



**(भारत सरकार का उपक्रम – जल शक्ति मंत्रालय)**

**(A Government of India Undertaking–Ministry of Jal Shakti)**

**76-C, Institutional Area, Sector 18, Gurgaon**

**TENDER DOCUMENT**

**FOR**

*Hiring of Agency for carrying out – Geotechnical Investigation for MBRAPP -1  
to 4*

**WAP/IP/MBRAPP/BANSWARA/2025/01 Date: 22.01.2025**

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**NOTICE INVITING TENDER (NIT)**

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## NOTICE INVITING TENDER (NIT)

**WAP/IP/MBRAPP/BANSWARA/2025/01**

**Date: 22.01.2025**

WAPCOS Limited (A Govt. of India Undertaking), invites **“Online Electronic Tenders”** for Geotechnical Investigation on LCS (Least-Cost Selection) basis from Experienced, Resourceful, Reputed and Competent Agencies for the work as per the following details:

|     |   |   |   |
|-----|---|---|---|
| 1.  | Name of Work / Project  | : | “Hiring of Agency for carrying out Geotechnical Investigation at MBRAPP – 1 to 4”   |
| 2.  | Site / Location   | : | Banswara, Rajasthan<br>Northing: 2605188.77 m N<br>Easting: 455224.05 m E (Zone: 43Q)   |
| 3.  | Website for viewing tender  | : | <a href="http://www.wapcos.co.in">www.wapcos.co.in</a> and <a href="https://gem.gov.in">https://gem.gov.in</a>  |
| 4.  | Website for Registration/ Procurement/ uploading of Tender and also viewing & procurement of the Corrigendum/ Addendum, if any. | : | GEM Portal ( <a href="https://gem.gov.in/">https://gem.gov.in/</a> )  |
| 5.  | Approximate Estimated Cost of Work  | : | <b>Rs. 80,00,000/- (Rupees Eighty lakh Only) exclusive of GST</b>   |
| 6.  | Cost of Tender Document   | : | <b>Nil</b>  |
| 7.  | Amount of Earnest Money Deposit   | : | 2% of Estimated Cost i.e. Rs. 1,60,000/- in the form of RTGS/NEFT/D.D./Banker's Cheque/ FDR in favor of 'WAPCOS Limited' payable at Gurugram, Haryana OR Can be accepted in the form of bank Guarantee in prescribed format issued by a Nationalized/ Scheduled Commercial Bank.                  |
| 8.  | Project Completion Period   | : | <b>4 Months from the Date of Award</b>  |
| 9.  | Validity of Bid/Tender  | : | <b>120 Days from Bid Opening date</b>   |
| 10. | Site Visit  | : | Site visit is not mandatory. However, for actual understanding of site conditions and working season, bidders are advised to conduct visit or gather information about the project area. <b>In no case, extension of time for completion of services shall be granted on account of the same.</b> |

|   |   |   |   |
|---|---|---|---|
| 11.   | Pre Bid Meeting (for the bidders who conducted mandatory site visit)                                | : | The pre-bid meeting will not be held. Bidder(s) can ask queries in writing to tender inviting authority (WAPCOS LIMITED) till <b>7 days</b> before last date of tender online submission as mentioned in NIT. Any amendment(s)/ corrigendum/clarification(s) with respect to this Tender shall be uploaded on the GEM Portal only. The bidders should keep themselves updated by regularly visiting the GEM Portal website for any amendment/corrigendum/ clarification in regard to this Tender. |
| 12.   | Last date & time of Procurement / download of tender Document                                       | : | As per the GEM Portal   |
| 13.   | Offline Submission of Technical Document, Tender Fees and EMD etc. as detail in Tender for bidders. | : | Within 24 hours after Last date of online Bid submission in the office of Chief Engineer (INFS-III), WAPCOS Ltd., Gurugram  |
| 14.   | Last date & time for online submission of Technical & Financial Bid                                 | : | As per GeM Portal   |
| 15.   | Online opening of Technical Bid   | : | As per GeM Portal   |
| 16.   | Online opening of Financial Bid   | : | Will be Intimated to Technically Qualified Bidders.   |
| 17.   | WAPCOS Communication address during Tendering and execution of works                                | : | Chief Engineer (INFS-III),<br>WAPCOS Limited.<br>Room no. A-23,<br>76-C, Sector-18, Institutional Area,<br>Gurugram-122015, Haryana<br>Email: <a href="mailto:info2@wapcos.co.in">info2@wapcos.co.in</a><br>Contact No. +91-124-2340670   |
| <ul style="list-style-type: none"> <li>• <b>Exemption in EMD &amp; Tender document fee for registered Micro and Small Enterprises only under MSME:</b> The companies who are registered as Micro and Small Enterprises are exempted from the submission of Tender document fee on submission of requisite proof in the form of valid certification from MSME.</li> <li>• If the office of WAPCOS Limited, Gurugram happens to be closed on the last date and time mentioned for any of the event, the said event will take place on the next working day at the same time and venue.</li> </ul> |   |   |   |

The tender document has to be downloaded from above specified website. Bidders are advised to visit above specified website regularly for updates/Amendments/Corrigendum, if any. The

Updates/Corrigendum/Addendum shall be followed up to submission of tender and it will be the part of tender. The full details about the work, specifications, Drawings, terms and conditions shall be available in the Tender Document. The tender document has to be submitted online on GEM Portal <https://gem.gov.in>.

The purpose of this NIT is to provide interested parties with information to assist the preparation of their bid. While WAPCOS Limited has taken due care in the preparation of the information contained herein, and believe it to be complete and accurate, neither it nor any of its authorities or agencies nor any of its respective officers, employees, agents or Advisors give any warranty or make any representations, expressed or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

**Further, WAPCOS Limited does not claim that the information is exhaustive. Respondents to this NIT are required to make their own inquiries/ surveys and will be required to confirm, in writing, that they have done so and they did not rely solely on the information in NIT. WAPCOS Limited is not responsible if no due diligence is performed by the bidders.**

### **IMPORTANT POINTS**

- i. Joint Ventures / Associations are strictly not allowed.
- ii. All Bidders are hereby cautioned that Bids containing any deviation or reservation as described in Clauses of "Instructions to Bidders" shall be considered as non-responsive and shall be summarily rejected.
- iii. WAPCOS Ltd. reserves the right to accept or reject any or all bids without assigning any reasons. No Bidder shall have any cause of action or claim against the WAPCOS Ltd. for rejection of his Bid and will not be bound to accept the lowest or any other tender.
- iv. No reimbursement of cost of any type or on any account will be paid to persons or entities submitting their Bid.
- v. All information submitted in response to this NIT shall be the property of WAPCOS Limited and it shall be free to use the concept of the same at its will.
- vi. It is hereby declared that WAPCOS is committed to follow the principle of transparency, equity and competitiveness in public procurement.
- vii. Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected. This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the WAPCOS.

**For and on behalf of  
WAPCOS LIMITED**

**Chief Engineer (INFS-III)  
WAPCOS Gurugram**

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**SECTION-I**

**INSTRUCTION TO BIDDER**

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## SECTION 1 INSTRUCTION TO BIDDER

### 1.1 SPECIAL INSTRUCTION TO BIDDER FOR E- TENDERING

This Part of the Bidding Documents i.e. Instructions to the bidder provides the information necessary for bidders to submit responsive bids, opening and evaluation and process for award of contract. If any information provided in this document has conflict with the provision of general conditions, then the later shall prevail.

The Bidder, in his own interest is requested to read very carefully these instructions and the terms & conditions as incorporated in all parts of tender document along with all amendments/ corrigendum's / addendums before filling the Bid form. Submission of the Bid shall be deemed to be the conclusive proof of the fact that the Bidder had acquainted himself and is in agreement with all the instructions, terms & conditions governing the specification, unless otherwise specifically indicated/ commented by him in his Bid.

The Sellers/ Agency shall follow the link for reading the training module for GEM Participation as follows:

| S. No. | Module  | Link for Training Module  |
|--------|---|---|
| 1      | Introduction to Seller/Service Provider Functionality | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Introduction-Seller-Functionality-v11652261184.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Introduction-Seller-Functionality-v11652261184.pdf</a>   |
| 2      | Seller/Service Provider Registration Using PAN        | <b>Using PAN</b><br><a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Registration-Using-PAN-v1-1652261232.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Registration-Using-PAN-v1-1652261232.pdf</a><br><br><b>Using Aadhaar</b> <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Registration-Using-Adhaar-v11652261280.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Registration-Using-Adhaar-v11652261280.pdf</a> |
| 3      | Profile Updation (Seller/Service Provider)            | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Profile-Updation-Approved-07thFeb-2022-1657021156.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Profile-Updation-Approved-07thFeb-2022-1657021156.pdf</a>   |
| 4      | Secondary User Creation                               | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Secondary-User-Creation-Seller-v21652261408.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Secondary-User-Creation-Seller-v21652261408.pdf</a>   |
| 5      | Overview of Dashboard – Seller/Service Provider       | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Dashboard-v2-1652261449.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Seller-Dashboard-v2-1652261449.pdf</a>   |
| 6      | Vendor Assessment                                     | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Vendor-Assessment-Approved-16th-Feb-2022-1657021088.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Vendor-Assessment-Approved-16th-Feb-2022-1657021088.pdf</a>   |

|   |                                     |   |
|---|-------------------------------------|---|
| 7 | Bid Participation Services          | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Bid-Participation-Services-v2-1652262839.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Bid-Participation-Services-v2-1652262839.pdf</a> |
| 8 | Earnest Money Deposit (EMD) Process | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/EM D-Requirements-Seller-v11652262911.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/EM D-Requirements-Seller-v11652262911.pdf</a>       |
| 9 | Bill of Quantities [BoQ] – Seller   | <a href="https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Ite m-Wise-BOQ-seller-v21652262676.pdf">https://assets-bg.gem.gov.in/resources/upload/shared_doc/training_content/Ite m-Wise-BOQ-seller-v21652262676.pdf</a>             |

## **TENDER DOCUMENTS**

The tender documents are as stated below and should be read in conjunction with any corrigendum/modification issued on these documents:

- Notice Inviting Tender (NIT)
- Instructions to Bidders (ITB)
- Annexures for Bid Submission

The Bidder is expected to examine carefully the contents of all the above documents. Failure to comply with the requirement of the Bid submission will be at the Bidder's own risk. Bids which are not substantially responsive to the requirement of the bidding document shall be rejected.

## **CLARIFICATION OF BID DOCUMENTS**

Prospective Bidder requiring any clarification of the bidding documents may submit his queries in the pre-bid meeting / as mentioned in the NIT.

The Employer will reply to only those queries which are received before the scheduled time and which are essentially required for submission of bids. The Employer will not reply to the queries which are not considered fit like or replies of which can be implied /found in the NIT/Tender Documents or which are not relevant or in contravention to NIT/Tender Documents. While all efforts have been made to avoid errors in the drafting of the tender documents, the Bidder is advised to check the same carefully. No claim on account of any errors detected in the tender documents shall be entertained and the WAPCOS Limited shall remain indemnified on all counts in this regard.

## **AMENDMENT OF BID DOCUMENTS**

At any time prior to the deadline for submission of bids, the Employer may, for any reason (s), whether at their own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by the issuance of a corrigendum/ addendum. No modification of Bid shall be permissible after last date

of submission, whatever may be the reason. The Employer may at their discretion may extend the deadline for submission of Tender/ Bid, if considered necessary. Any corrigendum/ addendum thus issued shall be part of the bidding documents. Prospective Bidders shall download the same from the e-portal and submit along with the submission of Bid as token of acceptance.

#### **PREFERENCE TO MAKE IN INDIA**

- 1) The provisions of revised 'Public Procurement (Preference to Make in India) Order 2017-Revision' issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry vide letter no.-P45021/2/2017-PP (BE-II) as amended on 16.09.2020 shall be applicable to the bidding process and award of the contract shall be done accordingly. In this connection, the minimum local content shall be 50% and the margin of purchase preference shall be 20%.
- 2) Verification of Local Content
  - a. The bidder at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement of the tender. They shall also give details of the location(s) at which the local value addition is made.
  - b. In cases of procurement for a value in excess of Rs 10 Crores, the bidder shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

#### **RULE 144 (xi) IN GENERAL FINANCIAL RULES (GFRs) 2017**

- 1) Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.
- 2) "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- 3) "Bidder from a country which shares a land border with India" for the purpose of this Order means:
  - a) An entity incorporated, established or registered in such a country; or
  - b) A subsidiary of an entity incorporated, established or registered in such a country; or
  - c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
  - d) An entity whose beneficial owner is situated in such a country; or

- e) An Indian (or other) agent of such an entity; or
  - f) A natural person who is a citizen of such a country; or
  - g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
- 4) The beneficial owner for the purpose of 1.4.2.(iii) above will be as under:
- a) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercise control through other means;

**Explanation:**

- “Controlling ownership interest” means ownership of or entitlement to more than twenty- five per cent. Of shares or capital or profits of the company;
  - “Control” shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
- b) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
  - c) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone of together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profit of such association or body of individuals;
  - d) Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
  - e) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- 5) An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

**PREPARATION OF BIDS**

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

**Note:** *My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.*

## **SUBMISSION OF BIDS**

### **Online submission of Bid**

The bidders shall submit their Technical and Financial Bid electronically through GEM Portal (<https://gem.gov.in/>).

### **Technical Bid**

The Technical bid may be declared non-responsive / invalid, if the Bid is not accompanied by the requisite documents as stipulated in ITB of Bid document. **The Technical Bid should not contain any financial information related to Financial Bid.** The technical bid shall contain:

*Documentary evidence of having deposited the cost of bid document and EMD as per NIT.*

*Signed & scanned copy of all duly filled Forms as per Section-II and Annexures as per clause 1.8 of ITB and other requirements mentioned elsewhere in the Tender document.*

### **Financial Bid**

The Financial Bid shall not include any Commercial or Technical conditions/ information. Financial offers shall be submitted as per prescribed format given in **Annexure-A: Financial Bid** of Bid document. Financial Bid shall be uploaded through GEM Portal of Government of India.

### **Deadline for Submission of Bids**

WAPCOS may, at its discretion, extend the deadline for submission of bids by issuing an amendment, in which case all rights and obligations of WAPCOS and the bidders previously subject to the original deadline shall thereafter be subject to the new deadline as extended. The notice for extension of bid submission date shall be put on GEM Portal of Government of India.

### **Modification and Withdrawal of Bids**

The bidder may modify or withdraw their bid prior to deadline for submission of bid by giving modification or withdrawal notice in writing to WAPCOS. The bid shall be modified / withdrawn on GEM Portal.

No bid will be modified after the deadline for submission of the bid. Withdrawal of bid between deadline for submission and expiry of bid validity will result in forfeiture of earnest money pursuant to ITB clause-3.

### **OFFLINE SUBMISSION OF DOCUMENTS BY BIDDER**

The documents which shall be mandatorily submitted in Physical form as below:

- a) Notarized Power of Attorney / Authorization Letter in case of Proprietor firm, to sign the Tender in original as per Section 2.
- b) EMD in original submitted in the form of RTGS/NEFT/D.D./Banker's cheque / Insurance Surety Bonds/ FDR as per NIT
- c) Solvency Certificate in original as per format enclosed in FORM-L

**The physical submission of remaining part of Technical Bids is not mandatory.**

**The Technical Bid should not contain any financial information related to Financial Bid.**

### **1.2 MINIMUM REQUIREMENTS AT BIDDER'S END**

The Computer System having configuration with minimum Windows 7 or above, and Broadband Connectivity.

- Microsoft Internet Explorer 7.0 or above
- Digital Certificate(s)

### **1.3 INSTRUCTION TO BIDDER**

The purpose of these instructions to serve as a guide to Bidders for preparing offer for carrying out the project in all respect.

- a) The Schedule of Quantity is given in **Scope of Work**. The tenderer has to quote their offer in Item Rate in Schedule of Quantities. The Item-Rate shall be quoted up to 2 decimals. The tenderer shall quote rate(s) in figures as well as in words. In case of any discrepancy between the two, rate(s) quoted in words shall prevail. In case of discrepancy between quoted rate and amount, rate shall prevail. The payment will be made as per the actual work done and item wise measurement basis. Bidders are advised to examine the available Cost Index/ Market Rate while submitting the tender.
- b) Bidders are advised to quote their rates including the lead/lift/carriage of material at site as per the site conditions. No request for the lead/lift carriage shall be considered after the award of the work.

- c) Submission of a tender by a tenderer implies that the tenderer has read this notice and all other Tender Documents and has made himself aware of the scope, the specifications, and conditions of contract, local conditions and other factors having bearings on the execution of the work.
- d) WAPCOS Limited desires that the bidders, suppliers, and Sub-contractors under the Project; observe the highest standard of ethics during the performance, procurement and execution of such contracts. In pursuance of this requirement, WAPCOS Limited, defines, for the purposes of this provision, the terms set forth below:
- i. "Corrupt Practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
  - ii. "Fraudulent Practice" means any act of submission of forged documentation, or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation, or to succeed in a competitive bidding process;
  - iii. "Coercive Practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
  - iv. "Collusive Practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.
  - v. Will reject the award of Contract, even at a later stage, if it determines that the bidder recommended/ selected for award/awarded has, directly or through an agent, engaged in Corrupt, Fraudulent, Collusive, Or Coercive Practices in competing for the Contract; Will sanction a party or its successors, including declaring ineligible, either indefinitely or for a stated period of time, to participate in any further bidding/procurement proceedings under the Project, if it at any time determines that the party has, directly or through an agent, engaged in Corrupt, Fraudulent, Collusive, Or Coercive Practices in competing for, or in executing, the contract.
  - vi. The party may be required to sign an Integrity Pact, if required; and WAPCOS Limited will have the right to require the bidders, or its suppliers, contractors and consultants to permit WAPCOS Limited to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by WAPCOS Limited at the cost of the bidders.
  - vii. The Bidder must obtain for himself on his own responsibility and at his own expenses all the information which may be necessary for the purpose of making a bid and for entering into a contract, must examine the Drawings, must inspect the sites of the work, acquaint himself with all local conditions, means of access to the work, nature of the work and all matters pertaining thereto. WAPCOS Limited will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

- viii. The Contract shall be governed by each SECTION OF TENDER DOCUMENT i.e. instructions to bidders, selection & qualifying criteria, scope of works, General Conditions for Contract (GCC), Special Conditions for Contract (SCC), Annexures, Forms, Drawings, Technical Specification, Addendum / Clarification / Corrigendum etc. and all other Conditions mentioned in the tender documents.
- ix. All Bidders are hereby explicitly informed that conditional offers or offers with deviations from the Conditions of Contract, the bids not meeting the minimum eligibility criteria, Technical Bids not accompanied with EMD of requisite amount in acceptable format, Bids in altered/modified formats, or in deviation with any other requirements stipulated in the tender documents are liable to be rejected.
- x. The bidders shall not tamper or modify any part of the tender documents in any manner. In case in part of the bid is found to be tampered or modified at any stage, the bids are liable to be rejected, the contract is liable to be terminated and the full earnest deposit/retention money/performance guarantee will be forfeited and the bidder will be liable to be banned from doing any business with WAPCOS Limited
- xi. Incomplete Price bid shall be liable to be rejected, at the discretion of WAPCOS Limited. The total bid price shall cover the entire scope of works covered in the tender.

#### **1.4 EARNEST MONEY DEPOSIT (EMD)**

1. An EMD in the form of an Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's cheque or payment online in an acceptable form, safeguarding the purchaser's interest in all respects of the value as specified in the "NIT" may be submitted in favour of "WAPCOS Limited" payable at New Delhi / Gurugram. Such EMD shall be fully exempted for bidders with MSME certification for micro & small enterprises only.
2. Bids not accompanied with EMD shall be rejected as non-responsive.
3. The EMD of the unsuccessful bidders would be returned within 30 days of signing of the contract with the successful bidder.
4. The bank details of WAPCOS Limited are
  - Account Number – 193502000000281
  - A/c Holder – WAPCOS Limited
  - Bank Name – Indian Overseas Bank
  - Branch name: NHB, Gurugram
  - IFSC code: IOBA0001935
5. Unsuccessful bidder's EMD will be released after award of work to the Successful Bidder.
6. Successful bidder's EMD will be released only after submission of Performance Bank Guarantee and receipt of confirmation from bank for the same.

#### **Forfeiture of EMD**

The entire EMD shall be forfeited by WAPCOS Limited in the following events:



1. If the Bidder varies or modifies its proposal in a manner not acceptable to the tender inviting authority (TIA) after opening of Bid during the validity period or any extension thereof.
2. If the Bidder tries to influence the evaluation process or canvassing of any kind.
3. If the Bidder/s selected as 'Service Provider/s' chose to withdraw the Bid before the finalization process (failure to arrive at consensus by both the parties shall not be construed as withdrawal of Bid by the Bidder).

## **1.5 COST OF BIDDING**

The Bidder shall bear all costs associated with the preparation & submission of the Bid as well as costs associated for facilitating the evaluation. WAPCOS Ltd shall in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## **1.6 LANGUAGE OF BID**

The Bid and all related correspondence and documents relating to the Project shall be in English language only. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate English translation which shall be certified by a qualified translator. Any material that is submitted in a language other than English and which is not accompanied by an accurate English translation will not be considered.

## **1.7 CURRENCY OF BID**

Bid prices shall be quoted in Indian Rupees.

Tender submitted by tenderer shall remain valid for acceptance as mentioned in NIT from the date set for submission of the tender. The tenderer shall not be entitled within the said period to revoke or cancel or vary the tender given or any item thereof, without the consent of WAPCOS Limited. In case tenderer revokes, cancels, or varies his tender in any manner without the consent of WAPCOS Limited, within this period, his earnest money will be forfeited.

## **1.8 ANNEXURES**

The successful Bidder shall submit the following documents and follow the guidelines as per **"Section of Annexures"** mentioned in tender document.

|               |    |                      |
|---------------|----|----------------------|
| Annexure- I   | :- | GUARANTEE BONDS      |
| Annexure- II  | :- | PERFORMANCE SECURITY |
| Annexure- III |    | INDEMNITY BOND       |
| Annexure- IV  |    | SAFETY CODES         |

WAPCOS Limited reserves the right to reject any or all the bids or to cancel the Tender, without assigning any reason(s) whatsoever.

**For & on behalf of  
WAPCOS Ltd.**

## **SECTION – II**

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### **SELECTION AND QUALIFYING CRITERIA**

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## SECTION 2 SELECTION AND QUALIFYING CRITERIA

### 2.1 SITE VISIT

Intending Bidder(s) have to mandatorily visit, inspect and examine the site and its surroundings at his own cost and to satisfy themselves before submitting their bids. The bidder shall satisfy regarding all aspects of site conditions such as site conditions, traffic, location, surroundings, climate, access to the site, availability of drawings and other data etc., of the area before submission of the bid. No claim will be entertained on the plea that the information supplied by WAPCOS is insufficient. The Bidder at his own expense, interest, responsibility and risk, must visit and examine the site of works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract.

The Scope of work of project in this Section shall include in accordance with Detailed Technical Specifications of all the works.

### 2.2 PRE-BID MEETING

The pre-bid meeting will not be held. Bidder can ask queries in writing to tender inviting authority (WAPCOS LIMITED) till 2 Days before last date of tender submission as mentioned in NIT.

### 2.3 QUALIFYING CRITERIA: ONLINE TECHNICAL BID SUBMISSION

The intending bidders must read the terms & conditions of tender documents carefully. He should only submit his technical bid if he considers himself eligible and he is in possession of all the documents required.

The Technical Bid shall be uploaded **with properly readable colored scanned copies of following documents. All the documents must be Serial wise as stated below along with check list and clearly marked page no. on each page (MANDATORY). Any of the following document not uploaded/submitted or having misleading information shall be out rightly rejected as per discretion power of tender inviting authority. The documents which are not numbered, bids submitted after closure of submission date & time shall not be entertained and shall be summarily rejected.**

Table 2.1: Format of Check List

| Sl. No. | Particular of Document   | Yes | No | Page No. |
|---------|--|-----|----|----------|
| a)      | Authorization Letter to sign the Tender on bidder's original letter head or Power of Attorney from the competent authority of the firm |     |    |          |
| b)      | Scanned copy of EMD as mentioned in NIT.   |     |    |          |

|    |   |  |  |  |
|----|---|--|--|--|
| c) | Letter of Transmittal for Technical Bid in prescribed format on bidder's original letter Head   |  |  |  |
| d) | Yearly financial Turnover and Audited Balance Sheet for Last 5 (Five) years ending on the financial year 2022-23 duly certified by Chartered Accountant. <b>(Form-A, It must carry UDIN no.).</b>   |  |  |  |
| e) | The contractor should not have incurred any financial loss (profit after tax should be positive) in more than two years during last Five years ending 2022-23 duly audited and Attested by the Chartered Accountant. <b>(Form-A, It must carry UDIN no.).</b>   |  |  |  |
| f) | <b>Turnover:</b> Average annual financial turnover of the bidder should be at least 50% of the estimated cost of work during the last <b>3 years</b> consecutive financial years ending 2022-23. This should be duly audited by the Chartered Accountant doing Statutory Audit with UDIN number.  |  |  |  |
| g) | <p>The contractor should also have satisfactorily completed the similar type &amp; nature of work or works as mentioned below during the last seven years ending year 2022-23. (Form-B).</p> <p>1. One similar completed work costing not less than 80% of the estimated cost of work<br/>Or</p> <p>2. Two similar completed work costing not less than 50% of the estimated cost of work<br/>Or</p> <p>3. Three similar completed work costing not less than 40% of the estimated cost of work</p> <p><b>Similar work means:</b> "Geotechnical Investigation including drilling of boreholes in all types of strata and soil and perform the laboratory and field tests to determine various properties of soil and rock.</p> <p>Bidders must have experience in conducting geotechnical investigations in offshore/marine/river or submerged conditions in India within the past seven years.</p> |  |  |  |

|    |  |  |  |  |
|----|--|--|--|--|
|    | <p>Work completion certificate issued by Central/State Government Department/PSU or Autonomous body of Central or State Government or Public Limited Company listed on NSE/BSE will only be considered for evaluation. In case of a completion certificate from a private company, bidder needs to submit the TDS certificates authenticated by Chartered Accountant as a proof of the same.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>• The past experience should be supported by completion certificates indicating name, nature of work, value of the job, completion cost, date of commencement, stipulated date(s) of completion and actual date(s) of completion along with LOI(s)/W.O.(s) from respective owner(s)/client(s) duly signed by authority having rank Executive Engineer and above.</li> <li>• The value of the work given in NIT is without GST, hence the value of work declared in completion certificate is to be without GST.</li> <li>• For the works, where the Taxes or GST is not clearly defined, the value of works shall be considered as including GST and GST @18% shall be deducted to establish the value of work done.</li> <li>• The value of executed works shall be brought to the current level by enhancing the actual value of work done at a simple rate of 7% per annum, calculated from the date of completion to the last day of the month previous to the one in which applications are invited.</li> </ul> |  |  |  |
| h) | <p>The bidder should not be insolvent, in receivership, bankrupt or being wound up, not have had their business activities suspended. Accordingly, Bidder shall submit a <b>Solvency certificate</b> from any Nationalized/Scheduled Commercial Bank in Original from Banker for a sum of at least 40% of the estimated cost. <b>Solvency Certificate shall be issued after the</b></p>  |  |  |  |

|    |   |  |  |  |
|----|---|--|--|--|
|    | <b>date of publishing of NIT &amp; be addressed to the tendering authority quoting the name of the work.</b>  |  |  |  |
| i) | Name, Address, details of the Organization, Name(s) of the Owner/Partners/Promoters and Directors of the firm / company. <b>(Form-C)</b>  |  |  |  |
| j) | Copy of P.F and PAN Number and GST Registration Certificate.  |  |  |  |
| k) | The bidder should be an Indian Registered Company / Proprietorship Firm/ Partnership Firm. Copy of Certificate of Incorporation/ Registration/ Partnership Deed or any other relevant document, as applicable, should be submitted along with a copy of address proof. Note: Proprietor firms shall submit registration details or shall submit the copy of relevant page of Passbook for the Current Account in the name of Proprietor Firm. |  |  |  |
| l) | Bidder should not be blacklisted/ debarred by any Government / semi government department. Bidders shall give undertaking for not being involved in any form of corrupt and fraudulent practices. <b>(Form-D)</b> .   |  |  |  |
| m) | Letter of understanding the project site on bidder letter Head <b>(Form-E)</b> .  |  |  |  |
| n) | No Deviation Certificate in prescribed format in Bidder's Letter Head <b>(Form-F)</b> .   |  |  |  |
| o) | Consent Letter to execute the Integrity Pact <b>(Form-G)</b> .  |  |  |  |
| p) | Each page of the all Volume of Tender document & Addendum/ Corrigendum shall be Digitally signed by the bidders submitting the Tender in token of his/their having acquainted himself/ themselves and accepted the entire tender documents including various conditions of contract. Any Bid with any of the Documents not so signed is liable to be rejected at the discretion of WAPCOS Limited.  |  |  |  |

No information relating to financial terms of services should be included in the technical bid. Bids are to be submitted to determine that the bidder has a full comprehension of the tendered work. Where a bidder technical submittal is found non - compliant with the requirement of work, it may be rejected. This process is to assure that only technical acceptable bids are considered for the tendered work.

Bidders who full fill the above requirements shall only be technically qualified for first stage qualification. Nonfulfillment of any of the above requirements by any bidder will automatically lead to its technical disqualification. Therefore, bidders are requested to make sure that they submit all the relevant papers which meet all the above-mentioned requirements.

## 2.4 OFFLINE SUBMISSIONS OF TECHNICAL DOCUMENTS

The documents which shall be mandatorily submitted in Physical form as below:

- a) Notarized Power of Attorney / Authorization Letter in case of Proprietor firm, to sign the Tender in original as per Section 2.
- b) EMD in original submitted in the form of RTGS/NEFT/D.D./Banker's cheque/ Insurance Surety Bonds/ FDR as per NIT
- c) Solvency Certificate in original as per format enclosed in FORM-L

The physical submission of remaining part of Technical Bids is not mandatory.

The Technical Bid should not contain any financial information related to Financial Bid.

The offline submissions as mentioned above shall be submitted on WAPCOS address mentioned in NIT as per date & time mentioned in NIT otherwise bids are liable to be rejected.

## 2.5 TECHNICAL EVALUATION CRITERIA

### First Stage:

The first stage of technical evaluation will be based on fulfilling the Qualification criteria based on Table 2.1: Format of Check List above. The agencies qualifying and justifying the eligibility criteria with documentary proof are only considered for further second stage technical evaluation.

### Second Stage:

The Second Stage Technical Evaluation Criteria shall be as given below:

**Table 2.2: Second Stage Technical Evaluation**

| Sr. No | Particular  | Scoring | Max Marks        |
|--------|---|---------|------------------|
|        |   |         |                  |
| 1.     | <b>Average Annual Turn-over in previous three years ending FY 2022-23</b> |         | <b><u>20</u></b> |
| i.     | From ( $\geq$ ) Rs. 40 Lakh to ( $<$ ) Rs. 1 cr. in last three years      | 10      |                  |
| ii.    | From ( $\geq$ ) Rs. 1 cr. to ( $<$ ) Rs. 5 cr. in last three years        | 15      |                  |
| iii.   | More than ( $\geq$ ) Rs. 5 Cr. in last three years                        | 20      |                  |



| Sr. No    | Particular  | Scoring | Max Marks        |
|-----------|---|---------|------------------|
|           |   |         |                  |
| <b>2.</b> | <b>Experience in Similar Works</b>  |         | <b><u>40</u></b> |
| i.        | Experience of one (1) completed project   | 10      |                  |
| ii.       | Experience of two (2) completed projects  | 20      |                  |
| iii.      | Experience of three (3) or more completed projects  | 30      |                  |
| iv.       | Experience in conducting geotechnical investigations in two (2) or more completed projects in offshore/marine/river or submerged conditions   | 10      |                  |
| <b>3.</b> | <b>Team of Expert having following minimum experience</b>   |         | <b><u>30</u></b> |
| i.        | Team Leader with M. Tech. (Geotechnical Engineering) and minimum 15 years' experience in Geotechnical Investigation works, testing and recommendations/advisory services (1 No.)      | 10      |                  |
| ii.       | Lab In Charge with M. Tech./ B. Tech. in Civil Engineering having minimum 10 years of experience in geotechnical investigation works. (1 No.)   | 7.5     |                  |
| iii.      | Site-in-charge cum Project Manager with M. Tech./B. Tech. in Civil Engg. having minimum 10 years of experience in geotechnical investigation works. (1 No.)                           | 5       |                  |
| iv.       | Site supervisor/Geologist/Civil Engineer with Graduate/Diploma/ITI in Civil Engg. Or M.Sc. In Geology having 2 to 5 years of experience in geotechnical investigation works. (3 Nos.) | 7.5     |                  |
| <b>4.</b> | <b>Approach and Methodology</b>   |         | <b><u>10</u></b> |
| i.        | Approach & Methodology & Work Plan  | 10      |                  |

Detailed technical evaluation will be taken up in respect of only those bidders who meet the prescribed minimum qualifying eligibility criteria. The bidders securing minimum 75% marks in Table 2.2: Second Stage technical evaluation shall be considered for opening of financial proposals.

## 2.6 CONTENTS OF FINANCIAL BID

The Financial Bid should be uploaded separately along with Technical bid before last date & time of submission of Tender Document.

The bidder shall quote rates of BOQ items keeping in view all associated costs with the project including any out of pocket / mobilization expenses/ Custom duty (if any), Buildings and other construction worker's welfare cess, TDS, taxes (except GST) if any applicable as per Govt. terms, shall be paid by the Contractor.

The quoted rates should be inclusive of all taxes (Except GST).

It is mandatory to bidders to deposit GST within time limit framed by Govt. of India, if applicable. The Goods and Services Tax (GST), shall be reimbursed to the Agency only after uploading of bills by Contractor on GST Portal "to avail Input benefit of GST".

The company shall be performing all its duties of deduction of TDS and other deduction on payment made to the contractor as per applicable legislation in force on the date of submission of bid or to be newly / amended introduced during the execution of the Contract.

**Do not submit the Summary of Cost (BOQ) in the technical bid folder.**

The financial proposal is to be filled by bidder in the excel file attached in the portal. After that, same filled excel file, will be uploaded by bidder at the submission of Financial/Price Bid.

## **2.7 OPENING OF FINANCIAL BID**

The financial bids of the technically qualified bidders shall be opened at the notified date.

## **2.8 PARALLEL CONTRACTS OR SPLITTING OF AWARD**

The Procuring Entity reserves its right to split the quantities and conclude Parallel contracts with more than one bidder (for the same tender) in the following circumstances:

- 1) Unless otherwise stipulated in TIS/ AITB, there shall be no parallel orders or splitting quantities among more than one Bidders.
- 2) However, if the Tender Document stipulates such parallel contracts due to the critical/ strategic/ specific nature of the Services, the manner of deciding relative share of the lowest bidder (L-1) and the rest shall be clearly defined, along with the minimum number of Bidders sought (subject to availability of suitable bids meeting the requirements) for the contract. In such cases, the bidders should not quote for less than 25% of the tendered quantity; otherwise, their offer shall be rejected as nonresponsive. Unless otherwise stipulated in the AITB, in case of splitting in two and three, the ratio of 50:25:25, respectively shall be used. These ratios are approximate, and the Procuring Entity reserves its right to marginally vary quantities to suit capacity/ past performance of the bidder/ unit loads of packing or transportation/ relative ranking of the bids/ delivery period offered/ existing load of Bidder and other similar factors affecting smooth delivery of Services as per requirements.

## **2.9 AWARD CRITERIA**

After closing of Technical & Financial Bid process, WAPCOS Limited will award, the contract to the bidder, whose tender has been determined to be substantially responsive, complete and in accordance with the tender document, and whose total evaluation price for the undertaking the project as detailed in the scope of work is the lowest.

The Award of work shall be fixed in following manner for: -

- All the financial Bids shall then be ranked according to the financial Bid in increasing order with the bidder quoting the least amount ranked L1, bidder quoting next higher figure as L2 and so on.
- **The work will be awarded to L1 bidder accordingly.**

**For & on behalf of Tenderer**

### **SECTION – III**

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#### **GENERAL CONDITIONS OF CONTRACT**

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## SECTION 3 GENERAL CONDITIONS TO CONTRACT

### 3.1 DEFINITIONS

- ❖ The Contract means the documents forming the tender and acceptance thereof and the formal agreement executed between the WAPCOS and the Agency/ Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-In-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.
- ❖ In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:

- “Client/Employer” shall mean “WAPCOS Limited”, A Government of India undertaking- Ministry of Jal Shakti, Department of Water Resources, River Development & Ganga Rejuvenation, Government of India having their office at WAPCOS Ltd., Plot No. 76-C, Institutional Area, Sector-18, Gurugram-122015, Haryana, India & include their successors & permitted assigns as well as their authorized officer / representatives, for execution of the Work as mentioned in NIT.

- “Principal Client” shall mean Nuclear and Power Corporation India Limited (NPCIL)

- The “Company/WAPCOS” shall mean WAPCOS Limited.

- The Site shall mean the land/or other places on, into or through which work is to be executed under the contract.

- The Engineer-in-Charge shall means the Engineer Officer appointed by WAPCOS Limited or his duly authorized representative who shall direct, supervise and be in- charge of the work for the purpose of this Contract.

- Tenderer/Bidder shall mean the firm/party who intends to participate in this Notice Inviting Tender.

- Excepted Risk are risks due to riots (other than those on account of Agency/Contractor’s employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the Agency/ Contractor has no control and accepted as such by the Accepting Authority or causes solely due to use or occupation by Government of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to Government’s faulty design of works.

- Market Rate shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labor at the site where the work is to be executed plus the percentage mentioned in Special Conditions of Contract to cover, all overheads and profits.

- Schedule(s) referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates of the government mentioned in Special

Conditions of Contract hereunder, with the amendments thereto issued upto the date of receipt of the tender.

- District Specifications shall mean the specifications followed by the State Government in the area where the work is to be executed.
- The Agency/Contractor/Successful Bidder shall mean the firm or company whose bid has been accepted by WAPCOS Limited and shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
- Tendered value means the value of the entire work as stipulated in the letter of award.
- Month means calendar month of the Gregorian calendar.
- Date of commencement of work: The date of commencement of work shall be the date of start as specified or the first date of handing over of the site, whichever is later, in accordance with the phasing if any, as indicated in the tender document.
- The Agency/Contractor shall be furnished, free of cost one certified copy of the contract documents except standard specifications and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.
- The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Bill of Quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labors necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.
- The several documents forming the Contract are to be taken as mutually explanatory of one another.
- In the case of discrepancy between the Bill of Quantities and the Specifications, the following order of preference shall be observed:-
  - o Description of Bill of Quantities
  - o Particular Specification and Special Condition, if any.
  - o Scope of Work/Terms of Reference
  - o Indian Standard Specifications of B.I.S.
- Equipment/materials shall mean and include all type of construction equipment & materials etc. required for true and satisfactory completion of the work under this contract.
- Workmanship shall mean the method/manner in which the jobs of the different items, whether included in the schedule or not but are required for true & satisfactory completion of the

work under this contract, are executed. General conditions shall mean all the clauses of General conditions of the proposed contract stated hereinafter.

- The specification shall mean the specification annexed to or issued with the General Conditions and shall include the schedule and drawings attached thereto.

### **3.2 GENERAL RULES & DIRECTIONS**

The contract shall be based on the schedule of unit rates and prices submitted by the bidder.

The bidder shall fill in rates and prices for all the items of the schedule of works.

The quoted price shall include, but not be limited to, the following activities:

- Covering all works under scope of work in particular field work, office work, preparation of reports/ drawings/ sketches etc. as indicated in the tender documents, including provision of skilled personal, etc.
- Taking all necessary safety precautions;
- Local issue shall be managed by the contractor in his own cost.

### **3.3 TERMS AND CONDITIONS**

#### **3.3.1 Time of Completion:**

All works including submission of final report shall be completed as per the time specified at Clause 7.1 Scope of Work.

In the event of any delay in mobilization of manpower and completion of work in the specified completion time, a penalty of 2% of the remaining part of the contract value, per week shall be charged subject to the maximum of 10 (ten) % of the contract value. The contract shall stand terminated automatically on accumulation of the maximum amount.

#### **3.3.2 Performance Guarantee (In the form of BG)**

- i. A The bidder shall submit an irrevocable Performance Guarantee of 3% (Three percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period of 10 days from the date of issue of the letter of award. This period can be further extended by the Engineer-in-charge up to a maximum period on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in- Charge. This guarantee shall be in the form of Cash (in case guarantee amount is less than Rs. 10,000/-) or Banker's Cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay Order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the WAPCOS as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the WAPCOS to make good the deficit.
- ii. The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 1 year claim period beyond that. In case the time for completion of work gets enlarged, the bidder shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent

- authority, the performance guarantee shall be returned to the Bidder/contractor, without any interest.
- iii. The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the WAPCOS is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
    - a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer- in-charge may claim the full amount of the Performance Guarantee.
    - b) Failure by the contractor to pay WAPCOS any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.
  - iv. In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of WAPCOS.
  - v. The Performance Guarantee shall be refunded to the Contractor soon after the completion of works, issuance of the completion certificate and release of final payment to the vender. **Note: Confirmation of all Bank Guarantees submitted to WAPCOS by bidders may be sought from issuing bank through Structured Financial Messaging System (SFMS), as per details given below:**  
**"Indian Overseas Bank, NHB, Gurgaon,**  
**Branch Code: 1935**  
**IFSC Code: IOBA0001935**  
**Beneficiary: WAPCOS Limited"**  
**Acknowledgement Number so generated may be provided along with the BG's.**

### **3.3.3 Variation, Omission, Addition & Alteration**

The Agency/Contractor shall not modify the work except under direction in writing by the Company. The quantity mentioned in the schedule of work is final. However, the company reserves the right to vary the quantities as may be necessary. Payment shall be made as per execution/actual.

Whenever supplementary works become unavoidable for completion of the work in all respect, the Agency/Contractor shall bring the matter to the notice of the Controlling Officer/Engineer-in-charge and advise the Agency/Contractor to proceed with such item(s) of work.

Rates for supplementary item shall be arrived on the basis from the existing items & rates in the contract/Prevailing market rates by the WAPCOS.

Escalation/Price Variation: No claim because of any price variation/Escalation on whatsoever ground shall be entertained at any stage of works. All rates as per Bill of Quantities (BOQ) quoted by Contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. However, in case WAPCOS is compensated by client for change in Quantity, the same compensation shall be pass on to the agency.

### **3.3.4 Measurement and Payment**

All items of work carried out by the Agency/Contractor in accordance with the provision of the contract having a financial value shall be entered in the measurement book/ log book etc. as prescribed by the company so that a complete record is obtained of all works performed under the contract and the value of work can be ascertained and determined there from.



Measurement shall be taken jointly by the supervisory officer or his authorized representative and by the Agency/Contractor or his authorized representative. Every measurement thus taken shall be signed and dated by both the parties.

In the event of failure on the part of the Agency/Contractor to attend or send his authorized representative after receiving the information to countersign or record objection within a week from the date of measurement, the measurement taken by the Engineer-in charge/controlling officer or his authorized representative shall be taken to be correct measurement of the work done.

The Agency/Contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels. The contractor is responsible for the incidental expenses viz., formation of kuccha paths/cutting of tree branches/cutting of bushes etc.

Each payment certificate shall be issued by the Site Engineer or his authorized representative within 7 (seven) days from the date of receipt of contractor's statement, along with relevant field documents, and subsequent verification certificate(s) from the site representative about the accuracy, quantum and relevancy of works as per terms of contract. If any lacuna is observed in the contractor statement, the same shall be intimated to the contractor within 7 (seven) days.

### **3.3.5 Terms of Payment**

All the payments will be made on the basis of actual quantity of work executed and as per the unit rate quoted in the price bid and on receipt of payment from the client. No extra amount will be paid over and above the executed work. GST payment will be made on submission of proof challan.

The company reserves the right to recover/ enforce recovery of any overpayments detected after payment as a result of post-payment audit or technical examination or by any other means, notwithstanding the fact that the amount of disputed item, if any, of the Agency/Contractor exceeds the amount of such overpayments and irrespective of the fact whether such disputed claims of the Agency/Contractor are subject matter of arbitration or not. The amount of such overpayment may be recovered from subsequent bill, under the contract, failing that from Agency/Contractor's claim under any other contract with the company or from Agency/the Agency/Contractor shall pay the overpayment on demand.

Retention money shall be deducted from each bill and at each stage @ 5% of the gross bill. The whole retention money thus retained from each RA bill shall be released after defect liability period with successful completion of the work to the full satisfaction of Engineer-in-charge.

No payment will be made to the contractor for damages caused by rains or other natural calamities during the execution of the works and no such claim on this account will be entertained.

Payment Schedule:

| <b>S. No.</b> | <b>Description</b>   | <b>% of Actual amount of work executed as per BOQ</b> |
|---------------|--|---|
| <b>1.</b>     | On completion of all field activities and Geotechnical Investigation on site | 20%   |

|           |   |     |
|-----------|---|-----|
| <b>2.</b> | On submission Draft Geotechnical Investigation Report                 | 30% |
| <b>3.</b> | On submission & acceptance of Final Geotechnical Investigation Report | 50% |

### **3.3.6 Retention Money**

a) Deduction of Retention Money amounting to 5% (Five percent) of the Amount of Works executed from each running bill and final bill, shall be made by the Engineer-in-Charge.

b) The Retention Money shall be certified due for payment after the expiration of the Period of completion, notwithstanding that at such time there may be outstanding claims by the Contractor against the WAPCOS. Provided always that, if at such time there shall remain to be executed by the Contractor any Works ordered during such period, the WAPCOS shall be entitled to withhold payment until the completion of such Works or so much of the Retention Money as shall, in the opinion of the Engineer-in-Charge represent the cost of the Works so remaining to be executed.

C) Retention Money shall be refunded six months after the successful completion of work, acceptance of work by principal client NPCIL and release of final payment.

### **3.3.7 Back to Back Payment**

The Contractor acknowledges that under the present Work, WAPCOS is only working as intermediary between our client being Principal Employer and Contractor. Thus, the Contractor unconditionally acknowledges that the payments under the present Contract shall be made proportionately by WAPCOS only on back to back basis i.e., after 21 days' subject to receipt of payment from our client being Principal Employer. The Contractor also unconditionally agree that in the event the payment or part thereof, under the present Contract is not received from Principal Employer/Client, then WAPCOS &/or any of its Employee/Officer shall not be responsible to pay any amount to Contractor. The said condition shall supersede any and all other conditions of Contract between the parties.

### **3.3.8 Liquidated Damages for Error /Variation.**

In case of any error or Variation OR plagiarism is detected in the data, data analysis or reports submitted by the consultant and such error or variation is the result of negligence or lack of due diligence on the part of the consultant, the consequential damages thereof shall be quantified by WAPCOS in a reasonable manner and recovered by way of deemed liquidated damages, subject to a maximum of 10% (10 percent) of the Agreement value.

### **3.3.9 Liquidated Damages for delay**

In the event of any delay in mobilization of manpower and completion of work in the specified completion time, a penalty of 2.0% of the remaining part of the contract value, per week shall be charged subject to the maximum of 10 (ten) % of the contract value. The contract shall stand terminated automatically on accumulation of the maximum amount.

An extension of time without imposition of liquidated damage, may be granted for delay in execution of work provided there is no fault whatsoever on the part of the Agency/Contractor. Such extension may only be granted on the basis of application to be submitted by the

Agency/Contractor who has to establish that the extension of time required by him was not due to his fault.

### **3.3.10 Taxes and Duties**

All taxes, levies, duty, impositions, deductions, charges, fees and similar assessments whatsoever imposed, assessed, levied or collected by the Government of West Bengal and the Government of India or any subdivision thereof or any tax authority therein upon the contractor (Successful bidder to whom the work is awarded by WAPCOS) and his staff, shall be paid and/ or borne by the contractor and WAPCOS shall perform duty of tax deduction from contractor's payments whenever required by law.

### **3.3.11 Program**

The contractor shall furnish within seven days of the Letter of Award full particular of his program of field/ home office activity proposed for timely execution of the contract. Program should cover intermitted milestones and list of submittals corresponding to each milestone for approval.

### **3.3.12 Labor License & Compliance of Labor laws**

The contractor shall obtain a valid license under the Contract Labour (R&A) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.

Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed thereunder and other labour laws affecting contract labour that may be brought into force from time to time.

The Contractor shall comply all statutory Labor Laws to protect the laborers engaged by them. In this connection the contractor will be required to execute an Indemnity Bond (as per specimen enclosed as Annexure - IV) after placement of Letter of Intent / Order.

The Contractor shall arrange to submit identity proof of his workmen deputed at site to local police station for their information. Any changes in the deployment of manpower should be intimated time to time to the local police station.

### **3.3.13 Contractors Superintendence and Obligations**

The contractor shall intimate the employer within 3 (three) days the name of the authorized person with contact number, who will be responsible for field activity and day to day interaction with the employers authorized representative for field activity.

The contractor shall remain fully responsible for the accuracy and relevancy of all the survey field activities and for subsequent processing of field data including generated outputs. Sub-contracting of any part or whole of the works is prohibited and these provisions shall be strictly adhered to. In the event of sub-contracting of any part if detected, the contract shall be liable for termination forthwith without assigning any reason thereafter.

### **3.3.14 Insurance**

Before commencing execution of works, unless stated otherwise in the special conditions of contract, it shall be obligatory for the Agency/Contractor to obtain at his own cost stipulated insurance cover under the following requirements:

- a) Agency/Contractor's all risk and Third Party Cover.
- b) Liability under the workmen's compensation Act, 1923, Minimum Wages Act, 1948 and Contract Labour (Regulation and Abolition) Act, 1970.
- c) Accidents to staff, Engineers, Supervisors and others who are not governed by workmen's compensation Act.
- d) Damage to material, machinery and works due to fire, theft etc.
- e) Any other risk to be covered by insurance as may be specified by the employer in the special conditions of contract.

The policy referred to under sub-clause 22(1) above shall be obtained in the joint names of the Agency/Contractor and the employer and shall inter-alia provide coverage against the following, arising out of or in connection with execution of works, their maintenance and performance of the contract.

- a) Loss of life or injury involving public, employee of the Agency/Contractor, or that of employer and Engineer, labour etc.
- b) Injury, loss or damage to the works or property belonging to public, government bodies, local authorities, utility organizations, Agency/Contractors, employer or others.

The policies shall remain in force throughout the period of execution of the works. The Agency/Contractor shall, whenever called upon, produce to the engineer or his representative the various insurance policies obtained by him as also the rates of premium and the premium paid by him to ensure that the policies indeed continue to be in force. If the Agency/Contractor fails to effect or keep in force or provide adequate cover in the insurance policies mentioned in the sub clause 24(1) or any other insurance he might be required to effect under the contract, then in such cases, the employer may effect and keep in force any such insurance or further insurance and the cost and expenses incurred by him in this regard shall be deductible from payments due to the Agency/Contractor or from the Agency/Contractor's performance security.

### **3.3.15 Settlement of Dispute**

Any disputes or differences including those considered as such by only one of the parties, arising out of or in connection with the Contract shall be to the extent possible settled amicably between the parties. If amicable settlement cannot be reached, then all disputed issues shall be settled by arbitration.

### **3.3.16 Arbitration**

"Any dispute, controversy or claims arising out of or relating to the work or the breach, termination or invalidity thereof, shall be settled through following mechanism:

- a) Firstly, the aggrieved party shall write a letter to the other party detailing its grievances and calling upon the other party to amicably resolve the dispute by convening a joint meeting. Accordingly, the parties as per their convenience shall jointly convene the said meeting(s), wherein minutes of the said meeting(s) shall be prepared and countersigned by all the parties. It is mandatory to prepare minutes of meeting(s) and to be countersigned by all the parties, irrespective of the outcome of the said meeting(s).

- b) In the event the parties are unable to reach on any settlement in the said meeting(s), then the aggrieved party shall mandatory resort to pre-litigation mediation mechanism with Delhi High Court Mediation Cell, New Delhi.
- c) It is only upon failure of the pre-litigation mediation mechanism with Delhi High Court Mediation Cell, then the aggrieved party shall resort to resolution of disputes through arbitration of a Sole Arbitrator. The appointing authority of Sole Arbitrator is CMD, WAPCOS Limited, to which neither of the parties have any objection nor they shall ever object.
- d) Subject to the parties agreeing otherwise, the Arbitration proceedings shall be conducted in accordance with the provisions of the Indian Arbitration and Conciliation Act, 1996 (amended as on date).
- e) It is also acknowledged and accepted that WAPCOS is only working as Intermediary between the Associate/Sub-Consultant/Sub-Contractor and the Principal Employer/Client, thus in the event, any dispute arises under the present agreement and referred to Arbitration for adjudication, then subject to corresponding clause in the Contract/Agreement/Work Order/Arrangement between Principal Employer/Client & WAPCOS, Principal Employer/Client shall also be made party to the said Arbitration proceedings. Also, the award including costs if any passed against WAPCOS and costs incurred in the proceedings shall be the sole responsibility of Principal Employer/Client. The said clause if found inapplicable, even then the other terms of the Arbitration Clause shall survive and shall be acted upon.
- f) The place/seat of arbitration shall be Delhi and any award whether interim or final, shall be made, and shall be deemed for all purposes between the parties to be made, in Delhi. The arbitral procedure shall be conducted in English language and any award or awards shall be rendered in English. The procedural law of the arbitration shall be Indian Law. The award of the arbitrator shall be final and conclusive and binding upon the Parties.
- g) The Contract and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the laws of India and the Parties submit to sole & exclusive jurisdiction of courts at Delhi."

### **3.3.17 Force Majeure**

If performance by either party of its duties and obligation under this agreement is prevented or delayed by circumstances of force majeure including, but not limited to fire, flood, earthquakes, strike, war, riots, insurrection, any action undertaken or restriction imposed by authority of any Government agency of court, shortage of equipment or raw materials or any other act beyond its reasonable control, the time within which the affected party must perform shall be delayed for a period under such circumstances to a maximum of 120 days during which the parties shall use alternate methods, but after which period either party shall have the right to terminate the agreement. Determination of this agreement shall not relieve either party from the payment of the sum or performance of other duties and obligations, which may be owing to the other, as a result of the operation of this agreement prior to such termination.

### **3.3.18 Completion of Work**

Completion of work means completion of the Geotechnical Investigations in all respect in totality as mentioned in the tender document and acceptance of the same by the company, WAPCOS Ltd. as well as Principal client of the Project i.e. Nuclear Power Corporation of India Limited (NPCIL) .

But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the Agency/Contractor shall have completed the work upto the satisfaction of the Company and acceptance of the Investigation and Survey Report by the Principal client of the project i.e. Nuclear Power Corporation of India Limited (NPCIL).

### **3.3.19 Safety Rules**

Agency/Contractor's Site Management has following main objectives regarding safety at site:

- a) No Accident
- b) To make the environment safe
- c) No harm to people
- d) Safety is everyone's responsibility
- e) To make the job safe

These rules do not exempt the Contractor from statutory Health, Safety and Environmental duties but are intended to assist in attaining a high standard of compliance with those duties, in order to provide a safe and healthy working environment. The rules for Health and Safety specified herein are in no way intended to relieve the Agency/Contractor from any obligation or liability under the Contract, nor is it intended to relieve the Agency/Contractor of any of his legal obligations for the avoidance of accidents.

In all matters arising in the performance of the Contract, the Agency/Contractor shall conform with all Statutory Regulations and by-Laws made with statutory authority by Government Departments or by Local or other Authorities that shall be applicable to the Works. The Contractor, in the performance of the Contract, shall not endanger the safety or unlawfully interfere with the convenience of the public in any manner.

All Agency/Contractors' personnel shall treat everyone with respect and will refrain from any sexually suggestive or abusive comments or behavior.

### **3.3.20 Jurisdiction**

Any dispute connected with this contract shall fall within the jurisdiction of Courts at New Delhi.

### **3.3.21 Other Terms and Conditions**

- i) The Contractor will strictly comply with all the provisions of the Forest Conservation Act 1980. Under no circumstances any tree should be cut or destroyed in the vicinity of the project area. Adequate fuel should be supplied to the laborers so as to prevent them from damaging the forest.
- ii) The agency will arrange all the explosives required to carry out the job at its own risk and cost. The statutory clearance / requirement in this regard shall strictly be complied as per the provisions of the Explosives Act. However, necessary assistance required in the matter shall be provided at our end.
- iii) The agency has to make all arrangements to provide necessary accommodation / shelter to all its employees at their own cost.

- iv) The Contractor shall be responsible to take all precautions to ensure safety of the public and his own personnel. Further, you will also be required to take following insurances at your own cost.
- Third party liability insurance.
  - Worker's compensation insurance in respect of contractor's personnel.
  - Any other insurance for public & contractor's personnel in accordance with the relevant provisions of the applicable land.
- v) The agency shall comply with the provisions of the following acts:
- Contract labour (Regulation & Abolition) Act 1970
  - Employees Provident Fund Act, 1952
  - Minimum Wages Act, 1948 (Amended)
  - Employer's Liability Act, 1938 (Amended)
  - Industrial Employment Act, 1946 (Amended)
  - Personnel Injuries (Compensation Insurance) Act, 1963 (Amended)
- vi) The Contractor shall not employ any labour below 18 years.

#### **SECTION– IV**

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#### **SPECIAL CONDITIONS OF CONTRACT**

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## SECTION 4 SPECIAL CONDITIONS OF CONTRACT

### 4.1 SPECIAL CONDITIONS OF CONTRACT

The Special Condition of Contract (SCC) shall be followed by the Contractor in addition to the General Condition of Contract (GCC) of tender document. The following General Condition of Contract of this tender are modified/added as detailed below. **In case of any discrepancy between GCC and SCC, the SCC will succeed over GCC.**

| Description   | Applicability/Modified/ Added   |
|---|---|
| Schedule of Materials to be   | Not Applicable  |
| <b>Work / Project Means:</b> As mentioned in NIT  |   |
| <b>Site / Location</b> As mentioned in NIT  |   |
| <b>Owner/Principal Client means: Nuclear Power Corporation of India (NPCIL)</b>   |   |
| Engineer-In-Charge & Accepting Authority<br>Will be intimated to the successful Bidder at the time of issue of Notice to Proceed the works. |   |
| Standard Schedule of Rates<br>Schedule of Rates (Civil)   | Not Applicable  |
| Date of Commencement of work  | Within 5 days of award of Work  |
| i. Performance Guarantee  | <b>Applicable</b><br><br>5% of Tendered Value<br><br>The Performance Guarantee shall remain in force and effect for a period of one year from the date of completion of work  |
| ii. Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance.                                    | 21 days<br><br>The Performance Guarantee shall be initially valid for a period of sixty days (60) beyond the date of completion of all contractual obligation from supplier, including warranty obligations plus 1-year claim period beyond that. |
| iii. Validity of Performance Guarantee  |   |
| iv. Return of Performance Guarantee   | On Successful completion of the Work & issue of completion certificate by the Owner of the Work.  |
| Security Deposit  | <b>Applicable, 5 % of Tendered Value</b>  |
| Release of security Deposit   | Successful Completion of work, Approval of Final report by principal client NPCIL & issue of completion certificate from WAPCOS   |

|   |   |
|---|---|
| Compensation for Delay<br>Liquidated Damages (LD) | <b>Applicable</b><br><br>In the event of any delay in mobilization of manpower and completion of work in the specified completion time, a penalty of 1% of the contract value, per week shall be charged subject to the maximum of 10 (ten) % of the contract value. The contract shall stand terminated automatically on accumulation of the maximum amount. |
| Incentive for Early Completion                    | Not Applicable  |
| Time and Extension for Delay                      | Applicable, As per NIT and General Conditions of Contract.  |

|   |                     |
|---|---------------------|
| Stipulated time of completion of project                      | As Mentioned in NIT |
| Measurements of Work Done                                     | <b>Applicable</b>   |
| Computerized Measurement                                      | <b>Applicable</b>   |
| Payment on Intermediate Certificate to be Regarded as advance | Applicable          |

|  |   |
|--|---|
| Mobilization Advance   | Not Applicable  |
| Recovery of Mobilization advance   | Not Applicable  |
| Payment on Account of Increase in Price / Wages due to Statutory Order   | Not Applicable  |
| Payment due to Variation in Prices of Materials after Receipt of Tender  | Not Applicable  |
| Payment due to Increase /Decrease in Prices / Wages (Excluding Materials covered under Clause 10 CA) after Receipt of Tender for Works | Not Applicable  |
| Works to be Executed in Accordance with Specifications, Drawings, Orders Etc. Specifications to be followed for execution of work      | <p><b>Applicable</b></p> <p>The following is added:</p> <p>All works are to be executed in accordance with the specifications, all drawings, details of items etc. given with this tender document and vetted design/drawing by WAPCOS/Engineer in Charge.</p> <p>In case specification of any item is not clear, contractor will write to WAPCOS regarding the same.</p> |

|  |  |
|--|--|
| Deviations / Variations Extent and Pricing | As per General Conditions of Contract. |
|--|--|

|  |  |
|--|--|
| Compensation in case delay of supply of material | Not Applicable   |
| Alternate water arrangements                     | Not Applicable   |
| Hire of plant and Machinery                      | Not Applicable   |
| Return of Material & Recovery                    | Not Applicable   |
| Insurance  | <b>Applicable</b>  |
| Sr. No. 1 & Sr. No 2 : Payment Terms             | <p>The Contractor acknowledges that under the present Work, WAPCOS is only working as intermediary between our client being Principal Employer and Contractor. Thus the Contractor unconditionally acknowledges that the payments under the present Contract shall be made proportionately by WAPCOS only on back to back basis i.e. After 21days' subject to receipt of payment from our client being Principal Employer. The Contractor also unconditionally agree that in the event the payment or part thereof, under the present Contract is not received from Principal Employer/Client, then WAPCOS &amp;/or any of its Employee/Officer shall not be responsible to pay any amount to Contractor. The said condition shall supersede any and all other conditions of Contract between the parties.</p> |

## **4.2 ADDITIONAL CONDITIONS**

1. The scope of the work constitutes completion of all the works and services detailed in this Document and any underlying logical/ physical activity as indicated in this document, not expressly mentioned but required during the course of the execution will also be considered part of the work. The ancillary requirements for the fulfillment of the work shall be supplied by the contractor free of cost within the scope of the work.
2. The quantities indicated in schedule of prices are estimated as per anticipated requirement irrespective of the location of drill holes. The locations of the drill holes are indicative and can change but the quantities if reduced or if any drilling is cancelled, no compensation in any form shall be paid to the contractor.
3. Drilling of holes in all type of soils/rock should be as per the instructions of Engineer- In-Charge before the start of drilling.
4. All the works shall be carried out as per relevant State / Central government guidelines/ IS specifications and as per the instructions of Engineer-in-charge.
5. The contractor shall deploy the resources at site to start the work after clearance from the Owner of the project and subsequent written approval from WAPCOS. No claim shall be entertained for idle labor, idle machinery, idle technical/ Non-technical staff, idle T&P if any, due to delay in start of the works.
6. The Contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, etc. nothing extra shall be payable to the agency on this account.
7. Quoted amount by contractor shall be firm and fixed for entire contract period as well as extended period for completion of the works. No escalation shall be applicable on this contract.
8. The contractor shall make his own arrangements for obtaining electric connection and water Connection/arrangement (if required). The water charges and electricity charges as charged by the client/ owner and Local Authorities will be paid by the Contractor. No dispute in this regard shall be entertained.
9. If the work is carried out in more than one shift or during night, no claim on this account shall be entertained. The contractor has to take permission from the police & local authorities etc. If required for work during night hours. No claim / hindrance on this account shall be considered if work is not allowed during nighttime. The requisite supervision shall be made available by the WAPCOS along with necessary issue of material under joint custody.
10. The Contractor/s shall make his / their arrangements for paths etc. for carrying his/ their tools and plants labour and materials etc. for which no extra payment shall be made.
11. Contractor shall not divert any advance payments or part thereof for any work other than that needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e. mobilization advance, secured advance against materials brought at site, secured advance against plant & machinery and/or for work done during interim stages, etc.) are required to be re-invested in the contracted work to ensure advance availability of

resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work. The intending bidder(s) required to quote the rate of the items as per BOQ. The rate to be quoted shall be unit rate and shall remain firm without the price variation clause. The bidders should not claim for any price variation / escalation. No price variation/cost escalation is accepted. The bid submitted with a price variation/escalation clause will be treated as non- responsive and rejected.

12. During the execution of the work, the representative of WAPCOS Limited found any work not in accordance with the approved drawings/specifications/instructions, he may order for re-execution of part or whole of the work executed. No extra claims shall be entertained for re-execution or altering of such work.

13. Any other incidental charges like royalty, cartage, storage, cutting and wastage for execution of the work as defined above or infra structural activities required to be carried out in order to execute the work shall be borne by the Contractor. No reimbursement shall be entertained by the Department on this account.

14. Any damage done by the Contractor to any existing work during the course or execution of the work bidden for shall be made good by him at his own cost. No payment shall be made to the contractor/agency for any damage to the work executed by him due to rain, flood or any other natural calamities and the Contractor shall restore the work at his own cost and ensure such execution strictly in accordance with the specification. The maintenance and protection of work from damage of any kind shall be the responsibility of the contractor till the work is completed and handed over to the Department.

15. During the execution of the work, if any, problem arises which is not covered by the specifications, the Agency/Contractor shall seek necessary clarification and instruction from WAPCOS Limited. Such instruction shall be binding on the Agency/Contractor and shall be observed in full.

16. The work shall be inspected or supervised by WAPCOS Limited from time to time as necessary. The Agency shall provide all facilities for such inspection free of cost.

17. The Agency/Contractor shall strictly follow the safety rules, regulations and instructions issued from time to time. In absence of any particular reference the Agency/Contractor shall refer to the Indian Standard and also the State Government rules and regulations.

**SECTION– V**

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**FORMS**

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**5.1 LETTER OF TRANSMITTAL**

(On Bidder Original Letter Head)

To  
Chief Engineer (INFS-III),  
WAPCOS Limited

**Sub:** Letter of Transmittal for..... **(Name of the work / project)**

Ref: -  
NIT No: -

Dear Sir,

- i) I/We downloaded /obtained the tender document(s) for the above mentioned Tender/Work from the website namely: .....as per your advertisement.
- ii) I/We hereby certify I/We hereby certify that I/We have read the entire Terms & Conditions of the Tender Documents (including all documents like annexure(s), schedule(s), etc.), which form part of the contract agreement and I/We shall abide hereby the terms/conditions/clauses contained therein.
- iii) The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter
- iv) I/We hereby unconditionally accept the tender condition of above-mentioned tender document(s)/corrigendum(s) in its totality/entirety
- v) In case any provisions of this tender are found violated, then your department / organization shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said Earnest Money Deposit absolutely.

Yours faithfully,

(Signature, Name and  
Designation of the  
Authorized Signatory)

**Date:**

**Place:**

**Name and seal of Bidder**

## 5.2 FORM-A FINANCIAL INFORMATION

[To be submitted on Original Letter Head of Bidder or Original Letter Head of CA]

1. Financial Analysis: Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last Five years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

| Years     | Gross Annual turnover in similar works | Profit/Loss (After Tax) |
|-----------|--|-------------------------|
| 2018-2019 |  |                         |
| 2019-2020 |  |                         |
| 2020-2021 |  |                         |
| 2021-2022 |  |                         |
| 2022-2023 |  |                         |

2. Financial arrangements for carrying out the proposed work: It is hereby declared that -  
----- (Name of firm with address) has enough financial resources to execute the proposed work.

**Signature of Chartered Accountant/ statutory**

**Auditor (UDIN No.) (with Seal)**

**Signature of Bidder(s) (with Seal)**

**Note: Original Signature with Stamp of CA is Mandatory. Copy will not be entertained.**



### 5.3 FORM – B STATEMENT OF SIMILAR WORKS

**STATEMENT OF SIMILAR WORKS AS IN ELIGIBILITY CRITERIA  
EXECUTED/COMPLETED**

**DURING THE LAST 7 YEARS (ENDING 31/05/2024)**

| Name of work | Allotment/ award No & date | Name& address of client who awarded (Including Tele/Fax | Contract value in Rs. Original/ revised | Date of award of work | Date of completion original /revised | Actual date of comp | Comp. cost | Type of work | Remarks explaining reasons for delay in work |
|--------------|----------------------------|---|---|-----------------------|--------------------------------------|---------------------|------------|--------------|--|
| 1            | 2                          | 3   | 4                                       | 5                     | 6                                    | 7                   | 8          | 9            | 10   |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |
|              |                            |   |   |                       |                                      |                     |            |              |  |

**NOTE:**

- 1) The Tenderer should provide information as per this Performa for the firm/company for all completed similar works as per eligibility criteria's works during last 7 years.
- 2) Certificate from client for the above information should be attached with the offer.

#### 5.4 FORM – C STRUCTURE & ORGANISATION

| S. No. | Particulars  | Details Submitted by bidder |
|--------|--|-----------------------------|
| 1.     | Name & address of the bidder   |                             |
| 2.     | Telephone no./Telex no./Fax no.  |                             |
| 3.     | Legal status of the bidder (attach copies of original document defining the legal status) (a) A proprietary firm<br>(b) A partnership firm<br>(c) A limited company or Corporation<br>(d) A Company registered under company's Act 1956/2013 |                             |
| 4.     | Particulars of registration with various Government Bodies (attach attested photocopy)   |                             |
|        | Organization/Place of Registration<br>1.<br>2.<br>3.   | Registration No.            |
| 5.     | Names and titles of Directors & Officers with designation to be concerned with this work.  |                             |
| 6.     | Designation of individuals authorized to act for the organization  |                             |
| 7.     | Has the bidder, or any constituent partner in case of Partnership firm Limited Company/ Joint Venture, ever been convicted by the court of law? If so, give details.   |                             |
| 8.     | Any other information considered necessary but not Included in above.  |                             |

**Signature of Bidder(s)**

## 5.5 FORM – D NO CONVICTION CERTIFICATE

### FORM-D

#### FORMAT FOR NO-CONVICTION CERTIFICATE

[To be submitted on Bidder's Original Letter Head]

**Subject: No-Conviction Certificate for ----- (Name of the work / project)**

This is to certify that \_\_\_\_\_ (Name of the organization), having registered office at \_\_\_\_\_ (Address of the registered office) has never been blacklisted or restricted to apply for any such activities by any Central / State Government Department/Client/ Owner or Court of law anywhere in the country.

This is also to certify that M/s \_\_\_\_\_ (Name of the organization), is not involved in any form of Corrupt and Fraudulent Practices in past and will never be involved in future.

Yours faithfully,

(Signature, Name and  
Designation of the  
Authorized Signatory)

Date:

Place:

**Name and seal of Bidder**

## 5.6 FORM – E UNDERSTANDING THE PROJECT SITE

### FORM-E

#### **FORMAT FOR UNDERSTANDING THE PROJECT SITE**

[To be submitted on Bidder's Original Letter Head]

- A. I/We hereby solemnly declare that I/We have visited the site of work and have familiarized myself/ourselves of the working conditions there in all respects and in particular, the following: -
- a). Topography of the Area.
  - b). Soil & rock conditions at the site of work.
  - c). Sources & availability of approaches for working conditions at site.
  - d). Availability of local labour, both skilled and unskilled and the prevailing labour rates.
  - g). Availability of water & electricity.
  - e). The existing roads and access to the site of work.
  - i). Availability of space for putting labour camps, Offices, stores, Explosive magazine, godown, Engineering yard etc.
  - j). Climatic condition and availability of working days k). Law & Order, Security & Working conditions.
  - l). Methodology to be adopted for successful completion of work.
  - m). Working hours and shifts for completing the work as per tender conditions.
- B. I/We have kept myself/ourselves fully informed of the provisions of this tender document comprising NIT, General Information, Form of Bid, Instructions to the Tenderer & Appendices, General Conditions of the Contract, Special Conditions of Contract, and Specifications, Annexure and Statement of advertised Quantities apart from information conveyed to me/ us through various other provisions in this tender document.
- C. I/We have quoted my/ our rates for each of the items in "Schedule of Items."

I / We hereby submit our BID considering above all facts gathered during site visit and each & every aspect have been considered. Advertised Quantities taking into account all the factors given above and elsewhere in tender document.

Yours faithfully,  
(Signature, name and  
Designation of the  
Authorized signatory)

Date:

Place:

**Name and seal of Bidder**

## 5.7 FORM – F NO DEVIATION CERTIFICATE

### FORM-F

#### **FORMAT FOR NO DEVIATION CERTIFICATE**

[To be submitted on Bidder's Original Letter Head]

To  
The Chief Engineer (INFS-III)  
WAPCOS Limited,

**Subject: No Deviation Certificate for ----- (Name of Work/Project)**

Dear Sir,

With reference to above this is to confirm that as per Tender conditions we have visited site before submission of our Offer and noted the job content and site condition etc. We also confirm that we have not changed/modified the above tender document and in case of observance of the same at any stage it shall be treated as null and void.

We hereby also confirm that we have not taken any deviation from Tender Clause together with other reference as enumerated in the above referred Notice Inviting Tender and we hereby convey our unconditional acceptance to all terms & conditions as stipulated in the Tender Document.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null and void.

Yours faithfully,

Date:

Signature, name and designation of  
the Authorized signatory)

Place:

**Name and seal of Bidder**

## 5.8 FORM – G FORMAT FOR INTEGRITY PACT

### **FORMAT FOR INTEGRITY PACT** **[To be submitted on Bidder's Original Letter Head]**

To,  
**WAPCOS Limited,**  
**76-C, Sector 18, Institutional Area**  
**Gurgaon, Haryana-122015**

**Sub: Integrity Pact for ----- (Name of Work /Project)**

Dear Sir,

I/We acknowledge that WAPCOS is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document at **Enclosure-I.**

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by WAPCOS. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, WAPCOS shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/bid.

Yours faithfully,

Date:

(Signature, name and designation of the Authorized signatory)

Place:

**Name and seal of Bidder**

## 5.9 FORM – G INTEGRITY AGREEMENT

**[To be submitted on Stamp paper of at least Rs.100]**

This Integrity Agreement is made at ..... on this..... day of ..... 20.....

### **BETWEEN**

WAPCOS Limited, New Delhi (Hereinafter referred as the '**Principal/Owner**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns) **AND**..... (Name and Address of the Individual/firm/Company) through..... (Hereinafter referred to as the..... (Details of duly authorized signatory)

**"Bidder/Contractor"** and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

### **PREAMBLE**

WHEREAS the Principal / Owner has floated the Tender (NIT No. ....) (Hereinafter referred to as "Tender/Bid") and intends to award, under laid down organizational procedure, ..... contract ..... for ..... (Name of work) hereinafter referred to as the "Contract".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "Integrity Pact" or "Pact"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under: -

#### **Article 1: Commitment of the Principal/Owner**

- (1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - (a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the

Bidder(s) could obtain an advantage in relation to the Tender process or the

Contract execution.

- (c) The Principal/Owner shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
- (2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

**Article 2: Commitment of the Bidder(s)/Contractor(s)**

- (1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the WAPCOS all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.
- (2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:
  - (a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.
  - (b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.
  - (c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
  - (d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly, Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in attendance on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
  - (e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.
- (3) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.



- (4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the WAPCOS interests.
- (5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

### **Article 3: Consequences of Breach**

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

- (1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.
- (2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee of the Bidder/Contractor.
- (3) Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

### **Article 4: Previous Transgression**

- (1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.
- (3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

#### **Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors**

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/sub-vendors.
- (2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.
- (3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

#### **Article 6: Duration of the Pact**

- (1) This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.
- (2) If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, WAPCOS

#### **Article 7: Other Provisions**

- (1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Principal/Owner, who has floated the Tender.
- (2) Changes and supplements need to be made in writing. Side agreements have not been made.
- (3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- (4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- (5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

**Article 8: LEGAL AND PRIOR RIGHTS**

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity P a c t will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the

Place and date first above mentioned in the presence of following witnesses:

.....

..... (For and on  
behalf of Principal/Owner)

.....

..... (For and on behalf of  
Bidder/Contractor)

WITNESSES:

1..... (Signature, name and address)

2..... (Signature, name and address)

Place:

Dated:

**5.10 FORM – H FORMAT FOR LITIGATION HISTORY, LIQUIDATED DAMAGES,  
DISQUALIFICATION**

**FORMAT FOR LITIGATION HISTORY, LIQUIDATED DAMAGES,  
DISQUALIFICATION**

[To be submitted on Bidder's Original Letter Head]

To  
The Chief Engineer (INFS-III)  
WAPCOS Limited,

**Subject: Litigation History, Liquidated Damages, Disqualification for -----  
---- (Name of Work/Project)**

It is hereby declared that our firm (Name of firm with address-----) neither disqualified, nor have any Litigation history and no Liquidated Damage imposed on the firm by any Department.

Yours faithfully,

(Signature, name and designation of the  
Authorized signatory)

Date:

Place:

**Name and seal of Bidder**

## LITIGATION HISTORTY

**Subject:** Tenderer should provide information as per this Performa for the firm/company on any history of litigation or arbitration resulting from contracts executed in the last 5 years ending 31.03.2020 or currently in execution.

### 1. ARBITRATION CASES

| Year | Name of work | Name and address of Client | Cause of litigation and matter in dispute | Disputed amount in Rs. | Actual Award |
|------|--------------|----------------------------|---|------------------------|--------------|
|      |              |                            |   |                        |              |
|      |              |                            |   |                        |              |
|      |              |                            |   |                        |              |
|      |              |                            |   |                        |              |

### 2. COURT CASES

| Year | Name of work | Name and address of Client | Cause of litigation and matter in dispute | Name of court | If judgment given whether for or against the Tenderer |
|------|--------------|----------------------------|---|---------------|---|
|      |              |                            |   |               |   |
|      |              |                            |   |               |   |
|      |              |                            |   |               |   |
|      |              |                            |   |               |   |

### 3. Information Regarding Current Litigation, Debarring / Expelling of Tenderer or Abandonment of Work By Tenderer.

- a) i) Has the Bidder consistent history of Litigation.....Yes/No ii) If yes, give details:
- b) i) Has the Bidder been debarred/ expelled by any Agency in J&K state /India, during the last 5 years on the date of application except on account of reasons other than non- performance, ..... Yes/No  
ii) If yes, give details:
- c) i) Has the Bidder abandoned any contract work during the last 5 years...Yes/No  
ii) If yes, give details:
- d) i) Has the Bidder been declared bankrupt during the last 5 years...Yes/No  
ii) (If yes, give details, including present status:
- e) i) Has the Bidder been debarred by client or by any Department... Yes/No ii) If yes, give details:

Note: i) Separate sheet may be used for giving detailed information.

If any information in this schedule is found to be incorrect or concealed, pre- Qualification of bidder will be summarily rejected.

Yours faithfully,

Date:

(Signature, name and designation of the Authorized signatory)

Place:

**Name and seal of Bidder**

## 5.11 FORM – I FORMAT FOR UNDERTAKING REGARDING BLACKLISTING / NON-DEBARMENT

### FORMAT FOR UNDERTAKING REGARDING BLACKLISTING / NON-DEBARMENT [To be submitted on Bidder's Original Letter Head]

Name of Work: .....

Ref: Tender No. .... Dated.....

To,

**WAPCOS Limited,**

**76-C, Sector 18, Institutional Area**

**Gurgaon, Haryana-122015**

Dear Sir,

This is to certify that we have taken the cognizance of Blacklisting policy of WAPCOS Ltd. Further, we hereby confirm and declare that we, M/s ....., is not blacklisted / De-registered / debarred by any Government department / Public Sector Undertaking / Private Sector or any other agency for which we have Executed / Undertaken the works / Services during the last 5 Years.

For .....

Authorized Signatory

Date:

Place:

## 5.12 FORM – J FORMAT OF CONTRACT AGREEMENT

This agreement made this ..... day of ..... BETWEEN the M/s. WAPCOS Limited (A Miniratna Public Sector Undertaking of Government of India Undertaking, under the Ministry of Water Resources), a company Registered under the Companies Act, 1956 having its registered office at Kailash, 5th Floor, 26 Kasturba Gandhi Marg, New Delhi – 110 001 and Corporate at Gurgaon , Haryana (hereinafter called “the employer” which expression shall unless excluded by or repugnant to the context , be deemed to include their successors in office) of the One Part AND .....(name and address of the CONTRACTOR if any individual and of all partners if a Partnership with all their addresses) (hereinafter called the “CONTRACTOR” which expression shall unless excluded by or repugnant to the context, be deemed to include his/their heirs, executors, administrators, representatives and assigns or successors in office) of the Other Part. WHEREAS the “EMPLOYER” is desirous of .....and the Contractor has offered to .....AND WHEREAS the CONTRACTOR has deposited a sum of Rs ..... as Performance Security in the form of ..... For the due fulfillment of all the Conditions of Contract:

NOW THIS AGREEMENT WITNESSETH as follows:

- 1) That in this agreement words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
- 2) That the following documents shall be deemed to form and be read and construed as part of this agreement viz:
  - The Contract Agreement
  - The Letter of Acceptance
  - The Tender submitted by the Contractor
  - Instructions to Tenderer
  - Conditions of Contract
  - Specification for the Works
  - Price Bid
  - Correspondence exchanged before the issue of letter of acceptance by which the Conditions of Contract are amended, varied or modified in any way by mutual consent (to be enumerated).
- 3) That the Contractor hereby covenants with the Employer to complete the Contract in conformity, with the provisions of the Contract in all respects.
- 4) That the Employer hereby covenants to pay the Contractor, in monthly invoices submitted by him against the services rendered, as per the rates prescribed in the work order dated ..... In consideration of such completion of the Contract, the “Contract Price” of Rs.....(Rupees.....) at the times and in the manner prescribed in the Contract. IN WITNESS whereof the parties hereunto have set their hands and seals the day and year first above written. Signed and Sealed by:



CONTRACTOR

Signature :

Name :

Designation :

Seal :

Seal :

In the presence of Witness

Signature:  
Name & Address:

Signature:  
Name & Address

### 5.13 FORM – K FORM OF BANK GUARANTEE BOND (IN LIEU OF SECURITY DEPOSIT): NOT APPLICABLE

This Bank Guarantee No.

Date:

1. In consideration of WAPCOS Limited, a company Registered under the Companies Act, 1956 having its registered office at Kailash, 5th Floor, 26 Kasturba Gandhi Marg, New Delhi – 110 001 (hereinafter called the “WAPCOS”) having agreed to exempt M/s.....having its Registered Office at.....(herein after called the said “Contractor” from the demand under the terms and conditions of an Agreement / Contract / Work Order dated .....made between WAPCOS and Contractor for ..... (Herein after called the said “Agreement”), of Security Deposit for the due fulfillment by the said Contractor of the terms and conditions contained in the said Agreement, on production for of a Bank Guarantee .....only), we .....(hereinafter referred (indicate the name of the Bank) to as “the Bank” at the request of M/s..... (Contractor) do hereby undertake to pay to the WAPCOS an amount not exceeding .....against any loss or damage caused to or suffered or would be caused to or suffered by the WAPCOS by reason of any breach of the said Contractor of any of the terms and conditions contained in the said Agreement.
2. We, (indicate the name of Bank)do hereby undertake to pay the amounts due and payable under this guarantee without any demur merely on a demand and without reference to the Contractor from the WAPCOS stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the WAPCOS by reason of breach by the said Contractor of any of the terms or conditions contained in the said Agreement or by reason of the Contractor’s failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding ..... (say.....only).
3. We undertake to pay to the WAPCOS any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.
4. We ..... further (indicate name of the Bank) agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the DCI under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till DCI certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor and accordingly discharge this guarantee. Unless a demand or claim in writing under this guarantee has been received by us on ....., we shall be discharged from all liability under this guarantee thereafter.
5. We, ..... further agree (indicate name of the Bank) that the DCI shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the DCI against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor or for any forbearance, act or omission on the part of the DCI or any indulgence by the

DCI to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

7. We, lastly undertake not to (indicate name of the Bank) revoke this guarantee during its currency except with the previous consent of the DCI in writing.

8. This guarantee will remain in force until ..... All claims under this guarantee must be made in writing and dispatched to us by Registered Post, Hand Delivery or by Courier against acknowledgment. Notwithstanding what is stated above, our liability under this guarantee will be limited to (..... Only).

Dated the .....day of .....2024.

## 5.14 FORM – L FORMAT SOLVENCY CERTIFICATE

### FORMAT FOR SOLVENCY CERTIFICATE

[From a Nationalized/Scheduled Commercial Bank approved by Reserve Bank of India  
(RBI)]

[To be submitted on Original Bank's Letter Head]

Date: .....

To,  
WAPCOS Limited  
76-C, Sector 18, Gurugram – 122015 Haryana

**Subject: Solvency Certificate for ----- (Name of Work/Project)**

This is to certify that to the best of our knowledge and information that M/s ..... having its registered office at ..... and Head office at ....., a customer of our bank is respectable and can be treated as good for any engagement upto a limit of Rs. .... /- (Rupees .....Only).

It is clarified that this information is furnished without any risk or responsibility on our part in any respect whatsoever more particularly either as guarantor or otherwise. This certificate is issued at the specific request of the customer for furnishing the same to you.

Signature of Branch Manager

Stamp

**5.15 FORM – M FORMAT GFR Rule 144 (xi)**

**Date: .....**

**UNDERTAKING**

**[Rule 144 (xi) in the General Financial Rules (GFRs), 2017]**

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I hereby certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.

Date:

Place:

(Signature, name and designation of the Authorized signatory)

**Name and seal of Bidder**

**SECTION– VI**

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**ANNEXURES**

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**6.1 Annexure – I GUARANTEE BONDS****GUARANTEE TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION**

The agreement made this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and ..... between \_\_\_\_\_ S/o \_\_\_\_\_ (hereinafter called the GUARANTOR of the one part) and the WAPCOS LIMITED (hereinafter called the WAPCOS of the other part).

WHEREAS this agreement is supplementary to a contract. (Herein after called the Contract) dated \_\_\_\_\_ and made between the GUARANTOR OF THE ONE PART AND the WAPCOS of the other part, whereby the contractor inter alia, under look to render the work in the said contract recited structurally stable workmanship and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said work will remain structurally stable and guarantee against faulty workmanship, finishing, manufacturing defects of materials etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable, after the expiry of maintenance period prescribed in the contract for the minimum life of ten years, to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-charge with regard to nature and cause of defects shall be final. During the period of guarantee the guarantor shall make good all defects to the satisfaction of the Engineer in charge calling upon him to rectify the defects, failing which the work shall be got done by the WAPCOS by some other contractor at the guarantor's cost and risk. The decision of the Engineer in charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all the defects, commits breach thereunder then the guarantor will indemnify the Principal and his successor against all loss, damage cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and / or cost incurred by the WAPCOS the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNES WHEREOF those presents have been executed by the obligator and by for and on behalf of the WAPCOS LIMITED on the day, month and year first above written.

Signed sealed and delivered by OBLIGATOR in presence of:

1. \_\_\_\_\_
2. \_\_\_\_\_

SIGNED FOR AND ON BEHALF OF THE WAPCOS LIMITED BY  
in the presence of:

1. \_\_\_\_\_
2. \_\_\_\_\_

## 6.2 Annexure – II PERFORMANCE SECURITY

### FORM OF PERFORMANCE GUARANTEE (To be submitted on Stamp paper of At least Rs.1000)

WAPCOS Limited,  
76-C, Sector 18, Institutional Area  
Gurgaon, Haryana-122015.

In consideration of \_\_\_\_\_ (Employer's name) (hereinafter referred to as "the Employer") which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to (Contractor's name & address) (hereinafter referred to as "the Contractor" which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) a contract, by issue of Employer's Notification of Award No. Dt. and the same having been unequivocally accepted by the Contractor, resulting in to a contract valued at Rs. (Rupees \_\_\_\_\_ only) for \_\_\_\_\_ (name of work) (hereinafter called "the contract") and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire contract equivalent to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) (5 % of the said value of the Contract to the Employer).

We, \_\_\_\_\_ (name & address of bank) (hereinafter referred to as "the Bank" which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any or, all monies payable by the Contractor to the extent of Rs. \_\_\_\_\_ (Rupees only) as aforesaid at any time upto \_\_\_ without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor or court. Any such demand made by the Employer on the bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantee herein contained shall continue to be enforceable till the Employer discharges this guarantee.

We the said Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said contract have been fully paid and its claims satisfied or discharged or till the Employer certifies that the terms and conditions of the said Contract have been fully and properly carried out by the said Contractor and accordingly discharges the guarantee.

The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from, time to time to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The bank shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of



omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision, have the effect of relieving the Bank. The guarantee shall not be affected by a change in the constitution of the bank or of the employer.

The bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

We The Said Bank do hereby declare that we have absolute and unconditional power to issue this guarantee in your favor under the Memorandum and Articles of Association or such other constitutional documents of the Bank and the undersigned have full power to execute this guarantee under the Power of Attorney / Post Approval Authorization dated of the bank granted to him / us by the Bank. We the said bank do hereby declare and undertake that your claim under the guarantee shall not be affected by any deficiency or other defect in the powers of the bank or its officials and the guarantee shall be deemed to have been issued as if the bank and its officials have all the powers and authorization to give this guarantee on behalf of the bank.

We the said bank do hereby certify the genuineness and appropriateness of the Stamp paper and stamp value used for issuing the guarantee. We the said bank do hereby declare and undertake that your claim under the guarantee shall not be affected by any deficiency or other defect in the stamp paper or its stamp value.

We the said bank do hereby declare that our payments hereunder shall be made to you, free and clear of and without and deduction, reduction on account of any reasons including any and all present and future taxes, levies, charges of withholding whatsoever imposed or collected with respect thereto.

Notwithstanding anything contained hereinabove our liability under this guarantee is restricted to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) and it shall remain in force upto and including \_\_\_\_\_ and shall be extended from time to time for such period as may be desired by M/s WAPCOS Limited to whom this bank guarantee has been given.

Notwithstanding anything contained herein

- i) Our liability under this guarantee shall not exceed Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only);
- ii) This bank guarantee shall be valid upto \_\_\_\_\_;  
and
- iii) Our liability to make payment shall arise and we are liable to pay the guaranteed amount or any part thereof under this guarantee, only and only if you serve upon us a written claim or demand in terms of the guarantee on or before \_\_\_\_\_ (**indicate a date twelve month after validity of Guarantee**)

Dated this \_\_\_\_\_ day of \_\_\_\_\_ at New Delhi.

### 6.3 Annexure – III : INDEMNITY BOND

#### FORMAT FOR INDEMNITY BOND

**INDEMNITY BOND EXECUTED** by me / us on this .....Day of .....2023, I/We having Registered Office at ..... (herein referred as “**OBLIGOR / OBLIGORS**” which expression shall mean and includes my / our successors legal representatives, assigns) do hereby binds myself /ourselves and also our company / firm .....after having the power to bind so with the promise and undertaking in favour of the WAPCOS Limited, Gurugram (Hereinafter referred as **OBLIGEE**, which expression shall mean and include it’s legal representative, administrators assigns.

Whereas **OBLIGOR / OBLIGORS** has / have been awarded to execute the job / works under letter no.....dated..... issued by the **OBLIGEE** after having observing necessary formalities, the details of which is described in the schedule given hereunder as per letter mentioned herein-above and whereas the said job / works will be / likely to be done in places covered under Employees’ State Insurance Act (ESI) and / or the Employee Compensation Act, 1923 (W. C. Act) and / or other laws relating to the Labour Management and Welfare.

And whereas according to the condition of the contract the **OBLIGOR / OBLIGORS** is /are under obligation to execute this Indemnity Bond before the commencement of actual execution and **OBLIGOR / OBLIGORS** is/are aware that unless this Indemnity Bond is executed in accordance with the condition of contract before the actual execution in accordance with law the **OBLIGEE** shall have the power to deem that actual work has been started within the meaning of the contract before the execution of this Indemnity Bond.

Now this indenture witnesses that I / we the **OBLIGOR / OBLIGORS** do hereby undertake:-

- 1) THAT the **OBLIGEE** shall not be held responsible for any type of accident which may take place during the course of work undertaken by the **OBLIGOR / OBLIGORS**.
- 2) THAT the **OBLIGOR / OBLIGORS** will take / adopt all safety norms in respect of each and every workmen labour personnel according to the rules or to the satisfaction of the **OBLIGEE** in all cases.
- 3) THAT the **OBLIGOR / OBLIGORS** undertakes/undertake to engage only those labour worker or any other personnel whether skilled or unskilled or any other person whether in technical management or no managerial or any other capacity in the area covered under Employee’ State Insurance Act,1948 who has/have insurance coverage within the meaning of Employees’ State Insurance Act and further undertakes NOT to engage any person in the area covered under Employees State Insurance Act., who does / do not has / have insurance coverage within the meaning of Employees’ State Insurance Act,1948.
- 4) That the **OBLIGOR / OBLIGORS** further undertakes/undertake to engage only those labour, worker, or any other personnel, whether skilled or unskilled, whether in technical, managerial or non-managerial or any other capacity in the area NOT covered under Employees’ State Insurance Act 1948, who has life insurance for the sum assured

equivalent to the amount of Compensation under the Employees Compensation Act in case of accidental death or inquiry and such insurance has been effected by the OBLIGOR / OBLIGORS.

- 5) THAT the OBLIGOR / OBLIGORS undertakes / undertake to indemnify and keep harmless the OBLIGEE from all claims, action, proceedings and of risk, damage, danger to any person whether belonging to / or not belonging to OBLIGOR / OBLIGORS.
- 6) THAT the OBLIGOR / OBLIGORS shall keep harmless the OBLIGEE from all claims, compensation, damages, any proceedings in respect of any of its employee / workmen under the Employee Compensation Act. Act or any other laws for the time being in force.
- 7) THAT, if during the course of execution of work as stated in the letter mentioned hereinabove issued by the OBLIGEE, it is found that the OBLIGOR / OBLIGORS has/have not complied with guidelines/formalities within the meaning of Employees' State Insurance Act or Employee Compensation Act or any other laws relating to the Labour Welfare for the time being in force, and also has not observed the safety norms in accordance with the law to the satisfaction of the OBLIGEE, the OBLIGEE shall have the right to stop the execution of work / job and the period of such stoppage shall continue till adequate safety and other compliance mentioned hereinabove under the labour welfare legislation have been observed and such period of stoppage shall not be taken into account for the calculation of the total period of completion of work for which the OBLIGOR / OBLIGORS is responsible to complete the work / job and it will be deemed that discontinuance was due to default of OBLIGOR / OBLIGORS.
- 8) THAT, if at any time, due to exigency, the OBLIGEE i.e. the WAPCOS Limited, becomes liable to pay any such compensation mentioned hereinabove, whether on failure of the OBLIGOR / OBLIGORS or for any other reason, the OBLIGEE shall have the right to recover the said amount from any amount receivable by OBLIGOR / OBLIGORS or any bank guarantee deposited or anything payable whether in connection with this contract or other contract by the OBLIGEE to the OBLIGOR/ OBLIGORS.
- 9) THAT the OBLIGOR / OBLIGATOR is / are aware and accept that for the persistent or repeated violation of any condition mentioned in this Indemnity Bond, the OBLIGEE shall have right to terminate the contract of work issued by the OBLIGEE to OBLIGOR/ OBLIGATOR.

SIGNED AND DELIVERED BY THE OBLIGOR / OBLIGORS

Signature .....

WITNESS:

1) Name, Designation

Signature .....

2) Name, Designation

Signature .....

## **6.4 Annexure – IV: SAFETY CODE**

### **SAFETY CODE**

#### **1.0 INTRODUCTION**

1.1 The purpose of the present document is to outline the minimum safety requirements applicable to personnel, equipment and facilities during erection, pre-commissioning and commissioning activities of OWNER / CONSULTANT Construction Sites. Constructing safe structure and providing safe working environment to the personnel is a vital factor in successful construction business. Safety and health are as much as part of effective project planning and control as the cost, schedules, procurement and quality. Indeed they are all closely interrelated. Productivity, safety and quality can move forward in close proximity.

#### **1.2 OBJECTIVES**

OWNER/CONSULTANT Site Management has following main objectives regarding safety at site.

- a) No Accident
- b) To make the environment safe
- c) No harm to people
- d) Safety is everyone's responsibility
- e) To make the job safe

#### **2.0 GENERAL**

- 2.1 These rules do not exempt the Contractor from statutory Health, Safety and Environmental duties but are intended to assist in attaining a high standard of compliance with those duties, in order to provide a safe and healthy working environment.
- 2.2 OWNER/CONSULTANT will assist Contractors in any practical way to facilitate safe working, and requires full co-operation in observing these rules.
- 2.3 The rules for Health and Safety specified herein are in no way intended to relieve the Contractor from any obligation or liability under the Contract, nor is it intended to relieve the Contractor of any of his legal obligations for the avoidance of accidents.
- 2.4 In all matters arising in the performance of the Contract, the Contractor shall conform with all Statutory Regulations and By-Laws made with statutory authority by Government Departments or by Local or other Authorities that shall be applicable to the Works.
- 2.5 The Contractor, in the performance of the Contract, shall not endanger the safety or unlawfully interfere with the convenience of the public in any manner.
- 2.6 The Contractor's representative on Site shall communicate details of these rules for Health, Safety and Environment to all Contractors' employees and to all Subcontractors and Subcontractors' employees employed on the Site.

2.7 The requirements of the Client/Owner's existing Site Rules/Regulations form part of the Contract and in the case of conflict between the OWNER/CONSULTANT'S rules, the highest standard shall be applied.

2.8 At the tender stage OWNER/CONSULTANT will require to see a copy of the Contractor's policy, organization and arrangements for the Health and Safety at Work. The Contractor shall submit complete documents Health and Safety Questionnaire. Contractor shall deploy safety officer of adequate experience at each work site or during each shift including Sunday/holiday with approval of EIC/Owner.

### **3.0 SITE HEALTH, SAFETY AND ENVIRONMENT INDUCTION**

3.1 All personnel shall receive OWNER/CONSULTANT and Contractors' site Health, Safety and Environment induction before they commence work on site. The induction shall comprise information on the various hazards which they may come into contact with, instructions on the site emergency procedures, warning and alarm systems, and permit to work system, first aid locations, welfare facilities, access routes and project specific rules.

3.2 It is the responsibility of the Contractor to familiarize all new personnel to the Project on the actual location of muster points, fire alarm points, first aid stations and the like.

### **4.0 DEMARCATION**

4.1 Construction personnel are restricted to the construction areas shown on the Contract Drawings. Any personnel found on/in or interfering with the existing works/plant, without permission, will be dismissed from site. Any work outside of these areas may only be carried out with the written agreement of OWNER/CONSULTANT.

Before any work is started on the site, the Contractor's representative shall report to OWNER/CONSULTANT, who will confirm to the Contractor's representative, the limits of the working area(s) and shall be informed of any special requirements appertaining thereto.

### **5.0 ACCESS TO THE CLIENT'S FACILITIES/BUILDINGS**

5.1 The Client's Facilities, including the canteen/cafeteria and toilets shall not be used by Construction Personnel.

5.2 Construction Personnel shall not enter any of the Owner's building unless escorted by a member of the OWNER/CONSULTANT'S staff (or working with prior agreement to Owner's Permit to Work System).

### **6.0 BEHAVIOR ON SITE**

6.1 All Contractors' personnel shall treat everyone with respect and will refrain from any sexually suggestive or abusive comments or behavior.

## **7.0 SMOKING, EATING AND DRINKING**

7.1 Smoking, eating and drinking is allowed in designated areas.

## **8.0 DRUGS AND ALCOHOL**

8.1 The possession or use of illicit drugs and alcohol on site is not permitted. Anyone who is found, or suspected to be, under the influence of either will be removed from site (subject to the Contractors' disciplinary procedure).

8.2 Anyone taking prescriptive drugs shall advise their employer, in particular those drugs that may impair their performance. Their employer may make arrangements to assign them to more suitable work, but shall ensure that the OWNER/CONSULTANT Construction manager is informed without delay.

## **9.0 PERMIT TO WORK SYSTEM**

9.1 All construction works will be carried out under a permit to work system. It is designed to protect personnel and plant and consists of an organized and predefined safety procedure. It forms a clear record of all foreseeable hazards which have been considered in advance of construction operations.

9.2 The identities of the permit "Issuing Authority" will be OWNER and the "Permit Acceptor" will be the Contractor.

9.3 The following types of permits will be issued:

- Clearance Certificate - all other permits are invalid without this Certificate, (this certificate can be used for general work).
- Electrical Work Permit.
- Confined Spaces Work Permit.
- Excavations Work Permit.
- Working at Height work Permit.
- Road Closure Work Permit.

9.4 Written requests for permits must be submitted to Owner at least twenty-four hours in advance and the permits will be issued daily. Permits shall be given to Safety Officers of the contractor, by representatives authorized by Owner in approved formats.

## **10.0 ACCESS, SITE PASSES AND SECURITY**

### **10.1 Passes**

All personnel and vehicles shall enter and leave the site via the entrance authorized for construction personnel and traffic. Contractors' employees shall not enter any part of the site other than for the purpose of carrying out the Works.

All personnel shall be issued with a site pass. The site pass must be carried (or displayed on the pass holder's lapel) at all times. Details of all personnel requiring site passes shall be submitted to OWNER/CONSULTANT at least seven working days in advance of the planned start-on-site date. Site passes shall be submitted for inspection on entering or leaving the site, or when requested for inspection by OWNER/CONSULTANT or Security.

Loss of site passes must be reported immediately to Owner/Consultant. Lack of a site pass may mean delay at the site entrance. Owner/Consultant shall not accept any responsibility for lost time or costs incurred.

On completion of their assignment, or termination of their employment, all personnel will return their site pass to Owner or Owner representative/ Owner authorized personal.

## 10.2 Security

The security of Contractor's plant, tools, equipment, materials (including free issue materials properly handed-over by Owner/Consultant) are the responsibility of the Contractor. It is the Contractor's responsibility to satisfy themselves that the security arrangements in existence on the site are adequate. The Contractor shall provide any other security measure that he deems necessary for the control and security of Contractor owned equipment and plant, including for free-issue plant and materials, both within the site establishment area and the working areas on the site.

Owner accepts no liability for any loss, damage or deterioration to the Contractor's plant tools equipment and materials.

Owner reserves the right to search at random all personnel, any Contractor's employee, or employees of its servants, agents, Contractors or any vehicle entering or leaving the site. Any package or container being taken into or out of the site may be opened and inspected by security staff or any other persons authorized by Owner/Consultant to make such a search or inspection.

It is the Contractor's obligation and responsibility to ensure that OWNER / CONSULTANT right to search and inspect persons and property, extends to and is brought to the attention of all his personnel.

Personnel shall give all possible assistance and make available any facilities required to assist OWNER/CONSULTANT and the Police in pursuance of the prosecution of any person(s) responsible for alleged malicious damage or loss to the Works or existing installations.

Owner shall not accept any responsibility for the loss or damage of personal effects. The security and safekeeping of personal effects is the responsibility of each individual.

- 10.3 Construction personnel will not be admitted to the Construction Areas unless they have undergone Owner/ Consultant's induction, and received a security pass.

**No Induction, No Pass, No Access to the Site**

- 10.4 OWNER/CONSULTANT reserves the right to deny access to the Construction Site/Areas and/or the Construction Car parks to any person, or vehicle.

- 10.5 Individuals may be excluded from and refused future entry to the Site and/or Construction Areas for any breach of Safety or Security Rules, or exceeding the speed limit (20 mph on roads leading to the site off the public highway and 5 mph in the construction area).
- 10.6 No plant/skips waste or materials may leave the Construction Area without the clearance of OWNER/CONSULTANT.
- 10.7 The taking of photographs on the site is prohibited.
- 10.8 Vehicles with children under the age of 16 years or animals onboard will not be allowed access.
- 10.9 Visitors will only be allowed by appointment (two days' notice to OWNER/CONSULTANT is required). Visitors shall be accompanied by a member of the Contractor's team (who has received Health, Safety and Environment Induction) at all times. The visitor will have to obtain a visitor's pass, and be collected from and returned to the main gate.
- 10.10 Each Contractor will keep a daily register of who is on site. The register will record name, pass number, time-in and time-out (records on time-clocks will not be permitted). This information shall be used to check personnel (role call) in the event of an emergency

#### **11.0 PARKING, DELIVERIES AND VEHICLE PASSES**

- 11.1 Contractors' personnel shall not be allowed to park any vehicle on the main car park or site. All contractors shall park in the Contractors' Temporary Car Park.
- 11.2 The Contractor shall arrange transport between the parking area(s), the main site gate and the Contractor's establishment and working areas if judged to be necessary.
- 11.3 Vehicles used solely for transporting of tools and equipment may be allowed access to the working area(s) for unloading/loading only.
- 11.4 Owners of vehicles parked illegally will have their car pass taken off them and told to remove the vehicle from site. They may have their site pass withdrawn and be refused further access to the Construction Site.
- 11.5 The Construction Areas will be restricted to construction plant and delivery vehicles.
- 11.6 The speed limit on site is 10 mph on the approach roads leading to the site off the public highway and 5 mph on the construction areas

#### **12.0 SITE SUPERVISION**

- 12.1 The Contractor must ensure that an employee of suitable seniority and authority, with responsibility for Health and Safety, is always present on site during the course of the works, to supervise and direct the Works and to receive and



implement instructions from OWNER/CONSULTANT. Seven days before commencing works on site, the Contractor must notify OWNER/CONSULTANT of the name of that employee.

- 12.2 All supervisory staff shall be made aware of their responsibilities for safety.

### **13.0 TRAINING, COMPETENCE OF EMPLOYEES AND NOTIFICATION OF HAZARDS**

- 13.1 Each Contractor must ensure that all his supervision and employees have had adequate safety training and are experienced to carry out their work safely, prior to starting on site. Training should be continuous throughout a project and should include regular toolbox discussions, (on site briefings at the start of each working day/shift).

To this end, the Contractor must also ensure that specific hazards likely to be experienced on the Site, whether notified to them or discovered by them, are notified to their workforce together with any precautions to be taken and local rules to be observed. Similarly, such hazards should be notified to their Subcontractors and, where discovered by them, to OWNER/CONSULTANT.

- 13.2 Where particularly severe or unusual hazards may arise on site, OWNER/CONSULTANT reserves the right at no additional cost to request Contractors' employees to attend special safety training and instruction sessions, whether carried out on site or externally. OWNER/CONSULTANT also requires Contractors' employees to undergo specified induction safety training. These aspects should be checked prior to submission of Tenders or execution of the works.

### **14.0 METHOD STATEMENTS**

- 14.1 Contractors shall submit Safety Method Statements

- Excavation works.
- Lifting operations, as specified.
- Entry into confined spaces.
- Working at height.
- Installation of pre-cast concrete planks.
- Pre-cast concrete structure.

Safety method statements must also be submitted for activities which have been identified as being of significant risk during the risk assessment process and activities selected by OWNER/CONSULTANT.

- 14.2 All Safety method statements must be submitted to OWNER/CONSULTANT at least seven days before planned commencement of the works.

- 14.3 The Safety method statement shall detail:

- The job to be undertaken.
- The individual activities required to complete the job.
- The individual trades/disciplines involved in each activity.
- Plant, equipment and tools be used in each activity.
- The Name(s) of the Supervisor(s) for each activity.

- The Name of the person in overall charge of the job.
- A detailed description of how the work will be done including control measures and procedures to complete each activity and the overall job safety.

14.4 Compliance with the contents of the safety method statement shall be monitored on a daily basis and addressed during Contractors' safety management meetings.

14.5 The Contractor must ensure that employees executing the works are fully briefed and are made aware of the details within the approved Safety Method Statements, prior to starting the task, this includes highlighting hazards associated, associated risk assessments and reduction measures.

## **15.0 RISK ASSESSMENTS**

15.1 Contractors will be required to produce risk assessments for all works under their control.

The risk assessment shall be submitted as part of the Safety Method Statement to OWNER/CONSULTANT at least seven days before the job commences, and include the following information:

- Identification of all hazards applicable to significant risk activities.
- Details of measures in place to control the risk.
- Justification that the existing control measures are adequate or if not, a detailed action plan on how the risk(s) shall be controlled.

15.2 The use of Generic Risk Assessments is only acceptable if they follow the logical progression of the method statement and that specific operation, otherwise, task specific risk assessments will be required.

15.3 All risk assessments must be communicated to the workforce who will be responsible for undertaking the work.

## **16.0 COMPLIANCE WITH STATUTORY REGULATIONS**

16.1 Contractors shall carry out their work in accordance with statutory legislation.

It is the duty of the Contractor to have knowledge of all relevant legislation and take account of it in the planning and execution of the work on OWNER/CONSULTANT' Sites.

## **17.0 INFORMATION TO BE PROVIDED AND POSTED**

17.1 Contractors shall have in place, and issue to OWNER/CONSULTANT the following documents or information prior to commencement of their work, (where detailed within these rules):

17.1.1 Safety, Health and Environmental Policy.

17.1.2 Employer's Liability Insurance Certificate.

- 17.1.3 A detailed Health, Safety and Environment Plan, compliant with the project plan developed by the Planning Supervisor and/or Principal Contractor.
- 17.1.4 Work Method Statement Lifting Studies.
- 17.1.5 COSHH Procedures and Assessments.
- 17.1.6 Noise Procedures and Assessments.
- 17.1.7 Name of the individual appointed as the Site Safety Supervisor/Advisor.
- 17.1.8 Test certificates and examination for lifting gear, plant and appliances to be used on site. (Duplicates to be provided for OWNER/CONSULTANT's records.)
- 17.1.9 Drawings and calculations relating to false work, designed scaffolds, ground works and supporting temporary works.
- 17.1.10 Details of young persons to be employed on site.
- 17.1.11 Information relating to hazards associated with plant, operation and materials used in the works.
- 17.1.12 Proof of training for all personnel engaged in the works.
- 17.1.13 Daily Labour Returns.

17.1.14 Monthly Return of Accident Statistics to submitted OWNER/CONSULTANT Format (Nil returns required).

17.1.15 Personal Injury Report to submitted to OWNER/CONSULTANT format (all injuries, however minor to be reported). OWNER/CONSULTANT may request a detailed investigation into an accident. OWNER/CONSULTANT's decision on which incidents require detailed investigation is final.

17.1.16 Dangerous Occurrences, Incidents, Damage to Equipment and/or Property report to be submitted to OWNER/CONSULTANT format.

17.1.17 All entries/records of accidents entered into the Contractor's Accident Book shall also be copied into OWNER/CONSULTANT's Accident Book by the Contractor.

17.1.18 Copies of all Statutory Registers to be submitted weekly to OWNER/CONSULTANT.

17.1.19 Copies of the Contractor's Safety Officer/Advisor's reports of their findings on site visits/inspections.

## **17.2 Accidents, Incidents, Dangerous Occurrences and Notifiable Diseases**

### **17.2.1 Accidents/Incidents/ Dangerous Occurrences/Near Misses**

All accidents/incidents/dangerous occurrences/near misses must be notified to OWNER/CONSULTANT immediately, and a report prepared.

For reportable incidents, a copy the report to the Authority must be submitted to OWNER/CONSULTANT on completion but no later than two calendar days after the accident.

17.2.2 OWNER/CONSULTANT reserves the right to decide which accident, incidents or minor injuries shall be investigated, and to what extent/format/contents of any investigation.

**Note:** All such notification or reports to OWNER/CONSULTANT do not release the Contractor of his statutory duties to report such matters to the Authorities by the quickest possible means (viz, telephone, fax and e-mail) immediately following the incident/accident.

## **18.0 PERSONAL PROTECTIVE EQUIPMENT/CLOTHING**

18.1 All personnel on OWNER/CONSULTANT' site must wear as a minimum safety helmet, hi- vis vest, safety glasses and protective footwear. Additional personal protective equipment may be required dependent on the tasks being undertaken or as dictated by the risk assessment.

18.2 Contractors shall provide all necessary personal protective clothing and equipment for their employees and renew as necessary. Records of the issue of such equipment must be maintained for inspection by OWNER/CONSULTANT.

18.3 The Contractor shall:

- Provide personal protective equipment which is comfortable and fit for purpose.
- Maintain and clean personal protective equipment.
- Replace free of charge defective, broken or lost personal protective equipment.
- Provide storage for personal protective equipment when not being used.
- Ensure that personal protective equipment is properly used.
- Give training, information and instruction on its use to employees.
- Ensure that all personnel wear suitable clothing at all times (**no shorts, no sports shirts and no colours that may invite aggression - HSE "Keep Your Tops On" is enforced**).
- OWNER/CONSULTANT reserves the right to direct the contractor to change/replace personal protective equipment if they determine that it is unsuitable or inadequate for its proposed use.

## **19.0 SUBSTANCES (Control of Substances Hazardous to Health – COSHH)**

19.1 Substances hazardous to health must be identified prior to taking them onto site and, if they cannot be substituted or eliminated, assessments stating how the substances will be controlled and what precautions will be introduced must be carried out and recorded in writing by a competent person. This assessment must be communicated to, and understood by, the members of the workforce who are likely to come into contact with the substance(s). A copy of all assessments should be submitted to OWNER/CONSULTANT.

19.2 Hazardous substances may only be brought to site with OWNER/CONSULTANT' permission. They shall be kept to a minimum and must be stored in secure, appropriate containers with the contents clearly labelled. The containers must be stored in a secure area, preferably quarantined from the main

stores areas, with suitable warning notices and signage posted.

19.3 Hazardous materials must not be allowed to discharge into natural watercourses or drainage systems.

- 19.4 All hazardous material waste must be kept separate from normal waste and be disposed of in a specialist disposal facility.

## **20.0 NOISE**

- 20.1 When any operation of a Contractor is likely to expose any employee on site to an average noise level of 85 dB(A) and above, an assessment shall be carried out, by the Contractor, and records maintained for OWNER/CONSULTANT' inspection. In such circumstances, the Contractor must keep stocks of adequate ear defenders or other suitable hearing protection.
- 20.2 In addition to the foregoing, noise must be kept to a minimum at all times and must not exceed acceptable and/or locally specified rules and conditions relating to noise imposed by the Contract. Due regard must always be given to noise levels, and their effects on the local community and persons not involved in the operations. Permissible times for noisy work operations, and other restrictions, may be imposed by the Local Authority. Contractors receiving Notices or Prohibition Notices under the related legislation must notify OWNER/CONSULTANT of such Notices.

## **21.0 FIRST AID**

- 21.1 All Contractors shall provide or ensure that they are provided with, such equipment and facilities as are adequate and appropriate in the circumstances for enabling first-aid to be rendered to any of their employees if they are injured or become ill at work.
- 21.2 No work shall commence on site until Contractors have trained first aid personnel on site.  
Contractor at all times during execution, shall station at site an emergency vehicle without any extra cost or claim.

## **22.0 TOOL BOX TALKS**

- 22.1 Tool Box Talks will be implemented by all Contractors. The agenda for these talks will be agreed with OWNER/CONSULTANT prior to the commencing of work.

## **23.0 HEALTH, SAFETY AND ENVIRONMENT INSPECTIONS/HEALTH, SAFETY AND ENVIRONMENT ADVISORS**

- 23.1 The OWNER/CONSULTANT' Health, Safety and Environment Engineer/Advisor will visit the sites and carry out Site Safety Inspections. Contractors must co-operate in these inspections. Whenever Contractors' own Health, Safety and Environment Advisors visit site they must report their arrival and departure to the OWNER/CONSULTANT' Senior Representative, and provide a report of their findings and any necessary corrective action to be undertaken.
- 23.2 Contractors on the project must provide a full-time site based Health, Safety and Environment Advisor, when the intensity of the work requires or at the request of the OWNER/CONSULTANT.

23.3 Contractors who do not have full-time sitebased Health, Safety and Environment Advisors, shall ensure that their Health, Safety and Environment Advisor visits site once per week as a minimum.

**23.4 Appointment of Health, Safety and Environment Supervision**

The Contractor shall appoint safety supervision. The name of each appointee, together with evidence of his or her competence to carry out the requirements of the role, shall be submitted to OWNER/CONSULTANT for their approval.

**24.0 HEALTH, SAFETY AND ENVIRONMENT MEETINGS**

24.1 Health, Safety and Environment will form part of the agenda at all Site Progress Meetings.

The Contractor's Safety Advisor may be asked to attend these progress meetings.

24.2 Once per month OWNER/CONSULTANT' Resident Construction Manager shall convene a Health Safety and Environment Meeting of all Contractors. Attendees at the meeting shall be all Contractors' Safety Advisors and Site Managers.

**25.0 HEALTH, SAFETY AND ENVIRONMENT COMMITTEES AND SAFETY REPRESENTATIVES**

25.1 OWNER/CONSULTANT encourages the workforce to nominate Safety Representatives as a way of improving communication on Health, Safety and Environment issues. Wherever Contractors' Safety Representatives have been appointed, OWNER/CONSULTANT must be informed of their appointment in writing.

**26.0 HOUSEKEEPING**

26.1 Contractors are expected to carry out their work in a clean, safe and orderly manner.

26.2 Dust shall be kept to acceptable levels for the work being carried out. Waste materials and rubbish shall be cleared up as the work progresses and not left to introduce a safety hazard for other personnel engaged on the works.

26.3 Construction waste should never obstruct emergency exit routes, Firefighting equipment, emergency alarm call points or other emergency facilities.

26.4 From time to time as judged necessary, at the expiration of the contract, or when instructed to do so by OWNER/CONSULTANT, the Contractor shall undertake to clean and tidy his areas of occupation and work to the satisfaction of OWNER/CONSULTANT. Should the Contractor fail to do this, OWNER/CONSULTANT reserves the right to remove all offending materials and debris and to deduct the cost of this operation from the Contract Price. OWNER/CONSULTANT accepts no responsibility for any materials and/or tools which may be removed during this operation.

26.5 The Contractor must ensure that the following requirements are strictly enforced:

- Ample provision of refuse bins for all rubbish including organic waste such as food scraps, etc.
- Daily clearance of all such bins to the area designated for this discharge.
- No discharge of deleterious matter such as oils or other industrial waste.

26.6 All site offices, toilets, eating facilities, changing rooms, drying areas, stores, etc, which are the responsibility of the Contractor, shall be cleaned daily as a minimum by the Contractor. These facilities shall be checked for vermin on a two weekly Rota.

## **27.0 FIRE PREVENTION**

27.1 Before welding, flame or arc cutting of metals, or other processes involving heat or naked lights are permitted, a fire risk assessment shall be carried out by the contractor and arrangements agreed with OWNER/CONSULTANT who will issue a Permit to Work.

27.2 Contractors shall familiarize both themselves and their employees with the fire safety arrangements, fire alarms, means of escape and emergency evacuation procedures.

27.3 Before leaving the premises and site, contractors shall ensure that naked lights and other ignition sources have been extinguished and electrical apparatus, where practicable, switched off and/or disconnected.

27.4 Contractors shall store Highly Flammable Liquids and Liquefied Petroleum Gases in a manner approved by OWNER/CONSULTANT.

27.5 OWNER/CONSULTANT' fire protection equipment shall only be used in an Emergency. Fire extinguishers/fire blankets for use when carrying out hot work shall be provided by the Contractor.'

## **28.0 REMOVAL OF WASTE FROM CONSTRUCTION SITES**

28.1 The removal of waste shall only be undertaken by Licensed Waste Carriers.

28.2 Where there is any doubt of the composition of excavation spoil, it must be analyzed before it is removed from site.

28.3 Evidence of compliance shall be submitted to OWNER/CONSULTANT prior to the removal of any waste from site.

28.4 Controlled waste is any kind of household, industrial or commercial waste. This includes, for example:

- Scrap metal.
- Building, construction, demolition and excavation waste, including waste from any repair or renovation.

- Clinical waste.
- Anything which is unwanted because it is surplus, broken, worn out, contaminated or spoiled in some other way.

Controlled waste disposal must be managed via a chain of transfer notes, maintained by the contractor and readily retrievable for OWNER/CONSULTANT' inspection.

## **29.0 EXCAVATIONS AND OPENINGS**

- 29.1 No excavation work shall be commenced by the Contractor unless a valid excavation permit has been issued. The Contractor shall have on site at all times while excavation work is being carried out, detection equipment which meets the latest technology.
- 29.2 Prior to the start of any excavation, OWNER/CONSULTANT shall be consulted and the presence of overhead and buried service records shall be checked. Where "live" services are present, hand excavation must be carried out until the location of the service has been identified, recorded and made safe.
- 29.3 The Contractor must erect suitable solid edge protection (i.e., double handrails) around excavations or openings. During the hours of darkness any excavations, openings or obstructions near or on roadways and walkways must be indicated by a sufficient number of warning lamps.
- 29.4 The sides of all excavations should be properly shored, battered or stepped to prevent collapse. No excavation work shall commence unless there are adequate resources present to ensure the stability of the excavation. Excavations shall be inspected prior to, or re-commencement of the work to ensure the excavation is still in a safe condition.
- 29.5 All excavations shall have a proper ladder access point provided.
- 29.6 Spoil from excavations must be piled at least 1m from the edge of the hole.
- 29.7 Vehicular traffic shall be restricted from the edges of excavations, to prevent possible collapse.

## **30.0 ELECTRICITY**

- 30.1 All Contractors must provide their own electrical power supplies or as per Technical ITB.
- 30.2 Contractors must not interfere with or work on any of, the Client's electrical installations or equipment without written consent.
- 30.3 Where Contractors have to work in the vicinity of electrical equipment, they must carry out a risk assessment prior to commencement of any works.
- ALL EQUIPMENT MUST BE TREATED AS "LIVE" UNLESS ISOLATED/LOCKED OFF AND TAGGED.**



30.4 Repair or installation of any electrical equipment must only be carried out by a competent qualified electrician.

30.5 The electrical supply to powered hand tools must not exceed permissible volts, centre tapped giving appropriate volts to earth. Where this is not possible, due to the type of tool being used, the approval of OWNER/CONSULTANT must be sought in writing.

Electrical lighting for use in confined spaces must not exceed 24 volts (and be explosion proof where applicable). Powered hand tools used in confined spaces should, where possible, be air operated.

30.6 Contractors requiring to install temporary electrical supply equipment shall submit a temporary electrical supply procedure to OWNER/CONSULTANT for approval. The procedure shall, where necessary, cover installation of 380/440 volt system, installation of

110volt system, lighting system, welding equipment installation, inspection testing operation and maintenance of temporary electrical systems.

#### 30.6.1 **Distribution Boards** - Semi-permanent or Long Term

These should be accommodated in weatherproofed locations and be so arranged, if possible, that they will not need to be moved during the Contract. They should be proofed against interference or unauthorized operation and they should be large enough to accommodate all the necessary apparatus required. Each circuit should be clearly labeled and a circuit diagram should be located at each board.

#### 30.6.2 **Distribution Boards** – Temporary

These are usually small portable panels or boards containing two or three socket outlets. They must be of robust construction, preferably all-insulated and should be supplied by heavy duty flexible cables, these cables shall not be spliced. Socket outlets, plug connectors and cable couplers should comply with High Standards or equivalent industry standard.

#### 30.6.3 **Distribution Cables**

These cables run from the main distribution boards to the local distribution boards throughout the site.

The cables will normally be multi-strand multi-core armored PVC cables but, in certain cases, may take the form of Mineral Insulated Copper Clad (MICC) cables. The latter type should be sheathed with PVC.

The installation must be so arranged as to prevent the need for long trailing cables. Socket outlets should be located as near the working point as possible.

Power and lighting circuits should be kept separate.

A full record should be made of all parts of the installation and should be kept up to date when alterations or extensions are made.

#### **30.6.4 Underground Cables**

Cables may be provided by the Contractor and laid underground or overhead to connect the supply or metering point to the semi-permanent site distribution boards.

The cables must be suitable for the duty and loading expected, e.g., armored PVC cables. The cables should be buried at a safe depth or taken from a height so as not to obstruct the movement of persons and vehicles and their routes clearly marked both on the site and on the site plans.

The cables should be properly terminated and be provided with efficient circuit protection. Cable routes should be so arranged that the minimum of obstruction is caused. The cable should be treated with care and given the same supervision and protection as other cables.

- 30.7 No temporary electrical supply shall be installed or modified without the agreement and approval of OWNER/CONSULTANT.
- 30.8 Any tool, plant or equipment exceeding 110 volts (55v to earth) shall be connected to an earth leakage circuit breaker (ELCB).

#### **31.0 WORK IN CONFINED SPACES**

- 31.1 All work in confined spaces must be covered by a safety method statement.

Safety method statements for work in confined spaces should include arrangements for the following as a minimum:

- Issue of a permit to work
- Work scope and method.
- Nominated Supervisor.
- Tally man.
- Rescue procedures and equipment.
- Training.
- Tools and equipment to be used, including low voltage or pneumatic.
- Lighting requirements, including standby/emergency.
- Explosion proof fittings.
- Low voltage or pneumatic tools.
- Ventilation.
- Access.
- Bonding to prevent both electrical shock and static discharge.
- Work cycles, to reduce risk of heat exhaustion.
- Fire safety and extinguisher requirements.

- 31.2 Contractors shall not enter or commence work in any excavation, tank, vessel, pipe or chamber or other enclosed space, until a valid permit to work has been issued. Where Contractor's operations result in a dangerous atmosphere arising during the monitoring of the work activity, the permit to work issuing authority must be informed and all personnel removed from the area.

No new activity shall be introduced into a confined space without the permission and signed approval of the permit to work issuing authority.

Whilst work is ongoing within a confined space, the Contractor will be required to provide a trained standby/tally man.

- 31.4 All personnel who have to enter confined spaces must have undertaken the training appropriate to this task.

## **32.0 MOBILE CRANES**

- 32.1 All cranes (including piling rigs, fork lift trucks, mobile elevated work platforms, hand lorries and similar equipment), whether owned by the Contractor or hired, must carry relevant test certificates and thorough examination reports, together with the manufacturer's handbook. Copies of this documentation must be submitted to Owner/Consultant prior to commencing work.
- 32.2 Only persons who are certificated as competent and authorized shall be allowed to operate cranes. The Contractor must be able to prove the competence of their employees to operate such equipment prior to its use.
- 32.3 Crane operators or other competent persons must carry out daily inspections and enter these in the crane register. Failure to maintain the register properly may lead to suspension of operations. This obligation is the responsibility of the crane hirer when he is supplying the crane and the operator. In addition, the Contractor will implement a regular inspection and maintenance programme to ensure that all components of the lifting device are in good condition.
- 32.4 Travel routes for cranes and crane standing must be agreed with OWNER/CONSULTANT in order to avoid such things as overhead lines and other structures, underground services, excavations, made up ground, etc. Load spreader pads of sufficient size and thickness area, and of suitable material, e.g., metal plates, timber, etc, are to be placed under each outrigger foot, before all crane lifting operations are allowed to commence.
- 32.5 Crane duty charts (Load Radius Tables) must be displayed on or be available in the crane for easy reference. In addition, crane manufacturers' rigging/de-rigging instructions must be available on site. During rigging/de-rigging of jibs/booms, provision must be made to support sections/either side of rigging points, from below, utilizing tightly packed blocks.
- 32.6 All cranes shall be fitted with:
- A reverse warning audible alarm.
  - Load radius indicator.
  - Automatic safe load indication.
  - Crane hooks with safety catches. All of which must be serviceable.

- 32.7 All lifting equipment accompanying the crane shall comply with the requirements of lifting regulations.
- 32.8 The assembly, rigging and de-rigging of any crane components, including fly jibs, shall only be done under the supervision of a competent lifting supervisor. An approved risk assessment, together with the manufacturers' rigging/de-rigging instructions must be in place covering rigging activities for the equipment.
- 32.9 Every Contractor involved in lifting operations with a crane (including a piling rig) or mobile crane shall appoint, in writing, a lifting supervisor to oversee all lifting operations.
- 32.10 No crane shall travel with a suspended load.
- 32.11 Outriggers, when installed, must always be used.

### **33.0 LIFTING OPERATIONS**

- 33.1 A Lifting Study and Safety Method Statement must be prepared for all heavy lifts exceeding 10 tons, or of a complex nature, e.g., tandem lifts or as specified by the Construction Manager (or the Rigging and Lifting Supervisor) and submitted to OWNER/CONSULTANT for review.
- 33.2 Every lifting operation must be properly planned by a nominated, competent person.
- 33.3 Every lifting operation shall be appropriately supervised.
- 33.4 All slinging and rigging of loads must be carried out by competent personnel.
- 33.5 Clear communications between the crane operator and the person responsible for controlling the lift must be established.

All statutory Inspection Reports/Certification/Documentation and proof of the driver's training shall be photocopied and handed to OWNER/CONSULTANT prior to the setting up of the crane. Certification for lifting equipment to be used in the lift shall be identified and cross checked with the item of plant

### **34.0 STEEL ERECTION**

- 34.1 The weight of each component in excess of 500 kg shall be clearly marked upon it.
- 34.2 Erectors must be fully informed of the correct erection sequence, by their supervisor, prior to each stage of work commencing.
- 34.3 Vertical access provision should, whenever possible, be fixed to the steel before it is lifted into position. Where this is not possible permanent access, ie, stairways or permanent metal ladders, shall be installed as early as possible.
- 34.4 Where horizontal access along structural members is required, as much work as possible must be completed before the steel is lifted into position. This includes:

Fixing of handrails or posts for securing steel wire ropes to be used in conjunction with safety harnesses or inertia reels.

The fixing of scaffold tubes (needles) to the lower flange of an I-beam to allow a working platform to be erected.

Where scaffold tubes (needles) are used they shall not support a working platform wider than three boards, or one lightweight staging without being “picked up”.

Where no ladder access, permanent stairway, etc, leads onto working platforms, as described above, employees must use man riding baskets or mobile elevated work platforms as far as reasonably practicable to access working areas.

### **35.0 SCAFFOLDING**

- 35.1 All scaffolding must be of good quality, be erected in compliance Good Practices for Access and Working Scaffolds, and special scaffold structures in steel. In addition to the main guard rail, an additional guardrail is required such that the gap between the toe-board and main guardrail does not exceed 470mm and all boards must be secured, without causing a tripping hazard.
- 35.2 All scaffolding shall be erected, modified and inspected by qualified competent scaffolders.
- 35.3 Where materials are to be positioned on scaffolding the Contractor’s supervision must ensure that the scaffolding is not overloaded.
- 35.4 Before use, scaffolding shall be inspected by an authorized Scaffold Inspector who shall complete a “scaffold tag” and secure it in a prominent position at the base of all ladder access points. The scaffolding tag will clearly show the following information as a minimum:
- Location.
  - Reference number.
  - Requested by.
  - Access Scaffold Classification.
  - Maximum distributed load/working lift.
  - Maximum number of working lifts to be used simultaneously.
  - Date erected.
  - Erected by.
  - Inspected by.
- 35.5 Scaffolds shall be inspected at weekly intervals or after storms by the authorised Scaffold Inspector who shall sign and date the “Scaffold Tag” after each inspection. Scaffolding not considered safe shall have the Scaffold Tag withdrawn and a prominent “DO NOT USE” sign displayed.
- 35.6 A scaffold register shall be maintained by the authorized Scaffold Inspector. This shall contain:

- Date of first and subsequent weekly inspections.
- Individual identifications of all scaffolds which shall be cross-referenced to the Scaffold Tag identity number.
- Clear name and signature of the authorized Scaffold Inspector against each separate scaffold inspected.

35.7 No scaffold may be erected which impedes normal access or can be accidentally struck by moving plant without prior consultation with OWNER/CONSULTANT to ensure that a safe system of work is in place.

35.8 Contractors are not permitted to erect or carry scaffolding near live overhead electrical cables, or equipment because of the danger of tubes making accidental contact with electrically charged apparatus.

35.9 If there is any doubt about the security of any anchorage, suspension points or ties for a scaffold, e.g., strength of existing buildings/structures, or those under construction, OWNER/CONSULTANT must be consulted before proceeding with erection.

35.10 All scaffolds must be provided with suitable access. Where ladders are used for this purpose they must be of adequate length and properly secured by lashing or fixing to prevent displacement.

35.11 Action shall be taken to warn personnel against using partly erected or dismantled scaffolds.

A prominent "DO NOT USE" sign shall be clearly displayed.

35.12 OWNER/CONSULTANT shall approve the sitting of the scaffold material racks/compounds.

35.13 Mobile tower scaffolds shall not be constructed with a height greater than 3 times the minimum base width and shall only be used on level ground. Towers shall only be erected by trained personnel.

35.14 In addition to weekly inspections, wooden scaffold boards shall be subject to a monthly inspection to ensure wood has not rotted or been subject to insect damage

35.15 The Contractor shall ensure that the system of work employed for the erection and dismantling of scaffolding shall not expose the Scaffolders to any risk.

35.16 All scaffolding must be erected and dismantled to the requirements laid down in the current regulations and guidance notes and to the requirements of OWNER/CONSULTANT.

### **36.0 LADDERS/STEPS**

36.1 Ladders must be in good condition and free from defects, i.e., broken rungs, split stiles.

36.2 Ladders must not be painted.

36.3 Ladders must:

- Be securely fastened at the top.
- Be properly positioned at the base.
- Extend at least 1m (5 rungs) above the working platform.
- Be at an angle of 300mm out for every 1.2m vertical drop.

36.4 **All steps used on the project Site.**

36.5 Only one person must be allowed on a set of steps at any one time.

36.6 Persons must work with a set of steps of the appropriate height for the task.

36.7 The top rung of the steps must be kept at waist height, no work to be carried out above this height on steps.

36.8 Ladders are to be used as a means of access not as a working platform except for light, minor or one off activities. Then the person must wear a harness and tie- off to a suitable anchorage whilst carrying out the minor task.

**37.0 FALL PROTECTION**

37.1 Depending on the task and the risks, harnesses and appropriate anchorages/running lines will be used for activities carried out above a height of 2 meters.

37.2 Fall protection equipment shall be subject to regular inspection by a competent person, and a register maintained for OWNER/CONSULTANT' inspection.

37.3 During the execution of work at height, where it is not practicable to work from within a standard working platform with double handrail and toe boards (for example erection of structural steelwork, installation of roof components, etc), safety netting capable of catching a falling person must be installed as far as reasonably practicable.

37.4 The provision of safety netting does not relieve individuals from utilizing fall protection devices during the execution of the works.

37.5 The safety nets should be manufactured to Indian Standard and erected in accordance with good practices by a competent person.

37.6 The safety nets must bear a label stating the normal size of the net; the date of manufacture, the deflection at the centre of the net during the prescribed test and the maximum distance below the working height for which the net is designed to be used.

37.7 Test certificates must be provided for all safety nets, which will state the breaking strength of the net and provide details of the drop test carried out.

37.8 All safety nets must be periodically tested at intervals not exceeding three months – and records of these tests must be retained.

37.9 A formal inspection of safety nets must be carried out weekly to check for damage, loose ties, changes in anchorage points, etc. Records of these inspections must also

be retained.

### **38.0 MOBILE ELEVATED WORK PLATFORMS**

38.1 The term Mobile Elevated Work Platform (MEWP) covers the following types of equipment:

- Scissor lifts.
- Telescopic booms or jibs.
- Articulating and telescopic booms.

38.2 Anyone who is to operate a MEWP must be competent and have received formal training accredited by manufacturer.

38.3 Prior to any MEWP being used on site, a formal risk assessment must be carried out to identify any potential hazards which may exist as a consequence.

38.4 Whilst working within the platform of a MEWP, all personnel must wear a safety harness which is attached to a secure anchorage point within the platform.

38.5 Before commencing work from a MEWP, the surrounding area should be cordoned-off to prevent personnel straying into a potentially hazardous area.

38.6 The Safe Working Load specified on the MEWP must not be exceeded.

38.7 If the MEWP has been manufactured with outriggers or stabilizers, they must always be deployed.

38.8 Prior to commencing work, ground conditions must be checked to ensure that the ground bearing capacity will not be exceeded by the loading from the MEWP. Where required, spreader plates shall be used to distribute the loading.

38.9 The MEWP shall only be permitted to travel with the platform occupied and/or the boom extended if it is within the machine's specified operational capabilities.

38.10 MEWP shall not be used as a jack, prop or support.

38.11 MEWP shall not be used as a crane or lifting device.

38.12 MEWP shall not be used primarily for the transport of goods or materials.

38.13 MEWP shall not be used in wind speed exceeding 30 mph (12.5 m/s).

38.14 All MEWPs must be subjected to a regular maintenance and inspection regime, which as a minimum will require weekly inspections by a competent person and a thorough examination every six months.

### **39.0 CONTRACTORS' TOOLS AND EQUIPMENT**

39.1 All Contractors' tools and equipment must be fit for purpose. Tools should be CE marked.



- 39.2 Guards and electrical trip switches must work effectively and must not be removed or by-passed.
- 39.3 All tools shall be of good quality and maintained in a safe working condition. Homemade tools are not permitted.
- 39.4 The Contractor shall provide suitable storage with suitable racks and bins for storing tools and equipment.
- 39.5 All temporary construction leads, lighting and portable electric tools shall be of appropriate volts.
- 39.6 The Contractor shall nominate or employ the services of a competent qualified person to inspect and tag electrical power hand tools, transformers, distribution boards, extension cables, etc, on an at least a threemonthly basis (PAT testing). The tag shall display name, signature of the individual inspecting the tool and date of inspection.
- 39.7 The Contractor shall keep, on site, a register of all electrical power hand tools in use. The register shall detail:
- Individual identity number of the tool.
  - Name, signature and company of the qualified electrician carrying out the inspection.
  - Date of inspection.
  - Maintenance and Inspection schedule.
  - Remarks on condition of tool and whether repaired or withdrawn from use.
- 39.8 No electrically powered hand tool shall be used unless it is tagged with a current "INSPECTION" tag.
- 39.9 All electrical leads must be connected to the power source through standard industrial waterproofed plugs and sockets, which shall be in good condition.

#### **40.0 MECHANICAL PLANT AND EQUIPMENT**

- 40.1 Mechanical plant and equipment is defined as:
- Earthmoving plant.
  - Road making plant and equipment.
  - Concrete batching plant and mixers.
  - Forklift trucks.
  - Miscellaneous plant, including generators and compressors.
  - Mobile elevating work platforms (e.g., star-lift, cherry picker, etc).
- 40.2 All items of mechanical plant transported to the project shall be in a safe and sound condition and shall be properly maintained. Emissions shall be to acceptable limits and no smoke shall be discharged.
- 40.3 A programme of regular, preventative maintenance shall be established by the Contractor, as per the manufacturer's handbook, to ensure that all plant equipment is systematically inspected, maintained and repaired as necessary.
- 40.4 The preventative maintenance programme and the Contractor's employee responsible for taking the action shall be clearly detailed, identified and given to

## OWNER/CONSULTANT.

- 40.5 A safe system of work must exist during all maintenance and repair operations to ensure that no part of the machinery is set in motion while work is being carried out.
- 40.6 Plant maintenance must not be carried out within the main construction site.
- 40.7 Where refueling is required, facilities provided shall be adequately covered by fire extinguishers, earthing, warning signs, bonding and proper fuel dispensers. Refueling areas shall be curbed to avoid spills.
- 40.8 Waste oil removed from vehicles after servicing shall be sent to the appropriate off-site waste disposal facility and this is the responsibility of the Contractor.
- 40.9 The OWNER/CONSULTANT'S tools, plant and equipment may not be used by Contractors without their express permission.

### **41.0 COMPETENCY/PLANT EQUIPMENT**

- 41.1 All drivers and operators of mobile plant (mechanically propelled vehicles) shall be in possession of the appropriate license for the class of vehicle.
- 41.2 It is the responsibility of the contractor to ensure that all drivers, operators and banks men of mobile plant (mechanically propelled vehicles) are certificated as competent.

#### **41.3 General**

- 41.3.1 Every dangerous part of machinery shall be securely guarded.
- 41.3.2 Any guards removed for maintenance or repair purposes must be replaced before the machine is set in motion.
- 41.3.3 No mobile plant (mechanically propelled vehicles) shall carry passengers unless a proper fixed seat is provided, except when the equipment is specifically designed for standing personnel.
- 41.3.4 Mobile plant (mechanically propelled vehicles) must be parked on firm level ground when unattended, the engine stopped, brakes on and any load or attachment lowered to the ground and the keys left in the ignition.
- 41.3.5 No mechanical plant or equipment shall be sited on or operated on any area of the project without express the permission of OWNER/CONSULTANT.
- 41.3.6 All items of mobile plant (mechanically propelled vehicles) shall be fitted with a reverse warning audible alarm.
- 41.3.7 All drivers/operators of mobile plant (mechanically propelled vehicles) shall strictly obey the instructions of the site security, traffic regulations and speed limits. A banks man shall be in attendance during all reversing procedures.

#### **41.4 Inspection**

All mobile equipment (mechanically propelled vehicles) shall be inspected by a competent person appointed by the Contractor prior to use on site. Equipment

considered to be unsafe, by OWNER/CONSULTANT, shall not be allowed access to the site.

#### 41.5 Flame Arrestors

41.6 All mobile plant for use in Petro Chemical Live Plant Areas, or during the Start-up and Commissioning Phase of the project, must be fitted with Exhaust Flame Arrestors and Chalmers Valves where there is a risk of flammable gas releases.

### **42.0 MACHINERY GUARDING**

42.1 Unauthorized personnel must not operate, interfere or tamper with plant or equipment.

42.2 Persons authorized to use machines must first check that guards are in position and that any other safety devices, e.g., emergency stops, are in working order.

42.3 All plant or equipment brought onto the site must be properly guarded to prevent injury and be CE marked.

**NO GUARD OR FENCE MAY BE REMOVED FROM MACHINERY.**

### **43.0 WELDING**

43.1 Welding sets shall be in good condition, properly maintained and earthed.

43.2 Isolation switches on welding sets shall be readily accessible.

43.3 Terminals and live components shall be adequately protected.

43.4 Cables shall be frequently inspected to ensure the insulation is intact.

43.5 Damaged cables or electrical holders shall be properly repaired or replaced.

43.6 The welding return cable shall be secured onto the work piece. If this is not practical it shall be as near as possible.

43.7 Proper cable connectors shall be used when connecting runs of cables.

43.8 Welders shall wear:

- Face and eye protection with correct grade of filter.
- Welder's gauntlets.
- Long sleeved flame retardant overalls.

Welders shall wear safety helmets at all times, except whilst welding, when it is agreed as impractical and written permission is granted by OWNER/CONSULTANT, subject to mitigation of hazard, i.e., no work overhead, or shielded from falling objects.

43.9 Welding areas should whenever possible be screened off using flame retardant blanket or other suitable material. All combustible materials must be cleared from the vicinity of all welding operations.

43.10 Asbestos material shall not be used on the project.

43.11 Electric Arc Welding equipment and accessories shall conform to Latest Engineering Standards.

43.12 Fire extinguishers must be provided and kept adjacent to any welding or cutting activity.

#### **44.0 ABRASIVE WHEELS**

44.1 Contractors must ensure that any of their employees authorized to change Abrasive Wheels have attended an approved course of training and have been appointed in writing.

44.2 Details of each employee trained must be entered in the training register kept on site. Contractors must produce certificates and registers on request.

44.3 Machines used to drive Abrasive Wheels must be in good condition and properly guarded.

44.4 Pedestal or bench mounted grinders must have an emergency stop button and be fitted with a properly adjusted tool rest and guard.

44.5 All hand held grinders shall have a "Dead Man" switch and appropriate guards fitted.

44.6 The use of hand held angle grinders over 115mm shall only be permitted for specific tasks, subject to Owner's / Consultant's approval.

#### **45.0 USE OF GAS AND OXYGEN EQUIPMENT**

45.1 Compressed gas cylinders shall:

- Be in good condition and not suffering from corrosion.
- Be properly colour coded (reference should be made to National Standards).
- Be individually identified.

Hoses shall be properly colour coded to the internationally recognized standard for the gas being used, in good condition and fitted with hose connectors attached by permanent clips.

Check valves and flashback arrestors must be used on both hoses at all times.

45.2 Users shall check the equipment for perished, damaged hoses, regulators, and pressure gauges, etc. Defects must be reported to their supervisors and faulty equipment must be replaced.

45.3 When on site, cylinders must be in trolleys or secured in an upright position at all times. A bottle key shall be kept with cylinders in use.

- 45.4 Stored oxygen and fuel gas cylinders shall be kept separate with minimum separation distance of 5m. Cylinders must never be stored or used in a horizontal position cylinders must be secured in an upright position. Empty cylinders must also be separated from full cylinders. Cylinders shall be stored in lockable open mesh bottle cages.
- 45.5 All gas cylinders must be handled with care and they must not be misused or abused. They must be properly shut off when not in use and safety caps must be fitted when being moved.
- 45.6 Great care must be taken to ensure that gas equipment, including hoses, are not allowed to cause obstruction of roadways, walkways, manholes, ladders or other means of access where they can cause hazards or be damaged. Hoses not in use should be coiled up and put in a safe place. Hoses should whenever possible be supported off the ground.
- 45.7 Where any operation involves the use of gas and oxygen equipment in enclosed or semi- enclosed spaces, Contractors' supervision must carry out frequent checks to ensure these procedures are complied with.
- 45.8 During meal breaks and at stopping times, hoses and equipment must be removed from confined spaces or excavations. Oxygen or gas cylinders must not be taken into confined spaces for use or storage.
- 45.9 No modification to tanks or drums which have contained flammable liquid shall be undertaken at the site.

#### **46.0 ABRASIVE AIR BLAST CLEANIN**

- 46.1 Blast cleaning shall be carried out in an enclosed designated area.

Provision shall be made to prevent the spread of grit and dust out of the blast area and to collect and dispose of the spoil to an approved location.

- 46.2 The blast cleaning area shall be indicated by prominent warning signs.
- 46.3 Only approved abrasives having no free silica shall be used.
- 46.4 Personnel involved in the actual blasting of material shall be protected by a positive pressure, blast hood, meeting approved standards and providing both respiratory and eye protection, with breathing air supplied via a suitable filter.
- 46.5 The nozzle shall be fitted with a properly functioning dead man's handle, and anti-static abrasive blast hoses. It is required that all equipment be grounded and checked for ground potential
- 46.6 A standby man shall stay by the blast pot.

#### **47.0 COMPRESSED AIR**

- 47.1 All air receivers and compressors shall be in good condition and properly maintained.

47.2 Air receivers shall be individually identified and marked with their safe working pressure.

47.3 Air receivers shall be accompanied by a valid test certificate which shall be kept on site by the Contractor and shown to OWNER/CONSULTANT before bringing the vessel onto site.

47.4 All air receivers must be fitted with a properly set pressure relief valve.

47.5 Air receivers shall be examined and the pressure relief valve tested by an independent examiner at yearly intervals.

47.6 There shall be a register of all air receivers containing:

- Individual identification numbers.
- Dates of independent inspections.
- Name and signature of independent examiner.
- Rates safe working pressure.
- Pressure at which pressure relief valve lifted shall be kept on site by the Contractor along with all current certification.

47.7 The requirements inclusive also apply to compressor mounted air receivers.

47.8 All compressed air fittings shall be wired and/or restrained to prevent them from whipping should the coupling separate.

47.9 Only hose clamps designed for compressed air service shall be used. Worm drive (Jubilee) clips are not acceptable.

**COMPRESSED AIR MUST NEVER BE USED FOR CLEANING CLOTHES.**

47.10 Nozzles used for air blowing must be fitted with a "Dead Man" valve.

**48.0 MOBILE PHONES AND PAGERS**

48.1 Radios, personal CD and tape players are not allowed in the construction areas.

48.2 Mobile phones and pagers are prohibited in the designated construction areas by any hands-on personnel. External to the designated construction areas, providing it does not detract the user from any safety requirements and the user is stationary, then mobile phones and pagers may be used. **Other uses of this equipment will be at the discretion of OWNER/CONSULTANT.**

**49.0**

**RADIOGRAPHY/NDT**

-----Not applicable-----  
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**50.0 WORKING OVER WATER/DIVING OPERATIONS**

-----Not applicable-----  
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## **51.0 ASBESTOS**

51.1 Only certified Contractors are allowed to handle asbestos.

## **52.0 IMPROVEMENT AND PROHIBITION NOTICES**

52.1 In the event of an Improvement or Prohibition Notice being served by an Inspector, the OWNER/CONSULTANT Senior Representative must be notified immediately and the Contractor shall comply with the terms of such Notice immediately.

## **53.0 CARTRIDGE OPERATED FIXING TOOLS**

The use of Cartridge Operated tools shall only be permitted with the express permission of OWNER/CONSULTANT, subject to an approved method statement and risk assessment, and use only by competent, trained operators).

## **54.0 SITE ESTABLISHMENT AND AMENITIES**

55.1 Details of temporary services to be provided by Contractor or as Per Technical portion of ITB.

## **55.0 ACCOMMODATION**

55.1 An area will be allocated for temporary site establishment facilities/services.

55.2 When required by the Contract, the Contractor shall provide and maintain (including de-watering when necessary) a suitable level and hardcore surface in the area allocated for temporary buildings such as offices, stores, workshops, mess huts and a stores compound.

55.3 When required by the Contract, the Contractor shall provide all site offices, stores facilities, workshops and mess huts for the accommodation of staff/site personnel. Proposals for the Contractor's temporary buildings shall be submitted to OWNER/CONSULTANT for approval with their tender.

### **55.4 Storage in Permanent Buildings**

No Plant, Contractor's Equipment or Construction Aids shall be stored in any permanent building without first obtaining the written permission of OWNER/CONSULTANT. Such permission will not relieve the Contractor of the obligation to protect the building from damage whilst used as a store. If permission to use the building is refused by OWNER/CONSULTANT, the Contractor shall provide alternative storage facilities at no additional cost to OWNER/CONSULTANT.

### **55.5 Sanitary Facilities**

All toilets and washing facilities shall be provided by the Contractor.

The supply and installation of necessary water sewage/drainage pipe work, pits, etc, for the facilities and the regular emptying and servicing are the responsibility of the Contractor.

## **55.6 Canteen**

The Contractor must provide mess-huts for his employees and arrange any canteen facilities required for his employees and those of any others employed by him in connection with the Work.

## **56.0 TEMPORARY SERVICES**

### **56.1 Telephone, Facsimile, etc**

Arrangements for the provision of telephones, computer modems and/or facsimile facilities shall be made directly with providers of such facilities by the Contractor.

### **56.2 Electricity**

If under the contract the Contractor is responsible for providing electricity for the site establishment amenities and working area(s), the Contractor shall ascertain the type, location and available spare capacity of the electrical point(s) of supply and provide cable, connections, isolating switches and earth leakage protection of approved specification.

If the Contractor's requirements for temporary electrical supplies exceed those agreed and render the available service inadequate, the Contractor shall provide the additional requirements at no extra cost to OWNER/CONSULTANT.

Electrical installations including all cables, temporary connections, wandering leads and all electrical facilities and/or equipment required for the execution of the Works shall be properly installed and maintained by the Contractor.

Temporary electrical installations must comply with all appropriate statutory requirements, the latest edition of the Institution of Electrical Engineers Regulations, COP for Distribution of Electricity on Construction and Building Sites and Electrical Safety on Construction Sites.

Electrical equipment and installation shall at all times be subject to inspection and approval by OWNER/CONSULTANT but this shall not relieve the Installer/User of their responsibilities for the safety of the system.

Electrical equipment or cables forming part of the permanent installation shall not be used by the Contractor for temporary services. Temporary buildings shall have an external isolating switch. The Contractor shall supply, install and maintain any temporary workface lighting.

### **56.3 Water**

Supply of potable water for drinking and raw water for washing/toilet facilities, mixing concrete, hydrostatic testing and other construction purposes shall be in Contractor's scope. The Contractor shall ascertain the location of the supply point and shall provide and install any temporary pipe work necessary for the provision, use and disposal of such water.



## **57.0 DISCHARGES INTO THE INTERNAL AND EXTERNAL DRAINAGE SYSTEMS, LAND AND CONSTRUCTION AREAS**

57.1 All proposed controlled discharges into the site drainage systems shall be agreed with

OWNER/CONSULTANT.

57.2 Any water discharged on existing roads, hard shoulders or drainage systems shall first pass through a filtering interceptor (which must be regularly cleaned) to prevent the discharge of sludge or solids.

57.3 Any damage to the Works caused by prolonged or excessive pumping and any damage or nuisance arising out of pumping operations shall be the liability of the Contractor.

57.4 Subsequent to filling with water and testing of any part of the Works for hydraulic testing, the Contractor shall be responsible for safe disposal of the water, and shall ensure that the rate of discharge is controlled and kept within the capabilities of any drainage system utilized.

57.5 The Contractor shall provide all requisite equipment and materials to ensure that all drains, rivers, streams or waterways are safeguarded against pollution.

## **58.0 MAINTENANCE OF ROADS AND DRAINS**

58.1 The Contractor shall provide temporary protection to any existing roads to prevent all possibility of damage whatsoever arising from the Works.

58.2 The Contractor shall at all times in the execution of the work maintain all public and site roads in a clean condition to the satisfaction of OWNER/CONSULTANT.

58.4 The Contractor shall immediately remove all mud, earth and debris from road surfaces.

## **59.0 MATERIALS – STORAGE AND CONTROL**

59.1 The Contractor must give a minimum of twenty-four hours notice of the intention to uplift and transport materials/equipment supplied free-issue from OWNER/CONSULTANT/Client' storage facilities to the point of erection or Contractor's storage facility.

59.2 Free-issue materials/equipment furnished by OWNER/CONSULTANT shall be accepted by the Contractor and become the responsibility of the Contractor until acceptance of the Works. Any damage caused to free-issue materials after acceptance shall be repaired or replaced by the Contractor to OWNER/CONSULTANT' satisfaction.

### 59.3 Storage of Petrol, Fuels, Lubricants etc

All fuel and construction materials which may contaminate the site drains, land or watercourses shall be stored in bounded areas. Refueling of plant shall be via bounded bowers. All construction plant in static locations shall have drip trays which shall be cleared daily.

### 59.4 Environmental Impacts

The Contractor shall, prior to commencement of the work, present to OWNER/CONSULTANT for their approval a register of environmental impacts that necessarily arise from their works.

Each identified environmental impact shall be accompanied by an individual Risk Assessment, clearly showing the reduction measures put in place to ensure mitigation of residual risk.

### 60.0 PENALTY

The Contractor shall adhere consistently to all provisions of HSE requirements. In case of non compliances and also for repeated failure in implementation of any of the HSE provisions, Consultant/Owner may impose stoppage of work without any cost & time implication to the Owner and/or impose a suitable penalty

The amount of penalty shall be limited to 0.5 % (Zero decimal five percent) of the contract value.

The amount of penalty applicable for the Contractor on different types of HSE violations is as below.

1. For not using personal protective equipment (Helmet, Shoes, Goggles, Gloves, Full body harness, Face shield, Boiler suit, etc.) **Rs 500/- per day/ Item / Person.**
2. Working without Work Permit/Clearance **Rs 20000/- per occasion.**
3. Execution of work without deployment of requisite field engineer / supervisor at work spot **Rs. 5000/- per violation per day.**
4. Unsafe electrical practices (not installing ELCB, using poor joints of cables, using naked wire without top plug into socket, laying wire/cables on the roads, electrical jobs by incompetent person, etc.) **Rs 10000/- per item per day.**
5. Working at height without full body harness, using non-standard/ rejected scaffolding and not arranging fall protection arrangement as required, like handrails, life-lines, Safety Nets etc. **Rs. 10000/- per case per day.**
6. Unsafe handling of compressed gas cylinders (No trolley, jubilee clips double gauge regulator, and not keeping cylinders vertical during storage/handling, not using safety cap of cylinder). **Rs 500/- per item per day.**
7. Use of domestic LPG for cutting purpose / not using flash back arresters

on both the hoses/tubes on both ends. **Rs. 3000/- per occasion.**

8. No fencing/barricading of excavated areas /trenches.Rs. 3000/- per occasion.
9. Not providing shoring/strutting/proper slope and not keeping the excavated earth at least 1.5M away from excavated area. Rs.5, 000/- per occasion.
10. Non display of scaffold tags, caution boards, list of hospitals, emergency services available at work locations.Rs.1000/- per occasion per day
11. Traffic rules violations like over speeding of vehicles, rash driving, talking on mobile phones during vehicle driving, wrong parking, not using seat belts, vehicles not fitted with reverse horn / warning alarms / flicker lamps during foggy weather. Rs.2000/- per occasion per day
12. Absence of Contractor's RCM/SIC or his nominated representative (prior approval must be taken for each meeting for nomination) from site HSE meetings whenever called by Consultant/Owner & failure to nominate his immediate deputy (in the site organ gram) for such HSE meetings. Rs10000/- per meeting.
13. Failure to maintain HSE records by Contractor Safety personnel, in line with approved HSE Plan/Procedures/Contract specifications.Rs 10000/- per month.
14. Failure to conduct daily site safety inspection (by Contractor's safety engineers/ safety officers), internal HSE meeting, internal HSE Awareness/Motivation Program, Site HSE Training and HSE audit at predefined frequencies (as approved in HSE Plan).Rs.10000/- per occasion.
15. Failure to submit the monthly HSE report by 5th of subsequent month to Project's Engineer- in-Charge /Owner Rs. 10000/- per occasion and Rs.1000/- per day of further delay.
16. Poor House Keeping Rs. 5000/- per occasion per subject
17. Failure to report & follow up accident (including Near Miss) reporting system within specific time frame.Rs. 20000/- per occasion
18. Degradation of environment (not confining toxic spills, spilling oil/lubricants onto ground).Rs10000/- per occasion
19. Not medically examining the workers before allowing them to work at height / to work in confined space / to work in shot-blasting / to work for painting / to work in bitumen or asphalt works, not providing ear muffs while allowing them to work in noise polluted areas, made them to work in air polluted areas without respiratory protective devices,etc. Rs 5000/- per occasion per worker.
20. Violation of any other safety condition as per job HSE plan / work permit and HSE conditions of contract (e.g. using crowbar on cable trenches, improper welding booth, not keeping fire extinguisher ready at hot work site, unsafe rigging practices, non- availability of First-Aid box at site, not using hood with respiratory devices by blaster for shot//grit blasting, etc.) Rs. 5000/- per occasion.

21. Failure to carry-out Safety audit in time (internal & external), close-out of identified shortfalls of Observations of Safety Aspects(OSA),etc. Rs. 20,000/- per occasion.
22. Carrying out sand blasting instead of grit/shot blasting Rs. 50,000/- per day.
23. Failure to deploy adequately qualified and competent Safety Officer Rs. 10000/- per day per Officer.
24. Utilization of hydra/ back-hoe loader for material shifting or any other unauthorized /unsafe lifting works Rs 25,000/- per occasion.
25. Any violation not covered above to be decided by Consultant/Owner.
26. Any physical injury - maximum of Rs.2,00,000 per injury
27. Fatal accident - Rs. 25,00,000 per fatality

**61.0 FOLLOWING SHALL BE APPLICABLE FOR MANDATORY MEDICAL EXAMINATION OF CONTRACTOR WORKERS BEFORE DEPLOYMENT AT WORK SITE:**

Medical examination will be in the scope of the contractors.

Medical examination to be conducted by a doctor with minimum MBBS qualification, having registration number for practicing.

Certificate issued should have endorsement on the photo & clearly mention general health/fitness of the candidate to carryout work inside plant, including eye sight, Vertigo, BP,Heart, convulsion problem etc.

Certificate of fitness is to be issued on letter head of doctor and to be produced with application for photo Gate pass to the E-I-C for the job.

Validity of medical certificate will be for one year from the date of issuance.

**SECTION– VII**

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**SCOPE OF WORK & TECHNICAL  
SPECIFICATIONS**

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### 7.1 SCOPE OF WORK, TECHNICAL SPECIFICATIONS & METHODOLOGY:

#### 7.1.1 Background

As a part of its on-going action plan, Nuclear Power Corporation of India is intending to set up a Nuclear Power Plant consisting of 4x700 MWe generating unit in Banswara district of Rajasthan. The water requirement for this upcoming Nuclear Power Plant is being met from the Mahi-Bajaj Saar reservoir. The continuous supply of intake water required for plant operation per twin units of 700 MWe is 9000 m<sup>3</sup>/hr, wherein 6350 m<sup>3</sup>/hr is for consumptive use and about 2650 m<sup>3</sup>/hr quantum of the treated water will be discharged back i.e. continuous blow down discharge in reservoir, and is required with very high degree of assurance for the life time of the proposed Nuclear Power Project at Banswara site in Rajasthan.

Now, in order to ensure continuous normal operations of 4 units of 700 MWe at MBRAPP, Banswara Plant, Rajasthan, NPCIL has entrusted the complete design of water drawal system to WAPCOS Ltd.

#### 7.2 Purpose:

The purpose of the geotechnical investigations is to collect information on the subsurface soil and rock conditions of the proposed development site for finalization of design parameters of System Design and Engineering Service for Intake, Outfall and allied works. Qualitative geotechnical investigations related to a water conveyance system, including intake wells, bridges, and allied works, is crucial to ensure the safety, reliability, and longevity of the infrastructure needs to be carried out. The findings from the geotechnical investigations will be used in final design of Project infrastructure as it will decide the foundation type & required analysis and design parameters for the construction of Intake, Outfall and allied works as 'Water Drawal System for MBRAPP 1 to 4.

#### 7.3 Scope:

The scope of the agency deployed by WAPCOS for carrying out geotechnical investigations in presence of Geotechnical experts/Geologist of WAPCOS at the locations of proposed intake well, bridges, and associated structures mainly covering complete soil exploration work including carrying out In-Situ test and laboratory tests to evaluate Soil/Rock parameters and preparation of detailed report including the recommendation regarding the following main items:

- On the basis of Geotechnical Investigation report, type of foundation (e.g. Raft, Isolated or Pile type) will be recommended for different type of structure. Suitable depth of foundation details will provide with geotechnical reports.
- Bearing capacity at the foundation strata with the permissible settlement, and pile capacity in case the report recommends piles for proposed Bridge will be provide in the Geotechnical Report.
- Suitability of the excavated earth in back filling.

- Modulus of sub-grade reaction for the design of raft foundations for forebay and sump raft location of intake well will be stated based on the net allowable bearing capacity will be provided in geo- technical report
- Recommendation for the composition of sub-grade for the internal/Approach/ Inspection Road design.
- Recommendation for safe excavation and stability of slope against failure (based on shear strength parameters, 'c' and 'Phi' value)
- Data record format for all the field and lab test will be as per applicable IS code format
- WAPCOS will witness 15% of lab test in laboratory, in addition Lab testing will be done in NABL labs only.

#### **7.4 Methodology / Procedure**

**7.4.1** This Methodology / Procedure for carrying out Geo-technical Investigation cover the technical requirements for a geotechnical investigation and submission of a geotechnical report. The work shall include Mobilization and de-mobilization of Drilling Rigs and all other required equipment, tool & tackles for carrying out investigation work on-land investigations mobilization of all necessary equipment providing necessary engineering supervision and technical personnel, skilled and unskilled labor, etc. as required to carry out the entire field as well as laboratory investigation, analysis and interpretation of data collected and preparation of a Geotechnical report. The entire in- situ and laboratory test parameters (**as per para 7.5**) will be carried out by **National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited laboratories**, work shall be supervised by a Geotechnical Engineer having experience in Geotechnical Investigation work having minimum 10 yrs. of experience. A geologist shall also be deputed at site during investigation whenever rock drilling is undertaken. The scheduling of laboratory tests, analysis and interpretation of test results and drafting of report shall be carried out by Geotechnical expert having minimum 10 yrs. of experience in geotechnical field.

**7.4.2** The Contractor/Agency shall make his own arrangements for locating the co-ordinates and positions of bore holes (**attached bore hole location drawing as DRG No. WAP/IP/MBRAPP/BOREHOLE LOCATION**), and other field tests as per the drawings/sketches/co-ordinates supplied to him and for determining the reduced levels (R.L.'s) at these locations with respect to the single bench mark indicated by the Engineer. Two established reference lines will be indicated to him. The Agency has to provide at the site all the required survey instruments (well calibrated) to the satisfaction of the Engineer so that the work can be carried out accurately according to Methodology / Procedures and drawings.

**7.4.3** All the in-situ and laboratory data shall be recorded in the proforma recommended in Indian Standard Codes. All the field records shall be countersigned by the Engineer as per the QAP soon after the completion of each bore hole/filed test. The Contractor shall submit to the Implementing Agency / Owner two copies of field bore-logs (one copy to the site office of the Implementing Agency (WAPCOS) / Owner (NPCIL) and the other to the Corporate Office. All the investigations are to be carried out by the agency as per the priority requirements of the Implementing Agency/ Owner.

**7.4.4** The core data sample collected is to be preserved according to IS and to be handed to Client at site in core box. All the laboratory test data shall be recorded in the proforma recommended in the Indian Standard Codes mentioned in **para 7.5** and a copy of these shall be sent to the Implementing agency / Owner every week during the progress of laboratory testing. Whenever desired during the progress of the work the Implementing Agency / Owner may be present at the laboratory where the Contractor is arranging for execution of the laboratory tests which is National Accreditation Board for Testing and Calibration Laboratories (NABL) only. It is essential that the equipment's/instruments are properly calibrated at the commencement of the work so that they represent true values and submit the test reports to Engineer. If the Engineer so desires, the Contractors shall arrange for having the instruments tested in presence of the Engineer at an approved laboratory at his cost and the test reports shall be submitted to the Engineer.

#### **7.4.5 Soil Exploration / In-situ Testing/Laboratory Testing – in Soil**

**7.4.5.1.** Identification of utilities at borehole location, making 150 mm nominal diameter bore holes at various locations in all types of soils using suitable approved method of boring including local shifting, chiseling, cleaning, providing retrievable casing pipe as required or as directed (which can be reused or taken back by the Contractor/Agency), performing Standard Penetration Tests (As per IS:2131) at every 1.5 m intervals and at change of strata; collection of disturbed soil samples, observations such as ground water level etc., collection of water samples; transportation of all the collected samples to the laboratory, complete as per specification and instructions of the Employer's Representative, for depths below Natural Ground Level including submission of Factual Report and subsequence to submission of Geotechnical Investigation Report.

#### **7.4.5.2. Lab Tests for Soils**

Conducting various Laboratory tests on SPT/UDS soil samples (as mentioned in para 7.5) collected every 1.5/3.0 m interval from EGL up to a depth of 15 m, at any Laboratory Testing Facility where all the test parameters are accredited by NABL in compliance with ISO/IEC 17025 for testing and calibration scopes, including preparation of soil samples.

#### **7.4.6 Drilling / In-situ testing/ Laboratory testing – in Rock**

**7.4.6.1.** Rotary core drilling rig, flushing medium, conventional Double tube/Triple core barrels fitted with Diamond tipped / TC core bits, drilling rods and casing according to the IS: 1892 & IS 4464

**7.4.6.2.** Conducting laboratory tests on rock samples including preparation of the samples to determine the following properties, all complete as per specification on Rock Samples



#### **7.4.7 Codes and Standards**

All standards, Methodology / Procedures and codes of practice will adopt or sampling and testing of samples, Geological Bore logs to be presented as per prescribed format as per I.S. 1892 and will be provided once it is submitted by the executing agency to the Implementing agency.

#### **7.4.8 Location and Levels**

Location of all boreholes and field test points and levels of the existing ground at such locations shall be established from two reference grids and one approved bench mark given by the owner/his engineer and these shall be subsequently plotted in the layout plan, bore logs and other relevant field test data sheets/tables to be incorporated in the geo-technical investigation report.

- 7.4.8.1** Boring (Depth and location is furnished in the drawing attached as DRG No. WAP/IP/MBRAPP/BOREHOLE LOCATION at the end of the document and BOQ is given in Section 8)

#### **7.4.9 In-situ test**

##### **7.4.9.1 Standard Penetration Test (SPT)**

This test shall be conducted in all types of soil deposits met within a bore hole, to find the variation in the soil stratification by correlating with the number of blows required for unit penetration of split spoon sampler. This test shall be conducted at every change in stratum or at intervals of not more than 1.5 m whichever is less and as per the direction of the Engineer. The starting depth of performing SPT shall be between 1.0 and 2.0 m depth below the ground level. This depth shall be staggered in alternate boreholes. The depth interval between the top levels of Standard penetration test and next undisturbed sampling shall not be less than 1.5 m. The Methodology / Procedures for the equipment and other accessories, procedure for conducting the test, presentation of test results and collection of the disturbed soil samples shall conform to IS: 2131.

##### **7.4.9.2. Pressure Meter test-**

This test provides in-situ stress-strain response of the soil & rock medium, which in turns provide Modulus of Elasticity for use in geotechnical analysis (As mentioned in Annexure A).

#### **7.4.9.3. Cross hole seismic test-(CHST)**

To assess subsurface structure, thickness of layers, velocities of body waves, soil amplification factors up to a depth of not less than 15 mts. below the existing ground level according to ASTM D4428/ D4428M.

#### **7.4.9.4. Electric resistivity test-(ERT)**

To map geologic variations including: soil lithology, presence of ground water, fracture zones, variations in soil saturation, areas of increased salinity or, in some cases, ground water contamination. Conducting electrical resistivity tests at specified locations using Wenner's method (as per IS: 3043: 2018 and IS: 15736) as per specifications or as directed by the engineer-in-charge.

#### **7.4.9.5. In situ-Permeability test:**

In-situ permeability test shall be conducted to determine the water percolation capacity of overburden soil. This test shall be performed inside the bore hole/trial pit at specified depths or in each layer or as per the directions of the Engineer. The type of test shall be either pump-in or pump-out test depending on the subsoil and ground water conditions. Pump-in test shall be conducted whether ground water in bore hole exists or not. Pump-out test shall be conducted to obtain data for dewatering purposes when ground water is met in the bore hole. The Methodology / Procedures for the equipment required for the test and the procedure of testing shall be in accordance with IS: 5529, Part-I. When it is required to carry out the permeability test for a particular section of the soil strata above the ground water table, bentonite slurry shall not be used while boring.

#### **7.4.9.6 In situ California Bearing Ratio test (CBR):**

To determine the strength of the in-situ subgrade soil and enable appropriate selection of suitable pavement thickness (as mentioned in Annexure A).

#### **7.4.10. Sampling (as per IS: 1892 and IS: 4078)**

##### **7.4.10.1. Disturbed Samples:**

The material from the cutting shoe of the thin-walled sampler and from the split spoon sampler of the standard penetration test will be treated as disturbed sample. All disturbed samples collected, not less than 1.0 kg will be placed in plastic bags without

delay. All samples will be labeled with sampling details, project name, location and depth.

#### **7.4.10.2 Undisturbed Samples:**

Undisturbed sampling will be done using thick-walled tube wherever possible at 3m interval. Before the thick-walled sampler is taken, bottom of the hole will be cleared off loose material/drill cuttings and where a casing is being used the sampler will be taken below the bottom of the casing.

If an attempt to take the sample fails, the borehole will be cleaned out for the full depth to which the sampler has penetrated and the recovered soil will be retrieved as disturbed sample. A fresh attempt will then be made from the level of the base of the unsuccessful attempt.

The diameter of the sample would be 90 mm with length 450 mm. The samples will be sealed immediately using paraffin wax (IS 2131) after taken out from borehole on both ends of the sampler/tube to preserve their natural moisture content and in a manner as to prevent the sealant from entering any voids in the sample. Space left between the end of the tube and the top of the wax will be tightly packed with sawdust or other suitable material, and a close-fitting lid or screwed cap will be placed on each end of the tube.

#### **7.4.10.3 Ground water samples:**

When groundwater samples (as per IS: 6935) are to be taken from a stratum that has been contacted while advancing the borehole, all water-bearing strata from higher levels will first be sealed off by borehole casings. As far as possible, all the water in the borehole will be removed by bailing or pumping and the sample taken from water from seepage will be collected. About one liter will be collected in clean bottle as per the instructions of the Engineer.

#### **7.4.11. General**

a) Sufficient number of soil samples shall be collected for reliable estimation of soil properties. The samples collected shall be either disturbed or undisturbed. Disturbed soil samples shall be collected for field identification and conducting tests such as sieve analysis, index properties, specific gravity, chemical analysis, etc. Undisturbed samples shall be collected to estimate the strength, in situ density and moisture content and settlement properties of the soil.

b) All the accessories required for sampling and the method of sampling shall conform to IS: 2132. All the disturbed and undisturbed samples collected in the field shall be classified at the site as per IS: 1498.

c) All the samples shall be identified with date, bore hole or trial pit number, depth of sampling, etc. Care shall be taken to keep the undisturbed soil samples and box samples vertically with the arrow directing upwards.

d) All the samples shall be packed in wooden boxes using sand, saw dust etc. all around the samples before transportation to laboratory for testing.

#### **7.4.12 Laboratory Testing**

##### **7.4.12.1 Essential Requirements**

a) All laboratory tests parameters shall be carried out in NABL accredited laboratory using approved apparatus complying with the requirements and specification of Indian Standards or other approved ASTM standards for this quality of work. It shall be checked that the apparatus are in good working condition before starting the laboratory tests. Calibration of all the instruments and their accessories shall be done carefully and precisely.

##### **7.4.12.2 Laboratory tests:**

Tests as indicated in this specification and as called for by the Engineer shall be conducted. These tests shall include the following:

###### **A. Tests on Undisturbed and Disturbed Soil Samples**

- i. Water Content
- ii. Conducting Grain size analysis, Particle size Sieve analysis & Hydrometer) IS 2720 (part-4).
- iii. Atterberg Limits as per the Specification IS 2720 (Part-5)
- iv. Specific gravity
- v. Swell pressure and Free Swell index
- vi. Proctor Compaction test
- vii. CBR as per IS 2720 (part 16)
- viii. Consolidation Test (1 per Bore hole)
- ix. Relative Density (for sand)
- x. Unconfined Compression Test
- xi. Direct Shear Test (in case of cohesion-less and c-soil)
- xii. Triaxial Test
  - Consolidated undrained (CU) test
  - Unconsolidated undrained (UU) triaxial test
  - Consolidated Drained (CD) test
- xiii. Permeability Test
- xiv. Chemical analysis of soil to determine the, pH, Chloride, Sulphate

xv. Chemical analysis of water to determine pH, Chloride, Sulphate.

### **Test on Undisturbed Samples**

#### **B. Test on Rock Samples**

- Bulk Density and Water content
- Porosity and water absorption test
- Unconfined compressive strength test
- Point load index test
- Slake durability test

### **7.4.13 Report**

#### **7.4.13.1 General**

a) On completion of all the field and laboratory work, the draft report containing Geological information of the region, procedure adopted for investigation, field observations, summarized test data, statistical average parameters for each identified layer. The report shall include detailed bore-logs, subsoil sections, field test results, laboratory observations and test results both in tabular as well as graphical form, practical and theoretical considerations for the interpretation of test results, the supporting calculations/ documents for the conclusions drawn, etc. Initially, the Contractor shall submit three copies of the report in draft form for the Implementing Agency / Owner's review. The abstract of the sub-soil stratification of the project shall also be included in the report. Assessment for liquefaction potential of the founding strata & stability of slopes shall also be included in the report.

b) The detailed final report based on field observations, in - situ and laboratory tests shall encompass theoretical as well as practical considerations to arrive at foundations of different types of structures envisaged in the area under investigation.

#### **7.4.13.2 Data to be furnished**

The report shall also include but not be limited to the following:

- a) A plot plan showing the locations and reduced levels of all field tests e.g. bore holes, trial pits, static cone penetration tests, etc., properly drawn to scale and dimensioned with reference to the established grid lines.

- b) Geological Bore logs to be presented as per prescribed format by I.S. 1892. Containing, RL, co- ordinates, Date of commencement and completion. Ground water level and so on as per format.
- c) A true cross section of all individual boreholes and trial pits with reduced levels and coordinates showing the classification and thickness of individual stratum, position of ground water table, various in-situ tests conducted and samples collected at different depths and the rock stratum, if met with. All soil profiles shall be presented using any latest software package.
- d) A set of longitudinal and transverse soil/rock profiles vertical scale 1:200, horizontal scale 1:2000 connecting various bore holes in order to give a clear picture of the various of the subsoil strata as per IS: 6065.
- e) Water level contours and Rock level shall be presented
- f) Plot of Standard Penetration Test (N values both uncorrected and corrected) with depth for identified areas.
- g) Results of all laboratory tests summarized.
- h) For all tri-axial shear tests, stress v/s strain diagrams as well as Mohr's circle envelopes shall be furnished. If back pressure is applied for saturation, the magnitude of the same shall be indicated. The value of modulus of elasticity, 'E' shall be furnished for all tests along with relevant calculations.
- i) Drilling Record including:  
Borehole number, Method of making borehole, log of soil type and condition, Depth of water in Borehole, weather and temperature. Rock cores obtained during drilling to be stored in the core-boxes as per IS 4464 and IS: 11315.
- j) Geotechnical investigation activities to be conducted is attached as Annexure-A

#### **7.5. NABL Accreditation: In-situ & Laboratory Testing**

Laboratory testing shall be conducted by testing laboratory holding valid NABL accreditation under ISO 17025: 2017 covering minimum 90% of laboratory testing parameters of soil & rock as mentioned below. However, NABL accreditation of in-situ testing mentioned below are mandatory.

| S.No.                   | Discipline | Product/<br>Material<br>of test | Specific Test Performed | Test method                           |
|-------------------------|------------|---------------------------------|-------------------------|---------------------------------------|
| <b>Laboratory tests</b> |            |                                 |                         |                                       |
| 1.                      | Mechanical | Soil                            | Atterberg's Limit       | IS 2720 (Part 5) 1985 RA: 2020 & 2021 |

|                      |            |       |   |  |
|----------------------|------------|-------|---|--|
| 2.                   | Mechanical | Soil  | California Bearing Ratio (CBR)                  | IS 2720 (Part 16) 1987 RA:2021                               |
| 3.                   | Mechanical | Soil  | Triaxial Shear test                             | IS 2720 (Part 12) 1981 RA:2021                               |
| 4.                   | Mechanical | Soil  | Direct Shear Test                               | IS 2720 (Part 13) 1986 RA:2021                               |
| 5.                   | Mechanical | Soil  | Consolidation Test                              | IS 2720 (Part 15) 1965 RA:2021                               |
| 6.                   | Mechanical | Soil  | Free Swell Index                                | IS 2720 (Part 40) 1977 RA:2021                               |
| 7.                   | Mechanical | Soil  | Grain Size Analysis (Hydrometer)                | IS 2720 (Part 4) 1985 RA: 2020                               |
| 8.                   | Mechanical | Soil  | Grain Size Analysis/Sieve Analysis              | IS 2720 (Part 4) 1985 RA: 2020                               |
| 9.                   | Mechanical | Soil  | Standard/ Modified Proctor Compaction (OMC/MDD) | IS 2720 (Part 7) 1980 RA: 2021/IS 2720 (Part 8) 1983 RA:2020 |
| 10.                  | Mechanical | Soil  | Permeability                                    | IS 2720 (Part 17) 1986 RA:2021                               |
| 11.                  | Mechanical | Soil  | Specific Gravity                                | IS 2720 (Part 3) 1980 RA: 2021                               |
| 12.                  | Mechanical | Soil  | Swelling Pressure                               | IS 2720 (Part 41) 1977 RA:2021                               |
| 13.                  | Mechanical | Soil  | Unconfined Compressive Strength                 | IS 2720 (Part X) 1991 RA: 2020                               |
| 14.                  | Mechanical | Soil  | Water Content                                   | IS 2720 (Part 2) 1973 RA: 2020                               |
| 15.                  | Chemical   | Soil  | Chloride  | BS 1377 (Part 3) 2018  |
| 16.                  | Chemical   | Soil  | pH Value  | IS 2720 (Part 26) 1987 RA:2021                               |
| 17.                  | Chemical   | Soil  | Soluble Sulphate                                | IS 2720 (Part 27) 1977 RA:2022                               |
| 18.                  | Mechanical | Rock  | Bulk Density of Rock                            | IS 13030 1991 RA: 2016                                       |
| 19.                  | Mechanical | Rock  | Geological Classification of Rock               | IS 4464: 2020  |
| 20.                  | Mechanical | Rock  | Modulus of Elasticity                           | IS 9221 1979 RA: 2016  |
| 21.                  | Mechanical | Rock  | Point Load Strength Index                       | IS 8764 1998 RA: 2019  |
| 22.                  | Mechanical | Rock  | Poisson's Ratio                                 | IS 9221 1979 RA: 2016  |
| 23.                  | Mechanical | Rock  | Porosity  | IS 13030 1991 RA: 2016                                       |
| 24.                  | Mechanical | Rock  | Relative Density                                | IS 13030 1991 RA: 2016                                       |
| 25.                  | Mechanical | Rock  | Unconfined Compressive Strength                 | IS 9143 1979 RA: 2016  |
| 26.                  | Mechanical | Rock  | Water Content/Absorption                        | IS 13030 1991 RA: 2016                                       |
| 27.                  | Mechanical | Rock  | Slake Durability Test                           | IS 10050 1981 RA: 2016                                       |
| 28.                  | Chemical   | Water | pH value  | IS 3025 (Part 11) 2022                                       |
| 29.                  | Chemical   | Water | Chloride (Cl)                                   | IS 3025 (Part 32) 1988 RA:2019                               |
| 30.                  | Chemical   | Water | Sulphate (as SO <sub>3</sub> )                  | IS 3025 (Part 24) Sec 1 (2022)                               |
| <b>In-situ tests</b> |            |       |   |  |

|           |            |      |   |                             |
|-----------|------------|------|---|-----------------------------|
| <b>31</b> | Mechanical | Rock | Pressure Meter Test (Menard Method)   | IS 1892                     |
| <b>32</b> | Mechanical | Rock | Pressure Meter test (OYO Method)  | IS 12955 (Part 2)           |
| <b>33</b> | Mechanical | Soil | Drilling in Soil Standard Penetration Test (SPT) by Automatic and Manual method | IS 2131: 1981               |
| <b>34</b> | Mechanical | Soil | Electrical Resistivity Tests (ERT)  | IS: 3043: 2018 and IS:15736 |
| <b>35</b> | Mechanical | Soil | Field Permeability test   | IS 5529 (Part 1)            |



**SECTION– VIII**

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**FINANCIAL BID**

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8.1 FORM OF QUOTATION

Form of Quotation  
for

**Hiring of Agency for carrying out Geotechnical Investigation for MBRAPP -1 to 4**

To,  
The Chief Engineer (INFS-III)  
WAPCOS Ltd.  
76-C, Institutional Area, Sector-18  
Gurgaon, Haryana – 122 015.  
Tel – 0124-2399431 / 2399427  
Fax No. 2397392

I/We the undersigned, having carefully examined and understood the documents on which quotation to be based, hereby agree to carry out the aforesaid work in conformity with the specifications and terms and condition as specified in the document.

This price will remain valid for Ninety (120) days from the date of submission of bid. Unless and until a formal contract is prepared and executed, this quotation, together with your acceptance thereof, shall constitute a binding contract between us.

I/We undersigned, that you are not bound to accept the lowest or any quotation you may receive.

Signed this \_\_\_\_\_ day \_\_\_\_\_ 2024

Signature and seal of bidder

Or Authorized representative

|                 |   |
|-----------------|---|
| Name of firm    | : |
| Address of firm | : |
| Telephone No.   | : |
| Fax No.         | : |
| E-mail          | : |

## FINANCIAL BID

### Hiring of Agency for carrying out Geotechnical Investigation for MBRAPP -1 to 4

#### (Bill of quantities)

The rate shall be inclusive of all allied works as mentioned in Scope of Work/Terms of Reference. The rate quoted should be exclusive of GST.

| Geotechnical Investigation for Mahi reservoir and pipe line corridor in Banswara District, Rajasthan |  |      |   |      |        |
|--|--|------|---|------|--------|
| S.No.  | Item Description   | Unit | Quantity  | Rate | Amount |
|  | <b>GEOTECHNICAL INVESTIGATION</b>  |      |   |      |        |
| <b>1</b>   |  |      |   |      |        |
|  | Identification of utilities at borehole location, making 150 mm nominal diameter bore holes at various locations in all types of soils and NX size (76 mm dia) in rock using suitable approved method (IS 4464) of <b>double/ triple tube</b> boring including local shifting, chiselling, cleaning, providing retrievable casing pipe as required or as directed (which can be reused or taken back by the Contractor), performing Standard Penetration Tests (As per IS:2131) at every <b>1.5 m</b> intervals and at change of strata; collection of undisturbed soil samples, observations such as ground water level etc., collection of water samples; transportation of all the collected samples to the laboratory, complete as per specification and instructions of the Employer's Representative, for depths below Natural Ground Level including submission of Factual Report and subsequence to submission of Geotechnical Investigation Report as given below: <b>34 Nos.</b> of bore holes (may change as per site conditions) |      | 34 nos. of bore hole with depth of exploration ranging upto 20m to 40m) |      |        |
| <b>a</b>   | boring in soil from EGL to refusal (N>100)   | Rm   | 50  |      |        |
| <b>b</b>   | drilling ( <b>Double/ Triple tube core barrel</b> ) in all type of Rock (Weathred/ Soft/Hard Rock) : <b>Core Recovery&gt;0%</b> ;  | Rm   | 830   |      |        |
| <b>2</b>   | <b>Other Field Tests:</b><br><b>All the test parameters should be NABL accredited</b>  |      |   |      |        |
| <b>i</b>   | Trial pits (1.5 x 1.5 x 2.0) Cum   | Nos. | 5   |      |        |
| <b>ii</b>  | UDS collected in every 3 m interval from EGL up to 15m depth   | Nos. | 30  |      |        |
| <b>iii</b>   | Pressure meter test (Menard/OYO)   | Nos. | 41  |      |        |
| <b>iv</b>  | Earth resistivity test (Wenner's method ) covering in all 8 directions shall be conducted. Spacing of electrode shall vary. from 0.2 , 0 .4, 0 .6, 0 .8, 2 ,5,10,15 M.   | Nos. | 5   |      |        |
| <b>v</b>   | Conducting field CBR tests (in saturated condition) at various locations, and depth, all complete including saturation as per specification and directions of the Engineer at 0 m ( G L ) , 0 . 3 0 m a n d 0.5 m depth BGL  | Nos. | 5   |      |        |
| <b>vi</b>  | Field Permeability test of soil/rock   | Nos. | 30  |      |        |

|      |   |          |    |  |  |
|------|---|----------|----|--|--|
| vii  | CHST: ASTM code to assess subsurface structure, thickness of layers, velocities of body waves, soil amplification factors up to a depth of not less than 20 mts below the existing ground level. <b>Including drilling of 3 Bore holes</b> and performing CHST test according to ASTM D4428/ D4428M   | Nos.     | 1  |  |  |
| 3    | <b>Lab Tests for Soils</b><br><b>Conducting various Laboratory tests on SPT/UDS soil samples collected at every 1.5/3 m interval from EGL, at any Laboratory Testing Facility accredited the parameters by NABL and accreditation in compliance with ISO/IEC 17025 for laboratory testing and calibration scopes, including preparation of soil samples to determine the following properties of soil, all complete as per specifications</b> |          |    |  |  |
| i    | Water Content   | Nos.     | 30 |  |  |
| ii   | Conducting Grain size analysis, Particle size & percent fines distribution of soil and soil classification (IS 1498), (Sieve analysis & Hydrometer) including Grain Size Distribution curve as per drawings, on Disturbed soil samples obtained from SPT or undisturbed samples as per specifications, IS 2720 (part-4).  | Nos.     | 32 |  |  |
| iii  | Atterberg Limits (Liquid, Plastic, and Shrinkage limits) as per the Specification IS 2720 (Part-5)  | Nos.     | 30 |  |  |
| iv   | Specific gravity  | Nos.     | 30 |  |  |
| v    | Swell pressure and Free Swell index   | Nos.     | 30 |  |  |
| vi   | Proctor Compaction test   | Nos.     | 5  |  |  |
| vii  | Laboratory CBR as per IS 2720 (part 16)   | Nos.     | 5  |  |  |
| viii | Consolidation Test (1 per Bore hole)  | Nos.     | 10 |  |  |
| ix   | Relative Density (for sand)   | Nos.     | 30 |  |  |
| x    | Unconfined Compression Test   | Nos.     | 10 |  |  |
| xi   | Direct Shear Test (in case of cohesion-less and c-soil)   | Nos.     | 10 |  |  |
| xii  | Triaxial Test   | Nos.     | 4  |  |  |
| xiii | Laboratory Permeability Test  | Nos.     | 10 |  |  |
| xiv  | Chemical analysis of soil to determine the, pH, Chloride, Sulphate  | Nos.     | 10 |  |  |
| 4    | <b>Laboratory Tests for Rock</b>  |          |    |  |  |
| i    | Bulk Density and Water content  | Nos.     | 60 |  |  |
| ii   | Porosity and water absorption test  | Nos.     | 60 |  |  |
| iii  | Unconfined compressive strength test  | Nos.     | 60 |  |  |
| iv   | Point load index test   | Nos.     | 60 |  |  |
| v    | Slake durability test   | Nos.     | 20 |  |  |
| 5    | Slope Stability analysis  | Lump sum | 3  |  |  |
| 6    | Preparation and Submission of report with recommendation of type of foundation and allowable bearing pressures for the soil at various depths. (01 soft & 01 Hard Copy)   | Lump sum | 1  |  |  |
|      | <b>Total Amount (excl. GST)</b>   |          |    |  |  |

**NOTE:**

1. Slope Stability Analysis will be done on 3 different sections of road.
2. Depth of Exploration of borehole will be 8m minimum from pile founding level.
3. Pressure meter tests will be done as per ISO 22476-4, ASTM D 4719.
4. Depth of Borehole at PWPH location is given from Foundation level.

**Date:**

**Place:**

**Signature(s) of Bidder (s)**

**Name & designation**

**Quantity mentioned above in BoQ are tentative in nature and payment shall be made on the actual executed quantity.**

**Important Note for submission of online tender:**

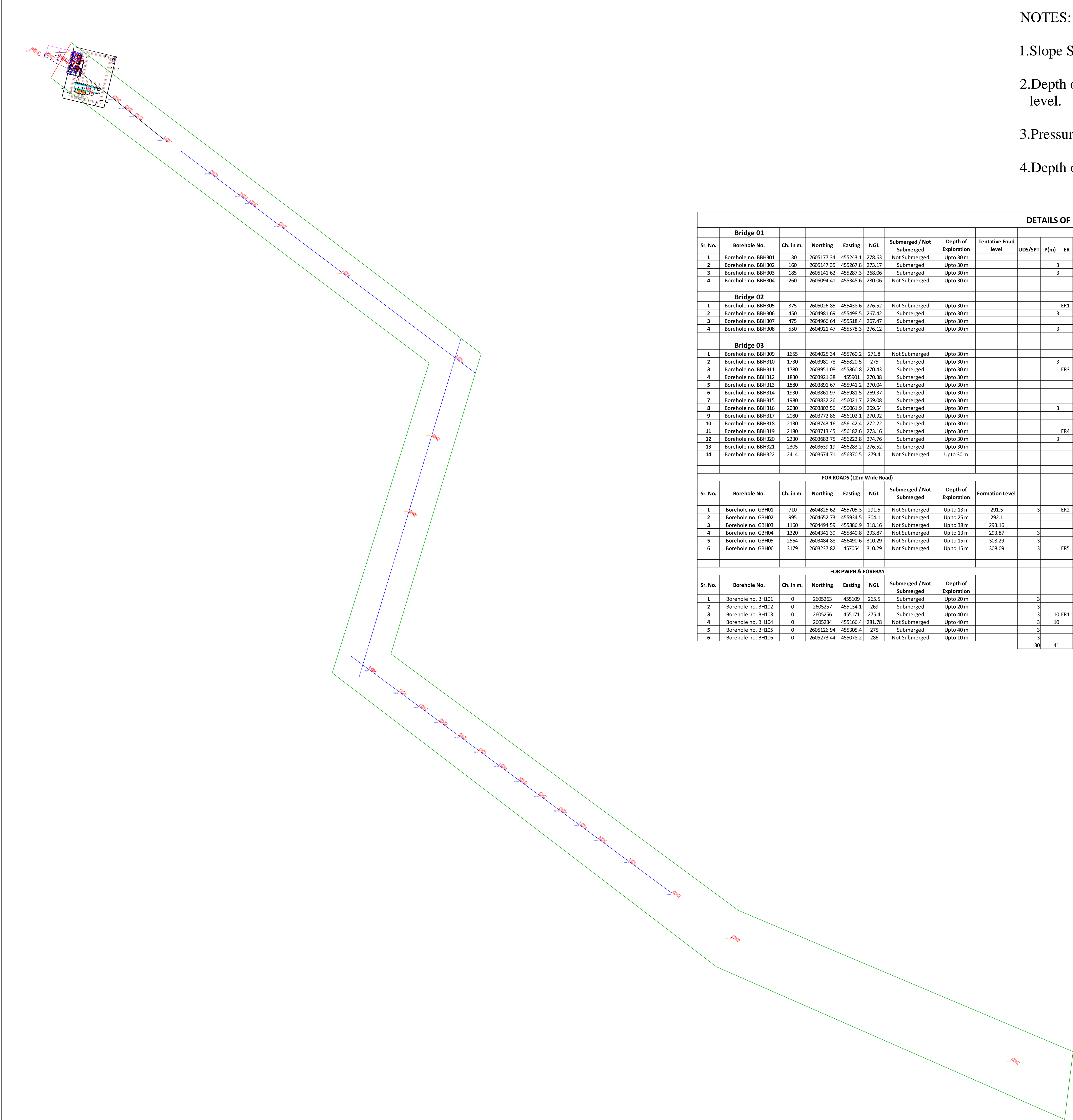
- 1) Do not fill BoQ at the time of submission of technical bid.
- 2) The above financial proposal is to be filled by bidder in the excel file attached in online portal. After that, same filled excel file, will be uploaded by bidder at the submission of Price Bid. Only cyan Colored cells are to be filled by the bidders.
- 3) Bidders will also have to fill the total bid amount on e-gem portal apart from this excel BoQ. The consolidated amount (as obtained in "Total") to be filled in the E-Gem portal should be inclusive of GST [@18%](#)

The Bill of quantity of tender is attached in Microsoft Excel format, bidder shall fill the rates and corresponding amounts only in soft format. The bidder will upload same filled soft Microsoft Excel copy during uploading of financial bid.

**Note:**

- **Payment shall be made on the basis of "Payment Schedule/ Terms of Payment",**
- In case of any discrepancy between the rates quoted in figures and words, then the rate quoted by the contractor in words shall be taken as correct.
- The quantity is tentative only and may decrease or increase as per the job requirements. The rates quoted above all items by the agency should be inclusive of expenditure on manpower deployment, & all other taxes etc. as applicable.
- GST as applicable shall be paid on submission of proofs.
- *The Rates are including cost of tools, equipment's, mobilization, demobilization, pontoon, machinery etc.*
- Payment will be made according to actual executed quantity and same unit price.
- Payment shall be made to the agency on receipt of the payment from the client (Back-to-Back basis)
- WAPCOS Limited will not pay any amount as advance to the selected bidder.

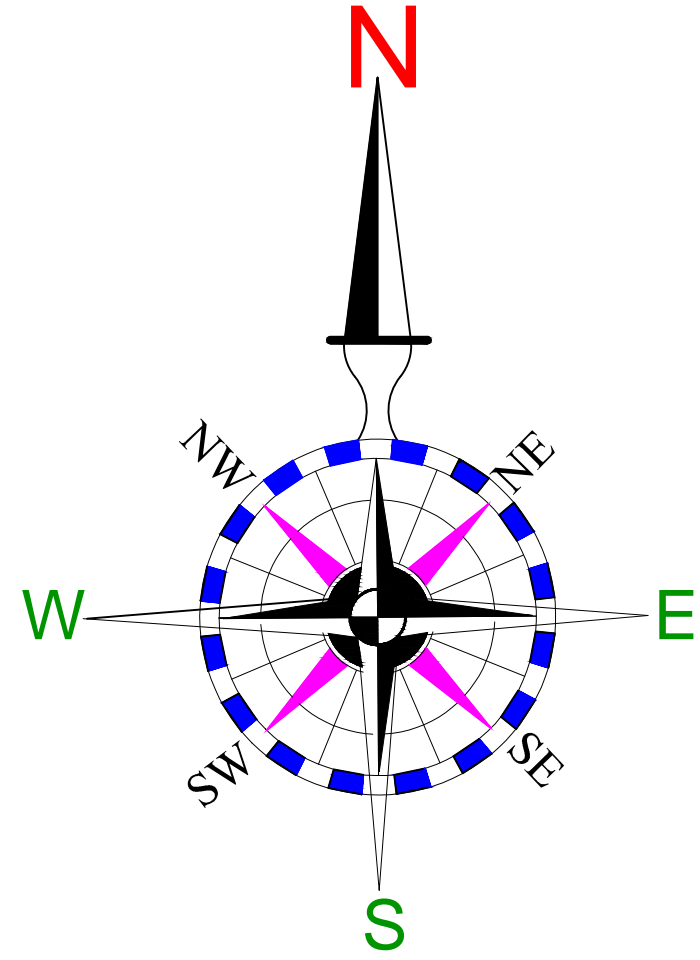
- All tests should be carried out through NABL accredited laboratory.
- Do not fill the Summary of Cost (BOQ) at the time of submission of technical bid.
- Details of tests to be carried out on samples are mentioned in Section 7.
- No additional payment will be allowed above the rates quoted on any account.



NOTES:

- 1.Slope Stability analysis will be done on 3 different sections of road.
- 2.Depth of Borehole exploration will be 8m minimum from pile founding level.
- 3.Pressuremeter tests will be done as per ISO 22476-4, ASTM D 4179.
- 4.Depth of Borehole at PWPH location is given from foundation level

| DETAILS OF BOREHOLES       |                     |           |            |          |        |                           |                      |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
|----------------------------|---------------------|-----------|------------|----------|--------|---------------------------|----------------------|----------------------|---------|---------|-----|------|------|----|----|-----|----|----|----|------|-----|-----|----|-----|---------|------|----|-------|------|------|------|------|----|----|
| Bridge 01                  |                     |           |            |          |        |                           |                      |                      |         | On Soil |     |      |      |    |    |     |    |    |    |      |     |     |    |     | On Rock |      |    |       |      |      |      |      |    |    |
| Sr. No.                    | Borehole No.        | Ch. in m. | Northing   | Easting  | NGL    | Submerged / Not Submerged | Depth of Exploration | Tentative Foud level | UDS/SPT | P(m)    | ER  | K(F) | CBRI | Wc | S  | ABL | G  | Sw | Ct | CBRI | UCT | Cst | Dr | DST | TAT     | K(I) | CA | Yt&Wc | N&Ws | UCSr | PLIr | SDTr |    |    |
| 1                          | Borehole no. BBH301 | 130       | 2605177.34 | 455243.1 | 278.63 | Not Submerged             | Upto 30 m            |                      |         |         |     |      |      | 3  | 2  | 2   | 2  | 2  | 2  |      |     |     |    |     |         |      |    | 1     | 2    | 2    | 2    | 2    |    |    |
| 2                          | Borehole no. BBH302 | 160       | 2605147.35 | 455267.8 | 273.17 | Submerged                 | Upto 30 m            |                      |         | 3       |     | 3    |      |    |    |     |    |    |    |      |     | 1   | 1  | 2   | 1       |      |    | 1     | 1    | 1    | 1    | 1    |    |    |
| 3                          | Borehole no. BBH303 | 185       | 2605141.62 | 455287.3 | 268.06 | Submerged                 | Upto 30 m            |                      |         | 3       |     | 3    |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    | 1     | 1    | 1    | 1    | 1    |    |    |
| 4                          | Borehole no. BBH304 | 260       | 2605094.41 | 455345.6 | 280.06 | Not Submerged             | Upto 30 m            |                      |         |         |     | 3    |      | 2  | 2  | 2   | 2  | 2  |    |      |     | 1   | 1  | 2   | 1       |      | 1  | 2     | 2    | 2    | 2    | 2    |    |    |
| Bridge 02                  |                     |           |            |          |        |                           |                      |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
| 1                          | Borehole no. BBH305 | 375       | 2605026.85 | 455438.6 | 276.52 | Not Submerged             | Upto 30 m            |                      |         |         | ER1 |      |      |    | 2  | 2   | 2  | 2  | 2  |      |     |     |    | 2   |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 2                          | Borehole no. BBH306 | 450       | 2604981.69 | 455498.5 | 267.42 | Submerged                 | Upto 30 m            |                      |         | 3       |     | 3    |      | 1  | 1  | 1   | 1  | 1  |    |      |     | 1   | 1  | 1   | 1       |      | 1  | 1     | 1    | 1    | 1    | 1    |    |    |
| 3                          | Borehole no. BBH307 | 475       | 2604966.64 | 455518.4 | 267.47 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      | 2  | 2  | 2   | 2  | 2  |    |      |     |     | 2  |     |         |      |    |       | 1    | 1    | 1    | 1    |    |    |
| 4                          | Borehole no. BBH308 | 550       | 2604921.47 | 455578.3 | 276.12 | Submerged                 | Upto 30 m            |                      |         | 3       |     |      |      |    |    |     |    |    |    |      |     | 1   | 1  |     | 1       |      | 1  | 1     | 1    | 1    | 1    | 1    |    |    |
| Bridge 03                  |                     |           |            |          |        |                           |                      |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
| 1                          | Borehole no. BBH309 | 1655      | 2604025.34 | 455760.2 | 271.8  | Not Submerged             | Upto 30 m            |                      |         |         |     |      |      |    | 2  | 2   | 2  | 2  | 2  |      |     |     | 1  | 2   | 1       |      |    | 1     | 1    | 1    | 1    | 1    |    |    |
| 2                          | Borehole no. BBH310 | 1730      | 2603980.78 | 455820.5 | 275    | Submerged                 | Upto 30 m            |                      |         | 3       |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 3                          | Borehole no. BBH311 | 1780      | 2603951.08 | 455860.8 | 270.43 | Submerged                 | Upto 30 m            |                      |         |         | ER3 | 3    |      | 2  | 2  | 2   | 2  | 2  |    |      |     | 1   | 1  | 2   | 1       |      | 1  | 2     | 2    | 2    | 2    | 2    |    |    |
| 4                          | Borehole no. BBH312 | 1830      | 2603921.38 | 455901   | 270.38 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 5                          | Borehole no. BBH313 | 1880      | 2603891.67 | 455941.2 | 270.04 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      | 1  | 1  | 1   | 1  | 1  |    |      |     | 1   | 1  | 1   | 1       |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 6                          | Borehole no. BBH314 | 1930      | 2603861.97 | 455981.5 | 269.37 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 7                          | Borehole no. BBH315 | 1980      | 2603832.26 | 456017.1 | 269.08 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      | 2  | 2  | 2   | 2  | 2  |    |      |     | 1   | 2  | 1   |         |      | 1  | 2     | 2    | 2    | 2    | 2    |    |    |
| 8                          | Borehole no. BBH316 | 2030      | 2603802.56 | 456061.9 | 269.54 | Submerged                 | Upto 30 m            |                      |         | 3       |     | 3    |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 9                          | Borehole no. BBH317 | 2080      | 2603772.86 | 456102.1 | 270.92 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      | 1  | 1  | 1   | 1  | 1  |    |      |     | 1   | 1  | 1   |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 10                         | Borehole no. BBH318 | 2130      | 2603743.16 | 456142.4 | 272.22 | Submerged                 | Upto 30 m            |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 11                         | Borehole no. BBH319 | 2180      | 2603713.45 | 456182.6 | 273.16 | Submerged                 | Upto 30 m            |                      |         |         | ER4 |      |      | 2  | 2  | 2   | 2  | 2  |    |      |     | 1   | 2  |     |         | 1    |    |       | 2    | 2    | 2    | 2    |    |    |
| 12                         | Borehole no. BBH320 | 2230      | 2603683.75 | 456222.8 | 274.76 | Submerged                 | Upto 30 m            |                      |         | 3       |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| 13                         | Borehole no. BBH321 | 2305      | 2603639.19 | 456283.2 | 276.52 | Submerged                 | Upto 30 m            |                      |         |         |     | 3    |      | 2  | 2  | 2   | 2  | 2  |    |      |     | 1   | 1  | 2   |         |      | 1  | 2     | 2    | 2    | 2    | 2    |    |    |
| 14                         | Borehole no. BBH322 | 2414      | 2603574.71 | 456370.5 | 279.4  | Not Submerged             | Upto 30 m            |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    |    |    |
| FOR ROADS (12 m Wide Road) |                     |           |            |          |        |                           |                      |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
| Sr. No.                    | Borehole No.        | Ch. in m. | Northing   | Easting  | NGL    | Submerged / Not Submerged | Depth of Exploration | Formation Level      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
| 1                          | Borehole no. GBH01  | 710       | 2604825.62 | 455705.3 | 291.5  | Not Submerged             | Up to 13 m           | 291.5                | 3       |         | ER2 |      |      | 1  | 2  | 2   | 2  | 2  | 2  | 1    | 1   | 1   | 1  | 2   | 1       | 1    | 1  | 1     | 2    | 2    | 2    | 2    | 2  |    |
| 2                          | Borehole no. GBH02  | 995       | 2604652.73 | 455934.5 | 304.1  | Not Submerged             | Up to 25 m           | 292.1                |         |         |     |      |      | 1  | 2  | 2   | 2  | 2  | 2  | 1    | 1   |     | 2  |     | 1       | 1    |    |       | 2    | 2    | 2    | 2    | 2  |    |
| 3                          | Borehole no. GBH03  | 1160      | 2604494.59 | 455886.9 | 318.16 | Not Submerged             | Up to 38 m           | 293.16               |         |         |     |      |      | 1  | 1  | 1   | 1  | 1  | 1  | 1    | 1   |     | 1  |     |         |      | 1  | 2     | 2    | 2    | 2    | 2    | 2  |    |
| 4                          | Borehole no. GBH04  | 1320      | 2604341.39 | 455840.8 | 293.87 | Not Submerged             | Up to 13 m           | 293.87               | 3       |         |     |      |      | 1  | 2  | 2   | 2  | 2  | 2  | 1    | 1   |     | 2  |     |         |      |    | 1     | 2    | 2    | 2    | 2    | 2  |    |
| 5                          | Borehole no. GBH05  | 2564      | 2603484.88 | 456090.6 | 310.29 | Not Submerged             | Up to 15 m           | 308.29               | 3       |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    | 3     | 2    | 2    | 2    | 2    | 2  |    |
| 6                          | Borehole no. GBH06  | 3179      | 2603237.82 | 457054   | 310.29 | Not Submerged             | Up to 15 m           | 308.09               | 3       |         | ER5 |      |      | 1  | 2  | 2   | 2  | 2  | 2  | 1    | 1   |     | 2  |     | 1       | 1    |    | 2     | 2    | 2    | 2    | 2    | 2  |    |
| FOR PWPH & FOREBAY         |                     |           |            |          |        |                           |                      |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
| Sr. No.                    | Borehole No.        | Ch. in m. | Northing   | Easting  | NGL    | Submerged / Not Submerged | Depth of Exploration |                      |         |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       |      |      |      |      |    |    |
| 1                          | Borehole no. BH101  | 0         | 2605263    | 455109   | 265.5  | Submerged                 | Upto 20 m            |                      | 3       |         |     | 3    |      |    |    |     |    |    |    |      |     | 1   |    |     |         |      |    |       | 2    | 2    | 2    | 2    | 1  |    |
| 2                          | Borehole no. BH102  | 0         | 2605257    | 455134.1 | 269    | Submerged                 | Upto 20 m            |                      | 3       |         |     |      |      |    |    |     |    |    |    |      |     | 1   |    |     |         |      |    |       | 1    | 1    | 1    | 1    | 1  |    |
| 3                          | Borehole no. BH103  | 0         | 2605256    | 455171   | 275.4  | Submerged                 | Upto 40 m            |                      | 3       | 10      | ER1 |      |      |    |    |     |    |    |    |      |     | 1   |    |     |         |      |    |       | 2    | 2    | 2    | 2    | 1  |    |
| 4                          | Borehole no. BH104  | 0         | 2605234    | 455166.4 | 281.78 | Not Submerged             | Upto 40 m            |                      | 3       | 10      |     | 3    |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    | 2  |    |
| 5                          | Borehole no. BH105  | 0         | 2605126.94 | 455305.4 | 275    | Submerged                 | Upto 40 m            |                      | 3       |         |     |      |      |    |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 1    | 1    | 1    | 1    | 1  |    |
| 6                          | Borehole no. BH106  | 0         | 2605273.44 | 455078.2 | 286    | Not Submerged             | Upto 10 m            |                      | 3       |         |     |      |      | 2  |    |     |    |    |    |      |     |     |    |     |         |      |    |       | 2    | 2    | 2    | 2    | 2  |    |
|                            |                     |           |            |          |        |                           |                      |                      | 30      | 41      |     |      | 30   | 5  | 30 | 32  | 30 | 30 | 30 | 5    | 5   | 10  | 10 | 30  | 10      | 4    | 10 | 10    |      | 60   | 60   | 60   | 60 | 20 |




ABBREVIATIONS

| Test                | Symbol |
|---------------------|--------|
| Pressuremeter       | P(m)   |
| Earth Resistivity   | ER     |
| Field Permeability  | K(F)   |
| CBR                 | CBRf   |
| Water Content       | Wc     |
| Grain Size Analysis | S      |
| Atterberg Limits    | ABL    |
| Specific Gravity    | G      |

|                                     |    |
|-------------------------------------|----|
| Swell Pressure and Free Swell Index | Sw |
|-------------------------------------|----|

|  |      |
|--|------|
| Proctor Compaction Test  | Ct   |
| Lab CBR  | CBRI |
| Unconfined Compression   |      |
| Test   | UCT  |
| Consolidation Test   | Cst  |
| Relative Density   | Dr   |
| Direct Shear Test  | DST  |
| Triaxial Test  | TAT  |
| Lab Permeability   | K(I) |
| Chemical analysis of soil to determine the, pH, Chloride, Sulphate | CA   |

| Test (Rock)                          | Symbol |
|--------------------------------------|--------|
| Bulk Density and Water content       | Yt&Wc  |
| Porosity and water absorption test   | N&Ws   |
| Unconfined compressive strength test | UCSr   |
| Point load index test                | PLIr   |
| Slake durability test                | SDTr   |

|   |                 |             |                |       |               |
|---|-----------------|-------------|----------------|-------|---------------|
| ISSUE No.   | REV. No.        | DESCRIPTION | DATE           | APPD. | ISSUE SHT.No. |
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| TITLE :-  |                 |             |                |       |               |
| BOREHOLE LOCATION FOR GEOTECHNICAL INVESTIGATIONS   |                 |             |                |       |               |
| DES'D. DATE   | DRN. DATE       | REV'D. DATE |                |       |               |
| DES. CHKD. DATE   | DRG. CHKD. DATE | APPD. DATE  |                |       |               |
| PROJECT:  |                 |             | SCALE:- 1:3330 |       |               |
| CARRYING OUT SYSTEM DESIGN AND ENGINEERING SERVICE FOR INTAKE, OUTFALL AND ALLIED WORK OF RAWA-BANGHAWA RAJASTHAN ATOMIC POWER PROJECT (MBRAPP)   |                 |             | PROJECTION     |       |               |
| DRG. No.- WAPI/PI/MBRAPPY BOREHOLE LOCATION   |                 |             |                |       |               |
| REVNO   |                 |             |                |       |               |
| DRG. TO BE READ IN CONJUNCTION WITH DRAWING NO. IF ANY  |                 |             |                |       |               |
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