

TWO-BID Open e –TENDER

Hindustan Urvarak & Rasayan Limited, Sindri,(hereinafter referred as HURL or Owner or Client) invites electronic online bids (e Tender) through HURL web site www.hurl.net.in (for ref. only) and CPP web site <https://eprocure.gov.in/eprocure/app> under Two Bid system (Part I :Techno commercial bid & Part II: Price Bid or BOQ) from bonafide and experienced bidders with sound technical and financial standing and capabilities & fulfilling the qualifying requirement for the tendered job as given in the NIT.

HURL, Sindri request bidders to quote in line with tender documents uploaded (refer attached Index) & submit the offer on our e-portal <https://eprocure.gov.in/eprocure/app>.

Upload of Tender: Tenderers are advised to download Notice Inviting Tender along with other tender documents and submit the declarations and tender documents along with clear scanned copies of requisite documents to substantiate the claim towards their credentials while the tender shall be submitted online in soft copy on our e-tendering portal.

All interested bidders have to submit Techno Commercial Bid (Part I) & Price Bid (BOQ) (Part II) strictly in the tender format available online on e-portal. No other form of bid shall be accepted and the tender shall be summarily rejected. **Bids shall be digitally signed and uploaded by someone legally authorized and competent on behalf of his firm / company i.e Bidder and relevant documents w.r.t. the same to be uploaded along with the bid by the bidders. The Power Of Attorney of such person needs to be furnished along with bid.**

Earnest Money Deposit has to be submitted as per NIT /Tender instructions before the due date and time of tender techno commercial bid opening, failing which the bid shall be liable for rejection.

For & on behalf of
HURL, Sindri

Manager, Contracts

SECTION – I : NOTICE INVITING TENDER (NIT)

1. Online bids are invited on two bid system for “**Renovation of Technical Building at HURL Sindri Project**” **Tender No.: HURL/Sindri/C&M/21-22/1911 Dated 22.03.2022.** Manual bids shall not be accepted.
2. Tender documents may be downloaded from HURL web site www.hurl.net.in (for reference only) and CPPP site <https://eprocure.gov.in/eprocure/app> as per the schedule as given in CRITICAL DATE as in Point no. 4 of NIT.
3. Type of Tender: Open Tender – Two bid – Percentage Rate
4. **Critical Date Sheet:**

Published Date	Refer CPP Portal
Bid Document Download / Sale Start Date	Refer CPP Portal
Bid Submission Start Date	Refer CPP Portal
Bid Document Download / Sale End Date	Refer CPP Portal
Bid Submission End Date	Refer CPP Portal
Bid Opening Date	Refer CPP Portal

5.0 Qualifying Requirements / Pre-Qualification Criteria (PQC)

Following are the Qualifying Requirements / Pre-Qualification Criteria (PQC) for the subject package for technical evaluation:

- 5.1 BIDDER must have satisfactorily executed Similar works* in Government Sector or any reputed Private Sector Enterprises during last seven (07) years ending last day of month previous to the one in which bids are invited i.e. 28-02-2022 and shall meet either of followings work order criteria (Value excluding GST) mentioned below,:

One completed work with executed value (Exclusive of GST) not less than INR 400 Lakhs

OR

Two completed works each with executed value (Exclusive of GST) not less than INR 250 Lakhs

OR

Three completed works each with executed value (Exclusive of GST) not less than INR 200 Lakhs

***Similar nature of works means:** The bidder must have successfully completed Construction / renovation of building in the Government sector or large reputed private sector enterprises.

Note 1- For above, job executed by bidder for its own plant / project cannot be considered as experience for the purpose of technical criteria evaluation. However, jobs executed for Subsidiary / Fellow subsidiary /

Holding company will be considered as experience for the purpose of technical criteria evaluation 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.

Note 2 - In case of bidder is submitting the work order/contracts of minimum value as mentioned in above table citing working experience in multiple/various services, then only the work experience of such services falling under the broadly classified category defined in similar works would be considered for the purpose of meeting evaluation criteria.

Note 3 - In case of running contracts, if the contract value executed till last day of the month previous to the one on which NIT is invited i.e. 28-02-2022 is equal to or more than minimum prescribed value as mentioned above, such experience will also be taken into consideration provided that the bidder has submitted satisfactory work execution certificate to this effect issued by end user/owner.

As a documentary proof, the bidder shall submit signed and stamped copies of the following documents in technical bid-

- 5.1.1 Copy of Work Orders performed in last 7 years with full technical details including detailed Scope of the Work, **BOQ**, Contract value and Completion Period.
- 5.1.2 Completion/Acceptance Certificate from End User/OWNER regarding satisfactory completion indicating the period of completion. The Completion / Acceptance Certificate shall clearly indicate LOI / Work Order no., Name of Work, Executed work value, Service Tax/GST, Contract period and actual Date of Completion. Completion certificate for works issued by a private organization shall be supported by **Form 26AS / TDS certificates**.
 - 5.1.2.1 Wherever executed value is not mentioned in the completion certificate, the copy of certified bills with service tax/GST details as applicable / Separate certificate from respective client (WO issuing company /Engineer In Charge) regarding executed value with service tax/GST details, date of completion etc., shall also be accepted towards fulfillment of Pre-Qualification criteria (PQC) 5.1, if same is submitted along with completion certificate.
 - 5.1.2.2 Completion certificate submitted by the bidders shall have clarity with respect to whether service tax/GST is included/excluded in the executed value of the completed job, towards fulfillment of PQC 5.1 and same shall be ensured by the bidders by submitting proper and relevant documents as required (e.g. separate certificate from respective client regarding service tax/GST) along with completion certificate.
 - 5.1.2.3 If no clear documents as mentioned above regarding service tax/GST component included/extra/not applicable with respect to the executed value of the job mentioned in completion certificate is submitted by the bidder & In case Service tax/GST amount / component is also not specified in the submitted completion certificate, then the amount equivalent to rate of applicable service tax/GST as considered by HURL for the subject tender shall be deducted from the value of completed job mentioned in the completion certificate to arrive at the value of the completed job without service tax/GST.
 - 5.1.2.4 In case of sub contract orders, credential as sub-contractor for above PQC shall be considered only when such work orders for sub contract has been issued with approval or written permission of end user/owner/consultant of the owner of the contract from the scope of work of which contractor under the contract has sub contracted a part of or entire work under such work order. In this regard, the bidder has to submit a certificate from the end user/owner/consultant of the owner stating that the main contractor has intimated them about the engagement of sub-contracting OR have been

allowed/ permitted as a sub-contractor. Based on such Sub contracted portion of the job actually executed by the bidder as subcontractor, PQC evaluation shall be done i.e. In case only part job is subcontracted, similar job & executed value etc for the part job only shall be considered for PQC and not the full job.

- 5.1.3 Similar work experience documents submitted in technical bid shall only be considered for technical bid evaluation. Any shortfall document related to submitted similar work experience in technical bid, if asked by HURL (As per clause 25 of ITB, Section -II of tender document) and submitted by the bidder as per given timeline shall be considered as part of technical bid.

Note- Any other/new work experience submitted by the bidder through mail / hard copy submission / by post / added through shortfall document submission shall not be considered for Technical bid evaluation.

5.2 Average Annual financial turnover during last three (03) financial years of the bidder should be at least INR 150 Lakhs. For evaluation of same, Bidder shall submit followings,

- Audited Annual Statements (Balance Sheet and Profit & Loss account) of the company for last three (3) financial years i.e. 2018-19, 2019-20 and 2020-21. Audited annual statement shall be certified by CA with membership number.

Or,

- Certificate issued by Chartered Accountants or statutory auditors of the bidding entity certifying the Annual Turnover for the Three preceding financial years i.e., 2018-19, 2019-20 & 2020-21

Note –

(1) If audited financial results of the immediate preceding financial year is not available, the bidder has an option to submit the audited financial results of the three (03) financial years immediately prior to that financial year. The same will be considered for evaluation of average financial turnover. In this case, The bidder shall submit followings in techno-commercial bid,

- (a) Duly filled Annexure-14 i.e. “Format for Certificate from CEO / CFO regarding non-availability of financial statement for last financial year” enclosed in Section-VII: Forms and Procedures (NIT) of tender document.
- (b) Completely filled Annexure-15 i.e. for “Certificate from CA regarding non-availability of financial statement for last financial year” enclosed in Section-VII: Forms and Procedures (NIT) of tender document.

(2) Other income shall not be considered for arriving at annual turnover.

5.3 The bidder shall have valid company registration, PAN card issued by Income Tax department and Valid GSTIN registration. As a documentary proof of same, the bidder shall submit signed, stamped and scanned copy of Certificates like valid GSTIN Registration certificate (GSTIN status shall be shown as active on GST portal.), registration with EPF Organization, PAN card issued by Income Tax Department.

The bidder shall submit following details also in technical bid as applicable,

- i) **For Proprietorship firm** - Name of the proprietor to be mentioned. The bidder shall submit copy of Affidavit of proprietorship in original duly notarized (Latest).
- ii) **For partnership firms** – The bidder shall submit copy of Affidavit in originals duly notarized, confirming the current status of the firm along with names of the partners or Copy of partnership deed duly notarized (latest) to be submitted
- iii) **For limited companies**– The bidder shall submit copy of notarized copy of Memorandum and Articles of Association and list of directors.

6.0 Bid Submission:

Bids shall be submitted online only at CPPP website: <https://eprocure.gov.in/eprocure/app>. Tenderer/Contractor is advised to follow the instructions provided for online submission of bids.

Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. Any bid document submitted through mail or Hard copy submission shall not be considered in bid evaluation.

7.0 Not more than one tender shall be submitted by one contractor or contractors having business relationship. Under no circumstance will father and his son(s) or other close relations who have business relationship with one another (i.e when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the tenders of both parties liable to rejection.

8.0 Tenderer who has downloaded the tender from the HURL website www.hurl.net.in and Central Public Procurement Portal (CPPP) website <https://eprocure.gov.in/eprocure/app>, <https://eprocure.gov.in/epublish/app> shall not tamper/modify the tender form including downloaded price bid template in any manner. In case the same is found to be tampered/modified in any manner, tender will be completely rejected and EMD would be forfeited and tenderer is liable to be banned from doing business with HURL.

9.0 Intending tenderers are advised to visit again HURL web site www.hurl.net.in and CPPP website <https://eprocure.gov.in/eprocure/app> regularly till closing date of submission of tender for any corrigendum / addendum/ amendment.

10.0 EMD Payment: Earnest Money Deposit is to be deposited **electronically by ECS/ RTGS/NEFT** in the account of “**Hindustan Urvarak and Rasayan Limited, payable at Delhi**” at the below mentioned details or in the form of an irrevocable bank guarantee . Bidders are required to submit the details of EMD payment at the time of Bid Preparation.

BANK Details for EMD Payment through ECS/NEFT/RTGS:

Bank Name – State Bank of India

IFS CODE: SBIN0004803, Account No: 38387231141.

11.0 EMD value: **Rs. 5,00,000.00** (Rupees Five Lakhs only).

12.0 Price Bid Validity date 120 days from the date of opening of Techno-Commercial bids.

13.0 Micro and Small Enterprises (MSEs) shall be exempted from paying Earnest Money Deposit. MSEs seeking exemption and benefits should enclose/upload in e-tender portal an attested/self-certified copy of following registration certificate as a part of his bid, failing which they run the risk of their bid being passed over as ineligible for the benefits applicable to MSEs.

i) Ministry of MSME vide Gazette notification no. CG-DL-E-26062020-220191 dated 26.06.2020 had notified certain criteria for classifying the enterprises as Micro, Small and Medium Enterprises and specified, form and procedure for filing the memorandum (Udyam Registration) w.e.f. 01.07.2020 (for complete details of policy refer website of Ministry of MSME i.e. <https://msme.gov.in/>) Accordingly, Micro and Small Enterprises (MSEs) shall be required to submit Udyam Registration Certificate for availing benefit under Public Procurement Policy for MSEs- 2012

ii) An enterprise registered prior to 30.06.2020 and who is not re-registered with Udyam Registration, shall continue to be valid for a period up to 31.03.2022. Such enterprise shall submit EM Part-II or Udyog Aadhaar Memorandum (UAM) for availing benefits of PPP-2012.

14.0 Bids will be opened as per date/time as mentioned in the Tender Critical Date Sheet. After online opening of Technical-Bid, the results of their qualification as well as the date of Price-Bid opening will be intimated later.

15.0 **LOCAL CONDITIONS :**

15.1 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 labor, 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.

15.2 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 at Sindri, Dhanbad, Jharkhand and rules related to work permit and visa requirements Sindri, Dhanbad, Jharkhand 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 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.

16.0 Bidders are required to carefully go through the entire tender document including scope of work, GCC, SCC and SOR before quote. Bidders should contact HURL in case of any query in tender document before bid submission. Once the bid submitted, HURL will assume that the bidder has understood all the aspects of tender document works and submitted bid accordingly.

17.0 HURL reserves the right to reject any or all the bids without assigning any reason whatsoever and does not bind itself to accept the lowest or any other bid. The bids which are incomplete in any respect are liable to be rejected. HURL is at liberty to take any of the following actions in case of this NIT:

- a) To cancel the tender without reference to the bidders.
- b) To postpone the due date and time.

18.0 Bidders shall not be entitled to claim any costs, charges, expenses or incidentals for or in connection with the preparation and submission of their bids even though HURL may withdraw the enquiry/tender or reject all bids.

19.0 **SITE VISIT: If needed**, the bidder and his authorized personnel will be granted permission by BUH / General manager, HURL Sindri Project to enter upon HURL Sindri project premises and may visit the site before quoting their rates.

20.0 HURL reserves the rights to assess bidder's capability and capacity to perform the contract.

21.0 To know more about HURL, please visit our website www.hurl.net.in

SECTION – II : INSTRUCTIONS TO BIDDERS (ITB)

Sr. no	Index
1	Introduction
2	General Information
3	Content of Bidding Documents
4	Benefits To MSEs
5	Cost of Bidding
6	Clarification on Bidding Documents
7	Corrigendum/ Amendment to Bidding Documents
8	Language of Bid
9	Bid Proposal
10	Documents Comprising the Bid
11	Bid Prices
12	Price Basis
13	Bid Currencies
14	Earnest Money Deposit (EMD) / Bid Security / Guarantee
15	Performance Security / Performance Bank Guarantee (PBG)
16	Confirmation of BGs through Structured Financial Messaging System (SFMS)/SWIFT
17	Ineligibility For Future Tenders
18	Period of Validity of Bids (Techno-Commercial Bid and Price Bid)
19	Nil Deviation
20	Format and Signing of Bid
21	Submission of Bids
21.1	Physical bid
21.1.1	Earnest Money Deposit etc.
21.2	on-line

21.2.1	Techno-Commercial Bid
21.2.2	Price Bid
22	Deadline for Submission of Bids
23	Modification and Withdrawal of Bids
24	Opening of Bids
25	Clarification on Bids
26	Preliminary Examination of Techno-Commercial Bids
27	Evaluation Of Techno-Commercial Bids
28	Preliminary Examination Of Price Bid
29	Discrepancies In Bid
30	Evaluation Criteria
31	Evaluation Of Bids
32	Contacting The Employer
33	Employer's Right To Accept Any Bid And To Reject Any Or All Bids
34	Award Criteria
35	Construction of Contract
36	Notification of Award
37	Corrupt or Fraudulent Practices
38	Fraud Prevention Policy
39	Indian Agents
40	Transfer of Bid Documents
41	Restrictions on procurement from a Bidder of a country which shares a land border with India
42	HURL right to assess the capabilities and capacity of Bidder
Annexure-1	Checklist of documents to be submitted:
Annexure-2	Guidelines for online Bid Submission and Reverse Auction.

1. Introduction	Hindustan Urvarak & Rasayan Limited (HURL) is a joint venture company of Coal India Limited (CIL), NTPC Limited (NTPC) and Indian Oil Corporation
------------------------	---

		<p>Limited (IOCL) as the lead promoters with Fertilizer Corporation of India Limited (FCIL) and Hindustan Fertilizer Corporation Limited (HFCL) as other two partners.</p> <p>HURL referred to herein as ‘the Owner’, intends to engage an agency for supply of Goods & related Services or Services as per specifications, Scope of Work as detailed in the Bidding documents.</p>														
2.	General Information	<p>The prospective Bidders are invited to submit a “Technical & Commercial Bid” and “Price Bid” for the package. Methodology for submission of Bid has been detailed hereunder in this document.</p> <p>Applicability of Reverse Auction may be seen on the CPP website / NIT.</p>														
3.	Content of Bidding Documents	<p>The items and/or services required, bidding procedures, order/contract terms and technical requirements are prescribed in the bidding documents/Bidding Documents.</p> <p>The bidding documents include the following sections:</p> <table><tr><td>Section-I</td><td>Notice Inviting Tender (NIT)/Tender Enquiry/Invitation for Bid (IFB)</td></tr><tr><td>Section-II</td><td>Instruction to bidder (ITB)</td></tr><tr><td>Section-III</td><td>General Conditions of Contract (GCC)</td></tr><tr><td>Section-IV</td><td>Standard Conditions of Contract (SCC)</td></tr><tr><td>Section-V</td><td>Scope of work, Technical specifications and Other Terms and Conditions</td></tr><tr><td>Section-VI</td><td>SCHEDULE OF RATES (SOR) AND BOQ</td></tr><tr><td>Section-VII</td><td>Forms and Procedures</td></tr></table> <p>The Bidder is expected to examine all instructions, forms, terms, conditions, specifications and other information in the bidding documents. Failure to furnish all information required as per the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder’s risk and may result in rejection of its bid.</p>	Section-I	Notice Inviting Tender (NIT)/Tender Enquiry/Invitation for Bid (IFB)	Section-II	Instruction to bidder (ITB)	Section-III	General Conditions of Contract (GCC)	Section-IV	Standard Conditions of Contract (SCC)	Section-V	Scope of work, Technical specifications and Other Terms and Conditions	Section-VI	SCHEDULE OF RATES (SOR) AND BOQ	Section-VII	Forms and Procedures
Section-I	Notice Inviting Tender (NIT)/Tender Enquiry/Invitation for Bid (IFB)															
Section-II	Instruction to bidder (ITB)															
Section-III	General Conditions of Contract (GCC)															
Section-IV	Standard Conditions of Contract (SCC)															
Section-V	Scope of work, Technical specifications and Other Terms and Conditions															
Section-VI	SCHEDULE OF RATES (SOR) AND BOQ															
Section-VII	Forms and Procedures															
4.	Benefits To MSEs	<p>Micro and Small Enterprises (MSEs) shall be exempted from paying Earnest Money Deposit.</p> <p>Further, in case of tenders where splitting of quantity is possible, participating MSEs quoting price within price band of L1 + 15 percent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 25 percent of total tendered value. In case of more than one such MSE, the supply will be shared proportionately (to tendered quantity).</p> <p>The benefit as above to MSEs shall be available only for Goods/Services produced & provided by MSEs.</p>														

		MSEs seeking exemption and benefits should enclose/upload in e-tender portal an attested/self-certified copy of registration certificate as a part of his bid, failing which they run the risk of their bid being passed over as ineligible for the benefits applicable to MSEs.
5.	Cost of Bidding	The Bidder shall bear all costs associated with the preparation and submission of its bid and the Owner will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.
6.	Clarification on Bidding Documents	<p>A prospective Bidder requiring any clarification of the Bidding Document shall put the query under Clarification tab of the on-line bid at least three days prior to the clarification end date. OWNER will respond to any request for clarification or modification of the bidding documents that it receives within the time line specified.</p> <p>OWNER will post the Clarifications under Clarification tab at e-tender i.e., CPP website. Bidders can view these clarifications.</p> <p>Bidders are advised to regularly check under Clarification tab regarding posting of clarification, if any.</p> <p>Bidders must check the Clarifications issued before submission of Bid. Should the Owner deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so and upload the amendments in the tender on the e-tender portal.</p>
7.	Corrigendum / Amendment to Bidding Documents	<p>At any time prior to the deadline for submission of bids, OWNER may, for any reason, whether at its own initiative, or in response to a clarification requested by a prospective Bidder, amend the bidding documents.</p> <p>The corrigendum's/amendment's will be posted in the tender on the e-tender portal for viewing by the Bidder. The amendments will be binding on Bidders and it will be assumed that the information contained therein will have been taken into account by the Bidder in its bid. Bidders are advised to regularly check the tender regarding posting of Amendments, if any.</p> <p>To give prospective Bidders reasonable time to take the corrigendum/amendment into account in preparing their bid, OWNER may, at its discretion, extend the deadline for the submission of bids.</p>
8.	Language of Bid	The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Owner, shall be written in English language. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in English. In such case for purposes of interpretation of the Bid such translation shall govern.
9.	Bid Proposal	<p>Bid shall be complete in all respects and shall be submitted with requisite information and Attachments. It shall be free from any ambiguity.</p> <p>For preparation of Bids, Bidders are expected to go through the complete bidding documents carefully. Material deficiencies in providing the information requested may result in rejection of the Bid.</p>

10	Documents Comprising the Bid	<p>The Bid shall comprise of following components:</p> <p>Technical Bid:</p> <p>The following documents are to be furnished by the Bidder as part of the Technical Bid:</p> <ol style="list-style-type: none"> I. Power of Attorney as per requirement mentioned in NIT. II. Signed, Stamped and Scanned copy of proof for payment of Earnest Money Deposit (EMD) / MSE Certificate for exemption. III. Similar work experience Documents as required in accordance with Clause 5.1 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document IV. Audited Annual Statements (Balance Sheet and Profit & Loss account statements) in accordance with Clause 5.2 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document V. Signed, Stamped and Scanned copy of Company Registration certificate, GSTIN Registration, PAN Card and other documents in accordance with Clause 5.3 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document VI. Signed, Stamped and Scanned copy of last three financial year ITR VII. Signed, Stamped and Completely filled with required details in Annexure-1, Annexure-2A, Annexure-2B and Annexure-2C in Forms and Procedures i.e., Section VII. VIII. Signed, Stamped and Scanned copy of Format for Electronics Payment (Enclosed as Annexure-3 to Forms and Procedures i.e., Section VII) IX. Signed, Stamped and Scanned copy of Declaration on company letter head as specified in Annexure-4 in Forms and Procedures i.e., Section VII. X. Signed, Stamped and Scanned copy of Tender Acceptance Letter as as specified in Annexure-5 in Forms and Procedures i.e., Section VII. XI. Signed, Stamped and Scanned copy of No deviation Certificate as specified in Annexure-6 in Forms and Procedures i.e., Section VII. XII. Signed, Stamped and Scanned copy of Certificate from CEO/MD/ Legally Authorized Signatory, in the format as enclosed as Annexure-7 to Forms and Procedures i.e., Section VII to Bidding Document shall be furnished certifying that the data and documents furnished by them in respect of Techno-Commercial Evaluation are true and correct including the contents thereof. However, if at any point of time the declarations given in bid are found to be incorrect, HURL shall have the full right to terminate the contract and take any action as per provisions of contract including forfeiture of EMD/Security Deposit. XIII. Acceptance to Fraud Prevention Policy of HURL, for which the bidder has to submit Signed, Stamped and Scanned copy of Form of Acceptance of Fraud Prevention Policy of HURL. (Enclosed as Annexure-8 to Forms and Procedures i.e., Section VII).
----	---	--

		<p>XIV. Certificate related to Restrictions on procurement from a Bidder of a country which shares a land border with India" i.e. (Enclosed as Annexure-9 to Forms and Procedures i.e., Section VII).</p> <p>XV. Documents in compliance to Scope of Work and Technical Specifications Any other document asked for in the Bidding Documents.</p> <p>XVI. Any Other Document asked for in the Bidding Document</p> <p>Price Bid:</p> <p>The Price bid is to be submitted in the BOQ provided in the Tender at https://eprocure.gov.in/eprocure/app.</p> <p>Bidders are advised to fill the BOQ and upload the same on the portal. Bidder should not tamper/modify download price bid template. In case if the same is found to be tampered / modified in any manner, bid will be rejected and EMD would be forfeited and Bidder is liable to be banned from doing business with HURL for a period of 2 years.</p>
11	Bid Prices	<p>Bidders shall quote such that the bid price covers all the Supplier's obligations mentioned in or to be reasonably inferred from the bidding documents including all requirements in accordance with the requirements of the Technical Specifications & Scope of Work. Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the bidding documents.</p> <p>Bidders shall give a breakdown of the prices in the manner and detail called for in the Bill of Quantity (BOQ).</p>
12	Price Basis	Bidders are required to quote price on the price basis as per Scope of Work / stipulated in the SCC.
13	Bid Currencies	All prices to be quoted by the bidders will be in Indian Rupees only, unless otherwise mentioned in the Special Conditions of Contract, on FIRM price basis and to remain valid during the currency of the Contract.
14	<p>EARNEST MONEY DEPOSIT (EMD) / BID SECURITY / GUARANTEE:</p> <p>The Bidder shall furnish, as part of his bid, a Earnest Money Deposit in the amount as stipulated in NIT/IFB/Tender Enquiry. Bidders are required to upload Signed, Stamped and Scanned copy of the Certificate as part of Technical Bid, failing to which their bids are liable for rejection.</p> <p>i. The Earnest Money Deposit (EMD) shall, at Bidders option, be submitted in the following forms:</p> <p>a) electronically by RTGS / NEFT / ECS in the account of HURL details as given in subsequent paragraphs</p> <p>or</p> <p>b) in the form of an irrevocable bank guarantee (Format of Bank Guarantee for EMD is enclosed as Annexure 10 of Section VII : Forms And Procedures of tender document).</p> <p>The format of Bid Guarantee (BG) towards EMD shall be in accordance with the form of EMD included in the bidding documents (Annexure 10 of Section VII (Forms and</p>	

Procedures)). The BG towards EMD shall remain valid for a period of forty-five (45) days beyond the original Bid validity period or beyond any extension in the period of Bid validity subsequently requested from any Scheduled / Commercial Bank recognised by Reserve Bank of India. The Bank Guarantee Verification Checklist duly filled in as per format given in the Bidding Documents is also to be submitted. Bidder shall ensure that all the points of check list are replied in "Yes".

- ii. Wherever Bids under Joint Venture route are permitted as per Qualifying Requirement in the Bidding Documents, the Earnest Money Deposit of the Joint Venture must be on behalf of all the partners of the Joint Venture.
- iii. Any bid not accompanied by an acceptable Earnest Money Deposit in accordance with the aforesaid provisions shall be rejected by the Employer as being non-responsive and shall be rejected without being opened.
- iv. The Earnest Money Deposit shall be forfeited in any of the following circumstances without any notice or proof of damage to the Employer:
 - a) If the Bidder withdraws or varies its bid during the period of Bid validity.
 - b) If the Bidder does not accept the Arithmetical correction of its Bid Price.
 - c) If the Bidder refuses to withdraw, without any cost to the Employer, any deviation, variation, additional condition or any other mention anywhere in the bid, contrary to the provisions of bidding documents;
 - d) In the case of a successful Bidder, if the Bidder fails, within the time limit,
 - (i) to sign the Contract Agreement
 - (ii) to furnish the required Security Deposit
 - e) If the bidder / his representatives commit any fraud while competing for this contract pursuant to Fraud Prevention Policy of HURL.
 - f) if the Bidder withdraws/ amends, impairs and derogates from the tender.
- v. No interest will be payable by the Employer on the said amount covered under Earnest Money Deposit.
- vi. EMD shall be refunded to all the unsuccessful Bidder within thirty days of acceptance of work order by the successful Bidders and no interest shall be payable thereon. EMD of the bidders whose price are not considered to be opened, shall be released/refunded at the earliest but not later than thirty days beyond the award of the subject work.

EMD of successful bidder shall be converted into security deposit. The same will be part of security deposit amount as mentioned in next clause 15.0 "Security Deposit / Performance Security / Performance Bank Guarantee (PBG)" and no interest shall be payable thereon.

- vii. RTGS / NEFT /ECS details of HURL as under:

Account Name: Hindustan Urvarak & Rasayan Limited
 Account no: 00000038387231141.
 IFSC code: SBIN0004803.

	<p>Price Bids shall be opened only of those bidder(s) whose EMD shall be found as per the requirement of the bidding documents.</p> <p>Exemption from submission of EMD: Micro and Small Enterprises (MSEs) bidders are exempted from submission of EMD as per provisions at clause 4.0 above.</p>
15	<p>Security Deposit / Performance Security / Performance Bank Guarantee (PBG)</p> <ol style="list-style-type: none"> 1. EMD of successful bidder will be converted to Security Deposit after award of contract. Successful Bidders who are exempted from submission of EMD on account of MSME, shall have to deposit security deposit equivalent to EMD amount i.e. Rs. 5,00,000.00 (Rupees Five Lakhs only) before award of contract/Work Order. 2. Within thirty (30) days of the receipt of Purchase Order/Service Order from the Owner, the contractor shall furnish the Contract Performance Guarantee (CPG), if applicable, for the due performance of the Contract for the amount equivalent to “ten percent (10%) of the Contract Price less security deposit amount as submitted against above point 1” i.e. in this case, it will be “10% of contract price – Rs. 5,00,000” with an initial validity up to ninety (90) days beyond the completion date for work plus defect liability period (if any), for due performance of the Contract(s)/Order(s) in any form acceptable to the Owner as mentioned below. <p>Performance Security / Performance Bank Guarantee (PBG) may be submitted in any of the following forms:</p> <ul style="list-style-type: none"> • electronically by RTGS in the account of HURL details of which are given in bidding document or • in the form of Demand Draft in favour of Hindustan Urvarak & Rasayan Limited, Payable at New Delhi. or • in the form of an irrevocable bank guarantee in accordance with the form of included in the bidding documents (Annexure 11 of Section VII (Forms and Procedures)) from any Nationalized bank / Scheduled Bank recognised by Reserve Bank of India. <p>Failure of the supplier to submit the above-mentioned Performance Security / Performance Bank Guarantee (PBG) shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security / Security deposit submitted before award of work.</p> <p>No interest shall be payable by the Owner to the Contractor against the Security Deposit furnished.</p> <p>Performance Security shall be returned after Certification of completion of work and Defect Liability period (if any) by EIC. However, the contractor will have to apply in writing, for refund of the same.</p>

		3. HURL reserves the right to forfeit the security deposit/PBG if the Contractor fails or neglects to take up the job, abide by to fulfil the terms and conditions of the contract and/or to execute the work satisfactorily.
16	Confirmation of BGs through Structured Financial Messaging System (SFMS)/SWIFT	<p>While issuing the physical BGs, the Bidder's Bank shall also send electronic message through secure SFMS (in case of BGs issued from within India) or SWIFT (in case of BGs issued from outside India) to Employer's Beneficiary Bank whose details are provided in the Special Purchase Conditions.</p> <p>Bidders are advised to ensure that the message is sent by their Bankers and the Bidders must submit the reference details as part of the bid with the EMD.</p> <p><u>Name of Beneficiary of Bank Guarantee:</u> Name of the Bank: State Bank of India Account Name-Hindustan Urvarak & Rasayan Limited Account no-00000038387231141. IFSC code- SBIN0004803. Secured Message Type-SBININBB102</p> <p>In case of submission of EMD in the form of Bank Guarantee, bidders are requested to provide the Details like Bank Name, Branch address, IFSC code and Branch E-mail Id of BG issuing Branch on EMD submission covering letter</p>
17	Ineligibility For Future Tenders	<p>Notwithstanding the provisions regarding forfeiture of Earnest Money Deposit specified above, if a bidder after having been issued the Purchase Order/Contract, either does not accept the Purchase Order/Contract or does not submit an acceptable Performance Security and which results in tender being annulled then such bidder shall be treated ineligible for participation in re-tendering of the particular package.</p> <p>If a bidder after opening of tenders where EMD is 'NIL/Not applicable' or exempted for bidders as per policy guidelines, withdraws its offer within the validity period of the offer, then such bidder shall be treated as ineligible for participation in the future tenders issued from HURL Sindri for a period of 6 months from the date of withdrawal of the bid.</p> <p>If a bidder after having been issued the Notification of Award/Purchase Order of a package where EMD is 'NIL/Not applicable' or exempted for bidder as per policy guidelines, either does not accept the Notification of Award/Purchase Order or does not submit an acceptable Performance Security pursuant to ITB Clause titled 'Performance Security', and which result in tender being annulled then such bidder shall be treated ineligible for participation in re-tendering of this particular package.</p>
18	Period of Validity of Bids (Techno-Commercial Bid and Price Bid)	<p>Bids shall remain valid for a period of 120 days from the closing date prescribed by OWNER for the receipt of bids, unless otherwise specified in Special Conditions of Contract (SCC). A bid valid for a shorter period shall be rejected by OWNER as being non-responsive.</p> <p>In exceptional circumstances, OWNER may solicit the Bidder's consent to an extension of the bid validity period. The request and responses thereto shall be made in writing by post or email or by telefax followed by post confirmation. If a Bidder accepts to extend the period of bid validity, the</p>

		validity of Earnest Money Deposit shall also be suitably extended. A Bidder may refuse the request without forfeiting its Earnest Money Deposit. A Bidder granting the request will not be required nor permitted to modify its bid.
19	Nil Deviation	<p>No deviation, whatsoever, is permitted by OWNER to any provision of Bidding Documents. The Bidders are advised that while making their Bids and quoting prices, all conditions are appropriately taken into consideration. Bidders shall certify their compliance to the complete Bidding Documents as per Certificate at Annexure-6 of Section VII (Forms and Procedures).</p> <p>In case the Products and/or Services offered do not meet the Technical requirements, the bid shall be rejected as Technically non-responsive.</p> <p>Bidders may note that in case the Bidder refuses to withdraw additional conditions/deviations/exceptions/implicit or explicit, found anywhere in the techno-commercial bid, the bid shall be rejected as Technically non-responsive.</p> <p>Bidders may also note that any deviation/variation in any form in the Price Bid shall result in forfeiture of EMD.</p>
20	Format and Signing of Bid	<p>The bid including all documents uploaded in the on-line bid shall be digitally certified by a duly authorised representative of the Bidder to bind him to the contract using Class II or Class-III digital signature (in the name of designated individual with Organisation name). The Digital Signature shall be as per Indian IT Act from the licensed Certifying Authorities (CA) operating under the Root Certifying Authority of India (RCAI) namely Controller of Certifying Authorities (CCA) of India.</p> <p>An authorisation letter/power of attorney indicating that the person signing the bid has the authority to sign the bid is to be submitted in Physical form and copy uploaded as part of the Techno-commercial Bid.</p>
21.	Submission of Bids	Bid shall be submitted through e-tender mode in the manner specified elsewhere in bidding document. No Manual/ Hard Copy of the Bid shall be acceptable except those asked for in Physical form.
21.1	PHYSICAL BID	No Physical Bid Submission is required.
21.2	ON-LINE	<p>Bid along with all the documents should be submitted in the electronic form only through e-Tendering system.</p> <p>Any revision or amendment in bid shall be possible only up to the due date and time of submission of tender.</p>
21.2.1	Techno-Commercial Bid	
(A)	COVER TYPE – FEE	MSEs seeking exemption and benefits should enclose/upload in e-tender portal a attested/self-certified copy of registration certificate as a part of his bid, failing which they run the risk of their bid being passed over as ineligible for the benefits applicable to MSEs.

(B)	COVER TYPE – TECHNICAL	<p>The bidders shall upload documents in compliance to the Bidding Documents.</p> <p>The following documents are to be furnished by the Bidder as part of the Technical Bid:</p> <ul style="list-style-type: none"> a) Power of Attorney as per requirement mentioned in NIT. b) Signed, Stamped and Scanned copy of proof for payment of Earnest Money Deposit (EMD) / MSE Certificate for exemption. c) Similar work experience Documents as required in accordance with Clause 5.1 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document d) Audited Annual Statements (Balance Sheet and Profit & Loss account statements) in accordance with Clause 5.2 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document e) Signed, Stamped and Scanned copy of Company Registration certificate, GSTIN Registration, PAN Card and other documents in accordance with Clause 5.3 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document f) Signed, Stamped and Scanned copy of last three financial year ITR g) Signed, Stamped and Completely filled with required details in Annexure-1, Annexure-2A, Annexure-2B and Annexure-2C in Forms and Procedures i.e., Section VII. h) Signed, Stamped and Scanned copy of Format for Electronics Payment (Enclosed as Annexure-3 to Forms and Procedures i.e., Section VII) i) Signed, Stamped and Scanned copy of Declaration on company letter head as specified in Annexure-4 in Forms and Procedures i.e., Section VII. j) Signed, Stamped and Scanned copy of Tender Acceptance Letter as as specified in Annexure-5 in Forms and Procedures i.e., Section VII. k) Signed, Stamped and Scanned copy of No deviation Certificate as specified in Annexure-6 in Forms and Procedures i.e., Section VII. l) Signed, Stamped and Scanned copy of Certificate from CEO/MD/ Legally Authorized Signatory, in the format as enclosed as Annexure-7 to Forms and Procedures i.e., Section VII to Bidding Document shall be furnished certifying that the data and documents furnished by them in respect of Techno-Commercial Evaluation are true and correct including the contents thereof. However, if at any point of time the declarations given in bid are found to be incorrect, HURL shall have the full right to terminate the contract and take any action as per provisions of contract including forfeiture of EMD/Security Deposit. m) Acceptance to Fraud Prevention Policy of HURL, for which the bidder has to submit Signed, Stamped and Scanned copy of Form of Acceptance of Fraud Prevention Policy of HURL. (Enclosed as Annexure-8 to Forms and Procedures i.e., Section VII).
-----	-------------------------------	---

		<p>n) Certificate related to Restrictions on procurement from a Bidder of a country which shares a land border with India" i.e. (Enclosed as Annexure-9 to Forms and Procedures i.e., Section VII).</p> <p>o) Documents in compliance to Scope of Work and Technical Specifications Any other document asked for in the Bidding Documents.</p> <p>p) Any Other Document asked for in the Bidding Document</p> <p>Note: -</p> <p>Bidders are requested to upload the clearly visible documents only otherwise if not clearly visible then offer shall be liable for rejection without any further communication. The Techno-Commercial Bid should not contain any price content entry. In case, the Techno-Commercial Bid is found to contain any price content, such bid shall be liable for rejection.</p> <p>Checklist of documents to be submitted is enclosed as Annexure-1 to ITB.</p>
21.2.2	Price Bid (COVER TYPE – FINANCE)	<p>The Price bid is to be submitted in the BOQ provided in the Tender at https://eprocure.gov.in/eprocure/app.</p> <p>Bidders are advised to fill the BOQ and upload the same on the portal. Bidder should not tamper/modify download price bid template. In case if the same is found to be tampered / modified in any manner, bid will be rejected and EMD would be forfeited and Bidder is liable to be banned from doing business with HURL for a period of 2 years.</p> <p>Bidders shall necessarily submit the prices on-line in the Bill of Quantity (BOQ) only.</p> <p>For preparation of the "Price Bid", Bidders are expected to take into account the requirements and conditions of the bidding documents. The Price Bid shall be made in the 'BOQ' (excel file) only of Bidding Documents.</p> <p>The rate quoted by the bidder shall be inclusive of all provisions for incidental expenses necessary for proper execution and completion of the work in accordance with the terms & condition of the bidding document.</p> <p>All prices to be quoted by the bidders will be in Indian Rupees only, unless otherwise mentioned in the Special Conditions of Contract, on FIRM price basis and to remain valid during the currency of the Contract.</p> <p>Bidder shall quote for all the items of "SOR" after careful analysis of cost involved for the performance of the complete items 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 be deemed to be inclusive of cost incurred for such activity.</p>

		<p>The bidder shall quote their rate in percentage rate over total estimated cost of all items of BOQ portion up to two decimals only in price bid. Tenderers to note that only first two decimals shall be considered for evaluation if quotation is having more than two decimals. Bidder to go through Preamble to SOR mentioned in the tender document before quoting.</p> <p>For items mentioned in SOR , the bidder has to quote in BOQ of price bid. Bidder is required to select "Excess(+)" / Less(-)" from drop down menu in Quoted Rate in Figures and then they have to quote rate in percentage up to two decimals only.</p> <p>The quoted rate/amount shall be inclusive of all taxes and duties etc. as per tender but exclusive of the GST. Bidder must quote their rates exclusive of GST. The GST shall be paid extra as per applicable rates.</p>
	Documents to be uploaded in the format stipulated in the tender (online).	
	Note:	In case of Single Stage Two envelope bidding, Price Bid of those bidders whose bids are found to be qualified and technically & commercially responsive shall be opened at a later date under intimation to such bidders.
22	Deadline for Submission of Bids	<p>Bids must be submitted online no later than the time and date stated in the Tender Enquiry/NIT/ on line Tender details.</p> <p>The Off-line bid specified in the tender must be submitted to the Owner at the address given in the Special Conditions of Contract before the last date & Time for submission of Bid as specified in the NIT / Tender. Owner shall not be liable for loss/non-receipt/late receipt of above documents in postal transit.</p> <p>The on-line Bid must be submitted on the system well before the expiry of time and the schedule specified in the tender notifications, and may note that there is a time lag between the actual placing the bid on the local computer of the bidder and the refreshing of the data on the server.</p> <p>The processing time for data exchange depends on the internet speed of the bidder, therefore bidder should avoid the last minute hosting of their bid. The bids visible to the Owner will be final for the purpose of acceptance.</p> <p>OWNER may, at its discretion, extend this deadline for submission of bids, in which case all rights and obligations of Owner and Bidders will thereafter be subject to the deadline as extended.</p>
23	Modification and Withdrawal of Bids	<p>The Bidder may modify or withdraw its bid after submission prior to the deadline prescribed for bid submission. In case of withdrawal a letter giving the reason for withdrawal is to be uploaded. Once a bid is withdrawn, the bid cannot be re-submitted.</p> <p>No bid may be withdrawn / modified in the interval between the bid submission deadline and the expiration of the bid validity period.</p>

		Withdrawal/Modification of a bid during this interval may result in the Bidder's forfeiture of its Earnest Money Deposit, pursuant to ITB Clause 14 above.
24	Opening of Bids	
	Techno-Commercial Bid Opening	<p>The Owner will first open the Techno-Commercial Bid on the date and at the place specified in the tender enquiry/NIT. In the event of the specified date for the opening of bids being declared a holiday for OWNER, the bids will be opened at the appointed time on the next working day. All important information and other such details as OWNER, at its discretion, may consider appropriate, will be announced at the opening.</p> <p>Technical Bid shall be opened for evaluation.</p> <p>In case of Single Stage Two Envelope bidding, the Price Bid will remain unopened and the date and time for opening of price bids shall be intimated separately on the CPP website by OWNER after completion of evaluation of Techno-Commercial Bids.</p>
	Price Bid Opening	<p>In case of Single Stage Single Envelope bidding, the Price Bid will be opened on the date and time for opening of bids specified after opening of Techno-commercial bids as specified above.</p> <p>In case of Single Stage Two Envelope bidding, after the evaluation process of Techno-Commercial bid is completed, the date and time for opening of price bids shall be intimated separately by Owner. Bidders, whose Techno-Commercial Bid is not substantially responsive, their Technical Bid shall be rejected and their Price bid will also be rejected & shall not be opened and their Earnest Money Deposit shall be returned.</p> <p>Price bids of those Bidders, who have been considered qualified and whose Techno-commercial Bid is found to be responsive, will be opened online in presence of the Bidder's authorised representatives who choose to attend.</p> <p>The participating bidders will be able to view the bid prices of all the bidders after online opening of Price Bids by Owner on the e-tender portal.</p>
25	Clarification on Bids	<p>During bid evaluation, OWNER may, at its discretion, ask the Bidder for a clarification of its bid including documentary evidence pertaining to the Purchase Orders/Contracts executed declared in the bid for the purpose of meeting Qualifying Requirement specified in NIT/IFB. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid including substitution of Purchase Orders/Contracts executed in the bid by new/additional Purchase Orders/Contracts executed for conforming to Qualifying Requirement shall be sought, offered or permitted.</p> <p>After evaluation of the uploaded documents, shortfall documents, if required, shall be sought from the bidder. For this purpose, maximum 1 chance, of 7x24 hours duration shall be given. If the techno-commercial acceptability of bidder is established upon verification of uploaded</p>

		documents and shortfall documents if any, the case shall be considered for further processing. If the bidder happens to be defaulter upon verification of the documents or has not uploaded the required document within the mentioned time frame his bid would be analyzed based on the uploaded documents and if found not in order as per requirement, would be outrightly rejected.
26	Preliminary Examination Of Techno-Commercial Bids	<p>OWNER will examine the bids to determine whether they are complete, whether required securities have been furnished, whether the documents have been properly signed and whether the bids are generally in order.</p> <p>Prior to the detailed evaluation, the Owner will determine whether the bid is of acceptable quality, is generally complete and is substantially responsive to the bidding document. For purpose of this determination, a substantially responsive bid is one that conforms to all the terms, condition and specifications of the bidding documents without material deviations, objections, conditionality or reservations.</p> <p>A material deviation, objection, conditionality or reservation is</p> <ul style="list-style-type: none"> (i) that effects in any substantial way the scope quality or performance of the contract. (ii) that limits in any substantial way inconsistent with the bidding document the Owners right or the successful bidders obligation under the contract or (iii) whose rectification would unfairly affect the competitive position of other bidders who are presenting substantially responsive bids. <p>Material deficiencies in the bid may render the bid non-responsive and may lead to the rejection of the bid.</p> <p>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 OWNER, and may not subsequently be made responsive by the Bidder by correction of the nonconformity.</p>
27	Evaluation Of Techno-Commercial Bids	<p>OWNER will carry out a detailed evaluation of the Techno-Commercial bids (of the qualified bidders shortlisted as above) previously determined to be substantially responsive in order to determine whether the technical and commercial aspects are in accordance with the requirements set forth in the bidding documents. In order to reach such a determination, OWNER will examine and compare the technical and commercial aspects of the bids on the basis of the information supplied by the bidders. Bidder may note that no deviation, whatsoever, is permitted by OWNER to any provisions of Bidding Documents.</p> <p>In case the Bidder refuses to withdraw additional conditions/deviations/variations/exception, implicit or explicit, found anywhere in the bid in respect of techno-commercial requirements of the bidding documents, without any financial implication whatsoever to the Owner, the bid shall be rejected as technically non-responsive.</p>

		Product(s) and/or service(s) not meeting the specified technical requirements & scope work, shall be rejected.
28	Preliminary Examination Of Price Bid	<p>The Owner will examine the Price bids to determine whether they are complete, whether any computational errors have been made, and whether the bids are generally in order.</p> <p>In case any additional conditions/deviations/variations/exception, implicit or explicit, is found anywhere in the Price bid, the Earnest Money Deposit shall be forfeited.</p>
29	Discrepancies In Bid	<p>In case of discrepancies in the bid, the following will be adopted to correct the discrepancies for Arithmetical for the purpose of evaluation.</p> <ol style="list-style-type: none"> In case of discrepancy between unit price in figures and words, the unit price words will be considered as correct. In case of discrepancy between unit price and total price, the unit price will be considered as correct. In case of discrepancy between unit price and total price, which is obtained by multiplying the unit price and quantity, or between sub-totals and the total price, the unit or subtotal price shall prevail, and the total price shall be corrected accordingly.
30	Evaluation Criteria	<p>The evaluation criteria specified in Special Conditions of Contract (SCC) shall over-ride all other similar related clauses appearing elsewhere in the bidding documents.</p> <p>The evaluation shall be based on the evaluated cost of fulfilling the contract in compliance with all commercial, contractual and technical obligations under this Bidding Document.</p>
31	Evaluation Of Bids	<ol style="list-style-type: none"> The Owner shall evaluate each Bid that has been determined, up to this stage of the evaluation, to be substantially responsive. To evaluate a Bid, HURL shall only use all the criteria and methodologies defined in this document. To evaluate a Bid, HURL shall consider the following: <ul style="list-style-type: none"> The bid price as quoted as per Bill of Quantity (BOQ) Price adjustment for correction of discrepancy. Price adjustment due to discounts offered; Price adjustment due to Price Preference due to any other condition specified in Special Purchase Condition; Price adjustment due to application of the evaluation criteria.
32	Contacting The Owner	<p>Subject to ITB clause 25.0 above, no Bidder shall contact the Owner on any matter relating to its bid, from the time of the opening of Bids to the time the contract is awarded.</p> <p>Any effort by a Bidder to influence the Owner in the Owner's bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid.</p>

33	Owner's Right To Accept Any Bid And To Reject Any Or All Bids	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 Contract award, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder(s) of the grounds for the Owner's action.
34	Award Criteria	<p>Subject to ITB Clause 33, the Owner will award the contract to the successful Bidder whose bid has been determined to be substantially responsive to the Bidding Documents and qualified to perform the contract satisfactorily, as per methodology specified in Special Conditions of Contract (SCC).</p> <p>The Bidder will be required to comply with all requirements of the Bidding Documents without any extra cost to the Owner, failing which his Earnest Money Deposit will be forfeited.</p>
35	Construction of Contract	<p>If required, HURL may place separate Orders for supplies and Services. The award of separate Purchase Orders shall not in any way dilute the responsibility of the Supplier for the successful completion of the Facilities as per Contract documents and a breach in one Purchase Order shall be construed as a breach of the other Purchase Order(s) which will confer a right on the Employer to terminate the other Contract(s) also at the risk and cost of the Supplier.</p> <p>The total value of all the orders shall be the Total Package value.</p>
36	Notification of Award	Prior to the expiration of the period of bid validity, the Owner will notify the successful Bidder in writing by email or letter or by telefax to be confirmed in writing by letter sent by Speed Post/Registered/courier, that its bid has been accepted. The notification of award (Purchase/Service Order) will constitute the formation of the contract and shall be effective from the date of award or the date as specified in Special Conditions of Contract (SCC).
37	Corrupt or Fraudulent Practices	<p>Owner requires that Bidders, Contractors and Suppliers observe the highest standard of ethics during the procurement and execution of the contracts. In pursuance of this policy, Owner:</p> <p>(a) defines, for the purposes of this provision, the terms set forth below as follows:</p> <p>(i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and</p> <p>(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Owner, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Owner of the benefits of free and open competition;</p> <p>(b) will reject a bid for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;</p>

		(c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for or in executing a contract of the Owner.
38	Fraud Prevention Policy	<p>The Bidders/ Service Providers/ Vendors/ Consultants etc. shall strictly adhere to the Fraud Prevention Policy of HURL displayed on its website http://www.hurl.net.in and shall not indulge or allow anybody else working in their organization to indulge in fraudulent activities and immediately apprise HURL of the fraud/suspected fraud as soon as it comes to their notice. A certificate to this effect shall be furnished by the bidder along with his bid, in relevant attachment as per format enclosed (Annexure 8 of Section VII (Forms and Procedures)) with the Bidding Document.</p> <p>If in terms of above policy, it is established that the bidder/his representatives have committed any fraud while competing for this contract then the Earnest Money Deposit shall be forfeited.</p>
39	Indian Agents	<p>In a tender, either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product.</p> <p>If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit bid on behalf of another Principal/OEM in the same tender for the item/product.</p>
40	Transfer of Bid Documents	<p>a. Transfer of Bidding documents is not permissible.</p> <p>b. Documents purchased / downloaded by the intending bidders cannot be transferred.</p>
41.	Restrictions on procurement from a Bidder of a country which shares a land border with India	<p>i. Any Bidder (including its Collaborator/Associate/DJU Partner/JV partner/Consortium Member/Assignee, wherever applicable) from a country which shares a land border with India will be eligible to bid in this tender only if bidder is registered with the Competent Authority.</p> <p>Such registration should be valid for the entire period of bid validity or any extension thereof. However, in case the validity period of registration is less than bid validity period, the Bidder shall be required to submit the extension of the validity period of registration before the opening of price bids, failing which the bid shall be rejected.</p> <p>Further the successful bidder shall not be allowed to sub-contract works to any "Sub-contractor" from a country which shares a land border with India unless such Sub-contractor is registered with the competent Authority as mentioned in SCC.</p> <p>However, the said requirement of registration will not apply to bidders/sub-contractors from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Bidders may apprise themselves</p>

		<p>of the updated lists of such countries available in the website of the Ministry of External Affairs.</p> <p>ii. “Bidder” (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency, branch or office controlled by such person, participating in a procurement process.</p> <p>iii. “Sub-contractor” (including the term ‘Sub-vendor’/Sub-supplier’ in certain contexts) means any person or firm or company, every artificial juridical person not falling in any of the descriptions of Sub-contractors stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.</p> <p>iv. “Bidders from a country which shares a land border with India” / “Sub-contractor from a country which shares a land border with India” mentioned in para above means;</p> <p>a) An entity incorporated, established or registered in such a country; or</p> <p>b) A subsidiary of an entity incorporated, established or registered in such a country; or</p> <p>c) An entity substantially controlled through entities incorporated, established or registered in such a country; or</p> <p>d) An entity whose beneficial owner is situated in such a country; or</p> <p>e) An Indian (or other) agent of such an entity; or</p> <p>f) A natural person who is a citizen of such a country; or</p> <p>g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.</p> <p>v. The beneficial owner for the purpose of clause “iv” above will be as under;</p> <p>a) In case of company of Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.</p> <p>Explanation-</p> <p>i. “Controlling ownership interest” means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company;</p> <p>ii. “Control” shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholdings or management rights or shareholders agreements or voting agreements;</p>
--	--	--

		<p>b) In case of a partnership firms, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more judicial person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;</p> <p>c) In case of an unincorporated associations or body of individuals, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;</p> <p>d) Where no natural person is identified under (a) or (b) or (c) above, the beneficial owner is the relevant natural person who holds the position of senior managing officials;</p> <p>e) In case of a trust, the identifications of beneficial owner(s) shall include identification of the author of trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.</p> <p>vi. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.</p> <p>vii. In regard to "Restrictions on procurement from a Bidder of a country which shares a land border with India" bidder has to submit Certificate as per Annexure 9 of Section VII (Forms and Procedures) of the bidding document.</p>
42.	HURL right to assess the capabilities and capacity of Bidder	HURL reserves the right to assess the capabilities and capacity of the Bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of HURL.
	Important Note	The Special Conditions of Contract (SCC) will supersede any other related conditions anywhere else in the Bidding Documents and will prevail for evaluation / finalization of the tender.

Checklist of documents to be submitted:

S.N	Item	Yes / No	Bid Ref
I	Power of Attorney as per requirement mentioned in NIT.		
II	Signed, Stamped and Scanned copy of proof for payment of Earnest Money Deposit (EMD) along with completely filled Annexure-16 (enclosed in Section-VII of tender document) / MSE Certificate for exemption.		
III	Similar work experience Documents as required in accordance with Clause 5.1 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document		
IV	Audited Annual Statements (Balance Sheet and Profit & Loss account statements) in accordance with Clause 5.2 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document		
V	Signed, Stamped and Scanned copy of Company Registration certificate, GSTIN Registration, PAN Card, EPF and other documents in accordance with Clause 5.3 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document		
VI	Signed, Stamped and Scanned copy of last three financial year ITR		
VII	Signed, Stamped and Completely filled with required details in Annexure-1, Annexure-2, Annexure-2A, Annexure-2B and Annexure-2C in Forms and Procedures i.e., Section VII.		
VIII	Signed, Stamped and Scanned copy of Format for Electronics Payment (Enclosed as Annexure-3 to Forms and Procedures i.e., Section VII)		
IX	Signed, Stamped and Scanned copy of Declaration on company letter head as specified in Annexure-4 in Forms and Procedures i.e., Section VII.		
X	Signed, Stamped and Scanned copy of Tender Acceptance Letter as as specified in Annexure-5 in Forms and Procedures i.e., Section VII.		
XI	Signed, Stamped and Scanned copy of No deviation Certificate as specified in Annexure-6 in Forms and Procedures i.e., Section VII.		
XII	Signed, Stamped and Scanned copy of Certificate from CEO/MD/ Legally Authorized Signatory, in the format as enclosed as Annexure-7 to Forms and Procedures i.e., Section VII to Bidding Document shall be furnished certifying that the data and documents furnished by them in respect of Techno-Commercial Evaluation are true and correct including the contents thereof. However, if at any point of time the declarations given in bid are found to be incorrect, HURL shall have the full right to terminate the contract and take any action as per provisions of contract including forfeiture of EMD/Security Deposit. Stamped & Scanned copy of format For Electronics Payment as per Annexure-E		
XIII	Acceptance to Fraud Prevention Policy of HURL, for which the bidder has to submit Signed, Stamped and Scanned copy of Form of Acceptance of Fraud Prevention Policy of HURL. (Enclosed as Annexure-8 to Forms and Procedures i.e., Section VII).		
XIV	Certificate related to Restrictions on procurement from a Bidder of a country which shares a land border with India" i.e. (Enclosed as Annexure-9 to Forms and Procedures i.e., Section VII).		
XV	Documents in compliance to Scope of Work and Technical Specifications Any other document asked for in the Bidding Documents.		
XVI	Any Other Document asked for in the Bidding Document		

Note: Failure to Upload Authentic and Corrects Documents as mentioned at S.No I to XVI (except Sr. no VIII) of Checklist above would lead to Rejection of Techno- Commercial Bid. Price Bids shall be opened only of those bidders who are qualified and whose techno-commercial bids are acceptable.

Annexure 2 to ITB

A	Instructions for Online Bid Submission	<p>The bidders are required to submit their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bidsonline on the CPP Portal.</p> <p>More information useful for submitting online bids on the CPP Portal may be obtained at: https://eprocure.gov.in/eprocure/app.</p> <p>1.0 <u>REGISTRATION</u></p> <p>1.1 Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: https://eprocure.gov.in/eprocure/app) by clicking on the link “Online bidder Enrollment” on the CPP Portal which is free of charge.</p> <p>1.2 As part of the enrollment process, the bidders will be required to choose a unique username and assign a password for their accounts.</p> <p>1.3 Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.</p> <p>1.4 Upon enrollment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g., Sify / nCode / eMudhra etc.), with their profile.</p> <p>1.5 Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC’s to others which may lead to misuse.</p> <p>1.6 Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.</p> <p>2.0 <u>SEARCHING FOR BIDDING DOCUMENTS</u></p> <p>2.1 There are various search options built in the CPP Portal, to facilitate bidders to searchactive tenders by several parameters. These parameters could include Tender ID,Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.</p> <p>2.2 Once the bidders have selected the tenders they are interested in, they may download the required documents / tender</p>
---	---	---

schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e- mail in case there is any corrigendum issued to the Bidding Document.

- 2.3** The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

3.0 PREPARATION OF BIDS

- 3.1** Bidder should take into account any corrigendum published on the Bidding Document before submitting their bids.

- 3.2** Please go through the Bidding Document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

- 3.3** Bidder, in advance, should get ready the documents to be submitted as indicated in the Bidding Document / schedule. Generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

4.0 SUBMISSION OF BIDS:

- 4.1** Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. HURL shall NOT be responsible for any delay.

- 4.2** The bidder has to digitally sign and upload the required bid documents one by one as indicated in the Bidding Document.

- 4.3** Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.

- 4.4** Bidder should prepare the EMD as per the instructions specified in the Bidding Document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the Bidding Documents.

- 4.5** Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the Bidding Document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the blue colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing

the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

4.6 The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

4.7 All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology.

4.8 Data storage encryption of sensitive fields is done. 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 Bidding Documents become readable only after the tender opening by the authorized bid openers.

4.9 The uploaded Bidding Documents become readable only after the tender opening by the authorized bid openers.

Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

4.10 The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

4.11 The Bidder is allowed to re-submit the Bid and related Bid documents before the last date of Bid submission and time. The Bid can be re-submitted as many times as required by the Bidder, within the indicated timelines. The last version of the Bid submitted by the Bidder before the Bid submission date and time will be considered for Bid evaluation.

4.12 The Bidder is permitted to withdraw his Bid before the last date of Bid submission and time through the CPP Portal. The bidder should provide the supporting reasons for bid withdrawal and attach the supporting letter to the Purchaser.

4.13 During bid evaluation, OWNER may, at its discretion, ask the Bidder for a clarification of its bid including documentary evidence pertaining to the Purchase Orders/Contracts executed declared in the bid for the purpose of meeting Qualifying Requirement specified in NIT/IFB. The request for clarification and the response shall be in writing, and no change in the price

		<p>or substance of the bid including substitution of Purchase Orders/Contracts executed in the bid by new/additional Purchase Orders/Contracts executed for conforming to Qualifying Requirement shall be sought, offered or permitted.</p> <p>For this purpose, only 1 chance, shall be given. If the techno-commercial acceptability of bidder is established upon verification of documents including clarifications submitted, the case shall be considered for further processing. If the bidder happens to be defaulter upon verification of the documents or has not uploaded the required document within the mentioned time frame his bid would be analyzed based on the uploaded documents and if found not in order as per requirement, would be outrightly rejected.</p>
B.	ASSISTANCE TO BIDDERS	<p>1. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.</p> <p>2 Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be call directed to the 24x7 CPP Portal Helpdesk.</p> <p>0120-4001 062 0120-4001 002 0120-4001 005 0120-6277 787 E-mail support: Technical - support-eproc(at)nic(dot)in Policy Related - cppp-doe(at)nic(dot)in Or For any Issues or Clarifications relating to the published tenders, bidders are requested to write on below email id,</p> <p>Mr. Deepak Kumar, Manager (C&M), HURL- Sindri Project, Email id : deepakkumar@hurl.net.in</p> <p>Miss. Moupiya Mallick, Officer (C&M), HURL- Sindri Project, Email id : moupiyamallick@hurl.net.in</p>
		<p>Bidders must apprise themselves of the applicable guidelines for submission of and uploading of bids etc. on CPP website.</p>

SECTION – III : GENERAL CONDITIONS OF CONTRACTS (GCC)

The Special Conditions of Contracts (SCC) will supersede any related condition anywhere in the Bidding Documents and will prevail for evaluation / finalization of the tender.

1	Definitions & Terminology	<p>Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:</p> <p>“HURL” / “Owner” / “Client” means the Hindustan Urvarak & Rasayan Limited (HURL), Sindri Project having its registered office Core-4, 9th Floor, Scope Minar, Laxmi Nagar District Centre, Delhi-110092 and shall include their legal representatives, successors and permitted assigns.</p> <p>“Contract” means the Contract Agreement entered into between the Owner and the Contractor, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly.</p> <p>“Contract Documents” mean the following documents that constitute the Contract between the Owner and the Contractor:</p> <ul style="list-style-type: none"> (i) The Contract Agreement along with its appendices (ii) Letter of Award/Service Purchase Order along with its appendices including agreed variations annexed. (iii) Amendment to Tender/Bidding Documents (iv) Special Conditions of Contract (v) Technical Specifications (vi) General Conditions of Contract (vii) The Bid and Bill of Quantities submitted by the Contractor (viii) Instructions to Bidders <p>“GCC” means the General Conditions of Contract hereof.</p> <p>“SCC” means the Special Conditions of Contract.</p> <p>“Day” means calendar day of the Gregorian Calendar.</p> <p>“Week” means a continuous period of seven (7) calendar days.</p> <p>“Month” means calendar month of the Gregorian Calendar.</p> <p>“Completion” means the fulfilment of the Services by the Contractor in accordance with the terms and conditions set forth in the Contract.</p> <p>“Contractor” shall mean the successful Sole Bidder or Consortium whose bid has been accepted by the OWNER and who has been selected by the OWNER for the award of Works and shall include his heirs, legal representatives, successors and permitted assigns.</p> <p>“Contract Price” means the price to be paid for the performance of the Services, exclusive of GST.</p>
---	--------------------------------------	--

		Effective Date means the date on which this Contract comes into force pursuant to GCC Clause 15.
		Foreign Currency means any currency other than the currency of the Owner's country.
		"Local Currency" means the currency of the Government of India.
		"Government" means the Government of the Owner's country i.e. INDIA.
		Party means the Owner or the Contractor, as the case may be, and "Parties" means both of them. Third party means any party other than Owner and Contractor.
		Personnel means professionals and support staff provided by the Contractor or by any Sub-Contractor and assigned to perform the Services or any part thereof;
		"Funds" means any funds allocated to the Owner under Company budget, or loan, grants and credits placed at the disposal of the Owner.
		Services means the work to be performed by the Contractor pursuant to this Contract
		Sub-Contractor means any person or entity to whom/which part of the Services is sub-consulted.
		"Engineer" or "Engineer-in-Charge" or "E.I.C." shall mean the officer appointed in writing by the Owner to act as "Coordinator" from time to time on behalf of Owner in all matters pertaining to this Contract. "Engineer-in-Charge" shall be authorized by the Client for supervision, inspection, scrutiny and approval of some or all of the services rendered by the Contractor under the Contract.
2	Order of the precedence of the Documents	"Bill Of Quantity" shall mean the priced and completed Bill of Quantity (BOQ) forming the part of the bid or such Bill of Quantity (BOQ) forming the part of the Contract, as the case may be, with amendments, if any, thereto.
		Throughout these Bidding Documents, the term "Bid" and "Tender" and their derivatives (Bidder/ Tenderer, Bidding / Tendering, Bidding Document/Tender Document, etc.); Bill of Quantity / Schedule of Quantity / Schedule of Quantities/ Bill of Quantities; Owner / Client / HURL; Bid Security / Earnest Money Deposit; Security Deposit / Performance Security/ Performance Guarantee; Engineer-in-Charge / Engineer, appearing anywhere in the Bidding Documents shall have the same meaning and are synonymous to each other.
		Subject to order of precedence listed below, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole. The order of precedence of documents shall be as under:

		<p>a) Contract Agreement and the Appendices</p> <p>b) Purchase Order/Service Order along with its annexures.</p> <p>c) Amendment to Bidding Documents</p> <p>d) Special Conditions of Contract</p> <p>e) Technical Specifications including Scope of Work</p> <p>f) General Purchase Conditions</p> <p>g) The Bid and BOQ submitted by the Supplier</p> <p>h) Instructions to bidders</p> <p>An amendment issued after issue of Contract shall take precedent over the formal Contract and all other contract documents.</p> <p>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 Documents are listed above.</p> <p>Any error in description, quantity or rate in Bill of Quantity (BOQ) or any omission therefrom shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the Works comprised therein according to drawings and specifications or from any of his obligations under the Contract.</p>
3	Singular and Plural	The singular shall include the plural and the plural the singular, except where the context otherwise requires.
4	Headings	<p>The headings and marginal notes in the General Conditions of Contract are included for ease of reference, and shall neither constitute a part of the Contract nor affect its interpretation.</p> <p>Heading and marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.</p>
5	Communications and Notices	<p>Communications between Parties (notice, request or consent required or permitted to be given or made by one party to the other) pursuant to the Contract shall be in writing to the Authorized Representatives named in the Contract.</p> <p>A notice shall be effective when delivered or on the notice's effective date, whichever is later.</p> <p>A Party may change its address for notice hereunder by giving the other Party notice of such change to the address.</p>
6	Governing Laws	The Contract shall be governed by and interpreted in accordance with laws in force in India. The Courts of Dhanbad shall have exclusive jurisdiction in all matters arising under the Contract, unless otherwise stated in the SCC.
7	Governing Language	The Contract shall be written in English. All correspondences and documents relating to the Contract shall be written in English. Supporting documents and printed literature that are part of the Contract may be in another language, as long as such literature is accompanied by a translation

		<p>of its pertinent passages in English language in which case, for purposes of interpretation, the translation shall govern.</p> <p>The English Translation of the documents shall be carried out by professional translators and the translator shall certify that he is proficient in both languages in order to translate the document and that the translation is complete and accurate. Further, translation shall be authenticated by the Indian Consulate located in the Country where the documents have been issued or the Embassy of that Country in India.</p> <p>The Contractor shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.</p>
8	Assignment	Neither the Owner nor the Contractor shall assign, in whole or in part, their obligations under this Contract; except with prior written approval of the Owner.
9	Authorized Representatives	<p>Engineer-in-Charge</p> <p>If the Engineer-in-Charge is not named in the Contract, then within fourteen (14) days of the Effective Date, the Owner shall appoint and notify the Contractor in writing of the name of the Engineer-in-Charge. The Owner may from time to time appoint some other person as the Engineer-in-Charge in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. The Owner shall take reasonable care to see that no such appointment is made at such a time or in such a manner as to impede the progress of work. The Engineer-in-Charge shall represent and act for the Owner at all times during the currency of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Engineer-in-Charge, except as herein otherwise provided. All notices, instructions, information and other communications given by the Contractor to the Owner under the Contract shall be given to the Engineer-in-Charge, except as herein otherwise provided.</p>
10	Contractor's Authorised Representative	<p>Contractor's Representative</p> <p>If the Contractor's Representative is not named in the Contract, then within fourteen (14) days of the Effective Date, the Contractor shall appoint the Contractor's Representative and shall request the Owner in writing to approve the person so appointed. If the Owner makes no objection to the appointment within fourteen (14) days, the Contractor's Representative shall be deemed to have been approved. If the Owner objects to the appointment within fourteen (14) days giving the reason therefore, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GCC Clause shall apply thereto.</p> <p>The Contractor's Representative shall represent and act for the Contractor at all times during the currency of the Contract and shall give to the Engineer-in-Charge all the Contractor's notices, instructions, information and all other communications under the Contract.</p> <p>All notices, instructions, information and all other communications given by the Owner or the Engineer-in-Charge to the Contractor under the Contract</p>

		<p>shall be given to the Contractor's Representative or, in its absence, its deputy, except as herein otherwise provided.</p> <p>The Contractor shall not revoke the appointment of the Contractor's Representative without the Owner's prior written consent, which shall not be unreasonably withheld. If the Owner consents thereto, the Contractor shall appoint some other person as the Contractor's Representative, pursuant to the procedure set out in above GCC Clause.</p> <p>The Contractor's Representative may, subject to the approval of the Owner (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Owner and the Engineer-in-Charge.</p> <p>Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with the above GCC Clause shall be deemed to be an act or exercise by the Contractor's Representative.</p>
11	Relation between the Parties	<p>Nothing contained herein shall be construed as establishing a relation of master and servant or of principal and agent as between the Owner and the Contractor. The Contractor, subject to this Contract, has complete charge of Personnel and Sub-Contractors, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.</p>
12	Location	<p>The Services shall be performed at such locations as are specified in the Contract and, where the location of a Special task is not so specified, at such locations as the Owner may approve.</p>
13	Taxes & Duties	<p>Contractor, shall bear all tax liabilities, duties, Govt. levies etc. on account of payments made under this Contract. It shall be the responsibility of the Contractor to submit to the concerned Indian authorities the returns and all other concerned documents required for this purpose and to comply in all respects with the requirements of the laws in this regard, in time.</p> <p>It shall be incumbent upon the Contractor to obtain a registration certificate as a dealer under GST Law, and other law(s) relating to levy of tax, duty, cess etc. and necessary evidence to this effect shall be furnished by the Contractor to the Owner.</p> <p>The Contract Price (of both domestic and foreign Contractor) shall also be exclusive of GST applicable on services as per the rates prevailing as on seven (7) days prior to the date of Techno-Commercial bid opening. In case the Contractor is from outside India, who does not have any fixed establishment or permanent address in India, the GST shall be paid to the concerned Tax Authorities in India by the Owner and the same shall be recovered/ deducted from the Contractor.</p>

		<p>In case of any variation in the rate of GST during the period of Contract, an equitable amount shall be paid/ recovered from the Contractor to fully take into account any such change.</p> <p>If a new tax, duty or levy is imposed or any rates of tax are increased or decreased under statute or law in India after the date seven (7) days prior to date of Techno-Commercial bid opening and the Contractor becomes liable there under to pay and actually pays the said new tax, duty or levy for bonafide use on the work contracted, the same shall be reimbursed/recovered to the Contractor.</p> <p>As regards Income Tax, Surcharge on Income Tax and other Corporate Taxes, including Cess wherever applicable, the Contractor shall be responsible for such payments to the concerned authorities.</p> <p>The Owner shall be entitled to make necessary tax deductions at source as per the prevalent laws. The Contractor shall be required to submit the PAN details before the submission of the first bill/invoice under the Contract.</p> <p>In case the Contractor is from outside India, it shall be required to either furnish (i) the certificate from Indian Tax Authority or (ii) Ruling from "the Authority for Advance Ruling (AAR)" determining the applicable rate of Income Tax in India before release of first payment.</p> <p>The Contractor shall himself be informed of all the applicable laws, notifications, rules, circulars and other communications of the State or Central or other authorities with regard to levy of any tax, duty, cess, levy or fee etc, which in any manner may impinge upon him in performance of any obligations/responsibilities under or arising out of the Contract.</p> <p>Further in case of foreign Contractor, certain benefits of Income Tax may be available to him in his country under Double Taxation Avoidance Agreement (DTAA). While quoting for the assignment, the foreign Contractors are required to consider such benefits in their proposal.</p>
14	Effectiveness of Contract	The Contract shall come into force and effect on the date, called the "Effective Date", of the Owner's notice to the Contractor instructing the Contractor to commence carrying out the Services. This notice shall confirm that the effectiveness conditions, if any, as specified in the SCC have been met or as mentioned elsewhere in the tender document.
15	Effective Date	The date the Contract comes into effect shall be as specified in the SCC.
16	Commencement of Services	The Contractor shall commence carrying out the Services not later than the number of days after the Effective Date as specified in the SCC.
17	Modifications or Changes or Amendment	No Modifications or changes or amendment or other variation of the Contract (Purchase Order / Work Order/ Service Purchase) shall be effective unless it is in writing, is dated, expressly refers to the Purchase Order / Work Order / Service Order, and is signed by a duly authorized representative of Owner and accepted by the Contractor.
18	Contract Price	The Contract price, other than GST, shall remain FIRM throughout the contract period and will be NOT be subject to adjustment for price escalation during the performance of the Contract until unless specified otherwise in

		the SCC.
19	Severability	If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.
20	Standard of Performance	The Contractor shall perform the Work / Services and carry out its obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Contractor shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Owner, and shall at all times support and safeguard the Owner's legitimate interests in any dealings with Sub Contractors or Third Parties.
21	Conflict of Interests	The Contractor shall hold the Owner's interest's paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests.
22	Confidentiality	The Owner and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Owner to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this clause of GCC.
23	Limitation of Liability	<p>HURL shall in no way be responsible for any liabilities arising out of the Contractor's Contractual obligations with the Contractor's personnel, experts, engineers, sub-Contractors, licensors, collaborators, vendors, or subsidiaries. Similarly, the Contractor shall in no way be responsible for any liabilities arising out of HURL's personnel, sub-Contractors, licensors, collaborators, vendors or subsidiaries.</p> <p>The Contractor and HURL both agree that each shall assume full risk of damages or injury to its own properties, employees and representatives caused by any act or omission to act by their respective employees or representatives, during the performance of this Contract.</p> <p>Except in cases of criminal negligence or willful misconduct,</p> <p>(a) Neither Party shall be liable to the other Party, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, which may be suffered by the other Party in connection with the Contract, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Owner and</p>

		<p>(b) The aggregate liability of the either party to the other party, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Owner with respect to patent infringement.</p> <p>Notwithstanding anything contained hereinabove, the aggregate liability of the Owner to the Contractor shall not exceed the Total Contract Price, less payments already released to the Contractor, if any.</p>
24	Liability of the Contractor	<p>The Contractor, shall be, liable to and required to indemnify, the Owner as stated under for due performance of the Contract.</p> <p>The Contractor shall indemnify the Owner from and against any and all claims, liabilities, obligations, losses, damages, penalties, actions, judgment, suits, proceedings, demands, costs, expenses and disbursements of whatsoever nature that may be imposed on, incurred by or asserted against the Owner during or in connection with the Services by reason of:</p> <p>(a) infringement or alleged infringement by the Contractor of any patent or other protected right; or</p> <p>(b) plagiarism or alleged plagiarism by the Contractor.</p> <p>The Contractor shall ensure that all goods and services (including without limitation all computer hardware, software and systems) procured by the Contractor out of funds provided or reimbursed by the Owner or used by the Contractor in the carrying out of the Services do not violate or infringe any industrial property or intellectual property right or claim of any third party.</p>
25	Insurance to be taken out by the Contractor	<p>The Contractor</p> <p>(a) shall take out and maintain, and shall cause any Sub-Contractors to take out and maintain, at their (or the Sub-Contractors', as the case may be) own cost, but on terms and conditions approved by the Owner, during the performance of the Contract, the insurance against the risks, and for the coverage as specified in the SCC; and</p> <p>(b) at the Owner's request, shall provide evidence to the Owner showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.</p>
26	Contractor's Actions Requiring Owner's Prior Approval	<p>The Contractor shall obtain the Owner's prior approval in writing before taking any of the following actions:</p> <p>(a) any subcontract relating to the Services to an extent and, with such specialists and entities as may be approved as</p> <p>(b) any other action that may be specified in the SCC.</p> <p>Notwithstanding any approval as above, the Contractor shall remain fully liable for the performance of Services by the Sub-Contractor and its Personnel and retain full responsibility for the Services.</p>
27	Assistance and Exemptions	<p>The Owner shall use its best efforts to ensure the following:</p>

		<p>(a) To ensure the accuracy of all information and/or data to be supplied by the Owner to the Contractor necessary for performance of the Contract, except when otherwise expressly stated in the Contract.</p> <p>(b) issue to officials, agents and representatives of the Owner all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services;</p> <p>(c) provide to the Contractor, Sub-Contractors and Personnel any such other assistance as may be specified in the SCC.</p>
28	Payment Terms	<p>General</p> <p>In consideration of the Work / Services performed by the Contractor under this Contract, the Owner shall make to the Contractor such payments and in such manner as stated below:</p> <p>Payments will be made in the currency or currencies in which the Contract Price has been stated in the Contractor's bid i.e., INR.</p> <p>No payment made by the Owner herein shall be deemed to constitute acceptance of the Services nor relieve the Contractor of any obligations.</p> <p>Modes of Billing and Payment</p> <p>All the invoices of payment shall be supported by necessary Documents and submitted in quadruplicate for the certification of Engineer-in-Charge for which he will require a maximum time of fifteen (15) days before the same are submitted for processing the payment of amount admitted.</p> <p>The Owner shall pay to the Contractor all the admissible payments within thirty (30) days of certification of the Engineer-in-Charge of the amount payable for the services.</p> <p>Contractor shall furnish the details of Bank Account in the prescribed format along with Bid in order to facilitate the Owner to release Payments electronically through Electronic Fund Transfer system wherever technically feasible. The Contractor shall hold the Owner harmless & Owner shall not be liable for any direct, indirect or consequential loss or damage sustained by the Contractor on account of any error in the information or change in Bank details provided to the Owner in the prescribed form without intimation to Owner duly acknowledged.</p>
29	Early Warning	<p>If at any time during performance of the Contract, the Contractor or its Sub-Contractors should encounter events, circumstances conditions that may adversely affect the quality of the work, increase the cost of Services or delay the execution of the Services, the Contractor shall promptly notify the Owner in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Contractor's notice, the Owner shall evaluate the situation, and the Contractor shall cooperate with the Owner in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced.</p>
30		<p>In the event the Contractor is unable to complete the assignment by the Intended Completion Date it may request the Owner to extend the Intended</p>

	Extension of the Intended Completion Date	Completion Date giving reasons. The Owner may extend the Intended Completion Date if the reasons given by the Contractor, including prior review where necessary, are found acceptable. The Owner shall, however, decide by how much to extend the Intended Completion Date.
31	Good Faith	The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.
32	Liquidated Damage (LD) for Delay	<p>If the Contractor fails to complete the Work on or before the scheduled or extended date of completion, he shall, without prejudice to any other right or remedy of the Owner, arising out of the Contract on account of such delay, be liable for payment of liquidated damages @ ½ percent per week, not as penalty, on the Contract Value of the Work for every week that the progress remains below the required progress or that the Work remains incomplete subject to a maximum of 5% of the Contract Value.</p> <p>In case of amendment in the contract value, the limiting value of the Liquidated damages shall be 5% of the amended Contract Value.</p> <p>The amount of Compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Owner.</p>
33	Change in laws and regulations	If, after the date seven (7) days prior to the last date of Bid submission, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. However, these adjustments would be restricted to items in respect of both direct transactions between the Owner and Supplier.
34	Performance Security	<p>Within thirty (30) days of the receipt of Purchase Order/Service Order from the Owner, the contractor shall furnish the Contract Performance Guarantee (CPG), if applicable, for the due performance of the Contract for ten percent (10%) of the Contract Price with an initial validity up to ninety (90) days beyond the completion date for work plus defect liability period (if any), for due performance of the Contract(s)/Order(s) in any form acceptable to the Owner as mentioned below.</p> <p>CPG may be submitted in any of the following forms:</p> <ol style="list-style-type: none"> crossed Demand Draft / Bankers cheque drawn in favour of HURL Payable at New Delhi. An irrevocable Bank Guarantee as per the HURL standard format from any Nationalized bank / Scheduled Bank as acceptable to HURL as per list enclosed. <p>Failure of the supplier to submit the above-mentioned Contract Performance Guarantee shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.</p>

		<p>No interest shall be payable by the Owner to the Contractor against the Security Deposit furnished.</p> <p>Performance Security shall be returned after Certification of completion of work by EIC. However, the contractor will have to apply in writing, for refund of the same.</p>
35	Force Majeure	<p>Neither CONTRACTOR nor OWNER shall be considered in default in the performance of their obligations under CONTRACT, as long as such performance is prevented or delayed for reasons such as, including but not limited to, whether similar or dissimilar, acts of God, earthquake, tidal wave, tsunami, hurricane, storm, typhoon or cyclone (except monsoon), floods, lightening, land slide, fire or explosions, plague or epidemic, strikes of a whole National category of workers and concerted act of workmen or other industrial disturbances (lasting more than 7 consecutive calendar DAYS), lockouts (lasting more than 7 consecutive calendar DAYS), sabotage, blockade, war, riots, invasion, act of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, terrorist acts, insurrection or military or usurped power of confiscation or trade embargoes or destruction or requisition by order of any Government or any Public Authority or for reasons or cause beyond the reasonable control of the affected party provided notice of any such cause is given forthwith and in any event not later than one week (7) DAYS of the happening of the event by the party claiming the benefit of this Clause to the other specifying the matter constituting FORCE MAJEURE explaining to what extent contractual obligations will thereby be prevented or delayed and the further period for which it is estimated that such prevention or delay will continue. CONTRACTOR shall provide justificatory documents countersigned by the local Chamber of Commerce. Notwithstanding the forgoing, FORCE MAJEURE shall not include (a) weather conditions reasonably to be expected for the climate in the geographic area of the SITE including but not limited to the monsoon season, (b) the occurrence of any manpower or material shortages unless such a shortage is itself caused by an event of force majeure, or (c) any delay, default or failure (direct or indirect) in obtaining materials, or in any SUB-CONTRACTOR/VENDOR or worker performing any WORK or any other delay, default or failure (financial or otherwise) attributable to SUB-CONTRACTOR/Vendor/worker, unless such delay, default or failure results from any act, event or condition which would, with respect to such SUBCONTRACTOR/ VENDOR/ worker, constitute an event of force majeure.</p> <p>If the CONTRACTOR suffers delay in the due execution of the contractual obligations due to delays caused by force majeure as defined above, the agreed time of completion of job covered by this CONTRACT or the obligation of the CONTRACTOR shall be extended by a period of time on account of force majeure conditions, provided that on the occurrence of any such contingency, the CONTRACTOR shall within 30 days reports to the OWNER in writing, the cause of delay and likely duration of cause of delay with requisite documentary evidence.</p> <p>Should one or both the parties be prevented from fulfilling the contractual obligations by a state of FORCE MAJEURE lasting continuously for a period</p>

		<p>of 6 weeks, the two parties shall consult each other regarding the future implementation of the CONTRACT. The mere shortage of labour, materials or utilities shall not constitute FORCE MAJEURE unless caused by circumstances which are themselves FORCE MAJEURE.</p> <p>CONTRACTOR and OWNER shall endeavour to prevent, overcome or remove the causes of FORCE MAJEURE.</p> <p>No ground for exemption can be invoked if CONTRACTOR has failed to give timely notice by registered letter and subsequently supported it by documentary evidence.</p> <p>Delay or non-performance by a party hereto caused by the occurrence of any event of FORCE MAJEURE shall not:</p> <p>(a) Constitute a default or breach of the CONTRACT,</p> <p>Or</p> <p>(b) Give rise to any claim for damages or additional cost or expense occasioned thereby, if such delay or non-performance is caused by the occurrence of any event of FORCE MAJEURE. FORCE MAJEURE conditions are not payable under any circumstances.</p> <p>Force Majeure is no one's fault, therefore each party should bear its own cost and a provision to terminate the CONTRACT in case of Force Majeure extending beyond six (06) month is provided. Should OWNER wish the CONTRACTOR to continue further, both parties may sit together and mutually agree on the future course failing which Parties will have the right to terminate. Such termination shall not be considered as Termination for Owner's Convenience. However, outstanding invoices, payment for supplies made and payment to the work already performed will be paid by OWNER on such termination and shall be detailed at the time of CONTRACT finalisation. CONTRACTOR shall have the right to take action to mitigate the impact of the prolonged Force Majeure event in mutual consent with Owner.</p> <p>FORCE MAJEURE shall not apply to any obligation of the OWNER to make payments to the CONTRACTOR under the contract.</p>
36	No Breach of Contract	<p>The failure of a Party to fulfil any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Contract.</p>
37	Measures to be Taken on Force Majeure	<p>A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure.</p> <p>A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not later than fourteen (14) days following the occurrence of such event, providing evidence of the</p>

		<p>nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.</p> <p>Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.</p> <p>During the period of their inability to perform the Services as a result of an event of Force Majeure, the Contractor, upon instructions by the Owner, shall either:</p> <ul style="list-style-type: none"> (a) demobilize, in which case the Contractor shall be reimbursed for additional costs they reasonably and necessarily incurred, and, if required by the Owner, in reactivating the Services; or (b) continue with the Services to the extent possible, in which case the Contractor shall continue to be paid under the terms of this Contract and be reimbursed for additional costs reasonably and necessarily incurred.
38	Suspension	<p>The Contractor shall, on receipt of the order in writing of the Engineer-in-Charge, suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary for any of the following reasons:</p> <ul style="list-style-type: none"> (i) On account of any default on part of the Contractor; <p>or</p> <ul style="list-style-type: none"> (ii) for proper execution of the Works or part thereof for reasons other than the default on the part of the Contractor; <p>or</p> <ul style="list-style-type: none"> (iii) for safety of the Works or part thereof, for reasons other than those attributable to the Contractor. <p>The Contractor shall, during such suspension, properly protect and secure the Works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-Charge.</p> <p>The time for completion of the WORKS will be extended for a period equal to the duration of the suspension. The Contractor shall not be eligible for any other compensation whatsoever for such suspension, except as otherwise provided herein under.</p> <p>If such suspension of WORK by OWNER delays or is likely to delay the progress of WORK or the carrying out of WORK under CONTRACT resulting in additional expenses or increased liability to CONTRACTOR, the OWNER shall pay to the CONTRACTOR all reasonable expenses, mutually agreed between OWNER and CONTRACTOR, arising from suspension of the work by an order in writing of the OWNER provided that such suspensions of work is more than a cumulative period of ninety (90) days and provided that such suspension is not due to some fault on the part of the CONTRACTOR or a SUBCONTRACTOR.</p>

39	Termination for Default	<p>The Owner or the Contractor, without prejudice to any other remedy for breach of Contract, by notice of default sent to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of contract. In such an occurrence one party shall give not less than thirty (30) days' written notice of termination to the other party.</p> <p>Fundamental breaches of the Contract shall include but shall not be limited to, the following:</p> <ul style="list-style-type: none"> (a) If the Contractor fails to remedy a failure in the performance of their obligations hereunder, within thirty (30) days of receipt of such notice of suspension or within such further period as the Owner may have subsequently approved in writing; (b) If the Contractor submits to the Owner a statement which has a material effect on the rights, obligations or interests of the Owner and which the Contractor knows to be false; (c) if the Contractor, in the judgement of the Owner has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. <p>For the purpose of this Sub-Clause:</p> <p>"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.</p> <p>"fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Owner and includes collusive practice among Contractors (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Owner of the benefits of free and open competition.</p>
40	Termination for Insolvency	<p>The Owner and the Contractor may at any time terminate the Contract by giving notice to the other party if:</p> <ul style="list-style-type: none"> (a) the Owner becomes bankrupt or otherwise insolvent; (b) the Contractor becomes (or, if the Contractor consist of more than one entity, if any of its Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary; or (c) in such event, termination will be without compensation to any party, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the other party.
41	Termination for Convenience	<p>The Owner, by notice sent to the Contractor, may in its sole discretion and for any reason whatsoever, terminates the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that</p>

		<p>termination is for the Owner's convenience, the extent to which performance of the Contractor under the Contract is terminated, and the date upon which such termination becomes effective.</p> <p>In event of termination of Order/Contract, the Owner shall pay to the Supplier/Contractor the Contract Price, properly attributable to the works/supplies executed by the Supplier/Contractor as on the date of termination. However, any sums due to the Owner from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Supplier under this Order/Contract.</p>
42	Termination because of Force Majeure	The Owner and the Contractor may at any time terminate the Contract by giving notice to the other party if, as the result of Force Majeure, the Contractor is unable to perform a material portion of the Services for a period of not less than sixty (60) days.
43	Cessation of Services	Upon termination of the Contract by notice of either Party to the other pursuant to GCC Clauses 39 to 42, the Contractor shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum.
44	Payment upon Termination	Upon termination of this Contract pursuant to GCC Clauses to 39 to 42, the Owner shall make the payments to the Contractor for Services satisfactorily performed prior to the effective date of termination.
45	Disputes about Events of Termination	<p>If either Party disputes whether an event specified in GCC Clause 39, 40 or 41 has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to arbitration pursuant to GCC Clause 46, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.</p> <p>In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to GCC Clause 46.</p>
46	Settlement of Disputes	<p>of Adjudicator</p> <p>Managing Director (MD) of HURL shall be the Appointing Authority for Adjudicator. Adjudicator under the Contract shall be retired judge of Supreme Court/High Court of India.</p> <p>If any dispute of any kind whatsoever shall arise between the Owner and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the services—whether during the progress of the work or after their completion and whether before or after the termination, abandonment or breach of the Contract—the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference by mutual consultation, then the dispute shall be referred in writing by either party to the Adjudicator, with a copy to the other party.</p>

The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) days of a dispute being referred to it. If the Adjudicator has done so, and no notice of intention to commence arbitration has been given by either the Owner or the Contractor within fifty-six (56) days of such reference, the decision shall become final and binding upon the Owner and the Contractor. Any decision that has become final and binding shall be implemented by the parties forthwith.

Should the Adjudicator resign or die, or should the Owner and the Contractor agree that the Adjudicator is not fulfilling its functions in accordance with the provisions of the Contract, another Adjudicator shall be jointly appointed by the Owner and the Contractor. Failing agreement between the two within twenty-eight (28) days, the new Adjudicator shall be appointed at the request of either party by the Appointing Authority. Expenses incurred in the process of adjudication including the fees required to be paid to the adjudicator, if any, shall be shared equally between the Owner and the Contractor.

Arbitration

If either the Owner or the Contractor is dissatisfied with the Adjudicator's decision, or if the Adjudicator fails to give a decision within twenty-eight (28) days of a dispute being referred to it, then either the Owner or the Contractor may, within fifty-six (56) days of such reference, give notice to the other party, with a copy for information to the Adjudicator, of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.

Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with above clause, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Services.

Any dispute submitted by a party to arbitration shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions set forth below.

The Owner and the Contractor shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within twenty-eight (28) days after the latter of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority as given below:

- a) President, Institution of Engineers in case of an Indian Contractor.
- b) President, International Chambers of Commerce, Paris in case of a Foreign Contractor.

If one party fails to appoint its arbitrator within forty-two (42) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.

If for any reason an arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of

		<p>applicable laws as mentioned under the Clause related to Governing Law and a substitute shall be appointed in the same manner as the original arbitrator.</p> <p>Arbitration proceedings shall be conducted</p> <p>(i) in accordance with the following rules of procedure :-</p> <p>a) In case of a foreign Contractor, the arbitration proceeding shall be conducted in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976.</p> <p>b) In case of an Indian Contractor, adjudication/Arbitration proceedings shall be conducted in accordance with Indian Arbitration and Conciliation Act 1996. In case the Indian Contractor is an Indian Public Sector Enterprise/Government Department (but not a State Govt. Undertaking or Joint Sector Undertaking which is not a subsidiary of Central Govt. Undertaking), the dispute arising between the Owner and the Contractor shall be referred for resolution to a Permanent Arbitration Machinery (PAM) of the Department of Public Enterprises, Government of India.</p> <p>c) In case of a foreign collaborator/associate of the Contractor, the arbitration proceedings shall be conducted in accordance with the United Nation Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976.</p> <p>(ii) At Dhanbad, Jharkhand, India (Place for Arbitration)</p> <p>(iii) In the language in which this Contract has been executed.</p> <p>The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement.</p>
47	Fraud Prevention Policy	<p>The Supplier along with their associate / collaborator / subcontractors / sub-vendors / consultants / service providers shall strictly adhere to the Fraud Prevention policy of the Owner displayed on its tender website http://www.hurl.net.in.</p> <p>The Supplier along with their associate / collaborator / subcontractors / sub-vendors / consultants / service providers shall observe the highest standard of ethics and shall not indulge or allow anybody else working in their organization to indulge in fraudulent activities during execution of the Contract (Purchase Order/Service Order).</p> <p>The Supplier shall immediately apprise the Owner about any fraud or suspected fraud as soon as it comes to their notice.</p>
48	Risk purchase	<p>In the event Contractor fails to execute the services in scheduled completion period, HURL reserves the right to get the job executed from any other source at the Contractors risk and cost and the difference in cost shall be borne by the Contractor.</p>

		Further, HURL shall retain the right of forfeiture of Performance Security and or any other action as deemed fit.
--	--	---

IMPORTANT NOTE	The Special Conditions of Contract will supersede any other related conditions anywhere in the tender documents and will prevail for evaluation / finalization of the tender.
-----------------------	--

SECTION – IV : SPECIAL CONDITION OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Wherever there is a conflict, the provisions herein shall prevail over those in the GCC. The corresponding clause number of the GCC is indicated.

SCC Clause	Reference Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract or additional clauses
1	Qualifying Requirements /Pre-Qualification Criteria (PQC)	As per clause 5.0 of Section 1 i.e., NIT (Notice Inviting Tender).
2	Price Bid/ BOQ	<p>Schedule of price bid / BOQ in the form of BOQ_XXXX .xls is provided along with this tender document at https://eprocure.gov.in/eprocure/app.</p> <p>In the BOQ total estimated cost is derived based on the estimated unit rate for each item as indicated in BOQ. The bidders shall quote their rate in percentage rate over total estimated cost of all items of BOQ portion up to two decimals only in price bid. Bidders to note that only first two decimals shall be considered for evaluation if quotation is having more than two decimals. Bidders is required to select "Excess (+) / Less (-)" from drop down menu against each line of BOQ/Price Bid i.e. SOR Part-A (Civil works), SOR Part-B (Electrical works) and SOR Part-C (IT works) and then they have to individually quote rate in percentage up to two decimals only.</p> <p>The quoted rate/amount shall be inclusive of all taxes and duties etc. as per tender but exclusive of the GST. Bidder must quote their rates exclusive of GST. The GST shall be paid extra as per applicable rates.</p> <p>For GST, clause related to Taxes and Duties of SCC may please be referred.</p> <p>Note: -</p> <ol style="list-style-type: none"> 1. The subject work is non-divisible as per the provisions mentioned in the award criteria in Special Conditions of Contract. Division for MSE benefit is not applicable. 2. The quoted rate/amount by the bidder shall be inclusive of all taxes and duties etc. but exclusive of the GST. Bidder must quote their rates exclusive of GST. The GST shall be paid extra as per applicable rates.
3	<u>Bid Evaluation</u>	Bids shall be scrutinized in terms of the provisions of the bidding documents. Full compliance to the complete provisions of the Bidding Documents and its subsequent Amendment(s) / Clarification(s) / Addenda / Errata if any, issued by the HURL shall be checked. Failure to comply with

this requirement, the bid shall be rejected.

Technical and commercial bids shall be evaluated only for those bidders, whose EMD is found to be in order as per NIT requirement. EMD submitted by bidder will be reviewed against its value, validity and issuing bank as per NIT requirement. If the EMD is not found in order with respect to NIT requirement, the bids may be rejected.

Pre-Qualification Evaluation

HURL, by the examination of Techno-Commercial Bid, will determine to its satisfaction whether the participating bidders are qualified to satisfactorily perform the contract in terms of Pre- Qualification Criteria stipulated in clause 1 of SCC.

An affirmative determination of meeting the Pre- Qualification Criteria will be a prerequisite for further evaluation of Techno-Commercial bid. A negative determination will result in rejection of the Bidder's Techno-Commercial Bid in which event HURL will not open the Price Bid of the concerned bidder and his EMD shall be returned.

Technical Bid Evaluation

Bids shall be scrutinized on Techno-Commercial parameters based on the documents as mentioned in Annexure-1 to ITB. Bidders are required to submit fully compliant bid. The bidders are required to furnish no deviation certificate in conformity to same. The bidder who has not submitted / furnished such certificate, their price bid shall not be opened.

Technical Bid for compliance of technical specifications as submitted by the bidder against Annexure-2A, 2B and 2C of to Section VII : Forms and Procedures (NIT) will be evaluated by technical department for acceptance/rejection of technical bid.

The PRICE BID shall be opened only of those bidders whose bid would have been considered techno-commercially accepted. Conditional bid will not be accepted.

Price Bid Evaluation

The PRICE BID shall be opened only of those bidders whose bids are found to be technically and commercially substantially responsive.

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.

		<p>(c) "Omission" is the failure to submit part or all of the information or documentation required in the tender document.</p> <ul style="list-style-type: none"> The subject work is indivisible / non-splitable and complete work shall be awarded to successful overall lowest bidder. The financial comparison for selection of Lowest (L-1) Bidder / Contractor shall be done based on the total derived price of all the items mentioned in BOQ/SOR after arithmetical correction of errors (if any). The aggregate of quoted amount for all items of BOQ (Items as mentioned in SOR) will be worked out as total derived price, shall be considered for evaluation and award In case tie between two or more bidders at L-1 position, the sole criterion for determining the L1 bidder among them shall be on the basis of evaluated Average Annual financial Turn Over of last three (03) financial years as per Pre-Qualification criteria (PQC) 5.2 of tender document. Bidder having the highest average annual financial turnover as per evaluation of Pre-Qualification criteria (PQC) 5.2 will be considered as L1 bidder. The unit price of each item mentioned in BOQ/SOR shall be derived after multiplying a factor (Bidder quote factor calculated as per below calculation) with estimated amount of unit rate for each item indicated in BOQ/SOR. <p style="text-align: center;"> $\text{Bidder quote factor} = 1 \pm (\text{Quoted rate in Percentage} / 100)$ "+" to be considered If bidder quotes Excess(+). "-" to be considered if bidder quotes Less(-). </p> <p>For Example- If bidder quotes Excess (+) 10% then bidder quote factor will be 1.1. Similarly, If bidder quotes Less (-) 10% then bidder quote factor will be 0.9.</p> <ul style="list-style-type: none"> In case of Abnormally Low Bid the Bidder may be asked for written clarifications, including detailed price analyses of its bid price in relation to scope, schedule, allocation of risks and responsibilities, and any other requirements of the bid documents. If, after evaluating the price analysis, the Owner determines that the bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Procuring Entity may reject the bid/ proposal.
4	Award Criteria	<p>HURL reserves the right to negotiate price with L1 bidder.</p> <p>HURL will award the Contract to the successful Bidder whose Technical and Commercial bid has been determined to be substantially responsive and Price Bid to be the lowest evaluated Bid.</p> <p>Note: Quantity mentioned in the SOR are non-splitable under the tender.</p>
5	Contract Price	As per GCC

	GCC CLAUSE 18	Contract Price shall be total amount excluding GST .
6	Taxes and Duties GCC CLAUSE 13	<p>The Contractor has to submit / furnish all necessary documents / information to enable HURL claim the input credit benefit, if any, under GST rules. After award of contract, The contractor has to ensure that invoices raised on HURL must be properly uploaded in GST portal and ensure of prompt filing of returns. GST amount will be released upon reflection of invoices under GSTR-2B.</p> <p>HURL shall deduct BOCW cess on the bills if applicable.</p>
7	Payment Terms & Documents required for Payment GCC CLAUSE 28	<ul style="list-style-type: none"> • The payment shall be made for the actual job executed by the Agency after due verification and certification by the concerned Engineer-in-charge of the HURL, Sindri Project. • The Agency shall submit bills in triplicate on monthly basis to the concerned Engineer- in- charge of the HURL, Sindri Project. It shall have to furnish Labours Payment Certificate along with copy of the EPF deposit challan and the deposit details duly receipted by the concerned EPFO to HURL, Sindri Project by 7th of every succeeding month irrespective of submission of bills, failing which its payment will be withheld. • In-come Tax as applicable as per IT Rules shall be recovered at source and other taxes as applicable will be deducted from the Running/final bill. • The Bills shall be submitted on running bill of running work on monthly basis. Payment shall be released within 30 days of submission of invoice by the party in all respect and duly certified by EIC. No claim regarding advance payment/adhoc payments will be entertained. • The agency shall pay applicable GST and claim it along with RA Bills. The vendor have to ensure that invoices raised on HURL be properly uploaded in GST portal and ensuring of prompt filing of returns. • All payments shall be made in Indian currency by means of Electronic Clearance Service (ECS) or Cheque only. • Royalty payment proofs & Clearance certificates shall be provided along with monthly invoices. • The successful bidder will be responsible for compliance of all statutory provisions relating to Minimum Wages, Provident Fund, and Employees State Insurance and any other mandatory provisions of law in respect of the persons deployed by Contractor for this work. • Successful bidder shall also be liable for depositing all taxes, levies, cess etc. on account of service rendered by it to HURL to concerned tax collection authorities from time to time as per extant rules and regulations on the matter.

		<ul style="list-style-type: none"> The successful bidder shall maintain all statutory registers under the applicable Law. The bidder shall produce the same, on demand, to the EIC of HURL nominated for this work. The Tax deduction at Source (T.D.S) shall be deducted as per the provisions of Income Tax Department, as amended from time to time and a certificate to this effect shall be provided to the agency by HURL. In case, the successful bidder fails to comply with any statutory/taxation liability under appropriate law, and as a result thereof HURL is put to any loss / obligation, monetary or otherwise, HURL will be entitled to get itself reimbursed out of the outstanding bills or the Performance Security Deposit of the bidder, to the extent of the loss or obligation in monetary terms. No demand certificate, gate pass clearance certificate and other certificates regarding completion of statutory compliance and undertakings as asked by EIC have to be submitted by the contractor at the time of submission of Final bill. No payment shall be made in advance nor any loan from any bank or financial institution recommended on the basis of the order of award of work.
8	Defect Liability Period	Defects Liability period will be 1 year after final handing over of Building i.e., after completion of all punch points for all activities except roof waterproofing and anti-termite for which the defects liability period will be 5 years after final handing over of building.
9	Effective Date GCC CLAUSE 14 & 15	The contract shall be operative from the start date of work as certified by Engineer-in-charge (EIC).
10	Commencement of Services GCC CLAUSE 16	The contractor has to mobilize their manpower within 15 days from date of acceptance of Letter of Award (LOA).
11	Insurance to be taken out by the Contractor GCC CLAUSE 25	<p>The contractor is required to take insurance cover for all risks involved in the execution of the scope of work including the following coverage</p> <p>The risks and the coverage shall be as follows:</p> <ul style="list-style-type: none"> (i) Necessary insurance(s) to cover accident risk for his employee's loss of life, material etc. to crew or the third party to be arranged by Contractor at his cost. (ii) All contractors' equipment shall be at the sole risk of the contractor. (iii) The contractor will insure all his personnel employed for the execution of the work against any personal injury that may be sustained as a result of the execution of the work. The contractor will present satisfactory evidence to the owner/consultant that such insurance is in force.

		<p>(iv) The contractor shall be responsible for workman's compensation insurance / ESI scheme and all other statutory requirements in regard to the personnel in the contractor's employment.</p> <p>Any other insurance required during the execution of work.</p>
12	Contractor's Actions Requiring Owner's Prior Approval GCC CLAUSE 26	<p>(1) For Civil works, The contractor shall provide direct service to HURL and shall not offload the work to any Sub- Contractors under any circumstances.</p> <p>(2) For Electrical & IT Works, Subcontracting is allowed as per GCC clause 26. For Electrical works, Subcontracting vendor shall have valid "A" class license from the Director of Electrical Safety to the Govt. of Jharkhand and other requirement as mentioned in scope of work for Electrical works as mentioned in Section-V of tender document.</p>
13	Contract Period	Time period for completion of the work is 8 months (Including Holiday) from the effective date of contract.
14	Signing of Contract Agreement	<p>The successful tenderer / bidder shall be required to execute a contract agreement on non-judicial stamp paper of Rs.500 in the prescribed proforma (enclosed as Annexure-13 to Section VII i.e., Forms and Procedures) with the Company within 30 (thirty) days of the issue of the work order of the same for carrying out the work according to the general and special conditions of contract specified in the Tender Document.</p> <p>Cost of non-judicial stamp paper shall be borne by successful bidder. The contract shall be presumed to be effective from the effective date contract. The Tender Document, Letter of Acceptance and other correspondence between the Company and the tenderers shall form part of the contract.</p> <p>Failure of the successful tenderer / bidder to execute the above-mentioned Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.</p>
15	Performance Security GCC Clause 34	<p>1. EMD of successful bidder will be converted to Security Deposit after award of contract. Successful Bidders who are exempted from submission of EMD on account of MSME, shall have to deposit security deposit equivalent to EMD amount i.e. Rs. 5,00,000.00 (Rupees Five Lakhs only) before award of contract/Work Order.</p> <p>2. Within thirty (30) days of the receipt of Purchase Order/Service Order from the Owner, the contractor shall furnish the Contract Performance Guarantee (CPG), if applicable, for the due performance of the Contract for the amount equivalent to "ten percent (10%) of the Contract Price less security deposit amount as submitted against above point 1" i.e. in this case, it will be "10% of contract price – Rs. 5,00,000" with an initial validity up to ninety (90) days beyond the completion date for work plus defect</p>

		<p>liability period (if any), for due performance of the Contract(s)/Order(s) in any form acceptable to the Owner as mentioned below.</p> <p>3. For civil works roof waterproofing and anti-termite, defect liability period will be five (05) years. Before validity end period of the Contract Performance Guarantee (CPG) as mentioned in above S.N. 2 of this clause, The contractor shall furnish the Contract Performance Guarantee (CPG) with validity up to Five (05) years beyond the completion date for work for the amount equivalent to ten percent (10%) of the contract price for roof waterproofing and anti-termite works as mentioned in S.N. 12, 13,14, 15, 123, 124, 135 and 141 SOR Part -A (The activities are marked with (*)) in respective S.N. of SOR part-A for roof waterproofing and anti-termite works). Contract Performance Guarantee (CPG) submitted against S.N. 2 will be released only after submission of the Contract Performance Guarantee (CPG) required as per S.N. 3 of this clause for roof waterproofing and anti-termite ,</p> <p>Performance Security / Performance Bank Guarantee (PBG) may be submitted in any of the following forms:</p> <ul style="list-style-type: none"> electronically by RTGS in the account of HURL details of which are given in bidding document or in the form of Demand Draft in favour of Hindustan Urvarak & Rasayan Limited, Payable at New Delhi. or in the form of an irrevocable bank guarantee in accordance with the form of included in the bidding documents (Annexure 9 of Section VI (Forms and Procedures)) from any Nationalized bank / Scheduled Bank recognised by Reserve Bank of India. <p>Failure of the supplier to submit the above-mentioned Performance Security / Performance Bank Guarantee (PBG) shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security / Security deposit submitted before award of work.</p> <p>No interest shall be payable by the Owner to the Contractor against the Security Deposit furnished.</p> <p>Performance Security shall be returned after Certification of completion of work and Defect Liability period (if any) by EIC. However, the contractor will have to apply in writing, for refund of the same.</p> <p>3. HURL reserves the right to forfeit the security deposit/PBG if the Contractor fails or neglects to take up the job, abide by to fulfil the terms and conditions of the contract and/or to execute the work satisfactorily.</p>
16	NOTICE OF DEFAULT	<p>In the event of any default by either party hereto, in respect of any of its obligations and responsibilities under the Contract, the party not in default shall give notice in writing to the other party calling upon it to rectify such default. Should the party in default does not rectify such default within a period of thirty (30) days of the receipt thereof within the said period, the</p>

		other party shall be entitled to treat it as a breach of Contract and notice to that effect shall be given forth with.
17		If a tenderer resorts to any frivolous, malicious or baseless complaints/allegations with an intent to hamper or delay the tendering process or resorts to canvassing / rigging/influencing the tendering process, HURL reserves the right to debar such tenderer from participation in the future tenders up to a period of 2 years.
18		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.

SECTION – V : SCOPE OF WORK, TECHNICAL SPECIFICATIONS AND OTHER TERMS AND CONDITIONS

PART- A : CIVIL WORKS-

(I) SCOPE OF WORK (CIVIL WORKS)

The scope of work is renovation work of all 66 (Sixty six) rooms along with utility area of Technical Building at HURL Sindri Project. The scope of work shall be in general but not limited to the followings: -

1. Surface dressing of ground, removing vegetation from terrace and surrounding area.
2. Dismantling of all sanitary fixture, fencing, water supply pipe, rain water pipe, door, window, damaged chajja, etc.
3. Laying of paver block on approach road and building peripheral.
4. Replacement of all sanitary and water supply fixture.
5. Laying vitrified tile flooring over existing floor.
6. All door and window to be replaced with new one. Wooden flush door for main gate and PVC door for bathroom. Aluminum window to be provided in all room.
7. Repairing of plaster and painting to whole building
8. Replacement of shutter and fittings of cub-board, ward robe.
9. Construction of septic tank with soak pit.
10. Water proofing treatment at terrace.

The scope of work shall also include any other item of work required to complete the work in all respects as per the specifications, drawings and instructions of Engineer-in-charge whether specifically mentioned or not in the tender documents.

(II) APPROVED VENDOR LIST FOR CIVIL ITEMS :

S.No.	Construction material	Approved Vendor List
1	Tiles	Kajaria, somany, AGL, Orient bell, Nitco
2	Cement (PPC/OPC-43)	Ultratech, Shree, Nuvoco, Emami, ACC
3	HYSD Steel (Fe- 500 D/550 D), Mild steel	Jindal, Tata, Sail, RINL, Shyam
4	MS steel	Jindal, Tata, Sail, shyam
5	Aluminium frame	Tata Vikas, Jindal, Hindalco
6	False ceiling	Gyproc (Saint Gobain)
7	APP membrane/ Hybrid Poly Urea elastomeric waterproofing	Pidilite, Sika, STP, Asian
8	Wall putty	Asian, JK, Berger, Nuvoco, Birla
9	Paint	Asian, Berger, Nerolac
10	Ply wood	Green ply, Century ply, Kitply, Bokaro timber
11	Sanitary fittings	Jaguar, Marc, parryware, Hindware, Somany
12	Plumbing pipes	Prayag, prince, paras
13	Waterproofing compound/products	Sika, Fosroc, pidilite, Asian, STP
14	PVC door & frame	Rajshree, Sintex
15	Water tank	Prince, Sintex, Himgiri
16	Anti Termite	Insecticide India Ltd., Arbuda, Lindane, Lethal

Brick- Red clay burnt brick/ Fly ash bricks of class 7.5 shall be used for brickwork conforming to IS 1077. Raw materials (coarse & fine aggregate)- shall conform to IS 383:2016.

Earth filling- The earth used for filling shall be free from all roots, grass, shrubs, rank vegetation, brush wood, trees, saplings and rubbish. Filling with excavated earth shall be done in regular horizontal layers

each not exceeding 20 cm in depth. All lumps and clods exceeding 8 cm in any direction shall be broken. Each layer shall be watered and consolidated with steel rammer.

Quality Assurance plan shall be prepared before commencement of work.

(III) OTHER TERMS AND CONDITIONS FOR CIVIL WORKS

1. The work will be executed as per the SOR & CPWD Specifications.
2. The quantity of any item of abovementioned work may vary to any extent for which no revision of rate will be applicable. However overall deviation limit shall be within 10% of contract value.
3. Any item of work other than mentioned in SOR if required may be carried out as per DSR-2018 after approval from EIC. The rate of item will be as same as quoted by the bidder over the SOR DSR-2018 items.
4. The Contractor shall note that the quantities of the different Items, as given in the "Schedule of Rates" are tentative based on tentative tender drawings and are subject to variation and they shall not be entitled to claim any higher rate or compensation on this account. Owner reserves the right to change / modify the size and type of sections at any time. Owner does not guarantee work under each item of the Schedule of Quantities. The total quantum of work may vary up to $\pm 10\%$ on either side the Contract Price or nothing extra over the Unit Rate as referred in Schedule of Rates will be paid on this account. Quantum of individual item may vary to any extent. However, in case of any increase in executed / work order value beyond awarded value, contractor shall prepare statement of such expected variation based on the drawings issued for construction or as per site condition and shall obtain prior issuance of formal amendment to Contract from the OWNER in this regard. In no case, the value of executed value should exceed the awarded value without prior written approval from owner.
5. **Defects Liability period for civil works** will be 1 year after final handing over of Building i.e., after completion of all punch points for all activities except roof waterproofing and anti-termite for which the defects liability period will be 5 years after final handing over of building.
6. Specialized agency shall be deployed for carrying out the activities of roof treatment and anti-termite treatment. Previous work experience of the agencies shall be submitted for approval before starting of respective activity.
7. Method statement shall be submitted for approval from EIC before starting of roof water proofing treatment and anti-termite treatment.
8. Anti-termite Treatment- The contractor shall submit performance guarantee for the item of anti- termite at the rate of 10% of cost of items of work order in the form of bank Guarantee for a period of 5 years from actual date of completion of work. In the event of unsatisfactory performance of anti-termite treatment work, the agency shall carry out necessary remedial/rectification works at no extra cost, failing which BG shall encashed by HURL. The BG shall be released only after satisfactory completion of performance period of 5 years.
9. Water proofing treatment of roof- The contractor shall submit performance guarantee for the item of roof waterproofing at the rate of 10% of cost of items of work order in the form of bank Guarantee for a period of 5 years from actual date of completion of work on non-judicial stamp paper of appropriate value in approved format. In the event of unsatisfactory performance of roof treatment work, the agency shall carry out necessary remedial/rectification works at no extra cost, failing which BG shall encashed by HURL. The BG shall be released only after satisfactory completion of performance period of 5 years
10. For proper execution of work sufficient numbers of tools & tackles needs to be provided by the agency at their own cost, nothing shall be paid extra for this.
11. Engineer in Charge (EIC) or an Officer explicitly authorized by him will represent HURL Sindri project in all dealings with the Firm/ Agency for execution of work.

12. The contractor shall depute one full time competent supervisor, who shall ensure that all the duties assigned to the firm by HURL must be performed by them in the desired manner, failing which, it shall invite penalties as prescribed in the following paragraphs.
13. The contractor's Supervisor shall be the first line of contact for client, who shall report to the EIC of HURL.
14. The contractor shall deploy qualified engineer to supervise the work.
15. The contractor shall arrange for equipment's and safety devices as are necessary for such type of work and carry out requisite of handling equipment, lifting tools, tackles etc. as per prescribed standards and practices.
16. Provision of all necessary labours, construction equipment, instruments and appliances in connection with all above mentioned work as specified or as directed by Engineer-in-Charge or the representative of Engineer.
17. CPWD latest specifications will be applicable for methodology of execution of work for all DSR items. For Non DSR items, methodology as per relevant IS codes or structural drawing with method statement shall be carried out as approved by Engineer in charge.
18. Any item of work other than mentioned in SOR if required may be carried out as per DSR-2018 after approval from EIC. The rate of item will be as same as quoted by the bidder over the SOR DSR-2018 items.
19. Any other item of work as required needs to be carried out as per CPWD specifications for completing the job in all respects in accordance with the provisions of contract and to ensure the structural stability and safety of the work during and after construction.
20. Damage caused to properties of HURL if any, during execution of above work shall be rectified by the contractor at his cost failing which the cost of rectification shall be recovered at market cost of such items from the next R/A Bill / Final Bill of the work contract.
21. The work shall be carried out as and when required by HURL with all safety precautions.
22. The contractor shall ensure all his workers shall have Personal Protective Equipment's (PPE's) at his cost (not to be charged to the worker) and ensure safety of site by providing Barricades for restricting movement of public to work area. The barricade arrangement shall be approved by Engineer in charge keeping in view the overall circulating pattern of the commuters in the station.
23. Time period of the work is 8 months (Including Holiday) from the stipulated date of commencement of work.
24. Electrical & water arrangement required for construction shall be the responsibility of contractor itself.
25. CPWD latest specifications shall be followed. Where not available, BIS/Engineering practice as directed by the Engineer shall be followed. The materials shall be supplied by contractor, as approved by the authorized officer of EIC.
26. All rubbish, debris etc. shall be disposed at the earliest and the place shall be cleaned at the end of each day's work.
27. The Contractor shall ensure that his staff is qualified for their part of work. The staff shall behave in a courteous manner. The contractor will be held responsible for any loss or damage to HURL property (if any) and recovery shall be made accordingly from the RA Bill.
28. The contractor shall ensure safety of his workers and others at site of work and shall be responsible for any consequence arising out of execution of the subject work.

29. The personnel engaged by the Agency shall draw their remuneration from their Agency and will not claim any employment benefit from HURL at any time. The agency shall also be responsible for the statutory obligations of such personnel and shall indemnify HURL in the matter.
30. The payment shall be released as per monthly R A Bills with all statutory deduction.
31. The contractor shall abide by all statutory rules and regulations of Local authority , State and Central Govt. as the case may be with regard to statutory benefits and non-statutory benefits prevailing at HURL-Sindri as applicable, at his own cost and hence the agency has to quote their rate accordingly by taking care of all these.
32. The Agency/ Firm shall be directly responsible for payment of minimum wages as per central government orders and circulars (including other benefits like E.P.F. & E.S.I) to his man power engaged under this contract at his own cost. When the contract terminates there shall be no physical or moral pressure on HURL, on grounds of “person/ resources displace from job”.
33. The contractor shall have P.F. code no. As per statutory requirements of provident fund Act, and extend the facilities of P.F. contribution of the act at his own cost and no extra claim shall be entertained by HURL on this account.
34. The contractor shall have to comply with the provision of payment of wages Act,1936 minimum wages Act, 1948, Employee liabilities 1938, Workers compensation Act,1923. Industrial dispute Act, 1947, contract labour (Regulation and abolition) Act,1970 with latest modification thereof or any other related law and rules made time to time. No extra claim shall be entertained by HURL on this account.
35. The Agency shall have to get itself registered with the E.P.F. Organization under Employees’ Provident Fund and Misc. Provision Act, 1952 and produce a copy of certificate of the same. The Agency shall recover the EPF contribution as prescribed under the EPF & Misc. Provision Act, 1952 from the wages of its personnel and deposit the same with the EPF Organization along with matching contribution from its side in accordance with the provisions in the relevant Act/Rules, and copy of the relevant deposit certificate is to be attached along with the bill raised by the Agency.
36. The Agency shall have a valid labour license under section 7 of the contract labour (R&A) act, 1970 and contract labour (R&A central Govt. rules, 1971) and produce a copy of certificate of the same to Engineer in charge (EIC).
37. The contractor shall have P.F. code no. As per statutory requirements of provident fund Act and in addition to that the work man shall have ESIC respectively.
38. All employees of agency are to be covered under the ESI Scheme. The Agency has to submit the proof of ESI Registration of its Company. It shall have to ensure that ESI contribution with respect to all the personnel engaged by it under the contract are submitted to the appropriate authority on month-to-month basis and have to submit the proof thereof.
39. Month wise detailed statement of wages paid to the employees including E.P.F/E.S.I deduction should be enclosed along with the monthly bill by the Firm/ Agency and submitted to the designated Engineer in charge, HURL.
40. HURL reserve the right to terminate the contract at any time during the contract period in case performance is not found satisfactory and work not carried as per instruction of Engineer-in-charge.
41. The firm/Agency shall comply the regulatory clauses of labours Act and shall not engage any minor under this contract.

42. The contractor shall ensure that all statutory/mandatory requirements either related to wages disbursements or related to deposition of EPF/ESIC with concerned authorities or providing ESIC facilities to the manpower are fulfilled through Contractor or its supervisor.
43. All safety measures must be taken care of, in order to avoid any accident, fire and other safety hazards. Any type of loss of assets due to any such incident is the sole responsibility of the Firm/Agency. HURL shall in no way be liable for any such incident.
44. If there is any damage to HURL property or any other financial burden on the institute because of willful or negligent action by the Firm or its personnel, the institute shall be entitled to recover the same by means of compensation from the Firm/ Agency.
45. The contract shall be executed under the Agency's own supervision. The Agency shall have to be present at the work place either personally or through their authorized representative for the supervision and co-ordination of works every day during working hours to supervise and control his work force as per the requirement and taking instruction of EIC for which no extra payment shall be made by HURL, failing which deduction of Rs. 500.00 per day shall be deducted from contractor's RA Bill.
46. In the view of pandemic situation contractor have to provide a transit camp for sheltering the manpower involved in work, If needed.
47. The Manpower/ supervisor deployed by the contractor shall ensure that the HURL properties are protected from theft/pilferage/ damage. After necessary investigation, if proved that the contractor/ their personnel are responsible for the incident, the contractor is liable and will be penalized to the extent of the value of the loss and additional charges for each incident as decided by the competent authority.
48. HURL is not liable at any stage to provide accommodation, transport, food, medical and any other requirement of their personnel deployed at the premises/institute.
49. All boarding/ lodging/ Transportation/ Local conveyance of workman engaged shall be in the scope of contractor.
50. The contractor shall be responsible for the conduct/integrity of persons deputed for works in the building and will also be responsible for any act of omissions or commissions on their part.
51. For smooth execution and attending complaints, the Contractor should provide mobile facilities to their supervisor.
52. The contractor shall not appoint any sub contractor for the work under any circumstances.
53. The contractor shall ensure that all personnel deployed by the firm are fully conversant with the premises and with the client's business activities and its related requirements.
54. SAFETY CLAUSES: All safety requirements shall be fulfilled by contractor. Safety of all manpower, shall be under contractor scope. Safety in totality is complete responsibility of contractor. Proper safety arrangements / PPEs for carrying out the job is under contractor's scope and same has to be complied with as per the direction of EIC. For non-compliance of introductions for safety measures, suitable penalty will be imposed and the decision of EIC-HURL shall be final and binding to the contractor.
55. None of the personnel employed by contractor shall be a member of Trade Union/political outfit and/or take any interest in trade union/political outfit activities.

PART- B : ELECTRICAL WORKS-

(I) SCOPE OF WORK :

- The scope covers Design, Engineering, Supply, Installation, Testing and Commissioning, delivery at site in well packed condition of the electrical equipment's and accessories specified herein required for Internal Electrification Works (Supply & Erection) for renovation of existing technical building s at HURL, Sindri Jharkhand
- This specification covers complete internal electrifications of existing technical building s including distribution boards, cables, earthing, Lightning etc. for Lighting, 6A/16A switch socket, Air conditioner points, Fans etc. as specified and mentioned in SOR.
- The scope of work shall also include digging of earth and refilling for directly buried cables, earth strips, cable protection pipes, earth pits, civil works such as making earth pit inspection chambers with covers, grouting of equipment base plate, channels, supports and foundation bolts, chipping of concrete or in brick work for earth strips, pipes or other minor chipping for foundation preparation, if required, cutting holes in walls light fitting brackets, sealing of cable entries and making good the same after installation of the equipment and leveling, and other minor similar jobs as per directions of Owner / Engineer-in-Charge.
- All civil work (like cutting, chipping, grouting, making opening in floor / wall etc. for equipment foundation and cabling work) pertaining to electrical equipment are in the scope of work of the contractor.
- All dismantling works like old cable, board, conduit etc removal shall be in the scope of the contractor. All the scrap generated during execution of works shall be handed over to HURL by the contractor.
- The contractor shall obtain the necessary clearance from Jharkhand Electricity Regulatory Commission (JERC) authority for complete electrical installation. Wherever service connections are to be obtained from the JERC authority, the contractor shall process the application and obtain the power supply. All necessary drawings, calculations, test certificates and record of site tests etc. as required by the Inspector shall be furnished. Any modification / rectification as required by Electrical Inspector shall be carried out free of cost by the contractor. All fees payable to the supply company and Electrical Inspector for such service connections shall be paid by the owner.
- This specification shall be read in conjunction with all referred standards, associated drawings, specification sheets, PDS, Inventory of internal electrification of existing technical buildings, SOR for Internal Electrical Works (Supply & Erection) for Renovation of the existing technical building.
- Quantities indicated in the Schedule of Rates (SOR) and Inventory are approximate and these may increase or decrease or some items may even be deleted at the time of actual execution. However, the value of total increase or decrease shall be limited to $\pm 10\%$ of the contract value irrespective of the changes in quantity of individual items.
- **The contractor shall have valid "A" class license from the Director of Electrical Safety to the Govt. of Jharkhand. The contractor must have PF & ESI codes covering all persons hired by him for carrying out the job. He shall engage suitably skilled / licensed workmen of various categories for execution of work supervised by supervisors / engineer of appropriate qualification and experience to ensure suitable quality of work.**

- There are no discrepancies between Technical Specification and SOR in respect of description of equipment / work, the bidder has to follow both the SOR/Technical Specification shall prevail.
- This being a renovation job, bidder must visit the site to understand the nature of job and collect the necessary details from site. Bidder shall also develop the layout based on the details provided and submit for approval during detail engg.
- The contractor shall observe safety rules and take all necessary safety precautions to carry out the internal electrification works.
- Scope of internal electrification shall also cover but not limited to complete internal electrifications up to and including main switches, MCBs and distribution boards as specified and as mentioned in SOR.
- Warranty as per OEM.

REFERENCE STANDARDS

All electrical equipment and installation shall comply with the requirements laid down in the latest issue of relevant Indian Standard Specifications and statutory acts / rules / regulations. In the absence of IS for any particular equipment or in case of imported equipment, relevant IEC Standards shall be applicable. All Specifications, publications mean the latest edition.

The equipment and installation shall also comply with the provisions of latest issue of Indian Electricity Rules. Contractor shall obtain approvals of Statutory Authorities for equipment and complete installation and shall make, wherever necessary, suitable modification in the equipment, installation to comply with the above.

Wherever any requirement, laid down in this standard, differs from that in Indian Standard Specification, the requirement specified herein shall prevail.

SERVICE CONDITIONS

The equipment shall be designed for the following site conditions:-

▪ Maximum ambient temperature	-	47.7°C
▪ Minimum ambient temperature	-	2.3°C
▪ Design reference temperature	-	50°C
▪ Relative humidity	-	100%
▪ Altitude above sea level	-	<1000 mtr.

INSTRUCTION FOR ELECTRICAL WORKS

- This specification covers complete electrifications of existing technical buildings with LT cables & wires, AC, Meter distribution boards, Room switch boards, surface/recess conduits, MCB boxes, LED lighting fixtures, wall & ceiling Fan, 6A & 16A switch socket etc as specified in technical specification, SOR, and attachments enclosed with it.
- Complete work shall be carried out conforming to the provisions of Indian Electricity Act and relevant Indian standard Specifications (ISS). Wherever these regulations are supplemented by the State Electricity Dept., Electricity Undertakings / Boards, the installation shall also comply with these requirements. Wherever the specifications given in this NIT differs from those of the statutory regulations, these specifications shall be followed.
- Contractor shall submit the sample of the electrical equipments / items for the approval of

Engineer-in-charge before procurement of any of the electrical equipments / items.

- Bidder shall submit various Layout drawings as per Annexure-I 'Drawings and Documents Schedule' for owner's approval before proceeding with the installation works. Approval of drawings / documents does not relieve the contractor of his responsibilities to meet the intents of specifications. Cutting chases / groove, wherever required, and making good is deemed to be included in the contractor's quoted rates.
- Location of PCC, Meter Distribution Boards, Power Distribution Boards for AC, Lighting Sub Distribution Boards, switch boards, light fittings, cable routes, conduit routes, earthpits etc. shall be marked at site and approval of Engineer in- charge obtained before proceeding with the installation work.
- On completion of works, wiring diagram for complete installation and various Layout drawings as per Drawings and Documents Schedule shall be prepared by the contractor and 4 copies of the same shall be supplied to the owner (M/s HURL) for their record.
- All circuits shall be indicated and numbered in wiring diagram and all points shall be given the same number as the circuit to which they are electrically connected. Distribution boards shall also be marked to indicate the circuit number controlled by them.
- "Loop in" system of wiring shall invariably be followed throughout the installation. Where it is absolutely necessary, junction boxes of approved make may be used as permitted by Engineer-in-charge. Soldered or taped joints are not permitted for jointing under any circumstances.
- Rated Power, Voltage and frequency of supply of current consuming devices and materials used in installation shall be suitable for the power and frequency of the supply to which these are to be connected.
- Power wiring shall be kept separate and distinct from light wiring, from the level of circuits, i.e., beyond the branch distribution boards. Conduits for light/power wiring shall be separate.
- In wiring, no joints in wiring will be permitted anywhere, except in switch box or point outlets, where jointing of wires will be allowed with use of suitable connector. Soldered or taped joints are not permitted for jointing under any circumstances.
- In recessed conduit system, routes of conduit will be planned, so that various inspection boxes provided don't present a shabby look. Such boxes can be provided 5 mm above plaster level, and they can be covered with Plaster of Paris with marking of junction boxes.
- Installation of conduits for wiring generally will not be taken in floor slabs.
- Socket outlets along with switch shall be modular type for either 6A 3 pin or 16/6 Amp 6 pin configuration. The third pin shall be connected to earth through protective (loop earthing) conductor. 2 pin or 5 pin socket outlets will not be provided.
- Sockets for the power outlets of rating above 1KW like for window/split AC etc, shall be of industrial type with associated plug top and controlling MCB.
- All external hardwares shall be made of stainless steel SS-304/316.
- 3 Canopy shall be provided for all outdoor equipments.

POWER SUPPLY DISTRIBUTION

HURL shall provide the power supply. For renovation of Existing technical buildings power shall be tapped from HURL Substation to Meter distribution board of existing Technical buildings. Contractor scope shall also include complete internal electrification of Existing technical buildings.

SYSTEM OF INTERNAL WIRING

Wiring shall be FRLS PVC insulated (Sheathed / Unsheathed) stranded copper conductor cable/ wire in approved PVC conduit wiring as per approved drawings. Wiring is to be terminated in sunken cast iron or pressed steel terminal boxes for mounting modular type fittings like switches, sockets and regulators, etc. complete with modular base, cover plate etc. Cable for lighting and power circuit shall run separately.

POINT WIRING

Installation is to be carried out on point wiring basis, the supply of following shall be deemed to be included in wiring installation works:

- a) Conduit/channel as the case may be, accessories for the same and wiring cables between the switch box and the point outlet, loop protective earthing of each fan/light fixture.
- b) 650/1100V FRLS PVC insulated copper conductor single core lighting wires of size 1.5/2.5/4 sq. mm as specified for conduit wiring, and PVC insulated 1.5 copper conductor earth wire.
- c) All fixing accessories such as clips, screws, Phil plug, rawl plug etc. as required.
- d) GI or PVC switch boxes for control switches, regulators, sockets etc, recessed or surface type, and phenolic laminated sheet covers over the same.
- e) Outlet boxes, junction boxes, pull boxes etc. provided with switchboards for loose wires/conduit terminations.
- f) Control switch or MCB, as specified.
- g) PVC concealed conduit as specified with all relevant accessories and junction / inspection boxes.
- h) Ceiling rose or connector (in case of ceiling / exhaust fan points).
- i) Connections to ceiling rose, connector, socket outlet, lamp holder, switch etc.
- j) Bushed conduit or porcelain tubing where wiring cables pass through wall etc.
- k) Back plate (in case of suspended light fixtures)
- l) Wiring of each lighting fitting / receptacle unit / ceiling fan / bell point / exhaust fan, etc. shall be considered as one point.

CONCEALED CONDUIT WIRING

- Supply, routing and laying of PVC conduit of minimum size 20 mm in walls / ceiling, from lighting panels up to fittings, receptacles / inspection / junction boxes etc. shall be in the contractor's scope.
- The Contractor shall closely coordinate his work with that of the Civil Contractor. The contractor shall prepare detailed shop drawing and submit for the approval to the owner/ consultant well before commencing the work. The shop drawings shall show setting out details for all components such as conduits and cable routes indicating the number and size of wires in each section of conduit.
- The layout of conduits shall be such that any condensation or sweating inside the conduit is drained out. Suitable precaution shall be taken to prevent entry of insects inside the conduit. No cable or wire shall be installed until the inside of conduit has been cleaned.
- Suitable junction / inspection boxes according to requirements shall be provided to permit

periodical inspection and to facilitate replacement of wires, when required. The boxes shall be mounted flush with the wall or ceiling. Junction boxes with minimum 75 mm depth shall be used in roof slabs and depth of boxes in other places shall be as per IS: 2667.

- Pull boxes shall not be located in a conspicuous manner. Number and location of pull boxes shall be clearly indicated on shop drawings and shall be got approved by the owner / Engineer-in-charge before commencing the work.
- The chases in the wall shall be neatly made and with ample dimensions to permit the conduit to be fixed in the manner desired.
- All the cuttings and chasings in the brick work / RCC work / Block work shall be carried out using electrically operated Hilti or Fishcher make casing tool. Further all the drillings and cuttings in the RCC work shall be carried out using core cutting machine. The rate shall include all these and no separate rates towards the same shall be paid to the contractor.
- Fixing of standard bends of elbows shall be avoided as far as practicable and all curves maintained by bending the conduit pipe itself with a long radius which will permit easy drawing in of conductors. All threaded joints of conduit pipes shall be treated with some approved preservative compound to secure protection against rust. Open conduit ends shall be properly protected to prevent the ingress of dirt and rubbish.
- Provisions shall be made at expansion joints, where they occur in the building structure. PVC pipe with coupling to be installed to prevent damage to structure / conduits and finishes. Continuity through all such joints shall be maintained.
- Power wiring shall be kept separate and distinct from light wiring, from the level of circuits, i.e., beyond the branch distribution boards. Conduits for light/power wiring shall be separate.
- Loads of complete building distributed in such a way that balancing of 3-ph circuit shall be done.
- In wiring, no joints in wiring will be permitted anywhere, except in switch box or point outlets, where jointing of wires will be allowed with use of suitable connector. Soldered or taped joints are not permitted for jointing under any circumstances.
- The wiring throughout the installation shall be such that there is no break in the neutral wire except in the form of linked switchgear.
- In recessed conduit system, routes of conduit will be planned, so that various inspection boxes provided don't present a shabby look. Such boxes can be provided 5 mm above plaster level, and they can be covered with plaster of paris with marking of junction boxes.
- Installation of conduits for wiring generally will not be taken in floor slabs.
- Socket outlets along with switch shall be modular type for either 6A 3 pin or 16/6 Amp 6 pin configuration. The third pin shall be connected to earth through protective (loop earthing) conductor. 2 pin or 5 pin socket outlets will not be provided.
- Sockets for the power outlets of rating above 1KW like for window/split AC etc, shall be of industrial type with associated plug top and controlling MCB.
- All conduits shall be kept clear of other services, except where intentionally earthed or bonded. Conduits shall be fixed to prevent contact with same at the following minimum spacing.
- 150 mm away from hot water services.

- 50 mm away from all other services.
- Where desktop to be installed, group of 3 Nos. 6A Plug point to be provided at convenient location.

CONDUIT CAPACITY

Maximum number of PVC insulated cables conforming to IS: 694 that can be drawn in one conduit shall be as follows

:-

Nominal Cross Sectional Area of Conductor in sq. mm	Size of Conduit							
	20 mm		25 mm		32 mm		38 mm	
	S	B	S	B	S	B	S	B
1	5	4	10	8	18	12	-	-
2	5	3	8	6	12	10	-	-
4	3	2	6	3	10	8	-	-
6	2	-	5	4	8	7	-	-
10	2	-	4	3	6	5	8	6

Note:

1. The above table shows the maximum capacity of conduits for a simultaneous drawing of cables.
2. The columns headed 'S' applies to runs of conduit which have distance not exceeding 4.25 m between draw in boxes and which do not deflect from the straight by an angle of more than 15°. The columns headed 'B' apply to runs of conduit which deflect from the straight by an angle of more than 15°.

MATERIALS

The cable shall be of PVC insulated and of approved make / grade ISI marked. All materials for fittings / accessories, cable etc. to be incorporated in this work shall strictly comply with latest appropriate Indian Standards. If Indian standards have not been issued relevant current British Standards may be used. Aluminium link clips of width 6 mm to 8 mm shall be acceptable without any price adjustment.

The rates for point wiring (power / light) are with the provision of stranded copper conductor of solid drawn copper conductor.

CONNECTORS

Connectors of appropriate rating shall be provided inside the box for fan and utility fittings. The wiring shall be done in such a way that wires from connectors to the fan are not visible. In situations where ceiling rose is proposed for fan and tube light fittings, the connector need not be provided.

LIGHTING WIRES

The wires for wiring in lighting system shall be 650 / 1100 V, PVC insulated, un armoured with stranded copper conductors, unless otherwise specified. The wires shall conform to IS: 694.

The minimum area of conductors shall be 1.5 sq. mm for light point/fan point/exhaustfan point/call bell point and 4 sq. mm for light/power plug.

The PVC insulation shall be coloured red, yellow, blue for R, Y, B phase and black for neutral.

MOUNTING STRUCTURES

Switch sockets, cable trays, Distribution Boards etc shall be mounted / supported on suitable structure fabricated out of standard sections of mild steel, i.e. channels, angels, flats

etc conforming to IS: 2062.

EARTHING

Complete earthing installation shall be done as per IS: 3043 and lightning protection shall be as per IS/IEC 62305 along with its latest amendments.

Earthing & lightning protection shall also conform with the requirements of National building code.

All equipment rated above 250V shall have two external earth connections and those rated up to 250V shall have one external earth connection.

All GI conductors shall meet the galvanizing requirement as per IS.

Surplus soil shall be carried away to distance exceeding 50 m and the site left clean and tidy.

Pipes carrying gas / water etc. shall not be used as means of earthing on installation.

Portion of earth wire between earth electrode and Meter Distribution Board shall be enclosed in 15 mm bore galvanized pipe light grade. The rate against respective item of earthing shall be deemed to include the cost of the aforesaid pipe.

OPERATING REQUIREMENTS

All equipment and accessories shall be suitable for trouble free and continuous service at their rated capacity in the specified ambient and system conditions.

REFERENCE STANDARDS

All electrical equipment and installation shall comply with the requirements laid down in the relevant Indian Standard Specifications and statutory acts/ rules / regulations. In the absence of ISS, relevant British Standards shall be applicable. All Specifications, publications mean the latest edition.

TESTS & INSPECTION

Electrical installation work shall be subjected to inspection by owner / his authorised representative, statutory bodies like Electrical Inspector. The contractor shall carry out without extra cost to owner rectifications / modifications desired by the above authorities to make the installation conforming to I.E. Rules etc.

The owner may reject any portion of the work considered defective or of poor workmanship and the contractor shall make good these defects without extra cost to owner.

Guarantee / Warrantee Certificate for all electrical equipments / appliances / components shall be handed over to the owner / Engineer-in-charge.

All equipment shall be routine tested as per relevant standards in presence of owner representative at manufacturer's works before dispatch. In addition, the equipment shall be inspected at site for final acceptance.

The following tests as specified in IS-732, code of practice for electric wiring and fittings in building shall be complied with before the complete installation is taken over. The contractor shall carry out the tests in the presence of Engineer-in-charge. Electrical wiring test sheet shall be signed both by the contractor's representative and the Engineer-in-charge. All testing equipment shall be arranged by contractor without any extra cost.

- a) Insulation resistance shall be measured by 500 volts megger. The insulation resistance in mega ohm of the installation shall not be less than 50 divided by the number of points on the circuit and the resistance of the whole installation shall not exceed one ohm and resistance including earth mass as 5 ohm.
- b) Testing Polarity of Switches

A test shall be made to verify that all non linked single pole switches have been fitted in the same conductor throughout and that such conductor has been connected to another or phase conductor or to the non-earthed conductor of the supply.

ERECTION, TESTING & COMMISSIONING

The contractor shall undertake erection of all equipment in accordance with good engineering practices in conformity with statutory regulations and Code of Practice and to the entire satisfaction of the owner.

Contractor shall prepare SLD of the entire distribution system and Lighting Distribution Board, various layout drawings (e.g. point layout, conduit layout etc.) and submit to the owner/consultant for approval. Contractor shall also supply 'as built drawings' for complete installation.

The contractor shall arrange all the necessary erection tools, tackles, testing and measuring instruments and shall supply erection materials and consumables.

The contractor shall clear the site after commissioning of the equipments / system and obtain the Site Clearance Certificate from owner's Engineer-in-charge.

MAKE OF COMPONENTS

Make of equipment / components shall be as per Annexure-II. Make of equipment / components not indicated shall be subject to owner's approval.

PAINTING

The equipment surface to be painted shall be pre-treated to remove all dust, scale and foreign adhering matter by suitable treatment.

All metal surfaces shall be painted with two coats of suitable anti-rust paint followed by two coats of anticorrosive epoxy paints.

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.

Unless otherwise specified, the finishing shade shall be light gray having No.631 as per IS-5.

DRAWINGS AND DOCUMENTS

The bidder shall supply the drawings and documents as per Annexure-I 'Drawings & Documents Schedule' under Section 2.0.

All drawings and documents shall have the following descriptions written boldly:

- Name of Client.
- Enquiry / Order Number with Project/Plant name.
- Equipment Code No. and Description.

The Contractor shall be responsible for preparation and submission of two sets of drawings viz.

- (1) "AS BUILT" (2) Material Reconciliation and Deviation Statement

CO-ORDINATION WITH OTHERS

The contractor shall co-ordinate with owner's other contractors / agencies as required.

HANDING OVER TO OWNER

The contractor shall hand over the complete installation as a whole. Minor works not specified or mentioned in the scope or SOR but required to complete the job as a whole will have to be done by the contractor without extra cost. Any equipment / installation shall not be deemed as handed

over to Owner until the same is complete in all respect and is accepted in writing by the Owner / Engineer-in-charge.

SCHEDULE

Bidder shall furnish bar chart for complete scope of their works.

DEVIATIONS

Clause-wise deviations, if any, from this specification shall be clearly indicated in the offer with reasoning.

(II) TECHNICAL SPECIFICATIONS OF ELECTRICAL ITEMS

- Equipment to be supplied by the contractor shall conform to relevant Indian Standards, Engineering Standards, Specification Sheets & Drawings enclosed.
- Equipment shall also comply with the requirement of Statutory Acts, Rules & Regulations.
- Make of the equipment / components shall be as specified elsewhere in this specification. Make of the equipment / components not indicated shall be subject to owner/ consultant's approval.
- Drawings & Documents for various equipments as indicated in respective Engineering Standards shall be furnished. For other equipments, GA drawings & descriptive catalogues shall be furnished.

- **EQUIPMENTS : POWER CONTROL CENTRE (PCC)**

- TECHNICAL SPECIFICATION FOR 415V SWITCHBOARDS**

SCOPE

The scope covers technical requirements of design, engineering, manufacture, assembly, testing before dispatch, delivery in well packed condition of 415V Switchboards detailed in this specification at HURL, Sindri.

Supervision of Installation, Testing and Commissioning of all the switchboards as described at Cl. No. 1.1 above.

REFERENCE CODES & DOCUMENTS

This specification shall be read in conjunction with the following documents attached:

- i) Engineering Standard for Medium Voltage Switch Boards, Doc. No. ES: 8060
- ii) Single Line Diagram of Technical building.
- iii) Specification Sheet for Medium Voltage Switch Boards.
- iv) Feeder Details.
- v) Schematic Diagrams,.
- vi) Auto Trip Alarm Scheme,
- vii) Non Trip Alarm Scheme,
- viii) Trip Circuit Supervision Scheme,

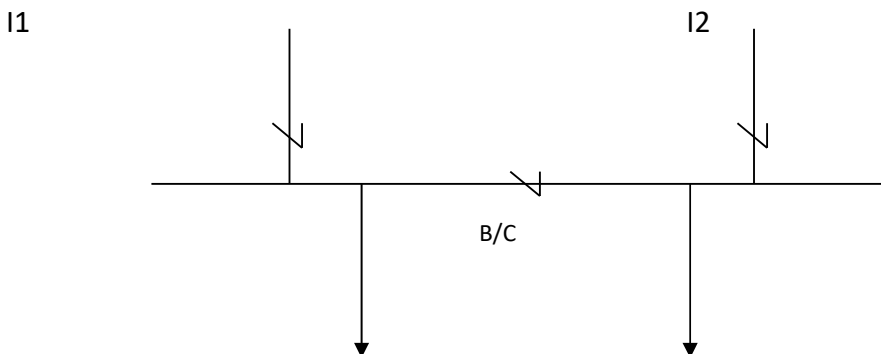
The design, manufacture and testing of equipment shall be in compliance with all applicable Indian Standards, Codes and Regulatory requirements.

INSTRUCTIONS FOR 415 V SWITCHBOARDS

- i) 415V switchboard shall conform to **IEC 60947** (for Switchgear), **IEC 61439-1/2** LV switchboard (PMCC/EPMCC) for TOTAL TYPE TESTED (TTA). Type Test Certificates for short circuit withstand of 50kA for 1 sec. along with ACB mounted in the Switchboards shall apply.
- ii) Switchboards shall also conform to **IEC 61641** (Switch Board with INTERNAL ARC test) for 50KA for 1 sec..
- iii) Bidder shall follow the specification given in ES: 8060 for Medium Voltage Switchboards and clause No. 3.2 below.
- iv) The required details of the 415V Switchboards like feeder / circuit rating, instruments, meters and protections etc. are indicated in the feeder details. Numbers and ratings of feeders, indicated in the feeder details, are tentative and may increase or decrease. Actual numbers and ratings of the feeders will be indicated at the time of drawing approval.
- v) The vendor shall furnish with the completely filled in Technical Particulars sheets enclosed with this specification for each switch board for approval.

SWITCHBOARDS (PMCC)

Operation sequence of 2 nos. incomers {I1 & I2} and 1 no. bus-couplers (B/C) for PMCC shall be as follows:



- 415V Switchboards shall generally have two sections operating independently with two 100% rated incoming feeders and with bus coupler open having facility for changeover in the event of failure of either of the incoming circuit breakers.
- During normal operation I1 & I2 are in closed position while B/C will be in open position. Both I1 & I2 shall be operating independently with 100% rated incoming feeders.
- If I1 trips (OFF or under voltage; without fault) then B/C will be in closed position. In this condition I2 independently will take the total load of both the buses.
- If I2 trips (OFF or under voltage; without fault) then B/C will be in closed position. In this condition I1 independently will take the total load of both the buses.
- Auto changeover scheme shall be provided between incomer feeders and bus coupler feeder of 415V Switchboards. Under normal operating conditions, Incomer-1 and Incomer-2 breakers shall be closed and bus coupler breaker shall remain open with 'Local-Remote-Auto' switch in 'Auto' position. The bus coupler breaker shall close automatically under the following condition being fulfilled: -
 - Either of the incoming breaker trips due to under voltage (70% or below).
 - Voltage on the healthy bus is 80% or more for the set period.
 - Residual voltage on the bus with no power supply comes down to 30% or below.
 - Required nos. of bus PT, line PT and under voltage relays shall be provided to achieve the desired automatic changeover. Auto transfer shall take place only on sustained loss of power on either of bus sections. Auto transfer shall be blocked in case of fault on either of bus sections or no power on both incomers.
 - Paralleling of two incoming feeders is not foreseen. However, facility for momentary paralleling shall be provided for intentional changeover without interruption of supply with synchro-check relay. There shall also be provision of selective tripping of one feeder out of three feeders (two incoming feeders and one bus coupler feeder).
 - One common Ammeter shall be provided in bus coupler panel for monitoring of the total current of the entire space heater bus.
 - Provision for Local Remote status feedback to DCS/LMS/PLC shall also be provided for all incoming and outgoing breaker feeders.
 - Provision for inputs of Local/Remote, ON, OFF, Service, Ready, Fault to PLC shall be made for all incoming and outgoing breaker feeders. Numerical relay status to be shown at PLC, also ON & OFF command from PLC to be incorporated in switchgear schematic.
 - Provision for inputs of ON, Ready, OFF & Trip to PLC shall be made for all outgoing contactor feeders. Provision for start & stop DO to be considered for all feeders.
 - Provision for inputs of under voltage 20%, 70% & 80%, Synchro check shall be made available for PLC.
 - Provision for Analog inputs i.e. PT supply for bus & incoming line shall be made available for PLC.
 - All incomers, bus couplers and other circuit breaker feeders shall be provided with ON & OFF indication in rear side.

- Synchro-selector switch for selection between I1 & I2 shall be provided. MCB to be considered at secondary side of VT supply and MPCB to be considered for primary side of PT. MCB shall be provided before VT supply going into Synchro Check Relay. Synchro-selector switch and trip selector switch shall be on bus coupler.
- Component ratings for motor starters shall generally be as per PDS: E 402. However, for motor feeders rated 75KW and above, ACB with microprocessor based motor protection relay shall be used instead of switch, fuse, contactor and thermal overload relay.
- All protective relays shall be microprocessor based numerical relays with communication facilities. Numerical Relay shall have communication on IEC-61850 protocol in redundant mode (having redundant communication port) and meters shall have communication on MODBUS TCP/IP protocol with event fault & disturbance recording features. Ethernet switch with required number of port shall be provided on both section of the switchboard. 100% redundancy shall be provided for communication. BMR suitable for Heavy Duty Motor starting, with facility of 'Trip Class' selection, shall be used in motor starter feeders for fans (if any) to take care of long starting time.
- 415V switchboards shall be suitable for interface with separate Load management system (LMS), provided by others. Switchboard vendor shall consider all required hardware/components such as Ethernet switch, star coupler etc for LMS interface. Following items components to be considered by switchboard vendor for successful interface with LMS system:-
 - Each numerical relay shall have IEC 61850 communication ports (redundant) connected in star topology to Ethernet switches. All Ethernet switches shall be connected in ring topology inside the switchboard and final connection to upstream LMS system (at one location inside switchboard) shall be considered with redundant fibre optic/Ethernet cable. Necessary FO ports at Ethernet switches, FO patch cards, FO patch box (i.e. LIU) etc as required inside the switchboards to be considered by switchboard vendor. Min. 1 no. Ethernet switch shall be provided on each bus.
 - Each multifunction meters (MFM) shall have RS485 Modbus RTU serial communication facility. All Multifunction meters (MFM) shall be connected in daisy chain arrangement and both ends of the daisy chain loop shall be brought to the terminal blocks at suitable location on one point for further connection to LMS panels. These loop wiring/cabling/connections within the switchboards shall be in switchboard vendor's scope. However further connection to LMS panels/equipments shall be done by others.
 - Ethernet switches & daisy chain loops shall be installed in appropriate location within the switchboards.
 - Interface details of switchboard incomer, bus coupler & outgoing feeder protection relay, multifunction meters with load management system shall be furnished to successful bidder after order during drawing approval stage.
 - Lamp test facility shall be provided in each feeders of switchboards.
 - All line & bus PT shall be in drawout execution.
 - Relays shall support features like remote relay parameterization, disturbance recorder etc. It shall be possible to set/operate the relay from the front facia. Lock out relay shall be conventional type with hand reset facility.

- Special protection as indicated for any feeder such as differential, restricted earth fault, directional distance power relays etc. shall also be through numerical relay having serial port for monitoring.
- Separate lockout relay shall be provided in both the incomers, Bus Coupler, all outgoing feeders for 0.415KV Switchgears including respective spare feeders.
- Trip circuit supervision relay shall be VAX-31.
- Memory/History of the Numerical relay shall not get erased due to loss of auxiliary supply of the relay. Preferably similar make of relays to be installed in one particular substation.
- The breaker contacts for critical logic (upstream/downstream tripping, changeover etc.) shall be provided directly from breaker auxiliary contacts and not from auxiliary contactors.
- Meters as indicated in the feeder details for each feeder shall be provided. However, whereas ammeter and voltmeter shall be provided separately, all other meters shall be part of the multifunction meter and shall have data communication facilities for various status of the breaker and operating parameters (KW, Amp etc.). Voltmeter & Ammeter wherever specified separately shall be of Analog type.
- Each ACB panel shall be provided with 5A, 3 pin switch socket with 3 pin plug outlet, having 240V, 1 phase AC supply for operation of hand lamp.
- All components for alarm scheme and other auxiliary equipment for making the scheme operational shall be included.
- All protective relays for incomers, bus couplers, ACB feeders shall be field proven microprocessor based numerical relays.
- One spare in the form of normally open contact of incomer for interlocking with upstream panel shall be provided.
- Test push button for checking the control circuit healthiness/circuit interlocks shall be provided in all the feeders.
- Push buttons for checking the healthiness of indication lamps in all feeders shall be provided.
- Proper lifting arrangement/Eye Bolt shall be provided on the switchboard panels for handling at site.
- Switchboard panel foundation frame/channel shall be supplied by the vendor.
- Alarm Annunciation panel shall be provided on all breaker feeders. Alarm Annunciation panel shall be of 12 window with in-built Accept, Reset & Test Push Button. Details of signals/interlocks for Alarm Annunciation shall be provided during drawing approval.
- All power switches shall be minimum 32 amps for motor feeders.
- All auxiliary contacts of breaker, relays, contactor, auxiliary relays, timers etc. shall be wired up to the terminal block for external connection.
- Phase barriers shall be provided in all cubicles for breaker poles. "Phase to Phase" and "Phase to Earth" barriers shall also be provided inside breaker compartment & PT compartment.

- All equipment for alarm scheme and other auxiliary equipment for making the scheme operational shall be included.
- Bus bars shall be of uniform cross section and supported on non-hygroscopic FRP insulators with adequate clearances and creepage distance to prevent flash over due to effect of dust/moisture.
- Busbar clearances shall conform to relevant Indian Standard/IEC for equipment voltages up to and including 500V AC.
- Sufficient bus supports shall be given to give adequate mechanical strength during short circuits.
- A continuous ground bus shall be provided at the bottom of the switchgear and in cable connection side for grounding the switchgear, breaker trolley, breaker panel door as well as to ground the cable glands.
- The draw out modules shall be standardized and it shall be possible to interchange any module with a module of same size. The components to control the equipment like switch, starter, fuse, auxiliary relay etc. shall be wired as a unit on the individual module. Safety shutter shall be provided to prevent direct access to live parts when the chassis is removed.
- The entire draw out construction should be designed for safe operation during placement or removal of chassis. An earthing arrangement shall be provided which will make contact first before the power contacts are made and break last. Each module shall control one motor in general.
- The door shall be interlocked so that it cannot be opened unless the isolating switch on that module is OFF. However, it shall be provided with a door defect mechanism for intentional opening when on line for testing and inspection purpose.
- Control switches for breaker control shall be provided in each breaker cubicle. Circuit breaker shall be interlocked to prevent withdrawal of a closed breaker or insertion of a closed breaker. Each breaker shall be provided with anti pumping device.
- Provisions shall be made to manually close/trip circuit breakers on loss of control voltage.
- The switchboards shall be suitable for extension at both the ends.
- FRP supports shall be used for bus bars with adequate clearances and creepage distance to prevent flash over due to effect of dust moisture.
- All meters shall be digital multifunctional meters. Additionally analogue type ammeter, voltmeter and Hour Meter shall be provided separately for various feeders as per the Feeder Details.
- Power for 240V Auxiliary supply bus shall be tapped from the main bus of the switchboard through suitably rated MCB.
- 240V, 1Ph, AC control supply shall be arranged by providing control transformers of suitable rating in compliance with Cl. No. 6.9 of ES: 8060.
- **220V DC supply shall be provided with by using power pack and it has the backup for atleast two hours in case of power failure.**
- All auxiliary contacts of breaker, relays, auxiliary relays, timers etc. shall be wired up to the terminal block for external connection. 20% spare control contacts shall be provided in each

feeder trolley and all spare contacts shall be wired up to the terminal blocks. The vendor shall include all accessories, whether indicated in our specifications or not, to make the boards complete in all respects.

- The switch boards shall be complete with terminal blocks, rolled aluminium heavy duty double compression type cable glands and crimping lugs suitable for the cable types and sizes indicated in feeder details. The number and sizes of cables may change at the time of drawing approval and the same shall be provided as required without any commercial implications. Cables, however, shall not be in switchboard vendor's scope.
- ACB feeder for switchboard shall be single front for ease of operation & maintenance.
- LV circuit breaker shall be 4 Pole type except for outgoing motor feeders which shall be 3 Pole type.
- Two no. breaker handling trolley shall be provided for each 415V switchboard.
- Removable gland plates shall be of 6 mm minimum thickness for incomers and 3 mm thickness elsewhere.
- CT and PT shall have separate metering and protection core.
- LOTO locking system to be provided for safety purpose while taking clearance for maintenance work. For this necessary Hasps and locks shall be provided in the switchboards.
- The drawout module chasis / frame shall get earthed while being inserted in the panel and positive earthing of the module frame shall be maintained in all positions, i.e. SERVICE, TEST & ISOLATED, as well as throughout the intermediate travel.
- 1 no. marshalling panel shall be provided on each bus section. Sufficient no. of DI, DO & AI shall be considered for remote operation. No. of DI, DO & AI per feeder shall be provided later
- The make of components to be used in the PMCC shall be as specified elsewhere in this specification. The make of the components, not specified, shall be indicated by the bidder and the same shall be subject to owner's approval.
- Spare contacts shall be wired and shown in terminal arrangement diagram.
- 20% spare auxiliary contactors shall be considered by the vendor.
- Caution name plate shall be provided at front and rear side of panel.
- Various schematic diagrams attached are suggestive. Vendor shall consider all other components/wiring as required for proper and safe operation of the scheme. Where no scheme is attached for any type of feeder, vendor shall develop the scheme as per their own standard which shall be subject to owner's approval.
- Completely filled in Technical Particulars shall be furnished for all the 415 V Switchboards separately for Approval.
- Wherever any requirement, laid down in this specification / Specification Sheet / Feeder Details, differs from that in Engineering Standard (ES: 8060), the requirements specified in this specification / Specification Sheet / Feeder Details shall prevail.

- The switchboards shall consist of an assembly of a series of free standing floor mounting, Indoor type, fully drawout, identical, metal clad, dead front type sheet steel panels of unitized design, cubicle type panels placed side by side to form a compact assembly and shall be extendible on either side.
- The complete assembly shall be dust, damp and vermin proof having minimum degree of protection shall be IP-52 for LV switchboards up to 1600A rating and IP-4X for LV switchboards above 1600A rating.
- The framework of the cubicles shall be bolted / welded construction. The minimum thickness of sheet steel shall be 3 mm for base channel & load bearing members and 2 mm for other members. The doors and covers shall be fabricated from cold rolled sheet steel. Suitable reinforcement, wherever necessary, shall be provided.
- The switchboard shall be mounted on the channel which shall be included in the vendor's scope along with mounting foundation bolts.
- Mimic Panels with indications shall be provided on outgoing panels feeding supply to transformer, which shall indicate the parameters of transformer winding. Panel shall have facility for accepting and resetting the faults.
- Incomer and bus coupler module shall be of ACB type and located in individual single panel. Other breaker feeders module shall be half the panel size.
- The bus-bars, both horizontal and vertical, including bus-bar joints shall be provided with heat shrinkable (Raychem make) sleeve. Insulating shrouds shall be provided for all joints of insulated bus-bars. All bus-bar joints shall be silver faced. Sleeving material shall have adequate electrical, thermal and mechanical properties to withstand impulse level, temperature rise during normal and short circuit condition and allow easy bending of bus bars.
- The wiring shall be carried out with flexible stranded HR PVC insulated copper conductor cables of 1100 Volt grade. The minimum size of wires shall be as follows:

▪ C.T. Circuit	▪ -	▪ 2.5 Sq. mm
▪ V.T. and Control Circuits	▪ -	▪ 1.5 Sq. mm
- All wiring shall be provided with dependent both ends marking as per IS: 5578. Numbered ferrules, reading from the terminal outwards, shall be provided at both ends of all wiring for easy identification. These shall be interlocking type plastic ferrules. Cross ferruling shall also be provided for easy identification of wires.
- All spare contacts of relays, switches, contactors shall be wired to the terminal block. 20% Spare terminals shall be provided.
- The cable glands shall be of rolled Aluminium or nickel/cadmium plated brass heavy duty double compression type and shall be mounted on a removable gland plate, provided at a minimum height of 75 mm from the bottom of the switchboard. Two number spare knockout of size 20 mm shall also be provided on the gland plate for future use. Cable gland plate shall be made of sheet steel with min. thickness of 3 mm. Cable glands shall be provided for all control cables as per approved drawings with 10% extra quantity.
- Cable for all control wiring shall be FRLS type.

- All circuit breakers shall be of O-3min-CO-3min-CO rated operating sequence capable of carrying the specified current at the site conditions and making/breaking of the system fault current. The making capacity of breaker shall be minimum 2.55 times the rated symmetrical breaking current.
- The circuit breakers shall have three positions, i.e. service, test and isolated with the cubicle door closed. In service position, the power connections shall be made; but in test and isolate mode, the power connection of bus bars shall be automatically removed. Necessary stoppers shall be provided to prevent the excessive movement of the breaker cradle than desired for the position. Service and test positions of the breaker shall have monitoring switch having 4NO+4NC contacts.
- Maintenance truck/device (minimum 2 Nos.), for raising, lowering and withdrawal of the circuit breaker shall be supplied for each switchboard serving all breaker ratings.
- MPCB shall be provided at primary side of Potential transformer and MCB at secondary side of potential transformer.
- All ammeters and voltmeters shall have 0-240° scale and shall be moving iron spring controlled type of class 1 accuracy as per IS: 1248. The scale range of the ammeters and voltmeters shall be as indicated in the Feeder details.
- In case of motor feeders the ammeter, shall be graduated uniformly up to C.T. primary current and with a compressed end scale up to 7 times the C.T. primary current. Red pointer shall be provided which can be adjusted at site for indicating full load current.
- Multifunction meters shall have analog output provision and RS 485 Port for serial communication on MODBUS protocol.
- A common ammeter shall be provided for reading total space heater current, in bus-coupler panel of switchboard.
- The switches and push buttons shall conform to utilization category AC14/DC14 as per IS/IEC 60947. The contact shall be rated to make, break and carry inductive current of 5 Amps. at 415 V AC and 1 Amp. at 220 V DC.
- Following Signal lamps shall be provided to indicate the various circuit conditions as shown in scheme drawings.
 - RYB indication, Spring charging, breaker in service, breaker in test, AC supply healthy, DC supply healthy, Synch check, CB/Switch/contactors On, CB/Switch/contactors Off, trip circuit healthy, Alarm and auto trip, Ready to start
 - The colour of the lamps for various functions shall be as follows:
 - Red - Circuit breaker/switch/contactors 'ON'
 - Green - Circuit breaker/switch/contactors 'OFF'
 - White - Trip circuit healthy
 - Amber - Alarm and auto trip
 - Blue - Ready to Start
 - Color of other indication lamps shall be furnished during vendor drawing approval.
- All lamps shall be LED type having 7 LED with lumen output of 200 millicandella in axial direction.

- The supply shall include the following accessories.
 - Maintenance truck/device for raising, lowering and withdrawal of circuit breaker serving allbreaker rating.
 - One set of panel end gasket along with each panel for interconnection of panels.
 - Special tools and tackles, as required.
- Name plate shall be of Aluminium / black Perspex with white engraving and of minimum 3 mm thick.
- The switchboard shall be properly packed before dispatch to avoid damage during transport, storage and handling. The packing shall be such that panel can be kept outside during rainy season and/or transported during rainy season.
- Annexure-I: Documentation for Medium Voltage Switchboards shall be replaced with Annexure-A of this Technical Specification.
- Annexure-II: List of spares shall be replaced with spares for 2 years of operation and maintenance as mentioned in the Price Schedule.

4.0 PACKING

The switchboards and bus-ducts shall be properly packed before dispatch to avoid damage during transport, storage and handling. The packing shall be such that panel can be kept outside during rainy season and / or transported during rainy season.

5.0 DOCUMENTATION SCHEDULE

The vendor shall supply all documents in requisite nos. as per clause no. 10.0 of ES: 8060 All documents shall be supplied in hard copies as well as soft copies in CD in place of Reproducible (R).

The contractor shall submit following documents before material supply for approval of EIC. After approval of EIC only, the contractor shall plan for material dispatches to HURL Sindri site.

Sr. No.	Documents to be submitted	To be Submitted before material supply
1.	Type tests for Switchboard assembly conducted during last 7 years from the date of NIT for the following from a recognized national / international testing authority as per IEC 61439 :	
a)	Verification of Temperature Rise limits	Required
b)	Verification of Dielectric Properties	Required
c)	Verification of the Short Circuit Strength	Required
d)	Verification of the continuity of the protective circuit	Required
e)	Verification of clearances and creepage distances	Required
f)	Verification of Mechanical Operation	Required

g)	Verification of Degree of Protection.	Required
2.	Type tests for Switchboard assembly conducted during last 7 years from the date of NIT from a recognized national / international testing authority for Internal Arc Test as per IEC 61641.	Required

Separate "AS BUILT" Drawings shall be submitted for each switchboard and bus-ducts.

The vendor shall also furnish detailed SLD indicating protection, metering, indication and feeder details for each switchboard for approval after award of order.

6.0 TESTING & INSPECTION

Testing and inspection of the switchboards and s shall be as per relevant Indian Standard and as per relevant clauses of ES: 8060 & ES: 8062 enclosed.

The Routine Tests shall include but not necessarily limited to the following:

- a) A general visual check shall be carried out. This shall cover measurement of overall dimensions, location, number & type of devices, terminal boxes, location & connection of terminal numbers.
 - b) Operation under simulated service condition to ensure accuracy of wiring, correctness of control.
 - c) scheme & proper functioning of the equipment.
 - d) All wiring and current carrying part shall be given appropriate High Voltage test.
 - e) Primary current and voltage shall be applied to all instrument transformers.
 - f) Routine tests shall be carried out on all the equipment separately e.g. Circuit Breaker, Bus-Bars, Panel, Instrument Transformers, Relays, Meters etc.
- Routine Test Certificates of all the bought out items e.g. Relays, CT, PT, Meters shall be submitted during inspection of Final Assembly and also along with final documentation.
 - During fabrication, the switchgear shall be subjected to inspection by Owner / TPI to assess the progress of work, as well as to ascertain that only quality raw material is used. The manufacturer shall furnish all necessary information concerning the supply to Owner's inspectors
 - Tests shall be carried out at the manufacturer's works before dispatch. All routine tests as specified by the applicable codes and standards including above mentioned shall be conducted. Type test certificates for the switchgear panel and circuit breakers, from a recognized testing authority, shall be furnished with the bids.
 - Bidder shall submit the QAP and ITP for the Switchboard for owner's approval before manufacturing.
 - Simulation test for auto changeover shall be done at works.

ANNEXURE – II

MAKE OF COMPONENTS	
Air Circuit Breaker	L&T (U power)/ Siemens (3WL) / GE Power (MPACT/ Mpro /Entelligaurd) / Schneider (Masterpact) / ABB (Emax)
MCB	Standard Kopp / MDS / Versatrip / Havells
Switch	L&T / Siemens / Alstom Power / Kaycee / Havells
Fuse	L&T / Siemens / Alstom Power / Havells
Contactor	L&T / Siemens
Thermal O/L Relay	L&T / Siemens / GE Power
Protective Relays	Areva / ABB / Easun Reyrolle/Siemens
Auxiliary Relays	Areva / Universal Electric / Jyoti / ABB / Easun Reyrolle / Alind
Timers	Alstom Power / Bhartia Cutler Hammer/Siemens
Single Phasing Preventor	L&T / Siemens
Current Transformer	Siemens / AEP / Indcoil / Precise / Current Electricals / Kappa Electricals
Potential Transformer	L&T / Siemens / Alstom Power / AEP / Kappa Electricals / Indcoil
Control Transformer	L&T / Siemens / Alstom Power / AEP / Kappa Electricals / Indcoil
Instruments (meters)	AEP / IMP / MECO / Universal / Indotech
Push Buttons	L&T / Siemens / Alstom Power / Teknik / Tulsi
Control Switches	L&T / Siemens / Alstom Power / Kaycee
Signal Lamps	L&T / Siemens / Alstom Power / Binoy / Tulsi
Cable Glands	Baliga / Comet / Electro Mech / Power Engg.
Cable Lugs	Dowell / Forward Engg. / Power Engg.
Terminal Blocks	Elmex / Siemens / L&T
Current Transducer	Elster / L&T / Pyrotech

Note: For make of other Items / components not covered in above, shall be subject to the owner / HURL approval.

SPECIFICATION SHEET (415 V SWITCHBOARDS)

Ref. Stds.	BIS & IEC	<input type="checkbox"/>	Temp. Max./Min./Design Ref. : 47.7/2.3/50°C	<input type="checkbox"/>	<input type="checkbox"/>
Encl. Docs.	ES: 8060		Relative Humidity:	Alt. above sea : <1000 M	
TESTS:	Routine	Type	Others		
BASIC DATA					
TAG NO.	Item No.				
	Description		PMCC <input type="checkbox"/>		
	Code No.		Shall be provided during drawing approval.		
REFERENCE DRAWINGS	Single Line Diagram		Refer attached SLD		
	Feeder Details				
	Auto Trip Alarm Scheme		Please refer attached reference schematics		
	Non Trip Alarm Scheme				
	Trip Circuit Supervision Scheme				
	Auto C/O Scheme				
	P.T. Bus Arrangement				
SYSTEM DETAILS	Nominal Voltage with Variation		415V \pm 10%		
	Rated Frequency with Variation		50Hz \pm 5%		
	Combined V & F Variation		\pm 10%		
	No. of Phases & Wires		3 Ph & 4W		
	Insulation Level		2.5 KV		
	Fault Level		36 MVA		
	Earthing Mode		Solidly Earthed		
BUS BARS	Rating	Continuous	2500A		
		Short Time for 1 sec.	50kA		
	Material		high conductivity aluminium alloy		
	Bare / Insulated		Insulated		
EXECUTION	Type of Insulation		Raychem make heat shrinkable PVC sleeve		
	Breaker	I/C & B/C : ST / DT	ST		
		Others : ST/DT	DT		
	Other Feeders	Single front / Double front	Double Front		
		Fixed / Drawout	Drawout		
	Cable Entry : Top / Bottom		Bottom		
	Bus Duct Entry : Top / Bottom		--		
Accessibility : Front / Back		Front / Back			
CONTROL SUPPLY	Breaker Feeders	Closing & Indication	220V DC(by power pack)		
		Tripping	220V DC(By power pack)		
	Contactors		240 V AC		
	Space Heater		240 V AC		
MISC. DATA	Painting	Type	Epoxy		
		Shade	631 of IS: 5		
	Period for which Spares required		2 Years		

ST- SINGLE TIER DT- DOUBLE TIER

SWITCH BOARD NO.: PMCC						BU
S BAR RATING : 2500A						
GENERAL	Feeder No.		I1	I2	B / C	
	Feeder Description		Incomer-1 from SS-01 for PMCC	Incomer-2 from SS-01 for PMCC,	Bus-couplers for PMCC	
	Ref. Scheme Drgs.					
CIRCUIT BREAKER / SWITCH.	Type		ACB	ACB	A C B	
	Rating (Amp)		Refer SLD			
	Operating Mechanism		MWS	MWS	MWS	
POWER FUSE	Rating		--	--	--	
POWER CONTACTOR	Rating (Amp)		--	--	--	
	Utilization Category		--	--	--	
CURRENT TRANSFORMER	Metering	Ratio	1250/1A for PMCC	1250/1A for PMCC	2500/1A for PMCC	
		Remote Ammeter (LCS)	--	--	--	
		Local Ammeter	YES	YES	YES	
		Digital Multifunction Meter	YES	YES	YES	
	Protection	O/C & E/F	YES	YES	YES	
		R.E.F.			--	
		S.B.E.F.			--	
VOLTAGE TRANSFORMER	Nos. & Burden / Ratio		3 Nos. (50VA/Ph)/ 415/√3 / 110/√3	3 Nos. (50VA/Ph)/ 415/√3 / 110/√3	3 Nos. (50VA/Ph)/ 415/√3 / 110/√3	
	Connection : Bus / Feeder		Feeder	Feeder	Bus	
MEASURING INSTRUMENT	Ammeter: no. & Range		a) 1 no. for PMCC (0-1 250A).	a) 1 no. for PMCC (0-1 250A).	a) 1 no. for PMCC (0-2500A).	
	Voltmeter: Nos.(Range:- as per rating)		1 No for PMCC (0-500V)	1 No for PMCC (0-500V)	1 No for PMCC (0-500V)	
	Selector switch for Ammeter /Voltmeter		YES / YES	YES / YES	YES / YES	
	KWH / KW Meter		-- / --	-- / --	-- / --	
	Digital Multifunction Meter		YES	YES	YES	
	Others as required		YES	YES	YES	
	Bimetal Thermal O/L (including SPPR)		--	--	--	
		Res. IDMTL	YES	YES	YES	

PROTECTIVE RELAY (Numeric)	Over current	High Set Inst.	YES	YES	YES	
	Earth fault	Res. IDMTL	YES	YES	YES	
		Res. Inst.	--	--	--	
		Restricted				
		Stand by				
	Single Phasing / Stalling		--	--	--	
	Combined Motor Protection Relay		--	--	--	
	Under Voltage / Neutral Displacement		YES / --	YES / --	YES / --	
	Over Voltage / Synchro check		YES / --	YES / --	YES / YES	
	PT Fuse Failure		YES	YES	YES	
AUX. RELAY	Tripping Relay (Lockout Type)	Elect. Fault	YES	YES	YES	
		Process Fault	--	--	--	
	Trip Circuit Supervision		YES	YES	YES	
	Buchholz Alarm / Trip		--	--	--	
	WTI / OTI Alarm		--	--	--	
	Low Oil Level Alarm		--	--	--	
	Alarm / Alarm Cancellation		--	--/--	--	
	Others as required		YES	YES	YES	
CONTROL SWITCH/ SELECTOR SWITCH	Trip Neutral Close / OFF-AUTO-ON		YES / --	YES / --	YES / --	
	Auto-OFF- Manual/ Local – Remote		-- / YES	-- / YES	YES / YES	
	Equipment selection		--	--	--	
	Others as required		YES	YES	YES	
PUSH BUTTON	Emergency Trip (T) / Test (Te)		YES/ YES	YES/ YES	YES/ YES	
	Alarm Accept (AC) / Reset (R)		YES / YES	YES/YES	YES/YES	
	Interlock Defeat		YES	YES	YES	
	Others as required		YES	YES	YES	
SIGNAL LAMPS	ON (R) / OFF (G)		YES/YES	YES/YES	YES/YES	
	Motor Space Heater ON (B)		--	--	--	
	Trip Ckt. Healthy (W)		YES	YES	YES	
	Non Trip (B)/(Auto Trip (A)		--/YES	--/YES	--/YES	
	Ready for Start (Y)		YES	YES	YES	
	Breaker in Test Position		YES	YES	YES	
	Breaker in service		YES	YES	YES	
	AC supply healthy		--	--	YES	
	DC supply healthy		--	--	YES	
	Others as required (refer note O)		YES	YES	YES	
SPACE HEATER	Rating in Watts		As required	As required	As required	
	MCB Rating		As required	As required	As required	
	Contactor Rating & Category		As required	As required	As required	

				red	
AUXILIARY. EQUIPMENT	Annunciator	YES	YES	YES	
	Limit switch: Service / Test	YES / YES	YES / YES	YES / YES	
CABLING DATA	Power Cable XLPE-A-FRLS PVC (mm ²)	XLPE 3.5X300 sqmm AL cable	XLPE 3.5X300 sqmm AL cable	At time of drawing approval	
	Space Heater XLPE-A-FRLS PVC (mm ²)	--	--	--	
	Control Cable XLPE-A-FRLS PVC (mm ²)	12x1.5 (Cu), 7x1.5 (Cu), 5x2.5 (Cu)	12x1.5 (Cu), 7x1.5 (Cu), 5x2.5 (Cu)	12Cx1.5 Sq.mm (Cu)m 7Cx1.5 Sq.mm (Cu)	

Note:

- A. Metering CT shall be of accuracy class 0.5.
- B. Protection CT shall be of accuracy class 5P10.
- C. Separate core for PT metering and protection to be provided.
- D. All required items for momentary paralleling shall be integral to Switchboard.
- E. CT ratios are tentative & shall be finalised during drawing approval stage.
- F. Contact multipliers as required for safe and satisfactory operation of the system is included in vendor's scope.
- G. Ratings are indicative and final ordered ratings shall be informed once these are confirmed by the respective vendors.
- H. Actual cable size shall be indicated at the time of drawing approval.
- I. SF2 – Power Feeder shall be MCCB (having shunt release, O/L & S/C protection) with RYB indication, earth fault protection with CBCT, metering CT & Digital Multifunction Meter.
- J. SF3 – Power Feeder shall be MCCB (having shunt release, O/L & S/C protection) with RYB indication, earth fault protection with CBCT.
- K. SF4 – Power Feeder shall be MCCB (having O/L & S/C protection) feeder with RYB indication only.
- L. For details of indication lamps in individual feeders also refer clause no. 3.2.25 of enclosed TS.
- M. Control transformer shall be provided in each bus section of respective switchboards (PMCC) and each transformer shall be sized for entire switchboards with facility for manual changeover. Control transformer shall have at least 10% spare capacity with minimum rating of 2.5KVA. Separate control transformer for space heater to be provided.

SWITCH BOARD DESCRIPTION: PMCC				CODE NO.:		
COMPONENT RATING AS PER DRG. NO. : PDSE:402						
FeederNo.	Feeder Description And Code No.	Load		Ref. Scheme Drg.	Power Cable Size (mm²)	Control Cable Size(mm²)
		K W	Am p.			
1	INCOMER-1	- -	250 0A	I1/EM250/ 251/270- 12 13	2R- 3.5Cx30 0 (Al)	5CX2.5(Cu), 12CX1.5(Cu) , 7CX1.5(Cu)
4A	MCCB	- -	25 0A	SF 2/- -	1R- 3.5CX24 0(Al)	5CX2.5(Cu)
5A	MCCB	- -	10 0A	SF 1/- -	Later	12CX2.5(Cu) , 7CX2.5(Cu)
6A	SFU	- -	63 A	SF 1/- -	Later	12CX2.5(Cu) , 7CX2.5(Cu)
1A	Bus PT for bus A	- -	--	--	3X6(Cu.)	- -
3	Bus Coupler	- -	250 0A	BC/EM250 /251/270-	--	12CX1.5(Cu) , 7CX1.5(Cu)
1B	Bus PT for bus B	- -	--	--	3X6(Cu.)	- -
2	INCOMER-2	- -	250 0A	I1/EM250/ 251/270-	8R- 3.5Cx40 0 (Al)	5CX2.5(Cu),
4B	MCCB	- -	25 0A	SF 2/- -	1R- 3.5CX24 0(Al)	5CX2.5(Cu)
5B	MCCB	- -	10 0A	SF 1/- -	Later	12CX2.5(Cu) , 7CX2.5(Cu)
6B	SFU	- -	63 A	SF 1/- -	Later	12CX2.5(Cu) , 7CX2.5(Cu)

COMPONENT DETAILS

The make of the components shall be as specified in SOR Sheet/Vendor List and shall conform to type of co-ordination C as per IS: 13947.

Moulded Case Circuit Breakers

- The circuit breaker shall conform to IS: 13947 (Part 2) and shall be of P2 category having rupturing capacity as specified in Specification Sheet.
- The circuit breaker shall be provided with spring assisted quick make quick break type manually operated trip free mechanism, mechanical ON/OFF position indicators, thermal tripping devices of inverse characteristics, instantaneous short circuit tripping devices and necessary auxiliary and alarm switches.
- The MCCB cubicle shall be provided with service, test and isolated position and automatic safety shutter.
- The thermal and short circuit tripping device shall be adjustable type.
- In addition, under voltage trip shall be provided, if specified.

Fuses

- The fuses shall be of non-deteriorating HRC cartridge link type and conform to IS: 13703. They shall be suitable for the load and the service required in the circuit.

Air Break Contactors

- The Air Break Contactor shall be of AC3 category unless otherwise specified, conforming to IS: 13947 and flapper type.
- Gravity operated contactors are not acceptable.
- The dropout voltage shall not exceed 65% of rated voltage.
- Each contactor shall be provided with auxiliary contacts as required. The rating of the auxiliary contacts shall be 5 Amps. AC or 1 Amp DC at the specified control voltages.
- The spare auxiliary contacts shall also be wired terminal block.

Miniature Circuit Breakers

- The miniature circuit breakers shall conform to IS: 13032 and shall be of duty category M-9.
- It shall be provided with overload and short circuit protective devices in a heat resistant housing.
- A certificate of short circuit rating and current time tripping curve shall be furnished along with the offer.

(B) LIGHTING SUB DISTRIBUTION BOARD / SINGLE PHASE SWITCHSOCKET SUB DISTRIBUTION BOARD

- LSDB shall be provided with incoming and outgoing feeders as indicated in SOR with this specification and specification sheet (attached in this specification) having IP-55 degree of protection.
- The enclosure for LSDB shall be fabricated out of 2.0 mm thick cold rolled sheet steel having dust, vermin and weatherproof construction conforming to IP54 as per IS:13947. 4 nos. holes suitable for 12mm bolts shall be provided outside the enclosure for fixing the LSDB.
- The miniature circuit breakers (MCBs) shall be so mounted inside the enclosure that their operating knobs project outside for ease of operation. The cut out for the knobs on the enclosure shall be lined with gaskets. For further protection against ingress of dust,

the portion where the knobs have protruded out shall be provided with another external cover, internally hinged at the top, gravity operated and with a knurled knob at the bottom. The external cover shall be flushed with the main cover. Continuous neoprene gasket shall be provided to make the board completely dust and weatherproof.

- All external hard ware of diameter less than 8 mm shall be of stainless steel and those of diameter 8 mm and above shall be of mild steel cadmium plated or zinc passivated.
- The LSDB shall have top entry arrangement for outgoing cables and bottom entry for incoming cable provided with heavy-duty double compression type aluminium cable glands suitable for 1.1 KV XLPE-A-FRLS PVC outer-sheathed cables.
- Three phase and neutral bus bar system of adequate size shall be provided to which all outgoing and incoming MCBs shall be connected.
- The internal wiring shall be carried out by means of single core PVC insulated 2.5 sq. mm stranded copper conductor cables.
- Individual earth terminals shall be provided for the earth conductor of the outgoing cables beside the phase and neutral terminals.
- Suitable label inscription consisting of black perspex with engraving for the board and circuit nos. of all outgoing feeders shall be provided. The label inscription of the board shall contain description and code no. as indicated in specification sheet. The circuit nos. of outgoing feeders shall be serially indicated as 1L, 2L, 17L, 18L.
- Two earthing terminals outside the board shall be provided.
- The board shall be complete with terminal block, double compression rolled Al cable glands, cable lugs and other accessories as required.
- No. of outgoing feeders of distribution boards shall be provided with incoming and outgoing feeder as indicated in single line diagrams
- For other specifications refer Engineering Standard of Sheet Steel Distribution Board (ES: 8080).

(C) PRE-WIRED DISTRIBUTION BOARDS

- Pre-wired distribution boards shall be concealed single door housed in purpose made metal cases conforming to relevant Indian standards. The sub-distribution boards shall not be mounted at a height exceeding 180 cm from finished level.
- Pre-wired distribution Boards shall be phase segregation type equipped with rigidity fixed Miniature Circuit Breakers (MCB) complying with specific number of relevant code in the phase leads with overload and short circuit protection. The (MCB) shall have adequately sized terminals for the outgoing leads. Pre-wired distribution boards shall have adequately sized terminals or clamps for the incoming conductors. Pre-wired distribution boards shall have an earth bus bar with the necessary number of terminals for connecting the earth continuity conductors associated with the various circuits supplied from the board.
- Each Pre-wired distribution board shall have a circuit pasted or otherwise permanently fixed inside the cover stating the designation and details of the circuits controlled, and rating of miniature breakers. Non-flammable insulating barriers shall be provided between poles and phases and all live parts protected with non-flammable insulating shields to prevent accidental contact while operating the miniature breaker.

(D) CEILING FANS

- Ceiling fans shall be of 1200 mm / 600 mm sweep suitable for operating on 240V, 1 phase, 50Hz supply and shall be complete with standard mounting accessories such as suspension rods, top and bottom caps etc. The fans shall be of approved shade and supplied with appropriate electronic speed regulators (modular type). The ceiling fans shall conform to relevant Indian standards.

(E) CEILING ROSES

- Ceiling rose shall be of bakelite and shall comply with IS-371 specification for ceiling roses having two or three terminal plates and of outside diameter not less than 63.5 mm. The flexible cord shall be fixed to ceiling rose in such a way that no weight is carried by the clamping screws. The flexible cord shall be of 23 / 0076 dia. cord with copper conductor.

(F) LIGHTING FIXTURES

- All lighting fixtures shall be LED type.
- The fixtures shall be complete with all accessories including the driver, lamps and all accessories. The lighting fixtures shall also conform to the specification sheet (attached in this specification).
- The fixtures shall be provided with cable glands and a terminal block suitable for termination of copper conductor up to 2.5 sq. mm size.
- The fixture shall be so designed that it shall be possible to maintain or replace different accessories without difficulty, including replacement of lamps.
- **Decorative type light fittings shall be provided in conference halls, meeting rooms, Senior executive rooms and Reception Area.**

(G) INTERLOCKED TYPE SWITCH SOCKET & PLUG

- Interlocked type switch socket shall be of the types as specified in specification sheet.
- These shall be complete with heavy duty air break switches, HRC fuses, sockets & plugs. These shall be fully wired and shall be complete with cable glands, lugs, terminals etc. for external connection.
- The switch socket shall be heavy duty industrial type. The interlocking arrangement shall be such that it is not possible to insert or withdraw the plug with the switch in 'ON' position. Switch socket shall also conform to specification sheet.
- The enclosure of switch sockets and plugs shall be dust and hose proof in weatherproof execution and of Cast Aluminium Alloy 4600, suitable for fixing on wall / structure. A rain-hood shall be offered as an additional protection. Rain hood shall be of the same material as of the main enclosure. Suitable arrangement for looping of cables from one switch socket to the other shall be provided. Necessary terminals, cable glands and lugs for looping shall be provided. Also one non threaded plug for each switch socket shall be supplied loose.
- The Air break switches shall be quick make, quick break rotary type and of utilization category AC-23. Switches shall be hand operated from outside the cover. The switch handle shall remain fixed to the front cover while removing the front cover.
- The sockets shall be provided with link type HRC fuses. The fuses shall be capable of withstanding a short circuit current of 50 KA and shall be delayed action type. These shall be mounted on a shrouded base.

- The socket outlet shall be located in the lower part of the enclosure and shall be provided with a threaded aluminium cover attached to the body with SS chain, to protect the socket after extraction of the plug. Spring loaded automatic shutter shall not be acceptable.
- The plugs shall be so constructed that these can be easily fitted in to the socket outlets and shall be provided with knurled knob arrangement for screwing on the body of the socket so that it can be securely fixed on the top. The plug base and cover shall be firmly secured to each other and shall be sufficiently robust in construction to withstand normal usage. The plug and socket contacts shall be self-aligning type with best electrical continuity.
- The plug shall be provided with cable entry suitable for receiving TRS flexible heavy duty copper conductor cable of specified size. The arrangement shall be such that the conductors are relieved from strain including twisting where they are connected to the terminals and that the outer surface of the cable at the place of entry is not damaged.

(H) MINIATURE CIRCUIT BREAKERS (MCB)

- MCBs shall have silver tungsten contact rewirable connections suitable for flush and surface mounting and shall be suitable for mounting on Din-Rail. MCB and distribution boards shall be as per approved make of list.
- All MCBs shall be ISI marked.
- All wiring connections required to be made with MCBs shall be carried out by providing necessary thimbles / lugs duly crimped.
- MCBs shall be hand operated, air break, quick make, quick break type conforming to applicable standards.
- The MCB shall be provided with overload / short-circuit protective device for protection under overload and short circuit conditions. The switch action shall be trip free to inhibit closing under fault conditions. All brass parts shall be electroplated and all steel parts cadmium plated and all contacts silver plated. The minimum breaking capacity of MCBs shall be 10KA r.m.s. at 415V / 240V AC.
- Miniature circuit breakers shall be SP, DP, TP or 4P and of the current rating all as specified elsewhere or approved. Each miniature circuit breaker shall be provided with spring-washer at each cable termination. All breakers shall be in accordance with the relevant standards.
- The instantaneous magnetic tripping of the MCBs shall be in accordance with the latest edition of the I.E. Regulations. The magnetic tripping of miniature circuit breaker supplying socket outlets shall be 2.7 to 4 times their rated current. The magnetic tripping of the miniature circuit breakers supplying lighting circuits shall be 7 to 10 times their rated current.

(I) JUNCTION BOXES

- Junction boxes shall be used for looping of lighting cables in the lighting circuit of fluorescent fixtures. Junction boxes shall be made of cast aluminium having IP55 degree of protection as per IS: 2147.
- Junction boxes shall be liberally dimensioned having minimum internal dia. of 120 mm.
- The junction boxes shall be 4 way, dome cover type, suitable for mounting on surface or wall complete with mounting accessories, 6 nos. 16 A terminals fitted on DMC moulded terminal block with shorting links, 3 nos. cable glands suitable for 3x2.5 sq. mm² copper conductor XLPE-A-FRLS PVC cable, one no. threaded plug and two external earthing terminals.
- Cable glands & plugs shall be of hose proof, single compression type and shall be of rolled aluminium.

(J) CAST IRON / MILD STEEL BOXES

The boxes having various fittings such as switches, sockets, fan regulators etc. shall be of cast iron / MS of required size and flush mounting type (Refer clause 6.52 of IS- 782).

Average thickness of cast iron boxes should not be less than 2.5 mm and that of MS boxes not less than 2 mm thick. The cast iron / MS boxes shall be embedded in the wall and need not be fixed to wooden plugs. The contractor may at his discretion provide galvanized screws without any extra cost.

(K) EXHAUST FANS

- The exhaust fans shall be of 250mm sweep, domestic type, suitable for operating on 240V, 1 phase, 50 Hz supply and shall be complete with self opening louvers and standard mounting accessories such as frame etc.
- Exhaust fans shall be fixed in wall by providing, a circular opening to suit the size of the frame, which shall be fixed by means of rag bolts embedded in the wall. The hole shall be neatly plastered to the original finish of the wall. The exhaust fan shall be connected to the exhaust fan point, which shall be wired as near to the opening as possible, by means of a flexible cord.

(L) TERMINAL BOXES

In concealed conduit wiring, the terminal point for power / light socket outlets, switching etc. shall terminate in recessed cast iron or galvanized mild steel boxes fitted flush with wall surface. All terminal boxes shall be properly earthed and connected to earth dolly.

(M) MODULAR TYPE SWITCHES / SOCKETS

Modular type switches and modular type sockets shall be ISI marked and shall be approved.

(N) LT POWER & CONTROL CABLE

- Cables shall conform to Engineering Standard ES-8160 and enclosed Specification Sheets.
- 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).
- 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).
- All control cables cores shall be identified with numerical core numbers printed on core instead of colours.
- All cables shall be armoured and shall have extruded inner and outer sheath. Cable shall be in continuous length without any joints.
- Technical Particulars shall be filled by bidder and submitted for approval after order in line with PO requirement before commencement of manufacturing. Separate sheet shall be furnished for different grade cables.
- The cut ends of cable shall be sealed by means of non-hygroscopic sealing material.
- Following information shall be embossed on outer sheath throughout the length of cable at regular interval:
 - i) Cable size & no of cores
 - ii) Voltage grade
 - iii) Type of insulation
 - iv) Year of Manufacture

- v) Name of Manufacture
- vi) Running meter

(O) EARTHING

- Complete earthing installation shall be done as per IS: 3043 and Lightning shall be done as per IS/IEC 62305.
- Earthing rings/grid shall be provided around the Existing technical building. Minimum size of main grid shall be 50mmX6mm.
- Earthing grid/ring shall comprise of buried GI earth strips and GI pipes/electrodes. All these earth electrodes shall be inter-connected.
- Individual electrical equipment shall be earthed by GI strip. Earth buses shall be provided for earthing groups of electrical/non-electrical equipment to earthing grid/rings.
- All equipment rated above 250 V shall have two external earth connections and those rated up to 250 V shall have one external earth connection.
- All GI conductors shall meet the galvanizing requirement as per IS.
- Surplus soil shall be carried away to distance exceeding 50 m and the site left clean and tidy.
- Portion of earth wire between earth electrode and Meter Dist. Bd. shall be enclosed in 15 mm bore galvanized pipe light grade. The rate against respective item of earthing of shall be deemed to include the cost of the aforesaid pipe.
- Pipes carrying gas / water etc. shall not be used as means of earthing on installation.

(P) MOUNTING STRUCTURES

Switch sockets, cable trays, Distribution Boards, Feeder Pillar etc shall be mounted / supported on suitable structure fabricated out of standard sections of mild steel, i.e. channels, angles, flats etc conforming to IS: 266.

(Q) PAINTING

- The equipment surface to be painted shall be pre-treated to remove all dust, scale and foreign adhering matter by suitable treatment.
- All metal surfaces shall be painted with two coats of suitable anti-rust paint followed by two coats of anticorrosive epoxy paints.
- 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.
- Unless otherwise specified, the finishing shade shall be light gray having No.631 as per IS-5.

(R) TESTING

- All equipment shall be routine tested as per relevant standards in presence of owner representative at manufacturer's works before dispatch. In addition, the equipment shall be inspected at site for final acceptance.
- The following tests as specified in IS-732, code of practice for electric wiring and fittings in building shall be complied with before the complete installation is taken over. The contractor shall carry out the tests in the presence of Engineer-in-charge. Electrical wiring test sheet shall be signed both by the contractor's representative and the Engineer-in-charge. All testing

equipment shall be arranged by contractor without any extra cost.

- Insulation resistance shall be measured by 500 volts megger. The insulation resistance in mega ohm of the installation shall not be less than 50 divided by the number of points on the circuit and the resistance of the whole installation shall not exceed one ohm and resistance including earth mass as 5 ohm.
- Testing Polarity of Switches -A test shall be made to verify that all non linked single pole switches have been fitted in the same conductor throughout and that such conductor has been connected to another or phase conductor or to the non-earthed conductor of the supply.

(S) DRAWING & DOCUMENTS

- All drawings and documents shall have the following descriptions written boldly:
 - Name of Client.
 - Enquiry / Order Number with Project/Plant name.
 - Equipment Code No. and Description.
- At the time of handing over of the installation, the vendor shall supply as built drawings taking into consideration the actual execution carried out at site.
- The vendor shall furnish a Bill of Materials covered in their offer. However, this shall be treated for information only and shall not absolve them from his obligation to supply the required items and quantities for making the plant complete as per intent of the specification.
- Drawings and documents shall be submitted as per Annexure-I

(T) MAKE OF ELECTRICAL ITEMS

- Make of electrical items shall be as mentioned in Annexure-II. Make of equipment / components not indicated shall be subject to owner's approval.

ANNEXURE-I
DRAWINGS AND DOCUMENTS SCHEDULE

S.N.	Description	With bid Y/N			
			For approval before procurement (*)	For approval before start of work (#)	Final / Approved / As built (\$)
1.	Specification Sheets, duly completed	N	2	--	4
2.	Technical Particulars, duly filled in	N	2	--	4
3.	SLD	N	2	--	4
4.	Feeder Details of Switchboards i.e.FPB etc.	N	2	--	4
5.	Cable route Layout	N	--	2	4
6.	Conduit Layout	N	--	2	4
7.	Point Layout	N	--	2	4
8.	Earthing & Lightning protection Layout	N	--	2	4
9.	Lighting Layout	N	--	2	4
10.	Schematic/wiring and terminal arrangement FPB etc.	N	--	2	4
11.	Cable schedule	N	--	2	4
12.	Bill of Materials	N	--	2	4
13.	Installation, Operation & Maintenance Manual	N	--	2	4
14.	Installation, Termination and Jointing Instructions	N	--	--	4
15.	Illustrative and Descriptive Literature/ Catalogue	Y	--	2	4
16.	Illustrative and descriptive catalogues indicating general arrangement, light distribution, light absorption and utilisation factors, full load currents, power factors and power requirement for each type of fixture including control gear losses.	N	-	--	4
17.	Sketch showing mounting Arrangement of Lighting Fixtures with dimensions.	N	2	--	4
18.	Catalogue of brought out items	Y	--	2	4
19.	Routine Test Certificates	N	--	--	4

(*) – The contractor is required to submit two hard copies of drawings and its soft copy in CD/Pen drive for approval of EIC of HURL before start of procurement of bought out items. After approval of EIC only, the contractor shall initiate procurement activity.

(#) – The contractor is required to submit two hard copies of drawings and its soft copy in CD/Pen drive for approval of EIC of HURL before start of electrical works. After approval of EIC only, the contractor shall start electrical works..

(\$) - The contractor is required to submit four hard copies of drawings and its soft copy in CD/Pen drive to EIC of HURL at the time of handover.

ANNEXURE-II
ACCEPTABLE MAKE OF EQUIPMENTS / COMPONENTS

Sl. No.	ITEM	MAKE
1	Low Voltage Industrial Switches / Isolators	Asea Brown Boveri Ltd.
		GE Power Controls India Pvt. Ltd.
		Havells India Ltd.
		Kaycee Industries Ltd.
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
2	Low voltage switch board	Indo asian.
		ABB
		Schneider Electric
		Legrand
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
3	Meters	Alstom Limited (Areva T&D)
		Hotline Switchgear & Controls
		IMP Power Ltd.
		Jaipur Metals & Electrical Ltd.
		M.B. Control & Systems Pvt. Ltd. (Only for Multifunctional Meters)
		Meco Instruments
		Mehru Electricals (Formerly Automatic Electric Limited)
		Prok Devices Private Limited
		Rishabh Instruments Pvt. Ltd.
		Seahorse Industries Ltd.
4	Prewired MCB-DB (SP/TP)	Indo asian.
		Anchor
		Havells India Ltd.
		Schneider Electric
		Siemens Ltd.
5	Floor Mounting Type Distribution Board	Indo asian.
		ABB
		Schneider Electric
		Legrand
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
6	Industrial Type Sw. Socket & Plug	Baliga Lighting Equipments Limited
		Caldyne Automatics Ltd.
		Crompton Greaves Ltd
		Cyclo Electric Devices & Services Co.
		FCG Flameproof Control Gears Pvt. Ltd. (Formerly CEAG
		Flame

		FCG Power Industries Ltd.
		Flameproof Equipments Pvt. Ltd.
		Legrand India Ltd.
7	Wall Mounting Type Distribution Board	Indo asian.
		ABB
		Schneider Electric
		Legrand
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
8	Hoseproof Junction Boxes	Baliga Lighting Equipments Limited
		Bhartia Industries Ltd. (Divn. BCH)
		FCG Flameproof Control Gears Pvt. Ltd.
		FCG Power Industries Ltd.
		Flameproof Equipments Pvt. Ltd.
9	LT Power, Control & Earthing Cables (XLPE-A-FRLS PVC/ PVC-A-FRLS PVC)	Polycab.
		Finolex
		KEI Industries Ltd.
		Havelles
		Anchor
		Universal Cables Ltd.
10	Industrial Cable Gland	Baliga Lighting Equipments Limited
		Comet Brass Products
		Comet Industries
		Dowell's Electricals
		Electromac Industries
		FCG Flameproof Control Gears Pvt. Ltd.
		Gland-Mech. Industries
		Power Engg. Co.
		Quality & Precision Indl. Equipment
		S J Metal Industries (Jainson)
11	Cable Lugs	Dowell's Electricals
		Forward Engg. Industries
		KSE Electrical Pvt. Ltd.
		MG Electrica
		Power Engg. Co.
		S J Metal Industries (Jainson)
		Usha Martin Industries Ltd. (Isma Divn.)
12	Heat Shrinkable End Termination Kit	Raychem RPG Ltd.
13	Epoxy based Termination / Straight Through Jointing Kits	Birla 3M Ltd.
		Yamuna Power & Infrastructure Limited
		Mahindra Engineering & Chemical Products Ltd.
		Raychem RPG Ltd.
14	MCB/ELCB/RCCB	Siemens
		GE Power Controls India Pvt. Ltd
		Havell's India Limited

		Legrand India Ltd.
		ABB
		Schneider
		L&T
15	MCCB	Siemens
		GE Power Controls India Pvt. Ltd
		Havell's India Limited
		Legrand India Ltd.
		ABB
		Schneider
		L&T
16	Fuse	Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
		Alstom Power
		Bussman
		Havells India Ltd.
17	Contactor	Siemens
		GE Power Controls India Pvt. Ltd
		Havell's India Limited
		Legrand India Ltd.
		ABB
		Schneider
		L&T
18	Timers	ABB India Limited
		Alstom Power
		Alstom Limited (Areva T&D)
		Bhartia Cutler Hammer
		Siemens Ltd.
19	Push Buttons	Alstom Power
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
		Tecnik
		Tulsi
20	Control Switches	Alstom Power
		Kaycee
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
21	Terminal Blocks	Connectwell
		Elmex
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
22	Signal Lamps	Alstom Power
		Binoy
		Larsen & Toubro Ltd. (El. Products Divn.)
		Siemens Ltd.
		Tulsi

23	Copper Wires- 600/1100 Volts (Flexible Cable)	Anchor Electricals Pvt. Ltd.
		Finolex Cables Ltd.
		Havells India Ltd.
		Polycab Wires & Cables
		KEI Industries Ltd.
		Universal Cables Ltd.
24	PVC Conduit Pipes	A.K.G.
		Finolex Industries Ltd.
		Havelles
		Anchor
		Prakash Industries Ltd.
25	Ceiling Fan	Anchor, model- Ecobreez Urban Mocha
		Luminous, model- Newyork Tiffany
		Crompton, model- Energion Stylus
		Havelles, model- Stealth air
		Usha, model-Heleous
26	Exhaust Fan	Bajaj Electrical Ltd.
		Crompton Greaves Ltd.
		Usha
27	Wall FAN	Anchor,
		Luminous,
		Crompton,
		Havelles,
		Usha,
28	Modular Switch/Socket with plates	Anchor , model- Roma/ Woods with metallic/glass plates
		Crabtree, model- Ducor by murano/Amare with metallic/glass plates
		Havells, model- Fabio art/ Oro Metallica with metallic/glass plates
		GM, model- GX/ Four Five with metallic/glass plates
		Orient electric, model- Salus with metallic/glass plates
		Wipro, model- Artisa with metallic/glass plates
29	Lighting Fittings & Accessories / LED Lamp	Bajaj Electrical Ltd.
		Crompton Greaves Ltd.
		Havells India Ltd.
		Syska
		Philips India Ltd.
		Surya Roshni Ltd.
		Wipro Lighting
30	Electric Call Bell	Anchor Electricals Pvt. Ltd.
		MDS
		Kinjal
31		Anand Electric Trading Co.

	Earthing & Lighting Protection Material	Bharti Exports
		Controls & Switchgear Co. Ltd.
		Jamna Metal Company
		Jayant Metal Mfg Co.
		Mahavir Industrial Corporation
		Metalite Industries
		Metropolitan Industries
		Premier Power Products (Calcutta) Pvt. Ltd.
		Rukmini Electricals & Components Pvt. Ltd.
		Sadhana Engineering Corporation
		Sai Galvanisers & Fabricators Pvt. Ltd.
		Stealite Engg. Co.
32	GI Pipes	Bharti Exports
		Indian Tube Co. (Tata Div. Of Tubes & Pipes)
		Jindal Pipes Ltd.
		Meghjyot Enterprises
		Rukmini Electricals & Components Pvt. Ltd.
		Steelcraft

NOTE : Items not covered above shall be subject to Owner approval.

ERECTION, TESTING & COMMISSIONING SPECIFICATION OF ELECTRICAL ITEMS

SCOPE OF WORK

The scope of work shall include storage, handling, transportation, unpacking, checking, reporting of damages / defects, assembling, erection, installation, including fabrication, alignment, levelling, grouting, welding, bolting, painting (wherever specified), etc., testing and commissioning of various electrical equipment supplied by the contractor, earthing system, fabrication & installation of steel structural etc. as per drawings & documents, specifications, standards & codes, prevalent rules & regulations and best engineering practices.

The scope shall also include obtaining approval from statutory authorities, as required.

SCOPE OF ERECTION

- The scope comprises of erection/ installation, testing and commissioning of electrical equipment / items as indicated in SOR.
- Laying of cables in excavated / RCC trenches and on cable trays as required.
- Supply of single / double compression / FLP aluminium cable glands and crimping type tinned copper cable lugs, shall be provided by the electrical contractor for which unit rates shall be quoted.
- Excavation and back filling of cable trenches/direct buried cables.
- Termination of power, control and lighting cables.
- Fabrication with supply of MS material, consumable and hardware of frames, supports, cable racks etc. as required.
- Supply, laying & connection of the complete earthing system including supply of GI

earth electrode as per sketch given, GI earthing strips, flexible earthing conductors etc.

- Civil works such as digging of earth and refilling for directly buried cables, earth strips, cable protection pipes, earth electrode pits, ground mounted lighting pole foundations, civil works such as making earth pit inspection chambers with covers, grouting of base plate, channels, supports and foundation bolts, including chipping of concrete or in brick work for earth strips, pipes and other minor chipping for foundation preparation, if required, cutting holes in walls for racks, risers, light fitting brackets, sealing of cable entries and making good the same after installation of the equipment and levelling and other minor similar jobs shall be in contractor's scope.
- Straight - through jointing of cables (wherever required)
- Making / providing canopies / rain hoods.
- All hardware required for successful commissioning, whether specifically mentioned or not in the specification.
- Concrete foundations for pedestals, lighting poles, grouting of equipments etc., including supply of grouting materials.
- Removal of materials / scraps to the scrap yard and stores etc. as per instructions of Owner / Consultant.
- Supply and installation of any other item not specifically mentioned but found necessary by the engineer-in-charge for satisfactory completion of job.
- Any work not included in this tender but may be required, as decided by engineer-in-chief, such as site modification of panel wiring, mounting of additional equipment etc. for which extra payment shall be made as per the man-day-rates to be quoted for various categories of workmen.
- "AS BUILT" drawings with all site modifications shall be prepared by making the changes on owner / consultant's drawings.
- All major civil engineering works pertaining to electrical equipment as per Technical Specification of Civil enclosed elsewhere in the tender.

CODES AND STANDARDS

The design, manufacture, testing, installation of the equipment shall comply with the latest issue of all relevant Indian Standards and codes of practices and all applicable Statutory Acts & Regulations.

The contractor shall have valid "A" class licence. The contractor must have PF & ESI codes covering all persons hired by him for carrying out the job. He shall engage suitably skilled / licensed workmen of various categories for execution of work supervised by supervisors / engineer of appropriate qualification and experience to ensure suitable quality of work.

The contractor shall observe safety rules and take all necessary safety precautions to carry out the internal electrification work.

GENERAL PROCEDURE FOR ERECTION

The general procedure governing "Transfer of equipment and materials to Contractor", erection and final acceptance of owner / consultant are given below:

Storage of equipment at site

- All equipment and materials shall be properly stored by the contractor at site in the designated storage area provided by the owner. Contractor shall arrange to draw the necessary equipment / materials in the sequence required for erection and transport the same from contractor's store to erection point.
- The contractor shall keep proper record of the materials supplied by him / owner.
- The contractor shall ensure that all the materials drawn/ supplied by him are stored indoor / under shade. However, if a package is temporarily stocked outdoor due to unavoidable reasons, this shall be ensured that the storage area is dry, hard and well-drained.
- Goods must not be placed directly on the floor / ground but shall be kept on blocks, 60 mm to 120 mm above the floor level such that the bottom is well ventilated.
- In case of outdoor storage, the contractor at his own cost shall provide waterproof PVC sheets/ tarpaulin to cover all goods so as to protect them from rain etc. These sheets / tarpaulin shall be removed for inspection once in a week and if found moist or mouldy, shall be dried in direct sunlight.
- In addition to the above, the equipment manufacturer's storage instructions, if any, shall be strictly followed.

Contractor's inspection at site

- On receipt of any material (supplied by the contractor) at site, contractor shall fully unpack and inspect all equipment received for completeness, signs of damages, defect etc. in the presence of owner's representative. Any damage / short supply detected shall be recorded immediately. The contractor shall be required to make good / replace / repair the defective / damaged items at no extra cost to the owner.

Handling and cleaning

- The contractor shall be responsible for proper handling and cleaning of all materials / equipment drawn / supplied by him until owner / consultant finally accepts the erected equipment.
- Equipment shall be handled with care by experienced riggers under guidance of competent supervisors and as per rigging marks given on cases. Dragging on floor shall be avoided and crane / suitable rollers shall be used for moving the equipment at any times.
- The contractor shall be fully responsible for the safe keeping of equipment issued to him till these are erected, tested, commissioned by him and accepted by owner / consultant.

Transportation

This involves transportation of various electrical equipments / materials from contractor's store to erection site. When transporting the equipment, it shall be loaded on suitable trailer / trucks as per capacity and size of equipment, and shall be properly supported on the trailers/ trucks by means of ropes / stoppers to avoid damage or tilting due to heavy jerks and vibration. Precautions, if any, displayed on equipment shall be strictly observed.

Erection Requirements

- All work shall be carried out as per drawings supplied. Placing on foundation, aligning, grouting, connecting, fixing danger notice plate / board on equipment as specified, meggering, labelling and painting shall form part of erection requirements.
- Fixing of supporting frames / pedestals, grouting, cutting and dressing holes in walls / ceiling

and any other minor civil work necessary for installation and levelling of electrical equipment are included in electrical erection scope.

- The scope of erection also includes cable dressing / clamping / minor rerouting, minor relocation of fittings, internal cleaning of equipment, overhauling and minor repairs.

- Fabrication of clamps from the materials specified and clamping of cables on racks, trays etc. fixing of single core cables in tri-foil formation in aluminium clamps, earthing of cable armour and lead sheath, wherever necessary (and as per the details given by Consultant) fall under erection scope of work.

- Marking of cables by fixing / grouting the cable marks / number tags at every 25 metres along entire route of cables are included in the scope of work. The tags shall be made of Aluminium Strips.

- The contractor shall without any extra cost, touch up with paint all electrical equipment which are damaged / scratched during handling, erection or repair. The paint used shall match exactly the painted surface of the equipment on which touch-up is done, and shall be epoxy based.

- The descriptions given above are only to give a preliminary idea about the scope of work and they do not limit the entire scope to these descriptions only. Hence all other parts of the tender document shall be read in conjunction with the referred standards, associated drawings, specification sheets and schedule of materials & services to assess actual scope of work.

- The contractor shall undertake erection of all equipment specified herein in accordance with good engineering practices in conformity with statutory regulations and Code of Practice and to the entire satisfaction of the purchaser / owner.

- The contractor shall arrange all the necessary erection tools, tackles, testing and measuring instruments and shall supply all erection materials as required.

Erection Supervision by OEM Suppliers

- For guiding / supervising erection of sophisticated equipment, services of main equipment supplier's engineer may be made available free of cost by the contractor for the electrical equipment. However, this will neither absolve the contractor from his responsibility nor his obligation to provide his own supervisors or technical personnel.

- The contractor shall have to comply with all the directions of Engineer-in-Charge, drawings etc. issued to him within the scope of his contract by supplier's engineer.

SPECIFICATION FOR ELECTRICAL ERECTION

General

These specifications lay down the erection procedures to be followed for each type of equipment, over and above the general "Erection Requirements".

The contractor shall also follow manufacturer's instructions and any other instructions of consultant / Principal / Statutory bodies during erection.

Suggestive Erection Drawings shall be supplied to the successful bidder for Lighting, Earthing, Cable Tray Routing, etc. These drawings may be suitably modified, if required, to suit site requirement with the approval of owner / consultant.

As-Built Drawings shall be prepared by the bidder and supplied to owner/ consultant.

Cable Jointing and Termination

General

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

- Soldering / crimping of sockets / ferrules and connections at all joints/ terminations as per specifications. Sockets shall be provided at all terminations except where pressure clamp type terminals are provided.
- Glanding of cable and fixing of cable boxes.

Specifications

- All LT XLPE power and control cables shall be terminated through compression type gland.
- In case of LT XLPE cables, armours shall be suitably earthed in compression type glands. In explosion proof equipment, sealing accessories, where provided in cable box, shall be used for sealing the cable entry to the box and termination.
- All lighting and control cables shall be provided with crimped Al / Cu Sockets before termination in junction boxes.

Crimping

- For all power cables, crimping type Al lugs for Al cables and tinned Cu lugs for Cu cables shall be provided. These lugs shall be crimped on the cable conductors by means of special hand / hydraulic crimping tools. Before crimping the socket inhibiting grease shall be smeared over the conductor. Conductor shall be shaped properly before sliding the socket over it. Crimping shall be done in an approved manner.
- All the control cables, which shall be of copper conductor, shall be terminated without any additional lugs in screwed type terminals provided in various equipments.

Jointing

- The jointing shall be done in an approved manner. Care shall be taken not to damage the insulation when opening the cable for jointing.
- Before commencing soldering of the socket, conductor shall be thoroughly cleaned and insulation protected. The ferrules shall be thoroughly cleaned. Ferrule and each strand of the cable shall be thoroughly sweated with solder to tin them and fill the conductor gaps to remove all air pockets. Soldering materials of approved quality as per ISS practice shall be used. Taping of the conductors shall be done in an approved manner after crimping / soldering.
- Filling up compound and sealing the cable box shall never be done in one operation. After the first pouring of compound, it should be topped up again with compound and then sealed.

Cable Installation

General

- All fabrication, cutting, laying, spacing, fixing etc. of cables, trays, supports, hangers etc. shall be as per drawings and instructions of Owner / Engineer-in-Charge.
- The contractor shall keep accurate record of cable drums, the drum nos. and actual length of cable taken out of each drum. Each cable length shall be cut from a specific drum as per approved schedule of cable. Lengths of cable runs shown in the cable schedule are calculated lengths only, hence the actual lengths shall be measured at site before laying and cutting the cable. The contractor shall take extreme care to adjust cable runs from drums so that joints in the cable are avoided and wastage reduced to minimum.
- For purpose of measurement of cable run for payment the length of cable between and terminations only shall be considered.

Laying

- The cable drums should be properly mounted on jack / cable wheel. Make sure that the spindle is suitable for carrying weight of the drum without bending. Check that spindle is laying horizontal on the bearing so as to prevent the drum creeping to one side or to the other while rotating.

- Unroll the cables from the drum in correct direction. Rotate drum only as per arrow mark given in the cable drum. Ensure that the end protection box attached to the flange of the drum is removed and securing rope cut to allow cable and move freely. Rotate the cable drum and simultaneously pull cable steadily and with even pulls and not with unnecessary jerk or strain. In no case the cable shall be allowed to twist or kink since this is likely to spring the armour and fracture the insulation and outer serving of the cable.

- Do not drag the cable on floor or hard surface. Use only wooden / steel cable rollers for this purpose.

- Cable should not be bent sharply to a small radius. The cable bending radius shall be as large as possible and will not be less than 15 times the outside diameter for XLPE cables and 12 times for PVC cables. At joint termination the individual core of cable shall not be bent with bending radius of less than 15 times the diameter over the insulation.

- Where cables are laid on the MS racks, trays etc. ensure that trays / racks / supports are fixed properly in an approved manner or according to the drawings. Check from drawings that for horizontal runs of cable, bracket, risers, supports, angles are grouted or fixed information as required.

- In sub-station where large no. of cables rise to panels/ switchboards, it shall be ensured that these risers do not interfere with cables on racks and rising cables do not interfere with cables on racks and rising cables do not cross the other cables in horizontal runs. Risers are to be properly supported so that weight of cable does not fall on terminations. All cable crossings shall be avoided.

- Cable laid in trenches should be sealed at the entry to hazardous area / non-hazardous area as per direction of owner / engineer-in-charge.

- Openings in substation basement and floors for entry of cables shall be sealed after the cables are laid.

- Cables shall be clamped by taking care to be taken to space clamps at such intervals as to prevent buckling of cables.

- The laying of the cable on the racks shall be done in an approved manner and according to the drawings supplied.

- Where cables are laid in cable slits, the slits after laying of cables shall be filled with sand & lean cement mixture and plastered so that surface flushes with top of slit.

Directly Buried Cables

- Laying of underground 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.

- 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 kinks 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.

- 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 used for brick working. Only Class-I bricks shall be used.

- 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.

- 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 "HT CABLE", "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.

- 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.

Laying in Readymade Trenches

- RCC slabs / chequered plates lifted from trenches for laying cables shall be put back in position at close of work every day to avoid accident & damage to cables in the trench.

- When cables pass through pipes, pipe ends shall be sealed with bitumen compound and sand as required.

- Protection pipes shall be provided, whenever cables enter from the floor, trench etc. in the equipment and sealing in and around these pipes shall be done.

Cable Jointing and Termination

General

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

- Soldering / crimping of sockets / ferrules and connections at all joints/ terminations as per specifications. Sockets shall be provided at all terminations except where pressure clamp type terminals are provided.
- Glanding of cable and fixing of cable boxes.

Specifications

- All LT XLPE power and control cables shall be terminated through compression type gland.

- In case of LT XLPE cables, armours shall be suitably earthed in compression type glands.

- In explosion proof equipment, sealing accessories, where provided in cable box, shall be used for sealing the cable entry to the box and termination.

- All lighting and control cables shall be provided with crimped Al / Cu Sockets before

termination in junction boxes.

Crimping

- For all power cables, crimping type Al lugs for Al cables and tinned Cu lugs for Cu cables shall be provided. These lugs shall be crimped on the cable conductors by means of special hand / hydraulic crimping tools. Before crimping the socket inhibiting grease shall be smeared over the conductor. Conductor shall be shaped properly before sliding the socket over it. Crimping shall be done in an approved manner.

- All the control cables, which shall be of copper conductor, shall be terminated without any additional lugs in screwed type terminals provided in various equipments.

Jointing

- The jointing shall be done in an approved manner. Care shall be taken not to damage the insulation when opening the cable for jointing.

- Before commencing soldering of the socket, conductor shall be thoroughly cleaned and insulation protected. The ferrules shall be thoroughly cleaned. Ferrule and each strand of the cable shall be thoroughly sweated with solder to tin them and fill the conductor gaps to remove all air pockets. Soldering materials of approved quality as per ISS practice shall be used. Taping of the conductors shall be done in an approved manner after crimping / soldering.

- Filling up compound and sealing the cable box shall never be done in one operation. After the first pouring of compound, it should be topped up again with compound and then sealed.

STRAIGHT THROUGH JOINTS

- Jointing of XLPE & XLPE cables shall be done with extreme care and manufacturer's instructions shall be strictly followed. Soldering of sockets shall also be done with extreme care as indicated above.

Earth continuity wire shall be plumbed and / or clamped. Compound shall be filled according to the instructions of manufacturers of terminating kit / cable. Joints made inside trench or on rack shall be properly supported. Wherever joints are made inside ground, brick masonry work shall be done around the joint box and filled with sand, and there after covered with earth at no extra cost.

- A tent shall be used in all circumstances where jointing work is being done outdoor, for protection against rain and to prevent dust from being blown in to exposed joints and jointing materials. Extreme care shall be taken to maintain proper phase sequence while terminating at equipment ends. Records of connection details shall be maintained. Conductors shall be shaped properly while terminating and no sharp bends shall be given. Where numbers of cables are to be connected in parallel, proper tests shall be done before connection, so that no cross connection shall be made. No phase crossings shall be allowed for making the connections.

- Cables shall be supported adequately at the entry to cable box / equipment so that load of cable does not come on cable glands.

- All cables shall be meggered before and after jointing and insulation values recorded.

- While terminating at equipment end, each core shall be properly tagged with numbering ferrules as per nomenclature given in the drawings. Wires should be dressed and clamped neatly, bolting shall be done properly.

Earthing & Lightning

General

- Painting of all earth strip joints with anti-corrosive paints shall be carried out as per details given in drawings and instruction of Owner / Engineer-in-Charge.
- All electrical equipment rated 415V and above shall be connected to earth bus by two separate and distinct earth connections. All equipment rated 240V and below shall be earthed with single earth conductor.

Specifications

- Types and sizes of earthing conductors shall be as indicated in the SOR attached. All earthing installations shall conform to IS-3043 / National building code 2016 / IS / IEC: 62305.
- Underground conductors shall run at a depth of 600 mm below ground level. Where these conductors run along with cables, they shall be laid at the same depth as cables. Where conductors run on wall, ceilings, they shall be laid on clamps or brackets made out of Al/GI strips.
- Wherever, earthing conductor is passing through floor, walls etc. the conductor shall be taken through PVC / GI pipes.
- All paints, enamel etc. shall be removed from point of contact before making connections.
- Connections between G.I. strips shall be done by welding. For connecting Al conductor / G.I. wire, Al socket shall be crimped on the conductor / wire. At the equipment end, connections shall be done by bolting.
- Connection between Al & GI shall be done by bolting. Graphite grease shall be applied on contact surfaces.
- Epoxy resin paint or bitumen shall be applied on welded or bolted joints to prevent corrosion and taping done as indicated in the drawing. Connections between Al wires shall be done by crimping back to back Al ferrule.
- Earth electrodes - Earth electrodes shall be provided as per drawings / specification. Work includes excavation of earth, installation of electrodes and test links etc., supply and filling of charcoal and common salt, back filling of earth and removal of extra earth as specified earlier. It also includes making brick wall around the electrode and cover as per drawings / specifications. The testing links shall be grouted on brick wall and connections with earth electrode and conductors shall be made. Distance between two electrodes shall not be less than 10 meters and may be located 4 M away from building foundation.
- Earth pits for equipment earthing, neutral earthing and lightning protection shall be separate. However, these pits shall be inter-connected.

Plant / Building Lighting

- The electrical installation covered by this specification shall conform to relevant Indian Standards & codes of practices.
- Erection of light fittings, plug sockets etc.
- Fabrication of supports for lighting fittings, sockets, junction boxes / Air condition points / TV points shall be done as per the best practice / relevant drawings / instructions given by the owner / engineer-in-charge.
- These shall be grouted to walls, ceiling or welded to insert plates, steel structures etc. Insert plates on ceilings shall normally be provided. However, if required, the contractor shall weld such supports to the reinforcement rods after exposing by chipping off concrete at no extra cost. Installation of lighting fittings includes control boxes, where supplied separately and shall be done as per drawings. Before installation, checking of internal parts, assembly

of accessories shall be done as per manufacturer's instruction.

- The explosion-proof fittings shall be earthed through third core of the cable used for wiring. The third pin and body of 16 amps shall be earthed similarly.
- Installation of explosion proof equipment shall be done strictly following manufacturer's instruction or relevant Standards. Cable termination shall be done as per relevant drawings. No drilling of holes or any change in construction of equipment or part thereof shall be done.
- Wiring for normal AC supply light points and plugs shall be taken on the same brackets but wiring for emergency DC supply lights shall be taken separately. Drawings for lighting layout give only tentative location of fittings and wiring route shall be decided in consultation with owner / engineer-in-charge. Wiring shall follow shortest possible route and no. of circuit shall be bunched together to the extent possible in the same route.
- Cable for wiring light points and socket outlets shall normally be laid along wall, ceilings, structures, on suitable brackets made out of M.S. / Al sheets or strips. Connections to the points with fluorescent fixtures in one circuit shall be taken through junction boxes. Junction boxes shall be suitably located for branching off from the circuit to the individual point. Wherever indicated, cables may be laid directly on walls, ceilings etc. by clamping on saddles.
- Wherever indicated, the wire can be drawn through PVC bushings provided in the fittings. Relevant drawings may also be referred to.
- Lamps shall be installed after installation of fittings and wirings.
- All light fittings and corresponding control switches shall be numbered in a permanent way as instructed by owner / engineer-in-charge.

ERECTION OF STRUCTURES

Specification

The fabrication work shall be done as per drawings / specifications / sketches in an approved manner and to the entire satisfaction of owner / engineer-in-charge. The contractor shall take adequate measures to avoid wastage. Scrap quantity shall not exceed 2 % of total quantity used for erection.

Erection of racks, risers, supports etc.

- Erection of racks and risers for cable supports shall be done along the cable routes as indicated in the drawings. The contractor before erection shall check the route for any obstruction like process pipe lines, structures, equipment etc. In case of obstructions, the matter shall be brought to the notice of owner / engineer-in-charge in writing and racks shall be re-routed as per his instructions.
- As and where indicated in the drawings, supports for racks, risers etc. shall be welded on the steel structure, such as MS beams, pipe trestles, insert plates provided in the RCC column etc. for erection of racks.
- Wherever indicated, supports for racks, risers, shall be grouted on walls. The racks, risers etc. shall be installed on such supports and those properly welded.
- Opening on walls / floors shall be provided where racks / risers are crossing floors/ walls.
- Heavy channels, risers may also be grouted on the floors in addition to supports provided from walls, ceilings, steel structures etc.

- As indicated in the drawings, racks and risers shall be erected either in single tier / multi tier formation.

Erection of supports in trench

- Supports and Hangers shall be grouted with rag bolts on the walls of readymade concrete trench.
- In existing trench wall, contractor may be required to provide pockets for grouting cable supports at some points. This shall be done without any extra cost to the owner.
- In case of requirement of insert plates for support of cable rack, the contractor shall weld such plates to the reinforcement MS rods. This shall be done by chipping the concrete for exposing the reinforcement MS rods and thereafter welding the plates and making good the concrete chipping by plastering.

The pipes will have to be bent (wherever required) and fixed / embedded in floor, wall and ground for laying the cables. Neoprene bushes shall have to be fixed at the end of such pipes.

GI trays of different sizes shall be cut in size and fixed on racks and risers. Fixing of trays shall only be done after erection / welding / painting of the supports as required.

Erection of support frames for miscellaneous equipments, base channels for transformers and switchboards etc. shall be carried out at no extra cost.

Dismantling of steel fabrication and re-erecting as required by owner / engineer-in-charge shall have to be carried out by the contractor.

Dismantling of cable racks and re-erecting as required by owner / engineer in charge shall be carried out by the contractor.

GENERAL PROCEDURE FOR TESTING & COMMISSIONING

Before proceeding with the work, contractor shall fully inspect all installed Electrical Equipment for completeness, signs of damages, defects etc. and record all discrepancies noticed. The contractor shall be required to make good / repair / replace the damaged components at no extra cost.

Testing and Commissioning Requirements

- All works shall be carried out in accordance with the drawings, supplier's instructions / manuals for equipment and as per relevant ISS & Code of Practices.
- Before conducting test on any equipment, the contractor shall obtain permission from owner/ engineer-in-charge and all tests shall be conducted in their presence.
- Results of each test shall be recorded by the contractor immediately after the test on approved performa and counter signed by the owner's authorised representative. The test results shall be furnished in four copies in the form of 'Test Certificates'. Performa for some of the items are given in Appendix-1.
- Copies of the record shall be handed over to owner / engineer-in-charge.
- The Contractor shall commission all electrical equipment and carry out all pre-commissioning / commissioning tests inclusive of no-load and on-load tests on motors, and shall be responsible for final adjustments of relays, motors, instruments, starters, breakers etc. as per operational data supplied and as per directions of Engineer-in-Charge.
- All terminals, cable joints, earth terminals which are opened for testing purposes shall be re-terminated and re-insulated by the Contractor to restore their original state.

Painting

The contractor shall without any extra cost, touch up with paint all electrical equipment which

are damaged/ scratched during testing and commissioning work. The paint used shall match exactly painted surface of the equipment on which touch up is done.

Cleaning and Regular Maintenance.

Till the commissioned equipment is finally accepted by owner / engineer-in-charge, Contractor shall be responsible for regular cleaning and maintenance of all electrical equipment. The maintenance job is to be done in consultation with or on advice from the Owner/ Consultant.

TESTING & COMMISSIONING SPECIFICATIONS

These specifications lay down the testing and commissioning procedures to be followed for each type of equipment, over and above the general requirements laid down in specifications for erection.

Manufacturer's instructions and any other instructions of owner / engineer-in-charge / statutory bodies shall also be followed by the contractor during testing and commissioning.

The contractor shall maintain and furnish the records of all equipments i.e. HT/LT panels, CT, PT, relays etc. including any special test as per manufacturer's manual.

Following testing shall also be done

- Wiring check for completeness for all equipment of the Panel.
- IR value with 500V Insulation Tester.
- Operational check of the Panel by simulation.
- All Meters and Indications shall also be checked at site.

Cables

- LT cables shall be tested for insulation resistance with 1000 V megger after termination. IR shall be measured between phases and between phase & earth. The voltage shall be applied for 1 minute.

Lighting

Before energizing any lighting circuit, the IR values (phase to phase and phase to earth) shall be recorded for entire wiring installation. The testing shall be done with 500 V megger. After switching on the power supply, load of each circuit shall be measured.

Earthing

The continuity of earthing and resistance of each earth pit and grid shall be measured with earth megger.

Miscellaneous Equipment

Under this are included, exhaust fans, blowers, limit switches, vibrators, electro-magnets, air pressurization unit etc. The following tests shall be conducted.

- Measurement of insulation resistance
- Check up the direction of rotation.
- Operational test

DOCUMENTATION

For the purpose of completion certificate, the following documents will be deemed to form completion document:

- The technical documents according to which the work was carried out.
- Final check-list and completion report.

Three sets of construction drawings showing therein the modifications and correction made during the course of execution signed by Owner / Engineer-in-charge.

Test certificates for the materials purchased by Contractor.

Material appropriation statement for the materials issued by Owner for the works and list of surplus materials returned to Owner's stores duly supported by necessary documents.

No claim certificate by the Contractor certifying that the entire work done by him under the contract has been measured & accepted for the final bill to his satisfaction and that he will have no claim(s) concerning any work(s) or part thereof performed by him under the Contract, to Owner except otherwise indicated in the final bill.

The completion certification shall be issued by Owner within 30 days of the Contractor furnishing documents listed in this clause jointly certified by Owner / Engineer-in-charge and Contractor's Site Engineer.

HANDING OVER TO OWNER

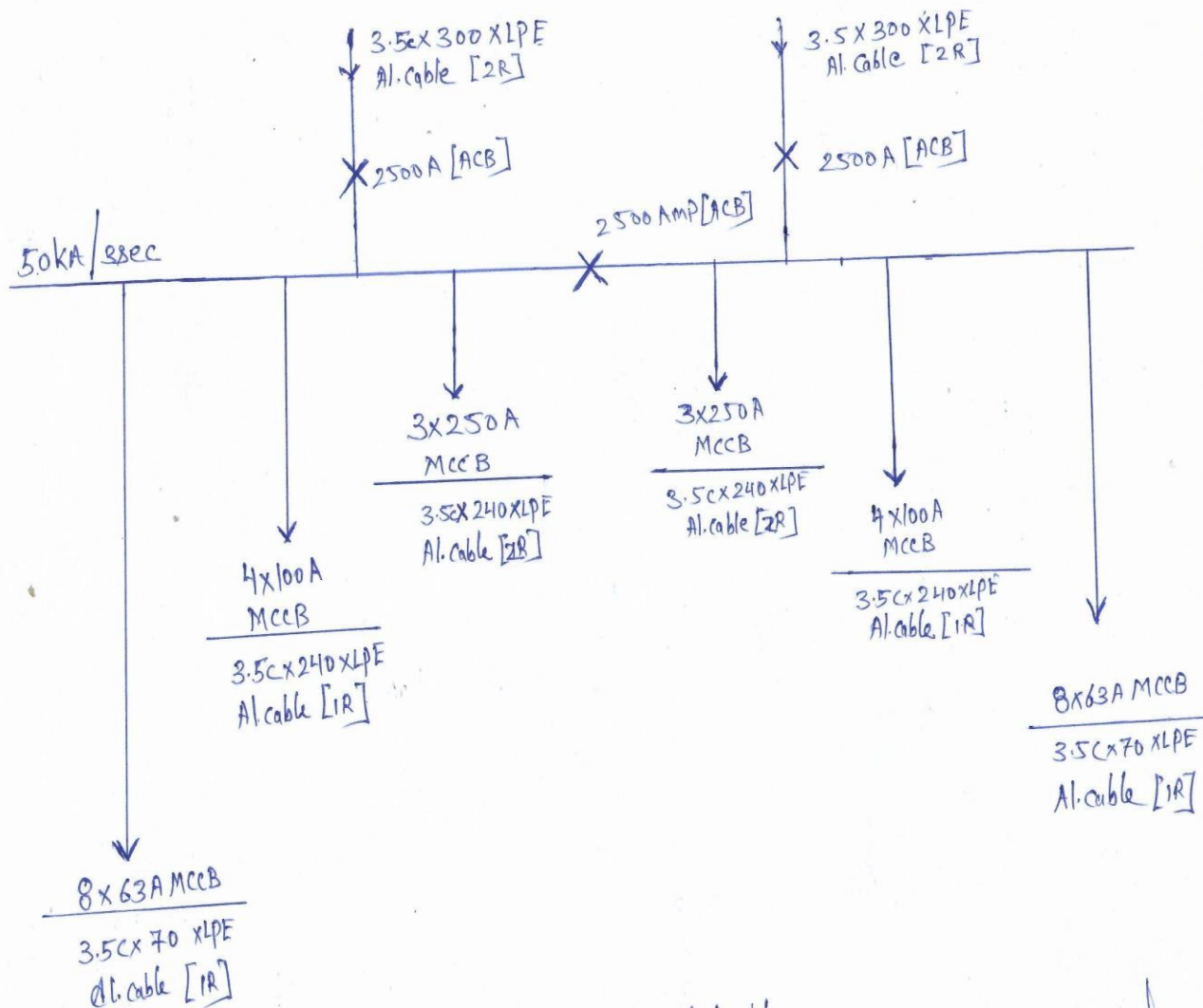
The contractor shall handover the complete installation as a whole. Minor works not specified or mentioned in the scope or SOR but required to complete the job as a whole will have to be done by the contractor without extra cost. Any equipment / installation shall not be deemed as handed over to Owner until the same is complete in all respect and is accepted in writing by the Owner / Engineer-in-charge.

The final acceptance of the work shall be after the demonstration of guarantees by the Contractor. Owner shall issue the final acceptance / taking over certificate upon fulfillment of the guarantees.

OBLIGATIONS & RESPONSIBILITIES OF CONTRACTOR

- The contractor's obligations and responsibilities shall include but not limited to the following:
 - To deploy skilled, semi skilled and unskilled personnel in requisite numbers and as per scheduled programme so as to complete the WORK as per overall project schedule.
 - 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 / Consultants.
 - Safety supervisor shall be deployed at site that monitors safety aspect during the site construction work. Contractor to note that all workers shall use PPE (helmet, safety shoes, hand gloves, goggles, double lanyard safety belt etc. and they shall be medically tested before putting into the job.
 - To prepare detailed planning and execution schedule considering the availability of fronts and materials. This shall be reviewed by Owner / Engineer-in-charge and Contractor shall be required to keep updating the same (as per the instructions of Owner / Engineer-in-charge) 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 / Engineer-in-charge shall in no way be held responsible for such changes.
 - To check for quantity compliance between bill of materials and drawings for cable, structural, earthing materials etc. and intimate Owner / Engineer-in-charge sufficiently in advance regarding discrepancies, if any.

- To arrange all required tools and tackles, consumables, instruments, erection materials & machineries etc. for handling erection, testing & commissioning of complete electrical installation.
- To arrange and supply storage tanks for drinking water so as to avoid any inconvenience that may be caused due to interruption in water supply at times.
- To provide proper storage and security arrangements for his tools, tackles, equipments, materials etc. as well as equipment and materials issued by Owner / Engineer-in-charge to Contractor. Owner / Engineer-in-charge shall not be responsible for any loss or damage to items in the custody of Contractor at site for any reason whatsoever.
- Completion of all repairs arising out of defective work done by Contractor, Owner / Engineer-in-charge 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 before starting such rectification jobs.
- To maintain all the records for men, materials and execution of job as required by law as well as Owner / Engineer-in-charge.
- To get his work inspected by Owner / Engineer-in-charge and get approved from statutory agencies such as but not limited to Electrical Inspector, Factory Inspector etc.
- All co-ordination with Statutory Authorities shall be contractor's responsibility. Only statutory fee required for approval shall be paid by the owner.
- To make arrangements for services such as transport, medical, lighting, canteen etc. for working round the clock.
- In addition to safety regulations indicated in this enquiry, Owner / Engineer-in-charge may issue certain safety directives, which shall have to be followed meticulously without any reservation.
- To undertake and execute work and supply as per scope of work, scope of supply and follow Technical Conditions including specification for electrical erection, specification for electrical testing and commissioning and as per schedule of rates
- Reconciliation of all materials issued by owner / supplied by contractor.
- Handing over of the completed works to owner / engineer-in-charge as per procedure laid down by Consultant.
- To submit documentation forming part of request for issue of completion certificate.
- Clearing the site after cleaning the areas where the Contractor executed the job, stored the materials and built his office, fabrication shop etc.



SLD for Technical building

[Signature]

PART- C : IT WORKS-**1. Scope of Work (For IT Works) :**

The scope of work are installation, commissioning and testing work in technical building's rooms along with utility area , the scope shall consist of but not limited to following.

- I. Laying of Telephone Cables, TRS Electrical cable through PVC conduit Underground includes cutting of wall required for underground conducting.
- II. Laying and Termination of TRS cable with proper fixtures.
- III. Installation and Termination of Telephone cable with krone module in JB.
- IV. Laying of UTP Cables with ferrules through PVC conduit Underground includes cutting of wall required for underground conduiting.
- V. Installation and termination of I/O Set, Patch Panel
- VI. Installation, Termination of SMB, faceplate, RJ45 Keystone and RJ11 etc.
- VII. Laying of Optic Cable through PVC conduit/HDPE piper over wall/surface/underground.
- VIII. Termination(splicing) of Fiber optic cable.
- IX. Installation of CCTV Cameras.
- X. Installation, Fixing and dressing of Racks and Power connect through TRS cable underground/concealed.
- XI. Installation, Configuration, Testing and commissioning of Network Switches, Cameras, NVR, and UPS.

The scope of works shall also include any other items of work required to complete the work in all respects as per the specification and instructions of Engineer- In-Charge whether specifically mentioned or not in the tender documents.

1. Items/Device list

#	Items Name	Quantity	Unit
1	Cat 6 Cable	33	Box(305Mtr/Box)
2	Telephone Cable 2 pair	5000	Mtr.
3	Network Rack 9U	4	Nos.
4	Network Switch 48 Port POE with 1Pair populated SFP+ module with each switch	4	Nos.
5	Wall Socket Dual Network LAN Cat5e/Cat6 RJ45 & dual RJ11 with Telephone Outlet Panel Faceplate and SMB	200	Nos.
6	Conduit	5000	Mtr.
7	Patch panel	12	Nos.
8	Patch Cord 1Mtr	200	Nos.
9	LIU 24 Port	1	Nos.
10	LIU 6 Port	3	Nos
11	Fibe Optic Cable 6 Core	500	Mtr.
12	Krone Type Metal Distribution Box 100 Pair With Krone Module	2	Nos.
13	TRS 3 Core 1.5 SQm	500	Mtr.
14	2MP Bullet Camera	30	Nos.
15	64 Channel NVR with 32TB HDD	1	Nos.
16	UPS 2KVA	1	Nos.

2. Service and Installation

#	Service and Installation	Qty.	UoM
1	Laying and termination of Telephone Cables through PVC conduit Underground includes cutting of wall required for underground conduiting	5000	Meters
2	Laying of UTP Cables through PVC conduit Underground includes cutting of wall required for underground conduiting	10000	Meters
3	Installation and termination of I/O Set(Set Means Wall Socket Dual Network LAN Cat5e/Cat6 RJ45 & dual RJ11 with Telephone Outlet Panel Faceplate and SMB)	200	Nos.
4	Installation and termination of Patch Panel	12	Nos
5	Laying of Optic Cable and Termination through PVC conduit(concealed)/HDPE pipe over wall/surface/	500	Meters
6	Laying of Optic Cable through HDPE pipe underground	500	Meters
7	Installation of CCTV Cameras	30	Nos.
8	Installation, Fixing and dressing of Racks and Power connect through concealed TRS cable.	4	Nos.
9	Installation, Configuration, Testing and commissioning of Network Switches, Cameras & NVR, UPS and rest devices with one year support/AMC.	1	Lot

(II) Technical Specifications of IT Items

01. UTP Cat6 Cable (305Mtr/Box)

#	Components/Parameters	Specifications
1	*Acceptable Make	CommScope, Dlink, Legrand, HikVision, Polycab
3	Type	<p>(a) Category 6 Unshielded Twisted Pair 4 pair cable shall be compliant with ANSI/TIA/EIA-568-B.2-1 Additional Transmission Performance Specifications for 4-pair Category 6 Cabling. The Cable should be tested by third party upto 700 MHz and report should be submitted along with bid.</p> <p>(b) Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, 23 AWG, UTP.</p> <p>(c) Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.</p>
4	Color	Blue
5	Jacket material	<p>(a) Jacket material should be FR-PVC</p> <p>(b) Incorporates central spine maintaining pair separation during installation to ensure premium performance after installation.</p>
6	Mechanical Characteristics	<p>(a) Construction: 4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.</p> <p>(b) Conductor Solid Copper</p> <p>(c) Conductor Diameter 0.56 ± 0.005mm (23 AWG)</p>

		(d) Insulator Polyolefin
		(e) Outer Diameter 6.0±0.4mm
		(f) Max. Temperature 75°C
7	Compliant	ROHS/ELV
8	Anti-Rodent	Yes

02. Telephone Cable 2 pair

#	Components/Parameters	Specifications
1	*Acceptable Make	Anchor, Polycab, Legrand, Havells, RR Cables
3	Number Telephone pair	2Pair Telephone Cables Standard (Any Reputed make)
4	Size	0.5mm ² copper conductor size, External diameter 4.5mm
5	Color and Standard	4 Core cable (2 Pair) with Industry standard colour coding - Orange, Orange/White, Blue & Blue/White coloured cores as indicators
6	Unarmoured	Yes
7	Insulation Material	PVC

03. Network Rack 9U

#	Components/Parameters	Specifications
1	*Acceptable Make	Dlink, Netrack, Vertiv, Urack
3	Size	9U RACK suitable for mounting network switch
4	Type	Wall mounted
5	Front	Transparent door with Lock
6	Side	Easily Removable Side doors with locking mechanism
7	Fans	2 numbers cooling fan
8	Power	Suitable number of Electrical power
		Outputs with spike buster.
9	Sealing	All opening and cable entry points should have proper cap/sealing to prevent Rodent
10	Certification	The Rack should be UL certified Conforms to DIN 41494
11	Accessories	(a) 1 Power Distribution Units
		(b) 1U Horizontal Cable Manager
		(c) 1 Cantilever Tray

04. Network Switch 48 Port POE

#	Components/Parameters	Specifications
1	*Acceptable Make	Cisco, HPE, Extreme, Ruckus
3	Architecture & Port Density	48 x 10/100/1000BaseT (RJ-45) ports
		4 x SFP-BaseT 10G (SFP+) with 1 pair populated SFP+ (SM) Tranciever
		1 x Serial console port RJ-45
		1 x 10/100 BaseT out-of-band management port

4	Architecture & Port Density	Switch should offer Wire-Speed Non-Blocking Switching & Routing Performance at Layer 2 & Layer 3
5	Switching Capacity	176 Gbit/s or more
6	Stack	Supported
7	Memory (RAM)	512 MB
8	Layer 2 features	1) Switch should support 4K Active VLANs
		2) Switch should support 10K MAC addresses or more.
		3) Switch should support IP multicast snooping with support for IGMP v1, v2, v3 and MLD v1 & v2
		4) Switch should support Jumbo Frames (up to 9K bytes)
9	Layer 3 features	1) Switch should support minimum 1K IPv4 Routes or more
		2) Switch should support Basic IPv4 and IPv6 Static Routing, ECMP, Host Routes, Virtual Interfaces, Routed Interfaces, Route Only and Routing between directly connected subnets from Day 1.
		3) Switch should support Dynamic IPv4 & IPv6 Routing protocols (OSPFv2 and OSPFv3) and Layer 3 Multicast Routing Protocols from Day 1.
10	Security	1) Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Passwords.
		2) Switch should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2), Secure Copy and SNMPv3
		3) Switch should support IP Source Guard, DHCP snooping, DHCPv4, DHCPv6 and Dynamic ARP Inspection.
		4) Switch should support IPv4 and IPv6 ACLs with up to 500 rules per ACL and a minimum of 6K rules per system (Standalone Switch or Stack).
		5) Switch should support Byte and packet based broadcast, multicast, and unknown-unicast limits with suppression port dampening.
		6) Switch should support IPv6 Router Advertisement (RA) Guard.
		7) Switch should support Flexible Authentication with 802.1x Authentication and MAC Authentication.
11	Manageability	1) Switch should support manageability using Network Management Software with Web based Graphical User Interface (GUI).
		2) Switch should provide Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring

		3) Switch should support NetFlow or sFlow or equivalent
12	Physical Attributes & PoE Power Budget	1) Mounting Option: 19" Universal rack mount ears
		2) PoE Power Budget: The Switch should provide a minimum of 740 watts of PoE+ power.
13	Mandatory Compliance	All categories of Switches, Transceivers & Switch OS should be from same OEM
14	Warranty	Switch should be quoted with TAC Support and Warranty for 3 years with NBD Hardware Replacement.
15	Compatibility	All Network Switches and its module should be from same OEM

05. Wall Socket Dual Network LAN Cat5e/Cat6 RJ45 & dual RJ11 with Telephone Outlet Panel Faceplate and SMB

#	Components/Parameters	Specifications
1	*Acceptable Make	Legrant, Dlink, Iball, Syrotech, Anchor, TPLink or Equivalent(Should be branded)
2.1	Port	Dual RJ45 Port + Dual RJ11 Port with dust protected with SMB and four way faceplate (Fully Loaded with keystone)
2.2	Colour	White
2.3	Cover Material	Flame Retardant ABS UL94V.0
3	GangBox	
3.1	Size	Suitable for mounting supplied face plate
3.2	Material	PVC

06. Conduit

#	Components/Parameters	Specifications
1	*Acceptable Make	Anchor, Havells, Polycab, Precision, VIP
2	Product Name :	PVC Conduit Pipe
3	Colour	White
4	Total Size	As required
5	Material	Plastic
6	Compliance/Standard	ISI

07. Patch panel

#	Components/Parameters	Specifications
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope
2	Type	19" 24-port, loaded with Jack , A key product used in both Category 6 link and channel gigabit Ethernet applications. The IDC section consists of V-shaped contacts that flex not fatigue when terminated. Each port features spring-loaded shutter and can be colour coded to match jack outlets. Offering both front and rear labelling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.

3	Ports	24
4	Plastic Housing Jack Connector	Polycarbonate, UL94V-0 rated or equivalent
5	Contact Plating	50μ" Gold/100μ" Nickel
6	Front Connector interface	RJ45
7	Circuit Identification Scheme	Icons on each of 24-ports
8	Port Identification	9mm or 12mm Labels on each of 24-ports (to be included in supply)
9	Height 1 U	(1.75 inches)
10	Compliant	ROHS/ELV

08.Patch Cord 1Mtr

#	Components/Parameters	Specifications
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope
2	Type	Cat 6 U/UTP Patch Cords are key components of Cat 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications.
3	AWG	23/24 AWG stranded copper wire
4	Length	1 Mtr
5	RJ45 plug and boot material	Clear polycarbonate
6	Outer Sheath	LS0H
7	RJ45 plug dimensions compliant with	ISO/IEC 60603-7-4 and FCC 47 Part 68
8	Contact material	0.35mm thick copper alloy
9	MIN operating life	750 insertion cycles
10	Sheath Material	LSZH
11	Compliant	ROHS/ELV

09. LIU 24 Port

#	Components/Parameters	Specifications
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope or Equivalent(Branded)
2	Rack mountable	19" Rack Mount FDMS 96F Detachable type
3	No. of cable entry ports with sizes	4 Nos. or more round type
4	Consumables Kit	Available
5	Packaging	In Corrugated Box
6	LC Pigtail and Coupler	Yes
7	Number of Ports	24 (LC)

10. LIU 6 Port

#	Components/Parameters	Specifications
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope or Equivalent(Branded)
2	Rack mountable	19" Rack Mount FDMS 96F Detachable type
3	No. of cable entry ports with sizes	2 Nos. or more round type
4	No. of splice trays (24F)	Minimum 1
5	Consumables Kit	Available

6	packing	In Corrugated Box
7	LC Pigtail and Coupler	Yes
8	Number of Ports	6 (LC)

11. Fibe Optic Cable 6 Core

#	Components/Parameters	Specifications
1	*Acceptable Make	Polycab, Dlink, Finolex, RR or Equivalent(Branded)
2	Overall Diameter	10mm,
3	Number Of Core	6 Cor
4	Fiber Type	(a) 9/ 125um (OS2)
		(b) Central Loose tube with jelly compound.
5	Tensile Strength	Yes
6	Conductor Material	HDPE/LSZH
7	Cable Jacket	1.8 + 0.2
8	Mode Type	Single mode (SM) 9/125um
9	Jacket Thickness	HDPE/LSZH
10	Color	Black

12. Krone Type Metal Distribution Box 100 Pair With Krone Module

#	Components/Parameters	Specifications
1	*Acceptable Make	Matrix, Avaya, Anchor, Siemens, Crystal
2	Material	cold rolled steel
3	Capacity	100 pair
4	Function	Fixed into Krone module
5	Environment	indoor
6	With Krone module	Yes
7	Lock	With key and lock for secure, key lock.
8	LSA Plus Module	0.4-0.6 mm, 10 Pair

13. TRS 3 Core 1.5 SQm

#	Components/Parameters	Specifications
1	*Acceptable Make	Anchor, Polycab, RR cables, Finolex, KEI
2	Size of Conductor	1.5 sq mm
3	Core	3 Core
4	Conductor Material	Copper
5	Colour	Black
6	Insulation Material	PVC
7	Current Rating AC	16Amp
8	Certification	ISI

14. 2/4MP Bullet Camera

#	Components/Parameters	Specifications
1	*Acceptable Make	Hikvision, Dahua, CPPlus, Sparsh, Samsung
3	Type of Camera	Bullet, Varifocal, 2/4MP
4	Image Sensor	2.54 cm (1/2.8 inch) Progressive scan CMOS

5	Min. Illumination Colour	0.005 Lux @ (F1.6, AGC ON)
6	Shutter Speed	1/3 s to 1/100,000 s
7	Slow Shutter	Yes
8	Day & Night	IR cut filter
9	Digital Noise Reduction	3D DNR
10	WDR	Digital WDR
11	Angle Adjustment Pan	0° to 355°, tilt: 0° to 75°
12	Focal length	2.8 to 8 mm
13	Aperture	F1.6
14	Video Compression	H.265/H.264/MJPEG
15	Max. Resolution	1920 × 1080
16	API	ONVIF (PROFILE S, PROFILE G), ISAPI
17	Network Storage	Support Micro SD/SDHC/SDXC card (128G), local storage and ANR
18	Ethernet Interface	1 RJ45 10 M/100/1000 M self-adaptive Ethernet port PoE: 802.3af
19	Audio Interface:	Built-in mic, 1 input (line in), 1 output (line out)
20	Environment Noise Filtering	Yes
21	Audio Compression	G.711/G.722.1/G.726/MP2L2/PCM
22	Warranty	Minimum 2 years

15. 64 Channel NVR with 32TB HDD

#	Components/Parameters	Specifications
1	*Acceptable Make	Hikvision, Dahua, CPPlus, Sparsh, Samsung
3	IP video input	64-ch Up to 12 MP resolution
4	Incoming: Outgoing Bandwidth	Mins 240:240 Mbps
5	Remote connection	128
6	Recording resolution	12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF /2CIF/CIF/QCIF
7	Output Display Port	2 Nos. HDMI
8	Audio output	2-ch, RCA (2.0Vp-p, 1 KΩ)
9	Video Compression	H.265+/H.265/H.264/H.264+/MPEG4
10	No. of Network interface	2
11	SATA	Min 8 SATA interfaces
12	eSATA	1 eSATA interface
13	Minimum Storage Supported	64TB
14	Disk Array Supported	RAID0, RAID1, RAID5, RAID6, RAID10
15	Serial interface	RS-232; RS-485; Keyboard
16	NVR populated with storage	32TB SATA Storage(Surveillance HDD)
17	***Compatibility	Camera and NVR should be same make and also our existing Hikvision cameras features should be fully supported with this NVR not only ONVIF.

18	Warranty	Minimum 2 years
----	----------	-----------------

16. UPS 2KVA

#	Components/Parameters	Specifications
1	*Acceptable Make	Vertiv, Mikrotek, Numeric, Schneider
3	Capacity	2000 VA / 1600 W
4	Input Voltage Range	110-280 VAC (Based on load at 50%)
5	Output Voltage	200/208/220/230/240VAC
6	Output Frequency Range	47— 53 Hz or 57 — 63 Hz
7	Waveform (Batt. Mode)	Pure Sinewave
8	Battery Type	12V-65AH
9	Number of Battery	6
10	Charging Voltage	85 VDC \pm 1%
11	Indication (LCD)	Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators
12	Warranty	Minimum 2 years

Note :

- (1) Bidder should fill the name of acceptable make .
- (2) The bidder should fill in the model and must submit the datasheet/specification sheet where the model is asked for .
- (3) Bidder must consider the compatibility and confirm compliance as per technical specification.

(III) Terms and Condition/Special Condition of Contract (SCC) For IT Works

- I. OEM Certificate:** OEM Authorisation certificate/ Manufacturer Authorization Letter (MAF) should be submit for the Items (Cat 5 Cable, Network Switch, Camera, NVR, and UPS)
- II. Warranty:** -The vendor shall provide guarantee towards any manufacturing and metallurgical defects, workmanship and performance of the materials & systems for a period of 1 year from the period of commissioning and OEM warranty will be the same as per technical specification of Items.
- III. One year support/AMC:** The following AMC clause will form part of the contract placed on successful Bidder –
 - a) The Seller would provide Support/AMC for a period of 1 years. The AMC services should cover the repair and maintenance of all the equipment and systems purchased under the present Contract. The Buyer Furnished Equipment which is not covered under the purview of the AMC should be separately listed by the Seller. The AMC services would be provided in two distinct ways:
 - i. **Preventive Maintenance Service:** The Seller will provide a minimum of four Preventive Maintenance Service visits during a year to carry out functional check-ups and minor adjustments/ tuning as may be required.
 - ii. **Breakdown maintenance Service:** In case of any breakdown of the equipment/system, on receiving a call from the Buyer, the Seller is to provide maintenance service to make the equipment/system serviceable.

- b) **Response time:** The response time of the Seller should not exceed 48 hours from the time the breakdown intimation is provided by the Buyer.
- c) Maximum repair turnaround time for equipment/system would be 7 days. However, the spares should be maintained in a serviceable condition to avoid complete breakdown of the equipment/system.
- d) **Technical Documentation:** All necessary changes in the documentation (Technical and Operators manual) for changes carried out on hardware and software of the equipment will be provided.

SECTION – VI : SCHEDULE OF RATES (SOR) AND BOQ**SOR PART-A : CIVIL WORKS COST ESTIMATE**

SOR Part-A : Civil work Cost Estimate for Renovation of Technical Building at HURL Sindri							
S.N.	DSR-2018 reference	DESCRIPTION OF ITEMS	UOM	Estimated Quantity (C)	Estimated Rate (Including GST) (A)	Estimated Rate (Excluding GST) (B) = (A) X 0.87672	Estimated Amount (Excluding GST)
1	1.1.2	Carriage of earth By Mechanical Transport including loading, unloading and stacking.	M3	150	131.17	115	17250
2	2.33	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material.					
3	2.33.1	Beyond 30 cm girth upto and including 60 cm girth	Each	20	380.6	333.68	6673.6
4	2.33.2	Beyond 60 cm girth upto and including 120 cm girth	Each	5	1694.4	1485.51	7427.55
5	2.33.3	Beyond 120 cm girth upto and including 240 cm girth	Each	2	7860.55	6891.5	13783
6	2.33.4	Above 240 cm girth	Each	1	15749.95	13808.3	13808.3
7	2.31	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	sqm	3000	12.55	11	33000
8	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 i) All kinds of soil.	M3	150	181.85	159.43	23914.5
9	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the	M3	100	252.3	221.2	22120

		excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.i) All kinds of soil.					
10	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering. Lead up to 50 m and lift up to 1.5 m.	M3	100	219.65	192.57	19257
11	2.28.1	Surface dressing of the ground including removing vegetation and inequalities not exceeding 15 cm deep and disposal of rubbish, lead up to 50 m and lift up to 1.5 m. i) All kinds of soil.	M2	2000	24.35	21.35	42700
12 (*)	2.34.1	Supplying chemical emulsion in sealed containers including delivery as specified. Chlorpyrifos/ Lindane emulsifiable concentrate of 20%	Liter	800	200.85	176.09	140872
13 (*)	2.35.1	Diluting and injecting chemical emulsion for POSTCONSTRUCTIONAL anti-termite treatment (excluding the cost of chemical emulsion) : a)- Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete: i) With Chlorpyrifos/Lindane E.C. 20% with 1% Concentration.	Mtr	400	28.25	24.77	9908
14 (*)	2.35.3	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1:2 (1 cement : 2 Coarse sand) to match the existing floor: i) With Chlorpyrifos/Lindane E.C. 20% with 1% concentration	sqm	5000	227.05	199.06	995300
15 (*)	2.35.5	Treatment at points of contact of wood work by chemical emulsion Chlorpyrifos/ Lindane (in oil or kerosene based solution)@ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	Mtr	400	254	222.69	89076
16	4.1.3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and	M3	250	6788.6	5951.7	1487925

		shuttering - All work up to plinth level: i)- 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)					
17	4.1.8	Providing and laying in Position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: i) 1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size)	M3	100	5789.6	5075.86	507586
18	4.3.1	Centering and shuttering including strutting, propping etc. and removal of form work for: i)- Foundations, footings, bases for columns	sqm	200	284.85	249.73	49946
19	5.1.3	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: i)- 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	M3	30	7296.35	6396.86	191905.8
20	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for: i) Suspended floors, roofs, landings, balconies and access platform.	sqm	100	693.05	607.61	60761
21	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for: i)- Lintels, beams, plinth beams, girders, bressumenrs and cantilevers	sqm	40	552.05	483.99	19359.6
22	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. i) Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	1000	83.5	73.2	73200
23	6.1.2	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: i) Cement mortar 1:6 (1 cement : 6 coarse sand)	M3	100	6157.45	5398.36	539836
24	6.4.2	Brick work with common burnt clay F.P.S. (Non) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in: i) Cement mortar 1:6 (1 cement : 6 coarse sand)	M3	30	7590.45	6654.7	199641

25	6.12.2	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in: i) cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	50	773.75	678.36	33918
26	6.13.2	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.	sqm	100	932.1	817.19	81719
27	8.2.2.2	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base3 cement mortar 1:4 (1 cement : 4 coarse sand). Joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels Granite of any colour and shade. i) Area of slab over 0.50 sqm	M2	70	4007.65	3513.59	245951.3
28	8.3.2	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. i)-Granite work	M	500	376.25	329.86	164930
29	8.40	Extra for fixing marble/granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	M	50	434.25	380.72	19036
30	8.50	Extra for providing opening of required size & shape for wash basin/kitchen sink in kitchen platform, vanity counter and similar location in marble/Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	Each	10	734.55	643.99	6439.9
31	9.1.2	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs	M3	5	105327.2	92342.46	461712.3

		or dash fastener shall be paid for separately).					
32	9.7.1	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick i)- Second class teak wood	M2	5	2942.3	2579.57	12897.85
33	9.9.1.1	Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws. Second class teak wood: 35 mm thick	M2	20	4353.75	3817.02	76340.4
34	9.16.1.1	Providing and fixing 25 mm thick shutters for cup board etc. : Panelled or panelled & glazed shutters: i)- Second class teak wood including ISI marked anodised aluminium butt hinges with necessary screws	M2	5	3794.85	3327.02	16635.1
35	9.20	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. 9.20.1 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	M2	150	3023.95	2651.16	397674
36	9.21.1	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters: i) - 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws.	M2	10	1886.7	1654.11	16541.1
37	9.46.2	Providing and fixing chromium plated brass curtain rod having wall thickness of 1.25 mm with two chromium plated brass brackets fixed with C.P. brass screws and PVC	M	50	373.15	327.15	16357.5

		sleeves etc., Wherever necessary complete: i)- 20 mm dia					
38	9.48.2	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. i)-Fixed to openings / wooden frames with rawl plugs screws etc.	Kg	3000	183.5	160.87	482610
39	9.96.2	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete: i)-250×16 mm	Each	100	231.7	203.14	20314
40	9.97.3	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete: i)-200×10 mm	Each	200	90	78.9	15780
41	9.97.5	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete: i)-100×10 mm	Each	40	58.15	50.98	2039.2
42	9.100.1	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS :1868) transparent or dyed to required colour or shade, with necessary screws etc. complete: i)125 mm	Each	200	59.65	52.3	10460
43	9.100.3	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 per IS :1868) transparent or dyed to required colour or shade, with necessary screws etc. complete: i)-75 mm	Each	40	45.9	40.24	1609.6
44	9.101.2	Providing and fixing aluminium handing floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete. i)- Twin rubber stopper	Each	100	62.05	54.4	5440

45	9.114.1	Providing and fixing magnetic catcher of approved quality in cupboard / ward robe shutters, including fixing with necessary screws etc. complete. i)-Triple strip vertical type	Each	20	39.05	34.24	684.8
46	10.20	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg	1000	101.75	89.21	89210
47	11.70	Cement concrete pavement with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete.	M3	30	7335.1	6430.83	192924.9
48	11.23	Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-incharge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with: i)-Raj Nagar plain	M2	20	1960.75	1719.03	34380.6
49	11.23.5	Marble stone flooring with 18 mm thick marble stone, as per sample of marble approved by Engineer-incharge, over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry, including rubbing and polishing complete with : i)-Udaipur green marble	M2	5	1991.5	1745.99	8729.95
50	11.26.1	Kota stone slab flooring over 20mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1:4 (1 cement : 4 coarse sand) :i)-25 mm thick	M2	20	1531.85	1343	26860
51	11.27	Kota stone slab flooring over 20mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	M2	10	1810.05	1586.91	15869.1

52	8.31	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	M2	400	1030.3	903.28	361312
53	11.37	Providing and laying Ceramic glazed floor tiles of size 300×300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS :15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	M2	250	926.9	812.63	203157.5
54	11.41.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1cement :4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete. i) Size of Tile 600×600 mm	M2	100	1500.55	1315.56	131556
55	11.41.3	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1cement :4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 800x800 mm	M2	5800	1758.7	1541.89	8942962

56	11.46.2	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08% and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete. i)- Size of Tile 600×600 mm.	M2	15	1545.85	1355.28	20329.2
57	11.46.3	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08% and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete. Size of Tile 800x800 mm	M2	150	1806.8	1584.06	237609
58	12.41.1	Providing and fixing on wall face unplasticised Rigid PVC rain water pipe conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, i) Single socketed pipes of 75 mm diameter	M	100	201.1	176.31	17631
59	12.41.2	Providing and fixing on wall face unplasticised Rigid PVC rain water pipe conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, i) Single socketed pipes of 110 mm diameter	M	350	305.05	267.44	93604
60	12.42.4.1	Providing and fixing on wall face unplasticised - PVC moulded fittings / accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, i) Single tee without door (75×75×75mm)	Each	50	122.45	107.35	5367.5
61	12.42.4.2	Providing and fixing on wall face unplasticised - PVC moulded fittings/accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring	Each	20	188.55	165.31	3306.2

		conforming to IS : 5382, leaving 10 mm gap for thermal expansion. i) Single tee without door (110×110×110mm)					
62	12.42.3.2	Providing and fixing on wall face unplasticised - PVC moulded fittings / accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. i) Single tee with door (110×110×110 mm)	Each	50	203.3	178.24	8912
63	12.42.5.1	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. i)- Bend 87.5°(75 mm bend)	Each	100	89.9	78.82	7882
64	12.42.5.2	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.i)- Bend 87.5°(110 mm bend)	Each	200.00	129.85	113.84	22768
65	12.43.1	Providing and fixing unplasticised - PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete. i)- 75 mm	Each	40.00	290.15	254.38	10175.2
66	12.43.2	Providing and fixing unplasticised - PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete. i)- 110 mm	Each	100.0	288.8	253.2	25320
67	13.4.2	12 mm cement plaster of mix :i)- 1:6 (1 cement: 6 coarse sand)	m ²	6000.00	263.55	231.06	1386360
68	13.6.1	20 mm cement plaster of mix : 1:4 (1 cement: 4 coarse sand)	m ²	5500.00	379.70	332.89	1830895

	13.18	Neat cement punning.	m2	500.00	62.75	55.01	27505
69	13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	m2	15500.0	196.7	172.45	2672975
70	13.44.1	Finishing walls with water proofing cement paint of required shade : New work (Two or more coats applied @ 3.84 kg/10 sqm).	m2	200.0	91.3	80	16000
71	13.41.1	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade :New work (two or more coats) over and including water thinnable priming coat with cement primer.	m2	9000.00	153.45	134.53	1210770
72	13.46.1	Finishing walls with Acrylic Smooth exterior paint of required shade :New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	m2	6500.0	164.7	144.4	938600
73	13.50.1	Applying priming coat: With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)	m2	500.00	57.05	50.02	25010
74	13.50.3	Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works	m2	600.0	50.7	44.45	26670
75	13.61.1	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :i)- Two or more coats on new work	m2	1200.00	121.55	106.57	127884
76	13.69.1	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :i)- New work	m2	50.0	150.9	132.3	6615
77	14.1.2	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in- Charge. i)- With cement mortar 1:4 (1cement: 4 coarse sand)	m2	200.0	429.6	376.64	75328
78	14.6.1	Renewing glass panes, with wooden fillets wherever necessary: i)- Float glass panes of nominal thickness 4 mm (weight not less than 10kg/sqm)	m2	10	1263	1107.3	11073
79	13.88	Removing white or colour wash by scrapping and sand papering and	m2	8000.0	14.2	12.45	99600

		preparing the surface smooth including necessary repairs to scratches etc. Complete					
80	13.91	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	m ²	9000.0 0	18.25	16	144000
81	14.77	Cleaning of choked sewer line by diesel running vehicle mounting hydraulic operated high pressure suction cum jetting sewer cleaning machine fitted with pump having 4000 litres suction capacity and 6000 litres water jetting tank capacity including skilled operator, supervising engineer etc. for cleaning and partial desilting of manholes and dechocking of sewer lines. Dechocking and flushing of sewer line from one manhole to another by high pressure jetting system of 2200 PSI for sewer line from 150mm dia upto 300mm	M	50.0	256.9	225.23	11261.5
82	14.82	Dismantling W.C. Pan of all sizes including disposal of dismantled materials i/c malba all complete as per directions of Engineer-in-Charge.	Each	20	96	84.17	1683.4
83	15.2.1	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. i)- Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	m ³	30.00	1737.45	1523.26	45697.8
84	15.7.4	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. i)- In cement mortar	m ³	600.0	1469.9	1288.69	773214
85	15.12.1	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead :i)- Of area 3 sq. metres and below	Each	300.0	274.5	240.66	72198
86	15.18	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding	Kg	1000.0 0	4.15	3.64	3640

		etc. including dismembering and stacking within 50 metres lead.					
87	15.42.2	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead : 100 mm dia pipe	M	200.00	55.65	48.79	9758
88	15.56	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	m ²	14000	39	34.19	478660
89	15.60	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	m ³	200.00	138.85	121.73	24346
90	16.15.2	Supplying at site :Welded steel wire fabric of required width having rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming &Painting to be paid for separately).	Kg	100.00	74.35	65.18	6518
91	16.68	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with line sand netc. all complete as per the direction of Engineer-in-charge.	m ²	500.00	859.35	753.41	376705
92	17.1.1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: i)- White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	Each	1.0	5421.5	4753.14	4753.14

93	17.2.1	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required : i)- W.C. pan with ISI marked white solid plastic seat and lid	Each	16.00	5260.95	4612.38	73798.08
94	17.7.4	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require: White Vitreous China Flat back wash basin size 550x 400 mm with single 15 mm C.P. brass pillar tap	Each	16.0	2510.5	2200.96	35215.36
95	17.10.1.4	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required : i)- 510x1040 mm bowl depth 178 mm	Each	2.0	5182.7	4543.78	9087.56
96	17.16A	Providing and fixing 8 mm dia C.P. / S.S. Jet with flexible tube upto 1 metre long with S.S. triangular plate to European type W.C. Of quality and make as approved by Engineer - in - charge.	Each	16.00	297.55	260.87	4173.92
97	17.22A	Providing and fixing CP Brass 32mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	Each	5.00	883.05	774.19	3870.95
98	17.28.2.1	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete. i)- Flexible pipe of 32 mm dia	Each	20.0	101.1	88.64	1772.8
99	17.29	Providing and fixing 100 mm sand cast Iron grating for gully trap.	Each	50.0	44.6	39.1	1955
100	17.31	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	16.00	1283.05	1124.88	17998.08
101	17.33	Providing and fixing 600x120x5 mm glass shelf with edges round off,	Each	16.0	841.8	738.02	11808.32

		supported on anodised aluminium angle frame with C.P. Brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.					
102	17.34	Providing and fixing toilet paper holder : i)- C.P. brass	Each	16.00	583.75	511.79	8188.64
103	17.71	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.	Each	20.00	158.55	139	2780
104	17.72	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 gms.	Each	20.0	228.2	200.07	4001.4
105	17.73.2	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.i)- 600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	Each	5.0	595.5	522.09	2610.45
106	18.8.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. i)- 15 mm nominal outer dia Pipes	M	200.00	409.65	359.15	71830
107	18.8.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC	M	100.00	478.15	419.2	41920

		solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc. i)- 20 mm nominal outer dia Pipes					
108	18.9.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work i)- 20 mm nominal outer dia Pipes	M	100.0	253.7	222.42	22242
109	18.9.3	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work i)- 25 mm nominal outer dia Pipes	M	500.00	326.65	286.38	143190
110	18.17.1	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :i)- 25 mm nominal bore	Each	20.00	497.15	435.86	8717.2
111	18.17.1A	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :i)- 20 mm nominal bore	Each	20.0	460.2	403.47	8069.4
112	18.18.1	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete : i)- 15 mm nominal bore	Each	10.0	338.7	296.95	2969.5
113	18.21.1	Providing and fixing uplasticised PVC connection pipe with brass unions : 30 cm length i)- 15 mm nominal bore	Each	18.00	72.85	63.87	1149.66
114	18.21.2	Providing and fixing uplasticised PVC connection pipe with brass unions : 45 cm length i)- 15 mm nominal bore	Each	40	83	72.77	2910.8
115	18.22.2	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet : i)- 150 mm diameter	Each	2.0	188.8	165.52	331.04

116	18.48	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support i/c fittings & fixtures for tank shall be paid separately.	Liter	8000.0	8.8	7.72	61760
117	18.49.1	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :i)- 15 mm nominal bore	Each	15.00	418.95	367.3	5509.5
118	18.50.1	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms. i)- 15 mm nominal bore	Each	5.0	618.8	542.51	2712.55
119	18.52.1	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931. i)- 15 mm nominal bore	Each	5.00	606.25	531.51	2657.55
120	18.53.1	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 i)- 15mm nominal bore	Each	50	532	466.42	23321
121	18.53A	Providing and fixing C.P. Brass extension nipple (size 15mmx50mm) of approved make and quality as per direction of Engineer-in-charge.	Each	100.00	61.25	53.7	5370
122	18.76.1	Cutting holes up to 30x30 cm in walls including making good the same: i)- With common burnt clay F.P.S. (non modular) bricks	Each	10.0	327.3	286.91	2869.1
123 (*)	22.14.1	Grading roof for water proofing treatment with Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	m ³	350.00	6924.65	6070.98	2124843
124 (*)	14.90.1	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufactured of density at 25°C, 0.87 - 0.89 kg/litre and viscosity 70 - 160 cps. Over the primer coat the layer of membrane shall be laid using butane torch and sealing all joints etc., and preparing the surface complete. The vital	sqm	200.00	512.95	449.71	89942

		physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/5 cm. Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane : 3 mm thick					
125	21.1.1.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : For fixed portion Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	900.00	423.95	371.69	334521
126	21.1.2.1	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) 21.1.2.1 Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	kg	700.00	513.40	450.11	315077

127	21.3.1	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): With float glass panes of 4.0 mm thickness (weight not less than 10 kg/ sqm)	sqm	600.00	999.60	876.37	525822
128	21.3.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): With float glass panes of 5 mm thickness (weight not less than 12.50 kg/ sqm) sqm 1296.40	sqm	50.00	1296.40	1136.58	56829
129	12.1.1	Providing corrugated G.S. sheet roofing including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. 12.1.1 1.00 mm thick with zinc coating not less than 275 gm/m ²	sqm	300.00	1234.25	1082.09	324627

130	12.45.1	<p>Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and</p>	sqm	100.00	1117.65	979.87	97987
-----	---------	--	-----	--------	---------	--------	-------

		direction of the Engineer in Charge but excluding the cost of painting with : 12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) : 2011 (Board with BIS certification marks)					
131	9.84	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	Each	50.00	851.60	746.61	37330.5
132	17.22B	Providing and fixing CP Brass Single lever telephonic wall mixer of quality & make as approved by Engineer in charge. (a) 15 mm nominal dia	Each	1.00	6113.60	5359.92	5359.92
133	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	Per 50 kg cement	600.00	56.55	49.58	29748
134	18.65	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	Each	10	130.5	114.41	1144.1
135 (*)	22.50	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water	sqm	200	465.6	408.2	81640

		proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. (The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.)					
136	11.20.1	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand). 11.20.1 Light shade pigment using white cement	sqm	20	1221.65	1071.04	21420.8
137	9.11	Providing and fixing partition upto ceiling height consisting of G.I. frame and required board, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/ sqm(both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450 mm centre to centre, and fixing of boards to both side of frame work by 25 mm long dry wall screws on studs, floor and ceiling channels at the spacing of 300 mm centre to centre. The boards are to be fixed to the frame work with joints staggered to avoid through cracks, Galvanised M.S. fixing channel of 99 mm width (0.9 mm thick having two flanges of 9.5 mm each with zinc coating of 120	sqm	20	1741.15	1526.5	30530

		gms/sqm(both side inclusive)) to be provided at the horizontal joints of two Code Description Unit Rate No. SUB HEAD : 9.0 WOOD AND P.V.C. WORK 161 boards, fixed to the studs using metal to metal flat head screws, including jointing and finishing to a flush finish with recommended jointing compound, jointing tape, angle beads at corners (25 mm x 25 mm x 0.5 mm), joint finisher and two coats of primer suitable for board as per manufacture's specification and direction of engineer in charge all complete. 9.105.1 75 mm overall thickness partition with 12.5 mm thick double skin fire rated Glass Reinforced Gypsum (GRG) plaster board conforming to IS: 2095: (part 3) : 1996 (Board with BIS certification marks) sqm 1741.15					
138	9.75	Providing and fixing bright finished brass door latch with necessary screws etc. complete : 9.75.1 300x16x5 mm each 272.40	each	100	272.4	238.82	23882
139	19.32.1	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design. With common burnt clay F.P.S. (non modular) bricks of class designation 7.5 each 25278.75	each	2	25278.75	22162.39	44324.78
140	Non DSR	providing and construction of septic tank 6.0 x 2.5 x 1.9 m in all respect as per scope of work, technical specifications and direction of EIC. Rate to include cost of following items:- 1) Excavation and backfilling 2) 230 Thk Brick work in cement mortar 1:6 3) 150 thk RCC top slab 4) bedding PCC (1:2:4) 5) 15 mm plaster in 1:6 6) Chemical resistant paint 7)Supplying and filling of material such as brick blast, dry brick etc, complete in all respect.	Each	2	113932	113932	227864

141 (*)	Non DSR	Supplying and applying High performance hybrid polyurea elastomeric waterproofing coating cold applied of spray / brush applied with an elongation of 600% and tensile strength of 12.6 N/mm ² as per ASTM D 2370, crack bridging ability of 3mm as per ASTM C1305, shore A Hardness of min. 75 as per ASTM D 2240. The system includes final base surface preparation, epoxy primer application and applying hybrid polyurea in two coats at 1kg per Sqm etc, complete as per Manufacturer specifications. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane. A guarantee for waterproofing shall be provided by the manufacturer for 15 years.	sqm	2600	850	850	2210000
Total Cost Estimate of Civil items in Rs.- SOR Part-A (Excluding GST)							34689608.35

(*) – Activity marked for roof waterproofing and anti-termite works in SOR Part-A for which defect liability period will be five (05) years after completion of works and handing over of Building.

Note :

(1) DSR item rate references are considered as per DSR 2018 and it is inclusive of GST. Multiplication factor of 0.87672 were multiplied with DSR 2018 rates for calculating DSR unit rate exclusive of GST.

(2) Bidder shall quote for all the items of "SOR" after careful analysis of cost involved for the performance of the complete items 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.

SOR PART-B : ELECTRICAL WORKS COST ESTIMATE**SOR Part-B : Electrical works Cost Estimate for Renovation works of Technical Building at HURL Sindri**

S.N.	DSR Item No.	Description	Unit	Qty	DSR Unit Rate	Unit Rate Estimate (Excluding GST)	Estimated Amount in Rs.
1	1.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed pvc conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.					
a	1.10.2	Group B	Point	1500	783	686.47	1029705.00
b	1.11	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed pvc conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.	Point	10	1057	926.69	9266.90
2	1.7	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.					
a	1.7.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Metre	1829	208	182.36	333536.44
b	1.7.2	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre	500	229	200.77	100385.00
c	1.7.3	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Metre	1900	263	230.58	438102.00

3	1.17	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface recessed steel/ PVC conduit as required.					
a	1.17.2	2 x 1.5 sq. mm	Metre	1500	41	35.95	53925.00
b	1.17.12	3 x 2.5 sq. mm	Metre	1200	75	65.75	78900.00
4	1.19	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	300	33	28.93	8679.00
5	1.21	Supplying and fixing of following sizes of medium class pvc conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed cutting the wall and making good the same in case of recessed conduit as required.					
a	1.21.2	25	Metre	2000	90	78.90	157800.00
b	1.21.5	50	Metre	1000	158	138.52	138520.00
6	1.24	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.					
a	1.24.1	5/6 A switch	Each	2500	85	74.52	186300.00
b	1.24.2	2 way 5/6 A switch	Each	100	123	107.84	10784.00
c	1.24.3	15/16 A switch	Each	150	132	115.73	17359.50
d	1.24.4	3 pin 5/6 A socket outlet	Each	1500	111	97.32	145980.00
e	1.24.5	6 pin 15/16 A socket outlet	Each	150	175	153.43	23014.50
f	1.24.6	Telephone socket outlet	Each	150	119	104.33	15649.50
g	1.24.7	TV antenna socket outlet	Each	10	119	104.33	1043.30
h	1.24.8	Bell push	Each	10	126	110.47	1104.70

7	1.25	Supplying and fixing two module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	200	342	299.84	59968.00
8	1.26	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	500	32	28.06	14030.00
9	1.28	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required.					
a	1.28.1	1 or 2 Module (75mmX75mm)	Each	100	114	99.95	9995.00
b	1.28.3	4 Module (125mmX75mm)	Each	100	138	120.99	12099.00
c	1.28.6	12 Module (200mmX150mm)	Each	100	227	199.02	19902.00
10	1.35	Installation ,Testing, Commissioning of wall bracket /ceiling fittings of all sizes and shapes containing upto two GLS/CFL/LED lamps per fitting, complete connections etc. as required. with all accessories including	Each	20	98	85.92	1718.40
11	1.38	Supplying and fixing call bell/ buzzer suitable for single phase, 230 Vac, complete as required.	Each	10	92	80.66	806.60
12	1.41	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types/led light fitting, complete with all accessories and tube/lamp etc. directly on ceiling/ wall, including connections with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	700	168	147.29	103103.00
13	1.44	Installation, testing and commissioning of ceiling fan, including wiring the down	Each	200	171	149.92	29984.00

		rods of standard length (upto 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable etc. as required.					
14	1.58	Supplying and fixing PVC batten/ angle holder including connections etc. as required.	Each	20	90	78.90	1578.00
15	7.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, refilling the trench etc as required. protective covering and refilling the trench etc as required.					
b	7.1.2	Above 35 sq. mm and upto 95 sq. mm	Metre	1000	338	296.33	296330.00
c	7.1.3	Above 95 sq. mm and upto 185 sq. mm	Metre	500	352	308.61	154305.00
16	7.2	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.					
a	7.2.2	Above 35 sq. mm and upto 95 sq. mm	Metre	500	236	206.91	103455.00
b	7.2.3	Above 95 sq. mm and upto 185 sq. mm	Metre	500	251	220.06	110030.00
17	Non-DSR Item	1.1KV Grade, XLPE Insulated, PVC inner sheathed, armoured, FRLS PVC outer sheathed cables Stranded Al Conductor cables					
a		3.5C x 70 Sqmm	Metre	1600		717.00	1147200.00
b		3.5 C X240	Metre	800		2146.00	1716800.00
18	Non-DSR Item	1.1KV Grade, XLPE Insulated, PVC inner sheathed, armoured, FRLS PVC outer					

		sheathed cables Stranded Al Conductor cables					
a		1CX 16 Sqm	Metre	500		185.00	92500.00
19	Non-DSR Item	EARTH STRIP / WIRE / ROPE / CABLE					
		Supply, installing and testing of earthing strip/wire/rope/cable for completely making the earthing grid system by supplying, laying the GI / Cu strip and making all the necessary welding joints, connecting to the earthing electrodes and existing earthing grid etc., complete as per drawings, specifications and directions of the Site engineer/Engineer in-charge, including the cost of all labour, tools, materials, etc. complete in all respect.	Metre				
a		75 mm X 10 mm G.I. earthing strip		500		600.00	300000.00
b		50 mm X 6 mm G.I. earthing strip		1000		242.00	242000.00
c		25mm x 6 mm G.I. earthing strip		2000		142.00	284000.00
d		GI wire Rope (8 SWG)		401		53.00	21253.00
20	Non-DSR Item	Supply Installation, testing and commissioning of 3.8M, 100mm dia. heavy G.I. Pipe earth electrode for earthing including the supply and installation of the CI cover, charcoal /special backfill etc as per Technical Specifications EM251/270-TS-0801 complete with all accessories like earth bus, GI links for earth Pit connection etc as per PDS attached with technical specification and with technical specification for earth Pit . The hot dip galvanizing (minimum Zinc coating of 610 gms. / sq. mtr. as per IS-2629) shall be done after all fabrication. The electrodes shall be made from one piece length of pipe as per		6		11830.00	70980.00

		earthing layout drawings including digging the earth upto required depth, erecting safe earth electrode, disposal of surplus earth (as directed by engineer-in-charge) and back filling of the pit as required including supply of erection material providing necessary brick works and other civil works, fixing G.I. L-shaped test links and brackets, twisted piece and connecting to it earth electrodes and earth strips with all labour and materials to complete installation work in all respect as per approved drawings, specifications and directions of engineer-in-charge.					
21		Supply of Fan with all complete fitting					
a		Supply, hanging, fixing, connecting up of 250 mm sweep, domestic exhaust fan with self opening louvres.		10		3500.00	35000.00
b		Supply, hanging, fixing, connecting up of BEE 5 star 400 mm 3-blade wall mounted bracket fan including fixing fan hook as reqd.		50		4500.00	225000.00
c	Non-DSR Item	Supply, hanging, fixing, connecting up of BEE 5 star 1200 mm sweep (decorative type), 3-blade ceiling fan including Electronic type module fan regulator & provision of cable from ceiling rose or connector to fan including supply and fixing hexagonal fan hook with 12 mm dia. MS rod bend to shape as reqd		150		4000.00	600000.00
d		Supply and fixing 25 A MCB in industrial type modular enclosure and modular 25 A socket for 1.5 ton Air Conditioner.		100		450.00	45000.00
22		Supply of Lighting with all complete fittings					

a	Non-DSR Item	High quality LED tube batten complete with 1X18W tube (T8) eco friendly, having ≥ 2000 lumen output, CCT-6500K, IP-20, luminous efficacy ≥ 100 lm/watt, CRI >80 , life ≥ 40000 burning hours, PF >0.95 and THD $< 10\%$, no UV radiation etc. suitable for ceiling/wall mounted. With all accessories and all hardware for fixing the lighting fittings	Nos.	600		1600.00	960000.00
b		Supply of 90W LED street Lighting fixtures including LED lamp/chip, driver etc. of Philips make or equivalent approved make having IP-65 degree of protection and suitable for use in safe area complete with all accessories and all hardware for fixing the lighting fittings with pole including supply of double compression Ni-plated brass cable glands & lugs, blanking plugs etc.	Nos.	20		6000.00	120000.00
c		Supply of 9 W LED Bulb	Nos.	50		200.00	10000.00
23	Non-DSR Item	Supply, Handling, installation including transportation from owner's store to site of installation, erection, testing and commissioning of 415V, 3 Ph & N, 2500 A, 50kA for 1 sec., Draw out type, Double front, indoor type Low Voltage switchboard (Power Control Centre, PCC) complete with all accessories as per data sheets, SLD, schematic diagrams and feeder details, This shall also include assembling as required, unpacking, inspection, fabrication and erection of foundation channel, installation on the foundation channels, welding, aligning, leveling, grouting, assembling, fitting of all accessories / instruments / relays, relay coordination, CT, PT, Numerical Relay,	Nos.	1		1580989.00	1580989.00

		interconnection of shipping sections and inter panel wiring as necessary, inter bus bar jointing, bus bar connection, installation, as per drawing, specifications and directions of the Site Engineer/ Engineer-in-Charge including cost of all materials, tools labour etc. complete in all respect including supply of WP double compression rolled aluminium cable glands & lugs (Al/Cu/Bimetalic), termination of all power, control cables, installation of thermistor controller, internal wiring, earthing of LT panels , making holes for cable entries as required, shrouding, plugging/sealing of all unused cable entries and other holes for making the same dust and vermin proof etc. complete as per drawings, specification and directions of Site Engineer / Engineer-in-Charge.					
a	Non-DSR Item	Supplying and fixing AC/power Distrubtion board (12 way 4 + 36) Double door in following ways surface/recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected,hose proof,weather proof, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCCB 100A, 4P, 30KA - 1 nos.,16A DP MCB - 16 nos. for power socket and 25A DP MCB -16 nos. for ac.	Nos.	6		28000.00	168000.00
b	Non-DSR Item	415V Hose proof and weatherproof industrial type sheet steel enclosed, 18 way Lighting Distribution Board (LSDB) with IP-55 degree of protection having 1 no. 63A TPN MCCB, 3 nos. 63A DP MCB in phase and 18 nos.16A	Nos.	5		48000.00	240000.00

		DP MCBs outgoing as indicated in attached SLD along with technical specifications, standards etc.					
c	Non-DSR Item	415V Hose proof and weatherproof industrial type sheet steel enclosed, 12 way Single Phase socket DB (SPDB) with IP-55 degree of protection having 1 no. 63A 4P MCCB, 3 nos. 63A DP ELCB in phase and 18 nos. 16A DP MCBs outgoing as indicated in attached SLD along with technical specifications, standards etc.	Nos.	6		76800.00	460800.00
Total Cost Estimate for SOR Part-B for Electrical works							11986880.84

Note –

(1) DSR item rate references are considered as per DSR 2018 and it is inclusive of GST. Multiplication factor of 0.87672 were multiplied with DSR 2018 rates for calculating DSR unit rate exclusive of GST.

(2) Bidder shall quote for all the items of "SOR" after careful analysis of cost involved for the performance of the complete items 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.

SOR Part-C : IT work Cost Estimate for Renovation of Technical Building at HURL Sindri

S.N.	Items Name	Quantity	Unit	Estimated Unit Rate (Excluding GST)	Estimated Amount in Rs.
1	Cat 6 Cable	33	Box(305Mtr/Box)	7600	2,50,800
2	Telephone Cable 2 pair	5000	Mtr.	16	80,000
3	Network Rack 9U	4	Nos.	8500	34,000
4	Network Switch 48 Port POE	4	Nos.	270000	10,80,000
5	Wall Socket Dual Network LAN Cat5e/Cat6 RJ45 & dual RJ11 with Telephone Outlet Panel Faceplate and SMB	200	Nos.	650	1,30,000
6	Conduit	5000	Mtr.	35	1,75,000
7	Patch panel	12	Nos.	4800	57,600
8	Patch Cord 1Mtr	200	Nos.	135	27,000
9	LIU 24 Port	1	Nos.	14800	14,800
10	LIU 6 Port	3	Nos.	9500	28,500
11	Fibe Optic Cable 6 Core	500	Mtr.	42	21,000
12	Krone Type Metal Distribution Box 100 Pair With Krone Module	2	Nos.	6000	12,000
13	TRS 3 Core 1.5 SQm	500	Mtr.	65	32,500
14	2MP Bullet Camera	30	Nos.	9900	2,97,000
15	64 Channel NVR with 32TB HDD	1	Nos.	146200	1,46,200
16	UPS 2KVA	1	Nos.	80000	80,000
Cost Estimate in Rs. For IT Items Supplies					24,66,400

PART-II

B	Service and Installation	Qty.	UoM	Unit Rate	Amounts
1	Laying of Telephone Cables through PVC conduit Underground includes cutting of wall required for underground conducting	5000	Meters	30	1,50,000
2	Laying of UTP Cables through PVC conduit Underground includes cutting of wall required for underground conducting	10000	Meters	45	4,50,000
3	Installation and termination of I/O Set	200	Nos.	100	20,000
4	Installation and termination of Patch Panel	12		600	7,200
5	Laying of Optic Cable through PVC conduit/HDPE piper over wall/surface	500	Meters	35	17,500
6	Laying of Optic Cable through HDPE pipe underground	500	Meters	45	22,500
7	Installation of CCTV Cameras	30	Nos.	300	9,000
8	Installation, Fixing and dressing of Racks	4	Nos.	700	2,800
9	Installation, Configuration, Testing and commissioning of Network Switches, Server, Storage, Cameras & NVR, UPS and rest devices with one year support	1	Lot	52000	52,000
Total Cost Estimate in Rs. for IT service and Installation					7,31,000
Total Cost Estimate for SOR Part-C in Rs.					31,97,400

Bidder shall quote for all the items of "SOR" after careful analysis of cost involved for the performance of the complete items 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.

Price Bid (BOQ)/ Financial Bid

Validate	Print	Help	Wise BoQ			
Tender Inviting Authority: BUH, HURL Sindri Project						
Name of Work: Renovation of Technical Building at HURL Sindri project						
Contract No: HURL/Sindri/C&M/21-22/XXXX dated XX.03.2022						
Name of the Bidder/ Bidding Firm / Company :						
PRICE SCHEDULE (DOMESTIC TENDERS - RATES ARE TO GIVEN IN RUPEES (INR) ONLY) (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)						
NUMBER #	TEXT #	NUMBER	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Estimated Rate in Rs. P	Excess (+)/ Lower (-)	Quoted Percentage Rate Entered By Bidder	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT In Words
1	2	6	9	7	14	15
1	Renovation of Technical Building at HURL Sindri					
1.01	SOR- PART A (Civil Works)	34689608.35	Select		0.00	INR Zero Only
1.02	SOR- PART B (Electrical works)	11986880.84	Select		0.00	INR Zero Only
1.03	SOR- PART C (IT Works)	3197400.00	Select		0.00	INR Zero Only
Total in Figures					0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only				

Note :

- For items mentioned in SOR Part-A of civil works, Bidder is required to select "Excess(+)" / Less(-)" from drop down menu against S.N. 1.01, SOR- Part A (Civil Works) and then they have to quote rate in percentage up to two decimals only.
- For items mentioned in SOR Part-B of Electrical works, Bidder is required to select "Excess(+)" / Less(-)" from drop down menu against S.N. 1.02, SOR- Part B (Electrical Works) and then they have to quote rate in percentage up to two decimals only.
- For items mentioned in SOR Part-C of IT works, Bidder is required to select "Excess(+)" / Less(-)" from drop down menu against S.N. 1.03, SOR- Part C (IT Works) and then they have to quote rate in percentage up to two decimals only.
- After submission of quote for SOR- Part A (Civil Works) in S.N. 1.01 of price bid, SOR- Part B (Electrical Works) in S.N. 1.02 of price bid and SOR- Part C (IT Works) in S.N. 1.03 of price bid, total quoted rates of all the items mentioned in BOQ/SOR will be calculated in price bid and the same will be shown in "Total in Figures" and "Quoted Rates in Words". The bidder is requested to verify total quoted rates before submission of price bid.
- The quoted rate/amount by the bidder shall be inclusive of all taxes and duties etc. but exclusive of the GST. Bidder must quote their rates exclusive of GST. The GST shall be paid extra as per applicable rates.

Price Bid Evaluation : The subject work is indivisible / non-splitable and complete work shall be awarded to successful overall lowest bidder. The financial comparison for selection of Lowest (L-1) Bidder / Contractor shall be done based on the total derived price of all the items mentioned in BOQ/SOR after arithmetical correction of errors (if any). The aggregate of quoted amount for all items of BOQ (Items as mentioned in SOR) will be worked out as total derived price, shall be considered for evaluation and award

SECTION – VII : FORMS AND PROCEDURES (NIT)**INDEX**

Annexure	Description
1	Techno-Commercial Proposal Bid Form
2A	Summary Details to be filled against Pre-Qualification Criteria (PQC)
2B	Technical Specification of Civil Items – To be filled by the bidder
2C	Technical Specification of Electrical Items – To be filled by the bidder
2D	Technical Specification of IT Items – To be filled by the bidder
3	Format for Electronics Payment
4	Declaration on Company Letter Head
5	Tender Acceptance Letter
6	No deviation Certificate
7	Certificate from CEO/MD/ Legally Authorised Signatory
8	Acceptance to Fraud Prevention Policy of HURL
9	Certificate related to Restrictions on procurement from a Bidder of a country which shares a land border with India
10	Format of Bank Guarantee for Bid Security
11	Format of Performance Bank Guarantee
12	BANK GUARANTEE VERIFICATION CHECKLIST
13	Format for Contract Agreement
14	Format for Certificate from CEO / CFO regarding non-availability of financial statement for last financial year
15	Format for Certificate from CA regarding non-availability of financial statement for last financial year
16	Format for Proof for payment of EMD
ES 8060	Details of ES 8060

**TECHNO-COMMERCIAL PROPOSAL BID FORM
(To be Submitted on the Letter Head of Bidder)**

Bidder's Techno-Commercial Proposal Ref. No.:

Bidder's Name & Address :

Date:

Person to be contacted :

Designation :

Tel. No(s). :

Mobile No. :

Fax No(s). :

E-mail address:

To

BUH, HURL SINDRI PROJECT / MANAGER (C&M),
Hindustan Urvarak & Rasayan Limited, Sindri Project,
Old FCIL Office Complex,
Sindri, Dhanbad , PIN - 828122

Dear Sirs,

- 1.0 Having examined the Bidding Documents reference No. HURL/Sindri/C&M/21-22/ 1911 Dated 22-03-2022 , including its subsequent amendments and clarifications, if any, issued by Owner, the receipt of which is hereby acknowledged, we the undersigned, offer to complete the work under the above-named Package in full conformity with the said Bidding Documents and hereby furnish our Techno-Commercial Proposal.
- 2.0 We have understood the instructions and the terms & conditions mentioned in the Bidding Documents furnished by you and have thoroughly examined the specifications laid down by you in the Bidding Documents and are fully aware of the nature of consultancy services required.

Attachments to the Bid form (Techno-Commercial Bid):

In line with the requirement of the Bidding Documents we enclose herewith the following Attachments to the Bid Form (Techno-commercial) Bid:

- q) Power of Attorney as per requirement mentioned in NIT.
- r) Signed, Stamped and Scanned copy of proof for payment of Earnest Money Deposit (EMD) / MSE Certificate for exemption.
- s) Similar work experience Documents as required in accordance with Clause 5.1 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document
- t) Audited Annual Statements (Balance Sheet and Profit & Loss account statements) in accordance with Clause 5.2 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document
- u) Signed, Stamped and Scanned copy of Company Registration certificate, GSTIN Registration, PAN Card, EPF Registration and other documents in accordance with Clause 5.3 of Qualifying Requirements / Pre-Qualification Criteria (PQC) of tender document
- v) Signed, Stamped and Scanned copy of last three financial year ITR

- w) Signed, Stamped and Completely filled with required details in Annexure-1, Annexure-2A, Annexure-2B and Annexure-2C in Forms and Procedures i.e., Section VII.
- x) Signed, Stamped and Scanned copy of Format for Electronics Payment (Enclosed as Annexure-3 to Forms and Procedures i.e., Section VII)
- y) Signed, Stamped and Scanned copy of Declaration on company letter head as specified in Annexure-4 in Forms and Procedures i.e., Section VII.
- z) Signed, Stamped and Scanned copy of Tender Acceptance Letter as as specified in Annexure-5 in Forms and Procedures i.e., Section VII.
- aa) Signed, Stamped and Scanned copy of No deviation Certificate as specified in Annexure-6 in Forms and Procedures i.e., Section VII.
- bb) Signed, Stamped and Scanned copy of Certificate from CEO/MD/ Legally Authorized Signatory, in the format as enclosed as Annexure-7 to Forms and Procedures i.e., Section VII to Bidding Document shall be furnished certifying that the data and documents furnished by them in respect of Techno-Commercial Evaluation are true and correct including the contents thereof. However, if at any point of time the declarations given in bid are found to be incorrect, HURL shall have the full right to terminate the contract and take any action as per provisions of contract including forfeiture of EMD/Security Deposit. Stamped & Scanned copy of format For Electronics Payment as per Annexure-E
- cc) Acceptance to Fraud Prevention Policy of HURL, for which the bidder has to submit Signed, Stamped and Scanned copy of Form of Acceptance of Fraud Prevention Policy of HURL. (Enclosed as Annexure-8 to Forms and Procedures i.e., Section VII).
- dd) Certificate related to Restrictions on procurement from a Bidder of a country which shares a land border with India” i.e. (Enclosed as Annexure-9 to Forms and Procedures i.e., Section VII).
- ee) Documents in compliance to Scope of Work and Technical Specifications Any other document asked for in the Bidding Documents.
- ff) Any Other Document asked for in the Bidding Document

3.0 COMPLIANCE TO THE PROVISIONS OF THE BIDDING DOCUMENTS

- 3.1 We have read all the provisions of the Bidding Documents and confirm that notwithstanding anything stated elsewhere in our bid to the contrary, the provisions of the Bidding Documents, are acceptable to us and we further confirm that we have not taken any deviation to the provisions of the Bidding Documents anywhere in our bid.

We have furnished our compliance to the provisions of the Bidding Documents and its subsequent Amendment(s)/Clarification(s)/Addenda/Errata by furnishing “NO DEVIATION CERTIFICATE”.

We hereby confirm that any deviation, variation or additional condition etc. or any mention, contrary to the provisions of Bidding Documents and its subsequent Amendment(s)/Clarification(s)/ Addenda/Errata (if any) found anywhere in our bid proposal, implicit or explicit shall stand unconditionally withdrawn, without any cost implication whatsoever to the Owner, failing which our bid security shall be forfeited.

- 3.2 We further declare that additional conditions, variations, deviations, if any, found in the bid, shall not be given effect to.

- 4.0 We undertake, if our bid is accepted, to commence the work immediately upon your Notification of Award to

us.

- 5.0** We agree to abide by this bid for a period 120 days from the date of opening of Techno-Commercial bids as stipulated in the Bidding Documents and it shall remain binding upon us and may be accepted by you at any time before the expiration of that period.
- 3.0** Until a formal Contract Agreement is prepared and executed between us, the bids, together with your written acceptance thereof in the form of your Notification of Award shall constitute a binding contract between us.
- 4.0** We understand that you are not bound to accept our bid or any other bid you may receive.
- 5.0** We, hereby, declare that only the persons or firms interested in this proposal as principals are named here and that no other persons or firms other than those mentioned herein have any interest in this proposal or in the Contract to be entered into, if the award is made on us, that this proposal is made without any connection with any other person, firm or party likewise submitting a proposal, is in all respects for and in good faith, without collusion or fraud.
- 6.0** We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.
- 7.0** We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours faithfully,

(Signature)

Date
Place

Name & Designation.....
Name of the Company.....

(Seal of Company)

Annexure-2**Summary Details to be filled against Pre-Qualification Criteria (PQC)**

To, Tender Committee, HURL Sindri Project. Sindri, Dhanbad, Jharkhand – 828122		Date:					
Tender No:		Tender No.: HURL/Sindri/C&M/21-22/1911 Dated 22-03-2022					
Work of the subject tender		Renovation of Technical Building at HURL Sindri Project					
Bidder's Name							
In order to meet the Qualifying Requirement of above tender No., we submit as under:							
Summary of Details & Documents in Support of PQC							
PQC 5.3	GST/PAN/EPF Details	GSTIN Number					
		PAN Number					
		EPF Number					
	Type of Firm	(Proprietorship/ partnership/ limited companies)					
PQC 5.2	Details of Annual Turn Over for the preceding three years.	Financial Year	Turnover (Rs.)				
		Average Annual Turnover for the preceding three (3) financial years					
PQC 5.1 – Details of Similar Work Experiences							
S.N	Description of Work	Work Order No. & Date	Work Order Value	Completion Certificate No.	Completion Certificate Date	Actual Date of Completion	Actual Executed Value

Note: Bidder must submit all requisite documents mentioned above in support of their meeting the PQC requirement.

Yours Faithfully,

(Signature of the Bidder with Official Seal)

Annexure-2A**Technical Specification of Civil Items – To be filled by the bidder**

S.No.	Construction material	Acceptable Vendor List	Confirmation by Bidder on Acceptable Vendor List (Yes/No)	Remarks If any (To be filled by bidder)
1	Tiles	Kajaria, somany, AGL, Orient bell, Nitco		
2	Cement (PPC/OPC-43)	Ultratech, Shree, Nuvoco, Emami, ACC		
3	HYSD Steel (Fe- 500 D/550 D), Mild steel	Jindal, Tata, Sail, RINL, Shyam		
4	MS steel	Jindal, Tata, Sail, shyam		
5	Aluminium frame	Tata Vikas, Jindal, Hindalco		
6	False ceiling	Gyproc (Saint Gobain)		
7	APP membrane/ Hybrid Poly Urea elastomeric waterproofing	Pidilite, Sika, STP, Asian		
8	Wall putty	Asian, JK, Berger, Nuvoco, Birla		
9	Paint	Asian, Berger, Nerolac		
10	Ply wood	Green ply, Century ply, Kitply, Bokaro timber		
11	Sanitary fittings	Jaguar, Marc, parryware, Hindware, Somany		
12	Plumbing pipes	Prayag, prince, paras		
13	Waterproofing compound/products	Sika, Fosroc, pidilite, Asian, STP		
14	PVC door & frame	Rajshree, Sintex		
15	Water tank	Prince, Sintex, Himgiri		
16	Anti Termite	Insecticide India Ltd., Arbuda, Lindane, Lethal		

Technical Specification of Electrical Items – To be filled by the bidder

S.N.	Technical Specification of Electrical Items as described in Part-B Electrical Works of Section IV of tender document	(To be filled by the Bidder)	
		Confirmation by Bidder for supply of Electrical Items as per Technical Specification described in Part-B Electrical Works of Section IV of tender document (Yes / No)	Remarks if any
A	415V SWITCHBOARDS		
B	LIGHTING SUB DISTRIBUTION BOARD / SINGLE PHASE SWITCH SOCKET SUB DISTRIBUTION BOARD		
C	PRE-WIRED DISTRIBUTION BOARDS		
D	CEILING FANS		
E	CEILING ROSES		
F	LIGHTING FIXTURES		
G	INTERLOCKED TYPE SWITCH SOCKET & PLUG		
H	MINIATURE CIRCUIT BREAKERS (MCB)		
I	JUNCTION BOXES		
k	CAST IRON / MILD STEEL BOXES		
L	EXHAUST FANS		
M	TERMINAL BOXES		
N	MODULAR TYPE SWITCHES / SOCKETS		
O	LT POWER & CONTROL CABLE		
P	EARTHING		
Q	MOUNTING STRUCTURES		
R	PAINTING		
S	TESTING		
T	DRAWING & DOCUMENTS		

U	MAKE OF ELECTRICAL ITEMS			
S.N.	ITEM	ACCEPTABLE MAKE	To be Filled By Bidder	
			Confirmation by Bidder on Acceptable Make (Yes / No)	Remarks If Any
1	Low Voltage Industrial Switches / Isolators	Asea Brown Boveri Ltd.		
		GE Power Controls India Pvt. Ltd.		
		Havells India Ltd.		
		Kaycee Industries Ltd.		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
2	Low voltage switch board	Indo asian.		
		ABB		
		Schneider Electric		
		Legrand		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
3	Meters	Alstom Limited (Areva T&D)		
		Hotline Switchgear & Controls		
		IMP Power Ltd.		
		Jaipur Metals & Electrical Ltd.		
		M.B. Control & Systems Pvt. Ltd. (Only for Multifunctional Meter)		
		Meco Instruments		
		Mehru Electricals (Formerly Automatic Electric Limited)		
		Prok Devices Private Limited		
		Rishabh Instruments Pvt. Ltd.		
		Seahorse Industries Ltd.		
4	Prewired MCB-DB (SP/TP)	Indo asian.		
		Anchor		
		Havells India Ltd.		
		Schneider Electric		
		Siemens Ltd.		
5	Floor Mounting Type Distribution Board	Indo asian.		
		ABB		
		Schneider Electric		
		Legrand		

		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
6	Industrial Type Sw. Socket & Plug	Baliga Lighting Equipments Limited		
		Caldyne Automatics Ltd.		
		Crompton Greaves Ltd		
		Cyclo Electric Devices & Services Co.		
		FCG Flameproof Control Gears Pvt. Ltd. (Formerly CEAG Flame		
		FCG Power Industries Ltd.		
		Flameproof Equipments Pvt. Ltd.		
		Legrand India Ltd.		
7	Wall Mounting Type Distribution Board	Indo asian.		
		ABB		
		Schneider Electric		
		Legrand		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
8	Hoseproof Junction Boxes	Baliga Lighting Equipments Limited		
		Bhartia Industries Ltd. (Divn. BCH)		
		FCG Flameproof Control Gears Pvt. Ltd.		
		FCG Power Industries Ltd.		
		Flameproof Equipments Pvt. Ltd.		
9	LT Power, Control & Earthing Cables (XLPE-A-FRLS PVC/ PVC-A-FRLS PVC)	Polycab.		
		Finolex		
		KEI Industries Ltd.		
		Havelles		
		Anchor		
		Universal Cables Ltd.		
10	Industrial Cable Gland	Baliga Lighting Equipments Limited		
		Comet Brass Products		
		Comet Industries		
		Dowell's Electricals		
		Electromac Industries		
		FCG Flameproof Control Gears Pvt. Ltd.		
		Gland-Mech. Industries		
		Power Engg. Co.		

		Quality & Precision Indl. Equipment		
		S J Metal Industries (Jainson)		
11	Cable Lugs	Dowell's Electricals		
		Forward Engg. Industries		
		KSE Electrical Pvt. Ltd.		
		MG Electrica		
		Power Engg. Co.		
		S J Metal Industries (Jainson)		
		Usha Martin Industries Ltd. (Isma Divn.)		
12	Heat Shrinkable End Termination Kit	Raychem RPG Ltd.		
13	Epoxy based Termination / Straight Through Jointing Kits	Birla 3M Ltd.		
		Yamuna Power & Infrastructure Limited		
		Mahindra Engineering & Chemical Products Ltd.		
		Raychem RPG Ltd.		
14	MCB/ELCB/RCCB	Siemens		
		GE Power Controls India Pvt. Ltd		
		Havell's India Limited		
		Legrand India Ltd.		
		ABB		
		Schneider		
		L&T		
15	MCCB	Siemens		
		GE Power Controls India Pvt. Ltd		
		Havell's India Limited		
		Legrand India Ltd.		
		ABB		
		Schneider		
		L&T		
16	Fuse	Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
		Alstom Power		
		Bussman		
		Havells India Ltd.		
17	Contactor	Siemens		
		GE Power Controls India Pvt. Ltd		
		Havell's India Limited		
		Legrand India Ltd.		

		ABB		
		Schneider		
		L&T		
18	Timers	ABB India Limited		
		Alstom Power		
		Alstom Limited (Areva T&D)		
		Bhartia Cutler Hammer		
		Siemens Ltd.		
19	Push Buttons	Alstom Power		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
		Tecnik		
		Tulsi		
20	Control Switches	Alstom Power		
		Kaycee		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
21	Terminal Blocks	Connectwell		
		Elmex		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
22	Signal Lamps	Alstom Power		
		Binoy		
		Larsen & Toubro Ltd. (El. Products Divn.)		
		Siemens Ltd.		
		Tulsi		
23	Copper Wires- 600/1100 Volts (Flexible Cable)	Anchor Electricals Pvt. Ltd.		
		Finolex Cables Ltd.		
		Havells India Ltd.		
		Polycab Wires & Cables		
		KEI Industries Ltd.		
		Universal Cables Ltd.		
24	PVC Conduit Pipes	A.K.G.		
		Finolex Industries Ltd.		
		Havelles		
		Anchor		
		Prakash Industries Ltd.		
25	Ceiling Fan	Anchor, model- Ecobreez Urban Mocha		

		Luminous, model- Newyork Tiffany		
		Crompton, model- Energion Stylus		
		Havelles, model- Stealth air		
		Usha, model-Heleous		
26	Exhaust Fan	Bajaj Electrical Ltd.		
		Crompton Greaves Ltd.		
		Usha		
27	Wall FAN	Anchor,		
		Luminous,		
		Crompton,		
		Havelles,		
		Usha,		
28	Modular Switch/Socket with plates	Anchor , model- Roma/ Woods with metallic/glass plates		
		Crabtree, model- Ducor by murano/Amare with metallic/glass plates		
		Havells, model- Fabio art/ Oro Metallica with metallic/glass plates		
		GM, model- GX/ Four Five with metallic/glass plates		
		Orient electric, model- Salus with metallic/glass plates		
		Wipro, model- Artisa with metallic/glass plates		
29	Lighting Fittings & Accessories / LED Lamp	Bajaj Electrical Ltd.		
		Crompton Greaves Ltd.		
		Havells India Ltd.		
		Syska		
		Philips India Ltd.		
		Surya Roshni Ltd.		
		Wipro Lighting		
30	Electric Call Bell	Anchor Electricals Pvt. Ltd.		
		MDS		
		Kinjal		
31	Earthing & Lighting Protection Material	Anand Electric Trading Co.		
		Bharti Exports		
		Controls & Switchgear Co. Ltd.		
		Jamna Metal Company		
		Jayant Metal Mfg Co.		
		Mahavir Industrial Corporation		

		Metalite Industries		
		Metropolitan Industries		
		Premier Power Products (Calcutta) Pvt. Ltd.		
		Rukmini Electricals & Components Pvt. Ltd.		
		Sadhana Engineering Corporation		
		Sai Galvanisers & Fabricators Pvt. Ltd.		
		Stealite Engg. Co.		
32	GI Pipes	Bharti Exports		
		Indian Tube Co. (Tata Div. Of Tubes & Pipes)		
		Jindal Pipes Ltd.		
		Meghjyot Enterprises		
		Rukmini Electricals & Components Pvt. Ltd.		
		Steelcraft		

Technical Specification of IT Items – To be filled by the bidder**Technical Specifications of Items****01. UTP Cat6 Cable****(305Mtr/Box)**

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	CommScope, Dlink, Legrand, HikVision, Polycab	
2	**Model		
3	Type	(a) Category 6 Unshielded Twisted Pair 4 pair cable shall be compliant with ANSI/TIA/EIA-568-B.2-1 Additional Transmission Performance Specifications for 4-pair Category 6 Cabling. The Cable should be tested by third party upto 700 MHz and report should be submitted along with bid.	
		(b) Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, 23 AWG, UTP.	
		(c) Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.	
4	Color	Blue	
5	Jacket material	(a) Jacket material should be FR-PVC	
		(b) Incorporates central spine maintaining pair separation during installation to ensure premium performance after installation.	
6	Mechanical Characteristics	(a) Construction: 4 twisted pairs separated by internal X shaped, 4 channel, polymer spine / full separator. Half shall not be accepted.	
		(b) Conductor Solid Copper	
		(c) Conductor Diameter 0.56 ± 0.005 mm (23 AWG)	
		(d) Insulator Polyolefin	
		(e) Outer Diameter 6.0 ± 0.4 mm	
		(f) Max. Temperature 75°C	
7	Compliant	ROHS/ELV	
8	Anti-Rodent	Yes	

02. Telephone Cable 2 pair

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Anchor, Polycab, Legrand, Havells, RR Cables	
2	**Model		
3	Number Telephone pair	2Pair Telephone Cables Standard (Any Reputed make)	
4	Size	0.5mm ² copper conductor size, External diameter 4.5mm	
5	Color and Standard	4 Core cable (2 Pair) with Industry standard colour coding - Orange, Orange/White, Blue & Blue/White coloured cores as indicators	
6	Unarmoured	Yes	

7	Insulation Material	PVC	
---	---------------------	-----	--

03. Network Rack 9U

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Dlink, Netrack, Vertiv, Urack	
2	**Model		
3	Size	9U RACK suitable for mounting network switch	
4	Type	Wall mounted	
5	Front	Transparent door with Lock	
6	Side	Easily Removable Side doors with locking mechanism	
7	Fans	2 numbers cooling fan	
8	Power	Suitable number of Electrical power	
		Outputs with spike buster.	
9	Sealing	All opening and cable entry points should have proper cap/sealing to prevent Rodent	
10	Certification	The Rack should be UL certified Conforms to DIN 41494	
11	Accessories	(a) 1 Power Distribution Units	
		(b) 1U Horizontal Cable Manager	
		(c) 1 Cantilever Tray	

04. Network Switch 48 Port POE

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Cisco, HPE, Extreme, Ruckus	
2	**Model		
3	Architecture & Port Density	48 x 10/100/1000BaseT (RJ-45) ports 4 x SFP-BaseT 10G (SFP+) with 1 pair populated SFP+ (SM) Transceiver 1 x Serial console port RJ-45 1 x 10/100 BaseT out-of-band management port	
4	Architecture & Port Density	Switch should offer Wire-Speed Non-Blocking Switching & Routing Performance at Layer 2 & Layer 3	
5	Switching Capacity	176 Gbit/s or more	
6	Stack	Supported	
7	Memory (RAM)	512 MB	
8	Layer 2 features	1) Switch should support 4K Active VLANs 2) Switch should support 10K MAC addresses or more. 3) Switch should support IP multicast snooping with support for IGMP v1, v2, v3 and MLD v1 & v2 4) Switch should support Jumbo Frames (up to 9K bytes)	
9	Layer 3 features	1) Switch should support minimum 1K IPv4 Routes or more	

		2) Switch should support Basic IPv4 and IPv6 Static Routing, ECMP, Host Routes, Virtual Interfaces, Routed Interfaces, Route Only and Routing between directly connected subnets from Day 1.	
		3) Switch should support Dynamic IPv4 & IPv6 Routing protocols (OSPFv2 and OSPFv3) and Layer 3 Multicast Routing Protocols from Day 1.	
10	Security	1) Switch should support RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Passwords. 2) Switch should support secure communications to the management interface and system through SSL, Secure Shell (SSHv2), Secure Copy and SNMPv3 3) Switch should support IP Source Guard, DHCP snooping, DHCPv4, DHCPv6 and Dynamic ARP Inspection. 4) Switch should support IPv4 and IPv6 ACLs with up to 500 rules per ACL and a minimum of 6K rules per system (Standalone Switch or Stack). 5) Switch should support Byte and packet based broadcast, multicast, and unknown-unicast limits with suppression port dampening. 6) Switch should support IPv6 Router Advertisement (RA) Guard. 7) Switch should support Flexible Authentication with 802.1x Authentication and MAC Authentication.	
11	Manageability	1) Switch should support manageability using Network Management Software with Web based Graphical User Interface (GUI). 2) Switch should provide Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch management/monitoring 3) Switch should support NetFlow or sFlow or equivalent	
12	Physical Attributes & PoE Power Budget	1) Mounting Option: 19" Universal rack mount ears 2) PoE Power Budget: The Switch should provide a minimum of 740 watts of PoE+ power.	
13	Mandatory Compliance	All categories of Switches, Transceivers & Switch OS should be from same OEM	
14	Warranty	Switch should be quoted with TAC Support and Warranty for 3 years with NBD Hardware Replacement.	
15	Compatibility	All Network Switches and its module should be from same OEM	

05. Wall Socket Dual Network LAN Cat5e/Cat6 RJ45 & dual RJ11 with TelephoneOutlet Panel Faceplate and SMB

#	Components/Parameters	Specifications	Compliance(Y/N)
---	-----------------------	----------------	-----------------

1	*Acceptable Make	Legrant, Dlink, Iball, Syrotech, Anchor, TPLink or Equivalent(Should be branded)	
2	Faceplate		
2.1	Port	Dual RJ45 Port + Dual RJ11 Port with dust protected with SMB and four way faceplate (Fully Loaded with keystone)	
2.2	Colour	White	
2.3	Cover Material	Flame Retardant ABS UL94V.0	
3	GangBox		
3.1	Size	Suitable for mounting supplied face plate	
3.2	Material	PVC	

06.Conduit

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Anchor, Havells, Polycab, Precision, VIP	
2	Product Name :	PVC Conduit Pipe	
3	Colour	White	
4	Total Size	As required	
5	Material	Plastic	
6	Compliance/Standard	ISI	

07. Patch panel

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope	
2	Type	19" 24-port, loaded with Jack , A key product used in both Category 6 link and channel gigabit Ethernet applications. The IDC section consists of V-shaped contacts that flex not fatigue when terminated. Each port features spring-loaded shutter and can be colour coded to match jack outlets. Offering both front and rear labelling options, the patch panel is constructed of cold-rolled steel for additional strength and durability.	
3	Ports	24	
4	Plastic Housing Jack Connector	Polycarbonate, UL94V-0 rated or equivalent	
5	Contact Plating	50µ" Gold/100µ" Nickel	
6	Front Connector interface	RJ45	
7	Circuit Identification Scheme	Icons on each of 24-ports	
8	Port Identification	9mm or 12mm Labels on each of 24-ports (to be included in supply)	
9	Height 1 U	(1.75 inches)	
10	Compliant	ROHS/ELV	

08.Patch Cord 1Mtr

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope	

2	Type	Cat 6 U/UTP Patch Cords are key components of Cat 6 U/UTP End-to-End Solution and are designed to support data networks for 10/100BASE-T and 1000BASE-T applications.	
3	AWG	23/24 AWG stranded copper wire	
4	Length	1 Mtr	
5	RJ45 plug and boot material	Clear polycarbonate	
6	Outer Sheath	LS0H	
7	RJ45 plug dimensions compliant with	ISO/IEC 60603-7-4 and FCC 47 Part 68	
8	Contact material	0.35mm thick copper alloy	
9	MIN operating life	750 insertion cycles	
10	Sheath Material	LSZH	
11	Compliant	ROHS/ELV	

09. LIU 24 Port

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope or Equivalent(Branded)	
2	Rack mountable	19" Rack Mount FDMS 96F Detachable type	
3	No. of cable entry ports with sizes	4 Nos. or more round type	
4	Consumables Kit	Available	
5	Packaging	In Corrugated Box	
6	LC Pigtail and Coupler	Yes	
7	Number of Ports	24 (LC)	

10. LIU 6 Port

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Dlink, Legrant, TPLink, Syrotech, Commscope or Equivalent(Branded)	
2	Rack mountable	19" Rack Mount FDMS 96F Detachable type	
3	No. of cable entry ports with sizes	2 Nos. or more round type	
4	No. of splice trays (24F)	Minimum 1	
5	Consumables Kit	Available	
6	Packing	In Corrugated Box	
7	LC Pigtail and Coupler	Yes	
8	Number of Ports	6 (LC)	

11. Fibe Optic Cable 6 Core

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Polycab, Dlink, Finolex, RR or Equivalent(Branded)	
2	Overall Diameter	10mm,	
3	Number Of Core	6 Cor	
4	Fiber Type	(a) 9/ 125um (OS2)	
		(b) Central Loose tube with jelly compound.	
5	Tensile Strength	Yes	

6	Conductor Material	HDPE/LSZH	
7	Cable Jacket	1.8 + 0.2	
8	Mode Type	Single mode (SM) 9/125um	
9	Jacket Thickness	HDPE/LSZH	
10	Color	Black	

12. Krone Type Metal Distribution Box 100 Pair With Krone Module

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Matrix, Avaya, Anchor, Siemens, Crystal	
2	Material	cold rolled steel	
3	Capacity	100 pair	
4	Function	Fixed into Krone module	
5	Environment	indoor	
6	With Krone module	Yes	
7	Lock	With key and lock for secure, key lock.	
8	LSA Plus Module	0.4-0.6 mm, 10 Pair	

13. TRS 3 Core 1.5 SQm

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Anchor, Polycab, RR cables, Finolex, KEI	
2	Size of Conductor	1.5 sq mm	
3	Core	3 Core	
4	Conductor Material	Copper	
5	Colour	Black	
6	Insulation Material	PVC	
7	Current Rating AC	16Amp	
8	Certification	ISI	

14. 2/4MP Bullet Camera

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Hikvision, Dahua, CPPlus, Sparsh, Samsung	
2	**Model		
3	Type of Camera	Bullet, Varifocal, 2/4MP	
4	Image Sensor	2.54 cm (1/2.8 inch) Progressive scan CMOS	
5	Min. Illumination Colour	0.005 Lux @ (F1.6, AGC ON)	
6	Shutter Speed	1/3 s to 1/100,000 s	
7	Slow Shutter	Yes	
8	Day & Night	IR cut filter	
9	Digital Noise Reduction	3D DNR	
10	WDR	Digital WDR	
11	Angle Adjustment Pan	0° to 355°, tilt: 0° to 75°	
12	Focal length	2.8 to 8 mm	
13	Aperture	F1.6	
14	Video Compression	H.265/H.264/MJPEG	
15	Max. Resolution	1920 × 1080	
16	API	ONVIF (PROFILE S, PROFILE G), ISAPI	
17	Network Storage	Support Micro SD/SDHC/SDXC card (128G), local storage and ANR	

18	Ethernet Interface	1 RJ45 10 M/100/1000 M self-adaptive Ethernet port PoE: 802.3af	
19	Audio Interface:	Built-in mic, 1 input (line in), 1 output (line out)	
20	Environment Noise Filtering	Yes	
21	Audio Compression	G.711/G.722.1/G.726/MP2L2/PCM	
22	Warranty	Minimum 2 years	

15. 64 Channel NVR with 32TB HDD

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Hikvision, Dahua, CPPlus, Sparsh, Samsung	
2	**Model		
3	IP video input	64-ch Up to 12 MP resolution	
4	Incoming: Outgoing Bandwidth	Mins 240:240 Mbps	
5	Remote connection	128	
6	Recording resolution	12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCiF /2CIF/CiF/QCiF	
7	Output Display Port	2 Nos. HDMI	
8	Audio output	2-ch, RCA (2.0Vp-p, 1 KΩ)	
9	Video Compression	H.265+/H.265/H.264/H.264+/MPEG4	
10	No. of Network interface	2	
11	SATA	Min 8 SATA interfaces	
12	eSATA	1 eSATA interface	
13	Minimum Storage Supported	64TB	
14	Disk Array Supported	RAID0, RAID1, RAID5, RAID6, RAID10	
15	Serial interface	RS-232; RS-485; Keyboard	
16	NVR populated with storage	32TB SATA Storage(Surveillance HDD)	
17	***Compatibility	Camera and NVR should be same make and also our existing Hikvision cameras features should be fully supported with this NVR not only ONVIF.	
18	Warranty	Minimum 2 years	

16. UPS 2KVA

#	Components/Parameters	Specifications	Compliance(Y/N)
1	*Acceptable Make	Vertiv, Mikrotek, Numeric, Schneider	
2	**Model		
3	Capacity	2000 VA / 1600 W	
4	Input Voltage Range	110-280 VAC (Based on load at 50%)	
5	Output Voltage	200/208/220/230/240VAC	
6	Output Frequency Range	47— 53 Hz or 57 — 63 Hz	
7	Waveform (Batt. Mode)	Pure Sinewave	
8	Battery Type	12V-65AH	
9	Number of Battery	6	
10	Charging Voltage	85 VDC ±1%	

11	Indication (LCD)	Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators	
12	Warranty	Minimum 2 years	

Note:-

*** Bidder should fill the name of acceptable make.**

**** The bidder should fill in the model and must submit the datasheet/specification sheet where the model is asked for.**

*****Bidder must consider the compatibility.**

Format For Electronics Payment

Bidders are required to submit the following details on the company's letter head for online transfer of amount to their account:

1.	Contractor Name / Company Name	
	Address:	
	Phone No.	
	E-mail ID	
2. a	Name of the Bank	
b.	Address of the Branch	
c.	Telephone No.	
d.	9 Digit Code number of the Bank and Branch appearing on the MICR Cheque issued by the Bank	
e.	11 Digit NEFT/IFSC Code of the Bank Branch	
f.	Account Type (SB/CC/CA)	
g.	Bank Account No. (as appearing on the Cheque)	
h.	Permanent Account Number (PAN) Under Income Tax Act.	
I	GST Registration Number	
j.	Name of Authorized Signatory	
k.	Contact Person Name	

We hereby declare that the particulars given above are correct and complete

Name

Designation

Date

Authorized signatory of the bidder

TO BE SUBMITTED ON COMPANY LETTER HEAD

DECLARATION

I, _____, being proprietor / partner / Director /authorized representative of M/s _____, do hereby solemnly affirm and state as under:

1. I, am submitting the tender for the work of “Renovation of Technical Building at HURL Sindri Project” against Tender Notice Number HURL/Sindri/C&M/21-22/1911 Dated 22.03.2022 .
1. That I/ we/ our partners/ directors do not have any relative working in Hindustan Urvarak & Rasayan Limited.
2. That I/we hereby declare that M/s _____ is neither put on Holiday nor Black-listed by any Government/ PSU/ Private firm or Financial Institution.
3. That all information furnished by me/ us in respect of fulfilment of eligibility criteria and information given in this tender is complete, correct and true.
4. That all documents / credentials submitting along with this tender are genuine, authentic, true and valid.
5. That the price bid is unconditional.
6. That I/ we shall comply with all the statutory provisions as laid down under various Labour Laws/ Acts/ Rules like minimum wages, Provident Fund, ESI, Bonus, Gratuity, Contract Labour Act and other Labour Laws/ Acts/ Rules in force from time to time at my/ our own cost.
7. I/We indemnify hereby HURL against all repercussions arising out of non- compliance of the foregoing in any case.
8. That if any information or document submitted is found to be false/ incorrect, the Department may cancel my/ our tender and action as deemed fit may be taken against me/ us including termination of the contract, forfeiture of all dues including earnest money and blacklisting of me/ our firm and all partners of the firm etc.

(Signature)

Date:

Name & Designation.....

Place:

Name of the Company.....

(Seal of Company)

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

Date:

To,
Hindustan Urvarak & Rasayan Limited, Sindri Project,
Old FCIL Office Complex,
Sindri, Dhanbad , PIN - 828122

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference 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 to (including all documents like annexure(s), schedule(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 have 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. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract , without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

DECLARATION FOR “NO DEVIATION”(To be submitted on the Letter Head of the Bidder duly signed by Authorised Signatory)

Bidder's Name & Address :	To, Hindustan Urvarak & Rasayan Limited, Sindri Project, Old FCIL Office Complex, Sindri, Dhanbad , Jharkhand, PIN - 828122
---------------------------	--

1. With reference to our Bid Proposal No. dated for the work of “Renovation of Technical Building at HURL Sindri Project” against Tender Notice Number **HURL/Sindri/C&M/21-22/1911 Dated 22.03.2022.** , 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 & Financial Bid and we declare that we have not taken any deviation / exceptions in this regard.
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 Financial Bid, implicit or explicit, shall stand unconditionally withdrawn, without any cost implication whatsoever to the Owner, failing which the Bid Security shall be forfeited.

Yours faithfully,
(Signature)

Date:

Name & Designation.....

Place:

Name of the Company.....

(Seal of Company)

PROFORMA OF CERTIFICATE

(TO BE SUBMITTED BY CEO/MD/ LEGALLY AUTHORISED SIGNATORY OF THE BIDDING COMPANY ON COMPANY'S LETTER HEAD IN ORIGINAL)

Ref. :

Date:

To

BUH, HURL Sindri Project / Manager (C&M),
Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Sub:

Bidding Doc. No.

Dear Sir,

I, Mr. (CEO of the company / MD of the company), hereby certify that the data and documents furnished by M/s..... in respect of Techno-Commercial Evaluation are true and correct including the contents thereof.

I further, confirm that if at any point of time the declarations given in bid are found to be incorrect, HURL shall have the full right to terminate the contract and take any action as per provisions of contract including forfeiture of EMD/Security Deposit.

Yours faithfully,

(Signature)

Date

Name & Designation.....

Place

Name of the Company.....

(Seal of Company)

(FORM OF ACCEPTANCE OF FRAUD PREVENTION POLICY OF HURL)

(To be submitted on the Letter Head of the Bidder duly signed by Authorised Signatory)

Ref. :

Date:

To
BUH, HURL Sindri Project / Manager (C&M),
Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Sub: **FORM OF ACCEPTANCE OF FRAUD PREVENTION POLICY OF HURL**

Bidding Doc. No.

We have read the contents of the Fraud Prevention Policy of HURL displayed on its website
<http://www.hurl.net.in> and undertake that we shall strictly abide by the provisions of the said Fraud Prevention
Policy of HURL.

Date: (Signature of Authorized Signatory)

Place : (Printed Name)

(Designation).....

(Company Seal)

Model Certificate For Tenders For Works involving possibility of sub-contracting

(TO BE SUBMITTED BY AUTHORISED SIGNATORY OF THE BIDDING COMPANY ON BIDDERS LETTER HEAD IN ORIGINAL)

Bid Ref No. :

Bidder's Name and Address:

To,
BUH, HURL Sindri Project / Manager (C&M),
Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Dear Sir,

We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries as per the guidelines dated 23.07.2020 & 24.07.2020 issued by Department of Expenditure (DOE), Ministry of Finance; We hereby certify that we/our collaborator/ JV partner/ Consortium member/ Assignee is not from such a country and are eligible to be considered. We further certify that we will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. We hereby certify that we fulfill all the requirements in this regard.

Yours faithfully,

(Signature)

Date

Name & Designation.....

Place

Name of the Company.....

(Seal of Company)

Note: - Bidders not furnishing this aforesaid declaration shall be considered to be from such Countries.

Bid Security Form**Bank Guarantee**

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

Bank Guarantee No...

Date...

To:

BUH, HURL Sindri Project / Manager (C&M),
Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Dear Sirs,

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

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 ... (#) ... gurantee 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.

Notwithstanding anything contained herein:

1. Our liability under this bank guarantee shall not exceed [Bid security amount]
2. This bank guarantee shall be valid up to [expiry date]
3. We are liable to pay the guaranteed amount or any part under this bank guarantee only and only if you
serve upon us a written claim or demand on or before [claim expiry date of guarantee]”.

In witness where of the Bank, through its authorised officer, has set its hand and stamp on this.....day of.....at.....

(Signature)
(Name)
(Designation with Bank Stamp)

Authorized Vide Power of Attorney No...

Date...

NOTE:

1. (*) The amount shall be as specified in the Instruction to Bidders.
(**) This shall be the date of opening of Techno-commercial bids.
(#) Complete mailing address of the Head Office of the Bank to be given.
(@) This date shall be forty-five (45) days after the last date of bid validity.
2. The Bank Guarantee shall be from a Bank as per relevant provisions of ITC clause of the Bidding Documents.
3. The Stamp Paper of appropriate value shall be purchased in the name of Bidder/Bank issuing the Guarantee.
4. While getting the Bank Guarantee issued, Bidders are required to ensure compliance to the points mentioned in relevant Form of Bank Guarantee Verification Check List enclosed in Section-VII of bidding document. Further, Bidders are required to fill up this Form and enclose the same with the Bank Guarantee.
5. HURL Bank details required for the purpose of issuance of Bank Guarantee are

Bank: SBI

Account Name: Hindustan Urvarak & Rasayan Limited

Account no: 00000038387231141.

IFSC code: SBIN0004803.

Performance Security Form

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

Bank Guarantee No.....

Date.....

To,

BUH, HURL Sindri Project / Manager (C&M),
Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Dear Sirs,

In consideration of the[*Owner's Name*]..... (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[*Bidder's Name*]..... with its Registered /Head Office at (hereinafter referred to as the 'Bidder', 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 Notification of Award No. dated..... and the same having been unequivocally accepted by the Bidder, resulting into a Contract bearing No..... dated valued at for and the Bidder having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to(*).....% (..... percent) of the said value of the Contract to the Owner.

We[*Name & Address 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, on demand any and all monies payable by the Bidder to the extent of(*)..... as aforesaid at any time upto(@)..... [*days/month/year*] without any demur, reservation, contest, recourse or protest and/or without any reference to the Bidder. Any such demand made by the Owner on the Bank shall be conclusive and binding notwithstanding any difference between the Owner and the Bidder 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 be enforceable till ninety (90) days after expiry of its validity.

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 Bidder. 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 Bidder, 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 Bidder 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 Bidder and notwithstanding any security or other guarantee that the Owner may have in relation to the Bidder's liabilities.

Notwithstanding anything contained hereinabove our liability under this guarantee is restricted 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[Bidder's Name]..... on whose behalf this guarantee has been given.

Dated thisday of.....20..... at.....

WITNESS :

..... (Signature).....
(Signature)

..... (Name).....
(Name)

.....
(Official Address) (Designation with Bank Stamp)

Attorney as per Power
of Attorney No.....
Dated.....

Notes : 1. (*) This sum shall be ten percent (10%) of the Contract Price.

(@) This date will be ninety (90) days beyond the completion date for for work plus defect liability period (if any)

2.The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank.

3.While getting the Bank Guarantee issued, the Bidder is required to ensure compliance to the points mentioned in relevant Form of Bank Guarantee Verification Check List. Further, the Bidder is required to fill up this Form and enclose the same with the Bank Guarantee.

4.The Bank Guarantee shall be from any Scheduled / Commercial Bank recognised by Reserve Bank of India.

BANK GUARANTEE VERIFICATION CHECKLIST

1. Bank Guarantee No.
2. Issuing Bank
3. Amount of BG
4. Nature of BG & No. Pages
5. Validity of BG
6. Package Description
7. Party & Contracts Ref.
8. Bank Reference

CHECK LIST

S.No.	Details of Checks	Yes/No
a)	Is the BG on non-judicial stamp paper of appropriate value, as per Stamp Act?	
b)	Whether date, purpose of purchase of stamp paper and name of the purchaser are indicated on the back of stamp paper under the Signature of Stamp vendor? (The date of purchase of stamp paper should be not later than the date of execution of BG and the stamp paper should be purchased either in the name of the executing Bank or the Bidder on whose behalf the BG has been issued).	
c)	In case the BGs from Banks abroad, has the BG been executed on Letter Head of the Bank, whether adhesive Stamp of appropriate value has been affixed thereon.	
d)	Has the executing Officer of BG indicated his name, designation and Power of Attorney No. / Signing Power No. etc. on the BG?	
e)	Is each page of BG duly signed/initiated by executant and whether stamp of Bank is affixed thereon? Whether the last page is signed with full particulars including two witness under seal of Bank as required in the prescribed proforma?	
f)	Does the Bank Guarantees compare verbatim with the Proforma prescribed in the Bid Documents?	
g)	In case of any changes in contents of text, whether changes are of minor/clerical nature (which in no way limits the right of HURL in any manner)?	

- h) In case of deviations in text of BG, which materially affect the right of Owner, whether the changes have been agreed based on the opinion by Legal Department or BG is considered acceptable on the basis of opinion of Law Department already available on the similar issue.
- i) Are the factual details such as Bid Document No./Specification No. / NOA / LOA / Contract No., Contract Price, Percentage of Advance, Amount of BG and Validity of BG correctly mentioned in the BG?
- j) Whether overwriting / cutting if any on the BG have been properly authenticated under signature & seal of executant?
- k) Whether the BG has been issued by a Bank in line with the provisions of Bidding / Contract Documents?
- l) In case BG has been issued by a Bank other than Scheduled / Commercial Bank recognised by Reserve Bank of India, is the BG confirmed by a Bank in India acceptable as per Bidding / Contract Documents?

Date : Signature.....

Place :

Printed Name of Authorized Person having Power of

Attorney.....

(Designation)

(Common Seal)

Note : The Bidder is required to fill up this form and enclose along with the Bank Guarantee.

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 *[country of Owner]* 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 *[country of Contractor]* 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 .. Ref. No
- 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
- (f)The Bid and Price Schedules submitted by the Bidder

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 aggregate of: *[amount of foreign currency in words]*, *[amount in figures]*, and *[amount of local currency 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 in any manner, claim, cause of action or thing whatsoever arising out 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 Bidder 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 Bidder

[Signature]

[Title]

in the presence of _____

CONTRACT AGREEMENT

dated the _____ day of _____, 20_____

BETWEEN

["the Owner"]

and

["the Bidder"]

PROFORMA OF CERTIFICATE FROM THE CEO/CFO OF THE COMPANY IN ACCORDANCE WITH FINANCIAL REQUIREMENT CRITERIA IN CASES WHERE AUDITED RESULTS FOR THE LAST FINANCIAL YEAR AS ON THE DATE OF TECHNO-COMMERCIAL BID OPENING ARE NOT AVAILABLE.

(To be submitted by the Bidder along with the Techno-Commercial Bid with QR DOCUMENTS ON COMPANY LETTER HEAD)

Ref.: -----

Date: -----

To,
M/s. Hindustan Urvarak & Rasayan Limited
Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Dear Sir / Madam;

Sub: Certificate regarding non-availability of financial statement for last financial year

I Mr./Ms. (*CEO/*CFO of the Company), confirm and undertake that the financial results of the company for the last financial year are under audit as on the date of Techno-Commercial bid opening and the certificate from the practicing Chartered Accountant certifying the financial parameters is not available.

Accordingly, the company is not able to submit the certificate from a practicing Chartered Accountant certifying its financial parameters for the last financial year and the audited results of the three consecutive financial years preceding the last financial year have been considered for meeting the financial parameters in the bid submitted by M/s.----- (Name of the Bidder) for the ----- (Name of the package) under NIT Reference No. ----- dated-----.

Yours faithfully

Signature-----

Name & Designation-----

Name of the Company-----

Seal of the Company

PROFORMA OF CERTIFICATE FROM THE CA IN ACCORDANCE WITH FINANCIAL REQUIREMENT CRITERIA IN CASES WHERE AUDITED RESULTS FOR THE LAST FINANCIAL YEAR AS ON THE DATE OF TECHNO-COMMERCIAL BID OPENING ARE NOT AVAILABLE.

(To be issued by CA (on letter head of CA) and submitted along with the Techno-Commercial Bid with QR Documents)

Ref.: -----

Date: -----

To

M/s. Hindustan Urvarak & Rasayan Limited,
(A JV of CIL, NTPC, IOCL, FCIL & HFCL)
Sindri Project, Old FCIL Office Complex, PO- Sindri
Dhanbad, Jharkhand PIN – 828122

Dear Sir / Madam;

Sub: Certificate regarding non-availability of financial statement for last financial year

We (name of CA Firm), confirm and certify that the financial results of the(name of the bidder) for the last financial year are under audit as on the date of Techno-Commercial bid opening and the financial parameters for the last financial year is not available.

Yours faithfully

Signature-----

Name & Designation-----

Name of the CA-----

Seal of the CA

PROOF OF PAYMENT OF EMD.

(To be submitted by the Bidder along with the Techno-Commercial Bid on COMPANY LETTER HEAD)

Ref.: -----

Date: -----

To

M/s. Hindustan Urvarak & Rasayan Limited,
 (A JV of CIL, NTPC, IOCL, FCIL & HFCL)
 Sindri Project, Old FCIL Office Complex, PO- Sindri
 Dhanbad, Jharkhand PIN – 828122

Dear Sir / Madam;

Sub: PROOF OF PAYMENT OF EMD.

I Mr./Ms. , Authorised signatory, hereby confirm and certify that the EMD has been submitted as per below details:

Sr.no	Particulars	Details	Remarks (if any)
1	EMD Amount	Rs.	
2	EMD submitted in which form	RTGS / NEFT / Demand Draft / Bank Guarantee	Please strike out whichever is not applicable
3	Name of Bidders Bank		
4	Account number of Bidder		
5	Date of EMD Submitted		
6	Transaction ID for RTGS / NEFT		
7	UTR ID for RTGS / NEFT		
8	Demand Draft Number and date (if applicable)		
9	Bank Guarantee Number and date (if applicable)		

Note:- Signed stamped copy of Transaction receipt in case of RTGS / NEFT to be annexed with this document.

Yours faithfully

Signature-----

Name & Designation-----

Name of the Company-----

Seal of the Company