completed, and the Project is hereby declared fit for entry into operation on this the……day of……20…,Scheduled Completed Date for which was the …… day of ……20…..

SIGNED, SEALED ANDDELIVERED

For and on behalf of the Authority's Engineerby:

(Signature)

(Name) (Designation)(Address)

Schedule - M

(See Clauses 14.6, 15.2 and 19.7)

Deleted.

Schedule - N

(Clause 18.1 (i) of Agreement)

Selection of Authority's Engineer

1. Selection of Authority's Engineer

(i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Authority's Engineer.

(ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

2. Terms of Reference

The Terms of Reference for the Authority's Engineer (the "**TOR**") shall substantially conform with Annex 1 to this Schedule N.

3. Appointment of Government entity as Authority's Engineer

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Authority's Engineer; provided that such entity shall be a body corporate having as one of its primary functions the provision of consulting, advisory and supervisory services for engineering projects; provided further that a government-owned entity which is owned or controlled by the Authority shall not be eligible for appointment as Authority's Engineer.

Annex – I

(Schedule - N)

Terms of Reference for Authority's Engineer

1. Scope

(i) These Terms of Reference (the"**TOR**")for the Authority's Engineer are being specified pursuant to the EPC Agreement dated ..... (the "**Agreement**), which has been entered intobetween the[name and address of the Authority](the"**Authority**") and..... (the "**Contractor**")for Construction of Inland Water Transport Terminal at Jogighopa on National Waterway No. 2 in the State of Assam (the "**Project**") on Engineering, Procurement, Construction (EPC) basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

- In case the bid of Authority's Engineer is invited simultaneously with the bid of EPC project, then the status of bidding of EPC project only to be indicated

(ii) The TOR shall apply to construction and maintenance of the Project.

2. Definitions and interpretation

(i) The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in theAgreement.

(ii) References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of thisTOR.

(iii) The rules of interpretation stated in Article 1 of the Agreement shall apply, mutatis mutandis, to thisTOR.

3. General

(i) The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good IndustryPractice.

(ii) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority beforedetermining:

a) any Time Extension;

b) any additional cost to be paid by the Authority to theContractor;

c) the Termination Payment; or

d) issuance of Completion Certificate or

e) any other matter which is not specified in (a), (b), (c) or (d) above and which creates a financial liability on either Party.

(iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.

(iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.

(v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.

(vi) In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

4. Construction Period

(i) During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, dredging & site grading etc. and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1 (vi). The Authority's Engineer shall complete such review and approval and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings.

(ii) The Authority's Engineer shall review and approve any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.

(iii) The Authority's Engineer shall review and approve the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty one) days stating the modifications, if any, required thereto.

(iv) The Authority's Engineer shall complete the review and approve of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.

(v) Deleted.

(vi) The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.

(vii) The Authority's Engineer shall inspect the Construction Works and the Project and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority's Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.

(viii) The Authority's Engineer shall conduct the pre-construction review of manufacturer's test reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.

(ix) For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 4 (ix), the tests specified in the Appendix B or any modification/substitution thereof shall be deemed to be tests conforming to GoodIndustry Practice for quality assurance.

(x) The timing of tests referred to in Paragraph 4 (ix), and the criteria for acceptance/ rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.

(xi) In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.

(xii) The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project , whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.

(xiii) In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the

Contractor forthwith.

(xiv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.2.

(xv) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.

(xvi) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.

(xvii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate, as the case may be. For carrying out its functions under this Paragraph 4 (xvii) and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.

5. Maintenance Period

(i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with theContractor.

(ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and theContractor.

(iii) The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Project is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Contractor in thisbehalf.

(iv) In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissiblelimit.

6. Determination of costs and time

(i) The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under theAgreement.

(ii) TheAuthority's Engineer shall determine the period of Time Extension that is required to be determined by it under theAgreement.

(iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause18.5.

7. Payments

(i) The Authority's Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provisions of Clause 10.2 (iv)(d).

(ii) Authority's Engineer shall-

a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and

b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable totheContractor, after adjustments in accordance with the provisions of Clause 19.10.

(iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.

(iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause19.16.

8. Other duties and functions

The Authority's Engineer shall perform all other duties and functions as specified in the Agreement.

9. Miscellaneous

(i) A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of

all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authorityforthwith.

(ii) The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.

(iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project as actually designed, engineered and constructed, including an as- built survey illustrating the layout of the Project ,All the buildings and structures forming part of Project Facilities; shall hand them overto the Authority against receipt thereof.

(iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between theParties.

(v) TheAuthority'sEngineershallinformtheAuthorityandtheContractorofanyeventof Contractor's Default within one week of itsoccurrence.

Schedule - O

(See Clauses 19.4 (i), 19.6 (i), and 19.8 (i) of Agreement)

Forms of Payment Statements

1. Stage Payment Statement forWorks

The Stage Payment Statement for Works shall state:

a) The estimated amount for the Works executed in accordance with Clause19.3

   (i) subsequent to the last claim;

b) amounts reflecting adjustments in price for the aforesaidclaim;

c) the estimated amount of each Change of Scope Order executed subsequent to the lastclaim;

d) amounts reflecting adjustment in price, if any, for(c) above in accordance with the provisions of Clause 13.2 (iii)(a);

e) total of (a), (b), (c) and (d)above;

f) Deductions:

   (i) Any amount to be deducted in accordance with the provisions of the Agreement excepttaxes;

   (ii) Any amount towards deduction of taxes;and

   (iii) Total of (i) and (ii)above.

g) Net claim: (e) – (f)(iii);

h) The amounts received by the Contractor upto the lastclaim:

   (i) For the Works executed (excluding Change of Scopeorders);

   (ii) For Change of Scope Orders,and

   (iii) Taxesdeducted

2. Monthly Maintenance Payment Statement

The monthly Statement for Maintenance Payment shall state:

a) the monthly payment admissible in accordance with the provisions of the Agreement;

b) the deductions for maintenance work notdone;

c) net payment for maintenance due, (a) minus(b);

d) amounts reflecting adjustments in price under Clause 19.12;and

e) amount towards deduction oftaxes

3. Contractor's claim for Damages

Note: The Contractor shall submit its claims in a form acceptable to the Authority.

Schedule - P

(Clause 20.1 of Agreement)

Insurance

1. Insurance during Construction Period

(i) The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire andterrorism:

a) insurance of Works, Plant and Materials and an additional sum of [15 (fifteen)] per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature;and

b) insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at theSite.

(ii) The insurance under sub para (a) and (b) of paragraph 1(i) above shall cover the Authority and the Contractor against all loss or damage from any cause arising under paragraph 1.1 other than risks which are not insurable at commercialterms.

2. Insurance for Contractor's DefectsLiability

The Contractor shall effect and maintain insurance cover of not less than 15% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

3. Insurance against injury to persons and damage toproperty

(i) The Contractor shall insure against its liability for any loss, damage, death or bodily injury, or damage to any property (except things insured under Paragraphs 1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor's performance of this Agreement. This insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number ofoccurrences.

The insurance cover shall be not less than: Rs. 2,00,00,000/- (Two Crore only)

(ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:

a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works;and

b) damage which is an unavoidable result of the Contractor's obligations to execute the Works.

4. Insurance to be in joint names

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.

Schedule-Q

Tests on Completion of Maintenance Period

Deleted

Schedule-R

Taking Over Certificate

I, ……. (Name and designation of the Authority's Representative) under and in accordance with the Agreement dated …… (the "**Agreement**"), for Construction of Inland Water Transport Terminal at Jogighopaon National Waterway No. 2 in the State of Assam (the "**Project**") on Engineering, Procurement and Construction (EPC) basis through (NameofContractor),herebycertifythattheTests on completion of Defect Liability Period of the Agreement have been successfully undertaken to determine compliance of the Project with the provisions of the Agreement and I hereby certify that the Authority has taken over the Project from the Contractor on this day.....

SIGNED, SEALED ANDDELIVERED

(Signature)

(Name and designation of Authority'sRepresentative)

(Address)

******* End of the Document *******