

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.

Technical Schedules



**NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LTD.
(NHIDCL)**

September, 2021

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.

SCHEDULES

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Schedule-A

(Clause 1.2 of Appendix B - General Technical Specifications)

Site of the Project

- 1.1 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 facilities at the following Four (4) locations:

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

Note: The Bidders are advised to undertake site visits to the aforesaid proposed locations and collect information and details required for the design and execution of the work. 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.

- 1.2 The dates of handing over the site to the Contractor are specified in Annex-II of this Schedule-A.
- 1.3 An inventory of the Site including the land, buildings, Structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority's Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2(i) of this Agreement.
- 1.4 The detailed specification and drawings of the Project are specified in Annex-III.
- 1.5 The status of the environment clearances obtained or awaited is given in Annex-IV.

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Annex – II

(Schedule-A)

Dates for providing of Site

The site shall be made available to the Contractor by the IWAI, Guwahati free of encumbrances as under:-

Sr. No.	Locations	Date of Providing of site/land/plot of construction zone
(i) 90% of site/ land/ plot	(i) Neamati, Jorhat (ii) Biswanathghat, Sonitpur	On Appointed Date.
(ii) Balance of site/ land/ plot	(iii) Pandu terminal, Pandu (iv) Jogighopa	Within 150 days after the Appointed Date.

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Annex - III

(Schedule-A)

Drawing & Specifications

The concerned Drawings and specification of the Project are enclosed in the Annex-B of Schedule-B.

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Annex – IV

(Schedule-A)

Environment Clearances

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

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Schedule - B

Development of the Project

1 Development of the Project Highway

Development of the Project includes Design, Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon and Gangways using suitable Steel Enveloped HDPE / FRP floating material for providing floating Terminal facilities and Parking facilities at various locations on NW - 2 (Brahmaputra River) as described in this Schedule-B and in Schedule-C.

2 Rehabilitation and augmentation

NA

3 Specifications and Standards

The Project shall be designed and constructed in conformity with the Specifications and Standards specified in Annex-I of Schedule-D.

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Annex I

(Schedule-B)

Description/Specification of the Project

1. Pontoons

1.1 General Requirement

1.1.1 The Pontoons 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.

1.1.2 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.

1.1.3 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.

1.1.4 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.

1.1.5 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 shall also be considered. In the event of any inconsistency in the GAD, the specifications shall prevail.

1.1.6 Principal Particulars

The main particulars of Pontoons are as given hereunder:

(i) Type of Pontoon	Box Type Steel all welded
(ii) Length	35 m
(iii) Breadth	8 m
(iv) Moulded Depth	1.6 m
(v) Draft	0.7 m

1.2 Classification, regulation and certificates

1.2.1 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).

1.2.2 Detail design and calculations are to be prepared and the same needs to be approved by Authority's Engineer, who shall be deployed by NHIDCL at site.

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1.3 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.

1.4 Hull Structure

1.4.1 General

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

1.4.2 Scantlings

- (i) 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	
(a) Bottom Plating	8 mm	i. Bottom Longitudinal	1A 75 x 75 x 8
(b) Side Plating	6 mm	ii. Side shell stiffeners	1A 65 x 65 x 6
(c) End Bulkheads	6 mm	iii. Deck Longitudinal	1A 65 x 65 x 6
(d) Internal Bulkhead	6 mm	iv. Bulkhead Stiffeners	1A 65 x 65 x 6 / 1A 100 x 100 x 10
(e) Deck Plating	6 mm chequered plates		
(f) Tank Boundaries	6 mm		

- (ii) 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.
- (iii) 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 corners are to be avoided. Good continuity of structural members in basic hull structure should be maintained.
- (iv) 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 /

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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.

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

1.4.3 Bulkhead

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

1.4.4 Hull Opening, watertight doors and hatches

- (i) 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.
- (ii) 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.
- (iii) One drain plug below every tank is to be provided.

1.5 Hull outfit and deck equipment

1.5.1 Anchor and Mooring arrangement

The Pontoon deployed on the river are to encounter current as per the actual site condition. 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 Authority's Engineer before commencement of works.

1.5.2 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.

1.5.3 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).

1.5.4 Ladders

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

1.5.5 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.

1.5.6 Fenders

Steel fenders of 300 mm diameter (6 mm thick) are to be provided on either side for 95 percent of

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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.

1.6 Accommodation of 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.

1.7 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.

1.7.1 Quality control system

The Contractor shall prepare and submit for the Authority's 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 Authority's Engineer 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 Authority's Engineer or the inspector may instruct the contractor to search for a defect and to uncover and test any work that the Authority's Engineer 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 Authority's Engineer 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 Authority's Engineer.

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.

1.7.2 Inspection, tests and trials

The Authority's Engineer's representative shall inspect and carryout specification surveys during the

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construction of the Pontoon. The Pontoon shall be built under the statutory survey of IWT Directorate and specification survey by Authority's Engineer's representative.

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

All stages of work against which stage payments are to be made shall be inspected by Authority's Engineer'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 Authority's Engineer. 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.

1.7.3 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 Authority's Engineer / handed over to the Authority's Engineer'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 Authority's Engineer's representative.

1.7.4 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.

1.8 Hull preservation & 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.

1.8.1 Painting Scheme

Paint specifications and scheme are to be approved by the Authority's Engineer. 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 Authority's Engineer. 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

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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

2. Gangway

2.1 General Description

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.

2.2 Technical Specification

S. No.	Particulars	Details	Remarks
1.	Material for construction for module / block	FRP or HDPE –	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/m ² or more	

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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.	

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15.	Hydrographic data	<p>The Contractor shall take into account the following parameters:</p> <p>Velocity of flow: 0.5 - 4 meters/sec</p> <p>Water level variation vertical: 8 - 10 meters</p>	
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***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.*

2.3 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 Authority's Engineer 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.*

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3. Onshore Facilities

3.1 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

3.2 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.

The details of Approach Road is as follows:

- (a) **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.
- (b) **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.
- (c) 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.
- (d) Providing and laying interlocking concrete block pavement (M40) having thickness 80 mm including carriage and Edge Block/ Edge restraints 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 Authority's Engineer

3.3 Porta Cabin

The Contractor shall design, supply, transport and install workstation type Porta Cabins of following sizes along with all associated items of work such as interior, lights, A.C., chair etc., complete in all respect to the satisfaction of the Authority's Engineer:

3.3.1 Size 40ft x 10ft x 8.5ft for the purpose of waiting area of tourists

3.3.2 Size 20ft x 10ft x 8.5ft for the purpose of pantry of tourists

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3.3.3 Size 6ft x 8ft x 8.5ft for the purpose of security cabin

3.3.4 The broad technical specifications for constructing porta cabin are listed 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 (if applicable)	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

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3.4 Bio Toilets

The Contractor shall supply, transport and install two (2) number of bio-toilets, complete in all respect to the satisfaction of the Authority's Engineer 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 skin 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/m ³) 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/m ³) 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), 11 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 single 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

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.

3.5 Installation of Project facilities

3.5.1 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 Authority's Engineer 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 Authority's Engineer and as per the terms & conditions of the Contract.

3.5.2 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 / Bajaj) 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 & earthing as per CPWD specifications.

4. CHANGE OF SCOPE

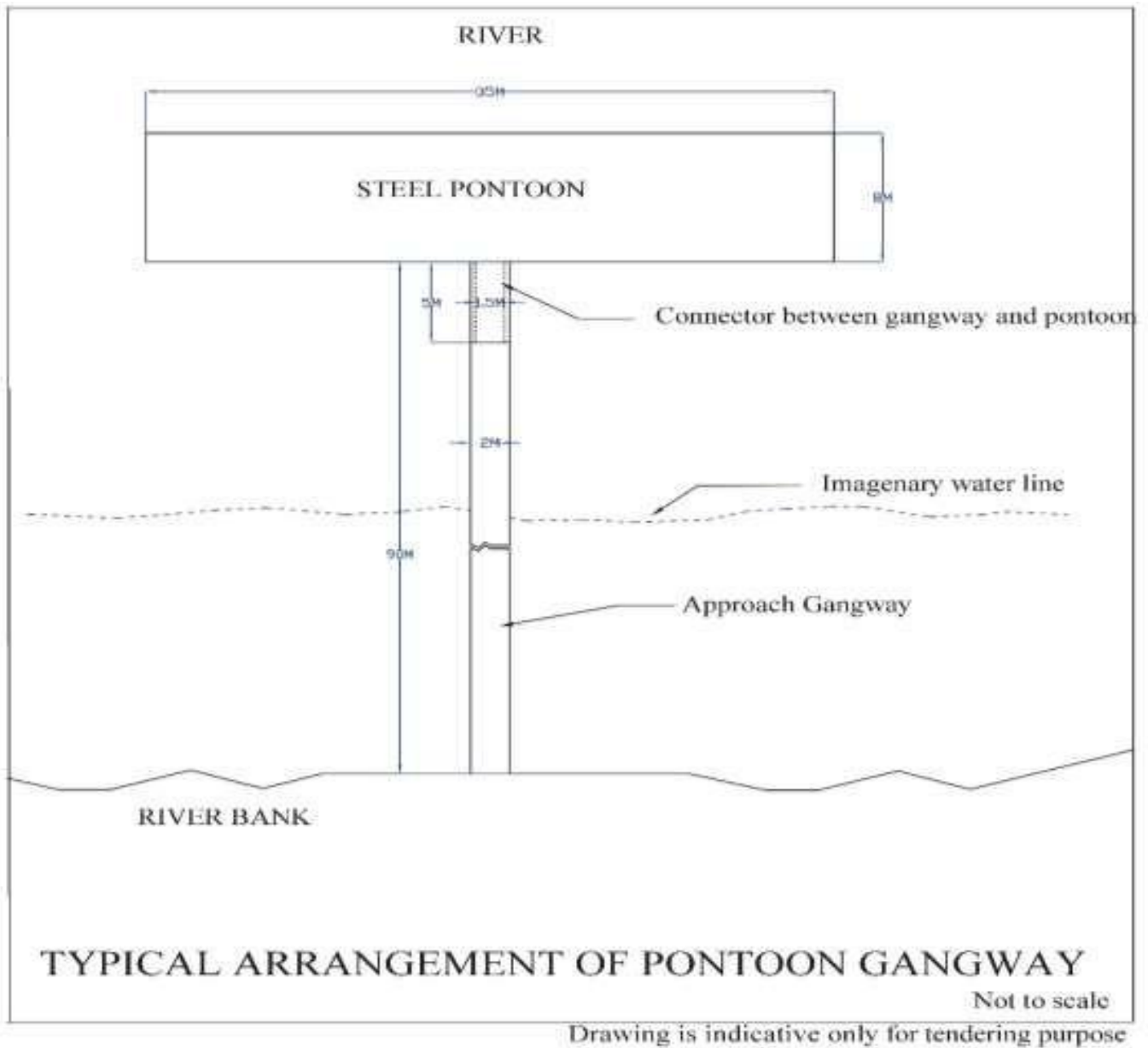
The length of Structures and approach road specified here in above shall be treated as an approximate assessment. The actual lengths as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any variations in the lengths specified in this Schedule- B shall not constitute a Change of Scope save and except any variations in the length arising out of a Change of Scope expressly under taken in accordance with the provisions of Article 4.

Note- (i) *The Contractor shall be responsible for accurate assessment of the actual requirement as per site situation & prepare designs as per the specifications & standards stipulated in schedule 'D' and submit the same to the AE for review through the proof consultant and implement it accordingly thereafter.*

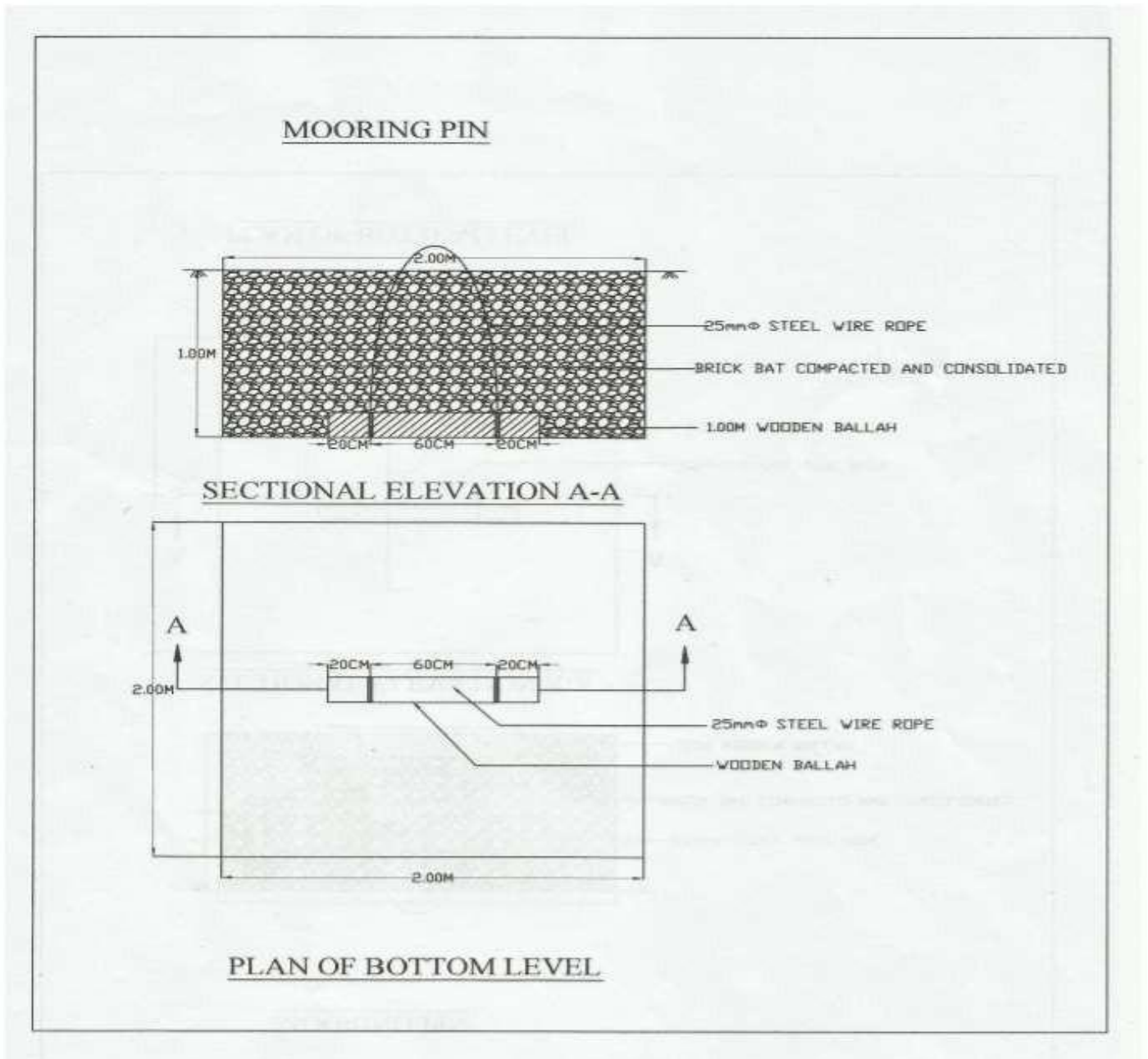
(ii) *Any increase in quantity over and above the minimum qty. as mentioned in Schedule B through change in specifications will not be considered as change of scope. Therefore contractor shall make thorough investigation at site and assess the requirement of each quantities mentioned in Schedule -B.*

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.

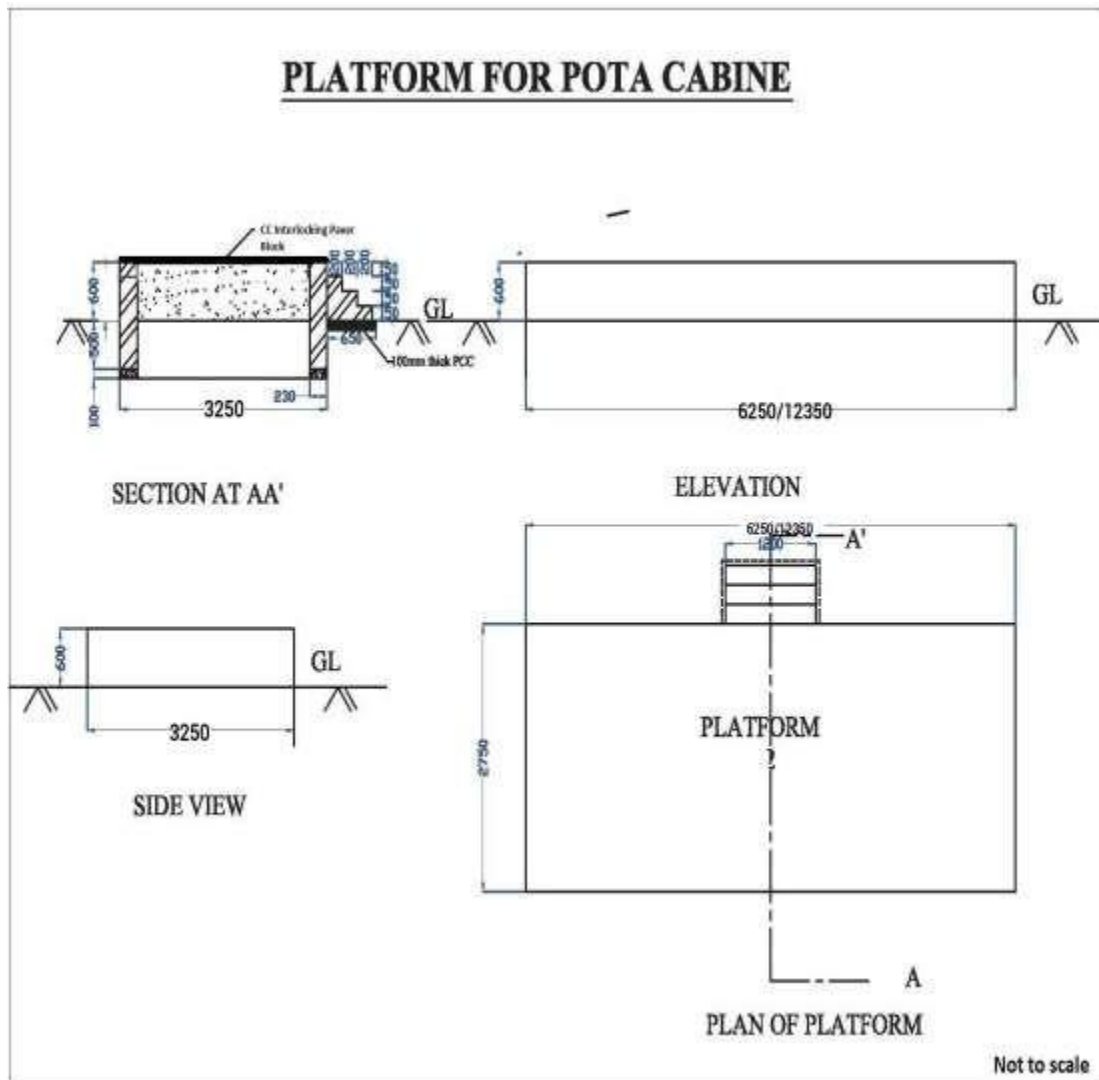
ANNEX - B



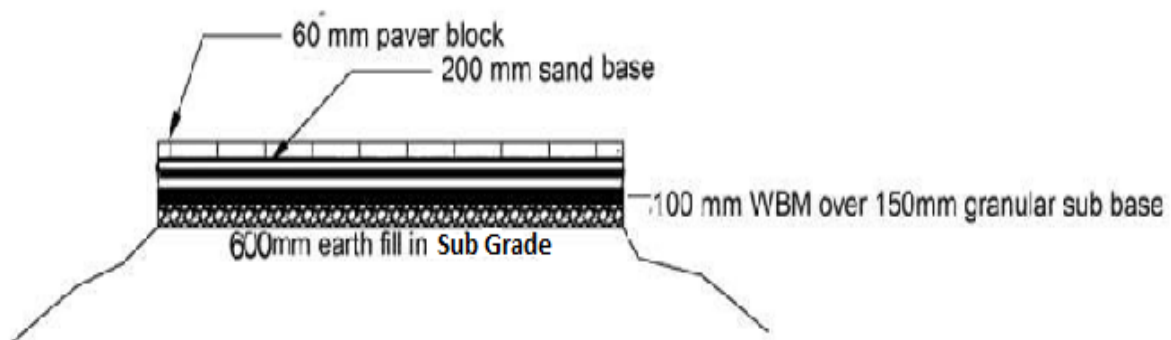
Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoons and Gangways using suitable Steel Enveloped HDPE / FRP floating material for providing floating Terminal facilities at various locations on NW - 2 (Brahmaputra River) on EPC mode.



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.



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.



SECTION OF APPROACH ROAD WITH ICBP

Not to scale

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.

Schedule - C

Project Facilities

The Contractor shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project Facilities shall include:

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 Authority's Engineer 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 Authority's Engineer 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:

- (i) G.I. Pole (dia-4") - 20' high, (ii) Exide Battery-12 v 40 Amp, (iii) Solar panel (Tata power / Bajaj) 40 w, iv. LED light - 9/12 W, (v) Battery box, sensor etc., and (vi) civil work in erection of pole.
- (ii) 90W LED Street Lights on existing pole.
- (iii) 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
- (iv) 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
- (v) Providing and fixing MCB of 10 A in streetlight.

Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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.

Schedule - D

Specifications and Standards

1. Construction

1.1 The Contractor shall comply with the Specifications and Standards set forth in Schedule B of for construction of the Project.

2. Design Standards

The Project including Project Facilities shall conform to design requirements set out in the following documents:

- (i) IS 2062 - Standards for HOT ROLLED STEEL FOR MEDIUM AND HIGH TENSILE STRUCTURAL PURPOSES.
- (ii) IS 5386:1969 - Standards for General purpose ship's davit
- (iii) IS 456: 2000 - Standards for Plain and Reinforced Concrete
- (iv) IS 800: 2007 - Steel Code for General Construction of Steel.

Note: In case revision has been undertaken in the respective IS Codes, the revised upto date IS Code shall be applicable.

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 – I

(Schedule-D)

Specifications and Standards for Construction

1 Specifications and Standards

All materials, works and construction operations shall confirm to the Manual of Specifications and Standards defined in Schedule B,. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority's Engineer.

2 Deviations from the Specifications and Standards

- 2.1 The terms 'Concessionaire', 'Independent Engineer' and 'Concession Agreement' used in the Manual shall be deemed to be substituted by the terms '**Contractor**', '**Authority's Engineer**' and '**Agreement**' respectively.

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.

SCHEDULE - E

(See Clauses 2.1 and 14.2)

MAINTENANCE REQUIREMENT

1. Maintenance Requirement

- 1.1 The Contractor shall, at all times maintain the Project in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits.
- 1.2 The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfilment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- 1.3 All Materials, works and construction operations shall conform to the applicable specifications of Ministry of Shipping and the relevant IS codes. Where the specifications for a work are not given, Good Industry Practice shall be adopted.

2. Repair/Rectification of Defects and Deficiencies

The obligations of the Contractor in respect of Maintenance Requirements shall include repair and rectification of the Defects and deficiencies specified in Annex - I of this Schedule-E within the time limit set forth therein.

3. Other Defects and Deficiencies

In respect of any Defect or deficiency not specified in Annex - I of this Schedule-E, the Authority's Engineer may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Contractor within the time limit specified by the Authority's Engineer.

4. Extension of Time Limit

Notwithstanding anything to the contrary specified in this Schedule-E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority's Engineer and conveyed to the Contractor and the Authority with reasons thereof.

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.

5. Emergency Repairs/Restoration

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect, deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

6. Daily inspection by the Contractor

The Contractor shall, through its engineer, undertake a daily visual inspection of the Project Highway and maintain a record thereof in a register to be kept in such form and manner as the Authority's Engineer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

7. Pre-monsoon Inspection / Post-monsoon Inspection

The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st June] every year in accordance with the guidelines contained in IRC: SP35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the [10th June] every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Authority's Engineer a compliance report. Post monsoon inspection shall be done by the [30th September] and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Authority's Engineer.

8. Repairs on account of natural calamities

All damages occurring to the Project Highway on account of a Force Majeure Event or default or neglect of the Authority shall be undertaken by the Authority at its own cost. The Authority may instruct the Contractor to undertake the repairs at the rates agreed between the Parties.

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 -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.

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.

Schedule – F

Applicable Permits

1 Applicable Permits

1.1 The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:

- a) Permission of the State Government for extraction of boulders from quarry;
- b) Permission of Village Panchayats and Pollution Control Board for installation of crushers;
- c) License for use of explosives;
- d) Permission of the State Government for drawing water from river/reservoir;
- e) Permission of Village Panchayats and State Government for borrow earth; and
- f) Any other permits or clearances required under Applicable Laws.

1.2 Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority in accordance with the provisions of this Agreement.

1.3 The agency need to ensure compliance of AIP and FC stated in schedules 'A', Annexure – IV. The necessary certifications need to be obtained from competent local forest department.

1.4 Muck dumping locations in forest area to be freezed in consultation with the forest department, the necessary certifications from local competent forest department is to be submitted.

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

Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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.

SCHEDULE - G

(See Clauses 7.1.1, 7.5.3 and 19.2)

FORM OF BANK GUARANTEE

Annex-I (See Clause 7.1.1)

Performance Security

The Managing Director,
National Highways & Infrastructural Development Corporation Ltd.
PTI Building, 3rd Floor,
4, Parliament Street New Delhi - 110001

WHEREAS:

[name and address of contractor] (hereinafter called the “Contractor”) and Managing Director, NHIDCL, PTI Building, 3rd Floor, 4, Parliament Street, New Delhi- 110001(hereinafter called the “Authority”) have entered into an agreement (hereinafter called the “Agreement”) for the RFP for Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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, subject to and in accordance with the provisions of the Agreement

A. The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the {Construction Period/ Defects Liability Period and Maintenance Period} (as defined in the Agreement) in a sum of Rs..... cr. (Rupees crore) (the “Guarantee Amount”).

B. We, through our branch at (the “Bank”) have agreed to furnish this bank guarantee (hereinafter called the “Guarantee”) by way of Performance Security.

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

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor’s obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Agreement, and agrees and 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 & Infrastructural Development Corporation Ltd], that the Contractor has committed default in the due and faithful performance of all or any of its obligations 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

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.

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 Agreement or to extend the time or period for the compliance with, fulfilment and/ or performance of all or any of the obligations of the Contractor contained in the Agreement 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.

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 Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.

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 on ****\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.

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 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.

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.

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for 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 operable 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. Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below: -

S. No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC SYNB0009062 / CNRB0019062
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.

Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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 – II
(Schedule - G)
(See Clause 7.5.3)

Form for Guarantee for Withdrawal of Retention Money

The Managing Director,
National Highways & Infrastructural Development Corporation Ltd.
PTI Building, 3rd Floor,
4, Parliament Street New Delhi - 110001

WHEREAS:

(A) [name and address of contractor] (hereinafter called the “Contractor”) has executed an agreement (hereinafter called the “Agreement”) with the and The Managing Director , NHIDCL, PTI Building, New Delhi (hereinafter called the “Authority”) have entered into an agreement (hereinafter called the “Agreement”) for the RFP for Construction of 2 Laning with Hard Shoulder of Peren - Dimapur section on NH - 129A from Design Km 146.208 to Km 163.592 (Length - 17.384 Km) in the state of Nagaland on EPC mode (Pkg - III) under NH(O) - TSP, 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 & Infrastructural Development Corporation Ltd, 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.

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.

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.

Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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.

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 operable 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. Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below: -

S. No.	Particulars	Details
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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.

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Annex - III
(Schedule - G)
(See Clause 19.2)

Form for Guarantee for Advance Payment

The Managing Director,
National Highways & Infrastructural Development Corporation Ltd.
PTI Building, 3rd Floor,
4, Parliament Street
New Delhi - 110001

WHEREAS:

(A) [name and address of contractor] (hereinafter called the “Contractor”) has executed an agreement (hereinafter called the “Agreement”) with the Managing Director, Head Office New Delhi (hereinafter called the “Authority”) have entered into an agreement (hereinafter called the “Agreement”) for Construction of 2 Laning with Hard Shoulder of Peren - Dimapur section on NH - 129A from Design Km 146.208 to Km 163.592 (Length - 17.384 Km) in the state of Nagaland on EPC mode (Pkg - III) under NH(O) - TSP subject to and in accordance with the provisions of the Agreement.

(B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest free advance payment (herein after called “Advance Payment”) equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in three installments 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 installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second/third} installment of the Advance Payment is Rs. ----- cr. (Rupees ----- crore) and the amount of this Guarantee is Rs. ----- cr. (Rupees crore)(the “Guarantee Amount”)\$.

(C) We, through our branch at (the “Bank”) have agreed to furnish this bank guarantee (hereinafter called the “Guarantee”) for the Guarantee Amount. NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. 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 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 & Infrastructural Development Corporation Ltd], that the Contractor has committed default in the due and faithful performance of all or any 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 Bank,

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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 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.

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 Advance Payment.

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 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.

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 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.

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

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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. Bank Guarantee has been sent to authority's bank through SFMS gateway as per the details below: -

S. No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC SYNB0009062 / CNRB0019062
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.

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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	Completion of Keel Laying.	20.55%
			Hull fabrication & erection at the shipyard.	40.22%
			Hull Outfit and Deck Equipment	22.33%
			Accomodation and other allied facilities	10.56%
			Hull Preservation and Painting	6.34%
2.	HDPE Gangway	19.55	Construction of Gangway	75.26%
			Gangway facilies	24.74%
3.	Onshore Facilities	24.34	Development and Parking facilities	6.68%
			Approach road	34.96%
			Water Supply System	5.12%
			Porta Cabin of Size 40ft x 10 ft x 8.5 ft	10.21%
			Porta Cabin of Size 20ft x 10 ft x 8.5 ft	9.78%
			Porta Cabin of Size 6ft x 8 ft x 8.5 ft	9.21%
			Bio Toilets	10.21%
			Project Facilities	13.83%
Total		100		

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Procedure of estimating the value of work done

1. Procedure for estimating the value of Steel Pontoon work done shall be as follows:

Table 1.3.1

Stage of Payment	Percentage weightage	Payment Procedure
A- Completion of Keel Laying	20.55 %	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10(ten) percent of the total length.
B – Hull Fabrication & Erection at the shipyard	40.22 %	Payment of each stage shall be made on pro rata basis on completion of a stage.
(1) Completion of 50% of hull fabrication & erection at the shipyard.	20%	
(2) Completion of 100% of hull fabrication and erection at the shipyard.	20%	
(3) Successful launching of the Pontoon at the shipyard.	20%	
(4) Transportation of Pontoon from Shipyard to the respective site.	20%	
(5) Testing, commissioning and trial of Pontoon at the respective site	20%	
C- Hull Outfits and Equipments	22.33%	Payment of each stage shall be made on pro rata basis on completion of a stage.
D – Accomodation and other allied facilities	10.56%	Payment of each stage shall be made on pro rata basis on completion of a stage.
E- Hull Prevention and Painting	6.34%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10(ten) percent of the total length.

1.1.1 Gangway.

Procedure for estimating the value of Gangway is as follows:

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
1	2	3
A –Construction of Gangway	75.26%	Cost of Gangway shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of full Gangway.
(i) Procurement of all the components along with accessories & supplying the same at site including on-site inspection by Engineer-In-Charge.	25%	
(ii) Transportation of Gangway from place of manufacturing to the respective site.	25%	
(iii) Installation of Gangway along with accessories.	25%	
(iv) Testing & Commissioning of the Floating Gangway for successful operation.	25%	

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Stage of Payment	Weightage	Payment Procedure
B- Gangway Facilities	24.74%	Cost of Gangway shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of full Gangway.

1.1.2 Onshore Facilities

Procedure for estimating the value of Onshore Facilities is as follows:

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
A- Development and Parking Facilities	6.68%	Cost of Onshore Facilities shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of full Parking Facilities
B – Approach Road	34.96 %	Cost of Onshore Facilities shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of each stage of Approach Road
(1) Earthwork	30%	
(2) Granular Sub base	10%	
(3) Water Bound Macadam	10%	
(4) Sand Base	10%	
(5) Paver Block	40%	
C- Porta Cabin of size 40ft x 10ft x 8.5ft	10.21%	Cost of Onshore Facilities shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of full Porta Cabin
D- Porta Cabin of size 20ft x 10ft x 8.5ft	9.78%	
E- Porta Cabin of size 6ft x 8ft x 8.5ft	9.21%	
F- Bio Toilets	10.21%	Cost of Onshore Facilities shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of full Bio Toilets
G – Projects Facilities	13.83%	Cost of Onshore Facilities shall be determined on pro-rata basis with respect to the total linear length of the Gangway. Payment shall be made on the completion of full Project Facilities

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Schedule – I

(See Clause 10.2.4)

1. Drawings

In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority's Engineer, free of cost, all Drawings listed in Annex-I of this Schedule-I

2. Additional Drawings

If the Authority's Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Authority's Engineer, as if such drawings formed part of Annex-I of this Schedule-I

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Annex – I

(Schedule - I)

List of Drawings

[Note: The Authority shall describe in this Annex-I, all the Drawings that the Contractor is required to furnish under Clause 10.2.]

1. A minimum list of the drawings of the various components/elements of the project highway and project facility required to be submitted by the Contractor is given below:

- (a) Drawing of plan, profile and cross sections
- (b) Drawings of cross drainage works
- (c) Drawings of junctions
- (d) Drawing of typical cross sections
- (e) Drawings of drainage system
- (f) Drawings of signage, marking, safety barriers, etc
- (g) Drawings of diversions plans and control measures
- (h) Drawings of protection measures

Note: 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.

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Schedule - J
(See Clause 10.3 (ii))

Project Completion Schedule

1. 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**. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

2. Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the [192th] day from the Appointed Date (the “**Project Milestone- I**”).
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

3. Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the [329th] day from the Appointed Date (the “**Project Milestone- II**”).
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 35% (thirty five per cent) of the Contract Price

4. Project Milestone-III

- (i) Project Milestone-III shall occur on the date falling on the [467st] day from the Appointed Date (the “**Project Milestone- III**”).
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and **should have** started construction of all project facilities.

5. Scheduled Completion Date

- (i) The Scheduled Completion Date shall occur on the [549th] day from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

6. Extension of time

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.

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Schedule - K

(Clause 12.1 (ii) of Agreement)

Tests on Completion

Schedule for Tests

- 1.1 The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10 (ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- 1.2 The Contractor shall notify the Authority's Engineer of its readiness to subject the Project to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule-K.

2 Tests

- 2.1 Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include (to be decided in consultation with Authority's Engineer as per relevant IS codes/manual).
- 2.2 Tank Testing : Suitable Testing for Water tightness may be carried out by the Contractor in presence of Authority's Engineer.
- 2.3 Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway with Specifications and Standards.
- 2.4 Environmental audit: The Authority's Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.
- 2.5 Safety Audit: The Authority's Engineer shall carry out, or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

3 Agency for conducting Tests

All Tests set forth in this Schedule-K shall be conducted by the Authority's Engineer or such other agency or person as it may specify in consultation with the Authority.

4 Completion Certificate

Upon successful completion of Tests, the Authority's Engineer shall issue the Completion Certificate in accordance with the provisions of Article 12.

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Schedule - L

(Clause 12.2 of Agreement)

PROVISIONAL CERTIFICATE

I, (Name of the Authority's Engineer), acting as the Authority's Engineer, under and in accordance with the Agreement dated (the "Agreement"), for **Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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**

- 1 (the "Project Highway") 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 undertaken to determine compliance of the Project Highway with the provisions of the Agreement.
- 2 Works that are incomplete on account of Time Extension have been specified in the Punch List appended hereto, and the Contractor has agreed and accepted that it shall complete all such works in the time and manner set forth in the Agreement. In addition, certain minor works are incomplete and these are not likely to cause material inconvenience to the Users of the Project Highway or affect their safety. The Contractor has agreed and accepted that as a condition of this Provisional Certificate, it shall complete such minor works within 30 (thirty) days hereof. These minor works have also been specified in the aforesaid Punch List.

In view of the foregoing, I am satisfied that the Project Road **of Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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**

- 3 can be safely and reliably placed in service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into operation on this the day of 20.....

ACCEPTED, SIGNED, SEALED

SIGNED, SEALED AND

AND DELIVERED

DELIVERED

For and on behalf of

for and on behalf of

CONTRACTOR by:

AUTHORITY's ENGINEER by:

(Signature)

(Signature)

Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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.

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 Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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 of20.....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Authority's Engineer by:

(Signature)

(Name) (Designation) (Address)

Construction, Supply, Transportation, Installation, Testing and Commissioning of Steel Pontoon 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.

Schedule - M

(See Clauses 14.6, 15.2 and 19.7)

PAYMENT REDUCTION FOR NON-COMPLIANCE

1. Payment reduction for non-compliance with the Maintenance Requirements

1.1 Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-E.

1.2 Any deduction made on account of non-compliance with the Maintenance Requirements shall not be paid even after compliance subsequently. The deductions shall continue to be made every month until compliance is done.

1.3 The Authority's Engineer shall calculate the amount of payment reduction on the basis of actual evaluation of the defects at site.

2. The amount to be deducted from monthly lump-sum payment for non-compliance of particular item shall be calculated as under:

$$R = P / 100 \times M \times L1 / L$$

Where P = Percentage of particular item/Defect/deficiency for deduction

M = Monthly lump-sum payment in accordance with the Bid

L1 = Non-complying length of stage

L = Total length of the stage,

R = Reduction (the amount to be deducted for non-compliance for a particular item/Defect/deficiency

The total amount of reduction shall be arrived at by summation of reductions for such items/Defects/deficiency or non-compliance.

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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.

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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 into between 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 the Agreement.
- (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 this TOR.
- (iii) The rules of interpretation stated in Article 1 of the Agreement shall apply, mutatis mutandis, to this TOR.

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 Industry Practice.
- (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 before determining:
 - a) any Time Extension;
 - b) any additional cost to be paid by the Authority to the Contractor;
 - c) the Termination Payment; or

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- 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.

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- (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 Good Industry 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.

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- (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 the Contractor.
- (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 the Contractor.
- (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 this behalf.
- (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 permissible limit.

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 the Agreement.

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- (ii) The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- (iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

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 to the Contractor, 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 Clause 19.16.

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 Authority forthwith.
- (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.

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- (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 over to 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 the Parties.
- (v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

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Schedule - O

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

Forms of Payment Statements

1. Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

- a) The estimated amount for the Works executed in accordance with Clause 19.3
 - (i) subsequent to the last claim;
- b) amounts reflecting adjustments in price for the aforesaid claim;
- c) the estimated amount of each Change of Scope Order executed subsequent to the last claim;
- 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 except taxes;
 - (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 last claim:
 - (i) For the Works executed (excluding Change of Scope orders);
 - (ii) For Change of Scope Orders, and
 - (iii) Taxes deducted

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 not done;
- c) net payment for maintenance due, (a) minus (b);

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- d) amounts reflecting adjustments in price under Clause 19.12;and
- e) amount towards deduction of taxes

3. Contractor's claim for Damages

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

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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 and terrorism:
 - 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 the Site.
- (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 commercial terms.

2. Insurance for Contractor's Defects Liability

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 to property

- (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 of occurrences.

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

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(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.

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Schedule-Q

Tests on Completion of Maintenance Period

1. Quality test:

Quality test: quality of each stage construction shall be checked with the help of a requisite tests as per IS codes and manuals.

2. Visual and physical test:

The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include measurement of cracking, rutting, stripping and potholes and shall be as per the requirement of maintenance mentioned in Schedule-E.

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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 (Name of Contractor), hereby certify that the Tests 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 AND DELIVERED

(Signature)

(Name and designation of Authority’s Representative)

(Address)

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