Jaipur Municipal Corporation Greater & Heritage

INVITATION FOR BID
(IFB)

Bid Reference No. 69/2019-2020

RFP for
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmampuri, Jaipur.

Estimated Cost- 19.97cr.
PARTI BIDDING PROCEDURES

Section I - Instruction to Bidders (ITB)
This section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, and evaluation of bids and on the award of contract.

Section II - Bid Data Sheet (BDS)
This section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section I - Instruction to Bidders.

Section III - Evaluation and Qualification Criteria (EQC)
This Section contains the criteria to determine the lowest evaluated bid and the qualifications of the Bidder to perform the contract.

Section IV - Bidding Forms (BDF)
This Section contains the forms which are to be completed by the Bidder and submitted as part of his Bid.

PARTII REQUIREMENTS

Section V - Procuring Entity's Requirement (PER)
This Section contains the specification, the Drawings, and supplementary information that describe the Work to be procured.

PARTIII CONDITIONS OF CONTRACT AND CONTRACT FORMS

Section VI A - General Conditions of Contract (GCC)
This Section contains the general clauses to be applied in all contracts. These conditions are subject to the variations and additions set out in Section 8 (Particular Conditions of Contract).

Section VI B - Special Conditions of Contract (SCC)
This Section contains provisions which are specific to each contract and which modify or supplement the GCC. Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

Section VI C - Contract Forms (COF)
This Section contains forms, which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Section VII - Drawings
VOLUME – II

Bill of Quantity

DISCLAIMER
This request for proposal (RFP) contains brief information about the Project, Qualification Requirements, Eligibility Criteria and the Selection process for the successful bidder. The purpose of this RFP documents is to provide bidders with information to assist in the formulation of their proposal ('proposal').

The information ('Information') contained in this RFP document or subsequently provided to interested parties (the bidder(s)), in writing by or on behalf of Jaipur Municipal Corporation Greater & Heritage (JMC) is provided to Bidder(s) on the terms and conditions set out in this RFP documents and any other terms and conditions subject to which such information is provided. This RFP document does not purport to contain all their information each Bidder may require. This RFP document may not be appropriate for all persons, and it is not possible for JMC, their employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP document. Certain Bidders may have a better knowledge of the proposed Project than others. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and obtain independent advice from appropriate sources.

JMC, their employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy; reliability or completeness of the RFP document and information provided hereunder is only to the best of the knowledge of JMC.

Intimation of discrepancies in the RFP, if any, should be given to the office of the JMC immediately by the Bidder. If JMC receives no written communication, it shall be deemed that the Bidders are satisfied that the RFP document is complete in all respects.

This RFP, along with its Annexures, is not transferable and will be issued only to the interested Bidding Company or the Lead Member of the interested Bidding Consortium. The RFP and the information contained therein are to be used only by the person to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient's professional advisors). In the event that the recipient does not continue with its involvement in the Project in accordance with this RFP, this RFP must be kept confidential.

This RFP document is not an agreement and is not an offer or invitation by JMC to any other party. The terms on which the Project is to be developed and the right of the successful bidder shall be as set out in separate agreement contained herein. JMC reserves the right to acceptor reject any or all proposals without giving any reasons thereof. JMC will not entertain any claim for expenses in relation to the preparation of RFP submissions.

Neither Jaipur Municipal Corporation Greater & Heritage, nor its employees and advisors/consultants will have any liability to any Bidder or any other person under the law of contract, tort, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage which may arise from or be incurred or suffered in connection with anything contained in this RFP, any matter deemed to form part of this RFP, the award of the Project, the information supplied by or on behalf of JMC or its employees, any advisors/consultants or otherwise arising in any way from the selection process for the said Project.
The purchaser of the RFP, which may be the Bidder or the lead Member of the BiddingConsortium and on behalf of each Member of such Consortium, shall be deemed to have confirmed that the Bidders are fully satisfied with the process of evaluation of the Responses and the JMC's decision regarding the qualification or disqualification or short listing of the Bidders. The Bidders hereby expressly waive any and all objections or claims in respect thereof.

This RFP may be withdrawn or cancelled by JMC at any time without assigning any reasons thereof. JMC further reserves the right, at its complete discretion to reject any or all of the Bids without assigning any reasons whatsoever.
Nagar Nigam, Jaipur Greater and Heritage

Notice Inviting Tender

NIB No. 63/2019-20

Nagar Nigam Jaipur invites online unconditional bids on behalf of Commissioner & Administrator Nagar Nigam Jaipur Greater and Heritage through e-procurement portal http://eproc.rajasthan.gov.in from eligible bidders in accordance with the RTPP act 2012 and RTPPP rules 2013, amended up to date, and under International Competitive Bidding with Single Stage two envelope system as per criteria mentioned in the tender document, for following works:

<table>
<thead>
<tr>
<th>Package No.</th>
<th>Name of Work</th>
<th>Estimated Cost (Rs. In Cr.)</th>
<th>Bid Security @ 2% of estimated cost (Rs. In Lacs)</th>
<th>Period of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunk. Basis at Pondrik Park Brahmputri, Jaipur.</td>
<td>19.97</td>
<td>39.94 Lacs</td>
<td>18 months</td>
</tr>
</tbody>
</table>

The details of NIB can be seen at e-procurement portal of state government and sppp.rajasthan.gov.in from date 13/03/2020 at 06:00 PM till the end date of online submission of bids i.e. date 24/04/2020 up to 06:00 PM. Any subsequent addendum/corrigendum shall be published on the e-procurement portal of state government and sppp.rajasthan.gov.in.

Commissioner & Administrator
Nagar Nigam Jaipur
Greater and Heritage
Nagar Nigam, Jaipur Greater and Heritage  
Pt. Deendyal Updhyaya Bhawan, Lal Kothi Tonk Road Jaipur  

Telephone: +91-141-2742823  
Email- ceo.jaipurmc@gmail.com  

NIB No.63/2019-20  

Notice Inviting Tender  

Notice Inviting Online Bids For Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmopuri, Jaipur  

Nagar nigam jaipur Heritage and Greater Jaipur invites online unconditional bids on behalf of nagar nigam jaipur Heritage and Greater Jaipur through e-procurement portal http://eproc.rajasthan.gov.in from eligible bidders in accordance with the RTPP act 2012 and RTPP rules 2013, amended up to date, and under National Competitive Bidding with Single Stage two envelope system as per criteria mentioned in the tender document, for following works:-

| Name & Address of the Procuring Entity | Name: Commissioner & Administrator  
Address: NAGAR NIGAM JAIPUR Heritage and Greater Jaipur, Pandit Dindayal Uppadhyay Bhawan, Tonk Road, Krishna Nagar, Lal Kothi, Jaipur, Rajasthan 302015 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Matter of Procurement</td>
<td>Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmopuri, Jaipur.</td>
</tr>
<tr>
<td>Period of completion of physical works</td>
<td>18 Months</td>
</tr>
<tr>
<td>Bid Procedure</td>
<td>Single-stage: Two Part (envelope) open competitive eBid procedure at <a href="http://eproc.rajasthan.gov.in">http://eproc.rajasthan.gov.in</a></td>
</tr>
<tr>
<td>Bid Evaluation Criteria (Selection Method)</td>
<td>Least Cost based selection (LCBS)-L1</td>
</tr>
<tr>
<td>Eligibility Criteria</td>
<td>As detailed in bid documents</td>
</tr>
</tbody>
</table>
| Fees | Bidding document fee (Non-Refundable): Rs. 10000/- (Rupees Ten Thousand only)  
Tender Processing Fee (Non-Refundable): Rs. 1000 (RISL Fees) (Rupees One Thousand only) |
| Estimated Procurement Cost | Amount: INR 19.97 Cr. (Rupees Nineteen Crore Fifty Four Lacs Only) |
| Bid Security And Mode of Payment | Amount: INR 39.94 Lacs (Rupees Thirty Nine Lacs Eight Thousand only) |
| Period of on-line availability of Bidding Documents (Start / End Date) | From: 13.03.2020, 6.00 PM onwards till 06.00 PM of 24.04.2020 |
| Site visit | Date/ Time 31.03.2020 at 10:00 AM  
Place to assemble before start of site visit: Meeting Hall, Jaipur Nagar Nigam, Pandit Dindayal Uppadhyay Bhawan, Tonk Road, Krishna Nagar, Lal Kothi, Jaipur, Rajasthan |
| Pre-bid Meeting | Date/ Time 31.03.2020 at 15.30 Hrs  
Place: EC Meeting Hall, Jaipur Nagar Nigam, Pandit Dindayal Uppadhyay Bhawan, Tonk Road, Krishna Nagar, Lal Kothi, Jaipur, Rajasthan |
| Start date of online submission of bid | 18.00 Hrs. onwards on 03.04.2020 |
| Bid Document Downloading End Date and Time | 18.00 Hrs. on 24.04.2020 |
| Last date and time of Online submission of technical proposal and financial proposal | End Date: 25.04.2020 (up to 06.00 P.M.) |
| Last date and time of Physical submission of EMD, Bid document Fee, Bid processing fee & Power of Attorney | Date: 26.04.2020 Time: 02:00 PM |
# Date & Time of Technical Bid Opening
Date: 27.04.2020 Time: 03:00 PM

# Date/ Time/ Place of Financial Bid Opening
Will be intimated later to the Technically qualified bidders

# Bid Validity
120 days from the bid Opening Date

## Note:
1. The interested bidder may submit their proposals online along with a Non-refundable tender fee of Rs 10000/- (rupees Ten Thousand only) towards the cost of Tender Document and RISL processing fee Rs 1000/- (Rupees One Thousand Only) both deposited in the account of Nagar Nigam, Jaipur on website [www.jaiipurmc.org](http://www.jaiipurmc.org). The Scan copy of receipt of online payment will be uploaded on website [http://eproc.rajasthan.gov.in](http://eproc.rajasthan.gov.in) along with the technical bid cover.

2. Any other details or information can be received from the office of the Executive Engineer (project-II) office Room No. 301&302 in working hours of Nagar Nigam Jaipur Heritage and Greater Jaipur.

3. Each bid must be accompanied by Bid Security of 2% of estimated cost deposited online or in the form of a banker’s cheque or demand draft or bank guarantee of a scheduled Bank in India, in specified format, or deposited through eGRAS/net banking, if permitted.in accordance with the provisions of “Rajasthan Transparency in Public Procurement Act 2012 & Rules 2013” in the account of nagar nigam jaipur Heritage and Greater Jaipur website [www.jaiipurmc.org](http://www.jaiipurmc.org). RFP Document can be seen at or obtained from website [http://sppp.rajasthan.gov.in](http://sppp.rajasthan.gov.in) & [http://eproc.rajasthan.gov.in](http://eproc.rajasthan.gov.in). The Scan copy of receipt of online payment will be uploaded on website [http://eproc.rajasthan.gov.in](http://eproc.rajasthan.gov.in) along with the technical bid cover.

4. Bidder, who procured digital certificate as per IT Act 2000 to sign their electronic bids, shall submit their technical and financial offer online on above mentioned web site up to time and date mentioned herein above.

5. In addition to above scanned copies of Original Documents should be uploaded along with the technical Bid/ cover:
   i. Letter of Technical Bid
   ii. Power of Attorney for appointing authorized representative
   iii. Proof of Registration in appropriate class as per bid value.
   iv. certificate of registration in PF/ESI/GST and PAN Card is required
   v. Annexure A,B,C,D,E duly filled with signature.
   vi. All documents of Technical proposal check list enclosed should be duly filled

6. In case of any bidder fails to upload copy of Required Documents as mention at Point No. 1 & 5 the bid of the respective bidder shall not be accepted.

7. Any subsequent addendum/corrigendum shall be published only at the websites sppp.raj.nic.in & [http://eproc.rajasthan.gov.in](http://eproc.rajasthan.gov.in) and will not be published in newspapers. In case there is a holiday on the day of opening of bids, activities assigned on that date shall be carried out on the next working day.

8. Before electronically submitting the bids, it should be ensured that all the bid documents including conditions of contract are digitally signed by the bidder.

9. Department will not be responsible for delay in online submission due to any reason. For this, bidders are requested to upload the complete bid well advance in time so as to avoid 11th hour issues like slow speed; choking of web site due to heavy load or any other unforeseen problems.

10. All the prospective bidders are suggested to visit the work sites and studied bid documents thoroughly before the submission of bid.

11. The procuring entity reserves the sole right to cancel the bid process and reject any or all of the Bids without assigning any reason.

12. Procurement entity disclaims any factual/ or other errors in the bidding document (the onus is purely on the individual bidders to verify such information) and the information provided therein are intended only to help the bidders to prepare a logical bid-proposal.

13. No conditional bids shall be accepted and such bids shall be summarily rejected forthwith.

14. The provisions of RTPP Act 2012 and Rules 2013 thereto shall be applicable for this procurement. Furthermore, in case of any inconsistency in any of the provisions of this bidding document with the RTPP Act 2012 and Rules thereto, the latter shall prevail & Provisions of PWF & AR shall be applicable.

[Signature]
Commissioner & Administrator
Nagar Nigam Jaipur
Greater and Heritage
VOLUME - I
SECTION I
INSTRUCTION TO BIDDERS
Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

Contents

1. General
2. Contents of Bidding Document
3. Preparation of Bids
4. Submission and Opening of Bids
5. Evaluation and Comparison of Bids
6. Award of Contract
7. Redressal of Grievances during Procurement Process (Appeals)
8. Annexure A: Compliance with the code of Integrity and No Conflict of Interest
9. Annexure B: Declaration by the Bidder Regarding Qualifications
10. Annexure C: Grievance Redressal During Procurement Process (Appeals)
11. Annexure D: Additional Conditions of Contract
12. Annexure E: Additional Clause’s
### Important Instruction:
The Law relating to procurement “The Rajasthan Transparency in Public Procurement Act, 2012” [hereinafter called the Act] and the “Rajasthan Public Procurement Rules, 2013” [hereinafter called the Rules] under the said Act have come into force which are available on the website of State Public Procurement Portal [http://sppp.rajasthan.gov.in](http://sppp.rajasthan.gov.in). Therefore, the Bidders are advised to acquaint themselves with the provisions of the Act and the Rules before participating in the Bidding process. If there is any discrepancy between the provisions of the Act and the Rules and this Bidding Document, the provisions of the Act and the Rules shall prevail.

## 1. General

| 1.1 Scope of Bid | 1.1.1 | In support of the Invitation to Bid indicated in the Bid Data Sheet (BDS), the Procuring Entity as indicated in the BDS, issues this Bidding Document for the procurement of works as named in the BDS and as specified in Section V: Procuring Entity’s Requirements. |
| 1.2 Interpretation | 1.2.1 | Throughout this Bidding Document: The term “in writing” means communicated in written form through letter, fax, e-mail etc. with proof of receipt. If the context so requires, singular means plural and vice versa; and “Day” means calendar day. |
| 1.3 Code of Integrity | 1.3.1 | As per Annexure -A of these ITB |
|                  | 1.3.2 | Conflict of Interest: As per Annexure -A of these ITB. |
|                  | 1.3.3 | The Bidder shall have to give a declaration regarding compliance of the Code of Integrity prescribed in the Act, the Rules and stated above in this Clause along with its Bid, in the format specified in Section IV, Bidding Forms. |
|                  | 1.3.4 | Breach of Code of Integrity by the Bidder: Without prejudice to the provisions of Chapter IV of the Rajasthan Transparency in Public Procurement Act, in case of any breach of the Code of Integrity by a Bidder or prospective Bidder, as the case may be, the Procuring Entity may take appropriate action in accordance with the provisions of sub-section (3) of section 11 and section 46 of the Act. |
| 1.4 Eligible Bidders | 1.4.1 | A Bidder may be a natural person, private Entity, government-owned Entity or, where permitted in the Bidding documents, any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture [JV], Consortium or Association. In the case of a Joint Venture, Consortium or Association: -all parties to the Joint Venture, Consortium or Association shall sign the Bid and they shall be jointly and severally liable; and a Joint Venture, Consortium or Association shall nominate a representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the Joint Venture, Consortium or Association during the Bidding process. In the event the Bid of Joint Venture, Consortium or Association is accepted, either they shall form a registered Joint Venture, Consortium or Association as company/firm or otherwise all the parties |
### Section – I Instruction to Bidders

#### RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

<table>
<thead>
<tr>
<th>Section</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>1.4.2</td>
<td>A Bidder, and all parties constituting the Bidder, shall have the nationality of India. In case of International Competitive Bidding or Joint Venture, Consortium or Association [where permitted], the nationality of the Bidder and all parties constituting the Bidder shall be of India or an eligible country declared as such by Government of India. A Bidder shall be deemed to have nationality of a country if the Bidder is a citizen or constituted or incorporated and operates in conformity with the provisions of the Laws of that country. This criterion shall also apply to the determination of the nationality of proposed Sub-Contractors or suppliers for any part of the Contract including related services.</td>
</tr>
<tr>
<td>1.4.3</td>
<td>A Bidder should not have a conflict of interest in the procurement in question as stated in the Rule 81 of RTPP 2013 and this Bidding document.</td>
</tr>
<tr>
<td>1.4.4</td>
<td>A Bidder debarred under section 46 of the Act shall not be eligible to participate in any procurement process undertaken by any Procuring Entity, if debarred by the State Government; and a Procuring Entity, if debarred by such Procuring Entity.</td>
</tr>
<tr>
<td>1.4.5</td>
<td>The Bidder must be a registered Contractor enlisted with any Govt. Department/ Organization of Govt. of Rajasthan as provided in BDS. He shall furnish necessary proof for the same. PSU can participate in tender without registration.</td>
</tr>
</tbody>
</table>
| 1.4.6   | i. Any change in the constitution of the firm, etc., shall be notified forthwith by the Bidder in writing to the Procuring Entity and such change shall not relieve any former partner/member of the firm, etc. from any liability under the Contract.  
   ii. No new partner/partners shall be accepted in the firm by the Bidder in respect of the contract unless he/they agree to abide by all its terms, conditions and deposit with the Procuring Entity a written agreement to this effect. The Bidder’s receipt for acknowledgement or that of any partners subsequently accepted as above shall bind all of them and will be sufficient discharge for any of the purpose of the Contract.  
   iii. The status of the lead partner/representative of the Joint Venture, Consortium or Association as a major stake holder shall not change without the consent of the Procuring Entity. New major stake holder must agree to abide by all terms and conditions of the Contract. |
| 1.4.7   | Bidders shall provide such evidence of their continued eligibility satisfactory to the Procuring Entity, should the Procuring Entity request. |
| 1.4.8   | In case a prequalification or empanelment or registration process has been conducted prior to the bidding process, this bidding shall be open only to the pre-
Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmupuri, Jaipur.

<table>
<thead>
<tr>
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<th>qualified, empaneled or registered Bidders.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.9</td>
<td>Each Bidder shall submit only one Bid except in case of alternative bids, if permitted.</td>
</tr>
<tr>
<td>1.4.10</td>
<td>Bidder who is not registered under the GST can bid, however selected bidder shall have to be got registered and submit the proof of registration before signing the Contract agreement. He is also required to provide proof of Permanent Account Number (PAN) given by Income Tax Department.</td>
</tr>
</tbody>
</table>

2. Contents of Bidding Document

<table>
<thead>
<tr>
<th>2.1 Sections of the Bidding Document</th>
<th>2.1.1 The Bidding Document consists of Parts I, II, and III, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB Clause 2.3 [Amendment of Bidding Document]. <strong>Part I: Bidding Procedures</strong> Section I. Instructions to Bidders (ITB) Section II. Bid Data Sheet (BDS) Section III. Evaluation and Qualification Criteria Section IV. Bidding Forms <strong>Part II: Requirements</strong> Section V. Procuring Entity's Requirements. <strong>Part III: Contract</strong> Section VI A. General Conditions of Contract [GCC] Section VI B. Special Conditions of Contract [SCC] Section VI C. Contract Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2</td>
<td>The Invitation for Bids (NIB) issued by the Procuring Entity is also part of the Bidding Document.</td>
</tr>
<tr>
<td>2.1.3</td>
<td>i. The Bidding Document shall be uploaded on the e-procurement portal, <a href="https://eproc.rajasthan.gov.in">eproc.rajasthan.gov.in</a> along with the Notice Inviting Bids. The complete Bidding Document shall also be placed on the State Public Procurement Portal <a href="http://sppp.rajasthan.gov.in">http://sppp.rajasthan.gov.in</a>. The prospective Bidders may download the bidding document from these portals. The price of the Bidding Document and processing fee of e-bidding shall have to be paid to the Procuring Entity in the amount and manner as specified in Bid Data Sheet and e-procurement portal.</td>
</tr>
<tr>
<td>2.1.4</td>
<td>The Procuring Entity is not responsible for the completeness of the Bidding Document and its addenda, if they were not downloaded correctly from the e-procurement portal or the State Public Procurement Portal.</td>
</tr>
<tr>
<td>2.1.5</td>
<td>The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Document. Failure to furnish all information or authentic documentation required by the Bidding Document may result in the rejection of the Bid.</td>
</tr>
</tbody>
</table>

2.2 Clarification of Bidding Document and

<p>| 2.2.1 | The Bidder shall be deemed to have carefully examined the conditions, specifications, size, make and drawings, etc. of the Works and Related Services to be provided. |</p>
<table>
<thead>
<tr>
<th>Section – I Instruction to Bidders</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.</td>
</tr>
</tbody>
</table>

| Pre-Bid Conference | If any bidder has any doubts as to the meaning of any portion of the conditions or of the specifications, drawings etc., it shall, before submitting the Bid, refer the same to the Procuring Entity and get clarifications. A Bidder requiring any clarification of the Bidding Document shall contact the Procuring Entity in writing or e-mail at the Procuring Entity’s address indicated in the BDS. The Procuring Entity will respond in writing or e-mail to any request for clarification, within seven days provided that such request is received no later than twenty-one (21) days prior to the deadline for submission of Bids as specified in ITB Sub-Clause 4.2.1[Deadline for Submission of Bids]. The clarification issued, including a description of the inquiry but without identifying its source shall also be placed on the State Public Procurement Portal and should the Procuring Entity deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB Clause 2.3 [Amendment of Bidding Document] through an addendum which shall form part of the Bidding Document. |
| 2.2.2 | The Bidder or his authorized representative is invited to attend the Pre-Bid Conference, if provided for in the BDS. The purpose of the Pre-Bid Conference will be to clarify issues and to answer questions on any matter related to this procurement that may be raised at that stage. If required, a conducted site visit may be arranged by the Procuring Entity. |
| 2.2.3 | The Bidder is requested, to submit questions in writing, to reach the Procuring Entity not later than one week before the date of Pre-Bid Conference. |
| 2.2.4 | Minutes of the Pre-Bid Conference, including the text of the questions raised, and the responses given, without identifying the source, will be transmitted promptly to all Bidders who attended the Pre-Bid Conference and shall also be placed on the State Public Procurement Portal and the e-procurement portal. Any modification to the Bidding Document that may become necessary as a result of the Pre-Bid Conference shall be made by the Procuring Entity exclusively through the issue of an addendum (part of Bid document) and not through the minutes of the Pre-Bid Conference. |
| 2.2.5 | At any time prior to the deadline for submission of the Bids, the Procuring Entity, Suo-moto, may also amend the Bidding Document, if required, by issuing an addendum which will form part of the Bidding Document. |
| 2.2.6 | Non-attendance at the Pre-Bid Conference will not be a cause for disqualification of a Bidder. |

2.3 Amendment of Bidding Document

2.3.1 Any addendum issued shall be part of the Bidding Document and shall be uploaded on the State Public Procurement Portal and the e-procurement portal.

2.3.2 To give prospective Bidders reasonable time in which to
take an addendum into account in preparing their Bids, the Procuring Entity may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB Sub-Clause 4.2 [Deadline for Submission of Bids], under due publication on the State Public Procurement Portal and the e-procurement portal and newspapers.

### 3. Preparation of Bids

<table>
<thead>
<tr>
<th>3.1</th>
<th>Cost of Bidding</th>
<th>3.1.1</th>
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<tbody>
<tr>
<td></td>
<td>The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>3.2</th>
<th>Language of Bid</th>
<th>3.2.1</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Procuring Entity, shall be written in English/Hindi or a language specified in the BDS. 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 duly accepted by the Bidder in English/Hindi or the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.</td>
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<table>
<thead>
<tr>
<th>3.3</th>
<th>Documents Comprising the Bid</th>
<th>3.3.1</th>
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<tr>
<td></td>
<td>The Bid shall comprise of two covers, one containing the Technical Bid/Proposal and the other the Financial or Price Bid/Proposal. One more cover containing scanned copies of proof of payment in form specified in Bid Data Sheet, of the price of Bidding Document, processing fee and Bid</td>
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<tr>
<td>Section – I Instruction to Bidders</td>
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<tr>
<td>Jaipur Municipal Corporation Greater &amp; Heritage</td>
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<tr>
<td><strong>RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.</strong></td>
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<thead>
<tr>
<th>3.3.2</th>
<th>The Technical Bid/ Proposal shall contain the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Technical Bid/ Proposal Submission Sheet and Technical Bid containing the filled-up Bidding Forms and Declarations related to Technical Bid and Code of Integrity given in Section IV [Bidding Forms];</td>
</tr>
<tr>
<td>ii.</td>
<td>Proof of payment of price of Bidding Document, processing fee, Bid Security, in accordance with ITB Clause 3.10;</td>
</tr>
<tr>
<td>iii.</td>
<td>Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB Clause 3.11;</td>
</tr>
<tr>
<td>iv.</td>
<td>Documentary evidence in accordance with ITB Clause 3.7 establishing the Bidder’s eligibility to bid;</td>
</tr>
<tr>
<td>v.</td>
<td>Documentary evidence in accordance with ITB Clause 3.8 establishing the Bidder’s qualifications to perform the contract if its Bid is accepted;</td>
</tr>
<tr>
<td>vi.</td>
<td>Drawings/ designs in support of the Works to be executed;</td>
</tr>
<tr>
<td>vii.</td>
<td>The Notice Inviting Bids;</td>
</tr>
<tr>
<td>viii.</td>
<td>Any other document required in the BDS; and</td>
</tr>
<tr>
<td>ix.</td>
<td>Others considered necessary to strengthen the Bid submitted.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.3.3</th>
<th>The Financial Bid/ Price Proposal shall contain the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Bid/ Price Proposal Submission Sheet and the applicable Price Schedules, in accordance with ITB Clauses 3.4, 3.5;</td>
<td></td>
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<tr>
<td>Any other document required in the BDS.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>3.4</th>
<th><strong>Bid Submission Sheets and Price Schedules</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.1</td>
<td>The Bidder shall submit the Technical Bid and Financial Bid using the Bid Submission Sheets provided in Section IV [Bidding Forms]. These forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.</td>
</tr>
<tr>
<td>3.4.2</td>
<td>The Bidder shall submit as part of the Financial Bid, the Price Schedules for Works, using the forms provided in Section IV [Bidding Forms].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.5</th>
<th><strong>Bid Prices</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5.1</td>
<td>i. In case of Item Rate Contracts, the Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder will not be paid for by the Procuring Entity but will have to be executed and shall be deemed covered by the rates for other items and prices in the Bill of Quantities.</td>
</tr>
<tr>
<td></td>
<td>ii. In case of Percentage Rate Contracts, combined single percentage above or below must be quoted by the Bidder for all items of the Bill of Quantities.</td>
</tr>
<tr>
<td></td>
<td>iii. In case of Lump Sum Contracts, only Total Price</td>
</tr>
</tbody>
</table>
### Instruction to Bidders

RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkley Basis at Pondrik Park Brahampuri, Jaipur.

| 3.5.2 | Prices quoted by the Bidder shall be fixed during the Bidder’s Performance of the Contract and not subject to variation on any account, unless otherwise specified in the BDS. A Bid submitted with an adjustable price quotation shall be treated as non-responsive and shall be rejected, pursuant to ITB Clause 5.7 [Responsiveness of Bids]. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero. |
| 3.5.3 | All duties, other levies payable by the Bidder under the contract, or for any other cause, shall be included in the rates and prices, and the total Bid Price submitted by the Bidder. The rates shall be excluding GST. |
| 3.6.1 | The unit rates and the prices shall be quoted by the Bidder entirely in Indian Rupees (INR) unless otherwise specified in BDS. All payments shall be made in Indian Rupees only, unless otherwise specified in the BDS. |

#### Documents Establishing the Eligibility of the Bidder

3.7.1 To establish their eligibility in accordance with ITB Clause 1.4 [Eligible Bidders], Bidders shall: complete the eligibility declarations in the Bid Submission Sheet and Declaration Form included in Section IV [Bidding Forms]; if the Bidder is an existing or intended Joint Venture [JV], Consortium or Association in accordance with ITB Sub-Clause 1.4.1, shall submit a copy of the Agreement, or a letter of intent to enter into such Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended JV, Consortium or Association as appropriate; and the existing or intended JV / Consortium shall authorize an individual/ partner in one of the firms as lead partner of the JV / Consortium to act and commit all the partners of JV / Consortium for the Bid.

#### Documents Establishing the Qualifications of the Bidder

3.8.1 To establish its qualifications to perform the Contract, the Bidder shall submit as part of its Technical Proposal the documentary evidence indicated for each qualification criteria specified in Section III, [Evaluation and Qualification Criteria].
**Section – I Instruction to Bidders**
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

| 3.9 | Period of Validity of Bids | 3.9.1 | Bids shall remain valid for 120 days or the period specified in the BDS after the Bid submission deadline date as specified by the Procuring Entity. A Bid valid for a shorter period shall be rejected by the Procuring Entity as non-responsive. |
| 3.9.2 | In exceptional circumstances, prior to the expiration of the Bid validity period, the Procuring Entity may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. The Bid Security or a Bid Securing Declaration in accordance with ITB Clause 3.10 [Bid Security] shall also be got extended for thirty days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its Bid Security or a Bid Securing Declaration. A Bidder granting the request shall not be permitted to modify its Bid. |

| 3.10 | Bid Security | 3.10.1 | Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, a Bid Security for the amount specified in the BDS. |
| 3.10.2 | Bid Security shall be 10% of the value of the Works as indicated in the NIB. For bidders registered with the Procuring Entity, the bid security shall be 10% of the value of works indicated in the NIB. The bid security shall be in Indian Rupees, if not otherwise specified in the BDS. |
| 3.10.3 | The Bid Security may be given in the form of a banker’s cheque or demand draft or bank guarantee of a Scheduled Bank in India, in specified format, or deposited through eGRAS/net-banking, if permitted. |
| 3.10.4 | In lieu of Bid Security, a Bid Securing Declaration shall be taken from Government Departments and State Government Public Sector Enterprises, Autonomous bodies, Registered Societies, Cooperative Societies which are owned or controlled or managed by the State Government, Public Sector Enterprises of Central Government. For the Bid Securing Declaration, the Bidder shall use the form included in Section IV [Bidding Forms]. |
| 3.10.5 | Scanned copy of Bid Security instrument or a Bid Securing Declaration shall necessarily accompany the sealed Bid. Any Bid not accompanied by Bid Security or Bid Securing Declaration, if not exempted, shall be liable to be rejected. |
| 3.10.6 | Bid Security of a Bidder lying with the Procuring Entity in respect of other Bids awaiting decision shall not be adjusted towards Bid Security for this Bid. The Bid Security originally deposited may, however be taken into consideration in case Bids are re-invited. |
| 3.10.7 | The issuer of the Bid Security and the confirmer, if any, of the Bid Security, as well as the form and terms of the Bid Security, must be acceptable to the Procuring Entity. |
| 3.10.8 | Prior to submitting its Bid, a Bidder may request the... |
### Section – I Instruction to Bidders

**RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkay Basis at Pondrik Park Brahampuri, Jaipur.**

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Description</th>
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<tr>
<td>3.10.3</td>
<td>Procuring Entity to confirm the acceptability of a proposed issuer of a Bid Security or of a proposed confirmer, if different than as specified in ITB Clause 3.10.3. The Procuring Entity shall respond promptly to such a request.</td>
</tr>
<tr>
<td>3.10.9</td>
<td>The bank guarantee presented as Bid Security shall be got confirmed from the concerned issuing bank. However, the confirmation of the acceptability of a proposed issuer or of any proposed confirmer does not preclude the Procuring Entity from rejecting the Bid Security on the ground that the issuer, or the confirmer, as the case may be, has become insolvent or is under liquidation or has otherwise ceased to be creditworthy.</td>
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<tr>
<td>3.10.10</td>
<td>The Bid Security of unsuccessful Bidders shall be refunded soon after final acceptance of successful Bid and signing of Contract Agreement and submitting Performance Security by successful Bidder pursuant to ITB Clause 6.4 [Performance Security].</td>
</tr>
</tbody>
</table>
| 3.10.11   | The Bid Security taken from a Bidder shall be forfeited in the following cases, namely:
  i. when the Bidder withdraws or modifies his Bid after opening of Bids; or
  ii. when the Bidder does not execute the agreement in accordance with ITB Clause 6.3 [Signing of Contract] after issue of letter of acceptance/placement of Work order within the specified time period; or
  iii. when the Bidder fails to commence the Works as per Work Order within the time specified; or
  iv. when the Bidder does not deposit the Performance Security in accordance with ITB Clause 6.4 [Performance Security]; in the prescribed time limit after the work order is placed;
  v. if the Bidder breaches any provision of the Code of Integrity prescribed for Bidders in the Act and Chapter VI of the Rules or as specified in ITB Clause 1.3 [Code of Integrity]; or
  vi. if the Bidder does not accept the correction of its Bid Price pursuant to ITB Sub-Clause 5.5 [Correction of Arithmetical Errors]. |
| 3.10.12   | In case of the successful bidder, the amount of Bid Security may be adjusted in arriving at the amount of the Performance Security or refunded if the successful bidder furnishes the full amount of Performance Security. No interest will be paid by the Procuring Entity on the amount of Bid Security. |
## Section – I Instruction to Bidders

### RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

| 3.10.13 | The Procuring Entity shall promptly refund the Bid Security of the Bidders at the earliest of any of the following events, namely:  
|         | i. the expiry of validity of Bid Security;  
|         | ii. the execution of agreement for procurement and Performance Security is furnished by the successful bidder;  
|         | iii. the cancellation of the procurement process; or the withdrawal of Bid prior to the deadline for presenting Bids, unless the Bidding Document stipulates that no such withdrawal is permitted. |

| 3.10.14 | The Bid Security of a Joint Venture, Consortium or Association must be in the name of the Joint Venture, Consortium or Association that submits the Bid. If the Joint Venture, Consortium or Association has not been legally constituted at the time of Bidding, the members of the proposed consortium or JV shall enter into an Agreement to form a legally constituted JV / Consortium after the issue of Letter of Acceptance / Letter of Intent to them and also declare a partner as the lead partner in whose name the Bid Security may be submitted. |

| 3.11 | Format and Signing of Bid  
| 3.11.1 | All pages of the Technical and Financial Bid shall be digitally signed by the Bidder or authorized signatory on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. In case of a Joint Venture, Consortium or Association, if the Joint Venture, Consortium or Association has not been legally constituted at the time of Bidding, all the members of the proposed Joint Venture, Consortium or Association shall digitally sign the Bid. |

### 4. Submission and Opening of Bids

| 4.1 | Sealing and Marking of Bids  
| 4.1.1 | Bidders shall submit their Bids to the Procuring Entity electronically only on the e-procurement portal, eproc.raj.nic.in. In submission of their Bids, the Bidders should follow the step by step instructions given on the e-procurement portal.  
| 4.1.2 | The Bidder shall enclose the Technical Bid and the Financial Bid in separate covers. The proof of payment of price of Bidding Document, processing fee and Bid Security shall be enclosed in third cover. The price of Bidding Document and Bid Security shall be paid in the name of the Procuring Entity and the processing fee shall be paid in the name of RISL. |

| 4.2 | Deadline for Submission of Bids  
| 4.2.1 | Bids shall be submitted electronically only up to the time and date specified in the Notice Inviting Bids and BDS or an extension issued thereof. |

| 4.3 | Withdrawal, Substitution and Modification of  
| 4.3.1 | A Bidder may withdraw, substitute or modify its Bid after it has been submitted by submitting electronically on the e-procurement portal a written Withdrawal/
<table>
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<th>Section – I Instruction to Bidders</th>
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<tr>
<td>RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.</td>
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<th>Bids</th>
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<tr>
<td>Substitutions/ Modifications etc. Notice on the e- procurement portal, duly digitally signed by the Bidder or his authorized representative and shall include a copy of the authorization in accordance with ITB Sub-Clause 3.11.1 [Format and Signing of Bid]. The corresponding Withdrawal, Substitution or Modification of the Bid must accompany the respective written Notice. All Notices must be received by the Procuring Entity on the e-procurement portal prior to the deadline specified for submission of Bids in accordance with ITB Sub-Clause 4.2. [Deadline for Submission of Bids].</td>
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| 4.3.2                                                               | No Bid shall be withdrawn, substituted or modified in the interval between the deadline for submission of the Bid and the expiration of the period of Bid validity specified in ITB Clause 3.9. [Period of Validity of Bids] or any extension thereof. |

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<tr>
<th>4.4 Bid Opening</th>
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<tr>
<td>4.4.1 The electronic Technical Bids shall be opened by the Bids opening committee constituted by the Procuring Entity at the time, date and place specified in the Bid Data Sheet in the presence of the Bidders or their authorized representatives, who choose to be present.</td>
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| 4.4.2                                                               | The Bids opening committee may co-opt experienced persons in the committee to conduct the process of Bid opening. |

| 4.4.3                                                               | The Bidders may choose to witness the electronic Bid opening procedure online. |

| 4.4.4                                                               | The Financial Bids shall be kept unopened until the time of opening of the Financial Bids. The date, time, and location of electronic opening of the Financial Bids shall be intimated to the bidders who are found qualified by the Procuring Entity in evaluation of their Technical Bids. |

| 4.4.5                                                               | The Bids opening committee shall prepare a list of the Bidders or their representatives attending the opening of Bids and obtain their signatures on the same. The list shall also contain the representative’s name and telephone number and corresponding Bidders’ names and addresses. The authority letters brought by the representatives shall be attached to the list. The list shall be signed by all the members of Bids opening committee with date and time of opening of the Bids. |

<p>| 4.4.6                                                               | First, covers marked as “WITHDRAWAL” shall be opened, read out, and recorded and the covers containing the corresponding Technical Bids and Financial Bids shall not be opened. No Bid shall be permitted to be withdrawn unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is readout and recorded at Bid opening. If the withdrawal notice is not accompanied by the valid authorization, the withdrawal shall not be permitted and the corresponding Technical Bid shall be opened. Next, covers marked as “SUBSTITUTION Technical |</p>
<table>
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<th>Section – I Instruction to Bidders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.</strong></td>
</tr>
</tbody>
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| **4.4.7** | All other covers containing the Technical Bids shall be opened one at a time and the following read out and recorded-
| | i. The name of the Bidder;
| | ii. Whether there is a modification or substitution;
| | iii. Whether proof of payment of Bid Security or Bid Securing Declaration, if required, payment of price of the Bidding Document and processing fee have been enclosed;
| | iv. Any other details as the Bids opening committee may consider appropriate. |

| **4.4.8** | Only Technical Bids shall be read out and recorded at the bid opening and shall be considered for evaluation. No Bid shall be rejected at the time of opening of Technical Bids except Alternative Bids (if not permitted) and Bids not accompanied with the proof of payment of the required price of Bidding Document, processing fee and Bid Security. |

| **4.4.9** | The Bids opening committee shall prepare a record of opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, modification, or alternative offer (if they were permitted), any conditions put by Bidder and the presence or absence of the price of Bidding Document, processing fee and Bid Security. The Bidders or their representatives, who are present, |

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**Bid**" shall be opened, read out, recorded. The covers containing the Substitution Technical Bids and/ or Substitution Financial Bids shall be exchanged for the corresponding covers being substituted. Only the Substitution Technical Bids shall be opened, read out, and recorded. Substitution Financial Bids will remain unopened in accordance with ITB Sub-Clause 4.4.4. No Bid shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at Bid opening.

Covers marked as “MODIFICATION Technical Bid" shall be opened thereafter, read out and recorded with the corresponding Technical Bids. No Technical Bid and/ or Financial Bid shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at opening of Technical Bids. Only the Technical Bids, both Original as well as Modifications to be opened, read out, and recorded at the opening. Financial Bids, both Original as well as Modification, will remain unopened in accordance with ITB Sub-Clause 4.4.4.
shall sign the record. The members of the Bids opening committee shall also sign the record with date.

4.4.10 After completion of the evaluation of the Technical Bids, the Procuring Entity shall invite Bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified to attend the electronic opening of the Financial Bids. The date, time, and location of the opening of Financial Bids will be intimated in writing by the Procuring Entity. Bidders shall be given reasonable notice of the opening of Financial Bids.

4.4.11 The Procuring Entity shall notify Bidders in writing whose Technical Bids have been rejected on the grounds of being substantially non-responsive and not qualified in accordance with the requirements of the Bidding Document.

4.4.12 The Bids opening committee shall conduct the electronic opening of Financial Bids of all Bidders who submitted substantially responsive Technical Bids and have qualified in evaluation of Technical Bids, in the presence of Bidders or their representatives who choose to be present at the address, date and time specified by the Procuring Entity.

4.4.13 All covers containing the Financial Bids shall be opened one at a time and the following read out and recorded-

i. the name of the Bidder;
ii. whether there is a modification or substitution;
iii. the Bid Prices;
iv. any other details as the Bids opening committee may consider appropriate.

After all the Bids have been opened, their hard copies shall be printed and shall be initialed and dated on the first page of each Bid by the members of the Bids opening committee. All the pages of the Price Schedule and letters, Bill of Quantities attached shall be initialed and dated by the members of the committee. Key information such as prices, completion period, etc. shall be encircled and unfilled spaces in the Bids shall be marked and signed with date by the members of the Bids opening committee.

4.4.14 The Bids opening committee shall prepare a record of opening of Financial Bids that shall include as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification, the Bid Price, any conditions, any discounts and alternative offers (if they were permitted). The Bidders or their representatives, who are present, shall sign the record. The members of the Bids opening committee shall also sign the record with date.

5. Evaluation and Comparison of Bids

5.1 Confidentiality

5.1.1 Information relating to the examination, evaluation, comparison, and post-qualification of Bids, and recommendation of contract award, shall not be
<table>
<thead>
<tr>
<th>Section</th>
<th>Instruction to Bidders</th>
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</thead>
<tbody>
<tr>
<td>5.1.2</td>
<td>Any attempt by a Bidder to influence the Procuring Entity in its examination of qualification, evaluation, comparison of the Bids or Contract award decisions may be resulting in the rejection of its Bid, in addition to the legal action which may be taken by the Procuring Entity under the Act and the Rules.</td>
</tr>
<tr>
<td>5.1.3</td>
<td>Notwithstanding ITB Sub-Clause 5.1.2 [Confidentiality], from the time of opening the Bid to the time of Contract award, if any Bidder wishes to contact the Procuring Entity on any matter related to the Bidding process, it shall do so in writing.</td>
</tr>
<tr>
<td>5.1.4</td>
<td>In addition to the restrictions specified in section 49 of the Act, the Procuring Entity, while procuring a subject matter of such nature which requires the procuring Entity to maintain confidentiality, may impose condition for protecting confidentiality of such information.</td>
</tr>
<tr>
<td>5.2</td>
<td>Clarification of Technical or Financial Bids</td>
</tr>
<tr>
<td>5.2.1</td>
<td>To assist in the examination, evaluation, comparison and qualification of the Technical or Financial Bids, the Bid evaluation committee may, at its discretion, ask any Bidder for a clarification regarding his Bid. The committee’s request for clarification and the response of the Bidder shall be in writing.</td>
</tr>
<tr>
<td>5.2.2</td>
<td>Any clarification submitted by a Bidder with regard to his Bid that is not in response to a request by the Bid evaluation committee shall not be considered.</td>
</tr>
<tr>
<td>5.2.3</td>
<td>No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetical errors discovered by the Bid evaluation committee in the evaluation of the financial Bids.</td>
</tr>
<tr>
<td>5.2.4</td>
<td>No substantive change to qualification information or to a submission, including changes aimed at making an unqualified Bidder, qualified or an unresponsive submission, responsive shall be sought, offered or permitted.</td>
</tr>
<tr>
<td>5.3</td>
<td>Deviations, Reservations and Omissions in Technical or Financial Bids</td>
</tr>
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</table>
| 5.3.1   | During the evaluation of Technical or Financial Bids, the following definitions apply:  
  i. “Deviation” is a departure from the requirements specified in the Bidding Document;  
  ii. “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and  
  iii. “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Document. |
| 5.4     | Nonmaterial Non-conformities in Technical or Financial Bids |
| 5.4.1   | Provided that a Technical or Financial Bid is substantially responsive, the Procuring Entity may waive any non-conformities (with recorded reasons) in the Bid that do not constitute a material deviation, reservation or omission. |
Provided that a Technical or Financial Bid is substantially responsive, the Procuring Entity may request the Bidder to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Request for information or documentation on such nonconformities shall not be related to any aspect of the Financial Proposal of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

*Provided that a Technical or Financial Bid is substantially responsive, the Procuring Entity will rectify nonmaterial nonconformities or omissions (with recorded reasons). To this effect, the Bid Price shall be adjusted during evaluation of Financial Proposals for comparison purposes only, to reflect the price of the missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section III, Evaluation and Qualification Criteria. *[This ITB Sub-Clause should be kept only when considered necessary]*

Provided that a Financial Bid is substantially responsive, the Bid evaluation committee shall correct arithmetical errors during evaluation of Financial Bid on the following basis:

i. if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

ii. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail, and the total shall be corrected; and

iii. if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.

If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified, and its Bid Security shall be forfeited, or its Bid Securing Declaration shall be executed.

The Procuring Entity shall examine the Technical or Financial Bids to confirm that all documents and technical documentation requested in ITB Sub-Clause 3.3 [Documents Comprising the Bid] have been provided, and to determine the completeness of each document submitted.

The Procuring Entity shall confirm, following the opening of the Technical or Financial Bids, that the following documents and information have been
Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

<table>
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<tr>
<th>Provided:</th>
<th>The Procuring Entity’s determination of the responsiveness of a Technical or Financial Bid is to be based on the contents of the Bid itself, as defined in ITB Sub-Clause 3.3 [Documents Comprising the Bid].</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Bid is signed, as per the requirements listed in the Bidding documents;</td>
<td>A substantially responsive Technical or Financial Bid is one that meets without material deviation, reservation, or omission to all the terms, conditions, and specifications of the Bidding Document. A material deviation, reservation, or omission is one that:</td>
</tr>
<tr>
<td>ii. Bid has been sealed as per instructions provided in the Bidding documents;</td>
<td>(a) if accepted, would-</td>
</tr>
<tr>
<td>iii. Bid is valid for the period, specified in the Bidding documents.</td>
<td>i. affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in Section V, Schedule of Supply; or</td>
</tr>
<tr>
<td>iv. Bid is accompanied by Bid Security or Bid securing declaration;</td>
<td>ii. limits in any substantial way, inconsistent with the Bidding Document, the Procuring Entity’s rights or the Bidder’s obligations under the proposed Contract; or</td>
</tr>
<tr>
<td>v. Bid is unconditional and the Bidder has agreed to give the required performance Security;</td>
<td>(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.</td>
</tr>
<tr>
<td>vi. Price Schedules in the Financial Bids are in accordance with ITB Clause 3.4 [Bid Submission Sheets and Price Schedules];</td>
<td></td>
</tr>
<tr>
<td>vii. written confirmation of authorization to commit the Bidder;</td>
<td>The Procuring Entity shall examine the technical aspects of the Bid in particular, to confirm that requirements of Section V, Procuring Entity’s Requirements have been met without any material deviation, reservation, or omission.</td>
</tr>
<tr>
<td>viii. Declaration by the Bidder in compliance of Section 7 and 11 of the Act; and Other conditions, as specified in the Bidding Document are fulfilled.</td>
<td>If a Technical or Financial Bid is not substantially responsive to the Bidding Document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by the Bidder by correction of the</td>
</tr>
</tbody>
</table>

Jaipur Municipal Corporation Greater & Heritage  Section I ITB17
### Section – I Instruction to Bidders

**RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunked Basis at Pondrik Park Brahampuri, Jaipur.**

<table>
<thead>
<tr>
<th>Section</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.8</td>
<td>Examination of Terms and Conditions of the Technical or Financial Bids</td>
</tr>
<tr>
<td>5.8.1</td>
<td>The Procuring Entity shall examine the Bids to confirm that all terms and conditions specified in the GCC and the SCC have been accepted by the Bidder without any material deviation or reservation.</td>
</tr>
<tr>
<td>5.8.2</td>
<td>The Procuring Entity shall evaluate the technical aspects of the Bid submitted in accordance with ITB Clauses 3.3 [Documents Comprising the Bid] and to confirm that all requirements specified in Section V [Procuring Entity’s Requirements] of the Bidding Document and all amendments or changes requested by the Procuring Entity in accordance with ITB Clause 2.3 [Amendment of Bidding Document] have been met without any material deviation or reservation.</td>
</tr>
<tr>
<td>5.9</td>
<td>Evaluation of Qualification of Bidders in Technical Bids</td>
</tr>
<tr>
<td>5.9.1</td>
<td>The determination of qualification of a Bidder in evaluation of Technical Bids shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB Clause 3.8 [Documents Establishing the Qualifications of the Bidder] and in accordance with the qualification criteria indicated in Section III [Evaluation and Qualification Criteria]. Factors not included in Section III, shall not be used in the evaluation of the Bidder’s qualification.</td>
</tr>
<tr>
<td>5.10</td>
<td>Evaluation of Financial Bids</td>
</tr>
<tr>
<td>5.10.1</td>
<td>The Procuring Entity shall evaluate each Financial Bid, the corresponding Technical Bid of which has been determined to be substantially responsive.</td>
</tr>
<tr>
<td>5.10.2</td>
<td>To evaluate a Financial Bid, the Procuring Entity shall only use all the criteria and methodologies defined in this Clause and in Section III, Evaluation and Qualification Criteria. No other criteria or methodology shall be permitted.</td>
</tr>
<tr>
<td>5.10.3</td>
<td>To evaluate a Financial Bid, the Procuring Entity shall consider the following:</td>
</tr>
<tr>
<td></td>
<td>i. the Bid Price quoted in the Financial Bid;</td>
</tr>
<tr>
<td></td>
<td>ii. price adjustment for correction of arithmetical errors in accordance with ITB Clause 5.5 [Correction of Arithmetical Errors];</td>
</tr>
<tr>
<td></td>
<td>iii. Adjustment of bid prices due to rectification of nonmaterial nonconformities or omissions in accordance with ITB Sub Clause 5.4.3 [Nonmaterial Nonconformities in Bids], if applicable.</td>
</tr>
<tr>
<td>5.10.4</td>
<td>If the Bid, which results in the lowest evaluated Bid Price, is considered to be seriously unbalanced, or front loaded, in the opinion of the Procuring Entity, the Procuring Entity may require the Bidder to produce detailed rate analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those rates with the construction methods and schedule proposed. After evaluation of the rate analysis, taking into consideration, the schedule of estimated Contract payments, the Procuring Entity may require that the amount of the Performance security be increased at the...</td>
</tr>
</tbody>
</table>
### Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

<table>
<thead>
<tr>
<th>5.11</th>
<th>Comparison of Bids</th>
<th>5.11.1</th>
<th>The Procuring Entity shall compare all substantially responsive Financial Bids to determine the lowest-evaluated Financial Bid in accordance with ITB Sub-Clause 5.10 [Evaluation of Financial Bids].</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.12</td>
<td>Negotiations</td>
<td>5.12.1</td>
<td>To the extent possible, no negotiations shall be conducted after the pre-Bid stage. All clarifications needed to be sought shall be sought in the pre-Bid stage itself.</td>
</tr>
<tr>
<td></td>
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<td>5.12.2</td>
<td>Negotiations may, however, be undertaken only with the lowest Bidder under the following circumstances:</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>i. when ring prices have been quoted by the Bidders for the subject matter of procurement; or</td>
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<td></td>
<td></td>
<td>ii. When the rates quoted vary considerably and considered much higher than the prevailing market rates.</td>
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<tr>
<td></td>
<td></td>
<td>5.12.3</td>
<td>The Bid evaluation committee shall have full powers to undertake negotiations. Detailed reasons and results of negotiations shall be recorded in the proceedings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.12.4</td>
<td>The lowest Bidder shall be informed about negotiations in writing either through messenger or by registered letter and e-mail (if available). A minimum time of seven days shall be given for calling negotiations. In case of urgency, the Bid evaluation committee, after recording reasons, may reduce the time, provided the lowest Bidder has received the intimation and consented to holding of negotiations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.12.5</td>
<td>Negotiations shall not make the original offer made by the Bidder inoperative. The Bid evaluation committee shall have option to consider the original offer in case the Bidder decides to increase rates originally quoted or imposes any new terms or conditions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.12.6</td>
<td>In case of non-satisfactory achievement of rates from lowest Bidder, the Bid evaluation committee may choose to make a written counter offer to the lowest Bidder and if this is not accepted by him, the committee may decide to reject and re-invite Bids or to make the same counter-offer first to the second lowest Bidder, then to the third lowest Bidder and so on in the order of their initial standing in the bid evaluation and work order be awarded to the Bidder who accepts the counter-offer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.12.7</td>
<td>In case the rates even after the negotiations are considered very high, fresh Bids shall be invited.</td>
</tr>
<tr>
<td>5.13</td>
<td>Procuring Entity’s Right to Accept Any Bid, and to Reject Any or All Bids</td>
<td>5.13.1</td>
<td>The Procuring Entity 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 assigning any reasons thereof and without there by incurring any liability to the Bidders.</td>
</tr>
</tbody>
</table>

### 6. Award of Contract

| 6.1 | Procuring | 6.1.1 | If the Procuring Entity does not procure any subject |

Jaipur Municipal Corporation Greater & Heritage

Section I ITB19
### Section – I Instruction to Bidders

**RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunk Eye Basis at Pondrik Park Brahampuri, Jaipur.**

<table>
<thead>
<tr>
<th>Section</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entity’s Right to Vary Quantities</strong></td>
<td>matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the Bidding Document.</td>
</tr>
<tr>
<td><strong>Order for additional quantity of an item of the Works up to 50 percent of the original quantity of that item in the Bill of Quantities and for extra items not provided for in the Bill of Quantities may be given but the amount of the additional quantities and extra items, taken together, shall not exceed 50 percent of the Contract Price.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Acceptance of the successful Bid and award of contract</strong></td>
<td>The Procuring Entity after considering the recommendations of the Bid Evaluation Committee and the conditions of Bid, if any, financial implications, samples, test reports, etc., shall accept or reject the successful Bid.</td>
</tr>
<tr>
<td><strong>Before award of the Contract, the Procuring Entity shall ensure that the price of successful Bid is reasonable and consistent with the required specifications.</strong></td>
<td></td>
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<tr>
<td><strong>A Bid shall be treated as successful only after the competent authority has approved the procurement in terms of that Bid.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>The Procuring Entity shall award the contract to the Bidder whose offer has been determined to be the lowest in accordance with the evaluation criteria set out in the Bidding Document if the Bidder has been determined to be qualified to perform the contract satisfactorily on the basis of qualification criteria fixed for the Bidders in the Bidding Document for the subject matter of procurement.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Prior to the expiration of the period of validity of Bid, the Procuring Entity shall inform the successful Bidder in writing, by registered post or email, that its Bid has been accepted.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>If the issuance of formal letter of acceptance (LOA) is likely to take time, in the meanwhile a Letter of Intent (LOI) may be sent to the Bidder. The acceptance of an offer is complete as soon as the letter of acceptance or letter of intent is posted and/ or sent by email (if available) to the address of the Bidder given in the Bidding Document.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>In the written intimation of acceptance of its Bid sent to the successful Bidder, it shall also be requested to execute an agreement in the format given in the Bidding Document on a non-judicial stamp of requisite value at his cost and deposit the Performance Security or a Performance Security Declaration, if applicable, within a period specified in the BDS or where the period is not specified in the BDS, then within fifteen days from the date on which the LOA or LOI is dispatched to the Bidder. In case the successful bidder is a JV / Consortium still to be legally constituted, all parties to the JV / Consortium shall sign the Agreement.</strong></td>
<td></td>
</tr>
<tr>
<td>6.3.2</td>
<td>If the Bidder, whose Bid has been accepted, fails to sign a written procurement contract or fails to furnish the required Performance Security or Performance Security Declaration within the specified time period, the Procuring Entity shall forfeit the Bid Security of the successful bidder / execute the Bid Securing Declaration and take required action against it as per the provisions of the Act and the Rules.</td>
</tr>
<tr>
<td>6.3.3</td>
<td>The Bid Security, if any, of the Bidders whose Bids could not be accepted shall be refunded soon after the contract with the successful Bidder is signed and his Performance Security is obtained. Until a formal contract is executed, LOA or LOI shall constitute a binding contract.</td>
</tr>
<tr>
<td><strong>6.4</strong></td>
<td><strong>Performance Security</strong></td>
</tr>
<tr>
<td>6.4.1</td>
<td>Performance Security shall be solicited from the successful Bidder except State Govt. Departments and undertakings, corporations, autonomous bodies, registered societies, co-operative societies which are owned or controlled or managed by the State Government and undertakings of Central Government. However, a Performance Security Declaration shall be taken from them. The State Government may relax the provision of Performance Security in particular procurement.</td>
</tr>
</tbody>
</table>
| 6.4.2 | (i) The amount of Performance Security shall be ten percent, or as specified in the BDS, of the amount of the Work Order. The currency of Performance Security shall be Indian Rupees, if otherwise not specified in BDS.  
(ii) If the Bid, which results in the lowest evaluated bid price, is seriously unbalanced or front loaded in the opinion of the Procuring Entity, the Procuring Entity may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, taking into consideration the schedule of estimated Contract payments, the Procuring Entity may require that the amount of the performance security be increased (to a maximum of 20% of the bid value of such items) at the expense of the Bidder to a level sufficient to protect the Procuring Entity against financial loss in the event of default of the successful Bidder under the Contract. |
| 6.4.3 | Performance Security shall be furnished in one of the following forms as applicable- 
(a) Deposit through eGRAS; or  
(b) Bank Draft or Banker's Cheque of a Scheduled Bank in India; or  
(c) National Savings Certificates and any other script/instrument under National Savings Schemes for promotion of small savings issued by a Post Office in Rajasthan, if the same can be pledged under the relevant rules. They shall be accepted |
<table>
<thead>
<tr>
<th>Section</th>
<th>Instruction to Bidders</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.</td>
<td></td>
</tr>
</tbody>
</table>

at their surrender value at the time of Bid and formally transferred in the name of the Procuring Entity with the approval of Head Postmaster; or

(d) Bank guarantee. It shall be got verified from the issuing bank. Other conditions regarding bank guarantee shall be same as specified in ITB Sub-Clause 3.10 [Bid Security]; or

(e) Fixed Deposit Receipt (FDR) of a Scheduled Bank. It shall be in the name of the Procuring Entity on account of Bidder and discharged by the Bidder in advance. The Procuring Entity shall ensure before accepting the Fixed Deposit Receipt that the Bidder furnishes an undertaking from the bank to make payment/premature payment of the Fixed Deposit Receipt on demand to the Procuring Entity without requirement of consent of the Bidder concerned. In the event of forfeiture of the Performance Security, the Fixed Deposit shall be forfeited along with interest earned on such Fixed Deposit.

(f) The successful Bidder at the time of signing of the Contract agreement, may submit option for deduction of Performance Security from each running and final bill @ 10% of the amount of the bill.

6.4.4 Performance Security furnished in the form of a document mentioned at options (a) to (e) of Sub-Clause 6.4.3 above, shall remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the Bidder, including operation and/or maintenance and defect liability period, if any.

6.4.5 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Procuring Entity may either cancel the procurement process or if deemed appropriate, award the Contract at the rates of the lowest Bidder, to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Procuring Entity to be qualified to perform the Contract satisfactorily.

6.4.6 Forfeiture of Performance Security: Amount of Performance Security in full or part may be forfeited in the following cases:

   i. When the Bidder does not execute the agreement in accordance with ITB Clause 6.3 [Signing of Contract] within the specified time; after issue of letter of acceptance; or

   ii. When the Bidder fails to commence the Works as per Work order within the time specified; or

   iii. When the Bidder fails to complete Contracted Works satisfactorily within the time specified; or
### Section – I Instruction to Bidders

RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

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<table>
<thead>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>iv.</td>
<td>When any terms and conditions of the contract is breached; or</td>
<td></td>
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<tr>
<td>v.</td>
<td>To adjust any established dues against the Bidder from any other contract with the Procuring Entity; or</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>If the Bidder breaches any provision of the Code of Integrity prescribed for the Bidders specified in the Act, Chapter VI of the Rules and this Bidding Document.</td>
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<tr>
<td>vii.</td>
<td>Notice of reasonable time will be given in case of forfeiture of Performance Security. The decision of the Procuring Entity in this regard shall be final.</td>
<td></td>
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</tbody>
</table>

### 7. Redressal of Grievances during Procurement Process (Appeals)

| 7 | Grievance handling procedure during procurement process | 7.1 | Any grievance of a Bidder pertaining to the procurement process shall be by way of filing an appeal to the First or Second Appellate Authority, as the case may be, as specified in the BDS, in accordance with the provisions of chapter III of the Act and chapter VII of the Rules and as given in Annexure C of these ITB. |   |   |   |   |   |   |
Annexure A : Compliance with the Code of Integrity and No Conflict of Interest
Any person participating in a procurement process shall:
(a) not offer any bribe, reward or gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or to otherwise influence the procurement process;
(b) not misrepresent or omit that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation;
(c) not indulge in any collusion, Bid rigging or anti-competitive behavior to impair the transparency, fairness and progress of the procurement process;
(d) not misuse any information shared between the Procuring Entity and the Bidders with an intent to gain unfair advantage in the procurement process;
(e) not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process;
(f) not obstruct any investigation or audit of a procurement process;
(g) disclose conflict of interest, if any; and
(h) disclose any previous transgressions with any Entity in India or any other country during the last three years or any debarment by any other procuring entity.

Conflict of Interest:
The Bidder participating in a bidding process must not have a Conflict of Interest.
A Conflict of Interest is considered to be a situation in which a party has interests that could improperly influence that party’s performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.
1. A Bidder may be considered to be in Conflict of Interest with one or more parties in a bidding process if, including but not limited to:
   a. have controlling partners/ shareholders in common; or
   b. receive or have received any direct or indirect subsidy from any of them; or
   c. have the same legal representative for purposes of the Bid; or
   d. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Procuring Entity regarding the bidding process; or
   e. the Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the Bidder is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one Bid, or
   f. the Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, Works or Services that are the subject of the Bid; or
   g. Bidder or any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as engineer-in-charge/ consultant for the contract.
Annexure B: Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

In relation to my/our Bid submitted to ................................ for procurement of .................................. in response to their Notice Inviting Bids No.................

Dated............... I/we hereby declare under Section 7 of Rajasthan Transparency in Public Procurement Act, 2012, that:

1. I/we possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity.

2. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Document;

3. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and not the subject of legal proceedings for any of the foregoing reasons;

4. I/we do not have, and our directors and officers have not, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;

5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition;

Date:..............................................
Place:..............................................

Signature of bidder
Name:
Designation:
Address:

Do:1
Annexure C : Grievance Redressal during Procurement Process

The designation and address of the First Appellate Authority is
The designation and address of the Second Appellate Authority is ________________

(1) Filing an appeal

If any Bidder or prospective bidder is aggrieved that any decision, action or omission of the Procuring Entity is in contravention to the provisions of the Act or the Rules or the Guidelines issued thereunder, he may file an appeal to First Appellate Authority, as specified in the Bidding Document within a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:

Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings.

Provided further that in case a Procuring Entity evaluates the Technical Bids before the opening of the Financial Bids, an appeal related to the matter of Financial Bids may be filed only by a Bidder whose Technical Bid is found to be acceptable.

(2) The officer to whom an appeal is filed under para (1) shall deal with the appeal as expeditiously as possible and shall endeavour to dispose of it within thirty days from the date of the appeal.

(3) If the officer designated under para (1) fails to dispose of the appeal filed within the period specified in para (2), or if the Bidder or prospective bidder or the Procuring Entity is aggrieved by the order passed by the First Appellate Authority, the Bidder or prospective bidder or the Procuring Entity, as the case may be, may file a second appeal to Second Appellate Authority specified in the Bidding Document in this behalf within fifteen days from the expiry of the period specified in para (2) or of the date of receipt of the order passed by the First Appellate Authority, as the case may be.

(4) Appeal not to lie in certain cases

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely:-
(a) determination of need of procurement;
(b) provisions limiting participation of Bidders in the Bid process;
(c) the decision of whether or not to enter into negotiations;
(d) cancellation of a procurement process;
(e) applicability of the provisions of confidentiality.

(5) Form of Appeal

(a) An appeal under para (1) or (3) above shall be in the annexed Form along with as many copies as there are respondents in the appeal.
(b) Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.

Doc 1
(c) Every appeal may be presented to First Appellate Authority or Second Appellate Authority, as the case may be, in person or through registered post or authorised representative.

(6) Fee for filling appeal
(a) Fee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non-refundable.
(b) The fee shall be paid in the form of bank demand draft or banker’s cheque of a Scheduled Bank in India payable in the name of Appellate Authority concerned.

(7) Procedure for disposal of appeal
(a) The First Appellate Authority or Second Appellate Authority, as the case may be, upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.
(b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be, shall:
   (i) hear all the parties to appeal present before him; and
   (ii) peruse or inspect documents, relevant records or copies thereof relating to the matter.
(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.
(d) The order passed under sub-clause (c) above shall also be placed on the State Public Procurement Portal.
Annexure D : Additional Conditions of Contract

1. Correction of arithmetic errors

Provided that a Financial Bid is substantially responsive, the Procuring Entity will correct arithmetical errors during evaluation of Financial Bids on the following basis:

i. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

ii. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

iii. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.

If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified and its Bid Security shall be forfeited or its Bid Security Declaration shall be executed.

2. Procuring Entity’s Right to Vary Quantities

(i) At the time of award of contract, the quantity of Goods, works or services originally specified in the Bidding Document may be increased or decreased by a specified percentage, but such increase or decrease shall not exceed twenty percent, of the quantity specified in the Bidding Document. It shall be without any change in the unit prices or other terms and conditions of the Bid and the conditions of contract.

(ii) If the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the Conditions of Contract.

(iii) In case of procurement of Goods or services, additional quantity may be procured by placing a repeat order on the same and conditions of the original order. However, the additional quantity shall not be more than 25% of the value of Goods of the original contract and shall be within one month from the date of expiry of last supply. If the Supplier fails to do so, the Procuring Entity shall be free to arrange for the balance supply by limited Bidding or otherwise and the extra cost incurred shall be recovered from the Supplier.
Annexure E

Clause 1: Fair Wage Clause

(a) The Contractor shall pay not less than fair wages/minimum wages to labourers engaged by him on the work as revised from time to time by the Government, but the Government shall not be liable to pay any thing extra for it except as stipulated in price escalation clause (clause 43) of the agreement.

Explanation: “Fair Wage” means minimum wages for time or piece work, fixed revised, by the State Government under the Minimum Wages Act, 1948.

(b) The Contractor shall, notwithstanding the provision of any contract to the contrary, cause to be paid fair wages to labourers indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work as if the labourers have been immediately or directly employed by him.

(c) In respect of all labourers, immediately or directly employed on the work, for the purpose of the Contractor's part of this agreement, the Contractor shall comply with or cause to be complied with the Public Works Department Contractor's Labour Regulations made, or that may be made by the Government, from time to time, in regard to payment of wages, wage period, deductions from wages, recovery of wages not paid, and unauthorised deductions, maintenance of wages register, wage card, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and other matters of a like nature.

(d) The Engineer-in-charge shall have the right to deduct from the money due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers, by reason of non-fulfilment of the conditions of the contract, for the benefit of the worker or workers, non-payment of wages or of deductions made them from, which are not justified by the terms of the contract, or as a result of non-observance of the aforesaid regulations.

(e) Vis-a-Vis the Nizam, Jaipur, the Contractor shall be primarily liable for all payments to be made and for the observance of the regulations aforesaid, without prejudice to his right to claim indemnity from his subcontractors.

(f) The regulations, aforesaid, shall be deemed to be part of this contract and any breach, thereof, shall be breach of the contract.

Clause 2: Contractor to engage technical staff

The Contractor shall engage the technical staff, as follows, on the contract works:

(a) For works costing Rs. 100 lac and above- One Graduate Engineer.

(b) For works costing between Rs. 50 lac to Rs. 100 lac- One qualified diploma holder having experience of not less than 3 years.

(c) For works costing between Rs. 15 lac and Rs. 50 lac- One qualified diploma holder.

The technical staff should be available at site, whenever required by Engineer-in-charge to take instructions.
Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

Clause 3:
The Contractor shall comply with the provisions of the Apprenticeship Act, 1961, and the Rules and Orders issued thereunder, from time to time. If he fails to do so, his failure will be a breach of contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

Clause 4: Safety Code
The Contractor shall follow the safety code of electricity strictly.

Clause 5: 
Near Relatives barred from tendering
The Contractor shall not be permitted to tender for works in Circle, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the Superintending Engineer and Assistant Engineer (both inclusive). He shall also intimate the names of persons, who are working with him in any capacity, or are subsequently employed by him and who are near relatives to any gazetted officer in the Organisation/Department. Any breach of this condition by the Contractor would render him liable to be removed from the approved list of contractors of the Department. If such facts is noticed (a) before sanction of tender, his offer shall be declared in valid and earnest money shall be forfeited, (b) after sanction of the tender then the tender sanctioning authority may at his discretion forfeit his earnest money, performance guarantee, security deposit and enlistment deposit and the work/remaining work may allot to any registered contractor on the same rates as per rules.

Note: By the term ‘near relative’ is meant wife, husband, parents and grandparents, children and grand children, brothers and sisters, uncles and cousins and their corresponding in-laws.

Clause 6: Retired Gazetted Officers barred for 2 years
No Engineer of Gazetted rank or other Gazetted Officer, employed in Engineering or Administrative duties in an Engineering Department of the Government of Rajasthan, is allowed to work as a Contractor for a period of 2 years of his retirement from Government service without the previous permission of Government of Rajasthan. The contract is liable to be cancelled, if either the Contractor or any of his employees is found, at any time, to be such a person, who had not obtained the permission of Government, as aforesaid, before submission of the tender or engagement in the contractor’s service, as the case may be.

Clause 7: Quality Control
The Memorandum of Understanding, Jaipur shall have right to exercise proper Quality Control measures. The Contractor shall provide all assistance to conduct such tests and shall bear the cost of all tests.

Clause 8:
The work (whether fully constructed or not) and all materials, machines, tools and plant, scaffolding,
temporary buildings and other things connected therewith, shall be at the risk of the contractor until the work has been delivered to the Engineer-in-charge, and a certificate from him, to the effect, obtained.

Clause 9: Death of Contractor

Without prejudice to any of the rights or remedies under the contract, if the Contractor dies the legal heirs of the Contractor or the Chief Engineer or duly authorized Engineer shall have the option of terminating the contract without any compensation.

Clause 10: Force Majeure

Neither party shall be liable to each other, for any loss or damage, occasioned by or arising out of acts or God such as unprecedented floods, volcanic eruptions, earthquake or other invasion of nature and other acts.

Clause 11: General Discrepancies and errors:

In case of percentage rate tenders, if there is any typographical or clerical error in the rates shown by the department in the “G” Schedule, the rates as given in the basic Schedule of Rates of the Department for the area shall be taken as correct.

Clause 12: Post payment Audit & Technical Examination:

The Government shall have right to provide a system of per-check of Contractor’s bill by a specified Organization, and payment by an Engineer or an Accounts Officer/ Sr. Accounts Officer/ Chief Accounts Officer/ Financial Advisor, as the Government may in its absolute discretion prescribe. Any over-payments/ excess payment detected, as a result of such per-check post-check of Contractor’s bill, can be recovered from the contractor’s bills in the manner, herein before provided and the Contractor will refund such over/ excess payments.

Clause 13: Check Measurements:

The department reserves to itself, the right to prescribe a scale of check measurement of work in general, or specific scale for specific works of by other special orders (about which the decision on the department shall be final) Checking of measurement by superior officer shall supersede measurements by the subordinate officer and the former will become the basis of the payment. Any over/excess payment detected, as a result of such check measurement or otherwise at any stage up to the date of completion and the defect removal period specified else-where in this contract, shall be recoverable from the Contractor, as any other dues payable to the Government.

Clause 14: Check Measurements:
Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

The Contractor in course of the work should understand that all materials e.g. stone, bricks, sand and other materials obtainable in the work by dismantling etc. will be considered as the property of the Government and will be disposed off to the best advantage on the Government. As per direction of the Engineer-in-Charge.

Clause 15: Recovery from Contractors:
Whenever any claim against the Contractor for the payment of a sum of money arises out of or under the contract, the Department shall be entitled to recover such sum be appropriation in part or whole of the Performance Guarantee and / or Security Deposit. Security Deposit at the time of enlistment of the Contractor. In the event of the security being insufficient, or if no security has been taken, thereafter, may become due to the Contractor, under this or any other contract with the Government of Rajasthan. Should this sum be not sufficient to cover the full amount recoverable the Contractor shall pay to the Department on demand the balance remaining dues.
The department shall, further, have the right to affect such recoveries under Public Demands Recovery Act.

Clause 16: Jurisdiction of Court:
In the event of any dispute arising between the parties hereto, in respect or any of the matters comprised in this agreement, the same shall be settled by a competent court having jurisdiction over the place, where agreement is executed any by no other court, after completion of proceedings under Clause 23 of this contract.
Section – I Instruction to Bidders
RFP for Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

3. Dividing quantities among more than one Bidder at the time of award (In case of procurement of Goods)

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, when it is considered that the quantity of the subject matter of procurement to be procured is very large and it may not be in the capacity of the Bidder, whose Bid is accepted, to deliver the entire quantity or when it is considered that the subject matter of procurement to be procured is of critical and vital nature, in such cases, the quantity may be divided between the Bidder, whose Bid is accepted and the second lowest Bidder or even more Bidders in that order, in a fair, transparent and equitable manner at the rates of the Bidder, whose Bid is accepted.
SECTION II
BIDDING DATA SHEET

This section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section I: Instructions to Bidders.
Contents

A. Introduction

B. Bidding Documents

C. Preparation of Bids

D. Submission and Opening of Bids

E. Award of Contract
A. Introduction

<table>
<thead>
<tr>
<th>ITB 1.1.1</th>
<th>The Number of the Invitation for Bids (NIT) is: The Member of the Invitation for Bids is: Jaipur Municipal Corporation Greater &amp; Heritage, Rajasthan Name of Work: Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunk Key Basis at Pondrik Park Brahampuri, Jaipur. (Detailed Scope of work has been defined in Section V: Procuring Entity’s Requirement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.2</td>
<td><strong>Period of Completion:</strong> The Physical Works shall be completed in its entirety within 18 Months from the Start Date, which shall be the date of issue of the Notice to proceed or such other Start Date as may be specified in the Notice to proceed.</td>
</tr>
<tr>
<td>1.1.3</td>
<td><strong>Estimated Cost of work is: Rs. 19.97 Cr. (Excluding GST)</strong></td>
</tr>
<tr>
<td>ITB 1.4.1</td>
<td>Joint Ventures / Consortium are permitted comprising not more than 2 (two) firms/companies. The minimum equity under JV / Consortium of lead firm should be min 51%.</td>
</tr>
<tr>
<td>ITB 1.4.2</td>
<td>“Bidders of Indian Nationality” are only permissible.</td>
</tr>
<tr>
<td>ITB 1.4.5</td>
<td>Registration with Government Department/Organisation class AA or above is compulsory.</td>
</tr>
<tr>
<td>ITB 1.4.8</td>
<td>The bidding process is open to bidders who fulfil the prescribed eligibility criteria.</td>
</tr>
<tr>
<td>ITB 1.4.9</td>
<td>Each bidder shall upload on-line / submit only one bid for one work. A bidder who submits or participates in more than one bid for the particular Works will be disqualified.</td>
</tr>
</tbody>
</table>

B. Bidding Documents

| ITB 2.1.3 | This is an “on-line tender”. Therefore, tender documents in physical form shall not be available for sale but can be downloaded from the website and pay cost (Rs. 10,000/-) while submitting the filled-up Bidding document to the Procuring Entity along with the processing fee of Rs. 1,000/- separately in favor of RISL, Jaipur. The bidder should submit, by date & time specified in bid document, in original, hard copies of (i) cost of bid document as Rs. 10,000/- for each work in the form of DD/Banker’s Cheque of a scheduled bank in India or eGRAS in the name of Commissioner & Administrator Nagar Nigam Jaipur Heritage/Greater payable at Jaipur; (ii) Bid processing fee of Rs. 1,000/- for each work in the form of DD in the name of Managing Director, RISL, Jaipur payable at Jaipur; (iii) Bid Security as per RTPP; (iv) Letter of Technical Bid; (v) Power of Attorney; and (vi) Joint Venture Agreement, if applicable. The bidder should upload scanned copies of these documents on e-procurement website along with their technical bids. |
Section – II: Bid Data Sheet
RFP for Underground Parking at Pondrik Park and Community cum Recreation Building near Pondrik Park,Jaipur.

| ITB 2.2.1 | For Clarification purposes only, the Procuring Entity's address is:

OFFICE OF THE Commissioner & Administrator
Nagar Nigam Jaipur Greater & Heritage
Pt. Deendayal Upadhyay Bhawan, Lal Kothi, Tonk Road, Jaipur-302015 |
|---|---|
| ITB 2.2.2 | Pre bid Meeting held as below:

Date: 31/03/2020
Time: 03:30 PM
Pt. Deendayal Upadhyay Bhawan, Lal Kothi, Tonk Road, Jaipur-302015
No site visit shall be organized by the procuring entity. However, bidder are advised to visit the sites at their own expenses and if any support is required, shall be provided by the JMC. |
| ITB 2.2.3 | The Bidders are requested, to submit questions in writing, to reach the Procuring Entity preferably not later than one week. However, Department may also consider questions / queries raised in writing only. |
| ITB 2.3.1 | Any addendum issued shall be part of the Bidding Document and shall be uploaded on the State Public Procurement Portals [http://sppp.rajasthan.gov.in/](http://sppp.rajasthan.gov.in/) and [http://eproc.rajasthan.gov.in](http://eproc.rajasthan.gov.in) or jaipurmc.org |
| ITB 2.3.2 | To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Procuring entity may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB Sub-Clause 4.2 [Deadline for Submission of Bids], under due intimation to the Bidders by uploading it on the State Public Procurement Portal and its e-procurement portal. |

C. Preparation of Bids

| ITB 3.2.1 | The language of the bid shall be **English** |
| ITB 3.3.1 | The online Bid shall comprise of two parts submitted simultaneously, one containing the Technical Bid/ Proposal and the other the Financial or Price Bid/ Proposal. |
| ITB 3.3.2 | The Bidder shall submit the forms, declarations and documents, as specified in Section IV of Bid Document, with the Technical Bid: |
| ITB 3.3.3 | The Bidder shall submit the following additional documents with its Technical Bid:

i. Technical Bid/Proposal Submission Sheet and Technical Bid containing the filled-up Bidding Forms and Declarations related to Technical Bid, possession of required qualifications and Code of Integrity given in Section IV [Bidding Forms];

ii. Proof of payment of price of Bidding Document, processing fee and Bid Security in accordance with ITB Clause 3.10;

iii. Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB Clause 3.11;

iv. Documentary evidence in accordance with ITB Clause 3.7 establishing the
<table>
<thead>
<tr>
<th>Section – II: Bid Data Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP for Underground Parking at Pondrik Park and Community cum Recreation Building near Pondrik Park, Jaipur.</td>
</tr>
</tbody>
</table>

Bidder’s eligibility to bid;

v. Documentary evidence in accordance with ITB Clause 3.8 establishing the Bidder’s qualifications to perform the contract if its Bid is accepted;

vi. The Notice Inviting Bids;

vii. The PAN No. (Permanent Account Number) of Income tax with the Xerox copy of the PAN card.

viii. Alternative bids shall not be permitted.

ix. Alternative times for completion shall not be permitted. (However, this does not prohibit the successful bidder from completing the work as per specifications before schedule)

x. Any other document required in the BDS; and

xi. others considered necessary to strengthen the Bid submitted.

<table>
<thead>
<tr>
<th>ITB 3.5.1</th>
<th>Add following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The form of contract for the work “Underground Multi Story Parking at Old Atish Market Tripolia Bazaar, Pink City, Jaipur” will be a Lump Sum contract on EPC basis.</td>
<td></td>
</tr>
</tbody>
</table>

| ITB 3.5.2 | The Prices quoted by the Bidder shall be fixed. |
| ITB 3.5.3 | All variations in taxes and duties shall be borne as per relevant clause of the Section VI B: SCC |

| ITB 3.9.1 | The Bid validity period shall be 120 (One Twenty days) days from deadline for submission of bids. |

| ITB 3.10.2 | Add following: |
| Bid security shall be of the value of Rs. 39.94 Lakh (Rupees Thirty Nine Lakh and Eight Thousand Only), as indicated in NIB for all bidders. |

| ITB 3.10.3 | A Bid Security shall be provided as a part of the bid in the form of a Banker’s Cheque or Demand Draft or Bank Guarantee of a Scheduled Bank in India, in specified format which shall remain valid for a period of 45 (forty-five) days beyond the validity of the bid. |

| ITB 3.11.1 | Only Digital signed copy shall be submitted through e-procurement website. |

| ITB 3.11.2 | The written confirmation of authorization to sign on behalf of the Bidder shall consist of: Power of Attorney. |

### D. Submission and Opening of Bids

<table>
<thead>
<tr>
<th>ITB 4.1.1</th>
<th>For bid submission purposes only, the Procuring Entity’s address is:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFFICE OF THE Commissioner &amp; Administrator</strong></td>
<td></td>
</tr>
<tr>
<td>Nagar Nigam Jaipur Greater &amp; Heritage.</td>
<td></td>
</tr>
<tr>
<td>Pt. Deendayal Upadhyay Bhawan, Lal Kothi, Tonk Road, Jaipur-302015</td>
<td></td>
</tr>
</tbody>
</table>

**Bidders shall submit their Bids electronically only.**

The Bidders shall submit the Bid online with all pages numbered serially and by giving an index of submissions. Each page of the submission shall be initialed by the Authorised Representative of the Bidder as per the terms of the tender. The Bidder shall be responsible for documents accuracy and correctness as per the version uploaded by the Procuring Entity and shall ensure that there are no changes caused in the content of the downloaded document. The bidder shall follow the following instructions for online
Bidder who wants to participate in bidding will have to procure digital certificate as per IT Act to sign their electronic bids. Offers which are not digitally signed will not be accepted. Bidder shall submit their offer in electronic format on above mentioned website after digitally signing the same.

Cost of bid document is Rs. 10,000/- per tender should be deposited by Non-Refundable Demand Draft drawn in favor of Commissioner, Nagar Nigam Jaipur payable at Jaipur, whereas the Processing fee Rs. 1,000/- should be deposited by Non-Refundable Demand Draft drawn in favor of MD, RISL, Jaipur payable at Jaipur. Original documents along with above mentioned fees and other documents as per bid conditions, has to be deposited up to prescribed date before opening of technical bid.

The Procuring Entity will not be responsible for any mistake occurred at the time of uploading of bid or thereafter.

If holiday is declared on submission & opening date of tender the scheduled activity will take place on next working day.

Bids are required to be submitted in Electronic Format, it shall be submitted on the e-procurement portal: http://eproc.rajasthan.gov.in

The Deadline for electronic Bid submission is

Date: 26/04/2020
Time: 02:00 PM

OFFICE OF THE Commissioner & Administrator
Nagar Nigam Jaipur Heritage/Greater.
Pt. Deendayal Upadhyay Bhawan, Lal Kothi, Tonk Road, Jaipur-302015

The tendering process shall be conducted online only; DD/BG tender fee, processing fee and Bid Security shall be submitted physically up to deadline described in tender document.

The Procuring Entity will open the Financial proposal as per e-tendering procedure.

The period within which the Performance Security is to be submitted by the successful Bidder and the Contract Agreement is to be signed by him from the date of issue of Letter of Acceptance is 15 Days.

The procuring entity shall promptly return the bid security after the earliest of the following events, namely:

1. The expiry of validity of bid security
2. The execution of agreement for procurement and performance security is furnished by the successful bidder;
3. The cancellation of the procurement process; or
4. The withdrawal of bid prior to the deadline for presenting bids, unless the bidding documents stipulate that no such withdrawal is permitted.

Performance Security shall be solicited from the successful Bidder.
| ITB 6.4.3 | (F) Deleted  
Performance Security amounting to total 10% of contract value and if any provisional sum along with additional security, as may be asked for by the Procuring Entity (Ref Clause 6.4.2 of ITB) shall be submitted/deducted as follows:  
(i) Contractor shall submit Performance Security in advance at the time of signing of agreement as per latest rules under RTPP act. Bank Guarantee submitted against the performance guarantee, shall be unconditional and en-cashable/ invokable at Town for which tenders are invited or submitted at Jaipur.  
(ii) If there is no reason to retain the Performance Security, it shall be returned back to the contractor within 60 days after the satisfactory completion of the defect liability period. |
| 7.1     | First Appellate Authority shall be: Director Cum Joint Secretary LSG., Govt of Rajasthan  
Second Appellate Authority shall be: Secretary LSG Govt. of, Rajasthan |
SECTION III
EVALUATION AND QUALIFICATION CRITERIA
section – iii: evaluation and qualification criteria
construction of recreational center cum community hall along with separate under ground parking on turnkey basis at pondrik park brahampuri, jaipur.

contents

A. Evaluation Criteria
B. Preliminary Qualification Criteria
   1. Eligibility
   2. Pending Litigation
   3. Financial Situation
   4. Experience
      4.1 General Construction Experience
      4.2 Specific Construction Experience
      4.3 Construction Experience in Key Activities
      4.4 Declaration by the Bidder regarding Qualification
A. Evaluation Criteria

1.1 The successful Bid will be the lowest evaluated responsive Bid, which qualifies technical evaluation.

1.2 Adequacy of Technical Proposal
Evaluation of the Bidder’s Technical Proposal will include an assessment of the Bidder’s technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail.

1.3 Quantifiable Nonconformities, Errors and Omissions.
The evaluated cost of quantifiable non-conformities, errors and/or omissions is determined as follows:
“Pursuant to ITB Clause 5.4, the cost of all quantifiable nonmaterial nonconformities or omissions shall be evaluated. The Procuring Entity will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of bids.”

For guidance: The cost of minor omissions or missing items should be added to the Bid Price to allow for bid comparison on an actual basis. The price adjustment should be based on reasonable estimate of the cost by the executing agency, engineer. Consultant or bid evaluation committee, taking into consideration the corresponding quoted prices from other confirming bids. The price adjustment may be based on the price of the item quoted by the next lowest qualified bidder.

B. Preliminary Qualification Criteria:

1. Eligibility:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Compliance Requirements</th>
<th>Documents Submission Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Entity</td>
<td>Joint Venture / Consortium</td>
</tr>
<tr>
<td>Requirement</td>
<td>All Partners Combined</td>
<td>Each Partner</td>
</tr>
<tr>
<td>i) Nationality</td>
<td>Nationality in accordance with ITB sub Clause 1.4.2</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td>ii) Conflict of Interest</td>
<td>No conflicts of interest in accordance with ITB Sub- clause 1.4.3 &amp; ITB Annexure-A</td>
<td>Must meet requirement</td>
</tr>
</tbody>
</table>
### Section III: Evaluation and Qualification Criteria

#### Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

<table>
<thead>
<tr>
<th>iii) Debarment/ Transgression by any Procuring Entity.</th>
<th>Must declare</th>
<th>Must meet requirement</th>
<th>Must meet requirement</th>
<th>Must meet requirement</th>
<th>Not Applicable</th>
<th>Declaration form given in the Bidding Document as per Bidding Form 4.15</th>
</tr>
</thead>
</table>

#### 2. Pending Litigation:

<table>
<thead>
<tr>
<th>Pending Litigation</th>
<th>All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50 percent of the Bidder's net worth.</th>
<th>Must meet requirement by itself or as partner to past or existing JV / Consortium</th>
<th>Not Applicable</th>
<th>Must meet requirement by itself or as partner to past or existing JV / Consortium</th>
<th>Not Applicable</th>
<th>Form LIT 1</th>
</tr>
</thead>
</table>

**NOTE:** CA certificate clearly mentioning with calculation that pending litigation in total not more than 50% of Bidder's net worth.

#### 3. Financial Situation:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Compliance Requirements</th>
<th>Documents Submission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Entity</td>
<td>Joint Venture / Consortium (permitted)</td>
<td></td>
</tr>
<tr>
<td>All Partners Combined</td>
<td>Lead Member</td>
<td>Each Member</td>
</tr>
</tbody>
</table>

#### 3.1 Historical Financial Performance

<table>
<thead>
<tr>
<th>Net Worth</th>
<th>Must meet requirement</th>
<th>Not Applicable</th>
<th>Must meet requirement</th>
<th>Must meet requirement</th>
<th>Form FIN 1 with attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission of audited financial statements or other financial statements acceptable to the Employer, for the last Five (5) years to demonstrate the current soundness of the Bidder’s financial position. As a minimum the Bidder’s net worth for the last financial year (FY 2018-19) calculated as the</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Criteria</td>
<td>Compliance Requirements</td>
<td>Documents Submission Requirements</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single Entity</td>
<td>Joint Venture / Consortium(permited)</td>
<td>All Partners Combined</td>
<td>Lead Member</td>
<td>Each Member</td>
</tr>
<tr>
<td>difference between total assets and total liabilities should be positive (Certificate of Chartered Accountant showing calculation of Networth shall be provided)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Turnover</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Annual Turnover of last five financial years, calculated as per total certified payments received for contracts completed or in progress, should be equal to or more than Rs. 1997.00 Lacs.</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet 51% of the requirement</td>
<td>Must meet 20% of the requirement</td>
<td>Form FIN 2</td>
</tr>
</tbody>
</table>

**NOTE:** Audited Balance Sheets of all the three financial years must be submitted in support, without which the bid will not be considered. The calculation sheet for annual average turnover of similar work shall be certified by a Chartered Accountant.

| Working Capital | Must meet requirement | Must meet requirement | Must meet 51% of the requirement | Must meet 20% of the requirement | |
|-----------------|------------------------|-----------------------|---------------------------|---------------------------|
## Section – III: Evaluation and Qualification Criteria
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

### Compliance Requirements

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Compliance Requirements</th>
<th>Documents Submission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement</td>
<td>Single Entity</td>
<td>Joint Venture / Consortium (permitted)</td>
</tr>
</tbody>
</table>

1. Compliance Requirements

- **Liabilities** (including the short-term loan repayments due in current years) should be minimum of 25% of the estimated cost of bid.

(Available Working Capital shall be evaluated as Current Assets + Revolving Line of Credit – Current Liabilities (including loan repayment due within one year)

**NOTE:** Certificate of CA must be submitted indicating clearly that the working capital is as per formula given in tender document and clearly stating the individual components. CA must also clearly mention that he has gone through the Revolving line of credit which is issued by scheduled Bank and Bank’s commitment is project specific, assured and without any ambiguity and shall be available till final completion of project, otherwise bid shall not be considered. For revolving line of credit bank’s letter should be attached. The bank issuing resolving line of credit has to be scheduled Bank as per format, otherwise it shall not be considered.

### Experience:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Compliance Requirements</th>
<th>Documents Submission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement</td>
<td>Single Entity</td>
<td>Joint Venture / Consortium</td>
</tr>
</tbody>
</table>

4. **General Construction Experience:**
### Section – III: Evaluation and Qualification Criteria

**Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Compliance Requirements</th>
<th>Documents Submission Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement</td>
<td>Single Entity</td>
<td>Joint Venture / Consortium</td>
</tr>
<tr>
<td><strong>05 Years</strong> as contractor, sub-Contractor or management contractor.</td>
<td>Must meet requirement</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**NOTE:** Certificate of Charted Accountant must be submitted, clearly indicating similar work-related experience based on similar work-related turnover of the firm.

### 4.2 Specific Construction Experience

The bidder should have experience of the following in last five financial years (2014-15 to 2018-19); experience in current year shall also be counted up to deadline for submission of bid.

- Experience of having successfully completed similar works in India during last 5 years ending last day of the month previous to the one in which applications are invited should be either of the following:
  - (i) Three similar completed works each costing not less than the amount of Rs. **798.80** Lakh (equal to 40% of the estimated cost of the Project);
  - (ii) Two similar completed works each costing not less than the amount of Rs. **998.50** Lakh (equal to 50% of the estimated cost of the Project);
  - (iii) One similar completed work costing not less than the amount of Rs. **1597.60** Lakh (equal to 80% of the estimated cost of the Project).

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Financial Year</th>
<th>Weight age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**

(A) The present price level for turnover and cost of completed work of similar nature, the previous years’ value shall be given weight age of 10% per year as follows:

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Financial Year</th>
<th>Weight age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section – III: Evaluation and Qualification Criteria

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>2018-19</td>
<td>1.00</td>
</tr>
<tr>
<td>(ii)</td>
<td>2017-18</td>
<td>1.10</td>
</tr>
<tr>
<td>(iii)</td>
<td>2016-17</td>
<td>1.21</td>
</tr>
<tr>
<td>(iv)</td>
<td>2015-16</td>
<td>1.33</td>
</tr>
<tr>
<td>(v)</td>
<td>2014-15</td>
<td>1.46</td>
</tr>
</tbody>
</table>

(B) Similar work shall mean: Construction of underground framed RCC structure with pile protection up to minimum of two basements.

4.3 Declaration by the Bidder regarding Qualification:
The form of Declaration by the Bidder regarding Qualification as per Annexure-B to be submit along with this Bid documents.
SECTION IV
BIDDING FORMS
# Contents

<table>
<thead>
<tr>
<th>S. No</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Technical Bid Check List</td>
</tr>
<tr>
<td>4.2</td>
<td>Letter of Technical Bid</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Bid Security (Bank Guarantee Unconditional)</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Bid Securing Declaration</td>
</tr>
<tr>
<td>4.4</td>
<td>Bidder’s Qualification</td>
</tr>
<tr>
<td>4.4.1</td>
<td>Form ELI-1</td>
</tr>
<tr>
<td>4.4.2</td>
<td>Form ELI-2</td>
</tr>
<tr>
<td>4.4.3</td>
<td>Form LIT-1</td>
</tr>
<tr>
<td>4.4.4</td>
<td>Form FIN-1</td>
</tr>
<tr>
<td>4.4.5</td>
<td>Form FIN-2</td>
</tr>
<tr>
<td>4.4.6</td>
<td>Form FIN-3</td>
</tr>
<tr>
<td>4.4.7</td>
<td>Form FIN-4</td>
</tr>
<tr>
<td>4.5</td>
<td>Form EXP-1</td>
</tr>
<tr>
<td>4.6</td>
<td>Form EXP-2a</td>
</tr>
<tr>
<td>4.7</td>
<td>Form EXP-2b</td>
</tr>
<tr>
<td>4.8</td>
<td>Form: Assured Revolving line of credit</td>
</tr>
<tr>
<td>4.9</td>
<td>Declaration by the Bidder under Sections 7 and 11 of the Act</td>
</tr>
<tr>
<td>4.10</td>
<td>Letter of Financial Bid</td>
</tr>
<tr>
<td>4.11</td>
<td>Power of Attorney</td>
</tr>
<tr>
<td>4.12</td>
<td>Joint Venture Agreement</td>
</tr>
<tr>
<td>4.13</td>
<td>Statement for work in hand</td>
</tr>
<tr>
<td>4.14</td>
<td>Calculation of Available Bid Capacity</td>
</tr>
<tr>
<td>4.15</td>
<td>Self-Declaration by Bidder: No Blacklisting</td>
</tr>
<tr>
<td>4.16</td>
<td>Certificate of Conformity / No Deviation</td>
</tr>
<tr>
<td>4.17</td>
<td>Check Points</td>
</tr>
<tr>
<td>4.18</td>
<td>Self-Appraisal Sheet</td>
</tr>
<tr>
<td>4.19</td>
<td>Bill of Quantities / Activity Schedule</td>
</tr>
</tbody>
</table>

## 4.1 Technical Bid (With Reference to Section III) Check List
In addition to the forms given in this section, a Technical Proposal must necessarily contain the following, otherwise the bid shall be considered incomplete and may lead to non-responsive:

1. Notice Inviting Tender
2. CA’s certificates
3. Bank’s letter as required in Tender Document (if applicable).
4. GST Registration, as required per law
5. Proof of payment of Bid Security
6. Proof of Cost of bidding document or receipt of such cost.
7. Proof of Bid processing fee as specified.
8. Bid capacity stipulations as required in Tender Document.
9. Completion Certificates of works which have been cited in support of fulfillment of eligibility criteria as specified in Tender Document.
10. Work orders of works which have been cited in support of fulfillment of eligibility criteria as specified in Tender Document.
11. Drawings / designs / technical documents (if required) in support of works to be executed
12. Any modifications or withdrawal.
13. Other documents considered necessary to strengthen the bid.
14. JV / Consortium agreement against which experience for eligibility is claimed to demonstrate clearly the JV / Consortium members work in that JV / Consortium.
15. Registration certificate of each bidder / JV / Consortium Partner in Class B or equivalent in any State / Central / PSU / in India.
16. Self-Declaration by Bidder: No Blacklisting
17. Certificate of Conformity / No Deviation
18. Check Points and Self-Appraisal sheet
4.2 Letter of Technical Bid

**Technical Bid Submission Sheet (In Bidder’s Own Letterhead)**

Date: _______________  NIT No.: _______________

To: ___________________________________________________

Sir,

We, the undersigned, declare that:

a) We have examined and haveno reservationsto the Bidding Document, including Addenda

b) We offer to execute in conformity with the Bidding Document the following Works:

c) Our Bid shall be valid for a period of 120 days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of ______________ percent of the Contract Price or Performance Security Declaration, as the case may be for the due performance of the Contract;

e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the eligible countries;

f) We are not participating, as Bidder, in more than one Bid in this bidding process, other than alternative offers, if permitted, in the Bidding Document;

g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers has not been debarred by the State Government or the Procuring Entity;

h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed;

i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive;

j) We agree to permit Government of Rajasthan or the Procuring Entity or their representatives to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the Procuring Entity;

k) We have paid, or will pay the following commissions, gratuities, or fees, if any, with respect to the bidding process for execution of the Contract:

<table>
<thead>
<tr>
<th>Name of Recipient</th>
<th>Address</th>
<th>Reason</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

l) We declare that we have complied with and shall continue to comply with the provisions of the Code of Integrity including Conflict of Interest as specified for Bidders in the Rajasthan Transparency in Public Procurement Act, 2012, the Rajasthan Transparency in Public Procurement Rules, 2013 and this Bidding Document during this procurement process and execution of the Works as per the Contract;

m) Other comments, if any:

Yours faithfully,

Signature:

Name/ address: __________________________________________________________
In the capacity of: _______________________________________________________
Signed: ________________________________
Duly authorised to sign the bid for and on behalf: ____________________________
Date: _______________
Tel: _______________ Fax: _______________ E-mail: _________________________
4.3.1 Bid Security (Bank Guarantee Unconditional) *

Form of Bid Security

[insert Bank’s Name, and Address of Issuing Branch or Office]

Beneficiary: [Commissioner & Administrator, Nagar Nigam Jaipur, Greater & Heritage, JMC, Jaipur RAJSATAN]

Date:

BID GUARANTEE No.:

We have been informed that ……………………… (hereinafter called “the Bidder”) has submitted to you its bid dated ……………. (hereinafter called “the Bid”) for the ……………………… under Notice Inviting Bid No. …………………………… (“the NIB”).

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee. Any sum or sums not exceeding the total amount of …………………………… accompanied by a written statement stating that the Bidder is in breach of its obligations(s) under the bid conditions, because the Bidder:

(a) has withdrawn its bid during the period of bid validity specified by the Bidder in the Letter of Technical Bid; or

(b) has been notified of the acceptance of its bid by the Procuring Entity during the period of bid validity,

   (i) fails or refuses to execute the Contract Agreement,

   (ii) fails or refuses to furnish the performance security, in accordance with the instructions to Bidders (hereinafter “the ITB”),

(c) has not accepted the correction of mathematical errors in accordance with the ITB, or

(d) has breached a provision of the Code of Integrity specified in the ITB;

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of the Bidder’s bid.

Consequently, any demand for payment under this guarantee must be received by us at the office or before that date.

Signed:

[Insert signature of person whose name and capacity are shown]

NOTE: * - Scheduled Bank Only

Name:

[Insert complete name of person signing the Bid Security]

In the capacity of:

[Insert legal capacity of person signing the Bid Security]

Duly authorized to sign the Bid Security for and on behalf of

[Insert name of the Bank]

Dated on …………… day of ……………

[insert date of signing]

Bank’s Seal

[affix seal of the Bank]

[Note: In case of a Joint Venture, the Bid-Security must be in the name of all partners to the Joint Venture/Lead bidder that submits the bid.]
4.3.2 Bid Securing Declaration (Not applicable)

Form of Bid Securing Declaration

Date: [insert date (as day, month and year)]

Bid No.: [insert number of bidding process]

Alternative No, if permitted: [insert identification No if this is a Bid for an alternative]

To: [Commissioner & Administrator Nagar Nigam Jaipur Greater & Heritage, JMC, RAJASTHAN]

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with you, the Procuring Entity for the period of time of ……………………………………………………………………………………………, starting on …………………, if we are in breach of our obligation(s) under the bid conditions, because we:

(a) withdraw our Bid during the period of bid validity specified in the Letter of Bid; or

(b) do not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter “the ITB”); or

(c) having been notified of the acceptance of our Bid by you, the Procuring Entity, during the period of bid validity, (i) fail or refuse to sign the Contract, if required, or (ii) fail or refuse to furnish the Performance Security Declaration, in accordance with the ITB; or

(d) breach any provisions of the Code of Integrity as specified in the ITB;

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) thirty days after the expiration of our Bid.

Signed: ____________________________________________________

[insert signature of person whose name and capacity are shown]

Name: _____________________________________________________

[insert complete name of person signing the Bid-Securing Declaration]

In the capacity of: ___________________________________________

[insert legal capacity of person signing the Bid-Securing Declaration]

Duly authorized to sign the bid for and on behalf of: __________________

[insert complete name of Bidder]

Dated on ______ day of, __________________

[insert date of signing]

Corporate Seal ______________________

[affix corporate seal of the bidder]
4.4 Bidder’s Qualification

To establish its qualifications to perform the contract in accordance with Section III (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

1.4.1 Form ELI - 1: Bidder’s Information Sheet

<table>
<thead>
<tr>
<th>BIDDER’S INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder’s legal name</td>
</tr>
<tr>
<td>In case of JV/Consortium, legal name of each partner</td>
</tr>
<tr>
<td>Bidder’s /all JV/Consortium partners country of constitution.</td>
</tr>
<tr>
<td>Bidder’s /all JV/Consortium partners year of constitution</td>
</tr>
<tr>
<td>Bidder’s /all JV/Consortium partners legal address in country of constitution</td>
</tr>
<tr>
<td>Bidder’s /all JV/Consortium partners authorized representative (name, address, telephone numbers, fax numbers, e-mail address)</td>
</tr>
</tbody>
</table>

Attached are self-attested copies of the following original documents:

1. In case of single entity, certificate of registration/ incorporation and memorandum of association or constitution of the legal entity named above.
2. Authorization to represent the firm or JV / Consortium named in above.
4.4.2 Form ELI – 2: JV / Consortium Information Sheet

Attach the Letter of Intent to form JV / Consortium or certificate of registration/ incorporation and memorandum of association or constitution of the legal entity, if JV / Consortium is already in existence.

(Each member of a JV / Consortium/ must fill in this form)

<table>
<thead>
<tr>
<th>JV /Consortium/ SPECIALIST CONTRACTOR’S INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder’s legal name</td>
</tr>
<tr>
<td>JV /ConsortiumPartner’s or Subcontractor’s legal name</td>
</tr>
<tr>
<td>JV /ConsortiumPartner’s financial share in the JV</td>
</tr>
<tr>
<td>JV /Consortium Partner’s or Subcontractor’s country of constitution</td>
</tr>
<tr>
<td>JV /Consortium Partner’s or Subcontractor’s year of constitution</td>
</tr>
<tr>
<td>JV /Consortium Partner’s or Subcontractor’s legal address in country of constitution</td>
</tr>
<tr>
<td>JV /Consortium Partner’s or Subcontractor’s authorized representative information (name, address, telephone numbers, fax numbers, e-mail address)</td>
</tr>
</tbody>
</table>

Attached are attested copies of the following original documents:

1. Certificate of registration/ incorporation and memorandum of association or constitution of the legal entity named above.
2. Authorization to represent the firm named above.
4.4.3 Form LIT 1- Pending Litigation

(Each Bidder or member of a JV / Consortium / must fill in this form to be certified by the Statutory Auditors of the Bidder)

<table>
<thead>
<tr>
<th>Pending Litigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>o No pending litigation in accordance with Section III (Evaluation and Qualification Criteria).</td>
</tr>
<tr>
<td>o Pending litigation in accordance with Section III (Evaluation and Qualification Criteria)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Matter in Dispute</th>
<th>Value of Pending Claim in INR</th>
<th>Value of Pending Claim as a Percentage of Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

4.4.4 Form FIN 1–Financial Situation

Each Bidder or member of a JV / Consortium must fill in this form

(To be certified by the statutory auditors of the Bidder)

<table>
<thead>
<tr>
<th>Financial Data for past 5 (Five) years in Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years /Items</td>
</tr>
<tr>
<td>--------------</td>
</tr>
</tbody>
</table>

Information from Balance Sheet in Rupees

(in case of bidders and JV / Consortium partners from outside India, data to be converted at the exchange rate prevailing 28 days prior to the deadline of submission of the bids)

<table>
<thead>
<tr>
<th>Total Assets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Liabilities</td>
<td></td>
</tr>
<tr>
<td>Net Worth</td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td></td>
</tr>
<tr>
<td>Current Liabilities</td>
<td></td>
</tr>
<tr>
<td>Others as required</td>
<td></td>
</tr>
</tbody>
</table>

Information from Profit & Loss Account/ Income & Expenditure Statement
Section – IV: Bidding Forms
Construction of Recreational Centre Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmampuri, Jaipur.

<table>
<thead>
<tr>
<th>Total Operating Revenues/Income</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit/ Excess of Income over Expenditure before Taxes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit/ Excess of Income over Expenditure after Taxes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others as required</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attached are attested copies of audited financial statements (balance sheets including all related notes, and Profit & Loss Account/ Income & Expenditure Statement) for the last five (5) years, as indicated above, complying with the following conditions:
- All such documents reflect the financial situation of the Bidder or partner to a JV / Consortium, and not sister or parent companies.
- Historic financial statements must be audited by a chartered accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited. (No statements for partial periods shall be requested or accepted).

<table>
<thead>
<tr>
<th>Signature of the Statutory Auditors</th>
<th>Signature of Authorized Signatory</th>
<th></th>
</tr>
</thead>
</table>
### 4.4.5 Form FIN 2 Average Annual Construction Turnover in Rupees

Each Bidder or member of a JV / Consortium must fill in this form

(To be certified by the statutory auditors of the Bidder)

| Annual Turnover Data for the last five (5) years (Construction works only) |
|---------------------------------|-------------------------|
| **Year** | **Amount-Rupees** |
|         |                     |
|         |                     |
|         |                     |
|         |                     |
|         |                     |

**Average Annual Construction Turnover**

The information supplied should be the Annual Turnover of the Bidder or each member of a JV / Consortium in terms of the amounts billed to clients for each year for work in progress or completed, at the end of the period reported. For JV / Consortium partners from other countries, the conversion to Rupees shall at the rates prevailing on the 31st. March of that year.

---

**Signature of the statutory auditors**

**Signature of Authorised Signatory**

---

**NOTE:**

[To bring the earlier year’s amount to the last financial year’s level the following multiplier may be applied.]

The present price level for turnover and cost of completed work of similar nature, the previous years’ value shall be given weight age of 10% per year as follows:

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Financial Year</th>
<th>Weight age</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>2018-19</td>
<td>1.00</td>
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<td>(ii)</td>
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<td>1.33</td>
</tr>
<tr>
<td>(v)</td>
<td>2014-15</td>
<td>1.46</td>
</tr>
</tbody>
</table>
4.4.6 Form FIN 3 Financial Resources - Rupees

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract as indicated in Section III (Evaluation and Qualification Criteria).

<table>
<thead>
<tr>
<th>S.No</th>
<th>Source of Financing</th>
<th>Amount in Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Signature of Authorised Signatory
4.4.7 Form FIN 4 Current Contract Commitments / Works in Progress

Bidders and each partner to a JV / Consortium should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

<table>
<thead>
<tr>
<th>S.N. No.</th>
<th>Name of Contract</th>
<th>Procuring Entity's Contact Address, Tel., Mobile, Fax, E-mail id</th>
<th>Value of Outstanding Work in Rupees</th>
<th>Estimated Completion Date</th>
<th>Average Monthly Invoicing during Last 6 months (Rupees per month)</th>
</tr>
</thead>
<tbody>
<tr>
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Signature of Authorised Signatory
### GENERAL EXPERIENCE

<table>
<thead>
<tr>
<th>Starting Month Year</th>
<th>Ending Month Year</th>
<th>Years</th>
<th>Contract Identification and Name</th>
<th>Name and Address of Procuring Entity</th>
<th>Brief Description of the Works Executed by the Bidder</th>
<th>Role of Bidder</th>
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</table>

**Bidder Must Enclose:**

1. *Certificate of CA mentioning the construction turnover as per relevant clause.*
4.6 **Form EXP – 2(a): Specific Experience**

**Note:** Please fill up one sheet per contract

<table>
<thead>
<tr>
<th>CONTRACT OF SIMILAR SIZE AND NATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract No. . . . . of.</td>
</tr>
<tr>
<td>Award Date</td>
</tr>
<tr>
<td>Role in Contract</td>
</tr>
<tr>
<td>Total Contract Amount</td>
</tr>
<tr>
<td>If partner in a JV / Consortium or subcontractor, specify participation of total contract amount</td>
</tr>
<tr>
<td>Procuring Entity’s Name, Address, Telephone Number, Fax Number, E-mail address</td>
</tr>
</tbody>
</table>

**Bidder Must Enclose:**

1. Copy of work order.
2. Experience certificate as per relevant clause from an officer not below the rank of executive Engineer or Equivalent.
4.7 Form EXP – 2(b): Experience in Key Activities

Fill up one (1) form per contract

<table>
<thead>
<tr>
<th>CONTRACT WITH SIMILAR KEY ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract No. . . . . . . of . . . . . .</td>
</tr>
<tr>
<td>Award Date</td>
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<tr>
<td>Total Contract Amount</td>
</tr>
<tr>
<td>If partner in a JV / Consortium or subcontractor, specify participation of total contract amount</td>
</tr>
<tr>
<td>Employer’s Name</td>
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<tr>
<td>Address</td>
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<tr>
<td>Telephone Number</td>
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<tr>
<td>Fax Number</td>
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<tr>
<td>E-mail</td>
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<tr>
<td>Description of the key activities in accordance with Criteria.</td>
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<tr>
<td>OR</td>
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</tbody>
</table>
4.8 Form: Assured Revolving Line of Credit Facility

*(To be submitted by a Scheduled Bank on the Bank’s Letterhead)*

**Date:** *(Insert Date)*

**To:** Commissioner & Administrator, Nagar Nigam Jaipur Greater & Heritage
JMC Building, Pt. Deendayal Upadhyay Bhawan
LalKothi, Tonk Road, Jaipur-302015

**Subject:** Letter of Assurance for Revolving line of credit facility for INR ----

Dear Sir,

WHEREAS __________________________________________ [name and address of Bidder] *(hereinafter called the “Bidder”)* intends to submit a bid for -------------------------(name of contract package) ------------------- under the Jaipur Municipal Corporation (JMC) *(hereinafter called the “Employer”)* in response to the Invitation for Bids issued by the JMC through NIB no. -------------------; and

WHEREAS the Bidder has requested that an assured revolving line of credit be provided to it for executing the -------------------------(name of contract package) ------------------- In the event that the Contract is awarded to it; then

KNOW ALL THESE PEOPLE by these presents that We __________________________________________ [name of Bank] of ___________________________ [name of Country] having our registered office at ___________________________ [address of registered office] are willing to provide to __________________________ (the Bidder) a sum of up to __________________________ [amount of guarantee in figures and words] as an assured revolving line of credit for executing the Works under -------------------------(name of contract package) ------------------- should the Bidder be awarded the contract based on its tendered prices.

We understand that this assurance may be taken into consideration by the Employer during evaluation of the Bidder’s financial capabilities, and further assure that we intend to maintain this revolving line of credit until such time as the Works are completed and taken over by the Employer.

SEALED with the Common Seal of the said Bank on the _____ day of __________, 2017

Date: __________________________________________ Signature of the Bank: ___________________________

Witness: __________________________________ Seal: ____________________________________

[Signature, name and address]
4.9 Declaration by the Bidder in compliance of Section 7 & 11 of the Act

Declaration by the Bidder/ JV / Consortium

(To be prepared and submitted as per applicable rules on Non-Judicial Stamp Paper)

In relation to our Bid submitted to ………………………. [enter designation and address of the procuring entity] for procurement of ………………………. [insert name of the Works] in response to their Notice Inviting Bids No…………… Dated …………… we hereby declare under Section 7 and 11 of the Rajasthan Transparency in Public Procurement Act, 2012, that;

1. We possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;

2. We have fulfilled our obligation to pay such of the taxes payable to the Central Government or the State Government or any local authority, as specified in the Bidding Document;

3. We are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and are not the subject of legal proceedings for any of the foregoing reasons;

4. We do not have, and our directors and officers not have, been convicted of any criminal offence related to our professional conduct or the making of false statements or misrepresentations as to our qualifications to enter into a procurement contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;

5. We do not have a conflict of interest as specified in the Rajasthan Transparency in Public Procurement Act, the Rajasthan Transparency in Public Procurement Rules and this Bidding Document, which materially affects fair competition;

6. We have complied and shall continue to comply with the Code of Integrity as specified in the Rajasthan Transparency in Public Procurement Act, the Rajasthan Transparency in Public Procurement Rules and this Bidding Document, till completion of all our obligations under the Contract.

Date: ____________________________
Signature of Bidder

Place: ____________________________
Name:

Designation:

Address: ____________________________
4.10 Letter of Financial Bid

Financial Bid Submission Sheet

*(To be submitted with financial bid under Vol 2: BoQ only)*

Date: ___________ NIT No.: ______________

To: ____________________________________________

Sir,

We, the undersigned, declare that:

a) We have examined and haveno reservationsto the Bidding Document, including Addenda No.: ____________________________

b) We offer to execute in conformity with the Bidding Document the following Works:

____________________________________________________________

c) The total Price for our Bid, excluding any discount offered, if permitted, in item(d) below is:

____________________________________________________________

d) The discount offered, if permitted, and the methodologies for their application are:

____________________________________________________________

e) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.

f) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

g) Other comments, if any:

Yours faithfully,

Signature:

Name/address: __________________________________________

In the capacity of: _______________________________________

Signed: _______________________________________________

Duly authorised to sign the Bid on behalf of: ______________

Date: ___________________

Tel: ___________________ Fax: _____________________

E-mail: ___________________

4.11 Power of attorney *(To be prepared and Submitted as per applicable rules on NON-JUDICIAL STAMP PAPER)*
Section – IV: Bidding Forms

Construction of Recreational Centre Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmputri, Jaipur.

Power of Attorney for Authorized Representative

The firm M/s………………………………..authorize the following Representative to sign and submit the tender document, negotiate terms and conditions for the contract, to sign the contract, to deal with the __________, to issue and receive correspondence related to all matters of the bid “-------”. We / M/s _______________________________ undertake the responsibility due to any act of the representative appointed hear by.

For Partnership Firm's

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<tr>
<th>S. No.</th>
<th>Name of the All Partner</th>
<th>Signature of Partner with Seal</th>
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<td>4.</td>
<td>Name and Designation of the person Authorized</td>
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<tr>
<td>5.</td>
<td>Attested Signature of the Authorized Representative</td>
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</tbody>
</table>

For Limited Firm's

<table>
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<tr>
<th>Name and Designation of the person Authorized</th>
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<tr>
<td>Firm</td>
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<td>Address</td>
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<td>Telephone No.</td>
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<tr>
<td>Fax No.</td>
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<tr>
<td>Telex No.</td>
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<tr>
<td>Authority By which the Powers is delegated</td>
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<tr>
<td>Attested Signature of the Authorized Representative</td>
</tr>
<tr>
<td>Name and Designation of person attesting the signatures</td>
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4.12 Joint Venture Agreement (Among Two Firms)

(On Rs 1000/- Non-judicial Stamp Paper)

Memorandum of Understanding for

JOINT VENTURE

This Memorandum of Understanding (hereinafter referred to as "MOU") is made and entered into this ----------------- (“Effective Date”).

BETWEEN

M/s. ____________________________________________________________, a company incorporated, and having its registered office at ___________________________________.
(Hereinafter referred to as the "First Party"/ "One Partner);

M/s. ____________________________________________________________, a company incorporated, and having Registered office at _______________________________.
(Hereinafter referred to as the "Second Party"/ “Each Partner”);

Hereinafter jointly referred to as the "Parties" and individually as "Each Party" or "a Party" as the case may be.

WHEREAS,

A) The Government of Rajasthan, JAIPUR MUNICIPAL CORPORATION GREATER & HERITAGE. Jaipur Rajasthan (hereinafter referred to as the JMC or procuring entity) invited bid for

________________________________________________________________________

________________________________________________________________________

(B) The Parties hereto formed a Joint Venture or will form a joint venture (hereinafter referred to as the "JV") to jointly execute the above project in all respect

NOW THEREFORE IT IS HEREBY AGREED as follows

ARTICLE 1: JOINT VENTURE:
1.1. The Parties hereto agree to form the Joint Venture with ___________ designated as the One Partner and First Partner.

1.2. ___________ shall be the Second Member – or Second Partner

ARTICLE 2: JOINT VENTURE NAME:
2. The JV shall do business in the name of “___________ Joint Venture”.

ARTICLE 3: JOINT AND SEVERAL LIABILITY:
3. The **Parties** hereto shall, for the above-referred **Projects**, be jointly and severally liable to the **Employer** for the execution of the Projects in accordance with the **Contract** till the actual completion of Contract including defect liability period and operation & maintenance as per bid conditions.

**ARTICLE 4: PROPORTIONATE SHARE:**

4.1 Each member of the Joint Venture agrees to place at the disposal of the Joint Venture, the benefit of all its experience, technical knowledge and skill, and shall in all respects bear its share of responsibility and burden of completing the contract. The parties herein shall be responsible for physical and financial distribution of work as under.

**Lead Partner:** Financial responsibility: --------------------------------------------------

Physical responsibility: --------------------------------------------------

**Other Partners:** Financial responsibility: --------------------------------------------------

Physical responsibility: --------------------------------------------------

4.2 All rights, interests, liabilities, obligations, risks, costs, expenses and pecuniary obligations and all net profits or net losses arising out of the **Contract** shall be shared or borne by the **Parties** in the above **Proportions**.

4.3 The members in the proportion as mention in article 4.1, shall contribute sufficient Initial fixed capital for timely execution of the project including commissioning & operating period as per the contract.

**ARTICLE 5: JOINT EFFORT AND MANAGEMENT:**

5.1 The **Parties** shall participate as a **JV** in the submission of bids and further negotiations with the **Employer** and shall co-operate and contribute their respective expertise and resources to secure and execute the **Projects**.

5.2 On award of **Projects**, the **First Partner** in consultation with the other members of **JV** will decide on the final management structure for the successful execution of the **Projects** as per the terms of **Contract**.

5.3 All the **Parties** hereby agree to pool in their financial, administrative, managerial, technical and material resources for execution of the **Projects**, including commissioning & operation for the period as stipulated in the contract. The share of interest of the **JV** shall be as per the mutual understanding for the successful completion of the project.

**ARTICLE 6: EXCLUSIVITY:**

6.1 The co-operation between the **Parties** hereto shall be mutually exclusive i.e. none of them shall without the other **Party's** consent & prior approval of **JMC**, approach or cooperate with any other parties in respect of the Project.

6.2 In the course of working as associates, the parties to the **JV** will be sharing information with each other which may be proprietary / confidential information / knowledge acquired by each other. It is hereby agreed that the parties will maintain complete secrecy regarding such information / knowledge and will not divulge to any party for any other purpose except for the success of the joint execution of the contract. All parties will also indemnify each other against any claim that may arise out of using information, which are being claimed proprietary.
ARTICLE 7: Memorandum of Understanding:

7.1 This Memorandum of Understanding shall be terminated:

a. if the Parties mutually confirm that the JV's bid proposal has not been finally accepted by Employer and all rights and obligations of the Parties under or in connection with this Memorandum of Understanding have ceased, or

b. after successful completion of the project including commissioning & operation and defect liability period from the date of this Memorandum of Understanding unlessextended for a further period on demand of JMC & mutual consent of the Parties, or

7.2 The Memorandum of Understanding can be modified by mutual consent of the Parties to suit the efficient and expeditious execution of Projects including commissioning & operation of Plant or to make this agreement more meaningful to suit the requirements of Employer after the consent of the Employer.

ARTICLE 8: ARBITRATION:

8.1 Any dispute resulting from this Agreement shall be settled amicably by mutual consultation by the Managing Directors/Chairman of ___________&_____________. In the event that an amicable settlement is not reached within 60 days in any particular case, the dispute shall be referred to arbitration and shall be resolved in accordance with and subject to the provisions of the _______________ and any statutory modifications and enactment hereof for the time being in force. The decision of the arbitrators shall be final and binding upon both parties. The venue of arbitration will be ____________.

ARTICLE 9: GOVERNING LAWS:

9.1 This Agreement shall in all respects be governed by and interpreted in accordance with the ___________ Laws.

ARTICLE 10: CONFIDENTIALITY:

10.1 No Party hereto shall disclose to any other party any information of a confidential nature including but not limited to trade secrets, know-how acquired from any Party in connection with the subject matter of this Agreement.

ARTICLE 11: ADDRESS OF Consortium:

Any and all correspondence from the Employer to the JV shall be addressed to (name of JV) at the address stated herein below--(any one of the partners). The address of the Consortium office of the partner companies will be deemed to be the address for the purpose of communication.

The notice, if any required to be served on the party by the other party, will be deemed to be served, if the said notice / communication is delivered by Registered Post at the respective address (name of JV)

ARTICLE 12: Authorized Representative:
The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.

Authorized Representative of JV: ____________________

ARTICLE 13: ASSIGN ABILITY:

13.1 The interests and rights of a Party in the Contract and as a Party of the Joint Venture shall not be transferable or assignable without the written consent of the Employer & other party.

ARTICLE 14: INTERPRETATION OF HEADINGS:

14. The headings of each of the Articles herein contained are inserted merely for convenience of reference and shall be ignored in the interpretation and construction of any of the provisions herein contained.

ARTICLE 15: OTHERS

15.1 Any other matters not contained in this Agreement shall be discussed and amicably agreed upon by the Parties in the spirit of mutual trust and cooperation for timely completion of project including commissioning & operation of project. Notwithstanding anything above all the Parties are severally and jointly responsible to the Employer for execution of the Contract:

IN WITNESS WHEREOF the Parties hereto have caused this Agreement to be executed by each of the duly authorized representatives as appearing below:

Signed by
For and on behalf of

in the presence of:

Name: ____________________
Designation: ____________________

Signed by
For and on behalf of

in the presence of:

Name: ____________________
Designation: ____________________

*Similar Consortium Agreement to be signed in case of a Consortium
4.13 STATEMENT FOR WORK IN HAND (for calculation of value of Bid Capacity)

This is to certify that the status of the present works in hand as on date of publication of NIT of order value more than Rs. 10.00 lacs for which either order are received or the work is under execution but which are still not completed is as under:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Brief Description of Work</th>
<th>Stipulated Date of Start</th>
<th>Stipulated Date of Completion</th>
<th>Time left for execution after date of publication of NIT, in months</th>
<th>Cost of awarded work</th>
<th>Cost of work executed up to date of publication of NIT</th>
<th>Balance Cost of un-executed work as on date of publication of NIT in 30 month from and date of submission</th>
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1. If the value of Balance work goes beyond 30 months from the date of bid submission then client certificate mentioning the amount of work to be executed beyond 30 months, otherwise full balance work shall be accounted for calculation of 'B' value.

2. This is certified that this is true in all respect and can be used for calculation of the bidding capacity as per the formula given in ITB. This is also certified that other orders under execution by the firm shall not materially affect the bidding capacity of the firm as required in this tender. (Format should be on Rs 500/= stamp paper)

Signatures with Seal of Authorized Signatory for tender
4.14 Calculation of Available Bid Capacity

[Using the following formula, the Bidder must calculate his available Bid Capacity: -]

**Assessed Available Bid Capacity:** \((A*N^2 – B)\)

Where

\(A\) = Maximum value of works executed in any one year during the last five years (updated to the current price level) taking into account the completed as well as works in progress;
\(N\) = Number of years prescribed for completion of the works for which bids are invited, and
\(B\) = Value at current price level of the existing commitments and ongoing works to be completed during the next ------ years (period of completion of the work for which bids have been invited)

**Signature of Authorized Signatory**
4.15 Self-Declaration by Bidder: No Blacklisting

In relation to our bid submitted to ........................................... [enter designation and address of the procuring entity] for procurement of ........................................... [insert name of the works] in response to their Notice Inviting Bids No............. Dated .......... we hereby declare that;

We hereby affirm that we have not been blacklisted by any Government agency or Public Sector Undertakings, either in the bidding stage or during the execution stage of any contract in which we participated.

Date: 
Place: 
Name: 
Designation: 
Address: 

Signature of Bidder
4.16 Certificate of Conformity / No Deviation

In relation to our bid submitted to ............[enter designation and address of the procuring entity] for procurement of ....................[insert name of the works] in response to their Notice Inviting Bids No ............. Dated ............. we hereby declare that;

We hereby affirm that we have complied and shall continue to comply with the all the terms and conditions as specified in this Bidding Document, including technical specification and schedule of supply, quantity of goods to be procured, payment conditions, till completion of all our obligations under the contract.

Date: .................................................. Signature of Bidder
Place: .................................................. Name:
Designation: .............................................
Address: ..................................................
4.17 Check Points

(Must be filled by Bidder)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Page No. of Bidding Document</th>
<th>Requirements / Documents required to be submitted</th>
<th>Check Points</th>
<th>Yes / No</th>
<th>Enclosed at page no. of bid and any other detail as required</th>
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<td>GENERAL</td>
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4.18 Self-Appraisal Sheet

(To Be Filled by The Bidder for Determination of Responsiveness)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Page No. of Bidding Document</th>
<th>Requirements as per bid document</th>
<th>Check points</th>
<th>Tick the correct option or fill in information</th>
<th>Enclosed at page no. of bid and any other detail as required</th>
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4.19 Bill of Quantities (Activity Schedule in case of Lump Sum Contract)

1. The Bill of Quantities (BOQ) shall be read in conjunction with the Conditions of Contract (General and Special), Technical Specifications (including BIS and IRC), design and Drawings.

2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out by the Contractor and as measured and verified by the Engineer-in-charge and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer-in-charge may fix within the terms of the Contract.
3. The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, machinery & equipment, T&P, quality assurance, erection, defect liability, maintenance (if included in the Contract), insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.

4. The rates and prices shall be quoted in the units indicated and entirely in Indian Rupees.

5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, including miscellaneous items involved in the concerned item, and items not mentioned in the BOQ but required to be executed will be considered as variation items.

6. General directions and descriptions of works and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities. The execution of various items shall be in full conformance to the relevant specifications and codes, drawings and designs as confirmed through sampling and testing and the third party quality inspection as per ISO 17020.

7. In case of Lump Sum Contract, the payments shall be linked to completion of various stages of the works as per design, drawings and specifications.
SECTION-V:
PROCURING ENTITY’S REQUIREMENTS
SECTION-V: PROCUREMENT ENTITY'S REQUIREMENTS

Name of project:- Construction of recreational center cum community hall along with separate underground parking on turnkey basis at pondrik park Brahampur Jaipur.

5.1. Project Background and Introduction

5.1.1. Introduction

Jaipur is known as one of the first planned cities of India. Jaipur City was not only planned but its execution was also coordinated in such a manner that a substantial part of the city developed up within seven years of its foundation. The municipality was reorganized in 1926 and a new Municipal Act was prepared in 1929. Post-independence, planned development of the city was taken up after the city became the capital of Rajasthan.

Jaipur is located at a strategic point on the National Highway (NH-8) that connects Delhi and Mumbai. NH-8 is one of the vertices of the Golden Quadrilateral Corridor of the National Highways Development Project. Jaipur with its exotic culture and tradition attracts domestic as well as foreign tourists. The city is currently the 11th largest city in the country and has one of the highest population growth rates. It is clearly one of the most thriving cities of North India. The city is therefore, bound to have increased spatial expansion in the coming decades in order to accommodate both economic as well as population growth. In this context, it is essential to introduce systematic planning measures for the future development of the city.

The Jaipur Region comprises two distinct constituents; the Jaipur Municipal Corporation (JMC) area and the rest of Jaipur Region. Jaipur Development Authority (JDA) is responsible for planning of the Jaipur region. Jaipur Region would henceforth be referred as the JDA area. The entire JDA area comprises Jaipur city (JMC) and the neighboring satellite towns namely, Chomu, Bagru, Bassi, Shivdas pura, Achrol and Jamwaramgarh. It covers a total area of 1464 sq. kms, out of which, the municipal area of Jaipur covers 288 sq. kms. The JMC area is further divided into the walled city and the rest of JMC area.

The area under Jaipur Municipal Corporation has grown from 200 sq. kms in 1981 to 218 sq. kms in 1991 and further to 288 sq. kms in 2001. The increase in area in 1991 was a result of addition of Sanganer and Amber tehsils and in 2001 due to the addition of Bagru, Bassi and Chomu tehsils in the municipal area. The area under the jurisdiction of JDA has remained same since 1991.

The population of Jaipur region is 3.073 million as per 2011 census and has shown a consistent increase in the past 50 years. In a recent international survey, Jaipur was ranked the 7th best place to visit in Asia and in another poll, it was ranked third among twelve major Indian cities.

Modern infrastructural facilities are developing fast. The city is expanding very quickly and has become a hot spot for development in Rajasthan.

Since 2000 Jaipur has become a center for education. Jaipur has more than 40 engineering colleges, 40 business management institutes, 15 pharmacy institutes, 4 hotel management
institutes, 3 medical colleges and 6 dental colleges. It also has 8 universities including Rajasthan University.

Jaipur has a well-maintained road network with multi-story flyovers and traffic lights with closed circuit cameras. Police control room (PCR) vans are being equipped with GPS to monitor locations and help maintain law and order. There are so many shopping malls and multiplexes which offer an urban lifestyle to Jaipurites.

The growing population and economic activity are already straining the existing infrastructure. The pressure is being felt by water supply, sewage, power and parking spaces. Since there are several areas within the walled city as well as outside where congestion is significant and is taking a toll on the sports facilities in the city. The open lands are either being converted into dumping yards or are misused in some other way.

Unavailability of community/recreational building is a major issue in the walled city area and an emergent issue in the rest of the city. The tendency in Jaipur is of commercialization and convergence of empty land into an unproductive area. Initially, the plots were of unused nature but with increasing land value they got commercialized. The commercialization led to an increase in the demand for the community/recreational buildings.

5.1.2. Project Background

The growing population and economic activity are straining the existing infrastructure in the old city of Jaipur. Absence of community/recreational facilities is a major issue in the walled city area and an emergent issue in the rest of the city. The main reason is either commercialization of the empty land or conversion of the land into some unproductive use. Initially, the plots along these roads were residential in nature but with increasing land value and traffic on these roads, they got commercialized. The remaining open lands were also converted into residential or commercial or into some unproductive use.
Section – V Procuring Entity Requirement

RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

Figure 1 Location- Recreational cum community hall and proposed underground parking

Pondrik park

Pondrik park is one of the significant places for Jaipur's chief social, cultural happenings. Situated near Talkatora and Govind Dev ji temple it is one of the historic park in Jaipur, Rajasthan.

5.2. Need for the Project

With increase in population and lack of public use building/recreational space and parking space has led to overburden in walled city. Due to tourist spots such as Talkatora, Govind dev ji temple there is huge demand for a Community building and parking space in city. In recent times, this park has become popular for the cultural events it houses. But, due to overuse and lack of maintenance of the park, the existing community facilities have deteriorated and needs up gradation, which is being done under this project.

5.3. Objective of the Project

This project aims to develop a multipurpose community building/recreational space, under ground parking and other allied works for the citizens of Jaipur under the Jaipur Municipal Corporation proposal.

5.4. Area Details

A. Project Area which is considered for the development of Recreational cum community hall building, Under ground parking and redevelopment of Nallah with outer development towards east side of paundrik park is:

- Recreational cum Community hall Building(site area): 2178 sqm approx
- Underground parking(site area): 3555 sqm approx.
- Redevelopment of existing nallah (approx 150mtrx4.5 mtr)

5.5. Project Duration

The Project shall be completed within 18 months from the commencement date including DLP for 36 months.

5.6. Scope of Work

The Successful Bidder has to carry out the developments on the site as mentioned below.

The survey of the site, prior to commencement of the works is under the scope of the contractor. The Integrated development of community building, underground parking, redevelopment of nallah
Section – V Procuring Entity Requirement

RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

and other allied works are being undertaken to execute the following works defined broadly. Details are in later sections of document.

Figure 2 Project Site Paundrik park 1. Recreational center cum community hall 2. Underground parking 3. Redevelopment of existing Nallah with footpath

Recreational center cum Community building and UG Parking

Following are the indicative scope of work but the bidder will have to design the facility to ensure attainment of the Objective as visualized by the Employer as Project Requirement.

It is proposed to take construction of Community building, underground parking, Minimum 3 Nos entry gates, redevelopment of park above parking area, landscaping of project area, redevelopment of existing nallah, outer development etc at project area, as detailed below.

1. Project Site- 1 :- Recreational center cum community hall (Available land area: 2178 sqm)
   I. Design & Construction of community building.
   II. Outer development and landscaping.
   III. Entry gates as per requirement.
2. Project Site- 2:- Underground parking at paundrik park (Available land area: 3555 sqm)
   IV. Underground parking.
   V. Redevelopment of park above underground parking area.
   VI. Outer development
   VII. Solar lights
3. Project Site- 3 :- (Redevelopment of existing nallah at east side of pondrik park)
VIII. Dismantling and reconstruction of nallah with required crosssection as per required hydraulic design discharge (minimum 150 m length and 4.5 mtr wide to meet out existing discharge)

4. Defect and Liability Period for 3 Years.

5.6.1. General Requirements

The contractor will have to ensure overall development of the project area Recreational center cum community building, existing nallah and underground parking, as visualized by the Employer, as detailed in this section of the bid document. The scope of work of the contractor will include Detail design of all the components as deemed required by the contractor, complying with the requirement of the Employer, as detailed below.

1. The designs and drawings of the Project under this package are to be appraised by JMC and approved from any of the Indian Institute of Technology/ National Institute of Technology/govt engineering college at Contractor’s cost actual fees will be reimbursed by JMC. The drawings shall conform with Indian Standards, before submitting them to the JMC. The number and type of drawings to be vetted by the IIT/NIT/GOVT Engineering college will be decided by the Engineer-In-Charge, which will be binding on the contractor,

2. In case design is not acceptable to JMC, for any reason, Contractor is required to resubmit design duly approved from the same IIT/NIT’S/ GOVT Engineering college concerning department incorporating requirements of JMC.

3. Contractor may choose any of the IIT/NIT’S/ GOVT Engineering college concerning department with JMC officials approval, but shall be fully responsible for getting timely submission of designs/ revised designs incorporating JMC’s requirements.

4. The design should be able to deliver outcome:
   i. Safety and durability of structures and equipment’s.
   ii. Safety of personnel.
   iii. Environment and health parameters as per international standards.
   v. Reduction in power consumption.

5. Contractor is required to submit the complete proposed process well in advance for execution/Installation/erection/commissioning of each unit/activity for approval of the Engineer-in-Charge and should proceed with the approved methodology only. In case methodology is not approved by the Engineer-in-Charge, Contractor is required to submit revised methodology till it gets the approval of the Engineer-in-Charge. The time for submission of methodology for each activity should be such that there should be no delay on this account. In case of any delay due to non-approval of methodology, delay in approval, it shall be wholly on the part of Contractor.

6. For IT and Electrical works, though the bidder will be required to design, in general the bidder shall follow the minimum specifications given in this subsection. Bidder shall furnish detailed specification of other equipment not listed in the main bid. The bidder shall ensure compliance of all Government Regulatory Requirements along with those pertaining to the construction, operation & maintenance requirements. The bidder shall arrange submission and clearance of appropriate drawings, details, etc., and obtain all necessary statutory clearances as deemed necessary.
7. Contractor shall prepare detail project design as per available land and get it approved from NIT/IIT/GOVT Engineering college and intimate the Procuring Entity.
8. The layout of the project must maximize use of the available land including all but not minimum scope of works as mentioned in document.
9. The plot plan for Project location is enclosed with the bid document in pdf format. The bidders are advised to visit the site to confirm site topography including but not limited to HFL, GWT, accessibility, soil strata etc.

5.6.2. Completeness of the Offer

1. The bidder shall be fully responsible to include in his bid the whole of the Works, including each individual component, designed and constructed in accordance with good engineering practice and best Industrial standards.
2. The offer shall include all buildings, plants, equipment and accessories required for the efficient, safe and satisfactory operation of the facilities.
3. Any accessories which are not specifically mentioned in the specifications/requirement, but which are usual or necessary for completion of the Works and successful performance of the project and facilities, shall be provided by the bidder within the tendered cost.
4. The bidder shall, to the maximum extent practical and feasible, endeavor to offer standardized designs, keeping in view minimization of operation and maintenance requirements. The bidder shall ensure that his offered designs and equipment are "maintenance-friendly".

5.6.3. Broad Scope

It broadly comprises the following works.

1. All preparatory work, including required topographical survey, clearing out trees, shrubs, debris, dismantling of existing building, nallah or any structure within project area as per the requirement of procuring entity, leveling and dressing of the site, excavation in wet saturated soil and disposal of surplus excavated earth within the site to the extent possible and proper disposal of the extra surplus excavated earth/debris to a suitable location with all lead and lift as decided by the Procuring Entity's Representative
2. Carrying out of necessary site surveys and soil investigations are deemed necessary by the Contractor for the purpose of designs/ drawings and as directed by the Engineer-in-Charge. The soil bearing capacity as found out from the soil investigation will be used for subsequent structural design. The SBC shall be taken as 15 t/M² or Actual, whichever is lower.
3. The worst-case criteria for bearing pressures and other design criteria shall be used from the site surveys and soil investigations.
4. Detailed engineering, layout, construction drawings, civil works construction, supply, installation/erection, testing and commissioning of Mechanical, Electrical, IT work etc., and operation & maintenance of project, including future up-gradation, etc.
5. The detailed Architectural & Structural designs and drawings for all civil works, including project components, building services, water supply, building, lighting, Guard room, storm water drainage, rain water harvesting etc. as per the requirement of the procuring entity with fulfill of existing traditional Jaipur styled heritage.
6. The contractor shall be responsible for taking electric connection as per requirement from JVVNL for which the demand note fee shall be paid by the contractor itself which will be reimbursed afterwards by JMC, on submission of receipt but actual electric consumption during the construction period will be paid by contractor itself.
7. Construction of Approach Road (if required) shall be in the scope of the contractor.
8. Construction of all civil structures including all civil works, buildings, water supply, storm water drainage, rain water harvesting as per latest prevailing specification and as per CPHEEO and QA- QC manual of RUIDP. Building code, NBC including electric fittings shall be applicable.
9. Third party inspection (TPI) at manufacturing units and site required for all electro-mechanical items along with submissions of respective QAP’s by contractor. Third party inspection (TPI) during manufacturing, during assembling or on testing before packing and after unloading at site is required. Cost of TPI along with clients and its representative’s visits shall be borne by the contractor.
10. Third party inspection of IIT/NIT/Govt engineering college will be conduct as per requirement of procuring entity and charges will be reimbursed by JMC after submission of invoice from institute.
11. TPI charges including JMC authorized representative’s visit/inspection at manufacture unit and on-site. Preferable mode of transportation for visiting/inspection at the manufacture unit shall be by Air to minimize the total time required for inspection. Facilities shall also include lodging and boarding with local transportation charges will be reimbursed by JMC after submission of invoice
12. Instituting Quality Assurance and Quality Control procedures during construction and Operation period as per QA/QC manual of RUIDP, IS Code, IRC etc. guidelines;
13. Preparation and submission of "as-built drawings" and “Operation and Maintenance Manual” for applicable components of the project;
14. The contractor will also provide luminous painted warning / caution notice boards with flickering light arrangements, where the work is in progress.
15. The sub-soil water is likely to be encounter during excavation. The Contractor is advised to carry out its own investigations and gather information on the water table/subsoil conditions. The suitable and approved dewatering system should be adopted for execution of work. Nothing extra shall be paid on this account.
16. The sub-soil water pumped will be drained off to the proper disposal points, contractor will have to make arrangements to dispose off the pumped sub-soil water to satisfaction of the Engineer-in-Charge/JMC and nothing extra for dewatering of sub-soil water drain etc. will be paid.
17. This contract includes Defect and liability for 3 yrs of the project with all required consumables.
18. A model shall be provided in the form of a three-dimensional Auto Cad (or equivalent) software model viewable on the computer equipment provided. The model shall be rendered to allow viewing of the model from various viewpoints to show all structures, facilities and equipment with different Color lighting.
19. Supply, installation, testing and commissioning of required capacity and type of Electrical Transformer at the cost of contractor. No additional payment will be paid by the Procuring Entity.
20. The GAD (General arrangement drawing) should include all the units for the design requirement of capacity as per the Design and Drawing submitted by the bidder and approved by the Engineer-In-Charge.
21. No additional cost will be paid to contractor for following works. The quoted price of the project is inclusive of all the works mentioned below:
   i. Carrying out topographic survey with Total station for required scope of work.
   ii. All the required test like Soil testing, material testing etc.
   iii. Shifting of existing utilities like RCC pipe, Water supply lines, electric cables with consultation and after approval of concern department etc.
22. Shifting of existing utilities like existing pipeline, cables etc, if required are to be taken by as per satisfaction of the line department. The charges for the same shall be deposited by the contractor upfront and the same shall be reimbursed by JMC through Jaipur Smart City Limited upon submission of receipts (if any).
23. Supply, Erection, Testing & Commissioning of Safety Equipment’s at required locations including Safety Showers, Sand Buckets, Fire Extinguishers, Fire Alarms, pump, sprinklers, Overhead Tank, hose, UG tank, etc. including necessary firefighting system, as per the applicable building bye laws and other requirements as needed for NOC. Contractor shall get Fire NOC from relevant department.

24. The landscaping of the project site is in the scope of this package. The open area within the campus after construction shall be developed through adequate greenery comprising flowering bushes, thickets and trees.

5.6.4. Site office during construction

The contractor shall provide temporary one site office at the project site consisting two rooms along with one attendant for JMC field Engineers. The contractor shall provide minimum 2 Nos. desktop with latest configuration including 2 Nos. laser printers to the JMC staff for monitoring of execution and maintenance work. Site office should be well furnished with electrical power supply, equipment’s and connection facility. Comfortable flooring along with toilet block facility shall be provided by contractor. Separate septic tank/ sewer connection should be provided for toilet block. Modern Notice board should be provided in the site office to display the notice or work schedule plan. No additional cost shall be paid for site office.

5.6.5. Testing Laboratory set up during construction

i. The contractor shall arrange a testing laboratory with all testing equipment’s and trained staff required for proper testing of construction material likely to be used in execution of work as per QA- QC manual of RUIDP, at his own cost. Calibration certificate of each equipment should be available on site with up to date validity period.

ii. Testing record book and Test results of each test with up to date shall be maintained by the contractor. All the records of testing in lab should be signed and stamped with the witness of the testing and field engineers of JMC officers.

5.6.6. Time Schedule

The work shall be done by the contractor according to the work schedule plan fixed in consultation with the JMC. Bar/PERT/CPM chart showing detailed program shall be submitted and adhered to by the contractor. Site order book shall be provided and maintained by the contractor. Site order book should be up to date and signed and stamped by JMC officials/ Field Engineer. Compliance of the site order given by JMC field engineer, officials shall be complied by the contractor with his sign and stamp.

5.6.7. Other services

5.6.7.1. Area outside the site

i. In the event of the Contractor making use of any special or temporary way or accommodation acquired by him or any tip for the disposal of surplus materials, or any borrow pit or quarry, he shall obtain the written consent of the owner, occupier or authority having charge of the land in which such way, accommodation or pit is situated and shall
make a record agreed by the owner, occupier or authority as aforesaid of the condition of the surface of that land before entering thereon.

ii. The Contractor shall permit JMC and its representative and any person authorized by the JMC to access for the purposes of the Contract to any such special or temporary way or additional accommodation.

iii. In the event of the Contractor making use of any special or temporary way or additional accommodation mode available to him by JMC for the purpose of the Contract, the land in which such way or accommodation is situated shall be deemed to be part of the Site. On completion of the works at site, the Contractor shall reinstate the area to its original condition to the satisfaction of JMC or it’s representative.

iv. For the purposes of this Clause, ‘accommodation’ shall be deemed to include housing, offices, workshops, warehouses, and storage areas.

5.6.7.2. Clearance of the Site

i. The Contractor shall clear all the Sites to the extent as required for checking the setting-out. Clearance of the Site shall also include demolition and removal of all articles, excavation/filling by earth, objects and obstructions, which are expressly required to be cleared. The Contractor shall ensure that the parts of the Site to be occupied by the proposed Permanent Works are clear and shall maintain the remainder of the Site as may be required for access and temporary works areas required for the project.

ii. The Contractor shall remove the material arising from such clearance and dispose of it in a manner at a location, to the approval of JMC. The Contractor shall fill and make good with appropriate materials those cavities and losses of soil, which result from clearing the parts of the Site not subsequently to be occupied by the Works.

iii. The Contractor shall not clear the Site of any existing structure without the prior written instruction of JMC.

5.6.7.3. Clearance and Reinstatement of the Site on Completion

On completion of the Works, the Contractor shall clear any temporary works and temporary access roads and reinstate the areas to their original condition to the satisfaction of JMC.

5.6.7.4. Access for the JMC and its representative

The Contractor shall permit JMC and its representative and any person authorized by JMC including workmen of JMC, other Contractors for utility undertakings access for the purposes of the Contract to all areas of the Site and to any additional accommodation or temporary way leave for the duration of the Contract period.

5.6.7.5. Water Supply and Wastewater Disposal at Site

i. The Contractor shall make his own arrangements for water supply during construction at site and he shall ensure the quality of the water remains potable for the purpose for which it is intended. The Contractor shall also conduct weekly/bi-weekly test for water quality and comply with the quality requirements, as directed by the JMC’s representative. If required, Contractor may construct a tube well as per the ground water norms and legal formalities with help of JMC. No additional cost will be paid for the construction of tube well including
laying of pipeline and necessary fittings and electro-mechanical items which is assumed the part of the project.

ii. In case of tap water connection taken by the contractor for construction, the water bill/charges should be paid by the contractor.

iii. Wastewater generated during the construction should be disposed as per the norms of CPBC. If there are any irregularity in disposal of wastewater as per the norms of CPCB/any authority appointed by Law, only the Contractor will be liable for the same.

5.6.7.6. Latrines and Washing Facilities

i. Throughout the period of construction works the Contractor shall provide, maintain and clean and sufficient latrines and washing facilities for use by his employees. He shall ensure that his employees do not foul the Site but make proper use of the latrines. Where practicable, the latrines shall be connected to the nearest sewer, or if this is not practicable the Contractor shall provide an adequately sized septic tank and soak-pit.

ii. The Contractor is also to provide separate latrines to the above requirements for JMC’s staff.

iii. After completion, the latrines and washing facilities shall be removed, all ground disinfected and the surface reinstated to the satisfaction of JMC.

5.6.7.7. Electricity for Contractor’s Use on Site

i. The Contractor shall be responsible for provision of electrical supply at site and will pay electricity bills for the purpose of construction up to testing and before O&M.

ii. The installation shall comply with all the relevant regulations, Indian Standards and Codes of Practice, and Health and Safety requirements, etc. The Contractor must take every possible precaution to ensure that his installation is safe and injury to personnel or damage to project and buildings is avoided. The Contractor shall be fully responsible for all safety, etc. The Contractor shall test the temporary site distribution system every 3 months for compliance with the relevant standards.

5.6.7.8. Refuse Disposal on Site

Refuse and rubbish of every kind shall be removed from the Site and disposed of by the Contractor at his own expense, frequently and regularly so as to keep the Site in an approved wholesome, hygienic and tidy condition to the satisfaction of JMC.

5.6.8. Setting Out

The Contractor shall submit all drawings based on his detail design, layout and hydraulics and will be approved by the Engineer-In-Charge. The contractor has to set out the Facility, as per the approved Design and Drawings.

5.6.8.1. Construction Documents

These documents shall include:

- Layout Plan
- Architectural Drawings/Renderings;
• Detailed structural design and good-for-execution (construction) drawings pertaining to all components of the project
• Drawings showing the size, position and other necessary details of all IT, mechanical and electrical equipment and fixtures;
• Wiring diagrams, power & motor control gear in power cum Motor Control Center and motor control center.
• Details of foundations, position of openings, etc., for the pumps, motors, Blowers, starter modules, Low- and High-tension panels, etc.
• Elementary diagram and manufacturers’ shop and part drawings for each equipment, including cut section drawings;
• Drawings depicting services like internal illumination and ventilation, building water supply, sanitation and plumbing, service roads, landscaping, area lighting, storm water drainage, rain water harvesting (to ensure optimum utilization of rain water run off form the entire project area, to avoid flooding) etc.;
• Any other design and drawings to comply with the Procuring Entity’s requirement as indicated in Section 5, Technical Specifications.

The documents and drawings shall be in sufficient detail for review of the Procuring Entity’s Representative. The scale of the drawing has to be chosen accordingly in coordination with the Procuring Entity’s Representative in respect of hard copies, the soft copies shall normally be made available on actual scale basis. The drawings shall be of standardized sizes and as instructed by the Procuring Entity’s Representatives. The drawings shall contain the following basic information in the nameplate:

a) Project name
b) Name and number of the Contract
c) Contractor’s name
d) Number and title of the drawing
e) Date
f) GFC stamp
g) Draftsman’s name
h) Revision Number (R0 for drawing submitted initially and R1, R2, etc., for drawings submitted subsequently).

A blank space 90 x 50 mm shall be provided immediately above the title block for the approval stamp. If required, the detailed design and the execution drawings shall be submitted only after verification by an institute approved by the Procuring Entity.

5.6.9. Bidder’s Inspection of Sites

The Bidders are deemed to have visited the sites and familiarized himself of the conditions, restrictions and constraints as well as any differences from drawing etc. before bid of the said project under which the work will be executed. The omission of any details shall not relieve the Bidder of his prima facie obligation and responsibility under the Contract to carry out and successfully complete the works. No monetary or other claims made by the Contractor on the grounds of want of knowledge will be entertained by the Employer. The Bidder is advised that it is his sole responsibility to ascertain for himself the extent of work that is required to be done in site and to generally obtain his own information on all matters affecting directly or indirectly the
execution of the whole works involved in the contract to the complete satisfaction of the Engineer. No claim of extras in consequence of any alleged ignorance in any aspect will be entertained by the Engineer. It must be clearly and definitely understood that the contractor shall be held solely responsible for making all necessary arrangement and coordinating with relevant authorities and obtaining permissions in time, competent agencies and specialist contractors etc., to ensure satisfactory completion of the Contract.

This includes but not limited to:

- Location of proposed project
- Traffic permissions and diversions as required
- Clearances for Night Shift working
- Approvals to work in residential areas
- Sewage/ Storm water flow diversions and management of flows
- Identification and relocation of existing utilities as necessary
- Relocation of any structures
- Construction access
- Site office location
- Nallah diversion
- Taping of raw sewage from existing manhole.

5.6.10. Security room

The security room at entry to each Sports Arena shall be a ground floor construction with 3m x 5m carpet area with toilet and be of RCC roofing and shall be provided with glass panels on three sides and an air cooler. Necessary fans and lights shall be provided as directed by the Procuring Entity’s representative.

5.6.11. Detailed Scope

The following section gives the scope of work for the project under different heads in an elaborated form but no limited to:

I. Design & Construction of Recreational center cum community hall, underground parking in paundrik park, Redevelopment of Nallah at east side of paundrik park

The construction of new community building as per traditional Jaipur styled architecture is to be done on East side of the Paundrik park. This facility shall be a multi-story structure housing Indoor hall to be used for recreational purpose in double height basement, double heighted banquet hall on ground floor with necessary rooms and service as per requirement, gymnasium,e-library dormitory on first floor, rooms for visitors and space for exhibition on second and third floor, terrace of building is to be developed to be used as food court/ roof top restaurant., having site area of approx 2178sqm (size with total built-up area of minimum 4650 sqm) for Recreational center cum community hall, and 3555 sqmtr for UG parking as shown in plan and sectional drawings, and shall comprise of various other facilities like, office, store, change rooms, toilets, drinking water,lifts etc, having adequate infrastructure and facilities for organizing multi-functional activities.
The major Project components have been listed out below with the view to summarize the broad Project Requirements, however this may not be exhaustive list therefore the Contractor is required to carefully understand the Project Requirements as stated in the document.

Table 1 Project Requirements

| Basement Floor (Minimum Area – 904.00 sqm) (double height min 6 mtr clear ht) | • Entrance Foyer + Lobby  
• Hall (min 24x28 mtr)  
• Gents toilet/ladies toilet with mechanized disposal including lockers and change room minimum 2 Nos for each.  
• Store  
• Admin office with required air conditioning  
• 2 Nos Lift (one passenger(13 passenger) + one service lift (min1.8mtrx1.8 mtr ))  
• Staircase (1 nos.) (min 1.5 mtr wide) |
| Ground Floor (minimum Area – 933.44 sqm): | • Entrance lobby (min 5.5x5.5)  
• Double height banquet hall (min 14x26mtr)  
• Stage(min 9.5x6.5 mtr)  
• 2 NOS green room with attached toilet (min 3.2x5.5 mtr each)  
• Kitchen with store as per requirement.  
• Min 2 Nos Staff toilets.  
• Pre functional area/ verandah (minimum 2.1x5 mtr)  
• 2 Nos toilet block for male and female (minimum 3.5x3.5 mtr each)  
• 2 Nos Office Room (3.670 x 3.6 & 4.8 x 5.3)  
• 2 Nos Lift (one passenger(13 passenger) + one service lift (min1.8mtrx1.8 mtr ))  
• Staircase (2 no’s) (min 1.5 mtr wide)  
• Verandah  
• car Porch  
• service lobby  
• handicap ramp |
| First Floor (minimum Area – 909.88 sqm): | • Lobby  
• Gymnasium (6.8x28.5 mtr)  
• Min 2 nos Change Room and lockers for male and female each  
• 2 Nos toilet block for male and female (minimum 3.5x3.5 mtr each)  
• 2 Nos Lift (one passenger(13 passenger) + one service lift (min1.8mtrx1.8 mtr ))  
• Staircase (2 nos.) |
### Procuring Entity Requirement

#### RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

<table>
<thead>
<tr>
<th>Section – V</th>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>Conference meeting room (9.1x3.6 mtr) with terrace</td>
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<tr>
<td>Dormitory with toilets (8.8x4.3mtr)</td>
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<tr>
<td>E-library (4.9x10.9 mtr) (minimum 30 nos sitting capacity)</td>
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<tr>
<td>Lounge(4.9x6.9mtr)</td>
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<tr>
<td>2 nos balcony</td>
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#### Second floor (minimum Area – 909.88 sqm):
- Lobby
- Space for arts and craft (10.26x22.9 mtr).
- Dormitory with 2 nos bath and W.C ( min 4.88X 7.04 Mtr)
- 2 Nos toilet block for male and female (minimum 3.5x3.5 mtr each)
- 2 Nos Lift (one passenger(13 passenger) + one service lift (min1.8mtrx1.8 mtr ))
- 8 nos room with attached toilets ( min 4.8x3.6)
- Conference meeting room (9.1x3.6 mtr)
- 6 nos Balcony
- Staircase (2 nos)

#### Third floor (minimum Area – 909.88 sqm):
- Lobby
- Space for arts and craft (10.26x22.9 mtr).
- Dormitory with 2 nos bath and W.C ( min 4.88X 7.04 Mtr)
- 2 Nos toilet block for male and female (minimum 3.5x3.5 mtr each)
- 2 Nos Lift (one passenger(13 passenger) + one service lift (min1.8mtrx1.8 mtr ))
- 8 nos room with attached toilets ( min 4.8x3.6)
- Conference meeting room (9.1x3.6 mtr)
- 6 nos Balcony
- Staircase (2 nos)

#### Terrace
- Lobby
- 2 nos staircase
- 2 Nos Lift (one passenger(13 passenger) + one service lift (min1.8mtrx1.8 mtr ))
- Toilets for male and female
- Terrace for roof top restaurant
- kitchen

#### (B) Underground Parking
- 2 Nos staircase
- Separate ramp and gates for entry and exit
- 1 Nos lift
- Mechanical ventilation
- Redevelopment of park above UG parking area
- Development of pathways in park over UG parking as per existing condition.
Contractor shall be responsible for Design & Construction of recreational center cum community hall, underground parking at paundrik park, redevelopment of existing nallah at east side of paundrik park on Engineering, Procurement & Construction (EPC) basis at the Project Site situated within the pondrik park JAIPUR,

1. The Contractor is encouraged to introduce innovative and efficient designs for the Project provided that the Project Requirements stated in the RFP document and conceptual layouts are fulfilled in entirety.
2. It is entirely Contractor’s responsibility to plan and design the Project and prepare detailed working Drawings & designs as per the provisions of the RFP document.
3. The design shall be as per the Project Requirement with respect to basic configuration of sizing and height.
4. The scope includes the following:
   (i) Survey and soil testing of the site shall be performed by the contractor.
   (ii) Dismantling of existing structure with all respect including disposal of material with all lead and lift.
   (iii) Shifting of transformer, electrical cable, mobile tower, sewerage line and other ancillary services.
   (iv) Cleaning of grass and vegetation by manual means and its disposal.
   (v) Design, Execute works for recreational center cum community hall including all civil, architectural, structural, interior and exterior finishes, service and systems like electrical and lighting works, mechanical, IT, Horticulture and landscaping, Plumbing, water supply and sewerage systems, firefighting, waterproofing system (with 5-year Commercial warranty, as provided by the manufacturer) etc. to make the building fully functional for all the disciplines with reference to tender drawings in bid document.
   (vi) Ground floor main entry should be of minimum 12 mm thick toughened glass with collapsible shutters and other design requirements as per engineering in charge.
   (vii) The contractor shall take up the basement work by using minimum 600mm dia RCC bored cast in situ piles along the periphery of the proposed building at interval of 1.0 mtr center to center.

<table>
<thead>
<tr>
<th>(C) Redevelopment of existing nallah</th>
<th><img src="https://via.placeholder.com/150x150" alt="Table" /></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approximate 150x4.5mtr wide</strong></td>
<td><strong>- Dismantaling of existing slab</strong></td>
</tr>
<tr>
<td></td>
<td><strong>- Desilting of nallah</strong></td>
</tr>
<tr>
<td></td>
<td><strong>- Box culvert section designed for AA class loading.</strong></td>
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<tr>
<td></td>
<td><strong>- Footpaths with Paver blocks above nallah</strong></td>
</tr>
<tr>
<td></td>
<td><strong>- Ferro drain cover and MS jaal for openings each every 4 mtr.</strong></td>
</tr>
</tbody>
</table>
(viii) Plaster of Paris/Wall Putty and cement plaster is to be taken up by contractor inside and exterior respectively on all the surfaces.
(ix) The contractor shall have to construct RCC retaining wall apart from pile to retain the earth for design earth pressure without presuming loading retaining capacity of pile work.
(x) False Ceiling shall be provided in entire area of slab of all floors including basement ground floor first floor second floor and third floor and terrace floor rooms.
(xi) Outer elevation shall be as per Jaipur traditional architectural practice with sandstone cladding over entire exterior surface of building, parking, gates as per direction of engineer-in-charge.
(xii) Diluting and injection Chlorpyrifos Emulsifiable concentrate 20% with 1% concentration for PRE-CONSTRUCTIONAL Anti termite treatment as per IS 6313 part III as amended from time to time and creating a continuous chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor along the external perimeter of building expansion joints, over the top surface of consolidated earth of which approach is to be laid surrounding of pipes and conduits etc. complete in whole project site area.
(xiii) Providing and laying in position cement concrete of specified grade - All work upto plinth level 1:3:6 (1 Cement : 3 fine/ coarse sand : 6 graded stone aggregate 20mm nominal size).
(xv) Providing and fixing stone jali 40mm thick throughout in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment, matching the stone shade in parapets.
(xvi) Reinforced cement concrete work in beams, suspended floors, roofs, columns, foundation, walls, landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases with minimum M-30 Grade Concrete.
(xvii) Reinforcement for R.C.C. work with Thermo-Mechanically Treated bars of minimum Fe-500 HYSD.
(xviii) Centring and shuttering with plywood or steel sheet.
(xix) Brick work with FPS bricks of class designation 75 in :Cement mortar 1:6 (1 cement : 6 coarse sand).
(xx) Half brick masonry with FPS bricks of class designation 75 in Cement mortar 1:4 (1 cement :4 coarse sand) and 2 Nos. 8mm dia. M.S. bars at every third course of half brick masonry.
(xxi) Kota stone slab flooring 25mm thick over 20 mm (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) for flooring works in store and wardrobe partitions.
(xxii) 1st quality Vitrified Porcelain Polished tiles on floor, skirting etc.in with water absorption less than 0.08% and conforming to IS 15622 of approved make in all colour and shade, laid with 20 mm thick CM 1 : 4 including grouting the joints with white cement and matching pigment etc complete. Size 800mm X 800 mm with approval from Engineer-in-charge for flooring in
- Basement floor:- indoor hall, admin office,
- ground floor:- rooms kitchens office
- First floor:-Library, dormitory, conference room
- Second/third floor:-rooms, dormitory, meeting room
- Terrace: Rooms
  (xxiii) 1st quality MAT finished ceramic tile size 400x400mm confirming to IS: 13755 and IS: 15622 colour in floors laid on a bed of neat cement slurry finished with flush pointing in the white cement mixed with pigment to match the shade of the tile complete for flooring works in toilets with approval from Engineer-in-charge.
  (xxiv) 1st quality standard white glazed tiles confirming to IS: 13753 & IS:15622 of size 200mm x 300mm in walls, laid on a bed of neat cement slurry finished with flush pointing in the white cement mixed with pigment to match the shade of the tile complete for walls in toilets with approval from Engineer-in-charge.
  (xxv) Granite stone slab mirror polished and machine edge cut in walls, pillars, steps, Shelves, Sills Counters, Floors etc. laid on 12mm (Av.) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) jointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete in (with skirting)
  - Basement floor: lobby, lift wall cladding
  - Ground floor: hall, verandah, lift wall cladding, lobby, passage
  - First floor: lobby, passage, lift wall cladding
  - Second/third floor: open hall for arts, passage lobby lift wall cladding
  - Terrace: lobby, lift wall cladding
  - Staircase (T+R) with double edge moulding

  (xxvi) Un-reinforced, dowel jointed, plain cement concrete mix over a prepared sub base with 43 grade cement, coarse and fine aggregate conforming to IS: 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to linesand grades complete as per drawing and as per clause 602, 112 of MoRT&H specification for flooring in gymnasium and Underground parking in Min M-30 grade concrete.

  (xxvii) Synthetic Indoor Flooring 10+2mm synthetic Indoor Sports Flooring system PAVISINT SL 75 of 12mm thick composed of 10mm SBR prefabricated elastic layer, coated with PU pore sealer and self leveling wear coat and top coat with 2 mm Polyurethane system in gymnasium

  (xxviii) Rolling shutters of approved make, made of 80 x 1.25mm. M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including cost of spring hooks, providing and fixing necessary 25.3cm. long wire springs grade No. 2 and M.S. top cover 1.25mm thick for rolling shutters as per design & IS 6248-1979..80x1.25mm M.S. laths with 1.25 mm thick top cover. For exit and entrance gate of underground parking.

  (xxix) Pressed steel door frames confirming to IS:4351 manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5mm thick with mortar
guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: Profile E

(1) aluminum work for, ventilators and partition with extruded built up standard tubular / appropriate Z sections and other sections of approved make conforming to IS :733 and IS :1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gap, at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium section shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle Aluminium snap beading for glazing/paneling, C.P. brass/ stainless steel screws Al. Tower bolt & Al. handle & Al. Aldrop etc., all complete as per architectural drawings and the directions of Engineer- in – charge. Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)

(ii) For shutters ventilators including providing and fixing hinges/pivots and making provision for fixing of fittings wherever required including PVC / neoprene gasket required Polyester powder coated aluminium (minimum thickness of polyester powder coating 50 micron)

(iii) Filling the gap in between aluminium frame & adjacent RCC/ Brick/Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete. Upto 5mm depth and 5 mm width

(iv) aluminium round shape handle of outer dia 100mm with SS screws etc. Complete as per direction of Engineer-in-charge. Powder coated minimum thickness 50 micron aluminium

(v) external grade board solid core single leaf flush door shutters ISI 2202-67 marked using Phenol formal dehydroresin in glue both sides including approved ISI marked Stainless Steel butt hinges fittings with necessary screws complete as per annexure ‘A’ : 30 mm thick Decorative teak veneer both side.

(vi) Cement plastering with 20mm cement plaster of mix :1:4 (1 cement : 4 fine/coarse sand) in exterior and interior of buildings.

(vii) synthetic enamel paint of approved brand and manufacture of required colour to give an even shade: Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture over roller shutters and wherever else as required.

(viii) Finishing walls with Deluxe Multi surface paint system for interiors using Primer as per manufacturers specifications : Two or more coats applied @ 1.25 ltr/10 sqm. over and including one coat of Special primer applied @ 0.75 ltr / 10 sqm.

(ix) Finishing walls with textured exterior paint of required shade: New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sqm.

(x) Making Mehrab's, Arches, pillars, highly decorative creepers, flower of small sizes etc.in plaster (1:2) as per B248 old traditional practices (Arches, Mehrab's) in three coats for base course and subsequent course.

(xi) water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of applying:

(a) after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm.

(b) laying second layer of Fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm.
c) third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289kg/sqm mixed with water proofing cement compound @ 0.670kg/sqm and coarse sand @ 1.289 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30cm on parapet wall and tucked into groove in parapet all around. fourth and final layer of brick tiling with cement mortar (which will be paid for separately For the purpose of measurement the entire treated surface will be measured as 65 mm.

(xli) water proofing treatment on sunken slabs of toilets.

(xlii) 60mm thick precast cement concrete interlocking paver block casted with rubber moulds in approved reflective colour and design having minimum compressive strength of 300 kg/ sq cm. The CC paving blocks be laid on average 50mm thick bed of coarse sand and the joint is to be filled with fine sand. Laying procedure on compacted sub-base as defined. Complete job is to be executed as per the instruction of Engineer incharge. The rates to be inclusive of all lead & Lifts etc. complete as per specifications in landscaping in adjoining area, driveways, pathways and footpaths.

(xliii) precast cement concrete M-20 grade (Using mechanical Concrete Mixer) kerb stone top and bottom width 115 and 165 mm respectively, 250 mm high on 150 mm thick PCC M-10 grade foundation as per design, as per clause 408 of MoRT&H along footpaths or wherever else required.

(xliv) 30 mm thick factory made Polyvinyl Chloride (PVC) door shutter made of styles and rails of a uPVC hollow section of size 60x30 mm and wall thickness 2 mm ± 0.2 mm with inbuilt decorative moulding edging on one side. The styles and rails mitred and joined at the corners by means of M.S. galvanised/ plastic brackets of size 5x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanized M.S. tube of size 25x20 mm and 1 mm ± 0.1 mm wall thickness. The lock rail made up of ‘H’ section, a uPVC hollow section of size 100x30 mm and 2 mm ± 0.2 mm wall thickness fixed to the shutter styles by means of plastic/ galvanised M.S. ‘U’ cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having overall thickness of 20 mm and 1 mm ± 0.1 mm wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer’s specification and direction of Engineer-in-charge for doors of wc and baths.

(xlv) Stone work (machine cut edges) for wall lining etc. (veneer work) backing filled with a grout of 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with admixture of pigment matching the stone shade: (To be secured to the backing by means of cramps which shall be paid for separately): sand stone - Exposed face fine dressed with rough backing for cladding of exterior walls with making of kangooras, mehrab, arches, as per Jaipur styled architecture with direction of engineer-in-charge and approved drawings.

(xlvi) Providing gola along parapet 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design In 75x75mm deep chase.

(xlvii) Providing and fixing 12mm thick Toughen Glass with Frame Facad with requisite hardware fittings (Dorma, Ozone or equivalent) as per architectural approved design for Entrance doors, halls, windows, banquet hall cutout railing or wherever else required (refer indicative drawings), Complete in all respect with filling of weather silicon where
necessary. & as per instruction of Engineer In charge, including cost of centering & shuttering for all leads & lift.(Saint Gobain/Amirates etc.)

Providing and fixing ornamental Chattries made of Jodhpur/karauli stones in front of windows complete as per direction of Engineer in charge and approved drawings.

Stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge for stairs, ramps etc.

U-PVC Sliding windows: Frame Made from the Extruded uPVC Window Profile Section of size 106w x 50h mm having outer wall thickness of 2.5mm (+/- 0.2mm) and 3 box multi-chamber construction, Laminated (colour) finish, duly reinforced with 1.2 mm thick GI section. Frame shall have three track configuration, two for sliding of window shutter and one for mosquito mesh shutter. Vertical member of frame which bears the sliding shutter load shall have aluminium rail/track for smooth sliding of shutter rollers. All the four corners shall be mitred cut & thermal welded so as to form window frame. Frame shall bemilled with drain and air equalizer hole in order to be water tight and for drainage of accumulated water, if any, to outer side. Shutter: The shutter of sliding window shall be made of 39w x 69h mm Extruded 3 box multi-chamber uPVC Window Profile Section of laminated (colour) having outer wall thickness of 2.5mm (+/- 0.2mm) provided with reinforcement of 1.5 mm thick GI section duly mitred cut & thermal welded at all corners and fitted with uPVC glazing bead of size 22 x 20 mm with inner and outer co-extruded EPDM/TPEE weather seal gaskets along with 6mm thick ISI make plain float glass. Mesh.

2Nos lift (one passenger + one service) elevator to be furnished and erected in accordance with the following details: (Including 5 year warranty)

LOAD: 800 Kg (10 Pass.) TRAVEL: B+G+3+T = 06 stop Control & operation: microprocessor base control systems+V3F STOP & openings: 06 Stops & 01 Opening, CAR DESIGN: S.S Cabin and false Ceiling with multi reflecting in direct lighting arrangement centrally placed motor type Blower with circular air diverter, integral car operating panel luminous button & Granite flooring. CAR door: S.S automatic centre opening door. Clear Inside shaft(Required) = 1500mm * 2000 mm Clear Inside shaft(Available) = 1800 mm * 2500 mm Machine Position: Directly placed above the top of the hoist way Special Features: a) Call Register type Micro push button, b) Blower switch in Car (automatic). c) Fireman Switch at Main Landing. d) Emergency Alarm. e) VV3F (f) Motor Sharp 7.7 kw (g) Fully Collective control-Simplex (h) Speech System. (I) ARD System.

Contractor has to carry out all required sanitary fixtures fittings, water supply fittings and fixtures, sewerage and drainage disposal pipes and fittings as required of approved make as per direction of engineer in charge.

All requires Signages, thermoplast marking etc as per standards are in scope of contractor.

Mechanical Ventilation, Mechanical internal disposal of storm water is in scope of contractor.

Providing and laying six courses water proofing treatment with bitumen felt over roofs consisting of first, third and fifth courses of blown or / and residual bitumen applied hot at 1.45, 1.20 and 1.70 kg per square metre of area respectively, second and fourth
courses of roofing felt type 2 grade I (fibre base self finished bitumen felt) six and final courses of stone grit 6mm and down size or pea sized gravel spread at 6cu.dm per sqm including preparation of surface over underground parking roof wherever else required

(lvi) Laying and spreading of good earth and manure over Underground parking slab with depth as per requirement and direction of engineer-in-charge.

(lvii) Grassing with 'Doobs' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving. In rows 7.5 cm apart in either direction over underground parking roof and wherever else required.

(lviii) Planting of trees by the (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, planting the saplings, backfilling the trench.

(ix) Supplying, erecting and fixing in position minimum 15 nos or as per requirement specified precast RCC bench made of RCC grade M-30 consisting of 2 Nos. “L” shaped base support of thickness 100 mm back height 1000mm, front height 450 mm, base width 420mm and 5 Nos. RCC planks of size of 1500x100 x 50 mm and 1 Nos RCC planks of 150x200x50mm including joining all parts with galvanised nuts and bolts of suitable size. All bolts to be sealed after assembly with nice finish and appearance and level complete in all respect as per direction of engineer in charge. Every bench should have a manufacturer's logo.

(lx) Desilting of nallah at east side of paundrik park minimum length 150 Mtr. including construction of by pass arrangement to byepass water with 1.5m lift from ground level and lead upto 50 m including foul & saturated condition where pumping out or bailing out of water is required, including shoring, shuttering where required and dewatering. Making access for disposal and dressing disposal side as per the directed of the Engineer.

(lxi) Providing and laying Precast reinforced cement concrete Box culvert section of M-40 grade designed for 'AA' class loading as per IRC specifications including the effect of impact, EQ etc. complete on firm base of 200mm thick lean concrete of M-10 grade with aggregate of size 40mm nominal of following internal sizes. The work includes required safety measures, construction of drain for diversion of flowing water. Size of rcc box culvert section should be as per hydraulic design discharge to meet out existing discharge (approximate 150 m length and 4.5 mtr wide).

(lxii) Providing and fixing of reinforced Ferro-Cement drain covers designed for ‘A’ class loading duly marked on cover with adequate steel reinforcement having thickness 75mm to 150mm anti corrosive bitumen painted M.S. plate, Rim and M.S. lifting hooks, Admixtures like plasticizer, bond improving compound, shrinkage, resistance compound, abrasion resistant complete as per approved design etc. at 4 mtr interval.

(lxiii) Providing and Installation of Stand-alone 15 w Solar Street Lights consisting 50Wp PV module capacity, inbuilt 12v charge controller, 40 AH batteries, GI pole of height 4 mt. with inbuilt dusk and dawn sensor, approximate backup time of 4hr. over parking roof and adjoining area of recreational cum community hall building or wherever else required as per direction of engineer-in-charge.

II. **Air-Conditioning:** Supply and installation of ductable split air conditioners of approved make, as required and approved by Engineer-In-Charge for all offices, all rooms, banquet hall, library, meeting hall, lounge, dormitory of Indoor Hall Entrance Lobby Provision of ac piping & refrigerant piping, drain piping and related electrical works

III. Design and construction of the ventilation systems for the building, underground parking and exhausts for the toilet area.
IV. Water Coolers with purifier: Supply, installation and commissioning of water coolers with purifying system at each floor of recreational cum community hall as per design requirements, and approved by Engineer-In-Charge

V. Fire Fighting: Supply, installation and commissioning of fire-fighting equipment, as required by the Nagar Nigam Jaipur for issuance of the No Objection Certificate (NoC).

VI. External Development Works: The area near recreational cum community hall and Ug parking is to be developed by landscaping and fixing of interlocking tiles (Grade M30; 60mm thick-of desired shape), laid over 50mm-thick bed of coarse sand and the joint shall be filled with fine sand for pathway along with M 10 PCC and parking (with marking by thermoplastic paint) as per approved drawings along with Plain cement concrete at base.

VII. Solid waste management works

With a view to ensure that the public does not litter waste, litter bins are to be provided at important locations placed at a distance ranging from 60m to 100m spacing depending on the local conditions. The following table shows tentative capacity and numbers of waste bins required to be placed at various locations. Following list are below:

### Table 2 Tentative Capacity and Numbers of Waste Bins

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Particulars</th>
<th>Capacity (Liters)</th>
<th>Number of Bins</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Green</td>
</tr>
<tr>
<td>1</td>
<td>Litter Bins- 33-liter capacity Twin Bins</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>50</strong></td>
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5.6.12. Electrical Scope of Work

This Scope covers the requirements of Design, Supply, Installation, Testing and Commissioning, Trial Run (SITC) of electrical equipment and accessories required for Recreational cum community hall, underground parking, paundrik park area above parking surface. This also covers the procedure to be adopted for Inspection, Testing and Commissioning for all electrical equipment’s at site. The works shall be carried out strictly in accordance with the IS or ISO standards. The Electrical contractor should be well established and must be a reputed Electrical Contractor having License for working as electrical contractor of 33KV/11KV/415Volts substations issued by Rajasthan state/state administration.

5.6.13. IT Scope of Work

Supply & Installation of computer system at reception/office of Recreational cum community hall. Due to large area of coverage its required to monitored by camera (minimum 22 nos):
5.6.14. Design Submissions

The Contractor shall be responsible for the safety of structures, correctness of design and drawings, even after the approval of the same by Engineer-in-Charge. Complete detailed design calculations of foundations and superstructure together with general arrangement drawings and explanatory sketches shall be submitted to the Engineer-in-Charge for approval, after due approval from IIT/NIT/Govt Engineering College. Separate calculations for foundations or superstructures submitted independent of each other shall be deemed to be incomplete and will not be accepted by the Engineer-in-Charge.

The design considerations described here under establish the minimum basic requirements of plain and reinforced concrete structures, masonry structures and structural steel works. However, any particular structure shall be designed for the satisfactory performance of the functions for which the same is being constructed.

5.6.15. Design Standards

All designs shall be based on the latest Indian Standard (I.S.) Specifications or Codes of Practice, RUIDP unless otherwise specified. The design standards adopted shall follow the best modern engineering practice in the field based on any other international standard or specialist literature subject to such standard reference or extract of such literature in the English language being supplied to and approved by the Engineer-in-Charge. In case of any variation or contradiction between the provisions of the I.S. Standards or Codes and the specifications given along with the submitted tender document, the provision given in this specification shall be followed.

5.6.15.1. Design Life

The design life of all structures and buildings shall be 60 years.

5.6.15.2. Design Loading

The structure shall be designed to resist the worst combination of the following loads/stresses under test and working conditions; these include dead load, live load, wind load, seismic load, and stresses due to temperature changes, shrinkage and creep in materials, dynamic loads.

5.7. Joints

Movement joints such as expansion joints, complete contraction joints, partial contraction joints and sliding joints shall be designed to suit the structure. No expansion joints in wall, floor & roof of water retaining structure shall be allowed. The positions of construction joints should be specified by the designer & indicated on the drawings. If there is a need on site to revise any specified position or to have additional joints, the proposed positions should be agreed with the designer. The concrete at the joint should be bounded with that subsequently placed against it, without provision for relative movement between the two, concrete should not be allowed to run to a feather edge & vertical joints should be formed against stop edges.
5.8. Foundations

The minimum depth of foundations for the structures, frame foundations and load bearing walls shall be as per IS: 1904 and suitable for site. Bearing capacity of soil shall be determined as per IS: 6403. Care shall be taken to avoid the foundations of adjacent buildings or structure foundations, either existing or not within the scope of this contract. Suitable adjustments in depth, location and sizes may have to be made depending on site conditions. No extra claims for such adjustments shall be accepted.

A structure subjected to groundwater pressure shall be designed to resist floatation. The dead weight of empty structure shall provide a factor of safety of 1.2 against uplift during construction and service. Where there is level difference between the natural ground level and the foundations of structure or floor slabs, this difference shall be filled. In case of liquid retaining structures, the natural topsoil shall be removed and the level difference shall be made up with Plain Cement Concrete not weaker than M 10. All blinding and leveling concrete shall be a minimum 100 mm thick in concrete grade M15 unless otherwise specified.

5.9. Specifications

5.9.1. Electrical Specifications

The scope of contract is explained below. (Bidder should visit the site before bidding)

i. Wiring of light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq. mm FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq.mm FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade (IS:694) of approved make in surface / recessed ISI marked medium duty PVC conduit & its accessories, round tiles, 18 SWG M.S. box with earth terminal, screwless cage connectors for neutral looping in switch board & false ceiling point. 6 A switch, 3.0 mm thick phenolic laminated sheet, zinc plated / brass screws, cup washers, making connections, testing etc. as required.

ii. Wiring of 3 pin 5 amp. light plug point with 1.5 sq. mm FR PVC insulated unsheathed flexible copper conductor 1.1 kV grade and 1.5 sq.mm FR PVC insulated unsheathed flexible copper earth conductor 1.1 kV grade(IS:694) of approved make in surface / recessed ISI marked medium duty PVC conduit & its accessories, 18 SWG M.S. box with earth terminal, screwless cage connectors for neutral looping in switch board & false ceiling point, 6 A switch, 6 A socket, 3.0 mm thick phenolic laminated sheet, zinc plated / brass screws, cup washers, making connections, testing etc. as required.

iii. ISI marked medium duty PVC conduit 25 and 32 mm dia along with accessories in surface / recessed using saddles, clamps, fastener as required including cutting the wall and making good the same as required.

iv. Wiring of 6 pin 15 amp. Light power point with 4.0 sq. mm PVC insulated unsheathed solid / stranded copper conductor 1.1 kV grade of approved make in surface / recessed ISI marked pvc conduit & its accessories, 18 SWG M.S. box with earth terminal, screwless cage connectors for neutral looping in switch board, 15 A switch, 15 A socket, 3.0 mm thick phenolic laminated sheet, zinc plated / brass screws, cup washers, bushes, check nuts, making connections, testing etc. as required.
v. FR PVC insulated & unsheathed flexible copper conductor ISI marked (IS:694) of 1.1 kV grade and approved make in existing surface or recessed conduit/casing capping including making connections etc. as required. 2 x 2.5 sq. mm. + 1x1.5sqmm, 2 x 4.0 sq.mm+1x 2.5 sq. mm, 2 x 6.0 sq. mm. + 1 x 2.5 sq. mm.

vi. 240/415 V and triple pole MCB of breaking capacity not less than 10 KA (B/ C/ D tripping characteristic) ISI marked IS 8828(1996)]/ conforming to IEC 60898 in existing board/sheets including making connections with lugs,testing etc. as required. single pole 6 A to 32 A rating, 40A to 63 A rating. Triple pole & neutral MCB6 A to 32 A rating and 40 A 63 A rating.

vii. Recessed/ Surface mounting heavy duty horizontal type sheet steel Distribution board phophatised/ powder painted complete with copper bus bar, shorting link , neutral link, earth link and din bar marking sheet conforming to IS13032 & IS8623 including making internal DB terminations with copper lugs, testing etc. as required Double door (Three phase) 4 way and 6 way. Single phase (Three pin)20A.

viii. metal clad industrial plug top & socket unit with pin and sleeve type contact on porcelain/ bakelite base in sheet steel enclosure (without MCB) including making connections with lugs, testing etc.as required single phase 3-pin 20A

ix. XLPE insulated / P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor Armoured of IS:7098-I/1554-1 approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, second Class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size. 10.0 Sq.mm 3 core, 10.0 Sq.mm 2 core, 35.0 Sq.mm 4 core, 50.0 Sq.mm 3.5 core, 185.0 Sq.mm 3.5 core

x. Supply, Fabricating & installing following sizes of perforated cabletrays including horizontal and vertical bends, reducers tees,cross members and other accessories as required and duly suspended from the ceiling with suspenders and including painting as required.

xi. Providing & Laying XLPE insulated / P.V.C. sheathed cable of 1.1 KV grade with aluminium conductor Armoured of IS:7098-I/1554-1 approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand, second Class bricks covering, refilling earth, compaction of earth, making necessary connection, testing etc. as required of size.

10.0 Sq.mm 3 core
10.0 Sq.mm 2 core
35.0 Sq.mm 4 core
50.0 Sq.mm 3.5 core
185.0 Sq.mm 3.5 core

xii. Supply, Fabricating & installing following sizes of perforated cable rays including horizontal and vertical bends, reducers tees,cross members and other accessories as required and duly suspended from the ceiling with suspenders and including painting as required.Hot Dipped Galvanized 150mm x 50mm x 1.6mm ,300mm x 50mm x 1.6mm.
xiii. P&F bus bar chamber made out of aluminium or wrought aluminium alloy suitable for 300 amp. Capacity housed in sheet metal box made out from 1.6 mm MS sheet front openable, bus bar fixed on insulators at approved spacing including making connections etc. as required 450 mm long, 4 strip

xiv. "Plate Earthing as per IS:3043 with copper Earth plate of size 600mm x 600mm x 3.0mm by embodying 3 to 4 mtr. below the ground level with 20 mm dia. G.I. 'B' class watering Pipe including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover. C.I. Frame of size 300mm x 300mm complete with alternate layers of salt and coke/charcoal, testing of earth resistance as required."

xv. earth wire/strip in horizontal or vertical run in ground/surface/recess including riveting, soldering, saddles, making connection etc. as required. 25mm x 5mm copper strip, 25mm x 6mm G.I. Strip

xvi. "Maintenance free gel earthing with pipe in pipe /strip in Pipetechology filled with anti corrosive conductive compound (CPRI tested) below the ground in 150 -200 mm dia earth pit and surrounding filled with required mineral filling compound (MFC should have hygroscopic property to retain the moisture for long time to create low resistance Zone) and C.C. finished chamber covered with hinged type with locking arrangement C.I. Cover. C.I. frame of size 300mm x300mm complete testing of earth resistance as required of following sizes With pipe in pipe technology (inner pipe dia / outer pipe dia) 80 -100 micron G.I. coating" With pipe in pipe technology with 80-100 micron G.I. Coating G.I. pipe 2000 mm long, 80/40 mm, terminal 12 mm G.I. Strip

xvii. P & F double ball bearing capacitor start ceiling fan of approved make complete with regulator and other accessories as required. (for estimation purpose only) 1200 mm sweep

xviii. P&F of capacitor start single phase metallic blade fresh air fan, in existing opening including cost of hardware, flexible copper conductor, making connections, testing etc. as required. 300 mm sweep

xix. P&F of Heavy duty capacitor start 900/1400 RPM single phase ISI marked Exhaust fan, IS:2312 marked in existing opening including making connections testing etc. as required. 450 mm sweep (900 RPM)

xx. P & F of capacitor start, three speed wall mounting/cabin fan of following sweep with the help of anchor bolts including making connection testing etc. As required. 400 mm sweep (Oscillating type)

xxi. "P & F of IP20 LED Recessed/ Surface Mounted Round/ square Non Dimmable Downlight with die-cast aluminum housing & Heat sink for heat dissipation, high purity reflector with external driver having efficiency > 85% and in compliance to IEC standards. (supplied together with luminaire) Power consumption of <= 7w/10w/8w/12w/15w/18W with 100/500/750/1100/1250 lumens, system lumen, efficiency of 70 lm/Watt or 100 lm/Watt output suitable to replace 1x18W/2x18W/2x26w CFL downlights, life time of 50000 Burning Hours with 70% of initial Lumen maintained. CCT 3000°K, 4000°K and 6000°K. Fixture shall be CECompliance."Recessed mountingLED downlight 14/15 W, Surface Mounting LED downlight 18/20 W

system lumen efficiency of 70-80 lm / Watt output suitable for 2x36W FTL/ 2x36w CFL/3x36w CFL light fixtures, life time of 50000 burning Hours with 70% initial Lumens maintained. CCT 3000° K, 4000° K and 6000° K. Fixture shall be CE compliance." Recessed mounting 36W LED Light 2’x2’ with acrylic/ prismatic front cover Surface Mounting 36W LED Light 2’x2’ with acrylic/ prismatic front cover

xxiii. P & F of IP20 LED batten type light fixture made from CRCA sheet stile housing suitable for mounting LED tube system (integral driver), Power consumption of 18W/36W, 1500/3000 lumens, system lumen efficiency 80 lm/ watt output, life time of 50000 burning hours with 70% initial lumen maintained. CCT 3000° K, 4000° K and 6000° K 4’ LED Tube shape fixture 18W

xxiv. "P & F of IP-66 protected high power LED flood light system with extruded aluminium housing, toughened glass diffuser with suitable lenses on LED to achieve various beam angles. 240 volt, 50Hz, of high power LED lamps supplied with pre wired cable of 1 mtr. Integrated driver shall be high efficiency having efficiency more than 85 % and in compliance to IEC standards. System life of 50000 burning hours with 70 % of initial lumen be maintained. Light output in red , green , blue, cool white or warm white colour as per engineers choice. Fixtures shall be CE compliance" High power LED flood light 100 watt

xxv. P & F of IP65 IK10 protected LED Bollard fixture. Light Fixture made of powder coated aluminium/Steel housing with diffuser for uniform distribution. The System level Luminous efficacy > 85 Lumen/W. SMD LEDs . CRI>70, CCT: 3000/4000/6000 K. The integral SMPS based electronic driver must be constant current and inbuilt surge protection of min. 4KV(L-N) and efficiency > 85%, PF>0.9 and input Voltage range of 90- 270V AC at 50Hz. System life of 50000 burning hours with 70% of Initial Lumens maintained. Light shouldinclude quick connecting cable coupled with various mounting accessories. Light output in Cool white or Warm White Colour as per engineers choice. Fixture must be in compliance with IS/CE Standards.1.0 Mtr Bollard

xxvi. Providing and Fixing of piller box for street light with 2 mm CRCA sheet steel, 63 amp LT disconnectors switch fuse units ,bakelite sheet ,insulators ,connectors,etc as required size500mm x100mmx 375mm with tapered top

xxvii. S & Laying following size ‘B’ Class G.I. Pipe confirming to IS: 1239 P-1 (1990) with accessories for laying earth conductor/ strip/ cable in ground/ surface/ recess as required.50 mm dia.,100mm dia.

xxviii. "Supply, Installation, Testing & Commissioning of HT metering cubical panel as approved By DISCOMs fabricated out of 14 SWG CRCA sheet steel in two compartment & MS angle of size 60mmX6mm having provision for Following: (i) Provision for fixing Trivector Meter (To be supplied by DISCOMs)(ii) Provision for fixing of combined CT PT Set (To be supplied byDISCOMs)(iii) TT Block(iv) 6mm Bakelite sheet on all sides."

xxix. Supply, Installation, Testing and Commissioning of indoor type floor mounted metal clad, 11 KV Incomer VCB panel up to 630 A equipped with following switchgears and accessories designed & tested as per latest standard i.e. IEC 62271-200, suitable for STC 25KA/3 and IAC A-FLR for 25kA/1sec. Make of HT Panel, Vaccum Interrupter and VCB should be of same make. 11 KV / 110 Volts PT Class 0.5 accuracy and 100 VA burden with 1No. Voltmeter (0-12 KV), analog type, selector switch for voltmeter and protection fuses/MCB for HT metering upto 12 KV on incomer, Ammeter, analog type, selector switches for ammeters, Microprocessor based numerical relay with O/L, E/F and S/C protection, Set of dual core
dual ratio 3CTs of suitable ratio with sec 1 of 15 VA burden and accuracy Class – 0.5 for metering and class 5P10 for protection, Multifunction Meter.

xxx. "SITC of DG Set complete with 1500 RPM Diesel Engine of suitable BHP & AC Brush less SPDP Alternator mounted on a common base Frame & coupled through a flexible coupling or close coupled. Alternator shall be self regulated with standard Alternator Protection (Over voltage, over speed & under voltage). Engine shall have residential silencer, up to 10 M exhaust piping, electronic / Mechanical governor, Manual & electric Start, Batteries, Fuel tank (with Stand) & piping, control panel (16 G) with MCCB (4P; 25 KA), Ammeter, Voltmeter, Frequency Meter, Energy Meter & Hour Meter, Engine instruments panel, AVM and with Weatherproof, powder coated Accoustic enclosure for DG set for sound attenuation fabricated from 1.6 mm CRCA sheet steel (structure) with side wall fabricated from 1.6 mm CRCA sheet and filled with foam as per CPCB norms latest amendments & IS 8183. The doors are fabricated from 1.6 mm CRCA sheet packed with acoustic material, floor of MS chequered plate 5.0 mm thick, All doors/ opening are sealed with neoprene/ EPDN gaskets. The enclosure has built in fuel tank, residential silencer (isolated from main DG chamber) with protection and tripping of DG set against temperature of more than 50 °C. All controls for operation of DG set are from outside the enclosure with DG control panel having microprocessor based genset monitoring and control system mccb Ammeter, voltmeter, Pf meter, frequency meter, KWH meter, Ind. Lamps etc. mounted inside enclosure, visible and accessible from outside. The enclosure should be suitable for following capacity DG sets and alternator. Noise level is less than 75 db (A) at a distance of 1 Mtrs. duly certified by authorized agency. Complete in all respect of following capacity: 250 KVA at 0.8 pf 415V 50Hz 3-Ø

xxxii. SITC of AUTO MAINS FAILURE (AMF) Panel fabricated from CRCA sheet steel 2mm Thick, Powder coated finish, Engine START & STOP commands, control RELAYS, selector switches for Ammeter & Voltmeter, Ammeter & Voltmeter, Control & Power Contactors, Timers, Electronic Hooter, Visual & Alarm indication for faults, UPS, operator interface panel complete in all respect suitable for following capacity DG sets: 180 to 250 KVA

xxxiii. Providing and fixing charged ABC type fire extinguisher including the cost of fixing with nut, bolts etc as required. 5 Kg

xxxiv. "Providing & Laying XLPE insulated IS:7098/II/85 of approved make H.T. cable for working voltage 11 K.V. Earthed with Stranded Compacted Circular Aluminium Conductor, Conductor Screened with Extruded Semi-conducting compound, XLPE Insulated, Insulation Screened with extruded semi-conducting compound in combination with Copper Tape, cores laidup, inner sheath of Thermoplastic tape, galvanised flat steel strip armoured and overall Extruded PVC Type ST- 2 Outer Sheathed cable direct in ground including excavation of 30cm x 100cm size trench, 25cm layer of river sand, second Class bricks covering, refilling earth, compaction of earth, making necessary connection testing etc. as required of size." 3 core 240.0 Sq.mm

xxxv. Providing and laying XLPE/PVC insulated & PVC sheathed Un-armoured control cables of 1.1 KV grade with copper conductor as per IS 1255 including excavation of 30 CmX75 Cm
Section – V Procuring Entity Requirement

RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

Size trench 25 Cm thick under layer of sand and second Class bricks covering 3C x 2.5 sq.mm

xxxvi. "P&F TP&N 415 V side handle operated double break fuse switch unit in sheet steel enclosure conforming to IS: 13947 P-III and IS:4064 (W/o HBC fuses) including making connections with suitable lugs, testing etc. as required."100 A rating

xxxvii. Providing & making heat shrinkable type indoor/outdoor/straight through terminations/joint kit of approved make suitable for XLPE insulated 11 KV cable, with required components, preparation of cable ends, testing etc. as required of following sizes Indoor 3 core 240/300 Sq.m, Outdoor 3 core 240/300 Sq.m, Straight Through 3 core 240/300 Sq.mm

xxxviii. "Supply, erection testing and commissioning of high mast lighting system (as per CP3-TRT/1996 of ILE, UK) consisting of totally hot dip galvanised by single dipped method high mast, lantern carriage suitable for up to 12 nos luminaries, mast head assembly, two nos aviation obstruction neon lights, double drum type self sustaining winch, integral power tool (winch motor with control circuit) hot dipped galvanised heavy duty pipe lighteningfinial, suitable ropes and CC foundation of M-15 grade complete as required. The mast is constructed from mild steel plates (as per BS-EN 10025) cut and folded to form a polygonal section, telescopic jointed and welding as per BS 5135. The complete work shall be supervised and certified by the manufacturers for satisfactory supply, erection, testing and commissioning of high mast. with all accessories, which also includes internal electrical cable and panel with foundation, erection & commissioning excluding luminaries and lamps"16 Mtr HM (in 2 section)

xxxix. P & F of aviation obstruction light luminaire comprising of yellow painted die cast aluminium alloy housing, built in 75 VA step up transformer, heat resistant clear glass cover, neon spiral lamp complete in all respect

xl. "P & F of IP-66 protected high power LED flood light system with extruded aluminium housing, toughened glass diffuser with suitable lenses on LED to achieve various beam angles, 240 volt, 50Hz, of high power LED lamps supplied with pre wired cable of 1 mtr. Integrated driver shall be high efficiency having efficiency more than 85 % and in compliance to IEC standards. System life of 50000 burning hours with 70 % of initial lumen bemaintained. Light output in red, green, blue, cool white or warm white colour as per engineers choice. Fixtures shall be CE compliance"High power LED flood light 180 watt

xli. "P & F of IP68, IK10 protected LED Buried marker light / Step Light Fixture. Fixture made of powder coated die cast aluminium with Toughened Glass cover and appropriate beam angle lens to be used as perrequirement. The System level Luminous efficacy must be >90 Lumen/W. High Power LEDS at 1W/2W per LED. The driving current should be Minimum 350 mA per LED. CRI>70, CCT: 3000/6500 K. The integralSMPS based electronic driver must be constant current and surge protection of min. 4KV(L-N) and efficiency > 85%, PF>0.9 and input Voltage range of 90-270V AC at 50Hz. System life of 50000 Burning hours with 70% of Initial Lumens maintained. Light should include quickconnecting cable coupled with various mounting accessories. Light output in Cool white or Warm White Colour as per engineers choice. Fixture must be in compliance with IS/CE Standards."Burial Light - 10W

xlii. "P&I of IP66 protected High Power LED Linear Flood Light System. Fixture made of powder coated Extruded Aluminium Housing with UV stabalized PC/Toughened Glass cover and appropriate lens to be used to achieve various beam angle pattern. Fixture suitable for input 12V DC, Power consumption should be 6W/0.5A per Feet with System level Luminous efficacy >80 Lumen/W. LM80 Approved RGB LEDs to be used. System CRI>70, Color Red/
Green/ Blue/ RGB/ W/ WW. The fixture must have IP66 protected 5mm Round female connector for input. The fixture must have provision to extend further. System life of 50000 burning hours with 70% of Initial Lumens maintained. Light output in Red, Green, Blue, Cool white or Warm White Colour as per requirement. Fixtures shall be CE compliance SMPS based electronic driver current rating should be chosen separately on complete series of linear flood light.” Linear LED Strip 2 Feet (with Driver)

xliii. SITC of Air Cooled split Air conditioners complete with Indoor unit(IDU), Out door unit (ODU), surface / concealed copper Refrigerant piping with insulation (EP foam pipe section) upto 10 Mtr (IDU to ODU), copper power cable upto 10 Mtr (IDU to ODU), R- 22 Refrigerant suitable for 400/230V +10% of 50 Hz 1 /3 AC supply capable of performing COOLING, DEHUMIDIFICATION, AIR CIRCULATION, FILTERATION & VENTILATION of following capacity with resprocating/ rotary/ scroll compressor as specified.

Ductable Split type 5 ton

Ductable Split type 1.5 Ton

Ductable Split type 2Ton

xliv. "SF of rigid CPVC (25mm) drain piping of 6 kg/ cm2 with EP section insulation."

xlv. Supply, Fixing and testing of following capacity wall mounted stabilisers having output voltage variation from 200V to 250V(+/-5%) with input voltage variation from 170V to 260V, time delay facility from 2 to 4 minute and high cutoff at 270V complete in all respect 3 kVA,5 kVA

xlvi. Supplying and drawing PVC/ Polythene insulated and PVC sheathed unarmoured/ armoured telephone cable with 0.5 mm dia. Tinned / annealed copper conductor taped &confirming to ITD specification S/WS-112C & 113 C of approved make in existing surface or recessed conduit/casing capping. Unarmoured 10 pair,50 pair.

xlvii. P & F ISI marked flush type double line telephone jack including making connection testing etc. as required.

xlviii. P & F following size hot dip galvanized M.S. box with earthing terminal in recess/ surface suitable for modular accessories as required.3 Module75 mm dia HDPE pipe PE-100 PN6 for potable water as per IS 4984,90 mm dia HDPE pipe PE-100 PN6 for potable water as per IS 4984

xlix. "Supply, Installation, Testing and commissioning of copper wound ISI marked Transformer 11/0.433 KV, Three Phase, 50 Hz, DYN 11,ONAN type , Standard accessories like, conservator, Silicagelbreather, radiator, fins, HT & LT cable end boxes or Bus Duct flange,Lifting lugs, Bi-directional Plain/ Flanged Rollers,Earthing terminal, Air relaase plug. Off load tap changer (+5% to -10% in steps of 2.5%), winding / Top oil temperature rise of 45°C/40°C, ISI marked drain valves, Dial type temperature gauge, first fill oil, Epoxy based paint etc having max. total losses as per energy efficiency level - 2 at basic Insulation level conforming to IS 2026 (Part- I to Part - II), latest ammended and IS 1180 Part-I : 2014 BEE star level- I as per Govt. of India, Ministry of power notification Dated 16thDec., 2016. Transformers described as above and as per thefollowing continuous rating 250 KVA"

l. "Supply and erection of Octagonal pole of followinglength and dimension as per table-3 with base plate onthe cement concrete foundation of M-15 /M-20 grade(1:1.5:3) with the help of anchor bolts of grade 6.8 (IS1367 P III ). The pole shall be made of S-355JO grade steel
sheet, folded lengthwise to obtained Octagonal shape, having single longitudinal seam weld and hot dipped galvanized internally & externally in accordance with IS 2629. The pole shall have a weatherproof flush door and locking arrangements. The complete work shall be supervised and certified by the manufacturers for satisfactory supply, erection, testing and commissioning. 8 Mtr." "Supply, Erection and Fixing of hot dipped galvanised Overhang (60 X 3.25 mm) with cap (250 x 137.9 x 4.05mm) over the existing poles Single arm overhang"

li. "P/F IP-65/ IP-66 protected street light luminaries on existing bracket. Fixture made from powder coated single piece pressure die cast aluminum housing with heat dissipation fins on housing with high power LEDs .

lii. Diffuser / glass cover for ensuring IP-65 protection for lamp and control gear compartment, system lumen output of 100 lum/watt high power LED. Integrated driver shall be high efficiency having efficiency more than 85 % and in compliance to IEC standards. System life of 50000 burning hours with 70 % of initial lumens maintained. Fixture shall be in CE compliance."

liii. IP-65 protected LED street light luminaries LED street light fixture 72 Watt

liv. "P & F ISI marked (IS:2082) Horizontal storage water heater with outer casing made of M.S.sheet finished with anti-corrosive powder coating, inner tank made of pure electrolytic copper/stainless steel, Tubular coppersheathed and Nickel plated heating element/ twin ceramic cartridge heating element, stem type thermostat and thermal cut out, Dual indicating lamps for power supply and thermostat, PUF insulation, Pressure release valve, fusible plug etc. as required held in position with 4 no. rack bolts, duly wired with 3 core 2.5 Sqmm PVC insulated & sheathed copper conductor and 16 A three pin plug top, including making inlet, outlet heavy gauge C.P. onnection, testing etc. as required. 15 Ltr."

lv. "Supplying and installation of submersible pumping motor pump sets I.S.I. Marked (IS : 8034-1989 ) of approved make like K.S.B., KIRLOSKAR, Calama etc. or equivalent, making connection suitable for T.W./D.C.B./Open well. The job includes screwing and welding of flanges on G.I. riser pipes, installation of complete fitting and accessories, with riser pipes, jointing of electrical cables and other connections making switch board electrical connections, all labour for testing of submersible pump set and supply of water to water mains, complete in all respect.7.5hp/3- , 45-73 mtr head with discharge of 400-280 LPM/hour Direct On Line 7.5 HP, 3-Ø Submersible Pump Starter Three phase: 4 Poles - Coil voltage 380-415V, Relay: MCH /MMK-1 Relay 4P, Wide band of operating: 70% to 110% of rated coil voltage, Drop off voltage: Below 50% of coil rating, Rated Operational Voltage: 380-415V, 50Hz Contactor: MCH/MK-1 Contactor 4P 16/ 25/ 40A, Ambient Temperature: -25°C to +55°C, Pick up voltage: Minimum 70% of coil rating, Insulation Voltage Ac (Vi): 660V, Terminal Capacity: 1 * 16 (mm)2 or 2 * 10 (mm)2

lvi. Design fabrication assembling wiring testing supply forwarding to site unloading shifting to location inspection installation testing and commissioning of LT cum DG changeover panel main distribution panels/sub-distribution panel and capacitor panel fabricated out of 14 gauge CRCA sheet in cubical formation compartmentalized from 3b construction free standing floor mounted dust and vermin proof with reinforcement of suitable size angle iron channel T section and / or flats where necessary 16 gauge CRCA sheet steel shall be provided on top as well as at the bottom of the panels. panels shall be treated with all anticorrosive process before powder coating as per specification and final approved for all distribution panels. panels. panels shall be suitable for 415v, 3 phase, 4wire, 50Hz supply
system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel in the form of shop drawing before fabrication. Galvanised hardwares with zinc passivation shall be used in fabrication.

lvii. MAIN DISTRIBUTION PANEL incoming 1 nos. 400 amps TNP, MCCB with microprocessor release unit for short circuit over current and earth fault protection with adjustable setting as per specification, 1 nos. 400 amps on load changover switch, accessories for incoming & changover sections, digital load manager (conzerewe-EM 6400 with RS-485 or equivalent) of accuracy class-1, with 1 nos. 400/5 amps 15VA CTS:-1 NO., Digital voltmeter with in built selector switch-1 set, phase indicating lights shall be protected by 2 amps MCB-1 set, breaker ON/OFF/TRIP indicating light with control MCB -1 SET, 24V DC shunt trip coil-1 set, 240V AC under voltage release -1 set, auto manual/test selector/switch-set, breaker control switch set, auxiliary contacts required for necessary interlocking of breakers, BUS BARS, 400 amps TNP aluminium bus bars with colour coded heat shrinkable insulating sleeves-set, outgoing, 10 nos. 200 amps TNP MCB including dual electronic energy metre (EM-6438 with RS-485 or equivalent) with required number of CTS, Wiring with space heater humidisat and control MCB shall danger board shall be provided, all bus bar section/backside panels shall pad locking facility and hinged type door, all outgoing MCCBS shall have in earth fault protection, main distribution panel described as above.

lviii. SUB DISTRIBUTION PANEL incoming 1 nos. 200 amps TNP MCCB with following accessories, VAF digital meter with inbuilt selector switch and 200/5 amps suitable VA, CL 1 CTS-1 SET, phase including light shall be protected by 2 amps SP MCB -3 set, BUS BARS- 200 amps TNP aluminium bus bars with heat shrinkable insulating sleeves-set, OUTGOING-8 nos. 63Amp FP MCB with dual digital energy meter including ct as required, 8 nos. 63 amp 100 ma FP ELCB, all MCBS shall be 10 KA (lcs) breaking capacity.

lix. Proving and fixing of AC stand for outdoor unit (1.5 /2 tone ) on wall / ground.

- Quantities as estimated or approximated are as mentioned in schedule of quantities. They are only for broad estimation purpose. Contractor shall however ascertain the exact quantity required at site and supply and install the materials as per SLD & technical specifications and scope as per site visit. No extra amount shall be admissible, unless change in the scope or location. Therefore, contractor to visit and check the site conditions before bidding. Supply of the Materials shall be to the Specification of this Tender document and installation shall be as described, as per drawings approved, instructions issued by consultant and/or the purchaser from time to time. Certain jobs shall be as per prevailing practices of Jaipur Vidyut Vitran Nigam Ltd (JVVNL) & IE/IS/IEC/IEEE codes. The cable quantities and sizes are tentative, any changes as per site conditions shall be to the account of the bidder, unless scope or location is changed.

- The Contractor shall take into account prevailing ambient temperature / weather conditions at site while designing the equipment as mentioned in technical specifications. Any de-rating factors related to ambient temperature shall be considered as per relevant IS specs. This scope shall be generally as per Contract Agreement and shall include additional jobs or additional quantities as may be required to be carried out for the completion of the electrical installation work in the opinion of the JMC Engineer. Any other jobs/items required to be carried out shall be evaluated on the basis of similar item rates under the Contract. Where such similar items do not exist, the Contractor shall submit cost analysis to arrive at the item.
rates for the approval of JMC Engineer. (Actual invoice / price list & discount, tax details shall be submitted along with rate analysis for each extra item.) Maximum 10 % overheads, profit, etc. shall be allowed to the contractor on landed cost accepted by JMC Engineer.

5.9.1.1. Liaising

i. Getting the installation approval and obtaining permission to energize the system from State / Central Government Electrical Inspectorate authority.

ii. Arranging visit of electrical inspector to site for Inspection of entire Electrical Installation which includes HT Cables, HT VCB, DG set, Transformer, LT Panels etc. as and when required.

iii. Submission of necessary test reports/QAPs.

iv. All required permission from any Government/ Semi Government / Municipal corporation / Fire Office shall be part of scope of work.

v. Contractor shall submit installation detail working drawings for JMC approval within 7 Days of the award of contract.

vi. Bidder to visit the site before bidding to understand the scope completely.

5.9.1.2. Documentation

The following detailed documents and drawings shall be submitted for JMC approval within 05 days of award of work.

- Earthing pits, Earth bus, Equipment / Panel earthing, etc., cable sizing calculations
- HT / LT PANEL BOARD Layout / Point of supply / Underground cable route layout etc.
- SLDs/Control Schematic/GA/BOQs/ QAPs for all panels, transformer, cables and all other electrical components to be used in this package, lighting calculations through Dialux or equivalent software.
- Cable Schedule with Tags, Cable trays/raceways lay out: - Details shall include pre-fabricated accessories such as risers, bends, tees, couplers, reducers, etc.
- Civil work like construction of RCC platforms/Fencing for installation of Transformer, Panel Board
- Electrical GA drawings, Electrical Plan Approval from JMC & State Electrical Inspector / JVVNL etc. QAPs for all Electrical components to be submitted for approval and Inspection thereof.

Any other drawings as may be required by JMC Engineer for completing the project on time without cost over-run.

5.9.2. ITSpecification

The following specification or better specification shall be followed for the items below:-
1) Camera

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Features</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>Camera Type</td>
<td>Varifocal bullet Camera</td>
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<tr>
<td>2.</td>
<td>Standard</td>
<td>ONVIF Profile S &amp; G Compliant</td>
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<tr>
<td>3.</td>
<td>Certification</td>
<td>UL, CE, FCC, BIS</td>
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<tr>
<td>4.</td>
<td>Edge Storage</td>
<td>MicroSD/microSDHC/microSDXC slot supporting memory card for min. 128 GB (Min. Class 6 or higher, Card to be included). In the event of failure of connectivity to the network storage the camera shall record video locally on the SD card automatically. After the connectivity is restored these recordings shall be automatically merged with the network storage recording such that no manual intervention is required to transfer the SD card based recordings to network storage.</td>
</tr>
<tr>
<td>5.</td>
<td>Image Sensor</td>
<td>1/2.8&quot; CMOS or better</td>
</tr>
<tr>
<td>6.</td>
<td>Resolution</td>
<td>Min. 2688 × 1520 at 30 FPS or better</td>
</tr>
<tr>
<td>7.</td>
<td>Compression</td>
<td>H.264, H.265</td>
</tr>
<tr>
<td>8.</td>
<td>Streaming</td>
<td>Min. three compressed stream (Individually Configurable)</td>
</tr>
<tr>
<td>9.</td>
<td>ID/Password</td>
<td>Multi-level user ID/Password</td>
</tr>
<tr>
<td>10.</td>
<td>Encryption</td>
<td>HTTP(SSL/TLS)/HTTPS</td>
</tr>
<tr>
<td>11.</td>
<td>Video Authentication</td>
<td>For video authentication, classic watermarks/digital signature must be embedded in Video Stream along with name, time, date stamped which cannot be tampered</td>
</tr>
<tr>
<td>12.</td>
<td>Physical Layer</td>
<td>10/100 base Tx Ethernet</td>
</tr>
<tr>
<td></td>
<td>Lens Type</td>
<td>2.7 to 13.5 mm or better</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>14</td>
<td>Dynamic Noise Reduction</td>
<td>3D</td>
</tr>
<tr>
<td>15</td>
<td>Slow Shutter</td>
<td>Support</td>
</tr>
<tr>
<td>16</td>
<td>Antiflicker</td>
<td>Support</td>
</tr>
<tr>
<td>17</td>
<td>Illumination</td>
<td>Color: 0.01 Lux @ (F1.2, AGC ON), 0.018 Lux @ (F1.6, AGC ON), 0 Lux with IR</td>
</tr>
<tr>
<td>18</td>
<td>Signal Process</td>
<td>Digital Signal Process</td>
</tr>
<tr>
<td>21</td>
<td>Privacy Mask</td>
<td>3 or higher</td>
</tr>
<tr>
<td>22</td>
<td>Auto Gain Control</td>
<td>Yes</td>
</tr>
<tr>
<td>23</td>
<td>Back Light Compensation &amp; High Light Compensation</td>
<td>Yes</td>
</tr>
<tr>
<td>24</td>
<td>Electronic Shutter</td>
<td>1/3 s to 1/100,000 s</td>
</tr>
<tr>
<td>25</td>
<td>White Balance</td>
<td>Yes</td>
</tr>
<tr>
<td>26</td>
<td>Wide Dynamic Range</td>
<td>120dB</td>
</tr>
<tr>
<td>27</td>
<td>Day and Night</td>
<td>Yes (as per minimum illumination)</td>
</tr>
<tr>
<td>28</td>
<td>Operating Temperature</td>
<td>-30 °C to +60 °C</td>
</tr>
<tr>
<td>29</td>
<td>Humidity 95% or less (non-condensing)</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Internet protocol Support</td>
<td>IPv4 and IPv6</td>
</tr>
<tr>
<td>31</td>
<td>Protection Level</td>
<td>IP67, IK10</td>
</tr>
<tr>
<td>32</td>
<td>Edge based video content Analytics</td>
<td>Line crossing detection, intrusion detection, unattended baggage detection, object removal detection, Scene change detection, audio exception detection,</td>
</tr>
<tr>
<td>33</td>
<td>Power Source</td>
<td>Suitable adaptor shall be supplied to make the equipment work on 230V ±10%, 50Hz and Power over Ethernet</td>
</tr>
</tbody>
</table>
### 2) Server

<table>
<thead>
<tr>
<th><strong>Recommended Specifications for VMS Server</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
</tr>
<tr>
<td><strong>RAM</strong></td>
</tr>
<tr>
<td><strong>NIC</strong></td>
</tr>
<tr>
<td><strong>HDD for OS</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>HDD for Picture Storage</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>HDD Capacity</strong></td>
</tr>
</tbody>
</table>

### 3) Computer/Client:

<table>
<thead>
<tr>
<th><strong>Recommended Specifications for Client/Computer</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
</tr>
<tr>
<td><strong>RAM</strong></td>
</tr>
<tr>
<td><strong>NIC</strong></td>
</tr>
<tr>
<td><strong>Graphics Card</strong></td>
</tr>
<tr>
<td><strong>HDD Type</strong></td>
</tr>
</tbody>
</table>
### HDD Capacity
240 GB for OS and HikCentral Control Client

### Operating System
Microsoft ® Windows 7 (64-bit)

4) Central Video Management Software

### Central Video Surveillance Management

#### 1. Central Video Surveillance Management Service

- Authenticated the Control Client access; manages the users, roles, permissions and monitors devices
- Provides the interface for third-party system integration
- VSM which forwards and distributes the video and audio data

<table>
<thead>
<tr>
<th>3rd Party Device Access Gateway</th>
<th>Communication between VSM and third-party device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Wall Management Service</td>
<td></td>
</tr>
<tr>
<td>a. Communicates with VSM</td>
<td></td>
</tr>
<tr>
<td>b. Responds to Control Client’s request and sends real-time messages to Control Client</td>
<td></td>
</tr>
</tbody>
</table>

#### 2. Responds to Control Client’s request and sends real-time messages to Control Client

#### 3. Accessibility and Management Capabilities

Administration functions and operation functions are performed separately in the following clients:
1. Web Client: All administration of VSM shall be performed using a web browser client via LAN, WAN or Internet. No client software is required for administration of the system.

2. Control Client: All security operator features shall be accessed through the Control Client connected to VSM via LAN, WAN, or Internet.


5. It Shall remotely connect to the VSM server via TCP/IP and perform the following functions:

<table>
<thead>
<tr>
<th>1. Add encoding devices to the VSM using the following discovery options:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. IP/Domain</td>
</tr>
<tr>
<td>b. IP Segment</td>
</tr>
<tr>
<td>c. Port Segment</td>
</tr>
<tr>
<td>d. Batch Import</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. When adding NVRs and Network Cameras, devices shall have the option to automatically create logical areas by device name or add to an existing area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Automatically add device’s recording schedule for future remote management. It Shall be able to set and modify NVR recording schedules.</td>
</tr>
<tr>
<td>b) When adding an NVR, user can check the online and offline status of NVR channels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Once added, shows the online/offline status of devices in both physical view and logical view.</th>
</tr>
</thead>
</table>

| 4. Shall remotely configure NVRs and Network Cameras and set all functions that are available if connecting to devices directly. |
5. When adding Hybrid SANs, shall be able to set as host server for network camera or as an N+1 hot spare for Hybrid SANs recording redundancy

6. It shall support Cloud Storage Server.

7. Improved security authentication.

8. It shall add up to 8 Smart Walls

9. It shall support the linkage between decoding device’s video outputs and Smart Wall screens.

10. It shall display channels in the same area in alphabetical order

11. It shall synchronize NVR channel names with the names displayed on the Web Client.

6. Recording: Shall have the ability to configure camera recording schedule and Picture Storage.

1. Recording Configuration

   a. Batch add new recording schedules

   b. Delete/modify existing recording schedules

   c. Filter recording schedules by customized rules

2. Picture Storage: Shall store the pictures of passing vehicles, events, and alarms on VSM server’s HDD

   a. Turn on/off Picture Storage

   b. Select picture storage location.
3. Recording Template Configuration shall have the ability to:

   a. Add multiple recording templates

   b. Delete/edit recording template

   c. Filter existing recording schedules by customized rules

   d. Set recording schedule for channels imported into the Central System from Remote Sites.

7. Event & Alarm: Shall have the ability to configure the following:

To avoid flooding operators with alarms, shall have the option of adding just an event from a device, that will be searchable via the Control Client, but not broadcast as an alarm:

   a) Shall batch add the following Video Content Analysis (VCA) events from cameras:

      Motion detection

      Line crossing detection

      Intrusion detection

      Region entrance detection

      Region exiting detection

   b) Shall batch add alarm input events

   c) Shall batch add Health Monitoring events from Device:

      Device Offline
### Section – V Procuring Entity Requirement

RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

<table>
<thead>
<tr>
<th>Event Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD Full</td>
</tr>
<tr>
<td>R/W HDD Failure</td>
</tr>
<tr>
<td>Video Standard Mismatch</td>
</tr>
<tr>
<td>Camera/Recording Resolution Mismatch</td>
</tr>
<tr>
<td>Array Exception</td>
</tr>
<tr>
<td>Illegal Login</td>
</tr>
</tbody>
</table>

d) Shall batch add Health Monitoring events from servers:

<table>
<thead>
<tr>
<th>Event Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Exception</td>
</tr>
<tr>
<td>HDD Full</td>
</tr>
<tr>
<td>R/W HDD Failure</td>
</tr>
<tr>
<td>System Temperature Too High</td>
</tr>
<tr>
<td>CPU Temperature Too High</td>
</tr>
<tr>
<td>Environment Temperature Too High</td>
</tr>
<tr>
<td>Memory Exception</td>
</tr>
<tr>
<td>Disk Loss</td>
</tr>
<tr>
<td>Disk Warning</td>
</tr>
<tr>
<td>Bad Disk</td>
</tr>
<tr>
<td>Disk Disconnect</td>
</tr>
<tr>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Physic Volume Alarm</td>
</tr>
<tr>
<td>Array Initialization</td>
</tr>
<tr>
<td>Array Rebuilding</td>
</tr>
<tr>
<td>Array Explanation</td>
</tr>
<tr>
<td>Array Degradation</td>
</tr>
<tr>
<td>Array Detection</td>
</tr>
<tr>
<td>Array Repair</td>
</tr>
<tr>
<td>Array Unavailable</td>
</tr>
<tr>
<td>Video Loss Alarm</td>
</tr>
<tr>
<td>Recording Exception Alarm</td>
</tr>
</tbody>
</table>

- If an event is added or batch added and is not configured, the Web Client will offer to activate and remotely configure, if the event type is supported on the NVR or Network Cameras but not configured on the device.

- Shall batch delete all invalid events that are not supported on NVR or Network Camera.

- Shall have the ability to convert any of above stated events into an alarm.

- Shall support email linkage.

- After configuring a recording schedule, video files of events can be searched and played.
**Alarms**: NVR and Network Camera events shall also be able to be added directly as alarms by using the Alarm Configuration tab

**Alarm Priority** shall be configured to one of three levels by default:

<table>
<thead>
<tr>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
</table>

- Shall have the ability to set alarm recipients from users accounts set up in the VSM
- Shall have the ability to associate up to 16 cameras recording with alarm events
- Shall have the ability to associate a map with an alarm
- Shall have the ability to trigger a pop-up window with an alarm event
- Shall have the ability to lock associated alarm event video footage, so it is not autoerased based on the camera schedule

Shall support importing newly-added alarms of Remote Sites, and alarm linkage of popup window, audible warnings, alarms outputs, e-map linkage, Smart Walls, and email linkage

Alarm source, trigger events, and alarm priority can also be displayed

Shall support site offline alarm for Remote Sites

Shall support alarm linkage of Smart Walls; Smart Walls and screens can be selected

Shall support displaying alarms in alphabetical order

**8. Map**: Shall have the ability to create graphical maps and add cameras, alarm inputs and alarm outputs
1. Create map by importing images in JPEG, BMP, or PNG format

2. Shall have the ability to add “hot region” icon to be able to skip to different layers of maps

3. Shall have the ability to add icons representing -
   - Camera
   - Alarm Input
   - Alarm Output

   Shall have the ability to import image files to create custom map icons

   Shall support switching to E-map of Remote Site by clicking the Remote Site icon

### 9. Roles and Users:

1. Shall have the ability to create user profile groups defined as Roles

2. Role shall be able to restrict user profile access for administration functions

Resource: Each “Role” can sub-divide the system and shall allow or deny access to the following features on a per-camera basis:

- Live view
- Playback
- Capture and Print Pictures
- Video Search
- Download
<table>
<thead>
<tr>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Activate Manual Recording</td>
</tr>
<tr>
<td>· Two-Way Audio</td>
</tr>
<tr>
<td>TagVideo</td>
</tr>
<tr>
<td>oAdd</td>
</tr>
<tr>
<td>oEdit</td>
</tr>
<tr>
<td>oDelete</td>
</tr>
<tr>
<td>o View</td>
</tr>
<tr>
<td>Lock video so it can’t be overwritten by a schedule</td>
</tr>
<tr>
<td>oAdd</td>
</tr>
<tr>
<td>oEdit</td>
</tr>
<tr>
<td>oDelete</td>
</tr>
<tr>
<td>o View</td>
</tr>
<tr>
<td>· PTZ Control</td>
</tr>
<tr>
<td>· Show Health Status</td>
</tr>
<tr>
<td>· Alarm Output Control</td>
</tr>
<tr>
<td>Device(NVR,NetworkCamera)</td>
</tr>
<tr>
<td>oAccess device parameters/settings</td>
</tr>
<tr>
<td>oBroadcast</td>
</tr>
<tr>
<td>oLog</td>
</tr>
<tr>
<td>o Health Status</td>
</tr>
<tr>
<td>· Show Server health status</td>
</tr>
<tr>
<td>· Search log by user accounts</td>
</tr>
<tr>
<td>Shall Control Smart Wall decoders</td>
</tr>
<tr>
<td>Shall manage the permission of checking, adding, deleting, editing of each module on the Control Client</td>
</tr>
</tbody>
</table>
Shall hide modules on the Control Client

<table>
<thead>
<tr>
<th>Alarm Center -</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. View</td>
</tr>
<tr>
<td>ii. Arm and Disarm</td>
</tr>
<tr>
<td>iii. Delete Alarm</td>
</tr>
<tr>
<td>iv. Acknowledge</td>
</tr>
<tr>
<td>v. Trigger Pop-up Window</td>
</tr>
<tr>
<td>vi. Search Alarm</td>
</tr>
</tbody>
</table>

10. **Users: shall be able to be added manually**

<table>
<thead>
<tr>
<th>a. Create user name</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Default password on for initial login and then user must create a unique password</td>
</tr>
<tr>
<td>c. Set expiry date of user profile</td>
</tr>
<tr>
<td>d. Select user status</td>
</tr>
<tr>
<td>e. PTZ control permission level</td>
</tr>
<tr>
<td>f. Assign roles to the user</td>
</tr>
<tr>
<td>g. View role list and detailed information</td>
</tr>
<tr>
<td>h. Add domain user group</td>
</tr>
</tbody>
</table>
### Section – V Procuring Entity Requirement

#### RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

**11. Security for Users:**

<table>
<thead>
<tr>
<th>i. PTZ control permission: notify the user with lower PTZ permission that PTZ control has been appropriated by another user with higher permissions</th>
</tr>
</thead>
</table>

**12. System and Maintenance:**

<table>
<thead>
<tr>
<th>1. Shall create a name for the current site</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Shall set a static IP address for the WAN access</td>
</tr>
<tr>
<td>3. The NTP settings shall be able to be set for syncing the time between the VSM and the NTP server</td>
</tr>
<tr>
<td>4. Shall enable GIS map function and configure the map API URL</td>
</tr>
<tr>
<td>5. If you have the AD (Active Directory) domain controller which contains the information (e.g., user data, computer information), you shall be able to configure the settings to get the related information. In this way, you can add the users that belong to an organization unit (e.g., a department of your company)</td>
</tr>
<tr>
<td><strong>6.</strong> The system shall be able to receive the configured generic events</td>
</tr>
<tr>
<td><strong>7.</strong> Shall set transfer protocol as HTTP or HTTPS</td>
</tr>
<tr>
<td><strong>8.</strong> Shall have system hot spare settings</td>
</tr>
<tr>
<td><strong>9.</strong> Shall reset network information of added devices</td>
</tr>
<tr>
<td><strong>10.</strong> Shall set database backup and restore.</td>
</tr>
</tbody>
</table>

### 13. Control Client:

The Control Client should be Windows-based software for security operators to access NVRs, Hybrid SANs, and network cameras using authorized client login credentials and view through the VSM. It shall provide multiple operating functionalities, including real-time live view, PTZ control, video playback and download/exporting, alarm management, VCA search, log query, and health monitoring module.

- Shall have the ability to support login to the Control Client through HTTP or HTTPS
- Shall have the ability to turn on and off VCA video overlay for both live and recorded video
- Shall have the ability to display the online/offline status of Remote Sites in Central System

### 14. Shall have the ability to view 3 auxiliary screens on 1 Control Client and shall have the following modules and functions:

1) **Live View**:

- a. Ability to view up to 256 channels
- b. Ability to auto switch to sub stream of Network Camera, if more than 4 camera tiles are called up
c. The following functions are available on the tile toolbar for easy access to operator:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Capture: ability to save snapshots</td>
</tr>
<tr>
<td>ii.</td>
<td>Print camera image</td>
</tr>
<tr>
<td>iii.</td>
<td>Enable manual recording of displayed Network Camera</td>
</tr>
<tr>
<td>iv.</td>
<td>Enable and utilize two-way audio</td>
</tr>
<tr>
<td>v.</td>
<td>Digital zoom</td>
</tr>
<tr>
<td>vi.</td>
<td>3D positioning for PTZ camera</td>
</tr>
<tr>
<td>vii.</td>
<td>Activate on-screen PTZ controls</td>
</tr>
<tr>
<td>viii.</td>
<td>Show camera statistics</td>
</tr>
<tr>
<td>ix.</td>
<td>Switch to sub or main stream of camera</td>
</tr>
<tr>
<td>x.</td>
<td>Fisheye expansion</td>
</tr>
</tbody>
</table>

2) Playback:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Ability to play back 1 to 16 cameras simultaneously</td>
</tr>
<tr>
<td>b.</td>
<td>When playing multiple cameras simultaneously, have ability to view in non-synchronized and synchronized mode</td>
</tr>
<tr>
<td>c.</td>
<td>Ability to export one or multiple cameras displayed simultaneously:</td>
</tr>
<tr>
<td></td>
<td>i. Set export location</td>
</tr>
<tr>
<td></td>
<td>ii. Set whether to download VSPlayer for viewing MP4 files</td>
</tr>
<tr>
<td></td>
<td>iii. Export only in MP4 format</td>
</tr>
<tr>
<td>d.</td>
<td>The following functions are available on the camera playback tile toolbar for easy access</td>
</tr>
</tbody>
</table>
to operator:

<p>| i. Capture: ability to save JPEG snapshots |
| ii. Print camera image                        |
| iii. Clipping: ability to quickly export video clips |
| iv. Add tag to video                           |
| v. Digital zoom                                 |
| vi. Lock video: to prevent video segments from being over written by schedule |
| vii. Video export                               |
| viii. Show camera statistics                    |
| ix. VCA search                                  |
| x. Fisheye expansion                            |
| e. Supports channel decoding on the Smart Wall  |
| f. Displays resolution ratio, encoding format, and frame rate of cameras |
| g. Plays back channels of Remote Sites          |
| h. Supports dual-stream playback                |
| i. Supports transcoding playback                |
| j. Supports AVI format for video file download  |</p>
<table>
<thead>
<tr>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>k. Supports encryption for downloading in MP4 format</td>
</tr>
<tr>
<td>l. Supports clicking and playing directly after downloading with player in MP4 format</td>
</tr>
<tr>
<td>m. Supports privacy mask after downloaded and played with VSPlayer</td>
</tr>
<tr>
<td>n. Supports customizing download time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3) Video Search:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ability to search for specific types of indexed video:</td>
</tr>
<tr>
<td>i. Tag: Video that has been auto tagged or manually tagged at a certain timestamp</td>
</tr>
<tr>
<td>ii. Lock: Search only video that has been “locked” to not be overwritten by schedule</td>
</tr>
<tr>
<td>iii. Segment: Ability to search for up to 7 days of video averagely divided into segments from 1 to 100</td>
</tr>
<tr>
<td>iv. Interval: Ability to search for up to 7 days of video divided by intervals from 1 to 60 minutes or seconds</td>
</tr>
<tr>
<td>v. Transaction Event</td>
</tr>
<tr>
<td>vi. Supports thumbnails (only searching video files stored in Hybrid SANs supports this function)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VCA Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Support Motion Detection</td>
</tr>
<tr>
<td>• Support Line Crossing Detection</td>
</tr>
<tr>
<td>• Support Intrusion Detection</td>
</tr>
</tbody>
</table>
4) **Map:**

- View maps created in the Web Client
- i. Ability to click on camera icons for live view of the camera
- ii. Ability to click camera and alarm input icons to set Arming Control
- iii. Ability to click camera and alarm input icons to show the history alarm
- iv. Dynamic icons that flash based on alarm status
- v. Ability to click on alarm output icons to turn on alarm output

5) **Health Monitoring:**

- a. Ability to monitor all encoding devices, decoding devices, recording servers, Remote Sites, and Streaming Servers associated with VSM and the overall status of VSM itself.

- b. Overview: Provide status of the following devices and the ability to click on items for a detailed report:
  - i. Camera Offline
  - ii. Signal Exception
  - iii. Getting Signal Failed
  - iv. Recording Exception
  - v. Getting Recording Failed
  - vi. No Recording Schedule
| vii. Video Surveillance Management Service |
| viii. Recording Server Status |
| ix. Streaming Server Status |
| c. Display host server and spare server when hot spare function is enabled |
| d. Switch to physical view of the encoding devices |
| e. Switch to logical view of cameras |
| f. Get the encoding devices real-time status immediately via refreshing encoding devices |
| g. Display channels of Remote Sites |
| h. Restore the device accessing mode to Automatically Judge mode |

6) **Log: search and view logs for the following:**

| a. Server Logs - |
| i. Operation Log, Server Logs - Operation Log |
| ii. System Log, Server Logs - System Log |
| b. Smart Wall Logs |
| c. Device log |
| d. Log searches are based on operation, user, and time interval searches of: |
i. Today
ii. Last 6 hours
iii. Yesterday
iv. Last 7 days
v. Custom time interval

VMS should support face attendance and terminal.

5) Display

The following are the technical parameters for the 32” Display:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Features</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Product Type</td>
<td>Workstation LED monitor</td>
</tr>
<tr>
<td>2.</td>
<td>Certification</td>
<td>UL, CE, FCC</td>
</tr>
<tr>
<td>3.</td>
<td>Backlight</td>
<td>LED Backlight</td>
</tr>
<tr>
<td>4.</td>
<td>Diagonal size</td>
<td>32”</td>
</tr>
<tr>
<td>5.</td>
<td>Resolution</td>
<td>1920 * 1080</td>
</tr>
<tr>
<td>6.</td>
<td>Visual angle</td>
<td>Horizontal - 178°; Vertical - 178°</td>
</tr>
<tr>
<td>7.</td>
<td>Response time</td>
<td>6.5ms</td>
</tr>
<tr>
<td>8.</td>
<td>Contrast</td>
<td>3000:1 or better</td>
</tr>
<tr>
<td>9.</td>
<td>Brightness</td>
<td>300cd/m2 or better</td>
</tr>
<tr>
<td>10.</td>
<td>Input interface</td>
<td>VGA x 1, BNC x 1, HDMI x 1</td>
</tr>
<tr>
<td>11.</td>
<td>Operating Temperature</td>
<td>5°C ~ 40°C</td>
</tr>
<tr>
<td>12.</td>
<td>Working life</td>
<td>≥60,000 Hours</td>
</tr>
<tr>
<td>13.</td>
<td>Remote control</td>
<td>IR remote control shall be supported. Shall be supplied as accessory along with display</td>
</tr>
</tbody>
</table>

9) CAT-6 Cable

The following are the technical parameters for the CAT 6 Cable:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Features</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Type</td>
<td>U/UTP 4Pairs cable-category 6- PVC Sheath</td>
</tr>
<tr>
<td>2.</td>
<td>Category</td>
<td>U/UTP CAT6-4P-PVC-CM</td>
</tr>
<tr>
<td>3.</td>
<td>Test Standard</td>
<td>ISO/IEC1180, TIA-568-C.2,YD/T1019</td>
</tr>
<tr>
<td>4.</td>
<td>Ambient temperature</td>
<td>-20°C - 75°C</td>
</tr>
<tr>
<td>5.</td>
<td>Insulation Material</td>
<td>HDPE</td>
</tr>
<tr>
<td>6.</td>
<td>Conductor</td>
<td>SOLID-Bare Copper Material, Copper content : 99.97%</td>
</tr>
</tbody>
</table>

6) Port Unmanaged POE Switch:
Unmanaged Switch

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Features</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Switch Type</td>
<td>Unmanaged</td>
</tr>
<tr>
<td>2.</td>
<td>Ports</td>
<td>Ports 1 to 16</td>
</tr>
<tr>
<td>3.</td>
<td>PoE Port</td>
<td>16 gigabit PoE ports,</td>
</tr>
<tr>
<td>4.</td>
<td>SFP Port</td>
<td>1 gigabit SFP fiber optical port</td>
</tr>
<tr>
<td>5.</td>
<td>Network</td>
<td>IEEE802.3 af and 802.3at</td>
</tr>
<tr>
<td>6.</td>
<td>Switching Capacity</td>
<td>36 Gbps</td>
</tr>
<tr>
<td>7.</td>
<td>MAC Address Table</td>
<td>8 k</td>
</tr>
<tr>
<td>8.</td>
<td>Surge Protection</td>
<td>6 KV</td>
</tr>
<tr>
<td>9.</td>
<td>Power Supply</td>
<td>100-240V AC, 50/60Hz</td>
</tr>
<tr>
<td>10.</td>
<td>Power Consumption</td>
<td>≤250W</td>
</tr>
<tr>
<td>11.</td>
<td>Working Temperature</td>
<td>Temperature: 0°C-40°C</td>
</tr>
<tr>
<td>12.</td>
<td>Storage Temperature</td>
<td>-40°C to 85°C (-40°F to 185°F)</td>
</tr>
</tbody>
</table>

Table 3 IT: Quantities Required

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
<th>Min QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Face Recognition, Biometric system with attendance software</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>NVR 32 port</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Vari Focal Bullet Camera</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>16 port Switch</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Server, Keyboard, Mouse, Monitor (with OS Windows)</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>UPS Rack for server with all required accessories</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>UPS for server (6 KVA)</td>
<td>1</td>
</tr>
</tbody>
</table>
5.9.3. **Lift Specifications**

5.9.3.1. **Type of lift**

(10 Passenger lift with machine room)

5.9.3.2. **Service condition**

Ambient Temperature & Relative Humidity: 4 Deg C (Min) - 50 Deg C (Max) & up to 95% RH

5.9.3.3. **Scope of Supply**

Scope of work: Design, Fabrication, Supply, Installation, Commissioning, packing, forwarding, transportation to I-TMT site, unloading, furnishing of final drawings and manuals, handling at site, performance demonstration and performance acceptance etc. of 16 passenger capacity lift, to make the system complete in all respects and required civil work as per technical Specification & as per the tender document.

**Table 4 Lift Capacity**

<table>
<thead>
<tr>
<th>CAPACITY</th>
<th>10 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED (mps)</td>
<td>1mps</td>
</tr>
<tr>
<td>STOPS</td>
<td>6 Stops With (all opening on the same side)</td>
</tr>
<tr>
<td>CONTROLLER TYPE</td>
<td>ACD3-MR</td>
</tr>
<tr>
<td>DRIVE</td>
<td>VF Regenerative (Closed Loop)</td>
</tr>
<tr>
<td>POWER SUPPLY</td>
<td>400/415 Volts (3 Phase AC) / or as per man specs.</td>
</tr>
<tr>
<td>OPERATION</td>
<td>Full collective operation</td>
</tr>
<tr>
<td>MACHINE</td>
<td>PM Gearless (Located above shaft)</td>
</tr>
<tr>
<td>TRACTION MEDIA</td>
<td>Flat Coated Steel Belt / or as per manufacturers specification</td>
</tr>
<tr>
<td>CAR FINISH</td>
<td>Rear Panel = SS Hairlinefinish</td>
</tr>
<tr>
<td></td>
<td>Side Panels = SS Hairlinefinish</td>
</tr>
</tbody>
</table>
### Front Panels
Front Panels = SS Hairline finish

### FALSE CEILING TYPE
metallic with LED light fixtures

### FLASE CEILING FINISH
Black Powder coated

### VENTILLATION
Cross flow fan

### HAND RAILS
Stainless Steel Mirror Finish Handrails on rear car panels

### FLOORING
Heavy duty Vinyl Tiles

### CAR DOOR FINISH
Stainless steel - Hairline finish

### LANDING DOORS FINISH
Stainless steel - Hairline finish

### FIRE RATED DOORS
Fire rating-60mins

### HOISTWAY DIMENSIONS (W x D - mm)
2.0 m x 2.0m

### CAR DIMENSIONS (W x D x H - mm)
As per manufacturer specs

### CAR & HOISTWAY DOOR TYPE
Central opening (CO) doors

### DOOR OPENING (W x H - mm)
800 mm (W) x 2100 mm (H)

### DOOR OPERATOR
DC Door Operator

### COP
Gien Buttons in Stainless Steel #4(Hairline)

### CAR POSITION INDICATOR
(RED LED) Scrolling Display

### HALL FIXTURES

<table>
<thead>
<tr>
<th>HALL FIXTURE FACE PLATE</th>
<th>Stainless Steel #4(Hairline)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALL BUTTON ARRANGEMENT</td>
<td>Hall Button with HPI</td>
</tr>
</tbody>
</table>

### STANDARD FEATURES
Anti-nuisance Car Call Protection, Independent Service (for Duplex only), Overload Device, Nudging, Emergency

<table>
<thead>
<tr>
<th>OPTIONS REQUIRED</th>
<th>Automatic Rescue operation, Voice Synthesizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTIONS REQUIRED</td>
<td>Mirror on rear side wall</td>
</tr>
</tbody>
</table>

### 5.9.3.4. General Requirements

The Elevators shall include all elements confirming to specifications or as amended herein. Elevators covered by these specifications shall be provided, installed, tested, commissioned, certified and approved as per statutory requirements.

The method of drive shall be Electric Traction with Gear less motor having VVVF Control.
The design of the Elevators shall take into consideration fire prevention, elimination of dust and dirt traps, and easy accessibility for cleaning and routine maintenance.

5.9.3.5. Electric Traction Drive System

A. Traction Machine

The construction of all Elevator machines shall conform with IS-14665

B. Brake

i. The Electro-magnetic brake with non-asbestos lining shall be spring applied and electrically released type having noiseless operation.

ii. The brake shall be capable of stopping and holding the Elevator car in its downward travel to rest with 125% of its rated load from the maximum governor tripping speed. In this condition the retardation of the Car shall not exceed that resulting from the operation of the Safety gear or stopping on the buffer.

iii. Springs used to apply the brake shoes (two nos.) shall be in compression and adequately supported.

iv. Brake linings shall be of renewable incombustible materials and shall be secured to the brake shoes such that normal wear shall not weaken their fixings. Band brakes shall not be used.

v. No earth fault, short circuit or residual magnetism shall prevent the brake from being applied in the event of loss of power supply to the Elevator motor and control circuit.

vi. A means of adjusting the brake plunger stroke and releasing the brake in emergency shall be provided.

vii. The Elevator machine shall be fitted with a manual emergency device capable of having the brake released by hand and requiring a constant effort to keep the brake open.

viii. The fail-safe break shall incorporate an approved design of brake switch i.e. pick up, hold, discharge. Brake coil shall be wired in series & their respective switches in parallel. The operation of brake shall be thyristor controlled from solid-state drive in order to effect minimum pick up time and synchronized start.

C. Driving Mechanism

i. Lift Machine:

The lift machine shall be suitable for 415-volt 3 phase 50 Hz AC supply with a voltage variation of +10% and -20% and shall be placed directly above the hoist way on steel beams resting on machine room floor slab. The lift machine shall have high efficiency and low power consumption and shall be designed to withstand peak currents in lift duties.

Means for manual operation of the lift car shall be made by providing winding wheel suitably marked to indicate the direction of the movement to enable the lift car to be brought to the nearest landing. There shall be a warning display for switching off electrical supply before the manual operations.

ii. Driving Sheaves

(a) The sheaves shall be manufactured in steel or SG iron and fitted with sealed for life lubricated bearings.

(b) The sheaves shall have machined rope grooves that can be reworked for future wear.
(c) Adequate provision shall be made to prevent any suspension ropes leaving groove due to rope slack or introduction of foreign objects.

### iii. Alignment

(a) The brake plunger, collar, sleeve, motor, sheaves and all bearings shall be mounted and assembled so that proper alignment of these parts is maintained.

(b) The assembly shall be reviewed and rectified when excessive noise is emitted during operation.

### iv. Gearless Machines

The gearless machine shall consist of a motor traction sheave and brake drum or brake disc completely aligned on a single shaft. Gearless machine shall be AC gearless with VVVF drive.

### v. Anti-Vibration Supports

The whole traction machine shall be mounted on appropriate anti-vibration supports to minimize noise and vibration.

5.9.3.6. **Control Systems**

The Lifts shall have state of art microprocessor-based AC variable voltage variable frequency (ACVVVF) drive. Some of the technical parameters required are innumerate below:

a) Starting current 1.2 - 1.5 times full load runningcurrent

b) Power saving 50 -55%

c) Leveling accuracy ± 3mm

d) Acceptable voltage fluctuation +10 to -20%

The controller shall be mounted on the side of the top of lift shaft, vertical, totally enclosed cubicle type with hinged doors on the front provide easy access to all components in the controller. Cubicle shall be well ventilated such that the temperature inside never exceeds the safe limits of the components at ambient room conditions. The controller shall operate within the supply voltage variation of plus 10% to minus 20% of the nominal voltage.

The Controller shall be including protection against the following abnormalities and shall cut off the power supply, apply the brake and bring the car to a rest in the event of any of the abnormalities occurring.

a) Overcurrent

b) Undervoltage

c) Overvoltage

d) Singlephasing
e) Phasereversal

f) Earth leakage

Features

Control system features are detailed as below.

  i. Attendant Operation

Lift shall be provided with attendant control facilities. A key switch for change of operation mode shall be provided in a lockable recess panel on the car operation panel. After gaining control on the lift, the attendant can direct the car to stop at any storey. The attendant can also by pass the landing calls (but not cancel them) or reverse the direction of travelling.

  ii. Automatic By-pass

Load weighing devices located either on car top or under the car cage shall be provided for all lifts. Whenever the load exceeds 60-70% of the capacity load of the lifts, the lifts shall ignore all landing calls and only respond to car calls.

  iii. Over load device

A load weighing device shall operate when the load in the car exceeds the rated capacity. The operation of the device shall activate buzzer sound and flashing ‘overload’ signals. At the same time the car doors shall be prevented from closing. When the excess load has been removed from the car, the buzzer alarm shall be muted automatically and the car shall function normally. The sensitivity shall be 30 kg for Passengerlift.

  iv. Automatic self-levelling

All lifts shall be provided with automatic self-levelling feature that shall bring the lift car level to within ± 3 mm for passenger elevators of the landing floor regardless of load or direction of travel. The automatic self levelling feature shall correct for over travel and rope stretch.

Possible future requirement of access control and BMS integration of the controller.

5.9.3.7. Technical Specifications - Lifts, Lift Car, Doors and Safety Devices

CAR ENCLOSURES

  a) General Requirements

   i. Frame

   • Every lift car body shall be carried in a steel car frame assembly which shall have sufficient mechanical strength to resist the forces applied by the safety gear or impact of the car on the buffers. The deflection of the steel members carrying the platform shall not exceed 1/1000 of their span under static conditions when the rated load is evenly distributed on the platform
• At least four renewable guide shoes or shoes with renewable linings or sets of
guides rollers shall be provided two at the top and two at the top and two at the
bottom of the car frameassembly.

ii. **Enclosure finishes**

The car enclosure, doors etc. shall be as per the following:

• Alarm System: An emergency alarm buzzer, including wiring shall be provided
and connected to a plainly marked push button in the car operating panel. The
alarm bell shall be located in central security room. The alarm unit shall be solid
state siren type, to give a waxing and waning siren when the alarm button in the
car is pressedmomentarily.

• Sealed Maintenance Free Nickel Cadmium Batteries capable of maintaining the
following in each lift for 2 hrs after mains failure.
  ➢ Emergency light of adequate illumination incar
  ➢ CarVentilation
  ➢ IntercommunicationSystem
  ➢ Alarms

• One no. 16 amp switch socket outlet to IP 54 and a permanent weatherproof type
luminary to IP54 (with lighting switch) adequately protected shall be provided on
the top of the lift car for maintenance.

• One no. 16 amp switch socket outlet to IP 54 at bottom of lift car for maintenance.

iii. **Operation Panel**

A full-length car operating panel incorporating following control/indications shall be
provided on the return panel

• LCD Illuminated touch push buttons of micro pressure type corresponding to
the floors served at Ground floor and Inside Car. For Other floors LED
Illuminated touch push buttons of micro pressure type to be provided.

• Door open and door close button

• Emergency stop button with Alarm

• Two position key operated switch for 'with attendant' and 'without attendant'
operation.

• Ventilation fan ON/OFF switch with auto OFF when there is no call after 120
seconds (Two Speed & concealedvents).

• Built in intercom of the hands-free type as well as space for providing EPABX
telephone instrument and 5 pair telephone trailing cable to communicate from
car to Two Locations i.e. Operator’s Room (at remote location) & Security
Guard Room and vice-versa.

• Dynamic car direction display

• Car position indicator (digital)

• Audio/Visual overload warning indicator

• Digital voice synthesizer (Optional) for announcing special messages with
background music.

iv. **Landing fixture**
The landing fixtures shall be recess mounted on a base junction box in the wall by the side or on top of landing doors as required. Each landing fixtures shall consist of micro touch type landing call buttons with illuminated call acknowledge signal and illuminated digital type car position indicators on separate stainless-steel face panels with hairline finish.

**b) Car and Landing Doors**

**i) General requirements**

All car doors shall extend to the full height and width of landing opening unless otherwise specified and shall be operated with variable frequency door operator. A similar imperforate door shall be provided for every landing opening in the lift hoist way enclosure. The top track of the landing and car doors shall not obstruct the entrance to the lift cars. All car and landing doors shall have a fire resistance of not less than 1 hour. In addition, all the car and landing doors shall meet the following general requirements.

**ii) Car door locking devices**

Every car door shall be provided with an electrical switch to prevent the lift car from being started or kept in motion unless the car door is closed. A mechanical locking device shall also be provided to prevent door opening from inside the car whilst the car is in motion.

**iii) Landing door locking devices**

Every landing door shall be provided with a mechanical locking device to prevent opening of the door from the landing side in normal cases unless the lift car is in that particular landing zone.

**iv) Projections and recesses**

Sliding car and landing doors shall be guided on door tracks and sills for the full travel of the doors.

**v) Door locking devices**

All doors locking devices, door switches and associated actuating rods, levers or contacts, shall be inaccessible from the landing or the car.

**vi) Protective devices**

Protective devices shall be fitted to the leading edges of both car door panels. It shall automatically initiate reopening of the door in the event of a passenger being struck (or about to be struck) by the door in crossing the entrance during the closing movement. The obstruction of either leading edge when closing shall actuate the protective device to function.

**vii) “Door open” alarm**

“Door open” alarm shall be provided in the car to initiate alarm and a continuous buzzer if a car or landing door has been mechanically kept open for a present period. The period shall be adjustable from 0-10 minute.

**viii) Emergency landing door unlocking devices and key**

- Every landing door shall be provided with an emergency landing door unlocking device. When operated by an authorized person with the aid of a key to fit the unlocking triangle, the landing door shall be unlocked irrespective of the position of the lift car for rescue purpose.
- In the case of coupled car and landing doors, the landing doors shall be automatically closed by means of weight or springs when the car is outside the unlocking zone.
ix) **Door Hangers and Tracks**

The car and the landing doors shall be provided with two-point suspension sheave type hangers complete with tracks. Sheaves and rollers shall be steel with molded nylon collar and shall include shielded ball bearings. Tracks shall be of suitable steel section with smooth surface. The landing doors shall be complete with headers, sills, frames etc. as required.

x) **Lift Door Protection**

Multiple-Infra red door protection and mechanical shoes shall be provided for lift to control door movement which shall cover the entire door opening effectively.

xi) **Protective Hand Rail in the Car (Optional)**

xii) **Cabin Fan:** A noiseless pressure fan shall be provided in the lift cabin.

c) **Hoist Ropes**

Hoist way material shall be non-flammable (02 hrs fire rated) except travelling cables which shall be flame resistant.

i) **Lift Ropes – IS 14665 (Part 4 / Sec 8)-2001**

Round strand steel wires ropes made from steel wire ropes having a tensile strength not less than 12.5 tonnes/cm² and of good flexibility shall be used for lift. Lubrications between the strands shall be achieved by providing impregnated hemp core. The lift ropes shall conform to IS 14665-(Part-4-Sec. 8):2001 and the required factor of safety shall be adhered to. The minimum diameter of rope for cars and counter weight of passenger and goods lift shall be 8mm.

ii) **Rope fastenings**

The ends of lift ropes shall be properly secured to the car and counter weight hitch plates as the case may be with adjustable rope shackles having individual tapers Babbitt sockets, or any other suitable arrangement. Each lift rope shackle shall be fitted with a suitable shackle spring, seat washer, shackle nut & lock & shackle nut split pin.

iii) **Guards for Lift Ropes**

Where lift ropes run around a sheave or sheaves on the car and/or counterweight of geared/ gearless machine suitable guards shall be provided to prevent injury to maintenance personnel.

iv) **Number & Size of Ropes**

The contractor must indicate the number and size of lift ropes and governor ropes proposed to be used, their origin, type, ultimate strength and factor of safety. The contractor should furnish certificate or ropes from the rope manufacturers issued by competent authority.

d) **Counter Weight**

The counter weight for lift cars shall be in accordance with clause 6 of IS 14665 (Part 4-Sec-3): 2001 and shall be designed to balance the weight of empty lift car plus approximately 50 percent of the rated load. It shall consist of cast sections firmly secured in relative movement by at least two numbers steel tie rods having lock nuts/split pins at each end and passing through each section and Housed in a rigid steel frame work. Cracked and broken sub weights shall not be accepted. Counter weight for passenger lifts should be able to accommodate suitable weight Interior finishes. In case interior finishes material exceeds this provision, then the elevator contractor shall adjust the Counter Weight accordingly, however this will be decided and intimated much before the delivery of the elevators.

i) **Counter Weight Guards**
Guards of wire metal / mesh shall be provided in the lift pit to a suitable height above the pit floor to eliminate the possibility of injuries to the maintenance personnel.

ii) **Guides / Guide Rails**
Car and counterweight guide shall be machined T section as per relevant Indian Standards IS-14665 of 2000 revised up to date. The guides shall be capable of withstanding forces resulting from the application of the car or counter weight safety devices the guide rails shall be minimum 16mm Tongued & Grooved type.

iii) **Trailing Cables**
A single trailing cable for lighting control and signal circuit is permitted, if all the conductors of this trailing cables are insulated for maximum voltage running through any one conductor of this cable. The lengths of the cables shall be adequate to prevent any strain due to movement of the car. All cables shall be properly tagged by metallic / plastic tags for identification. Cable jacket should be suitable for immersion in water, salt water & oil etc.

iv) **Safety Devices**
Safety devices shall be capable of operating only in the downward direction and stopping fully loaded car, at the tripping speed of the over speed governor, even if the suspension devices break, by gripping the guides, and holding the car there. Governor sheeve in elevator pit shall be enclosed in a wire cage to a height of 2.40 mtr. All safety devises statutorily required by Lift Inspector, including but not restricted to the following shall be provided.

v) **Terminal slow down switches**
These shall be provided and installed to slow down the lift car when approaching the top and bottom landings. The slow down switches shall act independently from the normal car operating device.

vi) **Over travel limit switches**
These shall be provided and installed to stop the car within the top and bottom clearance, independent of the normal car operating device. The bottom over travel limit switch shall become operative when the bottom of the car touches the buffer. When the over travel limit switches are operative, it shall be impossible to operate the car until the car has been hand wound to a position within the normal travel limits.

vii) **Pit Switch**
An emergency stop switch shall be located in the pit which when operated shall stop the car regardless of the position of hoist way.

viii) **Terminal Buffers**
Suitable spring buffers mounted on RCC foundation blocks shall be provided in the pit in compliance with ANSI/ASME/CENEN-81 /JIS codes for stopping the car in case of mal-operation. Dowels for the purpose shall be left while casting the pit floor alternatively floor reinforcement could be exposed by chipping for welding additional reinforcement for Dowels. However, clearance from underside of the car resting on a fully compressed buffer shall not be less than 1.20 m. Buffers shall be designed for design speed + 15%. Oil buffers shall be provided for the passenger elevators for speed of more than 1.75 mps and spring buffers for lower speed.

ix) **Interlocking**
Adequate interlocking is to be provided so that the car shall not move if the landing doors are even partially open and also the lift is overloaded.
x) **Over speed governor**

Over speed governor shall be of centrifugal type and shall operate the safety gear at a speed at least equal to 115% of the rate speed and less than the over speed governors shall be driven by flexible wire ropes with the following requirements.

- The breaking load of ropes shall be related to the force required to operate the safety gear by the safety factor of at least 8
- The nominal rope diameter shall be at least 7 mm
- The ratio between the pitch diameter of the over speed governor pulley and the nominal rope diameter shall be at least 30. The over speed governors shall be sealed after setting the tripping speed. The breaking or slackening of the governor rope shall cause the motor to stop by an electric safety device.

xi) **Alarm bells**

A concealed 200 mm diameter alarm bell shall be installed in the main security area. The alarm bell shall sound when the alarm bell button in the car operating panel is pressed. The bell shall mute when the pressure on the alarm bell button is released.

xii) **Emergency Stop Switches**

An emergency stop for use by maintenance personal shall be provided in each lift car.

xiii) **Fireman Switch**

Lift shall have a fireman switch with glass front for access by the firemen. The operation of this switch shall cancel all calls to this lift and shall stop at the next nearest landing if traveling upwards. The doors shall not open at this landing and the lift shall return to the ground floor. In case the lift is traveling downwards when the fireman's switch is operated it shall go straight to the ground floor bypassing all calls enroute. The emergency stop button inside the car shall be rendered inoperative. The fireman's switch shall be located adjacent to the lift opening at the terminal floor and shall be at a height of approximately 2 m above the floor level. For easy identification of firemen lift which confirm to the local authorities' requirements, a red and white diagonal striped backing shall be provided behind the glass of the firemen's switch. A permanent notice of prominent size indicating the floors served shall be provided and displayed adjacent to the fireman's lift at the terminal floor. The notice shall be made of laminated plastic sheet or other approved materials with red letters on white background. Details of the notice shall be submitted to the Engineer-in-Charge for approval prior to fabrication.

e) **Control of Noise and Vibration**

i) **General**

The whole of the lift assembly, including the opening and closing of the car and landing doors shall be quiet in operation and shall be free of rattling or squeaking noises. Lift doors operation shall be smooth to avoid the transmission of impact noise to the surrounding structure. Noise level resulting from the operation of the lifts, including direct sound transmission, breakout noise and re-radiation of structure borne noise, shall not exceed the specified noise criteria of the adjacent spaces. Vibration resulting from operation of lifts of escalators shall not be perceptible in any occupied areas.

ii) **Car construction**

All elements of the lift car construction shall be sufficiently rigid to avoid generation of noise by panel excitation as a result of movement. The total noise level in a moving lift car shall not exceed 45 dBA with the ventilation system operating.

iii) **Machinery**
The gearless traction machine and compact PM motor are installed within the hoist way and the slim control panel is located on the shaft side wall. Provision shall be made for the control vibration isolation measures employed to ensure that structure borne noise resulting from the operation of the lift machinery is not audible in any occupied area. Lift machinery noise levels under normal operating conditions shall not exceed 70 dBA at 1 m from the equipment in free field.

iv) **Arrival chimes**

Noise from arrival chimes shall not exceed 60 dBA. The above levels shall be measured at 3 m from the arrival chimes using a noise meter set to ‘fast’ response. Chimes with adjustable loudness shall be provided.

f) **Fire Safety Requirements**

General requirements of lifts shall be as follows:

i) Landing doors in lift enclosures shall have a fire resistance of not less than one hour.

ii) Lift car door shall have a fire resistance rating of one hour.

iii) Grounding switch(es), at ground floor level, shall be provided on all the lifts to enable the fire services to ground the lifts.

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G) **Technical Specifications - Lifts-Associated Works**

i) **Associated Electrical Works**

(1) **Scope**

Based on power requirements of lifts furnished by the lift contractor, power supply for the lift’s machines, terminating in a Switchboard located at a desired location, shall be provided by IIA. The earth bar provided on this Switchboards shall be connected to the building earthing system also by Engineer-in-charge. All cabling /wiring/loop earthing beyond this Switchboard for interconnection with the lift controllers / motors/ indicators / push buttons / safety devices etc. shall be provided by the lift contractor and its cost shall be deemed to be included in the quoted rates.

(2) **Cabling**

Cabling between switchboard and the controller /lift motor shall be with XLPE insulated HR PVC sheathed 1100-volt grade aluminum conductor armored cables conforming to IS 7098 or PVC insulated, PVC sheathed, 1100 volt grade al conductor armored cables conforming to IS 1554. Cables shall be terminated in glands fitted with armor clamps the gland body shall be provide with an internal conical sating to receive the armor clamping cone and clamping nuts which shall secure the armor wires. A PVC shroud shall be fitted to cover the gland body and exposed armor wires Trailing cables for the lifts shall be EPR insulated stranded copper conductor flexible cables conforming to IS 9968 Control cabling shall be with multi core stranded copper conductor PVC insulated and sheathed 1100-volt grade cables conforming to IS 8130. Minimum size of the cable shall be 2.5 sq. mm. Where cables pass through walls or floor slabs, pieces of GI sleeves shall be provided for cast into the wall / floor and cable shall be drawn therein.

(3) **Wiring**

All wiring shall be carried out with FRLS PVC insulated 1100-volt grade stranded copper conductor wires conforming to IS 694 drawn in MS rigid / flexible conduiting system and / or MS raceways. Minimum 2.5 sq. mm size wires shall be used. Wires shall be cut only at terminations. Intermediate jointing shall not be permitted. Drawing, cutting and terminating of the wires shall comply with the relevant Indian
standard specifications and shall be carried out in the most workman like manner as per standard practice. All normal care like cutting the insulation with a pencil edge, taking care not to cut the strands and proper tightening of terminal connector screws to avoid loose connection or breaking of conductors etc. shall be taken. Heavy gauge black enameled screw type ISI embossed MS conduits with superior quality accessories approved by Engineer-in-Charge shall be used in the work. Conduits could either be recessed in floors / walls or fixed on surface with saddles and clamps. Final connections to vibrating the equipment shall be made with metal flexible conduits. Entire work shall be carried out in work man like manner as per standard practice

(4) Earthing
Metal enclosures of all electrical equipment and devices including frames of motors, controllers, switchgear, conduits and raceways etc. shall be properly earthed so as to form an eruvim-potential zone. Loop earthing of vibrating equipment shall be done with flexible copper earthing braid or flexible cables. The lift motor frame shall be connected to the building earthing system termination at the switchboard by duplicate loop earthing conductors of appropriate size.

ii) Associated Civil & Structural Items
All civil and structural items of work associated with erection and operation of lifts shall be provided by the Contractor at his cost including (but not restricted to) the following:
• Hook for lifting lift Equipment in the top of shaft
• Temporary scaffoldings and safety barricades during lift installation in and around Lift wells
• Sill angels
• Bearing plates
• Buffer supports
• Checkered plate
• Fascia plates
• Ladders in pits (MS)
• Safety railing on car top
• Separator / stretcher beams if required
• Dowels for terminal buffers in pit floor during casting.

The Contractor shall ensure erection and fixing of steel work in such a manner that no RCC wall or any other structural member is damaged.

5.9.4. Testing
Testing for the various items of equipment shall be performed at the contractor’s cost and test certificate to be furnished by the contractor (for Motor, Machine Break-tests Controller & Steel wire Ropes). If required by the Engineer, the Contractor shall permit the Owner’s authorized representative to be present during any of the tests. After notification to the Owner that the installation has been completed the contractor shall make under the direction and in the presence of the Engineer such test and inspections as have been specified or as the Engineer shall consider necessary to determine whether or not the full intent of the requirements of the plans and specifications have been fulfilled. In case the work does not meet the full intent of
the specifications and further tests shall be considered necessary the contractor shall bear all the expenses thereof.

5.9.5. **Compliance of statutory observation**

Complying with observations, if any, of Lift/Electrical Inspector and/or any other Statutory Authority after completion of work in order to obtain a categorical clearance to start beneficial use.

5.9.6. **Manuals, drawings etc.**

5.9.6.1. **Along with the tender**

Technical Parameters duly filled in by the Tenderers along with technical catalogue etc. of the equipment offered.

5.9.6.2. **Shop drawings on award of work before commencement**

The Contractor shall submit GA drawings of Lift System to Architects/Owners for approval before commencement of work at site/fabrication/ manufacture.

5.9.6.3. **Operation and maintenance manuals**

Three sets of operation and maintenance manual with support drawings shall be submitted to the Owners after completion of work.

5.9.6.4. **Training**

Training of Owners personnel in operation, handling and maintenance of equipment.

5.9.6.5. **The Contractor shall submit following documents**

- 3 sets of operation and maintenance manual with support drawings shall be submitted to the owner after completion of work.
- 3 sets of test results of pre-commissioning test carried out at site. 3 sets of as built GA drawings.

5.9.7. **Maintenance**

Quoted rates shall be deemed to be inclusive of, free comprehensive maintenance (including spares) of lifts for a period of Two year from the accepted date of completion of the contract.

5.9.8. **Completion Certificate**

On completion of the electrical installation a certificate shall be furnished by the Contractor countersigned by the Licensed Supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local supply authority. The Contractor shall be responsible for getting the electrical installation inspected and approved by the local and statutory authorities concerned and expenses if any shall be borne by the contractor.
5.9.9. **Workmanship**

Good workmanship is an essential prerequisite to be complied for this work. Entire work shall be carried out in the most workmanlike manner by skilled workers under competent supervision.

- Details covering all the Technical Specifications along with following documents.
- Name of Company documents
- Wiring and control schematic and detail diagrams
- Electrical requirements
- Civil requirements
- Outline of the dimensions of the equipment.
- Details of equipment and controls.
- Installation details
- Manufacturers name and catalogue number of any equipment number to be furnished

5.10. **Civil Works**

5.10.1. **General Technical Specifications for Building Works**

- In the specifications, “as directed”/” Approved” shall be taken to mean “as directed”/ “approved” by the Engineer-in-charge.
- Wherever a reference to any Indian Standard appears in the specifications, it shall be taken to mean as a reference to the latest edition of the same in force on the date of agreement.
- In “Mode of Measurement” in the specification wherever a dispute arises in the absence of specific mention of a particular point or aspect, the provisions on these particular points or aspects in the relevant Indian Standards shall be referred to.
- All measurements and computations, unless otherwise specified, shall be carried out nearest to the following limits:
  - Length, width and depth (height): 0.01 m.
  - Areas: 0.01 m.
  - Cubic Contents: 0.01 Cum.
- The distance which constitutes lead shall be determined along the shortest practical route and not necessarily the route actually taken. The decision of the Engineer-in-Charge in this regard shall be taken as final.
- Where no lead is specified, it shall mean “all leads”.
- Lift shall be measured from plinth level.
- Up to “floor two level” means actual height of floor (Maxi. 4 M.) up to 3 Mt. Above plinth level.
- Definite particulars covering the items of work, though not mentioned or elucidated in it, specification shall be deemed to be included therein.
- Reference to specifications of materials as made in the detailed specification of the items of work is in the form of a designation containing the number of the specification of the material and prefix ‘M’ e.g. ‘M-5’.
- Approval to the samples of various materials given by the Engineer-in-charge shall not absolve the contractor from the responsibility of replacing defective material brought on site or materials used in the work found defective at a later date. The contractor shall have no
claim to any payment or compensation whatsoever on account of any such materials being rejected by the Engineer-in-charge.
- The contract rate of the item of work shall be for the work completed in all respects.
- Collection of approved materials shall be done at site of work in a systematic manner. Materials shall be stored in such a manner as to prevent damage, deterioration or intrusion of foreign matter and to ensure the preservation of their quality and fitness for the work.
- Materials, if and when rejected by the Engineer-in-charge, shall be immediately removed from the site of work.
- No materials shall be stored prior to, during and after execution of a structure in such a way as to cause or lead to damage or overloading of the various components of the structure.
- All works shall be carried out in a workmanlike manner as per the best techniques for the particular item.
- All tools, templates, machinery and equipment for correct execution of the work as well as for checking lines, levels, alignment of the works during execution shall be kept in sufficient numbers and in good working condition on the site of the work.
- The mode, procedure and manner of execution shall be such that it does not cause damage or over loading of the various components of the structure during execution or after completion of the structure.
- Special modes of construction not adopted in general Engineering practice, if proposed to be adopted by the Contractor, shall be considered only if the contractor provides satisfactory evidence that such special mode of construction is safe, sound and helps in speedy construction and completion of work to the required strength and quality. Acceptance of the same by the Engineer-in-charge shall not, however, absolve the contractor of the responsibility of any adverse effects and consequences of adopting the same in the course of execution of completion of the work.
- All installations pertaining to water supply and fixtures thereof as well as drainage lines and sanitary fittings shall be deemed to be completed only after giving satisfactory tests by the Contractor.
- The contractor shall be responsible for observing the rules and regulations imposed under ‘Minor Minerals Act’ and such other laws and rules prescribed by Government from time to time.
- All necessary safety measures and precaution including those laid down in the various relevant Indian Standards shall be taken to ensure the safety of men, materials and machinery on the works as also of the work itself.
- The testing charge of all materials shall be borne by the Contractor unless recovery at one percent towards using charges is separately made.
- Approval to any of the executed items for the work done not in any way relieves the contractor of his responsibility for the correctness, soundness and strength of the structure as the drawings and specification.

5.10.2. Applicable codes and Specifications

Codes of Practices:

- IS:456 Code of Practice for plain and reinforced concrete
- IS:457 Code of Practice for general construction of plain and reinforced concrete for dams and other massive structures.
- IS:1343 Code of Practice for pre-stressed concrete.
- IS:3935 Code of Practice for composite construction.
- IS:3201 Criteria for design and construction of precast concrete trusses.
- IS:2204 Code of Practice for construction of reinforced concrete shell roof
- IS:2210 Criteria for the design of R.C. shell structures and folded plates.
- IS:2751 Code of Practice for welding of mild steel bars used for reinforced Concrete construction.
- IS:2502 Code of Practice for bending and fixing of bars for concrete reinforcement.
- IS:3414 Code of Practice for design and installation of joints in buildings.
- IS:4014 Code of Practice for steel tubular, scaffolding (Part I & II)
- IS:13920 Code of Practice for ductile detailing of reinforced concrete structures Subjected to seismic forces.
- IS:3696 (Part I & II) Safety Code for scaffolds and ladders

Materials:
- IS:269 Specification for Ordinary, rapid-hardening and low heat Portland Cement
- IS:455 Specification for Portland Blast Furnace Slag Cement
- IS:1489 Specification for Portland- Pozzolana Cement
- IS:8112 High strength 43 grade cement
- IS:12269 High strength 53 grade cement
- IS:12330 Sulphate resistant cement
- IS:8042 White cement
- IS:4031 Method of physical tests for Hydraulic Cement
- IS:383 Specification for coarse and fine aggregates from natural sources for concrete.
- IS:2386 Method of tests for aggregates for concrete (Part I to VIII)
- IS:516 Method of tests for strength of concrete.
- IS:1199 Method of sampling and analysis of concrete.
- IS:3025 Method of sampling and test (physical and chemical) water used in industry.
- IS:3550 Method of test for routine control for water used in Industry.
- IS:4990 Specification for Plywood for concrete shuttering work

Equipment:
- IS:2505 Specification for Concrete Vibrators.
- IS:2506 Specification for Screed Board Concrete Vibrators.
- IS:2514 Specification for Concrete Vibrating Tables.
- IS:3366 Specification for Pan Vibrators
- IS:4656 Specification for Form Vibrators for Concrete.
- IS:2722 Specification for portable swing weigh Batchers for Concrete. (single & double bucket type).
- IS:2750 Specification for Steel Scaffoldings.

**Masonry:**
- IS:1077 Specification for Common Burnt Clay Building Bricks
- IS:2180 Specification for Burnt Clay Building Bricks, heavy duty
- IS:2116 Specification for Sand Masonry Mortar
- IS:2212 Code of Practice for Brickwork
- IS:3495 Method of sampling and testing Clay Building Bricks
- IS:2250 Code of Practice for Preparation and Use of Masonry Mortar
- SP:27 Handbook of Method of Measurement of Building works
- IS:432 Specifications for Mild Steel and Medium Tensile Bars
- IS:2185 Specification for Cement Concrete Block
- IS:2572 Code of Practice for construction of Concrete Walls
- IS:9103 Specification for Admixture of Concrete

**Rubble Masonry:**
- IS:2212 Code of Practice for Brickwork
- IS:3495 Method of sampling and testing Clay Building Bricks
- IS:2250 Code of Practice for Preparation and Use of Masonry Mortar
- SP:27 Handbook of Method of Measurement of Building works
- IS:432 Specifications for Mild Steel and Medium Tensile Bars
- IS:2185 Specification for Cement Concrete Block
- IS:2572 Code of Practice for construction of Concrete Walls
- IS:9103 Specification for Admixture of Concrete

**Flooring:**
- IS:269 Specification for ordinary and Low Heat Portland Cement
- IS:383 Specification for Coarse and Fine Aggregates
- IS: 777 Specification for Glazed Earthenware Tiles
- IS:1237 Specification for Cement Concrete Flooring Tiles
- IS:1443 Code of Practice for Laying and Finishing of Cement Concrete Flooring Tiles
- IS: 2571 Code of Practice for Laying In-situ Cement Concrete Flooring Tiles
- IS: 457 Specification for Ceramic Unglazed Vitreous Acid Resisting Tiles
- IS: 2114 Code of Practice for laying in situ Terrazzo Floor Finish
- IS: 4860 Specification for Acid Resistant Bricks
- IS: 5491 Code of Practice for laying in situ Granolithic Floor Topping

**Plastering:**
- IS:383 Specification for Coarse and Fine Aggregates
- IS:412 Specification for Expanded Metal Sheets for General Purpose.
- IS:1542 Specification for Sand for Plaster
• IS:1635 Code of Practice for field Slaking of Building lime and Preparation of Putty.
• IS:1661 Code of Practice for the Application of Cement and Cement Lime Plaster Finishes
• IS:2394 Code of Practice for the Application of Lime Plaster Finish
• IS:2402 Code of Practice for External Rendered Finishes
• IS:2645 Specification for Integral Cement Waterproofing Compound

Carpentry, Joinery, Doors:
• IS: 4021 Timber door, window and ventilator frames.
• IS: 2202 Wooden flush door shutters (Solid core Type) Part – I.
• IS: 1003 Timber paneled and glazed shutters. (Parts I & II)
• IS: 4020 Methods of tests for wooden flush doors: Type tests.
• IS: 1761 Transparent sheet glass for glazing and framing purposes.
• IS: 4351 Steel door frames.
• IS: 1038 Steel doors, windows and ventilators.
• IS: 1361 Steel windows for industrial buildings.
• IS: 1081 Code of practice for fixing and glazing of metal (Steel and Aluminum) doors, windows and ventilators.
• IS: 5807 Method of test for clear finishes for wooden furniture (Part I to III).
• IS: 1477 Code of practice for painting of ferrous metals in buildings and allied Finishes (Part I &II)
• IS: 1948 Aluminum doors windows and ventilators
• IS: 1949 Aluminum windows for industrial buildings.
• IS: 3548 Code of practice for glazing in building.

Glass and Glazing for Doors:
• IS: 3548- Code of practice for glazing in building.
• IS: 1081- Code of practice for fixing and glazing metal doors, windows and ventilators.
• Shall comply with both BS 476: Part 22

Earth Quake:
• IS:1893 (Part 1) – 2002
• IS 13920-1993
• IS 4326

Air Conditioning:
• Design of the Air-conditioning in the structure shall be as per National Building code of India 2016 (SP 7: 2016).

Ventilation:
• Design of the Ventilation in the structure shall be as per National Building code of India 2016 (SP 7: 2016).
5.10.3. General Technical Specification

1) M-1. Water
   - Water shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantities of silt and traces of oil and injurious alkalis, salts, organic matter and other deleterious material which will either weaken the mortar or concrete or cause efflorescence or attack the steel in R.C.C Container for transport, storage and handling of water shall be clean. Water shall conform to the standards specified I.S 456-1978.
   - If required by Engineer-in-charge it shall be tested by comparison with distilled water. Comparison shall be made by means of standard cement tests for soundness, time of setting and mortar strength as specified in I.S.269-1976. Any indication of unsoundness, change in time of setting by 30 minutes or more or decrease of more than 10 per cent in strength of mortar prepared with water sample when compared with the results obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.
   - Water for curing mortar, concrete or masonry should not be too acidic or too alkaline. It shall be free of elements which significantly affect the hydration reaction or otherwise interfere with the hardening of concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surfaces.
   - Hard and bitter water shall not be used for curing.
   - Potable water will be generally found suitable for curing mortar or concrete.

2) M-2. Cement:
   - Cement shall be ordinary Portland slag cement as per I.S. 269-1976 or Portland slag cement as per I.S. 455-1976.

3) M-3. White Cement:
   - The white cement shall conform to I.S. 80412-E 1978.

4) M-4 Sand:
   - Sand shall be natural sand, clean, well graded, hard strong durable and gritty particle free from injurious amounts of dust clay, kankar nodules, soft or flaky particles shale, alkali, salts organic matter, loam, mica or other deleterious substance and shall be got approved from the Engineer-in-charge. The sand shall not contain more that 8 percent of silt as determined by field test. If necessary, the sand shall be washed to make it clean.
   - Coarse Sand: The fineness modulus of coarse sand shall not be less than 2.5 and shall not exceed 3.0.
   - He sieves analysis or course shall be as under:

<table>
<thead>
<tr>
<th>Percentage by weight Passing SieveDesignation</th>
<th>I.S.SieveDesignation</th>
<th>Percentage by weight Passing sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.75 mm.100</td>
<td>600 Micron</td>
<td>30-100</td>
</tr>
<tr>
<td>2.36 mm.90 to 100</td>
<td>300 Micron</td>
<td>5-70</td>
</tr>
</tbody>
</table>
1.18 mm.70-100 & 150 Micron & 0-50 \\

- Fine Sand: The fineness modulus shall not exceed 1.0. The sieve analysis of fine sand shall be as under:

### Table 6 Sieves Designation 2

<table>
<thead>
<tr>
<th>Percentage by weight</th>
<th>I.S. Sieve Designation</th>
<th>I.S. Sieve Passing through Designation</th>
<th>Percentage byweight Passing through</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.75 mm.100</td>
<td>600 Micron</td>
<td>40-85</td>
<td></td>
</tr>
<tr>
<td>2.36 mm.100</td>
<td>300 Micron</td>
<td>5-50</td>
<td></td>
</tr>
<tr>
<td>1.18 mm.70-100</td>
<td>150 Micron</td>
<td>0-10</td>
<td></td>
</tr>
</tbody>
</table>

5) M-5 Stone Grit:
- Grit shall consist of crushed or broken stone and be hard strong, dense, durable, clean, of proper gradation and free from skin or coating likely to prevent adhesion of mortar Grit shall generally be cubical in shape and as far as possible flaky elongated pieces shall be avoided. It shall generally comply with the provisions of I.S. 383-1970. Unless special stone of particular quarries is mentioned, grit shall be obtained from the best black trap or equivalent hard stone as approved by the Engineer-in-charge. The grit shall have no deleterious reaction with cement.
- The grit shall conform to the following gradation as per sieve analysis:

### Table 7 Sieves Designation 3

<table>
<thead>
<tr>
<th>Percentage Passing through sieve Designation</th>
<th>I.S. Sieve Designation</th>
<th>Percentage Passing through sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.50 mm.100 %</td>
<td>4.75 mm.</td>
<td>0-20%</td>
</tr>
<tr>
<td>10.00 mm.85-100%</td>
<td>2.36 mm.</td>
<td>0-25%</td>
</tr>
</tbody>
</table>

- The crushing strength of grit will be such as to allow the concrete in which it is used to build up the specified strength of concrete.
- The necessary tests for grit shall carried out as per the requirements of I.S.2386 (Parts I to VII) 1963, as per instructions of the Engineer-in-charge. The necessity of test will be decided by the Engineer-in-charge.

6) M-6. Cement Mortar:
- Water shall conform to specification M-1.
- Cement: Cement shall conform to specification M-2.
- Sand: Sand shall conform to M-4.
- Proportion of Mix:Cement and sand shall be mixed to specified proportion; sand being measured by measuring boxes. The proportion of cement will be by volume on the basis of 50 Kg/Bag as directed.
- Preparation of Mortar:11.3.1 In hand mixed mortar cement and sand in the specified proportions shall be thoroughly mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogenous mixture of uniform color is obtained. Mixing platform shall be so arranged that no deleterious extraneous material shall get mixed with mortar or mortar shall flow out. While mixing, the water shall be gradually added and thoroughly mixed to form a stiff plastic mass of uniform color so that each particle of sand shall be completely covered with a film of wet cement. The water cement ratio shall be adopted as directed.
- The mortar so prepared shall be used within 30 minutes of adding water. Only such quantity of mortar shall be prepared as can be used within 30 minutes.

7) M-7 Stone Coarse Aggregate for Nominal Mix Concrete:
- Coarse aggregate shall be machine-crushed stone of black trap or equivalent and be hard, strong, dense, durable, clean and free from skin and coating likely to prevent proper adhesion of mortar.
- The aggregate shall generally be cubical in shape. Unless special stones of particular quarries are mentioned aggregates shall be machine crushed from the best black trap or equivalent hard stone as approved. Aggregate shall have no deleterious reaction with cement. The size of the coarse aggregate for plain cement concrete and ordinary reinforced cement concrete shall generally be as per the table given below, However, in case of reinforced cement concrete the maximum limit may be restricted to 6 mm. less than the minimum lateral clear distance between bars or 6 mm. less than the cover, whichever is smaller.

<table>
<thead>
<tr>
<th>I.S. Sieve Designation</th>
<th>Percentage passing for single sized aggregates of nominal size</th>
<th>I.S. Sieve Designation</th>
<th>Percentage passing for single sized aggregates of nominal size</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 mm</td>
<td>20 mm</td>
<td>16 mm</td>
<td>N 40 mm</td>
</tr>
<tr>
<td>80 mm.</td>
<td>--</td>
<td>--</td>
<td>12.5 mm.</td>
</tr>
<tr>
<td>63 mm.</td>
<td>100</td>
<td>--</td>
<td>10 mm.</td>
</tr>
<tr>
<td>40 mm.</td>
<td>85-100</td>
<td>100</td>
<td>4.75 mm.</td>
</tr>
<tr>
<td>20 mm.</td>
<td>0-20</td>
<td>85-100</td>
<td>2.35 mm.</td>
</tr>
<tr>
<td>16 mm.</td>
<td>--</td>
<td>--</td>
<td>85-100</td>
</tr>
</tbody>
</table>
Note: This percentage may be varied somewhat by Engineer-in-charge when considered necessary for obtaining better density and strength of concrete.

- The grading test shall be taken in the beginning and at the change of source of materials. The necessary test indicated in I. S. 383-1970 and I.S. 456-1978 shall have to be carried out to ensure the acceptability. The aggregates shall be stored separately and handled in such a manner as to prevent the intermixing of different aggregates. If the aggregates are covered with dust, they shall be washed with water to make them clean.

8) M-9 Bricks:
- The bricks shall be hand or machine molded and made from suitable soils and klin- burnt. They shall be free from crack and nodules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform color. The bricks shall be molded with a frog of 100 mm. x 40 mm. and 10 mm. to 20 mm. deep on one of its flat sides. The bricks shall not break when thrown on the ground from a height of 600 mm.
- The size of modular bricks shall be 190 mm x 90 mm x 90 mm.
- The size of the conventional bricks shall be as under: (9” x 4 3/8 “x 2 3/4”) 225 x 110 x 75 mm.
- Only bricks of one standard size shall be used on one work. The following tolerances shall be permitted in the conventional size adopted in a particular work. Length: 1.8(3.0 mm.) Width: 1/6” (1.51 mm.) Height: 1/6” (1.50 mm.)
- The crushing strength of the bricks shall not be less than 35 Kg./Sq. Cm. The average water absorption shall not be more than 20 percent by weight. Necessary tests for crushing strength and water absorption etc. shall be carried out as per I. S. 3495 (Part-I to IV) 1976.

9) M-10 Stone:
- The stone shall be of the specified variety such as Granite
- /Trap Stone/Quartzite or any other type of good hard stones. The Stones shall be obtained only from the approved quarry and shall be hard, sound, durable and free from defects like cavities, cracks, sand holes, flaws, injurious veins, patches of loose or soft materials etc. and weathered portions and other structural defects or imperfections tending to affect their soundness and strength. The stone with round surface shall not be used. The percentage of water absorption shall not be more than 5% of dry weight, when tested in accordance with I.S. 1134-1974. The minimum crushing strength of the stone shall be 200 Kb/Sq. Cm. unless otherwise specified.
- The samples of the stone to be used shall be got approved before the work is started.
- The Khanki facing stone shall be dressed by chisel as specified in the item for khanki facing in required shape and size. The face of stone shall be so dressed that the bushing on the exposed face shall not project by more than 40 mm. from the general wall surface and on face to be plastered it shall not projected it shall not project by more than 19 mm. nor shall it have depressions more than 10 mm. from the average wall surface.

10) M-11 Mild Steel Bars:
- Mild steel bars reinforcement for R.C.C. work shall conform to I.S. 432 (Part-II) 1966 and shall be of tested quality. It shall also comply with relevant part of I.S. 456-1978.
- All the reinforcement shall be clean and free from dirt, paint, grease, mill scale or loose or thick rust at the time of placing.
- For the purpose of payment, the bar shall be measured correct up to 1000 mm. length and weight payable worked out at the rate specified below:
Table 9 Steel Payment

<table>
<thead>
<tr>
<th>No.</th>
<th>Diameter (mm)</th>
<th>Weight (Kg./Rmt.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>0.22</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>0.39</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>0.62</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>0.89</td>
</tr>
<tr>
<td>5</td>
<td>14</td>
<td>1.21</td>
</tr>
<tr>
<td>6</td>
<td>16</td>
<td>1.58</td>
</tr>
<tr>
<td>7</td>
<td>18</td>
<td>3.00</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>2.47</td>
</tr>
<tr>
<td>9</td>
<td>22</td>
<td>2.98</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
<td>3.85</td>
</tr>
<tr>
<td>11</td>
<td>28</td>
<td>4.83</td>
</tr>
<tr>
<td>12</td>
<td>32</td>
<td>6.31</td>
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<tr>
<td>13</td>
<td>36</td>
<td>7.99</td>
</tr>
<tr>
<td>14</td>
<td>40</td>
<td>9.86</td>
</tr>
</tbody>
</table>

11) M-12 High Yield Strength Steel Deformed Bars:
- High yield strength steel deformed bars be either cold twisted or hot rolled, shall conform to I. S. 1739-1966 and I. S. 1139-1966 respectively.
- Other provision and requirements shall conform to specification No. M-11 for mild steel bars.

12) M-13 Shuttering:
- The shuttering shall be either of wooden planking of 30 mm. minimum thickness with or without steel lining or of steel plates stiffened by steel angles. The shuttering shall be supported on battens and beams and props of vertical bellies properly cross-braced together so as to make the centering rigid. In places of bullae props, brick pillar of adequate section built in mud mortar may be used.
- The form work shall be sufficiently strong and shall have camber, so that it assumes correct shape after deposition of the concrete and shall be able to resist forces caused by vibration of live load of men working over it and other incidental loads associated with it. The shuttering shall have smooth and even surface and its joints shall not permit leakage of cement grout.
- If at any stage of work during or after placing concrete in the structure, the form work sags or bulges out beyond the required shape of the structure, the concrete shall be removed and work redone with fresh concrete and adequately rigid form work. The complete formwork shall be got inspected by and got approved from the Engineer-in-charge, before the reinforcement bars are placed in position.
- The props shall consist of bullies having 100 mm. minimum diameters measured at mix length and 80 mm. at thin end and shall be placed as per design requirement. These shall
rest squarely on wooden sole plates 40 mm. thick and minimum bearing area if 0-10 sq. m. laid on sufficiently hard base.

- Double wedges shall further be provided between the sole plate and the wooden props so as to facilitate tightening and easing of shuttering without jerking the concrete. The timber used in shuttering shall not be so dry as to absorb water from concrete and swell or bulge nor so green or wet as to shrink after erection. The timber shall be properly sawn and planed on the sides and surface coming in contact with concrete. Wooden form work with metal sheet lining or steel plates stiffened by steel angles shall be permitted.

- As far as practicable, clamps shall be used to hold the forms together and use of nails and spikes avoided.

- The surface of timber shuttering that would come in contact with concrete shall be well wetted and coated with soap solution before the concreting is done. Alternatively coat of raw linseed oil or oil of approved manufacturer may be applied in place of soap solution. In case of steel shuttering either soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface. Under no circumstances black or burnt oil shall be permitted.

- The shuttering for beams and slabs shall have camber of 4 mm. per meter (1 in 250) or as directed by the Engineer-in-charge so as to offset the subsequent deflection. For cantilevers, the camber at free end shall be 1/50 of the projected length or as directed by the Engineer-in-charge.

13) M-14 Wooden flush door shutters (solid core):

- The solid core type flush door shutters shall be decorative or non-decorative type as specified in the drawing. The size and thickness of the shutter shall be as specified in drawings or as directed. The timber species for core shall be used as per I.S. 2202 – (Part-I) 1980. The timber shall be free from decay and insect attack. Knots and knot holes less than half the width of cross-section of the members in which they occur may be permitted. Pitch pockets, pitch streaks and harmless pin holes shall be permissible except in the exposed edges of the core members. The commercial plywood, cross-bands shall conform to I.S. 303-1275.

- The face panel of the shutters shall be formed by gluing by the hot press process on both faces of the core with either plywood or cross-bands and face veneers. The hopping rebating opening, ventilation etc. shall be provided if specified in the drawing.

- All edges of the door shutters shall be square. The shutters shall be free from twist or warp in its plane. Both faces of the shutters shall be sand papered to smooth even texture.

- The shutters shall be tested for:
  
  o **End immersion test:** The test shall be carried out as per I.S. 2202 (part-I) 1980. There shall be no delamination at the end of the test.
  
  o **Knife Test:** The face panel when tested in accordance with I.S. 1659-1979 shall pass the test.
  
  o **Glue adhesion test:** The flush door shall be tested for glue adhesive test in accordance with I. S. 2202 (Part-I) 1980. The shutters shall be considered to have passed the test if no de lamination occurs in the glue lines in the plywood and if no single de lamination more than 80 mm. in length and more than 3 mm. in depth has occurred in the assembly glue lines between the plywood face and the style and rail. De lamination at the corner shall be measured continuously around the corner. De lamination at the knots, knot holes and
other permissible wood defects shall not be considered in assessing the sample.

- The tolerance in size of solid core type flush door shall be as under:
  In Normal thickness + 1.2 mm. In Normal height + 3 mm.
- The thickness of the shutters shall be uniform throughout with a permissible variation of not more than 0.8 mm. when measured at any two points.

14) M-15 Fixtures and fastenings:
- The fixtures and fastenings, that is butt, hinges, tee and strap hinges, sliding door bolts, tower bolts, door latch, bath room latch, handles, door stoppers, casement window fasteners, casement stays and ventilators catch shall be made of the metal as specified in the item or its specifications.
- They shall be of iron, brass, aluminum, chromium plated iron, chromium plated brass, copper oxidized iron, copper oxidized brass or anodized aluminum as specified.
- The fixtures shall be heavy, medium or light type. The fixtures and fastenings shall be smooth finished and shall be such as will ensure case of operation.
- The samples of fixtures and fastenings shall be got approved as regards quality and shape before providing them in position.
- Brass and anodized aluminum fixtures and fastenings shall be bright finished

15) Holdfasts:
- Holdfasts shall be made from mild steel flat 30 cm. length and one of the hold fasts shall be bent at right angle and two nos. of 6 mm. diameter holes shall be made in it for fixing it to the frame with screws. At the other end, the holdfast shall be forked and bent at right angles in opposite directions.

16) Butt hinges:
- Railway standard heavy type but hinges shall be used when so specified.
- Tee and strap hinges shall be manufactured from M. S. Sheet.

17) Siding door bolts (Aldrops):
- The aldrops as specified in the item shall be used and shall be got approved.

18) Tower bolts (Barrel Type):
- Tower bolts as specified in the item shall be used and shall be got approved.

19) Door latch:
- The size of door latch shall be taken as the length of latch.

20) Bathroom Latch:
- Bathroom latch shall be similar to tower bolt.

21) Handle:
- The size of the handles shall be determined by the inside grip length of the handles. Handles shall have a base plate of length 50 mm. more than the size of the handle.

22) Door Stoppers:
- Door stoppers shall be either floor door stopper type or door catch type. Floor stopper shall be of overall size as specified and shall have a rubber cushion.

23) Door Catch:
- Door catch shall be fixed at a height of about 900 mm. from the floor level so that one part of the catch is fitted on the inside of the shutter and the other part is fixed in the wall with necessary wooden plug arrangements for appropriate fixity. The catch shall be fixed 20 mm. inside the face of the door for easy operation of catch.

24) Wooden Door Stop with hinges:
- Wooden door stop of size 100 mm x 60 mm x 40 mm shall be fixed on the door frame with a hinge of 75 mm size and at a height of 900 mm. from the floor level. The wooden door stop shall be provided with 3 coats of approved oil paints.

**25) Basement window Fastener:**
- Casement window fastener for single leaf window shutter shall be left or right handled as directed.

**26) Basement stays (Straight Peg Stay):**
- The stays shall be made from a channel section having three holes at appropriate position so that the window can be opened either fully or practically as directed. Size of the stay shall be 250 mm. to 300 mm. as directed.

**27) Ventilator Catch:**
- The pattern and shape of the catch shall be as approved.

**28) Pivot:**
- The base and socket plate shall be made from minimum 3 mm. thick plate and projected pivot shall not be less than 12 mm. diameter and 12 mm. length and shall be firmly riveted to the base plate in case of iron pivot and in single piece base plate in the case of brass pivot.

**29) M-16 Paints:**
- Oil Paints
  - Oil paints shall be of the specified color and shade, and as approved. The ready mixed paints shall only be used. However, if ready mixed paint or specific shade or tint is not available, white ready mixed paint with approved strainer will be allowed. In such a case, the contractor shall ensure that the shade of the paint so allowed shall be uniform.
  - All the paints shall meet with following general requirements:
    - Paint shall not show excessive setting in a freshly opened full can and shall easily be redepressed with a paddle to a smooth homogeneous state. The paint shall show no curdling, levering, caking or color separation and shall be free from lumps and skins.
    - The paint as received shall brush easily, possess good leveling properties and show no running or sagging tendencies.
    - The paint shall not skin within 48 hours in three quarters filled closed container.
    - The paint shall dry to a smooth uniform finish free from roughness, grit, unevenness and other imperfections.
  - Ready mixed paint shall be used exactly as received from the manufactures and generally according to their instructions and without any admixtures whatsoever.
- Enamel Paints:
  - The enamel paint shall satisfy in general requirements as mentioned in specification of oil paints. Enamel paint shall conform to I. S. 2933-1975.

**30) M-17 Rough Kota Stone:**
- The Kota stones shall be hard, even, sound, and regular in shape and generally uniform in color. The color of the stone shall generally be green. Brown color stones shall not be allowed for use. They shall be without any soft veins, cracks or flows.
- The size of the stones to be used for flooring shall be of size 600 mm x 600 mm and / or size 600 mm x 450 mm as directed. However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be as specified.
- Tolerance of minus 30 mm. on account of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be + 3 mm.
- The edges of stones shall be truly chiselled and table rubbed with coarse sand before paving. All angles and edges of the stone shall be true, square and free from chipping and the surface shall be true and plain.
- When machine cut edges are specified, the exposed edges and the edges at joints shall be machine cut. The thickness of the exposed machine cut edges shall be uniform.

31) M-18 Polished Kota Stones:
- Polished kotah stone shall have the same specifications as per rough Kota stone except as mentioned below:
  - The stones shall have machine polished smooth surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones for paving shall generally be single polished. The stones to be used for dedo, skirting, platforms, sink, veneering, sills, etc. where machine polishing after the stones are fixed in site is not possible, shall be double polished.

32) M-19 Granite Stone Slab:
- Granite shall be of approved color and quality. The stone shall be hard, even, sound regular in shape and generally uniform in color. It shall be without any soft veins, cracks of flaws.
  - The thickness of the stone shall be as specified in the items.
  - All exposed face shall be double polished to tender truly smooth and the even reflecting surface. The exposed edges and corners shall be rounded off as directed. The exposed edges shall be machine cut and shall have uniform thickness.

33) M-20 Wall Peg Rail:
- The aluminum wall peg rail shall have three aluminum pegs of approved quality and size. It shall be fixed on teakwood plank of size 450 mm. x 75 mm. x 20 mm. The teakwood shall be French polished or oil painted as specified.

34) M-21 Bitumen Felt for Water Proofing and Damp Proofing:
- Bitumen felt shall be on the fiber bases and shall be type 2, self-finished grade-2 and shall conform to I. S. 1322-1970.

35) M-22 Selected Earth:
- The selected earth shall be that obtained from excavated material or shall have to brought from outside as indicated in the item. If item does not indicate anything, the selected earth shall have to be brought from outside.
  - The selected earth shall be good yellow soil and shall be got approved from the Engineer-in-charge. In no case black cotton soil or similar expansive and shrinkable soil shall be used. It shall be clean and free from all rubbish and perishable materials, stones or brick bats. The clods shall be broken to a size of 50 mm. or less, Contractor shall make his own arrangement at his own cost for land for borrowing selected earth. The stacking of material shall be done as directed by the Engineer-in-charge in such a way as not to interfere with any constructional activities and in proper stacks.
  - When excavated materials is to be used, only selected stuff got approved from the Engineer-in-charge shall be used. It shall be stacked separately and shall comply with all the requirements of selected earth mentioned above:
DETAILED SPECIFICATIONS – EXCAVATION

- Excavation for foundation up to 1.5 M depth including sorting out and stacking useful materials disposing of the excavated stuff up to 50-meter lead in loose or soft soil.
- General: Any soil which generally yields to the application of pickaxes and shovels, phawaras, rakes or any such ordinary excavating implement or organic soil, gravel, silt, sand turf loam, clay, peat etc. fall under this category.
- Clearing the site: The site on which the structure is to be built shall be cleared and all obstructions, loose stone, materials and rubbish of all kind, bush, wood and trees shall be removed as directed. The materials so obtained shall be properly of the Government and be conveyed and stacked as directed within 50 M. lead. The roots of the trees coming in the sides shall be cut and coated with hot asphalt.
- The rate of site clearance is deemed to be included in the rate of earth work for which no extra will be paid.
- Setting out: After clearing the site, the center lines will be given by the Engineer-in-charge. The contractor shall assume full responsibility for alignment, elevation and dimension of each and all parts of the tractor shall assume full responsibility for alignment, elevation and dimension of each and all parts of the work. Contractor shall supply laborers, materials, etc. required for setting out the reference marks and bench marks and shall maintain them as long as required and directed.
- Excavation: The excavation in foundation shall be carried out in true line and level and shall have the width and depth as shown in the drawings or as directed. The contractor shall do the necessary shoring and shutting or providing necessary slopes to a safe angle, at his own cost. The payment for such precautionary measures shall be paid separately if not specified. The bottom of the excavated area shall be levelled both longitudinally and transversely as directed by removing and watering as required. No earth filling will be allowed for bringing it to level, if by mistake or any other reason excavation is made deeper or wider that shown on the plan or directed. The extra depth or width shall be made up with concrete of same proportion as specified for the foundation concrete at the cost of the contractor. The excavation up to 1.5 m. depth shall be measured under this item.

- Excavation for foundation up to 1.5 M. depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to 50-meter lead in dense or hard soil.
- Dense or Hard Soil: Any soil which generally require close application of picks or jumpers or scarifies to loosen it stiff clay, gravel and rubble stone etc. fall under this category.
- Workmanship: The relevant specification shall be followed except that the excavation work shall be carried out in dense or hard soil.

1) Disposal of Excavated materials:
a) No materials excavated from foundation trenches of whatever kind they may be are to be placed even temporarily nearer than 1.5m. of distance prescribed by the Engineer from the outer edge of excavation. All materials excavated shall remain the property of Government. Rate for excavation includes sorting out of useful materials and stacking them separately as directed within the specified lead. Materials suitable and useful for backfilling or other use shall be stacked in convenient places but not in such a way as to obstruct free movement of men, animals and vehicles or encroach upon the area required for constructional purpose. The site shall be left clean of all debris on completion.

b) Disposal of excavated materials is subject to the following: Unsuitable materials obtained from clearing site and excavation shall be disposed off within a lead of 50 meters as directed. Useful materials obtained from clearing site and excavation shall be stacked within a lead of 50 M. beyond the building area as directed. Materials suitable for back filling shall be stacked at convenient places within a lead of 50 M. from the structure for reuse. Useful stones from rock excavation shall be stacked neatly within a lead of 50m and will be allowed to be used by the contractor on payment at rates laid down in the contract or if not so lead down, at schedule of rates of the Division or at a mutually agreed rates if there are no such rates in the Schedule of rates.

c) If surplus materials are required to be conveyed beyond 50 M. conveyance will be paid for under a separate item.

d) Excavation for foundation for depth from 1.50 M to 3.0 M. including sorting out and stacking of useful materials and disposing of the excavated stuff upto 50 M. in lead loose or soft soil.
   a. Workmanship: The relevant specifications shall be followed except that the excavation work shall be carried out in loose or soft soil with lift 1.5 M. to 3.0 M.

e) Excavation: 1.0 For foundation for depth from 1.5 M. to 3.0 M. including sorting out and stacking of useful materials and disposing of excavated stuff upto 50 M. lead in Hard murrum.
   a. Workmanship: The relevant specifications shall be followed except that the excavation work shall be carried out from 1.5 M. to 3.0 M. lift in hard murrum.

f) Excavation: Foundation for depth 1.5 M. to 3.0 M. including sorting out and stacking of useful material and disposing of excavated stuff upto 50 M. lead in hard rock.
   a. Workmanship: The relevant specifications shall be followed except that the excavation work shall be carried out from 1.5 m. to 3.0 M. lift in hard rock.

2) Workmanship:

The relevant specifications shall be followed except that sand shall be filled in under floors, including watering, ramming, consolidating and dressing etc. complete.

   a) Filling in foundation and plinth with murrum or selected soil in layers of 20 cm. thickness including watering, ramming and consolidating etc. complete.

   b) Materials Murrum: Murrum shall be clean, of good binding quality, and of approved quality obtained from approved pots/quarries of disintegrated rocks which contain silicones materials and natural mixture of clay of calcareous origin. The size of murrum shall not be more than 20 mm.
      i. Workmanship: The relevant specifications shall be followed except that the murrum or selected soil shall be filled in foundation and plinth in 20 cms. layers including consolidating, ramming, watering, dressing etc. complete.
SECTION – 2

DETAILED SPECIFICATIONS– PLAIN & RCC WORKS

a) Providing and laying cement concrete 1:3:6 (1 cement:3 coarse sand: 6 graded stone aggregate 40 mm. nominal size) and curing complete excluding the cost of form work in foundations and plinth.


Workmanship: before starting concrete bed of foundation teaches shall be cleared of all loose materials, levelled, watered and rammed as directed.

c) Proportion of Mix: The Proportion of cement, sand and coarse aggregate shall be one part of cement, 3 parts of sand, 6 parts of stone aggregates and shall so be measured by volume.

d) Mixing: The concrete shall be mixed in a mechanical mixer at the site of work. Hand mixing may however be allowed for smaller quantity of work if approved by the Engineer-in-charge. When hand mixing is permitted by the Engineer-in-charge in case of break-down of machineries and in the interest of the work, it shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the mass in uniform in color and consistency. However, in such cases 10% more cement than otherwise required shall have to be used without any extra cost. The mixing in mechanical mixer shall be done for a period 1 to 2 minutes. The quantity of water shall be sufficient to produce a dense concrete of required workability for the purpose.

1) Transporting & Placing the concrete:

- The concrete shall be handled from the place of mixing to the final position in not more than 15 minutes by the method as directed and shall be placed into its final position, compacted and finished within 30 minutes of mixing with water i.e. before the setting commences.
- The concrete shall be laid in layers of 15 cms. to 20 cms.
- Compacting: The concrete shall be rammed with heavy iron rammers and rapidly to get the required compaction and to allow all the interstices to be filled with mortar.
- Curing: After the final set, the concrete shall be kept continuously wet, if required by pounding for a period of not less than 7 days from the date of placement.

a) Providing and laying cement concrete 1:4:8 (1 cement: 4 coarse sand : 8 graded stone aggregate 40 mm. nominal size) and curing complete excluding cost of form work in foundations and plinth.


Workmanship: Relevant specifications shall be followed except that cement concrete shall be mixed in the proportion of 1:4:8 instead of 1:3:6 by volume.

c) Providing throating or plaster drip and molding to R.C.C. Chhajas.

4.1 The work shall be carried out as directed. The proportion of mix for finishing touching shall be in CM 1:2 by volume. Curing shall be done for not less than 7 days. The work shall be carried out in best workman-like manner.

e) The throating or plaster drip and moulding shall be one centimeter in thickness.

f) Extra for providing and mixing water-proofing or plaster drip and moulding shall be one centimeter in thickness.

Workmanship: The proportions of materials for the cement concrete shall be mentioned with the specifications of that item. The quantity of water-proofing materials to be added and the method of addition shall be as specified by manufactures.

g) Mixing: The mixing of the water-proofing materials in cement, water or concrete shall be done according to the specifications of the manufacturer.

h) Providing and laying damp proof course 25 mm. thick cement concrete 1 : 2 : 4 (1 cement, 2 coarse sand, 4 stone aggregate 10 mm. nominal size) and curing complete.

i) The specification of ordinary concrete with or without reinforcement shall be followed except that the size of the stone aggregate shall be 10 mm. nominal size and the concrete work shall be carried out in 25 mm. thick damp proof course.

j) Providing and laying cement concrete 1:2: 4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm. nominal size) and curing complete excluding cost of form work in (A) foundation and plinth, (B) Independent piers, columns and pillars up to floor two level.


2) General:

- The concrete mix is not required to be designed by preliminary tests. The proportion of the concrete mix shall be 1:2: 4 (1 cement: 2 coarse sand: 4 graded stone aggregate 10 mm & 20mm nominal size) by volume. Concrete work shall have exposed concrete surface or as specified in the item.

- The designation ordinary M-10, M-15, M-20, M-25 specified as per I. S. Corresponding approximately to 1 : 3 : 6, 1 : 2 : 4, 1 ½ : 3 and 1 : 1 : 2 nominal mix of ordinary concrete by volume respectively.

- The ingredients required for ordinary concrete containing one bag of cement of 50 Kg. by weight (0.0342 Cu. M.) for different proportions of mix shall be as under:

  i. The water-cement ratio shall not not more than those specified in the above table. The cement content of the mix specified in the Table shall be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction so that the water-cement ratio specified in the Table is not exceeded.

  ii. Workability of the concrete shall be controlled by maintaining a water-cement-ratio that is bound to give a concrete mix which is just sufficiently wet to be placed and compacted without difficulty with the means available.

  iii. The maximum size of coarse aggregate shall be as large as possible within the limits specified but in no case greater than one fourth of the minimum thickness of the
member, provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and to fill the corners of the form.

### Table 10 Grade of Concrete - RCC Works

<table>
<thead>
<tr>
<th>Grade of concrete</th>
<th>Total quantity of dry aggregate by volume per 50 kgs. of cement to be taken as the sum of individual of fine and coarse aggregates, maximum</th>
<th>Proportion of fine aggregate to coarse aggregate</th>
<th>Quantity of water per 50 Kgs. of cement maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-10 (1 : 3 : 6)</td>
<td>300 Liters</td>
<td>Generally, 1: 2 for fine aggregate to coarse aggregate by volume but subject to and upper limit of 1:1 1/2</td>
<td>34 liters</td>
</tr>
<tr>
<td>M-15 (1 : 2 : 4)</td>
<td>220 liters</td>
<td></td>
<td>32 liters</td>
</tr>
<tr>
<td>M-20 (1 : 1 1/2 : 3)</td>
<td>160 liters</td>
<td></td>
<td>30 liters</td>
</tr>
<tr>
<td>M-25 (1 : 1 : 2)</td>
<td>100 liters</td>
<td></td>
<td>27 liters</td>
</tr>
</tbody>
</table>

iv. For reinforced concrete work, coarse aggregates having a nominal size of 20 mm. are generally considered satisfactory.

v. For heavily reinforced concrete members as in the case of ribs of main beams, the nominal maximum size of coarse aggregate should usually be restricted to 5 mm. less than the minimum clear distance between the main bars, or 5 mm. less than the minimum cover to the reinforcement whichever is smaller.

vi. Where the reinforcement is widely spaced as in solid slabs, limitations of size of the aggregate may not be important and the nominal maximum size may sometimes be as great as or greater than the minimum cover.

vii. **Admixture** may be used in concrete only with approval of Engineer-in-charge upon the evidence that with the passage of time, neither the compressive strength of concrete is reduced nor are other requisite qualities of concrete and steel impaired by the use of such admixtures.

viii. **Workmanship**: Proportioning: proportioning shall be done by volume, except cement which shall be measured in terms of bags of 50 Kg. weight. The volume of one such bag being taken as 0.0342 Cu. Meter Boxes of suitable sizes shall be used for measuring sand aggregate. The size of the boxes (internal) shall be 35 cms. x 25 cms. and 40 cms. deep. While measuring the aggregate and sand, the box shall be filled without shaking ramming or hammering. The proportioning of sand shall be on the basis of its dry volume and in case of damp sand, allowances for bulk age shall be made.

ix. **Mixing**: For all work. Concrete shall be mixed in a mechanical mixer which along with other accessories shall be kept in first class working condition and so maintained throughout the construction. Measured quantity of aggregate, sand, cement required for each batch shall be poured into the drum of the mechanical mixer while it is continuously running. After about half a minute of dry mixing, measured quantity of water required for each batch of concrete mix shall be added gradually and mixing continued for another one and a half minute. Mixing shall be continued till materials are uniformly distributed and uniform color of the entire mass is obtained and each individual particle of the coarse aggregate shows complete coating of mortar containing its proportionate amount.
of cement. In no case shall the mixing be done for less than 2 minutes after all ingredients have been put into the mixer.

x. When hand mixing is permitted by the Engineer-in-charge for small jobs or for certain other reasons, it shall be done on the smooth watertight platform large enough to allow efficient turning over the ingredients of concrete before and after adding water. Mixing platform shall be so arranged that no foreign materials gets mixed with concrete nor does the mixing water flow out. Cement in required number of bags shall be placed in a uniform layer on top of the measured quantity of fine and coarse aggregate, which shall also be spread in a layer of uniform thickness on the mixing platform. Due coarse and fine aggregate and cement shall then be mixed thoroughly by turning over to get a mixture to uniform color. Specified quantity of water shall then be added gradually through a rose-can and the mass turned over till a mix of required consistency is obtained. In hand mixing, quantity of cement shall be increased by 10 percent above that specified.

xi. Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. Unless otherwise agreed to by the Engineer-in-charge the first batch of concrete from the mixture shall contain only two thirds of normal quantity of coarse aggregate. Mixing plant shall be thoroughly cleaned before changing from one type of cement to another.

xii. **Consistency:** The degree of consistency which shall depend upon the nature of the work and methods of vibration of concrete, shall be determined by regular slumps tests in accordance with I. S. 1199-1959. The slumps of 10 mm. to 25 mm. shall be adopted when vibrators are used and 80 mm. when vibrators are not used.

xiii. **Inspection:** Contractor shall give the Engineer-in-charge due notice before placing any concrete in the forms to permit him to inspect and accept the false work and forms as to their strength, alignment, and general fitness but such inspection shall not relieve the contractor of his responsibility for the safety of men, machinery, materials and for results obtained. Immediately before concreting, all forms shall be thoroughly cleaned.

xiv. Centering design and its erection shall be got approved from the Engineer-in-charge. One carpenter with helper shall invariably be kept present throughout the period of concreting. Movement of labor and other persons shall be totally prohibited for reinforcement laid in position. For access to different parts, suitable mobile platforms shall be provided so that steel reinforcement in position is not disturbed for ensuring proper cover, mortar blocks of suitable size shall be cast and tied to the reinforcement. Timber, kapachi or metal pieces shall not be used for this purpose.

3) **Transporting and laying:**

- The method of transporting and placing concrete shall be as approved. Concrete shall be so transported and placed that no contamination, segregation or loss of its constituent material takes place. All formwork shall be cleaned and made free from standing water, dust show or ice immediately before placing of concrete. No concrete shall be placed in any part of the structure until the approval of the Engineer-in-charge has been obtained.

- Concerting shall proceed continuously over the area between construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper construction joints is formed. Concrete shall be compacted in its final position within 30 minutes of its discharge from the mixer. Except where otherwise
agreed to by the Engineer-in-charge concrete shall be deposited shall be deposited in horizontal layers to a compacted depth of not more than 0.45 meter when internal vibrators are used and not exceeding 0.30 meter in all other cases.

- Unless otherwise agreed to by the Engineer-in-charge, concrete shall not be dropped into place from a height exceeding 2 meters. When trunking or chutes are used they shall be kept close and used in such a way as to avoid segregation. When concreting has to be resumed on a surface which has hardened, it shall be roughened, swept clean, thoroughly wetted and covered with a 13 mm. thick layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. This 13 mm. layer of mortar shall be freshly mixed and placed immediately before placing of new concrete. Where concrete has not fully hardened, all laitance shall be removed by scrubbing the wet surface with wire or bristle brushes, care being taken to avoid dislodgement of any particles of coarse aggregate. The surface shall then be thoroughly wetted all free water removed and then coated with neat cement grout. The first layer of concrete to be placed on this surface shall not exceed 150 mm. in thickness and shall be well rammed against old work, particular attention being given to corners and close spots.

- All concrete shall be compacted to produce a dense homogeneous mass with the assistance of vibrators, unless otherwise permitted by the Engineer-in-charge for exceptional cases, such as concreting under water, where vibrators cannot be used. Sufficient vibrators in serviceable condition shall be kept at site so that spare equipment is always available in the event of breakdowns.

- Concrete shall be judged to be compacted when the mortar fills the spaces between the coarse aggregate and begins to cream up to form an even surface. Compaction shall be completed before the initial setting starts i.e. within 30 minutes of addition of water to dry mixture. During compaction, it shall be observed that needle vibrators are not applied on reinforcement which is likely to destroy the bond between concrete and reinforcement.

- Curing: Immediately after compaction, concrete shall be protected from weather, including rain, running water, shocks, vibration, traffic, rapid temperature changes, frost and drying out process. It shall be covered with wet sacking, hassain or other similar absorbent material approved soon after the initial set and shall be kept continuously wet for a period of not less than 14 days from the date of placement. Masonary work over foundation concrete may be started after 48 hours of its laying but curing of concrete shall be continued for a minimum period of 14 days.

4) Sampling and Testing of concrete:

- Samples from fresh concrete shall be taken as per I. S. 1199-1959 and cubes shall be made, cured and tested at 7 days or 28 days as per requirements in accordance with I. S. 516-1959. A random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested i.e. the sampling should be spread over the entire period of concreting and cover all mixing units. The minimum frequency of sampling of concrete of each grade shall be in accordance with following:

<table>
<thead>
<tr>
<th>Quantity of concrete in the works</th>
<th>No. of samples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
### Procuring Entity Requirement

**RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking**

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 Cum.</td>
<td>1</td>
</tr>
<tr>
<td>6-15 Cum.</td>
<td>2</td>
</tr>
<tr>
<td>16-30 Cum.</td>
<td>3</td>
</tr>
<tr>
<td>31-50 Cum.</td>
<td>4</td>
</tr>
<tr>
<td>51 and above + one additional for each additional 50 M. or part thereof.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** At least one sample shall be taken from each shift. Ten test specimens shall be made from each sample, five for testing at 7 days and the remaining five at 28 days. The samples of concrete shall be taken on each day of the concreting as per above frequency. The number of specimens may be suitably increased as deemed necessary by the Engineer-in-charge when procedure of tests given above reveals a poor quality of concrete and in other special cases.

- The average strength of the group of cubes case for each day shall not be less than the specified cube strength of 150 kg/Cm² at 28 days. 20% of the cubes cast for each day may have value less than the specified strength provided the lowest value is not less than 85% of the specified strength. If the concrete made in accordance with the proportions given for a particular grade, does not yield the specified strength, such concrete shall be classified as belonging to the appropriate lower grade. Concrete made in accordance with the proportions given for a particular grade shall not however, be placed in a higher grade on the ground that the test strength are higher than the minimum specified.

- **Stripping:** The Engineer-in-charge shall be informed in advanced by the contractor of his intention to strike the form work. While fixing the time for removal of form work due consideration shall be given to local conditions, character of the structure the weather and other condition that influence the setting of concrete and of the materials used in the mix in normal circumstances (generally where temperatures are above 20ºC) and where ordinary concrete is used forms may be struck after expiry of periods for respective item of form work.

- All formwork shall be removed without causing any shock or vibration as would damage the concrete. Before the soffit and struts are removed the concrete surface shall be exposed where necessary in order to ascertain that the concrete has sufficiently hardened. Centering shall be gradually and uniformly lowered in such manner as to permit the concrete to take stresses due to its own weight uniformly and gradually. Where internal metal ties are permitted they or their removable parts shall be extracted without causing any damage to the concrete and remaining holes filled with mortar. No permanently embedded metal part shall have less than 25 mm. cover to the finished concrete surface. Where it is intended to re-use the formwork, it shall be cleaned and made good to the satisfaction of the Engineer-in-charge. After removable of form work and shuttering the Executive Engineer shall inspect the work and satisfy by random checks that concrete produced is of good quality.

- Immediately after the removal of forms all exposed bolts etc., passing through the cement concrete member and use for shuttering or any other purpose shall be cut inside the cement concrete members to a depth of at least 25 mm. below the surface of the concrete and the resulting holes be filled by cement mortar. All fine caused by form joints, all cavities
produced by the removal of forms ties and all other holes and depressions honeycomb spots broken edges or corners and other defects shall be thoroughly cleaned, saturated with water and carefully pointed and rendered true with mortar of cement and fine aggregate mixed in the proportion used in the grade of concrete that is being finished and of as dry consistency as is possible to use. Considerable pressure shall be applied in filling and pointing to ensure through filling in all voids. Surfaces which are pointed shall be kept moist for a period of 24 hours.

- If rock pockets honeycombs in the opinion of the Engineer-in-charge are of such an extent or character as to effect the strength of the structure materially or to endanger the life of the steel reinforcement he may declare the concrete defective and require the removal and replacement of the portions of the structure affected.

a) **Materials & Workmanship:** The relevant specification shall be followed except that the work shall be carried out of reinforced concrete work in addition the following stipulations shall be followed for-

i. The bars shall be kept in position by the following methods:

ii. In case of beam and slab construction sufficient number of precast cover blocks in cement mortar 1 : 2 (a cement : 2 coarse sand) about 4 cms. x 4 cms. section and of thickness equal to the specified cover shall be places between the bars and shuttering as to secure and maintain the requisite cover of concrete over the reinforcement.

iii. In case of cantilevered or doubly reinforce beams of slabs the main reinforcing bars shall be held in position by introducing chain spacers or supports bars at 1.0 to 1.0 meters centers. B. W. S. 6.

iv. In case of columns and walls the vertical bars shall be kept in position by means of timber templates with slots accurately out in them. The tempts shall be removed after concreting has been done below it. The bars may also be suitably tied by means of annealed steel wires to the shuttering to maintain their position during concreting.

v. All bars projecting from pillars, columns beams, slabs etc. to which other bars and concrete are to be attached or bounded to later on shall be protected with a coat of thin neat cement grout, if the bars are not likely to be incorporated with succeeding mass of concrete within the following 10 days. This coat of thin neat cement shall be removed before concreting.

vi. Providing Mild Steel reinforcement of R. C. C. work including bending binding and placing in position etc. complete up to floor two level.

b) **Materials:** 1.1 Mild steel bars shall conform to M-11. Mild steel binding wires shall conform to M-21.

i. **Workmanship:** The work shall consist of furnishing and placing reinforcement to the shape and dimensions shown as on the drawings or as directed.

ii. Steel shall be clean and free from rust and loose mill scale at the time of fixing in position and subsequent concreting.\n
iii. Reinforcing steel shall conform accurately to the dimensions given in the bar bending schedules shown on relevant drawings. Bars shall be bent cold to specified shape and dimensions or as directed using a proper bar bender, operated by hand or power to attain proper radius of bends. Bars shall not be bent or straightened in a manner that will injure the material. Bars bent during transport or handling shall be straightened before being used on the work. They shall not be heated to facilitate
bending. Unless otherwise specified a ‘U’ type hook at the end of each bar shall invariably be provided to main reinforcement. The radius of the bend shall not be less than twice the diameter of the round bar and the length of straight part of the bar beyond the end of the curve shall be at least four times the diameter of the round bar. In case of bars which are not round and in case of deformed bars, the diameter shall be taken as the diameter of circle having an equivalent effective area. The hooks shall be suitably encased to prevent any splitting of the concrete.

iv. All the reinforcement bars shall be accurately placed in exact position shown on the drawings and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm. in size and by using stay blocks or metal chair spacers, metal hangers, supporting wires or other approved devices at sufficiently close intervals. Bars shall not be allowed to sag between supports nor displaced during concreting or any other operations of the work. All devices used for positioning shall be of non-corrodible material. Wooden and metal supports shall no extend to the surface of concrete, except where shown on drawings. Placing bars on layers of freshly laid concrete as the work progress for adjusting bar spacing shall not allowed. Pieces of broken stone or brick and wooden blocks shall not be used. Layers of bars shall be separated by spacebars, precast mortar blocks or other approved devices. Reinforcement after being placed in position shall be maintained in a clean condition until completely embedded in concrete. Special care shall be exercised to prevent any displacement of reinforcement in concrete already placed. To prevent reinforcement from corrosion, concrete cover shall be provided as indicated on drawings. All the bars producing from concrete and to which other bars are to be spliced and which are likely to be exposed for a period exceeding 10 days shall be protected by a thick coat of neat cement grout.

v. Bars crossing each other where required shall be secured by binding wires (annealed) of size not less than 1 mm. in such manner that they do not slip over each other at the time of fixing and concreting.

vi. As far as possible bars of full length shall be used. In case this is not possible, overlapping of bars shall be done as directed. When practicable, overlapping bars shall not touch each other but be kept apart by 25 mm. or 1.25 times the maximum size of the coarse aggregate whichever is greater by concrete between them. Where not feasible overlapping bars shall be bound with annealed wires not less than 1 mm. thick twisted tight. The overlaps shall be staggered for different bears and located at points along the span where neither movement is maximum.

vii. Whenever indicated on the drawings or desired by the Engineer-in-charge bars shall be jointed by couplings which shall have a cross section sufficient to transmit the full stresses of bars. The ends of the bars that are joined by coupling shall be upset for sufficient length so that the effective cross section at the base of threads is not less than normal cross-section of the bar. Threads shall be standard threads. Steel for coupling shall conform to I. S. 226.

viii. When permitted or specified on the drawings joints of reinforcement bars shall be butt- welded so as to transmit their full stresses. Welded joints shall preferably be located at points when steel will not be subject to more than 75 per cent of the maximum permissible stresses and welds so staggered that at any one section not more than 20 percent of the rods are welded. Only electric are welding using a
process which excludes air from the molten metal and conforms to any or all other special provisions for the work shall be accepted. Suitable means shall be provided for holding bars securely in position during welding. It shall be ensured that no voids are left in welding and when welding is done in two or three stages previous surface shall be cleaned properly. Ends of the bars shall be cleaned of all loose scale, rust, grease, paint and other foreign matter before welding. Only competent welders shall be employed on the work. The M. S. electrodes used for welding shall conform to I. S. 814. Welded pieces of reinforcement shall be tested. Specimen shall be taken from the actual site and their number and frequency of test shall be as directed.

ix. High yield deform bars steel enforcement for R. C. C. work including bending, binding and placing in position complete upto floor two level.

c) Materials: Cold twisted steel bars (high yield strength steel deformed bars) shall conform to M-12 mild steel binding wires shall conform to M-21.

i. Workmanship: The specification shall be followed except that the cold twisted steel bars shall be used with or without hooks at the ends. Deformed bars without hooks shall however, comply with relevant anchorage requirements.

ii. Extra for additional lift of concrete for all R.C.C. work above floor two level excluding cost of reinforcement.

d) Materials & Workmanship: The relevant specifications shall be followed for the work except that the R. C. C. work shall be done for ground floor i.e. above plinth level to first floor level.

e) Providing upto floor two level precast cement concrete jail or grill 1 : 2 : 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm. nominal size) reinforced with 1 : 6 mm. dia. mild steel wire including roughening, cleaning, fixing and finishing in cement mortar 1 : 3 and curing complete.

(A) 50 mm. thick (B) 40 mm. thick (C) 25 mm. thick (D) 75 mm thick (E) 100 mm. thick


i. Workmanship: It shall be of cement concrete 1 : 2 : 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm. nominal size) reinforced with 1.6 mm. dia mild steel wire unless otherwise specified. The thickness of jail shall be as specified in the item. The jail shall be set in position true to line and level before the jambs sills and soffits of the opening are plastered. It shall then be properly cemented with cement mortar 1:3 1 cement: 3 sand) and rechecked for levels. Finally the jambs, sills and soffist shall be plastered gripping the Jali uniformly on all sides.

g) Providing and laying controlled concrete M-15 and curing complete excluding the cost of form work and reinforcement for reinforced concrete work in:

ii. Foundation, footing base of columns and mass concrete

iii. Walls from top of foundations level up to floor two level

iv. Slabs, landing shelves, Balconies, lintels, beams, girders and cantilever up to floor two level

v. Columns, pillars, posts and struts up to floor two level

vi. Staircase up to floor two level

vii. Vertical and horizontal fins up to floor two level.
h) **Materials:** Water shall conform to M-1 Cement shall conform to M-2 Sand shall conform to M-4. Grit shall conform to M-5. Coarse aggregate shall conform M-7.

i) **General:** The relevant specifications of ordinary concrete shall be followed except that the concrete mix shall be designed from preliminary tests, the proportioning of cement and aggregates shall be done by weight and necessary precautions shall be taken in the production to ensure that the required work cube strength is attained and maintained. The controlled concrete shall be in grades of M-10, M-15, M-20, M-25, M-30, M-35 & M-40 with prefix controlled added to it. The letter 'M' refers to mix and numbers specify 28 days works cube compressive strength of 150 mm cubes of the mix expressed in Kg./Cum.

j) The proportion of cement sand and coarse aggregates shall be determined by weight the weight the weight batch machine shall be used for maintaining proper control over the proportion of aggregates as per mix design.

### Table 12 Concrete Strength Requirement

<table>
<thead>
<tr>
<th>Grade of Concrete</th>
<th>Compressive strength of 15 cms. 28 days conducted in accordance Preliminary test Work test Min.</th>
<th>Cubes in Kg./Cum. At with I. S. 5161959.Min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-15</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>M-20</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>M-25</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>M-30</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>M-35</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>M-40</td>
<td>400</td>
<td></td>
</tr>
</tbody>
</table>

In all cases the 28 days compressive strength specified in above table the criteria for acceptance or rejection of the concrete.

Where the strength of a concrete mix as indicated by tests, line in between the strength of any two grades specified in the above table, such concrete shall be classified in for all purpose as concrete belonging to the lower of the two grades between which its strength lies.

k) **Workmanship:** The proportions for ingredients chosen shall be such that concrete has adequate workability for conditions prevailing on the work in question and can be properly compacted with means available except where it can be shown to the satisfaction of the Engineer-in-charge that the supply of properly graded aggregate of uniform quality can be maintained till the completion of work. Grading of aggregate shall be controlled by obtaining the coarse aggregates in different sizes and benignity hemin the right proportions as required. Aggregate of different sizes shall be stocked in separate stockpiles. The required quantity of material shall be stock piled several hours, preferably a day before use. The grading of coarse and fine aggregate shall be checked as frequently as possible the frequency for a given job being determined by the Engineer-in-chargeto ensure that the suppliers are maintaining the uniform grading as approved for samples used in the preliminary tests.
l) In proportioning concrete the quantity of both cement and aggregate shall be determined by weight. Where the weight of cement is determined by accepting the maker’s weight per bag a reasonable number of bags shall be weighted separately to check the net weight. Where cement is weighted from bulk stocks at site and not by bags it shall be weighted separately from the aggregates. Water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in clean and serviceable condition. Their accuracy shall be periodically checked.

m) It is most important to keep the specified water cement ratio constant and at its correct value. To this end moisture content in both fine and coarse aggregates shall be determined by the Engineer-in-charge according to the weather conditions the amount of mixing water shall then be adjusted to compensate for variations in the moisture content. For the determination of moisture content in the aggregates I. S.2389 (Part-III) shall be referred to suitable adjustments shall also be made in the weights of aggregates due to variation in their moisture content. Minimum quantity of cement to be used in concrete shall not be less than 220 Kg./M³ in plain concrete and not less than 250 Kg./M³ in reinforced concrete.

n) Providing and laying controlled cement concrete M-20 and curing complete excluding the cost of from work and reinforcement for reinforced concrete work in : (A) Foundations, Footings base of columns and mass concrete (B) Walls from top of foundation upto floor two level, (C) Slabs, landings, shelves, balconies, lintels, beams, girders and cantilever upto floor two level. (D) Columns, pillars posts and struts upto floor two level, (E) Stair cases up to floor two level (K) Vertical and horizontal fins up to floor two level.

o) **Materials & Workmanship**: The relevant specification shall be followed except that the grading of concrete shall be controlled concrete M-20 sales for the works as specified in item.

p) Providing and laying controlled cement concrete M-15 and finishing smooth with curring etc. complete including the cost of form work but excluding the cost of reinforcement for R.C.C. work in:

i. Slabs more than 10 cms. and up to 13 cms.

ii. Slabs more than 13 cms. and up to 15 cms.

q) **Materials & Workmanship**: The relevant specifications shall be followed for concrete work and for form work and centering. The concrete surface shall be smooth finished with cement mortar 1:3 (1 cement, 3 fine sand). The thickness shall be as specified in the item.

r) Providing and laying ordinary cement concrete 1:2:4 (1 cement, 2 coarse sand, 4 graded stone aggregates 20 mm. nominal size) exposed work with curring etc. complete, including the cost of form work but excluding the cost of reinforcement for R.C.C. work in (I) Slab up to 8 cms. thickness (II) Slabs having more than 8 cms. and up to 10 cms. thickness (III) Slabs having more than 10 cms. and up to 13 cms. thickness (IV) Slabs having more than 13 cms. and up to 15 cms. Thickness

s) **Materials & Workmanship**: The relevant specifications shall be followed for concrete work and that of form work and centering work, the thickness of the slab shall be as specified in the item.

t) Providing and laying ordinary cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm. nominal size) for R.C.C. lintel including finishing smooth with curring etc. complete including the cost of form work but excluding the cost of reinforcement.

u) **Materials & Workmanship**: The relevant specifications shall be followed for concrete work relevant specifications for finishing work and relevant specifications shall be followed for
form work and centering work. The concrete work shall be followed for the form work and centering work for exposed concrete work.

v) Providing and laying ordinary cement concrete 1:2:4(1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm. nominal size) and finishing smooth with curing etc. complete including the cost of form work but excluding reinforcement for R.C.C. work in:

i. **Beams**: (I) Having cross sectional area 0.05 to 0.08 Sq. meter (II) Having cross sectional area more than 0.08 Sq. mt. Up to 0.12 Sq. mt. (III) Having cross sectional area more than 0.12 sq. mt. Up to 0.18 sq. mt.

ii. **Columns**: (I) Having cross sectional area 0.05 to 0.08 Sq. Mt. (II) Having cross sectional area more than 0.08 Sq. Mt. and up to 0.12 Sq. mt. (III) Having cross sectional area more than 0.12 Sq. mt. and up to 0.18 Sq. mt.

w) **Materials & Workmanship**: The relevant specifications shall be done in cement mortar 1:3 (cement :3 fine sand). The cross-sectional area of beam shall be specified in item.

**SECTION – 3**

**DETAILED SPECIFICATIONS– MASONARY WORK**

a) Brick work using common burnt clay building bricks having crushing strength not less than 75 Kg./Sq. Cm. in foundations and plinth in cement mortar 1 : 4 (1 cement : 5 fine sand) modular bricks.

b) **Materials**: Water shall conform to M-1. cement shall conform to M-2 sand shall conform to M-4. Brick shall conform to M-9. Cement mortar shall conform to M-6.

c) **Workmanship**:

i. **Proportion**: The proportion of the cement mortar shall be 1 : 5 (1 cement : 5 fine sand) b volume

ii. **Wetting of bricks**: The bricks required for masonry shall be thoroughly wetted with clean water for about two hours before use or as directed. The cessation of bubbles, when the bricks are wetted with water is an indication of through wetting of bricks.

iii. **Laying**: Bricks shall be laid in English bond unless directed otherwise. Half or cut bricks shall not be used except where necessary to complete to bond closers in such case shall be cut to required size and used near the ends of walls.

iv. Layer of mortar shall be spread on full width for suitable length of the lower course. Each brick shall first be properly bedded and set home by gently tapping lapping with handle of trowel or wooden mallet. It side face shall be flushed with mortar before the next brick is laid and pressed against it. On completion of course, the vertical joints shall be fully filled from the top with mortar.

v. The walls shall be taken up truly in plumb. All courses shall be laid truly horizontal and all vertical joint shall be truly vertical. Vertical joints in alternate course shall generally be directly one over the other. The thickness of brick course shall be kept uniform.

vi. The brick shall be laid with frog upwards. A set of tools comprising of wooden straight edges, mason’s spirit level, square half meter rub, and pins, string and plumb, shall be kept on the site of work for frequent checking during the progress of work.

vii. Both the faces of walls of thickness greater than 23 cms. shall be kept in proper place. All the connected brick work shall be kept nor more than one meter over the rest of the work. Where this is not possible the work shall be raked back according to bond (and not left toothed) at an angle not steeper than 45 degrees.
viii. All fixtures, pipes, outlets of water, hold fasts of doors and windows etc. which are required to be built in wall shall be embedded in cement mortar.

d) **Joints:** Bricks shall be so laid that all joints are quite flush with mortar. Thickness of joints shall not exceed 12 mm. the face joints shall be raked out as directed by taking tools daily during the progress of work, when the mortar is still green so as to provide key for plaster or pointing to done.

e) The face of brick shall be cleaned the very day on which the brick work is laid and all mortar dropping removed.

f) **Curing:** Green work shall be protected from rain suitably. Masonry work shall be kept moist on all the faces for a period of seven days. The top of masonry work shall be kept well wetted at the close of the day.

g) **Preparation of foundation bed:** If the foundation is to be laid directly on the excavated bed the bed shall be leveled, cleared of all loose materials, cleaned and wetted before starting masonry. If masonry is to be laid on concrete footing the top of concrete shall be cleaned and moistened. The contractor shall obtain the engineer’s approval for the foundation bed, before foundation masonry is started. When puccas flooring is to be provided flush with the top to plinth the inside plinth offset shall be kept lower than the outside plinth top by the thickness of the flooring.

h) Bricks work using common burnt clay building bricks having crushing strength not less than 35 Kg./per Sq. Cm. for super structure above plinth level up to floor two level in cement mortar 1:5 (1 Cement : 5 fine sand) modular bricks.

i) **Materials :** Brick shall conform to M-9. Cement mortar shall conform M-6.

   i. **Workmanship :** The relevant specifications shall be followed except that the masonry work shall be carried out above plinth level to floor two level i.e. for ground floor.

   ii. The frames of doors, windows, cupboards etc. shall be housed into the brick work at the correct location and level as directed. The heavy steel doors, window frames etc. shall be built in with work, but for ordinary steel doors and windows required opening for frames, hold-fasts etc. shall be left in the wall and frames embedded latter on in order to avoid damage to the frames.

   iii. Necessary scaffolding shall be provided. The supports of the scaffolding shall be sound and strong tied together with horizontal coarse only. Minimum number of holes shall be left in brick work for supporting horizontal scaffolding holes. The contractor is responsible for providing and maintaining sufficiently strong scaffolding so as to withstand all loads likely to come upon it.

   iv. For the face of brick work, where plastering is to be done, joints shall be racked out to a depth not less than thickness of joints. The face of brick work shall be cleansed and mortar dropping removed on very same day that brick work is laid.

   v. Half brick masonry in common burnt clay building bricks having crushing strength not less than 75 Kg./Sq. cm. in cement mortar 1:4 (1 Cement : 4 Coarse sand) in super structure above plinth level up to floor two level with modular bricks.


   i. **Workmanship :** Relevant specifications of bricks, wetting and laying of bricks, joints, curing etc. except the brick work of half bricks shall be carried out.
ii. Cement mortar used in masonry work shall be in proportion of 1 part of cement and 4 parts of sand by volume.

iii. All bricks shall be laid stretcher wise, breaking joints with those in the upper and lower courses. The wall shall be taken truly plumb. All courses shall be laid truly horizontal and all vertical joints shall be truly vertical. The bricks shall be laid with frogs upwards. A set of masons tools shall be maintained on work as required for frequent checking.

iv. Half brick masonry in common burnt clay building bricks having crushing strength not less than 75 Kg./Sq. cm. in cement mortar 1:4 (1 Cement : 4 Coarse sand) in super structure above plinth level up to floor two level with conventional bricks.

f) Materials & Workmanship:
The relevant specifications shall be followed for bricks. Wasting of bricks, joint, curing, except that the bricks to be used shall be conventional bricks instead of Modular bricks. Half brick masonry in common burnt clay building bricks having crushing strength not less than 75 Kg./Sq. cm. in lime cement mortar 1:4 (1 Cement : 4 Coarse sand) with hoop iron 25 mm x 1.6 mm. or equivalent reinforcement at every third coarse embedded in cement mortar in foundation and plinth with modular bricks.

g) Materials:

i. Workmanship:
Relevant specification of bricks wetting and laying of bricks, joints, curing, scaffolding etc. except the following:

ii. Cement mortar used in masonry work shall be proportion to 1 part of cement and 5 parts of sand by volume and shall conform to M-6 and this work is for half brick thickness for partitions walls.

iii. The hoop iron 25 mm. x 1.6 mm. or equivalent reinforcement shall be provided at every third course. The ends of reinforcement shall be fully embedded in mien walls on both sides as directed. Reinforcement shall be placed on the top of the bottom-most course. Laps shall be of 15 cms. of mild steel bars of hoop iron.

iv. The joints in the course where reinforcement is placed shall admit of mortar cover to the reinforcement.

SECTION – 4

DETAILED SPECIFICATIONS– RUBBLE MASONRY WORKS

Uncoursed rubble masonry with hard stone approved quality in foundations plinth in cement mortar 1 : 6 (1 cement : 6 coarse sand) including leveling etc. complete.

a) Materials:
The cement mortar shall conform to M-6 stones shall conform to M-10.

Workmanship:
i. **Dressing of stones**: Stones used of uncoursed rubble masonry work shall be hammer dressed on the sides and beds in such a way as to close up with the adjacent stone in the masonry work as strongly as possible. The face stones shall be dressed in such manner as to give a specified pattern such as Bygonal tucking etc. The trace of the stones shall be so dressed that bushing on the exposed face shall not project by more than 40 mm. from the general wall surface and on the face to be plastered. It shall not projected by more than 19 mm. nor shall have depressions more than 10 mm. from the average wall surface.

ii. **Laying**: All the stone shall be sufficiently wetted before laying to prevent absorption of water from mortar. The wall shall be built true to plumb (or true to required batter when so specified). All connected wall in a structures shall normally be raised up uniformly and regularly. However, if for any specific reason one part of masonry is required to be left behind the wall shall be racked back at an angle not steeper than 45º. Vertical Toothed joints in masonry shall not be allowed. The work shall be carried out regularly and masonry of any day will not be raised by more than 1 meter in height.

iii. The stone shall be laid in an uncoursed fashion or random facing etc. However the masonry is required to be brought to level at various stages viz. plinth level, window still level, roof level and any other level specifically shown in the drawings. This may be done by first by adjusting the laying or stones to one level and then by providing leveling coarse of cement concrete 1 : 6 : 12(1 cement : 6 sand : 12 graded stone aggregate 20 mm. nominal size) or as otherwise specified.

iv. Proper bonding shall be achieved by closely filling in adjacent stones as well as by using bond stones or through stones as described herein below. Face stones shall extend back sufficiently and bond well with the masonry. The stone shall be carefully set so as to break joints and avoid formation of vertical joints. The depth of stone from the face of wall inwards shall not be less than weight or breadth at the face. The hearting or interior filling of the wall shall consist of rubble stones which may be of any shape. Neither the face stone nor the hearting stone shall be so small to pass through circular ring of 150 mm. internal diameter in any direction nor shall any of them shall have minimum thickness 100 mm.

v. All stone shall be carefully laid, hammered down by a wooden mallet into position and solidly embedded in mortar, chips and sprawls of stone may be used wherever necessary to avoid thick mortar beds or joints at the same time ensuring that no hollow space is left anywhere in the masonry. The chips used shall not be more than 20% by volume of masonry. The hearting shall be laid nearly level with face stones except that at about one meter intervals vertical bond stone or plums projecting about 150 to 200 mm. shall be firmly embedded to form vertical bonding in masonry.

vi. **Bond stones**: Bond stones or through stones running right across the thickness of the wall shall be provided in walls up to 600 mm. thick. In thicker walls two stones overlapping each other by at least 150 mm. shall be provided across the thickness of the wall to form bond stones. There shall be
at least one bond stone for every 0.5 Sq. M. of wall surface. The bond stone shall be marked by a distinguishing letter during construction for subsequent verification and shall be laid staggered in subsequent layers.

vii. **Quoins:** The quoin or corners stone shall be selected stone nearly dressed with hammer and or chisel to form the required corner angle and laid header and stretcher alternatively. The bed and top surface of quoins shall be chiseled dressed to give horizontal joints. The quoins shall have a uniform chisel draft of at least 25 mm. width at four edges exposed face, all the edges of the same face being in one plane. No quoins stone shall be smaller than 0.025 Cum. in volume.

viii. **Jamb Stones:** The jamb stone shall be made with stone specified for quoins, except that the stone provided on the jambs shall have their length equal to thickness of wall up to 600 mm. and a line of headers shall be provided for walls thicker than 600 mm. as specified for bond.

ix. **Joints:** All the joints shall be completely filled with mortar and their width shall not exceed 25 mm. When plastering or pointing is not required to be done, the joints shall be struck flush and finished simultaneously while laying the stone. Otherwise the joints shall be racked to a minimum depth of 20 mm. by a racking tools, during progress of laying while the mortar is still green.

x. **Scaffolding:** Single or double scaffolding shall be used. The scaffolding shall be strong and sound. The holes left in Masonry for supporting scaffolding shall be filled and made good before plastering.

xi. **Curing:** Green work shall be projected from rains by suitably covering the same. Masonry shall be kept constantly moist on all the faces for a period of at least 7 days. The top of masonry shall be flooded at the close of the day.

b) **Uncoursed rubble masonry with hard stone of approved quality in foundation and plinth in cement mortar 1:5 (1 cement, 5 coarse sand) including leveling up etc. complete.**

c) **Materials & Workmanship:** The relevant specifications shall be followed except that the proportion of cement mortar shall be in C.M. 1 : 5 (1 cement : 5 coarse sand).

Coursed rubble masonry with hard stone of approved quality in foundation and plinth in cement mortar 1 : 6 (1 cement : 6 coarse sand) etc. complete.

d) **Materials:** Cement mortar shall conform to M-6. The stone shall conform to M-10.

**Workmanship:**

i. **Dressing Stone:** The face stone shall be hammer dressed so as to give approximately rectangular blocks. They shall be squared on bed and side joints. The bed joints shall be rough chisel dressed for a depth of at least 50 mm. back from the faces and the side joints shall be so dressed to a depth of at least 40 mm. back from the face such that no portion of the dressed surface is more than 10 mm. from a straight edge held against the surface. The remaining portions of surface shall not project above the chisel dressed bed and side joints. The bushing on the face shall not project by more than 40 mm. on an exposed face and 10 mm. on a face to be plastered. The hammer dressed stone shall also have a rough tooling for a minimum width of 25 mm. along the four edges of the face of the stone.
ii. **Laying**: all stones shall be wetted before laying. The wall shall be built up truly plumb (or to required batter where so specified).

iii. All connected masonry in a structure shall normally be raised up uniformly and regularly. However, if for any specific reasons one part of wall is required to be left behind such wall shall be raked back at an angle not steeper than 45°. Vertical Toothed joints in masonry shall not be allowed. The work shall be carried up regularly and masonry on any day shall not be raised by more than **one** meter in height.

iv. All the course shall be laid truly horizontal. The height of course shall not be less than 150 mm. nor more than 300 mm. Face stone shall be laid in alternate header and stretcher fashion. They shall be so arranged as to break joints by at least **10 mm**. Stones shall be laid with grains horizontal so that the load is transmitted along the direction of their maximum crushing strength. The depth of stone shall not be less than the height or breadth. The breadth of a face stone shall also be not less than 150 mm. Each face stone shall be of the same height in any given course. The course shall be built in perpendicular to the pressure which the masonry will bear. In case of battered walls (such as retaining walls) the beds of the stone and the plane of courses shall be laid with their bed perpendicular to the battered face.

**SECTION – 5**

**DETAILED SPECIFICATIONS – CENTERING & FORM WORK**

a) Providing form work of ordinary timber planking so as to give a rough finish including centering shuttering strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding **4 mm** and removal of the same for in site reinforced concrete and plain concrete work in foundations, footing, bases of columns and mass concrete.

b) **Materials**: The shuttering to be provided shall be of ordinary timber planks and shall conform to **M-13**. The dimensions of scantlings and battens shall conform to the design. The strength of the wood shall not be less than that assumed in the design.

i. **Workmanship**: The form work shall conform to the shape lines and dimensions as shown on the plans and be so constructed as to remain sufficiently rigid during the placing and compacting of the concrete. Adequate arrangements shall be made by the contractor to safe-guard against any settlement of the form work during the course of concreting and after concreting. The form work of shuttering, centering, scaffolding bracing etc. shall be as per design.

ii. **Cleaning & Treatment of forms**: All rubbish, particularly chippings shaving and saw dust shall be removed from the interior of the form before the concrete is placed and the form work in contact with concrete shall be cleaned and thoroughly wetted or treated. The surface shall be then coated with soap solution applied before concreting is done. Soap solution for the purpose shall be prepared by dissolving yellow soap in water to get consistency of paint. Alternatively a coat of raw linseed oil or form oil of approved manufacture may be applied in case steel shuttering us used.
solution or raw linseed oil shall be applied after thoroughly cleaning the surface. Care shall be taken that the coating does not get on construction joints surface and reinforcement bars.

iii. **Stripping time**: In normal circumstance and where ordinary cement is used forms may be struck after expiry of following periods:
   a. Sites of walls columns and vertical faces of beam 24 to 48 hours.
   b. Beam soffits. (Props left under) – 7 days.
   c. Removal of props slabs.
   d. Slabs spanning up to 4.5 m. – 7 days. (ii) Spanning over 4.5 mm. – 14 days.
   e. Spanning up to 6 m. – 14 days.
   f. Spanning over 6 m. – 21 days.

iv. Procedure when removing the form work: 2.4.1 All form work shall be removed without such shock or vibrations as would damage the reinforced concrete surface. Before the soffit formwork and struts are removed the soffits and the concrete surface shall be exposed where necessary in order to ascertain that the concrete has sufficiently hardened.

v. **Centering**: The centering to be provided shall be got approved. It shall be sufficiently strong to ensure absolute safely of the formwork and concrete work before during and after pouring concrete. Watch should be kept to see that behavior of centering and formwork is satisfactory during concreting. Erection should also be such that it would allow removal of forms in proper sequence without damaging either the concrete or the forms to be removed.

vi. The props of centering shall be provided on firm foundation or base of sufficient strength to carry the loads without any settlement.

vii. The centering and formwork shall be inspected and approved by the Engineer-in-charge before concreting. But this will not relive the contractor of his responsibility for strength, adequacy and safety of form work and centering. If there is a failure of formwork or centering, contractor shall be responsible for the damages to the work, injury to life and damage to property.

viii. **Scaffolding**: All scaffolding, hoisting arrangements and ladders etc. required for the facilitating of concreting shall be provided and removed on completion work by contractor at his own expense. The scaffolding, hoisting arrangements and ladders etc. shall be strong enough to withstand all live, dead and impact loads expected to act and shall be subject to the approval of the Engineer-in-charge. However, contractor shall be solely responsible for the safety of the scaffolding, hoisting arrangement, ladders, work and workman, etc.

ix. The scaffolding, hoisting arrangement and ladders shall allow easy approach to the work spot and afford easy inspection.

x. The rate is applicable to all conditions of working and height up to 4 mts. The rate shall include the cost of materials and labor for various operations involved such as
a. Splayed edges, notching, allowance for overlaps and passing at angles, battens centering, shuttering, strutting, propping bolting, nailing, wedging, easing, striking and removal.
b. Filleting to form stop chamfered edges or played external angles not exceeding 20 mm. width to beams, columns and the like.
c. Temporary openings in the forms for pouring concrete, if required, removing rubbish etc.
d. Dressing with oil to prevent adhesion of concrete with shuttering and (e) Raking or circular cutting.

xi. Re-Use: Before re-use all forms shall be inspected by Engineer-in-charge and their suitability ascertained. The forms shall be scarred, cleaned and joints gone over, repaired where required. Inside surface shall be retreated to prevent adhesion of concrete.

xii. Extra for providing form work of ordinary timber planking so as to give a rough finish including centering, shuttering, strutting and propping, etc. height of propping and centering below supporting floor to ceiling in between 4 m. to 5 m. and removal of the same of in site reinforced or plain concrete work in foundation, footings, bases of columns etc. and mass concrete.

c) Materials & Workmanship: The relevant specifications shall be followed except that the height of propping and centering below supporting floor to ceiling exceeding 4 m. but not exceeding 5 m.

d) Providing form work of ordinary timber planking so as to give a rough finish including centering shuttering, strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4 m. and removal of the same for in site reinforced and plain concrete work in flat surface such as soffits of slabs, landing and the like floors etc. up to 200 mm. in thickness.

e) Materials & Workmanship: The relevant specifications shall be followed except that the work is to be carried out for flat surface such as soffits of slabs, landing and the like for floors etc. up to 200 mm. in thickness.

f) Providing form work of ordinary timber planking so as to give a rough finish including centering, shuttering, strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4 m. and removal of the same for in site reinforced and plain concrete work in vertical surface such as walls (any thickness) partitions.

g) Materials & Workmanship: The relevant specifications shall be followed except that the form work shall be carried out for vertical surfaces such as walls of any thickness, partitions etc.

h) Providing form work of ordinary timber planking so as to give a rough finish including centering, shuttering, strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4 m. and removal of the same for in site reinforced and plain concrete work in columns, pillars and struts, square rectangular, polygonal in plan.

i) Materials & Workmanship: The relevant specifications shall be followed except that the work is for columns, pillars, posts and struts square, rectangular, polygonal in plan.
j) Providing form work of ordinary timber planking so as to give a rough finish including centering, shuttering, strutting and propping etc. height of propping and centering below supporting floor to ceiling not exceeding 4 m. and removal of the same for in site reinforced and plain concrete work in side and soffits of beams, haunchings, cantilevers girders bressumers and lintels exceeding 1 M. in depth.

k) **Materials & Workmanship : 1.1** The relevant specification shall be followed except that the work is for side and soffits of beams, beams haunchings, cantilevers, girders, bressumers and lintels exceeding 1 M. in depth. The rate shall be for a unit of one Sq. meter.

l) Extra for providing form of work with sheathing of steel sheets so as to give a fair finish in

- i. Foundation, footings, base of columns etc. and mass concrete. (B) Flat surfaces such as soffits of slab, landing and the like.
- ii. Floors etc. up to 200 mm. in thickness.
- iii. Floor etc. above 200 mm. in thickness.
- iv. Vertical surfaces such as wall (Any thickness) partitions.
- v. Columns, pillars, posts and struts.
- vi. Square, rectangular, bressumers and lintels not exceeding 1 mm. depth.
- vii. Sides and soffits of beams, beam haunchings, cantilevers, girders, bressumers and lintels exceeding 1 mm. in depth.
- viii. Edges of slabs and breaks in floors and walls.
- ix. Small surface such as cantilever ends, brackets and ends of steps, caps and bases to pillars and columns including edges.
- x. Chollar woods whether sheds, chhajjas, corrodes etc. and the like.
- xi. Stair cases with sloping or steeped soffits including risers, skingers, excluding landing. (Q) Vertical fins and vertical sun breakers.

m) **Materials & Workmanship :** The relevant specification shall be followed except that the extra rate shall be paid for using sheathing of steel sheets and plates of steel or plywood instead of ordinary timber plank, to obtain a desired smooth exposed finish of surface. The surface shall be presentable without further treatment.

**SECTION – 6**

**DETAILED SPECIFICATIONS– MASONARY WORK**

a) Providing wood work in frames of doors, windows clerestory windows and other similar work, wrought, framed and fixed in position, Indian Teak wood.

b) **Materials:** Wood in frames shall conform to M-29.

i. **Workmanship:** The item covers the requirement of frames for doors, windows, clerestory windows their supply and fixing.

c) **Frames:** All members of the frames shall be exactly at right angles. The right angle shall be checked from inside surface of the respective members.

d) All members of frames shall straight without any warp or bow and shall have smooth surface well planed on the three sides exposed at right angles to each other. The surface touching the wall may not be planed unless it is required in order to straighten up the member or to obtain the overall size within the tolerances specified.

e) Frame shall have dovetail joints. When clerestory windows are included, it shall be provided by having full length one piece post for door or windows and clerestory window extending
the frame on top at the head to the required extent. Horns shall not be provided in the head of the frame. When no sills are provided, the vertical posts of the frame in the ground floor shall be embedded in the sill masonry for 10 cm. on upper floors, the vertical posts shall be fixed in the floor or masonry by forming notches 10 mm. deep. Slight adjustment of spacing as necessary shall be done to have the hold fasts in the joints of masonry course. The frame shall be erected in position and held plumb with strong support from both sides and built in masonry as it is being built. The transom shall be through tenoned into the mortices of the jamb post to the full width of the jamb post and the thickness of the tenon shall be not less than 15 mm.

f) **Tolerance:** Unless specially mentioned otherwise tolerance of ± 1.5 mm. shall be allowed for each wrought face.

g) The tenons shall be closely fitting into the mortises and suitably pinned with wood dowels not less than 10 mm. dia. meter. The depth of rebates for housing the shutter shall be as shown in the detailed drawing or as directed.

h) The contact surface of tenon and mortise shall be treated before putting together with an adhesive of approved make.

i) Minimum number of three hold-fasts shall be fixed on each side of door and windows frames, one at the center point and the other two at 30 cm. from the top and the bottom of the frames. In case of windows and ventilators frames whose height is less 1 M. two hold-fats, on each side shall be fixed at quarter points of the frames. The size of each hold-fast shall be 300 x 25 x 6 mm. and of mild-steel with split end. The hold-fast shall be fixed with screws to frames.

j) Mild steel hold fasts shall be protected with a coating of coal asphalt tar. The surface of frame abutting the masonry or concrete faces shall be properly treated by applying a coat of approved coating.

k) Providing and fixing 35 mm. thick fully paneled shutters for doors, windows and clerestory windows including anodized aluminum butt hinges with necessary screws, Indian Teak Wood.

l) **Workmanship :** The item covers the requirement of preparation of shutters for doors, windows, clerestory windows, their supply and fixing.

a. **Shutters:** panelled shutters shall be constructed in the form of timber frame work of styles and rails with panel inserted of type as specified in the detailed drawings. Panel shall be fixed by providing groves in the style and rails. The styles and rails shall be joined to each other by mortise and tenon joints at right angles.

b. All members of the shutters shall be straight without any warp or bow and shall have smooth, well planed faces at right 2.2.3 B. W. S. 9 angles to each other.

c. The size of styles and rails shall be as per drawing or as directed. Styles and rails of shutters shall be made of one piece only.

m) **Fixtures & Fastenings:** The rate shall include anodized aluminum but hinges including fixing with iron screws.

n) Providing and fixing flush door shutters, solid core construction with frame of 1st class shard wood with cross band and face veneer or plywood face panels including anodized aluminium but hinges with necessary screws (A) Non-decorative type and block board core. (2) 35 mm. thick.
o) **Materials:** Flush door shall conform M-14. Plywood shall conform to M-37. Anodised aluminium but hinges shall conform to M-15.

p) **Workmanship:** The relevant specifications shall be followed except that the shutters be non-decorative type and block board core with face veneer or plywood with 35 mm. thickness.

q) Ready-made shutters shall be correct size and shall fit into the door or other openings without excessive scraping of edges. Adding of battens etc. to make up to the size shall not be allowed.

r) Providing and fixing M. S. grill of required pattern to wooden frames of windows etc. with M. S. plates, at required spacing and frame around, square or round bars with round headed bolts and nuts or by screws and with ornamental grill.

s) **Materials & Workmanship:** The relevant specifications shall be followed except that the work is for ornamental grill.

Providing and fixing hard drawn steel wire fabric 75 x 25 mm. mesh of weight not less than 7.75 Kg. per Sq. M to window frames etc. including 60 x 20 mm. beading of teak wood.

t) **Materials:** Hard drawn steel wire fabric of 75 x 25 mm. mesh shall conform to M-34. Teak wood beading shall conform to M-29.

**Workmanship:** The steel wire fabric 75 x 25 mm. mesh of weight not less than 7.75 kg. per Sq. M to windows frames etc. shall be fabricated as per detail drawing. The wire fabric shall be fixed to windows frame by teak wood beading of 60 x 20 mm. size by means of screws.

u) Providing and fixing fly proof galvanized M.S. Wire gauge of I.S. Gauge designation 85 G. with wire of dia 0.56 mm. to windows and clerestory windows including 60 x 20 mm. beading of Indian Teak Wood.

v) **Materials:** The fly proof galvanized M. S. wire gauge, Teak wood beading.

**Workmanship:** The relevant specification shall be followed except that the proof galvanized M. S. wire gauge of I.S. gauge designation 85-G with wire of 0.56 mm. shall be provided.

**SECTION – 7**

**DETAILED SPECIFICATIONS – LABOUR FOR FIXING FIXTURES & FASTENING**

a) Fixing metallic tower bolts of size with necessary screws etc. complete (tower bolts and screws to be paid under separate items)

b) **Workmanship:** This item shall be provided for labor fixing metallic tower bolts of any size with screws, nuts etc.

   i. The tower bolts shall be fixed in proper position as shown in the drawings or as directed. There shall be fixed truly vertical or horizontal as the case may be.

   ii. The screws shall be driven home with screw driver. In not case the screws shall be hammered in

   iii. All recesses and seats shall be cut to the exact size for counter sinking etc. where so required are shall be taken to see that no gaps are left between the fitting and the surface meant to receive the fittings.

   iv. The fittings shall be properly cleaned and left in original finish after fixing.

c) **Workmanship:** The relevant specifications shall be followed, except for fixing metallic flush bolts instead of tower bolts.

d) **Workmanship:** The relevant specifications shall be followed.
SECTION – 8

DETAILED SPECIFICATIONS–PAVING & FLOOR FINISHING

a) Kotah stone slab (Polished, Green color) flooring over 20 mm. (average) thick base of cement mortar 1 : 6 (1 cement : 6 coarse sand) or lime mortar 1 : 1.5 laid over and jointed with gray cement slurry including rubbing and polishing complete 25 mm. thick.

b) **Materials:** Water shall conform M-1. Lime mortar shall conform to M-10. Cement mortar shall conform to M-6 polished kotah stone shall conform to M-18.

c) **Workmanship:** Each slab shall be cut to the required size and shape and fine chisel dressed at all the edges. The sides thus dressed shall have a full contact if a straight edge is laid along. The sides shall be table rubbed with coarse sand before paving. All angles and edges of the slabs shall be true square and free from chippings and giving a plane surface. The thickness shall be 25 mm. (Average) as specified in the item but not less than 20 mm. at any place of the slab.

d) Bedding for the kotah stone slabs shall be cement mortar 1 : 6 (1 cement : 6 coarse sand) or L. M. 1 : 1.5 of average thickness 20 mm. as given in the description of the item. Sub grade shall be cleaned, wetted and mopped. Mortar of the specified mix and thickness shall be then be spread on an area sufficient to receive one kotah stone slab. The slab shall be washed clean before laying. It shall be laid on top pressed, tapped gently to bring it in level with the other slabs. It shall then be lifted and laid aside. Top surface of the mortar shall then be corrected by adding fresh mortar at hollows or depressions. The mortar shall then be allowed to harden bit. Over this surface, cement slurry of honey like consistency shall be applied. The slab shall then be gently placed in position and tapped with wooden mallet till it is properly padded in level with and close to the adjoining slab. The joint shall be as fine as possible. The slabs fixed in the floor adjoining the wall shall enter not less than 10 mm. under the plaster, skirting or dado. The junction between the wall floor shall be finished neatly. The finished surface shall be true to levels and slopes as directed.

e) The floor shall be kept wet for a minimum period of 7 days so that bedding and joints set properly.

f) Polishing shall be normally commenced after 14 days of laying the stone slab. First polishing shall be done with carborundum stones of 120 grade grit fitted in the heavy machine and then second polishing shall be done with carborundum stone of 220 to 350 grade grit fitted in heavy machine. Water shall be properly used during polishing. The stone shall then be washed clean with water. When directed by the Engineer-in-charge wax polish of approved quality shall be applied on the surface with the help of soft cloth over a clean and dry surface. Then the polish machine fitted with bobs shall be run over it.

g) The holes required for Nahni traps, pipes any other fittings shall be made without any extra cost.

h) Rough chiseled dressed (Kotah stone green) stone flooring over 20 mm. thick base of cement mortar 1 : 6 (1 cement : 6 coarse sand) or L. M. 1 : 1.5 including pointing with cement 1 : 2 (1 cement : 2 stone dust) etc. complete 40 mm. thick.

i) The relevant specifications shall be followed except that the thickness of stone slab shall be 40 mm. thick.

j) Cement concrete flooring for I.P.S. 1 : 2 : 4 (for Indian Patent Stones) (1 cement : 2 coarse : sand : 4 graded stone aggregate 20 mm. nominal size) laid in one layer finished with a floating coat of net cement 40 mm. thick.
k) **Materials**: Water shall conform to M-1 cement shall conform to M-2. Sand shall conform to M-4. Stone aggregate 20 mm, normal size shall conform to M-7. Cement concrete 1:2:4 proportion measured by volume shall conform to relevant specification or ordinary grade 1:2:4 concrete.

l) **Workmanship**: The relevant concrete flooring of 40 mm thick (Average) is to be laid as per the site condition.

i. The concrete shall be mixed in a mechanical mixer at the work. Hand mixed may however be allowed for smaller quantities of work and in case of failure of machines or as permitted by the Engineer-in-charge.

ii. It shall carried out on a water platform and care shall be taken to ensure that mixing is continued until the mass is uniform in color and consistency. However, in such cases 10% more cement than otherwise required shall have to be used without any extra cost. The mechanical mixing shall be done for period of ½ to 2 minutes.

iii. The quantity of water shall be just sufficient of produce a dense concrete of required workability for the purpose. Flooring of specified thickness shall be laid in accordance with approved pattern or as directed. Finishing operation shall start shortly after the cessation of beating and shall be spread over a period one to six hours depending upon the temperature and atmosphere conditions.

iv. The surface shall be left for some time till moisture disappears from it. Fresh quantity of water shall be just sufficient of produce a dense concrete of required workability for the purpose. Flooring of specified thickness shall be laid in accordance with approved pattern or as directed. Finishing operation shall start shortly after the cessation of beating and shall be spread over a period one to six hours depending upon the temperature and atmosphere conditions.

v. The surface shall be left for some time till moisture disappears from it. Fresh quantity of water shall be just sufficient of produce a dense concrete of required workability for the purpose. Flooring of specified thickness shall be laid in accordance with approved pattern or as directed. Finishing operation shall start shortly after the cessation of beating and shall be spread over a period one to six hours depending upon the temperature and atmosphere conditions.

vi. The junction of floors with wall plaster, dado or skirting shall be rounded off where so required up to 25 mm radius, flooring in lavatories and bath rooms shall be laid after fixing of water closet and squatting pans and floor traps which shall be plugged while laying the floors and opened after the floors are completed. Any damage, done to water supply or sanitary fittings during execution of work shall be made good.

m) After the final set, the concrete shall be kept continuously wet, if required by pounding for a period of not less than 7 days from the date of placement.

n) The formwork shall be provided if necessary as directed by the Engineer-in-charge. Concreting shall be done as per alternate bay method with necessary centering either by mastic or cement mortar as directed.

- Kota stone slab flooring 25mm thick over 20 mm (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) for flooring works in store and wardrobe partitions.
- 1st quality Vitrified Porcelain Polished tiles on floor, skirting etc.in with water absorption less than 0.08% and conforming to IS 15622 of approved make in all colour and shade, laid with 20 mm thick CM 1:4 including grouting the joints with white cement and
matching pigment etc complete. Size 800mm X 800 mm with approval from Engineer-in-charge for flooring in
- Basement floor:- indoor hall, admin office,
- ground floor:- rooms kitchens office
- First floor:-Library, dormitory, conference room
- Second/third floor:-rooms, dormitory, meeting room
- Terrace:-Rooms

- 1st quality MAT finished ceremic tile size 400x400mm confirming to IS : 13755 and IS : 15622 colour in floors laid on a bed of neat cement slurry finished with flush pointing in the white cement mixed with pigment to match the shade of the tile complete for flooring works in toilets with approval from Engineer-in-charge.

- 1st quality standard white glazed tiles confirming to IS : 13753 & IS :15622 of size 200mm x 300mm in walls, laid on a bed of neat cement slurry finished with flush pointing in the white cement mixed with pigment to match the shade of the tile complete for walls in toilets with approval from Engineer-in-charge.

- Granite stone slab mirror polished and machine edge cut in walls, pillars, steps, Shelves, Sills Counters, Floors etc. laid on 12mm (Av.) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) jointing with white cement mortar 1:2 (1white cement : 2 marble dust) with pigment to match the shade of the marble slab including grinding, rubbing and polishing complete in (with skirting)
  - Basement floor:- lobby, lift wall cladding
  - Ground floor:- hall, verandah, lift wall cladding, lobby, passage
  - First floor:-lobby, passage, lift wall cladding
  - Second/third floor:- open hall for arts, passage lobby lift wall cladding
  - Terrace:-lobby, lift wall cladding
  - Staircase (T+R) with double edge moulding

SECTION – 9

DETAILED SPECIFICATIONS– WATER PROOFING TREATMENT

a) Providing and fixing five course water proofing treatment felt consisting of second and fourth course of blown bitumen or/and residual bitumen applied hot 1.20 Kg. / Sq. mt. of area for each course and first course with fiber base self-finished felt type 2 Grade-I, fifth and final course of stone grit 6 mm. and down size or pea sized gravel spreader at 0.008 cum/sq. mt. including preparation of surface, excluding grading complete.


Workmanship:
  i Preparation of surface: Well-defined cracks other than hair cracks in the roof structure shall be cut to ’V’ section cleaned and filled up flush with cement and slurry or with bitumen conforming to I.S. 702-1961. The surface to be treated shall have a minimum slope of 1 in 120. The grading shall be carried out prior to
the application of water proofing treatment by cement mortar or line surkhi mortar or as specified in description of item.

ii The surface of room, part of parapet and gutters, drain mouths etc. over which the water proofing treatment is to be applied, shall be cleaned of all foreign matter such as fungus, moss and dust by wire brushing and dusting.

iii Drain outlet shall be suitably placed with respect to the roof gradient to ensure rapid drainage and prevent local accumulation of water on the roof, surface, masonry drain mouth, shall be widen sufficiently and rounded with cement mortar.

iv Form cast iron drain outlets; a groove shall be cut all round to touch the treatment.

v When a pipe passes through a roof on which water proofing treatment is to be laid, a cement, concrete angle fillet shall be built round it and the water proofing treatment taken over the fillet.

vi In case of parapet wall over 450 mm. in height for tucking in the water proofing treatment, a horizontal grooves 75 mm. wide and 65 mm. deep at minimum height of 150 mm. above roof level shall be left in the vertical face at the time of construction, the horizontal face of the groove shall be shaped with cement mortar 1 : 4.

vii In case of low parapet where the height does not exceed 450 mm. no groove shall be provided and the water proofing treatment shall be carried right over the top.

viii In case of existing R.C.C. and stone wall cutting the chase for tacking in the water proofing treatment is not recommended.

ix At the junction between the roof and veridical face of the parapet wall, a fillet 75 mm. in radius shall be constructed.

x At the drain mouths the fillet shall be suitably cut back and rounded off for easy application of water proofing treatment and easy flow or water.

xi Outlet at every low dividing wall about less than 300 mm. in height shall be rounded smooth and corners rounded off for easy application of water proofing treatment.

c) Priming coat: Bitumen primer shall conform to I.S. 3385-1965. A priming coat consisting of bituminous solution of low viscosity shall be applied with brush on the roof and wall surface at specified per unit area to assist adhesion of bonding materials as specified in the description of the item.

i Where a floating treatment of water proofing with self-finished bitumen felt is required i.e. where water proofing treatment is required to be isolated from the roof structure, layer of bitumen saturated felt (underlay) shall be spread over the roof surface and tucked into the flashing grooves. To keep the underlay free from the structure no bonding materials shall be used below underlay. Overlapping to the adjoining strip of underlay shall be minimum of 75 mm. at sides and 10 mm. at ends and shall be sealed with the same bonding materials as used for the self-finished felt treatment. The underlay shall be of type-1 saturated felt conforming to I.S. 1322-1970.

d) Laying of Felt: The self-finished tar felt shall be cut to the required lengths, brushed clean of dusting materials laid out flat on the roof to eliminate curls and subsequent stretching.
The felt shall be laid in length running at right angles to the direction of run off gradient commencing at the lowest level and working up to crest, so that the lower laps of the adjacent felt layer offer minimum obstruction to the flow of water. The felt shall not be laid in a single piece of very long lengths as it is likely to shrink 6 to 8 meters are suitable length. The roof shall be cleaned and dried before the felt treatment is begun. Each length shall be laid in position and rolled up for a distance of half it lengths. The hot bonding materials heated to correct working temperature as specified by manufacture shall be poured on to the roof across the full width of the felt as the latter is steadily unrolled and pressed down. The excess of bonding materials which squeezes out at the ends shall be removed as the laying proceeds. The pouring shall be so regulated that correct weight of the bonding materials as per unit area is spread uniformly over the surface. When the first half of the tar felt has been bonded to the roof, the other half shall be rolled up and then unrolled on the hot bonding materials in the same way. Subsequent strips shall also be laid in the same manner. Each strip shall overlap the preceding one by at least 75 mm. at the longitudinal edges and 100 mm. at the ends. All overlaps shall be firmly bonded with hot bitumen. Streaks and trailing of bitumen near edges of laps shall be leveled by heating the overlaps with blow lamp and levelling down unevenness.

i  Third layer of bonding materials in four course treatment shall be carried out in similar manner after the flashing has been complete.

ii  Water proofing treatment shall be carried out in the drain pipe or outlets by at least 100 mm. The water proofing treatment laid on the surface shall overlap the upper edge of water proofing treatment in the drain outlets by at least 10 mm. Flashing felts shall be laid as flashing. Wherever junction of vertical horizontal surface occurs longitudinal laps shall be 100 mm. The lower layer of flashing felt shall overlap the roofing felt by 100 mm. on vertical and sloping faces. Last course of flashing should not be of stone, grit or pea sized gravel but it shall be replaced by providing two coats of bitumen solution of approved quality.

iii  The lower edge of flashing shall overlap the flat portion of the roof and the upper edge of the flashing shall be tucked into the horizontal groove 75 mm. thick wide, 65 mm. deep provided at minimum height of 150 mm. from top of the roof surface. The flashing treatment shall be firmly held in place in the grooves with wooden wedges at intervals and the grooves shall be followed with cement mortar 1 : 4 (1 cement : 4 coarse sand) or cement concrete (1 : 2 : 4) (1 cement : 2 course sand : 4 graded stone aggregate 6 mm. nominal size) and surface finished smooth with the rest of wall. The cement work shall be cured for 7 days. When dry the exposed plaster joints of grooves shall be pointed with bitumen and two coats of bituminous solution shall be applied on the vertical and sloping surface of flashing.

iv  After the top flashing felt layer has been laid, the penultimate layer of bonding materials shall be applied over the roofing felt and horizontal overlap and vertical and sloping surface of flashing shall be spread uniformly over the hot bonding materials on the horizontal roof surface and pressed into it with wooden roller.

v  The material for surface finish shall be spread as described in the item over top layer.

vi  If ballooning occurs the defects may be rectified as under:
- Remove the gravel on the ballooned surface. Then cut open and squeeze out the trapped vapor by firm pressure applied by hand, seal the bitumen felt so lifted back on the surface by applying additional bitumen, finally seal the cut with piece of bitumen felt with bitumen application.

- Providing and fixing on wall face C. I. rain water pipe including filling the joints with spun yarn socked in neat cement slurry and cement mortar 1:2 (1 cement: 2 fine sand) 75 mm. dia.


Workmanship:

i. C. I. rain water pipes shall be of specified diameter and shall be in full lengths of 1.8 meters including socket ends of the pipes unless shorter lengths are required at junctions with fittings.

ii. Fixing: The pipe and fittings shall be fixed in vertical alignment unless otherwise specified and shall be secured to the walls at joints with M. S. clamps. The clamps shall be M. S. sheet 30 mm. bent to required shape and size so as to fit tightly on the socket of pipe when tightened with screw bolts. It shall be formed out of two semi-circular pieces. hinged with 6 mm. dia. M. S. pin on one side and provided flanged ends on the other side with holes to fit in the screw bolt and nut 40 mm. long. The clamps shall be provided with hook made out of 275 mm. long, 10 mm. dia. M. S. bar riveted to the ring at the center of one semicircular piece. The clamps shall be fixed to the walls. The clamps shall be kept above 25 mm. clear of finished face of wall so as to facilitate cleaning and painting the pipes.

iii. The pipe shall be fixed vertically. The spigot of the upper pipe shall be properly fitted in the socket of the lower pipe such that there is uniform annular space for filling with the jointing materials. The annular space between the spigot and socket shall be filled with a few turns of spun yarn socked in cement slurry or blown bitumen 85/25 grade. These shall be pressed home by caulking tools. The joints shall then be filled with stiff cement mortar 1:2 (1 cement: 2 fine sand) well pressed with caulking tools and finished smooth at top at an angle of 45º sloping up. The joints shall be kept wet at least for 7 days by typing four founds of gunny bag to the pipe and keeping it moist constantly.

iv. Providing and fixing M. S. Holder bat clamps of approved design to C. I. or S.C.I. pipes embedded and including cement concrete blocks (100 mm. x 100 mm. x 100 mm. size) in 1 : 2 : 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm. nominal size) and cost of cutting holes and making good the walls etc. complete : 75 mm. dia.

f) Materials & Workmanship:

i. The relevant specifications shall be followed except that the M. S. Holder bat clamps of approved design shall be for C. I. rain water pipe-75 mm. dia.

ii. The bat clamps shall be fixed as directed with C.C. blocks of 100 mm. x 100 mm. x 100 mm. The relevant specification shall be followed for concrete work.
iii. Providing and fixing and embedded sand C. I. rain water pipe in the mason surrounded with 12 mm. thick cement mortar of the same mix as that of masonry: 75 mm. dia pipe.


Workmanship:

i. The relevant specifications shall be followed except that the C. I. pipe 75 mm. dia. shall be embedded in masonry surrounded with 12 mm. thick cement mortar.

ii. The pipe shall be fixed in the masonry work as it proceeds. The pipe shall be kept vertical or to the line as directed. The pipe shall have minimum surroundings of 12 mm. thick cement mortar at every portion of external surface. The length shall be caulked with spun yarn and cement mortar as soon as the next length of pipe is placed in position. The socket ends the pipe shall be kept closed till the next length of pipe is fitted and jointed to prevent any brick-bats or concrete or pieces of wood falling in and chocking the pipes.

SECTION-10

DETAILED SPECIFICATIONS– PLASTERING AND PAINTS

a) 10 mm. thick cement plaster in single coat on fair side of brick concrete walls for interior plastering up to floor two level and finished even and smooth finishing with Cement Sand 1:4 Mortar.


Workmanship:

i. Scaffolding: Wooden ballics, bamboos, planks, treatles and other scaffolding shall be sound. These shall be properly examined before erection and use. Stage scaffolding shall be provided for ceiling plaster which shall be independent of the walls.

ii. Preparation of back-ground:

- The surface shall be cleaned of all dust, loose mortar droppings, traces of algae, afforescence and other foreign matter by water or by brushing. Smooth surface shall be roughened by wire brushing if it is not hard and by racking if it is hard. In case of concrete surface, if a chemical retarder has been applied to the form work, the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the retarders is left on the surface. Trimming of projections on brick/concrete surface where necessary shall be carried out to get an even surface.

- Racking of joints in case of mansonry where necessary shall be allowed to dry out for sufficient period before carrying out the plaster work.

- The work shall not be soaked but only damped evenly before applying the plaster. If the surface becomes dry such area shall be moistened again.

- For external plaster, the plastering operation shall be started from top floor and carried downwards. For internal plaster, the plastering
operations may be started whenever the building frame and cladding work are ready and the temporary supporting ceiling resting on the wall of the floor have been removed. Ceiling plaster shall be completed before starting plaster to walls.

iii. Applications of plaster:
- The plaster about 15 x 15 cms. Shall be first applied horizontally and vertically at not more than 2 metres intervals over the entire surface to serve as gauge. The surfaces of these gauges shall be truly in plane of the finished plastered surface. The mortar shall then be applied in uniform surface slightly more than the specified thickness, then brought to a true surface by working a wooden straight edge reaching across the gauges with small upward and sideways movement at a time. Finally, the surface shall be finished off true with a trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive trowelling or overworking the float shall be avoided. All corners, arrises, angles and junctions be truly vertical or horizontal as the case may be and shall be carefully finished. Rounding or chamfering corners, arrises junctions etc. shall be carried out with proper templates to the size required.
- Cement plaster shall be used within half an hour after addition of water. Any mortar or plaster which is partially set shall be rejected and removed forthwith from the size.
- In suspending the work at the end of the day, the plaster shall be left out clean to the line both horizontally and vertically. When recommending the plaster, the edges of the old work shall be scraped clean and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of the wall and nearer than 15 cm. To any corners or arrises. Horizontal joints in plaster work shall not also occur on parapet tops and copings as these invariably load to leakage. No portion of the surface shall be left out initially to be packed up later on.
- Each coat shall be kept damp continuously till the next coat is applied or for a minimum period of 7 days. Moistening shall commence as soon as plaster is hardened sufficiently. Soaking of walls shall be avoided and only as much water as can be readily absorbed shall be used, excessive evaporation on the sunny or windward side of building in hot air or dry weather shall be prevented by handing mattings or gunny bags on the outside of the plaster and keeping them wet.

iv. Thickness of the plaster shall be exclusive of the thickness of the key i.e. grooves or open joints in brick work, stone work etc. or space between laths. Thickness of plaster shall be average thickness with minimum 10 mm. at any point on this surface.

v. This item includes plastering up to floor two level.

vi. The measurement of wall plastering shall be taken between the walls or partition (dimensions before plastering being taken) for length and from
the top of floor or skirting to ceiling for height. Depth of cover of cornices if any shall be deducted.

vii. Soffits of stairs shall be measured as plastering on ceilings. Flowing soffits shall be measured separately.

viii. For jambs, soffits, sills etc. for openings not exceeding 0.5 sq.mt. each in area for ends of joints, beams, posts, girders, steps, etc. not exceeding 0.5 sq. mt. Each in area and for openings exceeding 0.5 sq. mt. And not exceeding 3.00 sq. mt. In each area deductions and additions shall be made in the following manner:

c) No deductions shall be made for ends of joints, beams, posts etc. and openings not exceeding 0.5 sq.mt. each and no addition shall be made for reveals, jambs, soffits, sills etc. of these opening for finish to plaster around ends of joints, beams, posts etc.

d) Deduction for openings exceeding 0.5 sq.mt. but not exceeding 3 sq.mt. each shall be made as follows and no addition shall be made for reveals, jambs, soffits, sills etc. of these openings.

e) When both faces of all wall are plastered with same plaster, deduction shall be made for one face only.

f) When two faces of wall are plastered with different types of plaster or if one faces is plastered and the other pointed, deductions shall be made from the plaster or pointing on the side of frame for door, window etc. on which width of reveals is less than that on the other side but no deductions shall be made on the outer side. Where width of reveals on both faces of all are equal, deductions of 50% of area of opening on each face shall be made from area of plaster and/or pointing as the case may be.

g) For openings having door frames equal to projecting beyond the thickness of wall, full deduction for opening shall be made from each plastered face of the wall.

h) In case of openings of area above 3 sq.mt. each, deduction shall be made for opening but jambs, soffits and sills shall be measured. 3.10. The rate shall be for unit of one sq. meter.

i) 20 mm. thick cement plaster in single coat on rough side of single or half brick walls for interior plastering up to floor two level, finished even and smooth in cement mortar 1:4 (1 cement: 4 sand).

j) Materials & Workmanship: The relevant specifications of above-mentioned item shall be followed except that the thickness of item plastering shall be 20 mm. in C.M. 1:4.

Extra over item for finishing with a floating coat of net cement slurry.

k) Materials & Workmanship: The relevant specifications shall be followed for materials and workmanship except that this work is only of providing smooth cement finish with floating coat of neat cement slurry.

l) The coat of cement and fine sand mortar of proportion 1:1 (1.5 mm. thick about) shall be applied to the plastered surface with a trowel to provide uniform texture while the base coast is still plastic.

m) In any continuous face of wall, the finishing treatment should be carried out continuously and day to day braked made to coincide with architectural breaks in order to avoid unsightly junctions.
n) Curing: All the plaster work shall be kept damp continuously for a period of 7 days.

o) Materials & Workmanship: The relevant specifications shall be followed except that the water proofing materials of approved make shall be added to the cement at the rate specified or as directed by the Engineer-in-charge. The proportion of water proofing materials to be mixed with 50 kg. Bags shall be as recommended by the manufactures of the water proofing material. Extra over items for plastering on ceiling and soffits of stair up to floor two level instead of plastering on walls.

p) Materials & Workmanship: The relevant specifications shall be followed except that this work is for ceiling soffits of stairs up to two floor level instead of plaster in walls. The smooth concrete surface shall be suitably roughened to provide necessary bond before plastering.

SECTION-11

DETAILED SPECIFICATIONS– WHITE WASHING & DISTEMPERING

a) While washing with undecorated wall surfaces (two coats) to given an even shade including through by brooming the surface to remove all dirt, dust, mortar drops and other foreign matter.

b) Materials: The elearcolle shall be made from glue and boiling water by Mixing 1 kg. Mixture shall be suitably tinted where required for use under coloured distemper if directed. Glue shall conform to I.S. 852-1969 (Specifications for animal glue). 1.2. line used shall be freshly burnt class ‘C’ Lime (fat lime) and white in colour conforming to I.S. 712-1973/ Water shall conform to M-1 Best quality of gum shall be used in the preparation of white wash. Ultramarine blue or Indigo: This shall conform to I.S. 55-1970 for points, and shall be used for preparation of white wash. Pigments: Mineral colours, not affected by lime shall be used in preparing colour wash.

c) Workmanship: Preparation of white wash solution: Surface already white or colour. The fat lime shall be slaked at site and shall be mixed and stirred with about five litres of water for 1 kg. Of unslaked lime to make a thin cream. This shall be allowed to stand for a period of 24 hours and then shall be screened through a clean coarse cloth, 4 kg. Of gum dissolved in hot water shall be added to each cubic metre of lime cream. Small quantity of ultramarine blut (Up to 3 gms. Per kg. Of lime) shall also be added to the last two coats of white wash solution and the whole solution shall be stirred thoroughly before use.

d) Preparation of surface: The surface shall be thoroughly cleaned of all dust, dirt, mortar croppings and other foreign matter before white wash is to be applied.

e) The surface spoiled by smoke soot shall be scraped with steel wire brushes or steel scrapers or shall be rubbed with over-burnt surkhi or brick bats. The surface shall be then broomed to remove all dust, dirt and shall be washed with clean water.

f) Oil or grease spots shall be removed by suitable chemical and smooth surface shall be rubbed with wire brushes.

g) All unsound portion of the surface plaster shall be removed to full depth of plaster in rectangular patches and plastered again after raking the masonry joints properly.
Such portion shall be wetted and allowed to dry. They shall then be given one coat of white wash.

h) All unnecessary nails shall be removed, the holes cracks patches etc. shall be made good with materials similar in composition to the surface to be prepared.

i) Scaffolding: Wherever scaffolding is necessary it shall be erected in such a way that as far as possible on part of scaffolding shall rest against the surface to be white or colour washed. A properly secured strong and well tied suspended platform (Zoola) may be used for white washing of ceilings proper stage scaffolding shall be erected where necessary.

j) Application of white wash: On the surface so prepared the white wash shall be applied with “Moon” brush. The first stroke of the brush shall be from top downwards, another from bottom upwards over the first stroke and similarly one stokes from the right another from the left, over the first stroke brush before it dries. This will from one coat. Each coat shall be allowed to dry before next coat is applied. Number of coats as specified in item shall be applied. It shall present smooth and uniform finish free from brush marks and it should not come off easily when rubbed with finger.

k) Splashing and dropping if any on the doors and windows, ventilators etc. shall be removed and the surface cleaned.

l) Priming and Alkali resistant treatments, scraping of surface washing etc. surface spoiled by smoke soot removed of oil and great spots treatment for infection with effloresence moulds moss, funji algae and litchen and patch repairs to plaster. Wherever done shall not be paid extra.

m) No deductions shall be made for ends of joints beams, posts etc. and openings not exceeding 0.5 sq.mt. each. No addition shall be made for reveals, jambs, soffits, sills etc. of these openings: When both the faces or walls are provided with finish, deduction shall be made for one face only.

n) When each face of walls is provided with different finish deduction shall be made for that side of frame for door, windows etc. on which width of reveals is less than that of the other side, where width of reveals on both faces of wall are equal, deduction of 50% of area of opening on each face shall be made from total area of finish.

o) When only one face of wall is treated and the other face is not treated, full deduction shall be made if the width of reveal on the treated side is less than that on the untreated side, but if the width of the reveal is equal or more than on the untreated side neither deductions nor additions be made for reveals, jambs, soffits, sills etc.

p) In case of area of opening exceeding 3 sq.mt. each, deduction shall be made for openings but jambs, soffits, shall be measured.

q) Corrugated surfaces shall be measured flat as fixed and not girth. The quantities so measured shall be increased by the following percentage and the resultant shall be included with the general areas.
   - Corrugated steel sheets 14%
   - Corrugated A.C. sheets 20%
   - Semi Corrugated A.C. sheets 10%
   - Nainital pattern roof (Plain sheeting with rolls) 10%
Section – V Procuring Entity Requirement

RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

- Nainital pattern roof (with corrugated sheets) 25%
  
r) Cornices and other wall features, when they are not picked out in a different finish/colour shall be girthed and included in the general area.
  - The rate shall include the cost of all materials, labour, scaffolding, protective measures etc. involved in all the operations described above.
  - White washing with lime on decorated wall surface (one coat) to give an even shade including thoroughly brooming the surface to remove dirt, dust mortar drops and loose scales of lime wash and other foreign matter.
  - Materials & Workmanship: The relevant specifications shall be followed except that the white washing work shall be carried out on decorated wall surface in single coat.
  - Extra for every subsequent coat of white washing with lime on wall surfaces.
  - Materials & Workmanship: The relevant specification shall be followed except that this work is for extra coat over and above two coats on wall surface.
  - Colour washing with lime on decorated wall surfaces (one coat) to give an even shade including thoroughly brooming the surface to remove all dirt dust, mortar drops and loose scales of lime wash and other foreign matter.
  - Materials & Workmanship: The relevant specifications shall be followed except that the colour washing shall be carried out on decorated wall surfaces in one coat.
  
s) Removing dry or oil bound distemper by washing and scraping and sand papering the wall surface smooth including necessary repairs to scratches complete.
  - Materials & Workmanship: All loose pieces and scales shall be removed by sand papering and surface shall be cleared of all greasy, dust, dirt, etc. on decorated wall surface: Where heavy scaling has taken place, the entire surface shall be scrapped by means of steel scrapers so as to remove all accumulated distemper, leaving clean surfaces. Necessary repairs to the scratches shall be made as directed.
  - Extra for removing dry oil bound distemper on ceiling and sloping roofs.
  - Workmanship: The relevant specifications shall be followed except that removing dry oil bound distemper from sloping roof, ceiling is to carried out.
  
t) Distempering with dry (water bound) Distemper of approved brand and manufacturer (two coat) and of required shade on undecorated wall surfaces to give an even shade, over and including a priming coat of white washing after thoroughly brooming the surface free from mortar droppings and other foreign matter.
  - Materials: The dry distemper and primer shall be of approved brand and manufacture. The dry distemper shall be required colour and shade and the same shall conform to I.S. 427-1965. Whiting shall conform to I.S. 63-1964.
  - Workmanship: Scaffolding: Where scaffolding is required it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be distempered.
• A properly secured strong and well tied suspended platform (jools) may be used for distempering. Where ladders are used, pieces of old gunny bags shall be tied at top and bottom to prevent scratches to the walls and floors. For distempering to ceiling, proper stage scaffolding shall be erected where necessary.

• Preparation of Surface: The undecorated surface to distempered shall be thoroughly brushed free from dust, dirt, grease, mortar, droppings and other foreign matter and sand papered smooth. New plaster surface shall be allowed to dry at least 2 months, before application of distemper.

• All necessary nails shall be removed. Pitting in plaster shall be made good with plaster of Paris mixed with dry distemper of the colour to be used. The surface shall then be rubbed down again with a fine grades and paper and made smooth.

• The surface affected by moulds, moss, fungi, algeelichem, efflorescence etc. shall be treated in accordance with I.S.: 2395 (Part-I) – 1996 before applying distemper. Any unevenness shall be made good by applying putty made of plaster of Paris mixed with water on entire surface including filling up the undulations & then papering the same after it is dry.

u) Priming coat: A priming coat of whiting shall be applied over the prepared surface in case of new work on undecorated surface. No coat of with lime shall be used as a priming coat for distemper.

• Application of plaster shall be done as under: The primer shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be Vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be Finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours before oil bound Distemper or paint is applied.

• Distemper is not recommended to be applied within six months of the completion of wall plaster.

v) Proportion of Distemper: The distemper shall be diluted with water or any other prescribed thinner in a manner recommended by the manufactures only. Sufficient quantity of distemper required for one day’s work shall be prepared.

i. Application of Distemper coat:

• For undecorated surface, after the primer coat is dried for at least 48 hours, the surfaces shall be lightly sand papered to make them smooth for receiving the distemper, taking care not to rub cut the priming coat; All loose particles shall be dusted off after rubbing. Minimum two coats of distemper shall be applied with brushed in horizontal strokes followed immediately by vertical strokes which together shall constitute one coat. The subsequent coats shall be applied after time interval of at least 24 hours between consecutive coats to permit proper drying of the preceding coat. The finished surfaces shall be finished surfaces shall be even and uniform without patches, brush marks; distemper drops etc.

• Sufficient quantity shall be mixed to finish one room at a time. The application of a coat in each room shall be finished in one operation and no
work shall be started in any room which cannot to completed on the same day.

- 15cm. Double bristled brush shall be used. After the day’s work, brushes shall be thoroughly washed in hot water with a soap solution and hang down to dry. Old brushes which are dirty and caked with distemper shall not be used on the work.

ii. Protective Measure:

- The surface of door, windows, floors, articles of furniture etc. and such other parts of the building as are not to be distempered shall be protected from being splashed upon. Such surfaces shall be cleaned of distemper splashes if any.

iii. Distempering (two coats) with oil bound distemper of approved brand and manufacture and of required shade on undecorated wall surfaces to give an even shade, over and including a priming coat with distemper primer of approved brand and manufacture after thoroughly brushing the surface free from mortar dropping and other foreign matter also including preparing the surface even and sand papered smooth.

iv. Materials: Oil bound washable distemper and primer shall be of approved brand and manufacture. The distemper shall be of required colour and the same shall conform to I.S. 428-1969.

- Scaffolding: Where scaffolding is required, it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be distempered. A properly secured strong and well tied suspended platform (Joola) may be used for distempering. Where ladders are used, pieces of old gunny bags shall be tied at top and bottom to prevent scratches to the walls and floors. For distempering to ceilings, proper stage scaffolding shall be erected where necessary.

- Preparation of surface: The undecorated surface to be distempered shall be thoroughly brushed off from dust, dirt, grease, mortar dropping and other foreign matter and sand papered smooth. New plaster surface shall be allowed to dry for at least 2 months before applications of distemper.

- All unnecessary nails shall be removed. Pitting in plaster shall be made good with plaster of Paris mixed with dry distemper of colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth. A coat of distemper shall be applied over the patches. The surface shall be allowed to dry thoroughly before the regular coat of distemper is allowed. The surface affected by moulds, moss, fungi algae, lichens, efflorescence etc. shall be treated in accordance with I.S. 2395 (Part-I) 1966. Before applying distempering, any unevenness shall be made good by applying putty made of plaster of Paris mixed with water on entire surface including filling up the undulation and then sand papering the same after it is dry.

w) Priming coat: A priming coat or distemper prime of approved manufacture and shade shall be applied over the papered surface in case of new work on decorated surface. If the distemper premiering is done after the wall surface dries completely, the distemper primer shall be applied.
v. Application of primer shall be done as under: The primer shall be applied with a brush on the clean dry and smooth surface. Horizontal strokes shall be given first and vertical strokes shall be applied immediately afterwards. This entire operation will constitute one coat. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for atleast 48 hours before oil bound distemper or paint is applied.

vi. Oil bound distemper is not recommended to be applied within six months of the completion of wall plaster.

vii. Preparation of oil bound distemper: The distemper shall be diluted with water or any other prescribed thinner in a manner recommended by the manufacture only. Sufficient quantity of distemper required for a day's work shall be prepared.

viii. Application of Distemper coat: For undecorated surfaces, after the primer coat is dried for atleast 48 hours, the surface shall be lightly sand papered to make it smooth for receiving the distemper, taking care not to rub out the priming coat. All loose particles shall be dusted off after rubbing. Minimum two coats of distemper shall be applied with brushes in horizontal strokes followed immediately by vertical strokes which together shall constitute one coat. The subsequent coats shall be applied after a time interval of atleast 24 hours between consecutive coats to permit proper drying of the proceeding coat. The finished surface shall be even and uniform without patches, brush marks, distemper drops etc.

ix. Sufficient quantity of distemper shall be mixed to finish one room at a time. The application of a coat in each room shall be finished in one operation and no work shall be started in any room which cannot be completed on the same day.

x. 15 cm. Double bristled distemper brush shall be used. After day's work brushes shall be thoroughly washed in hot water soap solution and hung down to dry. Old brushes which are dirty and caked with distemper shall not be used on the work.

xi. Distempering (two coats) with oil bound washable distemper of approved brand and manufacture and of shade required on undecorated wall surfaces to give an even shade, over and including a priming coat with alkali resistance primer of approved brand and manufacture after thoroughly brushing the surface free from mortar droppings, and other foreign matter and also including preparing the surface even and sandpapered smooth.

xii. Materials &workmanship: The relevant specifications shall be followed except that the primer of alkali resistance primer of approved brand manufacture shall be sued instead of distemper primer.

xiii. Finishing wall with water proofing cement paint on an undecorated wall surfaces (two coats) to give an approved brand and manufacture and of required shape even shade after thoroughly brushing the surface to remove all dirt and remains of loose powdered materials.

- Scaffolding: The relevant specifications shall be followed.
- Preparation of surface: The relevant specifications of item shall be followed as per above mentioned except that the word white wash colour wash shall be substituted with water proofing cement paint.
- The surface shall be thoroughly wetted with clean water before cement water proofing paint is applied.
- Preparation of paint: Portland cement shall be prepared by adding paint powder to water and stirring to obtain a thick paste, which shall then be diluted to a brushable consistency. Generally, equal volumes of paint powder and water make a satisfactory paint. In all cases, the manufacturer’s instructions shall be followed. The paint shall be mixed in such quantities as can used up within an hour of mixing as otherwise the mixture will set and thickness, affecting flowing and finish. The lids of cement paint drums shall be kept tightly when not in use.
- Application of Paint: No painting shall be done when the paint is likely to be exposed to a temperature of below 70 C within 48 hours after application.
- When weather conditions are such as to cause damage, the work shall be carried out “in the shadow” as far as possible. The helps the proper hardening of the paint film by keeping the surface moist for a longer period.
- To maintain the uniform mixture and to prevent segregation, the paint shall be stirred frequently in the bucket.
- For undecorated surfaces, the surfaces shall be treated with minimum two coats of water proof cement paint. Not less than 24 hours shall be allowed between two coats. Next coat shall not be started until the proceeding coat has become sufficiently hard to resist making by the brush being used. In hot dry weather, the proceeding coat shall be allowed between two coats. Next coat shall not be started until the proceeding coat shall be slightly moistened before applying the subsequent coat.
- The finished surface shall be even and uniform in shade, without patches, brush masks, paint drops etc.
- The cement paint shall be applied with a brush with relatively short stiff hog or fibre bristles. The paint shall be brushed in uniform thickness and shall be free from excessive heavy brush marks. The lamps shall be well brushed out.
- Water proof cement paint shall be applied on surfaces already treated with white wash colour wash, distemper dry or oil bound varnishes, paint etc. It shall not be applied on gypsum, wood and metal surfaces.
- Curing: Painted surfaces shall be sprinkled with water two or three times a day. This shall be done between coats and for atleast two days following the final coat. The curing shall be started as soon as the paint has hardened so as not to be damaged by the sprinkling of water say about 12 hours after the application.
- Protection measures shall be taken as per above mentioned para.
SECTION 12

DETAILED SPECIFICATIONS – PAINTINGS & POLISHING

a) Painting two coats (excluding priming coat) on new steel and other metal surfaces with enamel surfaces with enamel paint, brushing, interior to give an even shade including cleaning the surface of all dirt, dust and other foreign matter.

b) Materials: The enamel paint shall conform to M – 44 B.

Workmanship:

i. The materials required for work of painting work shall be obtained directly from approved manufactures or approved dealer and brought to the site in maker's drums, kege etc. with seal unbroken.

ii. All materials not in actual use shall be kept properly protected, lids of containers shall be kept closed and surface of paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin. The materials which have become stale or flat due to improper and long storage shall not be used. The paint shall be stirred thoroughly in its container before pouring into small containers. While applying also the paint shall be continuously stirred in smaller container. No left-over paint shall be put back into stock tins. When not in use, the containers shall be kept properly closed.

iii. If for any seasons, thinning is necessary, the brand of thinner recommended by the manufacturer shall be used.

iv. The surface to be painted shall be thoroughly cleaned and dusted. All rust, dirt and grease shall be thoroughly removed before painting is started. No painting on exterior or other exposed parts of the work shall be carried out in wet, damp or otherwise unfavourable weather and all the surfaces shall be thoroughly dry before painting work is started.

c) Application: Brushing operations are to be adjusted to the spreading capacity advised by the manufacture of particular paint. The paint shall be applied evenly and smoothly by means of crossing and laying off. The crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternately in opposite directions two or three times and then finally brushing lightly in direction at right angles to the same. In this process, no brush marks shall be after the laying off is finished. The full process of crossing and laying off will constitute one coat.

d) Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of sand paper and loose particles brushed off before the next coat is applied. Each coat shall vary slightly in shade and shall be got approved from Engineer-in-charge before next coat is started.

e) Each coat except the last coat shall be lightly rubbed down with sand-paper of fine pumice stone and cleaned of dust before the next coat is applied. No hair marks from the brush or clogging of paint puddles in the corners of panels angles of mouldings etc. shall be left on the work.

f) Special care shall be taken while painting over bolts, nuts, rivets, overlaps etc. Approved best quality brushes shall be used.

g) Materials & Workmanship: The relevant specifications shall be followed except that the work of painting shall be carried out for subsequent coat.
h) Painting two coats (excluding priming coat) on new steel and other metal surface with synthetic enamel paint, brushing to give an even shade including cleaning the surface of all dirt, dust and other foreign matter.

Workmanship: The relevant specifications of above mentioned pera shall be followed except that the painting shall be carried out with synthetic enamel paint.

j) Painting two coats (excluding priming coat) on external surfaces of rain water, soil waste and vent pipe and fittings with ready mixed bituminous paint brushing, black anticorrosive to give shade including cleaning off all dirt dust and other foreign matter :100 mm. dia.

k) Materials & Workmanship: The relevant specifications shall be followed except that the pipes to be painted on is 100 mm. dia. metre.

l) Applying priming coat over new wood and based surfaces after and including preparing the surface by thoroughly cleaning of dirt grease, dust and other foreign matter, sand papering and knotting : Ready mixed paint, brushing wood primer pink.

m) Materials: The ready mixed paint, brushing, wood primer pink shall conform to I.S. 3536-1966.
Workmanship:
i. Preparation of Surfaces: wood work shall be dry and free from any foreign matter incidental to building operations. Nails shall be punched well below the surface to provide a firm key for stopping. Mouldings shall be carefully smoothened with abrasive paper and projecting fibres shall be removed. Flat portion shall be smoothened off with abrasive paper used across the grain prior to painting and with the grain prior to staining or if the wood is to be left in its natural colour, wood work which is to be stained may be smoothened to scraping instead by glass papering if so required.

ii. Any knots, resinous or streaks or bleish sap wood that are not large enough to justify cutting out shall be treated with two coats of pure shellac knotting applied thinly and extended about 25 mm. beyond the actual area requiring treatment.

n) Application of primer: The relevant specifications shall be followed for application of primer

o) Applying priming coat over new wood and wood-based surfaces after and including preparing the surface by thoroughly cleaning of oil, dirt, grease, dust and other foreign matter, sand papering and knotting: Ready mixed paint brushing priming, for enamel.

Workmanship:
i. The relevant specifications of above-mentioned item shall be followed except that ready mixed paint brushing priming for enamel shall be used instead of ready mixed paint brushing wood primer pink.

ii. Above mentioned work for every subsequent coat of priming coat. Ready mix paint brushing wood primer pink.

iii. The relevant specifications of above mentioned item shall be followed except that the painting work shall be carried out with ready mix paint, brushing wood primer pink for subsequent coat.
iv. Above mentioned item for every subsequent coat of priming coat ready mix paint brushing priming for enamel.

q) Materials & Workmanship:
   i. The relevant specifications of above-mentioned item shall be followed except that the painting work shall be carried out with ready mix paint brushing priming for enamel.
   ii. Painting two coats (excluding priming coat) on new wood and wood-based surfaces with enamel paint interior to give an even shade including cleaning the surface off all dirt, dust and other foreign matter sand papering and slopping.


   Workmanship:
   i. The relevant specifications shall be followed for general and applications of paint, except that the enamel paint shall be used for painting on new wood/wood-based surfaces.
   ii. In painting doors and windows, the putty, round the glass panes also be painted but care shall be taken to see that no paint, stain etc. are left on the glass. Top of shutters and surfaces in similar hidden locations shall not be left out in painting.

SECTION 13

DETAILED SPECIFICATIONS – DEMOLITION & DISMANTALING

a) Demolition and disposal of unserviceable materials with all leads and lifts: Lime Concrete.

   Workmanship:
   i. The demolition shall consist of demolition of one or more parts of the building as specified or shown in the drawings. Demolition implies taking up or down or breaking up. This shall consist of demolishing whole or part of work including all relevant item as specified or shown in the drawings.
   ii. The demolition shall always be planned before hand and shall be done in reverse order of the one in which the structure was constructed. This scheme shall be got approved from the Engineer-in-charge before starting the work. This however will not absolve the contractor from the responsibility of proper and safe demolition.
   iii. Necessary dropping, shoring and under pinning shall be provided for the safety of the adjoining work or property, which is to be left intact, before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damages is caused to the adjoining property.
   iv. Wherever required, temporary enclosures or partitions shall also be provided. Necessary precautions shall be taken to keep the dust nuisance down as and where necessary.
   v. Dismantling shall be commenced in a systematic manner. All materials which are likely to be damaged by dropping from a height or demolishing, masonry etc. shall be carefully dismantled first. The dismantled articles shall be properly stacked as directed.
   vi. All materials obtained from demolition shall be the property of Government unless otherwise specified and shall be kept in safe custody until handed over to the Engineer-in-charge.
vii. Any serviceable material, obtained during dismantling or demolition shall be separated out and stacked properly as directed, with all lead and loft. All unserviceable materials, rubbish etc. shall be stacked as directed by the Engineer-in-charge.

viii. On completion of work, the site shall be cleared of all debris rubbish and cleaned as directed.

ix. The rate shall include cost of all labour involved and tools used in demolishing and dismantling in including scaffolding. The rate shall also include the charges for separating out and stacking the serviceable materials properly and disposing the unserviceable materials with all lead and lift. The rate also includes for temporary storing for the safety of the portion not required to be pulled down or of adjoining properly and providing temporary enclosures or partitions where considered necessary.

x. Demolition including stacking of serviceable materials and disposal or unserviceable materials with all leads and lifts: R.C.C. work.
   - The relevant specifications shall be followed except that demolition of R.C.C. work is to be done.

xi. Dismantling tiled or stone floors laid in mortar including stacking of serviceable materials and disposal of unserviceable materials with all lead and lifts.
   - The relevant specification shall be followed except that the dismantling of tiled or stone floors laid on mortar shall be done. Dismantling implies carefully, taking up or down or these are fixed by nail, screws, bolts etc. these shall be taken out with proper tools.

xii. Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats Architraves, hold fasts and other attachments etc. complete and stacking them within all leads & lifts exceeding 3 sq. mt. in area.
   - The relevant specification shall be followed that the doors, windows, ventilators etc. (wood or steel) shutters including chowkhats Architraves, hold fasts and other attachments etc. are to be dismantled.

SECTION-14

DETAILED SPECIFICATIONS– REPAIRS TO BUILDINGS

a) Cutting out cracks of roof terrace to V-section cleaning out, and fillings solidly with a hot mixture of bitumen and clean dry sand (1:1 by weight).
   i. Materials: Bitumen shall be 85/25 penetration. (20 sand shall conform to M-4.)
   ii. Workmanship: The relevant specification shall be followed for opening cracks and cleaning.

b) The cracks shall be absolutely dried and cleaned and filled solidly with a hot mixtures of 85/25 penetrating and sand in ratio of 1:1 by weight. The filler shall be well filled in to
cracks with the edges of trowel and left flush with surface of roof. Repaired cracks shall cause no ridges across the direction of the slope of roof.

SECTION–15

DETAILED SPECIFICATIONS– MIS. BUILDING ITEMS

a) Treating the earth along the external perimeter of the building by making holes 15 cms. Apart up to a depth of 30 cms. With chemical emulsion at the rate of 7.5 liters/sq.mt. along the wall.

i. Materials:
   - The relevant specifications of the above-mentioned item shall be followed.

ii. Workmanship:
   - The relevant specifications shall be followed except that the external perimeter of the building shall be treated with chemical emulsions. After building is complete, the earth along the external perimeter of the building should be robbed at intervals of 15 cms. And to a depth of 30 cms. The rods shall be moved backward and forward parallel to the wall to breakup the earth and chemical emulsion poured along the wall at the rate of 7.5 liters/sq.mt. of vertical surfaces. After the treatment, the earth shall be tempered back into place, the earth outside of the building should be graded on completion of building. This treatment shall be carried out on the completion of such grading. In event of filling being more than 30 cms. the external perimeter and treatment shall be extended to the full depth of filling up to ground level so as to ensure continuity of the chemical barrier.

b) Providing treatment along outside of foundation using chemical emulsion at 7.5 litres/sq.mt. of vertical surface (for each side) of sub-structure.

i. Materials:
   - The chemical used for the soil treatment shall be any one of the following with concentration shown against each in aqueous emulsion.

<table>
<thead>
<tr>
<th>Chemicals</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldrin</td>
<td>0.50% (by weight)</td>
</tr>
<tr>
<td>Heptachlor</td>
<td>0.50% (by weight)</td>
</tr>
<tr>
<td>Chlordane</td>
<td>1.00% (by weight)</td>
</tr>
</tbody>
</table>

ii. Workmanship:
   - The surface of consolidated earth around the existing shall be treated with chemical emulsion at the rate 7.5 liters/sq.mt. of vertical surface of the sub structure. The minimum height to sub-structure shall be considered 60 cms. for treatment. If the earth along the perimeter does not allow emulsion to seep through, holes up to 300 mm. depth at 150 mm. centers both ways be made by 12 mm. dia. mild steel rod on the surface on facilitate saturation of the soil with chemical emulsion.
   - The chemical barrier shall be complete and continuous under hole of the structure to be protected.
   - The chemical treatment shall be carried out when the surface is quite dry. Chemical treatment shall not be carried out when it is raining or when the soil is wet with rain or sub soil water.
c) Providing treatment along external wall perimeter below concrete or masonry apron using chemical at 5 liters/sq.mt. linear including drilling and plugging etc.
   i. Materials:
      • The relevant specifications of the above-mentioned item shall be followed.
   ii. Workmanship:
      • The relevant specifications of the above-mentioned item shall be followed except that the termite control treatment shall be carried out in soil below existing floors.

d) The holes of 12 mm. dia. rod shall be drilled in floor up to 150 mm. depth at 300 mm. apart both ways. The chemicals shall be then injected with pressure at the rate 1 liters/hole of surface area.
   i. Materials:
      • The relevant specifications of the above-mentioned item shall be followed.
   ii. Workmanship:
      • The walls effected by termite shall be cleaned off all live formy hiding inside sand holes or voids in masonry wall surface shall be treated by chemical emulsion at rate 1 liters/hole. The holes in cracks in surface of wall shall be drilled at 300 mm. apart.

NOTE: PLEASE READ CAREFULLY:

1 Where detailed specification of an item provides for specific size of any fixture or fastening that shall prevail over the provisions in this schedule.
2 Fixtures and fastenings (except hold fasts which shall be of M.S. plate only) shall be of brass, copper oxidized brass, chromium plated brass, Iron, copper oxidized iron, or chromium plated iron as specified in the item of the work or detailed specifications.
3 External door and door falling in staircase excepting the door in balcony shall have sliding door bolt of size 300 mm. x 18 mm. in place of 250 mm. 16 mm. as shown in this schedule.
4 The length of tower bolt shown is for a door having shutter height up to 2100 mm. only. For door having shutter height more than 2100 mm. the length of tower bolt is to be increased to the extent of increase door shutter height beyond 2100 mm.
5 150 mm. x 150 mm. size glass vision panel shall be provided in the doors of Officer's chamber in addition to the scheduled provisions if so, directed by the Engineer-in-charge.
6 Diamond shape chromium plated brass peeping plate of approved quality shall be provided in one entrance door in residential building in addition to the scheduled provisions.
7 Drawer in a wardrobe shall be provided with one furniture handle and one drawer lock (4 levers) in addition to its schedule provision.
8 For door and window with steel frame, 75 mm. size screws shall be provided both in top and bottom frame for fixity as shown below:
   • For width up to 1200 mm.: 2 Nos.
   • For width above 1200 mm. and up to 1800 mm.: 3 Nos.
   • For every additional width of 500 mm. over and above 1800 mm: 1 Nos.
9 When the mortice local (6 levers) and latch is specified to be provided to a door enter in the item of work itself or by a separate item, the requirement of providing sliding door bolt door latch and handles as per this schedule shall be dispensed with.
10 For door/window with ventilator at top, fixture and fastenings of door/window plus those of ventilator (excluding hold fasts) shall be used.
11 Where the item of work or its specification provides for anodized aluminium fixtures, all the fixtures except hinges and screws will be of anodized aluminium and chromium plated iron hinges and screws will be of anodized aluminium and chromium plated iron hinges and screws shall be used.

12 For door, window or cupboard frame abutting concrete section, instead of hold fasts as shown in the schedule, coach screws of size as mentioned below shall be used:
   - Teak wood frame 00.125 mm.
   - Steel frame 00.75 mm.

13 The locking etc. in the door latch shall be so positioned that the door can be properly locked even if part of the latch, when fully, slided, remains in the frame or masonry.

14 Showcase cupboards having single shutter shall be provided with ball catcher instead of tower bolt (barrel type) as per schedule.

15 The size of the handle shown in the schedule indicates grip length.

16 Door stopper shall be either floor door stopper or door catchas directed by the Engineer-in-charge.

17 Piano hinges shall be for the fall height of the shutter.

18 Shutters with piano arrangements shall be provided with two pivots of approved size instead of hinges as per the schedule.

19 For butt hinges, only lengths are indicated in the schedule. The width of each flap being 5 mm. less than the thickness of the shutter to which they are to be fixed and the thickness of the flap shall be as specified in the relevant I.S.S. for heavy medium or light as specified in the detailed specification of the item of work.

Schedule for Testing for Materials

For ensuring quality control and workmanship, various test prescribe below corresponding to the material cinerned shall be taken as periodic intervals as stipulated below be taken. The Material shall be got tested Govt. recognized Laboratory (R & B) or field laboratory of GERI (R&B) for which 1% of the estimated amount to tender shall be recovered from the contractor from the R.A. Bill and Final Bills as the testing charges shall be paid b y the Govt. to the GERI, However if the charged increase over 1% no excess recovery shall be made from the contractor as per resolution of B&B department dated 10th May 1985, vide TNC/1085 (4) S. The testing of various materials shall be carried out in GERI/ or approved GOVT. LAB and result received shall be binding to all. i.e. contractor and Govt.

Table 13 Material Testing

<table>
<thead>
<tr>
<th>Brief Description of Materials to be tested</th>
<th>Prescription of test which shall be carried out</th>
<th>Frequency at which test shall be carried out</th>
<th>Total No. of test to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kapachi</td>
<td>• Gradation test</td>
<td>• CMT 1 to 100 – 1 test</td>
<td>As per relevant IS Code</td>
</tr>
<tr>
<td></td>
<td>• Impact Value Flakiness Index of aggregate</td>
<td>• CMT 100 to 500 – 3 tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• CMT 500 to 1500 – 5 tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• CMT 1500 to 5000 – 7 tests</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Tests</td>
<td>Quantity Requirements</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Grit</td>
<td>Stripping Value</td>
<td>As per relevant IS Code</td>
<td></td>
</tr>
<tr>
<td>Sand</td>
<td>Special Gravity, Water absorption, Fineness, Modulus, Silt, Content, Soundness</td>
<td>As per relevant IS Code</td>
<td></td>
</tr>
<tr>
<td>Tiles</td>
<td>Dimension Test, Transverse strength, Water Absorption, Abrasion Test</td>
<td>As per relevant IS Code</td>
<td></td>
</tr>
<tr>
<td>Teakwood</td>
<td>Dimension Test, Transverse strength, Water Absorption, Abrasion Test</td>
<td>As per relevant IS Code</td>
<td></td>
</tr>
<tr>
<td>Bricks</td>
<td>Water Absorption, Efflorescence, Size, Comprehensive Strength</td>
<td>1 test at 50,000 Bricks</td>
<td></td>
</tr>
<tr>
<td>Cement</td>
<td>Consistency, Setting Time, Compressive Strength</td>
<td>As per relevant IS Code</td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>Tensile strength, Yield Stress, Elongation, Size</td>
<td>As per relevant IS Code</td>
<td></td>
</tr>
<tr>
<td>C.C. Cube 1:2:4</td>
<td>Compressive Strength</td>
<td>1 to 5 Cum. 1 No. 6 to 15 Cum. 2 Nos. 16 to 20 Cum. 3 Nos. 21 to 50 Cum. 4 Nos. 51 &amp; above Cum 4+ 1 for each Cum</td>
<td>As per relevant IS Code</td>
</tr>
</tbody>
</table>
5.11. Electrical

1. Electrical Works Specifications:
   All equipment and material shall be designed manufactured and tested in accordance with
   the latest applicable IEC and equivalent IS standards.
   Separate electrical rooms shall be constructed in indoor hall & Cricket ground area.

   a. Proposed Electrical plan:
      New Load for the following areas

Table 14 Electrical Loads

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Location</th>
<th>Area</th>
<th>Elect Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indoor Hall</td>
<td>40000 Sq. ft</td>
<td>150 Kw</td>
</tr>
<tr>
<td>2</td>
<td>Cricket pitch</td>
<td></td>
<td>10 Kw</td>
</tr>
<tr>
<td>3</td>
<td>Nallah Area</td>
<td></td>
<td>20 Kw</td>
</tr>
<tr>
<td>4</td>
<td>Plumbing Load</td>
<td></td>
<td>10 Kw</td>
</tr>
<tr>
<td>5</td>
<td>Stand by Tube well</td>
<td></td>
<td>10 Kw</td>
</tr>
<tr>
<td>6</td>
<td>Misc Load</td>
<td></td>
<td>10 Kw</td>
</tr>
<tr>
<td>7</td>
<td>Total Load in KW</td>
<td></td>
<td>240 Kw</td>
</tr>
<tr>
<td>8</td>
<td>Total Load in KVA</td>
<td></td>
<td>267 KVA</td>
</tr>
<tr>
<td>9</td>
<td>Proposed Transformer</td>
<td></td>
<td>315 KVA</td>
</tr>
</tbody>
</table>

b. Tapping Point: New load for entire Chaugan Stadium is 267KW, at present the
   Electrical Power tapped point is from 2 Transformers.
   i. Transformer # 1 – Located beside Swimming Pool, JVVNL supplying 30KW
      to Chaugan Stadium.
   ii. Transformer # 2 – located in open area of stadium (100 Mtrs away from Main
      Stadium), from this Transformer JVVNL is supplying 11 KW power to
      Stadium.

c. Scope of job: Scope of Job include Survey, design, Supply, installation, testing
   & Commissioning of new Electrical System (Main Panel Boards, Lighting DP,
   Lighting Fixtures & Switches) in the following areas / Location in Chaugan Stadium;
   i. Indoor Multi Level Sport Hall
   ii. Cricket Pitches./football ground
   iii. Tube well – 3 Nos

   All electrical installations shall comply with the National Electrical Code of the National Fire
   Protection Association and the requirements of the appropriate regulatory agency.

   Tapping will be from Main Transformer which is located near Basket Ball court and the distance
   from Transformer to Main Panel room is approx. 1000 Mtrs. The nominal Voltage varies from 220 -
   440VAC with frequency 50Hz.
The Electrical Room / Materials offered shall in general comply with the latest issues including amendments of the following standards.

2. **APPLICABLE CODE & STANDARDS for Substation / Electrical rooms:**

### Table 15 Electrical: Applicable Standards

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Voltage / Low Voltage Pre-Fabricated Substation</td>
<td>IEC 61330/ 62271-202</td>
</tr>
<tr>
<td>Switches</td>
<td>IEC 60265</td>
</tr>
<tr>
<td>Metal Enclosed Low Voltage Switchgear</td>
<td>IEC 60298/ IEC62271-200</td>
</tr>
<tr>
<td>Low Voltage Switchgear and Control gear</td>
<td>IEC 60439</td>
</tr>
</tbody>
</table>

- Earthing: Separate Earthing Pit need to construct for earthing of Main MCC, Distribution Panel Boards & Pump Motors and shall be in accordance with IS3043-1987.
- Lightning Protection to be done as per the IS Codes applicable.
- Safety parameters as indicated under Indian Electricity Rules 1956 and ECBC shall be complied.
- Earth resistivity test shall be carried out in accordance with IS Code of Practice forearthing IS 3043.
- Specifications in respect of conductor material, their installation & jointing and providing earth electrode shall be as stipulated in “EARTHING” sections of TechnicalSpecifications of this tender document.
- The lightning protection system shall use either copper or GI as stipulated in Bill ofquantities as conducting material throughout.
- Galvanizing shall conform class – IV of IS 4736: 1986. Longest possible unbrokenlengths of conductors shall be used to eliminate or at least minimize mid run jointing.
- No work shall be undertaken on live installations, or on installations which could beenergized unless one another person is present to immediately isolate the electricsupply in case of any accident and to render first aid, if necessary.
- Measures shall be taken to identify the Electrical Environment Impacts (hazards) arisingduring the land preparation for use, building construction operation, and the entire cycleactivities of the project and proper mitigation measures shall be adopted.
- All the standards, codes or legal requirements required to be adopted during the installation of electricalequipment.

### 3. Energy Saving Practices:
- Energy efficient lamps will be provided within the complex, Location/Area.
- Constant monitoring of energy consumption and defining targets for energyconservation.
- Adjusting the settings and illumination levels to ensure minimum energy used fordesired comfort levels.
- The following safety measurement are considered:
Section – V Procuring Entity Requirement

RFP Integrated Development for Construction of Recreational center cum community Hall along with separate Underground Parking

- IS:8061- 1976 Code of practice for design, installation and maintenance of servicelines up to and including 650V
- IS: 11353- 1985 Guide for uniform system of marking and identification of conductors and apparatus terminals
- IS: 5216(Part-1)-1982 Guide for safety procedures and practices in electrical work
- IS:2667 - 1988 Fittings for rigid steel conduits for electrical wiring
- IS: 3854 - 1988 Switches for domestic and similar purposes.

**UPS supply:** supply, Installation & commissioning of UPS (minimum 10 KVA) for at least 60 Min backup supply for the following area: Indoor Sports Hall

### A. LED LIGHT LUMINAIRES:

#### CODES & STANDARDS:

IEC 60529 Classification of degree of protections provided by enclosures (IP Codes)

- EN 55015 / CISPR15 Limits and methods of measurement of radio disturbance characteristic of electrical lighting and similar equipment.
- IEC 62031 LED modules for general lighting - Safety requirements
- EN 61547 Equipment for general lighting purposes – EMC immunity requirement.
- IEC 60598-Part-2, Sec-3, Luminaries for road and street lighting.
- IEC 60598-2-1 Fixed general-purpose luminaries
- IEC 60598-1 Luminaries - General requirement and tests
- IEC 60068-2-38 Environmental Testing: Test Z- AD: composite temperature/ humidity cyclic test
- IS 10322 Specification for the luminaries
- LM 80 Lumen Maintenance
- RoHS (Reduction of Hazardous Substances)
- IEC 61347-1 ed. 2.0 for Lamp control gear - Part 1: General and safety requirements
- IEC 61000-4-5 Electromagnetic Compatibility (EMC) – Surge Immunity Test.

**LED Modules/Fixtures:** ANSI rated LEDs from reputed makes such as Syska, LG / Nichia, Japan / Cree, USA / Bridgelux, USA / Lumiled USA / Osram / Citizen Japan / Philips or equalant shall be provided.

- LEDs shall have optical grade polycarbonate / PMMA lens to provide light distribution. LED
optical lens should be mechanically fixed to MCPCB and should not be fixed by glue. Individual or cluster of LEDs should be provided with Optical Grade Polycarbonate lens with light optical distribution.

- LED life is of 50,000 Hrs with 70% lumen maintenance at 35°C ambient temperature. (Complete LM 80 test report for LED should be submitted). Earthing is must for all LED’s based products. Surge Protector need to install in the supply panel. Ensure LED Products are in separate circuit and not connected with other heavy-duty loads.

**Compliance: RoHS**

**B. STREET LIGHT FIXTURE ENCLOSURE SPECIFICATIONS:**

Extruded aluminium / Spun Aluminum / pressure die cast aluminium (sand / gravity casting not to be considered) and should be corrosion resistant polyester powder coated. Aluminium grade LM 6063 or LM 6 as applicable or above high conductivity heat sink material. Heat sink must be made of pressure die cast Aluminium. Luminaire shall have two separate compartments for LEDs and driver and both compartments should be hermatically sealed to achieve IP 65 / IP 66 ingress protection. Control gear shall be provided with die cast aluminium cover for safety.

The label on Fixtures shall mention: Name of Manufacturer, model name and Serial number, system lumen pack, nominal CCT, Wattage of fitting, Date of Manufacture, and other labelling details as per IS. Heat sink used should be pressure die cast aluminum having high conductivity. Heat sink should be integrated within luminaries and efforts shall be made to keep the overall outer dimensions optimum such that it permits sufficient heat dissipation through the body itself so as to prevent abnormal temperature inside the luminaire and consequential damage to cover, gasket material, LEDs, lenses and drivers. Optical compartment shall be provided with heat resistant toughened glass. The optical assembly should be structured LED array for optimised roadway photometric distribution and photometric lenses designed to optimise application efficiency and minimum glare.

1) **Ingress Protection:** Ingress protection should be IP 65 / 66. The fixture should have double-wall construction with silicone gasket designed for IP 65 / 66 without using any glue to prevent breakdown of the water and dust proof seal for both the LED & the driver compartments.

2) The Fixture light output (lux) shall be constant with area wise as per National Standard of Lighting for Indoor Stadium. The voltage variations / fluctuations in the specified voltage range shall not impinge upon the lux levels it produces. Maximum +/-2% is allowed throughout the input voltage range.

3) **CCT (Colour corrected temperature):** 5000K to 6000K (Kelvin)

4) **WIND PRESSURE:** The fixture shall be built in such a way that it can withstand wind speed of 150 Km/Hr.

5) **OPERATING VOLTAGE:** 120VAC to 270VAC

6) **OPERATING TEMPERATURE:** 0°C to 50°C

7) **P.F:** > 0.9

a) Cables: Cables shall be ISI marked LT (1100 volts, 2/3/5/4C x 4 Sq.mm to 185 Sq.mm power cables stranded Aluminium, XLPE Insulation, inner sheath must be extruded type of PVC ST2, aluminium flat strip un armoured, Overall PVC Sheathed cable confirming to IS 7098/P1/88.
b) The rated voltage of the cable shall be 1100 Volts AC with the highest system voltage of 1100 Volts between phases of the effectively earthed three-phase transmission system.

c) The cables shall be capable of operating continuously under the system frequency variation of ± 3 Hz, voltage variation of ± 10% and a combined frequency-voltage variation of ±10%.

C. APPLICABLE STANDARDS FOR CABLES

The latest version of the following Standards shall be applicable:

- IS 8130 Conductors for insulated electrical cables and flexible cords.
- IS 10810 (series) - Methods of tests for cables.
- IS 10418 Drums for electric cables.
- IS 3975 - Specification for mild steel wires, strips and tapes for armouring of cables.
- IS 5831 Specification for PVC insulation sheath for electric cables.
- IS 10462 - Fictitious calculation method for determination of dimensions of protective coverings of cables Part 1 - Elastomeric and thermoplastic insulated cables.

The cables manufactured to any other International Standards like BIS, IEC or equivalent standards not less stringent than Indian Standards are also acceptable. In such cases, a copy of the equivalent international standard need to enclosed, in English language, along with the bid.

The insulation shall withstand mechanical and thermal stresses under steady state and transient operating conditions.

D. OUTER SHEATH:

Extruded PVC ST2, outer sheath as per IS: 5831/1984, IS: 7098 Part 1, IEC: 60502 Part – 1, BS: 6622, LSOH to BS: 7835. Shall be applied over Cable with suitable additives to prevent attack by rodents and termites. Outer sheathing shall be designed to offer high degree of protection and shall also be heat, oils, chemicals, abrasion and weather resistant. Common acids, alkalis, saline solutions etc., shall not have adverse effects on the PVC sheathing material used.

All Cables shall run through GI pipe and Junction Boxes and underground wiring shall not be installed under or within the area extending at least 5 feet (1524mm) horizontally away from the inside walls of pools and outdoor hot tubs and spas except where the wiring is installed.

The wiring method shall be rigid metal conduit, intermediate metal conduit or a non-metallic raceway system depending upon requirement. Running of underground cable through rigid metal conduit should maintain min. 6-inch depth whereas Running underground cable through non-metallic should maintain min.18-inch depth respectively.

The short circuit current of the LT cable to be as specified below

<table>
<thead>
<tr>
<th>Sq.mm of LT Cable</th>
<th>Short Circuit Current (KA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0.274</td>
</tr>
<tr>
<td>6</td>
<td>0.142</td>
</tr>
<tr>
<td>10</td>
<td>0.686</td>
</tr>
</tbody>
</table>
**Table 17 Electrical: Applicable Codes and Standards for Substation**

<table>
<thead>
<tr>
<th>Sq.mm of LT Cable</th>
<th>Short Circuit Current (KA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>1.100</td>
</tr>
<tr>
<td>25</td>
<td>2.420</td>
</tr>
<tr>
<td>35</td>
<td>3.370</td>
</tr>
<tr>
<td>50</td>
<td>4.790</td>
</tr>
<tr>
<td>70</td>
<td>6.680</td>
</tr>
<tr>
<td>95</td>
<td>9.030</td>
</tr>
<tr>
<td>120</td>
<td>11.400</td>
</tr>
<tr>
<td>150</td>
<td>14.200</td>
</tr>
<tr>
<td>185</td>
<td>17.500</td>
</tr>
</tbody>
</table>

**a) Panel Board General Technical Particulars Locations**

Recessed mounting heavy duty horizontal type sheet steel Distribution board phosphatized / powder painted complete shall be used with suitable rating insulated copper bus bar, shorting link, neutral link, earth link and din bar, masking sheet, on forming to IS: 13032 & IS: 8623 including making internal DB terminations with copper lugs, testing etc. as required including MCB and Isolators of appropriate rating in distribution Board. The DB should be separate for light and power circuits.

**b) Testing & Commissioning:** After completion of Erection job, need to do testing & Commissioning for all DB’s, Cables, Panel Boards as per IEE1248.

**c) Maintenance:** Periodic inspections should be made by a licensed or certified electrician. Repairs to any electrical system shall be made only by a licensed or certified electrician. Defective underwater and overhead lights, Switches, Breakers, Cables etc shall be immediately repaired or replaced in time.

**d) PACKINGS:** All material shall be suitably packed for transport, direct to site and Manufacturer / Contractor shall be responsible for all damages / losses due to improper packing. All boxes shall be marked with signs indicating the up and down sides of the boxes along with the unpacking instructions, if considered necessary by the Manufacturers.

**4. APPLICABLE CODE & STANDARDS FOR SUBSTATION / ELECTRICAL ROOM:**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal system voltage (rms) (U)</td>
<td>0.44KV</td>
</tr>
<tr>
<td>Highest system voltage (rms) (U_m)</td>
<td>1.1 KV</td>
</tr>
<tr>
<td>Number of Phase</td>
<td>3P+N</td>
</tr>
<tr>
<td>Frequency</td>
<td>50Hz</td>
</tr>
<tr>
<td>Variation in Frequency</td>
<td>+/- 3%</td>
</tr>
<tr>
<td>Type of Earthing</td>
<td>Solidly Earthed</td>
</tr>
<tr>
<td>Total relay &amp; circuit breaker Operating time</td>
<td>15 – 20 cycles</td>
</tr>
<tr>
<td>Metal Enclosure</td>
<td>IP25 / IP54</td>
</tr>
</tbody>
</table>
### High Voltage / Low Voltage Pre-Fabricated Substation
- IEC 61330/ 62271-202

### Switches
- IEC 60265

### Metal Enclosed Low Voltage Switchgear
- IEC 60298/ IEC62271-200

### Low Voltage Switchgear and Control gear
- IEC 60439

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**a) Earthing:** Separate Earthing Pit need to construct for earthing of Main MCC, Distribution Panel Boards & Pump Motors and shall be in accordance with IS3043-1987.

**b) ELECTRICAL INSTALLATIONS:** This section covers the general requirements for electrical work to be installed under this specification. The Contractor shall supply and install all electric wiring, switchgear etc., necessary for the complete, safe and satisfactory operation of the project covered by the Specification. All electrical wiring and cables shall be properly tagged to the satisfaction of the Owner. All equipment provided shall be designed for use in conditions up to 50 oC ambient air temperature and 100% relative humidity. All equipment, materials, workmanship and fittings shall comply with the appropriate Indian Standard Specifications or Code of Practice as listed in the relevant paragraphs of this Section, or applicable international standards.

**c) ELECTRICAL SUPPLY:** The electricity supply shall be 415/240 Volts, 50 Hz, 3 phase, 4 wire. All equipment shall be designed to operated with a + 10% voltage tolerance without a loss of rated output. All cables, equipment shall be so connected as to ensure that the load on phases are balanced and as per specification given in CPWD-Electrical works.

**d) INTERNAL ELECTRICAL WORKS**

#### WIRING

1. **GENERAL** Technical Specifications in this section cover the Internal Wiring Installations comprising of:
   - Wiring for lights and convenience socket outlets etc. in concealed/surface conduit/raceways.
   - Wiring for telephone outlets.
   - Sub main wiring.
   - Conduiting for Low Voltage System.

2. **STANDARDS AND CODES** Latest up to date Indian Standard (IS) and Code of Practice will apply to the equipment and the work covered by the scope of this contract. In addition the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended up to date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and / or IEC Standard shall be applicable.

3. **CONDUITS**
   - STEEL CONDUITS (If Required) : These shall be of mild steel 16 gauge up to 32mm and 14 gauge for sizes above 32mm, electric resistance welded (ERW), electric threaded type having perfectly circular tubing. Conduits shall be precension welded ERW and shall be fabricated from tested steel strips of thickness as per IS by high frequency induction weld process. Weld shall be smooth and of consistent of high quality to ensure crack proof bending. The conduits shall be black enamel painted inside and outside in its manufactured
form. Wherever so specified, the conduit shall be galvanized. All conduits used in this work shall be ISI embossed.

- **MS CONDUITS (If Required)**: The electrical wiring shall be done in recessed MS Conduits, unless mentioned otherwise. No conduit less than 25mm in diameter shall be used, unless otherwise specifically ask by Engineer-In-Charge.

- **PVC CONDUITS**: Wiring shall be carried out in recessed/surface PVC conduits. The PVC conduits conform to latest and shall be ISI embossed. The conduits shall be heavy gauge (minimum 2 mm wall thickness) and the interiors of the conduits shall be free from all obstructions. All joints in conduits shall be sealed/cemented with approved solvent cement. Damage conduits/fittings shall not be used. Cut ends of conduits shall not have sharp edges.

- **BENDS**: As far as possible, the conduit system shall be so laid out that it shall obviate use of tees, elbows and sharp bends. No length of conduit shall have more than the equivalent of Signature and seal of Contractor Signature and seal of TCIL two quarter bends from inlet to outlet.

3.5 **CONDUIT ACCESSORIES**:

- **STANDARD ACCESSORIES**: The conduit wiring system shall be complete in all respects, including their accessories. Bends, couplers etc. shall be solid type in recessed type of works and may be solid or inspection type as required, in surface type of works. The accessories shall conform in all respects to the relevant IS. Samples shall be got approved by Engineer-In-Charge before use.

- **FABRICATED ACCESSORIES**: Wherever required, outlet/junction boxes of required sizes shall be fabricated from 1.6 mm thick MS sheets excepting ceiling fan outlet boxes which shall be fabricated from minimum 3 mm thick sheets. The outlet boxes shall be of approved quality, finish and manufacture. Suitable means of fixing connectors etc., if required, shall be provided in the boxes. The boxes shall be protected from rust by zinc phosphate primer process. Boxes shall be finished with minimum 2 coats of enamel paint of approved colour. A screwed brass stud shall be provided in all boxes as earthing terminal.

iv. **WIRES**: Wiring shall be carried out with FRLS insulated 660/1100 volt grade unsheathed single core wires with electrolytic annealed stranded copper (unless otherwise stated) conductors conforming to latest IS Code. All wire rolls shall be ISI marked. All wires shall bear manufacturer's label and shall be brought to site in new and original packages. Manufacturer's certificate, certifying that wires brought to site are of their manufacture shall be furnished as required.

v. **COAXIAL CABLES**: The coaxial cables shall be of video band type with operation up to 300 MHz capability. Aging resistance shall comply with latest code i.e. maximum 5% increase in attenuation at 200 MHz measured by artificial aging (14 days at 80oC) cables shall meet all exceed following specifications Center core Dia 0.8 mm Dielectric Dia 4.8 mm Dielectric PE Outer Conductor Dia 5.4 mm Outer Dia 7.0 mm Bending radius more than 30 mm Impedance 75 ohms DC Resistance 50 ohms/KM
vi. LAYING OF CONDUITS: Conduits shall be laid either recessed in walls and ceilings or on surface on walls and ceilings or partly recessed and partly on surface, as required. Signature and seal of Contractor Signature and seal of TCIL Same rate shall apply for recessed and surface Conduiting in this contract. Stranded copper conductor insulated wire of size as per schedule of quantities shall be provided in entire Conduiting for loop earthing. GI wire of suitable size to serve as a fish wire shall be left in all conduit runs to facilitate drawing of wires after completion of Conduiting.

vii. SURFACE CONDUITING: Wherever so desired, conduit shall be laid in surface over finished concrete and/or plastered brickwork. Suitable spacer saddles of approved make and finish shall be fixed to the finished structural surface along the conduit route at intervals not exceeding 600 mm. Holes in concrete or brick work for fixing the saddles shall be made neatly by electric drills using masonry drill bits. Conduits shall be fixed on the saddles by means of good quality heavy duty MS clamps screwed to the saddles by counter sunk screws. Neat appearance and good workmanship of surface Conduiting work is of particular importance. The entire conduit work shall be in absolute line and plumb.

viii. FIXING OF CONDUIT FITTINGS AND ACCESSORIES: For concealed Conduiting work, the fittings and accessories shall be completely embedded in walls/ceilings leaving top surface flush with finished wall/ceiling surface in a workman like manner. Loop earthing wire shall be connected to a screwed earth stead inside outlet boxes to make an effective contact with the metal body.

ix. PAINTING AND COLOUR CODING OF CONDUITS: Before laying, conduits shall be painted specially at such places where paint has been damaged due to vice or wrench grip or any other reason. If so specified, surface conduits shall be provided with 20 mm wide and 100 mm long colour coding strips as below Use Code colour Low voltage Grey Telephone Black Earthing system Green Control system lighting Purple

x. PROTECTION OF CONDUITS: To safeguard against filling up with mortar/plaster etc. all the outlet and switch boxes shall be provided with temporary covers and plugs which shall be replaced by sheet/plate covers as required. All screwed and socket joints shall be made fully water tight with white lead paste.

xi. CLEANING OF CONDUIT RUNS: The entire conduit system including outlets and boxes shall be thoroughly cleaned after completion of erection and before drawing in of cables.

xii. PROTECTION AGAINST DAMPNESS: Signature and seal of Contractor Signature and seal of TCIL All outlets in conduit system shall be properly drain and ventilated to minimize chances of condensation/sweating.

xiii. EXPANSION JOINTS: When crossing through expansion joints in buildings, the conduit sections across the joint shall be through approved quality heavy duty metal flexible conduits of the same size as the rigid conduit. The expansion joint crossing shall be done as approved by Engineer-In-Charge.

xiv. LOOP EARTHING: Loop earthing shall be provided by means of insulated stranded copper conductor wires of sizes as per Schedule of Quantity laid along with wiring.
inside conduits for all wiring outlets and sub-mains. Earthing terminals shall be provided inside all switch boxes, outlet boxes and draw boxes etc.

e) LAYING AND DRAWING OF WIRES:
   i. BUNCHING OF WIRES: Wires carrying current shall be so bunched in conduits that the outgoing and return wires are drawn into the same conduit. Wires originating from two different phases shall not be run in the same conduit.
   ii. DRAWING OF WIRES: The drawing of wires shall be done with due regard to the following precautions:- No wire shall be drawn into any conduit, until all work of any nature, that may cause injury to wire is completed. Burrs in cut conduits shall be smoothen before erection of conduits. Care shall be taken in pulling the wires so that no damage occurs to the insulation of the wire. Approved type bushes shall be provided at conduit terminations. Before the wires are drawn into the conduits, conduits shall be thoroughly cleaned of moisture, dust, dirt or any other obstruction by forcing compressed air through the conduits if necessary. While drawing insulated wires into the conduits, care shall be taken to avoid scratches and kinks which cause breakage of conductors. There shall be no sharp bends. The Contractor shall, after wiring is completed, provide a blank metal/sunmica plate on all switch / outlet / junction boxes for security and to ensure that wires are not stolen till switches / outlets etc. are fixed at no extra cost the contractor shall be responsible to ensure that wires and loop earthing conductors are not broken and stolen. In the event of the wire been partly / fully stolen, the contractor shall replace the entire wiring alongwith loop earthing at no extra cost. No joint of any nature whatsoever shall be permitted in wiring and loop earthing.
   iii. TERMINATION / JOINTING OF WIRES: Sub-circuit wiring shall be carried out in looping system. Joints shall be made only at distribution board terminals, switches/buzzers and at ceiling roses/connectors/lamp holders terminals for lights/fans/socket outlets. No joints shall be Signature and seal of Contractor Signature and seal of TCIL made inside conduits or junction/draw/inspection boxes. Switches controlling lights, fans or socket outlets shall be connected in the phase wire of the final sub circuit only. Switches shall never be connected in the neutral wire. Wiring conductors shall be continuous from outlet to outlet. Joints where unavoidable, due to any special reason shall be made by approved connectors. Specific prior permission from Engineer-In-Charge in writing shall be obtained before making such joint. Insulation shall be shaved off for a length of 15 mm at the end of wire like sharpening of a pencil and it shall not be removed by cutting it square or wringing. Strands of wires shall not be cut for connecting terminals. All strands of wires shall be twisted round at the end before connection. Conductors having nominal cross sectional area exceeding 1.5 sq. mm shall always be provided with crimping sockets. Tinning of the strands shall be done wherever crimping sockets are not available as per instructions of the Engineer-In-Charge. All wiring shall be labeled with appropriate plastic ferrules for identification. At all bolted terminals, brass flat washer of large area and approved steel spring washers shall be used. Brass nuts and bolts shall be used for all connections. The pressure applied to tighten terminal screws shall be just adequate, neither too much nor too less. Switches controlling lights, fans, socket outlets etc. shall be connected to the phase wire of circuits only.
Only certified valid license holder wiremen shall be employed to do wiring / jointing work.

iv. LOAD BALANCING: The Contractor shall plan the load balancing of circuits in 3 phase installation and get the same approved by the Engineer-In-Charge before commencement of the work.

v. COLOUR CODE OF CONDUCTORS: Colour code shall be maintained for the entire wiring installation - red, yellow, blue for three phases, black for neutral and green for earth.

f) SWITCHES AND FIXTURES:
   i. SWITCHES: All 6 and 16 amps switches shall be of the modular enclosed type flush mounted 220 Volt AC of the best quality and standard or as approved by MEP/Architect/Engineer-In-Charge. The switch moving and fixed contacts shall be of silver nickel and silver graphite alloy and contact tips coated with silver. The housing of switches shall be made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material.

   ii. FLUSH PLATES: Signature and seal of Contractor Signature and seal of TCIL Switches, receptacles and telephone system outlets in wall shall be provided with molded cover plates of shape, size and colour approved by the Engineer-In-Charge made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material, and secured to the box with counter sunk round head chromium plated brass screws. Where two or more switches are installed together, they shall be provided with one common switch cover plate as described above with notches to accommodate all switches either in one, two or three rows. One and two gang switch cover plate, telephone outlet cover plate, 6 and 16 amps switched/unswitched plates shall have the same shape and size. Three and four gang switch cover plates shall have the same shape and size. Six and eight gang switch cover plates shall have the same shape and size. Nine and twelve switch cover plates shall have the same shape and size. Wherever five switches, seven switches, ten switches and eleven switches are to be fixed the next higher size of gang switch cover plate to be used and extra openings shall be provided with blank-off.

   iii. EXTERNALLY OPERATED SWITCHES: Externally operated switches, shall be of general purpose type, 250 volts of the proper size and rating and shall be provided in weather proof enclosures, complete with weather proof gasketed covers. The MCB’s for all externally operated switches shall be separate and of proper rating.

   iv. WALL SOCKET OUTLETS: All 6/16 Amps wall socket outlets unless otherwise mentioned on the drawings shall be switched, five/six round pin and fitted with automatic linear safety shutters to ensure safety from prying fingers. Un-switched 6/16 amp wall socket outlets where called for in the drawings shall be of five/six round pin type. The socket outlets shall be made from high impact resistant, flame retarding and ultra violet stabilized engineering plastic material. The switch and sockets shall be located in the same plate. The plates for 6 amp switched/un-switched plugs and telephone outlets shall be of the same size and shape. All the switched and un-switched outlets shall be of the best standard. An earth wire shall be provided along the cables feeding socket outlets for electrical appliances. The earth wire shall be connected to the earthing terminal screw inside the box. The earth
terminal of the socket shall be connected to the earth terminal provided inside the box.

v. LIGHTING FIXTURES: The light fixtures and fittings shall be assembled and installed complete and ready for service, in accordance with details, drawings, manufacturer's instructions and to the satisfaction of the Engineer-In-Charge. Wires brought out from junction boxes shall be encased in GI flexible pipes for connecting to fixtures concealed in suspended ceiling. The flexible pipes shall be provided with a check nut at the fixture end. Pendant fixtures specified with overall lengths are subject to change and shall be checked with conditions of the job and installed as directed. Signature and seal of Contractor Signature and seal of TCIL All suspended fixtures shall be mounted rigid and fixed in position in accordance with drawings, instructions and to the approval of the Engineer-In-Charge. Fixtures shall be suspended true to alignment, plumb, level and capable of resisting all lateral and vertical forces and shall be fixed as required. All suspended light fixtures etc. shall be provided with concealed suspension arrangement in the concrete slab/roof members. It is the duty of the Contractor to make these provisions at the appropriate stage of construction. All switch and outlet boxes shall be bonded to earth with insulated stranded copper wire as specified. Wires shall be connected to all fixtures through connector blocks. Flexible pipes, wherever used, shall be of make and quality approved by the Engineer-In-Charge.

vi. Highmast Lighting:- 16 mts High mast Tower of Polygonal Shape for Asymmetric loading of up to eight luminaries for Wind Speed up to 180 Km/hr. The Mast shall be made from steel grade of BSEN 10025 and should be in two sections (each of length 8375 mm or top length 5470mm & bottom length 10980mm) with the bottom section shall be of 4 mm thick and top section of 3 mm thick. Both the sections should be joined by telescopic slip joint. The bottom dia should be of 410 mm or more while top dia should of 150 mm. The bottom section should have Anti Vandalism looking type door size of 1200 mm x 250mm .The mast section should be fabricated for metal protection through hot dip galvanization and thickness of galvanization should not be less than 86 microns. The mast should be supplied with Components including Head Frame & Pulley Assembly, Winch Bracket, Lantern Carriage Ring for Luminaries and C.G Box Mtg. Arms, Resting Bracket Guide Ring, compensating Disc, Lightening Arrestor, LED AOL, Wire Rope, Safety Wire Rope, D Suckle Clamps, nuts and Bolts, internal Cable, foundation Accessories., winch assembly with two drums with SWL 750 KG and internal power tool of 2 HP with control panel. The size of base plate diameter should be of 570 mm or more with thickness should be of 25 mm.

g) MEASUREMENT AND PAYMENT OF WIRING: Wiring for lights, fans, convenience socket outlets and telephone outlets etc. shall be measured and paid for on POINT BASIS as itemized schedule of quantities and as elaborated as below unless otherwise stated.

i. PRIMARY AND SECONDARY LIGHT POINT WIRING: In respect of group control of lights (more than one light controlled by one switch or MCB), wiring up to the first light in the group shall be measured and paid for as a primary light point. Wiring for other lights looped in one group for switch controlled as also MCB controlled lights shall be measured and paid for as secondary light points. Primary light points for switch controlled lights shall include the cost of control switch whereas primary light
points controlled by MCBs shall not include the switch cost. The cost of MCB controlling such lights shall not be included in the primary light point rate since the MCB shall be paid for in the item of DB. The point wiring basis shall assume average wiring length and average conduiting length per point based on parameters stipulated in Para 9.2 below. The average wiring length and average conduiting length forming the basis of point wiring payment, shall take the electrical layouts of the entire project into consideration. Tenderers are advised to seek clarifications, if they so desire, on this aspect before submitting their tenders. No claim for extra payment on account of electrical layouts in part or whole of the project requiring larger average wiring and conduiting length per point, whether specifically shown in tender drawings or not, shall be entertained after the award of contract.

ii. PARAMETERS : Wiring shall be carried out as per following parameters in recessed/surface conduit system. Only looping system of wiring shall be adopted throughout. No joints excepting at wiring terminals shall be permitted. All accessories shall be flush type unless otherwise stated. Lights, fans and 6 amp socket outlets shall be wired as per the item given in the Bill of Quantities. Power circuits shall normally have maximum two/one 16 amps socket outlet Signature and seal of Contractor Signature and seal of TCIL unless otherwise stated. Separate circuit shall be run for each Geyser, Window/Split air conditioners and similar appliances. Wiring rates shall include painting of conduits and other accessories as required. Wiring rates shall include cleaning of dust, splashes of colour wash or paint from all fixtures, fans, and fittings etc. at the time of taking over of the installation. Wiring rates shall include blanking of outlet boxes to prevent damage/pilferage of wires. Wiring rates shall include circuit wiring from DB to first control switch & shall be done as per Bill of Quantities.

A. DEFINITIONS :

a) WIRING FOR LIGHTS : PRIMARY LIGHT POINTS : Wiring for primary light points, as defined in Para 9.1 above, shall commence at the Distribution Board terminals and shall terminate at the ceiling rose/connector in ceiling box/lamp holder via the control switch (for switch controlled lights). Rates for primary light point wiring shall be deemed to be inclusive of the cost of entire material and labour require for completion of primary light point thus defined including: Recessed / surface conduiting system with all accessories, junction/draw/inspection boxes, bushes, check nuts etc. complete as required. Wiring with stranded copper conductor PVC insulated 660/1000 volt grade wires including terminations etc. complete as required. Control switch with switch box and cover plate of specified type including fixing screws, earth terminal etc. complete as required. Cost of this switch is applicable only for switch controlled points. Loop earthing with insulated copper wire. SECONDARY LIGHT POINTS : Secondary light points, as defined in Para 9.1 above, shall cover the cost of interconnection wiring between group controlled light fittings and shall be deemed to be inclusive of the cost of entire materials and labour required for completion of the secondary light point thus defined including Recessed / surface conduiting system with all accessories, junction/draw/inspection boxes, bushes, check nuts etc. complete as required. Wiring with stranded copper conductor PVC insulated 660/1000 volt grade wires including terminations etc. complete as required. Loop earthing with insulated copper wire.
b) WIRING FOR CEILING FANS: Wiring for ceiling fan points shall be same as for primary light points.

c) WIRING FOR EXHAUST FANS: Wiring for exhaust fan points shall be same as for primary light points and shall in addition Signature and seal of Contractor Signature and seal of TCIL include the cost of providing a 3/5 pin 6 amp socket outlet near the fan alongwith plug top and a 6 amp control switch at convenient location near the room entry.

d) WIRING FOR CALL BELL POINTS: Wiring for call bell points shall be the same as for primary light points. A call bell switch which include in lieu of the control switch at a convenient location as required.

e) WIRING FOR TELEPHONE OUTLETS: Wiring for telephone outlets points shall include the entire wiring and conduiting from the telephone tag block to the telephone outlet including the telephone outlet complete as required and as itemized in the Schedule of Quantities.

f) WIRING FOR TV OUTLETS: Wiring for TV outlet points shall include the entire wiring and conduiting from the Splitter Box to the TV outlet including the TV outlet complete as required and as itemized in the Schedule of Quantities.

g) WIRING FOR CONVENIENCE SOCKET OUTLETS: 3/5 pin 6 amps and 3/6 pin 16 amps single phase switched convenience socket outlets shall be provided in the building as indicated in the layout drawings.

h) SUB MAINS WIRING: Sub mains wiring shall be measured from outer end of the boxes. Extra Loop length shall be left at each end as required.

B. ROUTINE AND COMPLETION TESTS:

a) INSTALLATION COMPLETION TESTS: At the completion of the work, the entire installation shall be subject to the following tests:

   i. Wiring continuity test

   ii. Insulation resistance test

   iii. Earth continuity test

   iv. Earth resistivity test

Besides the above, any other test specified by the local authority shall also be carried out. All tested and calibrated instruments for testing, labour, materials and incidentals necessary to conduct the above tests shall be provided by the contractor at his own cost.

b) WIRING CONTINUITY TEST: All wiring systems shall be tested for continuity of circuits, short circuits, and earthing after wiring is completed and before installation is energized.

c) INSULATION RESISTANCE TEST: The insulation resistance shall be measured between earth and the whole system conductors, or any section thereof with all protection in place and all switches closed and Signature and seal of Contractor Signature and seal of TCIL except in concentric wiring all lamps in position of both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it does not exceed 1100 volts for medium voltage circuits. Where the supply is derived from AC three phase system, the neutral pole of which is connected to earth, either direct or through added resistance, pressure shall be deemed to be that which is maintained between the phase conductor and the neutral. The insulation resistance measured as above shall not be less than 50 mega ohms divided by the number of points provided on the circuit the whole installation shall not have an insulation resistance lower than one mega ohm. The insulation resistance shall also be measured between all conductors connected to one phase conductor of the supply and shall be carried out after
removing all metallic connections between the two poles of the installation and in those circumstances the insulation shall not be less than that specified above. The insulation resistance between the frame work of housing of power appliances and all live parts of each appliance shall not be less than that specified in the relevant Standard specification or where there is no such specification, shall not be less than half a Mega ohm or when PVC insulated cables are used for wiring 12.5 Mega ohms divided by the number of outlets. Where a whole installation is being tested a lower value than that given by the above formula subject to a minimum of 1 Mega ohms is acceptable.

d) TESTING OF EARTH CONTINUITY PATH: The earth continuity conductor including metal conduits and metallic envelopes of cable in all cases shall be tested for electric continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance of earth leakage circuit breaker measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

e) TESTING OF POLARITY OF NON-LINKED SINGLE POLE SWITCHES: In a two wire installation a test shall be made to verify that all non-linked single pole switches have been connected to the same conductor throughout, and such conductor shall be labeled or marked for connection to an outer or phase conductor or to the non-earthed conductor of the supply. In the three of four wire installation, a test shall be made to verify that every non-linked single pole switch is fitted to one of the outer or phase conductor of the supply. The entire electrical installation shall be subject to the final acceptance of the Engineer-In-Charge as well as the local authorities.

f) EARTH RESISTIVITY TEST: Earth resistivity test shall be carried out in accordance with latest IS Code of Practice for earthing.

g) PERFORMANCE: Should the above tests not comply with the limits and requirements as above the contractor shall rectify the faults until the required results are obtained. The contractor shall be responsible for providing the necessary instruments and subsidiary earths for carrying out the tests. The above tests are to be carried out by the contractor without any extra charge.

h) TESTS AND TEST REPORTS: The Contractor shall furnish test reports and preliminary drawings for the equipment to the Engineer-In-Charge for approval before commencing supply of the equipment. The Contractor should intimate with the tender the equipment intended to be supplied with its technical particulars. Any test certificates etc., required by the local Inspectors or Signature and seal of Contractor Signature and seal of TCIL any other Authorities would be supplied by the Contractor without any extra charge. All test reports shall be approved by the Engineer-In-Charge prior to energizing of installation.

C. MEDIUM VOLTAGE DISTRIBUTION BOARDS:

a) GENERAL: This section covers specification of DBs.

b) STANDARDS AND CODES: The latest and amended up to date Indian Standard Specifications and Codes of Practice will apply to the equipment and the work covered by the scope of this contract. In addition the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended up to date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and/or IEC Standards shall be applicable.

c) MINIATURE CIRCUIT BREAKERS: The MCB's shall be of the completely moulded design suitable for operation at 240/415 Volts 50 Hz system. The MCB's shall have a rupturing
capacity of 10 KA at 0.6 p.f. The MCB’s shall have inverse time delayed thermal overload and instantaneous magnetic short circuit protection. The MCB time current characteristic shall coordinate with XLPE cable characteristic. Type test certificates from independent authorities shall be submitted with the tender.

d) FINAL DISTRIBUTION BOARDS: Final distribution boards shall be prewired type flush mounting, totally enclosed, Double door, dust and vermin proof with built in loose wire box and shall comprise of miniature circuit breakers, earth leakage circuit breakers, neutral link etc as detailed in the schedule of quantities. The distribution equipment forming a part of the Distribution Boards shall comply with the relevant Standards and Codes of the Bureau of Indian. The board shall be fabricated from 16 gauge CRCA sheet steel and shall have a hinged lockable spring loaded cover. All cutouts and covers shall be provided with synthetic rubber gaskets. The entire construction shall give an IP 43 (double door and four tier arrangement) degree of protection. The bus-bar shall be of electrical grade copper having a maximum current density of 1.6 ampere per square mm and PVC insulated throughout the length. The minimum spacing between phases shall be 25 mm and between phase and earth 19 mm Separate neutral link for each phase shall be provided. Separate earth link for each phase shall be provided. All the internal connections shall be with either solid copper PVC insulated or copper conductor PVC insulated wires of adequate rating. The equipment shall be mounted on a frame work for easy removal and maintenance. The sheet steel work shall undergo a rigorous rust proofing process, two coats of filler Signature and seal of Contractor Signature and seal of TCIL oxide primer and final powder coated paint finish. All the circuits shall have an independent neutral insulated wire, one per circuit, and shall be numbered and marked as required by the Engineer-In-Charge. A sample of the completed board is to be got approved by the Engineer-In-Charge before commencement of supply and erection. Before commissioning, the distribution boards shall be megger tested for insulation and earth continuity

e) SHEET STEEL TREATMENT AND PAINTING: Sheet Steel materials used in the construction of these units should have undergone a rigorous rust proofing process comprising of alkaline degreasing, descaling in dilute sulphuric acid and a recognized phosphating process. The steel work shall then receive two costs of oxide filler primer before final painting. Castings shall be scrupulously cleaned and fettled before receiving a similar oxide primer coat. All sheet steel shall after metal treatment be given powder coated finish painted with two coats of approved shade on the outside and white on the inside. Each coat of paint shall be properly stoved and the paint thickness shall not be less than 50 microns.

f) NAME PLATES AND LABELS: Suitable engraved white on black name plates and identification labels of metal for all Switch Boards and Circuits shall be provided. These shall indicate the feeder number and feeder designation.

D. TELEPHONE WIRING SYSTEM:

a) SCOPE This section relates to specification for the supply, installation, testing & commissioning of works included telephone system. The scope of work included in this section is as follows: a) Supply, installation and laying of telephone cables/ wires. b) Providing & installing medium duty MS conduit. c) Providing & installing G.I./MS moulded boxes including plug in type telephone outlets.

b) CONDUITING: All concealed /surface installation including the conduit run above the false ceiling space shall be black enameled MS Conduit (as specified in BOQ). The specification for materials & installation shall be same as described in electrical
section. All relevant clauses are applicable for telephone system as well. The conduit for telephone system shall be installed minimum 20 cm away from the power conduit. Care shall be taken so that no telephone conduit is run in parallel to Electrical conduit in close proximity. Wherever telephone conduits cross power conduits, they shall be at right angle, to each other. All telephone conduits shall be earthed. Signature and seal of Contractor Signature and seal of TCIL
c) TELEPHONE DISTRIBUTION BOARDS (TAG BLOCK) : Telephone distribution network shall be provided with Main Telephone Distribution board for building located in Basement level. At each floor, Telephone distribution board tag block shall be provided in telephone shaft/cupboard. Telephone tag block shall be double jumpering type. Tag block shall be mounted in MS box fabricated from 1.63mm thick sheet steel. Box shall undergo a rigorous metal treatment process i.e. degreasing, pickling, phosphating, passivating in deoxalate solution, dry with compressed air in dust free atmosphere facility, and disconnection module shall be in multiple of 10 pairs. Disconnection unit shall be mounted on back mounting frame. Protection against over voltage through protection magazine shall be provided from rear of Disconnection Module. Telephone distribution box shall have back mounting frame, disconnection module, lock & key arrangement. Contractor shall also provide one pair of wiring tools, test cord, disconnection plug, wiring base. Cost of these items shall deemed to be included in quoted rates. Main telephone distribution board shall be provided with protecting magazine with GD tubes for protection from over voltage. MTDB shall be complete with back mounting frame. Disconnection module, lock & key arrangement. MTDB box shall be fabricated from 2mm thick sheet steel.

E. MOULDED CASE CIRCUIT BREAKERS:

a) GENERAL Moulded case circuit breakers shall be incorporated in the switch board wherever specified. MCCB shall conform to IEC:947-II or IS:13947-II in all respects. MCCB shall be suitable for three phase 415 volts AC. Suitable discrimination shall be provided between upstream and down stream breakers in the range of 10-20 milli seconds. All MCCBs will have earth fault module (if specifically asked) and front operated. All four pole MCCB shall be suitable for three phase four wire system, with the neutral clearly identified and capable of first make last break feature.

b) CONSTRUCTION The MCCB cover and case shall be made of high strength heat-resistant and flame retardant thermosetting insulating material, operating handle shall be quick make/quick break. The operating handle shall have suitable `ON `OFF' and `TRIPPED' mechanical indicators notable from outside. All MCCBs shall have a common operating handle for simultaneous operation and tripping of all the three phases. The MCCB should be suitable for disconnection and isolation with marking on front name plate. Suitable arc extinguishing device shall be provided for each contact. Tripping unit shall be thermal-magnetic type provided on each pole and connected by a common trip bar such that tripping of any one pole operates all three poles to open simultaneously. Thermal magnetic tripping device shall have IDMT characteristics for sustained over load and short circuits. All MCCBs above 250 Amps will also have short circuit magnetic pickup level adjustment.

c) MCCBs Signature and seal of Contractor Signature and seal of TCIL All MCCBs shall have variable thermal overload releases which can be adjusted at site. Contact Tips shall be made of suitable arc resistant, sintered alloy for long electrical life. Terminals
shall be of liberal design with adequate clearances. All MCCBs of higher ratings above 250 Amps shall be provided with separate extended arcing contacts.

d) INTERLOCKING Moulded case circuit breakers shall be provided with the following interlocking devices for interlocking the door of a switch board. a) Handle interlock to prevent unnecessary manipulations of the breaker. b) Door interlock to prevent the door being opened when the breaker is in ON or OFF position. c) Defeat-interlocking device to open the door even if the breaker is in ON position.

e) BREAKING CAPACITY The moulded case circuit breaker shall have a rated service. Short circuit breaking capacity of not less than 25 KA rms at 415 volts AC. Wherever required, higher breaking capacity breakers to meet the system short circuit fault shall be used.

f) ACCESSORIES All the accessories like shunt, under voltage contact blocks shall be of snap fitting possible at site.

g) TESTING:
   - Original test certificate of the MCCB shall be furnished.
   - Pre-commissioning tests on the switch board panel incorporating the MCCB shall be done as per standard specifications.
   - Signature and seal of Contractor Signature and seal of TCIL TECHNICAL SPECIFICATIONS EXTERNAL ELECTRICAL WORKS A - MV CABLES

F. STANDARDS OF CODES:

This chapter covers the specifications for supply and laying of Medium Voltage XLPE cables. All equipment, components, materials and entire work shall be carried out in conformity with applicable and relevant Bureau of Indian Standards and Codes of Practice, as amended up to date. In addition, relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended up to date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and /or IEC Standards shall be applicable.

a) CABLES Medium voltage cables shall be aluminium conductor FR XLPE insulated, PVC sheathed armoured conforming to latest IS. Cables shall be rated for 1100 Volts. All Conductor cables shall be as per BOQ. Conductors shall be insulated with high quality FR XLPE base compound. A common covering (bedding) shall be applied over the laid up cores by extruded sheath of unvulcanised compound. Armouring shall be applied below outer sheath of PVC sheathing. The outer sheath shall bear the manufacturer’s name and trade mark at every meter length. Cores shall be provided with following colour scheme of PVC insulation. 1 Core : Red/Black/Yellow/Blue 2 Cores : Red and Black 3 Cores : Red, Yellow and Blue 3 ½ /4 Core : Red, Yellow, Blue and Black

b) STORING, HANDLING, LAYING, JOINTING AND TERMINATION
   i. STORING All the cables shall be supplied in drums. On receipt of cables at site. It should be ensured that both ends of the cables are properly sealed to prevent ingress/absorption of moisture lay the insulation. The cables shall be inspected and stored in drums with flanges of the cable drum in vertical position. Whenever cable drums have to be moved over short distances, they should be rolled in the direction of the arrow, marked on the drum and while removing cables from the drums the drum shall be properly mounted on jacks.
or on a cable wheel or any other suitable means making sure the spindle, jack etc. are strong enough to take the weight of the drum.

ii. LAYING Cables shall be laid as per the specifications given below: Signature and seal of Contractor Signature and seal of TCIL

iii. DUCT SYSTEM Wherever specified such as road crossing, entry to building or in paved area etc. cables shall be laid in underground ducts. The duct system shall consist of a required number of stone ware pipes, GI, CI or spun reinforced concrete pipe with simplex joints and all the jointing work shall be done according to the CPWD building specifications or as per the instructions of the Engineer-In-Charge as the case may be. The size of the pipe shall not be less than 100mm in diameter for a single cable and shall not be less than 150mm for more than one cable and so on. The pipe shall be laid directly in ground without making any special bed but wherever asbestos cement pipes are used, the pipes shall be encased in concrete of 75mm thick. The ducts shall be properly anchored to prevent any movement. The top surface of the cable ducts shall not be less than 60 cm. below the ground level. The ducts shall be laid a gradient of at least 1:300. The duct shall be provided manholes of adequate size at regular intervals for drawing the cables. The manhole cover and frame shall be of cast iron and machine finished to ensure a perfect joint. The manhole covers shall be installed flush with the ground or paved surfaces. The duct entry to the manholes shall be made leak proof with lead-wool joints. The ducts shall be properly plugged at the ends to prevent entry of water, rodents, etc. Suitable duct markers shall be placed along the run of the cable ducts. The duct markers shall at least be 15 cm. square embedded in concrete, indicating duct. Suitable cable supports made of angle iron shall be provided in the manholes for supporting the cables. Proper identification tags shall be provided for each cable in the manholes.

iv. CABLES IN OUTDOOR TRENCHES: Cable shall be laid in outdoor trenches wherever called for. The depth of the trenches shall not be less than 75cm from the final ground level. The width of the trenches shall not be less than 45 cm. However, where more than one cable is laid, an axial distance of not less than 15 cm. shall be allowed between the cables. The trenches shall be excavated in reasonably straight line with vertical side walls and with uniform depth. Wherever there is a change in direction suitable curvature shall be provided complying with the requirements. Suitable shoring and propping may be done to avoid caving in of trench walls. The bottom of the trench shall be level and free from stone brick bats etc. The trench shall then be provided with a layer of clean, dry sand cushion of not less than 8 cm. in depth. The cable shall be pulled over rollers in the trench steadily and uniformly without jerks and strains. The entire cable length shall as far as possible be paved of in one stretch. However where this is not possible the remainder of the cable may be removed by "Flaking" i.e. by making one long loop in the reverse direction. After the cable has been uncoiled and laid into the trench over the rollers, the cable shall be lifted slightly over the rollers beginning from one end by helpers standing about 10 meters. apart and drawn straight. The cable
should then be taken off the rollers by additional helpers lifting the cable and
then laid in a reasonably straight line. For short cut runs and sizes up to 50
sq.mm of cables up to 1.1 KV grade any other suitable method of direct
handling and laying can be adopted with the prior approval of the Engineer-in-
charge. When the cable has been properly straightened, the cores are tested
for continuity and insulation resistance and the cable length then measured.
The ends of all cables shall be sealed immediately. In case of PVC cables
suitable moisture seal tape shall be used for this purpose. Cable laid in
trenches in a single tier formation shall have a covering of clean, dry sand of
not less 17 cms above the base cushion of sand before the protective cover is
laid. In the case of vertical multi tier formation after the first cable has been
laid, a sand cushion of 30 cms shall be provided over the initial bed before the
second tier is laid. If additional tiers are formed, each of the subsequent tiers
also shall have a sand cushion of 30 cms as Signature and seal of Contractor
Signature and seal of TCIL stated above. The top most cable shall have final
sand covering not less than 17 cms before the protective cover is laid. Unless
otherwise specified, the cables shall be protected by the second class bricks
of not less 20 cms x 10 cms x 10 cms (nominal size) protection covers placed
on top of the sand (bricks to be laid breadth wise) for the full length of the
cable. Where more than one cable is to be laid in the same trench, this
protective covering shall cover all the cables and project at 5 cm. over the
sides of the end cables. The trenches shall be taken back filled with
excavated earth free from stones or other sharp edge debris and shall be
rammed and watered, if necessary, in successive layers not exceeding 30
cm, unless otherwise specified.

v. ROUTE MARKER Cable route marker marked "Cable" shall be provided
alongwith the route of the cable and location of loops. The route markers shall
be of tapered concrete slab of 60 x 60cm at bottom and 50 x 50cm at top
having a thickness of 10cm. Cable marker shall be mounted parallel to and
50cm away from the edge of the trench.

vi. CABLES IN INDOOR TRENCHES Cables shall be laid in indoor trenches
wherever specified. The trench shall be made of brick masonry with smooth
cement mortar finish with suitable removable covers (i.e. precasted slabs or
chequered plates). The dimensions of the trenches shall be determined
depending upon the maximum number of cables that is expected to be
accommodated and can be conveniently laid. Cables shall be arranged in tier
formation in trenches and if necessary, cables may be fixed with clamps.
Suitable clamps, hooks and saddles shall be used for securing the cables in
position. Spacing between the cables shall not be less than 15 cm centre to
centre. Wherever specified, trenches shall be filled with fine sand and
covered with RCC or steel chequered trench covers.

G. EARTHING

a) GENERAL This section covers the general arrangement of the earthing, i.e. all non-
current carrying metal parts of the electrical installation shall be earthed as per latest
IS code and general specifications for electrical works (part-1, internal) of CPWD
specifications. All metal conduits, trunkings, cable sheaths, switchgear, distribution
boards, meters, light fixtures, fans and all other metal parts forming part of the work shall be bonded together and connected by two separate and distinct conductors to earth electrodes. Earthing shall also be in conformity with the provisions of Rule 32, 61, 62, 67 and 88 of IER 1956. The earth electrode shall not be situated less than 1.5 meters.

b) EARTHING SYSTEMS It shall comprise of earth electrodes, earth strips, earth continuity conductor and all earthing conductors shall be of high conductivity copper, GI or aluminium and shall be protected against mechanical damage and corrosion. The size of earth conductors shall not be less than half that of the largest current carrying conductor. The connection of earth continuity conductors of earth bus and earth electrodes shall be strong and sound and shall be rigidly fixed to the walls, cable trenches, cable trays or conduits and cable by using suitable clamps made of non-ferrous metals.

c) EARTHING ELECTRODES Earthing electrodes shall be designed as per the requirement of latest IS codes. The number and size of earth electrodes shall be calculated so that under fault conditions no Signature and seal of Contractor Signature and seal of TCIL electrode is loaded above its maximum permissible current density. The resistance of earth electrode shall be as low as possible, the maximum allowable value being one ohm. Earthing electrodes of either plate type or pipe type may be adopted. The choice of plate or pipe electrode shall be decided according to the anticipated fault level of the network and local soil conditions. Generally, plate electrodes shall be used for substations and large medium voltage network and pipe electrodes for small medium voltage network and installations.

i. LOCATION OF EARTH ELECTRODES Normally on earth electrode shall not be situated less than 1.5 mtr from any building. Care shall be taken that the excavation for earth electrode may not effect the column footings or foundation of the buildings. In such cases electrodes may be further away from the building. The location of the earth electrode will be such where the soil has reasonable chance of remaining moist. As far as possible, entrances, pavements and road ways, are to be definitely avoided for locating earth electrode.

ii. WATER ARRANGEMENT Method of watering arrangement shall comply with CPWD General Specifications.

iii. PLATE ELECTRODE Plate electrodes shall be made of GI plate of 6 mm thick and 60x60 cm. size. The plate shall be buried vertically in ground at a depth of not less than 3.5 meters to the top of the plate, the plate being encased in charcoal to a thickness of 15 cm. all round. It is preferable to bury the electrode to a depth where sub-soil water is present. Earth leads to the electrode shall be laid in a GI pipe and connected to the plate electrode with GI bolts, nuts and washers. A GI pipe of not less than 19 mm Dia shall be placed vertically over the plate and terminated in a funnel at 5 cm. above ground. The funnel shall be provided with a wire mesh. The funnel shall be enclosed in masonry chamber of 100 x 50 cm. dimensions. The chamber shall be provided with CI frame cover of 100 x 50 cm size. The earth station shall also be provided with a suitable permanent identification label/tag. Note: If copper plate is used it shall be of 3mm thickness.
iv. Pipe electrode shall comprise of a 2.5 Meter. long 40 mm Dia GI pipe buried vertically in a pit of 35 x 35 cm size and filled with alternate layers of charcoal, salt and river sand and connected at the top to a GI pipe of 19 mm, 1 Meter. long with a funnel at the other end, 5 cm above the ground. The earth lead shall be properly fixed to the pipe electrode with brass bolts, nuts and washers. The funnel and earth lead connections shall be enclosed in a masonry chamber of 30 x 30 x 30 cm. dimensions. The chamber shall be provided with a CI frame and CI cover. Proper permanent identification tag/label shall be provided for each electrode.

d) INSTALLATION: All joints shall be reverted and sweated. Joints in the earth bar shall be bolted and the joints faces tinned. Where the diameter of the bolt for connecting earth bar to apparatus exceeds one quarter of the width of the earth bar, the connection to the bolt shall be made with a wider piece of flange of copper jointed to earth bar. These shall be tinned at the point of connection and special care taken to ensure a permanent low resistance contact to iron or steel. All steel bolts, nuts, washers, etc shall be cadmium plated. Main earth bars shall not be fixed by ferrous fittings. The earthing shall be suitably protected from mechanical injury by galvanized iron within ground shall be buried at least 60 cm deep. The earthing lead shall be securely bolted and soldered to the plate or pipe as the case may be. In the Signature and seal of Contractor Signature and seal of TCIL case of the plate, the lead shall be connected by means of cable socket with two bolts and nuts. All washers shall be of the same materials as the plate or pipe. All iron bolts, nuts and washers shall be galvanized.

e) METHOD OF INSTALLATION OF WATERING ARRANGEMENT In the case of plate earth electrode a watering pipe of 20 mm Dia of medium class GI pipe shall be provided and attached to the electrode. A funnel with mesh shall be provided on the top for watering the pit. In case of pipe earth electrode a 40 mm x 20 mm reducer shall be used for accessing the funnel. The watering funnel attachment shall be housed in masonry enclosure of not less than 30 cm x 30 cm x 30 cm. A cast iron cover having locking arrangement shall be suitably embedded in the masonry enclosure.

f) PRECAUTIONS Earthing system shall be mechanically robust and the joints shall be capable of retaining low resistance even after passages of fault currents. Joints shall be soldered, tinned and double riveted. All the joints shall be mechanically and electrically continuous and effective. Joints shall be provided against corrosion. The earthing lead from electrode onwards shall be suitably protected from mechanical injury by a 15 mm Dia GI pipe in case of wire and by 40 mm Dia medium class GI pipe in case of strips. Portion of this protection pipe within the ground shall be buried at least 30 cm deep (to be increased to 60 cm in case of road crossing and pavements). The portion within the building shall be recessed in walls and floor to adequate depth.

g) TESTING On the completion of the entire installation, the following tests shall be conducted and no earth electrode shall have ohmic resistance of more than 2 ohm and in rocky soil not more than 3 ohms.
i. Earth resistance of electrodes  
ii. Impedance of earth continuity conductors as per IEE regulations.  
iii. Effectiveness of earthing as per IEE regulations.

All meters, instruments and labour required for the tests shall be provided by the contractor. The test results shall be submitted in triplicate to the Architects for approval.

H. MEDIUM VOLTAGE PANELS:

a) GENERAL Medium voltage power control centres (generally termed as switchboard panels) shall be in sheet steel clad cubicle pattern, free floor standing, totally enclosed, compartmentalized design having multitier arrangement of the incomers and feeders as per details given in the schedule of quantities. All panels shall conform to the requirements of the latest addition of IS and shall be suitable for 415 V, 3 phase AC supply or 230 V single phase AC supply as required.

b) CONSTRUCTIONAL FEATURES The Switch Boards shall be totally enclosed, sheet steel cubicle pattern, extensible on either side, dead front, floor mounting type (wall mounting if specifically asked for in BOQ) Signature and seal of Contractor Signature and seal of TCIL and shall have a bus bar chamber at the top and the cable entry from the bottom. (For panel requiring top cable entries if any, refer to BOQ). The cable terminations should be in side the feeder compartment only. The Switch Boards shall be completely dust and vermin proof. Synthetic rubber gaskets between all adjacent units and beneath all covers shall be provided to render the joints dust and vermin proof to provide a degree of ingress protection of IP 43. All doors and covers shall also be fully gasketed with synthetic rubber. All the live parts shall be properly shrouded with FRP sheets. The Switch Board shall be fabricated with CRCA Sheet Steel of thickness not less than 2.0mm and shall be folded and braced as necessary to provide a rigid support for all components. The doors and covers shall be constructed from CRCA sheet steel of thickness not less than 1.6 mm. Joints of any kind in sheet metal shall be seam welded and all welding slag ground off and welding pits wiped smooth with plumber metal. Base channel shall be fabricated from ISMC 75 and door shall be provided at the bottom with arrangement for fixing bolts in the foundation. All panels and door covers shall be properly fitted and square with the frame. The cutouts in the panel shall be correctly positioned. Lifting lugs of adequate strength shall be provided on each transport section of the panels. Fixing screws shall enter holes tapped into an adequate thickness of metal or provided with hank nuts. Self threading screws shall not be used in the construction of the Switch Boards.

c) SWITCHBOARD DIMENSIONAL LIMITATIONS A base channel 75 mm x 5 mm thick shall be provided at the bottom. The overall height of the Switch Board shall be limited to 2200 mm The height of the operating handle, push buttons etc shall be restricted between 300 mm and 1900 mm from finished floor level.

d) BUS BARS The bus bars shall be suitable for 4 wire, 415 volts, 50 Hz, system. The main bus bar shall be made of high conductivity electrolytic grade AL 91E Aluminium. The bus bars shall have uniform cross section throughout the panel. The bus bars shall be capable of carrying the rated current at 415 volts continuously. The bus bar will run in a separate bus bar chamber using bus insulators made of non-deteriorating, vermin proof, non hygroscopic materials such as epoxy fiber, reinforced
polyester or moulding compound (min. 25mm clearance between phase to phase & phase to neutral bus bars shall be provided). The interval between the two insulators will be designed after considering the following:

i. Strength and safe load rating of the insulator
ii. The vibrating force generated during a fault
iii. A Factor of safety of 1.25
iv. A set of insulators at both ends of the bus.

Bus bars shall be sized considering maximum current density of 1 Amps/ cross section Sq.mm area. The size of the bus bar calculations must be approved by the consultants. The bus bars shall be designed to withstand a temperature rise of 45 oC above the ambient. To limit the temperature rise in the bus bar chamber a set of louvers can be provided at strategical places considering the air circulation. Signature and seal of Contractor Signature and seal of TCIL All the bus bars shall be insulated with PVC heat shrinking sleeves throughout (except at joints) the length of the panel. The electro-galvanized high tensile steel nuts, bolts, plain or spring washers of suitable size will be used in connecting the various sections of the bus bars.

e) SWITCH BOARD INTERCONNECTIONS All connections between the bus bars/Breakers terminations shall be through solid Aluminium strips of adequate size to carry full rated current which shall be PVC/fiber glass insulated. For switch unit ratings up to 63A PVC insulated copper conductor wires of adequate size to carry full load current can be used. The terminations of all such interconnections shall be properly crimped.

f) CABLE TERMINATIONS Knockout holes of appropriate size and number shall be provided in the Switch Board in conformity with the location of incoming and outgoing conduits/cables. All cable entries shall be from bottom until & unless specifically asked for in the BOQ. The cable terminations of the circuit breakers shall be brought out to terminal cable sockets suitably located in the panel. All outgoing links for FSU/MCB feeders shall be in the feeder compartment only. The Switch Boards shall be complete with tinned brass cable sockets, tinned brass compression glands, gland plates, supporting clamps and brackets etc for termination of 1100 volt grade aluminium conductor PVC cables.

g) EARTHING The panels shall be provided with an aluminium earth bus of suitable size running through out the length of the switchboard. Suitable earthing eyes/bolts (at min. two points) shall be provided on the main earthing bus to connect the same to the earth grid at the site. Sufficient number of star washers shall be provided at the joints to achieve earth continuity between the panels and the sheet metal parts.

h) INTERLOCKING The panels shall be provided with the following interlocking arrangement. The door of the switch-fuse compartments is so interlocked with the switch drive or handle that the door can be opened only if the switch is in ‘OFF’ position. De-interlocking arrangement shall also be provided for occasional inspection. It shall not be possible for the breaker to be withdrawn when in ‘ON' position. It shall not be possible for the breakers to be switched on unless it is either in fully inserted positions or for testing purposes in fully isolated position. The breaker shall be capable of being raked in to ‘testing’ ‘isolated' and ‘maintenance’ positions and kept locked in any of these position. A safety latch to ensure that the movement
of the breaker as it is withdrawn, is checked before it is completely out of the cubicle shall be provided.

i) WIRING Signature and seal of Contractor Signature and seal of TCIL All wiring for relays and meters shall be with PVC insulated copper conductor wires. The wiring shall be coded and labeled with approved ferrules for identification. The minimum size of copper conductor control wires shall be 1.5 sq.mm except for the circuits related to current transformers or circuits with current carrying capacity more than 5 Amps (for which min. 2.5 Sq.mm copper conductor wires shall be used).

j) SHEETSTEEL TREATMENT AND PAINTING: Sheet Steel materials used in the construction of these units should have undergone a rigorous rust proofing process comprising of alkaline degreasing, descaling in dilute sulfuric acid and a recognized phosphating process. The steel work shall then receive two coats of oxide primer before final painting. Castings shall be scrupulously cleaned and fettled before receiving a similar oxide primer coat. All sheet steel shall after metal treatment shall be powder coated with shade RAL 7032 (Siemens Gray) on the outside of the panel and mounting plates shall be of orange shade. Each coat of paint shall be properly stoved and the paint thickness shall not be less than 50 microns (shade of paint may be changed if the Engineer In charge so desires).

k) NAME PLATES AND LABELS Suitable engraved white on black name plates and identification labels of metal for all Switch Boards and Circuits shall be provided. These shall indicate the feeder number and feeder designation.

l) INSTALLATION: Installation shall be done by erection

m) TESTING AND COMMISSIONING Copies of type tests and routine test as per relevant specification, carried out at manufacturer’s work shall be submitted to the ENGINEER IN CHARGE as required. Wiring and connections including earthing shall be checked for continuity and tightness. Insulation shall be measured with a 500 V megger and insulation resistance shall not be less than 100 Mega ohms Interlocking operation to be checked as per requirement. Tests shall be performed in presence of authorized representative of the ENGINEER IN CHARGE for which the contractor shall give due prior notice.

n) HIGH VOLTAGE TEST A high voltage test with 2.5 KV for one minute shall be applied between the poles and earth. Test shall be carried out on each pole in turn with the remaining poles earthed, all units raked in position and the breakers closed. Original test certificate shall be submitted along with panel.

o) PRE-COMMISSION TESTS: Panels shall be commissioned only after the successful completion of the following tests. The tests shall be carried in the presence of Architect's/Consultant's or their representatives. Signature and seal of Contractor Signature and seal of TCIL. All main and auxiliary bus bar connections shall be checked and tightened.

i. All wiring termination and bus bar joints shall be checked and tightened.
ii. Wiring shall be checked to ensure that it is according to the drawing.
iii. All wiring shall be tested for insulation resistance by 1000 volts Meggar.
iv. Phase rotation tests shall be conducted
v. All relays and protective devices shall be tested for correctness of settings and operation by introducing a current generator and an ammeter in the circuit.
p) CLIMATIC CONDITIONS The panels & switch gear components shall be suitable for following climatic conditions: Maximum Minimum DBT RH 45 OC 90% 3 OC 20%

q) HEATING ARRANGEMENT : The panel shall be provided with a thermostatically controlled heating arrangement for monsoon (200 Watt) to take care of high humidity conditions. A 6/16A service socket outlet (single phase) shall be provided in one of the compartments in all the panels. D - METERING, INSTRUMENTATION AND PROTECTION : The specifications hereinafter laid down shall cover all the meters, instrumentation and protective devices required for the electrical work. The ratings, type and quantity of meters, instruments and protective devices shall be as per the schedule of quantities and drawings

I. MEASURING INSTRUMENTS

a) Direct reading electrical instruments shall be in conformity with IEC-51, BS: 89 or IS: 1248. The accuracy of direct reading shall be 1.0 for voltmeters and 1.5 for ammeters. Other type of instruments shall have accuracy of 1.5. The error due to variations in temperature shall be limited to a minimum. The meter shall be enclosed in a dust tight housing. The housing shall be of steel or phenolic mould. The design and manufacture of the meters shall ensure the prevention of fogging of instrument glass. Instrument meters shall be sealed in such a way that access to the measuring element and to the accessories within the case shall not be possible without removal of the seal. The meters shall be provided with white dials and black scale marking. The pointer shall be black in colour and shall have zero position adjustment device which could be operated from outside. The direction of deflection shall be from left to right. Suitable selector switches shall be provided for all ammeters and voltmeters intended to be used on three phase supply. a) Ammeters Ammeters shall be moving iron type. The moving part assembly shall be with Signature and seal of Contractor Signature and seal of TCIL jewel bearings. The jewel bearing shall be mounted on a spring to prevent damage to pivot due to vibrations and shocks. The ammeters shall be manufactured and calibrated as per the latest edition of IS 1248 or BS 89. Ammeters shall be instrument transformer operated, and shall be suitable for 5 A. Secondary of instrument transformer. The scales shall be calibrated to indicate primary current, unless otherwise specified. The ammeters shall be capable of carrying sustained overloads during fault conditions without damage or loss of accuracy. b) Voltmeters Voltmeter shall be of moving iron type. The range for 400 volts, 3 phase voltmeters shall be to 0 to 500 volts. Suitable selector switch shall be provided for each voltmeter to read voltage between any two lines of the system. The voltmeter shall be provided with protection fuse of suitable capacity.

b) INSTRUMENTTRANSFORMERS: Current Transformers Current transformers shall be in conformity with IS: 2705 (Part-I, II, & III) in all respects. All current transformers to be used in the L.T. Electrical panels shall be low tension, ring type resin cast current transformer with the requisite currents ratio having secondary of the current transformers selected will be based on the following;

i. For energy measuring: 1.0 class of accuracy
ii. For other metering: 1.5 class of accuracy
iii. For protects on: 3.0 class of accuracy

c) Where a common CT is used for different functions the CT accuracy class will be equal to the best class required by any of those function. Current transformers shall
be capable of withstanding without damage, magnetic and thermal stresses due to short circuit fault of 35 MVA on medium voltage system. Terminals of the current transformers shall be marked permanently for easy identification of poles. Current transformers shall be provided with earthing terminals for earthing chassis frame work and fixed part of the metal casing (if any). Each CT shall be provided with rating plate indicating the following

i. Name and make
ii. Serial Number
iii. Transformation ratio
iv. Rated burden
v. Rated voltage
vi. Accuracy class

d) The current transformers to be selected for this panel will have at least 20% extra VA capacity available over the normal capacity based on the following details; 1. For ammeters: 3 VA. 2. For current coils of KW & KWHR, PF, and KVAR meters or for all recorders: 5 VA. 3. For normal wiring: 2 VA.

e) For current coil of protection relays: 10 VA under; no circumstances the VA rating of the CT's will be less than 15 VA. Current transformers shall be mounted such that they are easily accessible for inspection, maintenance and replacement. The wiring for CT’s shall be copper conductor, PVC insulated wires with proper termination lugs and wiring shall be bunched with cable straps and fixed to the panel structure in a neat manner. Signature and seal of Contractor Signature and seal of TCIL

f) CONTROL DEVICES a) Push Buttons The push buttons used in the panels will be rated for more than 415 volts and 2 amps. All the push buttons will be mounted on the front door and the assembly will be in two parts. All the push buttons will be mounted on the front door of the cubicle in regular symmetrical fashion as per the general norms being practiced. Only one make of push buttons will be used in the assembly of all the panels. The selection of the colour of the push buttons will be as follows Function Colour Starting/Switching ON Green Stopping/Switching OFF Red Resetting Black Forward ON Yellow Reverse ON Blue Emergency OFF Red/Mushroom b) Indicating Lights The indicating lights used in the panel will be pleasant looking and round shape having the following features;

i. A separate front lens for it’s easy replacement.
ii. Facility to replace the bulb from the front.
iii. Bayonet pin cap bulbs of standard size to be used.
iv. The shape of the lens to allow viewing from sides.
v. Series resistance with use of low voltage bulb for longer life.

g) Clear and distinct indication for light ON and OFF with differences of brightness of the lens. The selection of the colors of the indicating lamps will be as follows: -Red for system in operation -Amber for system ready for operation. -Green for system being put off. -Red, yellow and blue for incoming supply.

h) TESTING Instrument transformers shall be tested at factory as per IS: 2705 & IS: 3156. The test shall incorporate the following: a) Type tests b) Routine tests Original test certificates in triplicate shall be provided. Meters shall be tested as per IS: 1248. The tests shall include both type tests and routine tests. Original test certificate in triplicate shall be furnished. a) Suitable injection tests shall be applied to the
secondary circuit of every instrument to establish the correctness of calibration and working order. b) All relays and protective devices shall be tested to establish correctness of setting and operation by introducing a current generator and an ammeter in the circuit. Signature and seal of Contractor Signature and seal of TCIL

J. INSTRUMENT TRANSFORMER

a) Current Transformer The current transformers shall be of epoxy encapsulated/cast resin type, mounted on stationary portion of the switchgear and shall be easily accessible for maintenance and testing purpose. The current transformers shall be capable of withstanding the short circuit stresses corresponding to a fault level of the system. The ratio and ratings of the current transformers shall be suitable to meet the requirements of metering and protection of the corresponding feeder. The current transformers shall conform to the latest edition of IS. Unless specified otherwise, insulation, temperature rise and all other phases of manufacture and testing shall conform to that given in the standards. A type test certificate of a CT of similar design for temperature rise test shall be furnished along with the offer. Facilities for shorting and grounding the terminals shall be provided at the terminal block.

b) Potential Transformers The potential transformers shall be epoxy encapsulated /cast resin design and Star type on L.T. side. A manually operated disconnecting device shall be mounted on the primary side of potential transformer. This device shall be designed to operate externally without access into the line portion of the switchgear. The connections from main circuit to potential transformers shall be capable of withstanding short circuit stresses of the system. The high voltage winding of the potential transformer shall be protected by current limiting fuses. Low voltage fuses, sized to prevent harmful overload, shall be installed. The manufacture, testing, insulating and temperature rise of the potential transformer shall conform to the latest revision of the relevant IS. The 110V bus in the switchboard shall be sectionalized.

c) INSTRUMENTS & METERS The instruments shall be the flush type preferably with the square face of digital intelligent panel meter 96W x 96H as specified. They shall be fully tropicalised, dust tight and shall conform to the relevant standards. Display shall be of backlit LCD with 10mm height digits. The meter shall be capable of measuring power, current, and voltage simultaneously with accuracy of class 1.0. The scale range of the AC ammeter shall generally be equal to 1.5 times the rated primary current of the C.T. feeding them. The scale range of the voltmeter shall be about 15% in excess of the normal circuit voltage.

K. AUXILIARY AND CONTROL POWER SUPPLY:

a) AC Power Supply for Space Heater and Cubicle Illumination Lamps: Each carriage control panel including the breaker operating mechanism shall be provided with thermostatically controlled space heater. The thermostat shall have adjustable range. The space heaters shall be rated for 230 volts, 1 phase, 50 Hz. For cubicle illumination, receptacle arrangement at suitable location of each control panel shall be provided so that hand lamp connection may be taken from this receptacle during inspection and maintenance. Wiring for space heaters shall be suitably grouped so as to form a more or less balanced condition on 230 V, 1 phase, 50 Hz supply. Suitable number of space heaters alongwith thermostat may be provided. Each
space heater and hand lamp circuit shall be provided with ON/OFF switch and suitable protection.

b) Control Supply: The power for breaker control and indication shall be taken from 24V DC supply. In addition, each cubicle shall be provided with one double pole, single throw switch for its control circuit power supply.

c) Fuse: All control and power fuses shall be link type "H.R.C." fuses. Plug fuses (screw-in type) shall not be accepted.

L. SECONDARY AND SMALL WIRING

a) All wiring for the equipment and devices located on or within the switchgear shall be carried out. The wiring shall be complete in all respects so as to ensure proper functioning of control, indication, measurement, protection and interlocking scheme.

b) All the wiring shall be marked in accordance with the relevant standards. Numbered ferrules, reading from the terminals onward shall be provided at both ends of all the wiring for easy identification.

c) The internal wiring shall be of PVC insulated cable of 1100/650 grade of minimum size 2.5 Sq.mm copper.

M. ALARM ANNUNCIATION SYSTEM:

a) The annunciator shall be provided on each panel to indicate the various circuit conditions and shall be placed at suitable height. The various functions shall be as follows:

- Circuit breaker closed
- Circuit breaker open
- Trip circuit healthy
- Alarm& Auto trip Transformer non trip (Buchholtz, etc.)
- C/B in test
- Hooter/Buzzer

shall be provided with a manually operated switch so that it can be Signature and seal of Contractor Signature and seal of TCIL silenced.

N. Control Cable:

All control cables shall enter the switchgear from top/bottom. Removable plates at the top/bottom of the panel shall be furnished with compression type cable glands to make entry dust-tight and no weight is transferred on the terminal. The glands shall be suitable for terminating cable armour. All connections and accessories required to complete the whole installation shall be supplied by the Contractor.

O. TERMINAL BLOCKS:

Terminal blocks shall be provided as specified and shall be clip-on type. They shall be shrouded preferably by a transparent acrylic sheet. The terminal block of different voltage classes shall be segregated.

P. ACCESSORIES:

Following accessories shall be provided for each switchgear:

- Channel base and foundation bolts
- Lifting lugs
- Maintenance closing handle for circuit breaker
- Draw handle for circuit breaker
- Hook stick, indoor use, 1.5 m long
- Test plug for draw out type relay

**Q. NAME PLATE:**
Nameplates of approved design shall be furnished at the front of each compartment of the cubicles. Rating plates for each circuit breaker and at each instrument, relay and auxiliary switches as mounted on the face or inside the cubicle shall also be furnished. Instruments and devices mounted on the cubicle door of the switchgear shall be identified on the rear also with the respective numbers on or adjacent to the instrument or device case.

**R. GROUND BUS:**
A ground bus of 32 mm x 6 mm Copper flat shall be furnished along with the full length of the panel. Each stationary unit shall be connected directly to this ground bus. Grounding terminals at two end of the ground bus shall be provided for connection to station ground grid. The frame of each draw-out carriage containing circuit breaker shall be grounded through heavy multiple finger contacts at all times except when the unit primary disconnecting devices are separated by a safe distance.

**S. TESTS:**
The switchgear unit shall be completely assembled, wired, adjusted and tested for operation under similar conditions to ensure accuracy of wiring, correctness of control schemes and proper functioning of all equipment. Signature and seal of Contractor Signature and seal of TCIL.

- **a) Routine Test :** Each of the following equipment shall be subjected to standard routine tests as per applicable clauses of relevant IS specifications:
  - Circuit breakers
  - Bus bar assembly
  - Instrument transformers
  - Auxiliary relays
  - Control switches and indication lamps
- **b) Design Test (Type Test):** Typical type test report of the tests mentioned below conducted on similar equipment in the past shall be furnished alongwith the tender. i) Short Time Current Test ii) Short Circuit Test duties on Circuit Breaker iii) Impulse withstand Test iv) Power Frequency withstand Test v) Temperature Rise Test vi) Internal Arc Test vii) Mechanical Endurance test on Circuit Breaker viii) Test to prove Degree of Protection of enclosure
- **c) Test Certificates :** Test certificate shall be furnished in required number of copies. The routine and type test certificates shall be furnished to the Engineer-in-charge for approval before dispatch of the equipment from the works. The approval in writing shall be required to effect the dispatch of the equipment. The routine and type test certificates of the miscellaneous components shall also be furnished to the Engineer-in-charge for approval. The report shall furnish complete identification of data including serial number of each equipment.
- **d) Performance Guarantee :** The performance guarantee figures quoted on the schedule of technical data shall be guaranteed within the tolerances permitted by standard and will become a part of successful Tenderer's Contract.

**T. DRAWINGS, DATA AND MANUALS :**
- **a) After award of contract, the successful Bidder shall submit the required number of copies of the following drawings for approval of the Engineer-in-charge :** Confirmed
outline dimensional drawing of the various switchgears showing the general arrangement and indicating the following:

- Space required in the front for breaker withdrawal
- Signature and seal of Contractor Signature and seal of TCIL Control cable entry points and termination arrangement.
- Power cable entry points and termination arrangement.
- Bus bar clearance phase to phase and phase to ground.
- Configuration of bus bar
- Technical detail of supporting insulator and their spacing.
- Location of instrument transformers.
- Control panel details with equipment layout.
- Terminal block details.

b) Single and three line diagram of all switchgears showing instrument transformers control switches, instruments and indication, etc.

c) Control schematic diagram of each breaker showing all safety and operation interlocks, annunciation, etc.

d) Transport/shipping dimensions with weights.

e) Foundation and anchor bolt details including dead load and impact load.

f) Cross-section with parts list.

g) Cubicle wiring diagram with terminal board disposition.

h) Any other relevant data, drawing and information necessary for review of items whether specifically mentioned or not, shall be furnished by the Contractor along with that information.

i) The responsibility of correctness of wiring diagram shall be with Contractor. The Engineer-in-charge will check the final schematic after submission. If any modification, addition or alteration is considered necessary to comply with the approved schematic drawing as stated herein above, the said modification, addition or alteration shall be carried out by the Contractor either in their works if it is before delivery, or at Site after delivery at no cost to the Engineer In charge.

j) Before starting manufacture of the equipment, the Contractor shall have to take approval of these design drawings from the Engineer-in-charge in writing. Any manufacturing done prior to approval of drawings shall be rectified in accordance with the approved drawing by the Contractor at his own cost and the equipment shall be supplied within the stipulated period. Oil level indicator. Thermometers with thermometer sockets & leads. Oil & winding temperature indicators with alarm & trip contacts with capillary. Oil conservator Tank filter cap, drain valve and oil level gauge Oil filling hole and cap. Filter valve. Bi-directional Rollers. Explosion vent. Air Release Valve. H.V. Cable Box L.V. Cable Box with copper bus bars Marshalling Box Buchholz Relay with alarm & trip contacts & two shut OFF valves Radiators with shut off valves & air release plugs. On Load Tap Changer and RTCC Panel. Steel bolts and nuts exposed to the atmosphere shall be either galvanized or zinc passivated to make them as rust free.
Contractor's Obligations:

i. All safety related aspects shall be responsibility of contractor.

ii. While undertaking design and construction works of the Project, the Successful Bidder shall adhere to the latest amended National Building Code of India, IRC, MORTH, other relevant IS & BS codes for all disciplines like civil structural, architectural, interiors, Mechanical, Electrical & Plumbing, IT and practices, Development Control Rules, FSI Limits, statutory requirements, laws of land, the principles of good industry practices and any other norms as applicable from time to time.

iii. All required plant and machinery for execution are in scope.

iv. Curing to RCC. brickwork, plaster works is in scope and shall be done as per standard practices.

v. Test reports for all materials to be submitted establishing their conformance to standards.

vi. Stacking of all serviceable materials shall be done and handed-over to JMC. Unserviceable unusable materials to be disposed by mechanical transport including loading, unloading etc for all leads and lifts. Removal of debris/ vegetation by manual means and its disposal for all lead and lifts shall also be done.

vii. For all specific works RUIDP/PWD specifications shall be applicable.

viii. The electrical materials shall be supplied/installed/commissioned as per group 1/class A of RUIDP (SOR 2017) and all other items shall be as per Group 1/ class A of the prevailing in PWD BSR, Jaipur circle.

ix. The detailed design drawings (GFCs) for all renovation works and new works including mix design, design calculations (wherever applicable), shall be submitted to the JMC and the construction activity will only start after its review and approval.

x. All necessary scaffolding for construction of various facilities is in scope. The elevational area of the scaffolding shall be measured for payment purpose. The payment will be made once irrespective of duration of scaffolding.

xi. On completion of the work, the site will be handed over to JMC. However, the contractor will be responsible for maintaining the asset for 3 years of Defect Liability Period, during which, the contractor will be liable to rectify or amend the defect, if any, including those for civil works, mechanical/electrical/ plumbing and instrumentation works, IT instrumentations, etc. and will change all the Equipment or parts there of promptly and without any additional cost.

xii. Warranties to be submitted in name of JMC.

xiii. Structure Stability Certificate to be provided by the contractor at the completion of the work.

xiv. The quality assurance, quality control plans to be submitted for approval before commencement of works.

xv. The sample pallets for materials to be submitted for approval before procuring the material.

xvi. All required survey, investigations are in scope.
Section VIA
General Conditions of Contract
Section VI A: General Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur

(“Copy of appendix XI of PWF&AR, Govt. of Rajasthan effective from 01.07.99 and subsequent addendum dated 19.03.2001 & 29.03.2001 and other amendments up to date. In case of any typographical error or omission or alteration the original version of the same shall be valid.”)

GENERAL RULES AND DIRECTIONS FOR THE GUIDANCE OF CONTRACTOR

1. All works, proposed for execution by contract, will be notified in a form of Invitation to tender pasted on public places and on a board hung up in the office and signed by the Chief Engineer or other duly Authorized Engineer.

   The form of invitation to tender will state the work to be carried out, as well as the date for submitting and opening of tenders, and the time allowed for carrying out the work; also the amount of Earnest Money to be deposited with the tender, and the amount of the Security Deposit to be deposited by the successful Bidder and the percentage, if any, to be deducted from bills. Copies of the specifications, Designs and drawings and Estimated rates/Scheduled rates and any other documents required in connection with the work signed for the purpose of identification by the Executive Engineer, shall also be open for inspection by the contractor at the office of the Chief Engineer or other duly authorized Engineer during office hours.

2. In the event of the tender being submitted by a firm, it must be signed separately by each partner, thereof, or in the event of the absence of any partner, it must the signed on his behalf, by a person holding a power of attorney, authorizing him to do so. Such power of Attorney will be submitted with the tender and it must disclose that the firm is duly registered under Indian Partnership Act, by submitting the copy of registration certificate.

3. Receipts for payments, made on account of a work when executed, by a firm must also be signed by the several partners, except where the contractors are described in their tender as a firm, in which case the receipts must be signed in the name of the firm by one of the partners or by some other person having authority to give effectual receipts for the firm.

4. Any person, who submits percentage rate tender, shall fill up the usual printed form stating at how much percent, above or below the rates specified in scheduled G, he is willing to undertake the work. Only one rate of percentage more or less on all the Estimated rates/ Scheduled rates shall be mentioned. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, will be liable to rejection. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit a separate tender for each work. Tenders shall have the name and number of the work, to which they refer, written outside the envelope.

5. The Chief Engineer or other duly authorized Engineer will open the tenders in the presence of any tendering contractor(s) or their authorized representatives who may be present at the time, and will announce and enter the rates/amounts of all tenders in the register of Opening of tenders, (Form RPWA 20A). In the event of the tender being accepted, a receipt for the Earnest Money deposited shall be given to the contractor, who shall sign copies of the specifications and other documents mentioned in Rule 1. In the event of a tender being rejected, the earnest money forwarded with such unaccepted tenders shall, be returned to the Contractor making the same.

6. The Chief Engineer or other duly authorized Engineer shall have the right of rejecting all or any of the tender without assigning any reason.

7. The receipt of an Accountant, Cashier or any other official, not authorized to receive such amount, will not be considered as an acknowledgement of payment to the Chief Engineer or other duly authorized Engineer.

8. The memorandum of work tendered for, the memorandum of materials and of Tools and Plants to be supplied by the Department and their rates, shall be filled in and completed in the office of the Chief
9. If it is found that the tender is not submitted in proper manner, or contains too many corrections and or unreasonable rates or amounts, it would be open for the Engineer-in-charge not to consider the tender, forfeit the amount of earnest money and/or delist the contractor.

10. The Bidder shall sign a declaration under the Official Secrets Act for maintaining secrecy of the tender document, drawings or other records connected with the work given to him in form given below. The unsuccessful Bidder shall returned all the drawings given to them.

**Declarations**

“I/We hereby declare that I/We shall treat the tender documents, drawings and other records, connected with the work, as secret confidential documents, and shall not communicate information derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the same.”

11. Any percentage rate tender containing item-wise rates, and any item rate tender containing percentage rate below or above estimated/scheduled rates, will be summarily rejected. However, if a Bidder voluntarily offers a rebate for payment within a stipulated period, this may be considered.

12. On acceptance of the tender, the name of the accredited representative(s) of the Contractor (with a photograph and signature attested), who would be responsible for taking instructions from the Engineer in charge, shall be communicated to the Engineer-in-charge.

13. Sales tax or any other tax on materials, or Income Tax in respect of the contract shall be governed by Clause 36 A, B and C and D of the Conditions of Contract. Deduction of Income Tax at source will be made as per provisions of the Income Tax Act, in force from time to time.

14. The tender to work shall not be witnessed by a Contractor or Contractors who himself/themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe the secrecy of the tenders will render tenders of the contractors, tendering as well as witnessing the tender, liable to summary rejection.

15. If on check, there are discrepancies, the following procedure shall be followed:-

   (i) Where there is a difference between the rates in figures and words, lower of the two rates shall be taken as valid and correct rate.

   (ii) When the rate quoted by the contractor in figures and in words tallies, but the amount is not worked out correctly, the rate quoted by the contractor shall be taken as correct and not the amount worked out.

   (iii) While quoting rates, if rate/rates against any item or items are found to be omitted, the rate given in the Schedule ‘G’ by the department for such items will be taken into account while preparing comparative statement and contractor shall be bound to execute such item on ‘G’ Schedule rates.

   (iv) In case where percentage is given but the ‘above’ or ‘below’ not scored, the tender will be non-responsive.

16. The Contractor shall comply with the provisions of the Apprenticeship Act, 1961, and the rules and orders issued, there under, from time to time. If he fails to do so, his failure will be breach of the contract and the original sanctioning authority in his discretion may cancel the contract. The Contractor shall also be liable for any pecuniary liability arising on account of violations by him of the provisions of the Act.

17. The Contractor shall read the specifications and study the working drawings carefully before submitting the tender.

18. The site for execution of the work will be made available as soon as the work is awarded. In case, it is not possible for the Department to make the entire site available on the award of the work, the Contractor shall arrange his working programme accordingly. No claim, whatsoever, for not giving the
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

19. The tender documents show already the specific terms and conditions on which tenders are required by the Government. Hence, all tenders should be in strict conformity with the tender documents and should be fulfilled in, wherever necessary, and initialed. Incomplete tenders are liable to be rejected. The terms and conditions of the tender documents are firm, as such conditional tenders are liable to be rejected.

20. The Bidder, while submitting tender, must provide adequate information regarding his financial, technical and organizational capacity and working experience to execute the work of the nature and magnitude.

21. The Chief Engineer or other duly authorized Engineer reserves the right to ask for submission of samples as in respect of materials for which the Bidder has quoted his rates before the tender can be considered for acceptance. If the Bidder, who is called upon to do so, does not submit within seven days of written order to do so, the Engineer-in-charge shall be at liberty to forfeit the said earnest money absolutely.

22. The Contractor shall submit the list of the works, which are in hand (progress), in the following form:

<table>
<thead>
<tr>
<th>Name of work</th>
<th>Name and particular of the Sub-Division / Division, where work is being executed</th>
<th>Amount of work</th>
<th>Position of works in progress</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

23. The Contractor should quote his rates only in one language i.e. either in Hindi or English. Rates should be quoted in figures as well as in words. In case a Contractor has quoted rates in both the languages, and the rates so quoted differ, then the lower of the two shall be treated as the rate quoted by the Contractor.

24. All additions, deletions, corrections and overwriting, must be serially numbered and attested by the Contractor at every page, so also by the officer opening the tenders, so as to make further disputes impossible on this score.

25. After acceptance of the tender, the Contractor or all partners (in the case of partnership firm), will append photographs and signatures duly attested, at the time of execution of Agreement.

26. If any contractor, who having submitted a tender does not execute the agreement or start the work or does not complete the work and the work has to be put to retendering, he shall stand debarred from participating in such retendering in addition to forfeiture of Earnest Money/Security Deposit and other action under agreement.

27. The tender documents shall be issued to those contractors only having valid enlistment as on the date of issue of documents.

28. (a) If a Bidder reduces the rates voluntarily after opening of the tenders/negotiations, his offer shall stand cancelled automatically, his earnest money shall be forfeited and action for debarring him from business shall be taken as per enlistment rules.

(b) If a non-Bidder offers lower rates after opening of tenders, action for debarring him from business shall be taken as per enlistment rules.

29. Contractors shall submit only unconditional tenders. Conditional tenders are liable to be rejected summarily.

GENERAL CONDITIONS OF CONTRACT

("Copy of appendix XI of PWF&AR, Govt. of Rajasthan effective from 01.07.99 and subsequent addendum up to date. In case of any typographical error or omission or alteration the original version of the same shall be valid.")
Clause 1: Security Deposit

“The security deposit @ 10% of the gross amount of the running bill shall be deducted from each running bill and shall be refunded as per rules on completion of the contract as per terms and conditions. The earnest money deposited shall however be adjusted while deducting security deposit from the first running bill of the contractor. There will be no maximum limit of security deposit.

A contractor may, however, elect to furnish bank guarantee or any acceptable form of security for an amount equal to the full amount of security deposit @ 10% of the work order before or at the time of executing the agreement. In that case earnest money may be refunded only after furnishing of the bank guarantee as above. During the execution of the work or after completion of the work also a contractor may replace the security deposit by furnishing bank guarantee for an equal amount. However, during execution of the work if cost of work exceeds as shown at the time of furnishing bank guarantee, balance security deposit shall be deducted from the Running Account Bills."

All compensation or other sums of money payable by the Contractor to Government under the terms of his contract may be deducted from or paid by the sale of a sufficient part of his Security Deposit, or from interest arising therefrom, or from any sums, which may be due or may become due to the Contractor by the Government on any account whatsoever, and in the event of his Security Deposit being reduced by reason of any such deduction or sale as aforesaid, the Contractor shall within ten days thereafter, make good in cash or Bank Guarantee of Nationalized/Scheduled bank, as aforesaid, any sum or sums which may have been deducted from or raised by sale of his Security Deposit or any part thereof.

In case of Bank Guarantee of any Nationalized/Scheduled Bank is furnished by the Contractor to the Government, as part of the Security Deposit and the bank goes into liquidation or, for any reason is unable to make payment against the said Bank Guarantee, the loss caused thereby shall fall on the Contractor and the Contractor shall forthwith, on demand, furnish additional security to the Government to make good the deficit.

The liability or obligation of the bank under the Guarantee Bond shall not be affected or suspended by any dispute between the Engineer-in-Charge and the Contractor, and the payment, under the Guarantee Bond by the bank to the Government shall not wait till disputes are decided. The bank shall pay the amount under the Guarantee, without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the Contractor. The demand, so made, shall be conclusive as regards to amount due and payable by the bank, under the guarantee limited to the amount specified in the Guarantee Bond. The guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

The Bank Guarantee shall remain valid up to the specified date unless extended on demand by the Engineer-in-Charge which shall include the period of completion of the contract and the defect removal period as per terms of the Agreement. Bank’s liability shall stand automatically discharged unless a claim in writing is lodged with the Bank within the period stated in the Bank Guarantee including the extended period. After satisfactory completion of the contract and clearance of all dues by the Contractor, the Chief Engineer or duly authorized Engineer will discharge the Bank Guarantee after expiry of the original or the extended period, as the case may be. In case the date of expiry of the Bank Guarantee is a holiday, it will be deemed to expire on the close of the next working day.

Government is not concerned with any interest accruing to the Contractor on any form of Security (primary or collateral) lodged by him with the bank or any sums payable to sureties obtained by the Bank as counter guarantee to secure its own position. These will be the matters between the Bank and the Contractor.

Clause 2: Compensation for delay

The time allowed for carrying out the work as entered in the tender, shall be strictly observed by the Contractor and shall be reckoned from the 10th day after the date of written order to commence the work is given to the Contractor. If the Contractor does not commence the work within the period specified in the work order, he shall stand liable for the forfeiture of the amount of Earnest Money and Security Deposit. Besides, appropriate action may be taken by the Engineer-in-Charge/competent authority to debar him from taking part in future tenders for a specified period or black list him. The work shall, throughout the stipulated period of completion of the contract, be proceeded with all due diligence, time being essence of the contract, on the
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

part of the Contractor. To ensure good progress during the execution of work, the contractor shall be bound, in all cases in which the time allowed for any work exceeds one month (save for special jobs), to complete 1/8th of the whole of the work before 1/4th of the whole time allowed under the contract has elapsed, 3/8th of the work before ½ of such time has elapsed and 3/4th of work before 3/4th of such time has elapsed. If the contractor fails to complete the work in accordance with this time schedule in terms of cost in money, and the delay in execution of work is attributable to the contractor, the contractor shall be liable to pay compensation to the Government at every time span as below:

<table>
<thead>
<tr>
<th>A.</th>
<th>Time Span of full stipulated period</th>
<th>1/4th</th>
<th>1/2th</th>
<th>3/4th</th>
<th>Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.</td>
<td>Work to be completed in terms of money</td>
<td>1/8th</td>
<td>3/8th</td>
<td>3/4th</td>
<td>Full</td>
</tr>
<tr>
<td></td>
<td>(Rs. ........)</td>
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<tr>
<td>C.</td>
<td>Compensation payable by the contractor for delay attributable to contractor at the stage of:</td>
<td>Delay up to one fourth period of the prescribed time span – 2.5% of the work remained unexecuted</td>
<td>Delay exceeding one fourth period but not exceeding half of the prescribed time span – 5% of the work remained unexecuted</td>
<td>Delay exceeding half of the prescribed but not exceeding three fourth of the time span – 7.5% of the work remained unexecuted</td>
<td>Delay exceeding three fourth of the prescribed time span – 10% of the work remained unexecuted</td>
</tr>
</tbody>
</table>

Note: In case delayed period over a particular span is split up and is jointly attributable to Government and contractor, the competent authority may reduce the compensation in proportion of delay attributable to Government over entire delayed period over that span after clubbing up the split delays attributable to Government and this reduced compensation would be applicable over the entire delayed period without paying any escalation.

Following illustrations is given:

First time span is 6 months, delay is of 30 days which is split over as under:

5 days (attributable to Government) + 5 days (attributable to contractor) + 5 days (attributable to Government) + 5 days (attributable to contractor) + 5 days (attributable to Government) + 5 days (attributable to contractor)

Total delay is thus clubbed to 15 days (attributable to Government) and 15 days (attributable to contractor).

The normal compensation of 30 days as per clause 2 of agreement is 2.5% which can be reduced as 2.5*15/30-1.25% over 30 days without any escalation by competent authority.

Note: The compensation, levied as above, shall be recoverable from the Running Account Bill to be paid immediately after the concerned time span. Total compensation for delays shall not exceed 10 percent of the total value of the work.

The contractor shall, further, be bound to carry out the work in accordance with the date and quantity entered in the progress statement attached to the tender.

In case the delay in execution of work is attributable to the contractor, the spanwise compensation, as laid down in this clause shall be mandatory. However, in case the slow progress in one-time span is covered up within original stipulated period, then the amount of such compensation levied earlier shall be refunded. The Price escalation, if any, admissible under clause 45 of Conditions of Contract would be admissible only on such rates and cost of work, as would be admissible if work would have been carried out in that particular time span. The Engineer-in-Charge shall review the progress achieved in every time span, and grant stagewise extension in case of slow progress with compensation, if the delay is attributable to contractor, otherwise without compensation.

However, if for any special job, a time schedule has been submitted by the Contractor before execution of the agreement, and it is entered in agreement as well as same has been accepted by the Engineer-in-charge, the Contractor shall complete the work within the said time schedule. In the event of the Contractor failing to comply with this condition, he shall be liable to pay compensation as prescribed in forgoing paragraph of this clause provided that the entire amount of compensation to be levied under the provisions of this Clause shall be
not exceed 10% of the value of the contract. While granting extension in time attributable to the Government, reasons shall be recorded for each delay.

**Clause 2A: Incentive for Early Completion:**

(Added by Order No. F.2.(4) FD/Exp.III/99-II dated: 16.01.2018 Circular No 66/2018 with immediate effect)

In the event that the project (Cost more than Rs. 50 Crore) Completion date occurs prior to the scheduled Completion Date (after taking into account any time extension approved by the competent Authority for delays not attributable to the contractor), the contractor shall be entitled to receive a payment of incentive equivalent to 0.03% (zero point zero three percent) of the Contract Price for each day by which the Project Completion Date precedes the Scheduled Completion Date, but subject to a maximum of 3% (Three percent of the Contract Price). Provided, however, that the payment of incentive, is any, shall be made only after the issue of the completion certificate.

**Note:** Contract Price for calculation of above incentive means Original Cost of Work, plus Cost of Additional and Extra Items, if any, but excluding price variations/ Escalations granted, if any.

**Clause 3: Risk & Cost Clause**

The Engineer-in-charge or the Competent Authority defined under rules may, without prejudice to his rights against the Contractor, in respect of any delay or inferior workmanship or otherwise, or any claims for damages in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this Contract or otherwise, and whether the date for completion has or has not elapsed, by notice in writing, absolutely determine the Contract in any of the following cases:

(i) If the Contractor having been given by the Engineer-in-charge, a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un-workman like manner shall omit to comply with the requirements of such notice for a period of seven days, thereafter, or if the Contractor shall delay or suspend the execution of the work so that either in the judgement of the Engineer-in-charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion or he has already failed to complete the work by that date,

(ii) If the Contractor, being a company, shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager, on behalf of a creditor, shall be appointed or if circumstances shall arise, which entitle the court or creditor to appoint a receiver or a manager or which entitle the court to make a winding up order,

(iii) If the contractor commits breach of any of the terms and conditions of this Contract,

(iv) If the contractor commits any acts mentioned in, clause 19 thereof.

When the Contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-charge on behalf of the Governor of Rajasthan shall have powers:

(a) To determine or rescind the contract, as aforesaid (of which determination or rescission notice in writing to the Contractor under the hand of the Engineer-in-charge shall be conclusive evidence), upon such determination or rescission, the earnest money, full security deposit of the contract shall be liable to be forfeited and shall be absolutely at the disposal of Government.

(b) To employ labour paid by the Department and to supply materials to carry out the work or any part of the work, debiting the Contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-charge shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respects in the same manner and at the same rates, as if it had been carried out by the Contractor under the terms of this Contract. The certificate of the Divisional Officer, as to the value of the work done, shall be final and conclusive evidence against the Contractor provided always that action under the sub-clause shall only be taken after giving notice in writing to the Contractor. Provided also that; if the expenses incurred by the Department are less than the amount payable to the Contractor at his agreement rates, the difference shall not be paid to the Contractor.
After giving notice to the contractor to measure up the work of the contractor and to take such part thereof, as shall be unexecuted out of his hands, and to give it to another contractor to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor, if the whole work had been executed by him (of the amount of which excess, the certificate in writing of the Engineer-in-charge shall be final and conclusive) shall be borne and paid by the original Contractor and may be deducted from any money due to him by Government under this contract or on any other account whatsoever, or from his Earnest Money, Security Deposit, Enlistment Security or the proceeds of sales thereof, or a sufficient part thereof, as the case may be. In the event of any one or more of the above courses being adopted by the Engineer-in-charge, the Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of contract. And, in case action is taken under any of provisions aforesaid, the Contractor shall not be entitled to recover or be paid, any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-charge has certified, in writing, the performance of such work and the value payable in respect thereof, and he shall only be entitled to be paid the value so certified.

Clause 4: Contractor remains liable to pay compensation, if action not taken under clause 3

(i) In any case in which any of the powers conferred by clause 3 hereof, shall have become exercisable and the same shall have not been exercised, the non-exercise, thereof, shall not constitute waiver of any of the conditions hereof, and such power shall, notwithstanding, be exercisable in the event of any future case of default by the Contractor for which, by any clause or clauses hereof, he is declared liable to pay compensation amounting to the whole of his Security Deposit /Earnest Money/Enlistment security and the liability of the Contractor for past and future compensation shall remain unaffected.

Powers to take possession of, or require removal, sale of Contractor’s plant

(ii) In the event of the Engineer-in-Charge putting in force, powers vested in him under the preceding Clause 3 he may, if he so desires, take possession of all or any tools, plants, materials and stores, in or upon the works or the site, thereof or belonging to the contractor or procured by him and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account, at the contract rates or, in case of these not being applicable, at current market rates, to be certified by the Chief Engineer or duly authorized Engineer (whose certificate thereof, shall be final and conclusive), otherwise the Engineer-in-Charge may, by notice in writing to the contractor or his clerk or other authorized agent, require him to remove such tools, plant, materials or stores from the premises (within a time to be specified in such notice), and in the event of the contractor failing to comply with any requisition, the Chief Engineer or other duly authorized Engineer may remove them at the contractor’s expenses, sell them by auction or private sale on account of the Contractor and at his risk in all respects, and the certificate of the Chief Engineer or other duly authorized Engineer, as to the expense of any such removal, and the amount of the proceeds and expense of any such sale shall be final and conclusive against the Contractor.

Clause 5: Extension of time

If the contractor shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or on any other grounds, he shall apply, in writing, to the Engineer-in-Charge within 30 days of the date of the hindrance, on account of which he desires such extension as aforesaid, and the Authority Competent to grant extension under the rules/delegations of power or other duly authorized Engineer shall, if in his opinion, (which shall be final) reasonable grounds be shown therefore, authorize such extension of time, if any, as may, in his opinion, be necessary or proper, if the period of completion of contract expires before the expiry of the period of one month provided in this clause, the application for extension shall be made before the expiry of the period stipulated for completion of the contract. The competent authority shall grant such extension at each such occasion within a period of 30 days of receipt of application from contractor and shall not wait for finality of work. Such extensions shall be granted in accordance with provisions under clause (2) of this agreement.
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

Clause 5 A: Monthly Return of Extra Claims

Contractor has to submit a return every month for any work claimed as extra. The Contractor shall deliver the return in the office of the Executive Engineer and obtain Receipt Number of the Receipt Register of the day on or before 10th day of every month during the continuance of the work covered by this contract, a return showing details of any work claimed as extra by the contractor which value shall be based upon the rates and prices mentioned in the contract or in the Schedule of Rates in force in the District for the time being. The contractor shall be deemed to have waived all claims, not included in such return, and will have no right to enforce any such claims not included, whatsoever be the circumstances.

Clause 6: Final Certificate

On completion of the work, the contractor shall send a registered notice to the Engineer-in-charge, giving the date of completion and sending a copy of it to the officer accepting the contract, on behalf of the Governor and shall request the Engineer-in-charge to give him a certificate of completion, but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the site on which the work shall be executed, all scaffolding, surplus materials and rubbish and cleared off the dirt from all wood work, doors, walls, floors, or other parts of any building in, upon or about which the work is to be executed or of which he may have possession for the execution thereof, he had filled up the pits. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and cleaning off dirt and filling of pits on or before the date fixed for completion of the work, the Engineer-in-charge may, at the expense of the contractor, remove such scaffolding, surplus materials, and the rubbish and dispose of the same, as he thinks fit, and clean off such dirt and fill the pits, as aforesaid, and the contractor shall forthwith pay the amount of all expenses, so incurred, and shall have no claim in respect of any such scaffolding or surplus materials, as aforesaid, except for any sum actually realized by the sale thereof. On completion, the work shall be measured by the Engineer-in-charge himself or through his subordinates, whose measurements shall be binding and conclusive against the contractor. Provided that, if subsequent to the taking of measurements by the subordinates, as aforesaid, the Engineer-in-charge had reason to believe that the measurements taken by his subordinates are not correct, the Engineer-in-charge shall have the power to cancel the measurements already taken by his subordinates and acknowledged by the Contractor and to take measurements again, after giving reasonable notice to the Contractor, and such re-measurements shall be binding on the Contractor.

Within thirty days of the receipt of the notice, Engineer-in-charge shall inspect the work and if there is no visible defects on the face of the work, shall give the Contractor, a certificate of completion. If the Engineer-in-charge finds that the work has been fully completed, it shall be mentioned in the certificate so granted. If, on the other hand, it is found that there are certain visible defects to be removed, the certificate to be granted by Engineer-in-charge shall specifically mention the details of the visible defects along with the estimate of the cost for removing these defects. The final certificate of work shall be given after the visible defects pointed out as above have been removed.

Clause 7: Payment on Intermediate Certificate to be regarded as advance

No payments shall be made for works estimated to cost less than rupees twenty-five thousand, till after the whole of the works shall have been completed and a certificate of completion given. But in the case of works estimated to cost more than rupees twenty five thousand, the Contractor shall on submitting the bill therefore, be entitled to receive a monthly payment proportionate to the part, thereof, then approved and passed by the Engineer-in-charge, whose certificate of such approval and passing of sum, so payable, shall be final and conclusive. Running Account Bill shall be paid within 15 days from presentation. But all such intermediate payments shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed, and shall not preclude the requiring of bad, unsound and imperfect or unskillful work to be removed and taken away and re-constructed or re-erected, or considered as an admission of the due performance of the contract, or any part thereof, in any respect, or the accruing of any claim, nor shall it conclude, determine, or effect in any way the powers of the Engineer-in-charge under these conditions or any of them to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract. The final bill shall be made/submitted by the Contractor within one month of the date fixed for completion of the work, otherwise the Engineer-in-charge’s certificate of the measurement and of the total amount payable for the work accordingly shall be final and binding on all parties.
Clause 7A: Time Limit for Payments of Final Bills

The final bill shall be paid within 3 months on presentation by the contractor after issuance of final completion certificate in accordance with clause 6 of the conditions of contract. If, there shall be any dispute about any item(s) of the work, then the undisputed item(s) only, shall be paid within the said period of 3 months. If a final bill (which contains no disputed item or disputed amount of any item) is not paid within the period of three months from presentation of final bill or 6 months from the date of receipt of registered notice regarding completion of work in accordance with clause 6 of the conditions of the contract, the defects, if any, shall be brought to the notice of the higher authority. The period of 3 months shall commence from the date of rectification of the defects. The higher authority shall ensure that in no case final bill should be left unpaid after 9 months from the receipt of registered notice regarding completion of work. The contractor shall submit a memorandum of the disputed items along with justification in support within 30 days from the disallowance thereof, and if he fails to do so, his claims shall be deemed to have been fully waived and absolutely extinguished.

Clause 8: Bills to be submitted on completion of specified stage of work

In case of Lump Sum contract, bills will be submitted by the contractor on completion of various stages of work as specified in the contract document. The claim as far as admissible, authorized or paid, if possible, before expiry of 10 days from the presentation of the bill. The claims for additions & alterations, if any, may also be included in the bills if their measurements have been recorded and checked.

Clause 8A: Bills to be submitted on completion of specified stage of work

In case of Lump Sum contract, bills will be submitted by the contractor on completion of various stages of work as specified in the contract document. The claim as far as admissible, authorized or paid, if possible, before expiry of 10 days from the presentation of the bill. The claims for additions & alterations, if any, may also be included in the bills if their measurements have been recorded and checked.

Clause 8B: Recovery of Cost of Preparation of the Bill

In case of contractor of class A and AA do not submit the bill within time fixed, the Engineer in Charge may prepare the bill as per the provision of clause 8 of the general conditions of the contract but @ 0.5 % of amount of such a bill shall be made and credited to the general revenue on account of preparation of bill.

Clause 9: Bills to be on printed forms

The Contractor shall submit all bills on the printed forms, to be had on application, at the office of the Engineer-in-charge and the charges in the Bills shall always be entered at the rates specified in the tender or in the case of any extra work ordered in pursuance of these conditions, and not mentioned or provided for in the tender, at the rates hereinafter provided for such work.

Clause 9A: Payments of Contractor’s Bills to Banks

Payments due to the Contractor may if so desired by him, be made to this Bank instead of direct to him, provided that the contractor has furnished to the Engineer-in-Charge an authorization in the form of a legally valid document, such as a Power of Attorney conferring authority on the Bank to receive payments, and (ii) his own acceptance of the correctness of the account made out, as being due to him, by Government, or his signature on the bill or other claim preferred against Government before settlement by the Engineer-in-Charge of the account or claim, by payment to the Bank. Nothing, herein contained, shall operate to create in favor of the Bank any rights vis-a-vis the Governor.

Clause 10: Stores supplied by Government

If the specification or estimate of the work provides for the use of any special description of material, to be supplied from Engineer-in-Charge’s stores, or if, it is required that contractor shall use certain stores to be provided by the Engineer-in-charge, specified in the schedule or memorandum hereto annexed, the contractor shall be bound to procure and shall be supplied such materials and stores as are, from time to time, required to be used by him for the purpose of the Contract only, and the value of the full quantity of materials and stores, so supplied, at the rates specified in the said schedule or memorandum, may be set off or which
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

may be deducted from any sum, then due or thereafter become due, to the Contractor under the Contract or otherwise or against or from the Security Deposit or the proceeds of sale, if the same is held in Government securities, the same or sufficient portion thereof being in this case, sold for this purpose. All materials supplied to the contractor, either from Departmental stores or with the assistance of Government, shall remain the absolute property of Government. The Contractor shall be trustee of the Stores/ Materials, so supplied/ procured, and these shall not, on any account, be removed from the site of work and shall be, all times, open to inspection by the Engineer-in-Charge. Any such material, unused and in perfectly good condition at the time of completion or determination or rescinding of the contract, shall be returned to the Divisional officer’s Stores, if, by a notice in writing under his hand, he shall so require, and if on service of such notice, the contractor fails to return the materials, so required, he shall be liable to pay the price of such materials in accordance with provision of clause 10 B ibid. But the contractor shall not be entitled to return any such materials, unless with such consent, and shall have no claim for compensation on account of any such materials, so supplied to him as aforesaid being unused by him, or for any wastage in or damage to any such materials. For the stores returned by the contractor, he shall be paid for, at the price originally charged excluding storage charges, in case of materials supplied from departmental stores and actual cost including freight, cartage, GST, taxes etc., paid by the Contractor, in case of supplies received with the assistance of Government, which, however, should in no case exceed market rate prevailing at the time the materials are taken back. The decision of the Engineer-in-charge, as to the price of the stores returned, keeping in view its condition etc., shall be final and conclusive. In the event of breach of the aforesaid condition, the Contractor shall, in addition to throwing himself open to account for contravention of the terms of the license or permit and/or for criminal breach of trust, pay to the Government, all advantages or profits resulting, or which in the usual course, would result to him by reason of such breach. Provided that the Contractor shall, in no case be entitled to any compensation or damage on account of any delay in supply, or non–supply thereof, all or any such materials and stores.

Clause 10A: Rejection of materials procured by the Contractor

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion, are not in accordance with the specifications and, in case of default, the Engineer-in-Charge shall be at liberty to employ other person(s) to remove the same without being answerable or accountable for any loss of damage, that may happen or arise to such materials to be substituted thereof, and in case of default, Engineer-in-Charge may cause the same to be supplied and all costs, which may attend such removal and substitution, are to be borne by the Contractor.

Clause 10B: Penal rate in case of excess consumption

The Contractor shall also be charged for the materials consumed in excess of the requirements calculated on the basis of standard consumption approved by the department, at double of the issue rate including storage and supervision charges or market rate, whichever is higher. A Material Supply and Consumption Statement, in prescribed Form RPWA 35A shall be submitted with every Running Account Bill, distinguishing material supplied by the Government and material procured by the Contractor himself. The recovery for such material shall be made from Running Account Bill next after the consumption and shall not be deferred. Certificate of such nature shall be given in each Running Account Bill.

Clause 10 C: Hire of Plant and Machinery

Special Plant and Machinery, required for execution of the work, may be issued to the Contractor, if available, on the rates of hire charges and other terms and conditions as per departmental Rules, as per Schedule annexed to these conditions. Rates of such Plant & Machinery shall be got revised periodically so as to bring them at par with market rate.

Clause 11: Works to be executed in accordance with specifications, Drawings, Orders etc.

The Contractor shall execute the whole and every part of the work in the most substantial and satisfactory manner and both as regards materials and otherwise in every respect, in strict accordance with the Specifications. The Contractor shall also conform exactly fully and faithfully to the designs, drawings (either designed by department or designed by contractor and approved by Engineer-in-charge during additional execution) and instructions in writing relating to the work signed by the Engineer-in-charge and lodged in his office and to which the Contractor shall be entitled to have access at such office or on the site of the work for the purpose of inspection during office hours and the Contractor shall, if he so require, be entitled, at his own
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

expense, to make or cause to be made copies of specifications and of all such designs, drawings and instructions, as aforesaid. A certificate of executing works as per approved design, specifications etc. shall be given on each Running Account Bill.

The specifications of work, material, methodology of execution, drawings and designs shall be signed by the Contractor and Engineer-in-charge while executing agreement and shall form part of agreement.

Clause 12:

The Engineer-in-charge shall have power to make any alterations, omissions or additions to or substitutions for the original specifications, drawings, designs and instructions, that may appear to him to be necessary during the progress of the work and the contractor shall carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-in-charge and such alterations, omission, additions or substitutions shall not invalidate the contract and any altered, additional or substituted work, which the contractor may be directed to do in the manner above specified as part of the work, shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work. The time for the completion of the work shall be extended in the proportion that the altered, additional or substituted work bears to the original contract work, and the certificate of the Engineer-in-charge shall be conclusive as to such proportion. The rates for such additional, altered or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order:

(i) If the rates for the additional, altered or substituted work are specified in the contract for the work, the contractor is bound to carry out the additional, altered or substituted work at the same rates as are specified in the contract for the work.

(ii) If the rates for the additional, altered or substituted work are not specifically provided in the contract for the work, the such rates will be derived from the rates for a similar class of work as are specified in the contract for the work.

(iii) If the rates for the altered, additional or substituted work cannot be determined in the manner specified in the sub-clauses (i) to (ii) above, then the rates for such composite work item shall be worked out on the basis of the concerned Schedule of Rates of the District/area specified above minus/plus the percentage which the total tendered amount bears to the estimated cost of the entire work put to tender. Provided always that if the rate for a particular part or parts of the item is not in the Schedule of Rates, the rate for such part or parts will be determined by the Engineer-in-Charge on the basis of the prevailing market rates when the work was done.

(iv) If the rates for the altered, additional or substituted work item cannot be determined in the manner specified in sub-clauses (i) to (iii) above, then the contractor shall within 7 days of the date of receipt of order to carry out the work, inform the Engineer-in-Charge of the rate which it is his intention to charge for such class of work supported by analysis of the rate or rates claimed and the Engineer-in-Charge shall determine the rate or rates on the basis of prevailing market rates, and pay the contractor accordingly. However, the Engineer-in-Charge, by notice in writing, will be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner, as he may consider advisable. But under no circumstances, the contractor shall suspend the work on the plea of non-settlement of rates on items falling under the clause.

(v) Except in case of items relating to foundations, provisions contained in sub-clauses (i) to (iv) above shall not apply to contract or substituted items as individually exceed the percentage set out in the tender documents under clause 12 A.

For the purpose of operation of clause 12 (v) the following works shall be treated as work relating to foundations:

i. For buildings, compound wall plinth level or 1.2 meters (4 ft.) above ground level whichever is lower, excluding items above flooring and D.P.C. but including base concrete below the floors.

ii. For abutments, piers, retaining wall of culverts and bridges, walls of water reservoir and the bed of floor level.

iii. For retaining walls, where floor levels is not determinate 1.2 meters above the average ground level or bed level.
iv. For roads, all items of excavation and filling including treatment of sub base and soling work.

v. For water supply lines, sewer lines underground storm water drains and similar work, all items of work below ground level except items of pipe work for proper masonry work.

vi. For open storm water drains, all items of work except lining of drains.

vii. Any other items of similar nature which Engineer-in-Charge may decide relating to foundation.

The rate of any such work, except the items relating to foundations, which is in excess of the deviation limit shall be determined in accordance with the provisions contained in Clause 12A.

Clause 12A:

The quantum of additional work for each item shall not exceed 50% of the original quantity given in the agreement and the total value of additional work shall not exceed 20% of the total contract value, unless otherwise mutually agreed by the Engineer-in-charge and the Contractor. This limit shall not be applicable on items relating to foundation work which shall be executed as per original rates or provision of clause 12 (i) to (iv).

In case of contract substituted items or additional items, which results in exceeding the deviation limit laid down in this clause except items relating to foundation work, which the contractor is required to do under clause 12 above, the contractor shall within 7 days from the receipt of order, claim revision of the rate supported by proper analysis in respect of such items for quantities in excess of the deviation limit notwithstanding the fact that the rates for such items exist in the tender for the main work or can be derived in accordance with the provision of sub clause (ii) of clause 12 and the Engineer-in-Charge, may revise their rates having regard to the prevailing market rates and the contractor shall be paid in accordance with the rates so fixed. The Engineer-in-Charge shall, however, be at liberty to cancel his order to carry out such increased quantities of work by giving notice in writing to the contractor and arrange to carry it out in such manner as he may consider advisable. But under no circumstances, the contractor shall suspend the work on the plea of non-settlement of rates of items failing under this Clause.

All the provisions of the preceding paragraph shall equally apply to the decrease in rates of items for quantities in excess of the deviation limit notwithstanding the fact that the rates for such items exist in the tender for the main work or can be derived in accordance with the provisions of sub-clause(ii) of the preceding clause 12 and the Engineer-in-Charge may revise such rates having regard to the prevailing market rates unless otherwise mutually agreed by the Engineer-in-Charge and the Contractor.

Clause 13: No compensation for alteration in or restriction of work to be carried out.

If, at any time after the commencement of the work the Government shall, for any reason, whatsoever, not require the whole work, thereof, as specified in the tender, to be carried out, the Engineer-in-charge shall give notice, in writing, of the fact to the Contractor, who shall have no claim to any payments or compensation, whatsoever, on account of any profit or advantage, which he might have derived from the execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out. Neither, shall he have any claim for compensation by reason of alterations having been made in the original specifications, drawings, and design, and instructions, which shall involve any curtailment of the work, as originally contemplated. Provided, that the Contractor shall be paid the charges for the cartage only, of materials actually brought to the site of the work by him for Bonafede use and rendered surplus as a result of the abandonment or curtailment of the work or any portion thereof, and taken them back by the Contractor, provided however, that the Engineer-in-charge shall have, in all such cases, the option of taking over all or any such materials at their purchase price or at local market rates whichever may be less. In the case of such stores, having been issued from Government Stores, charges recovered, including storage charges, shall be refunded after taking into consideration any deduction for claim on account of any deterioration or damage while in the custody of the contractor, and in this respect the decision of the Engineer-in-charge shall be final.

Clause 14: Action and compensation payable in case of bad work

If, it shall appear to the Chief Engineer or any authorized authority or the Engineer-in-charge or his subordinates in-charge of the work, or to the committee of the retired officers/officers appointed by the State Government for the purpose that any work has been executed with unsound, imperfect or unskilful workmanship, or with material of any inferior description, or that any materials or articles provided by him for
the execution of the work are unsound or of a quality inferior to that contracted, or otherwise not in accordance with contract, the Contractor shall on demand in writing from the Engineer-in-charge, specifying the work/materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for, will rectify or remove and reconstruct the work, so specified, in whole or in part, as the case may be, remove the materials or articles, so specified, and provide other proper and suitable materials or articles at his own cost, and in the event of his failing to do so, within a period to be specified by the Engineer-in-Charge in his demand as aforesaid, then the Contractor shall be liable to pay compensation at the rate of one percent, on the tendered amount of work for every week not exceeding ten percent, while his failure to do so shall continue, and in the case of any such failure, the Engineer-in-Charge may rectify or remove and re-execute the work or remove and replace with others, the materials or articles complained of as the case may be, at the risk and expense, in all respects of the contractor.

**Clause 15: Work to be open to inspection: Contractor or his responsible Agent to be present**

All work, under or in course of execution or executed in pursuance of the contract shall, at all times, be opened to inspection and supervision of the Engineer-in-charge and his superior officers e.g. Superintending Engineer, Additional Chief Engineer, Chief Technical Engineer, Chief Engineer, and his subordinates and any other authorized agency of the Government and the contractor shall, at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Engineer-in-charge or his subordinate and any other authorized agency of Government or committee of retired officers/officers appointed by the State Government for the purpose to visit the works shall have been given to the Contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for the purpose. Orders given to the Contractor’s agent shall be considered to have the same force as if they had been given to the Contractor himself.

**Clause 16: Notice to be given before any work is covered up**

The Contractor shall give not less than 7 days' notice, in writing, to the Engineer-in-charge or his subordinate-in-Charge of the work, before covering up or otherwise placing beyond the reach of measurement, any work in order that the same may be measured, and correct dimensions thereof, be taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Engineer-in-Charge of the work, and if, any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at the Contractor’s expense or in default, thereof, no payment or allowance shall be made for such work, or for the materials with which the same was executed.

**Clause 17: Contractor liable for damage done and for imperfections**

If the Contractor or his work people or servants shall break, deface, injure or destroy any part of a building, in which they may be working or any building, road, fence, enclosure, or cultivated ground contiguous to the premises on which the work or any part of it is being executed, or if any damage shall happen to the work, while in progress, from any cause, whatsoever, or any imperfections become apparent in it, within a period specified in clause 37, after a certificate, final or otherwise of its completion, shall have been given by the Engineer-in-charge, may cause the same to be made good by other workmen and deduct the expense (of which the certificate of the Engineer-in-charge shall be final) from any sums that may be then, or at any time thereafter, may become due to the Contractor, or from his security deposit, or the proceeds of sale thereof, or of a sufficient portion thereof.

**Clause 18: Contractor to supply plant, ladders, scaffolding etc.**

The Contractor shall arrange and supply, at his own cost, all material (except such special materials, if any, as may, in accordance with the contract, be supplied from the Engineer-in-charge’s stores), plants, tools, appliances, implements, ladders, cordage, tackle, scaffolding and temporary works requisite or proper for the proper execution of the work, whether original, altered, or substituted, and whether included in the specification or other documents, forming part of the Contract, or referred to in these conditions, or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer in-Charge, as to any matter as to which, under these conditions, he is entitled to be satisfied or which he is entitled to require, together with carriage thereof, to and from the work. The Contractor shall also arrange and supply, without charge, the requisite number of persons with the means and materials, necessary for the purpose of setting out work and counting, weighting and assisting in the measurement or examination at any
time and from time to time of the work, or materials. Failing his so doing, the same may be provided by the
Engineer-in-charge, at the expense of the Contractor, and the expenses may be deducted from any money
due to the Contractor under the Contract, or from his Security Deposit or the proceeds of sale thereof, or a
sufficient portion thereof. The Contractor shall also provide all necessary fencing and lights required to protect
the public from accident and shall be bound to bear the expenses of defense of every suit, action or other
proceeding at law, that may be brought by any person for injury sustained owing to neglect of the above
precautions, and to pay any damages and costs which may be awarded in any such suit, action proceeding to
any such person or which may, with the consent of the Contractor, be paid to compromise any claim by any
such person.

Clause 19: Work not to be sub-let, Contract may be rescinded and Security
Deposit and Performance Forfeited for sub-letting, bribing or if Contractor becomes insolvent.

The Contractor shall not be assigned or sublet without the written approval of the Chief Engineer, and if the
contractor shall assign or sublet his contract or attempt so to do, or become insolvent, or commence any
insolvency proceedings or mark any composition with his creditors, or attempt so to do, or if any bribe,
gratuity, gift, loan, requisite reward or advantage, pecuniary or otherwise, shall either directly or indirectly, be
given, promised or offered by the Contractor or any of his servants or agents to any public officer or person, in
the employ of Government, in any way, relating to his office or employment, or if, any such officer or person
shall become, in any way, directly or indirectly, interested in the contract, the Chief Engineer may, thereupon,
by notice, in writing, rescind the contract and Security Deposit of the Contractor shall, thereupon, stand
forfeited and be absolutely at the disposal of Government and the same consequences shall ensure as, if the
contract had been rescinded under Clause 3 hereof, and in addition the Contractor shall not be entitled to
recover or be paid for any work therefore, actually performed under the Contract.

Clause 20: Sums payable by way of compensation to be considered as reasonable
compensation without reference to actual loss

All sums payable by way of compensation under any of these conditions shall be considered as reasonable
compensation to be applied to the use of Government without reference to the actual loss or damage
sustained and whether or not any damage shall have been sustained.

Clause 21: Changes in constitution of firm

Where the Contractor is a partnership firm, the previous approval, in writing, of the Engineer-in-charge shall
be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or
a Hindu undivided family business concern, such approval, as aforesaid, shall likewise be obtained before the
Contractor enters into any partnership agreement thereunder the partnership firm would have the right to
carry out the work thereby undertaken by the Contractor. If, previous approval, as aforesaid, is not obtained,
the Contract shall be deemed to have been assigned in contravention of Clause 19 hereof, and the same action
may be taken, and the same consequences shall ensure, as provided in the said clause 19.

Clause 22: Work to be under direction of Engineer-in-charge

All the works, to be executed under the contract, shall be executed under the direction and subject to the
approval, in all respect, of the Engineer-in-charge of the Government of Rajasthan for the time being, who
shall be entitled to direct, at what point or points, and in what manner, they are to be commenced, and from
time to time, carried on.

Clause 23: Standing Committee for Settlement of Disputes

If any question, difference or objection, whatsoever shall arise in any way, in connection with or arising out of
this instrument, or the meaning of operation of any part thereof, or the rights, duties or liabilities of either
party then, save in so far, as the decision of any such matter, as herein before provided for, and been so
decided, every such matter constituting a total claim of Rs. 50,000/- or above, whether its decision has been
otherwise provided for and whether it has been finally decided accordingly, or whether the Contract should be
terminated or has been rightly terminated, and as regards the rights or obligations of the parties, as the result
of such termination, shall be referred for decision to the empowered Standing Committee, which would
consist of the followings:-

(i) Secretary, LSG, GoR.
Section VI A: General Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

(ii) Finance Secretary or his nominee, not below the rank of Deputy Secretary.

(iii) Law Secretary or his nominee, not below the rank of Joint Legal Remembrancer.

(iv) Commissioner Nagar Nigam Jaipur.

(v) Chief Engineer Nagar Nigam Jaipur.

The Engineer-in-charge, on receipt of application along with non-refundable prescribed fee, (the fee would be two percent of the amount in dispute, not exceeding Rs. one Lac) from the Contractor, shall refer the disputes to the committee, within a period of three month from the date of receipt of application. Procedure and Application for referring cases for settlement by the Standing Committee shall be, as given in Form RPWA 90.

Clause 23A: Contractor to indemnify for infringement of Patent or design

Contractor shall fully indemnify the Governor of Rajasthan against any action, claim or proceeding, relating to infringement or use of any patent or design, or any alleged patent or design, rights, and shall pay any royalties, which may be payable in respect of any article or part thereof, included in the contract, in the event of any claims made under or action brought against Government. In respect of any such matters, as aforesaid, the Contractor shall be, immediately, noticed thereof, and the Contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation, that may arise there from provided that the Contractor shall not be liable to indemnify the Governor of Rajasthan, if the infringement of the patent or design or any alleged patent or design, right is the direct result of an order passed by the Engineer-in-Charge in this behalf.

Clause 24: Imported Store articles to be obtained from Government

The contractor shall obtain from the stores of the Engineer-in-charge, all imported store articles which may be required for the work or any part thereof, or in making up articles required thereof, or in connection therewith, unless he has obtained permission, in writing, from the Engineer-in-charge, to obtain such stores and articles from else-where. The value of such stores and articles, as may be supplied to the Contractor by the Engineer-in-charge, will be debited to the Contractor, in his account, at the rates shown in the schedule attached to the contract, and if they are not entered in the schedule, they will be debited at cost price, which for the purposes of this contract, shall include the cost of carriage and all other expenses, whatsoever, which shall have been incurred in obtaining delivery of the same at the stores aforesaid plus storage charges.

Clause 25: Lump-sums in estimates

When the estimate, on which a tender is made includes lump sums, in respect of parts of the work, the Contractor shall be entitled to payment in respect of the item of work involved, or the part of the work in question at the same rates, as are payable under the contract for such items or if the part of the work in question is not, in the opinion of the Engineer-in-charge, capable of measurement, the Engineer-in-charge may at his discretion pay the lump sum amount entered in the estimate and the certificate in writing of the Engineer-in-charge shall be final and conclusive with regard to any sum or sums payable to him under the provisions of this clause.

Clause 26: Action where no Specification

In case of any Class of work for which there is no such specification as is mentioned in the contract document referred in ITB Clause 4.1, such work shall be carried out in accordance with the detailed specification of the department and also in accordance with the instructions and requirement of the Engineer-in-charge.

Clause 27: Definition of work

The expression “works” or “work” where used in these conditions, shall, unless there be something either in subject or context, repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed, whether temporary or permanent, and whether original, altered, substituted or additional.

Clause 27A: Definition of Engineer-in-charge

The term “Engineer-in-charge” means the Divisional officer who shall supervise and be in-charge of the work and who shall sign the contract on behalf of the Governor.
It cannot be guaranteed that the work will be started immediately after the tenders have been received. No claims for increase of rate will be entertained, if the orders for starting work are delayed.

**Clause 29: Payments at reduced rates on account of items of work not accepted and not completed to be at the discretion of the Engineer-in-charge**

The rates for several items of works, estimated to cost more than Rs. 1,000/-, agreed within, will be valid only when the item concerned is accepted as having been completed fully in accordance with the sanctioned specifications. In cases, where the items of work are not accepted, as so completed, the Engineer-in-charge may make payment on account of such items, at such reduced rates, as he may considers reasonable, in the preparation of final or on account bills, and his decision in the matter shall be final and binding.

**Clause 29A: Payments at part rates**

The rates for several items of works may be paid at part rates provisionally in running bills in proportion to the quantum of items executed at the discretion of Engineer-in-charge. In case of item rates, if the rate quoted for certain items are very high in comparison to the average/overall tendered premium, then the payment at running stages shall not be made more than the average sanctioned premium. The deferred payment, will however be released after successful completion of the work.

**Clause 30: Contractors Percentage:**

The percentage referred to in the “Tender for works” will be deducted/ added from/ to the gross amount of the bill before deducting the value of any stock issued.

**Clause 31: Contractor to adhere to labour laws/regulation**

The Contractor shall adhere to the requirements of the Workmen's Compensation Act and Labour Legislation in force from time to time and be responsible for and shall pay any compensation to his workmen which would be payable for injuries under the Workmen's Compensation Act, here-in-after called the said Act. If such compensation is paid by the State as Principal employer under Sub Section (1) of section 12 of the said Act, on behalf of the Contractor, it shall be recoverable by the State from the Contractor under Sub Section (2) of the said section. Such compensation shall be recovered in the manner laid down in clause 1 of the Conditions of Contract.

Note: All contracts with Government shall require registration of workers under the building & other Construction Workers (Regulation of Employment & Conditions of Services) Act, 1996 and extension of benefit to such workers under the Act. Deduction of cess at source will be made as per provisions of the said Act, in force from time to time.

**Clause 32: Withdrawal of work from the Contractor**

If the Engineer-in-charge shall at any time and for any reasons, whatever, including inability to maintain prorate progress, think any portion of the work should not be executed or should be withdrawn from the Contractor, he may, by notice in writing to that effect, require the Contractor not to execute the portion of the work specified in the notice, or may withdraw from the Contractor the portion of work, so specified, and the Contractor shall not be entitled to any compensation, by reason of such portion of work having been withdrawn from him. The Engineer-in-charge may supplement the work by engaging another agency to execute such portion of the work at the cost of the original contractor, without prejudice to his rights under clause 2. He shall also be competent to levy compensation for delay in progress. The recovery of excess cost shall be made from next available running bill or any other claim and shall not be deferred.

**Clause 33:**

The Contract includes clearance, leveling and dressing of the site within a distance of 15 meters of the building on all sides except where the building adjoins another building.

**Clause 34: Protect works**

The Contractor shall arrange to protect, at his own cost, in an adequate manner, all cut stone work and other work, requiring protection and to maintain such protection, as long as work is in progress. He shall remove and replace this protection, as required by the Engineer-in-Charge, from time to time. Any damage to the work, so
Section VI A: General Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

protected, no matter how it may be caused, shall be made good by the Contractor free of cost. All templates, forms, moulds, centering, false works and models, which in the opinion of the Engineer-in-Charge, are necessary for the proper and workman like execution of the work, shall be provided by the Contractor free of cost.

Clause 35: Contractor liable for settlement of claims caused by his delays
If the progress of the work has fallen so much in arrears as to prevent other contractors on the work, from carrying out their part of the work within the stipulated time, he will be liable for the settlement of any claim, put in by any of these contractors for the expenses of keeping their labour unemployed, to the extent considered reasonable by the Engineer-in-Charge.

Clause 36A:
The liability, if any, on account of quarry fees, royalties, Octroi and any other taxes, cess and duties in respect of materials actually consumed on public work, shall be borne by the Contractor.

Clause 36B:
The cost of all water connections, necessary for the execution of work, and the cost of water consumed and hire charges of meters and the cost of electricity consumed in connection with the execution of work, shall be paid by the Contractor, except where otherwise specifically indicated.

Clause 36C: Payment of Sales Tax, and any other Taxes
Royalty or other tax on materials, issued in the process of fulfilling contract, payable to the Government under rules in force, will be paid by the Contractor himself.

Clause 36D:
In respect of goods and materials procured by the Contractor, for use in works under the contract, sales tax will be paid by the Contractor himself. But in respect of all such goods manufactured and supplied by the Contractor and works executed under the contract, the responsibility of payment of sales tax would be that of the Engineer-in-Charge.

Clause 37: Refund of Security Deposit
The Security Deposit will be refunded after the expiry of the period, as prescribed below:

(a) In case of contracts relating to hiring of trucks and other T&P, transportation including loading, unloading of materials, the amount of Security Deposit is refundable along with the final bill.

(b) Supplies of material: As per provisions of G.F.& A.R.

(c) Ordinary repairs: 3 months after completion of the work provided the final bill has been paid.

(d) Original works/special repair works: Security Deposit will be refunded six months after completion, or expiry of one full rainy season, or after expiry of defect liability period as defined in the special condition of agreement, whichever is later provided the final bill has been paid.

(e) In case of PWD original works/special repairs works costing more than Rs. 10.00 Lacs, partial amount of Security Deposit will be refunded during the defect liability period @ 10% of SD amount after lapse of one year of completion and thereafter 10% of original amount of SD at the end of each subsequent year. The remaining amount of SD be refunded after the expiry of Defect Liability period.

Clause 38: Fair Wage Clause

(a) The Contractor shall pay not less than fair wages/minimum wages to laboures engaged by him on the work as revised from time to time by the Government, but the Government shall not be liable to pay anything extra for it except as stipulated in price escalation clause (clause 45) of the agreement.

Explanation: “Fair Wage” means minimum wages for time or piece work, fixed or revised, by the State Government under Minimum Wages Act, 1948.

(b) The Contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wages to labourers indirectly engaged on the work, including any labour engaged by his sub-
Section VI A: General Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

contractors in connection with the said work as if the labourers have been immediately or directly employed by him.

(c) In respect of all labourers immediately or directly employed on the work, for the purpose of the Contractor's part of this agreement, the Contractor shall comply with or cause to be complied with the Public Works Department Contract's Labour Regulations made, or that may be made by the Government, from time to time, in regard to payment of wages, wages period, deductions from wages, recovery of wages not paid, and unauthorized deductions, maintenance of wages register, wage card, publication or scale of wages and other terms of employment, inspection and submission of periodical returns and other matters of a like nature.

(d) The Engineer-in-charge shall have right to deduct from the money due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers, by reasons of non-fulfillment of the conditions of the contract, for the benefit of the worker or workers, non-payment of wages or of deductions made therefrom, which are not justified by the terms of the contract, or as a result of non-observance of the aforesaid regulations.

(e) Vis-a-Vis the Government of Rajasthan, the Contractor shall be primarily liable for all payments to be made and for the observance of the regulations aforesaid, without prejudice to his right to claim indemnity from his sub-contractors.

(f) The regulations, aforesaid, shall be deemed to be part of this contract and any breach, thereof, shall be deemed to be breach of the Contract.

Clause 39: Contractor to engage technical staff

The Contractor shall engage the technical staff, as follows, on the contract works:

(a) For works costing Rs. 100 Lac and above – One Graduate Engineer
(b) For works costing between Rs. 50 Lac to Rs. 100 Lac - One qualified diploma holder having experience of not less than 3 years.
(c) For works costing between Rs. 15 Lac and Rs. 50 Lac - One qualified diploma holder

The technical staff should be available at site, whenever required by Engineer-in-charge to take instructions.

Clause 39 A:

The Contractor shall comply with the provisions of the Apprenticeship Act, 1961, and the Rules and Orders issued, thereunder, from time to time. If he fails to do so, his failure will be a breach of contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

Clause 40: Safety code

The Contractor shall follow the safety code(s) of the department and as specified in special conditions of contract.

Clause 41: Near Relatives barred from tendering

The Contractor shall not be permitted to tender for works in Circle, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the Superintending Engineer and Assistant Engineer (both inclusive). He shall also intimate the names of persons, who are working with him in any capacity, or are subsequently employed by him and who are near relatives to any gazetted officer in the Organization/Department. Any breach of this condition by the Contractor would render him liable to be removed from the approved list of contractors of the Department. If such facts is noticed (a) before sanction of tender, his offer shall be declared invalid and earnest money shall be forfeited, (b) after sanction of the tender then the tender sanctioning authority may at his discretion forfeit his earnest money, security deposit and enlistment deposit and work/remaining work may allot to any registered contractor on the same rates as per rules.

Note: By the term "near relative" is meant wife, husband, parents, and grand-parents, children and grandchildren, brothers and sisters, uncles and cousins and their corresponding in-laws.
Clause 42: Retired Gazetted Officers barred for 2 years

No Engineer of Gazetted rank or other Gazetted officer, employed in Engineering or Administrative duties in an Engineering Department of the Government of Rajasthan, is allowed to work as a Contractor for a period of 2 years of his retirement from Government service without the previous permission of Government of Rajasthan. This contract is liable to be cancelled, if either the Contractor or any of his employee is found, at any time, to be such a person, who had not obtained the permission of Government, as aforesaid, before submission of the tender or engagement in the contractor’s service, as the case may be.

Clause 43: Quality Control

The Government shall have right to exercise proper Quality Control measures. The Contractor shall provide all assistance to conduct such tests.

Clause 43 A:

The work (whether fully constructed or not) and all materials, machines, tools and plant, scaffolding, temporary buildings and other things connected therewith, shall be at the risk of the contractor until the work has been delivered to the Engineer-in-charge, and a certificate from him, to the effect, obtained.

Clause 44: Death of Contractor

Without prejudice to any of the rights or remedies under the contractor, if the Contractor dies, the legal heirs of the Contractor or the Chief Engineer or duly authorized Engineer shall have the option of terminating the contract without any compensation.

Clause 45: Price Variation Clause:

If, during the progress of the contract of value exceeding Rs. 50.00 Lac (accepted tendered amount minus cost of material supplied by the department), and where stipulated completion period is more than 6 months (both the conditions should be fulfilled), the price, of any materials/ diesel and petrol/cement/steel incorporated in the works (not being materials to be supplied by the department) and / or wages of labour increases or decreases, as compared to the price and / or wages prevailing at the date of opening of tender or date of negotiations for the work, the amounts payable to contractors for the work shall be adjusted for increase or decrease in the rates of materials (excepting those materials supplied by the department)/ labour/ diesel and petrol/cement/ steel. If negotiated rates have been accepted, prices as on the date of negotiation shall be considered for price adjustment. Similarly, if rates received on the date of opening of tenders have been accepted, then prices on the date of opening of tender shall be considered for price adjustment.

Increase or decrease in the cost of labour/material/diesel and petrol/cement/steel shall be calculated quarterly in accordance with the following formula: -

(A) Labour

\[ V_L = 0.75 \times \frac{P_L (I_L1 - I_L0)}{100 I_L0} \]

\[ V_L = \text{Increase or decrease in the cost of work during the quarter under consideration due to change in rates for labour.} \]

\[ R = \text{The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.} \]

\[ I_L0 = \text{The average consumer price index for industrial workers (whole sale prices) for the quarter in which tenders were opened/negotiated (as published in Reserve Bank of India Journal/Labour Bureau Simla, for the area).} \]

\[ I_L1 = \text{The average consumer price index for industrial workers (whole sale prices) for the quarter of a calendar year under consideration (as published in Reserve Bank of India Journal/Labour Bureau Simla, for the area).} \]

\[ P_L = \text{Percentage of labour components.} \]

Note: In case of revision of minimum wages by the Government or other competent authority, nothing extra would be payable except the price escalation permissible under this clause.

(B) Material (excluding material supplied by the department).

\[ P_M (L_M1 - L_M0) \]
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

\[ V_M = 0.75 \times \frac{R}{100} \times L_{M0} \]

\[ V_M \] = Increase or decrease in the cost during the quarter under consideration due to change in rates of material.

\[ R \] = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.

\[ L_{M0} \] = The average wholesale price index (all commodities) for the quarter in which tenders were opened/negotiated (as published in Reserve Bank of India Journal/Economic Adviser to Government of India, Ministry of Industries, for the area).

\[ L_{M1} \] = The average wholesale price index (all commodities) for the quarter under consideration (as published in Reserve Bank of India Journal/Economic Adviser to Government of India, Ministry of Industries, for the area).

\[ P_M \] = Percentage of material components (excluding materials supplied by the Department).

\[ (C) \text{ Bitumen} \]

\[ V_b = 0.75 \times \frac{(B_i - B_0)}{100} \times R \times B_0 \]

\[ V_b \] = Increase or decrease in the cost of work during the quarter under consideration due to change in rates for bitumen.

\[ R \] = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.

\[ B_0 \] = The wholesale price for bitumen on day of opening of tenders/negotiation, as published by the Economic Advisor to Government of India, Ministry of Industry.

\[ B_i \] = The average wholesale price index for bitumen for the quarter under consideration as published weekly by Economic Adviser to Govt. of India, Ministry of Industry.

\[ P_{b} \] = Percentage of bitumen component excluding bitumen supplied by the department (Specified in the sanctioned estimate of the work).

\[ (D) \text{ Petroleum} \]

\[ V_f = 0.75 \times \frac{(F_i - F_0)}{100} \times R \times F_0 \]

\[ V_f \] = Increase or decrease in the cost of the work during the quarter under consideration due to change in the rates for fuel and lubricants.

\[ R \] = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.

\[ F_0 \] = The average wholesale price index of High-speed Diesel (HSD) as published by the Economic Adviser to Govt. of India, Ministry of Industry on the day of opening of tender/negotiations.

\[ F_i \] = The average wholesale price Index of H.S.D. for the quarter under consideration as published weekly by the Economic Adviser to the Government of India, Ministry of Industry.

\[ P_{f} \] = Percentage of fuel and lubricants component excluding fuel and lubricants supplied by the departments (Specified in the sanctioned estimate for the work).

Note: For application of this clause price of HSD is chosen to indicate fuel and lubricant component.

\[ (E) \text{ Cement} \]

\[ V_c = 0.75 \times \frac{(L_{c1} - L_{c0})}{100} \times R \times L_{c0} \]

\[ V_c \] = Increase or decrease in the cost of the work during the quarter under consideration due to change in the rates for cement.

\[ R \] = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.

\[ L_{c0} \] = The average wholesale price index of cement for the quarter under consideration (as published weekly by the Economic Adviser to the Government of India, Ministry of Industry).

\[ P_{c} \] = Percentage of cement component excluding cement supplied by the department (Specified in the sanctioned estimate for the work).
V_c = Increase or decrease in the cost of work during the quarter under consideration due to change in rates of cement.

R = The value of the work done in rupees during the quarter under consideration excluding the cost of cement supplied by the department and excluding other items as mentioned in this Clause.

Lco = The average wholesale price index for the quarter in which tenders were opened/ negotiated, as published by the Economic Advisor to Government of India, Ministry of Industry.

Lc1 = The average wholesale price index for the quarter under consideration as published weekly by Economic Adviser to Govt. of India, Ministry of Industry.

P_C = Percentage of cement component excluding bitumen supplied by the department.

F) Steel

V_s = \frac{0.75 \times P_s (Ls1 - Ls0)}{100 Ls0} x R

V_s = Increase or decrease in the cost of work during the quarter under consideration due to change in rates of steel.

R = The value of the work done in rupees during the quarter under consideration excluding the cost of steel supplied by the department and excluding other items as mentioned in this Clause.

Lso = The average wholesale price index for the quarter in which tenders were opened/ negotiated, as published by the Economic Advisor to Government of India, Ministry of Industry.

Ls1 = The average wholesale price index for the quarter under consideration as published weekly by Economic Adviser to Govt. of India, Ministry of Industry.

P_s = Percentage of steel component excluding bitumen supplied by the department.

Note: For application of this clause price of HSD is chosen to indicate fuel and lubricant component.

Clause 45A: Price Variation in installation of elevators, supply/installation of Central Air Conditioning and Central Evaporating Cooling Works

In all cases of contracts for installation of elevators, supply/installation of Central Air Conditioning and Central Evaporating Cooling Works, the price quoted shall be based on the Indian Electrical and Electronics Manufacturers Association (IEEMA) price variation clause based on the cost of raw materials/components and labour cost as on the date of quotation/tender, and the same is deemed to be related to wholesale price index number of metal products and All India Average consumer price index number of industrial workers as specified below. In case of any variation in these index numbers, the prices shall be subject to adjustment up or down in accordance with following formula:

\[ P = \frac{P_o}{100} + \frac{MP}{15} + \frac{W_o(D)}{15} + \frac{W_o(1)}{15} \]

Where:

P = Price payable as adjusted in accordance with the above price variation formula.

P_o = Price quoted/confirmed

MP_o = Wholesale Price Index Number for metal products as published by the office of the Economic Adviser, Ministry of Industry, Government of India, in their weekly bulletin. Revised Index Number of Wholesale Prices (Base: 1981-82=100) for the week ending first Saturday of the relevant calendar month. The relevant month shall be that in which price was offered or negotiated whichever is later.

W_o = All India Average Consumer Price Index Number for Industrial workers (Base: 1982=100), as published by Labour Bureau, Ministry of Labour, Government of India, for relevant calendar month. The relevant month shall be that in which price was offered or negotiated whichever is later.

The above index number MP_o&W_o are those published by IEEMA as prevailing on the first working day of the calendar month FOUR months prior to the date of tendering.
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

MP = Wholesale Price Index Number of Number of Metal Products as published by the office of Economic Adviser, Ministry of Industry, Government of India, in their weekly bulletin, Revised index Number of wholesale prices (Base: 1981-82=100). The applicable wholesale price Index Number for Metal Products as prevailing on 1st Saturday of the month covering the date FOUR months prior to the date of delivery and would be as published by IEEMA.

Wo(D) = All India Average Consumer Price Index Number for Industrial workers prevailing for the month covering the date FOUR months prior to the date of delivery of manufactured material and would be as published by IEEMA.

Wo(1) = All India Average Consumer Price Index Number for Industrial workers (Base: 1982=100) as published by labour Bureau, Ministry of Labour Government of India. The applicable All India Consumer Price Index Number of Industrial workers prevailing for the FOUR months prior to the date of completion of installation/ progress parts of installation and would be as published by IEEMA. The date of delivery shall be the date on which the manufactured material is actually supplied at site. The date of completion of installation (or progress part of installation) shall be the date on which the work is notified as being completed and is available for inspection/ duly tested. In the absence of such notification, the date of completion is not intimated, such completion shall be considered by the Engineer-in-charge which shall be final.

Note 1. The Wholesale Price Index Number for Metal Products is published weekly by the office of the Economic Adviser, but if there are any changes, the same are incorporated in the issue appearing in the following week. For the purpose of this Price Variation Clause, the final index figures shall apply.

Note 2. The sole purpose above stipulation is to arrive at the entire contract under the various situations. The above stipulation does not indicate any intentions to sell materials, under this contract as movables.

Note 3. The indices MP & Wo are regularly published by IEEMA in monthly basic price circulars based on information bulletins from the authorities mentioned. These will be used for determining price variation and only IEEMA Circulars will be shown as evidence if required.

General Conditions for admissibility of Escalation

1. The exact percentage of labour/material (excluding materials to be supplied by the department)/bitumen/diesel and petrol/cement/ steel component for the work shall be approved by the authority while sanctioning the detailed Estimates.

2. The break-up of components of labour/materials (excluding materials to be supplied by the department)/bitumen/diesel and petrol/cement/steel as indicated in Clause 45 have been predetermined as below:

<table>
<thead>
<tr>
<th>SN</th>
<th>Particulars</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Labour</td>
<td>30</td>
</tr>
<tr>
<td>(b)</td>
<td>Bitumen</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>Petroleum</td>
<td>3</td>
</tr>
<tr>
<td>(d)</td>
<td>Steel</td>
<td>7</td>
</tr>
<tr>
<td>(e)</td>
<td>Cement</td>
<td>5</td>
</tr>
<tr>
<td>(f)</td>
<td>Material</td>
<td>55</td>
</tr>
</tbody>
</table>

3. While allowing price escalation the following shall be deducted from the value of work done (R):
   (a) Cost of material supplied by the Department.
   (b) Cost of services rendered as per clause 34.
   (c) Secured Advance/any advance added earlier but deducted now after work is measured.
   (d) Cost of extra items, the rates for which have been worked out based on market rates/mutually agreed rates.

4. The first statement of escalation shall be prepared at the end of three months in which the work was awarded and the work done from the date of start to the end of this period shall be taken into account. For subsequent statement, cost of work done during every quarter shall be taken into account. At the completion of work, the work done during the last quarter or fraction, thereof, shall be taken into account.
5. For the purpose of reckoning the work done during any period, the bills prepared during the period shall be considered. The dates of recording measurements in the Measurement Book by the Assistant Engineer shall be the guiding factor to decide the Bills relevant to any period. The date of completion, as finally reorded by the competent authority in the Measurement Book, shall be the criterion.

6. The index relevant to any quarter, for which such compensation is paid, shall be the arithmetical average of the indices relevant of the calendar month.

7. Price adjustment clause shall be applicable only for the work that is carried out within the stipulated time, or extension thereof, as are not attributable to the contractor.

8. If during the progress in respect of contract works stipulated to cost Rs. 50 Lac or less, the value of work actually done excluding cost of material supplied by the Department, exceeds Rs. 50 Lac and completion period is more than 6 months, then escalation would be payable only in respect of value of work in excess over Rs. 50 Lac from the date of satisfying both the conditions.

9. Where originally stipulated period is 6 months or less but actual period of execution exceeds beyond 6 months on account of reasons not attributable to contractor, escalation amount would be payable only in respect of extended period if amount of work is more than Rs. 50 Lac.

10. In case the contractor does not make prorate progress in the first or another time span and the short fall in progress is covered up by him during subsequent time span within original stipulated period then the price escalation of such work expected to be done in the previous time span shall be notionally give based upon the price index of that quarter in which such work was required to be done.

11. No claims for price adjustment other than those provided herein, shall be entertained.

12. If the period of completion including extended period attributable to Government exceeds twelve months but cost does not exceeds more than Rs. 50 Lac, no escalation is admissible.

13. Similarly, if cost of works increases more than Rs. 50 Lac but completion period including extended period attributable to government is less than 6 months, no escalation is admissible.

14. No provisional escalation is payable on the basis of indices of the previous quarter in absence of non publication of indices for concerned quarter by the RBI.

15. Escalation is always payable quarterly and no provisional escalation is payable monthly for fortnightly.

16. In case at the time of executing agreement, both the conditions (completion period 6 months and amount of work Rs. 50 Lac) for admissibility of price escalation are not fulfilled and subsequently due to additional work and extension of time attributable to government, both the conditions become fulfilled, that case the escalation shall be payable from the date of satisfying both the conditions and only for work done beyond Rs. 50 Lac and in period of work beyond 6 months.

17. The contractor shall for the purpose of this conditions keep such books of account and other documents as are necessary to show the amount of any increase climbed or reduction available and shall allow inspection of the same by a duly authorized representative of Government and further shall at the request of the Engineer-in-charge furnish, verified in such a manner as the Engineer-in-Charge may require any documents so kept and such other information as the Engineer-in-Charge may require.

18. Price variation clause shall be applicable in case of lump sum contracts estimated cost more than Rs. 100 crores with stipulated completion period of more than 18 months.

19. The components of operation and maintenance (O&M) cost included in the contract price shall not be subject to price variations. The price may be adjusted by the use of prescribed formula (formulae) which breaks down the total price into components.

20. The amount of price variation in case of lump sum contracts will be made by adding or deducting as the case may be, from the payments made at the stage of work specified in the contract documents.

Clause 46: Force-Majeure

Neither party shall be liable to each other, for any loss or damage, occasioned by or arising out of acts of God such as unprecedented floods, volcanic eruptions, earthquake or other invasion of nature and other acts.
Clause 47: General Discrepancies and Errors

In case of percentage rate tenders, if there is any typographical or clerical error in the rates shown by Department in the "G" Schedule, the rates as given in the Basic Schedule of Rates of the Department for the area shall be taken as correct.

Clause 48: Post payment Audit & Technical Examination

The Government shall have right to cause an audit and technical examination of the works, and the final bills of the contractor, including all supporting vouchers, abstracts, etc., to be made within 2 years after payment of the final bill, and if, as a result of such audit and technical examination, any sum is found to have been over paid in respect of any work done by the Contractor under the contract, or any work claimed by him to have been done by him under the Contract and found not to have been executed or executed below specifications, the Contractor shall be liable to refund the amount of over payment, and it shall be lawful for Department to recover the same from him in the manner prescribed in Clause 50 or in any other manner legally permissible, and if it is found that the Contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under- payment shall be duly paid by the Government to the Contractor.

Clause 48A: Pre-Check or Post Check of Bills

The Government shall have right to provide a system of pre-check of Contractor’s bill by a specified Organization, and payment by an Engineer or an Accounts Officer/sr. Accounts Officer/chief Accounts Officer/ financial Advisor, as the Government may in its absolute discretion prescribe. Any over-payments excess payments detected, as a result of such pre-check or post-check of Contractor’s bills, can be recovered from the Contractor’s bills, in the manner, herein before provided, and the Contractor will refund such over/excess payments.

Clause 48B: Check Measurements

The department reserves to itself, the right to prescribe a scale of check measurement of work, in general, or specific scale for specific works, or by other special orders (about which the decision of the department shall be final). Checking of measurement by superior officer shall supersede measurements by the subordinate officer, and the former will become the basis of the payment. Any over/excess payments detected, as a result of such check measurement or otherwise at any stage up to the date of completion and the defect removal period specified elsewhere in this contract, shall be recoverable from the Contractor, as any other dues payable to the Government.

Clause 49: Dismantled materials

The Contractor, in course of the work, should understand that all materials e.g. stone, bricks, steel and other materials obtainable in the work by dismantling etc. will be considered as the property of the Government and will be disposed off to the best advantage of the Government, as per directions, of the Engineer-in-charge.

Clause 50: Recovery from Contractors

Whenever any claim against the Contractor for the payment of a sum of money arises out of or under the contract, the Department shall be entitled to recover such sum by appropriating, in part or whole of the Security Deposit, Security Deposit at the time of enlistment of the Contractor. In the event of the security being insufficient, or if no security has been taken, then the balance or the total sum recoverable, as the case may be, shall be deducted from any sum, then due or which at any time, thereafter, may become due to the Contractor, under this or any other contract with the Governor of Rajasthan. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Department on demand the balance remaining dues.

The department shall, further, have the right to effect such recoveries under Public Demand Recovery Act.

Clause 51: Jurisdiction of Court

In the event of any dispute arising between the parties hereto, in respect of any of the matters comprised in this agreement, the same shall be settled by a competent Court having jurisdiction over the place, where agreement is executed and by no other court, after completion of proceedings under Clause 23 of this Contract.
Section VI A: General Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

Schedule of Materials to be supplied by the Department, if available (Referred to in clause 10)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Particulars</th>
<th>Quantity, meters</th>
<th>Rates</th>
<th>Place of Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NIL</td>
<td>NIL</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Schedule of Machinery/T&P to be supplied by the Department
The following Machinery/T&P shall be supplied by the Department, if available, to the Contractor, on hire as per “Rules of the Department for supply for machinery and T&P to the Contractor on hire” (Referred in Clause 10 C)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Item</th>
<th>Rate</th>
<th>Place of Delivery and Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIL</td>
<td>NIL</td>
<td>NIL</td>
<td></td>
</tr>
</tbody>
</table>

Progress Statement referred to in Clause 2 of Conditions of Contract

<table>
<thead>
<tr>
<th>Name of Work</th>
<th>Date from which the work should be commenced</th>
<th>Date by which the work should be completed</th>
<th>Monthly rate of Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The contractor has been informed that his tender has been accepted

Dated Signature of Engineer- in -charge
Dated signature of Contractor

Notes: - For Filling in the Progress Statement Form
1. Columns 2, 3, and 4 must be initialed and dated by the Contractor
2. Column 4 must be initialed and dated by the Chief Engineer or other duly authorised Engineer also.
3. The date in column 2 should correspond to the date on which the order to commence work is given to the contractor read with Clause 2 of the conditions of contract.
4. The date in column 3 must correspond to the period stated in Sub clause(e) of the Memorandum below “Tender for works”.
5. Column 4. This will ordinarily be worked out proportionately; thus if Rs. 24,000/- is the cost of the whole or portion of work tendered for, and six months period of completion, then the monthly rate of progress should be Rs. 4,000. If necessary, quantities may also be specified in this column at the discretion of the Chief Engineer.
6. The Certificate as to intimation of acceptance of tender printed at the foot of the form, must be signed and dated both by the Chief Engineer or other duly authorised Engineer and the Contractor. Annexure to Appendix XI

RAJASTHAN PUBLIC WORKS DEPARTMENT CONTRACTORS LABOUR REGULATIONS
1. Short Title: These regulations may be called "The Rajasthan public Works Department Contractors-

LABOUR REGULATIONS"
2. Definition: In these regulations unless otherwise expressed or indicated, the following words and expressions shall have the meaning hereby assigned to them respectively, that is to say:

3. "Labour" means workers employed by a Rajasthan P.W. Department contractors directly or indirectly through a sub contractor or other person by an agent on his behalf.

4. "Fair Wage" means minimum wages for time or piece work fixed or revised by the state Government under the minimum wages Act 1948.

5. "Contractor" shall include every person whether sub-Contractor or headman or Agent employing labour on the work taken on Contract.

6. "Wages" shall have the same meaning as defined in the payment of Wages Act and includes time and price rate wages.

7. Display of Notice regarding wages etc.: The contractor shall (a) before he commences his work on contract, display and inconspicuous places on the work notices in English and the correctly maintain in Hindi by the majority of the workers giving the rate of wages which have been certified by the Executive Engineer, Superintending Engineer, the Chief Engineer or Labour Commissioner, as fair wages and the hours of works for which such wages are earned, and (b) send a copy of such notices to the Certifying Officers.

8. Payment of Wages:
   (i) WAGES DUE TO EVERY WORKER SHALL BE PAID TO HIM DIRECT.
   (ii) ALL WAGES SHALL BE PAID IN CURRENT COIN OR CURRENCY OR IN BOTH.

9. Fixation of wage periods:
   (iii) THE CONTRACTOR SHALL FIX THE WAGE PERIODS IN RESPECT OF WHICH THE WAGES SHALL BE PAYABLE.
   (iv) NO WAGE PERIOD SHALL EXCEED ONE MONTH.
   (v) WAGES OF EVERY WORKMAN EMPLOYED ON THE CONTRACT SHALL BE PAID BEFORE THE EXPIRY OF TEN DAYS THE LAST DAY OF THE WAGE PERIOD IN RESPECT OF WHICH THE WAGES ARE PAYABLE.
   (vi) WHEN THE EMPLOYMENT OF ANY WORKER IS TERMINATED BY OR ON BEHALF OF THE CONTRACTOR, THE WAGES EARNED BY HIM SHALL BE PAID BEFORE THE EXPIRY OF THE DAY SUCCEEDING THE ONE ON WHICH HIS EMPLOYMENT IS TERMINATED.
   (vii) ALL PAYMENTS OF THE WAGES SHALL BE MADE ON A WORKING DAY EXCEPT WHEN THE WORK IS COMPLETED BEFORE THE EXPIRY OF THE WAGE PERIOD, IN WHICH CASE, FINAL PAYMENTS SHALL BE MADE WITHIN 48 HOURS OF THE LAST WORKING DAY.

Note: The term "working day" means a day on which the labour is employed in progress.

10. Wage Book and Wage Slips etc.
   (i) THE CONTRACTOR SHALL MAINTAIN A WAGE BOOK OF EACH WORKER IN SUCH FORM AS MAY BE CONVENIENT BUT THE SAME SHALL INCLUDE THE FOLLOWING PARTICULARS:

   (a) RATE OF DAILY OR MONTHLY WAGES.
   (b) NATURE OF WORK ON WHICH EMPLOYED
   (c) TOTAL NUMBER OF DAYS DURING WAGE PERIOD
   (d) TOTAL AMOUNT PAYABLE FOR THE WORK DURING EACH WAGE PERIOD
   (e) ALL DEDUCTIONS MADE FROM THE WAGES WITH AN INDICATION IN EACH CASE OF THE GROUND FOR WHICH THE DEDUCTION IS MADE
   (f) WAGES ACTUALLY PAID FOR EACH WAGE PERIOD

   (ii) THE CONTRACTOR SHALL ALSO MAINTAIN A WAGE SLIP FOR EACH WORKER EMPLOYED ON THE WORK

   (iii) THE EXECUTIVE ENGINEER MAY GRANT AN EXEMPTION FROM THE MAINTENANCE OF THE WAGE BOOKS AND WAGE SLIPS TO A CONTRACTOR WHO, IN HIS OPINION, MAY NOT DIRECTLY OR INDIRECTLY EMPLOY MORE THAN 50 PERSONS ON THE WORK.
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

(iv) FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES:

(v) THE WAGES OF A WORKER SHALL BE PAID TO HIM WITHOUT ANY DEDUCTIONS OF ANY KIND EXCEPT THOSE AUTHORIZED, NAMELY THE FOLLOWING

(vi) FINES.

(vii) DEDUCTIONS FOR ABSENCE FROM DUTY I.E. FROM THE PLACE OR PLACES WHERE, BY THE TERMS OF HIS EMPLOYMENT, HE IS REQUIRED TO WORK.

(viii) (c) DEDUCTIONS FOR DAMAGES TO OR LOSS OF GOODS EXPRESSLY ENTRUSTED TO THE EMPLOYED PERSON FOR CUSTODY OR FOR LOSS OR ANY OTHER DEDUCTIONS OF MONEY, WHICH HE IS REQUIRED TO ACCOUNT WHERE SUCH DAMAGES OR LOSSES ARE DIRECTLY ATTRIBUTABLE TO HIS NEGLIGENCE OR DEFAULT.

(ix) THE RAJASTHAN GOVERNMENT MAY, FROM TIME TO TIME, ALLOW DEDUCTIONS OTHER THAN THOSE SPECIFIED IN CLAUSE I ABOVE.

(x) NO FINES SHALL BE IMPOSED ON A WORKER AND NO DEDUCTIONS FOR DAMAGE OR LOSS SHALL BE MADE UNTIL WORKER HAS BEEN GIVEN AN OPPORTUNITY OF SHOWING CAUSE AGAINST EACH FINE OR DEDUCTIONS.

(xi) THE TOTAL AMOUNT OF FINES, WHICH MAY BE IMPOSED IN ANY ONE WAGE PERIOD ON A WORKER, SHALL NOT EXCEED AN AMOUNT EQUAL TO THREE PAISE IN RUPEE OF THE WAGE PAYABLE TO HIM IN RESPECT OF THAT WAGE PERIOD.

(xii) NO FINE IMPOSED ON ANY WORKER SHALL BE RECOVERED FROM HIM BY INSTALLMENTS OR AFTER THE EXPIRY OF 60 DAYS FROM THE DATE ON WHICH IT WAS IMPOSED.

8. Register of fines etc.: The contractor shall maintain a register of fines and of all deductions for damage or loss. Such register shall mention the reasons for which fine was imposed or deduction for damage or loss was made.

The contractor shall maintain both in English and local Indian Language, a list approved by the Labour Commissioner clearly stating the acts and omission for which penalty of fine may be imposed on a workman and display it in a good condition in conspicuous place on the work.

9. Preservation of Register: The wage registers the wage card and the register fines deduction; required to be maintained under these regulations, shall be preserved for 6 months after the date of the first entry made in them.

10. Powers of Labour Welfare Officer to make investigation of enquiry: The Labour Welfare Officer or any other person, authorized by the State Government on their behalf, shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of the fair wage clauses and provisions of the regulations. He shall investigate into any complaint regarding default made by the Contractor or Sub-Contractor in regard to such provisions.

11. Report of Labour Welfare Officer: The Labour Welfare Officer or other person, authorized as aforesaid, shall submit report of the result of his investigation or enquiry to the Executive Engineer concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractors bill be made and the wage and other dues be paid to the labour concerned in case an appeal is made by contractor under clause 12 of these regulations, actual payment to Labors will be made by the Executive Engineer after the Labour Commissioner had given decision on such appeal.

12. Appeal against the decision of Labour Welfare Officers: Any person aggrieved by the decision and recommendation of the Labour Welfare Officer or other persons, so authorized, may appeal against such decision to the Labour Commissioner within 30 days from the date of decision forwarding simultaneously a copy of his appeal to Executive Engineer concerned but subject to such appeal the decision of the Officer shall be final and binding upon the contractor.

12-A. No party shall be allowed to be represented by a lawyer during any investigation, enquiry, appeal or any other proceedings.

13. Inspection of Wage Books and Slips: The contractor shall allow inspection of the wage books and wage slips and register of fines and deductions to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Welfare Officer or any other person authorized by the State Government on his behalf.

14. Submission of Returns: The Contractor shall submit periodical returns, as may be specified from time to time.
15. Amendments. The State Government may, from time to time, add to or amend these regulations and on any questions as to the application, interpretation effect of these regulations, the decision of the Labour Commissioner to the Government of Rajasthan or any other person authorized by the State Government in that behalf, shall be final.
Section VI A: General Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

Schedule of Fair Wages to be Given by Executive Engineer

LIST OF ACTS AND COMMISSION FOR WHICH FINE CAN BE IMPOSED

(1) WILFUL INSUBORDINATION OR DISOBEDIENCE WHETHER ALONE OR IN COMBINATION WITH ANOTHER. (2) THE FRAUD OR DISHONESTY IN CONNECTION WITH THE CONTRACTORS BUSINESS OF PROPERTY OF THE RAJASTHAN P.W.D. (3) TAKING OR GIVING Bribes OR ANY ILLEGAL GRATIFICATION. (4) HABITUAL LATE ATTENDANCE. (5) DRUNKENNESS, FIGHTING RIOT OR DISORDERLY OR INDECENT BEHAVIOR. (6) HABITUAL NEGLIGENCE. (7) SMOKING NEAR OR AROUND THE AREA WHERE COMBUSTIBLE OR OTHER MATERIALS ARE STOCKED. (8) HABITUAL INDISCIPLINE. (9) CAUSING DAMAGE WORK IN PROGRESS OR TO PROPERTY OF THE RAJASTHAN P.W.D. OR THE CONTRACTOR. (10) SLEEPING ON DUTY. (11) MALINGERING OR SOWING DOWN WORK. (12) GIVING OF FALSE INFORMATION REGARDING NAME, AGE, FATHER'S NAME. (13) HABITUAL LOSS OF WAGE CARDS SUPPLIED BY THE EMPLOYERS. (14) UNAUTHORIZED USE OF EMPLOYER'S PROPERTY OR MANUFACTURING OR MAKING OF UNAUTHORIZED ARTICLES AT THE WORK PLACES. (15) BAD WORKMANSHP IN CONSTRUCTION AND MAINTENANCE BY SKILLED WORKERS WHICH IS NOT APPROVED BY THE DEPARTMENT AND FOR WHICH CONTRACTORS ARE COMPELLED TO UNDERTAKE RECTIFICATION. (16) MAKING FALSE COMPLAINTS AND/OR MISLEADING STATEMENT. (17) ENGAGING, IN TRADE WITHIN THE PREMISES OF THE ESTABLISHMENT. (18) ANY DELINQUENCY OF BUSINESS AFFAIRS OF THE EMPLOYERS. (19) COLLECTION OR CANVASSING FOR THE COLLECTION OF ANY MONEY WITHIN THE PREMISES OF AN ESTABLISHMENT UNLESS AUTHORIZED BY THE EMPLOYER. (20) HOLDING MEETING INSIDE THE PREMISES WITHOUT PREVIOUS SANCTION OF THE EMPLOYER. (21) THREATENING OR INTIMIDATING ANY WORKMAN OR EMPLOYEE DURING THE WORKING HOURS WITHIN THE PREMISES.

SCHEDULE SHOWING (APPROXIMATELY) MATERIALS TO BE SUPPLIED FROM THE PUBLIC WORKS STORE FOR WORK CONTRACTED TO BE EXECUTED AND THE RATES OF WHICH THEY ARE TO BE CHARGED FOR

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Rates which the materials will be charged to the contractor</th>
<th>Place of delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit</td>
<td>Rs.</td>
</tr>
</tbody>
</table>

NOTE: THE PERSON OR FIRM SUBMITTING THE TENDER SHOULD SEE THAT THE RATES IN THE ABOVE SCHEDULE ARE FILLED UP BY THE ENGINEER-IN-CHARGE ON THE ISSUE OF THE FORM PRIOR TO THE SUBMISSION TO THE TENDER.

(Signature of Contractor)  (Signature of Engineer)

Progress Statement referred to in Clause 3 of Conditions of Contract

<table>
<thead>
<tr>
<th>Name of Works</th>
<th>Date from which work should be commenced</th>
<th>Date by Which the work should be completed</th>
<th>Monthly Rate of progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The contractor has been informed that his tender has been accepted.

DATE: ENGINEER-IN-CHARGE CONTRACTOR

NOTES FOR FILLING IN THE PROGRESS STATEMENT FORM ON THE LAST PAGE

1. Columns 2, 3 and 4 must be initialed and dated by the contractor.
2. Column 4 must be initialed and dated by the Chief Engineer or other duly authorized Engineer also
3. The date in column 2 should correspond to the date on which the order to commence work is given to the contractor, specified in line 3, clause 2, page 3 of the "condition of contract".

Jaipur Municipal Corporation Greater & Heritage
4. The date in column 3 must correspond to the period stated in clause (f) page 2 of the tender.

5. Column 4. This will ordinarily be worked out proportionately; thus, if Rs. 24,000/- is the cost of the whole or portion of work tendered for, and six months period of completion, then the monthly rate of progress should be Rs. 4,000/-. If necessary, quantities may also be specified in this column at the discretion of the Chief Engineer.

6. The certificate as to intimation acceptance of tender printed at the foot of the form, must be signed and dated both by the Chief Engineer or other duly authorized engineer and the contractor.

**Statement of Payment & Recoveries to be attached with the agreement of works**

<table>
<thead>
<tr>
<th>S.No. of Bill</th>
<th>Gross Amount of Bill</th>
<th>Progressive Total Amount of Bill</th>
<th>Recoveries</th>
<th>Net Amount of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>C.B/v. No. &amp; Date</td>
<td>Dated Initial Of</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4(a)</td>
<td>4(b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4(c)</td>
<td>4(d)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4(e)</td>
<td>4(f)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4(g)</td>
<td>4(h)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4(i)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material &amp; T&amp;P</th>
<th>Quantity</th>
<th>Hours</th>
<th>Amount</th>
<th>SD</th>
<th>Income Tax Deduction</th>
<th>Sales Tax</th>
<th>Royalty</th>
<th>Other Recoveries</th>
<th>Total Recoveries</th>
<th>D.A.O.</th>
<th>EE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Jaipur Municipal Corporation Greater & Heritage

Section VIA GCC30
SECTION VIB
SPECIAL CONDITION OF CONTRACT
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmputri, Jaipur.

The following Particular Conditions of Contract shall complement, amend, supplement the GCC. Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

Definitions
1. The Intended Completion Date will be 18 Months from NTP followed by 5 Years (60 months) of DLP.
   The Start Date is the date as specified in the Notice to Proceed. This is the date when the Contractor can commence work on the Contract, but does not necessarily coincide with Possession Date of all the locations of Site.

2. Interpretation
   Sectional Completion will be not allowed.

3. Language and Law
   The law which shall govern the conduct of the Contract and according to which the Contract shall be construed is that in force in the State of Rajasthan, India. The language of the contract shall be in English.

4. Communications
   Any notification under this Contract shall be served on the party concerned when received by telex, hand delivery, courier delivery, or registered letter at the addresses listed in the Contract Data.
   Any notification under this Contract shall be served at the addresses provided below:

   Address of the Contractor:
   Name: _________________________
   Address: ________________
   
   Address of the Chief Engineer:
   Chief Engineer (designated by Jaipur Municipal Corporation Greater & Heritage)
   Jaipur Municipal Corporation Greater & Heritage,
   Pt. Deendayal Upadhyay Bhawan
   LalKothi, Tonk Road, Jaipur -302015

5. Personnel and Equipment
   List of minimum personnel required during execution period:

<table>
<thead>
<tr>
<th>Position</th>
<th>Nos.</th>
<th>Minimum Experience required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>1</td>
<td>Total 15 years with 5 years in similar work</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>1</td>
<td>At least 10 years’ experience with 3 years in similar work</td>
</tr>
<tr>
<td>Quality Assurance cum Site Engineer</td>
<td>1</td>
<td>At least 5 years’ experience</td>
</tr>
</tbody>
</table>

In case the contractor does not engage the staff as specified in this section, the EIC shall deduct amounts as indicated below and shall engage staff on his own:

<table>
<thead>
<tr>
<th>Position</th>
<th>Nos.</th>
<th>Salary to be deducted for eachperson if not engaged by contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>1</td>
<td>Rs. 1,00,000/- per month</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>1</td>
<td>Rs. 75,000/- per month</td>
</tr>
<tr>
<td>Quality Assurance cum Site Engineer</td>
<td>1</td>
<td>Rs. 50,000/- per month</td>
</tr>
</tbody>
</table>
6. Insurance

The minimum amount of Third-Party Liability insurance cover shall be Rs 10,00,000 (Rupees ten Lakhs only) per occurrence or event, with the number of occurrences not less than four. The Contractor shall promptly notify the Engineer of each claim made under the Third-Party Liability coverage, and shall renew the Third-Party Insurance after each such occurrence in order to maintain the number of covered occurrences at not less than four.

The minimum coverage against damage to the Works and materials during construction shall be Rs. 5,00,000 (Rupees Five Lakhs only).

7. Possession of Site

The employer will give possession of the sites as elaborated in the Notice to Proceed on the Date of Start as mentioned in NTP. The contractor will not be entitled to any delay or compensation event unless his work as per the agreed “Schedule of Work” is actually held up because of delay in the Employer’s hand over of the site to the contractor. Refer Section V, Work Requirements for further details.

8. The work program shall be given in Inception Report submitted by the Selected Bidder and the same shall be final and binding, once approved by the Engineer. The Contractor shall submit the detailed method statement defining Contractor's methodology for implementation backed with his proposal for equipment planning & deployment duly supported with broad output calculation. The Drawings for any particular activity shall be issued to the contractor at least 30 days in advance of the schedule date of the start of the activity as per the approved program.

9. The Contractor shall provide an updated Work Program by the last day of each Month, which shall clearly demonstrate the actual progress achieved on each activity, the effect of the progress achieved on the timing of the remaining work, and the proposed changes in activities that will enable the Contractor to complete the Works within the Intended Completion Date. In case the Contractor fails to submit an updated Work Program within this time limit, the Engineer will be entitled to withhold an amount of Rs. 1,00,000/- (Rupees One lakh only) or 1% of the Contract Value (Whichever is more) from the next payment certificate, and continue to withhold this amount until the next payment after the date on which the overdue program has been submitted.

10.1 If in the opinion of the Engineer, the work on site is not progressing satisfactorily in accordance with the mutually agreed “Work Program” and the delay is likely to affect the overall completion of the work within the intended date of completion, he may by a written notice to the Contractor ask him to expedite the works within 15 days suitably to make for deficiencies.

10.2 If the contractor fails to take appropriate action in time in pursuance of 10.1, the Engineer may by another notice informs him the components of work that will be carried out by him through another agency in parallel to the other activities being carried out by the contractor at his cost with a view of expediting the works and reducing delays. The value of the work so carried out will be credited to the contractors account, but he will not be responsible for the quality of the said work. The Engineer will recover the cost spent plus 5% for supervision charges from the next bill or

If the contractor fails to take appropriate action in time in pursuance of 10.1, the Engineer may withhold 25% amount of the delayed part of the work from the next running bills, till the contractor achieves the progress as per the agreed Work Plan.

10.3 In addition to the Updated Program, Monthly updated progress reports shall be prepared by the
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

Contractor and submitted to the Engineer in six copies in the first week of every calendar month. Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works. Each report shall include:

(a) photographs and detailed descriptions of progress.
(b) charts showing the status of Construction Documents, purchase orders, manufacture and construction;
(c) records of personnel and Contractor’s Equipment on Site;
(d) copies of quality assurance documents, test results and certificates of Materials;
(e) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and

Comparisons of actual and planned progress, with details of any aspects which may jeopardize the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome such aspects.

11. Identifying Defects:

Unless otherwise indicated elsewhere in the contract, the Quality Assurance and Quality Control (QA/QC) document, as issued by the RUIDP, shall be followed. The Contractor, prior to commencement of permanent works at site shall set up his own laboratory with prior notification to the Employer’s Representative as defined in Section V.

12. Correction of Defects:

(i) The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins from the physical completion date specified in the completion certificate/ taking over certificate. The Defects Liability Period may be extended for as long as Defects remain to be corrected. The Defects Liability Period is 3 year from the date of completion mentioned in the certificate of Completion pursuant to the provisions of Clause 48.

(ii) The Engineer shall certify that all Defects have been corrected. If the Employer considers that correction of a Defect is not essential; he can request the Contractor to submit a quotation for the corresponding reduction in the Works Contract Price. If the Employer accepts the quotation, the corresponding change in the Contract Price is a Variation. The Defects Correction Period is 14 (fourteen) Days from the date of receipt by the Contractor of the Employer’s notice to correct any Defects in the Works.

(iii) If the Contractor has not corrected a Defect within the time specified in the Engineer’s notice, the Engineer may have the defect corrected by other contractor(s) and recover the cost paid for the same plus 5% for supervision charges from any amount due to the contractor.

13. Contract Price

This is a Lump Sum contract on EPC basis.

The Contract Price includes all duties, taxes, royalty, and fees(excluding GST) that may be levied in the accordance with the laws and regulations in force as on the Base Date on the Contactee’s equipment, Plant, Materials and supplies to be acquired for the purpose of this Agreement and on the services to be performed under this Agreement. Nothing in this Agreement shall relieve the Contractor from its responsibility to pay any tax including any tax that may be levied in India on profits made by it in respect of this Agreement.
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Turnkey Basis at Pondrik Park Brahampuri, Jaipur.

14. Payments

14.1 The Contract Price shall not be adjusted, except as stated in Price adjustment as per Clause 44.

14.2 The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs, unless otherwise provided for in this Agreement.

14.3 Unless otherwise stated in this Agreement, the Contract Price covers all the Contractor's obligations for the Works under this Agreement and all things necessary for the Construction, and the remedying of any Defects in the Project.

14.4 All payments under this Agreement shall be made in Indian Rupees.

14.5 The Authority shall make payments to the Contractor as certified by the Engineer on completion of a stage, as specified, and valued in accordance with the proportion of the Contract Price assigned to each item and its stage. Contractor will be paid as per the Payment Schedule prescribed below:

15. The Bidder shall quote a Consolidated Price.

1 Payment for Material:
With respect to materials and Plant brought by the Contractor to the site for incorporation in the permanent works, no claim shall be made by the Contractor unless the following conditions have been met to the Engineer's satisfaction.

i. The materials and plant are in accordance with the relevant BIS specifications for the works.

ii. The materials and the plant have been delivered to the site and are properly stored and protected against loss, damage or deterioration.

iii. The Contractor's records of the requirements, orders, receipts and use of materials and plant are kept in a form approved by the Engineer, and such records are available for inspection by the Engineer.

iv. The Contractor has submitted a statement of his cost of acquiring and delivering the materials and plant to the site, together with such documents as may be required for the purpose of evidencing such cost.

v. The materials are to be used within a reasonable time as decided by the Engineer and the Contractor shall not unnecessarily procure any material or equipment too much in advance.

2 Other Payments:
Payment shall be made in stages for each component as envisaged as under:

<table>
<thead>
<tr>
<th>Payment Schedule for the turnkey job</th>
<th>Payment Schedule is in percentage of total amount quoted by contractor for the turnkey job.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance Payment</td>
<td>Nil</td>
</tr>
<tr>
<td>Upon Completion of Excavation up-to design level including pile work</td>
<td>7.50%</td>
</tr>
<tr>
<td>Completion of footing Works</td>
<td>7.50%</td>
</tr>
<tr>
<td>Completion of sidewalls of lower basement.</td>
<td>10.0%</td>
</tr>
</tbody>
</table>
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of roof slab of lower basement</td>
<td>15.0%</td>
</tr>
<tr>
<td>Completion of sidewalls of upper basement</td>
<td>10.0%</td>
</tr>
<tr>
<td>Completion of roof slab of upper basement</td>
<td>15.0%</td>
</tr>
<tr>
<td>Ventilation, Firefighting &amp; annunciation, lift, PMS</td>
<td>10.0%</td>
</tr>
<tr>
<td>All finishing works including painting, Plastering, MEP etc. in all respect.</td>
<td>10.0%</td>
</tr>
<tr>
<td>Commissioning and Handover</td>
<td>12.5%</td>
</tr>
<tr>
<td>Horticulture</td>
<td>2.50%</td>
</tr>
<tr>
<td>Total</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

16. Advance Payment

No advance payment shall be admissible.

17. Securities

17.1 A performance security shall be provided to the Employer in accordance with the Instructions to Bidders and shall be issued in a form acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable.

17.2 If there is no reason to call the performance security, the performance security shall be returned to the Contractor within 60 days of the last Defects Liability Period.

17.3 The Employer shall notify the Contractor of any claim made against the institution issuing the performance security.

17.4 The Employer may claim against the Amount of Performance Security in full or part may be forfeited in the following cases:

i. When the bidder does not execute the agreement in accordance with ITB Clause 6.3(signing of Contract) within the specified time, after issue of LOA; or

ii. When the bidder fails to commence the works as per Work Order within the time specified; or

iii. When the bidder fails to complete contracted work satisfactorily within the time specified; or

iv. When any term and condition of the contract is breached; or

v. To adjust any established dues against the bidder from any other contract with the procuring entity; or

vi. If the bidder breaches any provision of the Code of Integrity prescribed for the bidders specified in the Act, Chapter 6 of the rules and this Bidding Document.

vii. If any of the following occurs for 14 days or more-

a. If the Contractor is in breach of the Contract and the Employer has notified him that he is; and

b. The Contractor has not paid an amount due to the Employer.

viii. Notice of reasonable time will be given in case of forfeiture of Performance Security. The decision of the procuring entity in this regard shall be final.

18. Completion

(i) When whole of the work has been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the contractor, the Contractor may give a notice to that effect to the Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due
expedition any outstanding work. The Engineer shall issue a certificate complying completion of the works to the contractor.”

(ii) “If any part of the permanent work has been substantially completed and has satisfactorily passed any Tests on Completion prescribed by the Contract, the Engineer may issue a Completion Certificate in respect of the part of the Permanent Work before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in the part of the Permanent Work during the Defects Notice Period.” Hence the defect liability period starts on the date on which part/substantial completion certificate is issued, for that particular part of the permanent work has been substantially completed.

19 Taking Over

“The Employer shall take over the whole works or section of works within Seven (7) days of issuance of Completion Certificate, as per Clause no 52.1 and 52.2.”

20. Site Environmental Plan (SEP)

The Contractor should prepare a detailed Site Environmental Plan (SEP) as per the Environmental and Social Management Framework and EMP format attached for location/s identified to be potentially impacted such as but not limited to the work site, base camp. The SEP should include arrangement for disposal of sites for excavated materials, sanitary and other waste, storage location for fuel, oil and lubricants, facilities for equipment, labour and housing, among others. The SEP should be reviewed and approved prior to construction activities by the Engineer.


(A) General

i. This section of the Specification sets out limitations on the Contractor's activities specifically intended to protect the environment.

ii. The Contractor shall take all necessary measures and precautions and otherwise ensure that the execution of the works and all associated operations on site or off-site are carried out in conformity with statutory and regulatory environmental requirements including those prescribed elsewhere in this document.

iii. The Contractor shall take all measures and precautions to avoid any nuisance or disturbance arising from the execution of the Works. This shall wherever possible be achieved by suppression of the nuisance at source rather than abatement of the nuisance once generated.

iv. In the event of any spoil, debris, waste or any deleterious substance from the Site being deposited on any adjacent land, the Contractor shall immediately remove all such material and restore the affected area to its original state to the satisfaction of the Engineer. This should be monitored regularly in accordance with the Environmental Management Plan.

v. During construction, the area should be to avoid trespassing of animals and people. Unauthorized persons should not be allowed within the construction area.

vi. During construction, there should be signs to inform public of on-going work, warning on dangers due to trenches along roads, excavations on different sites.

vii. Contact town authorities to arrange for the use of excavated material where possible, such as in construction projects, to raise the level of land prior to construction of roads or buildings, or to fill previously excavated areas.

viii. Especially for cleaning, desilting, and dredging of drainages: Contact town authorities to arrange for testing and analysis of sludge/excavated materials for hazardous components. If material are hazardous, coordinate with authorities for appropriate disposal sites;

ix. Prevent generation of dust by removing excavated materials as soon as is excavated, by loading directly onto trucks and covering with tarpaulins to prevent dust during transportation.

x. All excavation should be done in the dry seasons to avoid any impacts on surface water drainage if water collects in any quantity, it will need to be pumped out, and it should be then be donated to
neighboring farmers to provide a beneficial use to the communities most affected by this aspect of the work.

xi. Plant five (5) trees for every tree to be cut.

xii. Consult town authorities to identify any buildings at risk from vibration damage and avoiding use of pneumatic drills or heavy vehicles in the vicinity.

xiii. Providing wooden bridges for pedestrians and metal sheets for vehicles to allow access across open trenches where required (including access to houses).

xiv. Carefully planning of transportation routes with the municipal authorities to avoid sensitive areas as far as possible, including narrow streets, congested roads, important or fragile buildings and key sites of religious, cultural or tourism importance.

xv. Consulting historical and archaeological authorities at both national and state level to obtain an expert assessment of the archaeological potential of the site. Alternate location should be considered if the area is medium or high risk.

xvi. Developing a protocol in conducting any excavation work to ensure that any chance finds are recognized and measured are to take to ensure they are protected and conserved this should involve having excavation observed by a person with archaeological field training, stopping work immediately to allow further investigation if any finds are suspected; and calling the state archaeological authority if a find is expected and taking any action they acquire ensuring its removal or protection in situ.

xvii. Living spaces for access between mounds of excavated soil and providing footbridges so that pedestrians can cross open trenches;

xviii. Increasing the workforce in these areas to ensure that work is completed quickly;

(B) . Water Quality

i. The Contractor shall prevent any interference with the supply to or abstraction from, and prevent any pollution of, water resources (including underground percolating water) as a result of the execution of the Works.

ii. Areas where water is regularly or repetitively used for dust suppression purposes shall be laid to fall to specially constructed settlement tanks to permit sedimentation of particulate matter. After settlement, the water may be re-used for dust suppression and rinsing.

iii. All water and other liquid waste products arising on the Site shall be collected and disposed of at a location on or off the Site and in a manner that shall not cause either nuisance or pollution.

iv. The Contractor shall not discharge or deposit any matter arising from the execution of the Works into any waters except with the permission of the Engineer and the regulatory authorities concerned.

v. The Contractor shall at all times ensure that all existing stream courses and drains within, and adjacent to, the Site are kept safe and free from any debris and any materials arising from the Works.

vi. The Contractor shall protect all watercourses, waterways, ditches, canals, drains, lakes and the like from pollution as a result of the execution of the Works.

22. Air Quality

i. The Contractor shall devise and arrange methods of working to minimize dust, gaseous or other airborne emissions and carry out the Works in such a manner as to minimize adverse impacts on air quality.

ii. The Contractor shall utilize effective water sprays during delivery manufacture, processing and handling of materials when dust is likely to be created, and to dampen stored materials during dry and windy weather. Stockpiles of friable materials shall be covered with clean tarpaulins, with application of sprayed water during dry and windy weather. Stockpiles of material or debris shall be dampened prior to their movement, except where this is contrary to the Specification.

iii. Any vehicle with an open load-carrying area used for transporting potentially dust producing material shall have properly fitting side and tail boards. Materials having the potential to produce dust shall not be loaded to a level higher than the side and tail boards, and shall be covered with a clean tarpaulin in good condition. The tarpaulin shall be properly secured and extend at least 300
23. **Noise**  
   i. The Contractor shall consider noise as an environmental constraint in his planning and execution of the Works.
   ii. The Contractor shall take all necessary measures so that the operation of all mechanical equipment and construction processes on and off the Site shall not cause any unnecessary or excessive noise, taking into account applicable environmental requirements. The Contractor shall use all necessary measures and shall maintain all plant and silencing equipment in good condition so as to minimize the noise emission during construction works.
   iii. Using modern vehicles and machinery with standard adaptations to reduce noise and exhaust emissions and ensuring they are maintained to manufacturers’ specifications.

24. **Control of Wastes**  
   i. The Contractor shall control the disposal of all forms of waste generated by the construction operations and in all associated activities. No uncontrolled deposition or dumping shall be permitted. Wastes to be controlled shall include, but shall not be limited to, all forms of fuel and engine oils, all types of bitumen, cement, surplus aggregates, gravels, bituminous mixtures, etc. The Contractor shall make specific provision for the proper disposal of these and any other waste products, conforming to local regulations and acceptable to the Engineer.

25. **Emergency Response**  
   i. The Contractor shall plan and provide for remedial measures to be implemented in the event of occurrence of emergencies such as spillages of oil or bitumen or chemicals.
   ii. The Contractor shall provide the Engineer with a statement of the measures he intends to implement in the event of such an emergency which shall include a statement of how he intends to provide personnel adequately trained to implement such measures.
   iii. Should any pollution arise from the Contractor's activities he shall clean up the affected area immediately at his own cost and to the satisfaction of the Engineer, and shall pay full compensation to any affected party.

26. **Protection of Trees and Vegetation**  
   The Contractor shall ensure that no trees or shrubs or waterside vegetation are felled or harmed except for those required to be cleared for execution of the Works. The Contractor shall protect trees and vegetation from damage to the satisfaction of the Engineer. No tree shall be removed without the prior approval of the Engineer and any competent authorities. Should the Contractor become aware during the period of the Contract that any tree or trees designated for clearance have cultural or religious significance he shall immediately inform the Engineer and await his instructions before proceeding with clearance. In the event that trees or other vegetation not designated for clearance are damaged or destroyed, they shall be repaired or replaced to the satisfaction of the Engineer, who shall also impose a penalty to twice the commercial value of any timber affected, as assessed by the Engineer.

27. **Water Supply and Electric Power**  
   The Contractor shall make his own arrangements at his own expense for water supply and electric power supply for construction, testing and other purposes. Only clean water free from deleterious

28. **Fire Prevention**  
68.1 The Contractor shall take all precautions necessary to ensure that no vegetation along the line of the road outside the area of the permanent works is affected by fires arising from the execution of the Works. The Contractor shall obtain and follow any instructions of the competent authorities with respect to fire hazard when working in the vicinity of gas installations. Should a fire occur in the natural vegetation or
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahmampuri, Jaipur.

plantedations adjacent to the road for any reason the Contractor shall immediately suppress it. In the event of any other fire emergency in the vicinity of the Works the Contractor shall render assistance to the civil authorities to the best of his ability. Areas of forest, scrub or plantation damaged by fire considered by the Engineer to have been initiated by the Contractor's staff or labour shall be replanted and otherwise restored to the satisfaction of the Engineer at the Contractor's expense.

29. Fossils

The Contractor shall make his staff available for briefing on archaeological matters as directed by the Engineer.

30. Clearance of Contractor's Facilities

On or before expiry of the Defects Notice Period the Contractor shall clear away all his temporary facilities including but not limited to offices, camps, storage and holding yards, workshops, crushing and mixing plant, diversion and haul roads so that the land is returned to at least its previous condition and, in the case of agricultural land, potential productivity. Clearance shall include but not be limited to tasks such as the removal of unwanted structures, removal of metallic and concrete debris, removal and disposal of any soil contaminated by diesel, bitumen or other polluting material, ripping to relieve compaction, grading, replacement of topsoil, and turfing and grassing, as appropriate. Where improvements have been made such as land filling or installation of boreholes or construction of boat landings these may be retained subject to the agreement of the landowner. The Employer reserves the right to inspect the site of any facilities established or used by the Contractor in connection with the Works and to undertake any corrective measures necessary to restore the land, and to recover the cost from monies due or to become due to the Contractor.

31. Fair Wages

31.1 The Contractor shall pay not less than fair wage/minimum wages to laborer's engaged by him on the work as revised from time to time by the Government of Rajasthan, but the Government shall not be liable to pay anything extra for it except as stipulated in price adjustment clause (Clause 41) of the Contract.

(Explanation: "Fair wage" means minimum wages for time or piece work, fixed or revised, as established by the State Government under the Minimum Wages Act, 1948.)

31.2 The Contractor shall, notwithstanding the provisions of any Contract to the contrary, cause to be paid fair wages to laborers indirectly engaged on the work, including any labour engaged by his sub-Contractors in connection with the said work, as if the laborers have been immediately or directly employed by him.

31.3 In respect of all laborers, immediately or directly employed on the work, for the purpose of the Contractor's part of this agreement, the Contractor shall comply with or cause to be complied with, the Public Works Department Contract Labour Regulations' made, or that may be made, by the Government, from time to time, in regard to payment of wages, wage period, deductions from wages, recovery of wages not paid, and unauthorized deductions, maintenance of wages register, wage card, publication of scale of wages and other terms of employment, inspection and submission of periodical returns, and all other matters of a like nature.

31.4 The Engineer shall have the right to deduct, from the money due to the Contractor, any sum required or estimated to be required for making good the loss suffered by a worker or workers by reasons of non-fulfillment of the conditions of the Contract for the benefit of the worker or workers, non-payment of wages or of deductions made there from, which are not justified by the terms of the Contract or as a result of non-observance of the aforesaid regulations.

31.5 Vs-à-Vs the Government of Rajasthan the Contractor shall be primarily liable for all payments to be made and for the observance of the regulations aforesaid, without prejudice to his right to claim indemnity from his sub-Contractors.

31.6 The regulations, aforesaid, shall be deemed to be part of this Contract and any breach thereof, shall be deemed to be breach of the Contract.
32. Safety and Accident Prevention Officer

Due precautions shall be taken by the Contractor, at his own cost, to ensure the safety and protection against accidents of all staff and labour engaged on the Works, local residents in the vicinity of the Works, and the public travelling through the Works. The Contractor shall have on his staff on Site a designated officer qualified to promote and maintain safe working practices. This officer shall have authority to issue instructions and shall take protective measures to prevent accidents, including but not limited to the establishment of safe working practices and the training of staff and labour in their implementation.

33. Protective Clothing and Footwear

33.1 The Contractor shall, at his own expense, provide protective clothing and equipment to all staff and labour engaged on the Works to the satisfaction of the Engineer, and on his failure to do so the Employer shall be entitled to provide the same and recover the cost from the Contractor. Such clothing and equipment shall include, at a minimum, protective footwear for workmen undertaking concrete mixing work, protective footwear and gloves for any workmen performing bituminous paving works, protective footwear, clothing, cream, gauntlet-type gloves, hats, safety glasses or goggles and filter masks for workmen undertaking lime stabilisation works, hard hats for workmen engaged on bridge construction, and otherwise as appropriate to the job in hand and to the Engineer's satisfaction.

33.2 Ensuring that all workers are provided with and use appropriate Personal Protective Equipment (PPE), Health and safety training should be conducted for all site personnel; availability of documented procedures to be followed for all site activities; and documentation of work-related accidents;

34. First-Aid Services

The Contractor shall, at his own expense, provide first aid equipment at all camps and work sites to the satisfaction of the Engineer, and shall ensure that at all work sites where 40 or more persons are engaged on the Works there shall at all times be a person qualified in first-aid with access to appropriate first-aid equipment. A first-aid post shall be established at each base camp comprising a suitable room with two beds, washing and examination facilities, appropriate medical supplies, and staffed on a full-time basis by a qualified paramedical attendant.

35. Health and Pests

The Contractor shall at his own expense and throughout the period of the Contract ensure that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements for his staff and labour, and shall comply with all the regulations and requirements of the local health authorities with respect to disease prevention and control. He shall warn his staff and labour of the dangers of communicable diseases including those transmitted by insects, water, faecal/oral contact and sexual activity. The Contractor shall take the precautions necessary to protect all staff and labour employed on the Site from insect nuisance, rats and other pests and minimise the dangers to health and the general nuisance caused by the same. Should malaria or other insect-borne diseases be prevalent in the area, he shall provide his staff and labour with suitable prophylactics, equip living accommodation with screens and bed-nets, and carry out spraying with approved insecticides, as appropriate and to the Engineer's satisfaction.

36. Disorderly Conduct

The Contractor shall at all times take reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his employees and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same. "Disorderly conduct" shall
include but not be limited to harvesting of natural resources such as firewood or fish by the Contractor's labour when this is done to the detriment of pre-existing local interests.

37. Records of Labour and Accidents

The Contractor shall maintain full records of numbers, working hours and wages of labour, safety, health and welfare of persons, accidents, and damage to property and make such reports on these matters to the Engineer as he may from time to time prescribe.

38. General

Unless otherwise indicated elsewhere in the Contract, The General Specification for civil works and the Quality Assurance and Quality Control (QAQC) document, as issued by the PMU of RUIDP, shall be followed. The QAQC document of JMC is an integral part of the document and it will be provided with the bid document. A copy of the same shall be made available at the site by the contractor.

39. Site Office for Engineer and Other Supervisory Staff

The Contractor shall arrange to provide office of minimum 100 sq. ft. size as per specification with two tables, four chairs, one steel almirah, sufficient number of display board, telephone etc. fully furnished office accommodation within 15 days from the date of commencement of same and shall become property of the Contractor at the completion of the work. The electrical charges / water charges and all other charges shall be arranged within the area of the work. Approval shall be taken from Engineer prior to making arrangement of the office. The construction of site office and its or maintenance are incidental to the work. The office shall be functional until work is completed. If Engineer found that office arranged by the contractor is not being maintained properly then Engineer has right to deduct a reasonable amount from that payment. In case adequate space is not available for setting up of such office, the Engineer may waive such requirement on being requested by the Contractor, in writing.

40. Field Laboratory

40.1 Within 15 (Fifteen) days from the date of commencement of the work, the Contractor shall arrange to provide a 250 sqft. fully furnished and adequately equipped field laboratory as per Specifications and directions of the Engineer, including maintenance of the same. This shall be removed at the completion of the work. All dismantled items of field laboratory and all equipment shall be property of the Contractor at the completion of the work. The Laboratory shall be functional till the work is completed. If Engineer found that Laboratory arranged by the Contractor is not being maintained properly then Engineer has right to deduct a reasonable amount from payment. The construction of Field Laboratory & its maintenance are incidental to the work. Notwithstanding the above, the Engineer may agree to the Contractor's proposal to use facilities of accredited/ Government laboratories, upon scrutinising the details of such laboratories, submitted by the Contractor. Even in that case also, the Contractor will keep and maintain certain basic equipment at site as mentioned under Section V: Procuring Entity's Requirement.

40.2 The calibration of the laboratory equipments and instruments shall at the initial stage to be certified by agencies approved by the Engineer. Laboratory equipments shall be properly maintained and calibrated throughout the period of the Contract by the Contractor at his own expense. The Contractor shall notify the Engineer in sufficient advance prior to conducting any tests for the materials and work. The Engineer will also inspect the laboratory and the contractor shall provide adequate facilities to the Engineers for his independent verification of the accuracy and adequacy of the facilities.

41. Pre-Construction Inspection, Testing & Review of Data for Materials, Plant & Equipment

41.1 The contractor shall place order for the material and the equipment only after the approval of the Engineer. The Contractor shall submit the detailed drawings for the approved manufacturer and the procedure of submission, review and revision shall be specified herein below.

41.2 The Contractor shall inform the Engineer about the likely dates of manufacturing, testing and dispatching. The Contractor shall notify the Engineer for Inspection and Testing, at least twenty-
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

eight days prior to packing and shipping and shall supply the manufacturer’s test results and quality control certificates. The Engineer will decide whether he or his representative will inspect and test the material/ equipment or whether he will approve it on the basis of manufacturer’s certificate.

41.3 The inspection and test categories shall be applied prior to delivery of the equipment, of various categories as indicated in the technical specifications for each type of the equipment.

**Category A:** - The Drawing has to be approved by the Engineer before manufacturing and Testing. The material has to be inspected by the Engineer or by an Inspecting agency approved by the Engineer at the manufacturer’s premise before packing and dispatching. The Inspection charges of the agency will be borne by the Employer but the contractor has to pay the inspection charges. The Contractor shall include in their next bill the inspection charges and the same will be reimbursed by the Employer from the provisional Sum. The Contractor shall provide the necessary equipment and facilities for tests and the cost, thereof, shall be borne by the Contractor. In case of failure of any item during third party inspection no charges shall be reimbursed to the contractor for the same.

**Category B:** - The drawings of the Equipment have to be submitted and to be approved by the Engineer prior to manufacture. The material has to be tested by the manufacturer and the manufacturer’s test certificates are to be submitted and approved by the Engineer before dispatching of the Equipment. Notwithstanding the above, the Engineer, after examination of the test certificates, reserves the right to instruct the Contractor for retesting, if required, in the presence of Contractor’s representative.

**Category C:** The material may be manufactured as per standard and delivered to the site.

For material / Equipment under category “A” and “B”, the Engineer will provide an authorization for packing and shipping after inspection.

The testing, approval for dispatching shall not absolve of the Contractor’s obligation for satisfactory performance of the plant.”

### Indicative list of Inspection Items with Category

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Item</th>
<th>Category of inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cement, Steel, Bricks</td>
<td>Category A</td>
</tr>
<tr>
<td>2</td>
<td>Electric Cable, Conductors</td>
<td>Category A</td>
</tr>
<tr>
<td>3</td>
<td>Electric poles</td>
<td>Category A</td>
</tr>
<tr>
<td>4</td>
<td>Bitumen</td>
<td>Category A</td>
</tr>
<tr>
<td>5</td>
<td>Others as directed by Engineer &amp; as mentioned in QA/QC manual</td>
<td>Category A</td>
</tr>
</tbody>
</table>

**42. Supply of Colored Record Photographs**

The Contractor shall, at his own cost, arrange to take colour photographs at various stages / facets of the work including interesting and novel features of the work as directed by the Engineer and supply two copies of colour record photographs mounted in the albums including negatives with specification and these shall be kept by Employer.

**43. Public Awareness / Information Display**

The Contractor shall, at his own cost, arrange to provide, erect and maintain necessary display boards/ banners etc. at selection points of project site giving such information as considered necessary for public awareness/ information/ safety as directed by the Engineer.

**44. Contractor’s Responsibilities**

The contractor shall promptly inform the Employer and the Engineer of any error, omission, fault, or any other defect in the design or drawings or specification for the works, which he discovers when reviewing the contract documents, or in the process of execution of the works. The Engineer will
resolve the ambiguity or correct the error and will notify the contractor of the interpretation to be adopted.

45. Services

45.1 Underground and overhead services are likely to be met with during construction. These are to be protected against damage by the Contractor at his own cost.

45.2 The contractor shall be required to carry out removal / shifting of existing utilities at his own cost. The contractor work program shall include this activity. The work shall be carried out under supervision of concerned department. The supervision charges of the line agencies shall be paid by the contractor and shall be reimbursed on actual on submission of receipt.

45.3 In cases of utilities to be shifted by Govt. departments, no amount shall be paid extra for shifting/ co-ordination. The employer would provide full support to contractor in coordinating with line agencies; however, no claim on account of delay in shifting of utilities by line department will be admissible.

46. Setting Out

46.1 The Contractor(s) shall set out the whole of the work in conjunction with an officer to be deputed by the Engineer and during the progress of the work to amend on the requisition of the Engineer any errors which may arise therein and provide all the necessary labour materials and equipments for so doing. The contractor(s) is/are to provide all tools, plant, machinery, labour and materials (with the exceptions noted in the relevant clauses for issue of departmental materials as per schedule attached) which may be necessary and required for the work. All materials and workmanship shall conform to the relevant specifications mentioned in the tender documents.

46.2 During execution of pile foundation, if there is any variation in soil strata which was not anticipated earlier, the matter shall be referred to Engineer – in – charge for review and modification of design by the competent authority, if considered necessary. Time taken in this process is consider in the original completion period, however no claim on account of delay in getting the sanction from competent authority will be admissible.

46.3 The contractor shall carryout the detailed topographic survey at site and prepare the pre-commencement survey map for approval of the Engineer’s representatives. Based on the approved Pre-commencement survey map, the contractor will prepare the necessary working drawings for the purpose of execution.

46.4 Contractor shall be responsible for taking all traffic block and shutdowns etc. from west central railway authority for execution in railway land / spans. Contractor will get all designs and drawings approved from west central railway authority for all temporary and permanent works of railway land / spans. This will be all incidental to the work. No separate claim on this account shall be payable.

46.5 Defect liability period shall be 5 year. Contractor shall furnish an affidavit from the manufacture / supplier firms before actual date of completion.

47. Labor

47.1 Engagement of Staff and Labor

a) Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, housing, feeding and transport.

b) The contractor shall pay equal wages for men and women for work of equal value or type.

c) The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.

d) The Contractor shall be responsible for obtaining all necessary permit(s) and/or Visa(s) from the appropriate authorities for the entry of all labor and personnel to be employed on the Site into the country where the Site is located. The Employer will, if requested by the Contractor, use his best
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor’s personnel.

e) The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor’s personnel employed on the Contract at the Site to the place where they were recruited or to their domicile. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor.

f) Be required to employ at least 50% of the labour force from communities within a radius of 2kms from the site, if sufficient people are available.

47.2 Persons in the Service of Employer
The Contractor shall not recruit, or attempt to recruit, staff and labor from amongst the Employer’s Personnel.

47.3 Labor Laws
(a) The Contractor shall comply with all the relevant labor Laws applicable to the Contractor’s Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

(b) The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst its employees and the labor of its Subcontractors.

(c) The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.

47.4 Rates of Wages and Conditions of Labour
(a) The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.

(b) The Contractor shall inform the Contractor’s Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages and allowances as are chargeable under the Laws for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

47.5 Working Hours
(a) No work shall be carried out on the Site on locally recognized days of rest, or outside the Normal working hours, which shall be 9.00 AM to 5.00 PM on all days of the week, unless:

(i) otherwise stated in the Contract,

(ii) the Engineer gives consent, or

(iii) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer.
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

(b) If and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Time for Completion and requests the Engineer’s consent thereto, the Engineer shall not unreasonably withhold such consent.

(c) This Sub-Clause shall not apply to any work, which is customarily carried out by rotary or double-shifts.

47.6 Facilities for Staff and Labor

(a) Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor’s Personnel. The Contractor shall also provide facilities for the Employer’s Personnel as stated in the Specification.

(b) The Contractor shall not permit any of the Contractor’s Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

47.7 Health and Safety

(a) The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor’s Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor’s and Employer’s Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

(b) The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the performance of the Contract, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

(c) The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer may reasonably require.

(d) The Contractor shall throughout the contract (including the Defect Liability Period):

(i) conduct Information, Education and Consultation Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labor (including all the Contractor's employees, all Sub-Contractors and Employer's and Engineer's employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to of Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular;

(ii) provide male or female condoms for all Site staff and labor as appropriate; and

(iii) provide for STI and HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor.

The Contractor shall include in the program to be submitted for the execution of the Facilities under Sub-Clause 18.2 an alleviation program for Site staff and labor and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or
Section VI B: Special Conditions of Contract

Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

utilized and any related sub-contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation of this program shall not exceed the Provisional Sum dedicated for this purpose.

47.8 Funeral Arrangements

In the event of the death of any of the Contractor’s personnel or accompanying members of their families, the Contractor shall be responsible for making the appropriate arrangements for their return or burial, unless otherwise specified in the SCC.

47.9 Records of Contractor’s Personnel

The Contractor shall keep accurate records of the Contractor’s personnel, including the number of each class of Contractor’s Personnel on the Site and the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis in a form approved by the Engineer and shall be available for inspection by the Engineer. Until the Contractor has completed all work.

47.10 Supply of Foodstuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor’s Personnel for the purposes of or in connection with the Contract.

47.11 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor’s Personnel.

47.12 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor’s Personnel employed on the Site from insect and pest nuisance, and to reduce their danger to health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

47.13 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter or disposal by Contractor’s Personnel.

47.14 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor’s Personnel to do so.

47.15 Prohibition of All Forms of Forced or Compulsory Labour

The contractor shall not employ “forced or compulsory labor” in any form. "Forced or compulsory labor" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

47.16 Prohibition of Harmful Child Labor

The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. “Child” means a child below the statutory minimum age of 14 years.
Section VI B: Special Conditions of Contract
Construction of Recreational Center Cum Community Hall Along with Separate Under Ground Parking on Trunkey Basis at Pondrik Park Brahampuri, Jaipur.

48. MONITORING

Provision for regular monitoring will be made as per the Environmental Management Plan and actions will be taken in case of non-compliance.
SECTION VI C
CONTRACT FORMS
Table of Contents

1. Letter of Acceptance
2. Contract Agreement
3. Performance Security
4. Performance Security Declaration
1. **Letter of Acceptance**

Letter of Acceptance

[on letterhead paper of the Procuring Entity]

No. ..........................                      Dated .........................

To: .......................... [name and address of the Contractor] ..........................

Subject: .......................... [Notification of Award for the Works] ..........................

This is to notify you that your Bid dated .......................... [date] .......................... for execution of the .......................... [name of the contract and identification number, as given in the Contract Data] ..........................

. . for the Accepted Contract Amount of the equivalent of .......................... [amount in numbers and words and name of currency] .........................., as corrected and modified in negotiations and in accordance with the Instructions to Bidders has been accepted by [designation of the Procuring Entity] .......................... The date of commencement and completion of the Works shall be: ..........................

You are requested to furnish the Performance Security/ Performance Security Declaration within .......................... Days in the form given in the Contract Forms for the same for an amount equivalent to Rupees .......................... within .......................... days of notification of the award valid up to 60 days after the date of expiry of Defects Liability Period and maintenance period, if applicable, and sign the Contract, failing which action as stated in sub-section 2 of section 42 of the Rajasthan Transparency in Public Procurement Act, 2012 and Instructions to Bidders shall be taken.

Authorized Signature: ..........................

Name and Title of Signatory:  Commissioner & Administrator Nagar Nigam Jaipur Greater & Heritage, JMC, Jaipur.

Designation: ..........................
2. **Contract Agreement.**

**Contract Agreement Works**

THIS AGREEMENT made this ..... day of .........., between Government of Rajasthan, represented by the Commissioner & Administrator Nagar Nigam Jaipur Greater & Heritage, JMC (Jaipur Municipal Corporation Greater & Heritage) pt. Deendayal Upadhyay Bhawan Lal Kothi, Tonk Road, Jaipur-302015 (hereinafter “the Employer”) which expression shall, where the context so admits, be deemed to include his successors in office and assigns, of the one part

and

M/S ___________________________ (Contractor name) ___________ (Contractor address) (hereinafter “the Contractor”), which expression shall, where the context so admits, be deemed to include his heirs, successors, executors and administrators, of the other part:

WHEREAS the Employer desires that the Works known as . . . . . [name of the Contract] . . . . should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein, and for which the Contractor has submitted Performance Security for Rupees ------------------------- in the form of ------------------------- ---------(For Jaipur Municipal Corporation Greater & Heritage)

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

   a) the Letter of Acceptance;
   b) RFP as uploaded in eproc.rajasthan.gov.in; sppp.rajasthan.gov.in
   c) Any addendum, corrigendum issued.
   d) the Bid of the Contractor as accepted along with the correspondence done on it, if any;

3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor Rupees ______/ Rupees (word only) + GST as consideration for execution and completion of the Works and the remedying of defects therein, in the manner prescribed by the Contract.

5. All the terms and conditions of NIT______________________, Jaipur will be part of this agreement.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of India on the day, month and year indicated above.

Signed by
Commissioner & Administrator
Nagar Nigam Jaipur Greater & Heritage

Witness, Name, Signature, Address
Signed by

Signed by
Contractor
for and on behalf the Contractor

Witness, Name, Signature, Address
Signed by
3. Performance Security

Performance Security

........................................... [Bank's Name, and Address of Issuing Branch or Office] .................

Beneficiary: [Name and Address of Procuring Entity] (Commissioner & Administrator Nagar Nigam Jaipur Greater & Heritage, Jaipur Municipal Corporation Greater & Heritage) .................
Date: .......................................................................................................................................................
Performance Guarantee No.: ..................................................................................................................

We have been informed that . . . . [name of the Contractor] . . . . (hereinafter called "the Contractor") has entered into Contract No. . . . . [reference number of the Contract] . . . . dated . . . . . . . with you, for the execution of . . . . [name of contract and brief description of Works] . . . . (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance security is required.

At the request of the Contractor, we . . . . [name of the Bank] . . . . hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of Rupees* . . . . [amount in figures], . . . . (Rupees......................... . . . . [amount in words] . . . . ) such sum being payable upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

The Guarantor agrees to extend this guarantee for a specified period in response to the Procuring Entity's written request for such extension for that specified period, provided that such request is presented to the Guarantor before the expiry of the guarantee. Bank Guarantee submitted against the performance guarantee, shall be unconditional and en-cashable/invokable at Jaipur

This guarantee shall expire, no later than the . . . . Day of . . . . . . **, and any demand for payment under it must be received by us at this office on or before that date.

........................................... ........................................... ........................................... 
Seal of Bank and AuthorisedSignature(s)

* The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract

** Insert the date sixty days after the expected completion date, including defect liability period and maintenance period, if any.

Notes: 1. All italicized text is for guidance on how to prepare this advance payment guarantee and shall be deleted from the final document.

2. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in guarantee.
4. Performance Security Declaration (Not Applicable)

Form of Performance Security Declaration

Date: __________ [insert date (as day, month and year)]

Contract Name and No.: __________ [insert name and number of Contract]

To: ___________________________________________________________________[insert Designation and complete address of Procuring Entity]

We, the undersigned, declare that:

We understand that, according to your conditions, the Contract must be supported by a Performance Security Declaration as a guarantee to ensure fulfillment of our all performance obligations under the Contract for ______________ [insert name of subject matter of procurement].

We accept that we will automatically be suspended from being eligible for bidding in any contract with you for ______________ [Procuring Entity] starting on the date that we receive a notification from you, the ______________ [Designation of the Procuring Entity] that our Performance Security Declaration is executed, if we are in breach of any of our performance obligations under the conditions of the Contract.

We understand this Performance Security Declaration shall expire after 60 days of completion of our all obligations under the Contract including Defect Liability, warranty/Guarantee, etc. in accordance with the conditions of the Contract.

Signed: ____________________________

[insert signature of person whose name and capacity are shown]

In the capacity of: ____________________________

[insert legal capacity of person signing the Performance Security Declaration]

Name: ____________________________

[insert complete name of person signing the Declaration]

Duly authorized to sign the Contract for and on behalf of: ____________________________

[insert complete name and address of the Bidder]

Dated on __________ day of ____________, __________ [insert date of signing]

Corporate Seal ___________________________________________________________________
### Item Rate BOQ

Tender Inviting Authority: Commissioner & Administrator Nagar Nigam Jaipur Greater and Heritage

Name of Work: Construction of Recreational center cum community Hall along with separate Underground Parking on turnkey basis at Poundrik Park Brahampuri Jaipur.

Contract No: NIB N0. 69/2019-20

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Units</th>
<th>BASIC RATE In Figures To be entered by the Bidder</th>
<th>TOTAL AMOUNT</th>
<th>TOTAL AMOUNT In Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Planning, drawing, design and Construction of Recreational center cum community Hall along with separate Underground Parking at Poundrik Park and reconstruction of Nalah Brahampuri Jaipur including all required component like civil, water supply and sanitary fittings, Electrical, Horticulture, fire fighting and annunciation, Rain water harvesting, solar light, Basement ventilation, works as per scope mentioned in section V of bid document on turnkey basis with all safety measures etc. complete Job work including Defect Liability Period of 3 Year from the date of completion of the project. (including GST &amp; other applicable Taxes if any)</td>
<td>1</td>
<td>complete Job</td>
<td>0.0000</td>
<td>INR Zero Only</td>
<td></td>
</tr>
</tbody>
</table>

**Total in Figures** 0.0000 INR Zero Only

**Quoted Rate in Words** INR Zero Only
Annexure A: Compliance with the Code of Integrity and No Conflict of Interest

Any person participating in a procurement process shall -

(a) not offer any bribe, reward or gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or to otherwise influence the procurement process;
(b) not misrepresent or omit that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation;
(c) not indulge in any collusion, Bid rigging or anti-competitive behavior to impair the transparency, fairness and progress of the procurement process;
(d) not misuse any information shared between the procuring Entity and the Bidders with an intent to gain unfair advantage in the procurement process;
(e) not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process;
(f) not obstruct any investigation or audit of a procurement process;
(g) disclose conflict of interest, if any; and
(h) disclose any previous transgressions with any Entity in India or any other country during the last three years or any debarment by any other procuring entity.

Conflict of Interest:-
The Bidder participating in a bidding process must not have a Conflict of Interest.
A Conflict of Interest is considered to be a situation in which a party has interests that could improperly influence that party’s performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.

i. A Bidder may be considered to be in Conflict of Interest with one or more parties in a bidding process if, including but not limited to:
   a. have controlling partners/shareholders in common; or
   b. receive or have received any direct or indirect subsidy from any of them; or
   c. have the same legal representative for purposes of the Bid; or
   d. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Procuring Entity regarding the bidding process; or
   e. the Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the Bidder is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one Bid; or
   f. the Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, Works or Services that are the subject of the Bid; or
   g. Bidder or any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as engineer-in-charge/consultant for the contract.
Annexure B: Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

In relation to my/our Bid submitted to ......................... for procurement of
................................. in response to their Notice Inviting Bids No..............
Dated............... I/we hereby declare under Section 7 of Rajasthan Transparency in Public
Procurement Act, 2012, that:

1. I/we possess the necessary professional, technical, financial and managerial resources and
   competence required by the Bidding Document issued by the Procuring Entity;

2. I/we have fulfilled my/our obligation to pay such of the taxes payable to the Union and the
   State Government or any local authority as specified in the Bidding Document;

3. I/we are not insolvent, in receivership, bankrupt or being wound up, not have my/our
   affairs administered by a court or a judicial officer, not have my/our business activities
   suspended and not the subject of legal proceedings for any of the foregoing reasons;

4. I/we do not have, and our directors and officers not have, been convicted of any criminal
   offence related to my/our professional conduct or the making of false statements or
   misrepresentations as to my/our qualifications to enter into a procurement contract within
   a period of three years preceding the commencement of this procurement process, or not
   have been otherwise disqualified pursuant to debarment proceedings;

5. I/we do not have a conflict of interest as specified in the Act, Rules and the Bidding
   Document, which materially affects fair competition;

Date: ..................................................
Place: ..................................................
Signature of bidder
Name: ..................................................
Designation: ...........................................
Address: .............................................
Annexure C: Grievance Redressal during Procurement Process

The designation and address of the First Appellate Authority is ____________________________

The designation and address of the Second Appellate Authority is ____________________________

(1) Filing an appeal

If any Bidder or prospective bidder is aggrieved that any decision, action or omission of the Procuring Entity is in contravention to the provisions of the Act or the Rules or the Guidelines issued thereunder, he may file an appeal to First Appellate Authority, as specified in the Bidding Document within a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:

Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings:

Provided further that in case a Procuring Entity evaluates the Technical Bids before the opening of the Financial Bids, an appeal related to the matter of Financial Bids may be filed only by a Bidder whose Technical Bid is found to be acceptable.

(2) The officer to whom an appeal is filed under para (1) shall deal with the appeal as expeditiously as possible and shall endeavour to dispose it of within thirty days from the date of the appeal.

(3) If the officer designated under para (1) fails to dispose of the appeal filed within the period specified in para (2), or if the Bidder or prospective bidder or the Procuring Entity is aggrieved by the order passed by the First Appellate Authority, the Bidder or prospective bidder or the Procuring Entity, as the case may be, may file a second appeal to Second Appellate Authority specified in the Bidding Document in this behalf within fifteen days from the expiry of the period specified in para (2) or of the date of receipt of the order passed by the First Appellate Authority, as the case may be.

(4) Appeal not to lie in certain cases

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely:–

(a) determination of need of procurement;
(b) provisions limiting participation of Bidders in the Bid process;
(c) the decision of whether or not to enter into negotiations;
(d) cancellation of a procurement process;
(e) applicability of the provisions of confidentiality.

(5) Form of Appeal
(a) An appeal under para (1) or (3) above shall be in the annexed Form along with as many copies as there are respondents in the appeal.
(b) Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.
(c) Every appeal may be presented to First Appellate Authority or Second Appellate Authority, as the case may be, in person or through registered post or authorised representative.

(6) Fee for filing appeal
(a) Fee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non-refundable.
(b) The fee shall be paid in the form of bank demand draft or banker's cheque of a Scheduled Bank in India payable in the name of Appellate Authority concerned.

(7) Procedure for disposal of appeal
(a) The First Appellate Authority or Second Appellate Authority, as the case may be, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.
(b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be, shall:
   (i) hear all the parties to appeal present before him; and
   (ii) peruse or inspect documents, relevant records or copies thereof relating to the matter.
(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass an order in writing and provide the copy of order to the parties to appeal free of cost.
(d) The order passed under sub-clause (c) above shall also be placed on the State Public Procurement Portal.
FORM No. 1  

Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

Appeal No ..........of ..............
Before the ............... (First / Second Appellate Authority)

1. Particulars of appellant:
   (i) Name of the appellant:
   (ii) Official address, if any:
   (iii) Residential address:

2. Name and address of the respondent(s):
   (i)
   (ii)
   (iii)

3. Number and date of the order appealed against
   and name and designation of the officer / authority
   who passed the order (enclose copy), or a
   statement of a decision, action or omission of
   the Procuring Entity in contravention to the provisions
   of the Act by which the appellant is aggrieved:

4. If the Appellant proposes to be represented
   by a representative, the name and postal address
   of the representative:

5. Number of affidavits and documents enclosed with the appeal:

6. Grounds of appeal:

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

   ..........................................................................................................................
   (Supported by an affidavit)

7. Prayer:

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

   Place ..............................................
   Date ..............................................

Appellant’s Signature
Annexure D: Additional Conditions of Contract

1. Correction of arithmetical errors

Provided that a Financial Bid is substantially responsive, the Procuring Entity will correct arithmetical errors during evaluation of Financial Bids on the following basis:

i. if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

ii. if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

iii. if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.

If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified and its Bid Security shall be forfeited or its Bid Securing Declaration shall be executed.

2. Procuring Entity’s Right to Vary Quantities

(i) At the time of award of contract, the quantity of Goods, works or services originally specified in the Bidding Document may be increased or decreased by a specified percentage, but such increase or decrease shall not exceed twenty percent, of the quantity specified in the Bidding Document. It shall be without any change in the unit prices or other terms and conditions of the Bid and the conditions of contract.

(ii) If the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the Conditions of Contract.

(iii) In case of procurement of Goods or services, additional quantity may be procured by placing a repeat order on the rates and conditions of the original order. However, the additional quantity shall not be more than 25% of the value of Goods of the original contract and shall be within one month from the date of expiry of last supply. If the Supplier fails to do so, the Procuring Entity shall be free to arrange for the balance supply by limited Bidding or otherwise and the extra cost incurred shall be recovered from the Supplier.
3. Dividing quantities among more than one Bidder at the time of award (In case of procurement of Goods)

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, when it is considered that the quantity of the subject matter of procurement to be procured is very large and it may not be in the capacity of the Bidder, whose Bid is accepted, to deliver the entire quantity or when it is considered that the subject matter of procurement to be procured is of critical and vital nature, in such cases, the quantity may be divided between the Bidder, whose Bid is accepted and the second lowest Bidder or even more Bidders in that order, in a fair, transparent and equitable manner at the rates of the Bidder, whose Bid is accepted.
Annexure E

Clause 1: Fair Wage Clause
(a) The Contractor shall pay not less than fair wages/minimum wages to labours engaged by him on the work as revised from time to time by the Government, but the Government shall not be liable to pay any thing extra for it except as stipulated in price escalation clause (clause 45) of the agreement.

Explanation: "Fair Wage" means minimum wages for time or piece work, fixed revised, by the State Government under the Minimum Wages Act, 1948.

(b) The Contractor shall, notwithstanding the provision of any contract to the contrary, cause to be paid fair wages to labourers indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work as if the labourers have been immediately or directly employed by him.

(c) In respect of all labourers, immediately or directly employed on the work, for the purpose of the Contractor's part of this agreement, the Contractor shall comply with or cause to be complied with the Public Works Department Contractor's Labour Regulations made, or that may be made by the Government, from time to time, in regard to payment of wages, wage period, deductions from wages, recovery of wages not paid, and unauthorised deductions, maintenance of wages register, wage card, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and other matters of a like nature.

(d) The Engineer-in-charge shall have the right to deduct from the money due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers, by reasons of non-fulfilment of the conditions of the contract, for the benefit of the worker or workers, non-payment of wages or of deductions made there from, which are not justified by the terms of the contract, or as a result of non-observance of the aforesaid regulations.

(e) Vis-à-Vis the Municipal Corporation Jaipur, the Contractor shall be primarily liable for all payments to be made and for the observance of the regulations aforesaid, without prejudice to his right to claim indemnity from his subcontractors.

(f) The regulations, aforesaid, shall be deemed to be part of this contract and any breach, thereof, shall be breach of the contract.

Clause 2: Contractor to engage technical staff
The Contractor shall engage the technical staff, as follows, on the contract works:-

(a) For works costing Rs. 100 lac and above- One Graduate Engineer.

(b) For works costing between Rs. 50 lac to Rs. 100 lac- One qualified diploma holder having experience of not less than 3 years.

(c) For works costing between Rs. 15 lac and Rs. 50 lac- One qualified diploma holder.

The technical staff should be available at site, whenever required by Engineer-in-charge to take instructions.
Clause 3:
The Contractor shall comply with the provisions of the Apprenticeship Act, 1961, and the Rules and Orders issued, there under, from time to time. If he fails to do so, his failure will be a breach of contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

Clause 4: Safety Code
The Contractor shall follow the safety code of electricity Strictly.

Clause 5:
Near Relatives barred from tendering
The Contractor shall not be permitted to tender for works in Circle, in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the Superintending Engineer and Assistant Engineer (both inclusive). He shall also intimate the names of persons, who are working with him in any capacity, or are subsequently employed by him and who are near relatives to any gazetted officer in the Organization/Department. Any breach of this condition by the Contractor would render him liable to be removed from the approved list of contractors of the Department. If such facts is noticed (a) before sanction of tender, his offer shall be declared in valid and earnest money shall be forfeited, (b) after sanction of the tender then the tender sanctioning authority may at his discretion forfeit his earnest money, performance guarantee, security deposit and enlistment deposit and the work/remaining work may allot to any registered contractor on the same rates as per rules.

Note: By the term 'near relative' is meant wife, husband, parents and grand-parents, children and grand children, brothers and sisters, uncles and cousins and their corresponding in-laws.

Clause 6: Retired Gazetted Officers barred for 2 years
No Engineer of Gazetted rank or other Gazetted Officer, employed in Engineering or Administrative duties in an Engineering Department of the Government of Rajasthan, is allowed to work as a Contractor for a period of 2 years of his retirement from Government service without the previous permission of Government of Rajasthan. The contract is liable to be cancelled, if either the Contractor or any of his employees is found, at any time, to be such a person, who had not obtained the permission of Government, as aforesaid, before, submission of the tender or engagement in the contractor's service, as the case may be.

Clause 7: Quality Control
The Municipal Corporation Jaipur shall have right to exercise proper Quality Control measures. The Contractor shall provide all assistance to conduct such tests and shall bear the cost of all tests.

Clause 8:
The work (whether full constructed or not) and all materials, machines, tools and plant, scaffolding,
temporary buildings and other things connected therewith, shall be at the risk of the contractor until the work has been delivered to the Engineer-in-charge, and a certificate from him, to the effect, obtained.

Clause 9: Death of Contractor

Without prejudice to any of the rights or remedies under the contract, if the Contractor dies the legal heirs of the Contractor or the Chief Engineer or duly authorised Engineer shall have the option of terminating the contract without any compensation.

Clause 10: Force Majeure

Neither party shall be liable to each other, for any loss or damage, occasioned by or arising out of acts or God such as-unprecedented floods, volcanic eruptions, earthquake of other invasion of nature and other acts.

Clause 11: General Discrepancies and errors:

In case of percentage rate tenders, if there is any typographical or clerical error in the rates shown by the department in the “G” Schedule. the rates as given in the basic Schedule of Rates of the Department for the area shall be taken as correct.

Clause 12: Post payment Audit & Technical Examination:

The Government shall have right to provide a system of per-check of Contractor’s bill by a specified Organization, and payment by an Engineer or an Accounts Officer/ Sr. Accounts Officer/ Chief Accounts Officer/ Financial Advisor, as the Government may in its absolute discretion prescribe. Any over-payments/ excess payment detected, as a result of such per-check post-check of Contractor’s bill, can be recovered from the contractor’s bills in the manner, herein before provided and the Contractor will refund such over/ excess payments.

Clause 13: Check Measurements:

The department reserves to itself, the right to prescribe a scale of check measurement of work in general, or specific scale for specific works of by other special orders (about which the decision on the department shall be final) Checking of measurement by superior officer shall supersede measurements by the subordinate officer and the former will become the basis of the payment. Any over/excess payment detected, as a result of such check measurement or otherwise at any stage up to the date of completion and the defect removal period specified else-where in this contract, shall be recoverable from the Contractor, as any other dues payable to the Government.

Clause 14: Check Measurements:
The Contractor in course of the work should understand that all materials e.g. stone, bricks, steel and other materials obtainable in the work by dismantling etc. will be considered as the property of the Government and will be disposed off to the best advantage on the Government. As per direction of the Engineer-in-Charge.

**Clause 15: Recovery from Contractors:**

Whenever any claim against the Contractor for the payment of a sum of money arises out of or under the contract, the Department shall be entitled to recover such sum be appropriation in part or whole of the Performance Guarantee and / or Security Deposit. Security Deposit at the time of enlistment of the Contractor. In the event of the security being insufficient, or if no security has been taken, thereafter, may become due to the Contractor, under this or any other contract with the Governor of Rajasthan. Should this sum be not sufficient to cover the full amount recoverable the Contractor shall pay to the Department on demand the balance remaining dues.

The department shall, further, have the right to affect such recoveries under Public Demands Recovery Act.

**Clause 16: Jurisdiction of Court:**

In the event of any dispute arising between the parties hereto, in respect or any of the matters comprised in this agreement, the same shall be settled by a competent court having jurisdiction over the place, where agreement is executed any by no other court, after completion of proceedings under Clause 23 of this contract.