



**NOTICE INVITING TENDER**

**FOR**

**DRILLING & DEVELOPMENT OF TUBEWELL**

**(PACKAGE-IV)**

**AT**

**GORAKHPUR, UTTAR PRADESH**

**NIT NO. : PNP/5001/E/103**

**PREPARED AND ISSUED BY**



**PROJECTS & DEVELOPMENT INDIA LTD.**  
**(A Govt. of India Enterprise)**  
**PDIL Bhawan, A-14, Sector-1,**  
**NOIDA-201301, U.P., India**

*January, 2018*

	<b>PROJECTS &amp; DEVELOPMENT INDIA LIMITED</b>	PNPM/5001/E/103/P -I/LIB	0	
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## LETTER INVITING BID

**NIT NO. : PNP/5001/E/103**

**SUBJECT : DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

### (OPEN DOMESTIC COMPETITIVE BIDDING)

Dear Sir(s),

Projects and Development India Limited (PDIL), hereinafter referred to as CONSULTANT on behalf of Hindustan Urvarak & Rasayan Ltd. (HURL), hereinafter referred as OWNER, has the pleasure of inviting eligible bidders to submit Bid ONLINE through Central Public Procurement (CPP) Portal in Single Phase Two Bid System, for the subject Project in compliance with the NIT. The entire set of Bidding documents is also placed on the website at HURL website [www.hurl.net.in](http://www.hurl.net.in), PDIL website [www.pdilin.com](http://www.pdilin.com), and CPP Portal <http://eprocure.gov.in/cppp/>

#### **BRIEF SCOPE OF WORK:**

To meet the requirement of Construction Water, Installation of Tubewells is required. The Scope of Work consists of mainly but not limited to the followings:-

- a.) Supply and Installation of Tubewells.
- b.) Supply & Erection of Aboveground Piping Works from Tubewell to Existing Water Tank.
- c.) Supply, Installation and Commissioning of Pumps at Existing Water Tank.
- d.) Construction of Pump House
- e.) Renovation of Existing Water Tank

#### **REFER SECTION-B, TECHNICAL PART FOR DETAILED SCOPE OF WORK**

**NIT Document consists of:**

**SECTION-A : COMMERCIAL PART**  
**SECTION-B : TECHNICAL PART**



TENDER DOCUMENT FOR DRILLING AND  
DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT  
GORAKHPUR, UTTAR PRADESH  
**LETTER INVITING BID**

PNPM/5001/E/103/P  
-I/LIB

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**SALIENT FEATURES OF NIT :**

1.	<b>NIT NO.</b>	<b>PNPM/5001/E/103</b>
2.	Issue Date	12.01.2018
3.	Last Date & Time for Submission of Technical & Commercial Bid and Priced Bid (ONLINE through CPP)	30.01.2018, at 12:00 hrs. (IST)
4.	Date & Time of opening of EMD and Technical and Commercial Bid	31.01.2018, at 12:00 hrs. (IST), at PDIL, Noida
5.	Earnest Money Deposit (EMD)	Rs.1,52,000.00 (Rupees One Lakh Fifty Two Thousand only)
6.	Submission of EMD, in Original, at PDIL Noida	On or before Bid Submission Date i.e. 30.01.2018.
7.	Time Schedule	<b>02 Months</b> from the Effective Date of Contract
8.	Address for Communication with	
8.1.	Projects & Development India Limited (PDIL)	Projects & Development India Limited, Project Management Department PDIL Bhawan, A-14, Sector-1, Noida, U.P., India  Kind Attention: Mr. Sumit Kumar Project Manager Tel no. : 0120-2529842, Extn. 374 Fax no. : +91-120-2529801 E-mail : <a href="mailto:sumit.kumar@pdilin.com">sumit.kumar@pdilin.com</a>
8.2.	Hindustan Urvarak & Rasayan Limited (HURL)	Hindustan Urvarak & Rasayan Ltd., Core-2, 2 <sup>nd</sup> Floor, Scope Minar, Laxmi Nagar District Centre, Delhi-92  Kind Attention : Mr. Manish Goyal Senior Project Manager Tel no. : 011-22502267 Email : <a href="mailto:goyalm@hurl.net.in">goyalm@hurl.net.in</a>
8.3.	Contact Person for Site visit	Contact Person: Mr. Subodh Dixit Senior Project Manager, HURL Fertilizer Plant (FCI), Gorakhpur Mob.: +91-551-2261758 E-mail: <a href="mailto:subodhdixit@hurl.net.in">subodhdixit@hurl.net.in</a>
8.4.	NIT overview on websites	“Letter Inviting Bid” & “Instruction to Bidders” is available at following websites: HURL ( <a href="http://www.hurl.net.in">www.hurl.net.in</a> ) PDIL ( <a href="http://www.pdilin.com">www.pdilin.com</a> ) CPP Portal ( <a href="http://www.eprocure.gov.in">www.eprocure.gov.in</a> )

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH LETTER INVITING BID</b>	PNPM/5001/E/103/P -I/LIB	0	
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The bidder shall submit the bid ONLINE through Central Public Procurement (CPP) Portal. However, Earnest Money Deposit (EMD) in original / Documentary evidences regarding EMD Exemption along with No Deviation Certificate and Integrity Pact shall be submitted at PDIL, Noida on or before Bid Submission Date.

MSEs (Micro & Small Enterprises) are also exempted from submission of EMD in accordance with the provisions of PPP-2012. MSEs (Micro & Small Enterprises) are exempted from submission of EMD in accordance with the provisions of PPP-2012. However, Traders/Dealers/Distributors/Stockiest/Wholesaler are not entitled for exemption of EMD.

OWNER/CONSULTANT reserves the right to accept/reject any or all Bids without assigning any reason whatsoever.

Bids complete in all respects should reach on or before the Bid Due Date and time. **Bids through Fax / E-mails will not be accepted.** OWNER / CONSULTANT take no responsibility for delay, loss or non-receipt of Bid sent by post/courier. Please be noted that all the dates mentioned herewith are firm and OWNER / CONSULTANT expect strict adherence since this is a priority project.

Transfer of Bidding Document is not permissible.

Bidder may depute their representative with proper authorization letter to attend Technical and Commercial opening of bids.



Eligible bidders are requested to confirm their intention, within seven (07) days from the placement of NIT at CPP Portal, to participate in subject bidding through a letter or fax message

Thanking you,

For & on behalf of  
Projects & Development India Ltd.





**SUMIT KUMAR  
PROJECT MANAGER**

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>	PNPM/5001/E/103/ MI	0	
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<b>MASTER INDEX</b>				

## MASTER INDEX

NIT NO. : PNPM/5001/E/103  
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(PACKAGE-IV) AT GORAKHPUR, U.P.

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**SECTION-A**  
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**SECTION-A : COMMERCIAL**

**ATTACHMENT – 1.0**

**INSTRUCTIONS TO BIDDERS**



0	11.01.2018	FOR TENDER	SK	KJ	RRK
<b>REV.</b>	<b>DATE</b>	<b>PURPOSE</b>	<b>PREPARED</b>	<b>REVIEWED</b>	<b>APPROVED</b>



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## INSTRUCTION TO BIDDERS

### 1.0 INTRODUCTION

1.1. Government of India has formed a joint venture company of M/s. National Thermal Power Corporation Ltd. (NTPC), M/s. Coal India Limited (CIL), M/s. Indian Oil Corporation Ltd. (IOCL) & FCIL/HFCL by name M/s Hindustan Urvarak & Rasayan Ltd. (HURL) hereinafter also referred to as "OWNER", for setting up a brown field Ammonia Urea Complex along with its associated offsite & utility facilities at existing fertilizer complex of FCIL, Gorakhpur, in the State of Uttar Pradesh.

1.1.1 Projects & Development India Ltd. (PDIL) has been retained as Consultant for providing Engineering Consultancy Services and Project Management Services for the aforesaid project.

### 1.2 LOCATION OF THE PROJECT SITE

The existing Gorakhpur Fertilizer unit of FCIL is located at about 12 km north from Gorakhpur town in eastern part of Uttar Pradesh on NH-28. It has good connectivity both by road and rail. The nearest airport Gorakhpur Air Port which is 21 km from Gorakhpur Fertiliser unit and has flights to and from Delhi via Lucknow and Kolkata via Patna.

### 2.0 SCOPE OF PROPOSAL



To meet the requirement of Construction Water, installation of Tubewells is required. The Scope of Work consists of mainly but not limited to the followings:-

- a.) Supply and Installation of Tubewells.
- b.) Supply & Erection of Aboveground Piping Works from Tubewell to Existing Water Tank.
- c.) Supply, Installation and Commissioning of Pumps at Existing Water Tank.
- d.) Construction of Pump House.
- e.) Renovation of Existing Water Tank.

**REFER SECTION-B, TECHNICAL PART FOR DETAILED SCOPE OF WORK**

### 3.0 BIDDING DOCUMENTS

The bidder is expected to examine the bidding documents, including all instructions, Pre-Qualification Criteria, Forms, Annexure, Terms and Conditions of Contract, Specifications, Drawings and other documents and to fully familiarize itself with the requirements of the bidding documents. Failure to furnish all the information required by the Bidding Documents or the submission of a bid not substantially responsive to the Bidding Documents in every respect may result in the rejection of the Bid.

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In case of any inconsistency, in the interpretation of meaning of any part of this Tender Documents, the BIDDER shall give his best endeavor to resolve the inconsistency by expressing his assumption through his proposal to OWNER.

#### 4.0 AMENDMENT OF BIDDING DOCUMENTS

Bidders shall examine the Bidding documents thoroughly and inform the OWNER of any apparent conflict, discrepancy or error.

At any time prior to the deadline for submission of bids as well as upto priced bid opening, the OWNER may, for any reason whether at its own initiative or in response to a clarification or modification requested by any prospective Bidder(s), modify the Bidding documents, if required.

Notice of issuance of any Amendment to the bidding document (Corrigendum/Addendum/Amendment) if any, shall be hosted on PDIL website and shall not be advertised in press. The same shall also be notified in the websites of any one or more of the JV companies comprising HURL (viz. IOCL, NTPC, CIL & FCIL/HFCL). Bidders are therefore advised to visit the website regularly for downloading the details of amendment to bidding document. The Bidders will be required to acknowledge notification of any such amendment to the Bidding documents. Bidders shall confirm the inclusion of Addendum/Corrigendum in their bid and shall follow the instructions issued along with addendum/corrigendum

In order to afford Bidders reasonable time to take the amendment, issued prior to submission of Bids, into account in preparing their Bids, OWNER may, at its discretion, extend the deadline for the submission of Bids.

#### 5.0 LANGUAGE OF THE BID



The Bid prepared by the Bidders and all correspondence and documents relating to the Bid exchanged by the Bidder and the CONSULTANT/ OWNER shall be written in the English language and all units shall be in Metric system. Any printed literature furnished by the Bidder may be written in another language, provided that such literature is accompanied by an English translation, in which case, for purpose of interpretation of the Bid, the English translation shall govern.

#### 6.0 TIME SCHEDULE

6.1 Bidder shall be required to complete the WORK under the CONTRACT in accordance with the following:

<b>Project Completion Date</b>	<b>02 Months from Effective Date of Contract</b>
--------------------------------	--

6.2 The “**Effective Date of Contract**” shall be the date of issuance of LOI (Letter of Intent) by the Owner.

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>INSTRUCTIONS TO BIDDERS</b></p>	PNPM/5001/E/103/S- A/AT-1.0	0	
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6.3 The basic consideration and essence of the Contract is the strict adherence to the time schedules for performing the specified works as stipulated in the Contract.

## 7.0 SIGNATURE ON BIDS

7.1 The Bid must contain the name, designation and place of business of the person or persons making the Bid and must be signed and sealed, on each page, by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature. The Bidder shall submit authority letter / Power of Attorney / Board Resolution in favour of the authorized signatory(s) of the Bid. The Bidder's name stated on the proposal shall be the exact legal name of the Bidder.

7.2 Bids by bodies corporate/ limited Companies must be signed with the legal name of the Corporation/Limited Company by the President, Managing Director or by the Company Secretary or any other person or persons holding Power of Attorney for signing their Bid.

7.3 Power of Attorney issued by the Board of Directors / CEO / MD / Company Secretary of the Bidder/ all partners in case of Partnership Firm / Proprietor in favor of the authorized employee(s) of the Bidder, in respect of the particular tender for signing the Bid and all subsequent communications, agreements, documents etc. pertaining to the tender and to act and take any and all decision on behalf of the Bidder, is to be submitted. The authorized employee(s) of the Bidder shall be signing the Bid and any consequence resulting due to such signing shall be binding on the Bidder.

7.4 Bid shall contain no cuttings, erasures or overwriting except as necessary to correct errors made by the Bidder in which case each such corrections or other changes in the Bid documents shall carry the initials of the person(s) signing the Bid.

7.5 Bids not conforming to the above requirements of signing may be disqualified.

## 8.0 PRE-QUALIFICATION CRITERIA (PQC)

Evaluation of Technical and Commercial offers shall be carried out for only those Bidders who shall meet the Pre-qualification Criteria.

### 8.1 TECHNICAL CRITERIA

8.1.1 The Bidder, meeting the requirements as per clause 8.1.1 above, must have executed **Similar Works\*** during last seven (07) years ending last day of the month previous to the one on which NIT is invited, should be either of the following:



One completed Work with contract value not less than **INR 60.80 Lakhs**

OR

Two completed Works each works with contract value not less than **INR 38.00 Lakhs**

OR

Three completed Works each works with contract value not less than **INR 30.40 Lakhs**

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>INSTRUCTIONS TO BIDDERS</b></p>	PNPM/5001/E/103/S- A/AT-1.0	0	
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**\*Similar Works means : Procurement, Installation, Development, Testing & Commissioning of Tubewell along with Civil, Piping and Electrical Works in the field of Oil & Gas / Refinery / Power / Petrochemicals / Fertilizers / Railways sector.**

To meet the criteria (8.1.1) above, the bidder shall submit attested photo copies as a documentary proof of the following documents-



- i. Work Orders with full technical details including Detailed Scope of the Work and Completion Period.
- ii. Completion Certificate from End User/OWNER regarding satisfactory completion indicating the period of completion and contract value.

For clause 8.1.1, a Job executed by a Bidder for its own plant/ project cannot be considered as experience for the purpose of meeting PQC of the tender. However, jobs executed for Subsidiary / Fellow subsidiary / Holding company will be considered as experience for the purpose of meeting PQC subject to submission of tax paid invoice (s) duly certified by Statutory Auditor of the Bidder towards payments of statutory tax in support of the job executed for Subsidiary / Fellow subsidiary / Holding company. Such Bidders to submit these documents in addition to the documents specified to meet PQC.

## 8.2 FINANCIAL CRITERIA

- 8.2.1 Average Annual financial turnover during three (03) financial years i.e. 2016-17, 2015-16, and 2014-15 of the bidder meeting the requirement as per clause above experience criteria should be at least **INR 22.80 Lakhs**.
- 8.2.2 Net Worth of the Company should be positive during the last financial year ending 31st March 2017.
- 8.2.3 The Bidder will submit Solvency certificate not more than six months old from the date of issue of NIT from their Banker for a value not less than **INR 30.40 Lakhs** or minimum credit ratings of "A" from ICRA/CRISIL etc OR equivalent reputed institutions, OR financing / unutilized credit limits from bank of value not less than **INR 30.40 Lakhs** valid as on date of issue of ITB.

To meet the criteria (8.2.1 & 8.2.2) above, bidder shall submit Audited Annual Statements (Balance Sheet and Profit & Loss account) of the company for three (3) financial years i.e. 2016-17, 2015-16, and 2014-15.

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### 8.3 AUTHENTICATION OF ALL DOCUMENTS SUBMITTED AGAINST PQC

All documents in support of Technical criteria of PQC to be furnished by the bidders shall necessarily be:

Duly certified / attested by Notary Public with legible stamp.

In support of Financial criteria of PQC, bidder is required to submit following

Shall submit "Details of Financial capability of Bidder" in prescribed format (as per Annexure-1.21), duly signed & stamped by a Chartered Accountant.

Further, a copy of Audited Annual Financial Statements submitted in bid shall be duly certified / attested by Notary Public with legible stamp.

Note : The Authentication of PQC Documents of the Bidders Qualified after Techno-commercial (unpriced) Evaluation may be checked through Original documents.

### 9.0 EARNEST MONEY DEPOSIT (EMD) AND COMPLIANCE TO ALL THE PROVISIONS OF THE BIDDING DOCUMENT/NIL DEVIATION

#### 9.1 EARNEST MONEY DEPOSIT (EMD)



- 9.1.1 Bids must be accompanied with 'Earnest Money Deposit (EMD) / Bid Security' in the form of 'Demand Draft' or 'Banker's Cheque' or 'Bank Guarantee'. The amount of EMD shall be as indicated in the LIB (Letter Inviting Bid). The Bidder shall furnish as part of his Bid, EMD in the form of a Bank guarantee.
- 9.1.2 In case EMD is submitted in form of BG, then the EMD offered shall be an irrevocable Bank Guarantee, issued by any scheduled nationalized bank on a non judicial stamp paper of appropriate value, on a stamp paper of appropriate value. Proforma of the Bank guarantee is enclosed as Annexure-1.11.
- 9.1.3 The Bank Guarantee shall be valid for a period of three (3) months beyond validity of the Bid. The amount shall be as indicated in the Letter Inviting Bid for this NIT. The Bank Guarantee shall be extended suitably if there is a delay in awarding the contract. The relevant extension shall be on Bidders' account.

OR

EMD can also be furnished in the form of Demand Draft in favour of **M/s. Hindustan Urvarak & Rasayan Limited, payable at Delhi** for value as outlined in the Letter Inviting Bid for this NIT.

EMD will not carry any interest.



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9.1.4 However, Central / State Public Sector Undertaking / Enterprise (PSU/PSE) are exempted from submission of above bid security. Bidders claim such exemption needs to submit necessary valid documents as a proof of their eligibility.

9.1.5 MSEs (Micro & Small Enterprises) are also exempted from submission of EMD in accordance with the provisions of PPP-2012. MSEs (Micro & Small Enterprises) are exempted from submission of EMD in accordance with the provisions of PPP-2012. However, Traders/Dealers/Distributors/Stockiest/Wholesaler are not entitled for exemption of EMD.



9.1.5.1 The bidders shall submit the following documents in support of claiming the exemption of EMD:

- a) Documentary evidence that the bidder is a Micro or Small Enterprises registered with District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or MSEs who are having Udyog Aadhaar Memorandum or any other body specified by Ministry of Micro, Small and Medium Enterprises.
- b) The above document submitted by the bidder shall be duly certified (in original) by Notary or the Statutory Auditor of the bidder or a practicing Chartered Accountant (not being an employee or a Director or not having any interest in the bidder's company/firm) where audited accounts are not mandatory as per law or duly notarized by any Notary Public in the bidder's country.
- c) If the bidder does not provide the appropriate document or any evidence to substantiate the above, then it will be presumed that they do not qualify for any preference admissible in the Public Procurement Policy, 2012.

## 9.2 COMPLIANCE TO ALL THE PROVISIONS OF THE BIDDING DOCUMENT / NIL DEVIATION

The Bidders are advised that while making their Bid and quoting prices, all conditions may appropriately be taken into consideration. No deviation, whatsoever, is permitted by the Owner to the provisions of Bidding Documents and its subsequent Amendment(s) / Clarification(s) / Addenda / Errata if any, issued by the Employer. Bidders are required to certify their full compliance to the complete Bidding Documents and its subsequent Amendment(s) / Clarification(s) / Addenda / Errata if any, issued by the owner by submitting the 'No Deviation Certificate' as per Annexure-1.3 in the tender documents. In case the Certificate as per Annexure-1.3 duly signed and stamped is not furnished, the bid shall be rejected.

Acceptance of above shall be considered as Bidder's confirmation that any deviation to the Bidding Documents found anywhere in their Bid Proposal, implicit or explicit shall stand unconditionally withdrawn, without any cost implication whatsoever to owner, failing which the bid shall be rejected and bid security shall be forfeited

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9.2.3 Bidders shall submit their EMD in original / Documentary evidences regarding EMD Exemption along with No Deviation Certificate and Integrity Pact, at following address.

**The envelope shall be super scribed with:**

**"DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, U.P."**

PROJECTS & DEVELOPMENT INDIA LTD.  
(A Govt. of India Enterprise)  
PDIL BHAWAN, A-14, SECTOR-1,  
NOIDA-201301, U.P., INDIA

Kind Attention: Mr. Sumit Kumar, Project Manager  
EPBX No. + 91-120-2529842 / 43 / 47 / 51 / 53 / 54 Extn. 374  
Fax no. + 91-120-2529801 / 91  
E-mail : [sumit.kumar@pdilin.com](mailto:sumit.kumar@pdilin.com)

- 9.3 The bid must be accompanied by EMD in original along with No Deviation Certificate and Integrity Pact. The owner allows only those bids to be opened whose EMD in original / Documentary evidences (as per clause no 9.1.4 & 9.1.5) in support of claiming EMD exemption for MSEs and PSEs has been received by the owner before the Techno-Commercial bid opening.
- 9.4 The EMD of unsuccessful Bidders will be returned by OWNER/CONSULTANT without any interest to the unsuccessful Bidders as promptly as possible on acceptance of Bid of the successful Bidder or when the Bidding process is cancelled by OWNER/CONSULTANT, whichever is later. Bidders may indicate the name and address in whose favour the said EMD shall be returned.
- 9.5 The successful Bidder's EMD will be discharged upon the Bidder accepting and signing the Contract and furnishing the Security cum Performance Bank Guarantee.
- 9.6 The EMD shall be forfeited and appropriated by OWNER/CONSULTANT in regard to the NIT without prejudice to any other right or remedy to OWNER under the following conditions:
- If a Bidder withdraws his Bid during the validity or extended validity period.
  - If the bid is varied or modified in a unilaterally by the bidder during the validity or extended validity period.
  - Any effort by the bidder to influence the Owner on bid evaluation, bid comparison or contract award decision.
  - In the case of a successful Bidder, if the Bidder fails to duly sign the CONTRACT within the stipulated timeframe, and/or meet the stipulations for signing the CONTRACT within the said timeframe.



OR

If the successful bidder is seeking modifications to the agreed terms and conditions after issue of Letter of Intent ("LOI") and prior to signing of the Contract.

OR

If the successful bidder fail to furnish Security cum Performance Bank Guarantee within 30 days of issuance of the LOI.



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## 10.0 COST OF BIDS

The Bidder shall bear all costs associated with the preparation and submission of the Bid, and OWNER / CONSULTANT will, in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## 11.0 MODIFICATION AND WITHDRAWAL OF BIDS

11.1 The Bidder may modify or withdraw its Bid after the Bid's submission, but before the last date and time of Bid submission as specified in this NIT provided that written notice of the modification or withdrawal is received by OWNER/ CONSULTANT prior to the deadline prescribed for submission of Bids.

11.2 A withdrawal notice may also be sent by E-mail in signed and scanned form not later than the deadline for submission of Bids.

11.3 In case any clarifications are sought by the OWNER/CONSULTANT after opening of tenders, then the replies of the Bidder should be restricted to the clarification sought. Any modification of a Bid by the Bidder (including a modification which has the effect of altering the value of the said Bid) after opening of Technical and Commercial Bids without specific reference by the OWNER shall render the Bid liable to be rejected without notice and without further reference to the Bidder.

11.4 No bid may be withdrawn in the interval between the deadline for the submission of bids and the expiration during the validity or agreed extension validity period duly agreed by the bidder. Withdrawal or unsolicited modification of a bid during this interval shall result in the Bidder's forfeiture of its EMD.

## 12.0 INFORMATION REQUIRED WITH THE BID

12.1 All technical information shall be furnished as per Section-B, Technical. In addition, the bidder shall ensure that Technical and Unpriced Commercial Bid has been submitted.



12.2 Requirement of Manpower / Equipment / Tools & Tackles for timely completion of the project.

12.2.1 Bidder shall furnish tentative month wise manpower requirement till completion of the job.

12.2.2 Bidder shall also furnish a tentative break up of equipments, tools & tackles for timely execution of job.

## 13.0 PRELIMINARY EXAMINATION

13.1 Full compliance to the complete provisions of the Bidding Documents and its subsequent Amendment(s) / Clarification(s) / Addenda / Errata if any, issued by the owner will be checked first in terms of para clause 9.2 above and other requirements of the bidding documents in respect of No deviation Certificate and Integrity pact. In case those documents duly signed and stamped are not found in separate envelope / techno-commercial bid and / or they are not found as per format of the bidding document, the bidder will be asked to furnish the same as per the format before price bid opening. Failure to comply with this requirement, the bid shall be rejected.



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- 13.2 The Owner/Consultant will examine the bids to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, whether validity of the Bid is in conformity with ITB and whether the bids are generally in order.
- 13.3 Prior to the detailed evaluation, the Owner/Consultant will determine the substantial responsiveness of each Bid with reference to the bidding documents. For purpose of this article a substantially responsive Bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. The Owner/Consultant's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, without recourse to extrinsic evidence.
- 13.4 A Bid determined as substantially non-responsive is liable to be rejected by the Owner/Consultant and may not subsequently be made responsive by the Bidder by correction of the non-conformity.
- 13.5 The Owner/Consultant may waive any minor informality or non-conformity or irregularity in a Bid, which does not in their opinion constitute a material deviation.
- 13.6 Under two stage bidding system, after a preliminary screening based on both technical and un-priced commercial evaluation, Bidders will be short-listed. In the event that any clarifications are required, then such clarifications shall be obtained from such short listed bidders only. Based on the clarifications, the technically acceptable Bidders shall be asked to submit the revised price.

#### **14.0 LOCAL CONDITIONS**

- 14.1 It will be imperative on each Bidder to fully make aware himself of all local conditions and factors which may have any effect on the execution of the works covered under these specifications and documents. Bidder shall inspect the site, examine and obtain at its cost and responsibility, all information required and satisfy himself regarding all matters and things such as access to site, communications, transport, right of way, the type and number of equipment and facilities required for the work, availability of local labour, materials and their rates, local working conditions, weather, flood levels, sub-soil conditions, natural drainage, and all information that may be necessary for preparing its Bid, performance of work and other obligations and related matters. By submitting the Bid the Bidder shall be deemed to have acknowledged and agreed that ignorance of the site and other said conditions shall not be basis for any claim for compensation or extension of time or loss of profits etc. and the OWNER shall not be liable on account thereof in any manner whatsoever to the Bidder or any person claiming through or under the Bidder.
- 14.2 Bidders must before submission of their Bids, acquaint themselves with all applicable regulatory and other legal requirements pertaining to insurance and health, safety and environment requirement in India and rules related to work permit and visa requirements in India or in any way or manner affecting the performance of Scope of Work, the Contractor and the Plant operation and performance including social security, safety, pollution control, permits, licenses, and the other statutory requirements and regulations. The submission of a Bid by the Bidder will be construed as evidence that such an examination was made and the Bidder shall not raise at any time later any claims/disputes against the Owner and the Owner shall not be liable for the same in any manner whatsoever.

14.3 Deleted

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14.4 The Owner shall not entertain any request for clarification from the bidder, regarding such local conditions.

14.5 The Bidder shall be deemed to have prepared the Bid on the basis of its independent judgment and to have made all necessary allowances and provisions to ensure that the PROJECT will meet all technical specification prescribed hereunder in the tender document and will be entirely suitable for the purpose for which it is intended. Accordingly, at the time of submission the Bid Price will, without extra price and/or extension of time, be held to include everything implicitly or otherwise required or necessary for the proper and timely completion of the WORK in accordance with the CONTRACT. Further, in case of any contract awarded under these specifications and documents, neither any change in the time schedule of the Contract nor any financial adjustments arising thereof shall be permitted by the Owner, which are based on the lack of such clear information or its effect on the cost of the works to the Bidder.

14.6 Visit to site at BIDDER's cost and expense.

#### **15.0 PRICE BASIS & CURRENCY OF BIDS**

15.1 The Bidder shall quote in Indian Rupees only.

15.2 The price/rate to be quoted by the Contractor shall be fixed and firm shall be valid until completion of the Contract to be executed with the successful Bidder pursuant hereto and shall not be subject to variation/escalation on any account except as otherwise specifically provided in the Contract documents.

15.3 Site is located at Gorakhpur, U.P., India and the bidder are required to check & confirm before bidding for applicability of all taxes & duties for the procurement of supply and service by them for the execution of contract.

15.4 The Bidders shall quote in their proposals, the firm price for the entire scope of work as per Schedule of Prices, **(Refer Part-B of Section-B, Technical)**, inclusive of all taxes, duties, levies etc. except GST as applicable. GST amount will be quoted separately which will be paid at actual by the owner limited to the GST amount indicated by the bidder in their bid.

15.5 All bank charges of bidders bankers shall be to the Bidder's account and all Bank charges of Owner's bankers shall be to Owner's account.

15.6 Income Tax, or any other tax and surcharge as applicable shall be deducted at source from the bills of the contractor and a certificate to that effect shall be issued by the Owner.



#### **16.0 CONSORTIUM BIDS**

Joint Venture / Consortium Bids are not acceptable.

#### **17.0 NUMBER OF BIDS**

17.1 A bidder shall on no account submit more than one bid either directly or indirectly.

17.2 A bidder shall be deemed to have submitted an indirect bid if a subsidiary of the bidder is also a direct or indirect bidder in an independent bid or if the bidder or its subsidiary has

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with its consent been indicated as a sub-contractor in any other bid or even if not so indicated has entered into any arrangement (whether disclosed or undisclosed) with any other bidder or with a sub-contractor of that bidder for the performance of any work for that other bidder upon an award of the work to that other bidder.

- 17.3 If a bidder makes more than one bid and/or directly or indirectly participates in another bid as contemplated under 17.2 above, all the bids of the bidder, including the bid of the bidder in whose bid the first named bidder has directly or indirectly participated, may be considered as cartel bids and may be rejected. If the factum of such bid(s) is discovered after the notification of award, the resultant contract shall be liable to be terminated pursuant to the provisions for termination contained in the General Conditions of Contract.

#### **18.0 CONFIDENTIALITY OF DOCUMENTS**

Bidders shall treat the bidding documents and contents therein as strictly confidential.

#### **19.0 TAXES AND DUTIES**

- 19.1 The Prices/Rates shall include all taxes & duties, levies etc. including but not limited to custom duty, personnel and corporate tax, except GST. GST amount will be paid extra at actual by the owner limited to the GST amount quoted by the bidder in their bid.

- 19.2 Bidders are required to ascertain themselves the prevailing rates of applicable taxes & duties including income tax rates as applicable on the scheduled date of submission of price bids and Owner would not undertake any responsibility whatsoever in this regard. However, due to any subsequent change in law, liability of the Owner as regards to payment of duties and taxes would be governed by Clause 39.0 of Special Conditions of Contract on subsequent legislation.



- 19.3 Please note that the responsibility of payment of above taxes thereupon lies with the Service Provider only. Contractor providing taxable service shall issue an Invoice as per the law, a Bill or as the case may be, a Challan which is signed, serially numbered and in accordance with GST rules. The invoice shall also contain the following:

- (a) Name, Address & GST Registration No. of such Person/Contractor
- (b) Name & Address of the Person/Contractor receiving Taxable Service
- (c) Description, Classification & Value of Taxable Service provided like HSN/SAC Code.
- (d) GST Amount & Cess thereupon, if any.

Payments to Service Provider for claiming GST amount will be made provided the above formalities are fulfilled. Further, OWNER may seek copies of challan and certificate from Chartered Accountant for deposit / submission of Return of GST thereupon collected from Owner.

Any changes in statutory rules and regulations under GST regime shall be followed by Contractor.

***Refer Annexure-1.20 of Section-A (Commercial) for General Guidelines for Goods & Service Tax (GST)***

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## 20.0 DETERMINATION OF BID'S RESPONSIVENESS

20.1 The Owner's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence. If a bid is not substantially responsive, it will be rejected by the Owner, and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

20.2 It is important that Bidder clearly demonstrates his experience and capability, giving OWNER/CONSULTANT a high level of confidence that if awarded, the Bidder will be able to perform the works within the stipulated Time Schedule and quoted rate/price and meeting all other requirements listed in the Bidding document.

20.3 Bidder is requested to furnish the complete and correct information required for evaluation of his Bid. If the information with regard to resources and concurrent commitments or any other information/documentation forming basis of evaluation is found incomplete/incorrect, the same may be considered as adequate ground for rejection of the Bid.

20.3 Examination of bids and determination of responsiveness

20.3.1 The owner's determination of bid's responsiveness is based on the content of the bid only. Prior to the detailed evaluation of Bids, the Owner will determine whether each Bid:-

- (a) Meets the "Pre-Qualification Criteria" of the Bidding Documents;
- (b) Has been properly signed;
- (c) Is accompanied by the required 'Earnest Money';
- (d) Is substantially responsive to the requirements of the Bidding Documents; and
- (e) Provides any clarification and/or substantiation that the Owner may require to determine responsiveness pursuant to Clause-20.3.2 of this ITB



20.3.2 A substantially responsive Bid is one which conforms to all the terms, conditions and specifications of the Bidding Documents without material deviations or reservations or omissions for this purpose Owner defines the foregoing terms below:-

- (a) "Deviation" is departure from the requirement specified in the tender documents.
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirement in the tender documents.
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the tender document.

20.3.3 A material deviation, reservation or omission is one that,

- (a) If accepted would,
  - i) Affect in any substantial way the scope, quality, or performance of the job as specified in tender documents.
  - ii) Limit, in any substantial way, inconsistent with the Tender Document, the Owner's rights or the tenderer's obligations under the proposed Contract.
- b) If rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

20.3.4 The Owner shall examine all aspects of the bid to confirm that all requirements have been met without any material deviation, reservation or omission.

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20.3.5 If a Bid is not substantially responsive, it may be rejected by the Owner and may not subsequently be made responsive by correction or withdrawal of the material deviation, reservation or omission.

## 21.0 SUBMISSION OF BIDS

21.1 The Bid shall be submitted in electronic format (through CPP portal) as per time schedule mentioned in the Letter Inviting Bid.



The Bidder shall submit Bid Security / EMD in physical form only at the address mentioned at Clause 9.0 of Instruction to Bidders.

## 21.2 Instruction for Online Submission of Bid



**Instructions to the Bidders to submit the bids online through the Central Public Procurement Portal for e-Procurement at <https://eprocure.gov.in/eprocure/app>**

- 1) Possession of valid Digital Signature Certificate (DSC) and enrolment/registration of the contractors/bidders on the e-procurement / e-tender portal is a prerequisite for e-tendering.
- 2) Bidder should do the enrolment in the e-procurement site using the “Click here to Enroll” option available on the home page. Portal enrolment is generally free of charge. During enrolment/registration, the bidders should provide the correct/true information including valid email id. All the correspondence shall be made directly with the contractors/bidders through email id provided.
- 3) Bidder need to login to the site thro’ their user ID/ password chosen during enrolment/registration.
- 4) Then the Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by SIFY / TCS / nCode / eMudra or any Certifying Authority recognized by CCA India on eToken / SmartCard, should be registered.
- 5) The DSC that is registered only should be used by the bidder and should ensure safety of the same.
- 6) Bidder may go through the NIT / tenders published on the site and download the required NIT documents/schedules for the tenders he/she is interested.
- 7) After downloading / getting the NIT/ Tender document/schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise bid will be rejected.
- 8) If there are any clarifications, this may be obtained online thro’ the tender site, or thro’ the contact details. Bidder should take into account the corrigendum published before submitting the bids online.
- 9) Bidder then logs in to the site through the secured log in by giving the user id/ password chosen during enrolment/registration and then by giving the password of the e-Token / Smart Card to access DSC.



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- 10) Bidder selects the tender which he/she is interested in by using the search option & then moves it to the 'my tenders' folder.
- 11) From my tender folder, he / she selects the tender to view all the details indicated.
- 12) It is construed that the bidder has read all the terms and conditions before submitting their offer. Bidder should go through the tender schedules carefully and upload the documents as asked otherwise, the bid will be rejected.
- 13) 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/zip/dwf formats. If there is more than one document, they can be clubbed together and can be provided in the requested format. Each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through zip/rar and the same can be uploaded, if permitted. Bidders Bid documents may be scanned with 100 dpi with black and white option. However of the file size is less than 1 MB the transaction uploading time will be very fast.
- 14) If there are any clarifications, this may be obtained through the site, or during the pre-bid meeting if any. Bidder should take into account the corrigendum published from time to time before submitting the online bids.
- 15) The Bidders can update well in advance, the documents such as certificates, annual report details etc., under My Space option and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.
- 16) Bidder should submit the EMD as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission due date & time for the tender. Scanned copy of the instrument should be uploaded as part of the offer.
- 17) While submitting the bids online, the bidder reads the terms & conditions and accepts the same to proceed further to submit the bid packets.
- 18) The bidder has to select the payment option as offline to pay the Tender FEE/ EMD as applicable and enter details of the instruments.
- 19) The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise submitted bid will not be acceptable.
- 20) The bidder has to digitally sign and upload the required bid documents one by one as indicated. Bidders to note that the very act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read all sections and pages of the bid document including General conditions of contract without any exception and have understood the entire document and are clear about the requirements of the tender requirements.
- 21) The bidder has to upload the relevant files required as indicated in the cover content. In case of any irrelevant files, the bid will be rejected.



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- 22) If the price bid format is provided in a spread sheet file like BoQ\_xxxx.xls, the rate offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Price Bid / BOQ template must not be modified/ replaced by the bidder; else the bid submitted is liable to be rejected for this tender.
- 23) The bidders are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.
- 24) After the bid submission (i.e. after Clicking “Freeze Bid Submission” in the portal), the acknowledgement number, given by the system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender and will also act as an entry pass to participate in the bid opening date.
- 25) The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.
- 26) All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not viewable by unauthorized persons during bid submission & not be viewable by any one until the time of bid opening.
- 27) Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 28) The confidentiality of the bids is maintained since the secured Socket Layer 128 bit encryption technology is used. Data storage encryption of sensitive fields is done.
- 29) The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) exit option in the browser.

**Note:** A bidder shall submit only one bid in the same bidding process. A Bidder who submits more than one bid will cause all their bids disqualified in the said bidding process.

- 21.3 The Bidder is expected to examine all instructions, forms, terms and conditions in the NIT. The NIT together with all its attachments thereto, shall be considered to be read, understood and accepted by the Bidders. Failure to furnish all information required or submission of a Bid not responsive to the NIT in every respect will be at the Bidder’s risk and may result in the rejection of the Bid.



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21.4 Pre-qualification Bid and **Technical & Commercial Bid** in two Sections, as specified below.

**SECTION-I : PRE-QUALIFICATION BID (Refer Clause 8.0)**

i.	Letter of Submission
ii.	Pre Qualification Criteria in favour of <b>Experience Criteria as per Exhibit-1</b> along with Copies of Work Orders, Certificates from End User/OWNER and completion certificates in support of prequalification requirement.
iii.	Pre Qualification Criteria in favour of <b>Financial criteria as per Exhibit-2</b> along with copies of Work Orders, Completion/ Acceptance certificates and Annual audited Report for the last three financial years. Annual Reports shall be a verifiable statement of annual accounts certified by a Chartered Accountant or Public Accountant in the form of printed annual reports or similar document.
iv.	<b>Format for Financial Capability of Bidder</b> as per Annexure-1.21
v.	<b>Solvency Certificate</b> from Bidder's bankers as per Annexure-1.18. Date of Issue of this certificate should not more than six months old from the date of issue of NIT.

**SECTION-II : TECHNICAL AND COMMERCIAL BID**

i)	Photocopy of Earnest money Deposit (EMD)
ii)	Power of Attorney of Bid Signatory from the Competent Authority
iii)	Tender Acceptance Letter as per Annexure-1.1
iv)	Commercial Questionnaire as per Annexure-1.2
v)	No Deviation Certificate as per Annexure-1.3
vi)	Details of Similar Works Executed as per Annexure-1.4
vii)	Current Commitments of the Bidder as per Annexure-1.5
viii)	Deployment Schedule of Supervisory Personnel as per Annexure-1.6
ix)	Deployment Schedule of Construction Equipment as per Annexure-1.7
x)	Details of Equipment Proposed to be used for this work as per Annexure-1.8
xi)	Contents of Bid and Check List as per Annexure-1.9
xii)	A declaration shall be submitted as per Annexure-1.14 to the effect that Bidder have or had not been banned or blacklisted/del-listed by any PSU / Government Organizations.
xiii)	Declaration by Bidder regarding Bidding Document as per Annexure-1.16
xiv)	Photocopy of Integrity Pact as per Annexure-1.17
xv)	EFT details as per Annexure-1.19
xvi)	A declaration shall be submitted to the effect that Bidder submitting their Bid is not under liquidation, court receivership or similar proceedings as per Annexure-1.22

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xvii)	Declaration by bidder for Past Safety Record
xviii)	Bidder to furnish PAN Number, TIN Number, PF/ESI Number, GST Number, Labor License Registration Number, Latest Income Tax Clearance Certificate / ITR etc. along with the bid.
xix)	<b>Price confirmation copy</b> - A Photocopy of the Schedule of Prices, to be submitted strictly as per <b>Part-B of Section-B, Technical</b> , prices being blanked out and in place indicating “ <b>Quoted</b> ” against each head, shall be submitted duly signed and stamped.
xx)	Master Index along with a copy of complete set of Bidding Documents of all technical and commercial amendments/addendums if any issued, duly signed and stamped on each page as a token of having received and read all parts of the bidding document and having accepted and considered the same in preparing their bid.
xxi)	Any other information required in the Bidding Documents or considered relevant by the Bidder.

For convenience, the Bid shall be compiled in the form of Specific Sections conforming to the above. In case of non-submission of above documents or submission of incomplete documents, the OWNER/CONSULTANT reserves the right not to evaluate such offers further and not to enter into correspondence in this regard after opening the Technical and Commercial Bid.

## 21.5 PRICED BID

21.5.1 Priced Bid shall consist of in the following manner:



- (i) Preamble to Price Bid.
- (ii) Priced Bid, duly filled in and completed in all respects, as per **Part-B of Section-B, Technical** given in the Bidding Documents.

21.5.2 Priced Bid shall be submitted duly signed and stamped on each page. This part shall not contain any condition whatsoever failing which the Bids shall be liable to be rejected. In case of any correction, the bidder shall put its signature and its stamp. Eraser fluid will not be allowed for making any correction.

**If the bidder fails to quote for any item in the price bid, it will be implied that such item is included elsewhere in the quoted prices. Also, wherever bidder has indicated “Not Applicable” / “Nil” and the same is required during execution of the contract it will be considered as included in the price.**

**Further, if the bidder does not quote GST in the price schedule/SOR by indicating ‘Nil’ / ‘Not applicable’ / ‘NA’ / ‘kept the space blank’, then GST amount payable by the contractor to the concerned authorities is deemed to have been included in their quoted price and no payment towards GST shall be made by the owner.**

21.5.3 Prices must be strictly filled in format for “Schedule of Rates as per Part-B of Section-B, Technical” enclosed as part of bidding document. If quoted in separate typed sheets and any variation in description, unit is noticed, the bid is liable to be rejected. In any case Bidder shall be presumed to have quoted against the description of work and the same shall be binding on the Bidder.

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21.6 The Priced Bid shall also indicate total prices in figures as well as in words. The prices should be strictly quoted as specified in **Part-B of Section-B, Technical** otherwise the Bid may be rejected. The priced Bid containing any comments, remarks, conditions deviations etc, which is not indicated in the Technical and Commercial Bid, is liable to be rejected.

**22.0 DEADLINE FOR SUBMISSION OF BIDS:**

22.1 Bids must be submitted not later than the time and date as specified in the Letter inviting Bid.

22.2 The OWNER/ CONSULTANT may extend this deadline for the submission of Bids by amending the NIT documents in accordance with Clause No. 4.0 above. In such case all rights and obligations of the OWNER and Bidders under this NIT shall be subject to the extended deadline.

22.3 Any bid received after the deadline specified in the NIT or as extended shall be liable to be rejected.

**23.0 OPENING OF BIDS**

23.1 Owner / Consultant will open Bids in the presence of Bidder's representatives who choose to attend at Date and time specified on cover page of NIT or as informed by Owner / Consultant. The Bidder's representative(s) present during the Bids opening shall sign a Bids opening record sheet evidencing their attendance.

23.2 The Bidder's name, modifications, Bid withdrawal and such other details, as the Owner / Consultant at its discretion may consider appropriate, will be announced during Bids opening. The owner allow only those bids to be opened whose EMD in original has been received by the owner before the Techno-Commercial bid opening.

23.3 The Bids shall be opened and evaluated in two stages:



**23.3.1 STAGE-I: OPENING & REVIEW OF EMD, PRE-QUALIFICATION BID, TECHNICAL AND COMMERCIAL BIDS**

On the date of Public Bid opening as indicated on the Letter Inviting Bid of this NIT, cover containing EMD shall be opened and reviewed.

The OWNER / CONSULTANT will review the Bank Guarantee (BG) submitted by Bidder against EMD, with respect to:

- a. its value,
- b. validity &
- c. issuing Bank.
- d. the format attached with the tender document.

In case, the Bidder has not submitted the EMD or the BG submitted by the Bidder is not as per the requirement of NIT with respect to the above mentioned parameters, the Bids submitted by them may be rejected.

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If the EMD submitted by the Bidder is found to be in order with respect to above mentioned parameters but if there is a minor deviation with respect to the format enclosed with the NIT, the OWNER /CONSULTANT may at its discretion inform the Bidder who shall have to rectify the same before the date of opening of the Price Bid. In case the Bidder fails to rectify the EMD, its Bids will be rejected and the Bidder will be informed to take back its Bid, including the Price Bid.

EMD exemption will be applicable for PSE / Micro and Small Enterprises (MSEs) subject to submission of documents as bought out at clause no 9.1.4 & 9.1.5.

In case of MSEs the certificate will be verified for registration and validity. The certificate shall be valid as on date of opening of bid. If the bidder meets this requirement, their bid will be processed further. If not, the bidder will be asked to submit the EMD. In case the bidder does not submit the EMD within 7 calendar days of HURL/PDIL intimation, then their bid shall be rejected.

Thereafter, OWNER / CONSULTANT will open, Pre-qualification Bid, Technical and Commercial Bids of those Bidders, whose EMD is found to be in order as described here above.

OWNER / CONSULTANT will first review Pre-qualification requirement. Technical and Commercial Bids shall be evaluated only for those bidders whose bid is found to be Pre-qualified based on the Pre-qualification Criteria.

The owner, at its discretion, may hold post bid discussions with any one or all the bidders at a mutually suitable date & time. However, it will not be construed from invitation/ holding of post bid discussions that the bidders have been considered eligible for opening of their Price Bid. The discussion will cover all the aspects of bidder's offer in the Techno-commercial proposal

### **23.3.2 STAGE – II: OPENING OF PRICE BID**

Before opening the Priced Bid of the technically and commercially acceptable Bidders, if required, a meeting with the Bidders shall be arranged. Date and Venue of such meeting shall be informed at the appropriate time.



The date of the opening of the Price Bid shall be intimated to technically and commercially acceptable Bidders. The price bids of such shortlisted Bidders will be opened in the presence of Bidder's representative who chooses to attend, on the date and time to be intimated. The bidder's name, bid price and such other details as the OWNER at its discretion may consider appropriate, will be announced at the opening of price bids.

**The evaluation of the priced Bids shall be done as described under Clause No. 30.0 of the ITB.**

23.3.3 If the Bids as judged by the OWNER are unresponsive, the NIT may be declared void and a new procedure for selection of CONTRACTOR as deemed appropriate by OWNER may be adopted.

### **24.0 CORRECTION OF ERRORS**

Bids determined to be substantially responsive will be checked by the Owner / Consultant for any arithmetic errors. Errors will be corrected by the Owner / Consultant as follows:

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- (i) When there is a difference between the rates in figures and words, the rate which corresponds to the amount worked out by the Bidder (by multiplying the quantity and rate) shall be taken as correct.
- (ii) When the rate quoted by the Bidder in figures and words tallies but the amount is incorrect, the rate quoted by the contractor shall be taken as correct and not the amount and the amount shall be re-calculated/ corrected accordingly.
- (iii) When it is not possible to ascertain the correct rate, in the manner prescribed above, the rate as quoted in words shall be adopted and the amount worked out, for comparison purposes.
- (iv) All errors in totaling in the amount column and in carrying forward totals shall be corrected.

The amount stated in the Bid will be adjusted by the Owner / Consultant in accordance with the above procedure for the correction of errors. If the Bidder does not accept the corrected amount of Bid, its Bid will be rejected, and the EMD shall be forfeited.

## **25.0 POLICY FOR BID UNDER CONSIDERATION**

Bids shall be deemed to be "Under Consideration" immediately after they are opened and until such time that the official intimation of award / rejection is made by the OWNER / CONSULTANT to the Bidders. While the bids are under consideration, bidders and/or their representatives or other interested parties are advised to refrain from contacting by any means, the OWNER / CONSULTANT and/or his employees / representatives on matters related to the bids under consideration.

The OWNER / CONSULTANT, if necessary will obtain clarifications on the bids by requesting for such information from any or all the Bidders, either in writing or through personnel contact as may be necessary. The Bidder will not be permitted to change the substance of the bid after the bid had been opened.



## **26.0 DISCUSSIONS WITH BIDDERS DURING TECHNO- COMERCIAL EVALUATION**

After opening of the Bids, to assist in the examination, evaluation and comparison of Bids, OWNER / CONSULTANT may, at its discretion, ask the Bidder for clarification on its Bid. The request for such clarification and the response shall be in writing either through fax or email.

Further OWNER / CONSULTANT may ask BIDDER to visit OWNER's/ CONSULTANT's office for technical, commercial or financial clarifications.

BIDDER is expected to undertake such visits and participate in such meetings as and when called by the OWNER/ CONSULTANT. All costs related to such visits shall be borne by BIDDER.

Consequent upon the discussions, if required OWNER / CONSULTANT may issue final amendment to the bid document. Bidders shall be required to submit their unconditional acceptance to final amendment.

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Bidder may be given a chance to furnish supplementary price bid indicating the price implication in view of final amendment, if any. The price implication (positive/negative) shall be given in the Part-BS of Section-B, Technical. Part-BS of Section-B, Technical shall be the exact replica of Part-B of Section-B, Technical, ~~SCHEDULE OF RATES~~ super scribed as SUPPLEMENTARY PRICE BID. The same shall be considered for the purpose of evaluation. OWNER/ CONSULTANT's decision in this regard shall be final and binding on the bidders.

After opening of the Price Bid, no change in the quoted rate/price shall be sought, offered or permitted.

## **27.0 EFFECT AND VALIDITY OF BID**

27.1 The submission of any bid connected with these documents and specifications shall constitute an agreement that the Bidder shall have no cause of action or claim against the OWNER/ CONSULTANT for rejection of his bid. The OWNER / CONSULTANT shall always be at liberty to reject or accept any bid or bids at his sole discretion and any such action will not be called into question and the Bidder shall have no claim in that regard against the OWNER/ CONSULTANT.

27.2 The bids should be kept valid for acceptance for a period of 120 Days from the date of opening of Technical and Commercial Bids. A Bid valid for shorter period may be rejected by the Owner as being non-responsive.

Under the exceptional circumstances, prior to expiry of the original Bid validity period, the OWNER/ CONSULTANT may request the Bidder for a specified extension in the period of validity. The request and the responses thereto shall be made in writing or by telefax or by E-mail.

27.3 In the event of OWNER/ CONSULTANT seeking extension of period of validity of the Priced Bids, the validity of EMD shall also be suitably extended.

27.4 A Bidder agreeing to the request of OWNER/ CONSULTANT seeking extension will not be required nor permitted to modify his bid, and will be required to extend the validity of his EMD correspondingly. However, Bidders request for revision/adjustment of Priced Bid under such circumstances may be considered by the OWNER/ CONSULTANT. The provisions of Clause-9.0 regarding discharge and forfeiture of EMD shall continue to apply during the extended period of Bid Validity.



## **28.0 COMPLETE SCOPE OF SUPPLIES / WORK**

28.1 The complete scope of supplies and work/services has been defined in the bidding documents. Only those bidders who take complete responsibility and who bid for the complete scope of supplies and work/services as contained in the bidding document shall be considered for further evaluation subject to meeting Pre-Qualification Criteria.

28.2 If the contractor is required to engage a sub-contractor for any part of work, then such sub-contractors shall have prior proven experience of similar work and shall require specific approval by OWNER.

28.3 If a proposed sub-contractor has been approved by the OWNER, the CONTRACTOR shall not replace such approved sub-contractor with another sub-contractor without obtaining the OWNER's prior approval for the proposed replacement.



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## 29.0 FIRM RATES / PRICE

The price quoted by the Contractor shall be fixed & firm and shall be valid until completion of the Contract, pursuant hereto and shall not be subject to variation / escalation on any account except as otherwise specifically provided in the Contract documents. The rates shall include all taxes & duties, levies etc. except GST. GST shall be paid extra at actual.

## 30.0 EVALUATION AND COMPARISON OF BIDS

### 30.1 General

30.1.1 The OWNER wishes to finalise the award of work of the facilities covered under this bidding documents within a limited time schedule. The bidders are advised to submit their bids complete in all respects conforming to all terms and conditions of the bid document.

30.1.2 Bids shall be evaluated based on the information / documents available in the bid. Hence bidders are advised to ensure that they submit appropriate and relevant supporting documentation along with their proposal in the first instance itself. Bids not complying with the requirements of Bid Documents are liable to be rejected. Bidders are advised to fill up all Annexure carefully and provide reference to all relevant documents given in their bid offer.

30.1.3 Bidders shall quote their prices on firm price basis. **The prices should be strictly quoted as specified in Part-B of Section-B, Technical** otherwise the bid may be rejected. Any conditional discount offered by the bidder shall not be considered for the purpose of evaluation, however, the same shall be considered for purpose of award.

Correction of Errors (if any) shall be done as per clause 24.0 above. The comparison shall be on the basis of summation of the arithmetically corrected PRICE in SCHEDULE OF RATES (i.e. the Total of PART-B of Section-B, Technical). The Owner's evaluation will also include the costs resulting from application of the evaluation procedures described in ITB Clause 30.2. Any adjustments in price that result from the below procedures as per ITB Clause 30.2 shall be added, for the purposes of comparative evaluation only.



30.1.4 The work is not bifurcated. Hence, evaluation of bids shall be done as per clause no. 30.2 below. The order will be placed on overall lowest basis.

30.2 The financial comparison for selection of Lowest (L-1) Bidder / Contractor shall be arrived by using the following methodology:

### 30.2.1 TOTAL EVALUATED PRICE

**Total Evaluated Price shall be derived as follows:-**

**a) Total Price quoted by the bidder plus GST charges (after arithmetical corrections as per clause no. 24.0 if any) in the Schedule of Rates (SOR).**

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### 31.0 PRICE VARIATION

The Bidder shall quote firm rate in the “**Schedule of Rates (Part-B of Section-B, Technical)**”. Firm rate shall not be subject to any escalation on any account. Bids with variable prices shall be disqualified.

### 32.0 REBATE

32.1 No suo-moto reduction in price(s) by Bidders is permissible after opening of the price bid. If any Bidder unilaterally reduces the price(s) / percentage quoted by him in his bid after opening of price bids, such reduction shall not be considered for comparison of prices but shall be binding on the Bidder if he happens to be selected for award of work

### 33.0 CONTACTING OWNER

33.1 A Bidder shall not contact the OWNER/CONSULTANT on any matter relating to his bid from the time of priced bid opening to the time that the Contract is awarded, unless requested to do so in writing. Any effort by a Bidder to influence the OWNER/CONSULTANT in the OWNER's/ CONSULTANT's decisions in respect of bid evaluation or contract award will result in the rejection of that Bid.

### 34.0 AWARD OF CONTRACT

34.1 Subject to ITB Clause 36.0, the OWNER will award the CONTRACT to the successful Bidder whose Technical and Commercial bid has been determined to be qualified, substantially responsive and Price Bid to be the lowest evaluated Bid, further provided that the Bidder is determined to be qualified to perform the CONTRACT satisfactorily.

34.2 After selection, Letter of Intent s (“LOIs”) as per mode of contracting shall be released by the OWNER to the selected Bidder. The selected bidder will return the duplicate copy duly signed & stamped as token of acceptance within 15 days.

34.3 The Bidder shall enter into a Contract Agreement with the OWNER as per clause 35.0, failing which the Bid Security/EMD is liable to be forfeited.

### 35.0 SIGNING OF CONTRACT



35.1 At the same time as the OWNER notifies the successful Bidder that its Bid has been accepted, the OWNER will send to the Bidder a draft of the Contract provided in the Bidding Documents, incorporating all agreements between the parties.

35.2 Within Thirty (30) days of receipt of the CONTRACT, the successful Bidder shall sign and date the Contract Agreement and return it to the OWNER. Cost of execution of the Contract, including payment of stamp duty thereon, shall be borne by the Bidder.

### 36.0 OWNER’S RIGHT TO ACCEPT / REJECT BIDS

36.1 The OWNER reserves the right to accept or reject any Bid and to annul the bidding process and reject all Bids at any time prior to award of Contract without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the ground of OWNER’s action.



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36.2 It is observed that many bidders indulge in trading in contracts by entering into undisclosed back-to-back arrangements for the whole or a substantial portion of a CONTRACTOR's obligations under the contract. If a bidder proposes to enter into any such arrangements upon a successful award of work or has in place any such arrangement which will become operative upon the award of work, the bidder must make a complete disclosure of such arrangement or proposed arrangement in its proposal, and all provisions applicable to sub-contractor(s) in terms of bidding documents shall apply to such arrangements.

36.3 If the existence of such an undisclosed arrangement is reasonably apprehended by the OWNER in the case of a bidder, the OWNER may reject such bidder's bid as not responsive.

36.4 If such an undisclosed arrangement is discovered after the award of work, such arrangement(s) shall be deemed to constitute an assignment of contract and a ground of termination pursuant to the provisions of termination under the General Conditions of Contract.

36.5 Owner/Consultant reserves the right to accept or reject any tender in whole or part and/or accept other than the lowest quotation without assigning any reason. The whole work may be split up between two or more contractors if considered expedient by the Owner/Consultant on their sole and absolute discretion. The bidder shall have no claim in this regards whatsoever.

### **37.0 CONTRACT SECURITY CUM PERFORMANCE BANK GUARANTEE (CPBG)**



37.1 As a Contract Security, a successful Bidder, to whom the work is awarded, shall be required to furnish a Security cum Performance Bank Guarantee in the form attached as Annexure-1.12 within thirty (30) days of issuance of LOI. This Bank Guarantee shall be an irrevocable Bank Guarantee, issued by any scheduled nationalized bank on a non judicial stamp paper of appropriate value. The Bank Guarantee amount shall be equal to ten per cent (10%) of the TOTAL CONTRACT PRICE and it shall guarantee the faithful performance of the CONTRACT in accordance with the terms and conditions specified in these documents and specifications. The Performance Bank Guarantee shall be valid for a period till Project Completion Date / Preliminary Acceptance of Work by Owner plus Defect Liability period of 12 months plus a claim period of 06 months. In case of breach of contract the guarantee amount shall be payable to the Owner without any conditions whatsoever.

37.2 Failure of the successful Bidder to comply with the requirement of Clause 37.1 hereof shall constitute sufficient grounds for forfeiture of Bid Security/EMD without prejudice to its rights and remedies as set forth in this NIT or otherwise in law.

### **38.0 INCOME TAX & CORPORATE TAX**

38.1 Income tax deduction shall be made from all payments made to the contractor as per the rules and regulations in force and in accordance with the Income Tax Act prevailing from time to time.

38.2 Corporate Tax liability, if any, shall be to the contractor's account.

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### 38.3 MENTIONING OF PAN NO. IN INVOICE/BILL

As per CBDT Notification No. 95/2015 dated 30.12.2015, mentioning of PAN no. is mandatory for procurement of goods / services/works/consultancy services exceeding Rs. 2 Lacs per transaction.



Accordingly, supplier/ contractor/ service provider/ consultant should mention their PAN no. in their invoice/ bill for any transaction exceeding Rs. 2 lakhs. As provided in the notification, in case supplier/ contractor/ service provider/ consultant do not have PAN no., they have to submit declaration in Form 60 along with invoice/ bill for each transaction.

Payment of supplier/ contractor / service provider/ consultant shall be processed only after fulfillment of above requirement.

## 39.0 GENERAL INSTRUCTIONS

### 39.1 TRANSFER OF TENDER DOCUMENTS/PROPOSAL

- 39.1.1 Transfer of Bid submitted by one BIDDER to another is not permitted. No alteration in the essence of a Bid, once submitted, shall be permitted.
- 39.1.2 OWNER/CONSULTANT reserves the right to verify all statements/information submitted to confirm the Bidder's claim on experience on the performance of equipment offered and capabilities of the Bidder to perform the Scope of Work. OWNER/CONSULTANT may inspect similar facilities built by the Bidder. Bidder shall co-ordinate and arrange for visit. However all expenses of such visit of OWNER's Officials / OWNER's Representative will be borne by OWNER.
- 39.1.3 OWNER/CONSULTANT shall not entertain any correspondence with any Bidder on acceptance or rejection of any Bid.
- 39.1.4 Oral statements made by the Bidder at any time regarding any matter including quality, or arrangement of the equipment or any other matter will not be considered and will not be binding on the OWNER/CONSULTANT.
- 39.1.5 Standard catalogue pages and other documents of the Bidder may be used in the Bid to provide additional information and data as deemed necessary by the Bidder.
- 39.1.6 Bidder will furnish the Bid with all relevant information's as called for. Bids with incomplete information are liable for rejection.
- 39.1.7 If at any later date, it is found that documents, information and data submitted by the Bidder in the Bid, and based on which the Bidder has been considered eligible or successful or has been awarded the Contract is incorrect or false to the extent that had the correct or true information been made available to the OWNER at the time of Bid evaluation, the bid would have been declared ineligible or unsuccessful, the Bidder shall be forthwith disqualified or, as the case may be, the contract awarded based on such incorrect or false information shall be cancelled and the EMD/PBG shall be liable to be forfeited.

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#### 40.0 INTEGRITY PACT

Bidders are required to unconditionally accept the "Integrity Pact (IP)", as per Annexure 1.17, (executed on plain paper) and submit the same duly signed on all pages by the bidder's authorized signatory along with the EMD / Documentary evidences in support of EMD exemption for MSEs & PSEs. In case, Annexure-1.17 duly signed & stamped is not found in the sealed envelope / techno-commercial bid and / or is not found as per the format required as per the bidding document, the bidder will be asked to furnish the same before price bid opening. Failure to comply with this requirement, the bid shall be rejected.



#### 41.0 RATES FOR EXTRA ITEMS

Rates for additional, altered or substituted work shall be determined by the Engineer-in-Charge as follows:-

- a) If the rate for the additional, altered or substituted item of work is not specified in the said schedule of quantities, the rate of that item shall be derived from the rate for the nearest similar item specified therein.
- b) If the rate for any additional, altered or substituted item of work cannot be determined in the manner specified in sub-para (a), then such item of work shall be carried out at the rate entered in the C.P.W.D. Delhi Schedule of Rates, 2016. The contractor to quote the % above or below the rates as mentioned in CPWD Schedule of Rates Delhi 2016.
- c) If the rate for any additional, altered or substituted item of work can not be determined in the manner specified in sub para (a) to (b), the contractor shall within 7 days of the date of receipt of the order to carry out the said work, inform the Engineer-in-charge of the rate which he proposes to Claim for such item of work, supported by analysis of the rate claimed by the rate of labour and materials. In the event of the contractor failing to inform the Engineer-in-Charge within the stipulated period of time and rate which he proposes to claim, the rate for such item shall be determined by the labour and materials and quantum of labour and materials as per actual observation, provided all these elements are justifiable, plus 15% to cover the contractor's profit and over head.
- d) If any altered, additional or substituted item of work ordered comprises of more than one part/sub item and each part/sub item could be priced in different manners according to the principles laid in sub para a to c, the decision of the Engineer-in-Charge as the appropriate principle of pricing applicable to the particular part/sub item shall be final.
- e) No deviation from specifications stipulated in this contract shall be made or additional items of work shall be carried out by the contractor unless the rates of such substituted, altered or additional items have been approved in writing by the Engineer-in-Charge failing which Owner shall not be liable to pay any claim on this account.

#### 42.0 BIDDER TO QUOTE FOR ALL ITEMS

The bidders shall quote their rates with reference to each item and must tender for each and all the items shown in the attached schedule of quantities.

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>INSTRUCTIONS TO BIDDERS</b></p>	PNPM/5001/E/103/S- A/AT-1.0	0	
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**43.0 BIDDER TO SIGN ALL PAGES**

All pages of the tender documents shall be signed and stamped by the bidder.

**44.0 ERASURES AND ALTERATIONS**

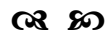
Tenders containing erasures and alterations in the tender documents may be rejected. All rates shall be indicated both in words and figures. Where there is a difference between the rates quoted in words and figures, the rates given in words shall prevail.

**45.0 INCOMPLETE AND LATE TENDER**

Unsolicited/Incomplete/late tenders are liable to rejection without any further reference.

**46.0 EXECUTION OF CONTRACT**

The successful bidder shall be required to execute contract with Owner within reasonable time.





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## SECTION-A : COMMERCIAL

### ATTACHMENT – 2.0



## GENERAL CONDITIONS OF CONTRACT

0	11.01.2018	FOR TENDER	SK	KJ	RRK
REV.	DATE	PURPOSE	PREPARED	REVIEWED	APPROVED

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## GENERAL CONDITIONS OF CONTRACT

### ARTICLE-1: DEFINITIONS

In this contract the following words shall have the meaning herein assigned to them respectively.

- a. **i-“Tenderer”** means any person, firm or company invited to submit their tenders; including their authorised representative for the work.
- ii-“Bid/Tender”** shall mean offer/proposal/document that the bidder/tenderer submit in the required and specified form in accordance with the provisions of NIT duly signed by the bidder or authorized signatory under the seal of firm document, LOI.
- b. **“The Work”** means all duties, responsibilities and obligations to be discharged by the Contractor pursuant to the Scope of Work and Technical Specifications mentioned in the contract.
- c. **“The Contractor’s Equipment”** means all machinery, apparatus, materials and equipment to be provided by the Contractor pursuant to the Contract for and in connection with the work but not forming or intending to form a permanent part of Plant.
- d. **“Site”** shall mean the plants location at Gorakhpur for which this Purchase Order/Contract has been issued and where the Equipment / Works to be erected / executed. The location of plant site is in Gorakhpur, Uttar Pradesh.
- e. **“Date of Completion”** means the date specified in the body of the contract hereto or such later date as may be agreed to in writing from time to time by the Owner/Consultant.
- f. **“Month”** shall mean English Calendar month.
- g. **“Contractor” or “Supplier” or “Vendor”** shall mean any person, firm or company awarded the work through Letter of Intent and accepted by him/them.
- h. **“Purchaser / Owner / HURL”** shall mean **HINDUSTAN URVARAK & RASAYAN LIMITED (HURL)** having their site at Gorakhpur, Uttar Pradesh, India.
- i) **“Consultant”** shall mean M/s Projects & Development India Ltd (PDIL) having their office at A-14, Sector-1, Noida, Dist.-Gautam Budh Nagar, UP- 201301, India is acting for and on behalf of M/s. Hindustan Urvarak & Rasayan Limited (HURL) for providing Consultancy Services for the Project.
- ii) **“Engineer-In-Charge”** shall mean person designated as such By HURL or his duly authorized representative and includes those who are expressly authorized to act for and on its behalf respectively for operation of the contract and who will be in-





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charge of the works and under whose supervision and direction the work shall be carried out.

- i. **“Principal Rotating Equipment”** shall mean those items of equipment comprising of centrifugal compressors, steam turbines, high pressure boilers feed pumps, from 3300 volts electric motors, turbine generator, diesel generator and gear boxes associated with any of these equipment.
- j. **“Goods”** means all of the Equipment, machinery, and/or other materials which the Supplier/Contractor is required to supply/execute to the purchaser under the Purchase Order/Contract.
- k. **“Services”** means supervision to installation, commissioning, provision of technical assistance, training and other such obligations of the Supplier covered under the Purchase Order.
- l. **“Subcontract”** shall mean Order/Contract placed by the Supplier/Contractor, for any portion of the Order or Work, after necessary consent of Owner/Consultant.
- m. **“Subcontractor”** or “Sub Vendor” or “Sub Supplier”- shall mean any person or persons or firm or their legal representatives, successors, assignees to whom part of Order has been sub-let by the Supplier/Contractor.
- n. **“Battery Limit”** shall mean the area within which Plant/Equipment are to be located.
- o. **“Plant”** shall mean entire assembly of the Equipment within specified Battery Limit.
- p. **“Drawings”** shall mean and include Engineering drawings, sketches showing plants, sections and elevations related to the Purchase Order/Contract together with modifications and/or revisions thereto.
- q. **“Specifications”** shall mean and include schedules, detailed description, statement of technical data, performance characteristics, standards (Indian as well as international) as applicable and specified in the Purchase Order/ Contract.
- r. **“Engineer”** shall mean the Engineer or Executive-in-charge at Site nominated by Owner/Consultant.
- s. **“Inspector”** shall mean any person or outside agency nominated or agreed by Owner/Consultant to inspect Equipment stage-wise as well as final inspection, before despatch, at Supplier's/Contractor's work and on receipt at Site as per the terms of the Purchase Order/ Contract.
- t. **“Tests”** shall mean such process or processes to be carried out by the Supplier as are prescribed in the Purchase Order/Contract or considered necessary by Owner/Consultant or their representatives in order to ascertain quality, workmanship, performance and efficiency of Equipment or part thereof.





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- u. **“Approval”** shall mean and include the written consent, either manuscript, type - written or printed statement, under signature or seal, as the case may be, of the Owner/Consultant or their authorized representative on documents, drawings or other particulars in relation to the Purchase Order.
- v. **“Work Order/Contract”** means the agreement entered into between Owner/Consultant and the Supplier, as recorded in the Purchase Order form, signed by the Owner & accepted by Supplier, including all attachments and Annexure thereto and all documents incorporated by reference therein together with any subsequent modifications thereof in writing.
- w. **“Work Order/Contract Price”** means the price payable to the Supplier under Purchase Order for the full and proper performance of his contractual obligations.
- x. **“Schedule of rates”** shall mean the rates/percentage quoted by the tenderer with his tender/bid and which have been finally accepted by Owner.
- y. **“Effective date of Work Order”** shall be the date of Issuance of Notification of Award (Letter of Intent) by Fax/Email unless otherwise agreed.
- z. **“Act/code”** shall mean any law, rules, regulations, notification, issued and passed by Central/State or local authority for the time being in force in India.
- z<sup>1</sup>. **“Completion period”** shall mean the period of date on/by which the work shall be completed in all respect as agreed to between Owner and the contractor.

## ARTICLE-2: CONTRACTOR’S SERVICES



- a. The Contractor shall supply material under scope and provide, execute, complete and maintain the work in Accordance with the Contract. The contractor shall also perform the services described in various sections of Invitation to Tender.
- b. The contractor undertakes to cooperate with the Consultant/Owner and other contractor’s appointed by the Owner for the Plant and agrees to exchange technical information as may be reasonably asked for to obtain most efficient and economical Plant for owner.
- c. The contractor shall be responsible for ensuring that the positions, levels and dimensions of the work are correct according to the Contract notwithstanding that he may have been assisted by the Consultant in setting out the said positions, levels and dimensions. Any discrepancies shall be promptly intimated to the Owner/Consultant for his final decision.
- d. The work to be done under the contract shall be executed with all due diligence and in the manner specified in the Contract and to the satisfaction of the Owner/Consultant. The contractor hereby undertakes that work shall be ready for tests on completion not later than the date of completion.

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- e. The contractor shall carryout all such tests as are specified in the Contract and/or required in accordance with good engineering practices or directed by Owner/Consultant for ensuring the quality and performance of the equipment and materials supplied and work done under the contract at his own cost.
- f. Contractor shall arrange for all handling, safe storage and security of all the equipment/ material issued to him for erection.
- g. Contractor shall arrange all tools, tackles, cranes and other material handling equipment's, welding equipment and cables, welding rods, scaffoldings (metallic only), consumable stores, safety equipment & appliances and all other equipment/accessories required for execution of work including erection and testing. These shall not be removed from the site without the written permission of the Owner.
- h. Contractor shall bear all postage/courier, telephone/fax, telegraph and other communications etc. expenditure during his work at the site.
- i. Contractor shall provide necessary supervisory staff and inspectors, erection engineers, skilled and unskilled labour, clerical staff, watch and ward staff, store keepers, drivers, etc. required in connection with the execution of the contract.
- j. Contractor shall provide all amenities, including but not limited to, accommodation/ conveyance to his staff and labour employed by him for the work at the site.

### **ARTICLE-3: CONTRACT PRICE**

- a. The Owner shall pay to the Contractor sum not exceeding to what is set out in the Letter of Intent /Work Order, reduced or increased by such sums (if any) as under the Contract are to be taken into account in ascertaining the Contract Price. The Contractor shall take written permission from Owner for carrying out works beyond stipulated contract value as and when such situation arises.
- b. The contractor shall credit the Owner with the sums which may become allowable or due under the Contract at the times and in the manner hereinafter specified.
- c. The prices shall be fixed for the duration of the contract and shall not be subject to escalation of any description including extension of time, if any granted by owner on any ground, what-so-ever it may be.

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#### **ARTICLE-4: OWNER'S REPRESENTATIVE/CONSULTANT**

- a. All instructions and orders to the Contractor shall, except as herein otherwise provided, be given by the Owner through his nominated representative(s).
- b. All the work shall be carried out under the direction of and to the satisfaction of the Owner/Consultant.
- c. The contractor shall proceed with the work in accordance with decisions and orders given by Owner/Consultant in accordance with the contract provided that:
  - i. If the contractor being given any decision, instruction or order other than in writing and if the contractor without any undue delay require it to be confirmed in writing, such decision, instruction or order shall not be effective until written confirmation thereof has been received by the contractor, and
  - ii. If the contractor after receiving any decision, instruction from the Owner/Consultant in writing or written confirmation thereof, intimates within fourteen days any dispute or questions the decision, instruction, or order by written notice to the Owner/Consultant giving his reasons for so doing, either party shall be at liberty to refer the matter to arbitration pursuant to Article-35 hereof, but such an intimation shall not relieve the contractor of his obligations to proceed with the work in accordance with the decision, instruction, or order in respect of which the intimation has been given.



#### **ARTICLE-5: CONTRACTOR TO INFORM HIMSELF FULLY**

The contractor shall be deemed to have carefully examined the specifications, schedules and drawings and also to have satisfied himself as to the nature and character of the work to be executed and, the Site conditions and other relevant matter in detail, before entering in to the contract. No claim whatsoever, if subsequently made in this regard, shall be entertained by the owner/consultant.

#### **ARTICLE-6: FINANCIAL GUARANTEE FOR SECURITY AND PERFORMANCE**

- A) The Contractor shall provide the Owner with the financial guarantee for the due and faithful performance of the contract for a sum equal to 10% (ten percent) of the contract value or the sum as defined in the body of the contract. Such guarantee shall be in the form of a Bank Guarantee from any Scheduled/ Commercial Bank recognised by Reserve Bank of India on the format attached herewith. Contractor shall inform the Owner/Consultant name and address of its banker along with Fax Number and E-Mail.

The Bank Guarantee shall be furnished within 15 days of placement of letter of intent and shall be valid until expiry of the maintenance period referred to in Article - 31.

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- B) For increase of 20% in contract value, performance guarantee originally submitted shall remain valid. For increase beyond 20% additional guarantee to cover total increase from original contract value shall be submitted by the contractor.
- C) The validity of performance guarantee shall be suitably extended in accordance with final date of completion of work plus 12 months maintenance period from the date of certified final completion of work plus 6 months (claim period).
- D) The proceeds of performance security shall be appropriated by the Owner/Consultant as compensation for any loss resulting from the Supplier's/Contractor's failure to complete its obligations under the Purchase Order without prejudice to any of the rights or remedies the Owner/Consultant may be entitled to as per terms and conditions of Purchase Order/Contract.

## ARTICLE-7: DRAWING AND DESIGNS



- a. The drawings and detailed technical specification shall be supplied in stages, after the award of work, keeping in view the site requirements.
- b. All drawings, designs, specifications and other documents furnished by the Owner/Consultant to the contractor, including all features whether patented or patentable or not, or whether separately or collectively shown, are the exclusive property of the Owner and shall be confidential and shall not be lent or reproduced in whole or in part nor used for any purposes other than in execution of the Contract without the previous written consent of the Owner/Consultant. Such drawings, designs and other documents are loaned by the Owner/Consultant to the Contractor and subject to return on demand.
- c. Where with the written permission of the Owner/Consultant the Contractor reproduces any drawing or design in whole or part, the contractor shall stamp it as follows:

This drawing/design, including all patented and patentable features separately or collectively shown is reproduced from a drawing/design which has been furnished by the (Owner/Consultant) and is not to be reproduced or used for any purpose other than those specifically permitted in writing by the (Owner/Consultant).

- d. Any reproduction of any such drawings, designs, specification or any other document shall be equally subject to return on demand or on completion of work as the clause (b) above, whichever is earlier.

## ARTICLE-8: PATENT AND OTHER RIGHTS

- a. The contractor shall fully indemnify the Owner against any action, claim or demand, costs or expenses, arising from or incurred by reason or any infringement or alleged infringement of any letters, patent, registered design, trade mark of name copy right or other protected right in respect of the work or method of using, fixing, or working the Equipment's authorised or recommended by the Contractor.

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- b. The Owner warrant on their part that any design or instructions furnished or given by him for performance of work hereunder to the contractor shall not be such as will cause the contractor to infringe any letters patent, registered design, trademarks or copy right in the performance of the contract.

In the event of any action being brought or any claim or demand being made against owner on account of any such matter as aforesaid, the Contractor shall immediately be notified and he shall at his own expenses fully cooperate with Owner and shall do all that the Owner may reasonably require in defence in such action or to resist such claim or demand.

## ARTICLE-9: ROYALTIES



All payments and royalties payable in respect of any letters, patent and other rights whether payable in one lump-sum or by installments or otherwise are included in the Contract Price. Owner/consultant shall not be liable to pay such dues or sums.

## ARTICLE-10: ASSIGNMENT AND SUBLETTING

- a. The Contractor shall not without the consent in writing of the Owner/Consultant assign or transfer the contract or benefits or obligations or any part thereof to or enter into any sub-contract with any other person. Any such consent shall not relieve the Contractor from his obligations under the Contract.
- b. If any sub-contractor engaged upon the work with due permission from Owner/Consultant at the site executes any work which in the opinion of the Owner/Consultant is not of the requisite standard (the opinion of the Owner/ Consultant being final in this regard), the Owner/Consultant may by written notice to the Contractor require the Contractor to terminate such sub-contract, and contractor shall upon the receipt of such instructions terminate such sub-contract at the risks and cost of the Contractor, and shall keep Owner/Consultant indemnified against all the consequences.

## ARTICLE-11: GUARANTEE

- a. All Equipment supplied and work done by the Contractor pursuant to the Contract shall be guaranteed by the Contractor to be in accordance with the specifications contained in the contract, new and of the best quality and workmanship and to be of expert design conforming to generally accepted Indian/International standard to be of sufficient size and capacity and of proper materials so as to fulfill in all respects requirements specified in regard thereto.
- b. If at any time during the execution of the work or during the maintenance period specified in Article-31 hereof, the Owner/Consultant shall decide that any equipment supplied or work done by the contractor fails in any respect to conform to the guarantees given by the contractor in paragraph (a) hereof, the Owner/Consultant may as soon as reasonably

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practicable, give the contractor a notice in writing of the respects in which the equipment supplied or the work fails to conform to the such guarantee and the contractor shall thereupon, at his own expense, replace any equipment and carry out any further work that may be necessary to ensure that the equipment supplied and the work done conforms to such guarantee.



- c. If the contractor fails within a reasonable time not exceeding 15 days from the date of notice in this behalf from the Owner/Consultant to take such steps as may be necessary to fulfill his obligations under paragraph (b) hereof then the Owner/Consultant may, at the expense of the contractor shall conform to such guarantee.
- d. If any replacement of equipment or the work done by the contractor pursuant to this article shall be of such a nature as to effect the efficiency or performance of the whole or any portion thereof, Owner/Consultant may give notice to the contractor in writing requiring that a test or tests shall be carried out at the expense of the contractor and in accordance with the technical standards prescribed by Bureau of Indian Standards.

## ARTICLE-12: VARIATIONS AND OMISSIONS

- a. The contractor shall not; alter any of the work except as directed in writing by the Owner/Consultant but the Owner/Consultant shall have the full power from time to time during the execution of the contract by notice in writing to direct the contractor to alter, amend, omit, add to, or otherwise carry out any of the work, and the contractor shall carry out such variations, and be bound by the contract so far as applicable as though the said variations were stated in the contract. In any case, in which, the contractor has received any such direction from the Owner/Consultant which either then, or in the opinion of the contractor, will later involve an increase or decrease in the contract price, the contractor shall within seven (7) days of such direction, advise the Owner/Consultant in writing to that effect. The Owner/ Consultant shall thereupon approve in writing such variations which are to be given effect together with the amount of increase or decrease in the contract price on that account. The contractor shall then give effect to such variations. The difference in cost, if any, occasioned by any such variations, shall be added to or deducted from the contract price and paid in the same way as the contract price.
- b. If in the opinion of the contractor any such variation is likely to prevent or prejudice him from fulfilling any of obligations under the contract, he shall notify the Owner/ Consultant thereof, in writing and the Owner in consultation with consultant shall decide forth with whether or not such variations; shall be carried out. If the Owner/ Consultant amends his instructions in writing, the said obligations shall be modified to such an extent as may be agreed in writing between the owner and the contractor, provided however, that the contractor may not call upon the owner to agree to any such variations as would in any way, have the effect of modifying the obligations of the contractor under the provisions of Article-8 and 11 hereof.

If any variation in the scope of work necessitates any extension in the time for completion, the provisions of Article-25 here of shall apply.



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### **ARTICLE-13: EXECUTION OF WORK IN INCLEMENT WEATHER**



The contractor shall, during inclement, weather, carryout the work in accordance with the contract and the contractor shall not be entitled to any additional payment over and above the contract price by reason of his being unable to carry out the work owing to inclement weather.

It is presumed that the Contractor has familiarized himself with the weather conditions preailing in the area therefore in such weather parameters if it appears to the Engineer –in –charge (EIC) that certain weather condition may damage the work or specified quality of the work can be achieved without stoppage of the work, the EIC in such conditions may require the Contractor to stop the work till such time as he thinks fit and appropriate. It is understood by the contractor that no compensation will be admissible on this count. However in exceptional circumstances at the recommendation of the EIC, Consultant/owner may grant reasonable extension of Time.

### **ARTICLE-14: CONTRACTOR'S DEFAULT**

If the contractor shall fail or neglect to execute the work with all diligence and expedition, or shall refuse or neglect to comply with any reasonable orders given to him in writing by the Owner /Consultant in connection with the work, or shall contravene the provisions of the contract, the Owner/Consultant may give notice in writing to the contractor specifying the time within which to make good such failures, neglect or contravention. Should the Contractor fail to comply with the notice within the time specified in the notice, then the Owner either on its own or in consultation with the consultant shall be at liberty forthwith to make good such failure, neglect or contravention and to execute such part of the work as the contractor may have failed or neglected to do, all without prejudice to other rights the owner may have under contract, to take the work wholly or in part out to the contractor's hands and enter into contract with any other person, firm or company to complete the work or any part thereof, and in such events the owner shall have free use of all contractor's hands and enter into contract with any other person, firm or company to complete the work or any part thereof, and in such events the owner shall have free use of all contractor's equipment and other things that may be at any time on the site in connection with the work, without being responsible to the contractor, for fair wear and tear thereof, and to the exclusion of any right of the contractor over the same, and the owner shall be entitled to retain any balance amount which may be otherwise due under the contract to the contractor or such part thereof as may be necessary to the payment of the cost of executing the said part of the work or of completing the work as the case may be and of meeting claims of third parties against the owner and arising from or in consequence of the contractor's failure, neglect, refusal or contravention as aforesaid, if the cost of completing the work or executing a part thereof or of meeting claims of third parties as aforesaid shall exceed the balance due to the contractor under this contract the owner shall have right to recover the balance from amounts payable to the contractor under any other contract or from his performance guarantee. The contractor shall not resort to unilateral stoppage of work due to any reason whatsoever. If he does so, it shall be treated as default and breach of contract.



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## ARTICLE-15: BANKRUPTCY AND WINDING UP

If the contractor shall become bankrupt or insolvent or have a liquidator/receiver appointed over his company, or compound with his creditors, or being a corporation, commence to be wound up, not being a member's voluntary winding up for the purpose of reconstruction, or carry on its business under a receiver for the benefit of its creditors or any of them, the owner shall be at liberty -

- a. to terminate the contract forthwith by notice in writing to the contractor or to The Receiver or Liquidator or any person in whom the contract may become vested, and to act in the manner provided in Article-14 hereof as referred to in such Article and the work had been wholly taken out of contractor's hands or
- b. to give such receiver, liquidator, or other person the option of carrying out the contract subject to his providing guarantee for the due and faithful performance of the contract to the extent of work desired by the owner and upto the amount to be agreed within; the over all contract value.

## ARTICLE-16: INSPECTION AND TESTING

- a. The representatives of the Owner and the consultant shall be entitled at all reasonable time to inspect the work or any part thereof. The contractor shall provide all necessary assistance to the Owner/Consultant and shall make available all such tools to enable the owner/consultant may require carrying out such tests/inspection. The contractor shall uncover any part of the work or make openings for inspection as the Owner/Consultant direct and shall reinstate and make good such part to the reasonable satisfaction of the Owner/Consultant. The contractor shall ensure that his sub-contractors and vendors also provide such facilities for inspection and tests by the Owner/Consultants that have been mentioned in this clause.
- b. On receiving notice from the contractor that the work is ready for inspection, the Owner/Consultant shall without unreasonable delay, attend for the; purpose of inspecting the said work. The Owner/Consultant reserves the right to waive participation in any test requirements, which however shall not absolve the contractor of his liabilities herein. When the tests have been completed satisfactorily, the contractor shall furnish the test certificates for owner/consultant's signatures within two days of completion of such tests.
- c. The owner/consultant shall have the right, according to his judgment and specifications to for-bid the use and the dispatch of all such materials which, during tests and inspections, fail to comply with requirements.
- d. The contractor shall not dispatch any equipment without the completion of final inspection by the owner/consultant. The waiver from participation in the final inspection shall be made by the owner only.

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- e. Whenever it is necessary to cover up any work in respect of which previous inspection is desired and the contractor has been notified accordingly by the owner/consultant in writing, the contractor shall give notice in writing to the owner/consultant before the work is covered up. No such work shall be covered up or built upon unless it has been inspected and approved by the owner/Consultant or unless the owner's consent in writing to this was being done without his previous inspection and approval has been obtained in advance.
- f. Inspection/waiver by Owner/Consultant shall not, however, relieve the contractor of its obligations including guarantees and warranty obligations hereunder.

#### **ARTICLE-17: ORIGIN OF MATERIALS**

- a. The Owner shall have the right, at any time, to call upon the contractor for evidence of origin of raw materials and parts of equipment.
- b. All equipment supplied or used shall be new and of first class and quality of the grade specified.

#### **ARTICLE-18: MILL CERTIFICATES**

All mill certificates covering physical and analytical tests are to be produced as called for by the owner/consultant at no extra cost.



#### **ARTICLE-19: FLAME PROOF ELECTRICAL EQUIPMENT**

Where the equipment include flame-proof electrical equipment to a recognized Indian Standard or code of practice, then the contractor shall forward copies of the relevant certificates to the owner at no extra cost.

#### **ARTICLE-20: TEST CERTIFICATES**

The contractor will, if so required by the owner/consultant supply specified numbers of test certificates and/or materials analysis certificates. Reports from recognized agencies of repute (The agencies shall be approved by consultant/owner). In case of any doubt the contractor shall repeat the test at his own cost.

#### **ARTICLE-21: ACCESS TO AND POSSESSION OF THE SITE**

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- a. Subject to paragraph (c) hereof, access to and possession of the site shall be afforded to contractor by the owner/consultant in reasonable time.
- b. In the execution of the work, no persons other than contractor's employees or labours shall be allowed on the site, except by the written permission of the owner, but facilities to inspect the work at all times shall be afforded to the owner/consultant and his representatives and other authorized officials or representatives of the owner/consultant.
- c. The access to and possession of the site referred to in paragraph (a) hereof shall not be exclusive to the contractor but only such as shall to enable him to execute the work. The contractor shall afford to the owner/consultant, and to other contractors authorized by owner/consultant every reasonable facility for the execution of work concurrently with his own.
- d. Unless otherwise provided in the contract, the owner shall give contractor facilities as far as possible for carrying out the work on the site continuously during the normal working hours as fixed by the owner, the owner may, after consulting with the consultant direct that the work shall be done at other times if it shall be practicable in the circumstances for the work to be so done.
- e. Construction Water and Power shall be arranged by Contractor at their own cost.

## **ARTICLE-22: CONTRACTOR'S EQUIPMENT**

- a. The contractor shall, at his own risk and expenses, provide all equipment necessary to execute and complete the work, If any equipment is available with owner at the site, the contractor may, with the written consent of the owner, use the same on payment of necessary charges as fixed by the owner.
- b. All contractors' equipment shall be used solely for the purpose of the work at site and shall not be removed from site by the contractor, without the permission in writing of the Owner, and the contractor shall be liable for the loss or destruction thereof or damage thereto. If there shall be any due owing or accruing to owner, from the contractor any money in respect of this contract, the owner shall be at liberty, at the cost of the contractors, to sell and dispose of any such (Contractors) equipment, as the owner shall think fit, and to apply the proceeds in or towards the satisfaction of such money as aforesaid.

## **ARTICLE-23: CONTRACTOR'S REPRESENTATIVES AND WORKMEN AT SITE**



- a. The contractor shall employ one or more competent and authorized representative whose name or names with specimen signature shall have previously been communicated in writing to the owner/consultant by the contractor, to superintend and carrying out the work. The said representative shall be present at site during working hours and any orders or instructions which the owner/consultant may give to the said representative shall be deemed to have been received by the contractor.

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- b. The consultant and/or owner shall be at liberty to serve by notice in writing to the contractor to object to any representative or person employed for execution or otherwise for the work, who, in the opinion of the owner/consultant, misconduct himself or is incompetent or negligent. On receipt of such notice, the contractor shall remove such person from the site forthwith.
- c. The consultant and owner shall be given the opportunity to approve the employment of casual labour hired for the work.
- d. The contractor and his employees shall abide by the site working rules.
- e. The contractor shall immediately notify the owner/consultant in writing of any labour dispute affecting the work. Such notice shall describe the nature of labour dispute and the actions being taken by the contractor to settle the disputes.
- f. The contractor shall keep the owner/Consultant indemnified from and against all personal and third party claims whatsoever (inclusive of all costs incurred between attorney and client) arising out of any act, omission or intermission on part of contractor, any sub contractor or agent, sub-agent, consultant or employee of the contractor or any sub-contractor whether committed, omitted or arising within or without the scope of the contract, sub-contract agency or employment, as the case may be.

#### **ARTICLE-24: LIABILITY FOR ACCIDENTS, DAMAGE AND INSURANCE**



- a. The contractor shall, during the execution of the work, properly cover up and protect any part of the work liable to injury by exposure to the weather and; shall take every reasonable precaution against accident or injury to the work from any cause.
- b. All contractors' equipment shall be at the sole risk of the contractor.
- c. The contractor will insure all his personnel employed for the execution of the work against any personal injury that may be sustained by them as a result of the execution of the work and present satisfactory evidence to the owner/consultant that such insurance is in force.
- d. The contractor shall be responsible for workman's compensation insurance and all other statutory requirements in regard to the personnel in the contractor's employment.
- e. Owner will be taking storage / erection policy. The contractor at his own cost shall arrange, secure and maintain all insurance that may be pertinent to the works and obligatory in terms of law to protect his interest and interest of the owner against all points including accident insurance in the joint names of contractor and the owner. Contractors All Risk Insurance Policy covering a) fire & lightening / lighting, b) accident damage during construction for example due to dropping or falling or defective workmanship and materials, lack of skill, negligence, malicious act or human error, c) water damage, flood, storm, tempest inundation, earthquake, d) Collapse, collisions, impact e) theft and burglary, malicious damage f) subsidence, land slide, rock slide. The period of insurance cover shall be from commencement of work upto completion and handing over of the work to the

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owners. The sum insured should represent the completed value of work done including cost of all materials etc.

## ARTICLE-25: TIME FOR COMPLETION

- a. The terms and conditions agreed upon with respect to this agreement shall be subject to 'Force Majeure'. 'Force Majeure' shall be deemed to be only cause beyond the reasonable control of the contractor or the owner, as the case may be, which prevents or impedes the due performance of the agreement and which by the due diligence the affected party is unable to avoid or overcome through its individual concerted effort. For the purpose of this Article, Force Majeure shall mean and be limited to the following:
- i) Any war or hostilities;
  - ii) Any riots or civil commotion;
  - iii) Any earthquake, flood, tempest, lightening or other natural physical disaster;
  - iv) Any accident fire or explosion not caused by the negligence of the contractor;
  - v) Any legal strike / lock-out or other industrial disturbance (only those exceeding 10 continuous days in duration) affecting the performance of the contractual obligation.
  - vi) Any law or order of any Government Department or other authority which delays or impedes the contractor in the execution of the work.
- b. If either party is prevented or inordinately delayed in the performance of any of its obligations under the agreement by Force Majeure and if affected party gives written notice to the other party specifying the matter constituting Force Majeure with necessary evidence that a contractual obligation is thereby prevented or delayed, and the further period which it is estimated that such prevention or delay will continue, then the effected party shall be excused the performance or delayed performance as the case may be of such obligations as from the date of such notice for so long as may be justified.
- c. Any occurrences of Force Majeure shall be informed in writing within seven days of occurrence otherwise it shall not be deemed as force majeure. Such Force Majeure shall be effective from the date of receipt of such notice from either party. Continuance of Force Majeure shall be informed every week.
- d. If by virtue of the proceeding paragraphs either party shall be excused the performance or punctual performance of any obligation for a continuous period of six months the parties shall consult together with a view to agreeing what action should in the circumstances be taken and what amendments to the terms of the contract ought to be made.
- e. For variation in the scope of work resulting into additional 20% in estimated contract value, no extension in completion time shall be admissible. Notwithstanding any other provision in the contract, the Owner/Consultant may at any time of its own initiative or at the request of the contractor, if satisfied of the existence of any ground (s) may extend the completion

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period by duration as deemed reasonable. The decision of the Owner/Consultant in this regard shall be final and binding upon the contractor.



- f. Within (7) seven days from the date of receipt of work Order the contractor shall submit to the owner/consultant for approval in respect of each job site or groups of work or a detailed Progress schedule in graphical or other suitable form giving dates of starting and finishing of various operations and works related to the work providing sufficient margin to cover for contingencies and for final testing and consequential repair etc., if any required. The owner/consultant and contractor shall thereafter within seven days settle the progress schedule and the progress schedule so settled shall be the approved progress schedule and shall form part of the contract with attendant obligations upon contractor to commence the various works/operations involved on or before the date(s) mentioned in; the progress schedule and to conclude the said work(s)/ operation(s) on or before date mentioned in this behalf in the approved progress schedule, and default by contractor to commence or complete within prescribed date(s) any work or operation shall be deemed to be a breach of contract by the contractor to which the provisions of clause 30 relating to termination of contract shall be applicable, but without prejudice to any other rights or remedies that owner may have in this behalf.

**g. PREDETERMINED AGREED DAMAGES FOR DELAY**

If for reasons not attributable to the owner or due to conditions not constituting force majeure as defined in this contract the work is not completed in accordance with the provisions hereof within and in accordance with the Time Schedule hereto/the TIME FOR COMPLETION, it is clearly understood and agreed that the Owner shall be entitled to and the contractor shall pay to the Owner the following as mutually agreed damages for delay (which are a genuine pre-estimate made by the parties of the loss which the Owner would have suffered on account of such delay in completion of the work) after taking into consideration all circumstances and not as penalty and without the owner being required to establish and prove the actual loss/damage suffered by the owner on account of such delay :

- i. The pre estimated mutually agreed damages for delay pursuant hereto shall be payable at the rate of 1/2% (half percent) of total contract value per week or part thereof's delay in completion of the work subject to a maximum of 5% of final value of work. It is expressly agreed by and between the owner and the contractor that no prior notice will be required to be given by the owner to the contractor, before effecting recovery of compensation amount from their bills/other due if any.
- ii. Notwithstanding anything to the contrary contained in this Contract and without prejudice to the rights of the Owner under this CONTRACT and the entitlement to the said pre-estimated mutually agreed compensation for delay and in addition and not in derogation or substitution thereof the owner shall be entitled to terminate this contract in whole or in part without being liable to the contractor in any manner whatsoever or to have the uncompleted portion of the work to be executed/performed pursuant hereto by the contractor completed/ executed/performed at the risk and cost of the contractor in the event of, and despite 30 days notice in writing the contractor failing to complete/execute/perform all or any part of the work to be completed /



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executed / performed pursuant hereto by the contractor within and in accordance with the Time Schedule hereto/the TIME FOR COMPLETION as extended in accordance with the provisions hereof or by the owner.



## ARTICLE-26: COMPLETION TEST

Completion test if applicable shall be carried out as per technical specification in Contract / BIS.

## ARTICLE-27: TAKING OVER

- a. taking over shall be done at one stage after completion of the entire job except where desired by owner otherwise. Only one completion certificate shall be issued after completion of all jobs.
- b. Within 15 days of carrying out final inspection of the works at any job site covered by the contract, the contractor shall clear the job site covered by the contract, the contractor shall clear the job site of all scaffolding, wiring, pipes, surplus materials, contractor's labour's equipment and machinery and shall, demolish, dismantle and remove all contractor's site offices and quarters and other temporary works, structures and constructions and other items and things whatsoever brought upon or erected at the job site or any land allotted to the contractor by the owner and not incorporated in the permanent works and shall remove all rubbish from the job site and the land allotted to contractor and shall clear level and dress the job site and said land to the satisfaction of the owner/consultant and shall put the owner in undisputed custody and possession of the job site and all land allotted by the owner to the contractor, and unless the contractor shall have fulfilled the provisions of this clause the works shall not be deemed to have been completed.
- c. The contractor shall submit following documents as desired by owner before completion certificate is issued:
  - i) The Technical Documents according to which the work was carried out;
  - ii) Complete set of working drawings showing therein corrections and modifications (if any) made during the course of execution of the works, signed by the owner;
  - iii) Certificates of final levels as set for various works, signed by the owner;
  - iv) Final Test Certificate;
  - v) Certificates of owner; of satisfactory fulfillment of the provisions as above hereof;
  - vi) List of owner supplied surplus materials returned to owner's stores, signed by the owner;
  - vii) Materials-at-site accounting for owner supplied materials, signed by the owner;
  - viii) List of the scrap materials returned to store, signed by the owner.
  - ix) Discharge certificate in respect of owner supplied equipment and machinery signed by the owner.
  - x) Any other certificate/document which owner/consultant may find necessary.



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- d. The issue of completion certificate shall be without prejudice to the owner's rights and contractor's liabilities under the contract, including the contractor's liability for the defect liability period nor shall the issue of a completion certificate in respect of the works or work at the job site be construed as a waiver of any right or claim of the owner against the contractor in respect of work or the works at the job site in respect of which the completion certificate has been issued.
- e. Upto and until issue of the completion certificate as provided for herein above in respect of the works or the works at job site the relative work(s) shall be and remain at the risks of the contractor in all respects, including (but not limited to) accident, fire, lightning, earthquake, flood, storm, tempest, riot, civil commotion and /or war.

### **ARTICLE-28: SUSPENSION OF WORK ON INSTRUCTION OF OWNER/ CONSULTANTS**

- a. The Contractor shall on the written order of the owner/consultant, delay or suspend the progress of the work for such time or times and to such extent and in such manner as owner/consultant may specify.
- b. All reasonable expenses incurred by the contractor by reason of such delay or suspension by the owner/consultant otherwise than in consequence of some default on the part of the contractor shall be added to the contract price, provided that no claim shall be made under this article unless the contractor has within 7 days, after the event giving rise to the claim, give notice in writing to the owner/consultant of his intention to make such claim. However, no compensation for suspension of work by the consultant or the owner shall be payable to the contractor if the period of suspension is 30 days or less.
- c. If in the opinion of the contractor the suspension shall necessitate any extension in the time of completion, the provision of article no. 25 hereof and related article in respect of extension of time shall apply.

### **ARTICLE-29: CANCELLATION OF CONTRACT**



- a. The owner shall be entitled at any time at its discretion to cancel the contract if, in the opinion of the owner, the cessation of the work becomes necessary owing to any cause whatsoever, and a notice in writing from the owner to the contractor of such cancellation and the reason(s) therefore shall be conclusive proof of such cancellation and the reasons thereof.
- b. Upon cancellation of the contract, the owner shall take over from the contractor the approved materials lying at job site on the date of the cancellation at the rate(s) for such material(s) as specified in relative item(s) of the schedule of rates, and if the rate(s) for any material(s) be not (in the opinion of the owner which shall be final) specified in the schedule of rates at market rate(s) for such material(s) current on the date of the cancellation. The decision of the owner/consultant as to the approved materials lying at site on the date of cancellation and the quantities and market rate(s) thereof shall be final and binding upon the contractor.

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- c. The contractor shall not be entitled to any compensation in addition to the payment for the work actually performed by rates as a result of such cancellation notwithstanding that such cancellation may have resulted in the performance of quantities of work below the quantities indicated in the form of schedule of rates and/or of a value below the total contract value indicated in the work order.

### ARTICLE-30: TERMINATION

- 1
  - (a) The Owner may, for breach of any provision of the contract by the contractor at any time by notice in writing to the contractor, terminate the contract.
  - (b) In the event of termination pursuant to paragraph(s) of this Article-
    - i) The contractor shall carry out instructions of the owner in connection with such termination including the cancellation of orders and the termination of contracts which the contractor may have placed with others.
    - ii) The owner shall pay the contractor for all materials used and work executed pursuant to the contract, but unpaid at the date of such termination together with any costs necessarily incurred by the contractor in connection with the work as a result of such termination provided that owner shall not be liable for any indirect loss, any business loss or damage or loss of profit suffered by the contractor as a result of such termination.
    - iii) For the purpose of determining the amount due to the contractor joint measurements shall be taken for the work completed and material supplied as on the date of termination. Bill prepared by the contractor on the basis thereof shall be deemed to be the final bill.
  - (c) The contractor shall upon receiving notice from the owner in accordance with paragraph (a) of this Article, notify the owner within a reasonable time of the sums for materials used and work executed as mentioned in paragraph (b) (ii) of this Article. These sums and all terms and conditions of termination pursuant to this Article may be agreed in writing between the owner and the contractor.
2. In the event of any breach of the provisions of the agreement or default in the performance of the obligations by the contractor not being remedied by him within 30 days of receipt of notice in that behalf from the owner, the owner shall be entitled to terminate the contract forthwith without prejudice to its other rights and remedies hereunder, by a communication in writing to the contractor and as such on termination the contractor shall be liable to pay to the owner for all loss and damages and sums that may be suffered and incurred by the owner including the additional costs incurred in rectifying default and/or completing unfinished work notwithstanding anything contrary contained in this contract.



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3. Upon termination of the contract pursuant to this Article, obligations of the parties hereto shall cease except as to the liabilities of either party to the other for obligations accrued prior to the date of such termination.
4. Within 15 days of completion of measurements, the contractor shall clear the job site of all scaffolding, wiring surplus materials, labours, construction tools, equipment & machinery and shall dismantle, demolish and remove site office, labours quarters etc. or any other thing instructed by owner. Should the contractor fail to comply with the instructions of owner in this regard, owner shall be entitled to take undisputed possession of site and take action for site clearance at the risk and cost of contractor.

## **ARTICLE-31: MAINTENANCE PERIOD**

### **FOR ALL WORKS**

- i) The contractor guarantees that the work shall perform in accordance with the contract. He shall protect the work until the completion of same as certified in writing by the owner/consultant.
- ii) He shall also maintain in good and substantial repair, fair wear and tear expected, the whole of the works until the expiration of the maintenance period of 12 months after the certified completion of the works as whole and he shall also be liable for the soundness and stability thereof, and be responsible for injury to any person or property owing to any settlement, failure, defect, damage or fault due to any cause whatsoever other than earthquake or fire during this period. This liability and responsibility shall not be affected or removed by any certificate of satisfaction or for payment of money which the owner/consultant may at any time give or have given. Moreover, the contractor shall at his own cost, restore such settlement, failure, defect, damage or fault without charge to the owner or the owner may restore such settlement; failure, defect or damage at the contractor's risk and cost. In any case, the contractor shall be liable for and shall pay and make good to the owner or other person or parties being entitled thereto, all losses, costs and expenses they or any of them may put to or be liable to be by reason or in consequence of the settlement, failure, damage or defect and the owner may deduct the amount of losses, cost or expenses from any sum due or to become due to the contractor, or may recover the same from his performance guarantee.
- iii) The defects or other faults which may appear within the said maintenance period and which in the opinion of the owner/consultant who shall be the sole deciding authority in this respect have arisen from material or workmanship not in accordance with the contract, shall be rectified by the contractor at his own cost to the satisfaction of the owner/consultant within the period mentioned in the notice to be issued by the owner/consultant specifying the defects and directing the rectification thereof. Failing this rectification the owner will be at liberty to rectify the said defects by and through any other agency at their sole discretion entirely at the risk and cost of the contractor. In the event of such rectification being carried out by the owner on default of the contractor Owner shall deduct from the contractor's dues such sum of money as may be certified by the owner/consultant for the rectification for the said defects. The certificate of the

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owner/consultant in this respect as aforesaid shall be final, binding and conclusive to the contractors, Provided always that the liability of the contractor under this condition shall not extend beyond the maintenance period as aforesaid except as regards the defects and faults which the owner/consultant may have previously given notice to the contractor to rectify.

### **ARTICLE-32: PAYMENT DUE FROM THE CONTRACTOR**



All costs, damages or expenses for which the contractor is liable under the contract may be deducted from any money due or becoming due to the contractor on any account whatsoever or may be recovered by action at law or arbitration.

### **ARTICLE-33: PAYMENTS**

Payment Terms shall be applicable as per Annexure-1.10 of Section-A, Commercial Part.

### **ARTICLE-34: OBSERVANCE AND COMPLIANCE OF STATUTORY RULES/ LAWS**



- a. The rights and obligations of owner and contractor and provisions of the agreement shall be governed by the Indian Laws.
- b. The contractor will be fully responsible for all matters arising out of the performance of the contract and shall comply at his own expenses with all the laws/ enactment's/ orders/ regulations/ statutory obligations, whatsoever, of the Government of India/State Govt./any Statutory or non-statutory authority. The contractor hereby agrees to indemnify and keep harmless the owner/consultant against all liabilities in this respect. The contractor shall be fully and exclusively responsible for the work, conduct, supervision and control of all their own personnel and personnel employed by the sub-contractor engaged by them and owner/consultant shall in no way be responsible for supervision, control etc. of these personnel. Since the contractor shall have full and exclusive supervision and control over the contract awarded to him, and the people engaged for this purpose, the contractor or his sub-contractor, as the case may be, shall be the principal employer under the contract labour (Regulation & Abolition) Act. 1970 and the contractor shall register himself as such; and the owner/consultant shall have no responsibility and liability on this account.
- c. The contractor shall observe all safety rules so that no harm or damage is done to the owner's employees or property. The owner/consultant shall have their right to object to any unsafe practices followed by the contractor or their subcontractors. If on account of the contractor or sub-contractor, owner's property or personnel are likely to suffer any damage in such cases any directions, issued by owner/consultant shall be complied with by the contractor and their sub - contractors.
- d. The contractor shall at all times be responsible for work under the supervision and control of all its personnel in connection with the work awarded to him under this contract, whether the personnel are employed by the contractor or by any sub-contractor engaged by him.

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- e. If, in the opinion of owner, any employee or employees of the contractor or his sub-contractor is found to be suffering from any disease, infections or otherwise or if any employee of the contractor or his sub-contractor is found to commit any misconduct including use of intoxicants or on account of any other reasonable cause, owner/consultant at its sole discretion may if require, the contractor to remove such employee(s) without questioning the decision of the owner/consultant in this respect and owner will be entitled to restrain such employee(s) from entering the premises.
- f. The contractor shall engage sufficient number of personnel with suitable qualification and experience so that the work and job assigned to the contractor are completed as per the specifications and within the time schedule.
- g. Contractor shall be responsible to keep himself informed of all the statutory laws, rules and Regulations of Central Government, Municipality etc. Contractor shall be responsible to secure compliance with all central and state laws as well as the rules, regulations, bye-laws and orders of the local authorities and statutory bodies as may be in force from time to time.
- h. Contractor shall be responsible to ensure that no loss or damage is caused to the adjoining property around the battery limits of the project. In case of any damage or loss to adjoining property which is attributable to them, the contractor shall make good the loss or damage at his own cost.
- i. **PAYMENT OF WAGES BY THE CONTRACTOR**

The wages of every labourer employed by the contractor under this contract shall be paid by him before the expiry of 7 days after the last day of the month in respect of which the wages are payable (i.e. wages of the previous month). The minimum wages rates. As notified from time to time by the Government as per the minimum wages act. 1948 and/or such other authority will have to be paid by the contractor to all his workers. The payments shall be disbursed against muster roll in the presence of the owner's representative and the same shall be affected during working hours in the factory premises. In case of any default/delay, the company will have the right to disburse the due payments to the contractor's workmen and the amount so disbursed together with any other expense incurred by the company to meet the contractor's pending bills/security deposit, if any besides, the owner shall also have the right to cancel the contract forthwith.

- j. **PROVIDENT FUND:**

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The contractor will also strictly observe the provisions of employees provident fund act. The contractor shall have their own P.F. code. The contractor shall have to submit documentary evidence of his P.F. code otherwise bid not be considered. The contractor shall be required to submit documentary proof requiring remittance of P.F. of their workers during execution of work otherwise their bills not be cleared.

- k. Contractor shall be responsible to observe and comply with all statutory requirements including Contract Labour Act 1970, Minimum Wages Act 1948, ESI Act 1948, Employees Provident Fund Act 1952, Labour Laws and Regulation and subsequent amendment etc. in vogue of Central Government. Owner/Consultant shall be kept indemnified against any action brought against it for any violation/ non compliance of any Act, Rules and Regulations including contribution under ESI Act, 1948, EPF Act 1952, Wages Act 1948, Payment of Wages Act 1936, payment of Bonus Act 1965, Payment of Gratuity Act 1972 etc. and subsequent amendments etc. All expenses for compliance of above Acts and Regulations shall be borne by the contractor. Contractor shall submit documentary evidence against statutory dues like PF, ESI, Bonus etc. for the personnel deputed at site. Deputation of workers on duty and payment of their wages and other benefits (i.e. ESI contribution, PF contribution, overtime, bonus etc.) shall be strictly as per the notification of the Central Government from time to time and all other applicable statutory acts, rules and regulations in force and as amended from time to time.
- l. The contractor will provide access to their records so that Owner can check regular and just payment of the minimum wages and remittances of PF of the workmen to their account. In case any discrepancy is noticed or any complaint is received from the personnel deployed regarding non-payment of wages, PF, ESI and / or any other statutory dues, stern action will be taken against the contractor by the Owner.

## **ARTICLE-35: RESOLUTION OF DISPUTES/ARBITRATION**

35.1 The Owner/Consultant and the Supplier shall make every effort to resolve amicably by direct informal negotiations any disagreement or dispute arising between them under or in connection with the Purchase Order.



35.2 If, after thirty (30) days from the commencement of such informal negotiations, the Owner/Consultant and the Supplier have been unable to resolve amicably a Purchase Order dispute, either party may require that the dispute, be referred for resolution to the formal mechanisms as specified hereunder.

### **35.3 LEGAL CONSTRUCTION**

Subject to provision of Article 35.4, the Work Order shall be, in all respects, construed and operated as an Indian contract and in accordance with Indian laws as in force for the time being and is subject to the exclusive jurisdiction of the court at Delhi only.

### **35.4 ARBITRATION**



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- a. Any dispute or difference whatsoever arising between the parties out of relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the provisions of the Arbitration & Conciliation Act, 1996 and any amendments thereafter, and the award made in pursuance thereof shall be binding on the parties.
- b. The performance under this contract shall not stop for any reason whatsoever during the said dispute/proceedings, unless the contractor/supplier is specifically directed by Owner/Buyer to desist from working in this behalf.
- c. The Jurisdiction Venue of all arbitration shall be at Delhi only.
- d. The language of proceedings shall be English.
- e. The Law governing the substantive issues between the parties shall be the Laws of India.

#### **ARTICLE- 36: RECOURSE**

The Owner shall have recourse to the contractor for any costs, claims, demands, proceedings, damages and expenses whatsoever arising out of or in connection with any failure of the contractor to perform any of his obligations under the terms of contract.

#### **ARTICLE- 37: ADVERTISEMENT**

No advertisement, publicity matter or other literature in relation to the contract or the work is to be published or utilized by the contractor except with prior written permission of the owner.



#### **ARTICLE-38: CONSTRUCTION OF CONTRACT**

The contract to the exclusion of all other agreement, statements or representation whether oral or written constitutes the full agreement between the parties hereto for the work to be performed hereunder.

#### **ARTICLE-39: INTERPRETATION OF CONTRACT**

- a. The several contract documents forming the contracts are to be read together as a whole and are to be taken as mutually explanatory.
- b. Should there be any doubt or ambiguity in the interpretation of the contract documents or error, omission or contradiction therein or in any of them, the contractor shall prior to commencing the relative work, apply in writing to the owner for his decision in resolution of the doubt, ambiguity or contradiction or correction of the error or omission, as the case may be. Should the contractor fail to apply to the owner for his decision, as aforesaid prior to



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commencing the relative work, the contractor shall perform said work as per interpretation of owner whose decision shall be final and binding on contractor.

#### **ARTICLE-40: SECRECY CLAUSE**

The technical information, drawings, specifications & other related documents forming part of the WORK ORDER are the property of OWNER and shall not be used by CONTRACTOR for any other purposes, except for the execution of the WORK ORDER. All rights including rights in the event of grant of a patent and registration of design are reserved. The technical information, drawings, specification records and other documents shall not be copied, transcribed, traced or reproduced in any other form or otherwise in whole or in part and/or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without OWNER's prior written consent except to the extent required for the execution of WORK ORDER. CONTRACTOR confirms that he/it has read and understood the secrecy and confidentiality obligations of the OWNER as provided in this W.O. and agrees to abide by the obligations (including indemnity obligation) cast upon the OWNER. Successful bidder will have to execute secrecy agreement with owner, format of which shall be mutually agreed.

#### **ARTICLE -41: INDEMNIFICATION**

Supplier does hereby agree to indemnify and hold harmless the Owner/Consultant from all claims, losses demand clauses of action or suit arising out of the services, labour, equipment and materials furnished by supplier.

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## SECTION-A : COMMERCIAL

### ATTACHMENT – 3.0


### SPECIAL CONDITIONS OF CONTRACT

0	11.01.2018	FOR TENDER	SK	KJ	RRK
REV.	DATE	PURPOSE	PREPARED	REVIEWED	APPROVED

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## SPECIAL CONDITIONS OF CONTRACT

### 1.0 RATES

- 1.1 The rates shall be deemed to allow for all minor extras and constructional details which are not specifically shown on drawings or given in the specifications but are essential in the opinion of the Owner/Consultant to the execution of work to conform to good workmanship and sound engineering practice. The Owner / Consultant reserve the right to make any minor changes during the execution without any extra payment.
- 1.2 The Owner / Consultant decision to classify any item 'minor changes', 'minor extras' and 'constructional details' shall be final conclusive and binding on the Contractor.
- 1.3 The Rates quoted shall include for payment of royalties for obtaining earth, morrum, sand, aggregates, stones, etc. Nothing extra shall be paid to the Contractor on this account.
- 1.4 Contractor shall be responsible for making all necessary approach roads to the sites of execution for taking his rigs, cranes & equipments. No extra claim in this regard shall be entertained.
- 1.5 Schedule of rates submitted by the Tenderer shall be the true copy of the schedule of rates enclosed with the tender documents
- 1.6 Without prejudice to stipulation in General Conditions of Contract, the Bidder should quote firm prices inclusive of all taxes & duties (except GST) and other levies on which no variation will be allowed. Further any statutory variations in respect of other taxes & duties, if any, shall be governed by Clause 39.0 of the SCC.

### 2.0 SPECIFICATIONS

- 2.1 If specification for an item of work is not covered by CPWD/BIS specifications or Technical Specifications, the same shall be decided by the Owner/Consultant and shall be binding on the Contractor.
- 2.2 The Owner/Consultant shall have the right to cause the Contractor to purchase and use such materials of particular make or from a particular source which may in his opinion be necessary for proper and reasonable compliance with the specifications and execution of work.
- 2.3 (a) As and when required by the Owner/Consultant, the Contractor shall provide all facilities at site or at manufacture's works or in approved laboratory for testing of materials and/or workmanship. All the expenditure in respect of this shall be borne by the Contractor. The Contractor shall, when required to do so by the Owner/Consultant, confirm that the materials have been tested in accordance with requirements of the specifications.  
  
(b) Neither the omission by the Owner/Consultant to test the materials nor the production of manufacturer(s) certificate, etc. shall affect the right of the Owner/Consultant to reject, after delivery, the materials found not in accordance with the specifications.

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### 3.0 GATE PASSES

All tools, plant and materials shall be brought by the Contractor to the works site through a covering note to be submitted in 3 copies. One copy of the covering note will be delivered to the security staff and one copy to the Owner/Consultant. The third copy shall be retained by the Contractor. The Contractor shall follow all rules and regulations for entry / exit of their men and materials in/from project site as framed by Owner/Consultant.

### 4.0 CONSTRUCTION SCHEDULE

If at any time, the Owner/Consultant is of opinion that the Contractor has fallen behind the approved construction schedule, the Owner/Consultant may, without any cost to Owner/Consultant, require the Contractor to take such steps as may be necessary to improve his progress, especially require him to employ overtime operations, increase the number of shifts, work on holidays and Sundays or increase the capacity of his construction plant and equipment and require him to submit evidence demonstrating the manner in which the Contractor proposes to comply with the construction schedule. Failure of the Contractor to comply with the above will be considered a failure to execute the work with due diligence.

### 5.0 CONTRACTOR TO BE LIABLE FOR ALL TAXES ETC.

The Prices / Rates quoted by the Contractor shall be inclusive of all labour, materials, tools and tackles necessary for executing the work and all other miscellaneous expenditure for/or incidental tools in connection with the execution of the contract including but not limited to all taxes & duties, custom duty, personnel and corporate tax etc. except GST. GST which will be paid extra as actual by the owner limited to the amount quoted by the bidder.

Further any statutory variations in respect of other taxes & duties, if any, shall be governed by Clause 39.0 of the SCC.

Payment of taxes etc., is the responsibility of the Contractor and shall not be payable by OWNER. The Contractor shall indemnify OWNER against levy of any taxes, duties, etc., in regard to the contract and in the event of OWNER being assessed for any of the said imports, the OWNER shall have the right to recover the total amount so assessed from the Contractor's dues and the Contractor shall also be responsible for all costs or expenses that may be incurred by OWNER in connection with any proceeding or Litigation in respect of the same.



***Refer Annexure-1.20 of Section-A (Commercial) for General Guidelines for Goods & Service Tax (GST)***

### 6.0 ISSUE OF WORKING DRAWINGS

Approved working drawings marked "Good for execution/construction" shall be issued by Owner/Consultant to the Contractor progressively during the pendency of the contract. Sufficient quantum of workings drawings will be issued at the beginning. The Contractor on this account shall not be entitled to put forth any claim whatsoever.

### 7.0 COST OF TRANSPORT OF MATERIALS ISSUED BY OWNER

Cost of transport, loading, unloading etc. from Owner's stores to work site etc., will be on Contractor's account.

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## 8.0 ROLE OF OWNER/CONSULTANT

- 8.1 The Owner/Consultant shall have authority to stop the work, whenever such stoppage may become necessary to ensure the proper execution of the contract. He shall also have authority to inspect and reject all work and materials which do not conform to specifications, to direct the application of Contractor's forces to any portion of the work, as in his judgment is required, and to order the said force increased or diminished and to decide questions which arise in the execution of the work.
- 8.2 The Owner/Consultant reserve the right to suspend the work or part thereof at any time and no claim whatsoever on this account shall be entertained. In case of any clarification the Contractor may appeal to the Owner whose decision shall be final and binding thereupon.
- 8.3 The above inspection shall, however, not relieve the Contractor of his responsibilities in regard to defective materials or workmanship and the necessity for rectifying or replacing the same.
- 8.4 The judgment of Owner/Consultant for determining the category of an item not mentioned in the schedule shall be final.



## 9.0 SERVICE OF NOTICES OF CONTRACT

The Contractor shall furnish to the Owner/Consultant the name, designation and address of his authorized Agent for the purpose of service of notice(s) regarding all complaints, communications and references and shall be deemed to have been duly given to the Contractor if delivered to the Contractor or his authorized agent or left at or posted to the address so given and shall be deemed to have reached such address in the ordinary course of post or on the day on which they were so delivered or left. In the case of contract by partners, any change in the constitution of the firm shall be forthwith informed by the Contractor to the Owner/ Consultant.

## 10.0 CONTRACTOR'S GUARANTEE

The Contractor agrees to give the guarantee of his works in the following manner which shall remain valid till the validity of performance guarantee.

- i. All equipments / materials incorporated in the work shall be new and both workmanship and materials shall be of good quality.
- ii. Should, at a subsequent date, any inside honeycomb/hollowness be detected within a concrete member, he shall investigate other nearby sections for similar occurrence and shall rectify all these members by Pressure grouting at his own cost and as per direction of the Owner/ Consultant.
- iii. Should, any element of the structure be detected afterwards not exactly tallying with the working drawing, he shall re-do the element at his own cost and as per instruction of the Owner/Consultant.
- iv. Should, at a subsequent date, any equipment / materials or fittings or workmanship or any element of the structure be detected as of sub-standard quality he shall either remove the same and shall re-do at his own cost or shall accept an equitable deduction in the contract price should the Owner/ Consultant deemed it inexpedient to correct the work.

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- v. All liquid retaining concrete structures shall be demonstrated about their efficiency or water tightness by filling the said structures with water and retaining it for 72 hours at his own cost. Should the result be found unsatisfactory he shall rectify the structures by pressure grouting at his own cost and as per direction of the Owner/Consultant.
- vi. Should, at a subsequent date, the basement wall/floor been noted seeping/leaking he shall rectify the same by pressure grouting at his own cost and as per direction of the Owner/Consultant.

#### 11.0 CONTRACTOR FULLY RESPONSIBLE FOR LAYOUT OF WORK

The Contractor shall remain fully responsible to provide detailed layout of different structures according to the coordinates and reduced levels incorporated in the working drawings by taking reference from the Bench Marks of both the coordinates and the reduced levels which shall be given at a convenient place in the works site by Owner/Consultant. The Contractor shall provide necessary protection to keep the Bench Marks Undisturbed throughout the pendency of the contract. The accuracy of detailed layout of any element of a structure shall remain exclusively with the Contractor. The Contractor shall have to maintain a number of after beams; Theodolite and levels instruments etc. in good working conditions at site for the above purpose throughout the pendency of the contract, and shall make them available to Owner/Consultant for their use.

#### 12.0 NOTHING EXTRA FOR ADVERSE SUB-SOIL CONDITION

There may be variation in nature of sub-soil both horizontally and vertically. The Contractor shall have to take necessary precaution during excavation against any happening like collapsing of sides etc. Any slip or fall in excavation shall have to be cleared by the Contractor at his own cost. In case of excessive heaving, it shall have to be cut and refilled with lean concrete by the Contractor at his own cost. The Contractor shall have to adopt underwater work in case of occurrence of piping/quick conditions without any cost to Owner/Consultant.

#### 13.0 R.C.C. ELEMENT SHALL BE INTEGRAL FINISHED



For all RCC elements, both underground and above ground, only new plywood and steel shuttering shall be used to produce the concrete surface reasonably plain and smooth which will be integrally finished surface. Any little unevenness shall be made good by rubbing with carborandum stones only. Unless otherwise mentioned, plastering will not be allowed to manipulate and make the surface plain and smooth.

If the surfaces after stripping off the shuttering are found to be contrary to the above conditions then the Contractor shall have to dismantle the member and re-do the same to attain the aforesaid surfaces at his own cost.

#### 14.0 FABRICATION DRAWINGS FOR STRUCTURALS

- a) The CONTRACTOR shall prepare and submit fabrication drawings in **triplicate** for preliminary **approval** of CONSULTANT. Fabrication drawings shall be based on design drawings issued by CONSULTANT. One copy of these preliminary drawings duly corrected and signed wherever necessary shall be returned to CONTRACTOR for incorporation of the corrections. After incorporating the corrections, the CONTRACTOR shall submit in 8 (eight) copies of the drawings for **final approval**. Each drawing shall be accompanied by:-



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- i) Bill of materials giving all details including sizes, numbers and weights.
- ii) Two copies of design calculations for the design of joints. All the joints shall be designed for full strength of members; unless otherwise specified.

Nothing extra shall be payable to Contractor for preparation of fabrication drawings, material lists design calculation etc.

Approval of fabrication drawings, however, will not absolve the CONTRACTOR of his responsibility for the safety and correctness of the fabrication details.

- iii) In case the CONTRACTOR wants to get the fabrication drawings prepared from other agencies, Owner/Consultant's approval for appointing such agencies shall be obtained by CONTRACTOR before appointing the agency. For this, CONTRACTOR must submit the credentials of the agency along with the request for approval.
- iv) The Contractor shall supply three (3) sets of as built drawings also, after completion of work but well before the submission of final bill.

#### **15.0 CONTRACTOR SHALL SUBMIT BAR BENDING SCHEDULE**

The Contractor shall prepare bar bending schedule from the detailed RCC working drawings supplied by Owner/Consultant for execution of work and nothing shall be paid on this account. Four copies of such bar bending schedule shall be made available to the Owner/Consultant for his approval and effecting payment there under.

#### **16.0 CONTRACTOR'S RESPONSIBILITY FOR THE MANNER OF EXECUTION OF WORK**



The Contractor shall be responsible for the manner and the method of executing the work. The work shall be subject to the approval of Owner/ Consultant from time to time for purposes of determination of the question whether the work is executed by the Contractor in accordance with the contract.

#### **17.0 NO WORK SHALL BE UNDERTAKEN WITHOUT APPROVED WORKING DRAWINGS**

No work shall be undertaken at Site by the Contractor until detailed approved working drawings marked "Good for execution/construction" for the same is issued by Owner/ Consultant. Any work done without the aforesaid working drawing shall be at the Contractor's own risk and costs.

#### **18.0 CONTRACTOR SHALL KEEP FOUNDATION PITS/TRENCHES DRY**

The Contractor, during the pendency of contract, shall keep in dry condition of pits, trenches, which are not yet back filled due to technical reasons, if not shall be Bail-out/Pump-out all accumulation at his own cost for the safety of the structure /element. During pumping, the Contractor shall have to ensure that 'Loss of Ground' does not occur. Other approved methods shall be undertaken by the Contractor to avoid 'Loss of Ground' if occurred, at his own cost.

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**19.0 NOTHING EXTRA FOR INTRICATE CONCRETE SHUTTERING OR REINFORCEMENT WORK**

Nothing extra shall be paid for any intricate concrete, shuttering or reinforcement work for foundations of equipment and machinery and for other foundation/superstructure works or for any delay inherent in concreting in small and thin sections in concrete or RCC works etc.

**20.0 NOTHING EXTRA FOR REBATING ETC.**

Nothing extra shall be paid in concrete/RCC works for all rebating, chamfering, grooving, sinking, trotting weathering, molding, etc. to accord with the details shown on the working drawings.

**21.0 CONSTRUCTION JOINTS**

21.1 In case of execution of massive concrete elements both in foundation and in superstructure and in some other locations as would be permitted except where specified in the working drawings, the work shall be carried out in one single operation without any break in concreting within time limit that would be specified by the Owner / Consultant without any additional cost to Owner/ Consultant.

21.2 All specified construction joints, either horizontal or vertical, in any element of concrete member shall be provided with shear keys of such dimensions as would be determined by the Owner/Consultant. Before adopting the next operation for the other half of the element these shear keys along with the entire surface of the joint shall be roughened and deepened to above 20 mm by chipping, washing and cleaning thoroughly. The Contractor shall provide cement slurry in sufficient quantity over the cleaned surface for proper bond as per the direction of Owner/Consultant. The Contractor shall not be entitled to any extra/payment; on this account.

**22.0 SUBMISSION OF BILL**

Contractor is to submit the bills and record of measurements in three (3) copies on approved proforma of Owner for works executed by him.

**22.1 FOR R/A BILLS:**

Contractor is to submit the bills and record of measurements complete in all respect duly certified by Owner/Consultant in three copies on approved proforma of Owner for works executed by him progressively.


**22.2 MEASUREMENT OF WORKS**

Measurement of work shall be made in the units mentioned in the schedule of rates.

**22.3 SUBMISSION OF FINAL BILL**

The final bill complete in all respect shall be submitted after certified completion of work. The bill should be accompanied with the following documents:

- i. Job completion certificate.

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- ii. O & M Manuals / Drawings / Other relevant docs. in respect of equipments supplied
- iii. No claim certificate on OWNER's prescribed proforma.
- iv. Site clearance certificate.
- v. Performance guarantee duly amended to cover certified maintenance period.
- vi. Indemnity certificate towards labours payment and all other statutory payments.

No claim shall be entertained after receipt of final bill. Settlement of final bill shall be made within 1 (one) month period subject to furnishing of all required documents / clarification and extension of time, if any, by OWNER's competent authority.

**In case any claim with regard to the wages of any labour employed by Contractor for the subject job is pending/ reported, OWNER shall be fully entitled to withhold payment of final bill pending finalisation of such claims.**

### **23.0 PROVISION FOR MULTIFARIOUS CHECKING OF WORK**

Before commencement of the actual concreting operation the position and layout of foundations, pedestals, inserts, pockets, recess, reinforcement and form work shall be checked repeatedly by Owner/Consultant. No claim whatsoever shall be entertained on this account. The level of foundations shall be accurately maintained as shown in the drawings or as directed by the Owner/Consultant. No padding, plastering or chipping shall be allowed for achieving the results.

### **24.0 DEFECT LIABILITY PERIOD**


Defect Liability Period shall be 12 months from the date of certified Final completion of Sub-station work.

### **25.0 NO COMPENSATION FOR ALTERATION IN OR RESTRICTION OF WORK TO BE CARRIED OUT**

If at any time after the commencement of the work, Owner/Consultant shall, for any reason whatsoever, not require the whole work thereof as specified in the tender to be carried out, the Owner/Consultant shall give notice in writing of the fact to the Contractor who shall have no claim of any payment or compensation whatsoever on account of any profit or advantage which he might have derived from the execution of work in full, but which he did not derive in consequence of the amount of the work not having been carried out, neither shall be Contractor have any claim for compensation by reasons of any alternations having been made in original specifications, drawings and instructions which shall involve any curtailment of the work as originally contemplated.

### **26.0 ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK**

If it shall appear to the Owner/Consultant or his representative, that any work has been executed with unsound, imperfect or unskilful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to at contracted for, or otherwise not in accordance with the contract, the Contractor shall, on demand in writing from the Owner/Consultant specifying the work/materials/articles complained, notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require, or as the

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case may be, remove other unsuitable materials or articles so specified within a period specified by the Owner/Consultant at his own cost.

## **27.0 CLEARING, FILLING AND LEVELING OF SITE**

The site shown on the layout plan shall be cleared by the Contractor of all obstructions, loose stones, materials, rubbish of all kinds of bushes, trees, grass as well as brush wood. All holes/hollow, whether originally existing or produced by removal of loose stones or brush wood, shall be carefully filled up with earth, well rammed and leveled off as directed by the Owner/ Consultant. The Contractor will not be entitled to any payment in his regard.

## **28.0 CONTRACTOR TO COMPLY ALL LAWS**

28.1 The contract shall be governed by the law in force in the Republic of India.

28.2 The Contractor shall comply with all laws etc. The Contractor shall be responsible to secure compliance with the Central and States Laws as well as the Rules, Regulations, by-laws and orders of the legal authorities and statutory bodies which are in force or as may be in force from time to time. He shall give to the Municipal Corporation Committees, police and other relevant authorities all such notices, etc. as may be required by law and obtain all requisite license for temporary constructions, enclosures, etc. and pay all fees, taxes and such other dues or charges which may be leviable on account of any of his operations in executing the works under this contract. Owner/Consultant shall not pay anything extra to the Contractor on this account. The Contractor shall also make good at his own cost, any damage done by him to any adjoining property, during execution of work.

## **29.0 CONTRACTOR TO USE THE MATERIALS ONLY AFTER THE APPROVAL OF OWNER**

The Contractor shall use the materials only after the approval of Owner/ Consultant, before incorporation of the same in the works.

## **30.0 COMPLIANCE OF ENTIRE PROVISIONS IS OBLIGATORY TO CONTRACTOR**

It shall always prevail, unless otherwise specifically stated, that the entire provisions of the Tender Document have been accepted for compliance by the Contractor without any reservation.



## **31.0 GENERAL**

31.1 The location and general information regarding site on which the proposed work is to be executed is furnished in Attachment-I hereto.

31.2 Contractor shall acquaint himself with access to site, availability of local facilities such as railway siding, transport facilities, materials and labour and shall provide suitable allowances in his Bid, Contractor's quoted rate being firm, it should take into account all expenses likely to arise in this regard.

31.3 Contractor shall be deemed to have visited site and familiarized himself thoroughly with site conditions before submitting his Bid. Non-familiarity with site conditions will not be considered a reason either for extra claims or for not carrying out work in strict conformity with drawings and specifications.

## **32.0 DELIVERY AND DOCUMENTS**

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH SPECIAL CONDITIONS OF CONTRACT</b>	PNPM/5001/E/103/S- A/AT-3.0	0	
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Delivery of the Goods shall be made by the Contractor in accordance with the terms specified by the Owner/Consultant in the schedule of requirements in Technical Specifications. and the special conditions of purchase, if any and the Goods shall remain at the risk of the Contractor until Delivery has been completed.

### 33.0 INCIDENTAL SERVICES

33.1 As specified in the special conditions of purchase, the Contractor may be required to provide any or all of the following services:

- i) Supervision of on-Site assembly and/or of the supplied Goods.
- iii) Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Contractor of any warranty obligations under this Purchase Order, and

33.2 Price charged by the Contractor for the preceding incidental services, if not included in the contract price for the Goods shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Contractor for similar services.

33.6 At the request of Consultant or Owner, Contractor shall at his expense, dismiss from work and replace any such employee as Owner/Consultant, may deem incompetent or careless or whose continued employment is deemed inimical to the interest of the Owner/Consultant or against public interest.

33.7 Other conditions of work at Site shall be mutually discussed and settled.

### 34.0 WORK AND WORKMANSHIP GUARANTEE

34.1 Contractor shall make arrangements to provide at no extra charge all temporary approaches to and within the site, after obtaining prior approval of Owner/Consultant of the layout of such approaches.

34.2 To determine the acceptable standard of workmanship, Owner/Consultant may order Contractor to execute certain portions of work and services such as wall, flooring, joinery, finishes, roads and the like under the close supervision of Owner/Consultant. On approval, these items shall be labeled as guiding samples and work shall be executed to conform to these samples. These samples shall be prepared at the cost of Contractor.

34.3 Workmanship shall be of best possible quality and all the work shall be carried out by skilled workmen except for those which normally require unskilled persons. If the laws of local government, municipal or other authorities require employment of licensed or registered workmen of various trades, Contractor shall arrange to have the work done by such registered or licensed persons.

34.4 Workmanship shall be in accordance with the specifications, standards and codes which are part of this tender as well as the established engineering practices for this type of work. For any portion of work executed by Contractor and considered defective by Owner/Consultant, the Contractor shall have to take necessary remedial measures, to the complete satisfaction of Owner/Consultant, to make the defective good in order at his own cost without any liability to Owner/Consultant.

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The Contractor shall be responsible for the proper workmanship and shall not be relieved of his obligation in this regard just because no objection was raised by Owner/ Consultant during the progress of work. The workmanship guarantee period will be 12 months from the date of final completion as a whole, certified by Owner.

If any defects are found due to bad workmanship during this period, the Contractor shall undertake to rectify the same at his cost, most expeditiously. The workmanship guarantee for rectified portion of work shall commence from the date of rectification for a subsequent period of 12 months. The decision of Owner/Consultant regarding bad workmanship shall be final binding and conclusive.

The Contractor shall be required to submit the performance guarantee accordingly.

### 35.0 PRIORITY OF DOCUMENTS

The following is the order of priority in descending order. High priority document shall take precedence over low priority document in case of any conflict:-

1. Drawings
2. Schedule of Rates
3. Scope of work & Technical Specifications
4. Special condition of contract
5. Terms of Payment
6. General Conditions of Contract
7. Site working and safety conditions
8. Standards (Standards here shall mean National/ International Standards & Specifications).
9. Issue of Materials

### 36.0 WEATHER CONDITIONS

Owner/Consultant may order Contractor to suspend any work which in the opinion of Owner/Consultant may be subject to damage by prevailing weather conditions. No claim whatsoever on this account shall be entertained.


“It is presumed that the Contractor has familiarized himself with the weather conditions prevailing in the area therefore in such weather parameters if it appears to the Engineer –in –charge (EIC) that certain weather condition may damage the work or specified quality of the work can be achieved without stoppage of the work, the EIC in such conditions may require the Contractor to stop the work till such time as he thinks fit and appropriate. It is understood by the contractor that no compensation will be admissible on this count. However in exceptional circumstances at the recommendation of the EIC, Consultant/owner may grant reasonable extension of Time.

### 37.0 TIME SCHEDULE AND PROGRESS REPORTING

#### 37.1 Time schedule network/bar chart.

- 37.1.1 Together with the Work Order/Contract confirmation, Contractor shall submit to Owner/Consultant, his time schedule regarding the documentation, supply of materials as well as information about of his Subcontracts to be placed with their parties, including the dates on which Contractor intends to issue such Subcontracts.



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37.1.2 The time schedule will be in the form of a network or a bar chart clearly indicating all main or key events regarding documentation, supply of materials, delivery and site fabrication, erection, inspection, testing and completion.

37.1.3 The original issue and subsequent revisions of Contractor's time schedule and or Sub-contractor's time schedules shall be sent to Consultant in two copies (of which one shall be in Soft copy) and two copies to Owner.

37.1.4 The time schedule network/bar chart shall be updated at least every fortnight.

**37.2 Progress Trend Chart/Monthly Report**

37.2.1 Contractor shall report weekly to Owner/Consultant the progress of the execution of Work Order/Contract and achievement of targets set out in time bar chart.

37.2.2 The progress will be expressed in percentages shown in the progress trend chart.

37.2.3 The first issue of the progress trend chart will be forwarded together with the time bar chart along with the Work Order confirmation.

37.2.4 The fortnightly reporting will bear the updating of the progress trend chart.

37.2.5 All reporting will be done on e-mails and hard copies wherever required will follow.

**38.0 INSTRUCTIONS, DIRECTIONS AND CORRESPONDENCE**



38.1 The work described in Work Order is to be executed according to the standards, data sheets, tables, Specifications and Drawings attached hereto and/or enclosed with the Work Order itself and according to all conditions both general and specific enclosed with the Work Order, unless any or all of them shall have been modified or cancelled in writing as a whole or in part.

- i) All instructions and orders to Contractor shall, excepting what is herein provided, be given by Owner/Consultant.
- ii) All the work shall be carried out under the direction of and to the satisfaction of Owner/Consultant.
- iii) All communications including technical/commercial clarifications and/or comments shall bear reference to the Work Order /Contract.
- iv) Invoice for payment against Work Order /Contract shall be addressed to Owner/Consultant.
- v) The WORK Order/Contract number shall be shown on all invoices, communications, packing lists, containers and bills of lading etc.

38.2 All correspondence from Contractor/Contractor shall be forwarded in duplicate (2 copies) to CONSULTANT and 02 copies to OWNER at following addresses:

<b>CONSULTANT</b>	<b>OWNER</b>
Projects & Development India Ltd., Project Management Department P.D.I.L Bhawan, A-14, Sector-1, Noida, UP	Hindustan Urvarak & Rasayan Ltd., Core-2, 2 <sup>nd</sup> Floor, Scope Minar, Laxmi Nagar District Centre, Delhi-92



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<p>Kind Attention : Mr. Sumit Kumar Project Manager</p> <p>Tel no. : + 91-120-2529842 / 43 / 47 / 51 / 53 / 54 Extn. 374 Fax no. : +91-120-2529801 E-mail : <a href="mailto:sumit.kumar@pdilin.com">sumit.kumar@pdilin.com</a></p>	<p>Kind Attention : Mr. Manish Goyal Sr. Project Manager</p> <p>Tel no. : 011-22502267 Email : <a href="mailto:goyalm@hurl.net.in">goyalm@hurl.net.in</a></p>
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- 38.3 Correspondence on technical and commercial matters shall be dealt with in separate letters for each Work Order /Contract and each copy of the letter shall be complete with all Annexures. Wherever possible, correspondence should be through e-mail to the above personnel so as to save time.
- 38.4 Correspondence for expediting and inspection shall be done directly with inspector with a copy to consultant & owner at above mentioned address.



### 39.0 STATUTORY VARIATION IN TAXES AND DUTIES

- 39.1 If any new taxes or duties (including any increase in rate of any existing taxes or duties) are levied in India after the date of submission of bids on any payments due to the CONTRACTOR under the CONTRACT other than tax on income, wealth or profits of the CONTRACTOR, the OWNER shall reimburse the CONTRACTOR the amount of such taxes or duties lawfully paid and borne by the CONTRACTOR against proof of payment. However, this is applicable within the GUARANTEED COMPLETION DATE only and shall not be reimbursed by OWNER during the delayed contractual project completion attributable to CONTRACTOR'S account.
- 39.2 If any existing taxes or duties are withdrawn or the rate is decreased after the date of submission of the bids on any payments due to the CONTRACTOR under the CONTRACT other than tax on income, wealth or profits of the CONTRACTOR, the OWNER shall be entitled to discount in the amount payable to the CONTRACTOR of amount equivalent to the amount of such taxes or duties. This is applicable within the GUARANTEED COMPLETION DATE and also during the delayed contractual Project completion.
- 39.3 In case of delayed completion beyond the GUARANTEED COMPLETION DATE even though extension of completion time is allowed by OWNER, for reasons solely attributable to Contractor, all extra costs on account of changes of statutory regulations/ acts, or increase in price on any other account including price variation clause, if any, shall not apply to the Contract price and shall be borne by the CONTRACTOR.

However, any decrease in taxes and duties during the delayed period shall be passed on to the OWNER.

### 40.0 QUALITY ASSURANCE / QUALITY CONTROL

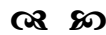
- 40.1 Bidder shall include in his offer the Quality Assurance Programme containing the overall quality management and procedures which is required to be adhered to during the execution of contract. After the award of the contract detailed quality assurance programme shall be prepared by the Contractor for the execution of contract for various works which will be mutually discussed and agreed to.

	<p style="text-align: center;"><b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b></p> <p style="text-align: center;"><b>SPECIAL CONDITIONS OF CONTRACT</b></p>	PNPM/5001/E/103/S-A/AT-3.0	0	
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- 40.2 The Contractor shall establish document and maintain an effective quality assurance system outlined in recognized codes.
- 40.3 Quality Assurance System plans/procedures of the Contractor shall be furnished in the form of a QA manual. This document should cover details of the personnel responsible for the Quality Assurance, plans or procedures to be followed for quality control in respect of Design, Engineering, Procurement, Supply, Installation, Testing and completion in all respect till final acceptance by Owner. The quality assurance system should indicate organizational approach for quality control and quality assurance of the construction activities, at all stages of work at site.
- 40.4 The Owner/Consultant or their representative shall reserve the right to inspect/witness, review any or all stages of work at shop/site as deemed necessary for quality assurance.
- 40.5 The Contractor has to ensure the deployment of quality Assurance and Quality Control Engineer(s) depending upon the quantum of work. This QA/QC group shall be fully responsible to carry out the work as per standards and all code requirements. In case Engineer-in-charge feels that Contractor's QA/QC Engineer(s) are incompetent or insufficient, Contractor has to deploy other experienced Engineer(s) as per site requirement and to the full satisfaction of Engineer-In-Charge.
- 40.6 In case Contractor fails to follow the instructions of Engineer-in-charge with respect to above clauses, next payment due to him shall not be released unless until he complies with the instructions to the full satisfaction of Engineer-in-charge.
- 40.7 The Contractor shall adhere to the approved quality assurance system

**41.0 HEALTH SAFETY AND ENVIRONMENT (HSE) MANAGEMENT**

The Contractor, during entire duration of the Contract, shall adhere to HSE requirement as per Specification enclosed in the Bidding Document.





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## SECTION-A : COMMERCIAL

### EXHIBIT-1

### EXPERIENCE CRITERIA

0	11.01.2018	FOR TENDER	SK	KJ	RRK
<b>REV.</b>	<b>DATE</b>	<b>PURPOSE</b>	<b>PREPARED</b>	<b>REVIEWED</b>	<b>APPROVED</b>

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>EXHIBIT-1 : EXPERIENCE CRITERIA</b>	PNPM/5001/E/103/S -A/E-1	0	
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## EXHIBIT-1

**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**



### EXPERIENCE CRITERIA

Bidder shall furnish their Experience details with reference to the work, which pre-qualify them in line with Experience Criteria mentioned under Clause 8.0 of “Instructions to Bidders”.

(MARK ✓ FOR APPLICABILITY IN BOX)

#### 1.0 EXPERIENCE AS CONTRACTOR

SL. NO.	DESCRIPTION	DETAILS
1.	Name of Project, Location (Executed by Bidder)	
2.	Description of work	
3.	Name of Owner, Postal Address, Phone / Fax No. / E-mail	
4.	Name of Consultant / Postal Address, Phone / Fax No. / E-mail.	
5.	Project Status <ul style="list-style-type: none"> <li>Date of Award</li> <li>Scheduled Mechanical completion date.</li> <li>Actual Mechanical completion date</li> <li>Actual Project completion date (handover)</li> <li>Delay in months (if any)</li> <li>Reasons for delay (if any)</li> </ul>	
6.	Scope of work executed by Bidder's organization	<ul style="list-style-type: none"> <li>Drilling, Development, Testing &amp; Commissioning of Tubewell</li> </ul> <input type="checkbox"/>
		<ul style="list-style-type: none"> <li>Supply &amp; Installation of Pumps and its Accessories</li> </ul> <input type="checkbox"/>
		<ul style="list-style-type: none"> <li>Civil, Piping &amp; Electrical Works</li> </ul> <input type="checkbox"/>

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>EXHIBIT-1 : EXPERIENCE CRITERIA</b>	PNPM/5001/E/103/S -A/E-1	0	
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7.	Completion Status	Specify	Date	
			Act.	Sch.
		- Completion Date  • Whether completion certificate enclosed  YES <input type="checkbox"/> NO <input type="checkbox"/>		
7.1	LD imposed/ Bonus claimed	YES/NO ; if yes, brief the reason:		
8.0	Document Furnished			
8.1	Copy of work order / Contract Agreement enclosed	YES <input type="checkbox"/> NO <input type="checkbox"/>		
8.2	Documentary proof from the End User/OWNER regarding satisfactory performance indicating the period of completion.	YES <input type="checkbox"/> NO <input type="checkbox"/>		

**Note :**

- Bidder shall furnish the experience details as above of Projects which they consider suitable for their pre-qualification. OWNER / CONSULTANT reserve the right not to evaluate any other Project details.
- Bidder to note that this exhibit form shall be filled as per the Proformas as stated, along with wherever applicable, copies of work order and completion certificates.
- Bidder to note that non-submission of relevant supporting documents may lead to rejection of their bid.** It is to be ensured that all relevant supporting documents shall be submitted alongwith the bid in the first instance itself. Pre-qualification may be completed based on the details so furnished without seeking any subsequent additional information.

For and on behalf of .....  
 Stamp & Signature : .....  
 Name : .....  
 Designation : .....  
 Date : .....



	<b>PROJECTS &amp; DEVELOPMENT INDIA LIMITED</b>	PNPM/5001/E/103/S-A/E-2	0	
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## SECTION-A : COMMERCIAL

### EXHIBIT-2

### FINANCIAL CRITERIA

0	11.01.2018	FOR TENDER	SK	KJ	RRK
<b>REV.</b>	<b>DATE</b>	<b>PURPOSE</b>	<b>PREPARED</b>	<b>REVIEWED</b>	<b>APPROVED</b>

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH EXHIBIT-2 : FINANCIAL CRITERIA</b>	PNPM/5001/E/103/S -A/E-2	0	
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**EXHIBIT-2**

**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL  
(PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**



**FINANCIAL CRITERIA**

Bidder shall furnish details with reference to the work, which pre-qualify them in line with Financial Criteria mentioned under Clause 8.0 of "Instructions to Bidders".

**1.0 DETAILS OF PROJECT REFERENCES AS PER CLAUSE 8.0 OF "INSTRUCTIONS TO BIDDERS"**

SL. NO.	DESCRIPTION	PROJECT – 1, 2 etc. (Separate sheets for each Project)
1.	Project name and description	
2.	(a) Awarded contract value (INR)  One completed Work with contract value not less than <b>INR 60.80 Lakhs</b> OR Two completed Works each works with contract value not less than <b>INR 38.00 Lakhs</b> OR Three completed Works each works with contract value not less than <b>INR 30.40 Lakhs</b>	
	(b) Final executed contract value (INR)	
3.	Name of Owner	
	(a) Name and address of Owner's contact person	
	(b) Telephone and Fax No.	
	(c) Mobile No.	
	(d) Email No.	
4.	(a) Date / month / year of award / commencement of Project	
	(b) Date / month / year of Scheduled Completion of the Project.	
	(c) Date / month / year of Actual Completion of the Project.	
5.	Document Furnished	YES/NO



	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>EXHIBIT-2 : FINANCIAL CRITERIA</b>	PNPM/5001/E/103/S -A/E-2	0	
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SL. NO.	DESCRIPTION	PROJECT – 1, 2 etc. (Separate sheets for each Project)
5.1	Copy of work order / Contract Agreement enclosed	
5.2	Completion / Acceptance certificate identifying the successful commissioning of project.	

## 2.0 ANNUAL TURNOVER

SL. NO.	FINANCIAL YEAR	TURNOVER (IN INR)
1	FY: 2016-2017	
2	FY: 2015-2016	
3	FY: 2014-2015	

## 3.0 NET WORTH

Net worth as on the last day of the financial year ending 31 <sup>st</sup> March 2017:	: .....
--	---------



Whether copies of balance sheet and annual turnover statements for the above three financial years submitted	YES / NO
--	----------

## 4.0 SOLVENCY CERTIFICATE

NAME & ADDRESS OF BANK	ISSUE DATE	AMOUNT (INR)

### Note:

- Bidder shall furnish the experience details as above of Projects which they consider suitable for their pre-qualification. OWNER / CONSULTANT reserve the right not to evaluate any other Project details.
- Bidder to note that this exhibit form shall be filled as per the Proformas as stated, along with wherever applicable, copies of work order and completion certificates.

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>  <b>EXHIBIT-2 : FINANCIAL CRITERIA</b>	PNPM/5001/E/103/S -A/E-2	0	
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3. The bidder shall attach fresh solvency certificate issued by his banker. The solvency certificate shall not be more than six months old from the date of issue of NIT OR minimum credit ratings of "A" from ICRA/CRISIL etc OR equivalent reputed institutions, OR financing/credit limits from bank of value not less than **INR 30.40 Lakhs** valid as on date of issue of ITB.
4. **Bidder to note that non-submission of relevant supporting documents may lead to rejection of their bid.** It is to be ensured that all relevant supporting documents shall be submitted alongwith the bid in the first instance itself. Pre-qualification may be completed based on the details so furnished without seeking any subsequent additional information.



For and on behalf of : .....

Stamp & Signature : .....

Name : .....

Designation : .....

Date : .....

 पी डी आई एल <b>PDIL</b>	TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH <b>TENDER ACCEPTANCE LETTER</b>	PNPM/5001/E/1031/S- A/A-1.1	0	 HURL
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.1

## TENDER ACCEPTANCE LETTER

**TENDER ACCEPTANCE LETTER**  
**(To be given on Company Letter Head)**

Date: \_\_\_\_\_

To,

Sub: Acceptance of Terms & Conditions of Tender.

NIT No: \_\_\_\_\_

Name of Tender/Work:-



---

Dear Sir,

1. I / We have downloaded/obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:  
\_\_\_\_\_  
as per your advertisement, given in the above mentioned website(s).
2. I / We hereby certify that I/ we have read the entire terms and conditions of the tender documents (including all documents like annexure(s), schedules(s), etc.), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions/ clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organization too has also been taken into consideration, while submitting this acceptance letter.
4. I / we hereby unconditionally accept the tender conditions of above mentioned tender document(s) corrigendum(s) in its totality / entirety.
5. 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 of Bidder with Seal :  
Name :  
Date :  
Email Address :  
Contact Number :

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH COMMERCIAL QUESTIONNAIRE</b>	PNPM/5001/E/103/S- A/A-1.2	0	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.2

## COMMERCIAL QUESTIONNAIRE



	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH <b>COMMERCIAL QUESTIONNAIRE</b></p>	PNPM/5001/E/103/S- A/A-1.2	0	
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**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL  
(PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

Note:

- 1) The Bidder shall submit reply to each query.
- 2) The Bidder's reply/ confirmation as furnished in the Commercial Questionnaire (CQ) shall supersede the stipulation mentioned else where in the bid.

Sl. No.	OWNER'S/PDIL'S QUERY	BIDDER'S REPLY / CONFIRMATION
1.	Please confirm that Master Index and copies of all technical and commercial amendments/addendums if any issued, duly signed and stamped on each page as a token of having received and read all parts of the bidding document and having accepted and considered the same in preparing their bid.	
2.	Please confirm that you have studied complete Bidding Document including Pre-Qualification Criteria, Technical and Commercial Part and your Bid is in accordance with the requirements of the Bidding Document.	
3.	Please confirm Bid Submission as per tender i.e. in Single Phase Two Bid System.	
4.	Please confirm that the Price Part does not include any terms and condition. In case any terms and condition is mentioned in the price part, the same shall be treated as null and void.	
5.	<b>Price confirmation copy</b> : Please confirm a Photocopy of the Schedule of Price, to be submitted strictly as per <b>Part-B of Section-B, Technical</b> , Rates being blanked out and in place indicating " <b>Quoted</b> " against each head, shall be submitted duly signed and stamped as confirmation to quoted rate failing which bid may be rejected.	
6.	Please confirm your compliance to total scope of work mentioned in the Bidding Document. CONTRACTOR's scope shall include supply of all materials and services required for completion of Work irrespective of whether such materials and services are mentioned in the Bidding Document or not.	
7.	Please confirm your acceptance for Time Schedule as mentioned in Instructions to Bidders.	
8.	Please confirm your acceptance for Payment Terms as per Bidding Documents.	
9.	Please confirm that your bid is valid for 120 days from the date of opening of Technical and Unpriced	

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>COMMERCIAL QUESTIONNAIRE</b>	PNPM/5001/E/103/S-A/A-1.2	0	
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Sl. No.	OWNER'S/PDIL'S QUERY	BIDDER'S REPLY / CONFIRMATION
	Commercial Bid.	
10.	Please confirm EMD Validity as Bid Validity (120 Days) plus 03 Months.	
11.	Please confirm Damages for delay in completion as per Article-25 of General Condition of Contract.	
12.	Please confirm Guarantee/Warranties as per Article-11 of General Conditions of Contract (GCC).	
13.	Please confirm that your Bid is substantially responsive to the requirements of the Bidding Document and you have not stipulated any material deviation and submitted all details as specified in the Bidding Document.	
14.	Please confirm that adequate numbers of construction equipments, tools, tackles, etc. have been proposed which will be sufficient to complete the work as per the time schedule.	
15.	Please confirm that you have proposed adequate project / site organization with qualified supervisory personnel having sufficient experience.	
16.	Please confirm that all costs resulting from safe execution of Work, such as safety induction, use of protective clothing, safety glasses and helmet, safety precaution taken during monsoon, or any other safety measures to be undertaken by the CONTRACTOR for execution of Work are included in the Lump sum Price.	
17.	Please confirm that all safety rules & regulations as mentioned in Bidding Document or notified at later date by OWNER during execution shall be adhered by CONTRACTOR.	
18.	The CONTRACTOR shall include safety rules & regulation and apply the same during the execution of the contract. Contractor shall also follow the safety guidelines of OWNER during the execution period of the contract.	
19.	<p>Please confirm the following :-</p> <p>“The planning schedule, manpower deployment schedule, construction equipment deployment schedule etc. submitted by the bidder with his bid are indicative and shall not be basis for extra compensation in case actual needs are higher.</p> <p>Detailed planning schedule developed by CONTRACTOR after Contract award may be subject to</p>	



Sl. No.	OWNER'S/PDIL'S QUERY	BIDDER'S REPLY / CONFIRMATION
	<p>fluctuations depending upon actual progress of the project and available Work front.</p> <p>Co-ordination and making available by CONTRACTOR of all staff, manpower, construction equipment, tools, cranes, etc. and materials as required for a timely completion of all Work as per OWNER's construction and priority schedule and in accordance with the available Work front are to be included in the pricing".</p> <p>Notwithstanding the above provision, the bidder shall submit these details in accordance with the volume of work, which may be reviewed and commented by us during pre award stage /post award stage.</p>	
20.	<p>Please note that the scope of this bid package consists of mainly but not limited to the followings:-</p> <p>a.) Supply and Installation of Tubewells.  b.) Supply &amp; Erection of Aboveground Piping Works from Tubewell to Existing Water Tank.  c.) Supply, Installation and Commissioning of Pumps at Existing Water Tank.  d.) Construction of Pump House  e.) Renovation of Existing Water Tank</p>	
21.	<p>The safety measures as mentioned in Tender Document/GCC/SCC shall not be considered as limitative. The CONTRACTOR will be required to develop their stringent safety measures and submit the same to Engineer-in-Charge with the provision of a dedicated safety group closely monitoring the construction activities in all working shifts.</p>	
22.	<p>Please confirm the following that, a photocopy of the documents listed below has been enclosed in the bid:-</p> <ol style="list-style-type: none"> <li>1. PAN Number</li> <li>2. TIN Number</li> <li>3. PF/ESI Number</li> <li>4. GST Number</li> <li>5. Labour Licence Registration Number</li> <li>6. Latest Income Tax Clearance Certificate / ITR</li> <li>7. Audited Balance Sheets</li> </ol>	



For and on behalf of : .....

Stamp & Signature : .....

Name : .....

Designation : .....

Date : .....

 <p>पी डी आई एल <b>PDIL</b></p>	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>NO DEVIATION CERTIFICATE</b></p>	PNPM/5001/E/103/S- A/A-1.3	0	 <p>HURL</p>
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.3

## NO DEVIATION CERTIFICATE

**(Self Declaration on Bidder's Letter Head as per below performa)**

**DECLARATION**

1. With reference to our Bid Proposal No. .... dated ..... for Drilling and Development of Tubewell (Package-IV) at Gorakhpur, Uttar Pradesh, we hereby confirm that we comply with all terms, conditions and specifications of the Bidding Documents read in conjunction with Amendments(s) / Clarification(s) / Addenda / Errata (if any) issued by the Owner prior to opening of Techno – Commercial Bids and the same has been taken into consideration while making our Techno – Commercial Bid & Price Bid and **we declare that we have not taken any deviation / exceptions in this regards.**
  
2. We further confirm that any deviation variation or additional conditions etc or any mention, contrary to the Bidding Documents and its Amendments(s) / Clarification(s) / Addenda / Errata (if any) as mentioned at 1.0 above found anywhere in our Techno – Commercial Bid and / or price Bid, implicit or explicit, shall stand unconditionally withdrawn, without any cost implication whatsoever to the Owner, failing which the Bid Security shall be forfeited.



For and on behalf of : .....

Stamp & Signature : .....

Name : .....

Designation : .....



Date : .....

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>DETAILS OF SIMILAR WORKS EXECUTED</b></p>	PNPM/5001/E/103/S-A/A-1.4	0	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.4

#### DETAILS OF SIMILAR WORKS EXECUTED

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>  <b>DETAILS OF SIMILAR WORKS EXECUTED</b>	PNPM/5001/E/103/S-A/A-1.4	0	
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**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

**NAME OF THE PROJECT: BIDDER TO FILL**

SL. NO.	FULL POSTAL ADDRESS OF CLIENT AND NAME OF OFFICER IN-CHARGE WITH PHONE/CELL NO AND E-MAIL	DESCRIPTION OF THE WORK	VALUE OF CONTRACT	DATE OF COMMENCEMENT OF WORK	SCHEDULED COMPLETION PERIOD	ACTUAL COMPLETION DATE	REMARKS



Note : 1) Description of work should be in detail.

2) Please also indicate the major problems if any, faced during construction of works.

STAMP & SIGNATURE OF BIDDER : \_\_\_\_\_

NAME OF BIDDER : \_\_\_\_\_

DATE : \_\_\_\_\_

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>CURRENT COMMITMENTS</b></p>	PNPM/5001/E/103/S- A/A-1.5	0	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.5

### CURRENT COMMITMENTS

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>	PNPM/5001/E/103/S- A/A-1.5	0	
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**CURRENT COMMITMENTS**

**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**



SL. NO.	DESCRIPTION OF WORK	FULL POSTAL ADDRESS OF CLIENT & NAME OF OFFICER IN CHARGE	CONTRACT VALUE	DATE OF COMMENCEMENT OF WORK	SCHEDULED COMPLETION PERIOD	% AGE COMP. AS ON DATE	EXPECTED DATE OF COMPLETION	REMARKS

**STAMP & SIGNATURE OF BIDDER** : \_\_\_\_\_

**NAME OF BIDDER** : \_\_\_\_\_

**DATE** : \_\_\_\_\_





	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>DEPLOYMENT SCHEDULE FOR SUPERVISORY PERSONNEL</b></p>	PNPM/5001/E/103/S- A/A-1.6	0	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.6

## DEPLOYMENT SCHEDULE FOR SUPERVISORY PERSONNEL

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>  <b>DEPLOYMENT SCHEDULE FOR SUPERVISORY PERSONNEL</b>	PNPM/5001/E/103/S- A/A-1.6	0	
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**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

SL. NO.	DESCRIPTION	DEPLOYMENT SCHEDULE		TOTAL
		M1	M2	
1.	PROJECT MANAGER			
2.	CONSTRUCTION MANAGER			
3.	PLANNING ENGINEER			
4.	ELECTRICAL ENGINEER			
5.	CIVIL & STRUCTURAL ENGINEER			
6.	SUPERVISORS			
7.	ADMINISTRATION MANAGER			
8.	WAREHOUSE PERSONNEL			
9.				
10.				

**NOTE : Bidder may add more personnel as per job assessment / experience**

**STAMP & SIGNATURE OF BIDDER** : \_\_\_\_\_

**NAME OF BIDDER** : \_\_\_\_\_



**DATE** : \_\_\_\_\_

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>DEPLOYMENT SCHEDULE FOR CONSTRUCTION EQUIPMENT</b></p>	PNPM/5001/E/103/S- A/A-1.7	0	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.7

## DEPLOYMENT SCHEDULE FOR CONSTRUCTION EQUIPMENT

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>	PNPM/5001/E/103/S- A/A-1.7	0	
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<b>DEPLOYMENT SCHEDULE FOR CONSTRUCTION EQUIPMENT</b>				

**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

SL. NO.	DESCRIPTION	CAPACITY (Bidder to specify)	DEPLOYMENT SCHEDULE		TOTAL
			M1	M2	
1.	CRANES				
2.	DIESEL GENERATORS				
3.	WELDING MACHINE				
4.	TRACTORS				
5.	TRAILERS / TRUCKS				
6.	DUMPERS				
7.	EXCAVATORS				
8.	VIBRATOR				
9.	COMPACTORS				
10.	OTHER TOOLS & TACKLES				
11.					
12.					

**NOTE : Bidder may add more Equipments as per job assessment / experience.**

**STAMP & SIGNATURE OF BIDDER** : \_\_\_\_\_

**NAME OF BIDDER** : \_\_\_\_\_

**DATE** : \_\_\_\_\_

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH <b>DETAILS OF EQUIPMENT PROPOSED FOR TENDERED WORK</b></p>	PNPM/5001/E/103/S-A/A-1.8	0	
		DOC. NO.	REV.	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.8

## DETAILS OF EQUIPMENT PROPOSED FOR TENDERED WORK

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH DETAILS OF EQUIPMENT PROPOSED FOR TENDERED WORK</b>	PNPM/5001/E/103/S- A/A-1.8	0	
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**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

<u>DETAILS OF PROPOSED EQUIPMENTS, TOOLS &amp; TACKLES</u>									
The bidder shall submit the details of construction equipments, Tools & tackles etc. in the following format, proposed to be deployed for this works.									
SI. No.	EQUIPMENTS LIST REQUIRED TO BE DEPLOYED				STATUS OF EQUIPMENT		SCHEDULE DEPLOYMENT DATE AT SITE	SCHEDULED COMPLETION DATE OF WORK	REMARKS
	Description of Equipment	Make	Year	Capacity	Own by Contractor	If on Hiring (Give Detail Address)			



Note : 1. In case of equipment are to be hired, bidder shall indicate the source of hiring and enclosed and enclose the consent the letter from such sources.  
2. Bidder shall clearly indicate the expected data of availability of owned / hired equipment.

**NOTE : Bidder may add Equipments as per job assessment / experience.**

SIGNATURE OF BIDDER : .....

NAME OF BIDDER : .....

COMPANY SEAL : .....



	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>CONTENTS OF BID &amp; CHECK LIST</b>	PNPM/5001/E/103/S-A/A-1.9	0	
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## SECTION-A : COMMERCIAL

### ANNEXURE-1.9

### CONTENTS OF BID AND CHECK LIST



	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>  <b>CONTENTS OF BID &amp; CHECK LIST</b>	PNPM/5001/E/103/S-A/A-1.9	0	
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**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

Bidder is requested to fill this check list and ensure that all details /documents have been furnished under relevant section as called for in the Bidding Document duly filled in, signed & stamped.



Please tick the box and ensure compliance:

**SECTION-I : PRE-QUALIFICATION BID: (Refer Clause 8.0 of Instructions to Bidders)**

S.NO.	DESCRIPTION	SUBMITTED
i)	Letter of submission	<input type="checkbox"/>
ii)	Pre Qualification Criteria in favour of Experience Criteria as per <b>Exhibit-1</b> along with Copies of Work Orders, Certificates from End User/OWNER and completion certificates in support of prequalification requirement.	<input type="checkbox"/>
iii)	Pre Qualification Criteria in favour of Financial criteria as per <b>Exhibit-2</b> along with copies of Work Orders, Completion/ Acceptance certificates and Annual audited Report for the last three financial years. Annual Reports shall be a verifiable statement of annual accounts certified by a Chartered Accountant or Public Accountant in the form of printed annual reports or similar document.	<input type="checkbox"/>
iv)	<b>Solvency Certificate</b> as per Annexure-1.18. Date of Issue of this certificate should not more than six months old from the date of issue of NIT.	<input type="checkbox"/>
v)	Format for <b>Financial Capability</b> of Bidder as per Annexure-1.21	<input type="checkbox"/>

**SECTION-II : TECHNICAL AND COMMERCIAL BID:**

S.NO.	DESCRIPTION	SUBMITTED
i.	Photocopy of Earnest money Deposit (EMD)	<input type="checkbox"/>
ii.	Power of Attorney of Bid Signatory from the Competent Authority	<input type="checkbox"/>
iii.	Tender Acceptance Letter as per Annexure-1.1	<input type="checkbox"/>
iv.	Commercial Questionnaire as per Annexure-1.2	<input type="checkbox"/>
v.	No Deviation Certificate as per Annexure-1.3	<input type="checkbox"/>
vi.	Details of Similar Works Executed as per Annexure-1.4	<input type="checkbox"/>

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>CONTENTS OF BID &amp; CHECK LIST</b>	PNPM/5001/E/103/S-A/A-1.9	0	
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S.NO.	DESCRIPTION	SUBMITTED
vii.	Current Commitments of the Bidder as per Annexure-1.5	<input type="checkbox"/>
viii.	Deployment Schedule of Supervisory Personnel as per Annexure-1.6	<input type="checkbox"/>
ix.	Deployment Schedule of Construction Equipment as per Annexure-1.7	<input type="checkbox"/>
x.	Details of Equipment Proposed to be used for this work as per Annexure-1.8	<input type="checkbox"/>
xi.	Contents of Bid and Check List as per Annexure-1.9	<input type="checkbox"/>
xii.	A declaration shall be submitted as per Annexure-1.14 to the effect that Bidder have or had not been banned or blacklisted/del-listed by any PSU / Government Organizations.	<input type="checkbox"/>
xiii.	Declaration by Bidder regarding Bidding Document as per Annexure-1.16	<input type="checkbox"/>
xiv.	Photocopy of Integrity Pact as per Annexure-1.17	<input type="checkbox"/>
xv.	EFT details as per Annexure-1.19	<input type="checkbox"/>
xvi.	A declaration shall be submitted to the effect that Bidder submitting their Bid is not under liquidation, court receivership or similar proceedings as per Annexure-1.22	<input type="checkbox"/>
xvii.	Declaration for Past Safety Record as per Annexure-1.23	<input type="checkbox"/>
xviii.	Bidder to furnish PAN Number, TIN Number, PF/ESI Number, GST Number, Labor License Registration Number, Latest Income Tax Clearance Certificate / ITR etc. along with the bid.	<input type="checkbox"/>
xix.	<b>Price confirmation copy</b> - A Photocopy of the Schedule of Prices, to be submitted strictly as per <b>Part-B of Section-B, Technical</b> , prices being blanked out and in place indicating <b>"Quoted"</b> against each head, shall be submitted duly signed and stamped. However, Bidder shall not hide the percentage of taxes and duties considered in the priced bid.	<input type="checkbox"/>
xx.	Master Index along with a copy of complete set of Bidding Documents of all technical and commercial amendments/addendums if any issued, duly signed and stamped on each page as a token of having received and read all parts of the bidding document and having accepted and considered the same in preparing their bid.	<input type="checkbox"/>
xxi.	Any other information required in the Bidding Documents or considered relevant by the Bidder.	<input type="checkbox"/>



For and on behalf of : .....

Stamp & Signature : .....

Name : .....

Designation : .....

Date : .....



	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>TERMS OF PAYMENT</b></p>	PNPM/5001/E/103/S- A/A-1.10	0	
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## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.10



### TERMS OF PAYMENT

0	11.01.2018	FOR TENDER	SK	KJ	RRK
<b>REV.</b>	<b>DATE</b>	<b>PURPOSE</b>	<b>PREPARED</b>	<b>REVIEWED</b>	<b>APPROVED</b>

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>TERMS OF PAYMENT</b></p>	PNPM/5001/E/103/S- A/A-1.10	0	
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	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>TERMS OF PAYMENT</b></p>	PNPM/5001/E/103/S- A/A-1.10	0	
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## TERMS OF PAYMENT

### 1.0 FINANCIAL GUARANTEE FOR PERFORMANCE

The contractor shall provide financial guarantee within 15 days of award of work for due & faithful performance of the contract as per Article 6 of General Conditions of Contract.

### 2.0 PAYMENT TERMS

Following terms of payment shall be applicable :

#### 2.1. MOBILIZATION ADVANCE

Mobilization Advance not exceeding 10% of contract value shall be payable on submission of Bank Guarantee for the equivalent amount from a Nationalized / Scheduled Bank in the prescribed proforma, subject to furnishing the Performance Bank Guarantee. **An interest @ 10% per annum shall, however, be charged on the above Mobilization Advance till it is recovered.** Recovery of this Advance shall be made @ 15% from each bill so that full Mobilization Advance including interest is recovered by the time 75% work is done. The interest shall be calculated on the advance up to the date of release of payment(s). Mobilization Advance shall be paid only on acceptance of LOI / Work Order and establishment of Site Office by Contractor. The payment of Mobilization Advance shall be released with certification by Consultant/Owner.



#### 2.2. RUNNING ON ACCOUNT PAYMENT

**2.2.1 90% against value of actual work done** shall be paid against running bills within 30 days of certification by OWNER/CONSULTANT after recovery of the following:

- Mobilization Advance as indicated above.
- Statutory deduction such as Income-Tax as applicable.
- Any other recovery if become due.

**2.2.2 Balance 10% (Retention Money) of the SOR** shall be released along with final bill.

2.3. The running on A/c Bills shall be submitted on monthly basis.

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>TERMS OF PAYMENT</b></p>	PNPM/5001/E/103/S- A/A-1.10	0	
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#### 2.4. RELEASE OF 1<sup>st</sup> R/A BILL

Payment will be released against 1<sup>st</sup> R/A bill only on submission of following documents by contractor to the indenting department.

- i. Financial Guarantee for Performance
- ii. Labour License (as per statutory requirements)
- iii. EPF Code Registration number with RPFC/ARPF
- iv. Insurance Contractor All Risk (CAR) Policy
- v. Workmen compensation policy

#### 2.5. SUBMISSION OF FINAL BILL

The final bill complete in all respect shall be submitted after certified completion of work. The bill should be accompanied with the following documents:

- i. Job completion certificate.
- ii. No claim certificate on HURL's prescribed proforma.
- iii. Site clearance certificate.
- iv. Performance guarantee duly amended to cover certified maintenance period.
- v. Indemnity certificate towards labours payment and all other statutory payments.

No claim shall be entertained after receipt of final bill. Settlement of final bill shall be made within 1 (one) month period subject to furnishing of all required documents / clarification and extension of time, if any, by HURL's competent authority.

#### 3.0 PRICE



The prices shall be firm during the entire contract period including all extensions granted on whatsoever ground may be.

#### 4.0 INSTRUCTION FOR INVOICING & PAYMENT DOCUMENTATION

##### 4.1. INVOICING

Invoicing shall be in compliance with the stipulations of the Work Order and the following instructions. Contractor is liable for all costs arising from noncompliance with the instructions.

As far as possible, description of Works in invoice shall match the description in Work Order. **Invoice for payment shall be addressed to Owner.**

	<p style="text-align: center;"><b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b></p> <p style="text-align: center;"><b>TERMS OF PAYMENT</b></p>	PNPM/5001/E/103/S- A/A-1.10	0	
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The invoices shall be issued in the name of:

Hindustan Urvarak & Rasayan Limited,  
Core-2, 2<sup>nd</sup> Floor, Scope Minar,  
Laxmi Nagar District Centre, Delhi-92

Attn : Mr. Manish Goyal  
Sr. Project Manager  
Tel No. : 011-22502267  
Email : [goyalm@hurl.net.in](mailto:goyalm@hurl.net.in)

The invoice shall contain the following information:

- i. Work Order No.
- ii. Item no., quantity and complete description
- iii. Item-wise net price (unit and total) of the works where applicable.
- iv. Net amount payable by deducting advance payment already invoiced, if any, and the guarantee retention amount, if any, from the total value of the Works being invoiced.

The signed invoices, original and copy shall be made on Contractor's letter head and shall be duly signed.



Invoices for progress payment(s) shall state the information under (i), (ii) and (iii).  
Invoices for guarantee retention money shall state the information under (i) to (iv).

#### **4.2. PROGRESS PAYMENT**

- 1) Invoice for \_\_\_\_\_ in original and two (2) copies duly certified by Owner / Consultant.
- 2) Performance certificate in one (1) original plus two (2) copies from the beneficiary to the effect that progress achieved is equal to progress invoiced, duly certified by Owner/Consultant.

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	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p>PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT (EMD) / BID SECURITY</p>	PNPM/5001/E/103/S-A/AT-1.11	0	
		DOC. NO.	REV.	
		Page 1 of 3		

## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.11

# PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT (EMD) / BID SECURITY

(To be stamped in accordance with Stamp Act,  
if any, of the Country of the issuing Bank)

Bank Guarantee No. ....  
Date.....

To:  
[Owner's Name and Address]

Dear Sirs,

In accordance with Invitation for Bids under your Bid Document No. ....  
M/s..... having  
its Registered/Head Office at..... (here-in-after  
called the 'Bidder') wish to participate in the said bid for .....[Name  
of Project].....

As an irrevocable bank guarantee against Bid Security for an amount of  
.....(\*).....valid for..... days  
from.....(\*\*).....required to be submitted by the Bidder  
as a condition precedent for participation in the said bid which amount is liable to be forfeited on the  
happening of any contingencies mentioned in the Bidding Documents.



We, the .....[Name & address of the  
Bank].....having our Head  
Office at.....(#).....guarantee and undertake to  
pay immediately on demand by.....[Name of the Owner] (hereinafter called the  
'Owner')..... the amount of  
.....(\*).....without any reservation, protest, demand and  
recourse. Any such demand made by the 'Owner' shall be conclusive and binding on us irrespective of  
any dispute or difference raised by the Bidder.

This Guarantee shall be irrevocable and shall remain valid upto .....(@)..... If any  
further extension of this guarantee is required, the same shall be extended to such required period (not  
exceeding one year) on receiving instructions from M/s ..... [Bidder's Name]..... on  
whose behalf this guarantee is issued. In witness where of the Bank, through its authorised officer, has  
set its hand and stamp on this.....day  
of.....20.....at.....

.....  
(Signature)  
.....  
(Name)  
.....  
(Designation with Bank Stamp)  
Attorney as per  
Power of Attorney No.....  
Date.....

NOTE :

1. (\* ) The amount shall be as specified in Letter Inviting Bid.  
(\*\* ) This shall be the date of opening of Technical and Commercial bids.  
(# ) Complete mailing address of the Head Office of the Bank to be given.  
(@ ) This date shall be three (3) months beyond bid valid.
2. The Stamp Paper of appropriate value shall be purchased in the name of Bidder / Bank issuing the guarantee.

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>  <b>PROFORMA OF SECURITY CUM PERFORMANCE BANK GUARANTEE / SECURITY DEPOSIT</b>	PNPM/5001/E/103/ S-A/A-1.12	0	
		DOC. NO.	REV.	
		Page 1 of 3		

## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.12

# PROFORMA OF SECURITY CUM PERFORMANCE BANK GUARANTEE / SECURITY DEPOSIT

(To be submitted on non judicial stamp paper of appropriate value)

## PROFORMA OF BANK GUARANTEE FOR CONTRACT PERFORMANCE

(This guarantee should be executed on non-judicial stamp paper of appropriate value)

In Consideration of **Hindustan Urvarak & Rasayan Limited, having its Registered Office at Coal Bhawan, 7<sup>th</sup> Floor, Plot No. AF-III, Action Area-1A, Newtown, Kolkata-700156,** (hereinafter referred to as the 'Owner' which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s. \_\_\_\_\_ with its registered / Head Office at \_\_\_\_\_ (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 Owner's Letter of Intent No. \_\_\_\_\_ dated \_\_\_\_\_ and the same having been unequivocally accepted by the Contractor, resulting in a contract \_\_\_\_\_ ( *scope of contract* ) \_\_\_\_\_ and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to Rs. \_\_\_\_\_ (%) \_\_\_\_\_ per cent) of the said value of the Contract to the Owner.

We \_\_\_\_\_ ( *name and address* ) \_\_\_\_\_ having its Head Office at \_\_\_\_\_ (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 Owner, on demand any and all monies payable by the Contractor to the extent of \_\_\_\_\_ as aforesaid at anytime upto \_\_\_\_\_ (days/month/year) without any demur, reservation, context, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Owner on the Bank shall be conclusive and binding notwithstanding any difference between the Owner 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 Owner and further agrees that the guarantee herein contained shall continue to be enforceable till the Owner discharge this guarantee.

The Owner 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 Owner 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 Owner and the Contractor or any other course or remedy or security available to the Owner. The bank shall not be released to its obligations under these presents by any exercise by the Owner of its liberty with reference to the matters aforesaid or any of them or by reason of any other act of omission or commission on the part of the Owner or any other

indulgences shown by the Owner or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank.

The Bank also agrees that the Owner 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 the Owner may have in relation on to the Contractor's liabilities.



Notwithstanding anything contained herein above our liability under this guarantee is restricted to Rs. \_\_\_\_\_ and it shall remain in force upto till \_\_\_\_\_. Unless a demand or claim under this performance bond is filed against us within six months from the expiry date of this Guarantee, i.e. on or before \_\_\_\_\_ all the rights under this performance bond shall be forfeited and we shall be relieved and discharged from all liability there under.

IN WITNESS, the Principal and surety have executed this performance bond and have affixed their seals on the date set forth.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 200 \_\_\_\_ at \_\_\_\_\_.

PRINCIPAL

CORPORATE SURETY

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>BANK GUARANTEE FOR ADVANCE/ PROGRESS PAYMENT</b></p>	PNPM/5001/E/103/ S-A/A-1.13	0	
		DOC. NO.	REV.	
		Page 1 of 3		

## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.13

### BANK GUARANTEE FOR ADVANCE / PROGRESS PAYMENT

(To be submitted on non judicial stamp paper of appropriate value)

## PROFORMA OF BANK GUARANTEE FOR ADVANCE PAYMENT

(To be stamped in accordance with Stamp Act)

In Consideration of **Hindustan Urvarak & Rasayan Limited, having its Registered Office at Coal Bhawan, 7<sup>th</sup> Floor, Plot No. AF-III, Action Area-1A, Newtown, Kolkata-700156,** (hereinafter referred to as the 'Owner' which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s. \_\_\_\_\_ (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 Owner's Letter of Intent No. \_\_\_\_\_ dated \_\_\_\_\_ and the same having been unequivocally accepted by the Contractor, resulting in a Contract \_\_\_\_\_ (*scope of contract*) \_\_\_\_\_ and the Owner having agreed to make an advance payment to the Contractor for performance of the above Contract amounting Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) as an advance against Bank Guarantee to be furnished by the Contractor.

We \_\_\_\_\_ (*name of the bank*) \_\_\_\_\_ having its Head Office at \_\_\_\_\_ (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 Owner, immediately on demand any or, all monies payable by the Contractor to the extent of \_\_\_\_\_ as aforesaid at any time upto \_\_\_\_\_ @ \_\_\_\_\_ without any demur, reservation, context, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Owner on the Bank shall be conclusive and binding notwithstanding any difference between the Owner and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable till the Owner discharges this guarantee.

The guarantee herein contained is not revocable by notice during the currency and will remain in full force until (a) payment has been made to the owner by the Bank of the aggregated amount payable herein under or (b) the said advance has been fully adjusted and extinguished, as hereafter set forth, whichever is earlier.

The Owner shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from time to time to vary the advance or to extend the time for performance of the Contract by the Contractor. The Owner 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 with Contract between the Owner and the Contractor or any other course or remedy or security available to the Owner. The bank shall not be released of its obligations under these presents by any exercise by the Owner 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 Owner or any other indulgence shown by the Owner or by any





other matter or thing whatsoever which under law would but for this provision have the effect of relieving the Bank.

The Bank also agrees that the Owner 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 Owner may have in relation to the Contractor's liabilities.

Notwithstanding anything contained herein above our liability under this guarantee is limited to \_\_\_\_\_ and it shall remain in force upto and including \_\_\_\_\_ @ \_\_\_\_\_ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s. \_\_\_\_\_ on whose behalf this guarantee has been given.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 200\_\_\_\_ at \_\_\_\_\_

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH <b>PROFORMA FOR BLACK-LISTED</b></p>	PNPM/5001/E/103/S- A/A-1.14	0	
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		Page 1 of 2		

**SECTION-A : COMMERCIAL**

**ATTACHMENT - 1.14**

**PROFORMA FOR BLACKLISTED**

(Self Declaration on Bidder's Letter Head as per below performa)

**DECLARATION**

To ,

.....  
.....  
.....

NIT NO. : PNPM/5001/E/103

**SUBJECT :** TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL  
(PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH

Sir ,



We hereby declare that M/s ..... is neither put on Holiday or Black-listed  
by any Government / PSU / Private firm or Financial Institution.

Signature

Name :

Designation :

Seal of the Bidder.

 पी डी आई एल <b>PDIL</b>	TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH  <b>FORMAT OF CONTRACT AGREEMENT</b>	PNPM/5001/E/103/ S-A/A-1.15	0	 HURL
		DOC. NO.	REV.	
		Page 1 of 4		

## **SECTION-A : COMMERCIAL**

### **ATTACHMENT - 1.15**

## **FORMAT OF CONTRACT AGREEMENT**

## FORMAT OF CONTRACT AGREEMENT

(To be executed on non-judicial stamp paper of appropriate value)

THIS CONTRACT AGREEMENT is made the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

BETWEEN

(1) *[Name of Owner]*, a corporation incorporated under the laws of India and having its principal place of business at *[address of Owner]* (hereinafter called "the Owner"), and (2) *[name of Contractor]*, a corporation incorporated under the laws of India and having its principal place of business at *[address of Contractor]* (hereinafter called "the Contractor")

WHEREAS the Owner desires to engage the Contractor to .....*[scope of work]*..... and the Contractor have agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

### **ARTICLE 1. CONTRACT DOCUMENTS**

1.1 The following documents shall constitute the Contract between the Owner and the Contractor, and each shall be read and construed as an integral part of the Contract:

- a) This Contract Agreement and the Appendices hereto
- b) Letter of Award
- c) Amendment to the NIT document.
- d) Instruction to Bidders
- e) Special Conditions of Contract
- f) General Conditions of Contract
- g) Technical Specifications and Drawings
- h) The Bid and Schedule of Prices including Supplementary Price (*delete if not applicable*) submitted by the Contractor
- i) Integrity Pact (IP) signed between the Owner and the Bidder / Contractor

1.2 **Order of Precedence**

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 **Definitions**

Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions of Contract.

### **ARTICLE 2. CONTRACT PRICE AND PAYMENT TERMS**

2.1 **Contract Price**

The Owner hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the *and [amount in words], [amount in figures]*, or such other sums as may be determined in accordance with the terms and conditions of the Contract.

## 2.2 **Payment Terms**

Payment shall be made by the Owner to the Contractor as per the provisions of Bidding Documents.

### **ARTICLE 3. EFFECTIVE DATE FOR DETERMINING TIME FOR COMPLETION**

The Completion period of the Project shall be determined from the date of Letter of Award.

### **ARTICLE 4. NON-ASSIGNABILITY**

The Contract and benefits and obligations thereof shall be strictly personal to the CONTRACTOR and shall not on any account be assignable or transferable by the CONTRACTOR.

### **ARTICLE 5. GOVERNMENT OF INDIA NOT LIABLE**

It is expressly understood and agreed by and between the Contractor and the Owner that the Owner is entering into this Agreement solely on its own behalf and not on behalf of any other person or entity. In particular it is expressly understood and agreed that the Government of India is not a party to this Agreement and has no liabilities, obligations or rights hereunder. It is expressly understood and agreed that the Owner is an Independent legal entity with power and authority to enter into contracts solely on its own behalf under the applicable laws of India and the general principles of Contract Law. The Contractor expressly agrees, acknowledges and understands that the Owner is not an Agent, Representative or Delegate of the Govt. of India. It is Further understood and agreed that the Government of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the Contract. Accordingly, the Contractor expressly waives, releases and foregoes any and all actions or claims, including cross claims, impleader claims or counter claims against the Government of India arising out of this Contract and covenants not to sue the Government of India as to any manner, claim, cause of action or thing whatsoever arising of or under this Contract.

### **ARTICLE 6. APPENDICES**

The Appendices listed in the attached list of Appendices shall be deemed to form an integral part of this Contract Agreement. Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

### **ARTICLE 7. NO LIABILITY ON DIRECTOR AND EMPLOYEE**

No Director, employee, consultant or agent of the OWNER or other person representing the OWNER or acting on behalf of the OWNER in or pursuant to the Contract or in the discharge of any obligation to the OWNER under the Contract or otherwise in relation to the Contract shall have any personal liability to the CONTRACTOR or any Sub-Contractor, agent, representative, director or employee of the CONTRACTOR or to any other person acting for or on behalf of the CONTRACTOR and the CONTRACTOR on its own behalf and on behalf of its Sub Contractors, directors, employees, agents and representatives hereby waives and disclaims any and all right of action which it or they may have whether under tort or Contract or otherwise against the OWNER or any director, employee, agent, consultant or representative of the OWNER for act of omission or commission done or omitted to be done.

**ARTICLE 8. WAIVER**

No failure or delay by the OWNER in enforcing any right or remedy of the OWNER in terms of the CONTRACT or any obligation or liability of the CONTRACTOR in terms thereof, shall be deemed to be a waiver of such right, remedy, obligation or liability, as the case may be, by the OWNER and notwithstanding such failure or delay, the OWNER shall be entitled at any time to enforce such right, remedy, obligation or liability, as the case may be.

**ARTICLE 9. LANGUAGE OF CONTRACT AND COMMUNICATION**

The language of the Contract shall be English and all communications, drawings, design, data, information, codes specifications and other document whatsoever supporting the bid or otherwise exchanged under the Contract shall be in English. In the event that any technical documentation is in any language other than English, the document should be translated and presented to the OWNER/Project Manager in English and English document/translated document shall be regarded as the only authentic document.

IN WITNESS WHEREOF the Owner and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by for and on behalf of the Owner

\_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Title]

in the presence of \_\_\_\_\_

Signed by for and on behalf of the Contractor

\_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Title]

in the presence of \_\_\_\_\_



CONTRACT AGREEMENT

dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

BETWEEN

\_\_\_\_\_  
["the Owner"]  
and

\_\_\_\_\_  
["the Contractor"]

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>DECLARATION BY BIDDER REGARDING BIDDING DOCUMENT</b></p>	PNPM/5001/E/103/S- A/A-1.16	0	
		DOC. NO.	REV.	
		Page 1 of 2		

## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.16

## DECLARATION BY BIDDER REGARDING BIDDING DOCUMENT



(Declaration on Bidder's Letter Head as per below performa)

**SUBJECT: TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

We \_\_\_\_\_ (Name of the Bidder) hereby represent that we have gone through and understood the Bidding Documents, **NIT NO: PNP/5001/E/103 DATED** \_\_\_\_\_ (including but not limited to) the Commercial & Technical Requirements/ Specifications in **Section-A : Commercial and Section-B : Technical** of the Bidding documents and amendments, if any, and that our Bid has been prepared accordingly in compliance with the requirements stipulated in the said documents.

We are submitting a copy of complete set of Bidding Documents, **Section-A : Commercial and Section-B : Technical** and amendments, if any, as part of our Bid duly signed and stamped on each page in token of our acceptance. Further we undertake that in the event of award of work to us, all the parts shall be considered for constitution of Contract Agreement.



For and on behalf of : .....

Stamp & Signature : .....

Name : .....

Designation : .....

Date : .....

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>FORMAT FOR INTEGRITY PACT</b></p>	PNPM/5001/E/103/S- A/A-1.17	0	
		DOC. NO.	REV.	
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## **SECTION-A : COMMERCIAL**

### **ATTACHMENT - 1.17**

### **FORMAT FOR INTEGRITY PACT**

## INTEGRITY PACT

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on \_\_\_\_ day of the month of \_\_\_\_\_ 2017, between **M/s Hindustan Urvarak & Rasayan Ltd.**, registered under Companies Act, 2013, having its registered office at **having its Registered Office at Hindustan Urvarak & Rasayan Limited, having its Registered Office at Coal Bhawan, 7<sup>th</sup> Floor, Plot No. AF-III, Action Area-1A, Newtown, Kolkata-700156**, (hereinafter referred to as [HURL], which expression shall mean and include, unless the context otherwise requires, its successors and assigns) of the First Part and M/s \_\_\_\_\_ a Company, firm incorporated under \_\_\_\_\_ Laws to which it is subject to (hereinafter called the "Bidder/Seller", which expression shall mean and include, unless the context otherwise requires, its successors, heirs / legal representatives / administrator in office and assigns) of the Second Part.

Whereas

HURL has issued NIT \_\_\_\_\_ dated \_\_\_\_\_ inviting bids from Parties for undertaking-the Project /Work of \_\_\_\_\_ at its unit located at \_\_\_\_\_ (hereinafter referred to as the Project /Work). The BIDDER is a private Company/Public Company/Government Undertaking / Partnership / registered export agency, constituted in accordance with the relevant law in the matter and HURL is joint venture company incorporated by Indian Oil Corporation Ltd. (IOCL), National Thermal Power Corporation Ltd. (NTPC), Coal India Ltd. (CIL), The Fertilizer Corporation of India Ltd. (FCIL) and Hindustan Fertiliser Corporation Ltd. (HFCL).

The Bidder is willing to offer/ has offered to carry out the Project/ Work and understands that this Integrity Pact has to be executed between the parties before HURL can consider the offer.

### **NOW, THEREFORE,**

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling HURL to undertake the Project/Work at a competitive price in conformity with the defined specifications by avoiding the high costs and the distort nary impact of corruption on public procurement, and

Enabling BIDDER to abstain from bribing or indulging in any corrupt practices in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and HURL will commit to prevent corruption, in any form, by its officials by following transparent procedures.

In respect of the Project/Work an Independent Monitor shall be appointed by HURL to verify facts and to take necessary action, legal or otherwise as may be deemed appropriate including criminal proceedings, against the persons and /or Organizations indulging in the corrupt practice.

**NOW, THEREFORE IN CONSIDERATION OF THE MUTUAL COVENANTS CONTAINED HEREIN, THE PARTIES AGREE AS UNDER:**

## **1.0 COMMITMENTS OF HURL:**

- 1.1 HURL undertakes that no official of HURL, connected directly or indirectly with the Project/Work, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any other person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 HURL will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular Bidder in comparison to other BIDDERS.
- 1.3 HURL will report to the Independent Monitor of any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach. HURL will also report to appropriate Government Office wherever necessary”.

## **2.0 PRECEDING MISCONDUCT:**

- 2.1 In case any preceding misconduct on the part of any official(s) is reported by the BIDDER to the Independent Monitor with full and verifiable facts and the same is prima facie found to be correct by the Independent Monitor, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by HURL or the Independent Monitor and such a person shall be debarred from further dealings related to contract process. In such a case while an enquiry is being conducted by HURL the proceedings under the contract would not be stalled.

## **3.0 COMMITMENTS OF BIDDER:**

- 3.1 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:
- 3.2 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the HURL, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
- 3.3 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of HURL or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with HURL for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with HURL.
- 3.4 BIDDER shall disclose the name(s) and address(es) of foreign principals, associates, agents and distributors, advisors, representatives and sub-contractors.

- 3.5 BIDDER shall disclose the payments to be made by them to agents/ brokers or any other intermediary, in connection with this bid/ contract.
- 3.6 The BIDDER further confirms and declares to HURL that he has not engaged any individual or firm or company, whether Indian or foreign, to intercede, facilitate or in any way to recommend to HURL or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or Company in respect of any such intercession, facilitation or recommendation.
- 3.7 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose complete details of any payments made, is committed to or intends to make to any officials of HURL or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 3.8 The BIDDER will not collude with other parties, interested in the contract, to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.9 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.10 The BIDDER shall not use improperly, for purposes of completion or personal gain, or pass on to others, any information provided by HURL as part of the business relationship, such as plans, technical proposals and business details including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care to ensure that no information is divulged to others.
- 3.11 The BIDDER commits to refrain from giving any complaint in connection with the Project, directly or through any other manner, without supporting it with full and verifiable facts.
- 3.12 The BIDDER shall not instigate or cause to instigate any third party to commit any of the actions aforestated.
- 3.13 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the employees of HURL, or, if any relative of an employee of HURL has financial interest/stake in the BIDDER, the same shall be disclosed by the BIDDER at the time of filing the tender.

The term `relative' for this purpose would be as defined in Companies Act, 2013 or any modifications thereof.

- 3.14 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of HURL.

#### **4.0 PREVIOUS TRANSGRESSION**

- 4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact with HURL, in respect of any corrupt practices

envisaged hereunder, and/or with any Public Sector Enterprises/ Government department that could justify BIDDERS exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process of the contract, and if already awarded, the Contract can be terminated for such reason.

## **5.0 EARNEST MONEY / SECURITY DEPOSIT:**

5.1 While submitting commercial bid, the BIDDER shall deposit an amount \_\_\_\_\_ as Earnest Money/Security Deposit, with HURL through any of the following instruments:

(i) Bank draft or pay order in favour of

(ii) A confirmed guarantee by an Indian Nationalized Bank, promising payment of the guaranteed sum to the Buyer on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the Buyer shall be treated as conclusive proof of payment

(iii) Any other mode or through any other instrument

5.2 The amount and validity of the earnest money / Security Deposit shall be as mentioned in the NIT.

5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the purchase contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of the decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the HURL to the BIDDER on Earnest Money/ Security Deposit for the period of its currency.

## **6.0 SANCTIONS FOR VIOLATIONS**

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle HURL to take all or any one of the following actions, wherever required:-

i. To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

ii. The Earnest Money Deposit (in pre-contract stage) and /or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by HURL, without assigning any reason thereof.

iii. To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

iv. To recover all sums already paid by HURL, together with interest thereon at 2% higher than the prevailing Lending Rate of State Bank of India or at 2% higher than LIBOR as may be applicable based on whether the bidder is an Indian party or a foreign party. If any outstanding payment is due to the BIDDER from HURL in connection with any other contract for any other Project/Work/ Supply, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

v. To encash the advance bank guarantee and performance bond/ warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by HURL, along with interest.

vi. To terminate all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to HURL resulting from such termination and RCF shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

vii. To debar/blacklist the BIDDER from participating in future bidding processes of HURL for a minimum period of five years, which may be further extended at the discretion of HURL.

viii. To recover all sums paid, in violation of this Pact by BIDDER to any middleman or agent or broker, with a view to securing the contract.

ix. In case where irrevocable Letters of Credit have been opened in respect of any contract signed by HURL with the BIDDER, the same shall not be operated.

x. Forfeiture of Performance Bond in case of a decision by HURL to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 HURL will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (Whether with or without the knowledge of the BIDDER) of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of HURL to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the Bidder can approach the Independent Monitor appointed for the purposes of this Pact.

**7.0 INDEPENDENT MONITOR:**

7.1 HURL has appointed following persons as Independent Monitor for this Pact:

(i) Name : .....  
Address:  
Email:  
Mobile:

(ii) Name : .....  
Address:  
Email:  
Mobile:

- 7.2 The task of the Monitor shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.
- 7.3 The Monitor shall not be subject to instructions by the representatives of the parties and perform his functions neutrally and independently.
- 7.4 Both the parties accept that the Monitor has the right to access all the documents relating to the project/ procurement, including minutes of meetings.
- 7.5 As soon as the Monitor notices, or has reason to believe a violation of this Pact, he will so inform the Authority designated by HURL.
- 7.6 Notwithstanding any Confidentiality Agreement/ clause agreed between HURL and Bidder, the BIDDER accepts that the Monitor has the right to access, without restriction, to all Project documentation of HURL including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to this project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/ Subcontractor (s) with confidentiality.
- 7.7 HURL will provide to the Monitor sufficient information about all meetings among the parties related to the supply provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 7.8 The Monitor will submit a written report to the designated Authority of HURL within 8 to 10 weeks from the date of reference or intimation to him by HURL/ BIDDER and should the occasion arise, submit proposals for correcting problematic situations.

## **8.0 FACILITATION OF INVESTIGATION**

In case of any allegation of violation of any provisions of these terms or payment of commission, HURL shall be entitled to examine all the project documents of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

## **9.0 LAW AND PLACE OF JURISDICTION**

This Pact is subject to Indian Law. The place of performance and jurisdiction is the registered office of HURL.

## **10.0 OTHER LEGAL ACTIONS**

The Actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.



**11.0 VALIDITY**

- 11.1 The validity of this Integrity Pact shall be from date the NIT is issued and extend upto two years from the date of last payment under the contract. In case BIDDER is not awarded Contract/Purchase Order, this Integrity Pact shall expire after twelve months from the date of issue of the NIT.
- 11.2 Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 12.0 The parties hereby sign this Integrity Pact, through their authorized representative, for having accepted the conditions contained hereinabove.

**HURL**

**BIDDER**

( )

( )

*Date:*

*Date:*

*Place:*

*Place:*

Witness

Witness

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

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

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p><b>PROFORMA FOR SOLVENCY CERTIFICATE</b></p>	PNPM/5001/E/103/S-A/A-1.18	0	
		DOC. NO.	REV.	
		Page 1 of 2		

## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.18

## PROFORMA FOR SOLVENCY CERTIFICATE

	<p style="text-align: center;">TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p style="text-align: center;"><b>PROFORMA FOR SOLVENCY CERTIFICATE</b></p>	PNPM/5001/E/103/S- A/A-1.18	0	
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		Page 2 of 2		

**PROFORMA FOR SOLVENCY CERTIFICATE**

(on Bank's Letter Head)

REF NO:.....

DATE:.....

To Whomsoever Concerned

This is to certify that to the best of our knowledge and information, M/s \_\_\_\_\_  
(Bidders name with complete address), a customer of our Bank, is respectable, and is capable of  
executing orders to the extent of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_). M/s  
\_\_\_\_\_ have been our customer since \_\_\_\_\_ to date and has been granted the following  
limits, at present, against various facilities granted by the Bank:



.....  
.....

This certificate is issued without any guarantee, risk or responsibility on behalf of the Bank or any of its  
officials.

This certificate is issued at the specific request of the customer.

Yours faithfully,



(Bank Official's signature & stamp)

 पी डी आई एल <b>PDIL</b>	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH FORMAT FOR EFT DETAILS</b>	PNPM/5001/E/103/S- A/AT-1.19	0	 HURL
		DOC. NO.	REV.	
		Page 1 of 2		

## **SECTION-A : COMMERCIAL**

### **ATTACHMENT - 1.19**

## **FORMAT FOR EFT DETAILS**

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b>  <b>FORMAT FOR EFT DETAILS</b>	PNPM/5001/E/103/S- A/AT-1.19	0	
		DOC. NO.	REV.	
		Page 2 of 2		

### FORMAT FOR EFT DETAILS



I / WE hereby agree to receive the payment against our bills raised to M/s Hindustan Urvarak & Rasayan Ltd. directly in our bank account as per details given below through Electronic Fund Transfer Mechanism. Necessary details are given as below:

- 1 Name, Branch and address of Payee's bank : \_\_\_\_\_
- 2 Title of the account : \_\_\_\_\_
- 3 Account number : \_\_\_\_\_
- 4 Nature of the Account : \_\_\_\_\_
- 5 Branch MICR code number : \_\_\_\_\_
- [Enclose photocopy of cancelled cheque] : \_\_\_\_\_
- 6 Permanent Account Number : \_\_\_\_\_
- [PAN] of the Payee : \_\_\_\_\_
- 7 IFSC Code : \_\_\_\_\_

**STAMP & SIGNATURE OF BIDDER** : \_\_\_\_\_

**NAME OF BIDDER** : \_\_\_\_\_



**DATE** : \_\_\_\_\_

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH GENERAL GUIDELINES FOR GST</b>	PNPM/5001/E/103/S- A/AT-1.20	0	
		DOC. NO.	REV.	
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## **SECTION-A : COMMERCIAL**

### **ATTACHMENT - 1.20**

## **GENERAL GUIDELINES FOR GOODS & SERVICE TAX (GST)**

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>GENERAL GUIDELINES FOR GST</b>	PNPM/5001/E/103/S-A/AT-1.20	0	
		DOC. NO.	REV.	
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## GENERAL GUIDELINES FOR GOODS & SERVICE TAX (GST)

### 1.0 SCHEDULE OF RATES / BID PRICES

- 1.1. Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole works as described in Bidding Documents, based on the rates and prices submitted by the Bidder and accepted by the Employer. The prices quoted by the Bidders will be inclusive of all taxes except **GST (CGST & SGST/UTGST or IGST)**.
- 1.2. Prices must be filled in format for "Schedule of Rates [SOR]" enclosed as part of Tender document. If quoted in separate typed sheets and any variation in item description, unit or quantity is noticed, the Bid is liable to be rejected.
- 1.3. Bidder shall quote for all the items of "SOR" after careful analysis of cost involved for the performance of the completed item considering all parts of the Bidding Document. In case any activity though specifically not covered in description of item under "SOR" but is required to complete the works as per Specifications, Scope of Work / Service, Standards, General Conditions of Contract ("GCC"), Special Conditions of Contract ("SCC") or any other part of Bidding Document, the prices quoted shall deemed to be inclusive of cost incurred for such activity.
- 1.4. All duties, taxes and other levies [if any] payable by the Contractor under the Contract, or for any other cause except final **GST (CGST & SGST/UTGST or IGST)** shall be included in the rates / prices and the total bid-price submitted by the Bidder. Applicable rate of **GST (CGST & SGST/ UTGST or IGST)** on the contract value shall be indicated in Agreed Terms & Conditions and SOR.
- 1.5. Prices quoted by the Bidder, shall remain firm and fixed and valid until completion of the Contract and will not be subject to variation on any account. Any new taxes & Duties, if imposed by the State/ Govt. of India after due date of bid submission but before the Contractual Delivery Date, shall be reimbursed to the contractor on submission of documentary evidence for proof of payment to State/ Govt. Authorities and after ascertaining it's applicability with respect to the contract.
- 1.6. Further, Bidder shall also mention the **Service Accounting Codes (SAC)** at the designated place in SOR.

### 2.0 GST (CGST & SGST/UTGST or IGST)

- 2.1 Bidders are required to submit copy of the GST Registration Certificate while submitting the bids wherever **GST (CGST & SGST/UTGST or IGST)** is applicable.

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>GENERAL GUIDELINES FOR GST</b>	PNPM/5001/E/103/S-A/AT-1.20	0	
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- 2.2 Quoted prices should be inclusive of all taxes and duties, except **GST (CGST & SGST or IGST or UTGST)**. Please note that the responsibility of payment of **GST (CGST & SGST or IGST or UTGST)** lies with the Supplier of Goods / Services only. Supplier of Goods / Services (Service Provider) providing taxable service shall issue an Invoice/Bill, as the case may be as per rules/ regulation of GST. Further, returns and details required to be filled under GST laws & rules should be timely filed by Supplier of Goods / Services (Service Provider) with requisite details.



Payments to Service Provider for claiming **GST (CGST&SGST/UTGST or IGST)** amount will be made provided the above formalities are fulfilled. Further, OWNER may seek copies of challan and certificate from Chartered Accountant for deposit of **GST (CGST & SGST/UTGST or IGST)** collected from Owner.

- 2.3 In case CBEC (Central Board of Excise and Customs)/ any equivalent government agency brings to the notice of OWNER that the Supplier of Goods / Services (Service Provider) has not remitted the amount towards **GST (CGST & SGST/UTGST or IGST)** collected from OWNER to the government exchequer, then, that Supplier of Goods / Services (Service Provider) shall be put under Holiday list of OWNER for period of six months.
- 2.4 In case of statutory variation in **GST (CGST & SGST/UTGST or IGST)**, other than due to change in turnover, payable on the contract value during contract period, the Supplier of Goods / Services (Service Provider) shall submit a copy of the 'Government Notification' to evidence the rate as applicable on the Bid due date and on the date of revision.
- 2.5 Beyond the contract period, in case OWNER is not entitled for input tax credit of **GST (CGST&SGST/UTGST or IGST)**, then any increase in the rate of **GST (CGST&SGST/UTGST or IGST)** beyond the contractual delivery period shall be to Service Provider's account whereas any decrease in the rate **GST (CGST&SGST/UTGST or IGST)** shall be passed on to the Owner.
- 2.6 Beyond the contract period, in case OWNER is entitled for input tax credit of **GST (CGST&SGST/UTGST or IGST)**, then statutory variation in applicable **GST (CGST&SGST/UTGST or IGST)** on supply and on incidental services, shall be to OWNER account.
- 2.7 Claim for payment of **GST (CGST&SGST/UTGST or IGST)**/ Statutory variation, should be raised within two [02] months from the date of issue of 'Government Notification' for payment of differential (in %) **GST (CGST&SGST/UTGST or IGST)**, otherwise claim in respect of above shall not be entertained for payment of arrears.

The base date for the purpose of applying statutory variation shall be the Bid Due Date.

- 2.8 OWNER will reimburse the **GST (CGST&SGST/UTGST or IGST)** to the Supplier of Goods / Services (Service Provider) at actuals against submission of Invoices as per format specified in rules/ regulation of GST to enable Owner to claim input tax credit of **GST (CGST&SGST/UTGST or IGST)** paid. In case of any variation in the executed quantities,



	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</b> <b>GENERAL GUIDELINES FOR GST</b>	PNPM/5001/E/103/S-A/AT-1.20	0	
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the amount on which the **GST (CGST&SGST/UTGST or IGST)** is applicable shall be modified in same proportion. Returns and details required to be filled under GST laws & rules should be timely filed by supplier with requisite details.

- 2.9 OWNER will reimburse **GST (CGST&SGST/UTGST or IGST)** to the Supplier of Goods / Services (Service Provider) at actual against submission of Invoices as per format specified in rules/ regulation of GST subject to the ceiling amount of **GST (CGST&SGST/UTGST or IGST)** as quoted by the bidder, subject to any statutory variations, except variations arising due to change in turnover. In case of any variation in the executed quantities (If directed and/or certified by the Engineer-In-Charge) the ceiling amount on which **GST (CGST&SGST/UTGST or IGST)** is applicable will be modified on pro-rata basis.
- 2.10 The bids will be evaluated based on total price including applicable **GST (CGST&SGST/UTGST or IGST)**.
- 2.11 Bidders are requested to get themselves registered under GST, it not registered yet. However, in case any unregistered bidder is submitting their bid, their prices will be loaded with applicable GST (**CGST & SGST/UTGST or IGST**) while evaluation of bid. Where OWNER is entitled for input credit of **GST (CGST & SGST/UTGST or IGST)**, the same will be considered for evaluation of bid as per evaluation methodology of tender document.
- 2.12 In case OWNER is required to pay entire/certain portion of applicable **GST (CGST&SGST/UTGST or IGST)** and remaining portion, if any, is to be deposited by Bidder directly as per **GST (CGST&SGST/UTGST or IGST)** laws, entire applicable rate/amount of **GST (CGST&SGST/UTGST or IGST)** to be indicated by bidder in the SOR.



Where OWNER has the obligation to discharge **GST (CGST&SGST/UTGST or IGST)** liability under reverse charge mechanism and OWNER has paid or is /liable to pay **GST (CGST&SGST/UTGST or IGST)** to the Government on which interest or penalties becomes payable as per GST laws for any reason which is not attributable to OWNER or ITC with respect to such payments is not available to OWNER for any reason which is not attributable to OWNER, then OWNER shall be entitled to deduct/ setoff / recover such amounts against any amounts paid or payable by OWNER to Contractor / Supplier.

- 2.13 Contractor shall ensure timely submission of invoice(s) as per rules/ regulations of **GST** with all required supporting document(s) within a period specified in Contracts/ LOA to enable OWNER to avail input tax credit. Further, returns and details required to be filled under **GST** laws & rules should be timely filed by supplier with requisite details.

If input tax credit with respect to **GST (CGST&SGST/UTGST or IGST)** is not available to OWNER for any reason which is not attributable to OWNER, then OWNER shall not be obligated or liable to pay or reimburse **GST (CGST&SGST/UTGST or IGST)** charged in the invoice(s) and shall be entitled to / deduct/ setoff /recover the such **GST (CGST&SGST/UTGST or IGST)** thereupon together with all penalties and interest if any, against any amounts paid or payable by OWNER to Supplier of Goods / Services.

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH GENERAL GUIDELINES FOR GST</b>	PNPM/5001/E/103/S- A/AT-1.20	0	
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- 2.14 In case the GST rating of vendor on the GST portal / Govt. official website is negative / black listed, then the bids may be rejected by OWNER/CONSULTANT. Further, in case rating of bidder is negative / black listed after award of work for supply of goods / services, then OWNER shall not be obligated or liable to pay or reimburse GST to such vendor and shall also be entitled to deduct / recover such GST along with all penalties / interest, if any, incurred by OWNER.

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH FORMAT FOR FINANCIAL CAPABILITY OF THE BIDDER</b>	PNPM/5001/E/103/S- A/AT-1.21	0	
		DOC. NO.	REV.	
		Page 1 of 2		

## **SECTION-A : COMMERCIAL**

### **ATTACHMENT - 1.21**

### **FORMAT FOR FINANCIAL CAPABILITY OF BIDDER**

(On Chartered Accountant's Letter Head)

**FORMAT FOR CHARTERED ACCOUNTANT CERTIFICATE FOR FINANCIAL  
CAPABILITY OF THE BIDDER**

We have verified the Annual Accounts and other relevant records of M/s..... (Name of the bidder) and certify the following

**A. ANNUAL TURNOVER OF LAST 3 YEARS:**

Year	Amount (INR)
Year 1: 2016-17	
Year 2: 2015-16	
Year 3: 2014-15	

**B. FINANCIAL DATA FOR LAST AUDITED FINANCIAL YEAR :**



Description	FY Closing as on 31.03.2017
	Amount (INR)
Current Assets	
Current Liabilities	
Working Capital (Current Assets- Current liabilities)	
Net Worth (Paid up share capital and Free Reserves & Surplus)	

Name of Audit Firm:  
Chartered Accountant  
Date:

[Signature of Chartered Accountant]  
Name:  
Designation:  
Seal:  
Membership no.:

**Instructions:**

1. The financial year would be the same as one normally followed by the bidder for its Annual Report.
2. The bidder shall provide the audited annual financial statements as required for this Tender document. Failure to do so would result in the Proposal being considered as non responsive.
3. For the purpose of this Tender document, (i) Annual Turnover shall be "Sale value/ Operating Income" (ii) Working Capital shall be "Current Assets less Current liabilities" and (iii) Net Worth shall be "Paid up share capital and Free Reserves & Surplus"
4. **This certificate is to be submitted on the letter head of Chartered Accountant.**

	<p>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH</p> <p>FORMAT FOR BIDDER NOT UNDER LIQUIDATION, COURT RECEIVERSHIP OR SIMILAR PROCEEDINGS</p>	PNPM/5001/E/103/S-A/AT-1.22	0	
		DOC. NO.	REV.	
		Page 1 of 2		

## SECTION-A : COMMERCIAL

### ATTACHMENT - 1.22

# FORMAT FOR BIDDER NOT UNDER LIQUIDATION, COURT RECEIVERSHIP OR SIMILAR PROCEEDINGS

(Self Declaration on Bidder's Letter Head as per below performa)

**DECLARATION**

To ,

.....  
.....  
.....

**NIT NO. : PNPM/5001/E/103**

**SUBJECT : TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF  
TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

Sir ,



We hereby declare that M/s ..... is not under liquidation, court receivership or similar proceedings as on date.

Signature

Name :

Designation :

Seal of the Bidder.

	<b>TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH FORMAT FOR PAST SAFETY RECORD</b>	PNPM/5001/E/103/S- A/AT-1.23	0	
		DOC. NO.	REV.	
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## **SECTION-A : COMMERCIAL**

### **ATTACHMENT - 1.23**

### **FORMAT FOR PAST SAFETY RECORD**

(Self Declaration on Bidder's Letter Head as per below performa)

**DECLARATION**

To ,

.....  
.....  
.....

**NIT NO. : PNPM/5001/E/103**

**SUBJECT : TENDER DOCUMENT FOR DRILLING AND DEVELOPMENT OF  
TUBEWELL (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH**

Sir ,

We hereby declare that, we have taken up all safety measures during the past 5 years while executing the works awarded to me.

No deviation and casualty has been found during execution of the contract.

The above information is true and correct to the best of my knowledge and belief.

Signature

Name :

Designation :

Company Name :

Seal of the Bidder :





**SECTION-B**  
**TECHNICAL**

	<b>TENDER FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-TD-BW-0001	0	
		DOCUMENT. NO.	REV.	
		Sheet 1 of 2		

## PROJECT :- GORAKHPUR FERTILISER COMPLEX

**TENDER DOCUMENT FOR  
DRILLING AND DEVELOPMENT OF TUBEWELLS FOR  
PROPOSED FERTILIZER PROJECT OF M/s HURL  
AT GORAKHPUR, U.P.**



0	23.10.17	FOR TENDER	ARUN	RNS	UPT
<b>REV</b>	<b>DATE</b>	<b>PURPOSE</b>	<b>PREPARED</b>	<b>REVIEWED</b>	<b>APPROVED</b>

	<b>TENDER FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-TD-BW-0001	0	
		DOCUMENT. NO.	REV.	
		Sheet 2 of 2		

## CONTENTS



SL.NO.	DESCRIPTION	DOCUMENT NO.
<b>PART-A (TECHNICAL SPECIFICATIONS)</b>		
1.0	TECHNICAL SPECIFICATIONS FOR DRILLING & DEVELOPMENT OF TUBEWELL	0000-PNCV-TS-BW-0001
2.0	SCOPE OF WORK & TECHNICAL SPECIFICATION OF SUPPLY & ERECTION OF PIPING AND EQUIPMENTS WORKS FOR TENDER FOR CONSTRUCTION WATER (TUBEWELL)	PNCN-TS-601
3.0	HEALTH, SAFETY AND ENVIRONMENT (HSE) MANAGEMENT	PNCN-HSE-01
<b>PART-B (SCHEDULE OF RATES)</b>		
SUMMARY SHEET FOR SCHEDULE OF RATES (SOR) i.e. PART-B (1.0) & PART-B (2.0)		5001/E/103/SS
Part-B (1.0)	SCHEDULE OF RATES FOR DRILLING & DEVELOPMENT OF TUBEWELL	0000-PNCV-SOR-BW-0001
Part-B (2.0)	SCHEDULE OF RATES FOR MECHANICAL WORKS (SUPPLY & ERECTION) FOR TENDER FOR CONSTRUCTION WATER (TUBEWELL)	PNCN-SOR-601

# PART - A

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**TECHNICAL SPECIFICATIONS FOR  
DRILLING AND DEVELOPMENT OF TUBEWELLS FOR  
PROPOSED FERTILIZER PROJECT OF M/s HURL  
AT GORAKHPUR, U.P.**

0	23.10.17	ISSUED FOR TENDER	ARUN	RNS	UPT
<b>REV</b>	<b>DATE</b>	<b>PURPOSE</b>	<b>PREPARED</b>	<b>REVIEWED</b>	<b>APPROVED</b>

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## 1.0 GENERAL

### 1.1 INTRODUCTION

M/s HURL is planning to set up an Ammonia-Urea Fertilizer complex at Gorakhpur ,U.P. To meet construction water requirement Tube wells are required to be installed. This tender deals with drilling and construction of tube wells at M/s HURL Ammonia-Urea Fertilizer complex, Gorakhpur, U.P.

### 1.2 SCOPE OF WORK

1.2.1 This specification cover the drilling and construction of tube wells, the requirements r development and final tests of tube wells. The drilling and construction of tube wells shall also conform to IS: 2800 (Part-1). Development and final tests of tube wells shall also conform to IS: 2800 (Part-2 ).

1.2.2 This section of the tender Documents deals mainly with the Scope and Technical Specifications needed for the boring, development of Tube wells and for supply and installation of submersible pumps as per details given below. The scope of work includes Transportation of all equipments and erection, boring, development and testing as per relevant IS codes and as per schedule attached based on the locations within the site as per the directions of the site officer at proposed “**FERTILIZER COMPLEX AT GORAKHPUR**” as per the items indicated in the "Schedule of Rates".



#### 1.2.3 WATER REQUIREMENTS

- |                         |                         |
|-------------------------|-------------------------|
| a) No of Tube wells     | : 2 Nos                 |
| b) Capacity of tubewell | : 100 Cu.M/hr at 50 M.  |
| c) Type of service      | : Continuous            |
| d) Use of Water         | : Industrial & Drinking |
| e) Quality of Water     | : Potable               |
| f) Location             | : GORAKHPUR,U.P.        |

1.2.4 1.1KV grade cable size of 1R-3.5Cx120 Sq. mm (Al) XLPE-A-PVC FRLS cable from owner's PCC to bidder's star-delta starter for construction water pump has been considered. Same shall be supplied, laid, supported & terminated at both end by the bidder. Moreover cable from star-delta starter near construction water pump to pump motor shall also supplied, laid, routed and terminated at both end by the bidder. Cable size indicated above is tentative and shall be finalized after receipt of load detail from the bidders with their respective bid.

## 2.0 CODES AND STANDARDS

2.1 All standards and codes of practice referred to herein shall be the latest editions including all applicable revisions issued.

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2.2 All works shall be carried out as per the relevant Indian Standard Codes. In case of conflict between the specification and the IS Codes referred to herein, the former shall prevail. Some of the applicable Indian Standard Codes referred to here are given below:

IS : 432 (Part-1 & 2)	Mild Steel and Medium Tensile bars and hard drawn steel wire for concrete reinforcement.
IS : 456	Code of practice for plain and reinforced concrete.
IS : 816	Code of practice for metal arc welding for general construction in mild steel.
IS : 1239	Mild steel tubes, tubular and other wrought steel fittings.
IS : 1786	High strength deformed steel bars and wires for concrete reinforcement.
IS : 2062	Weldable structural steel.
IS : 2800 (Part-1&2)	Code of practice for tubewell
IS : 4097	Gravel for use as pack in tubewells.
IS : 4270	Steel tubes used for water wells.
IS : 8110	Well screens & slotted pipes.
IS : 13083	Liquid Flow measurement in open channels-flat -V weirs.

### 3.0 GENERAL REQUIREMENTS

- 3.1 The work shall include mobilization of all necessary equipments, providing necessary engineering supervision through qualified and technical personnel, skilled and unskilled labour etc., as required to carry out design, drilling, construction, development, final tests etc., of tube wells and submission of results / records as indicated in this specification.
- 3.2 The Contractor shall guarantee the "Safe Rated Discharge" of the tubewell installed by him.
- 3.3 Consequent upon award of work and prior to installation of tube wells, the Contractor shall submit design of tubewell in terms of discharge, length and diameter of housing, blank and shrouded strainer pipes, termination depth etc., for the approval of Owner / Consultant. Owner's approval on the design of tube wells will not in any way absolve the Contractor of his final responsibility for fulfillment of the performance and guaranteed discharge of the tube wells.
- 3.4 The Contractor shall make his own arrangements for locating the coordinates and position of tube wells shown in approved drawings and for determining the Reduced Level (R.L) of these locations with respect to the single bench mark indicated by the Engineer-in-Charge. Two established reference lines in mutually perpendicular direction shall be indicated to the Contractor. The Contractor shall provide at site all the required survey instruments to the satisfaction of the Engineer-in-Charge so that the work can be carried out accurately according to specifications and drawings.



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- 3.5 Full details of the equipment proposed to be used for the drilling, construction, development and tests of tube wells shall be submitted to the Engineer-in-Charge, before starting the drilling, for his approval.
- 3.6 All operations in connection with the drilling, construction, development and tests of the tube wells shall be carried out in a safe manner so as to prevent the exposure of people to hazard.
- In case all the above operations are to be executed in the existing plant, the Contractor shall take all necessary precautions to protect all the existing equipment, structures, facilities and buildings, etc., from damage. In case, any damage occurs due to the activities of the Contractor on account of negligence, ignorance, accidental or any other reasons whatsoever, the damage shall be made good by the Contractor at his own cost to the satisfaction of the Owner / Consultant. The Contractor shall also take all necessary safety measures at his own cost, to avoid any harm / injury to his workers and staffs from the equipment and other facilities of the existing plant.
- 3.7 If under any circumstances drilling of the tubewell is to be discontinued by the Contractor for any reason and it is decided to abandon the drilling spot, the Contractor shall carry out the drilling operation at some other location to be decided by the Engineer-in-Charge without any extra cost to the Owner.
- 3.8 After completion of tube well, the Contractor shall submit 4 (four) copies of the following documents for the record and future reference of Owners / Consultants:
- Strata Chart in the form as indicated in Clause No. 5.5.3 along with Drilling time log and dried samples of strata preferably in polythene bags.
  - Chart showing pipe assembly provided for the tube wells.
  - Results of Development of tubewell as per Performa as prescribed in Annexure-B.
  - Step Draw-down and Aquifer Performance Test data / results as per Performa prescribed in Annexure-C and Annexure-D respectively.
  - Results of Chemical Analysis of water samples, collected during Aquifer Performance Test, in the form as indicated in Clause No. 9.0.

#### 4.0 MATERIALS

##### 4.1 GENERAL



All materials viz. electric resistant welded pipes, pea gravel, cement, steel reinforcements, aggregates, water etc., which are to be used for tubewell construction shall conform to relevant IS Codes Specifications for properties, storage and handling of common building materials. However, aggregates more than 20 mm shall not be used.

##### 4.2 CEMENT

The cement shall be Ordinary Portland Cement conforming to IS: 269 or as decided by the Engineering-in-Charge.

##### 4.3 AGGREGATE, WATER, ADMIXTURES, REINFORCEMENT ETC

Coarse and fine aggregates for cement concrete plain and reinforced, water, admixtures, reinforcements shall be as per relevant clauses of IS:456.

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#### 4.4 TUBEWELL ASSEMBLY

The tubewell assembly shall comprise mainly electric resistance welded mild steel plain ended pipes/tubes conforming to IS: 4270 and IS: 1239 in general. The grade of steel for the above pipes shall be ST 42. The plain ended pipes shall be with both ends beveled for welding. The angle of bevel shall be  $30^{\circ} \pm 5^{\circ}$  measured from a line drawn perpendicular to the axis of the pipe and with root face of  $1.6 \pm 0.8$  mm. The pipes shall be reasonably straight, free from harmful defects, of good commercial finish and free from loose scale and rust.

##### a. Housing Pipe.

This shall be electric resistance welded (E.R.W) mild steel pipe of minimum 200 mm nominal diameter (i.e, 219.1 mm outside diameter) having shell thickness of minimum 6 mm and tested for 77 kg/sq.cm pressure.

##### b. Blank Pipes.

This shall be E.R.W. mild steel plain ended pipes of minimum 150 mm nominal diameter (i.e, 168.3 mm O.D) with shell thickness of minimum 6 mm and shall be tested for 100 kg/sq.cm. pressure. The plain ended shall be beveled for welding.

##### c. Taper Reducer.

Taper reducer of size 219.1 mm x 168.3 mm O.D shall be of mild steel plate conforming to IS: 2062 and having beveled ends for welding. The smaller diameter end shall be suitably ground for matching the thickness of the blank pipe.

##### d. Strainer Pipes.



The strainer pipes shall be shrouded with pea-gravel filters and it shall be Hagusta brand or its approved equivalent. The strainer pipes shall be plain ended mild steel pipes with beveled ends. The size of the same shall be minimum 150 mm nominal dia (168.3 mm O.D) with shell thickness of minimum 6 mm and tested for 100 kg/sq.cm. The sizes of perforations or slots for the strainers are so designed that the total opening area available is adequate to pass the water in filtering from the aquifer without exceeding the critical velocity. The slots or perforations are milled such a way that the strength of the pipe is not impaired. The slotted pipes shall have slots preferably of width minimum 1.6 mm with side's perpendicular to the surface of the pipe and of length minimum 65 mm. The opening area of the slots shall not be less than 15% of the total surface area of the strainer pipes. Bigger slots of 3 mm in width and 500 mm in length are provided in conjunction with pea-gravel shroud of 100 mm to 250 mm thick all round. The slots are V-shaped with the smaller opening at the outside.

Slotted mild steel pipe core shall be coated with anti-corrosive paint and provided with an enveloping graded pea-gravel shroud bonded with heat resistant, water repellent plastic.

##### e. Centralized Guide shall be of mild steel and shall be placed at every 10.0 m interval.

##### f. Bail Plug or Bottom Plug. The bottom end of the blank pipe shall be plugged. Bail plug or bottom plug shall be fabricated from E.R.W. mild steel pipe of 168.3 mm O.D. having 6.0 mm shell thickness with a mild steel bull-nose.

##### g. Housing Clamp shall be of mild steel plate of 25.0 mm thick and shall be fixed at the top of the housing pipe. This shall be embedded in plain cement concrete (nominal mix - 1 cement : 1½

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coarse sand : 3 graded coarse aggregate of 20 mm nominal size ) foundation of size 2000 mm x 2000 mm x 1300 mm depth below finished floor level.

- h. Well cap shall be of mild steel having 219.2 mm O.D. It shall be either threaded type or a plate type suitably fixed with bolts and nuts for easy removal, when required.
- i. Bull-nose shall be of mild steel rod connected at the bottom of the well plug-pipe.

#### 4.5 GRAVEL

- a) Pea-gravel used for packing shall conform to IS: 4097 and shall be free from impurities such as mica, feldspar, clay, sand, dirt, loam and organic matter.
- b) All pea-gravels shall consist of hard well rounded particles reasonably uniform in diameter and shall be of size ranging from 3.0 mm to 5.0 mm with maximum 10% tolerance in grading or as decided by the Engineer-in-Charge depending upon the sand size of the aquifer. The pea-gravel shall have a hardness not less than 5 (five) in Moh's scale and uniformity co-efficient shall be 2 or less.
- c) The grading of the gravel shall be as per IS: 4097 and size of the pea-gravel shall be 6 (six) to 10 (ten) times of the largest diameter of the sand of the aquifer.

#### 4.6 PAINTING OF PIPES

- 4.6.1 All pipes and specials shall be painted with two coats of anti-corrosive bituminous paint both inside and outside before welding and lowering is started. The joints after welding shall also be painted from outside before lowering.
- 4.6.2 The bituminous paint shall be of quality such as to produce a coating which, when dry, shall be smooth, tough and tenacious and sufficiently hard not to flow on exposure to a temperature of 63° C and shall not be brittle at 0° C.

#### 4.7 EQUIPMENT AND ACCESSORIES



- 4.7.1 The equipment and accessories for drilling and construction of tube wells consisting of derrick, suitable cables and reels for handling the tools and lowering the well pipe in the boreholes, a rotary table for rotating the drill pipe and bit, pumps for handling mud fluid, etc., complete, shall be supplied by the Contractor for successful operation of the drilling. These shall be of standard type and shall have the approval of the Engineer-in-Charge. The Contractor shall maintain them in good condition throughout the progress of the work.
- 4.7.2 List of details of equipment and accessories proposed to be used for the job shall be submitted along with the bid.
- 4.7.3 The capacity of the rig shall be adequate so as to reach the desired termination depth.

#### 5.0 DRILLING

##### 5.1 METHOD OF DRILLING

Drilling operations shall be done by Hydraulic Rotary type drilling rigs using direct / reverse mud circulation (DMC or RMC) methods. In soft clays and loose sands, bailer method, if used, shall be used with caution to avoid the effect of suction. Boring operations by any of the above methods shall be done using drilling mud.

##### 5.1.1 Direct Mud Circulation

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A drill bit is rotated mechanically through a hollow shaft known as drill pipe, circulating prepared drilling mud (usually bentonite with certain chemicals added to give it a gelling quality) under pressure, through the drill pipe. This process of circulation lubricates the bit, carries in suspension the drilled cuttings and also plasters the wall of the hole to prevent it from caving in.

### 5.1.2 Reverse Mud Circulation

A string of drill pipes with a drill bit at the bottom is rotated by mechanical means. Plain water or a fluid of gelling quality, depending upon the strata conditions, is circulated to prevent the hole from caving in and for sucking up the drill cuttings through drill pipes.

## 5.2 SUITABILITY OF THE METHOD

The Contractor shall satisfy himself about the suitability of the method to be adopted for site. If DMC or RMC is used, bentonite slurry shall be pumped through drill rods by means of high pressure pumps. The cutting tool shall have suitable ports for the bentonite slurry to flow out at high pressure. If on mobilization the Contractor fails to make a proper bore for any reason, the Contractor has to switch over to other boring methods as approved by the Engineer at no extra cost to the Owner.

5.2.1 Use of drilling mud (bentonite suspension / slurry) for stabilizing the wall of the tubewell bore is necessary wherever it is likely to caving in. Drilling mud to be used shall meet the following requirement:



- a) Liquid limit of bentonite when tested in accordance with IS: 2720 (Part - V) shall be more than 300 percent and less than 450 percent.
- b) Sand content of the bentonite powder shall not be greater than 7 percent.
- c) Bentonite solution should be made by mixing it with fresh water. The density of the freshly prepared bentonite suspension shall be between 1.034 and 1.10 gm/ml depending upon the tube-well dimensions and type of soil in which the tube-well is to be installed. However, the density of bentonite suspension after mixing with deleterious materials in the bore may be up to 1.25 gm/ml.
- d) The Marsh viscosity when tested by a Marsh cone shall be between 30 to 60 seconds.
- e) The differential free swell shall be more than 540 percent.
- f) The pH value of the bentonite suspension shall be between 9 and 11.5.

5.2.2 The bentonite slurry and the cuttings, which are carried to the surface by the rising flow of slurry shall pass through settling tanks of adequate size to remove the sand and spoils from the slurry, before the slurry is recirculated to the boring. The bentonite slurry mixing and recirculation plant shall be suitably designed and installed.

## 5.3 CLEANING OF BORE

5.3.1 After completion of boring up to the required depth, the bottom of the bore shall be thoroughly cleaned. Cleaning shall ensure that the bore is completely free from sludge / bored material, debris of rock / boulder etc.

5.3.2 Tube-well bore spoil along with used drilling mud shall be disposed off from site as directed by the Engineer-in-Charge.

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#### 5.4 ADJACENT STRUCTURES

5.4.1 When working near existing structures care shall be taken to avoid any damage to such structures.



#### 5.5 GEOLOGICAL DATA

5.5.1 Samples of drill cuttings from different strata should be collected at every 2.0 metre depth drilled or at closer intervals if a change in the strata is met with.

5.5.2 The samples should be dried and stored in neat cloth or polythene bags which should be leveled clearly indicating the depth range of the strata.

5.5.3 After the drilling has reached sufficient depth, all the samples of strata collected should be carefully examined and analyzed and a strata chart in the form given below should be prepared, indicating the probable strata which are likely to yield water.

SL.NO.	LITHOLOGY	DEPTH RANGE	THICKNESS
1.	Clay, top soil, brown etc.		
2.	Clay, brown, silty with trap gravel		
3.	Gravel, consisting of trap, sub-angular to rounded with some trap sand, calcareous material, etc.		
4.	Gravel, consisting of trap, sub-angular to rounded mixed with clay and kankar.		
5.	Gravel, consisting of trap, sub-angular to rounded (pea size), with angular pieces of fresh or weather trap etc.		
6.	Gravel, consisting of trap (size up to 50 mm in dia) with very coarse trap sand.		
7.	Gravel, consisting of trap (pea size) with coarse sand, consisting of altered trap, agate, flint, chert and fresh calcite		
8.	Clay, brown, yellowish brown, chocolate or grey, hard, plastic with a little angular to sub-angular trap gravel.		
9.	Trap basalt.		

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## 5.6 DRILLING TIME LOG

- 5.6.1 As the drilling progresses, an accurate drilling time log shall be kept indicating the time taken to drill each 3.0 m depth. This log will enable interpretation regarding the nature of the formations (hard, soft, unconsolidated, etc.) which has a bearing on the water yielding capacity of the formations.
- 5.6.2 After the completion of drilling up to the desired depth, the borehole shall be electrically logged to collect adequate information about the conditions of the formations.

## 6.0 DESIGN AND LOWERING OF PIPE ASSEMBLY

### 6.1 GENERAL

- 6.1.1 From the data collected about the nature of the aquifers met, the Contractor shall design the tube wells in respect of size and length of the housing pipe, blank pipes, pea-gravel shrouded slotted or perforated pipes, and bail plug etc. It should be ideal to have the length of the slotted pipes or screens exactly equal to the thickness of the aquifers to be tapped. However, in practice the actual length of each of the housing pipes, blank pipes and pea gravel shrouded pipes may be kept as multiple of the length of the pipes available in the market, provided there is no difficulty, such as intrusion of water from a saline aquifer and gradation in the texture of formation material.
- 6.1.2 The sizes of perforation or slots for pea-gravel shrouded strainer pipes shall be so designed that the total opening available is adequate to pass the water in filtering from the aquifer without exceeding the critical velocity.
- 6.1.3 In case of patented pea-gravel shrouded strainers, the manufacturer's directions shall be followed to obtain the best results.
- 6.1.4 The circumferential, longitudinal or spiral seams of the metal casing shall be welded in such a manner as to develop strength nearly equal to that of the parent metal. It is preferable to use seamless steel pipes.



### 6.2 GRAVEL PACKING OF TUBEWELL

- 6.2.1 All gravel shall consist of hard well-rounded particles reasonably uniform in diameter and shall be of a size determined after analyzing the character of the water bearing formation to be packed. A minimum thickness of 100 mm of the pea-gravel shroud around the strainer pipes shall be provided to prevent inflow of sand from the aquifer under normal operating conditions.
- 6.2.2 With the hydraulic rotary drilling, the pipe assembly shall be lowered into the borehole in position and gravel-packing shall be done up to the bottom of the housing pipe. Verticality of the housing pipes shall then be tested and the defects, if any, shall be rectified. Thereafter, the gravel-packing up to the top shall be completed. The feeding of the gravel shall be done in such a manner that there should not be any bridging in the annular space. To avoid bridging, the circulating fluid shall be pumped to agitate the gravel during feeding of gravel.

### 6.3 PLUMBNESS AND ALIGNMENT

- 6.3.1 The verticality shall be checked immediately after the housing pipes are installed but prior to commencing the gravel filling.



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6.3.2 If the tubewell pipe assembly is found inclined before filling the gravels, the assembly shall be pulled in desired direction by applying force through jacks or by other means with a view to rectify the slantness and bring the pipe assembly within the permissible limits of verticality. The gravel filling operation shall then be undertaken immediately after the verticality has been rectified and tested. If necessary, remedial measures should also be adopted in between by means of jacks or any other means to bring the pipe assembly within the permissible limits of verticality.

6.3.3 For tube wells encased with pipes less than 350 mm diameter, the verticality of the tubewell shall have a deviation not exceeding 10 cm per 30 m of depth of the tubewell and the deviation shall be in one direction and in one plain only. The verticality of the tubewell shall be determined according to the method described in Clause No.7.9.4 of IS: 2800.

## 7.0 DEVELOPMENT OF TUBEWELL

After completion of gravel packing, the dirty water from the tubewell shall be pumped out and the development of the tubewell shall be carried out as under in the presence of Engineer-in-Charge who will issue a certificate to the Contractor for the satisfactory completion of the test.

7.1 The well shall be developed either by surging, including washing and agitating, or by over-pumping and back-washing with an air lift. The development process shall be continued until the stabilization of sand and gravel pack is completely assured.

7.1.1 Initial development of tubewell shall be carried out by means of compressed air. The compressor to be used for this purpose shall have minimum capacity of 10 cu.m./minute under a pressure of 7.5 kg / cm<sup>2</sup> (Compressor etc., for the above test shall be provided by the Contractor at his own cost).

7.1.2 A suitable diameter of pipe for air supply, approved by the Engineer-in-Charge shall be lowered into the well. The air shall be released suddenly into the tubewell by means of quick opening of valves. The bottom of the air pipe shall be moved up to and down along the aquifer depth to agitate the aquifer evenly.



7.1.3 Development by air injection and pumping shall be continued till the sand free water is obtained to the satisfaction of the Engineer-in-Charge.

7.2 After the initial development is completed, the tube wells shall be further developed by means of deep well turbine pump (to be provided by the Contractor for the test at his own cost).

7.2.1 The discharge of the pump during development shall correspond to a draw-down of 50% higher than the normal drawdown at which the tubewell will be working during its normal continuous operation. The pump shall be fitted with a depth gauge and pressure gauge.

7.2.2 The development of tubewell shall be continued till:

- a) The tubewell ceases to absorb further gravel.
- b) A specific capacity at a given RPM becomes constant and
- c) The water remains sand free with maximum tolerance of 10 parts of sand in one million parts of water by volume after 30 minutes continuous running of the pump.

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- 7.2.3 In case, the condition under clause No. 7.2.2 is achieved earlier than 12 (twelve) hours from the starting of the pumping operation, the Contractor shall continue the pumping operation for not less than 12 (twelve) hours.
- 7.2.4 The tubewell shall be further pumped for at least 4 (four) hours and pumping level shall be measured by the Contractor at an interval of every one hour and shall be passed on to the Engineer-in-Charge.
- 7.2.5 After the development of tube well, the Contractor shall remove all material, which might have accumulated by the side of the tubewell to a place directed by the Engineer-in-Charge at no extra cost to the Owner / Consultant.
- 7.2.6 Where a depression of 50 percent higher than the normal depression cannot be arranged, the tubewell may be over-developed so as to yield a discharge 20 percent excess of the rated discharge.
- 7.2.7 The results of the development of tubewell shall be tabulated in the Performa as prescribed in Annexure-B.

## 8.0 FINAL TESTS

The following tests shall be conducted on the completed tube well:

- a) To find out the performance of the tubewell in regard to yield and drawdown
- b) To select a suitable size and type of pump to be installed in the tube well.



### 8.1 STEP DRAWDOWN TEST

- 8.1.1 This test shall be conducted by installing a test pump in the tubewell temporarily and pumping out water at various speeds or by throttling delivery sluice valve. At each rate of discharge, pumping is carried out at least for 30 minutes. If the water level and discharge are found to be fluctuating, the development of tubewell shall be carried out for some more hours, until the discharge becomes steady and sand content is within the above tolerance limits. The specific capacities of the tubewell for various pumping rates shall be computed based on the step drawdown test data.
- 8.1.2 The discharge shall be measured by any of the methods detailed in Clause No. 11.2.5 of IS: 1710.
- 8.1.3 The data of the Step Drawdown Test shall be recorded as per the Performa given in Annexure-C.

### 8.2 AQUIFER PERFORMANCE TEST

- 8.2.1 This test shall be conducted after the tubewell is allowed sufficient time to recoup its normal condition after step drawdown test.
- 8.2.2 The tubewell shall be pumped at a constant discharge rate and pumping water level shall be measured at close intervals of time during the initial stages of pumping. The measurement of water level should be conducted according to any of the recognized methods, such as graduated steel tape and electrical method. After pumping continuously at constant discharge for at least four hours, the pump shall be stopped and water level in the tubewell shall be



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noted at very close intervals as it recoups. The process is continued until the water level attains the original static water level in the pumped tube well.

8.2.3 The test data so obtained shall be tabulated in the Performa as given in Annexure-D.

## 9.0 CHEMICAL ANALYSIS OF WATER SAMPLES

The water samples shall be collected during aquifer performance test for carrying out the chemical analysis of water. The following tests shall be carried out for one sample collected from each tube well. The chemical analysis of water shall be carried out as per standard methods.

1. Temperature.
2. Odour
3. Colour
4. Turbidity
5. Characteristics showing slim and sediments
6. Total dissolved solids
7. Suspended solids
8. pH value
9. Phenolphthaleine alkalinity as  $\text{CaCO}_3$
10. Methyl orange alkalinity as  $\text{CaCO}_3$
11. Temporary hardness as  $\text{CaCO}_3$
12. Permanent hardness as  $\text{CaCO}_3$
13. Calcium as  $\text{CaCO}_3$
14.  $\text{CaSO}_4$  as  $\text{CaCO}_3$
15.  $\text{CaCl}_2$  as  $\text{CaCO}_3$
16.  $\text{MgSO}_4$  as  $\text{CaCO}_3$
17. Sodium as Na
18. NaCl
19. Iron as Fe
20. Chloride as Cl
21. Sulphate as  $\text{SO}_4$
22. Conductivity
23. Silica dissolved as  $\text{SiO}_2$
24. Fluoride as F
25. Oxygen absorbed at  $37^\circ\text{C}$  in 4 hours.
26. Hydrogen Sulphide as  $\text{H}_2\text{S}$
27. Ammonia (free and Saline ) as  $\text{NH}_3$
28. Nitrate as  $\text{NO}_3$
29. Total Organic matter.
30. Bacteriological Test.

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## 10.0 SANITARY SEALING

For installations where water is to be used for drinking purposes, the annular space between the tubewell bore and the housing pipe shall be cement grouted up to 5 m below ground level or up to first clay bed whichever is met first. Two nos. of 75 mm nominal bore G.I. pipes on either side of the housing pipe to the full depth of foundation shall be provided for feeding gravel as and when required in future.

## 11.0 SPECIFICATION OF PUMP

Depending upon the discharge and drawdown noted during the above tests, specification for a suitable submersible type pumping set shall be drawn and got approved by the Engineer-in-Charge before procurement of the same. The above pumping set shall be fitted in the tube well. The pumps are to be supplied by the Contractor, the vertical turbine pump shall conform to IS -1710 and Electric Motor shall conform to IS-325.

## 12.0 LT Cables

12.1 All LT power cables shall be with stranded aluminium / copper conductor with XLPE insulation, PVC inner sheathed, armoured, PVC outer sheathed FRLS type and construction as per IS: 7098 (Part 1) and as specified in the specification Sheet (attached in this specification).



12.2 All control cables shall be stranded copper conductor with XLPE insulation, PVC inner sheathed, armoured, PVC outer sheathed FRLS type and construction as per IS: 7098 (Part 1) and as specified in the specification Sheet (attached in this specification).

12.3 All control cables cores shall be identified with numerical core numbers printed on core instead of colours.

12.4 All cables shall be armoured and shall have extruded inner and outer sheath.

### 12.5 Directly Buried Cables



- a. Laying of under ground directly buried cables shall include excavation of earth along the cable route, laying of Hume / GI pipes for road crossing, back filling, ramming, removing of extra earth including supply of bricks, sand etc. as per drawing and instruction of Owner / Engineer-in-Charge.
- b. Where cables are directly laid into ground, trenches should be dug up to such a depth as to ensure that the depth of the top of the entire cable below the ground level is min. 750 mm for medium and low voltage cables, and min.1050 mm for high voltage cables. Before laying of cables at these trenches, bottom of the trench should be properly levelled up and all odd and sharp materials removed. Trench bottom then should be bedded with a 75 mm thick layer of sand. Approval of Owner / Engineer-in-Charge shall be taken for preparation of this bed before laying of cables. Cables shall be laid in the trenches in straight runs. Care shall be taken so that any kinds or bends are not formed. After laying of the cables, bricks shall be placed length wise on both the sides of the cables along the entire length to form trough.

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- c. Fill up space between bricks with sand up to height of the bricks. Then place bricks closely width wise on top of the sand layer throughout the length. Fill up loose earth in trench, ram properly to compact, remove extra earth from site. Broken bricks shall not be use for brick working. Only Class-I bricks shall be used.
- d. If new cables are laid to cross existing cables, the new cable shall be laid under existing cables at depth of not less than 200 mm from the existing cable. It shall be ensured that the approach of new cable to the crossing is uniform and gradually sloped.
- e. Fix cable markers at 100 Mtrs. apart and at joints on the entire cable route length of the cables. The cable markers shall be made of pre-cast concrete blocks of 300 mm x 350 mm x 350 mm size with markings of "LT CABLE", "Depth of Cable", "Arrow Marks" etc. inscribed. These shall be supplied by the contractor at no extra cost and fixed as per directions of the Owner / Engineer-in-Charge. The top of the above concrete slabs shall have a smooth finish with cement only.
- f. Laying of cables under road crossings etc. shall be done in pipes, and pipe ends shall be sealed with bitumen compound and sand as required after cables are laid. Backfilled soil shall be rammed thoroughly to prevent road surface cracking due to settlement of loose soil.

### 13.0 HANDING OVER OF TUBEWELL

- 13.1 The tubewell should be handed over to the Owner / Consultant in a complete shape. The housing pipe should be closed by a well-cap for the period between the completions of the tubewell and the installation of the pumping set. The cap should be of such a design that it is easily removable without any damage to the housing pipe.
- 13.2 The following information should be furnished by the Contractor to the Owner/Consultant on complete of the tube well:
  - a) Strata chart of the borehole indicating the different types of soil met with at different depths and granular zones.
  - b) Samples of strata collected, neatly packed and correctly marked in sample bags.
  - c) Chart of actual pipe assembly lowered indicating the sizes of pipes, depth ranges where slotted pipe have been placed, depth and diameter of housing pipe, reduced level of the top of the housing pipe, and the diameter and depth of borehole.
  - d) Hours of developing by compressed air, pumping sets or by other means.
  - e) Results of development, step draw-down test and aquifer performance test on the performance of the tubewell which are to be recorded in the Performa attached with this.
  - f) Results of mechanical sieve analysis of samples of the aquifer material.
  - g) Recommendation on the safe pumping yield, specification and setting of a suitable submersible type pumping set.
  - h) Verticality test results which are recorded in accordance with the performa given in Appendix-A of IS: 2800.
  - i) Report on the chemical and bacteriological tests of the tubewell water.

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### ANNEXURE-A

Verticality Test Results which are recorded in accordance with the Performa given in Appendix-A of IS: 2800.

### ANNEXURE-B

#### RESULTS OF DEVELOPMENT OF TUBEWELL



**Table – A : For Rated Discharge.**

Rated Discharge	Depression at the Rated Discharge	Sand in PPM after 30 minutes of start of pumping	Total hours Of run	Sand in PPM at the end of the test.

**Table – B : For discharge at 1.5 times the normal depression:**

(If 1.5 times normal depression can not be arranged, the test shall be carried out up to 20% in excess of rated discharge).

Discharge at 1.5 times the normal depression or 20% in excess of the rated discharge if 50% extra depression cannot be arranged.	Sand in PPM after 30 min. of start of pumping	Total hours of run	Sand in PPM at the end of the test	Static water level	Pumping water level

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**ANNEXURE-C  
STEP DRAW-DOWN TEST**

1. A suitable test pump approved by the Engineer-in-Charge shall be installed in the tubewell.
2. Water shall be pumped out at various speeds of the test pump or by throttling delivery valve.
3. At each rate of discharge, pumping shall be carried out at least for 30 minutes.
4. If the water level and discharge are found to be fluctuating, the tubewell shall be developed for some more hours until the discharge becomes steady and sand content is within the specified limits without any extra cost to the Owner / Consultant.
5. The test results shall be tabulated in the prescribed performa as given below for computing specific capacities of the tubewell for various pumping rates.

**RESULTS OF STEP DRAW-DOWN TEST**



**Table – A : Readings and Measurements:**

(To be taken at every 5 to 10 minutes intervals)

Date & hour	Depth to water level below measuring point (In metre)	Discharge ( in l / min.)	R e m a r k s

**Table – B : Summarized Results:**

Discharge ( In l / min.)	Draw-down ( In metre )	Specific Capacity ( In l/min. per metre draw-down )

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**ANNEXURE-D  
AQUIFER PERFORMANCE TEST**

This test shall be conducted after the tubewell is allowed sufficient time to recoup its normal condition after Step Draw-down Test.

1. The tubewell shall be pumped at a constant discharge rate and pumping water level shall be measured at close intervals of time during the initial stages of pumping.
2. The depth of water level shall be measured by any standard method, approved by the Engineer-in-Charge.
3. Pumping shall be continued at the constant discharge at least for 4 (four) hours, then the pumping shall be stopped. Water level shall be measured at this time.
4. The water level in the tubewell shall be measured at very close intervals of time as it recoups.
5. The measurement shall be continued until the water level attains the original static water level in the tubewell. The test results shall be tabulated in the prescribed performa as given below for working out the co-efficient of transmissibility and field permeability.

**Table – A : Readings and Measurements:**

Date & Hour	Depth to water level below measuring point (In metre)	Discharge (In l / min.)	Remarks
			For example, water samples, temperature, pump started and stopped etc.

**Table – B : Readings and Measurements for Recovery:**



Date & Hour	Depth to water Level below Measuring Point (In metre)	Residual Draw-down	t / t'	Remarks

Where, t = Time in minutes since pumping started and  
t' = Time in minutes since pumping stopped.

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**SCOPE OF WORK**  
**&**  
**TECHNICAL SPECIFICATION**  
**OF**  
**SUPPLY & ERECTION OF PIPING AND EQUIPMENTS WORKS**  
**FOR**  
**TENDER FOR CONSTRUCTION WATER (TUBEWELL)**  
**AT**  
**HURL, GORAKHPUR**

0	16.10.17	SPECIFICATION FOR ISSUANCE	DILIP	GC	SM
P	14.08.17	DRAFT SPECIFICATION	DILIP	GC	SM
<b>REV</b>	<b>REV ATE</b>	<b>PURPOSE</b>	<b>PREPD</b>	<b>REVWD</b>	<b>APPD</b>

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### DESCRIPTION

Scope of works & Technical Specification for Supply & erection of equipments / machineries, Supply, Fabrication & Erection of Piping works.

1. Scope of Work
2. Obligation of Owner/Consultant
3. Obligation and responsibility of Contractor
4. Technical conditions of Contract
- 5.0 Statutory Approvals



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## 1.0 SCOPE OF WORK

The scope of work covers Supply of Piping material, Valves, Flange, GASKET, STUDS & NUTS FOR ALL SIZES as per Technical specification to complete the work related to this projects erection of Equipments/machineries, fabrication & erection piping and structural's, works of HURL.

Any item/activity which is not listed here but is required for completion of job as per enquiry's scope of work, Technical Specifications and drawings shall be under Contractor's scope without any cost implication to Owner.



**In this Mechanical erection Specification the following works to be executed by Contractors:-**

1. Supply of Piping material, Valves, Flange, GASKET, STUDS & NUTS FOR ALL SIZES as per Technical specification to complete the work related to this projects.
2. Fabrication and erection of piping (aboveground /under ground piping) works.
3. Unloading and transportation of items (Equipments & Piping).
4. Erection of new equipments (Rotary + static).
5. Supply & Installation of Steel structure work.
6. Erection of Instrumentation items if any.
7. Painting of Piping & Equipments.
8. Pre-commissioning and commissioning activities

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

- 1.1 **Unloading and transportation of equipments / material from the owner storage yard or directly from trailer / truck will be the responsibility of the contractor. Suitable lift machinery/equipments should be available with the contractor for lifting and erection purpose. The dedicated team should be identified with proper credentials at the work place.**
- 1.2 The lifting and transportation of materials shall be done by the Contractor to their site stores/yard, storage and protecting them as per relevant specification and instruction of Owner/Consultant's representative. Saddle/skirts, foundation bolts, equipment internals, davits, prefabricated structural, etc. may come in loose supply from equipments vendors. If required, Contractor shall open the boxes, remove stiffeners, bracing and any other means of protection used for transportation without any additional cost to Owner/Consultant. No separate payment shall be made for transportation of these items.

In the event of non-reporting by Contractor, of the defects/ damages and shortages of the items issued by Owner within a prescribed time from the date of issue, the Contractor shall be responsible for any eventual consequence resulting there from and shall repair/ replace the defective/damaged items at his own risk and cost.



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After opening the packing boxes Contractor shall record the items available in individual case. In case spares / tools etc. are issued to the Contractor along with equipment / accessories by virtue of having been packed in the same case, Contractor shall return to Owner's store immediately, the items which are not required by them.

If materials to be supplied by the Contractor for erection use (piping material, instrument's, steel etc.), contractor shall make necessary arrangement for their storage by constructing temporary storage/sheds. Necessary arrangements for unloading and packing, lifting, shifting and transportation inside the plant shall be done by the Contractor.

**1.3 Before start of any erection activities the following shall be checked by Contractor:**

- a. Thorough initial surveying of the SITE shall be done with regard to the proper laying/ routing of the equipment/pipe lines and instrumentation work. It is responsibility of contractor to generate the fabrication & erection front depending on availability of Drawings, material and site condition to co-up the progress of the work. Any delays due to this reason are solely attributable to the contractor.
- b. Checking of foundations/structures including anchor bolts for their correct dimension, levels, co-ordinates etc., with reference to bench marks, well before the actual erection is planned. Discrepancies, if any, are reported to Owner for his decision so that any rectification, if required, can be carried out earlier than planned erection date. Anchor bolt's sleeves shall be free of water and debris.
- d. Prior to installation of Equipment, Machineries, Piping & structural etc., the Contractor shall ensure the following:
  - i) Foundation bolts are clean.
  - ii) Nuts fit properly over the entire threaded length.
  - iii) Foundation bolts are coated properly with GREASE MIXED WITH GRAPHITE POWDER and wrapped with polythene (Threaded part only).
  - iv) To ensure the correctness of existing holes/slots in structure and to rectify existing holes/slots or to make new ones, if required.
- e. Necessary grouting space shall be maintained by Contractor by putting packing plates (to be supplied by Contractor) as per requirement. If more than one packing plate is used to build up the required thickness, the packing plates must be tack-welded to each-other. The packing plate may be retained in their place by grouting or by tack welding (using MS/TOR steel rods) to each other. Number of packing plates should be kept as minimum as possible. Packing plates shall be free from burrs and high spots. Providing & fixing of packing plates is the part of erection & alignment of equipments without extra cost to Owner.
- h. Structural steel fabrication and erection as per requirement of site. Detailed structural drawing preparation shall be included in the rates of fabrication Refer Schedule of Rates.

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- i. To deliver pre-fabricated piping, supports and structural to painting yard/shop and pick up and bring back the same to erection site after sand blasting and primer paint application.
- j. Carrying out Dye-penetrant examination, Radiography and other Non-destructive tests etc. where ever required as per Instruction of Engineering Incharge/Owner.
- k. In addition to piping designed and engineered by Consultant, Contractor shall be required to fabricate and/or erect pipelines designed, engineered and/or supplied by package vendors etc. as per instruction of Owner/Consultant.

#### 1.4.0 FABRICATION & ERECTION OF PIPING

Pipes in random length, pipe fittings, flanges and valves etc. shall be supplied by Contractor's.

- 1.4.1
  - a) All piping shall be assorted and marked for identification to avoid mix up of different materials, as per colour code provided by Owner / Consultant.
  - b) Prefabrication of piping as per convenient spools from pipes supplied in random commercial lengths (in some cases pipes may be supplied in painted condition). Contractor shall mark spools on isometrics and layout drawings in consultation with Owner/Consultant.

#### 1.4.2 PRE-FABRICATED PIPING



Pre-fabricated (painted or unpainted) pipes & spools pertaining to Pump Vendor's, etc. shall be also supplied by Contractor for their erection as per drawing and instruction of Owner if applicable.

- 1.4.3 Erection of fabricated and prefabricated piping including those of all on-line items such as but not limited to valves, control valves, flow nozzles, in line filters, basket strainers, Y-strainers, safety / relief valves, orifice flanges, etc. by welding, bolting or screwed joints as per drawing, specification, standards, codes and instructions of Owner/Consultant. Orifice plates, control valves, piping spools may have to be removed and re-installed after hydro-test, cleaning & blowing of pipe lines.

- 1.4.4 Erection of piping after cleaning from inside and joining by bolting, welding or screwing etc. at site as per drawings, specifications/standards/codes and instruction of Owner/Consultant.

The fabrication and installation of internal spacers, SS wrapper plates and swage jacket, if required, shall be done by Contractor within his quoted rates for pipes and nothing extra is payable on this account.

- 1.4.7 Carry out dye penetrent examination, radiography, and submission of films.



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1.4.8 For radiography use of Close Proximity Camera with Selenium Source is preferred.



1.4.9 Modification of certain existing erected piping as per site requirement by "Dismantling and Reinstallation as per instruction of Owner/Consultant.

**1.4.10 All activities listed below shall be covered under the scope of this CONTRACT. These activities shall be covered in the unit rates for prefabrication, fabrication and erection of piping, nothing extra shall be paid on this account unless indicated otherwise specifically :-**

- i) Cleaning, edge preparation, welding, Non-Destructive Tests (radiography shall be paid separately as per SOR), wherever required as per specifications/standards and codes including supply of manpower machinery, consumables, and necessary arrangements for execution of all works. Wire brush with SS bristles only shall be used for the purpose cleaning the welding joints of CS/SS piping.
- ii) Pressure setting of Safety valve shall be set at respective pressure for mounting on equipment and or piping after hydro-testing flushing and cleaning of system. Checking of all rupture discs, breather valves, flame arrestors etc., shall be done prior to their installation.
- iii) The Contractor shall be required to make stub-in connection for branches from main line for piping as well as instrument tapings. Stub-in connections shall include fabrication, installation and welding of reinforcement pads wherever required as per drawings, documents and standards. The fabrication and welding of these items shall also be in the scope of Contractor. However the pads and rings materials shall be made from free issue pipes/plates as per drawing, document, Standard, specifications and instruction of Owner/Consultant.
- iv) Cutting & chipping of floors and making holes in walls, if required to facilitate pipe laying and supporting and/or fixing of sleeves. After lying of piping the cut-out holes shall be filled and finished as per instructions of Owner without any extra cost to Owner.
- v) Construction of special components of piping like nipples (screwed at one or both ends) shall be made out of free issue pipes as per drawing/ specification for C.S. & GI etc., wherever required without any extra cost to Owner.
- vi) Cutting and beveling of special degree's elbow from standard 90<sup>0</sup>/45<sup>0</sup> elbows as per site requirement shall be made by Contractor as per drawing/specification and instruction of Owner/Consultant.
- vii) Threading the ends of C.S., GI etc piping shall be done up to 1-1/2" size, if required. Seal welding of screwed joints of C.S., GI etc. piping shall be done wherever required as per instruction of Owner/Consultant.

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- viii) All the flanged valves, except control valves shall be hydro-tested, at Contractor's shop prior to their erection. The defective valves shall be rectified by lapping, etc. The valves shall be suitably dried after hydro-testing.
- ix) DELETED.
- xi) DELETED.
- xii) Some equipment/machinery nozzles may be without flanges and require welding with pipes directly. In such cases piping may be tested by taking equipment/ machinery in the loop. But if this is not possible, the piping shall be tested by welding an end blind plate prior to final welding with equipment/ machinery; final weld testing shall be done by 100% radiography. The thickness of such blind has to be calculated by the Contractor & got approved by Owner for fixing.
- xiii) Lapping if necessary shall be done on the machined seats of the mating surfaces of flanges prior to putting metallic ring gaskets.
- xiv) The Contractor will be required to take up pre-fabrication of piping even prior to receipt and erection of equipment/machinery. There may be some deviations in equipment/machinery dimensions or levels and co-ordinates. This should be taken care of while prefabricating the piping. In shop fabrication as far as possible, margins for field adjustment in three planes shall be kept. Nothing extra shall be paid for cutting/welding etc. for such adjustments.
- It will be responsibility of the Contractor to verify the Isometrics by physical measurements prior to prefabrication of piping spool pieces. Contractor shall promptly inform any discrepancy in drawings to Owner/Consultant. Though the payment shall be made as per actual measurements, nothing extra shall be payable for cutting, welding / or extra joints needed because of site adjustment.
- xv) The supply and application of anti-seize lubricating compounds such as **MOLYKOTE, NEVER SIEZE, and GREASE** etc. for the protection of threads of valve stems, studs, bolts and nuts etc.
- xvi) All permanent gaskets shall be fixed in the piping system just after all testing; blowing or pickling etc. operations are over, and just before leak testing / seal testing of the piping system. The temporary gaskets for testing shall be arranged by the **Contractor** without any extra cost to OWNER.
- xvii) During bad weather, the Contractor shall make suitable and adequate arrangement by way of providing protection against rain and wind for carrying out welding and other fabrication and erection jobs smoothly at SITE, necessary rain protection hoods shall be prepared for each welder to enable him carry out the job under owner/consultant instructions.
- xviii) DELETED
- xix) All instruments pressure taping, temperature taping, thermowell taping and installation of welded thermowells (except instrument) shall be in the scope of the Contractor.

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Installation data sheets for carrying out the above jobs shall be provided at Site. Threaded/Screwed joints, if and wherever required shall be seal-welded as per the instructions of Owner/Consultant.

- xx) In case of dissimilar thicknesses at any weld joint, the internal surface of thicker member shall be beveled for proper matching of I.D. The beveling slope shall not exceed 1:4. In such cases, for dissimilar thicknesses, no extra payment will be made.
- xxi) Piping having threaded nozzles and threaded flanges may require chasing of flange/nozzle threads on a lathe at site to avoid interference, if any.
- xxii) DELETED
- xxii) Removal and re-erection of all on-line instruments during testing and / or calibration or functional testing, if so required, at SITE. Calibration and functional testing is excluded from the scope of this contract.
- xiv) Carrying out hydraulic/pneumatic testing of the erected piping in loops after stress relieving if required, which shall be done only after the joints have been tested and found acceptable. Any temporary piping and temporary supports required for carrying out hydro testing shall be supplied and erected by the Contractor within his quoted rates, nothing extra is payable on this account. Contractor is required to carry out the test, tightening of bolts, and replacement of gaskets shall also be done without any extra cost to Owner. Equipment flanges shall be considered as part of piping system for this purpose. Making suitable arrangement for fixing of target plates shall be part of the scope of Contractor.
- xxv) After hydro testing, pipe lines of sizes 2" and above shall be cleaned by air blowing and card board blasting or steam blowing, for efficient and proper cleaning of line as per instruction of Owner/Consultant. If compressor is required for these activities, the same shall be arranged by the Contractor without any extra cost to the Owner/Consultant. During this activity, the piping shall be adequately supported. Temporary piping spool shall be fabricated by the Contractor from the materials taken from the Owner and erected as per site requirement. Fabrication and fixing/removal of all spool pieces, blinds etc. required for carrying out hydro-testing/blowing shall be Contractor's sole responsibility without any extra cost to Owner. Nothing extra shall be payable on this account. For card board blasting, all materials shall be arranged by Contractor without any extra cost to Owner. Making suitable arrangement for fixing of target plates shall be part of the scope of Contractor.
- xxvi) Carrying out the final "loop testing" of the entire process piping work including the erected equipment and machinery system with either air or Nitrogen at available pressure for establishing a leak proof system to the satisfaction of Owner/Consultant. It shall be noted by Contractor that after hydro-testing till completion of loop testing, no additional payment shall be made for removal/fixing and re-fixing of permanent gaskets, fasteners, valves, on-line instruments, filters, traps, etc.



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## 1.5 SUPPLY, FABRICATION & ERECTION OF SUPPORTS

Supports falling under the scope of this enquiry shall consist of:-

- a. Resting supports
- b. Guide supports

All structural steels required for fabrication of above supports shall consist of angles, channels, beams, plates, flats etc. including bolts, nuts and washers to be in the Contractor's scope of supply.

- 1.5.1 Supply and fabrication of supports as per drawings, sketches, specifications, standards and instructions of Owner/Consultant. All materials required for supports shall be in the Contractor scope.

Supply and fabrication of piping support shoes/clamps shall be done by Contractor as per support bill of materials outside the premises.

- 1.5.2 Erection of all supports supplied and fabricated by Contractor as well as supplied by Vendors of various packages, equipments and machinery. Contractor may be required to fabricate and install additional supports, if required, up to the time of and including pre-commissioning and trial runs of machinery. Erection of supports shall include making of support pedestals (of concrete) including grouting etc.

### 1.6.0 ERECTION OF EQUIPMENTS & MACHINERIES ETC



- 1.6.1 Erection of equipments and Machinery etc. leveling, alignment, finishing, grouting including supply of shims, packing plates, taper wedges etc. as required at site.

a) Checking of the level and alignment for skewness/runout of machineries

- 1.6.2 The following activities shall also be covered under the scope of this contract. These activities shall be covered in the unit rate of erection of equipments as the case may be and nothing extra shall be paid on this account unless indicated otherwise specifically:

- a. First maintenance of Equipments & Machinery.
- b. Flushing of lube oil and Seal oil piping
- c. Supply and application of anti-seize lubricating compounds such as **MOLYKOT/NEVERSEIZE** etc. for bolts and nuts of equipment.

- 1.7 For machineries, erection ,leveling, alignment, dowelling, drilling tapping in base plate, installation of sight glass/gauges/safety valves directly mounted on machinery supplied by vendors, coupling and decoupling from machineries for no load testing/repair by vendors, etc. and grouting (including supply of all grouting materials) shall be in the scope of contractor. Nothing extra shall be paid on this account.

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- 1.8 First maintenance of equipment before pre-commissioning or as and when desired by Owner/Consultant.
- 1.9 Carrying out radiography, other non-destructive tests at site as defined in this tender.
- 1.11 Dismantling and reassembly of structures removed to facilitate erection of some equipment. The job may involve opening of bolts/cutting of structural member by gas and fitting back by bolting/welding.
- 1.12 Fabrication and erection of additional equipment supports, structures etc. shall be taken up by the Contractor and the payment shall be made Schedule of Rates
- 1.13 To carry out non-destructive testing. Radiography shall be paid as per unit rates stated in S.O.R. However, all other non-destructive test, as per standards, codes and specification, shall be deemed to be included in the unit rates for fabrication and/or erection as the case may be and nothing extra shall be paid.

## 2.0 OBLIGATION OF OWNER/CONSULTANT



- 2.1 To provide a plot of land to enable the Contractor to build his office, stores, fabrication shop, urinal and latrine etc., at his own cost. **For Office / Store etc. only Pre-Engineered Porte Cabins to be considered and shall be arranged by the contractor at his own cost.**
- 2.2 To issue hot and cold safety work permits to Contractor as and when required.
- 2.3 To facilitate issuance of gate-pass and night/special passes to workmen of Contractor for their entry to work SITE through security gate.
- 2.4 To facilitate issuance of gate-pass to the Contractor for entry of his materials and equipment including tools and tackles etc. for entry to work SITE through security gate.
- 2.5 To function as a medium of co-ordination between various Contractors for facilitating smooth progress of work.
- 2.6 Provide all clarifications in technical matters for expediting the job.
- 2.7 To lay down the system for issue of materials from Owner / Consultant's stores/ storage yard.
- 2.8 To provide information regarding availability of fronts and materials to be issued by Owner so as to enable the Contractor to plan and organize the execution of work under his scope as per the overall project schedule.

## 3.0 OBLIGATIONS AND RESPONSIBILITIES OF CONTRACTOR



The Contractor's obligations and responsibilities shall include but not limited to the following:

- 3.1 Construction power & water shall be arranged and supplied by the Contractor.





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- 3.2 All permanent gaskets, fasteners, such as bolts/nuts/washers etc. for all size of piping and nuts, bolts, washers etc. required for **structural** works, shall be arranged and supplied by Contractor.
- 3.3 **Paved floor** and covered shed area shall be made available for piping pre-fabrication and *work shop* without any extra cost to Owner. The pre-fabrication of piping shall not be allowed on loose earth. The Contractor must strictly adhere and built the same during the mobilization stage.
- 3.4 To deploy skilled, semiskilled and unskilled personnel in requisite numbers and as per scheduled programme so as to complete the WORK as per overall project schedule.
- 3.5 To deploy suitably qualified supervisors and engineers in requisite numbers to assure execution of good quality job as per best engineering practices and to the full satisfaction of Owner/Consultant.
- 3.6 To prepare detailed planning and execution schedule considering the availability of fronts and materials. This shall be reviewed by Owner and Contractor shall be required to keep updating the same (as per the instructions of Owner/Consultant) to take care of any changes in the availability of fronts and materials and to complete all jobs as per the overall project schedule. Owner shall in no way be held responsible for such changes because such changes are deemed quite a common feature in any project of this size.
- "To achieve the targeted progress, as required by Owner/Consultant, the number of construction equipments, tools tackles and manpower shall be augmented by contractor without any additional cost to Owner/ Consultant. These numbers shall be based on the actual output achieved in the previous fortnight".
- 3.7 To check for quantity compliance between bill of materials and drawings for piping, structures etc. and intimate Owner sufficiently well in advance regarding discrepancies if any.
- 3.8 Compressed air generation to arrange & provide at site.
- 3.9 To arrange and supply all equipments/machineries, lifting, handling and shifting devices, tools and tackles which are required for the execution of jobs in sufficient quantities, as per the best engineering practices and within the targeted completion Schedule. It must be clearly under stood that Owner/ Consultant shall not be responsible for arranging or supplying any tools and tackles. Contractor shall also arrange motorised hydro-testing pump in sufficient nos. for hydro testing of pipes.
- 3.10 To arrange and supply all consumables (required for executing the job covered under the scope of Contractor such as but not limited to the following in adequate quantity of required quality and in time to meet the completion schedule :-
- Electrodes, filler wires, industrial gases such as oxygen, acetylene, argon, water soluble paper, fuel oils, cotton waste, markine cloth, toil stones; emery papers; grinding wheel; cutting wheel; thread petroleum compounds, Teflon sealing tapes, raw dust, sponge, cardboard pickling and Passivation chemicals, Asbestos cloth and target plates etc.

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- 3.11 To provide proper storage and security arrangements for Contractor's tools, tackles, equipments, materials etc. as well as materials issued by Owner to Contractor. Owner shall not be responsible for any loss or damage to items in the custody of Contractor at site for any reason whatsoever.
- 3.12 Completion of all repairs arising out of defective work done by Contractor. Owner may at his discretion require the Contractor to rectify certain defects in materials caused due to bad workmanship of supplier and/or during transportation. For such work of course, the payment modalities shall be settled by mutual agreement as per the items already available in this tender before starting such rectification jobs.
- 3.13 To maintain all the records for manpower, materials and execution of job as required by law as well as Owner/Consultant.
- 3.14 To get his work approved from statutory agencies such as but not limited to Boiler Inspector, Factory Inspector, and Inspector of Explosives etc., if required.
- 3.15 To make arrangements for services such as transport, medical lighting, canteen etc. for working round the clock.
- 3.16 In addition to safety regulations listed elsewhere in the NIT, Owner /Consultant may issue certain safety directive which shall have to be followed meticulously without any reservation.
- 3.17 To undertake scope of work listed in this enquiry; to follow TECHNICAL CONDITIONS OF CONTRCT listed in Para No. 4.0 and to honor all other obligations listed specifically in other section or subsection of the enquiry.
- 3.18 Reconciliation of materials issued to Contractor as directed by Owner/Consultant.
- 3.19 Hand over of the completed works to Owner as per procedure laid down by Owner/Consultant.
- 3.20 To submit documentation forming part of request for issue of completion certificate.
- 3.21 Clear the site after cleaning the areas where the Contractor executed the job, stored the materials and built his office / fabrication shop etc.
- 3.22 For working within booths the contractor should have suitable metallic planks / gratings etc which will serve as the working platform for the executing team. **Use of Bamboo or any wooden structure is strictly prohibited.**
- As the work requires working at height and within booths contractor should be equipped with scaffolding pipes of different sizes and in good condition. Scaffolding pipes will be subject to inspection prior to being cleared for erection
- 3.23 Equipments / facilities for material transportation / erection/ piping alignment works like Chain Pulley Blocks of different capacities. Hydraulic / Screw Jacks of different capacities, Tripod, Platform Trolleys, Slings (Metallic/non metallic), Rope (of suitable length). Master Spirit Level.

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#### 4.0 TECHNICAL CONDITIONS OF CONTRACT

##### 4.1 WELDER'S QUALIFICATION

Welders proposed to be deployed at SITE shall be tested for welding procedure qualification and welder performance qualification in the presence of Owner or his representative or any statutory authority whenever required strictly as per standards, codes and specifications.

##### 4.2 ELECTRODES AND FILLER WIRES

Electrodes and filler wires to be used at site in this job shall be procured from the approved vendors only. Electrodes and filter wires shall be **D&H, Advani Orlikon or ESAB** make only.

Selection of electrodes and filler wires shall be as per standards, codes and specifications. Tests required, if any, to satisfy the technical suitability of these electrodes/filler wires shall be arranged by Contractor at his own cost. All electrodes and filler wires shall be supplied by Contractor within their quoted rates. All welding of materials shall be as per Engineering/Technical Standard and shall be of radiographic quality. Electrodes shall be baked as per manufacturer's catalogue at suitable temperature for the requisite time before these are to be used. The ovens (mother as well as field) are to be arranged by the Contractor.

##### 4.3 ROOT RUN WELDING

###### API Pipelines:

All piping's root run for Carbon Steel weld joints shall be done using TIG welding. Welding of socket joints for all CS and C.S. piping > 600 # rating shall be done by TIG welding only. Further to this if butt weld joints are required to be done by **TIG welding**; only **Argon gas** shall be used both for shielding and purging wherever required.



##### 4.4 DELETED

##### 4.5 GROUTING

Grouting of pipe supports, structures and machineries etc. shall be carried out in general as per approved site work instruction except the following:

###### A) SELECTION AND TYPE OF GROUT

- i) For piping support, ordinary grout mix as mentioned below may be used:  
1:1:2 cement grout to which anti-shrinkage compound is added, such as CONBEX MONOLITHEX OR FERROGROUTE ETC.
- ii) During actual grouting three cubes for testing are to be taken for each batch prepared and to be tested and must meet the strength required as mentioned.

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Contractor shall check and ensure that cement containing calcium chloride is not used for grouting and all grouting shall be suitably cured so as to achieve full strength. After the grout has been cured fully, anchor bolts shall be checked for adhesion with the grout by tightening of nuts.

Instructions for grouting received from equipment vendor shall override specification in this enquiry.

#### 4.6 NON DESTRUCTIVE TESTING

Radiography of weld joints, DP testing (DPT materials is only of ITW Signode/Ferrochem/Checkmate), shall be carried out by Contractor as per codes/standards/specifications wherever required. **Close Proximity Radiography (CPR) to be used** by using suitable source of suitable strength depending upon thickness shall be used up to 30 mm thick pipes. For more than 30 mm thickness of pipe, DPT at root run will be done, filup up to 30mm shall be tested with radiography and final welding shall be tested with ultrasonic testing. Ultrasonic testing charges are covered in unit rates of piping. The joints to be radiographed shall be selected by Owner/ Consultant. Radiography of repaired joints shall be at Contractor cost.

The decision of Owner/ Consultant regarding interpretation of radiographs shall be final. For higher thicknesses where **CPR** is not possible, ultrasonic testing shall be carried out. Testing being a specialized job, it is mandatory that Contractor must get this job done through approved agencies listed elsewhere in this enquiry. Where less than 100% examinations reveal, unacceptable defects in a weld or welds, two further welds per defective weld in batch, represented by this welder shall be tested. If the tests of these further welds reveal no unacceptable defects, the defects in the first weld or welds shall be repaired and re-tested. However, if the further welds in the batch reveal unacceptable defects, all the remaining welds in the batch shall be inspected, without any extra cost for the increase in number of radiographs on this account.



**100% D.P. Testing of root weld shall be done.**

**Radiography of weld joints shall be 10% for all piping.**

**Note: - For radiography use of Close Proximity Camera with Selenium Source is preferred.**

#### 4.7 HYDROTESTING

Hydraulic/Pneumatic testing including repair, rectification and retesting of the complete piping system, by making suitable loops in consultation with Consultant's representative, shall be done by the Contractor. The decision to include any equipment in a loop or not shall be taken by Owner's /Owner's representative. All the necessary materials and arrangements required (such as but not limited to blanks, temporary supports, temporary spools in place on on-line instruments, pressure gauges, pumps suitable for required hydro test pressure, including connected piping and accessories for pumps temporary fasteners etc.) shall be in the scope of Contractor. The pressure gauges shall be used after due calibration and

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certification by the Consultant's representative (a valid calibration test certificate shall be made available at all time of test by the Contractor).

During testing all on-line instruments may have to be removed or blanked as **required** by Owner/Consultant. If removed, necessary spool pieces are to be fabricated and installed by Contractor. The above instruments shall be installed back in the line only after cleaning and blowing of the line is over. Additional vents and drains, if required for pressure testing, shall be installed by Contractor. But the valves & pipes required for vents and drains shall be supplied by Owner/ Consultant as free issue. All the above activities form part of hydro-testing/ pneumatic testing, as the case may be. After hydro/pneumatic testing is completed to the satisfaction of the Owner / Consultant's representative, the piping shall be cleaned and blown with steam/air as per relevant technical specification. All on-line instruments shall be removed, (except if permitted by the Owner / Consultant's representative) and installed back after cleaning of the pipe line. Whenever the on-line instruments are to be removed, supply, installation and removal of spool pieces shall be arranged by the Contractor, without any extra cost to the Owner/Consultant.

#### 4.8 CARD BOARD BLASTING

The pipe lines which are required to be cleaned by air/card board blasting shall be done as per standards, specifications and instruction of Consultant in order to ensure that the lines are cleaned properly. For this purpose, the following points are kept in view:



- i) Lines to be card board blasted shall be properly supported.
- ii) One end of the line shall be blanked with two or three "standard card boards of 1/16" thickness & target plate" using flanges and bolting system.
- iii) Other end of the line shall be connected to the pneumatic pressure system.
- iv) Air pressure shall then be increased till the card board bursts at around 3-4 Kg/cm<sup>2</sup> pressure, thereby expelling out even the tiniest dust, rust and weld slag particles from inside of the pipelines.
- v) Target plates are to be used here to check if the line is fully cleared.
- vi) Supply of target plates and card-board shall be in the scope of Contractor

#### 4.9 MEASUREMENTS

##### 4.9.1 FOR STRUCTURALS

- A) For payment, weights indicated on approved vendor drawings shall be taken. Where weights are not indicated on vendor drawings, net weight indicated on packing lists shall be taken or as per IS hand book(SP-06). However, if weights are neither indicated on vendor drawings nor on packing list, weights shall be calculated from approved vendor drawings. For calculation of weights the following guidelines shall be followed:

- i) Weld metal weight shall not be considered.

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- ii) No deduction or addition shall be made for opening and for nozzles less than 300 mm diameter.
- iii) For 300 mm and above openings, nozzles and skews the actual weights shall be added or subtracted.
- iv) Weights of structures and plates shall be taken as per IS hand book (SP-06).
- v) For structural / heat exchangers base plates, if the weights are not available in the drawings the same shall be taken as per relevant ISI hand book / code (SP-06).

#### 4.9.2 FOR PIPING

- i) To make payment **for Erection of piping**, the length of piping shall be measured along the centre line of piping including all fittings but excluding valves and spectacle blinds (which are being paid separately). Length of piping shall be calculated from isometrics. However, if no isometric exists for a line, actual measurements shall be taken at site.
- ii) On-line instruments such as Control valves, Rota meters, Orifice plates and Steam traps, in-line Filters and Strainers, Expansion bellows, Bellmouth, Vortex breaker, Spectacle blind, Relief/Safety valves etc. shall be treated as Valves. For Relief/Safety valves, the size at smaller end shall be considered.
- iii) Measurement for branch connection shall be taken from the root of Stub-in or Weldolets joint, However separate payment shall be made for RF Pad as per SOR.
- iv) Reducers shall be paid along with piping of larger diameter, except in the case of funnels, where they shall be paid along with drain pipe to which they are connected.
- v) Weight of supports shall be calculated from support sketches, drawings or standards and specifications using ISI hand book.
- vi) Weight of structural steel platforms shall be taken as indicated on drawings. If not indicated on drawings, the same may be calculated using ISI hand book.
- vii) Payment for radiography shall be made based on the no's of weld radiographed.
- viii) The payment shall be made for the weld joints found acceptable and no payment shall be made for defective weld joints. Payment for overlapping of films is not permissible, though overlapping is required.

#### 4.9.3 FOR EQUIPMENTS/MACHINERIES



For payment weights indicated on approved vendor drawings shall be taken. Where weights are not indicated on vendor drawings, net weight indicated on packing lists shall be taken. However, if weights are neither indicated on vendor drawings nor on packing list, weights shall be calculated from approved vendor drawings.

For structural/heat exchangers base plates, if the weights are not available in the drawings the same shall be taken as per relevant ISI hand book/code (SP-06).

#### 4.10 TRIAL RUN, TESTING AND COMMISSIONING

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All machines shall be put on trial for 72 hours continuously as per instruction of Owner/ Consultant. The Contractor shall provide his competent personnel during trial run. Final inspection of bearings etc. to be carried out after trial run shall be part of trial run and testing. Up to this activity, the services of Contractor are covered within the unit rates of erection.

During commissioning i.e. after trial run and testing is over, Owner/ Consultant may require the services of Contractor's skilled/unskilled personnel up to a period of one year from the date of issue of completion certificate. These persons shall be paid as per the man-hour rates. The requirement of number and type of people shall be indicated to Contractor at least 15 days in advance. This one year period shall not be counted as part of Contractor period.

#### 4.11 STANDARDS, CODES & SPECIFICATIONS

The latest revision of the following standards codes and specification shall form part of this enquiry:

#### 4.12 INDIAN & INTERNATIONAL CODES (FOR REFERENCE)

- a) ANSI: B 31.3
- b) ASME SECTION VIII & IX (Latest revision)
- c) IS-800 CODE OF PRACTICE FOR STRUCTURAL STEEL IN GENERAL BUILDING CONSTRUCTION (Latest revision)
- d) IS-554 - DIMENSIONS FOR PIPE THREADS FOR PRESSURE JOINTS

#### 5.0 STATUTORY APPROVALS

The Contractor shall be fully responsible for obtaining Statutory Approvals for drawings and documents needed for carrying out dismantling /erection and Hydro testing of equipment coming under different local authority. All documents needed for the same shall be supplied to Contractor by Owner/Consultant. Statutory fee shall be paid by the Owner on production of documentary evidence.

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**TECHNICAL CONDITION**  
**TC: 5106**  
**CENTRIFUGAL PUMPS**  
**(NON - CRITICAL SERVICES)**

<b>0</b>	<b>17.10.2017</b>	<b>17.10.2017</b>	<b>ISSUED FOR ENQUIRY</b>	<b>ASR</b>	<b>ASR</b>	<b>SM</b>
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD



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8.	APPENDIX- II (SPARE PARTS LIST)

**NOTES:** This document shall be used with relevant information contained in the documents listed below (in order of priority).

1. Letter for invitation of bid or succeeding official confirmed order.
2. Specification sheet of particular pump with relevant drawings, if any, for the project in question.
3. This document.
4. Codes & Standards referred in the above mentioned documents and in this document.

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## 1.0 GENERAL

- 1.1 This standard shall be followed in establishing the minimum engineering requirements for centrifugal pumps for non-critical services / water handling services.
- 1.2 The pumps shall be designed, manufactured and supplied as per Hydraulic Institute Standard / DIN 24256 / ISO-2858 /IS-1520/ IS-13518/ IS-5120 Standard.
- 1.3 The pump shall be designed to develop the specified differential head at rated capacity, suction pressure and specific gravity while running at the rated speed. Rated speed of pump shall be full load speed of the drive motor. In case the driver is not in pump vendor's scope, full load speed of the driver shall be furnished to the pump vendor alongwith other details after order. The pump characteristics shall be guaranteed / tested with reference to the full load speed of motor.
- 1.4 Guarantee point shall refer to the differential head, rated capacity, specific gravity, and full load speed of the driver.
- 1.5 The pump and accessories shall be suitable for outdoor, unsheltered installation and continuous duty unless otherwise specified in the respective specification sheets.
- 1.6 The pumps shall be supplied complete with all the accessories as specified in the respective specification sheets inclusive of necessary appurtenances, auxiliary piping, special tools, spares etc.
- 1.7 Accessories required / recommended by pump vendor other than those specified in the pump specification sheet for safe and efficient operation of the pump unit shall be included in the pump vendor's scope of supply and the same shall be identified in the bid separately with adequate justification.
- 1.8 Deviations and/or exceptions to the enquiry specification sheet, enclosures, applicable standards, etc., must be listed for each document, clausewise with proper reason in a separate annexure in the bid. Otherwise it shall be assumed

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that all the requirements of the enquiry are acceptable without any reservation and shall be binding to the bidder.

- 1.9 Pumps shall have SI dimensions, comply with applicable ISO standards except for piping connections which shall be as per ANSI/ASME standard.
- 1.10 Reference list of pumps which are in operation for similar service conditions shall be furnished with the offer indicating broad specifications, purchase order number, date and name & address of user.

## 2.0 BASIC DESIGN

- 2.1 The shut off head of the pump shall be 105% to 120% of the head at rated capacity.
- 2.2 Maximum allowable noise level shall be within 85 dBA measured at a distance of 1.0 meter.
- 2.3 It should be possible to increase the head minimum by 5% by installing higher size impeller.
- 2.4 In addition to static balancing, impellers shall be dynamically balanced as per G6.3 of ISO-1940.
- 2.5 Pump inlet, outlet and auxiliary connections shall be flanged. All connections shall be provided with slip-on type companion flanges, nuts, bolts and gaskets.
- 2.6 Connections of 1<sup>1</sup>/<sub>4</sub>, 2<sup>1</sup>/<sub>2</sub>, 3<sup>1</sup>/<sub>2</sub>, 5, 7 nominal pipe sizes shall not be used.
- 2.7 When specified, pump shall be provided with drip tray under the stuffing box and leak-off line with flange, companion flange, nuts, bolts and gaskets. Material composition shall be same as that of pump casing. Leak - off piping shall be arranged upto the edge of the base plate.
- 2.8 Pump inlet, outlet and auxiliary flanged connections shall confirm to the facing and drilling requirements of ANSI / ASME B 16.1 or ANSI / ASME B16.5.

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- 2.9 All equipment shall be designed to permit rapid and economical maintenance. Major parts such as casing components and bearing housings shall be designed (shouldered or doweled) to ensure accurate alignment on reassembly.
- 2.10 Impeller shall be keyed to the pump shaft. Impeller nut shall be used to secure the impeller and a positive mechanical locking method shall be adopted.
- 2.11 The pump shaft shall be one piece for horizontal pumps. For vertical pumps number of shafts shall be minimum.
- 2.12 Shafts for horizontal pumps shall be fitted with deflectors. Deflectors shall be made of non-sparking material (corrosion resistant material for corrosive service).
- 2.14 Renewable wear ring surfaces shall be furnished on impeller and casing. Mating wear surfaces of hardenable materials shall have a difference in Brinell hardness number of at least 50.
- 2.15 Radial and thrust bearings shall be rolling element type. These shall be designed for 24,000 hours bearing life.
- 2.16 For between bearing pumps arrangement, bearing housing shall be cast integral with the lower half of the pump casing or bolted to it. Bearing housing should be provided with stiffening brackets and be sufficiently rigid to resist the dynamic loads during operation.
- 2.17 Castings shall be sound and free from shrink holes, blow holes, cracks, scale, blisters and other similar injurious defects. Ferrous pressure casting shall not be repaired by peening, plugging, burning in or impregnating. When weld repairs to castings are authorized by ASTM specification for the material, repair welding shall be carried out in accordance with that specification. Unless otherwise specified, weld repairs shall be inspected according to the same quality standards used to inspect the casting.
- 2.18 Material of construction of various pump parts shall be as per pump specification sheet. If the vendor considers other materials better, the same shall be offered as an alternative only. Materials not specified in the specification sheet shall be \_\_\_\_\_

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selected by the vendor in accordance with the service conditions. Chemical composition and physical properties of the special materials, wherever used, must be furnished along with the offer.

2.19 Copper and copper alloys shall not be used for pump parts for application in ammonia and urea plants.

2.20 A name plate of 18 Cr - 8 Ni Stainless Steel or Monel, securely attached by stainless steel pins at an easily accessible point on the pump body shall be furnished. The name plate shall be stamped with following information:

- Purchaser's item number
- Pump serial number
- Capacity in m<sup>3</sup>/h
- Differential head in meters
- Revolution per minute
- Casing hydrostatic test pressure in kg / cm<sup>2</sup>g
- Absorbed power in kW

In addition to above an arrow shall be cast / attached at a reasonably observable point on the pump to indicate direction of rotation.

2.21 Motor shall have power ratings including service factor at least equal to following percentage of pump rated absorbed power. :

Pump absorbed power ( in kW )	Motor rating percentage of absorbed power
< 22	125
22 - 55	115
> 55	110

2.22 Vendor shall indicate for vertical pumps, minimum liquid level for pump operation / startup in the offer.

2.23 For vertical pumps, a hole shall be provided in the column pipe above the maximum liquid level to relieve pressure on stuffing box.

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- 2.24 For vertical the specified head shall be measured at the discharge flange, at pump mounting level. Pumps shall be suitable to develop specified discharge head in addition to column losses and vertical distance, between minimum level in the sump tank and center line of the discharge flange. Pump vendor shall indicate total head to be developed by the pump in the offer.
- 2.25 Vertical pumps taking suction from sump / vessel shall be furnished with corrosion resistant suction strainer. Perforation / mesh size shall be suitable for proper operation of pump. Sufficient free flow area of the strainer shall be provided.
- 2.26 Pumps shall be provided with shaft sleeve under mechanical seal.
- 2.27 Shaft sleeves shall be hard chrome oxide coated under flexible member of mechanical seal.
- 2.28 Gland Packed pumps shall not be offered.
- 2.29 When pumps are specified with mechanical seals
- 2.29.1 Make of mechanical seal shall be Flowserve, Eagle Burgmann, John Crane make.
- 2.29.2 Mechanical seal shall be inside mounted, balanced type with Carbon versus Tungsten Carbide faces or Carbon versus Silicon Carbide faces. Suitable flushing plan shall be provided.
- 2.30 Coupling make shall be as follows:
- |                               |   |   |
|-------------------------------|---|---|
| Driver rating up to 25 kW     | : | Lovejoy (RRL), Pinbush type<br>Unique, Flender  |
| Driver rating more than 25 kW | : | Pinbush type/All metallic type<br>Rathi-Discoflex type M, Euroflex,<br>Triveni-Flexibox |

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### 3.0 INSPECTION AND TESTING

- 3.1 All pumps shall be subjected to inspection by Owner / inspector of owner/ purchaser or authorized inspecting agency as defined in the purchase order. Test and inspection plan shall be submitted to the inspector for approval. The inspector shall indicate additional test to be witnessed over and above the once specified in the pump specifications.
- 3.2 Inspector shall have free access at all reasonable times to the vendor's / sub vendor's shops. Vendor shall furnish to the inspector all necessary information and assistance to verify that the requirements of the order specifications have been met. The vendor shall give 2 weeks notice regarding readiness of material for inspection to the inspector.
- 3.3 Acceptance of shop test shall not relieve the vendor of this responsibility in any way.
- 3.4 Inspector shall witness / inspect the following :
- 3.4.1 Review of material test certificate for casing, impeller, shaft, shaft sleeve, wearing rings etc., and for spare parts.
- 3.4.2 Dynamic balancing of impeller as per ISO-1940
- 3.4.3 Hydrostatic test.
- 3.4.4 NPSHR test, when specified.
- 3.4.5 Performance test including vibration check.
- 3.4.6 Disassembly / strip down test.
- 3.4.7 Visual inspection and dimensional check.
- 3.5 Manufacturer's standard shall be applied with respect to the tolerances of each dimension.
- 3.6 All casting shall be visually inspected before machining for surface defects and irregularities.

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3.7 All repairs of defects found on inspection shall be subjected to prior approval of purchaser's inspector.

### 3.8 PERFORMANCE TEST

3.8.1 Performance test of each pump in the manufacturer's shop shall be carried out, unless specified otherwise.

3.8.2 Pumps shall be operated in shop for a period sufficient to obtain complete test data. Unless otherwise agreed, the test speed shall be the rated speed of the pump.

3.8.3 Test procedure shall be as per Hydraulic Institute Standard / IS - 5120.

3.8.4 During the performance test, pump when operated at rated speed and rated capacity shall give guaranteed characteristics of total head, efficiency, brake kW and NPSH within the following tolerances.

Rated differential head : + 5%, - 2%

Rated kW : + 4%

NPSHR : 0

3.8.5 During performance test, pump shall operate without undue heating of bearings, excessive vibration, noise or other mechanical faults. Such defects if noticed shall be promptly rectified to the satisfaction of the inspector.

3.8.6 Instruments measurement tolerance shall be as per accuracy class I of IS-1520.

3.8.7 When operating fluid has viscosity appreciably higher than test fluid, test values of capacity, head, efficiency and power input shall be corrected to specified viscosity of operating fluid as per IS - 5120 / Hydraulic Institute Standard. Characteristic curves shall be plotted accordingly.

3.8.8 Job driver shall be used during performance test when ordered alongwith pump.

3.8.9 NPSHR test shall be conducted whenever specified in pump specification sheet. Test shall be done at 5 points from shut off to 110% of rated capacity.

### 3.9 HYDROSTATIC TEST



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- 3.9.1 Each pressure casing shall be hydrostatically tested to 1.5 times the maximum allowable casing pressure. Multistage pumps may be segmentally tested at appropriate section pressure.
- 3.9.2 Test pressure shall be maintained for a minimum period of 30 minutes during hydrostatic test.
- 3.9.3 Vendor shall compile all the tests & inspection reports relevant to purchase order scope of supply in folder(s). Following reports must be included:
- Material certificates (chemical analysis, chemical test & impact test)
  - Results of non destructive inspection
  - Results of hydrostatic test
  - Records of performance test
  - Records of NPSH test
  - Records of dimensions
  - Other test conducted by vendor as per specification
  - Guarantee certificates

#### **4.0 PREPARATION FOR SHIPMENT**

- 4.1 Pumps shall be despatched only after the shop test data and performance test curves are approved by the inspector.
- 4.2 The unmachined exterior surfaces shall be sand blasted, descaled and cleaned. The surface must be free from foreign material before paint is applied.
- 4.3 The external surface subject to atmospheric corrosion shall be painted with two coats of primer and two coats of epoxy based finish paint.
- 4.4 All the internal parts and machined unpainted exterior surfaces shall be protected with suitable rust preventive.
- 4.5 When driver is supplied with pump, the same shall be duly mounted on a common base frame.

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4.6 Both halves of the coupling shall be supplied by vendor in machined condition.

4.7 Each unit shall be suitably packed for outdoor storage for at least six months.

## 5.0 VENDOR'S DATA

5.1 The pump vendor shall supply the drawings and documents as per Appendix - I.

5.2 Each drawings / documents shall have the following information in a separate block :

Owner's Name  
 Name of the Project / Plant  
 Consultant Name : PDIL  
 Purchase Order Number  
 Equipment Code Number / Name  
 Drawing Number / Revision Number  
 Supplier Reference Number

## 6.0 SPARE PARTS

6.1 Spare parts as per Appendix - II shall be quoted in the proforma enclosed with enquiry.

<b>APPENDIX - I</b>					
<u>DRAWINGS &amp; DOCUMENT SCHEDULE</u>					
<b>Bidder shall furnish alongwith each copy of bid</b>					
<b>Vendor shall furnish <u>8</u> copies of drawings / documents for approval / review</b>					
<b>Vendor shall furnish <u>12</u> copies and <u>2</u> transparencies of final documents</b>					
<b>X - INDICATES APPLICABLE</b>				Delivery Time in weeks	
DESCRIPTION				For Approval	Final
<b>X</b>	<b>X</b>	<b>X</b>	<b>GENERAL :</b>		
	<b>X</b>	<b>X</b>	1. List of drawings / documents including drawing number, revision number, description and approval status	4	
<b>X</b>	<b>X</b>		2. Detailed manufacturing program ( Time bar chart )	4	
<b>X</b>	<b>X</b>	<b>X</b>	3. Certified dimensional outline & Installation Drawing including Size, Rating, Facing and location of all customer connections, overall weight and handling weights, overall dimensions and clearances, direction of rotation, etc.	4	
<b>X</b>	<b>X</b>	<b>X</b>	4. Cross sectional drawing (of the applicable) with complete bill of material	4	
<b>X</b>	<b>X</b>	<b>X</b>	5. Pump specification sheet in PDIL proforma	4	
<b>X</b>	<b>X</b>	<b>X</b>	6. Pump performance curves	4	
<b>X</b>	<b>X</b>		7. Q.A.P & Test procedures	6	
<b>X</b>		<b>X</b>	8. Spare parts as per Appendix - II		
<b>X</b>			9. Reference List		
		<b>X</b>	10. Test & inspection report		
		<b>X</b>	11. Instruction manuals describing installation, operation, and maintenance procedures.		
			12. Drawings for driver as per specification & engineering standards enclosed with enquiry / order specification ( if pump is ordered with driver )		

**NOTE:**

1. TRANSPARENCIES SHALL BE FURNISHED BY VENDOR FOR DRAWING OF SIZE A2 AND ABOVE ONLY.
2. ALL THE FINAL DRAWINGS / DOCUMENTS MUST BE DELIVERED AT LEAST ONE WEEK BEFORE DESPATCH OF THE EQUIPMENT & ACCESSORIES.
3. FINAL DRAWINGS / DOCUMENTS MUST BE SUBMITTED IN PROPERLY ARRANGED FOLDERS.

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<b>APPENDIX - II</b>				
<b>SPARE PARTS LIST (MANDATORY)</b>				
Sl. No.	Description	Qty. Reqd. in sets based on total number of pumps installed		
	<b>PUMP :</b>	<b>1 - 2</b>	<b>3</b>	<b>4</b>
1	Impeller with wearing ring	1	1	1
2	Impeller Locking Nut and Washers	1	3	3
3	Shaft with keys	1	2	2
4	Wearing Rings for impeller *	1	3	4
5	Wearing Rings for casing *	1	3	4
6	Throat bush	1	2	2
7	Shaft Sleeve *	1	1	1
8	Bearings Complete	1	2	2
9	Complete Coupling	1	1	1
10	Stuffing box packing *	1	4	4
11	Gaskets & 'O' Rings *	1	3	4
12	Complete Mechanical Seal ( as applicable )	1	2	2
13	Intermediate bearing bushes ( for vertical pump )	1	2	2
14	Intermediate bearing sleeves ( for vertical pump )	1	2	2
15	Intermediate couplings ( for vertical pump )	1	1	1

- \* One set of spares also to be considered for commissioning in addition to above mentioned quantities.

**NOTES:**

1. "Set" means complete replacement of particular part in one machine.
2. The vendor may quote for any additional item required to be kept as spares. Likewise vendor may suggest if a particular item is not required in his opinion. If any change in quantity is considered desirable by him. It may be clearly stated.

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**SUB-VENDOR LIST**  
(CENTRIFUGAL PUMP FOR WATER)

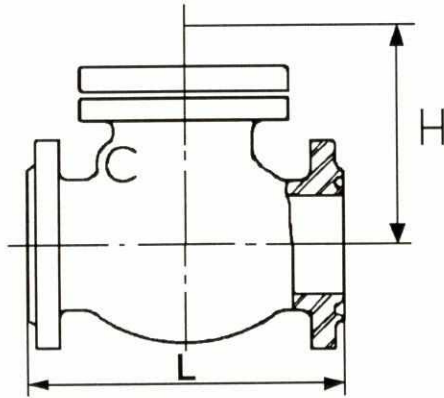
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD
0	17.10.2017	17.10.2017	ISSUED FOR ENQUIRY (DRAFT)	ASR	ASR	SM

	<b>SUB-VENDOR LIST</b>	EM0000-SVL-501	0	
		DOCUMENT NO	RE	
		SHEET 2 OF 2		

**RECOMMENDED MACHINERY SUB-VENDOR LIST FOR WATER CENTRIFUGAL PUMP**

SI.No	Vendor's Name	Country
<b>Pumps for water service (Vertical)</b>		
1.	Beacon Weir Ltd	India
2.	Flowmore Pvt. Ltd	India
3.	Jyoti Limited	India
4.	Kirloskar Brothers Ltd.	India
5.	Mather & Platt (India) Ltd.	India
6.	KSB Pumps Limited	India

# CHECK VALVE



DESIGN (ILLUSTRATIVE ONLY)

ITEM NO	CHV 210	
PRESSURE RATING CLASS	150	
FACE	RF	
CONSTRUCTION		
BODY	CAST	
BONNET TO BODY CONNECTION	BOLTED	
SEAT RING	RENEWABLE	
TYPE OF DISC	SWING TYPE	
ACCESSORIES	NO	
BY-PASS	NO	
NOMINAL SIZE	2" - 24"	
MATERIALS		
BODY	A 216 Gr. WCB	
BODY SEAT RING	A 105 STELLITED	
DISC	A 216 Gr. WCB 13Cr. FACED	
HINGE PIN	13 Cr.	
DESIGN CONDITIONS		
PRESSURE RATING	ANSI B16.34	
FLUID	Kg/cm2g	°C
BOILER FEED WATER	6	150
COOLING WATER	7	70
FUEL GAS	12	100
NITROGEN	10	150
POTASSIUM CARBONATE SOL.	10	150
NAPHTHA	9	70

GENERAL

1. COPPER AND COPPER ALLOYS NOT PERMITTED

MANDATORY STANDARDS:

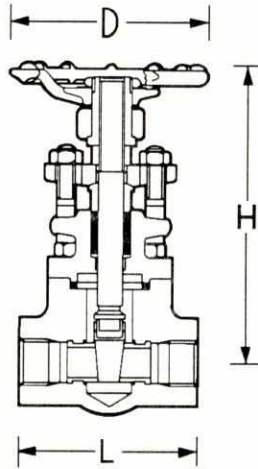
API 598, ANSI B16.10, ANSI B16.34, ANSI B16.5, MSS-SP 45

NOTES:

NOM. DIA.	INCH	2	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36
LENGTH L	mm	203	241	292	356	495	622	699	787	864	978	978	1295	1448	1524	1524	1956
H	mm																
APPROX WT	Kg																



# GATE VALVE



DESIGN (ILLUSTRATIVE ONLY)

ITEM NO	<b>GAV 201</b>
PRESSURE RATING CLASS	800
FACE	SW
<b>CONSTRUCTION</b>	
BODY	FORGED
BONNET TO BODY CONNECTION	BOLTED
HANDWHEEL	NON-RISING
STEM	RISING
STEM AND YOKE TYPE	OS & Y
GATE TYPE	WSS
GEAR OPERATED	NO
BY-PASS VALVE	NO
NOMINAL SIZE	1/2" - 1 1/2"
<b>MATERIALS</b>	
BODY	A 105
BODY SEAT RING	A 182 Gr. F6a STELLITED
GATE	A 182 Gr. F6a
STEM	13 Cr.
STEM PACKING	IMPREGNATED BRAIDED ASBESTOS
TRIM NUMBER	8

GATE SYMBOLS	TYPE OF SEAT	TYPE OF GATE	TYPE OF BLOCKADE
WSS	WEDGE	SINGLE	SOLID WEB
WSF			FLEX. SOLID WEB
WDF	PARALLEL	DOUBLE	SLIP ON OR SPLIT
PDF			FLEXIBLE

<b>DESIGN CONDITIONS</b>		
PRESSURE RATING	API 602	
FLUID	Kg/cm <sup>2</sup> g	°C
BOILER FEED WATER	6	150
COOLING WATER	7	70
NAT. GAS/NAPHTHA/HYDROGEN	50	150
NITROGEN	10	350
SYNTHESIS GAS	90	100
AMMONIA LIQUID / GAS	30	230

GENERAL

1. COPPER AND COPPER ALLOYS NOT PERMITTED
2. GLAND SHALL BE SUITABLE FOR REPACKING UNDER PRESSURE WHEN VALVE IS FULLY OPEN
3. IF NOT OTHERWISE STATED THE VALVES SHALL BE FULL BORE

MANDATORY STANDARDS:

API 598, API 602, ANSI B16.11, ANSI B16.34

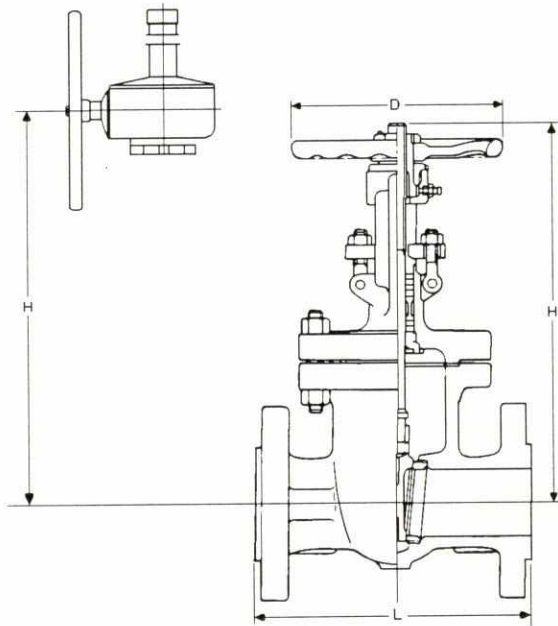
NOTES:

a) LENGTH TO BE VERIFIED BY MANUFACTURER

NOM. DIA.	INCH	1/2	3/4	1	1 1/2												
LENGTH L	mm	90	110	127	130												
H OPEN	mm																
H CLOSED	mm																
HANDWHEEL øD	mm																
APPROX WT	Kg																



# GATE VALVE



DESIGN (ILLUSTRATIVE ONLY)

ITEM NO	<b>GAV 210</b>
PRESSURE RATING CLASS	150
FACE	RF
<b>CONSTRUCTION</b>	
BODY	CAST
BONNET TO BODY CONNECTION	BOLTED
HANDWHEEL	NON-RISING
STEM	RISING
STEM AND YOKE TYPE	OS & Y
GATE TYPE	WSF OR WDF
GEAR OPERATED	YES > = 14"
BY-PASS VALVE	NO
NOMINAL SIZE	1 1/2" - 48"
<b>MATERIALS</b>	
BODY	A 216 Gr. WCB
BODY SEAT RING	A 105 STELLITED
GATE	A 216 Gr. WCB 13 Cr. FACED
STEM	13 Cr.
STEM PACKING	IMPREGNATED BRAIDED ASBESTOS
TRIM NUMBER	8

GATE SYMBOLS	TYPE OF SEAT	TYPE OF GATE	TYPE OF BLOCKADE
WSS	WEDGE	SINGLE	SOLID WEB
WSF			FLEX. SOLID WEB
WDF	PARALLEL	DOUBLE	SLIP ON OR SPLIT
PDF			FLEXIBLE

<b>DESIGN CONDITIONS</b>		
PRESSURE RATING	ANSI B16.34	
FLUID	Kg/cm2g	°C
BOILER FEED WATER	6	150
COOLING WATER	7	70
FUEL GAS	12	100
NITROGEN	10	150
NAPHTHA	9	70

GENERAL

1. COPPER AND COPPER ALLOYS NOT PERMITTED
2. GLAND SHALL BE SUITABLE FOR REPACKING UNDER PRESSURE WHEN VALVE IS FULLY OPEN
3. IF NOT OTHERWISE STATED THE VALVES SHALL BE FULL BORE
4. VALVES > = 10" AND > = 600" RATING SHALL HAVE BOSSES FOR BY-PASS CONNECTION ACC. TO API 600 AND MSS-SP 45, LOCATION E-F

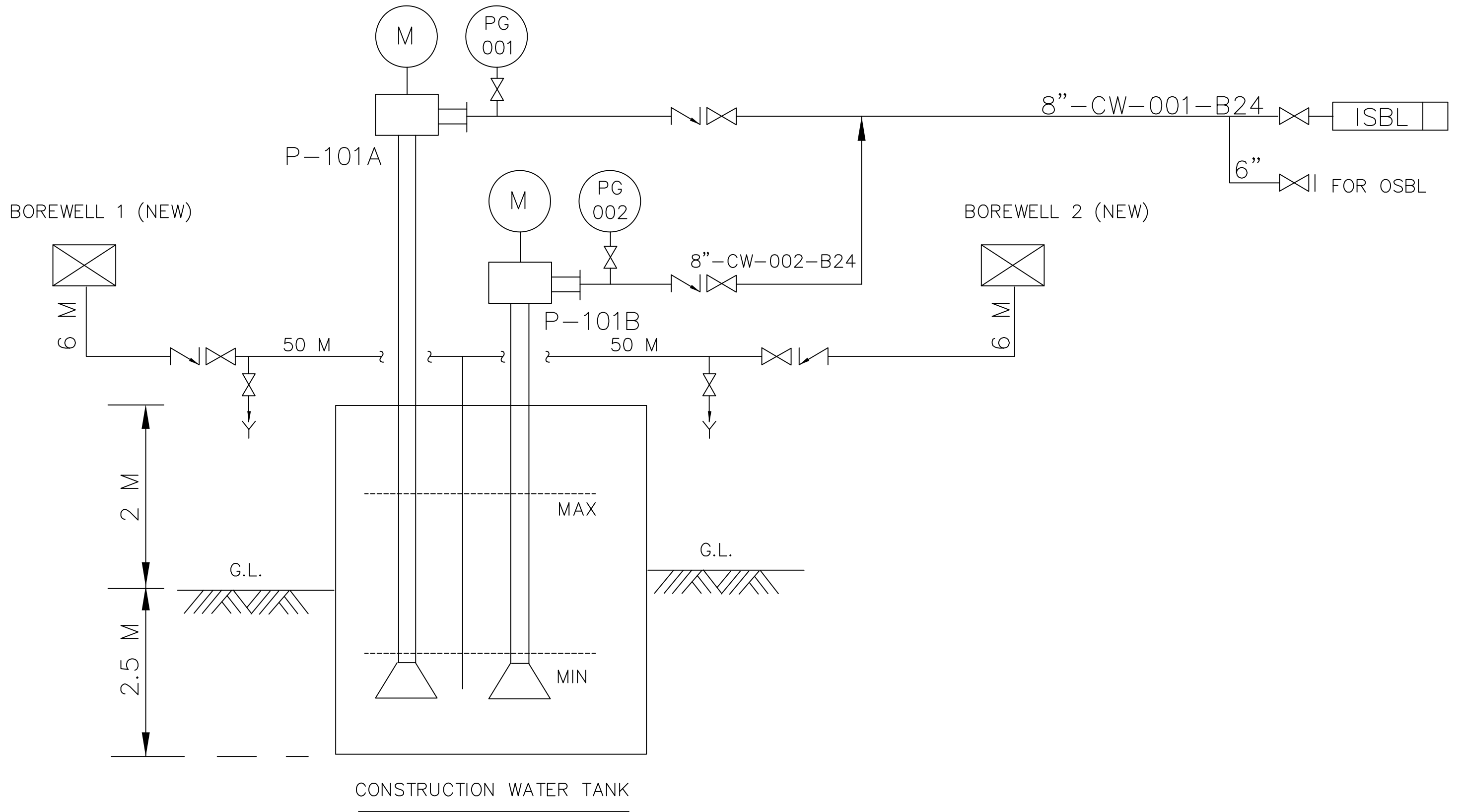
MANDATORY STANDARDS:


API 598, API 600, ANSI B16.10, ANSI B16.34, ANSI B16.5, MSS-SP 45, ASME B16.47

NOTES:

- a) FLANGES > 24" ACC. TO ASME B16.47 SERIES B

NOM. DIA.	INCH	1 1/2	2	3	4	6	8	10	12	14	16	18	20	24	28	32	36
LENGTH L	mm		178	203	229	267	292	330	356	381	406	432	457	508	610	660	771
H OPEN	mm																
H CLOSED	mm																
HANDWHEEL øD	mm																
APPROX WT	Kg																



P	24.10.17	ISSUED FOR ENGINEERING	VKS	RSB	RKV
REV.	DATE	DESCRIPTION	PPD.	CKD.	APPD.
CLIENT			REV. P		
HURL GORAKHPUR			SHEET 1 OF 1		
TITLE: P & I DIAGRAM			SCALE		
PLANT: CONSTRUCTION WATER SYSTEM			DWG.NO.		
PROJECT: OFFSITE & UTILITIES			0000-7111-0021		
 <b>PROJECTS &amp; DEVELOPMENT INDIA LTD.</b> NOIDA					





**TECHNICAL SPECIFICATION  
FOR MOTOR AND MOTOR STARTER  
(TO BE PROCURED ALONG WITH DRIVEN MACHINE)**

EM000-PNEL-TS-0801	P
DOCUMENT NO	REV
SHEET 2 OF 11	

**CONTENTS**

<b>SECTION NUMBER</b>	<b>DESCRIPTION</b>	<b>SHEET NUMBER</b>
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**LIST OF ATTACHMENTS**

<b>ATTACHMENT NUMBER</b>	<b>DESCRIPTION</b>	<b>NUMBER OF SHEETS</b>
EM000-SS-MOTOR	Specification Sheet (Induction Motor)	1



**TECHNICAL SPECIFICATION  
FOR MOTOR AND MOTOR STARTER  
(TO BE PROCURED ALONG WITH DRIVEN MACHINE)**

EM000-PNEL-TS-0801	P
DOCUMENT NO	REV
SHEET 3 OF 11	

## 1.0 SCOPE

- 1.1 The scope shall include design, engineering, manufacture, testing at works and delivery to site in well packed condition, erection, testing and commissioning of complete electrical system for Vertical Submerged Pump (P-101 A/B) to be installed in Offsite Plant at HURL, Gorakhpur.
- 1.2 This specification shall be read in conjunction with all standards, Data sheets and other relevant reference as specified herein.
- 1.3 The scope shall include but not limited to the following:
- Drive motors for the pump.
  - DOL starter for the motor.
  - Cable from DOL starter to the motor terminal box.
  - Cable from owner's PCC to bidder's wall mounted board.
  - All other items not specified but required for safe and proper operation.
- 1.4 1.1KV grade cable size of 1R-3.5Cx120 Sq. mm (Al) XLPE-A-PVC FRLS cable from owner's PCC to bidder's DOL starter for construction water pump has been considered. Same shall be supplied, laid, supported & terminated at both end by the bidder. Moreover cable from DOL starter near construction water pump to pump motor shall also supplied, laid, routed and terminated at both end by the bidder. Cable size indicated above is tentative and shall be finalized after receipt of load detail from the bidders with their respective bid.
- 1.5 The scope shall also include the erection, testing, commissioning of above equipments.

## 2.0 CODES & STANDARDS

- 2.1 The design, manufacture and testing of the equipment shall comply with the latest issue of relevant Indian Standard specification and codes of practices / relevant IEC.
- 2.2 The design and operational features of the equipment offered shall also comply with the provisions of latest issue of the Indian Electricity Rules and other relevant Statutory Rules & Regulations. The supplier shall, whenever necessary, make suitable modification in the equipment to comply with the above mentioned rules.
- 2.3 Wherever any requirement, laid down in this Specification, differs from that in Indian Standard specification / IEC, the requirement specified herein shall prevail.

## 3.0 SERVICE CONDITIONS

- 3.1 The equipment shall be designed for the site conditions as specified in the specification sheet attached.

## 4.0 SYSTEM DETAILS

- 4.1 The equipment shall be suitable for the system details as specified in the respective specification sheet attached and respective clauses of this specification.

## 5.0 GENERAL INSTRUCTIONS TO BIDDER

- 5.1 Owner shall provide 415V  $\pm$  10%, 3Ph & N, 50 Hz power supply at owner's PCC, further distribution from owner's PCC to Bidder's equipment (DOL Panel, motor etc.) shall be in bidder's scope.
- 5.2 Motors shall conform to IS: 325 and Specification Sheet enclosed.



**TECHNICAL SPECIFICATION  
FOR MOTOR AND MOTOR STARTER  
(TO BE PROCURED ALONG WITH DRIVEN MACHINE)**

EM000-PNEL-TS-0801	P
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- 5.3 Motor shall be suitable for DOL starting on full load.
- 5.4 The motor (frame sizes from 71 up to and including 315L) shall be energy efficient type having efficiency class of 'IE2' as per IS 12615: 2011 and high power factor type.
- 5.5 The rating of the motor shall be as per the sizes in the ISS. The margin between the installed power and absorbed power shall not be less than the following:

<u>Motor Rating</u>	<u>Margin above Driven M/C Absorbed Power</u>
Less than 22 KW	25%
22 KW to 55 KW	15%
75 KW and above	10%

- 5.6 The duty cycle of the motor shall meet the process and driven machine requirement.
- 5.7 Voltage rating for the motors of different KW ratings shall be as below:
- Up to 150 KW : 415V, 3-phase, 50 Hz AC
- 5.8 Motors for outdoor service shall be provided with special seals for the enclosure, joints, bearing housing, terminal boxes etc. so that no extra protective covering for ingress of water shall be required.
- 5.9 Vertical motors for outdoor installation shall be provided with a rain protective hood.
- 5.10 All external hardwares shall be made of stainless steel SS-304/316.
- 5.11 All terminal boxes of motor as well as DOL starter shall be complete with heavy duty rolled Aluminium double compression type cable glands and lugs/connectors to receive the external cables.
- 5.12 Wherever any requirement, laid down in this Technical specification / Specification Sheet, differs from that in IS, the requirements specified in this specification / Specification Sheets shall prevail.

## **6.0 EQUIPMENT SPECIFICATION**

### **6.1 Motors**

- 6.1.1 Motor shall conform to BIS and Specification Sheets enclosed.
- 6.1.2 Motor shall be suitable for DOL starting on full load.
- 6.1.3 The motor (frame sizes from 71 up to and including 315L) shall be energy efficient type having efficiency class of 'IE2' as per IS 12615: 2011 and high power factor type.
- 6.1.4 Type test certificate of similar motor for use in specified hazardous area shall be furnished along with the bid.
- 6.1.5 The rating of the motor shall be as per the sizes in the ISS. The margin between the installed power and absorbed power shall not be less than the following:

<u>Motor Rating</u>	<u>Margin above Driven M/C Absorbed Power</u>
---------------------	---





**TECHNICAL SPECIFICATION  
FOR MOTOR AND MOTOR STARTER  
(TO BE PROCURED ALONG WITH DRIVEN MACHINE)**

EM000-PNEL-TS-0801	P
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Less than 22 KW	25%
22 KW to 55 KW	15%
75 KW and above	10%

- 6.1.6 The duty cycle of the motor shall meet the process and driven machine requirement.
- 6.1.7 Voltage rating for the motors of different KW ratings shall be as below:
- Up to 150 KW : 415V, 3-phase, 50 Hz AC
- 6.1.8 The rotor shall be of squirrel cage cylindrical type construction. The rotor shall be made of laminated steel with good electrical performance.
- 6.1.9 The cooling fans shall be suitable for bidirectional rotation of motors. These shall be fastened to the motor shaft by means of compensating rings or will be balanced independent of the motor. Guide key or reference points shall be supplied to prevent wrong assembly. The cooling air shall be sucked from the non-driving end.
- 6.1.10 All motors shall be provided with bearings suitable for the application. The bearings must be guaranteed to ensure a smooth operation and a life not shorter than 40,000 hrs.
- 6.1.11 The bearing shall be suitable for both directions of rotation of the motor.
- 6.1.12 Motor terminal box shall be designed to rotate at 90° at site.
- 6.1.13 For all vertical flange mounted motors, the limitations on shaft extension, run out, perpendicularity and eccentricity, as required by the driven machine supplier shall be complied with by the motor supplier.
- 6.1.14 Space heaters rated for 240 V A.C. shall be provided to keep the winding dry for all high and medium voltage motors, except for motors rated below 30 KW.
- 6.1.15 The motor noise level shall not exceed 85 dB measured at a distance of 1 metre from the motor.
- 6.1.16 The motor vibrations measured at the bearings must not exceed the limits specified in IS: 12075, unless otherwise stipulated in the specification sheet.
- 6.1.17 Specification Sheet duly filled in with balance data for each type and rating of motors shall be furnished with bid.
- 6.1.18 Filled in Technical Particulars of each type & rating of motors shall be furnished by the bidder for approval after order in line with ITB/PO requirement before commencement of manufacturing.
- 6.1.19 In DOL starting current shall not exceed the values indicated in IS-12615 with no further positive tolerance on the values of starting current.
- 6.2 Wall mounted DOL motor starter panel**
- 6.2.1 Wall mounted DOL motor starter panel shall be IP-65 protection.
- 6.2.2 MCCBs shall be motor protection type with thermal and magnetic release. MCCB and contactor combination shall conform to Type-2 co-ordination conforming to IEC-947.
- 6.2.3 Contactor shall be air break, double break single throw, and electromagnetic type.
- 6.2.4 Main contacts shall be of silver faced copper.



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- 6.2.5 Minimum two NO and two NC auxiliary contacts shall be provided for each power contactor.
- 6.2.6 The enclosure for starter panel shall be of SS/Cast Aluminium alloy (LM6) and shall be of weatherproof construction. A rain-hood shall be offered as an additional protection. Rain hood shall be of the same material as of the main enclosure. The enclosure shall be suitable for mounting on wall or on steel structure. 4 Nos. holes suitable for 12 mm bolts shall be provided outside the enclosure for fixing the control station.
- 6.2.7 Indication lamp shall be LED type with LVGP protection having good illumination in all direction with lumen output of minimum 200milli Candela +/-10%.
- 6.2.8 The ammeter shall be flush mounting, moving iron spring controlled type, of accuracy class 1.5 as per IS: 1248, with square face of minimum size 72 mm x 72 mm having scale range 0-2400. The ammeter for motor shall be provided with uniform scale up to CT primary current and compressed end scale up to the 6 times the C.T. primary current. Adjustable red pointer shall be provided to indicate the full load current of the motors. Zero adjusters shall be provided for operation from the front of the meter. All ammeters shall be operated through 1 Amp. CTs only.
- 6.2.9 All the components shall be mounted on a base plate inside the enclosure. Necessary actuating system for control switches, non-yellowing acrylic/glass cover for ammeter and indication lamps shall be provided on the front cover. No wiring shall be carried out on the front cover.
- 6.2.10 Starter panel shall be provided with minimum 2 mm thick stainless steel name plates indicating the code number and description of the equipment controlled by it. Similar labels shall be provided for all control switches and indication lamps. The name plate and labels shall be fixed with screws only.
- 6.3 LT Cables**
- 6.3.1 All LT power cables shall be with stranded aluminium / copper conductor with XLPE insulation, PVC inner sheathed, armoured, PVC outer sheathed FRLS type and construction as per IS: 7098 (Part 1) and as specified in the specification Sheet (attached in this specification).
- 6.3.2 All control cables shall be stranded copper conductor with XLPE insulation, PVC inner sheathed, armoured, PVC outer sheathed FRLS type and construction as per IS: 7098 (Part 1) and as specified in the specification Sheet (attached in this specification).
- 6.3.3 All control cables cores shall be identified with numerical core numbers printed on core instead of colours.
- 6.3.4 All cables shall be armoured and shall have extruded inner and outer sheath.
- 6.4 Directly Buried Cables**
- a. Laying of under ground directly buried cables shall include excavation of earth along the cable route, laying of Hume / GI pipes for road crossing, back filling, ramming, removing of extra earth including supply of bricks, sand etc. as per drawing and instruction of Owner / Engineer-in-Charge.
- b. Where cables are directly laid into ground, trenches should be dug up to such a depth as to ensure that the depth of the top of the entire cable below the ground level is min. 750 mm for medium and low voltage cables, and min.1050 mm for high voltage cables. Before laying of cables at these trenches, bottom of the trench should be properly levelled up and all odd and sharp materials removed. Trench bottom then should be bedded with a 75 mm thick layer of





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sand. Approval of Owner / Engineer-in-Charge shall be taken for preparation of this bed before laying of cables. Cables shall be laid in the trenches in straight runs. Care shall be taken so that any kinds or bends are not formed. After laying of the cables, bricks shall be placed length wise on both the sides of the cables along the entire length to form trough.

- c. Fill up space between bricks with sand up to height of the bricks. Then place bricks closely width wise on top of the sand layer throughout the length. Fill up loose earth in trench, ram properly to compact, remove extra earth from site. Broken bricks shall not be use for brick working. Only Class-I bricks shall be used.
- d. If new cables are laid to cross existing cables, the new cable shall be laid under existing cables at depth of not less than 200 mm from the existing cable. It shall be ensured that the approach of new cable to the crossing is uniform and gradually sloped.
- e. Fix cable markers at 100 Mtrs. apart and at joints on the entire cable route length of the cables. The cable markers shall be made of pre-cast concrete blocks of 300 mm x 350 mm x 350 mm size with markings of "LT CABLE", "Depth of Cable", "Arrow Marks" etc. inscribed. These shall be supplied by the contractor at no extra cost and fixed as per directions of the Owner / Engineer-in-Charge. The top of the above concrete slabs shall have a smooth finish with cement only.
- f. Laying of cables under road crossings etc. shall be done in pipes, and pipe ends shall be sealed with bitumen compound and sand as required after cables are laid. Backfilled soil shall be rammed thoroughly to prevent road surface cracking due to settlement of loose soil.

## 7.0 PAINTING

- 7.1 The equipment surfaces to be painted shall be pre treated to remove all dust, scale and foreign adhering matter by suitable treatment.
- 7.2 All steel surfaces shall be painted with two coats of suitable anti-rust paint followed by two coats of anticorrosive epoxy paints.
- 7.3 All paints shall be carefully selected to withstand tropical heat and extremes of weather. The paint shall not scale off, crinkle or be removed by abrasion due to normal handling.
- 7.4 Unless otherwise specified, the finishing shade shall be light grey having No.631 as per IS-5.

## 8.0 TESTS & INSPECTION

- 8.1 All equipment shall be routine tested as per relevant Indian/International Standards.
- 8.2 All tests shall be carried out in the presence of owner's representative.
- 8.3 The owner's inspection shall, however, not absolve the bidder from his responsibility for making good any defect, which may be noticed subsequently.
- 8.4 Despatch of material shall be subject to written consent of owner or his representative.

## 9.0 LIST OF SPARES

- 9.1 For two years operation and maintenance, item wise unit and total prices of spares shall be quoted by the bidder along with the main equipment as per **Annexure-C.**
- 9.2 Any other spare parts required, but not specified, shall also be offered.
- 9.3 Spare for commissioning as required shall be supplied without any extra cost.



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9.4 All spare parts shall be identical to the parts used in the offered equipments.

**10.0 MAKE OF ELECTRICAL ITEMS**

10.1 Make of all electrical items shall be as per **Annexure-B**.

**11.0 DRAWINGS & DOCUMENTS**

11.1 All drawings and documents shall have the following descriptions written boldly:

- Name of Client.
- Name of Consultant i.e. PDIL.
- Enquiry / Order Number with Project / Plant name.
- Equipment Code No. and Description.

11.2 Drawings and documents shall be submitted as per **Annexure-A**.

11.3 Data Sheets (Specification Sheets & Technical Particulars) for each rating and services of motors and MOTOR STARTER PANEL, duly filled in completely, signed and stamped shall be furnished separately in the format attached herewith.

**12.0 DEVIATIONS**

12.1 Deviations, if any, from this specification (clause wise) shall be clearly indicated in the offer with reasons thereof. Deviations from the data indicated in Data Sheet shall be shown clearly by encircling it and indicating the revised data in Data Sheet. In the absence of any such activities, compliance with the clauses shall be deemed automatically.

12.2 The bidder shall submit the duly signed and stamped copies of all the NIT documents as a token of compliance to NIT.



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**ANNEXURE - A**

**DOCUMENTATION FOR ELECTRICAL ITEMS**

Sl. No.	Document Description	Documents Required (Y / N)		
		With Bid	For Approval	Final
1.	Specification Sheet and Technical Particulars completely filled-in for motor & Motor starter.	Y	Y	Y
2.	Dimensional Drawings for Motor and Motor starter.	Y	Y	Y
4.	Characteristic curves			
	a) Thermal withstand curve	Y	Y	Y
	b) Load Vs FL current	Y	Y	Y
	c) Load Vs Efficiency	Y	Y	Y
	d) Load Vs Power factor	Y	Y	Y
	e) Load Vs Speed	Y	Y	Y
	f) Voltage Vs Thermal Withstand time	Y	Y	Y
	g) Starting current Vs Time	Y	Y	Y
5.	Terminal Box drawings for motor and motor starter.	Y	Y	Y
6.	Illustrative and Descriptive catalogues	Y	N	Y
7.	Catalogues of bought out accessories	Y	N	Y
8.	Spare parts list	Y	N	Y
9.	Installation, Operation and Maintenance manual	N	N	Y
10.	Test certificates			
	a) Routine	N	N	Y
	b) Type	N	N	Y
	c) For enclosure	Y	N	Y
11.	Guarantee Certificates	N	N	Y

**Note:** 4 hard copies & 1 soft copy shall be supplied with bid.

1. 4 hard copies & 1 soft copy shall be supplied for approval after order within 4 weeks from the date of LOI.
2. 8 hard copies & 2 soft copies in CD shall be submitted as final documents prior to despatch of the equipment. These shall be made in sets and supplied in fine plastic coated folder.

Y - Yes, N - No



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**ANNEXURE – B**

**MAKE OF ELECTRICAL ITEMS**

**A. For LT Motor**

Asea Brown Boveri Ltd., India  
Crompton Greaves Ltd., India  
Bharat Bijlee Limited, India  
Kirloskar Electric Co., India  
Laxmi Hydraulics Pvt. Ltd (up to 315L frame size), India  
Siemens AG, Germany  
Jeumont Industrie, France  
Ansaldo Robicon, Italy  
Fuji Electric Systems Co. Ltd., Japan  
Mitsubishi Corporation, Japan  
Toshiba Corporation, Japan  
General Electric Co., USA  
Westinghouse Electric Corporation, USA  
Laurence, Scott & Electromotors Ltd, U.K.  
Peebles Electrical Machines, U.K.  
Asea Brown Boveri Ltd., Sweden

**B. For Wall Mounted Motor Starter Panel**

Crompton Greaves Ltd, India  
Elecmech Corporation., India  
Intrelec, India.  
Reunion Electrical Manufacturers (P) Ltd., India  
L&T, India  
Siemens, India  
Schneider, India

**C. POWER & CONTROL CABLES**

Cable Corporation Of India Ltd., India  
Gloster Cables Ltd., India  
Kec International Ltd., India  
Nicco Corporation Ltd., India  
Torrent Cables Ltd., India  
Universal Cable Ltd., India



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FOR MOTOR AND MOTOR STARTER  
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**ANNEXURE – C**

**LIST OF SPARES**

<b>1.0</b>	<b>Motor (For each rating)</b>	<b>Quantity</b>
a	Bearings (Driving end)	1 No.
b	Bearings (Non driving end)	1 No.
c	Cooling fan	1 No.
d	Terminal block	1 No.
e	Grease Nipple & Plug (if applicable)	1 No.

<b>2.0</b>	<b>Wall Mounted DOL starter Panel</b>	<b>Quantity</b>
a	SFU (1 No. of each type)	1 Set
b	MCCB (1 No. of each type)	1 Set
c	OLR (1 no. of each type)	1 Set
d	Contactora (1 no. of each type)	1 Set
e	Ammeters (1 No. of each type)	1 Set
f	Push buttons (1 No. of each type)	1 Set
g	Terminal block	2 Nos
h	Indication lamps (1 No. of each type)	1 Set

**Note:**

1. Set means 01 No. item of each type/each type & size used in one equipment (i.e. motor and DOL starter).



# SPECIFICATION SHEET INDUCTION MOTOR

EM000-SS-MOTOR

P

DOCUMENT NO.

REV.

SHEET 1 OF 1

<b>CLIENT : M/s HURL</b>		<b>PROJECT : Ammonia &amp; Urea Fertilizer Plant HURL</b>		<b>PLANT : Offsite &amp; Utility</b>	
<b>ISSUED FOR :</b> PROPOSAL <input type="checkbox"/>		ENQUIRY <input checked="" type="checkbox"/>		ORDER <input type="checkbox"/>	
				FINAL <input type="checkbox"/>	
<b>GENERAL</b>					
Item No. :		Ref. Stds. :		IS <input checked="" type="checkbox"/> IEC <input checked="" type="checkbox"/> API 541 <input type="checkbox"/>	
Quantity :		Encl. Docs. :		ES-8102 <input type="checkbox"/>	
Description : Motor for construction water pump		Make :			
Code No.: PM-101 A/B		Maker's Type. :			
<b>TESTS:</b> Routine <input checked="" type="checkbox"/>		Type <input type="checkbox"/>		Others <input type="checkbox"/>	
<b>SERVICE CONDITIONS</b>					
<b>SYSTEM DETAILS</b>			<b>AMBIENT CONDITION</b>		
Rated Voltage with $\pm$ % : 415 V $\pm$ 10%			Temp. Max./Min./Design Ref. :		
No. of phases : 3			Relative Humidity: 100% Max.		Alt. above sea : <1000 M
Rated Frequency With $\pm$ % : 50 Hz $\pm$ 5%			<b>Atmospheric Pollution</b>		Dusts : Urea
Combined V & F variation : $\pm$ 10%					Vapour : Ammonia
Fault Level : 36 MVA			<b>Area</b>		Safe <input type="checkbox"/> Hazardous <input type="checkbox"/>
Space Heater Supply :			<b>Haz. Area class :</b>		
Low Voltage Heating Supply :			<b>Location :</b> Indoor <input type="checkbox"/> Outdoor <input checked="" type="checkbox"/>		
<b>INSTRUMENT CONTACT RATING</b>		A.C. :		<b>COOLING WATER</b>	
		D.C. :		Inlet Press. : kg/sq.m .	
Aux. Motor Supply :		Fauling Factor :		Inlet Temp. $^{\circ}$ C	
				Outlet Temp. $^{\circ}$ C	
<b>BASIC DATA</b>					
<b>RATING &amp; DUTY</b>			<b>DRIVEN M/C DATA</b>		
Rated Output :			Type :		
Syn. Speed :			Make :		
Duty : Continuous			Absorbed Power :		
Rotor Type : Squirrel Cage			Coupling :		
Starting Method : DOL			Torque-Starting / Max. :		
Max I Start/I Rated: as per IS12615			GD <sup>2</sup> at Motor Speed :		
Min. V Start at Terms : 80% of rated voltage			Thrust - Radial / Axial :		
Min. Starting Torque at V <sub>R</sub> :			Addl. Data :		
<b>EXECUTION</b>			<b>ACCESSORIES</b>		
Degree of Protection : IPW 55			Foundation Bolt <input checked="" type="checkbox"/>		Space Heater (if applicable) <input checked="" type="checkbox"/>
Addl. Degree of Protection : NA			Lifting Eye Bolt <input checked="" type="checkbox"/>		Drain Plug (if applicable) <input checked="" type="checkbox"/>
Mounting Arrangement :			Cable Glands <input checked="" type="checkbox"/>		Cable Lugs <input checked="" type="checkbox"/>
Direction of Rotation :			Diff. C.T.s <input type="checkbox"/>		C.W. Flow Indicator <input type="checkbox"/>
Insulation Class : 'F' with temp. rise limited to 'B'			<b>RTDs for</b> Wdgs. <input type="checkbox"/>		Hot Air <input type="checkbox"/> Bearings <input type="checkbox"/>
Cooling Method : IC411			<b>Thermometer For</b>		Hot Air <input type="checkbox"/> Bearings <input type="checkbox"/>
Stator Connection : Delta			<b>Earthing Terminals</b>		On Body <input checked="" type="checkbox"/> In T.B. <input type="checkbox"/>
<b>CABLING DATA</b>			Name Plate : <input checked="" type="checkbox"/>		Addl. Name Plate : <input type="checkbox"/>
Power cable :			Rain Protecting Hood : <input checked="" type="checkbox"/>		Thermistor <input type="checkbox"/>
Heater cable:			<b>SPARE PARTS</b>		
C.T. cable : NA			Required <input checked="" type="checkbox"/>		For Period of 2 Years
R.T.D. cable : LATER			Bearings <input checked="" type="checkbox"/>		Bearing Accessory <input checked="" type="checkbox"/>
Alarm cable : NA			Thermometer <input type="checkbox"/>		Cooling Fan <input checked="" type="checkbox"/>
<b>CABLE GLAND</b>		Type : Double Compression		Grease Nipple & Plug <input checked="" type="checkbox"/>	
		Material : Rolled Aluminium		Space Heater <input checked="" type="checkbox"/>	
				Inner & Outer covers for DE & NDE bearings <input type="checkbox"/>	
<b>PAINTING</b>					
Type : Epoxy					
Shade : 631 of IS : 5					

- Notes :**
- i) The motor shall be energy efficient type having efficiency class of IE2 as per IS 12615.
  - ii) Separate sheets shall be used for different services and ratings of motors.
  - iii) All unfilled data shall be filled by the bidder and submitted with bid.
  - iv) Power and space heater cables shall be of 1.1KV grade XLPE-A-FRLS PVC.

P	23.10.2017	23.10.2017	FOR CLIENT'S COMMENT	BK	AP	AP
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD



# SPECIFICATION SHEET INDUCTION MOTOR

EM000-SS-MOTOR

P

DOCUMENT NO.

REV.

SHEET 1 OF 1

<b>CLIENT : M/s HURL</b>		<b>PROJECT : Ammonia &amp; Urea Fertilizer Plant HURL</b>		<b>PLANT : Offsite &amp; Utility</b>	
<b>ISSUED FOR :</b> PROPOSAL <input type="checkbox"/>		ENQUIRY <input checked="" type="checkbox"/>		ORDER <input type="checkbox"/>	
				FINAL <input type="checkbox"/>	
<b>GENERAL</b>					
Item No. :		Ref. Stds. :		IS <input checked="" type="checkbox"/> IEC <input checked="" type="checkbox"/> API 541 <input type="checkbox"/>	
Quantity :		Encl. Docs. :		ES-8102 <input type="checkbox"/>	
Description : Motor for construction water pump		Make :			
Code No.: PM-101 A/B		Maker's Type. :			
<b>TESTS:</b> Routine <input checked="" type="checkbox"/>		Type <input type="checkbox"/>		Others <input type="checkbox"/>	
<b>SERVICE CONDITIONS</b>					
<b>SYSTEM DETAILS</b>			<b>AMBIENT CONDITION</b>		
Rated Voltage with $\pm$ % : 415 V $\pm$ 10%			Temp. Max./Min./Design Ref. :		
No. of phases : 3			Relative Humidity: 100% Max.		Alt. above sea : <1000 M
Rated Frequency With $\pm$ % : 50 Hz $\pm$ 5%			<b>Atmospheric Pollution</b>		Dusts : Urea
Combined V & F variation : $\pm$ 10%					Vapour : Ammonia
Fault Level : 36 MVA			<b>Area</b>		Safe <input type="checkbox"/> Hazardous <input type="checkbox"/>
Space Heater Supply :			<b>Haz. Area class :</b>		
Low Voltage Heating Supply :			<b>Location :</b> Indoor <input type="checkbox"/> Outdoor <input checked="" type="checkbox"/>		
<b>INSTRUMENT CONTACT RATING</b>		A.C. :		<b>COOLING WATER</b>	
		D.C. :		Inlet Press. : kg/sq.m .	
Aux. Motor Supply :		Fauling Factor :		Inlet Temp. $^{\circ}$ C	
				Outlet Temp. $^{\circ}$ C	
<b>BASIC DATA</b>					
<b>RATING &amp; DUTY</b>			<b>DRIVEN M/C DATA</b>		
Rated Output :			Type :		
Syn. Speed :			Make :		
Duty : Continuous			Absorbed Power :		
Rotor Type : Squirrel Cage			Coupling :		
Starting Method : DOL			Torque-Starting / Max. :		
Max I Start/I Rated: as per IS12615			GD <sup>2</sup> at Motor Speed :		
Min. V Start at Terms : 80% of rated voltage			Thrust - Radial / Axial :		
Min. Starting Torque at V <sub>R</sub> :			Addl. Data :		
<b>EXECUTION</b>			<b>ACCESSORIES</b>		
Degree of Protection : IPW 55			Foundation Bolt <input checked="" type="checkbox"/>		Space Heater (if applicable) <input checked="" type="checkbox"/>
Addl. Degree of Protection : NA			Lifting Eye Bolt <input checked="" type="checkbox"/>		Drain Plug (if applicable) <input checked="" type="checkbox"/>
Mounting Arrangement :			Cable Glands <input checked="" type="checkbox"/>		Cable Lugs <input checked="" type="checkbox"/>
Direction of Rotation :			Diff. C.T.s <input type="checkbox"/>		C.W. Flow Indicator <input type="checkbox"/>
Insulation Class : 'F' with temp. rise limited to 'B'			<b>RTDs for</b> Wdgs. <input type="checkbox"/>		Hot Air <input type="checkbox"/> Bearings <input type="checkbox"/>
Cooling Method : IC411			<b>Thermometer For</b>		Hot Air <input type="checkbox"/> Bearings <input type="checkbox"/>
Stator Connection : Delta			<b>Earthing Terminals</b>		On Body <input checked="" type="checkbox"/> In T.B. <input type="checkbox"/>
<b>CABLING DATA</b>			Name Plate : <input checked="" type="checkbox"/>		Addl. Name Plate : <input type="checkbox"/>
Power cable :			Rain Protecting Hood : <input checked="" type="checkbox"/>		Thermistor <input type="checkbox"/>
Heater cable:			<b>SPARE PARTS</b>		
C.T. cable : NA			Required <input checked="" type="checkbox"/>		For Period of 2 Years
R.T.D. cable : LATER			Bearings <input checked="" type="checkbox"/>		Bearing Accessory <input checked="" type="checkbox"/>
Alarm cable : NA			Thermometer <input type="checkbox"/>		Cooling Fan <input checked="" type="checkbox"/>
<b>CABLE GLAND</b>		Type : Double Compression		Grease Nipple & Plug <input checked="" type="checkbox"/>	
		Material : Rolled Aluminium		Space Heater <input checked="" type="checkbox"/>	
				Inner & Outer covers for DE & NDE bearings <input type="checkbox"/>	
<b>PAINTING</b>					
Type : Epoxy					
Shade : 631 of IS : 5					

- Notes :**
- i) The motor shall be energy efficient type having efficiency class of IE2 as per IS 12615.
  - ii) Separate sheets shall be used for different services and ratings of motors.
  - iii) All unfilled data shall be filled by the bidder and submitted with bid.
  - iv) Power and space heater cables shall be of 1.1KV grade XLPE-A-FRLS PVC.

P	23.10.2017	23.10.2017	FOR CLIENT'S COMMENT	BK	AP	AP
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD

	<b>PROJECTS &amp; DEVELOPMENT INDIA LIMITED</b>	PNCN-HSE-01	0	
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**HEALTH, SAFETY AND ENVIRONMENT (HSE) MANAGEMENT**  
**FOR**  
**HINDUSTAN URVARAK & RASAYAN LIMITED**

0	30.10.17	30.10.17	FOR ISSUANCE	DILIP	GC	SM
REV	REV DATE	EFF DATE	PURPOSE	PREPD	REVWD	APPD



	<b>HEALTH, SAFETY &amp; ENVIRONMENT (HSE) MANAGEMENT</b>	PNCN-HSE-01	0	
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## 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.

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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 submitted 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.

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## 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).
  - Hot Job Work Permit.
  - Electrical Work Permit.
  - Confined Spaces Work Permit.
  - Excavations Work Permit.
  - Working at Height work Permit.
  - Radiography Work Permit.
  - Cold Job 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

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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 or 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.

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- 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 OPENING AND CLOSING TIMES**

- 12.1 The site will be open from 8.00am to 6.00pm Monday to Saturday. Work outside the agreed normal working hours will be by agreement with Owner (subject to two working days' notice). All applications for out of hour working will identify the scope of work, supervision arrangements and a list of personnel.



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### 13.0 SITE SUPERVISION

13.1 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.

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

### 14.0 TRAINING, COMPETENCE OF EMPLOYEES AND NOTIFICATION OF HAZARDS

14.1 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.

14.2 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.

### 15.0 METHOD STATEMENTS

15.1 Contractors shall submit Safety Method Statements and JSA for all work activities, for example:

- Piling Operations.
- Excavation works.
- Lifting operations, as specified.
- Steel erection.
- Hot work operations.
- Radiography/NDT.
- Entry into confined spaces.
- Pressure testing.
- Working at height.
- Shot fired tools.
- Installation of pre-cast concrete planks.
- Pre-cast concrete structure.
- The erection of safety nets and fall arrest equipment.



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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.

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

15.3 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 to be used in each activity.
- Any substances/chemicals to be used and where, and during which activity they will be used (together with a COSHH assessment).
- 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.
- All hot work.

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

15.5 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.

## 16.0 RISK ASSESSMENTS

16.1 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.

16.2 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.

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

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## 17.0 COMPLIANCE WITH STATUTORY REGULATIONS

- 17.1 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.

## 18.0 INFORMATION TO BE PROVIDED AND POSTED

- 18.1 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):

- 18.1.1 Safety, Health and Environmental Policy.
- 18.1.2 Employer's Liability Insurance Certificate.
- 18.1.3 A detailed Health, Safety and Environment Plan, compliant with the project plan developed by the Planning Supervisor and/or Principal Contractor.
- 18.1.4 Work Method Statement Lifting Studies.
- 18.1.5 COSHH Procedures and Assessments.
- 18.1.6 Noise Procedures and Assessments.
- 18.1.7 Name of the individual appointed as the Site Safety Supervisor/Advisor.
- 18.1.8 Test certificates and examination for lifting gear, plant and appliances to be used on site. (Duplicates to be provided for OWNER/CONSULTANT's records.)
- 18.1.9 Drawings and calculations relating to false work, designed scaffolds, ground works and supporting temporary works.
- 18.1.10 Details of young persons to be employed on site.
- 18.1.11 Information relating to hazards associated with plant, operation and materials used in the works.
- 18.1.12 Proof of training for all personnel engaged in the works.
- 18.1.13 Daily Labour Returns.
- 18.1.14 Monthly Return of Accident Statistics to submitted OWNER/CONSULTANT format (Nil returns required).
- 18.1.15 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' decision on which incidents require detailed investigation is final.
- 18.1.16 Dangerous Occurrences, Incidents, Damage to Equipment and/or Property report to be submitted to OWNER/CONSULTANT format.
- 18.1.17 All entries/records of accidents entered into the Contractor's Accident Book shall also be copied into OWNER/CONSULTANT' Accident Book by the Contractor.
- 18.1.18 Copies of all Statutory Registers to be submitted weekly to OWNER/CONSULTANT.
- 18.1.19 Copies of the Contractor's Safety Officer/Advisor's reports of their findings on site visits/inspections.

## 18.2 Accidents, Incidents, Dangerous Occurrences and Notifiable Diseases

- 18.2.1 Accidents/Incidents/ Dangerous Occurrences/Near Misses

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

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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.

18.2.2 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.

## 19.0 PERSONAL PROTECTIVE EQUIPMENT/CLOTHING

19.1 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.

19.2 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.

19.3 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.

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

20.1 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.

20.2 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

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area, preferably quarantined from the main stores areas, with suitable warning notices and signage posted.

- 20.3 Hazardous materials must not be allowed to discharge into natural watercourses or drainage systems.
- 20.4 All hazardous material waste must be kept separate from normal waste and be disposed of in a specialist disposal facility.

## 21.0 NOISE

- 21.1 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.
- 21.2 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.

## 22.0 FIRST AID

- 22.1 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.
- 22.2 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.

## 23.0 TOOL BOX TALKS

- 23.1 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.

## 24.0 HEALTH, SAFETY AND ENVIRONMENT INSPECTIONS/HEALTH, SAFETY AND ENVIRONMENT ADVISORS

- 24.1 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.

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24.2 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.

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

**24.4 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.

**25.0 HEALTH, SAFETY AND ENVIRONMENT MEETINGS**

25.1 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.

25.2 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.

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

26.1 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.

**27.0 HOUSEKEEPING**

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

27.2 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.

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

27.4 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.

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27.5 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.

27.6 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.

## 28.0 FIRE PREVENTION

28.1 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.

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

28.3 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.

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

28.5 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.

## 29.0 REMOVAL OF WASTE FROM CONSTRUCTION SITES

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

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

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

29.4 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.



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- 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.

### 30.0 EXCAVATIONS AND OPENINGS

- 30.1 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.
- 30.2 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.
- 30.3 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.
- 30.4 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.
- 30.5 All excavations shall have a proper ladder access point provided.
- 30.6 Spoil from excavations must be piled at least 1m from the edge of the hole.
- 30.7 Vehicular traffic shall be restricted from the edges of excavations, to prevent possible collapse.

### 31.0 ELECTRICITY

- 31.1 All Contractors must provide their own electrical power supplies or as per Technical ITB.
- 31.2 Contractors must not interfere with, or work on any of, the Client's electrical installations or equipment without written consent.
- 31.3 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.**

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

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31.5 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.

31.6 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 110 volt system, lighting system, welding equipment installation, inspection testing operation and maintenance of temporary electrical systems.

**31.6.1 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.

**31.6.2 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.

**31.6.3 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.

**31.6.4 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.



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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 cables should be treated with care and given the same supervision and protection as other cables.

31.7 No temporary electrical supply shall be installed or modified without the agreement and approval of OWNER/CONSULTANT.

31.8 Any tool, plant or equipment exceeding 110 volts (55v to earth) shall be connected to an earth leakage circuit breaker (ELCB).

## 32.0 WORK IN CONFINED SPACES

32.1 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.

32.2 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.

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

### 33.0 MOBILE CRANES

33.1 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.

33.2 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.

33.3 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.

33.4 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.

33.5 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.

33.6 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.

33.7 All lifting equipment accompanying the crane shall comply with the requirements of lifting regulations.

33.8 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.

33.9 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.

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33.10 No crane shall travel with a suspended load.

33.11 Outriggers, when installed, must always be used.

#### **34.0 LIFTING OPERATIONS**

34.1 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.

34.2 Every lifting operation must be properly planned by a nominated, competent person.

34.3 Every lifting operation shall be appropriately supervised.

34.4 All slinging and rigging of loads must be carried out by competent personnel.

34.5 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

#### **35.0 STEEL ERECTION**

35.1 The weight of each component in excess of 500 kg shall be clearly marked upon it.

35.2 Erectors must be fully informed of the correct erection sequence, by their supervisor, prior to each stage of work commencing.

35.3 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.

35.4 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".

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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.

### 36.0 SCAFFOLDING

- 36.1 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.
- 36.2 All scaffolding shall be erected, modified and inspected by qualified competent scaffolders.
- 36.3 Where materials are to be positioned on scaffolding the Contractor's supervision must ensure that the scaffolding is not overloaded.
- 36.4 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.
- 36.5 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.
- 36.6 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.
- 36.7 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.

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- 36.8 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.
- 36.9 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.
- 36.10 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.
- 36.11 Action shall be taken to warn personnel against using partly erected or dismantled scaffolds. A prominent "DO NOT USE" sign shall be clearly displayed.
- 36.12 OWNER/CONSULTANT shall approve the sitting of the scaffold material racks/compounds.
- 36.13 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.
- 36.14 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
- 36.15 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.
- 36.16 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.
- 37.0 LADDERS/STEPS**
- 37.1 Ladders must be in good condition and free from defects, i.e., broken rungs, split stiles.
- 37.2 Ladders must not be painted.
- 37.3 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.
- 37.4 **All steps used on the project Site.**
- 37.5 Only one person must be allowed on a set of steps at any one time.
- 37.6 Persons must work with a set of steps of the appropriate height for the task.
- 37.7 The top rung of the steps must be kept at waist height, no work to be carried out above this height on steps.

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37.8 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.

### 38.0 FALL PROTECTION

38.1 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.

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

38.3 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.

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

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

38.6 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.

38.7 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.

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

38.9 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.

### 39.0 MOBILE ELEVATED WORK PLATFORMS

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

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

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

39.3 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.

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- 39.4 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.
- 39.5 Before commencing work from a MEWP, the surrounding area should be cordoned-off to prevent personnel straying into a potentially hazardous area.
- 39.6 The Safe Working Load specified on the MEWP must not be exceeded.
- 39.7 If the MEWP has been manufactured with outriggers or stabilizers, they must always be deployed.
- 39.8 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.
- 39.9 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.
- 39.10 MEWP shall not be used as a jack, prop or support.
- 39.11 MEWP shall not be used as a crane or lifting device.
- 39.12 MEWP shall not be used primarily for the transport of goods or materials.
- 39.13 MEWP shall not be used in wind speed exceeding 30 mph (12.5 m/s).
- 39.14 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.

#### **40.0 CONTRACTORS' TOOLS AND EQUIPMENT**

- 40.1 All Contractors' tools and equipment must be fit for purpose. Tools should be CE marked.
- 40.2 Guards and electrical trip switches must work effectively and must not be removed or by-passed.
- 40.3 All tools shall be of good quality and maintained in a safe working condition. Home made tools are not permitted.
- 40.4 The Contractor shall provide suitable storage with suitable racks and bins for storing tools and equipment.
- 40.5 All temporary construction leads, lighting and portable electric tools shall be of appropriate volts.
- 40.6 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 three monthly basis (PAT testing). The tag shall display name, signature of the individual inspecting the tool and date of inspection.



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40.7 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.

40.8 No electrical powered hand tool shall be used unless it is tagged with a current "INSPECTION" tag.

40.9 All electrical leads must be connected to the power source through standard industrial waterproofed plugs and sockets, which shall be in good condition.

#### **41.0 MECHANICAL PLANT AND EQUIPMENT**

41.1 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).

41.2 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.

41.3 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.

41.4 The preventative maintenance programme and the Contractor's employee responsible for taking the action shall be clearly detailed, identified and given to OWNER/CONSULTANT.

41.5 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.

41.6 Plant maintenance must not be carried out within the main construction site.

41.7 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.

41.8 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.



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41.9 The OWNER/CONSULTANT'S tools, plant and equipment may not be used by Contractors without their express permission.

#### 42.0 COMPETENCY/PLANT EQUIPMENT

42.1 All drivers and operators of mobile plant (mechanically propelled vehicles) shall be in possession of the appropriate license for the class of vehicle.

42.2 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.

#### 42.3 General

42.3.1 Every dangerous part of machinery shall be securely guarded.

42.3.2 Any guards removed for maintenance or repair purposes must be replaced before the machine is set in motion.

42.3.3 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.

42.3.4 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.

42.3.5 No mechanical plant or equipment shall be sited on or operated on any area of the project without express the permission of OWNER/CONSULTANT.

42.3.6 All items of mobile plant (mechanically propelled vehicles) shall be fitted with a reverse warning audible alarm.

42.3.7 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.

#### 42.4 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.

#### 42.5 Flame Arrestors

42.6 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 Chalwyn Valves where there is a risk of flammable gas releases.

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### 43.0 MACHINERY GUARDING

- 43.1 Unauthorized personnel must not operate, interfere or tamper with plant or equipment.
- 43.2 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.
- 43.3 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.**

### 44.0 WELDING

- 44.1 Welding sets shall be in good condition, properly maintained and earthed.
- 44.2 Isolation switches on welding sets shall be readily accessible.
- 44.3 Terminals and live components shall be adequately protected.
- 44.4 Cables shall be frequently inspected to ensure the insulation is intact.
- 44.5 Damaged cables or electrical holders shall be properly repaired or replaced.
- 44.6 The welding return cable shall be secured onto the work piece. If this is not practical it shall be as near as possible.
- 44.7 Proper cable connectors shall be used when connecting runs of cables.
- 44.8 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.

- 44.9 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.
- 44.10 Asbestos material shall not be used on the project.
- 44.11 Electric Arc Welding equipment and accessories shall conform to Latest Engineering Standards.
- 44.12 Fire extinguishers must be provided and kept adjacent to any welding or cutting activity.

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#### 45.0 ABRASIVE WHEELS

- 45.1 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.
- 45.2 Details of each employee trained must be entered in the training register kept on site. Contractors must produce certificates and registers on request.
- 45.3 Machines used to drive Abrasive Wheels must be in good condition and properly guarded.
- 45.4 Pedestal or bench mounted grinders must have an emergency stop button and be fitted with a properly adjusted tool rest and guard.
- 45.5 All hand held grinders shall have a “Dead Man” switch and appropriate guards fitted.
- 45.6 The use of hand held angle grinders over 115mm shall only be permitted for specific tasks, subject to Owner’s / Consultant’s approval.

#### 46.0 USE OF GAS AND OXYGEN EQUIPMENT

- 46.1 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.

- 46.2 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.
- 46.3 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.
- 46.4 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.
- 46.5 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.
- 46.6 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.

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- 46.7 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.
- 46.8 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.
- 46.9 No modification to tanks or drums which have contained flammable liquid shall be undertaken at the site.

#### **47.0 ABRASIVE AIR BLAST CLEANIN**

- 47.1 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.
- 47.2 The blast cleaning area shall be indicated by prominent warning signs.
- 47.3 Only approved abrasives having no free silica shall be used.
- 47.4 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.
- 47.5 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
- 47.6 A standby man shall stay by the blast pot.

#### **48.0 COMPRESSED AIR**

- 48.1 All air receivers and compressors shall be in good condition and properly maintained.
- 48.2 Air receivers shall be individually identified and marked with their safe working pressure.
- 48.3 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.
- 48.4 All air receivers must be fitted with a properly set pressure relief valve.
- 48.5 Air receivers shall be examined and the pressure relief valve tested by an independent examiner at yearly intervals.
- 48.6 There shall be a register of all air receivers containing:
- Individual identification numbers.
  - Dates of independent inspections.
  - Name and signature of independent examiner.

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- Rates safe working pressure.
- Pressure at which pressure relief valve lifted shall be kept on site by the Contractor along with all current certification.

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

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

48.9 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.**

48.10 Nozzles used for air blowing must be fitted with a “Dead Man” valve.

**49.0 MOBILE PHONES AND PAGERS**

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

49.2 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.**

**50.0 RADIOGRAPHY/NDT**

50.1 Contractors who carry out radiography/NDT on the site must comply with safe systems of work. In particular, they MUST ensure that:

- Radiography areas are clearly marked using barrier tapes, notices and flashing lights.
- Audible warning (horns) must be sounded before a source is exposed.
- Only Classified Workers are engaged in radiography work.
- All other personnel are clear of the area before radiography takes place.
- Radiography work is supervised by a Qualified Radiological Protection Supervisor. Such supervisors must be nominated in writing and notified to OWNER/CONSULTANT.
- Any incident which may have resulted in over-exposure of any personnel is brought to the attention of OWNER/CONSULTANT for investigation.
- They have a written emergency procedure to be followed in the event of loss of an isotope or damage or malfunction of associated equipment. This procedure must be submitted to OWNER/CONSULTANT for approval before commencement.
- A certified meter is available on site.
- Radiography is carried out at the times agreed with OWNER/CONSULTANT normally this will only be during silent hours. OWNER/CONSULTANT requires twenty-four hours notice of such planned work.

50.2 Contractors who are not involved in radiography work must ensure that their employees observe warning notices, alarms and barriers in use where such work is being carried out.

50.3 Contractors must ensure that statutory notification is made to the authorities of radiography works.

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50.4 Disposal of spent radioactive sources shall be agreed with OWNER/CONSULTANT.

**51.0 WORKING OVER WATER/DIVING OPERATIONS**

51.1 The Contractor shall provide a buoyancy aid to any employee working over (or near) water where there is a likelihood of falling in.

The Contractor shall also supply a sufficient number of life buoys to be permanently located at the point(s) of danger. The life buoys shall be attached to a throwing line.

Where rescue of a person falling into the water may be difficult, OWNER/CONSULTANT may require the Contractor to supply a standby boat, crewed by a competent boatman trained in rescue and resuscitation techniques.

51.2 Diving operations may only be carried out using approved specialist diving contractors, employing certified commercial divers, and upon acceptance by OWNER/CONSULTANT of their Health, Safety and Environment plan and method statements (Diving Rules).

**52.0 ASBESTOS**

52.1 Only certified Contractors are allowed to handle asbestos.

**53.0 IMPROVEMENT AND PROHIBITION NOTICES**

53.1 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.

**54.0 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).

**55.0 SITE ESTABLISHMENT AND AMENITIES**

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

**56.0 ACCOMMODATION**

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

56.2 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.

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56.3 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.

**56.4 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.

**56.5 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.

**56.6 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.

**57.0 TEMPORARY SERVICES**

**57.1 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.

**57.2 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.



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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.

### 57.3 **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.

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

58.1 All proposed controlled discharges into the site drainage systems shall be agreed with OWNER/CONSULTANT.

58.2 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.

58.3 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.

58.4 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.

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

### 59.0 **MAINTENANCE OF ROADS AND DRAINS**

59.1 Existing roads, road gullies and drains shall be inspected by OWNER/CONSULTANT and the Contractor prior to work commencing. A record of this inspection shall be compiled and on the completion of the Works, a further inspection will be carried out and any necessary repairs to road surfaces or cleaning of drains shall be to the Contractor's cost.

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

59.3 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.

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



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59.5 Track-laying cranes and similar vehicles must not travel on finished roads without written authority from OWNER/CONSULTANT and then only with the use of timber mats or approved precautions to prevent damage to the roads. Timber mats or other approved precautions shall be supplied by the Contractor.

**60.0 MATERIALS – STORAGE AND CONTROL**

60.1 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.

60.2 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.

**60.3 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.

**60.4 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.

**61.0 PENALTY**

The Contractor shall adhere consistently to all provisions of HSE requirements. In case of noncompliances 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.**

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- 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. **Rs 10000/- 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 timeframe. **Rs. 20000/- per occasion**

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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

**62.0 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.

Gate pass issued by CISF will bear “Medically Fit” stamp based on the E-I-C’s recommendation.

Accordingly, this shall be treated as part of the tender.

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### MEDICAL CERTIFICATE

**Affix latest PHOTO impression of the workmen half covering the photo.**

#### Form for Medical Check Up for the Workman engaged by the Contractor

Certified that I, \_\_\_\_\_ have examined Shri \_\_\_\_\_ Age \_\_\_\_\_ who has signed / thumb impression above on the photo in my presence. The details of his examination as required are given in the enclosed medical examination report. I certify that all clinical and pathological tests were done in my hospital/dispensary under my instructions. General and physical examinations of Shri \_\_\_\_\_ do not reveal any abnormality. He does not suffer from any acute / chronic disease or any contagious or infectious disease. He is medically fit to work inside plant. He is free from Vertigo, Epilepsy or Fits, general giddiness and height related disease. His B.P.Pulse, Eyesight etc. are normal.

In my opinion, Shri \_\_\_\_\_ is physically and mentally fit for undertaking physical labour inside the plant.

Sign \_\_\_\_\_  
Date: \_\_\_\_\_

#### Signature and Rubber stamp of medical practitioner with name

Note: This certificate is to be given on the letterhead of the registered medical practitioner who is possessing MBBS qualification as recognized by the Indian medical council. Below the signature, the rubber stamp of the medical practitioner should be affixed. The letterhead normally should contain the following:

- 1) Name of the Medical practitioner:
- 2) Qualifications:
- 3) Registration Number:
- 4) Designation:
- 5) Address:

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### 63.0 ADDITIONAL SAFETY REQUIREMENT

#### A. Strict implementation of IS marked safety helmets & IS/CE marked safety shoes for contract personnel

All the contractors working inside the plant shall ensure that their supervisors/labourers compulsorily wear IS marked safety helmets & IS/CE marked safety shoes while entering plant premises. No contract personnel shall be allowed inside battery area without wearing IS marked safety helmets & IS/CE marked safety shoes. All EIC's/site engineers and F&S department shall sensitize and spread awareness among the contract personnel.



**Name of Tenderer:** .....

**Signature & Seal of Tenderer:** .....

# PART - B

**SUMMARY SHEET**  
**OF**  
**SCHEDULE OF RATES (SOR)**  
**FOR**  
**DRILLING AND DEVELOPMENT OF TUBEWELLS (PACKAGE-IV)**  
**AT**  
**GORAKHPUR, U.P.**

[NIT NO. : PNPM/5001/E/103]

 पी डी आई एल <b>PDIL</b>	SUMMARY SHEET FOR SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH	5001/E/103/SS	0	12.01.2018	SK	KJ	RRK	Page 1 of 2	
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NIT NO. : PNPM/5001/E/103

NIT SUBJECT : DRILLING AND DEVELOPMENT OF TUBEWELLS (PACKAGE-IV) AT GORAKHPUR, U.P.

### SUMMARY OF SCHEDULE OF RATES

S.NO.	DESCRIPTION	UNIT	AMOUNT
1.	PART-B (1.0) : DRILLING & DEVELOPMENT OF TUBEWELLS	INR	
2.	PART-B (2.0) : MECHANICAL & ELECTRICAL WORKS (SUPPLY & ERECTION)	INR	
3.	<b>TOTAL (S.NO. 1 + 2)</b>	INR	
4.	GST EXTRA AS APPLICABLE (BIDDER TO INDICATE % ONLY)	in %	_____ %
5.	TOTAL GST CHARGES	INR	
	<b>GRAND TOTAL (S.NO. 3 + 5)</b>	INR	

Note:



- 1.) If the bidder fails to quote for any item in the price bid, it will be implied that such item is included elsewhere in the quoted prices. Also, wherever bidder has indicated "Not Applicable" / "Nil" and the same is required during execution of the contract it will be considered as included in the price.
- 2.) Further, if the bidder does not quote GST in the price schedule/SOR by indicating 'Nil' / 'Not applicable' / 'NA' / 'kept the space blank', then GST amount payable by the contractor to the concerned authorities is deemed to have been included in their quoted price and no payment towards GST shall be made by the owner.

**NAME** : \_\_\_\_\_

**SIGNATURE & SEAL OF TENDERER** : \_\_\_\_\_

**PLACE** : \_\_\_\_\_

**DATE** : \_\_\_\_\_

	SUMMARY SHEET FOR SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS (PACKAGE-IV) AT GORAKHPUR, UTTAR PRADESH	5001/E/103/SS	0	12.01.2018	SK	KJ	RRK	Page 2 of 2	
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**PART-B (1.0)**

**SCHEDULE OF RATES**



**FOR**



**DRILLING AND DEVELOPMENT OF TUBEWELLS FOR**

**PROPOSED FERTILIZER PROJECT OF M/s HURL**



**AT**

**GORAKHPUR, UTTAR PRADESH**



	<b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	1 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)			
				(in Figure)	(in Words)				
	<p><b>Note:</b></p> <p>a) The Tenderer shall refer to the "Schedule of Rates "and Technical Specifications " before quoting their rates.</p> <p>b) The Tenderer shall note that the supply of manpower, arranging all necessary instruments, tools, tackles, plants and cutting of wild bushes, etc., required for proper execution of the work, shall be their responsibility.</p> <p>c) The Tenderer shall note that the supply/ procurement of all the materials, required for the job, shall be their responsibility.</p> <p>d) The Contractor shall back fill the rejected/ adandoned /discontinued drilled tube well with sand; provide cap up to 500mm depth from top with concrete and make it good in all respect and then carry out the drilling operation at some other location to be decided by the Engineer-in-Charge without any extra cost to the Owner.</p>								
1	Drilling 350 mm dia bore-hole by Down the Hole Hammer Drilling(DTH) or by any suitable rig, according to BIS 2800-1991 (Part one) as amended up to date in any kind of soil strata including soft clay, murram, gravel, Rocky strata including Boulders,soft and hard rock, including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants								
 <b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>		0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	2 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
	& machineries required for the job, disposal of spoils to an unobjected place (within 500 M radius), Item also includes lowering and extracting of casing pipe and Presentation of samples of strata encountered in bore in graduated strata sample Jars. Item includes getting the water samples tested for portability and hardness for industrial use and submitting report. all complete as per direction of Engineer -in-charge.					
a)	From Ground level to 90 meters.BGL	M	150			
2	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/ plain ended housing/ casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories. The contractor will be responsible for installation of pipe in plumb and in case any defect is noticed the same will have to rectified by the contractor at no extra cost to the owner. Payment shall be made for fixed and finished length and no extra payment shall be made for sockets, transportation, loading and unloading etc. all complete, for all depths, as per direction of Engineer-in-charge					

	<b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	3 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
a)	150 mm nominal size dia for use as casing pipe having minimum wall thickness 5.00 mm (for 1 bores 50 m each approx.)	M	110			
3	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed / plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, including painted with outside surface with two coats of anticorrosive bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge.					
a)	150 mm nominal size dia slotted pipe having min wall thickness 5.4 mm and slots as per BIS 8110-1985 & 2800-1991(Part 1) (for 1 bores 70 M each approx)	M	40			
4	Providing and fixing 150mm dia threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirements, fittings and painting 2 coats of Shalimar Tank mastic HD or equivalent on exposed surfaces, all complete, as per direction of Engineer -in-charge.	Nos	2			

	<b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	4 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
5	Providing and fixing Bail plug/ Bottom plug of 150mm dia with strong iron hook to the bottom of pipe assembly of tubewell as per IS:2800 (part I), fittings and painting 2 coats of Shalimar Tank mastic HD or equivalent on exposed surfaces, all complete, as per direction of Engineer -in-charge.	Nos	2			
6	Providing and fixing M.S. clamp of 150mm dia to the top of casing/housing pipe of tube well as per IS: 2800 (part I), including necessary bolts & nuts of required size complete and painting 2 coats of Shalimar Tank mastic HD or equivalent on exposed surfaces, all complete, as per direction of Engineer - in-charge.	Nos	2			
7	Gravel packing in tube well construction in accordance with IS: 4097,including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in- charge	Cu.M	5			
8	Development of tube well in accordance with IS : 2800 (part I) and IS:11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour	Nos	2			

	<b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	5 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
	charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge (The compressor shall run for min. period of 100 hours).					
9	<p>Providing, installing, connecting and commissioning of deep well submersible pump of KSB / Kirloskar make with Bronze impeller and wear rings, SS shaft and closed grain cast iron pump casing run by 3 phase 50 cycles 415 volts power supply motor having SS tube stator and casing with a coating of rust preventing paint, SS shaft sleeves, pivot, thrust pad, motor coupling, Bronze bush bearing and carbon thrust bearing. Motor should be protected against infiltration of sand.</p> <p>The pump capacity shall be 100 Cu. mtr per hour against 50 mtr total head and shall have the following accessories.</p> <p>a) Frame mounted GI sheet (20 SWG) panel for Star Delta Starter with single phase preventer, over load relay, and electronic water level guard.</p> <p>b) Submersible cable with copper conductor of Siemens, ICC, Safex or Finolex make of recommended size (Approx. length 60 mtr).</p> <p>c) To provide and fasten 15 mm dia twisted GI wire rope with pump to housing clamp.</p> <p>d) Providing cable clips with nuts and bolts @ 3 mtr vertically.</p>	Set	2			

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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
	<p>e) Providing supporting clamps for pump and pipeline.</p> <p>f) Providing pressure gauge of (range 0-10 kg/sq. cm. and 6" dial size of SS316L MOC, glycerin filled with 1/2 " NPT(M) connection may be provided at the pump discharge and flanged check valve and gate valve on delivery side.</p>					
10	Supplying, handling, threading, screwing, fixing.150 mm dia.C class GI pipe as per BIS codes (TATA /Zenith / Jindal make for connection between Delivery of tubewell pump to main grid line in the plant. Item includes supplying and fixing necessary fittings like bends, elbows and reducers etc. as per directions of site engineer. No separate payment shall be made for gaskets/ fasteners.	M.	20			
11	Constructing 1.0 M dia foundation for tube well. Item includes supplying Brick masonry in cement mortor 1:5. At top of the foundation 50 mm thk. CC 1:2:4 shall be laid and shall be plastered in cement mortor 1:4 on all sides to give smooth finish..	Nos	2			



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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
12.	<p>Construction pump house with following requirements:-</p> <p>i) Internal dimension of 3.0m x 3.0 m x 3.0 height</p> <p>ii) 230 thk. Brick work.</p> <p>iii) Foundation with stepped brick work at 1 m below Ground level, with pcc (1:2:4) bedding 800 mm wide and 100 mm thk.</p> <p>iv) IPS Flooring</p> <p>v) Roofing in slope with non asbestos high impact Polypropylene reinforced cement 6 thk. corrugated sheet including all fixtures.</p> <p>vi) Internal plaster 12 mm thk. (1 cement : 6 coarse sand) and dry distemper.</p> <p>vii) External plaster 15 mm thk. (1 cement : 6 coarse sand) and water proof cement paint.</p> <p>viii) Steel frame door with 1 mm thk. MS Plate including necessary handle, locking arrangement and bracings.</p> <p>ix) Steel glazed window with 4 mm thk. glass.</p>	Lums um	2			



	<b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	8 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
13.	Providing and wet drilling ( Core cutting of RCC works) accurate and clean holes ( blind & through) of 25-200 mm diameter and upto 400MM deep without vibration through Diamond drilling machine Hilti DD200 or equivalent having 1:1 & 1:3 gearing ratio for wide range of reinforcements in concrete, control panel indicator to display proper pressure application, capable of drilling at angle from 0 Degree – 45 degree and do overhead application complete in all respect.	Each	2			
14.	Providing and laying reinforced cement concrete of grade M-25(using 20 mm. nominal gauge graded stone aggregate) machine mixed and mechanically vibrated and finished to a fair face but including the cost of centring and shuttering excluding reinforcement in foundation and plinth, for rafts, footings, bases of columns, pedestals, beams, walls, columns, slabs, machine and equipment foundations, pile caps, box sections, pipe supports, etc., complete in all respects as per direction of Engineer-in- Charge.	Cu.M	2			
15.	Supplying, cutting, bending, hoisting, placing in position and binding with 18 SWG annealed wire, HYSD reinforcements for all R.C.C. works including all necessary handling at all heights and depths complete in all respects and as per direction of the Engineer-in Charge.	Te	0.25			

	<b>SCHEDULE OF RATES FOR DRILLING AND DEVELOPMENT OF TUBEWELLS</b>	0000-PNCV-SOR-BW-0001	0	23.10.17	SS	RNS	UPT	9 of 11	
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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
16.	<p>Pressure grouting with the help of threaded nozzle of suitable length fixed in leaking portion of water retaining structures and later removing and making the holes good, checking the leakproofness etc. all complete upto the satisfaction of Engineer-in-Charge.</p> <p>(The rate shall be inclusive of fixing nozzle in old concrete , drilling of holes of suitable size preferably by using electrically operated percussive hammer drill and fixing grouting nozzle in the holes. After nozzles are fully set , a neat cement slurry admixed with water soluble non shrink polymer/monomer or equivalent based chemical shall be injected through the nozzle with low pressure grout pumps at a pressure of about 2.0 Kg/Sq.cm. The water cement ratio of slurry shall not be more than 1:2).</p>	No.	20			
17.	Chipping of exposed concrete & repairing with cement mortar 1:2 (1 cement : 2 coarse sand ) after applying a coat of rich cement slurry over exposed concrete and finishing the surface with neat cement punning, as per direction of Engineer in charge & complete in all respect.	Sqm	50			
18.	Supply, Horizontal and vertical laying, testing (before and after laying) and commissioning of 1.1 KV Grade, XLPE Insulated, PVC inner Sheath, FRLS PVC outer sheathed cables as specified in Technical Specification Doc. No 0000-PNCV-TS-BW-0001 in readymade trenches, on pre-fabricated cable trays / racks, on already installed risers, support hangers, saddles etc. pulling through pipes on walls / columns, steel structures including transportation of cable drums from storage yard to the site, unrolling the drum, laying the required length of cables					

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SL. NO.	DESCRIPTION OF ITEMS	UNIT	QTY	RATE		AMOUNT (in Rs.)
				(in Figure)	(in Words)	
	including supply and fixing of necessary saddles, saddle bars, cable tags, Al clamps for cables laid vertical on walls / columns / structures, risers with all labour, consumable materials and necessary hardware to make installation complete in all respect as per approved standard drawings and direction of engineer-in-charge.					
	3.5C x 120 sq. mm (Al)	m	1000			



**SUBTOTAL OF SL. NO. 1.0 TO 18.0 = RS.** \_\_\_\_\_

**TOTAL PART-B (1.0) :-** \_\_\_\_\_

Signature of Tenderer :

Name & seal of Tenderer :

Place / Date :

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**PART-B (2.0)**

**SCHEDULE OF RATES**

**FOR**

**MECHANICAL & ELECTRICAL WORKS (SUPPLY & ERECTION)**

**FOR**

**DRILLING AND DEVELOPMENT OF TUBEWELLS**

**FOR**

**PROPOSED FERTILIZER PROJECT OF M/s HURL**

**AT**

**GORAKHPUR, U.P.**



**SUPPLY & ERECTION OF EQUIPMENTS AND PIPING WORKS**  
**FOR M/s HURL, GORAKHPUR**  
SCHEDULE OF RATES FOR EQUIPMENTS AND PIPING WORKS

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### 1.0 SUPPLY & ERECTION OF NEW EQUIPMENTS & MACHINERIES ETC.

Complete works of supply & Erection of **Pumps, Motors, Machineries**, flanges, fittings, transportation and inspection charges but not limited to, the following items in accordance with PMS (piping material specification), relevant specifications & drawings indicated in Technical specification under this tender documents and instructions of Engineer-in-charge and as per all provisions of the CONTRACT.

Transportation of Equipments etc. from stores/storage dismantling & reassembly / reinstatement of structures, building sheets (if required) etc., to facilitate for erection, assembly of parts / sub-assemblies; checking, cleaning, chipping and preparing the top of foundation and cleaning of pockets for erection; placing the equipments, machinery etc., on foundation ; leveling, alignment, bolting, welding, grouting; first maintenance, painting & carrying out testing / trial runs ; completion of all jobs as per drawings, scope of work & technical conditions as defined in the enquiry specifications, standards, codes and instructions of Owner/ Consultant. Rates shall include cost of labour, deployment of tools & tackles, consumables, Materials and other associated arrangements required to execute all activities. Grouting shall be paid as per Cl. 2. of SOR when using SHRINKOMP or equivalent. For cost of grouting using ordinary grouting, including supply of materials shall be included in the unit rates of erection of equipments, machinery etc. without any extra cost to Owner.

Sl. No.	DESCRIPTION	UNIT	Approx. Qty. MT	Unit Rate in (Rs.)		Total amount (Rs)
				Fig.	Words	
1.	MOVING MACHINERY (02 NOS PUMPS WITH ITS DRIVE MOTOR ETC.) FOR RESERVIOR ONLY	MT	2			

**SUBTOTAL OF 1.0 = RS. \_\_\_\_\_**



**SUPPLY & ERECTION OF EQUIPMENTS AND PIPING WORKS**  
**FOR M/s HURL, GORAKHPUR**  
 SCHEDULE OF RATES FOR EQUIPMENTS AND PIPING WORKS

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**1.1 GROUTING**

Grouting works include supply of materials, manpower, and necessary arrangement for application of grouting as per technical specification, vendor's requirement and instruction of Owner/Consultant. Machineries with  $\geq 500$  H.P., Araldite of M/s CIBA Geigy or equivalent shall be used SHRINKOM - 20 or Conbextra GP-2 shall be used for low pressure parts. However, for balance / machineries and structurals ordinary 1:1:2 cement grout mix added with anti-shrinkage compound shall be used without any extra cost to Owner.

SI. No.	Description	Unit	Qty.	Unit Rate (in Rs.)		Total Amount (Rs.)
				Figures	In words	
1.	SHRINKOMP-20 Or Conbextra GP-2	M <sup>3</sup>	1.5			

**SUBTOTAL OF 1.1 = RS. \_\_\_\_\_**

**2.0 SUPPLY, FABRICATION & ERECTION OF PIPING**

Complete works of supply of pipes, flanges, fittings & Valves for aboveground installation including all taxes, duties, transportation and inspection charges but not limited to, the following items in accordance with PMS (piping material specification), relevant specifications & drawings indicated in job specification and instructions of Engineer-in-charge and as per all provisions of the CONTRACT.

Transportation of all piping materials from storage point to work site/shop including from shop to work site, cleaning, stacking, prefabrication / fabrication at shop and/or site including marking, cutting, edge preparation, beveling, bending, etc., providing all branch connections, reinforcement pads, threading etc., welding of all fitting and specials, erection including lifting, placing, installing of supports etc. at all levels and locations, leveling, aligning, jointing of flanges including insertion of gaskets, orifice plates, spectacle blinds etc., bolting, joining by threading or welding, surface **preparation & painting** wherever required, Rubber lining connecting the system to the required other system, , pumps,



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including hook up of new lines with existing lines, and welding of Tie-in points, installation of all in line fittings / all type of valves / Instruments / strainers / filters / spray nozzles / traps, safety / control valves rupture disc, flow meters, flow orifice etc. as applicable including shifting to & collection from painting contractor's shop for erection, hydro testing, flushing and blowing, seal/leak testing and making ready for commissioning as per drawings, specification ,standards ,codes, instructions of Owner/Consultant and scope of work defined in Tender. Welding shall include all the examination and testing required such as but not limited to radiography, ultrasonic, magnaflux /dye check etc and pre and post heat treatment wherever required.

Unit rates shall include the cost of supervision, labour, overheads/profits, consumables, and other associated arrangements required to execute all the related activities.

The quoted rates shall include seal welding of thermocouples, Orifice flange plug, nipple, and hydro testing drain and vents caps.

ITEM NO.	DESCRIPTION					UNIT	QTY.	UNIT RATE IN (RS.)		TOTAL AMOUNT (Rs.)
	ITEM	SIZE	SPECN	SCH/THK	MATERIAL			FIGURE	WORDS	
<b>SUPPLY &amp; ERECTION OF PIPING ITEMS</b>										
<b>1.0 PIPE: -</b>										
	CS PIPE	3/4"	B24	SCH 80	SMLS,API 5L GR.B,PE	MTR.	4			
	CS PIPE	1"	B24	SCH 80	SMLS,API 5L GR.B,PE	MTR.	2			
	CS PIPE	6"	B24	SCH 40	SMLS,API 5L GR.B,BE	MTR.	2			
	CS PIPE	8"	B24	SCH 20	ERW,API 5L GR.B, BE	MTR.	200			
					<b>SUB-TOTAL</b>					
<b>2.0 VALVE: -</b>										
	GATE VALVE (SOCW)	1/2"	GAV201	800#	CS BODY ASTM A105,SOCW	No.	4			



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	ITEM	SIZE	SPECN	SCH/THK	MATERIAL			FIGURE	WORDS	
	GATE VALVE (SOCW)	3/4"	GAV201	800#	CS BODY ASTM A105,SOCW	No.	6			
	GATE VALVE (SOCW)	1"	GAV201	800#	CS BODY ASTM A105	No.	2			
	GATE VALVE (FLG)	6"	GAV210	150#	CS BODY ASTM A216 GR WCB,FLNG	No.	1			
	GATE VALVE (FLG)	8"	GAV210	150#	CS BODY ASTM A216 GR WCB,FLNG	No.	5			
	CHECK VALVE (FLG)	8"	CHV210	150 #	CS BODY ASTM A216 GR WCB,FLNG	No.	4			
					<b>SUB-TOTAL</b>					
<b>3.0 FLANGE</b>										
	FLANGE(SLIP ON)	6"	ASME B16.5	150 #	ASTM A105, SO-RF 125 AARH	No.	3			
	FLANGE(SLIP ON)	8"	ASME B16.5	150 #	ASTM A105, SO-RF 125 AARH	No.	19			
					<b>SUB-TOTAL</b>					
<b>4.0 GASKET</b>										
	GASKET(SPRL-WND RF)	6"	ASME B16.20	150#	TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG	No.	4			
	GASKET(SPRL-WND RF)	8"	ASME B16.20	150#	TP304 SS WDG;GPH FLR;TP304 SS INR RNG;CS OTR RNG	No.	20			
					<b>SUB-TOTAL</b>					
<b>5.0 STUD &amp; 2NUTS</b>										





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ITEM NO.	DESCRIPTION					UNIT	QTY.	UNIT RATE IN (RS.)		TOTAL AMOUNT (Rs.)
	ITEM	SIZE	SPECN	SCH/THK	MATERIAL			FIGURE	WORDS	
	STUD & 2NUTS-100MM	6"		3/4	ASTM A193 GR.B7/ASTM A194 GR.2H	No.	32			
	STUD & 2NUTS-110MM	8"		3/4	ASTM A193 GR.B7/ASTM A194 GR.2H	No.	160			
					<b>SUB-TOTAL</b>					
<b>6.0 ELBOW</b>										
	ELBOW 90 <sup>0</sup>	1"(SOC W)	ASME B16.11	3000#	ASTM A105	No.	2			
	ELBOW 90 <sup>0</sup> . 1.5D	6"(BW)	ASME B16.9	SCH 20	ASTM A234 WPB-SMLS	No.	1			
	ELBOW 90 <sup>0</sup> .1.5D	8"(BW)	ASME B16.9	SCH 20	ASTM A234 WPB-WLDD	No.	13			
					<b>SUB-TOTAL</b>					
<b>7.0 TEE</b>										
	TEE 8X8	8	ASME B16.9	SCH 20	ASTM A234 WPB-WLDD, BW	No.	2			
	TEE 8X6	6	ASME B16.9	SCH 20x SCH 40	ASTM A234 WPB-WLDD, BW	No.	1			
					<b>SUB-TOTAL</b>					
<b>8.0 REDUCER</b>										
	REDUCER CONC.(BW)	8X6	ASME B16.9	SCH 20X SCH 40,	ASTM A234 WPB-WLDD	No.	2			



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	ITEM	SIZE	SPECN	SCH/THK	MATERIAL			FIGURE	WORDS	
					<b>SUB-TOTAL</b>					
<b>9.0 SOCKOLET</b>										
	SOCKOLET(SO CW)	8X1"	MSS SP 97	3000#	ASTM A105	No.	2			
	SOCKOLET(SO CW)	8X3/4"	MSS SP 97	3000#	ASTM A105	No.	6			
					<b>SUB-TOTAL</b>					
<b>10.0 BLIND FLANGE</b>										
	BLIND FLANGE	8"	ASME B16.5	150#,RF 125 AARH	ASTM A105	No.	1			
	BLIND FLANGE	6"	ASME B16.5	150#,RF 125 AARH	ASTM A105	No.	1			
					<b>SUB-TOTAL</b>					
<b>11.0 CAP(CS)</b>										
	CAP, THD	1/2"	ASME B16.11	3000#	ASTM A105	No	4			
	CAP, THD	3/4"	ASME B16.11	3000#	ASTM A105	No	6			
					<b>SUB-TOTAL</b>					



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	ITEM	SIZE	SPECN	SCH/THK	MATERIAL			FIGURE	WORDS	
12.0	<b>NIPPLE</b>									
	NIPPLE, NPT-PLN-THD	1/2"	ASME B36.10	SCH160	SMLS,API 5L GR.B	No	4			
	NIPPLE, PLN-THD	3/4"	ASME B36.10	SCH160	SMLS,API 5L GR.B	No	2			
	NIPPLE, NPT-PLN-THD	3/4"	ASME B36.10	SCH160	SMLS,API 5L GR.B	No	10			
					<b>SUB-TOTAL</b>					

**SUB-TOTAL OF 2.0 = RS. \_\_\_\_\_**



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### 3.0 PIPE SUPPORTS

#### 3.1. a SUPPLY & FABRICATION OF PIPE SUPPORTS

Supply, fabrication and erection of all types of pipe supports like clamps, saddle, guide stops, cradles, turn buckles, anchors, T-posts; stockade/trestle and pipe bridge for overhead piping; frames for canopy, approach ladders and platforms, crossover, cable tray supports, Crash barrier etc. including painting suitable for highly corrosive area as per specification labour and supervision & complete work as per drawings, specifications and instruction of Engineer-in-charge. (Bolts, nuts, washers, U-clamps etc. for supporting shall be supplied by the Contractor within the rates quoted. These items will not be measured and paid separately). The work is to be completed in all respect as per scope of work and specification.

**CATEGORY**  
PS 1

**MATERIAL OF CONSTRUCTION**  
Means carbon steel supports.

Sl. No.	Category of Supports	Unit	Qty.	Unit Rate (Rs.)		Total Amount(Rs.)
				In figures	In words	
1.0	PS 1	MT.	1.0			

**TOTAL OF 3.1 a = RS. \_\_\_\_\_**



**SUPPLY & ERECTION OF EQUIPMENTS AND PIPING WORKS**  
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**3.1. b ERECTION OF PIPE SUPPORTS**

Erection of supports fabricated by Contractor and/or supplied by vendors. The rate shall include cost of erection as part of piping, welding (including dissimilar welding), labour, consumables, application of finish paint, overheads/profits etc to complete all related activities as per ITB and instruction of Owner/ Consultant.

Sl. No.	Category of Supports	Unit	Qty.	Unit Rate (Rs.) In Rupees		Total Amount (Rs.)
				In figures	In words	
1.0	PS 1	MT.	1.00			

**SUBTOTAL OF 3.1. b = RS. \_\_\_\_\_**

**4.0 RADIOGRAPHY**

The unit rate shall include cost of radiograph viewer and films, consumables, scaffolding, manpower, overheads/profits etc. Payment shall be made only for those films after examination for joints found acceptable as per codes, standards & NIT. Films for defective joints shall not be paid. Overlapping Length of radiography film is not payable.

Sl. No.	Description	Unit	Total Quantity	Unit Rate In (Rs.) In Rupees		Amount (Rs.)
				In Figure	In words	
1.0	<b>At outside, the place of erection using film size</b>					
<b>b</b>	4" wide film	Inches	20			
2.0	<b>In-situ (erected position) using</b>					
<b>b</b>	4" wide film	Inches	20			

**SUBTOTAL OF 4.0 = RS. \_\_\_\_\_**



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**5.0 SUPPLY, ERECTION, TESTING & COMMISSIONING OF ELECTRICAL ITEMS**

➤ **General instruction to bidder:**

1. The Schedule of Rates is to be read in conjunction with Technical Specification: Electrical Works (Supply & Erection) and other relevant sections / sub sections.
2. This being an item rate contract, the unit rate shall prevail, does any discrepancy arise between unit rate and total price, unit rate shall be considered for evaluation and arriving at the Contract Value.
3. Owner / Consultant reserves the right to interpolate or extrapolate the rate for any item, which is not covered in the Schedule of rates, from the rates available for similar item / work in the Schedule of Rates.
4. Whenever it is mentioned in the specifications that the bidder shall perform certain work or provide certain facilities / materials or certain item or activity is in bidder's scope of services it is understood that the bidder shall do so at his cost within the item rates unless expressly stated otherwise.
5. Unit rates for erection shall inclusive of Unloading from Truck / Trailer, transportation from store (at site), handling, the cost of labour, supervision, all consumables, cost towards providing erection materials & hardware, necessary tools and tackles, and providing all the required facilities for execution and inspection, testing and commissioning, guarantees etc. Minor repair and touch painting work towards providing all required facilities for execution shall be in bidder's scope.
6. Work shall involve, at every stage, correct identification of all equipment including loose equipment from stores, identifying spare items / excess items, listing the same and carefully storing them under the custody of the contractor. Information to this extent shall be passed on to the concerned Engineer-in-charge / owner. Certification of balance items after erection and return to the Engineer in-charge / Owner so assigned.
7. All equipment shall be deemed to have clear tags, descriptive letter writing indicating locations / sources (from - to), cable sizes, circuit no., unit no., and any other writing required to make installation completely informative. All costs in view of above shall be deemed to have been included in installation / commissioning.
8. All primary & secondary injection tests & testing of relays and other equipment as per relevant IS, code of practice for testing and commissioning shall be deemed to have been included for testing & commissioning. No extra charges shall be provided for that.
9. Wherever quantity is indicated as lot, estimated quantity shall be indicated by the Contractor.



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10. Any item specifically not indicated but considered necessary for completion of the job shall also be quoted by the Contractor under separate sheet. Work shall also include any other item of work required to complete the work in all respect as per the specifications, drawings and instructions of the Engineer-in-Charge whether specifically mentioned or not in the tender document.
11. This being a grass root job, the Contractor must visit HURL, Gorakhpur sites to assess the quantum and nature of work before quoting. However, the Contractor shall inform PDIL / HURL, 1 week prior to their visit.
12. Man-days rate for skilled, semi-skilled, un-skilled labour and engineers shall also be indicated to cover any other work not specified herein, keeping Govt. circular on wages in consideration and in conformity with contract regulation and abolition act.
13. Quantities mentioned in the Schedule of Rates are indicative and not exhaustive in nature. Payment shall be made as per actual quantity used / certified at site by Engineer-in-charge.
14. Contractor shall indicate the prices of all electrical items as per attached documents. The quantities indicated in Schedule of Rates are estimated quantities and may change during detailed engineering as per site condition.  
  
Quantity of some or all the items may increase or decrease up to any extent at the time of actual execution, however the total contract value shall be limited to total increase or decrease of 25% only. Contractor shall supply the equipments at the same rate as per these change quantities, irrespective of the changes in quantity of individual items.
15. Un-priced Price Schedule indicating quoted against each item shall be attached with bid documents for conformity that all the items have been quoted. Unit rate sought, for which quantities have not been indicated in the schedule of rates, shall also be quoted. However, the same shall not be considered for evaluation. Payment shall be made as per quantities executed.
16. Owner reserve their right to execute any additional works / extra works, during the execution of work, either by themselves or by appointing any other agency, even though such works are incidental to and necessary for the completion of works awarded to the Contractor. In the event of such decisions taken by Owner, Contractor is required to extend necessary cooperation, and act as per the instructions of Engineer-in-Charge.
17. Before procurement of any equipment / material, the Contractor shall submit drawing / document, Compliance Statement supported by Product Catalogue for review / approval. PDIL / HURL shall indicate the quantity of equipment / material to be procured during approval of respective equipment Document.



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**SUPPLY, ERECTION, TESTING & COMMISSIONING OF ELECTRICAL ITEMS**

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT RATE (in Rs.)		AMOUNT (in Rs.)
				FIGURES	WORDS	
1.	Supply, Installation, testing and commissioning of following Wall Mounted DOL Starter Panel as specified in Technical Specification Doc. No. EM000-PNEL-TS-0801 including supply and fabrication of epoxy painted MS frame, operational and functional checking, drilling of gland plates with requisite holes, fixing of cable glands, plugging of all unused cable entries and other holes found in the boards to make the same waether proof with all labour and consumable materials to make installation complete as per approved drawings, specifications and directions of engineer-in-charge.					
1.1	415 V, 3 Ph & N, Wall mounted sheet steel enclosed, IP-65 suitable for construction water pump motor complete with all accessories along-with rolled Aluminium double compression cable glands and lugs.	Nos.	2			
2.	Supply, Horizontal and vertical laying, testing (before and after laying) and commissioning of 1.1 KV Grade, XLPE Insulated, PVC inner Sheath, FRLS PVC outer sheathed cables as specified in Technical Specification Doc. No. EM000-PNEL-TS-0801 in readymade trenches, on pre-fabricated cable trays / racks, on already installed risers, support hangers, saddles etc. pulling through pipes on walls / columns, steel structures including transportation of cable drums from storage yard to the site, unrolling the drum, laying the required length of cables including supply and					





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**SUPPLY, ERECTION, TESTING & COMMISSIONING OF ELECTRICAL ITEMS**

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT RATE (in Rs.)		AMOUNT (in Rs.)
				FIGURES	WORDS	
	fixing of necessary saddles, saddle bars, cable tags, Al clamps for cables laid vertical on walls / columns / structures, risers with all labour, consumable materials and necessary hardware to make installation complete in all respect as per approved standard drawings and direction of engineer-in-charge.					
2.1	3.5C x 120 sq. mm (Al)	Mtrs.	1000			
3.	<b>CABLE TRENCH MATERIAL &amp; ACCESSORIES</b>					
3.1	Supply, Spreading of approved fine river sand in the cable trench around cables up to a depth of 250 mm (100 mm below the centre line of cable and 150 mm above cable the centre line of cable) including all labour and materials to make the installation complete in all respect as per approved drawings, specifications and directions of engineer-in-charge.	M <sup>3</sup>	200			
3.2	Supply, Spreading of approved first class bricks of Class B 9"x 4.5" x 3" bricks for cable trenches for cable protection including all labour and materials to make installation complete in all respect.	Nos.	15000			
3.3	Excavation 500 mtr. length x 800 mm wide x 750 mm deep for laying of cables including disposal of excavated earth, lead up to 100 mtrs. and lift up to 1.5 mtrs., disposed earth to be levelled and neatly dressed	M <sup>3</sup>	300			
3.4	Back filling with excavated earth in trench including consolidating each deposited layer by ramming, dressing etc.	M <sup>3</sup>	100			



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**SUPPLY, ERECTION, TESTING & COMMISSIONING OF ELECTRICAL ITEMS**

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT RATE (in Rs.)		AMOUNT (in Rs.)
				FIGURES	WORDS	
4.	CABLE ROUTE MARKER					
	Supply & installation of Cable route markers of Round shape made of MS of dia 200mm with suitable engraving as of HT/ LT/ Control/ Data Cable jointed with angle of 30X30X5 mm grouted in concrete of size 150mm x150mm x 500mm.	Nos.	10			
5.	MAN-HOUR RATE					
5.1	Electrician / Wireman	Man Days	Unit Rate*			
5.2	Cable Jointer	Man Days	Unit Rate*			
5.3	Supervisor	Man Days	Unit Rate*			
5.4	Helper	Man Days	Unit Rate*			

“\*” : These items shall not be considered in evaluation. The rates indicated above are subject to acceptance of HURL. For acceptance of these rates the bidder shall furnish the justification to establish the reasonables of the rates before any assignment is taken up by the contractor on HURL's request.

SUBTOTAL OF 5.0 = RS. \_\_\_\_\_

TOTAL PART-B (2.0) :- \_\_\_\_\_

Signature of Tenderer :

Name & seal of Tenderer :

Place / Date :