

Inland Waterways Authority of India (IWAI)
Ministry of Ports, Shipping & Waterways (MoPSW), Government of India (GoI)
A-13, Sector-1, Noida – 201301, Uttar Pradesh (U.P), India

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**REQUEST FOR QUOTATION (RFQ)/SHOPPING PROCEDURES
FOR DEVELOPMENT OF ONSHORE TERMINAL FACILITIES AT KAITHI
(VARANASI) ON NW-1 IN UTTAR PRADESH UNDER JMVP-II (ARTH GANGA)**

RFQ REFERENCE	: IN-IWAI-297746-CW-RFQ
DATE OF COMMENCEMENT OF SALE OF RFQ DOCUMENT	: 03.06.2022
LAST DATE FOR SALE OF RFQ DOCUMENT	: 17.06.2022
LAST DATE AND TIME FOR RECEIPT OF QUOTATIONS	: 17.06.2022 at 1500 Hours
TIME AND DATE OF OPENING OF QUOTATIONS – Technical Part	: 17.06.2022 at 1530 Hours
OFFICER INVITING QUOTATIONS	: Vice Chairman & Project Director (JMVP) Inland Waterways Authority of India, A-13, Sector-1, Noida-201301, UP

REQUEST FOR QUOTATIONS
Procurement of Works under RFQ/Shopping Procedures
E-Procurement Notice
(Through e-Procurement Bidding Process)

Project: Capacity Augmentation of National Waterway-1 (Jal Marg Vikas Project (JMVP))

Contract title: Development of onshore terminal facilities at Kaithi (Varanasi) on NW-1 in Uttar Pradesh under JMVP-II (Arth Ganga)

RFQ No: IN-IWAI-297746-CW-RFQ

Date: 03.06.2022

Applicable Procurement Guidelines/Regulations Date: January 2011, Revised July 2014

1. Government of India has received/has applied for/intends to apply for financing from the World Bank towards the cost of the Jal Marg Vikas Project (JMVP) Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this request for quotations is issued. Inland Waterways Authority of India (IWAI), Ministry of Ports, Shipping & Waterways (MoPS&W), Government of India (GoI) invites quotations electronically from eligible bidders for construction of the following works.

Brief Description of the Works	Approximate value of Works (Rs.)	Period of Completion
Development of Onshore terminal facilities at Kaithi (Varanasi) on NW-1 in Uttar Pradesh under JMVP-II (Arth Ganga)	64,80,000/- + GST	20 days from the date of Letter of Acceptance

2. This e-Procurement notice includes the following documents to facilitate preparation and submission of quotations, criteria for qualification, evaluation, and for award of contract; and relevant forms to be filled by the bidders. Implementing Agency has not issued a separate RFQ document for this purchase. The e-Procurement notice including the various documents and forms to be filled etc. can be downloaded free of cost by logging on to the website <https://eprocure.gov.in/eprocure/app> and www.iwai.gov.in. The bidders would be required to register in the website which is free of cost.
 - i. Instructions to Bidder including qualification information
 - ii. Format for Qualification Information
 - iii. Format for Submission of Quotation
 - iv. Format of Letter of Acceptance
 - v. Draft Contract Agreement which will be used for finalizing the agreement for this Contract

- vi. Detailed Bill of Quantities
 - vii. Format of Certificate
 - viii. Specifications and Drawings
3. For submission of Quotation, the Bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorized by Government of India for issuing DSC. Bidders can see the list of licensed CA's from the link (www.cca.gov.in). Bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: <https://eprocure.gov.in/eprocure/app>.
5. Quotations, both Technical Part and Financial Part shall be submitted on <https://eprocure.gov.in/eprocure/app> on or before 1500 hours on 17.06.2022. Any quotation or modifications to quotation received outside e-procurement system will not be considered. The electronic bidding system would not allow late submission of quotations. The 'Technical Part' of the Quotations will be opened online on 17.06.2022 at 1530 hours, this can also be viewed by the bidders online. The electronic summary of quotation opening of technical part will be generated and uploaded online.
6. If the implementing agency's office happens to be closed on the date of opening of the Quotations as specified, the 'Technical Part' of the Quotations will be opened on the next working day at the same time. The Financial Parts of the Quotations shall remain unopened in the e-procurement system, until the subsequent online opening, following the evaluation of the Technical Parts of the Quotations.
7. Other details can be seen in the RFQ document. The implementing agency shall not be held liable for any delays due to system failure beyond its control. A Bidder requiring any clarification of the RFQ document may notify the Implementing agency online or may visit the office of the implementing agency at the address given below.

Jayant Singh,
Vice Chairman & Project Director, JMVP,
Inland Waterways Authority of India
A-13, Sector-1, Noida-201301, U.P
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Fax: 0120-2424544
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Instructions to Bidders

SECTION - A

1. Scope of Works

Inland Waterways Authority of India (IWAI), Ministry of Ports, Shipping & Waterways (MoPS&W), Government of India (GoI) (Employer) invites quotations for the works as detailed in the table given below:

Brief Description of the Works	Approximate value of Works (Rs.)	Period of Completion
Development of Onshore terminal facilities at Kaithi (Varanasi) on NW-1 in Uttar Pradesh under JMVP-II (Arth Ganga)	64,80,000/- + GST	20 days from the date of Letter of Acceptance

The successful bidder will be expected to complete the works by the intended completion date specified above.

2. Qualification of the bidder

2.1. Qualification Information to be provided by the Bidder: the bidder shall provide information on his qualification which shall include:-

- (a) Total monetary value of works executed by the bidder for each year of the last 3 years (i.e. FY 2018-19, FY 2019-20 and FY 2020-21);
- (b) List of works (similar to the works described in Para 1) completed satisfactorily as a prime contractor during the last 3 years (i.e. FY 2018-19, FY 2019-20 and FY 2020-21), enclosing certificates from the respective Employers in support of experience claimed along with the Employers' contact numbers;
- (c) Report on his financial standing, along with last 3 years' financial statements/Profit and Loss Statements (i.e. FY 2018-19, FY 2019-20 and FY 2020-21); and
- (d) Details of any litigation, during the last 3 years (i.e. FY 2018-19, FY 2019-20 and FY 2020-21) in which the bidder is involved, the parties concerned, and disputed amount or award in each case (Give details of both completed and pending cases).

2.2. Qualification Criteria: to qualify for award of the contract the bidder:-

- (a) Should have satisfactorily completed as a prime contractor at least one similar work of value not less than Rs. 51,84,000/- in the last three years (i.e. FY 2019-20, FY 2020-21 and FY 2021-22).

For this purpose, “**Similar Works**” means “**Supply, Installation and Commissioning of Porta Cabins**”.

- 3. **Eligibility – Conflict of Interest:** A Bidder (a) shall not have conflict of interest as defined in the Bank’s Procurement Regulations/ Guidelines; and (c) should not have been (i) temporarily suspended or debarred by the World Bank Group in compliance with the Bank’s Anti-Corruption Guidelines and its Sanctions Framework.

- 4. **Clarifications & Amendments:** If the Employer receives any request for clarification of this RFQ document, it will upload its response together with any amendment to this document, on the e-procurement portal for information of all Bidders. Bidders should check on the e-procurement system, for any amendments to this RFQ document.

5. **Quotation Prices**

- a) The quotation shall be for whole works as described in the Bill of quantities, drawings and technical specifications. Corrections, if any, in the quotation shall be carried out by editing the information before electronic submission on e-Procurement Portal.
- b) All duties, taxes and other levies payable by the contractor under the contract shall be included in the total price.
- c) The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- d) The rates should be quoted in Indian Rupees only.

6. **Preparation of Quotations**

- 6.1 The bidder is advised to visit the site of works at his own expense and obtain all information that may be necessary for preparing the quotation.

- 6.2 Each bidder shall submit only one quotation. Bidders shall not contact other Bidders on matters relating to this quotation.

- 6.3 The quotation shall comprise two Parts, namely the Technical Part and the Financial Part. Both Parts shall be submitted online simultaneously.

6.4 **The Technical Part of Quotation shall comprise the following:**

- (a) **Letter of Quotation – Technical Part** as per Format given in Section B;
- (b) **Authorization:** Power of Attorney of signatory of Quotation (Paragraph 1.1 of Qualification Information);

- (c) **Annual Turnover:** Confirmation showing Annual Turnover in works of similar nature in the last three financial years. [ITB Clause 2.1 (a)];
- (d) **Qualifications:**
 - (i) Qualification information and supporting documents relating to similar nature of works executed and payments received. (ITB Clause 2.1 (b) and paragraph 1.3 of Qualification Information);
 - (ii) Details of proposed sub-contractors; (Paragraph 1.4 of Qualification Information); and
 - (iii) Other details listed in Paragraphs 1.6 and 1.7 of the Qualification Information Form;
- (e) **Complete address** and contact details of the Bidder having the following information:

Name of Firm
Address for communication
Telephone No(s): Office
Mobile No.
Facsimile (FAX) No.
Electronic Mail Identification (E-mail ID)
- (f) The Technical Part of Quotation shall not include any financial information related to the Quotation price. Where material financial information related to the Quotation price is contained in the Technical Part of Quotation, the Quotation shall be declared non-responsive.

6.5 The Financial Part of Quotation shall comprise the following:

- (a) **Letter of Quotation** - Financial Part;
- (b) **Priced Bill of Quantities:** (using the BOQ uploaded with the RFQ document) wherein the rates shall be entered online.

6.6 Signing of Quotations: The name and position held by each person signing the quotation and related documents must be typed or printed below the signature.

6.7 Deadline for Submission of Quotations: Quotations must be uploaded online no later than the deadline for submission of quotations viz. time 1500 (hours) and date **17.06.2022**, as per server time. A Bidder may modify its Quotation any number of times by using the appropriate option on the e-Procurement Portal, before the deadline for submission of Quotations.

6.8 Validity of Quotation: Quotation shall remain valid for a period not less than 45 days after the deadline date specified for submission.

7. Quotation Submission:

- (a) The Letter of Quotation – Technical Part, and Letter of Quotation – Financial Part shall be filled, signed and scanned copies shall be uploaded along with the Priced

Bill of Quantities that shall be entered using the Forms available online, without any alterations. All blank spaces shall be filled in with the information requested. Scanned copies of all other documents shall also be uploaded on the e-procurement website.

- (b) All documents are required to be signed digitally by the Bidder. The System generates a Unique Quotation Identification Number, time stamped as per server time, as an acknowledgement for Quotation submission. Detailed guidelines for viewing and submission of Quotations online are given in the website.
8. **Subcontractor:** The bidder shall not subcontract the whole of the works. The bidder shall not subcontract works of value more than 25% of the total price. The works pertaining to design, fabrication, supply installation, testing & commissioning of passenger terminal cabins shall be considered out of ambit of subcontract works. Further, the bidder shall be responsible for the acts or defaults of any subcontractor, his agents or employees, as if they were the acts or defaults of the Contractor.
9. **Online Opening and Evaluation of Technical Parts of Quotations:** The ‘Technical Part’ of the Quotations will be opened online on the specified date and time. This can also be viewed by the bidders online, and electronic summary of quotation opening of technical part will be generated and uploaded online. The Financial Parts of the Quotations shall remain unopened in the e-procurement system, until the subsequent online opening, following the evaluation of the Technical Parts of the Quotations.
- (a) The Employer shall examine the technical part of the quotation to determine whether the quotation (a) has been properly signed (Clause 6.6); (b) meets the eligibility criteria (Clause 3); (c) is substantially responsive to the requirements of the RFQ document; and (d) meets the qualification criteria specified in ITB Clause 2.
 - (b) Only Quotations that are both substantially responsive to the RFQ document, and meet all Qualification Criteria shall qualify for opening of the Financial Parts of their Quotations at the second online opening.
 - (c) Employer shall notify in writing those Bidders who have failed to meet the Qualification Criteria or whose Quotations were considered non-responsive to the requirements in the RFQ document, advising them that their Technical Part of Quotation failed to meet the requirements of the RFQ document; and that their Financial Part of the Quotation shall not be opened.
 - (d) Simultaneously Employer shall notify in writing those Bidders whose Technical Parts of Quotations have been evaluated as substantially responsive and meeting the Qualification Criteria that their Quotation has been evaluated as substantially responsive to the RFQ document and that their Financial Part of Quotation will be opened online at 17.06.2022 and 1530 hours.
10. **Online Opening and Evaluation of Financial Parts of Quotations:** The ‘Financial Part’ of the Quotations will be opened online on the specified date and time. This can

also be viewed by the bidders online, and electronic summary of quotation opening of financial part will be generated and uploaded online.

The Employer shall examine and confirm that Letter of Quotation – Financial Part and Priced Bill of Quantities are in accordance with the requirements specified in the RFQ document. If any of these documents or information is missing, the offer shall be rejected.

11. Award of contract

The Employer will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price and who meets the specified qualification criteria.

11.1 Notwithstanding the above, the Employer reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

11.2 The bidder whose quotation is accepted will be notified of the award of contract by the Employer prior to expiration of the quotation validity period.

12. Defects Liability Period:

The “Defects Liability Period” for the work is six months from the date of taking over possession or one full monsoon season whichever occurs later. During the defects liability period, the contractor will be responsible for rectifying any defects in construction free of cost to the Employer.

13. Supply of all construction materials including cement and steel as per the specifications (ISI certification marked goods wherever available) shall be the responsibility of the contractor. Employer will not issue any material/equipment.

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SECTION - B

- 1. Format for Qualification Information**
- 2. Format for Submission of Quotation**
- 3. Format of Letter of Acceptance**

QUALIFICATION INFORMATION

1 For Individual Bidders

1.1 Principal place of business: _____

Power of attorney of signatory of Quotation.

[Attach copy]

1.2 Total value of similar work performed in the last three years (in Rs. Lakhs) 20 _____
20 _____
(i.e. FY 2019-20, FY 2020-21 and FY 2021-22) 20 _____

1.3 Work performed as prime contractor (in the same name) on works of a similar nature over the last three years (i.e. FY 2019-20, FY 2020-21 and FY 2021-22)

<u>Project Name</u>	<u>Name of Employer</u>	<u>Description of work</u>	<u>Contract No.</u>	<u>Value of contract (Rs. Lakhs)</u>	<u>Date of issue of work order</u>	<u>Stipulated period of completion</u>	<u>Actual date of completion*</u>	<u>Remarks explaining reasons for delay and work completed</u>
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Existing commitments and on-going works:

<u>Description of Work</u>	<u>Place & State</u>	<u>Contract No. & Date</u>	<u>Value of Contract (Rs. Lakhs)</u>	<u>Stipulated period of completion</u>	<u>Value of works* remaining to be completed (Rs. Lakhs)</u>	<u>Anticipated date of completion</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

* *Enclose a certificate from the Engineer concerned for completion as well as value of pending works.*

1.4 Proposed subcontracts and firms involved.

Sections of the works	Value of Sub-contract	Sub-contractor (name & address)	Experience in similar work
*	*	*	*
	*	*	
*	*	*	*
	*	*	
*	*	*	*
	*	*	

1.5 Evidence of access to financial resources to meet the requirements of working capital: cash in hand, lines of credit, etc. List them below and attach copies of support documents.

1.6 Name, address, and telephone, telex, and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.

1.7 Information on litigation history in which the Bidder is involved.

Name of the work	Agreement number/date	Name & address of Employer	Contract Value in Rs	Cause of dispute	Amount Disputed	Remarks showing present status

Letter of Quotation–Technical Part

The Bidder must prepare the Letter of Quotation on stationery with its letterhead clearly showing the Bidder's complete name and address. The italicized text is for Bidder's guidance in preparing these forms and shall be deleted from the final products.

Description of the Works: Development of onshore terminal facilities at Kaithi (Varanasi) on NW-1 in Uttar Pradesh under JMVP-II (Arth Ganga)

RFQ No.: [insert identification]

Our Reference: No..... Dated.....

To: (Employer's name and address)

Subject : Construction of.....
.....

Reference : Letter No.....dated.....from.....

Sir,

1. We, the undersigned, hereby submit our Quotation in two parts, namely:

- (a) Technical Part; and
- (b) Financial Part

2. In submitting our Quotation, we make the following declarations:

- (a) **No reservations:** We have examined and have no reservations to the RFQ document;
- (b) **Conformity:** We offer to execute the subject work in conformity with the RFQ document and in accordance with the Period of Completion specified in Section A;
- (c) **Quotation Validity Period:** Our Quotation shall be valid for the period of 45 days, from the deadline fixed for the Quotation submission;
- (d) **Eligibility:** We meet the eligibility requirements and have no conflict of interest, we are not participating in more than one quotation in this bidding process, and we have not been temporarily suspended or debarred by the World Bank.
- (e) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of corrupt, fraudulent, collusive, coercive, or obstructive practices.

- (f) **ESHS/GBV Compliance:** We hereby undertake to comply with (i) the applicable Laws/ Rules/ Regulations for protection of environment, public health and safety; (ii) the regulatory authority conditions (if any) attached to any permits or approvals for the project; and (iii) the Management Strategies and Implementation Plan (MSIP) to manage the Environmental, Social (including sexual exploitation and abuse (SEA) and gender based violence (GBV)), Health and Safety (ESHS) risks, and ESHS Code of Conduct, (if any prescribed by the Employer), that will apply to us, our employees and all subcontractors.

Yours faithfully,

Authorized Signature : Date: _____

Name & Title of Signatory : _____

In the capacity of *[insert legal capacity of person signing the Letter of Quotation]*

Name of Bidder : _____

Address : _____

Dated on _____ day of _____, _____ *[insert date of signing]*

To be filled in by the Bidder, together with his particulars and date of submission at the bottom of this Form.

Letter of Quotation–Financial Part

The Bidder must prepare the Letter of Quotation on stationery with its letterhead clearly showing the Bidder's complete name and address. The italicized text is for Bidder's guidance in preparing these forms and shall be deleted from the final products.

Description of the Works: Development of onshore terminal facilities at Kaithi (Varanasi) on NW-1 in Uttar Pradesh under JMVP-II (Arth Ganga)

RFQ No.: *[insert identification]*

Our Reference: No..... Dated.....

To:

(Employer's name and address)

Subject: Construction of.....

Sir,

1. We, the undersigned, hereby submit the second part of our Quotation, the Financial Part including the Quotation Price and Bill of Quantities. In submitting our Financial Part we make the following additional declarations:

(a) **Validity:** Our Quotation shall be valid for the period of 45 days from the deadline fixed for the Quotation submission;

(b) **Quotation Price:** The total price of our Quotation including any unconditional discounts, offered in accordance with the Conditions of Contract is at percentage above / below the estimated rates, i.e., for a total Contract Price of –

Rs.** _____ [in figures]

Rs. _____ [in words];

(c) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Bidding process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity. If none has been paid or is to be paid, indicate "none."]*

Yours faithfully,

Authorized Signature

Name & Title of Signatory _____

In the capacity of *[insert legal capacity of person signing the Letter of Quotation]*

Name of Bidder _____

Address _____

Dated on _____ day of _____, _____ *[insert date of signing]*

**** *To be filled in by the Bidder, together with his particulars and date of submission at the bottom of this Form.***

**LETTER OF ACCEPTANCE
CUM NOTICE TO PROCEED WITH THE WORK**

(LETTERHEAD OF THE EMPLOYER)

Dated: _____

To: _____ [Name and address of the Contractor]

Dear Sirs,

This is to notify you that your quotation dated _____ for execution of the _____ for the contract price of Rupees _____ [amount in words and figures], is hereby accepted by us.

You are also requested to sign the agreement form and proceed with the work not later than _____ under the instructions of the Engineer, _____ and ensure its completion within the contract period.

With the issuance of this acceptance letter and your furnishing the required contract, for the above said work, stands concluded.

Yours faithfully,

**Authorized Signature
Name and title of Signatory of Employer**

Draft Contract Agreement form for Construction through National Shopping

ARTICLES OF CONTRACT AGREEMENT

1. This deed of agreement is made in the form of agreement on _____ day _____ month _____ 20____, between the _____ (Employer) or his authorized representative (hereinafter referred to as the first party) and _____ (Name of the Contractor), S/O _____ resident of _____ (hereinafter referred to as the second party), to execute the work of construction of _____ (hereinafter referred to as works) on the following terms and conditions.

2. Contract Price

The total Contract Price for the works (hereinafter referred to as the “total price”) is Rs. _____ as reflected in Annexure - 1.

3.1 Payments under its contract:

Payments to the second party for the construction work will be released by the first party in the following manner:-

On completion of 100% of the works envisaged in Annexure 1 and 3 of this Agreement, complete in all respects as per the specifications & standards and directions of the Engineer	: 90% of the total price The remaining 10% of the total price shall be paid after completion of Defects Liability Period of six (6) months as defined in clause 11 of Section A
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3.2 Payments will be made by the first party:

- (a) on the second party submitting an invoice for an equivalent amount;
- (b) on certification of the invoice by the Engineer nominated by the first party with respect to quality/quantity of works executed in the format in Annexure - 2; and
- (c) Payments shall be adjusted for deductions for recoveries if any in terms of the contract, and taxes at source, as applicable under the law.

4. Notice by Contractor to Engineer

The second party, on completion of the works, issue a notice to the first party or the Engineer nominated by the first party (who is responsible for supervising the contractor, administering the contract, certifying the payments due to the contractor, issuing and

valuing variations to the contract, awarding extensions of time etc.), to visit the site for certification of completion. Within 15 days of the receipt of such notice, the first party or the Engineer nominated by it, will ensure issue of completion certificate after due verification.

5. Completion time

The works should be completed within twenty (20) days from the date of Letter of Acceptance. In exceptional circumstances, the time period stated in this clause may be extended in writing by mutual consent of both the parties.

6. If any of the compensation events mentioned below would prevent the work being completed by the intended completion date, the first party will decide on the intended completion date being extended by a suitable period:

- a) The first party does not give access to the site or a part thereof by the agreed period.
- b) The first party orders a delay or does not issue completed drawings, specifications or instructions for execution of the work on time.
- c) Ground conditions are substantially more adverse than could reasonably have been assumed before issue of letter of acceptance and from information provided to second party or from visual inspection of the site.
- d) Payments due to the second party are delayed without reason.
- e) Certification for completion of the work is delayed unreasonably.

7. Any willful delay on the part of the second party in completing the construction within the stipulated period will render him liable to pay liquidated damages @0.1% of the total price of the works per day which will be deducted from payments due to him. The first party may cancel the contract and take recourse to such other action as deemed appropriate once the total amount of liquidated damages exceeds 3% of the total price.

8. Duties and responsibilities of the first party

8.1 The first party shall be responsible for providing regular and frequent supervision and guidance to the second party for carrying out the works as per specifications. This will include written guidelines and regular site visit of the authorized personnel of the first party, for checking quality of material and construction to ensure that it is as per the norms.

8.2 The first party shall supply 3 sets of drawings, specifications and guidelines to the second party for the proposed works.

- 8.3** Possession of the site will be handed over to the second party within 3 days of signing of the agreement.
- 8.4** The Engineer or such other person as may be authorized by the first party shall hold meeting once in a week where the second party or his representative at site will submit the latest information including progress report and difficulties if any, in the execution of the work. The whole team may jointly inspect the site on a particular day to take stock of activities.
- 8.5** The Engineer shall record his observations/instructions at the time of his site visit in a site register maintained by the second party. The second party will carry out the instructions and promptly rectify any deviations pointed out by the Engineer. If the deviations are not rectified, within the time specified in the Engineer's notice, the first party as well as the Engineer nominated by it, may instruct stoppage or suspension of the construction. It shall thereupon be open to the first party or the engineer to have the deviations rectified at the cost of the second party.

9. Duties and responsibilities of the second party

9.1 The second party shall:

- a) take up the works and arrange for its completion within the time period stipulated in Clause 5;
- b) employ suitable skilled persons to carry out the works;
- c) regularly supervise and monitor the progress of work;
- d) abide by the technical suggestions/direction of supervisory personnel including engineers etc. regarding construction;
- e) be responsible for bringing any discrepancy to the notice of the representative of the first party and seek necessary clarification;
- f) ensure that the work is carried out in accordance with specifications, drawings and within the total price without any cost escalation;
- g) keep the first party informed about the progress of work;
- h) be responsible for all security and watch and ward arrangements at site till handing over to the first party; and
- i) maintain necessary insurance against loss of materials/cash, etc. or workman disability compensation claims of the personnel deployed on the works as well as third party claims.

- j) Pay all duties, taxes and other levies payable by construction agencies as per law under the contract (First party will effect deduction (TDS) from running bills in respect of such taxes as may be imposed under the law).

10. Variations / Extra Items

The works shall be carried out by the second party in accordance with the approved drawings and specifications. However, if, on account of site conditions or any other factors, variations are considered necessary, the following procedure shall be followed:-

- a) The second party shall provide the Engineer with a quotation for carrying out the Variation when requested to do so by the Engineer. The Engineer shall assess the quotation, which shall be given within seven days of the request before the Variation is ordered.
- b) If the quotation given by the second party is unreasonable, the Engineer may order the Variation and make a change to the total price which shall be based on Engineer's own forecast of the effects of the Variation on the Contractor's costs.
- c) The second party shall not be entitled to additional payment for costs which could have been avoided by giving early warning.

11. Termination

11.1 The Employer may terminate the Contract if the other party causes a fundamental breach of the Contract.

11.2 Fundamental breaches of Contract include, but shall not be limited to the following:

- (a) the contractor stops work for 28 days and the stoppage has not been authorized by the Engineer;
- (b) the Contractor has become bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- (c) the Engineer gives Notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
- (c) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the Clause 7 of this agreement

11.3 Notwithstanding the above, the Employer may terminate the Contract for convenience.

11.4 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

12. Payment upon Termination

12.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law.

12.2 If the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

13. Dispute settlement

If over the works, any dispute arises between the two parties, relating to any aspects of this Agreement, the parties shall first attempt to settle the dispute through mutual and amicable consultation.

In the event of agreement not being reached, the matter will be referred for arbitration by a Sole Arbitrator not below the level of retired Superintending Engineer, PWD to be appointed by the first party. The Arbitration will be conducted in accordance with the Arbitration and Conciliation Act, 1996. The decision of the Arbitrator shall be final and binding on both the parties. The Arbitrator shall give his award/decision within 60 days of start of proceedings.

The Priced Bill of Quantities (Annexure 1), Format of Certificate (Annexure 2) and Specification and Drawings (Annexure 3) are attached.

Signed and delivered by Sri. _____ for and on
behalf of the Contractor
In the presence of the Witness:

- i)
- ii)

SIGNATURE

Signed and delivered by Sri _____ Deputy Executive Engineer/Executive
Engineer/Superintending Engineer _____ of _____ for
an on behalf of the Government.

In the presence of the Witness:

- i)
- ii)

SIGNATURE

BILL OF QUANTITIES

Sl. No.	Description of Work	Qty.	Unit	Rate (in Rs.)	Amount	
					In figure (Rs.)	In Words (Rs.)
1.	Excavating, supplying and filling of local earth (including royalty) by mechanical transport up to a lead of 5km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc., complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer	Cum	1690.92			
2.	Supplying and fixing of interlocking C.C. paver block (80 mm thick, M-30) for pathway, complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer	Sqm	74			
3.	Design, fabrication, supply installation, testing & commissioning of Passenger Terminal Cabins (2nos.) at Kaithi Ghat along with all associated items of work including civil/foundation works and other allied works, complete in all respect to the satisfaction of the Engineer and as per the technical specifications, terms & conditions of the contract.	LS (for 2 nos.)	01			

Sl. No.	Description of Work	Qty.	Unit	Rate (in Rs.)	Amount	
					In figure (Rs.)	In Words (Rs.)
4.	Grassing with Selection No. 1 doob grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn, free from weeds and fit for mowing including supplying good earth, if needed with grass turf, complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer	Sqm	635.36			
5.	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer), complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer	Cum	4.3			
6.	Providing and displaying of Areca Palm plant, having ht. 1.20 m to 1.50 m with 5 to 6 suckers, well developed, fresh and healthy with	Nos.	24			

Sl. No.	Description of Work	Qty.	Unit	Rate (in Rs.)	Amount	
					In figure (Rs.)	In Words (Rs.)
	lush green foliage in 25 cm size of Earthen pot/Plastic pot, complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer					
7.	Providing and displaying Marigold (Tagetes) inca hybrid different colour having 30 cm and above ht., with 6 to 8 flowers in bloom & blooming condition, well developed pot should be fully covered with fresh and healthy, foliage and flowers in 20cm Earthen Pot/ Plastic Pot, complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer	Nos.	33			
8.	Outdoor Bench: 5 nos. outdoor garden benches made of wood and cast iron or wrought iron to fixed at 5 locations as indicated in the layout in Annexure 3. The width of the bench to be such that 2 to 3 persons can sit comfortably. Size: 5' x 2' approximately, complete in all respects as per the specifications and provisions of CPWD specifications 2009, relevant IS code & direction of the Engineer	Nos.	05			
9.	Solar Street Lights: 2 Nos. Solar Street light of following specifications to be installed at site in the outdoor area including	Nos.	02			

Sl. No.	Description of Work	Qty.	Unit	Rate (in Rs.)	Amount	
					In figure (Rs.)	In Words (Rs.)
	associated civil/foundation works and other allied activities, complete in all respects as per the specifications and provisions of CPWD specifications 2009, CPWD Specifications for Electrical Works 2013, relevant IS code & direction of the Engineer					
10.	GST as applicable	LS	1			
Gross Total Estimated Cost: Rs						

We agree to execute the works in accordance with the approved drawings and technical specifications for a total Contract Price of Rs.(amount in figures) (Rs. amount in words).

Signature of Contractor

(Where there is a discrepancy between the amount in figures and words, the amount in words will prevail)

Format of certificate

Certified that the works (as defined in Clause 3.1 of the Agreement) in respect of construction of ----- at ----- have been executed satisfactorily in accordance with the terms and conditions of the agreement and as per approved drawings and technical specifications.

Signature
Name & Designation
(Official address)

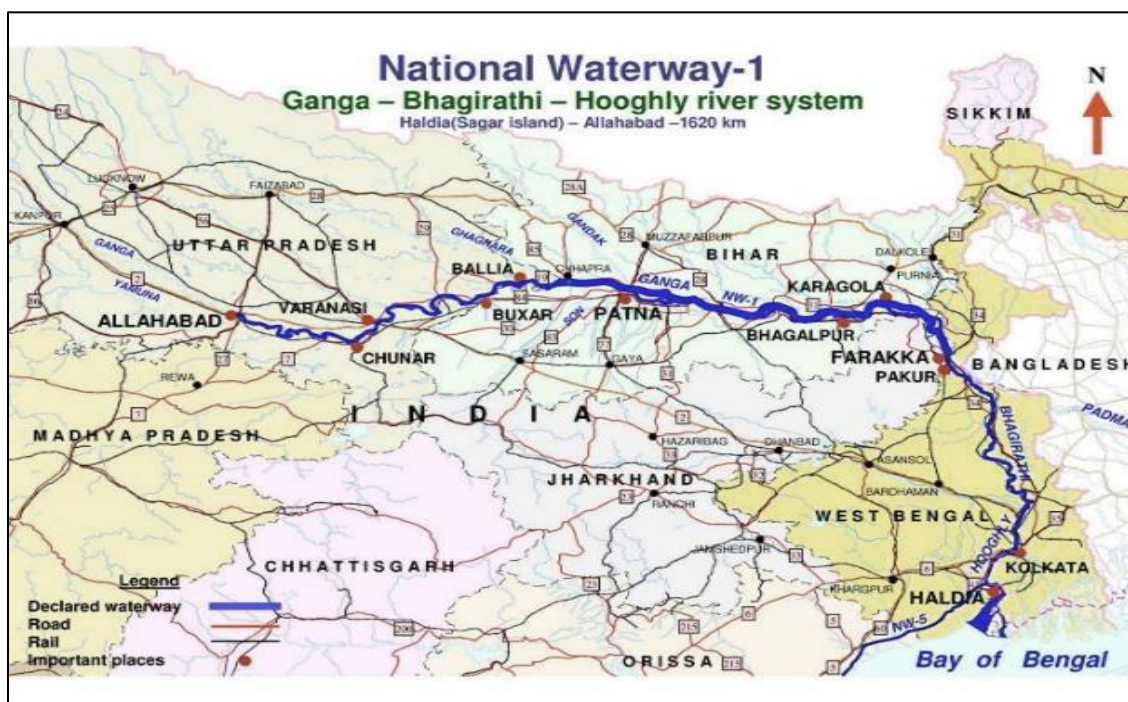
Place:
Date:

Office seal

Specification and Drawings

1. Background

- 1.1 The Employer is a statutory body of the Ministry of Ports, Shipping and Waterways (MoPS&W), Government of India (GoI). The Employer was set up in 1986 for regulation and development of inland waterways for the purposes of shipping and navigation. The Employer is primarily responsible for development, maintenance and regulation of Inland Water Transport (IWT) on the National Waterways (NWs) in the country. Presently, there are 111 NWs in the country.
- 1.2 IWT has the potential to provide a cost efficient, economic, reliable, safe and environment friendly mode of transport. When developed for use by modern inland vessels operating on dependable fairways, it can reduce congestion and investment needs in rail & road infrastructure, promote greater complementarities in the riparian states, enhance intra-regional trade and, through increased economies of scale, significantly reduce overall logistics costs for the benefit of the economy and India's global trade competitiveness.
- 1.3 The National Waterway-1 (NW-1), Ganga-Bhagirathi-Hooghly river system is located in India and runs from Haldia (Sagar) to Allahabad/Prayagraj across the Ganges, Bhagirathi and Hooghly river systems. It is 1620km long, making it the longest waterway in India. It is of prime importance amongst all the national waterways considering its locational advantages. The NW-1 passes through West Bengal, Jharkhand, Bihar and Uttar Pradesh and serves major cities and their industrial hinterland.



- 1.4 Considering the strong potential for transportation of multiple cargoes such as coal, fly ash, cement and clinker, stone chips, edible oils, petroleum products, foods grains and over dimensional cargo, the Employer is implementing “Jal Marg Vikas Project (JMVP)” for capacity augmentation of NW-1 with the technical and financial assistance

of the World Bank to improve the navigability of NW-1 through: (i) fairway development by providing an assured depth of 2.2m to 3.0m throughout the corridor for atleast three hundred thirty (330) days in a year to make it navigable for comparatively larger vessels of 1,500-3,000 DWT; and (ii) civil structures, logistics and communications interventions required that includes multimodal terminals, jetties, navigational locks, barrages, channel marking systems etc.

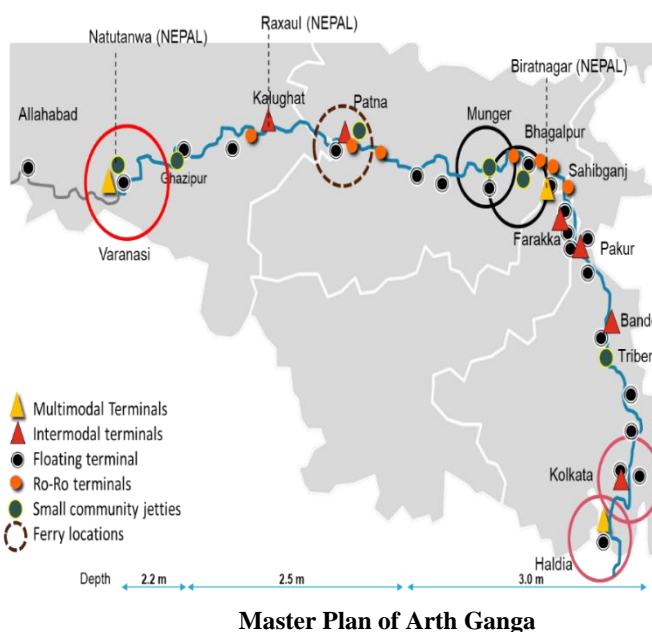
1.5 As part of JMVP, the conceptualization of Arth Ganga was finalized to energize economic activities which will impact the overall ecosystem along the riverbank. Inland waterways is one of the most important pillars of Arth Ganga, that can lead to inclusive growth and play a key role in improving the livelihoods of the populations.

1.6 Arth Ganga is being developed on an approach based on principles of sustainable development model that focus on economic activities in & around the hinterland of NW-1 by providing opportunity to local communities to transport their goods and passenger (including tourist) movements through waterways as well as skill development and public / private sector capability developments to support the following:

- (a) Economic benefits to the farmers, traders and public living around the Ganga belt;
- (b) Growth of small-scale industries;
- (c) Employment opportunities;
- (d) Easy, cost-effective and environment friendly transportation of cargo;
- (e) Improved logistics through small jetties; and
- (f) Wider choice of logistics mode for cargo movement

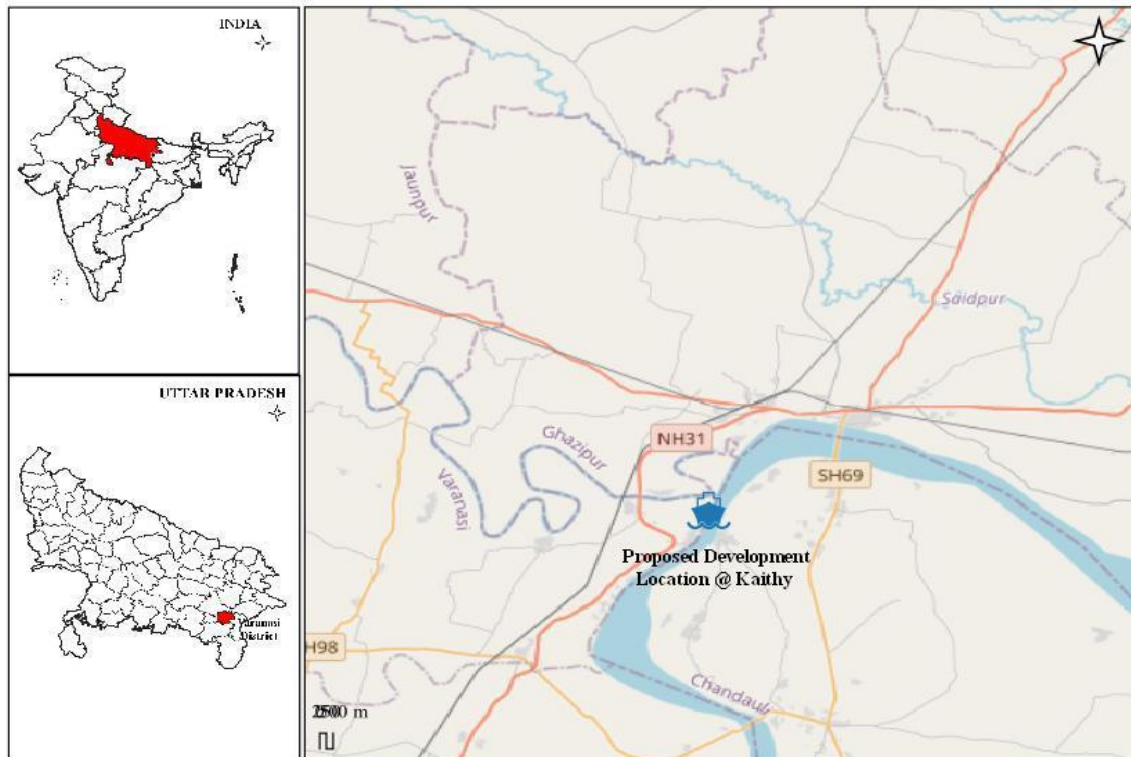
Since, efficient logistics and transport systems are a critical enabler for sustaining as well as accelerating the economic growth along river Ganga, in this regard, JMVP has the potential to greatly channelize economic activities along river Ganga, thus also aligning to the objective of Arth Ganga.

1.7 The major components that have been envisaged under Arth Ganga are: (a) fairway development through dredging including bandalling and navigational aids; (b) channel stabilisation works; (c) construction of Ro-Ro terminals; (d) construction of new community jetties; (e) modernization / rehabilitation of existing jetties; (f) modernization/ rehabilitation of existing navigational lock at Farakka; (g) RIS and DGPS; (h) Hydrographic equipment, HDP Software, Automatic Gauge Stations etc.; and (i) IWT promotional activities.



2. Kaithi IWT terminal

- 2.1 The proposed development site at Kaithi is located in Kaithi village under Cholaipur development block of Sadar Tehsil, Varanasi district in Uttar Pradesh. It is a well-known existing ghat of Varanasi, which is a famous tourist attraction point having both religious and architectural importance. The location map of the proposed development location at Kaithi is as presented below:



- 2.2 Kaithi is one of the renowned ghats of Varanasi, which is having high potential for Ganges oriented spiritual tourism. This ghat is provided with various architectural constructions including viewpoint towards enhancing the aesthetic appeal of the area. The Markandey Mahadev Temple, one of the famous temples of Lord Shiva is located within an aerial distance of 500m from the proposed development location. Apart from Markandey Mahadev Temple, this site is having proximity to many other religious places like Gargacharya Ashram, Hanuman Temple, Durga Matha Temple etc. The people mainly use this ghat for spiritual baths, religious ceremonies, blessed offerings etc. This ghat is busy with various commercial activities related to religious tourism.
- 2.3 Due to the proximity of the famous religious places and the existing tourism potential, this place is highly crowded. Presently, an average population of 3000 per day is expecting at this site, which may enhance up to 10,000 per day in festive seasons.
- 2.4 Even though various facilities towards catering the pilgrim / tourism needs of the sites are available, a deficiency in satisfying needs of existing population is observed. Due to the lack of waste disposal facilities, the hygiene condition of the site is very poor, which is an important factor for a spiritual area. Moreover, existing facilities seems to be developed in haphazard manner which in turn demands an integrated planning so that the existing location can be developed as one of the signature tourism destination point in Varanasi.

- 2.5 Apart from the spiritual tourism potential, Kaithi and nearby villages are popularly known for cultivation of marigold flower year around. The proposed community jetty facilities at Kaithi will provide economic alternative mode of transport to marigold producing farmers to Varanasi flower mandi. Fisherman and milk producer community of Kaithi and nearby villages on bank of Ganga River will also be benefitted by the proposed developments.

3. **Objective**

With the background mentioned above, the Employer intends to engage a contractor for undertaking development of onshore terminal facilities at Kaithi on NW-1 in the state of Uttar Pradesh along with all associated items of works as outlined in this document.

4. **Scope of Work**

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

- 4.1 The description of technical specifications and quantities of various items of work involved have been detailed in Annexure I and this Annexure of this document.
- 4.2 Annexure I: Bill of Quantities, the total quantities of various components/ sub-components are to be executed as per the prescribed specifications/ standards and processes. These quantities are approximate & indicative only and can increase or decrease as per actual requirement of the site and direction of the Engineer in this regard will be final & binding on the Contractor.

5. **General**

- 5.1 The Contractor shall acquaint himself with the proposed works at the site and physically assess the activities that are involved for completing the work, including the quantum of work besides the information supplied in the document, conditions at work sites and approach roads to the site(s) of work.
- 5.2 The Contractor shall discuss with the Employer before commencement of works, the methodology required for the work including sequence of construction and construction techniques to be followed. No claim whatsoever for not having first-hand knowledge in respect of scope of work shall be entertained at a later date.
- 5.3 The Contractor shall arrange all labour, tools, equipment, materials, temporary works, plant & machinery, fuel including transportation thereof and all other incidental items specified in this document or not, but may be required for complete performance of the works in accordance with drawings, specifications and direction of the Engineer.
- 5.4 The Contractor shall be responsible for making out the center line and establish total station equipment stations including construction of the pillars as reference points for establishing control points to check the lines and levels.
- 5.5 The Contractor shall be responsible for clearing of site for construction of the work and all activities connected therewith before commencement of work to the satisfaction of the Engineer and.
- 5.6 The Contractor shall be responsible for clearing of site (to the satisfaction of the Engineer) after completion of entire work and handing over the same to the Employer.

- 5.7 The Contractor shall be responsible for maintenance of all works during construction and period of maintenance. This is notwithstanding any other provision contained in this document elsewhere.
- 5.8 The Contractor shall provide provision for all safety measures for traffic, pedestrian, workmen and machinery etc. as considered necessary by the Engineer.
- 5.9 Any works, other than the above essential works, which are not specifically mentioned above but are required otherwise for the completion of the work, shall be deemed to be covered under the scope of work.

6. Procurement

- (a) The Contractor shall procure and supply all the necessary material, machinery and related necessary items well in advance adhering to the timelines stipulated in the terms and conditions of the Contract.
- (b) The Contractor shall make its own arrangement for safe storage, handling of material and machinery procured at site.

7. Site Organization

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

8. Materials

- (a) All materials to be incorporated in the work, shall be in accordance with the specifications laid down.
- (b) The Contractor shall use materials bearing ISI certification mark unless otherwise specified or allowed in writing by the Engineer. Any material banned by the Employer / Government shall not be used in the work.
- (c) The Contractor shall be fully responsible for the safe custody of the materials.

9. Measurements

- (a) All items of work carried out by the Contractor in accordance with the provision of the Contract having a financial value shall be entered in the Measurement Book (M.B.) as prescribed by the Engineer so that a complete record of the measurements is available for all the works executed under the Contract and the value of the work executed can be ascertained and determined there from. Measurements of completed work / portion of completed work shall be recorded only in the M.B.
- (b) Except where Contract provides otherwise, measurement of all the works done shall be taken and recorded in accordance with the relevant standard method of measurements published by the Bureau of Indian Standards (BIS), and if not covered by the above, other relevant standards / practices shall be followed as per instructions of the Engineer.
- (c) Measurement shall be taken jointly by the Engineer and Contractor.

10. Progress Monitoring & Supervision

- (a) The Employer shall check the Contractor's performance and notify him of any data or service defects that are found. Such checking shall not affect the Contractor's responsibilities.
- (b) All the drawings, designs, reports, and other documents submitted by the Contractor shall become and remain the property of the Employer, and the Contractor shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Employer, together with a detailed inventory thereof. The Contractor shall not disclose any proprietary or confidential information relating to the services without the prior written consent of the Employer.
- (c) Progress Monitoring and supervision shall be undertaken by the Engineer. The supervision and monitoring shall not relieve the Contractor to perform his responsibilities under the Contract. The Contractor shall submit regular progress status at the intervals decided by the Engineer.

11. Technical Specifications

(a) Civil Works

All civil works shall be carried out as per latest CPWD's Specification for Civil Works and applicable standards & codes. Any item for which specification is not provided and is not covered under CPWD specifications, standards and codes shall be executed as per manufacturer guidelines and as per directions of the Engineer. All materials shall be of best quality conforming to relevant Indian Standards and Codes.

(b) Electrical Works

All electrical works shall be carried out as per latest CPWD's Specification for Electrical Works and applicable standards & codes. Any item for which specification is not provided and is not covered under CPWD specifications, standards and codes shall be executed as per manufacturer guidelines and as per directions of the Engineer. All materials shall be of best quality conforming to relevant Indian Standards and Codes

- (c) **Porta Cabin:** The technical specifications for containerized pre-fab unit for passenger waiting area, ticket counter, office workstation and manager cabin is as below:

S. No.	Parameters	Description	Proposed Make
01.	Size	40' (L) x 8' (W) x 8' (H) +-5% (2nos. arranged in L shaped layout as indicated)	Prefab made from MS as per standard shipping containers
02.	Structure	Specially formed columns and beams duly placed on foundation / plinth of min. 1.25' on turnkey basis.	

S. No.	Parameters	Description	Proposed Make
03.	Roofing	PVC Puff Wall Panel min. 30mm thick.	
04.	Walls	Outer: PVC Panel PARE make or equivalent. Inner: PVC Wall cladding type with concealed electric conduiting, wiring. Fitting mechanism to be Soffit type modular ceiling and wall system. Should be waterproof, maintenance free and should impart a real wood feel.	PARE / Koreapuff
05.	Floor	18mm plywood layered with Click N Lock tiles come with advanced Wel-Lock technology that enables the tiles to easily fit against one another through a unique locking mechanism. ensuring strong locking at the joints and thereby ensuring quick installation. Base structure to such that Overall, the loads that can be provided on the Base is approximately 9000 kgs. inclusive of Human Weight, floor Finishes and Furniture.	Wellspun or similar
06.	Partition	Made for powder coated aluminium frame with PVC partition panels of PARE / Korea puff make or equivalent.	PARE / Koreapuff
07.	Pergola	Wooden Rafters (size min. 2.5" x 1") placed at every 3" on a Steel Frame made of 3" sq. pipe frame and 3" steel runners to support the rafters to be provided for shade between the two containers. The pergola frame to be 1' higher than the roof of the container. The top is to be lined with translucent fiber sheet for protection from rain. Area: 99.59 sqft.	Shubhwood / E3 wood or Standard
AMENITIES:			

S. No.	Parameters	Description	Proposed Make
08.	Door	UPVC Door with framing & Locking arrangement. Casement Upvc Door With 5 Mm Clear Glass Or Hmps Metal Openable Door With Vision Glass Panel. Size: 900 MM X 2100 MM	Standard
09.	Windows	UPVC Windows with glass panels of appropriate size as per approved layout. Casement upvc window with 5 mm clear glass Heavy duty anodized aluminum sliding window with 5 mm clear glass of size 900 mm x 900 mm or as per design. Open able or sliding window & window will be open outside for use Full size glass walls on the shorter sides of the container and the entry side for maximum view of the outside. Should be provided with blinds.	Standard
10.	Illuminated Logo	3D IWAI logo to be placed as indicated in the layout. To be made of Acrylic or SS 304 grade / Aluminium and illuminated by spot lights. Size: 3' x 1.5' and placed at 1.2mtrs height.	Standard
ELECTRIFICATION:			
11.	Wire	Finolex / Polycab/ RR Kabel or equivalent ISI Marked. All wiring will be fire retardant grade as per is standard & roof & wall panel will be joint with the standard connectors.	Havells or Legrand make.
12.	Switches	Legrand- Myline make.	
13.	Lights	LED lights, wall hanging swing type. Fans: 8nos. Lights: As applicable ranging from 3W to 20W.	PHILLIPS or equivalent make.

S. No.	Parameters	Description	Proposed Make
		The quantity may change depending on the décor. Provision of spot light for IWAI logo to be placed in front garden.	Fan: Usha / Bajaj / Orient make
14.	Sockets	6 Amp.: 20nos. 16amp: 10nos.	Legrand /Havells
15.	Bulk Light	ISI Standard	Standrad
16.	MCB /ELCB	32Amp or as per requirement of Schneider make or equivalent.	Legrand /Havells
17.	Power Backup	2KW Solar Power Backup Hybrid Inverter System to be provided for un-interrupted working of 8 LED lights, 3 Fans as well as 2 computers for atleast 3 hrs. Provision of mounting of solar panels on the roof to made by the supplier. Solar System Capacity 2kW Solar Panel Quantity 6 Nos. (equivalent to 2KW) Solar Inverter 2.5kVA Solar Battery 4nos. x 150AH Accessories Fasteners, Cable Tie, Crimping Tool, Earthing Kit, Lighting Arrestor MC4 connector 2 Pair Silent DG set of 7.5KVA to be provided with canopy.	UTL / Luminous / Exide / Okaya. DG: (Jakson/ Kirloskar / Koelgreen / Greaves or similar)
18.	Smoke Detectors	2nos. Battery Operated Smoke detectors in each prefab container.	Standard
19.	Fire Extinguisher	2nos. Fire Extinguisher of 2kgs each to be provided.	Standard

S. No.	Parameters	Description	Proposed Make
20.	Emergency light:	2nos. to be provided. One for each prefab structure.	Standard
21.	IT Equipment Amenities:	Lan port & Telephone connections for intercom for the work stations to be provided.	Standard
22.	Waste Bin	Each partition section to have a waste bin and a waste bin to be placed near the toilet area.	Standard
23.	Furniture	Waiting Area to have minimum 24 persons seating as per layout. The chairs to be made from SS with perforated sheets of reputed make. Office Table & Work station tables to be provided. Waiting Area Sofa to be of Geeken make or equivalent.	Geeken make or equivalent.

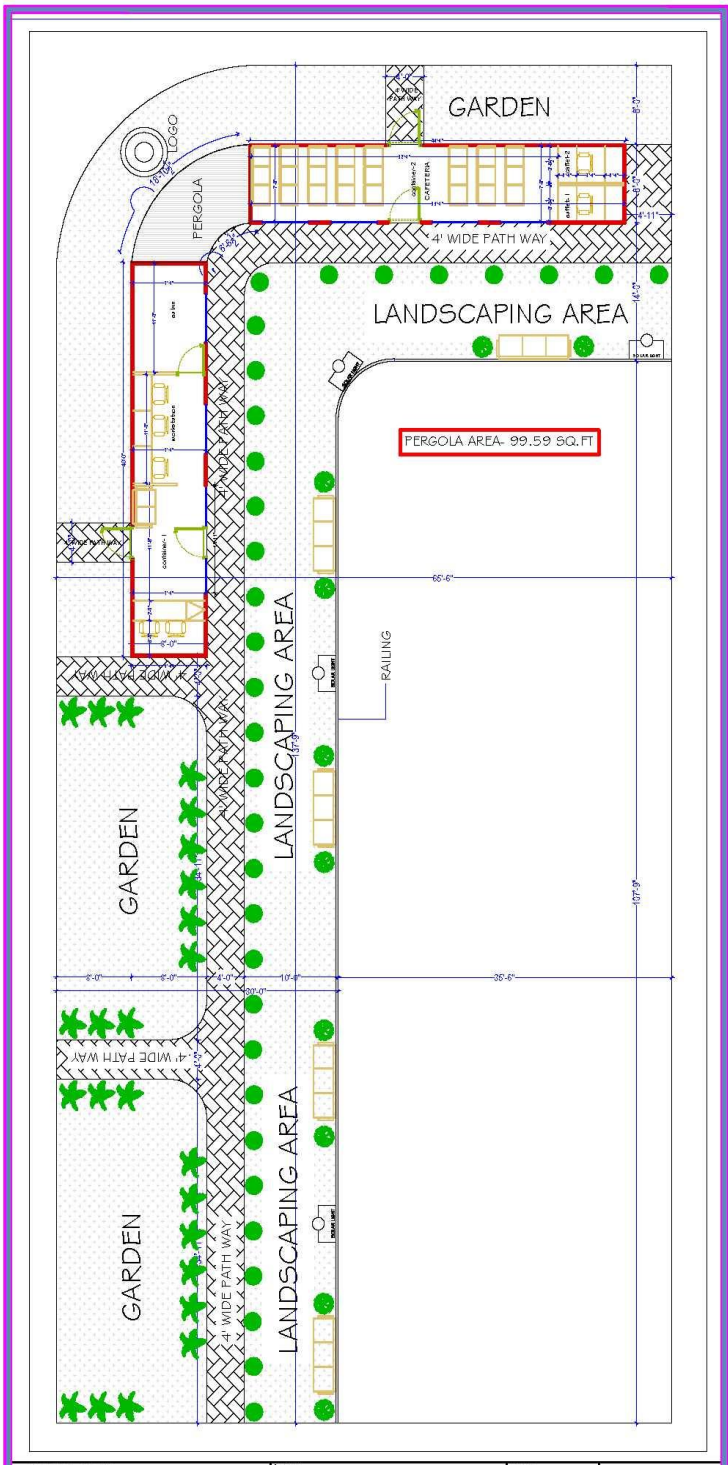
(d) **Solar Street Light**

LED Light	25W
Solar panel	Poly-crystalline 40W
Battery capacity	11.1V 20Ah / 25Ah Lithium-ion / LiFePO4 battery
Motion Sensor	PIR motion sensor (12m range) Detection: 102° Horizontal & 92° Vertical
Solar charge controller rating	5A
LUMEN Output	2000 Lumen. Dimming to 1/3 intensity on detecting no movement for more than 1 min.
LED Dispersion angle	120°
LED Driver efficiency	>90% (Battery to Load)
LED light operating Voltage Range	9V -12.6 V DC

Load cut-off voltage for battery deep discharge protection	9 V
Light mounting height	4m above ground level
Humidity Range	0 to 95% (non-condensing)
Temperature range	0 to 60 °C
Light backup time	Full night with dimming

PROPOSED LAYOUT PLAN

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Images for reference only.



OUTDOOR BENCHES



ACTUAL SITE PHOTOGRAPHS



