

UDAIPUR SMART CITY LIMITED

Municipal Corporation, Udaipur, Town Hall, Udaipur

Tel: 0294-2421255 ; Fax: 0294-2421255

Website: www.udaipursmartcity.in, E-mail: mc_udaipur@rediffmail.com

Notice Inviting E-Tender 14 / 2017-18

Nit No.: USCL/dev{ }/2017-18/14

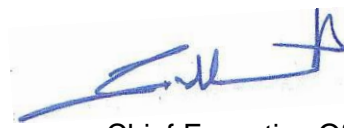
Date:- 07-12-2017

The USCL invites online unconditional bids under Single Stage two envelope system through e-procurement portal <http://eproc.rajasthan.gov.in> from eligible bidders as per criteria mentioned in bid document, for following works

SNo.	Name of Work	Estimated Cost (Rs. in Lacs)	Bid Security (Rs. in Lacs)	Tender Fee	Period of completion	Publish date & Start date of downloading of Bid documents	Pre-bid meeting	Last date of submission of on-line bids	Last date & time of submission of depositing documents in hard copy as stated under	Date of opening of technical bids
				Processing Fee pay to M.D. RISL, Jaipur						
1	Procurement, Operation & Management of Bus Services in Udaipur	3200.00	64.00	20,000/- 1,000/- Processing Fee	84 months	22.12.17 from 11:00 A.M.	08.01.2018 at 11:00 A.M.	29.01.18 (Up to 04:00 P.M.)	30.01.18 up to 03:00 P.M.	30.01.18 at 04:00 P.M.
2	Conservation & Development works of Heritage Façade, Lighting & Signage's for Historic Bazaars in the walled City, Udaipur under package for Udaipur Smart City Project Phase-II	660.45	13.20	10,000/- 1,000/- Processing Fee	09 months	22.12.17 from 11:00 A.M.	08.01.2018 at 04:00 P.M.	29.01.18 (Up to 04:00 P.M.)	30.01.18 up to 03:00 P.M.	30.01.18 at 04:00 P.M.

Earnest money and cost of tender documents shall be deposited through RTGS/ NEFT in the account of Smart City Udaipur having account no. 004994600000301 with YES Bank, Ground & First floor, "Goverdhan Plaza" 29 N.N. Acharya Marg, Udaipur branch (IFSC code YESB0CMSNOC). The unique transaction reference of RTGS/ NEFT shall be uploaded by the tenderer along with scanned copies of eligibility documents with "Eligibility Bid". The financial bid shall be submitted online only. The financial bid of tenderers qualifying eligibility criteria shall thereafter be opened on specific time, date of venue which will be intimated to them separately. 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.

Websites for downloading Bidding Document sppp.rajasthan.gov.in & eproc.rajasthan.gov.in



Chief Executive Officer
Udaipur Smart City Limited

प्रतिलिपी :-

1. प्रबन्ध निदेशक, राजस्थान सम्वद, सूचना एवं जन सम्पर्क विभाग परिसर, शासन सचिवालय, जयपुर को प्रेषित कर निवेदन है कि उपरोक्त निविदा का प्रकाशन :-
 1. एक मुख्य क्शीत्रीय दैनिक समाचार पत्र में,
 2. एक राज्य स्तरीय मुख्य दैनिक समाचार पत्र में,
 3. एक अखिल भारतीय स्तर का अंग्रेजी दैनिक समाचार पत्र।
 4. भारतीय व्यापार जनरल (ITJ), कोलकाता में **नियम अनुसार** प्रकाशित कराने का श्रम करावें।

2. **UBN No.**



Chief Executive Officer
Udaipur Smart City Limited

UDAIPUR SMART CITY LIMITED UDAIPUR

Bidding Document

Conservation & Development Works of Heritage façade, Lighting & Signage's for Historic Bazaars in the Walled City, Udaipur under package for Udaipur Smart City Project Phase-I

Bidding Document

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Notice Inviting E-Tender 14 / 2017-18

Nit No.: USCL/dev{ }/2017-18/14

Date:- 07-12-2017

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Websites for downloading Bidding Document sppp.rajasthan.gov.in & eproc.rajasthan.gov.in



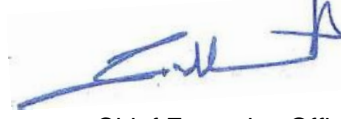
Chief Executive Officer
Udaipur Smart City Limited

प्रतिलिपी :-

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DETAILED NOTICE INVITING BID

(NIB) NIT No:14 / 2017-18

Udaipur Smart City Limited invites online unconditional tenders under Single Stage two envelope system are invited through e-procurement portal <http://eproc.rajasthan.gov.in> from eligible bidders as per criteria mentioned in bid document, for **Conservation & Development Works of Heritage façade, Lighting & Signage's for Historic Bazaars in the Walled City, Udaipur under package for Udaipur Smart City Project Phase-II**

Name & Address of the Procuring Entity	Name: Sidharth Sihag (IAS), CEO, USCL Address: Municipal Corporation Udaipur, Town Hall, Udaipur - 313001
Subject Matter of Procurement	Conservation & Development Works of Heritage façade, Lighting & Signage's for Historic Bazaars in the Walled City, Udaipur under package for Udaipur Smart City Project Phase-II
Bid Procedure	Single-stage: Two Part (envelope) open competitive eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	Least Cost based selection
Eligibility Criteria	As detailed in bid documents
Websites for downloading Bidding Document	sppp.rajasthan.gov.in eproc.rajasthan.gov.in
Fees	Bidding document fee (Non-Refundable): Rs. 10,000/- (Rupees Twenty Thousand only) in Cash/Demand Draft drawn on any Scheduled/ Commercial Bank in favour of "Chief Executive Officer, Udaipur Smart City Limited" payable at "Udaipur". Tender Processing Fee (Non- Refundable): Rs. 1000 (Rupees One Thousand only) in Demand Draft drawn on any Scheduled/ Commercial Bank in favour of "Managing Director, RISL" payable at "Jaipur"
Estimated Procurement Cost	Rupees Six Crores Sixty Lacs Forty Five Thousands Twenty (INR 6,60,45,020)

Bid Security and Mode of Payment	Amount: INR 13,20,900/- Mode of Payment: Banker's Cheque/Demand Draft drawn on any Scheduled Commercial Bank or Bank Guarantee as per Bid document or deposited through RTGS/ NEFT in the account of Smart City Udaipur having account no. 004994600000301 with YES Bank, Ground & First floor, "Goverdhan Plaza" 29 N.N. Acharya Marg, Udaipur branch (IFSC code YESB0000049)
Period of on-line availability of Bidding Documents(Start/End Date)	From : 22.12.2017, 11.00 AM Onwards till 03:00 PM of 29.01.2018
Pre-bid Meeting	Date/ Time: 08.01.18 at 04:00 PM Place: Meeting Hall, Municipal Corporation Udaipur
Manner, End Date for submission of Bids	Manner: Online at eProc website (http://eproc.rajasthan.gov.in) End Date: 29.01.2018 (up to 04:00 P.M.)
Submission of original Banker's Cheque/ Demand Draft for Bid Document cost, Bid Security, Bid Processing Fee & other documents listed herein after	30.01.2018 till 03:00 PM
Date & Time of Technical Bid Opening	Date: 30.01.2018 Time: 04:00 PM
Date/ Time/ Place of Financial Bid Opening	Will be intimated later to the Technically qualified bidders
Bid Validity	180 days from the bid submission deadline

Note:

- 1) Bidders (authorised signatory) shall submit their offer on-line in Electronic formats both for technical and financial proposal. However, DD / Banker's Cheques / BG (if applicable) for RFP Document Fees, RISL Processing Fees and Bid Security should be submitted physically in original at the office of Municipal Corporation Udaipur by time and date mentioned above as prescribed in bid document or deposited through RTGS/ NEFT in the account of Smart City Udaipur having account no. 004994600000301 with YES Bank, Ground & First floor, "Goverdhan Plaza" 29 N.N. Acharya Marg, Udaipur branch (IFSC code YESB0000049) and scanned copy of same should also be uploaded along with the technical Bid/ cover.
- 2) In addition to above, the following original documents should also be submitted physically in the USCL, Udaipur office by time and date mentioned above and scanned copies of same should also be uploaded along with the technical Bid/ cover:
 - i. Letter of Technical Bid

- ii. Power of Attorney for appointing authorized representative
 - iii. Joint Venture Agreement (if applicable)
 - iv. Proof of Registration in AA class as required
- 3) Any subsequent addendum/corrigendum shall be published only at the websites sppp.raj.nic.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.
 - 4) Before electronically submitting the bids, it should be ensured that all the bid documents including conditions of contract are digitally signed by the bidder.
 - 5) 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.
 - 6) All the prospective bidders are encouraged to participate in the pre-bid meeting and it is advised that the work sites are visited and bid documents are studied thoroughly.
 - 7) The procuring entity reserves the sole right to cancel the bid process and reject any or all of the Bids without assigning any reason.
 - 8) 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.
 - 9) No conditional bids shall be accepted and such bids shall be summarily rejected forthwith.
 - 10) 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.

INSTRUCTION TO BIDDERS

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, 2012” [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.raj.nic.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 Law 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, 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	Any person participating in the procurement process shall,- i. 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; ii. not misrepresent or omit that misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation; iii. not indulge in any collusion, bid rigging or anti-competitive behavior to impair the transparency, fairness and progress of the procurement process; iv. not misuse any information shared between the Procuring Entity and the Bidders with an intent to gain unfair advantage in the procurement process; v. 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; vi. not obstruct any investigation or audit of a procurement process; vii. disclose conflict of interest, if any; and viii. 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.

		1.3.2	<p>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.</p> <p>A Bidder may be considered to be in conflict of interest with one or more parties in this bidding process if, including but not limited to:</p> <ul style="list-style-type: none"> i. have controlling partners/ share holders in common; or ii. receive or have received any direct or in direct subsidy from any of them ;or iii. have the same legal representative for purposes of this Bid; or iv. 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 this bidding process; or v. the Bidder participates in more than one Bid in this 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 vi. the Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Works that are the subject of the Bid; or vii. the 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.
		1.3.3	<p>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.</p>
		1.3.4	<p>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.</p>

1.4	Eligible Bidders	1.4.1	<p>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:-</p> <p>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 to Joint Venture, Consortium or Association shall sign the Agreement.</p>
		1.4.2	<p>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.</p>
		1.4.3	<p>A Bidder should not have a conflict of interest in the procurement in question as stated in the Rule 81 and this Bidding document.</p>
		1.4.4	<p>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.</p>
		1.4.5	<p>The Bidder must be a registered Contractor in appropriate class with the Department/ Organization. He shall furnish necessary proof for the same.</p>

		1.4.6	<p>i Any change in the constitution of the firm, etc., shall be notified forth with 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.</p> <p>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.</p> <p>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.</p>
		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-qualified, empanelled or registered Bidders.
		1.4.9	Each Bidder shall submit only one Bid except in case of alternative bids, if permitted.
		1.4.10	<p>Bidder who is not registered under the Sales Tax Act prevalent in the State of Rajasthan can bid, however selected bidder shall have to be got registered with the Sales Tax department of the state government and submit the proof of registration before signing the Contract agreement.</p> <p>He is also required to provide proof of Permanent Account Number (PAN) given by Income Tax Department.</p>
2. Contents of Bidding Document			
2.1	Sections of the Bidding Document	2.1.1	<p>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].</p> <p>Part I: Bidding Procedures Section I. Instructions to Bidders (ITB) Section II. Bid Data Sheet (BDS) Section III. Evaluation and Qualification Criteria Section IV. Bidding Forms</p> <p>Part II: Requirements Section V. Procuring Entity's Requirements.</p> <p>Part III: Contract Section VI A. General Conditions of Contract [GCC] Section VI B. Special Conditions of Contract [SCC] Section VI C. Contract Forms</p>
		2.1.2	The Invitation for Bids (NIB) issued by the Procuring Entity is also part of the Bidding Document.

		2.1.3	i. The Bidding Document shall be uploaded on the e-procurement portal, eproc.raj.nic.in along with the Notice Inviting Bids. The complete Bidding Document shall also be placed on the State Public Procurement Portal, sppp.raj.nic.in. The prospective Bidders may download the bidding document from these portals. The price of the Bidding Document and processing fee of e-bid shall have to be paid to the Procuring Entity in the amount and manner as specified in Bid Data Sheet and e-procurement portal.
		2.1.4	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.
		2.1.5	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.
2.2	Clarification of Bidding Document and Pre-Bid Conference	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. 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 motto, may also amend the Bidding Document, if required, by issuing an addenda 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			
3.1	Cost of Bidding	3.1.1	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.
		3.1.2	The Bidder shall furnish the scanned attested copies of following documents with its Bid:- i. Partnership Deed and valid registration certificate with the Registrar of Firms in case of Partnership Firms. Power of Attorney in favour of the partner signing/submitting the Bid, authorizing him to represent all partners of the firm. ii. GST registration certificate and VAT/Sales Tax clearance certificate up to 30-6-2017 and Permanent Account Number (PAN) given by the Income Tax Department. iii. Address of residence and office, telephone numbers e-mail address in case of sole Proprietorship. iv. Certificate of Registration and Memorandum of Association issued by Registrar of Companies in case of a registered company and in case of any other statutory or registered body, certificate of incorporation or registration issued by concerned authorities. Power of attorney in favour of the person signing the Bid. v. Where permitted to bid as Joint Venture, Consortium or Association, letter of formal intent to enter in to an agreement or an existing

			agreement in the form of a Joint Venture, Consortium or Association.
3.2	Language of Bid	3.2.1	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.
3.3	Documents Comprising the Bid	3.3.1	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 Security/ Bid Securing Declaration shall be enclosed separately.
		3.3.2	The Technical Bid/ Proposal shall contain the following : i. 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]; ii. proof of payment of price of Bidding Document, processing fee, 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 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. Drawings/ designs in support of the Works to be executed; vii. the Notice Inviting Bids; viii. any other document required in the BDS; and ix. others considered necessary to strengthen the Bid submitted.
		3.3.3	The Financial Bid/ Price Proposal shall contain the following : Financial Bid/ Price Proposal Submission Sheet and the applicable Price Schedules, in accordance with ITB Clauses 3.4, 3.5; Any other document required in the BDS.
3.4	Bid Submission Sheets and Price Schedules	3.4.1	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.

		3.4.2	The Bidder shall submit as part of the Financial Bid, the Price Schedules for Works, using the forms provided in Section IV [Bidding Forms].
3.5	Bid Prices	3.5.1	<p>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.</p> <p>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.</p> <p>iii. In case of Lump Sum Contracts, only Total Price which the Bidder wants to charge for the entire Works with all its contingencies in accordance with drawings and specifications shall be quoted by the Bidder. A Schedule of Rates shall be specified in the Bid Data Sheet in order to regulate the amount to be added to or deducted from the fixed sum on account of additions and alterations not covered by the Contract. Payments shall be linked to various stages of completion of the Works specified in Activity Schedule given in Bid Data Sheet.</p>
		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, taxes and 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.
3.6	Currencies of Bid.	3.6.1	The unit rates and the prices shall be quoted by the Bidder entirely in Indian Rupees unless otherwise specified in BDS. All payments shall be made in Indian Rupees only, unless otherwise specified in the BDS.
3.7	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 shall authorize an individual/ partner in one of the firms as lead partner of the JV to act and commit all the partners of JV for the Bid.
3.8	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].
3.9	Period of Validity of Bids	3.9.1	Bids shall remain valid for 90 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 dead line 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 2% of the value of the Works indicated in the NIB. For bidders registered with the Procuring Entity, the bid security shall be 0.5% 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 the 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 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.
		3.10.9	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.
		3.10.10	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].
		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.
		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 iv. 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 in to an Agreement to form a legally constituted JV 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 authorised signatory on behalf of the Bidder. This authorisation 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 upto the time and date specified in the Notice Inviting Bids and BDS or an extension issued thereof.

4.3	Withdrawal, Substitution and Modification of Bids	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/ 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].
		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.
4.4	Bid Opening	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.
		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.
		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 authorisation to request the withdrawal and is readout and recorded at Bid opening. If the withdrawal notice is not accompanied by the valid authorisation, the withdrawal shall not be permitted and the corresponding Technical Bid shall be opened.

			<p>Next, covers marked as “SUBSTITUTION Technical 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 authorisation to request the substitution and is read out and recorded at Bid opening.</p> <p>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 authorisation to request the modification and is read out and recorded at opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are 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.</p>
		4.4.7	<p>All other covers containing the Technical Bids shall be opened one at a time and the following read out and recorded-</p> <ul style="list-style-type: none"> 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. <p>After all the Bids have been opened, their hard copies shall be printed and shall be initialed and dated on the first page and other important papers of each Bid by the members of the Bids opening committee.</p>
		4.4.8	<p>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.</p>
		4.4.9	<p>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</p>

			representatives, who are present, 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	<p>All covers containing the Financial Bids shall be opened one at a time and the following read out and recorded-</p> <ol style="list-style-type: none"> 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. <p>After all the Bids have been opened, their hard copies shall be printed and shall be initialed and dated on the first page of the 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.</p>
		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 disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.
		5.1.2	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 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.
		5.1.3	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.
		5.1.4	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.
5.2	Clarification of Technical or Financial Bids	5.2.1	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.
		5.2.2	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.
		5.2.3	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.
		5.2.4	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.
5.3	Deviations, Reservations and Omissions in Technical or Financial Bids	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 nonconformities (with recorded reasons) in the Bid that do not constitute a material deviation, reservation or omission.
		5.4.2	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.
		5.4.3	* 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. * <i>[This ITB Sub-Clause should be kept only when considered necessary]</i>
5.5	Correction of Arithmetical Errors in Financial Bid	5.5.1	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.
		5.5.2	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.
5.6	Preliminary Examination of Technical or Financial Bids	5.6.1	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.

		5.6.2	<p>The Procuring Entity shall confirm, following the opening of the Technical or Financial Bids, that the following documents and information have been provided :</p> <ul style="list-style-type: none"> i. Bid is signed, as per the requirements listed in the Bidding documents; ii. Bid has been sealed as per instructions provided in the Bidding documents; iii. Bid is valid for the period, specified in the Bidding documents; iv. Bid is accompanied by Bid Security or Bid securing declaration; v. Bid is unconditional and the Bidder has agreed to give the required performance Security; vi. Price Schedules in the Financial Bids are in accordance with ITB Clause 3.4 [Bid Submission Sheets and Price Schedules]; vii. written confirmation of authorization to commit the Bidder; viii. Declaration by the Bidder in compliance of Section 7 and 11 of the Act; and ix. other conditions, as specified in the Bidding Document are fulfilled.
5.7	Responsiveness of Technical or Financial Bids	5.7.1	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].
		5.7.2	<p>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:</p> <ul style="list-style-type: none"> (a) if accepted, would- <ul style="list-style-type: none"> 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 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 (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

		5.7.3	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.
		5.7.4	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 material deviation, reservation, or omission.
5.8	Examination of Terms and Conditions of the Technical or Financial Bids	5.8.1	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.
		5.8.2	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.
5.9	Evaluation of Qualification of Bidders in Technical Bids	5.9.1	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.
5.10	Evaluation of Financial Bids	5.10.1	The Procuring Entity shall evaluate each Financial Bid, the corresponding Technical Bid of which has been determined to be substantially responsive
		5.10.2	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.
		5.10.3	To evaluate a Financial Bid, the Procuring Entity shall consider the following: <ul style="list-style-type: none"> i. the Bid Price quoted in the Financial Bid; ii. price adjustment for correction of arithmetical errors in accordance with ITB Clause 5.5 [Correction of Arithmetical Errors]; 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.

		5.10.4	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 cost 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.
5.11	Comparison of Bids	5.11.1	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].
5.12	Negotiations	5.12.1	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.
		5.12.2	Negotiations may, however, be undertaken only with the lowest Bidder under the following circumstances- i. when ring prices have been quoted by the Bidders for the subject matter of procurement; or ii. when the rates quoted vary considerably and considered much higher than the prevailing market rates.
		5.12.3	The Bid evaluation committee shall have full powers to undertake negotiations. Detailed reasons and results of negotiations shall be recorded in the proceedings.
		5.12.4	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.
		5.12.5	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.
		5.12.6	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.
		5.12.7	In case the rates even after the negotiations are considered very high, fresh Bids shall be invited.
5.13	Procuring Entity's Right to Accept Any Bid, and to Reject Any or All Bids	5.13.1	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.
6. Award of Contract			
6.1	Procuring Entity's Right to Vary Quantities	6.1.1	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 Bidding Document.
		6.1.2	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.
6.2	Acceptance of the successful Bid and award of contract	6.2.1	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.
		6.2.2	Before award of the Contract, the Procuring Entity shall ensure that the price of successful Bid is reasonable and consistent with the required specifications.
		6.2.3	A Bid shall be treated as successful only after the competent authority has approved the procurement in terms of that Bid.
		6.2.4	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.
		6.2.5	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.
		6.2.6	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.

6.3	Signing of Contract	6.3.1	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 still to be legally constituted, all parties to the JV shall sign the Agreement.
		6.3.2	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.
		6.3.3	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.
6.4	Performance Security	6.4.1	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.
		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	<p>Performance Security shall be furnished in one of the following forms as applicable-</p> <p>(a) Deposit through eGRAS; or</p> <p>(b) Bank Draft or Banker's Cheque of a Scheduled Bank in India; or</p> <p>(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 at their surrender value at the time of Bid and formally transferred in the name of the Procuring Entity with the approval of Head Post Master; or</p> <p>(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</p> <p>(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.</p> <p>(f) The successful Bidder at the time of signing of the Contract agreement, may submit option for deduction of Performance Security from his each running and final bill @ 10% of the amount of the bill.</p>
		6.4.4	<p>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.</p>
		6.4.5	<p>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.</p>
		6.4.6	<p>Forfeiture of Performance Security: Amount of Performance Security in full or part may be forfeited in the following cases:-</p> <p>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</p>

			<ul style="list-style-type: none"> 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 iv. when any terms and conditions 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 VI of the Rules and this Bidding Document. vii. 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.
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 Appendix A to these ITB.

Appendix A: Grievance Handling Procedure during Procurement Process (Appeals)

(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 there under, he may file an appeal to First or Second Appellate Authority, as the case may be, as may be designated for the purpose, within a period of ten days or such other period as may be specified in the pre-qualification documents, Bidder registration documents or Bidding documents, as the case may be, 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 in terms of section 27 of the Act, 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 Bid before the opening of the financial Bid, an appeal related to the matter of financial Bid may be filed only by a Bidder whose technical Bid is found to be acceptable.

(2) 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.

(3) Form of Appeal.-

- a) An appeal under sub-section (1) or (4) of section 38 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 authorized representative.

(4) 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 payable in the name of Appellate Authority concerned.

(5) Procedure for disposal of appeals.-

- 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 be placed on the State Public Procurement Portal.

Annexure

FORM No. 1

[See rule 83]

Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

Appeal Noof

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):

(1).

(2).

(3).

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

SECTION II - BIDDING DATA

The following specific data for the works shall complement, amend, or supplement the provisions in Instructions to Bidders – Section I. Whenever there is a conflict, the provisions herein shall prevail over those in the Instructions to Bidders.

INSTRUCTIONS TO BIDDERS CLAUSE REFERENCE

A. Introduction

ITB. 1.1.1	<p>The Number of the Invitation for Bids (NIT) is E 14 / 2017-18</p> <p>The Procuring Entity is : Udaipur Smart City Limited</p> <p>Representative of the Procuring Entity: CEO, USCL</p> <p>Name of the works :Conservation & Development Works of Heritage façade, Lighting & Signage's for Historic Bazaars in the Walled City, Udaipur under package for Udaipur Smart City Project Phase-I (Detailed Scope of work has been defined in Section 5.)</p>
1.1.2	<p>Period of Completion:</p> <p>The Physical Works shall be completed in its entirety within Nine (9) 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. The defect liability period of 3 years shall commence after completion project Works.</p>
1.1.3	<p>Estimated Cost of work is as under: Rs 660.45 Lacs</p>

	The type of Contract is combination of percentage rate (Schedule G) and Item rate (H- Schedule) for civil & electrical works and on Lump Sum basis for Toilet & Drinking Water Facilities (if any)
ITB 1.4.1	Joint Ventures are permitted comprising not more than two 2 (two) firms/companies. The minimum equity under JV of lead firm should be 51% and that of other firm should 25%.
ITB 1.4.2	“Bidders of any Nationality” are permissible.
ITB 1.4.5	The Bidder / both partners of JV must be registered Contractor in AA class of the department / organization of any State Govt./ Central Govt. / PSU / Govt Autonomous Body / Govt. Undertaking of any country.
ITB 1.4.8	The bidding process is open to bidders who fulfill the prescribed eligibility criteria.
ITB 1.4.9	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.

B. Bidding Documents

ITB 2.1.3	<p>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 10000/_) while submitting the filled-up Bidding document to the Procuring Entity along with the processing fee of Rs 1000/_ separately in favour of RISL, Jaipur</p> <p>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 Chief Executive Officer, USCL, payable at Udaipur, (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 web-site along with their technical bids.</p>
ITB 2.2.1	<p>For Clarification purposes only, the Procuring Entity’s address is :</p> <p>CHIEF EXECUTIVE OFFICER, USCL MUNICIPAL CORPORATION UDAIPUR, TOWN HALL, UDAIPUR - 313001. EMAIL: mc_udaipur@rediffmail.com FAX: 0294-2421255; Contact Person: Arun Vyas(ACE): (M) 91-9414134012 and Mukesh Pujari (EE): 91-9414159746</p>
ITB 2.2.2	<p>A Pre-Bid conference will take place at the MEETING HALL of MUNICIPAL CORPORATION UDAIPUR, TOWN HALL, UDAIPUR on (Date) 08.01.2018 at (Time) 4:00 PM.</p> <p>No Site visit shall be organized by the procuring entity, however, bidder is advised to visit the site at his own expenses and if any support is required, shall be provided by the SE/EE of the ULB.</p>
ITB 2.2.3	The Bidder is requested, to submit questions in writing, to reach the Procuring Entity

	preferably not later than one week before the Pre- Bid Conference. However, Department may also consider questions / queries raised in writing only, during the pre-bid conference.
ITB 2.3.1	Any addendum issued shall be part of the Bidding Document and shall be uploaded on the State Public Procurement Portal and http://eproc.rajasthan.gov.in
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 on-line 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 upload the following documents with its Financial Bid: <ul style="list-style-type: none"> a) Financial Proposal Submission Sheet b) Preamble to BoQ c) And other details as mentioned in Sec 4 of Vol-01
ITB 3.5.1	

ITB 3.5.2	The Prices quoted by the Bidder shall be fixed. Provision of Price escalation shall be as per Conditions of Contract.
ITB 3.5.3	All variations in taxes and duties shall be borne by the contractor.
ITB 3.9.1	The Bid validity period shall be 180 (One hundred and eighty days) days from deadline for submission of bids.
ITB 3.10.2	Add following: Bid security shall be 2.0 % of value of work indicated in NIB for all bidders.
ITB 3.10.3	A Bid Security of Rs. 13.20 Lacs (Rupees Thirteen lacs Twenty Thousand only) (2% of the value of the works indicated in the NIB) 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 30 (thirty) days beyond the validity of the bid or deposited through RTGS/ NEFT in the account of Smart City Udaipur having account no. 004994600000301 with YES Bank, Ground & First floor, "Goverdhan Plaza" 29 N.N. Acharya Marg, Udaipur branch (IFSC code YESB0000049)
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

ITB 4.1.1	<p>For bid submission purposes only, the Procuring Entity's address is : CHIEF EXECUTIVE OFFICER, USCL MUNICIPAL CORPORATION UDAIPUR, TOWN HALL, UDAIPUR – 313001 EMAIL: mc_udaipur@rediffmail.com FAX: 0294-2421255;</p> <p>Bidders shall submit their Bids electronically only.</p> <p>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 Authorized 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 submission:</p> <ul style="list-style-type: none"> • 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.10000/- per tender should be deposited by Non Refundable Demand Draft drawn in favor of chief Executive officer, USCL Udaipur payable at Udaipur, whereas the Processing fee Rs. 1000/- should be deposited by Non Refundable Demand Draft drawn in favour 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 3.00 PM on 30.01.2018 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.
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ITB 4.1.2, 4.1.3, 4.1.4	Bids are required to be submitted in Electronic Format, it shall be submitted on the e-procurement portal : http://eproc.rajathan.gov.in
ITB 4.2.1	The Deadline for electronic Bid submission is
	Date: 29.01.2018 Time: 4:00 PM.
ITB 4.5.1	The on-line Bid opening shall take place at: CHIEF EXECUTIVE OFFICER, USCL MUNICIPAL CORPORATION UDAIPUR, TOWN HALL, UDAIPUR - 313001. EMAIL: mc_udaipur@rediffmail.com FAX: 0294-2421255 The tendering process shall be conducted on-line only; DD/BC tender fee, processing fee and Bid Security shall be submitted physically up to deadline described in tender document.
4.5.5	
ITB 4.5.14, 4.5.15	The Procuring Entity will open the Financial proposal as per e-tendering procedure.

E. Award of Contract

ITB 6.3.1	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.
ITB 6.3.3	The procuring entity shall promptly return the bid security after the earliest of the following events, namely: <ol style="list-style-type: none"> 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.
ITB 6.4.2, 6.4.3, 6.4.4	Performance Security amounting to total 10% of contract value shall be submitted / deducted as follows: <ol style="list-style-type: none"> (i) Contractor shall submit Performance Security @ 10% in advance at the time of signing of agreement in form of BG as per latest rules under RTPPP act.. The BG should be issued by any nationalized / schedule bank and shall remain valid up to 60 days beyond defect liability period. Bank Guarantee submitted against the performance guarantee, shall be unconditional and encashable/invokable at Town for which tenders are invited or at least at the concerned district head quarter when presented in specified Branch Office. (ii) If there is no reason to retain the PG, it shall be returned back to the contractor within 60 days after the satisfactory completion of the defect liability period. (iii) 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 shall be increased to 10% 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.
7.1	First Appellate Authority shall be : District Collector, Udaipur Second Appellate Authority shall be : Principal secretary, LSGD Jaipur

SECTION III: EVALUATION AND QUALIFICATION CRITERIA**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 equal basis. The price adjustment should be based on a reasonable estimate of the cost by the executing agency, engineer, consultant or bid evaluation committee, taking into consideration the corresponding quoted prices from other conforming bids. The price adjustment may be based on the price of the item quoted by the next lowest qualified bidder].

Criteria:

Criteria for potential assessment would be as follows:

- i) the bidder should have executed at least 33.33% of the same nature of work in any one of the last five financial years. However the bidder may opt., the current year in the above said five years assessment period.

(iii) The Bidder should have achieved a financial turnover of at least Rs. 13.20 Cr. in any one of the last five financial years. However, the bidder may opt. the current year in the five years assessment period.

(iv) The bidder should be able to deploy the machinery and equipment specified in Schedule-III, in the execution of this work. This machinery and equipment should be available to the bidder on ownership or confirm lease basis for which appropriate proof on Non-Judicial stamp paper will have to be submitted.

(v) Bidders who meet the minimum qualification criteria will be qualified only if their acceptable bid capacity is more than the cost of the work (Bid Cost). The bid capacity will be calculated as under:

B. Qualification Criteria:-**1. Eligibility:**

	Criteria	Compliance Requirements			
		Single Entity	Joint Venture		
	Requirement		All Partners Combined	Each Partner	One partner
i) Nationality	National / International firm	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement
ii) Conflict of Interest	No conflicts of interest in accordance with ITB Sub-clause 1.4.3	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement
iii) Debarment / Transgression by any Procuring Entity.	Must declare	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement

2. Pending Litigation:

Pending Litigation	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.	Must meet requirement by itself	N/A	Must meet requirement by itself	N/A
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NOTE: CA certificate clearly mention with calculation that pending litigation in total not more than 50% of Bidder's net worth.

3. Experience:

1. Experience of construction contracts in the role of contractor, subcontractor, or management contractor for at least the last 3 Years prior to the Bid submission deadline.

	Criteria	Compliance Requirements			
		Single Entity	Joint Venture		
	Requirement			All Partners Combined	Each Partner
i) Experience of construction contracts (2014-15 to 2016-17 and current year)	At least the last 3 Years prior to the Bid submission deadline.	Must meet requirement	N/A	Must meet requirement	N/A

NOTE: Certificate of Chartered Accountant must be submitted, clearly indicating construction experience based on construction turnover of the firm.

2. The bidder should have experience of the following in last five financial years (**2012-13 to 2016-17**); experience in current year shall also be counted up to deadline for submission of bid:

Criteria	Compliance Requirements			
	Single Entity	Joint Venture (permitted)		
Requirement			All Partners Combined	Each Partner
Should have substantially completed (as per definition given below) / completed and Commissioned one similar work (which includes heritage building conservation works, civil works, lighting works) costing not less than the amount equal to 33.33% of the estimated cost of the bid (Rs 6.60 Cr) i.e.Rs. 2.20 Cr. .	Must meet requirement	Must meet requirement	NA	NA

Note: - Substantially completed means:

i Contractor has completed the works but could not commission the same because of hindrances beyond control of contractor.

OR

ii. Contractor has completed and commissioned the work at least of the amount required for qualification, out of large size contract.

3. Clients certificate of experience must clearly indicate whether

(i) Completed and commissioned

Or

(ii) Substantially completed as per definition given above

Or

(iii) In case of substantial completion the criteria and reasons with details.

3. CONSTRUCTION EXPERIENCE IN KEY ACTIVITIES IN LAST 5 YEARS

Criteria	Compliance Requirements			
	Single Entity	Joint Venture (permitted)		
Requirement			All Partners Combined	Each Partner
(i) Experience (substantially completed (as per definition given in tender document) / completed and commissioned) of executing conservation & restoration works in lime & stone,	Must meet requirement	Must meet requirement	not applicable	not applicable

Note: For 2 & 3)

- i) The Bidder shall submit copies of Work Orders, Completion and satisfactory performance Certificates in support of their experience claims. Only works of Govt/PSU/Autonomous bodies under Govt. Sector of any country shall be considered.
- ii) The works which have been completed during the period mentioned above, though may have commenced earlier, shall be considered for experience purposes.
- iii) For considering experience of the bidder, out of its experience as JV, its own works in the JV shall be considered with relevant evidence/certificates.
- iv) JV shall comprise of not more than two firms/companies. The minimum equity under JV of lead firm must be 51% and that of other firm must 25%.

5. Financial:

Criteria	Compliance Requirements			
	Single Entity	Joint Venture (permitted)		
Requirement			All Partners Combined	Each Partner
5.1 Historical Financial Performance				
Net Worth:				
Net Worth for the Financial Year 2015-16 should be positive. (Certificate of Chartered Accountant showing calculation of Net Worth must be enclosed).	Must meet requirement	not applicable	Must meet requirement	not applicable
Working Capital:				
Working Capital based on the current assets and current liabilities (including the short term loan repayments due in current years) should be 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 revolving line of credit has to be scheduled Bank as per format, otherwise it shall not	Must meet requirement	Must meet requirement	Must meet (25%) requirement i.e. 6.25 % of estimated cost.	not applicable

be considered.				
5.2 Construction Turnover				
Average Annual construction Turnover of any three years out of last four years (Financial Year 2012-13 to 2016-17) should be equal to or more than (1.5 x cost of work/time period in years i.e (Rs 13.20 Cr) . Audited Balance Sheets of all the three financial years must be submitted in support, without which the bid may not be considered. The calculation sheet for annual average construction turnover shall be certified by a Chartered Accountant.	Must meet requirement	Must meet requirement	not applicable	Lead member must meet 60 percent of the requirement
5.3 BID CAPACITY:				
<p>Bid Capacity: The bid capacity of the bidder shall not be less than the estimated cost of the bid. The formula for calculating Bid capacity is given here</p> <p>$\text{Bid Capacity} = (2 \times A \times N) - B$ Where A= Maximum value of Annual Turnover from Civil Engineering works executed in any one year during the last four years(2013-14,14-15,15-16, 16-17) (updated to present price level) taking in to account the completed as well as works in progress (including current year, if opted by the bidder),</p> <p>N=Prescribed completion period of the work for which bids are invited in years,</p> <p>B= Value at present price</p>	Must meet requirement	Must meet requirement	Must meet 25% requirement	Lead member must meet 60 percent of the requirement

level (2016-17) of existing commitments and ongoing works to be completed during N period i.e., the period of completion of works for which bids are invited.				
---	--	--	--	--

NOTE: The certificate of CA regarding Bid Capacity must be submitted otherwise bid shall not be considered. The certificate should clearly show the calculation how the Bid Capacity is calculated as per formula given in tender. The contractor should submit an undertaking on stamp paper of Rs. 500 that he has mentioned all projects necessary for calculation of B value for the calculation of Bid Capacity.

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:

Sr. No	Financial Year	Weight age
(i)	2016-17	1.00
(ii)	2015-16	1.00
(iii)	2014-15	1.00
(iv)	2013-14	1.10
(v)	2012-13	1.21
(vi)	2011-12	1.33

Section IV: Bidding Forms

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4.1 TECHNICAL PROPOSAL [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 Bid
2. CA's certificates
3. Bank's letter as required in Tender Document(if applicable).
4. GST Registration,
5. VAT / Sales Tax Clearance Certificate up to 30-6-2017
6. Proof of payment of Bid Security
7. Proof of Cost of bidding document or receipt of such cost.
8. Proof of Bid processing fee as specified.
9. Bid capacity stipulations as required in Tender Document.
10. Completion Certificates of works which have been cited in support of fulfillment of eligibility criteria as specified in Tender Document.
11. Work orders of works which have been cited in support of fulfillment of eligibility criteria as specified in Tender Document.
12. Drawings / designs / technical documents (if required) in support of works to be executed
13. Any modifications or withdrawal.
14. Other documents considered necessary to strengthen the bid.
15. JV agreement against which experience for eligibility is claimed to demonstrate clearly the JV members work in that JV.
16. Registration certificate of each bidder / JV Partner in class AA or equivalent in any State / Central / PSU / in India.
17. Check Points and Self appraisal sheet

4.2 Letter of Technical Bid**Technical Bid Submission Sheet**

Date: _____

NIB No.: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda No.

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

(c) Our Bid shall be valid for a period of 180 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:

Name of Recipient	Address	Reason	Amount

(k) 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;

(l) Other comments, if any:

Name/ address: _____

In the capacity of: _____

Signed: _____

Duly authorised to sign the Bid for and on behalf of: _____

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: *[CHIEF EXECUTIVE OFFICER, USCL, RAJSATHAN]*

Date: *[insert date]*

BID GUARANTEE No.: *[insert number]*

We have been informed that ***[insert name of the Bidder]*** (hereinafter called "the Bidder") has submitted to you its bid dated ***[insert date]*** (hereinafter called "the Bid") for the execution of ***[insert name of contract]*** under Notice Inviting Bids No. ***[insert NIB number]*** ("the NIB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we ***[insert name of Bank]*** hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ----- ***[insert amount in figures][insert amount in words] payable at Udaipur*** upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(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) having 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 TB;

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 on 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**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: **[CHIEF EXECUTIVE OFFICER, USCL, 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 **[insert number of months or years, as required by the Procuring Entity]** starting on **[insert date]**, 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]

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all partners to the Joint Venture/ Lead bidder that submits the bid.]

4.4.1 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.

4.4.1(a) Form ELI - 1: Bidder's Information Sheet

BIDDER'S INFORMATION	
Bidder's legal name	
In case of JV/Consortium, legal name of each partner	
Bidder's /all JV/Consortium partners country of constitution.	
Bidder's /all JV/Consortium partners year of constitution	
Bidder's /all JV/Consortium partners legal address in country of constitution	
Bidder's /all JV/Consortium partners authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	
Attached are self attested copies of the following original documents:	
<ol style="list-style-type: none"> 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 named in above. 3. In case of JV, letter of intent to form JV or JV agreement. 4. In case of Consortium, letter of intent to form consortium or JV consortium 	

4.4.2 Form ELI – 2: JV Information Sheet

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

Each member of a JV / must fill in this form

JV /consortium/ SPECIALIST CONTRACTOR'S INFORMATION	
Bidder's legal name	
JV /consortium Partner's or Subcontractor's legal name	
JV /consortium Partner's financial share in the JV	
JV /consortium Partner's or Subcontractor's country of constitution	
JV /consortium Partner's or Subcontractor's year of constitution	
JV /consortium Partner's or Subcontractor's legal address in country of constitution	
JV /consortium Partner's or Subcontractor's authorized representative information(name, address, telephone numbers, fax numbers, e-mail address)	
<p>Attached are attested copies of the following original documents:</p> <ol style="list-style-type: none"> 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 / must fill in this form**

Pending Litigation			
<ul style="list-style-type: none"> ○ No pending litigation in accordance with Section III (Evaluation and Qualification Criteria). ○ Pending litigation in accordance with Section III (Evaluation and Qualification Criteria) 			
Year	Matter in Dispute	Value of Pending Claim in INR	Value of Pending Claim as a Percentage of Net Worth

4.4.4 Form EXP – 1: General Construction Experience

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

GENERAL CONSTRUCTION EXPERIENCE				
Starting Month Year	Ending Month Year	Years	Contract Identification and Name Name and Address of Procuring Entity Brief Description of the Works Executed by the Bidder	Role of Bidder

Bidder Must Enclose:

1. Certificate of CA mentioning the construction turnover as per relevant clause.

4.4.5 Form EXP - 2: Construction Experience in Key Activities

Fill up one (1) form per contract

Contract with Similar Key Activities			
Contract No.of.	Contract Identification		
Award Date		Completion Date	
Total Contract Amount	-----Equivalent INR -----		
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount	
Employer's Name Address Telephone Number Fax Number E-mail			
Description of the key activities in accordance with Criteria.			
<p>(i) Experience (substantially completed (as per definition given in tender document) / completed and commissioned) in Providing & Executing of similar work (which includes heritage building conservation and restoration work, civil work and lighting works) in lime and stone.</p>			
Reference page No., copy of work order and completion & commissioning certificate in support of above experience:			

4.4.6 Form EXP – 2(a): Specific Construction Experience**Note:** Please fill up one sheet per contract

CONTRACT OF SIMILAR SIZE AND NATURE		
Contract No.of.	Contract Identification	
Award Date		Completion Date
Role in Contract	Contractor / Management Contractor / Subcontractor	
Total Contract Amount	INR	
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Procuring Entity's Name, Address, Telephone Number, Fax Number, E-mail address		

Bidder Must Enclose:

1. Work order.
2. Experience certificate as per relevant clause from an officer not below the rank of executive Engineer or Equivalent.

4.4.7 Form: Format for assured Revolving line of credit facility*(To be submitted by a Scheduled Bank on the Bank's Letterhead)***Date:** *(Insert Date)*

To:

**Chief executive officer, USCL
Town Hall,Udaipur, Rajasthan, India****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 Municipal Corporation Udaipur (**hereinafter called the "Employer"**) in response to the Invitation for Bids issued by the Udaipur Smart city Limited 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 _____, 2015/2016.

Date: _____ Signature of the Bank: _____

Witness: _____ Seal: _____

[Signature, name and address]

4.5 Declaration by the Bidder in compliance of Section 7 & 11 of the Act

Declaration by the Bidder/ JV

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:

4.6 Letter of Financial Bid

Financial Bid Submission Sheet

Date: _____ NIB No.: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to 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 discounts offered, if permitted, in item (d) below is: _____

(d) The discounts offered, if permitted, and the methodology 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:

Name/ address: _____

In the capacity of: _____

Signed: _____

Duly authorised to sign the Bid for and on behalf of: _____

Date: _____

Tel: _____ Fax: _____

E-mail: _____

4.7. POWER OF ATTORNEY

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 tender "-----". We / M/s_____undertake the responsibility due to any act of the representative appointed hear by.

For Partnership Firm's

S. No.	Name of the All Partner	Signature of Partner with Seal
1.		
2.		
3		
4	Name and Designation of the person Authorized	
5	Attested Signature of the Authorized Representative	

For Limited Firm's

Name and Designation of the person Authorized	
Firm	
Address	
Telephone No.	
Fax No.	
Telex No.	
Authority By which the Powers is delegated	
Attested Signature of the Authorized Representative	
Name and Designation of person attesting the signatures	

4.9: Joint Venture Agreement (Between not more than two firms)

(ON Rs 500 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,

UDAIPUR SMART CITY LIMITED 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**

1.3. _____ shall be the **Third Member – or Third Partner** (*insert more lines if more partners*)

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 **UDAIPUR SMART CITY LIMITED**, 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** unless extended for a further period on demand of **Udaipur smart city Limited udaipur** & 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 Udaipur.

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: ASSIGNABILITY:

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:

Name:

Designation:

Name :

Designation:

4.10 Bidding Capacity = 2 A X N - B

4.10.1 STATEMENT FOR WORK IN HAND (for calculation of value of B)

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:

Amount In Lac Rs.

S. No	Brief Description of Work	Stipulated Date of Start	Stipulated Date of Completion	Time left for execution after date of publication of NIT , in months	Cost of awarded work	Cost of work executed up to date of publication of NIT	Balance Cost of un-executed work as on date of publication of NIT in 30 month from and date of submission
1	2	3	4	5	6	7	8=6-7

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

4.11 Check Points must be filled by Bidder

S. No.	Page No. of RFP	Requirements / Documents required to be submitted		Check Points	Yes / No	Enclosed at page no. of bid and any other detail as required
		GENERAL				
1	33	Cost of Bid Document as Rs. 10,000/-	DD/Cheque in favour of Chief executive officer, USCL UDAIPUR Original hard copy to be submitted in the office Chief executive officer, USCL UDAIPUR by date and time mentioned in NIB and scanned copy to be uploaded with technical bid	Confirm it is of scheduled bank? Name of Bank Amount Rs. 10000.00 In favour of Chief executive officer, USCL		
2	33	Bid Processing Fee of Rs 1,000/-	DD/Cheque in favour of MD, RISL Original hard copy to be submitted in the office Chief executive officer, USCL UDAIPUR by date and time mentioned in NIB and scanned copy to be uploaded with technical bid	Confirm it is of scheduled bank? Name of Bank Amount Rs. 1000.00 In favour of MD, RISL		
3	11, 33		DD / Bankers Cheque / Bank Guarantee as per format on page 49	Confirm that as per format? Confirm that it is in Confirm that it is unconditional? If any condition bid liable to be		

S. No.	Page No. of RFP	Requirements / Documents required to be submitted		Check Points	Yes / No	Enclosed at page no. of bid and any other detail as required
			copy to be uploaded with technical bid	rejected.		
				State in whose name is bid security (JV or Lead Bidder)		
				BG number		
				Confirm that BG is Valid up to 30 days beyond the validity of bid		
				Confirm it of a scheduled bank? Mention the Name of bank.		
				Amount		
4	33	Power of Attorney	On Stamp Paper, as per page 67 Original hard copy to be submitted in the office of Chief executive officer, USCL by date and time mentioned in NIB and scanned copy to be uploaded with technical bid	Confirm that value of Stamp Paper is Rs. 500/-		
				Name & designation of person who has issued POA		
				Name & designation of person to whom POA is issued		
5	33	Joint Venture Agreement	Agreement as per format on page 77 (not more than two companies) Original hard copy to be submitted	Confirm that value of Stamp Paper is Rs. 500/-		

S. No.	Page No. of RFP	Requirements / Documents required to be submitted		Check Points	Yes / No	Enclosed at page no. of bid and any other detail as required
			in the office of Chief executive officer, USCL UDAIPUR by date and time mentioned in NIB and scanned copy to be uploaded with technical bid	Confirm that financial responsibility of lead partner is minimum 51%		
				Confirm that financial responsibility of other partner bidder is minimum 25%		
				Confirm that JV is in prescribed format. If not, liable to be rejected.		

4.12 SELF APPRAISAL SHEET TO BE FILLED BY THE BIDDER FOR DETERMINATION OF RESPONSIVENESS

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
General Requirements					
2	33	Registration in class AA or equivalent in any department / organization of any State Govt./ Central Govt. / PSU / Govt Autonomous Body / Govt. Undertaking of any country	Confirm that bidder / both partners of JV are registered in class AA or equivalent Name of department & State	Yes / No	
			Confirm that valid up to date of submission of bid	Yes / No	
3		VAT Registration /clearance certificate	Confirm that submitted	Yes / No	
4		VAT Registration in Rajasthan	Confirm that submitted with this bid or will be submitted later as per clause _____	Yes / later after award	
Eligibility Criteria					
12	40	Nationality - Indian/International firms	Specify nationality	Indian/International	
13	40, 65	Declaration as per format on page 65 Requirement to be fulfilled by: Each of the consortium / JV member	Confirm that declaration submitted by bidder / each partner in case of JV Confirm that it is in the prescribed format. If not, bid is liable to be rejected	Yes / No Yes / No	
14	40	declaration regarding Debarment/Transgression by any procuring entity Requirement to be fulfilled by: Each of the consortium / JV member	Confirm that declaration submitted by bidder / each partner in case of JV Confirm that it is in the prescribed format; If not, bid	Yes / No Yes / No	

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required	
			is liable to be rejected			
15	40, 55	Pending Litigation in Form LIT-1 - All pending litigation shall be treated as resolved against the bidder and so shall in total not represent more than 50 percent of Bidder's net worth Requirement to be fulfilled by: Each of the consortium / JV member	Confirm that declaration submitted by bidder / each partner in case of JV	Yes / No		
			Confirm that it is in the prescribed format; If not, bid is liable to be rejected	Yes / No		
			Confirm that value of litigations is less than 50% of bidder's net worth and CA certificate showing calculation	Yes / No		
16		Experience of construction contracts in the role of contractor, subcontractor, or management contractor for at least the last 3 Years prior to the Bid submission deadline - Certificate of CA certifying construction experience in last 3 years based on construction turnover Requirement to be fulfilled by: Each of the consortium / JV member	Confirm that Certificate of CA attached; If not, bid is liable to be rejected	Yes / No		
17		The bidder should have experience of the following in last five financial years (2012-13 to 2016-17); experience in current year shall also be counted up to 28 days prior to the deadline for submission of bid: The bidder should have substantially completed / completed and Commissioned one single similar work	Number of works on basis of which eligibility is claimed.			
			Details of qualifying works : Work no. 1			
			Name of work (in brief)			

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
		<p>costing not less than the amount equal to 33.33% of the estimated cost of the bid (Rs. 220.00 lakhs).</p> <p><u>Substantially completed means:</u></p> <p>i. Contractor has completed the works but could not commission the same because of hindrances beyond control of contractor. OR ii Contractor has completed and commissioned the work at least of the amount required for qualification, out of large size contract. In case of JV, all partners combined should meet the requirement.</p> <p>i) Copies of Work Orders, Completion and satisfactory performance Certificates in support of their experience claims. Only works of Govt/PSU/Autonomous bodies under Govt. Sector shall be considered. The works which have been completed during the period mentioned above, though may have commenced earlier, shall be considered for experience purposes.</p>	<p>Name of client</p> <hr/> <p>Value of work done</p> <p>value of work done by bidder in case work is carried out in JV</p> <hr/> <p>Stipulated Date of start (as per work order)</p> <hr/> <p>Stipulated Date of completion (as per work order)</p> <hr/> <p>If completed & commissioned, indicate Actual date of completion & commissioning (as per client's certificate).</p> <hr/> <p>Confirm any one of the following:</p> <p>i. Work is completed and commissioned</p> <p>ii. works is completed but could not be commissioned because of hindrances beyond control of contractor</p> <p>iii. Work is completed and</p>		

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
		<p>For considering experience of the bidder, out of its experience as JV, its own works in the JV shall be considered with relevant evidence/certificates.</p>	<p>at least of the amount required for qualification, out of large size contract.</p>		
			<p>Confirm that client's certificate clearly mentions one of the above 3 criterion, with details, otherwise bid is liable to be rejected.</p>		
			<p>Confirm that copy of work order is attached.</p>		
			<p>Confirm that copy of client's certificate is attached and it has reference of above work order.</p>		
			<p>Confirm that the certificate is issued by the officer not below the rank of Executive Engineer.</p>		
			<p>Similar information to be given for each work if work done is more than one</p>		

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
18		<p>Experience in Providing & Executing of heritage building conservation and restoration work, civil work and lighting works in lime and stone.</p> <p>Substantially completed means: i. Contractor has completed the works but could not commission the same because of hindrances beyond control of contractor. OR ii Contractor has completed and commissioned the work at least of the amount required for qualification, out of large size contract. In case of JV, all partners combined should meet the requirement.</p>	<p>Details of qualifying works : Work no. 1</p> <p>Name of work (in brief)</p> <p>Name of client</p> <p>Value of work done</p> <p>value of work done by bidder in case he carried out this work as JV</p> <p>Stipulated Date of start (as per work order)</p> <p>Stipulated Date of completion (as per work order)</p> <p>Total length of sewer line</p> <p>Length of line of diameter more than 450 mm</p> <p>If completed & commissioned, indicate Actual date of completion & commissioning (as per client's certificate).</p>		

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
			Confirm one of the following: <ol style="list-style-type: none"> i. Work is completed and commissioned ii. works is completed but could not be commissioned because of hindrances beyond control of contractor iii. Work is completed and commissioned at least of the amount required for qualification, out of large size contract. 		
			Confirm that client's certificate clearly mentions one of the above 3 criterion, with details.		
			Confirm that copy of work order is attached.		
			Confirm that copy of client's certificate is attached and it has reference of above work order.		

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
			Confirm that the certificate is issued by the officer not below the rank of Executive Engineer.		
19	43	Certificate of Chartered Accountant certifying Net worth for the Financial Year 2014-15 is positive, along with calculations. In case of JV, each partner should meet requirement.	Confirm that Certificate of Chartered Accountant attached with calculation of net worth; If not, bid is liable to be rejected		
20	58	Form FIN-2 - Average Annual construction Turnover of any three financial years out of last five Financial years (Financial Year 2012-13 to 2016-17) should be equal to or more than (1.5x cost of work/time period in years) i.e. 13.20 Cr. The calculation sheet for annual average construction turnover shall be certified by a Chartered Accountant. In case of JV, lead member should meet 60 percent (Rs. <u>396.27</u> lakhs) of the requirement	Confirm that Certificate of Chartered Accountant clearly mentioning word "construction" turnover and its value for each financial year and calculation of average value at present price level, attached; If not, bid is liable to be rejected		
			Indicate value of avg annual turnover		
21	42	Bid capacity	Confirm that affidavit of bid capacity submitted on Stamp Paper of Rs. 500.00		
			Confirm that certificate of CA submitted for Bid Capacity clearly showing calculation; If not, bid is liable to be rejected		
			Value of A		

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
			Value of B		
			Bid Capacity		
			Confirm that bidder has mentioned in affidavit that all works above Rs. 10 lakhs, to be completed in next 30 months (period of completion + bid validity period), required for determination of value of "B" are declared		
22	42	Working capital	Confirm that certificate of CA submitted indicates clearly that the working capital is as per formula given in tender. Confirm that CA has clearly mentioned that he has gone through the letter of Revolving Line of Credit and bank's (scheduled Bank) commitment letter is project specific and assured without any ambiguity otherwise bid is liable to be rejected.		
			Confirm that bank's letter submitted for revolving line of credit, If required		

S. No.	Page No. of RFP	Requirements as per bid document	Check points	Tick the correct option or fill in information	Enclosed at page no. of bid and any other detail as required
			Confirm that the above bank's letter is as per format;		
			Value of working capital		

SECTION V

REQUIREMENT OF WORKS

SCOPE OF WORK & GENERAL SPECIFICATIONS

SUB SECTION 1(Conservation Works)

1.1 Objective of the Package

- 1.2 This package is proposed for the purpose of conserving historic facades and character of heritage buildings of Bazaars in Udaipur Town as per drawing.
- 1.3 This package is directed to restore and improve street facade, upgrading amenities developing uniform street furniture etc within the area under this contract.
- 1.4 It is recognized that the local residents will be put to inconvenience when the work will be taken up. It is however, also the objective of the contract to ensure minimum dislocation of the traffic and access to individual homes. It will be of utmost importance to implement the work so as to achieve the same.
- 1.5 In order to achieve the above, measures like planning alternative routes for traffic, removing the excavated soil from site while work is progress and to store it in suitable location and bringing it back for refilling, proper barricading, lighting of the excavated sites during nights, repair of roads immediately after completion of the work in minimum time will have to be taken.
- 1.6 In this package Initially Contractor shall start the work of building facades. The lateral work shall be allowed by the engineer in charge as per the work plan only.

2.1 Scope of work

- 2.2 The contractor is solely responsible for providing and executing all project works confirming all technical as well as quality standards as per TENDER DOCUMENT.
- 2.3 The contractor shall promptly inform the Consultant engaged by USCL 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 and collectively resolve the ambiguity or correct the error and will start the execution accordingly.
- 2.4 Start execution after taking layout from EIC or his representative.
- 2.5 Planning and taking up the work according to the Methodology/work plan or as per a modified work plan duly agreed and approved by the Engineer in charge.

- 2.6 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. The contractor shall be required to carry out removal / shifting of existing utilities as itemized in the BOQ. 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.
- 2.7 Shifting of underground and overhead services other than itemized in the BOQ. The Procuring Entity 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.
- 2.8 All works pertaining to unforeseeable sub surface condition shall be executed by the contractor at his own cost except for those for which payment is allowed in any other clause.
- 2.9 The site should be cleaned of all the surplus material and broomed to leave a clean surface at the end of work.
- 2.10 The contractor will be fully responsible for structural safety stability of the associated work.

3.0 Other Services

- 1.1 Contractor shall take the necessary precautions to avoid the damage to other services such as water supply lines, telephone cables, electrical cables, storm water drains etc. In case of any damages to any of the services, Contractor shall be responsible for restoring the facilities in bare minimum time at his own cost. The other utility services and traffic shall be maintained as per clause 1.9 of Standard Specifications. In case of shifting of any utilities, prior permission shall be taken from the Engineer and the same shall be carried out only after his written approval. The necessary deposit shall be paid to the concerned department or line agency in case the shifting / refixing of utility has to be carried out by the line agency. The actual expenditure incurred by the line agency shall be reimbursed to the Contractor from the provisional sum amount.
- 1.2 **Work program:** It is of utmost importance that the citizens of the town are inconvenienced to the minimum due to the works proposed to be carried out. The blocking of traffic and access to houses should be restricted for minimum period and the work done should be planned in a manner that it is commissioned in minimum time to provide benefits to the citizens inconvenienced. The sequence of work has been proposed as stipulated in Appendix to Bid keeping the same in mind.
- 1.3 The contractor may provide his alternative plan of work within 15 days of start for consideration of the EIC who may agree to a changed work program and the same shall be followed.

Materials workmanship, period and certificates of Maintenance and Defect Liability etc.

All materials and workmanship shall be of the respective kinds described in the contract and in accordance with the Architect's/Engineer instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication or on the site or at such other place or places as may be specified in the Contract or at all or any of such places. The contractor shall

install quality control laboratory and provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and test in any work and the quality, weight or quantity of any material used and shall supply samples of

materials before incorporation in the works for testing as may be selected and required by the Engineer-in-charge.

Period of maintenance and Defects liability:

The Contractor shall be responsible to make good within such period as maybe stipulated by the Engineer in-charge any defect which may develop or may be noticed during period of maintenance of 36 months from the certified date of completion and which is attributable to the contractor. All notice of such defect shall be given to the Contractor promptly. In case the contractor fails to make good the defects, the Engineer in-charge may employ other persons to make good such defects and all expenses consequent thereof and incidental thereto shall be recoverable from the Contractor. In the event the employer takes over portions of work as they are completed the liability of the contractor under this clause for these portions shall extend to a period of 36 months from the actual dates on which portions of the works are taken over.

The successful bidder/contractor is required to undertake detailed photo recording documentation by still photography, videography of the entire work prior to commencement and the same has to be deposited with the Engineer in charge of Udaipur Smart city limited in two copies immediately. Before dismantling any old work to redo this still photography with specifically putting some identity mark number of the portion by any specified means has to be done and this to be got checked and certified by Engineer In charge and recorded specifically in the measurement book (M.B.). A written permission from the Engineer in charge before commencement of executing such work is essential for execution as well as for payments.

During the work in progress and after its completion also photo documentation is necessary and the photos before & after completion of portion of work are essentially to be enclosed with the bill for payment.

General Specifications for Work

1. **Digging /Clearance of Debris**

Digging shall be carefully got carried out to the levels, shapes and dimensions to receive the embedded parts portion, Should any of the digging be taken down below the designated levels the Contractor shall fill in such excavation at his own expense with concrete well rammed in position until it is brought up to the proper level; filling in with excavated material will not be allowed for this purpose.

The excavated earth shall be used for filling up the sides of the foundations and between the plinth walls in layers not exceeding 30 cm properly rammed and watered. All surpluses left over earth shall be either spread or carted away without extra charges.

The measurements of the work shall be the exact height and width of the lowest steps of the footings according to the drawings or the architects/ Engineer's instructions and the depth measured vertically. If any excavations are to be taken deeper than the heights mentioned in the drawings they shall be measured and paid appropriately.

Rate for excavation in all the cases shall include labour for returning, watering and ramming spoil of excavation between sides of trenches and foundation masonry, spreading on site if required and for carting away surplus earth. No extra shall be allowed for planking and strutting of sides of excavation for walls and piers and for keeping the excavations free from water unless otherwise specified.

Excavation in Hard rocks either by chiseling or blasting shall not be permitted.

2. **Brick Bat Concrete:**

Brick bat concrete of specified thickness shall be composed of 2 parts of broken brick bats of regular pieces 3/4" thick and 1 part of lime mortar with 2 part surkhi for water proofing well mixed together and rammed hard till consolidated. It shall be laid in level or to slope as directed. In the terrace, the top surface of the concrete shall be brushed clean with wire brush to remove loose material.

3. **Lime concrete: For foundation works:**

All lime concrete for foundations shall be in the proportion of 40:100 lime surkhi mortar 1:2 of specified strength unless otherwise mentioned. The component materials shall be accurately gauged and thoroughly mixed, Concrete mixer to be used for mixing all gradients. Vibrator (Needle/Plate) shall be used wherever directed by Architect/ Engineer in charge finished/ completed work shall be adequately cured as directed.

4 **Brick Work:**

The Bricks shall be table moulded and of good quality as approved by the Architect/ Engineer in Charge, free from grit, well burnt, sound, square and with sharp-edges and shall give a ringing sound when struck with a mallet. Every Brick shall be thoroughly soaked in water before use till the bubbles cease to come up. No broken

bricks shall be used except as closures. The courses shall be truly horizontal and work strictly plumb, joints shall be broken vertically and they shall not exceed 1/2" in thickness.

They work shall be watered well so as to be continuously wet for 10 days and afterwards twice a day for a month.

In brick arches or other circular work (Keval, Dhoro & Dadarwal Dom etc). The bricks shall be shaped to slope according to drawings, joints radiating correctly to the center. The face bricks shall be of uniform colour and with sharp. All this type circular work and arches and to be plastered with lime cement mortar.

5. Lime Plaster :

Lime surkhi mortar plaster shall be of 1:2 ratio with order ingredients like google /Gur/ Methi, etc. The surkhi and lime will first be thoroughly mixed and grinded by grinder. If surkhi is not available grinded bricks can be used in place of surkhi.

The coats of plaster shall be applied to the walls and other specified bricks works. Plaster of one part lime and 2 parts surkhi shall be dashed and floated to make the surface uniform and even. The surface of this coat shall be scratched by trowel to form a key for the second coat. The third coat lime loi coat shall be thin coat of lime surkhi mortar evenly applied and trawled smooth to produce a perfectly smooth and even surface.

Adequate time interval shall be allowed between the applications of successive coats for hardening. The coats shall be kept moist by watering for fifteen days and shall not be allowed by dry out. The measurement shall be in sq. mtr. superficial openings shall be deducted as per mode of measurement.

6. Decorative stone masonry stone & marble :

Stone for this purpose shall be selected by Architect/ Engineer of the same quality & quarry as used in the project and of good quality. All stone work shall be worked to such size and shapes as may be shown on the drawings or as directed by the Architects. The stones shall be fine dressed or as required on the face and joints and rough tooled on beds fully, true and out of windings. All visible angles and edges shall be straight and free from chipping. Work shall be strictly in plumb. All stones shall be set in lime surkhi mortar 1:2 or as per old work is done and no joint shall exceed 1/8" in thickness. Wherever brick backing is suggested; brick masonry work shall be executed.

The quality of dressing and carving of stone shall be as per sample to be approved by Architect/ engineer. All mouldings and carvings shall be executed according to details supplied.

7. Stone pavement:

The pavement shall consist of slabs of rough tooled or machine polished stone of specified thickness of approved quality free from cracks and flakes of uniform colour and having an even surface and texture. After laying the pavement shall be machine polished and all unevenness removed.

8. Marble tiles:

Marble tiles of approved quality tiles with medium size marble in nature figure scheme selected by the Architect/ Engineer in-Charge shall be used. All visible angles, joints and edges shall be straight and free from chipping. Work shall be strictly in plumb and level. All marble tiles shall be set in cement/lime mortar in and

9. Glass / Mirror Work: -

- a) For the existing design where the work is to be executed should be documented by still photography and videography (in three copies) and the design is to be traced on a tracing paper before dismantling the damage portion.
- b) After removing the damaged portion the plaster of fine pop is to be done where ever necessary to give a flat surface.
- c) On the prepared surface the existing design which was traced on a tracing paper is to be traced back on the surface. (Photo documentation after retracing the design on the portion to be redone is an essential requirement)
- d) Jamia Glass/ mirror should be in convex shape and are to be cut in the required shape and design as per retracing.
- e) A paste for fixing the Glasses on walls is to be prepared by adding 250 gm fevicol in 2 kg of fine gypsum powder (POP). The so prepared paste shall be in a small quantity to be consumed with in two hours of its preparation.

Material Required: -

- a) Jamia Glass/ Mirror: Glass is should be in convex shape having gillett polish on the concave surface of the mirror.
- b) Fine gypsum Powder (POP) of approved quality.
- c) Fevicol /Araldite of approved quality.
- d) Gold leaf (24 Carrot) duly tested in approved lab.

10. Stain Glass, Paintings and Panels: -

- a) The wooden mould of the Jali's is to be made and over it design is to be made by Lime Surkhi Mortar 1:2.
- b) Copper sheet is to be cut in the existing design of Jali and the color glasses are to be fixed in between the gaps.
- c) At the Back of the Stain Glass silver foil is to be fixed as required and thereafter these glass is to be fixed in the copper sheet.
- d) On plain glass design/painting with the oxide colours is to be done in which the colored stained glasses are to be fixed.
- e) Conservation of Paintings and portraits of glass is to be done by cleaning with the help of approved chemicals under the strict supervision and after this the lost portions is be done and by fixing mica/ copper thin sheet behind the glasses according to original old design by using paste of gypsum powder mixed with fevicol complete with all stucco works in P.O.P. as per existing design.

Material Required: -

- a) Colored stained glasses (Italian/ Belgium)
- b) Plaster of Paris (Fine quality)
- c) Fevicol
- d) Plain Mirror (2-3 mm)
- e) Wooden Frame (Sheesham/ sal wood)
- f) Copper/Mica sheet (2-3 mm)
- g) Gold/ Silver Leafs

- 11 Any other specifications shall be as stated in "G" schedule or as directed by Engineer in charge at the time of execution.
- 12 All works shall be carried out as per Archaeological principles of restoration/conservation and strictly under direction of Engineer in Charge.

Material

The Contractor shall submit to the Engineer-in-Charge or his representative, samples of the materials which will form part of the permanent works, sufficiently in advance of the start of the work, so that necessary tests can be carried out for the approval of the Engineer In Charge or his representative, before using any such material on site. Samples for the basic materials shall be submitted from every supplier and from each consignment; if materials differ from one consignment to another, the consignment differing from the accepted sample shall be replaced by the Contractor free of cost. The format will be provided by Engineer In Charge.

The testing of materials to be used in the Works, or of the quality of finished items shall generally be done in a laboratory approved by the Engineer-in-Charge or his representative. All testing charges shall be borne by the Contractor.

**DETAILS OF MAJOR ITEMS OF CONSTRUCTION PLANT AVAILABLE FOR
THIS WORK.**

S. No.	Particulars	Make	Year of manufacture	Nos.	Whether owned or confirmed lease
1	Lime mortar Mill				
2	Scaffolding Material				
3	Movable Gantry Crane etc.				
4	Any other T&P for the purpose.				
5					
6					
7					
8					

Signature of Contractor

**Details of Key Personnal intended to be employed for this work
(use separate sheet if necessary)**

A. Technical Personnal

- (1)
- (2)
- (3)
- (4)

B. Administrative Personnal

- (1)
- (2)
- (3)
- (4)

C. Master Craftsmen

- (1)
- (2)
- (3)
- (4)

D. Craftsmen

- (1)
- (2)
- (3)
- (4)

E. Any other

- (1)
- (2)
- (3)
- (4)

Signature of Contractor

INTRODUCTION ON CONSERVATION WORKS

INTRODUCTION ABOUT THE CONSERVATION WORKS

1. What is Conservation?

Conservation is the action needed to secure the survival of our built heritage for the future. Our built heritage embraces a range of heritage structure which include buildings, gates, water bodies and sites, the fabric of which is too important for the nation, for region as well as for the community. Any wrong intervention can lead to loss of this valuable heritage forever.

2. What is built heritage?

Built Heritage refers to tangible manifestations of our history charting the human evolution. For the purpose of this document, built heritage will refer to monuments, groups of buildings and sites of heritage value, constituting the historic or built environment. This may include those buildings, artifacts, structures, areas and precincts that are of historic, aesthetic, architectural, associative or cultural significance. Various types of historic structures like Residential buildings, bungalows, houses, offices, post offices, institutional buildings, gateways, water bodies, memorials, clock towers, town halls, hospitals, library, religious structures, museums, guest houses, circuit houses, samadhis etc. Constitute the built heritage.

3. Understanding of items used for building conservation works

Before making any strategy it is essential to understand that conservation of historic building is different from the construction of a new structure because of different materials and construction techniques. New construction means designing and constructing a new structure with new material and construction techniques.

4. Available Schedule of Rates

The has been framed by following the below mentioned SoR

- i. RUIDP SoR-2017
- ii. ARC-BSR-2011(Jaipur Circle)
- iii. DSR-2013
- iv. PWD-2013
- v. Non SoR Items (Following privilege methodology of works in conservation and restoration of Heritage Sites in India)

5. Classification of Conservation works

The classification of conservation can be done in two broad categories of Maintenance works and Special Repair works after their conservation.

5.1 Maintenance of historic buildings: Maintenance is the continuous protective care of the fabric, contents and setting of a place. A maintenance plan is the most cost-effective way to keep the historic building in original form.

5.1.1 Daily maintenance

It includes daily cleaning, dust removal from the building.

5.1.2 Monthly maintenance

It includes cleaning all rain water outlets, cleaning toilet outlets and gully.

5.1.3 Quarterly maintenance

It includes inspection of roofs (inside and outside) , all rain water outlets ,checking all wooden and metal structural members and all door and windows, cleaning all gutters, down pipes and rain water drains to remove fallen leaves and removing vegetation, if any

5.1.4 Annual Maintenance

a). Inspection-It includes detailed inspection of the roof from inside and outside, checking all roofing members, gutters and rain water pipes, checking dampness in external and internal wall surfaces should be recorded in the record book before, during and after rainy season.

b). Cleaning and treatment- after rainy season affected metal and wooden members should be treated and repaired. All gutters, down pipes and rain water drains should be cleaned to remove fallen leaves and vegetation and other choking materials. In case of any roof leakage and capillary water rise, required repair should be done. Chemical and abrasive cleaning should not be done without consulting specialized conservators.

5.1.5 Maintenance every three years

Inspection report- A conservation architect must make full report every three years, specially noting structural defects that should be kept under observation. Revising the maintenance plan-maintenance plan should be revised after every inspection. It should draw attention to any problem that should be kept under observation and studied under next report

5.1.6 Maintenance record book

PWD or Engineer in charge or site representative should maintain the maintenance record book of all the historic structures. It should be checked by the engineer responsible for technical care of historic structures.

5.2 Special repair works

5.2.1 Preservation- Preservation means maintaining the fabric of a place in its existing state and retarding deterioration. Preservation deals directly with the cultural property. Its object is to keep it in its existing state. Repairs must be carried out when necessary to prevent further decay.

5.2.2 Conservation- means all the processes of looking after a place so as to retain its cultural significance. Conservation is the action taken to prevent decay. It embraces all acts that prolong the life of our built heritage.

5.2.3 Restoration- means returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material. The object of restoration is to revive concept or legibility of the object. Restoration and re-integration of details and features occurs frequently and is based upon respect for original material, archeological evidence, original design and authentic documents. Replacement of missing or decayed parts must integrate harmoniously with the whole, but must be distinguishable on close inspection from the original so that restoration does not falsify archeological or historical evidence. In a sense cleaning of buildings is also a form of restoration, and the replacement of missing decorative elements another.

5.2.4 Reproduction- Reproduction entails copying an extant artifact, often in order to replace some missing or decayed parts, generally decorative, to maintain aesthetic harmony. Generally reproduction is carrying out to for decayed brackets, chajjas, decorative columns etc.

5.2.5 Reconstruction- Reconstruction means returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabrics

5.2.6 Rehabilitation- Adaptive reuse of historic buildings-

The best way of preserving a building is to keep them in use. The original use is generally best for conservation of built heritage as it requires minimum alteration. Building can be used for some special purpose by partitioning, surface finishing, etc. which shall not be nailed, screwed or bolted by drilling the walls, ceiling or floors and instead shall be kept as movable partition so that they can be easily removed if required without causing any damage to the Heritage structure.

6. Conservation Principle and Approach

The primary aim of preservation and conservation is to maintain the historical authenticity and integrity of the cultural heritage with prolonging its life. Each intervention should therefore be based on proper

studies and assessments. Problems should be solved according to relevant conditions and needs with due respect for the aesthetic and historical values, and the physical integrity of the historic structure or site.

Following are the broadly laid conservation principles for executing work in any built heritage:

- i. The removal of historic materials or alteration of features and spaces that characterize the property shall be avoided.
- ii. Conservation work should be carried out in such a way that it can be reversed at some future time, without any significant damage having been done.
- iii. Changes that create a false sense of historical development on Heritage building, such as adding hypothetical features or architectural elements from other buildings, shall not be undertaken.
- iv. Additions and alterations to a historic place which, over time, have become character defining elements in their own right and contributing the integrity of the heritage should be respected and conserved.
- v. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize the property shall be preserved.
- vi. The new work shall always be reversible as well as differentiated from the old. Such interventions shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
- vii. The property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building, its site and environment.
- viii. Do not remove, replace, or substantially alter its intact or repairable character-defining elements.
- ix. Conservation should be carried out by recording the details of existing site properly during and after work; make provision for recording where continued preservation is no longer possible or where loss is taking place through change or ongoing decay, and ensure that all records are retained in readily accessible archives.
- x. Conservation should include effective arrangements for monitoring the condition and safety of the site and for routine maintenance and good housekeeping.

7. Material and Techniques for Conservation

Conservation of historic building is different from the modern building construction. Different construction systems and materials and their behavior make a big gap between these two. Before making any conservation proposal we should understand that strong and impermeable material is the best suited for new construction not for historic buildings. Today's belief that durability of binding material is its strength and impermeability and so porous materials like lime becomes useless in today's context.

The shift in the choice of material seemed is very practical and logical for the modern construction and for innovative structural forms. These high-rise structures, bridges and forms could not have been built adopting lime as chief cementing material. However, the construction techniques adopted for historic structures or vernacular buildings are very different from the modern construction. Use of porous building materials such as stones and bricks for masonry construction, wood, mud and lime mortars for binding materials, makes the historic structures breathable which allow moisture to evaporate easily through the pores of its fabric. The use of cement based materials for the historic structures lead to moisture entrapment and consequent deterioration of material due to their impermeable and strong behavior. The distinctive characteristics of the primary building material, including the scale of the material unit, its texture and finish, contributed to the heritage character of a building. In Heritage buildings a brick wall, for example, the particular size of brick used and the manner in which it was laid was distinct. In early masonry buildings, a soft mortar was used, which employed a high ratio of lime. The softness of the joints ensured that the mortar was porous. This soft mortar was laid in thin joints. and the inherent color of the material also was an important characteristic. The size of

the bricks contributed to the sense of scale of the wall, as did the texture of the mortar joints. When re-pointing such walls, it is important to use a mortar mix that approximates the original. Many contemporary mortars are harder in composition than those used historically. These should not be used in mortar repairs because this stronger material can accelerate the rate of deterioration.

For preparing conservation proposals it is required to understand the historic and traditional building materials and construction techniques which are used for the construction of the historic buildings. In the context of Northern India lime mortar is prepared with mature lime putty, methi, gur, bel, river sand and surkhi mixing is done with lime chakki. But in Rajasthan hydraulic lime and marble dust is also used for superior works. In coastal areas sea shells are the main source of lime. In *Bundelkhand* *kankar* lime which is hydraulic in nature is used in Mathura region. It is also available in *Bundelkhand* region. Sometimes locally available materials have been used but all samples of mortar, plaster, finishes and other materials should be tested to identify its ingredients. Sometimes it becomes very difficult to identify the organic additives such as methi, gur, dal, san, bel, etc. (varies from region to region) of any mortar sample so it is required to study available literature records and the existing tradition building construction system to identify the close approach for its ingredients.

7.1. Guidelines for selecting material for conservation

A material database must be prepared for selection of material during documentation of building.

- Database should include materials used in the structures, available-locally and regional markets and if these materials are not available in this area other resources should be identified.
- Identifying historic material proportions and properties which is identified in labs and visual inspection and preparing a list on material needed their properties and quantities.
- Selecting appropriate material from the database prepared during the documentation work having similar properties as historic material having.
- In case of mortar plaster, preparing samples as per historic proportions and testing it on similar surfaces. After getting desired results using it conservation works.

Properties to be checked for selection of appropriate material for conservation:

- a) Strength of the material in comparison to historic material or required material
- b) Color of the material should match with the historic material
- c) Cement or other inappropriate material should not be used for any conservation works.
- d) Workability, consistency, plasticity, setting time and kind of setting should be checked before using it on historic structure
- e) In selection of material Standards should also be referred for their properties, which it should possess.

7.2 Technical Guidelines for material conservation

1. It is required to identify the source of material for conservation. After testing of the materials their original resource should be identified and procure for conservation. If original material is found not available, material similar to original in terms of chemical properties, color, texture and other required material qualities or the closest options should be identified.

2. Use of modern materials and techniques should always be the second option. Traditional techniques and materials are preferred for the conservation of significant fabric. In some circumstances modern techniques and materials which offer substantial conservation benefits may be found appropriate like for strengthening of the structure and filling the cracks etc. Such modern substitutes should be considered only after their use is proven efficient and judicious, and must not compromise the integrity and continuity of local building traditions. It has experienced that for some specific items such as earthquake retrofitting, structural strengthening; water proofing etc. modern materials are more efficient. Membrane used during such process should be reversible.

3. When deterioration occurs, repair the material and any other related problems promptly to prevent further decay. Frequently, damaged materials can be patched or consolidated. In other situations,

however, some portion of the material may be found beyond repair. In such a case, consider replacement. In the case of primary historic building materials, the new material should match the original. It is important, however, that the extent of replacement be minimized, because the original materials themselves contribute to the authenticity of the property as a heritage resource.

Even when the replacement material exactly matches that of the original, the integrity of a heritage building is to some extent compromised when extensive amounts are removed.

4. Covering original building material with a new material is inappropriate and shall not be approved.

5. When feasible remove later covering materials such as cement plastering, inappropriate painting, Etc. that obscures the original building material and have not achieved historic significance. After removal of the outer layer, original layer should be repaired as required.

6. Painting brick masonry/ stone masonry/ historic decorative works is inappropriate. It changes the character of a building and may deteriorate the original material as well as affect the sense of visual Continuity among other masonry structures in the area.

7. Repair deteriorated primary building material in a manner that maintains its heritage character.

Modern consolidation such as Epoxies and resins should not be used for any type of consolidation work.

8. Use the gentlest means possible to clean the surface of a primary material. Perform a test patch to determine that the cleaning method will cause no damage to the surface. Many procedures can have an unanticipated negative effect upon building materials and result in accelerated deterioration or a loss of character. Harsh cleaning methods, such as sandblasting, use of drills, grinders, blades, hammers, sharp tools, chisels etc. shall be strictly prohibited. Damage the weather-protective glaze on brick and change its historic appearance. Such procedures should be avoided. When cleaning is an appropriate treatment, a low pressure water wash is preferred. Chemical cleaning also may be considered if a test patch is first reviewed.

9. Replacement of original materials should be avoided. If not feasible new material shall match the original in composition, scale and finish. Replace only the amount required. If a portion of any wooden are damaged beyond repair, then only they should be replaced, not the member. Similarly, if some bricks of any wall are so badly damaged that they must be replaced, then the new brick should match the original in size, finish and color. This is because the original material exhibits a record of the labor and craftsmanship of an earlier time and this is lost when it is replaced.

10. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old design in color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence. All stages and details of works shall be got approved by the engineers in charge/Heritage Conservation expert/Conservation Architect of the project and then only proceeded. For execution /implementation.

11. Contractor will have to face strict legal action which may finally lead to his termination if the conservation methodology is not followed and if the development works on site are not kept inform time to time to USCL. Contractor shall invite for regular site visits and inspection by the engineers in charge, records of which shall be maintained on the project site and. And a copy of the same shall be provided to USCL.

8. The stages for execution of Conservation works

After identifying a need of special repair works in any historic building, a conservation estimate is prepared based on measured drawings i.e. plans, elevations and condition assessment. It is sent to the requisitioning authority for administrative approval. Before incurring any liability in connection with the conservation work the following prerequisite are required to be fulfilled:

The execution of a conservation project has three stages viz. the pre-conservation stage, the execution state and post execution stage. The following activities are involved in these stages:

8.1 Pre Conservation

8.1.1 Documentation

Documentation is the information or evidence of a particular building that serves as a record. Pre and post Documentation of all the Heritage sites and buildings which fall under the proposed project's stretch shall be under the scope of works of the Contractor in this project.

The documentation includes the detail survey, preparation measured drawings, photographic documentation, etc.

8.1.2 Preparation of Detailed Project Report

The report will consist of architectural documentation, condition assessment and analysis supporting conservation and reuse proposals.

8.1.3 Estimation

To facilitate the preparation of conservation estimate, as also to serve as a guide in settling rates in connection with the contract agreement, a schedule on rates of each kind of proposed conservation items of work has been prepared which has finally led to total estimated cost to the project.

a) Preliminary conservation estimates

A preliminary conservation estimate should be prepared based on the actual quantification of defects.

The conservation estimates need to include following items:

- 1) Cost for storage of materials which needs special care such as quick lime, hydrated lime, timber, chemicals and mix mortars
- 2) Cost of constructing lime slaking tanks, working platforms and storage for lime putty
- 3) Testing such as for lime mortar and lime plaster in patches on the site
- 4) Sample testing of historic materials such as lime mortar, lime plaster etc.
- 5) Cost of post conservation works such as curing, ramming and protecting lime works till the time it sets, depends on the site conditions and the type of work.

8.1.4. Tendering

a) Pre - qualifications and short listing of conservation Contractors

Contractor's profiles and applications should be invited for the conservation work and following criteria should be considered for their selection.

Experience: Contractor who has experience of supervising conservation projects before. Supervision experience of three years must be required.

Assessing quality of work: The quality of previous works of the Contractors should be analyzed before short listing of the contractors.

Infrastructure: The Contractor should have supporting infrastructures such as scaffoldings, grouting machines, and lime mortar machine, water spray machines, tools used for conservation works etc.

In-house team: The Contractor should have in-house skilled labors, masons craftsmen, supervisors and technicians etc. He/ she should also appoint a Conservation Architect or a well-qualified Civil Engineer or an experienced Engineer on site to supervise the work full time.

b) Call of tender and pre-bid conference

A tender document should be prepared mentioning the required qualifications of the Contractors and the nature of the work. Only those Contractors should be invited for the work who have experience in Conservation or who have done Conservation work before.

c) Decision of tender and award of the work

The tender should be awarded to a Contractor who has fulfilled above mentioned eligibility criteria.

8.2. Execution

8.2.1 Supervision

Supervision should be done by experienced Civil Engineer/Heritage Conservation expert/Conservation Architect who will monitor the conservation works in progress in accordance with the concern Engineers of USCL (Udaipur Smart City Limited).

8.2.2 Process Documentation

The process of the work should be recorded daily on the site by the site supervisor.

1. Filling work record sheets should be filled on site.
2. Photographic documentation during the execution of the work.

8.2.3 Delivery of Project

A monitoring program to be organized by third party before final handover of the project:

- The monitoring program should identify defective work.
- The schedule for date of completion of different phases will be checked.
- Specifications of works to be verified with respect to completed work on site.
- The monitoring program should also include photo documentation.
- Unforeseen impact on heritage after completion to be identified

The contractor may be given extension of 15 days for resolving all the identified defects and issues.

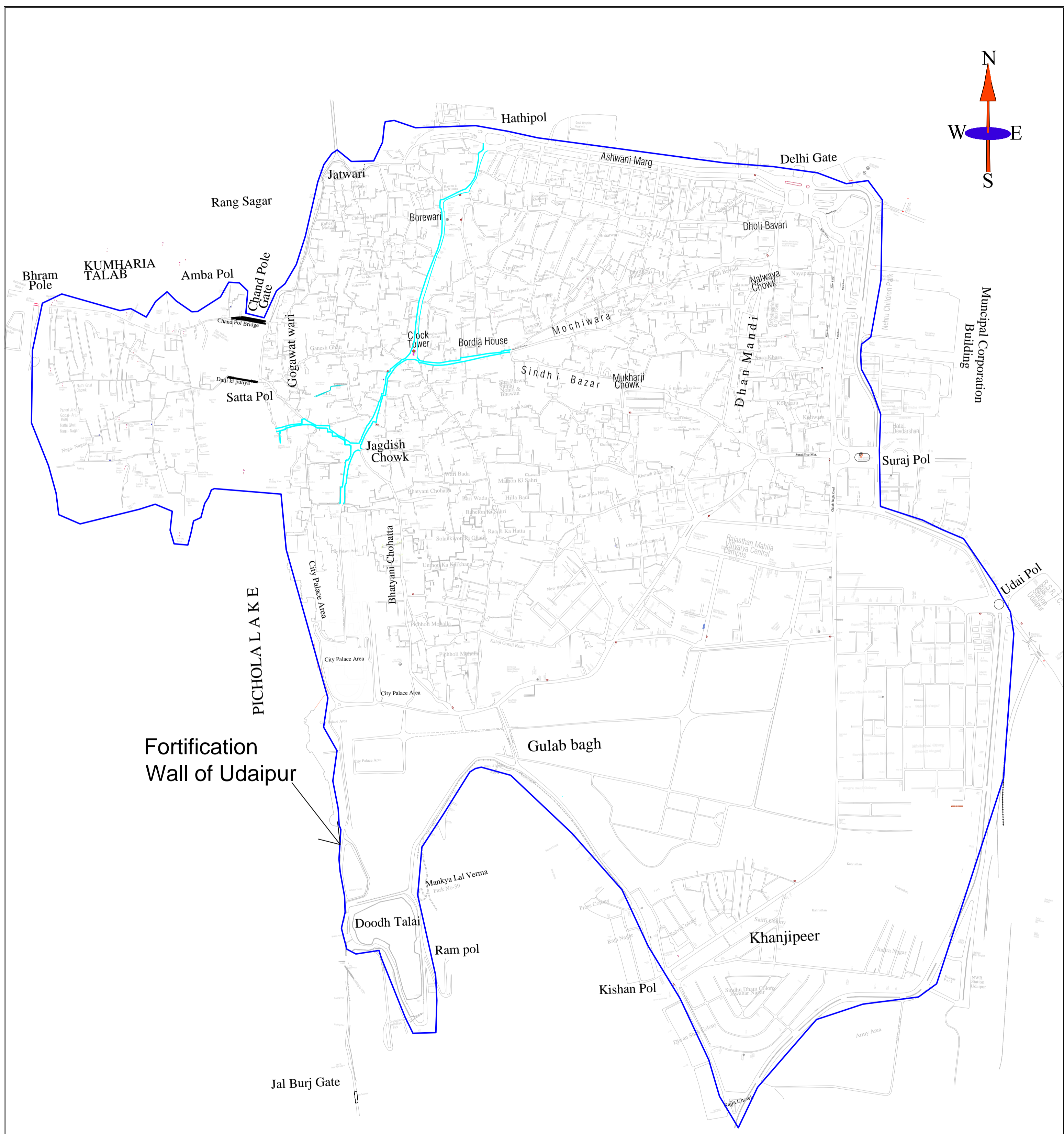
8.3 Post Execution

8.3.1 After care works

After care work includes curing and caring of lime works and other works under supervision of the Contractor and shall be active up to the defect liability period under the scope of Contractor as per his agreement with USCL.

8.3.2 Preparing maintenance plan

A maintenance plan should be prepared for 12 months which will include special care of new works.



Fortification Wall of Udaipur

LEGEND

S.No.	SYM.	NAME
1.		Proposed city Bazaar under conservation

Client:- UDAIPUR SMART CITY LIMITED		Drawing Title:- Conservation & Restoration of Historic City Bazaars	
Consultant:- Eptisa Servicios de Ingenieria S.L.	Drawing No:- EPTISA/USCL/03	Date: 27-11-2017	Revision: Ro
Project Title:- UDAIPUR SMART CITY LIMITED	Drawn by:- Vesud Meghwal	Designed by:-	Checked by:- Approved by:-

REQUIREMENTS
OF
CONTRACTOR

1. LIST OF PERSONNEL:

The Bidders must demonstrate that it has the at least the below mentioned personnel for the Key position that meet the following requirements:

S. No.	Position	Qualification	Experience (in Year)	No. of Staff
1.	Works Manager	B.E (Civil)/B.Arch	7	1
2.	Site Engineer	Diploma in Civil Engineering or Architecture	5	2
3.	Conservation Architect	B. Arch	5	1
4.	Quantity Surveyor	M.E (Q.S) / B.E Civil or equivalent	5	1
5.	Skilled Craftsperson	Skilled in /Heritage Conservation work	10	20
6.	Junior Architect	Diploma. Arch. Or Equivalent	3	1
7.	Junior Engineer	Diploma Civil	3	1
8.	Architect/Planner	B.Arch. or equivalent	5	1
9.	Laboratory technician	Diploma in Civil Engineering or equivalent	5	1
10.	Draftsmen	CAD Certification, diploma in draftsmanship or equivalent	5	3
11.	GIS Mapping Expert	Degree/ Diploma in Civil Engineering with Specialization in GIS	5	1

The Bidder shall provide details of the Proposed Personnel and their experience records and relevant information along with form in technical Bid.

2. LIST OF EQUIPMENTS :

The Bidders must demonstrate that it has the Key equipment listed below:

S. No.	Equipment Type & Characteristics	Min. number Required
1	Total Station	2
2	High definition Laser Meters(upto a length of 50m)	4
3	Water Tanker	2
4	H-frame Scaffolding (metal and cup locked system)	For 1000 Sqm
5	Tractors cum trolley	5
6	Pressure grouting machine for mortar	5
7	Traditional Chakki with Heavy stone wheel	5
8	Tractors for Chakki	5
9	Water Storage Tanks -1000 lit.	6 Nos.(1 each for each market / bazaar)

The Bidder shall provide further details of the proposed items of equipment and relevant details along with the bidding form.

SPECIFICATIONS

SPECIFICATIONS : Civil works and Finishes

1.1 LIME

This general specification lays down the general characteristics of lime to be used for the Conservation work to be undertaken for the Heritage Buildings as identified in the Proposed Conservation & Facade Upliftment of Historic Walled City Bazaars of Udaipur – Phase-I and undertaken under this proposal. No readymade or factory made lime is to be used for any of the work.

The classification of lime to be used for various purposes is as follows:

1.1.1 (a) Lime for Concrete Terracing:

Class A lime: Hydraulic Lime¹ for making lime mortar,

Class B lime: Feebly hydraulic lime (Spoke slowly) Lime for making lime plaster,

Class C lime: Fat lime² (*) Lime stone with 10% of clay (aluminum silicate) be used for burning to prepare a good hydraulic lime.

1.1.1 (b) Supply and Storage :

The lime to be used for concreting of terrace or Class A lime is to be supplied as hydraulic lime only. The class A, B and C shall be supplied as quick lime. Lime supplied as quick lime or lump lime at the site should be in a sealed condition and subsequently stacked in a store or any other place which is dry and under cover well protected from rain. This is necessary because quick lime deteriorates quickly as it attracts moisture and carbon dioxide from atmosphere. For storing it should be piled up and covered with a blanket of lime dust to exclude moist air. Therefore it should be slaked as soon as possible in a pit called a specially constructed for this. It should be slaked for at least 10 days prior to its use for making lime mortar and plaster.

1.1.1 (c) Rejection of Lime :

The lump or quick lime having stone pieces, impurities and powdery shall be rejected. The Contractor at his own expense shall remove lime, which has been rejected by the Project Manager and Architect, from the site of work within 3 days.

1.1.1 (d) Lime Slaking in tank :

A tank or the lined with stone or brick and finished with cement large enough to permit, stirring and hoeing shall be prepared (generally tanks suitable for 5 quintals or 10 quintals of quick lime are used in practice).

The tank shall be filled to half its depth with water. Quick lime shall be gradually added till it fills the entire bottom to about half the depth of water. (Never add water to lime). While quick lime is being added it shall be constantly stirred and hoed so as to break up the lumps. No part of the lime shall be allowed to expose above water level. As the lime slakes with evolution of heat temperature begins to rise and more lime or water may be added till the required temperature is reached and that temperature should be maintained by the addition of more lime or water till all the lime apparently has

1. Lime containing small quantities of silica and alumina and/or iron oxide which are in chemical combination with some of the calcium oxide content, giving a putty or mortar which has the property of setting and hardening under water.
2. The lime, which has high calcium oxide content. It is dependant for setting and hardening solely on the absorption of carbon dioxide from the atmosphere. It is used mainly for finishing coat in plastering, white washing and with suitable. Admixture, such as surkhi or any other pozzolonic material to produce artificial hydraulic lime.

* It may also be ascertained from the C.C.I whether as prescribed lime surkhi as hydraulic mixes are available and which require only mixing with water. Slaked, the stirring and hoeing shall be continued during the above process and for some period even after the slaking is apparently over. This whole act has to be done with utmost precaution to the body by covering the eyes with glass goggles and wearing rubber boots.

1.1.1 (e) Maturing :

After the lime has cooled, more water shall be added if required and it shall be left undisturbed for not more than 14 days with shallow covering of water. The putty shall be allowed to mature but not allowed to dry out till it is used. Therefore the tank will need to be filled with water to allow the slaked lime to be constantly submerged in water.

1.1.2 Surkhi :

Surkhi is the powdered burnt bricks, brickbats and is used as an admixture to lime both for making lime mortar and lime plaster. Surkhi shall always be obtained from fully burnt or slightly under burnt, but never from over burnt bricks. Surkhi obtained from burnt loam shall not contain any un-burnt soil. Surkhi shall be perfectly clean, free from an admixture or any foreign. Surkhi shall not contain soluble sulphate more than 0.5% for exposed work and work in damp situations and not more than 1.0% when used for works in dry and internal situations.

1.1.2 (a) Stacking :

Surkhi shall be stacked on masonry or wooden platform in regular stacks as of size 2.0M x 2.0M x 0.6M at the places as directed by the Engineer in charge/Heritage Conservation Expert/Conservation Architect and shall be protected from dust, rains and dampness and shall be kept under adequate coverings provided by the contractor.

1.1.3 Sand :

Sand used in the making of mortar should be coarse grained, perfectly clean and sharp and preferably of a yellow and variegated colour. It should, if possible, be obtained from local pits. It is absolutely essential that it should possess the above mentioned qualities in order that a successful result may be obtained for the lime mortar. Fine grained, dusty or dirty sand must not be allowed, and each fresh consignment should be carefully inspected in order to see that it corresponds with the sample approved in the first case. Many sands which would otherwise be of good quality contain lumps of foreign matter, or a quantity of dusty particles. Such sand may be used with the consent of in charge/Heritage Conservation Expert/Conservation Architect after it has been thoroughly washed, sifted and without organic materials (I.S. 1625-1970).

1.1.4 Lime Surkhi Mortar and Lime Surkhi Plaster^{*3} :

1.1.4 (a) Materials used : Lime A, B and C class shall be used in the preparation of mortar and shall, conform to lime specification 2.6.1.

1.1.4 (b) Surkhi Aggregates: It shall conform to Surkhi Specification 2.6.2.

1.1.4 (c) Sand aggregate in lime mortar : Shall conform to sand specification.

1.1.4 (d) Water : For all mortars water used shall be free from mud, clay, and acidic, basic or organic impurities and shall be drinkable.

^{*3} *The composition of the lime mortar and plaster can vary based on the result of the laboratory tests carried out on the actual lime plaster and mortar in the historic building. In conservation work the lime plaster and mortar should match with the original material and composition.*

1.1.4 (e) Proportion: The lime surkhi mortar shall be in conformance to the DSR-2002 specification for lime in 1:1:1 (1 lime putty: 1 surkhi: 1 sand). The proportion of mix for mortar shall also depend upon the percentage purity of lime with regard to its CaO content. In case the CaO content of lime is lower, the proportion of lime shall be suitably increased to compensate, for the lower CaO content of the lime used. The lime plaster will be as per Archeological specification 3.1 (a) in 1:2 (1 lime: 2 surkhi).

1.1.4 (f) Preparation of mortar : Mortar mill (Lime Chakki) mixing: Slaked lime in the required quantity and fine aggregates in proportions (For lime mortar, 1:1:1 (1 lime putty:1surkhi: 1 sand) and 1:2 (1 lime : 2 Surkhi) shall be put along with limewater/water in the chakki spreading uniformly all along its circumference and ground with a stone chakki till a mortar of uniform colour and desired consistency is obtained. As grinding is done the mixture shall be continuously raked and turned over and over specially from corners and sides. Mortar is to be ground to the required consistency depending on the mode of grinding i.e. bullock or tractor for 3 hrs and 1and 1/2 hour (at least) respectively. The prepared masala has to be then removed to a rectangular pit that would be used for storing of the masala with enough space to allow the masala to be mixed well for a short duration using feet (with gum boots on) before delivering it for application.

Sand, Surkhi as well as lime putty must be sieved before mixing for the preparation of the mortar for plaster. It must be assured that the mortar does not contain any pieces/ small lumps of lime, it may be found that in many cases small pieces of over burnt lime does not slake and pieces of lime are later found in small lumps in the plasters and mortar. In case the lime has this behavior, it is mandatory that the lime putty be sieved before it is used in the making of the mortar.

Note: - Addition of surkhi, lime ash or other pozzolanas in the making of mortars gives the mortars the properties of hydraulic mortars i.e. quick setting properties and should be treated like Class A and Class B lime mortars, depending upon the hydraulicity.

1.1.4 (g) Strengthening of the mortar :

The prepared lime mortar should be added with the admixture of lime, sand, surkhi, belgiri, sticky water of dry gum, boiled paste of gur (Jaggery) / gulgul ka paani /, sirus, Jute which should be added only after being filtered properly. The filtered admixture will be thoroughly mixed with the lime mortar and then added for extra strengthening in the final knocking of the mortar (before its use)

1.1.4 (h) Storage of Mortar:

Lime mortars prepared shall be used up as soon as possible after mixing 2 days for Class B limes from the time of making Putty or first grinding. Mortars from Class C limes can be used for periods longer than 3 days after the making of mortar provided they are protected from drying out. The mortar left over at the end of the working hour should be properly covered with moistened jute bags/tarpals. When the mortar is used after a gap of two days it should be wetted with limewater and pressure mixed thoroughly with showels and using feet covered with gumboot.

1.1.4 (l) Rejection of Mortar:

Mortar not found in accordance with the specifications above and unsuitable according to field and laboratory tests of lime mortar shall be rejected. The Contractor at his own cost shall remove rejected mortar from the site of work within 3 days.

1.2 CUTTING OUT & CLEANING CEMENT /LIME POINTING FROM MASONRY JOINT :

When modern lime or cement pointing has to be cut out from old joints and stone faces on any building, great care is to be taken such that the edges and surfaces of the brick are not touched / damaged with the chisel. When the cement pointing is hard and compact, a very small chisel is to be used, and the centre of the cement joint is cut out, after which the sides of the joints where the cement adheres, are to be picked off with a steel tool, but without the use of a hammer preferably after wetting.

1.3 COURSED TRADITIONAL BRICK MASONRY :

The construction and repair of damaged traditional brick masonry shall be in accordance with CPWD specification or as per the traditional practice of the region. Bricks shall be sufficiently wetted before laying to prevent absorption of water from mortar. The wetted bricks shall be kept on a clean wooden platform to avoid earth being smeared on them. Every brick shall be carefully fitted to the adjacent stones so as to form neat and close joints.

The joints shall be staggered to avoid vertical Cracks. Chips of bricks may be used wherever necessary to pin masonry/ a void thick mortar beds or joints and hollow spaces. The course shall be truly horizontal breaking the brick joint of previous layer and the work strictly in plumb. The mortar shall be removed from the brick faces after the work is completed. The

joints should be raked 20 mm. deep at the end of each day to provide for key to plaster. Piercing of walls for scaffolding supports shall not be permitted. All brickwork shall be maintained wet for a minimum period of 10 days.

1.3.1 Laying Roof Finish and Waterproofing :

All water proofing work shall be carried out by specialists duly approved by the Project Manager/Heritage Conservation Expert/Conservation Architect. Installations and materials shall be as per best practice for obtaining water proof work as recommended by the manufacturer. The contractor shall get all methods proposed for the works as well as the sub-contractors(s) carrying out the specialized works , approved from the Project Manager/Heritage Conservation Expert/Conservation Architect, prior to commencement of the actual work.

Water proofing work shall be commenced only after the surface is prepared, cleaned free of dirt, dust and foreign materials, inspected and approved. The vent and other projection through the roof shall be made absolutely secure before flashing.

While finishing for the exposed roof surface or terracing 25mm [minimum] traditional waterproofing lime mortar is laid to slope (the slope shall not be less than 1 in 50 and as per approved drawing) over the existing slab surface cleaned free of the existing loose plaster / topping finish. The finished surface shall be covered with damp sand or jute bags kept moist, or the surface may be sprinkled with water several times so as to keep it constantly wet for at least a fortnight.

1.3.2 Tests:

The workmanship and material shall be such so as to provide a leak proof roof and nothing stated above shall absolve the Contractor of responsibility from providing a water tight, leak proof roof. In case any leakage occurs, this shall be made good by Contractor at his expense and labour.

The contractor shall provide a performance guarantee of requisite value for the entire waterproofing works in this scope effective for a minimum period of five (5) years, to cover the risk and cost of rectification of defects, noticed during the guarantee period, to be counted from the date of completion of the entire work

1.3.3 Anti-termite Treatment:

1.3.3 (a) Description :

Sub-terrene an termites are responsible for most of the termite damage in buildings. Typically, they form nests or colonies underground. In the soil near ground level in a stump or other suitable piece of timber in a conical or dome shaped mound. The termites find access to the super-structure of the building either through the timber buried in the ground or by means of mud shelter tubes constructed over unprotected foundations.

Termite control in existing as well as new building structures is very important as the damage likely to be caused by the termites to wooden members of building and other household article like furniture, clothing, stationery etc. is considerable. Anti-termite treatment can be either during the time of construction i.e. pre-constructional chemical treatment or after the building has been constructed i.e. treatment for existing building.

Prevention of the termite from reaching the super-structure of the building and its contents can be achieved by creating a chemical barrier between the grounds, from where the termites come and other contents of the building which may form food for the termites. This is achieved by treating the soil beneath the building and around the foundation with a suitable insecticide.

1.3.3 (b) Materials / Chemicals:

Any one of the following chemicals in water emulsion to achieve the percentage Concentration specified against each chemical shall be used:

- (i) Chlorphiphos emulsifiable concentrate of 20%
- (ii) Lindane emulsifiable concentrate of 20%

Anti-termite treatment chemical is available in concentrated form in the market and concentration is indicated on the sealed containers. To achieve the specified percentage of concentrate Chemical should be diluted with water in required quantity before it is used. Graduated containers shall be used for dilution of chemical with water in the required proportion to achieve the desired percentage of concentration. For example, to dilute chemical of 20% concentration. 19 parts of water shall be added to one part of chemical for achieving 1% concentration.

Project Manager/Heritage Conservation Expert/Conservation Architect shall procure the chemical of required concentration in sealed original containers directly from the reputed and authorized dealers, chemical shall be kept in the custody of the Project Manager/Heritage Conservation Expert/Conservation Architect of his authorized representatives and issued for the use to meet the days requirement. Empty containers after washing and concentrated chemical left unused at the end of the day's work shall need to be used.

1.3.3 (c) Measurements: Concentrated chemical in sealed containers shall be measured in liters. Chemicals of different types and concentration shall be measured separately.

1.3.3 (d) Rate: The Rate for the concentrated chemical shall include the cost of material, containers and all the operations involved in transportation and delivery at the place specified. The rate shall include the cost of labor and all other inputs (except concentrated chemical) involved in all the operations described above including drilling, refilling and making good the holes.

1.3.3 (e) Safety Precautions: Chemical used for anti-termite treatment are insecticides with a persistent action and are highly poisonous. This chemical can have an adverse effect upon health when absorbed through the skin, inhaled as vapors or spray mists or swallowed.

The containers having emulsifiable concentrates shall be clearly labeled and kept securely closed in stores so that children or pet cannot get at them. Storage and mixing of concentrates shall not be done near any fire source or flame. Persons using these chemical shall be warned that absorption through skin is the most likely source of accidental poisoning.

Particular care shall be taken to prevent skin contact with concentrates and prolonged exposure to dilute emulsion shall also be avoided. After handling the concentrates or dilute emulsion. Workers shall wash themselves with soap and water and wear clean clothing, especially before eating. In the event of severe contamination, clothing shall be removed at once and the skin washed with soap and water. If chemical has splashed into the eyes, they shall be flushed with plenty of soap and water and immediate medical attention shall be sought. Care should be taken in the application of chemicals to see that they are not allowed to contaminate wells or springs which serve as source of drinking water.

The work to be carried out by the specialist firm shall provide a guarantee of the satisfactory performance of the treatment effective for a minimum period of ten (10) years, to be counted from the date of completion of the entire work

1.4 FLOOR FINISHES:

1.4.1 Lime Concrete Flooring:

This specification lays down requirements regarding materials, laying of sub-floor, and protection and finishing of lime concrete flooring.

1.4.1(a) Materials

Lime: Lime shall be fat lime and shall conform to lime specifications

Surkhi: Surkhi shall conform to surkhi specifications

Brick aggregate: 25 mm nominal size stone aggregate.

1.4.1(b) Preparation of mortar :

Preparation of lime concrete laid to fall with 25 mm nominal thickness brick aggregate and 50% lime mortar in 5" to 3" (lime 1: Surkhi 1: sand 1: Lime Ash laid over a sub-brick ballast and sand. The surface of floor to be rammed with wooden dambusa till the surface is tight and compact with curing for at least 7 days 1 day after laying the concrete floor.

1.5 L I M E SURKHI HISTORIC BRICK MASONRY CONSOLIDATION WORK:

The specification for lime mortar (1 Lime putty: 1 Surkhi: 1 Lime Ash: 1 Sand) as per Archeological specification 3.1 (a). For all consolidation works, double scaffolding having two sets of vertical supports shall be provided, so that scaffolding is independent of walls. For ceiling scaffolding, in stages where required shall be done. Preferably, steel tubular scaffolding should be used.

1.5.1 Surface Preparation :

This work is specially required in the case of traditional masonry where cement based plaster has to be removed from a composite masonry which comprises inner masonry is traditional bricks with mud mortar and a surface of single brick deep brick masonry in lime mortar. In this case in the course of removal of the cement plaster some of the bricks / brick pieces get dislodged while on the other hand the removal/ raking of cement plaster causes deep voids in the masonry.

Masonry surfaces to be consolidated shall be thoroughly cleaned of all dust, oil and loose mortar. The entire surface shall then be cleaned with brush and clean water. Joints shall be raked out to depth of 20mm minimum with a hook shaped tool specially made for the purpose. Care should be taken to protect masonry edges while raking. Soft or crumbling brickwork and other surfaces shall be carefully dismantled. All surfaces to be consolidated shall be thoroughly wetted kept damp during the progress of work. At the same time the wall should not be too wet. The Project Manager/Heritage Conservation Expert/Conservation Architect will inspect and approve all preparatory work before the commencement of consolidation work.

1.5.2 Application & Curing :

Small pieces of bricks will be pinned into the masonry with lime mortar and places where bricks are loose full bricks may be required to be refixed with lime mortar breaking the joints of masonry of previous layer. The deep masonry joints may need to be filled with lime mortar along with pinning with small pieces of bricks. Curing of this surface should be done for 14 days with water spray two to three times a day.

1.6 LIME SURKHI PLASTER WORK (EXCLUDING ITS USE ON FLOOR) :

The specification for lime surkhi plaster (1 Lime putty: 2 Surkhi) as per Archeological specification 3.1 (a). The work covered under this specification shall be in providing plaster finish over walls, etc. For all plaster works, double scaffolding having two sets of vertical supports shall be provided, so that scaffolding is independent of walls. For ceiling scaffolding, in stages where required shall be done. Preferably, steel tubular scaffolding should be used.

1.6.1 Surface Preparation :

Surfaces to be plastered shall be thoroughly cleaned of all dust, grease, oil and loose mortar. The entire surface shall then be thoroughly washed with brush and clean water. Joints shall be raked out to depth of 20mm minimum with a hook shaped tool specially made for the purpose. Care should be taken not to damage masonry edges while racking. All surfaces of concrete, old plaster and stone shall be roughened sufficiently for bond with the plaster. Soft or crumbling brickwork and other surfaces shall be dismantled and repaired if required. All surfaces to be plastered shall be thoroughly wetted for 24 hours before commencing plaster and shall be kept damp during the progress of work. At the same time the wall should not be too wet, as plaster is then likely to fall out and will also not be appropriate. It is essential to maintain uniform suction of water by receiving surfaces, which shall be ensured by damping evenly all dry patches before applying plaster. The Engineer in charge /Heritage Conservation Expert/Conservation Architect will inspect and approve all preparatory work before the commencement of plastering work.

1.6.2 Application & Curing :

The first coat shall be done as per specified in archeological specification 3.1 (a) and should be in ratio 1:2 (lime: surkhi). The first coat shall be applied to the wall with trowel in thickness 5 to 8mm. This surface shall be raked out, immediately after applying when it wet, by trowel at distances 30mm to 45mm. in zigzag pattern. This shall be done for complete room and should be left for 2-3 days.

Now the surface shall be thoroughly wetted for 24 hours before applying the next coat of surkhi plaster. The thickness for the surkhi plasters 20mm. in ratio 1:1:1 (1lime: 1surkhi:1sand). The surkhi plaster for wall shall be done from the top to bottom and if possible each wall should be done on the same day if to avoid defects or unevenness at the joints. To ensure even thickness and a true surface, about 150mm. x 150mm. of surkhi plaster shall first be applied horizontally and vertically at 2m centers, approximately over the entire surfaces, to serve as gauges.

The surkhi mortar shall be filled between these to gauge with a straight edge wooden piece (plainer or butkada). The plastered surface shall be firmly pressed to uniform plumb and plane. The surface shall be left for 24 hours. The surface shall develop cracks after 24 hours. All plastered surface shall be thoroughly wetted for 24 hours before commencing plaster and shall be kept damp during the progress of work. At the same time the wall should not be too wet, as plaster is then likely to fall out and will not be satisfactory. It is essential to maintain uniform suction of water by receiving surfaces, which shall be ensured by damping evenly all dry patches before applying plaster. The Project Manager/Heritage Conservation Expert/Conservation Architect will inspect all preparatory work and process shall not be commenced, until Engineer approves all preparatory works.

The surface shall be beaten at the cracks with the help of wet wooden sticks (jaal / baint wood) made for the purpose. The cracks should seem to be mixed. The surface shall be left for 7 days and shall be cured twice daily with a water spray during the process.

All corners, angles, junctions, etc. shall be truly vertical, horizontal or carved as the case may be and shall be carefully finished. Rounding or chamfering of corners or junctions wherever required shall be done without any extra payment. No portion shall be left out initially to be patched up later on. Before applying surkhi, the entire surface of the surkhi plaster should be rechecked with a true straight edge (wooden or aluminum plainer 2.5m long), plumb, string, level, etc.

If any crack appears on surfaces or if any portion found soft or if sound defective due to less lime, improper curing or any other reason, the relevant portion shall be removed and redone as per the instruction of the Project Manager/Heritage Conservation Expert/Conservation Architect. The surface is thoroughly wetted before applying the final coat. Now the surkhi, the final coat shall be applied in thickness 2mm. (ratio 1:2) is applied with the plainer. The surface shall be smoothed by rubbing and pressing.

1.7 TREATMENT OF BULGING PLASTER :

The problem associated with deteriorating plaster is in the form of bulging, flaking and loss of plaster in small or big patches from the ceiling and wall surface. In case of severe conditions related to the above the deteriorated plaster can be carefully removed without harming the surface of the underlying masonry and re-plastering it.

In many a place, the plaster separates from the walls and a gap is formed between them. There are two types of separation of plaster from the support, one in which the gap between the support and plaster is considerable and another in which though the plaster is detached, the gap is too much. Here again it is advisable to repair the lime plaster, similar in composition to the original plaster for filling up the lost areas.

1.8 CLEANING AND CONSERVATION OF SPECIAL STUCCO/FRESCO WORK :

The task of cleaning stucco/Fresco work or removal of lime wash and dirt from the surface is a specialized and difficult job to be undertaken only under the directions of Project Manager/Heritage Conservation Expert/Conservation Architect.

Mostly it is observed at many heritage sites that after the surface paint mostly layers of lime wash or dry distemper is removed the original impressions of stucco, fresco are visible. In such situations the contractor must retain the site condition and report the same to the architect in charge after which necessary measures must be taken to restore them..

1.9 REMOVAL OF LIME WASHES:

While removal of lime washes from an old surface care should be taken to prevent injury to the underlying surface in particular any inscription, painting or relief beneath. Lime wash can be removed by light brushing with soft brush and water or light sponging in case of painted or delicate surface. In certain cases scraping using surgical blade and knife may be resorted to by skilled worker under close supervision and instruction of the engineer in charge in consultation with the Heritage conservation expert/Conservation architect. No grinders, drills, blade, hammer, chisel, sharpe edges shall be used to carry the process of removal of lime wash.

1.10 APPLICATION OF LIME WASH :

Lime wash specification should be as per archeological specification clause 4.3 in the BSR 2002. Lime-wash is essentially a mixture of slaked lime (calcium hydroxide) in water, this sets slowly by absorbing carbon dioxide from the air. The chemical reaction that occurs produces crystals of calcite (calcium carbonate). Lime wash assists in maintaining the ability of the building to breathe as it is one of the most vapour permeable decorative coatings. Wetting periodically would be done. If a building is prevented from breathing, water can become trapped in the external walls, resulting in the decay of the masonry and producing ideal conditions for timber rot to commence.

For color washes (colored lime washes) care should be taken in selecting water-soluble pigments to ensure that they are not affected by ultra violet light, nor by lime. A variety of earth pigments are available and these should be soaked for at least 24 hours before being incorporated into a wash. These are essentially refined earth or clay with a strong natural color, such as red and yellow ochre. The colour is given by their mineral content and they are therefore least likely to fade in the sunlight or by chemical reaction with the lime.

Lime wash is not difficult to produce providing that a few simple but important rules are observed. Having slaked the quicklime, the resulting putty should be left for a long period of time (at least 3 months) to ensure that all the quicklime has reacted with the water and the particles of lime have matured. The putty should be sieved to exclude any foreign material, as even the finest and purest naturally occurring limestone will contain some contaminants. Lime wash should be applied as thinly as possible to facilitate carbonation and prevent crazing that can occur when applied more liberally and it is therefore recommended that the putty is diluted with sufficient lime water (that is, water that has been saturated in lime putty) to produce a wash the consistency of milk.

As a water-based product, lime wash is most suitable for application onto an absorbent background. It will be rather disconcerting to find that, having made what appears to be the appropriate colour in the tub; it dries many shades lighter once it is applied. Therefore colors need to be dry tested to ensure the correct hue has been achieved.

When making or applying lime wash, safety goggles and gloves should always be worn. The background should be absorbent; inappropriate old lime wash should be removed carefully using scalpel and blades without causing harm to the underlying plaster surface. When rejuvenating an old lime

Washed surface, care must be taken to remove any loose or spilled material and the entire surface should be thoroughly washed down using a soft scrubbing brush to ensure that the dust is removed. All surfaces to be lime washed should be pre-wetted with clean cold water and left until the surface is damp but not wet.

The best results are obtained when the lime wash is almost scrubbed into the surface with a brush that is stiffer than a conventional paint brush, but softer than a scrubbing brush, such as a soft bristle dustpan brush. The application should be with a circular motion, ensuring that the lime wash is worked into the surface and spread as far as possible. The work should be finished with vertical strokes. There is no need to be concerned if the first coat appears only as a thin transparent wetting. A fully opaque surface will appear when the paint has dried completely.

Lime wash cures by absorbing carbon dioxide from the atmosphere and this process are prolonged during periods of low temperature or high relative humidity. Even though the application has to be kept as thin as possible, it may take several days before it can be safely over coated. It is advisable to leave it for at least five days before further work is carried out. It is recommended that a minimum

of three coats should be applied for new work.

1.11 FILLING AND STITCHING OF THE CRACKS :

Cracks can be categorized into minute hairline crack and wide crack especially in plaster. Not much action is needed to put a stop or to treat micro-cracks. On the other hand, the wide cracks are filled with putty of lime and the materials originally used for the preparation of plaster at various places. Filling is done with a painted spatula and sometimes with a dropper. Where the cracks are structural the cracks need to further investigate and the underlying masonry condition assessed to find the cause of the cracks. Often the joints in the stone masonry deteriorated as a result of deteriorating mortar which gives rise to major cracks.

Cracks in the masonry will need to be stitched and the masonry grouted with hydraulic lime grout in 1:1 (1 lime putty: 1 fine sieved sand) using necessary admixture as in the traditional lime mix/mortar as specified in the analysis sheets for better bonding, using pressure grout machine to strengthen the masonry.

However structural cracks that cannot be treated by the above mentioned method especially in areas of high historic and architectural significance where masonry and details cannot be dismantled, will require specialized inputs and stress-free structural solutions such as stitching with high-strength rust free steel anchors and bars such as those from Cintec or Helifix or an equivalent well established technology.

1.12 REPAIR OF CHAJJAS :

To replace the Chajja either large part of it should be damaged or completely missing. At places where large pieces have fallen off, the remaining pieces should also be carefully removed out and a complete new Chajja carved out in the same pattern and be placed in grooves. In order to maintain the authenticity of the material of the new Chajjas to the old Chajja, it will have to be made out of same stone. If only small pieces have broken and fallen off, then there is no need to carve out a complete new one: only the piece, which is broken off can be replaced. The newly carved piece in the same pattern can be joined to the remaining piece still attached to the wall. They can be stuck with the help of cement mortar and metal clamps and supported by ballis/vertical wooden supports(scaffold) till dry and stiff. The cement mortar joint can be hidden by application of paint of the same color as the stone.

1.13 DOORS AND WINDOWS :

Door and window and frames should be of the best deodar wood, sheesham, salor teak wood in accordance to that in existencelocally , free from knots, etc.or as of that in existence .The door and window specification and drawing details given in the BOQ document are to be referred.

1.1.14 TIMBER :

1.14.1 Quality:

1. Timber shall be of first grade and shall be from the heart of a sound tree, the sapwood being entirely removed. It shall be, uniform in substance, straight in fibre, free from dead knots, heart-rot, saprot, boxed heart, pitch (resinous) pockets or streaks on the exposed edges, worm holes, splits and warps and shall be well. seasoned.
2. Timber for use in structures constantly in contact with water or damp earth shall be treated with suitable preservative laid down in I.S. 401-1954 so as to resist fungi, termites, and marine borers of all Kinds.
3. Normally teak shall be used in the Rajasthan for construction of joinery work. For temporary or inferior quality structures, kail, chir, sal or other species approved by Forest Research Institute, Dehradun, may be used. The latter varieties may be allowed to be used on permanent structures also after obtaining the approval of the Chief Engineer, and after treating them with suitable preservatives as specified in I.S. : 401-1954. For temporary electric transmission poles, sal shall generally be used.. In the absence of anything to the contrary, "wood" in this specification shall mean "Teak wood".

1.14.2 Storage:

After selection and prior to fabrication, framing or erection. Timber shall be stored in such a manner so as to prevent decay and renewed development of defects. The storage shall be such that the timber is protected from fire hazard. A recommended practice for storing timber as given in appendix 'A' of I.S : 883-1957 is reproduced in appendix VI and may well be adopted with advantage.

1.14.3 Sawing:

All scantlings, planks, etc., shall be sawn straight and of uniform thickness and of full measurement from end to end, and shall be sawn in the direction of the grain. All planks and scantlings shall be sawn-1/16 inch in excess of actual measurements to allow of planing.

1.14.4 Inspection:

Timber shall not be wrought until seen and approved by the Sub-Divisional Officer of concern department.

1.14.5 Rate :

The rate for timber is for the scantlings or sleepers of standard dimensions. No allowance is to be made for wastage in making sleepers or scantlings out of logs. Where the timber has been felled by the contractor, he is responsible for the proper observance of all forest, municipal or other rules or by-laws and for such royalty or other dues as may accrue.

1.15 REPAIRS / REPLACEMENT OF DOORS AND WINDOWS SHUTTERS

The damaged shutter shall be carefully examined by Project Manager/Heritage Conservation Expert/Conservation Architect to decide whether entire shutter along with panels and fittings to be replaced or only part of the shutter is required to be replaced. Keeping in view the condition and remaining life of the portions to be retained.

If the entire shutter is to be replaced, the shutter in question should be removed from the existing frame without damage to the frame and the hinges and fittings should be removed for reuse in the new shutter proposed to be fixed. The new shutter shall be of the same class of timber as the dismantled one unless otherwise decided by Project Manager/Heritage Conservation Expert/Conservation Architect. The specifications for manufacture and fixing of the shutter shall be as per relevant drawings / schedule of item.

At the time of fixing the shutter in the frame, minor damages to the rebates in the frame shall be made good to ensure proper fittings of the shutter and fixing of hinges may be done with new wood screws in new locations slightly away from the original location to ensure proper fixing of the hinges to the frames.

Any fitting of the dismantled door which are worn out or damaged may be replaced with new one as directed by the Engineer-in-Charge. When so directed by Project Manager/Heritage Conservation Expert/Conservation Architect only a portion of the shutter viz. rails or styles may be replaced with new member of the same class of timber shape and size matching the portions retained. The dismantling of the member shall be done with care so that mortise or tenon of the existing member is not damaged and the new member fixed carefully.

Measurements shall be made as per para. 9.6.10 [CPWD Specifications- Volume-I, 2007], if either shutter has been replaced. If only paneling or part of paneling has been replaced, measurements shall be made as per Para 9.6.10.2 [CPWD Specifications- Volume-I, 2007]. If styles and rails are only to be replaced, measurements shall be made as per 9.3.4. of CPWD Specifications- Volume-I, 2007. The rate shall include the cost of all operations mentioned above.

1.16 FIXING DOOR, WINDOW or CLERESTORY WINDOW CHOWKHATS IN EXISTING OPENING:

In case of door frames without sills, holes 40mm deep shall be made in the floor for fixing the lower end of verticals of the frames. For doors with sills, the sill plated shall be partly fixed in the floor so that they project above the floor to the height as directed by the Project Manager/Heritage Conservation Expert/Conservation Architect.

For embedding holdfast of the doors, windows or clerestory windows, the requisite number of holes at the correct positions shall be cut out in the masonry. The size of the holes shall be such that the chowkhats with the hold-fasts can be conveniently erected in position. Where necessary, the masonry shall be chipped uniformly to facilitate easy insertion of the frame in the opening.

Special care shall be taken when holes are made in load bearing pillars or wall portions separated by openings to ensure that beams etc. supported by them are properly propped up. In such portions cutting holes shall be done on one side at a time. The sides of the holes shall be truly parallel and perpendicular to the plane of the wall. Due care shall be taken, not to disturb the adjoining masonry and the masonry under the bearings of the lintels and arches etc. spanning the opening. The holes shall then be cleaned of all dust, mortar and brick bats or stones pieces and thoroughly wetted.

The sides of chowkhats of door, window or clerestory window abutting against or to be embedded in masonry shall be painted with two coats before being placed in position. The chowkhats then be inserted in position with their hold-fasts bolted tight. The chowkhats then be adjusted to proper line and plumb by temporary bracing which shall not be disturbed or removed until the hold fast are embedded in masonry and the concrete block has set. The concrete to be used for embedding hold-fast shall be cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 20mm nominal size).

The minimum size of Lime concrete(L.C) block in which the hold-fast will be embedded shall be 30 x 10 x 15 cm for 35cm long hold-fasts. The concrete of the block shall completely fill the hole made in masonry for the purpose. The chase cut in the floor shall be cut square and construction joint shall be provided, filled in Strong lime concrete 1:2:4 (1 Lime:2 coarse sand:4 graded stone aggregate 20mm nominal size) and rendered smooth at the top and finished to match the existing type of floor.

After the surface surrounding the hold-fast has sufficiently dried it shall be cleaned of dust etc. and wetted. It shall then be plastered with Lime mortar 1:4 (1 Lime : 4 fine sand) flush and matching with the surrounding plaster work. In case of exposed brick work, stone work, the finishing shall be done to match the surrounding. Any other portion of the wall, if damaged, shall be repaired in similar way.

After the Lime plaster patches have been thoroughly cured and have dried, they should either be white washed or colour washed as required unless specified. All malba / debris obtained from cutting etc. shall be disposed off to the nearest dumping ground.

The chowkhats of doors, window and clerestory windows shall be enumerated separately.

The rate shall apply irrespective of the size of the chowkhat upto a maximum area of opening 3.75 square meters for doors, 2.5 square meters for windows, 1.2 square meters for clerestory windows. The rate is inclusive of labor and materials involved in all the operations described above, excluding (a) cost of chowkhats and (b) cost of supplying and fixing hold-fasts including L.C. blocks and bolts.

1.17 HIGH TENSILE STRUCTURAL STEEL:

1.17.1 Scope :

This specification shall cover high tensile steel bars, plates, and sections of the following categories for use in structural work. Steel designation Purpose for which intended

HT In structures where fabrication is carried out by methods other than fusion welding,
HTW In structures where fusion welding is involved

1.17.2 Manufacture :

Steel shall be manufactured by any steel making processes or by a combination of such processes.

1.17.3 Quality :

All finished steel shall be well and cleanly rolled to dimensions, sections, and weights specified. It shall be free from cracks, surface flaws, laminations, rough jagged and imperfect edges, and other defects. High tensile structural steel shall comply with standards and test laid down in Indian Standard: 961. A summary of chemical and physical properties as laid down in this standard is given below

(a) Chemical Composition- The chemical composition shall be as under :-

Steel designation Carbon Per cent Max. Sulphur Per cent Max. Phosphorus Per cent Max.

HT	0.30	0.06	0.06
HTW	0.23	0.06	0.06

1.18 REPAIRS TO PLASTER :

The work includes cutting the patch and preparing the wall surface. Patches of 2.50 square meters and less in area shall be measured under item of "Repair to Plaster

and "under this sub-head. Plastering in patches over 2.5 square meters in area shall be paid for at the rate as applicable to new work under sub-head Finishing .

Scaffolding as required for the proper execution of the work shall be erected. If work can be done safely with the ladder or jhoola these will be permitted in place of scaffolding. The mortar of the patch, where the existing plaster has cracked, crumbled or sounds hollow when gently tapped on the surface, shall be removed. The patch shall be cut out to a square or a rectangular shape at the position marked at the wall as directed by the departmental staff. The edges shall be slightly undercut to provide a neat a joint.

The masonry joints which become exposed after the removal of the old plaster shall be raked out to a minimum depth of 10mm in case of brickwork and 20mm in case of stone work. The raking should be carried out uniformly with a raking tool and not with a basuli, and loose mortar dusted off. The surface then shall be thoroughly washed with water, and kept wet till plastering is commenced.

In case of hard surfaces /structures, the same shall be thoroughly scrubbed with wire brushes after the plaster had been cut out and pock marked as described in 13.8.2 [CPWD SPECIFICATIONS]. The surface shall be washed and cleaned and kept wet until the plastering is commenced.

Mortar of specific mix and of specified sand shall be used. The method of application shall be as described for single coat plaster work of specified mix and under chapter 13 [CPWD SPECIFICATIONS]. The surface shall be finished even and flush and matching with the old surrounding plaster. All roundings necessary at the junctions of the walls, ceilings etc shall be carried out in a tidy manner as specified in chapter 13 [CPWD SPECIFICATIONS].

All dismantled mortar etc. shall be disposed off as directed by the Project Manager/Heritage Conservation expert/Conservation Architect. Doors, windows, floors, articles of furniture etc. and such other parts of the building shall be protected upon from being splashed upon. Splashing and droppings, if any, shall be removed by the contractor at his own cost and the surface cleaned. Damages, if any, to furniture or fittings and fixtures shall be recoverable from the contractor.

Curing shall be done as for plasterwork with special reference to the particular type of plaster mix as head 'finishing'. After the plaster is thoroughly cured and dried the surface

Described under sub-shall be white washed or colour washed to suit the existing finishing as required use less specified otherwise. Length and breadth shall be measured correct to a cm. the area shall be calculated in square metre corrected to two places of decimal. Patches below 0.05 square metre in area shall not be measured for payment. Pre-measurement of the patches to be plastered shall be recorded after the old plaster has been cut and wall surface prepared. The rate includes the cost of all the materials and labour involved in all the operations described above including lead for disposal of old dismantled plaster.

1.19 DISMANTLING and DEMOLITION :

1.19.1 Dismantling :

The term dismantling implies carefully separating the parts without damage and removing. This may consist of dismantling one or more parts of the building as specified or shown on the drawings.

1.19.2 Demolition :

The term ' Demolition' implies breaking up. This shall consist if demolishing the whole or part of work including all relevant items as specified or shown in the drawings.

1.20 GENERAL : This chapter relates to building only.

1.20.1 Precautions:

All materials obtained from dismantling or demolition shall be property of the Government unless otherwise specified and shall be kept in safe custody until they are handed over to the Engineer-in-Charge.

The demolition shall always be well planned before hand and shall generally be done in reverse order of the one in which the structure was constructed. The operations shall be got approved from the Engineer-in-Charge before starting the work.

Due care shall be taken to maintain safety measures prescribed in IS: 4130. Necessary propping, shoring and or under pinning shall be provided to ensure the safety of the adjoining work or property before dismantling and demolition is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining work or property. Where specified, temporary enclosures or partitions shall also be provided, as directed by Engineer-in- Charge.

Necessary precautions shall be taken to keep down the dust nuisance to the minimum. Dismantling shall be done in a systematic manner. All materials which are likely to be damaged by dropping from a height or by demolishing roofs, masonry etc. shall be carefully removed first. The dismantled articles shall be removed manually otherwise, lowered to the ground (and not thrown) and then properly stacked as directed by the Engineer-in-Charge.

Due care should be taken so as not to block the traffic and the daily movement of the passerby taking appropriate decisions jointly with the Project Manager / Engineer In charge. Where the existing fixing is done by nails, screws, bolts, rivets, etc., dismantling shall be done by taking out the fixing with proper tools and not by tearing or ripping off. Any serviceable material, obtained during dismantling or demolishing, shall be separated out and stacked properly as directed by Engineer-in-Charge within a lead of 50 meters. All unserviceable materials rubbish etc. shall be disposed off as directed by Engineer-in-Charge.

The Contractor shall maintain/Disconnect existing services, whether temporary or permanent, where required by Engineer-in-Charge with prior permissions from the concerned agencies/service providers/stakeholders and rearranging the same in the shortest possible time or by providing a substitute arrangement for the nearby residents or the users of that particular service.

1.20.2 Measurements :

All work shall be measured net in the decimal system, as fixed in its place, subject to the following limits, unless otherwise stated hereinafter.

- (a) Dimensions shall be measured correct to a cm.
- (b) Areas shall be worked out in Sq.m correct to two places of decimal.
- (c) Cubical contents shall be worked out to the nearest .01 cum

Parts of work required to be dismantled and those required to be demolished shall be measured Separately. Measurements of all work except hidden work shall be taken before demolition or dismantling and no allowance for increase in bulk shall be allowed. Specifications for deduction for voids, openings etc. shall be on the same basis as that adopted for new construction of work.

Work executed in the following conditions shall be measured separately.

- (a) Work in or order water and/or liquid mud.
- (b) Work in or under foul position.

The rate shall include the cost of all labour involved and tools used in demolishing and dismantling including scaffolding. The rate shall also include the charges for separating out and stacking the serviceable material properly and disposing off unserviceable material within a distance of 50 metres.

The rate shall include for temporary shoring for the safety of portions not required to be pulled down, or of adjoining properly, and providing temporary, enclosures or partitions, where considered necessary.

1.20.2 (a) Roofs :

Roof coverings generally including battens boarding, mats, bamboo, jaffari or other subsidiary supports shall be measured in square metres except lead sheet roof covering shall be measured in quintals 24.4.3 and stone slab roof covering which shall be measured in cubic metres.

Ridges, hips and valleys shall be girthed and include with the roof area. Corrugated or semi corrugated surfaces shall be measured flat and not girthed.

Lead sheets in roofs shall be measured in quintals and hips, valleys, flashings, lining to gutter etc. shall be included in this weight.

Supporting members, such as rafters, purlins, beams, joists, trusses etc. where wood shall be measured in cubic metres and steel or iron sections in quintal.

1.20.2(b) Ceiling:

The stripping of ceilings shall be measured in square metres. Dismantling of ceiling joists, beams, etc. if any shall be measured in cubic metres or in quintals. Height above floor level, if it exceeds 3.5m shall be paid for separately.

1.20.2 (c) Floorings and Pavings :

- i. Dismantling of floors (except concrete and brick floors) shall be measured in square meters.
- ii. Supports such as joists, beams, etc. if any shall be measured as per relevant specifications.
- iii. Concrete and brick paving shall be measured as per prescribed measurements

1.20.2 (d) Wood work :

All wood work including beams , lintels , karries ,purlins, hand rails , balustrades etc shall be measured in cubic metres. Ballies shall be measured in running metres. Boarding including wooden chajjas and sun shades along with supports shall be measured in square metres in its plane.

1.20.2 (e) Steel and Iron Work :

All steel and iron work shall be measured in kg / quintals. The weight shall be computed from standard tables using the actual weight can readily be determined. Riveted work, where rivets are required to be cut, shall be measured separately. Making of structural steel required to be re-erected shall be measured separately. In framed steel items, the weight of any covering material or filling such as iron sheets and expanded metal shall be included in the weight of the main article unless such covering is not ordered to be taken out separately.

1.20.2 (f) Doors, Windows, etc. :

Dismantling doors, windows, clerestory windows, ventilators etc. (wood or metal) whether done in separately or along with the removal of wall by making it recess in the wall shall be enumerated. Those exceeding 3 Sqm each in area shall be measured separately. The item shall include removal of chowkhats architraves, hold fasts and other attachments.If only shutters are to be taken out it shall be measured separately.

Note: The units of those items not enlisted are as mentioned in the Cost Estimate against each nature of works to be undertaken.

1.2-B.SPECIFICATIONS -ELECTRICAL WORK (GENERAL)

1. The installation generally shall be carried out in conformity with the latest edition of the "Regulation for the electrical equipment of buildings of the Institution of Electrical engineer (London)."here in after referred to as the "I.E.E. Regulations" but where this specification or the

attached special conditions of contract differ from those regulations, the specification and special conditions shall be followed in addition all installation shall comply in all respects with the requirements of the Indian electricity act and the Indian Electricity rules for the time being in force.

2. The definitions of terms in the latest edition of the I.E.E. Regulation (reprinted in appendix XXII) shall apply except ~~NA~~ 27- "Point" shall consist of the branch wiring from the branch distributionboard or from the point of service entry where there is no branch distribution board together with a switch if required ,as far as including the ceiling rose or wall plug etc. The list of conventional signs and symbols as given in appendix XXII shall be used in all drawings wiring plans .etc

3(a) The wiring shall be carried out on such system as may be stated in the special conditions of and branch distribution boards at convenient centers & every such conductor shall be , for in clause 17. All conductors shall be run, as far as possible , along the walls and ceiling , so as to be easily accessible and capable of being thoroughly inspected . In no case is wiring to be run above ceilings without the special approval, In wiring of the Engineer in-charge. The balancing of circuits in 3 wires or 3 phase installation shall be arranged before and by the Engineer. Circuits on opposite side of a 3 wire system on different faces of a 3-phase system are to be kept as per a part as possible in all cases, the minimum from giving the results of each other being 7 feet. Medium pressure wiring and all associated apparatus shall comply in all respects with the requirements of the rules 60 and 61 of the Indian Electricity rules 1937.

3(b) All current consuming devices shall be suitable for the pressure and frequency of supply stated in the special conditions of the contract or as otherwise specified.

4. All wiring diagrams shall be deemed to be drawing within the meaning of the term as used in the general conditions of the contract and shall be prepared to the satisfaction of the Engineer in-charge within one month of the taking over of the installation the Contractor shall supply to the Engineer in- charge a complete wiring diagram of the work done by the contractor. In the case of the original installation in a building, drawing of the building shall be supplied by the engineer in-charge on the request from the contractor . In the case of additions to existing installations the contractor shall himself supply a wire in diagram of the additions only. in sufficient detail , to enable the Engineer in- charge to bring his original wiring diagram of the building up to date. All wiring diagrams are to indicate , clearly, in plan, the relative positions of all main boards , branch boards , distributions boards, and the runs of the various mains, sub-mains, and circuits, with the position of all points and fittings.

Only the conventional symbol given in Appendix XXII are in be used. All circuits are to be clearly indicated and numbered on wiring diagrams, and all points are to be numbered with the same number as the circuit to which they are electrically connected.

5. All conductors are to be of copper in accordance with the Specification of the British Engineering Standards Committee as set forth in the latest edition of I.E.E Regulations. Except as provided in clause 18 infra and clause 9 of specification no. 31.3 insulate – conductor shall have a cross section less than 0020 sqin nominal area 3.029”

6 (a) All cables , unless the contrary is expressly stated in the special Conditions of Contract , or otherwise, shall comply in all respects with the latest British Engineering standards Associated Specification for insulated annealed copper conductors for electric power and light and each coil must be accompanied by the makers test certificate, stating the ‘class’ and insulation tests.

6(b) Twin flexible cables shall comply with the latest edition of the I.E.E Regulation.

Rule 60 – Where a license proposes to supply or use energy at medium or high pressure, he shall give notice to an inspector and shall not commence or continue the supply unless and until he has complied with the following provisions , namely :-

(a) all live parts of apparatus shall , unless accessible only to and under the control of, an authorized person , be protected by mechanically strong metal-casing or metallic covering securely fastened throughout;

(b)suitable linked switches , of requisite capacity to carry and break the current shall be installed in each conductor ,near the point of origin on the consumers premises ;

(c)every conductor, unless accessible only to an authorized person ,shall be as for as in practicable completely enclosed in a mechanically strong metal casing of metallic covering, securely fastened throughout or fixed in such other manner as may be approved in writing by an Inspector;

(d)the supply to every apparatus shall be sufficiently controlled by suitable linked switches, of requisite capacity to carry and break the current, in each conductor, placed near the apparatus in such a position as to be readily handled by the operator, so that by their means all pressure can be cut off from the apparatus concerned and from any device in connection therewith;

(e)the word "CAUTION" both in English and in the vernacular ,shall be affixed permanently in a conspicuous position ,where possible ,on every generator and every motor and every controlling or regulating apparatus in connection with such generator or motor;

Provided that where it is not possible to affix them on the generator motor or apparatus, they shall be fixed as near as possible.

Provided also that where the generator, motor, controlling or regulating apparatus is within an enclosure accessible only to an authorized person one notice affixed to the enclosure shall be sufficient for the purposes of this sub-rule.

Rule 61– The owner of every main switchboard connected with a supply of energy at medium or high pressure shall comply with the following provisions, namely;-

- (a) A clear space of not less than 3 feet in width shall be provided in front of the switchboard;
- (b) if there are any attachments or bare connections at the back of the switchboard, the space (if any) behind the switchboard shall be either less than 9 inches or more than 30 inches in width ,measured from the further outstanding part of any attachment or conductor:
- (c) if the space behind the switchboard exceeds 30 inches in width ,there shall be a passage-way clear to a height or of not less than 6 feet, save as regards any horizontal supports of the switchboard ,which may be placed at a height of not less than 4 feet 6 inches.

7. The cross- sectional area of all conductors inside buildings shall be so proportioned to their length that the drop in pressure from the main fuses to the further ,or any consuming device shall not exceed 2 per cent plus 1 volts of the normal pressure of the circuit directly connected to such consuming device ,with all the consuming devices in use.

8. In estimating the current to be carried by any conductors, consuming devices are to be rated at the volt- amperage specified by the Engineer in the Special Condition of Contract or otherwise.

9. Before current is switched on the installation shall satisfactorily pass the following tests:

A) Insulation Resistance:

- a) The insulation resistance shall be measured by applying between 'earth'and the whole system of conductors or any section thereof , with all fuses in place and all switches on, a direct current pressure of not less than twice the working pressure .Where the

supply is derived from a three wire (alternating or direct current) or poly-phase system the neutral of which is connected to earth either direct or through added resistance ,the working pressure shall be deemed to be that which is maintained between the outer or phase conductors and the neutral.

b) The insulation resistance of an installation measured as in A

(a) Above shall not be less in megohms than 25 divided by the number of points on the circuits , provided that:-

(i) any installation shall not be required to have an insulation resistance greater than 1 megohm:

(ii) Lighting circuits shall be tested with all lamps in place, except in the case of earthed concentric wiring systems.

2. Design of Project Components:

2.1. Introduction:

2.1 Design Objectives :

The design objective of Conservation and re-development of the historic bazaars :

1. To restore Historic and traditional structures with minimal changes to historic fabric and material .
2. To enhance the values and the significance associated bazaars.
3. To meet the functional requirements of the stakeholders .

26.2 Planning aspects for the Execution of Civil works on site :

2.2.1 Dismantling of existing structures :

From the architectural heritage and cultural point of view Conservation efforts will be made to the historic structures but no dismantling is proposed to the existing structures except replacing certain decorative elements and of the buildings which cannot be restored and needs replacement in a similar material and type .Recent additions have been removed which has been proposed in line with original details existence was in existence by site analysis, discussion with the stakeholders, shopowners, etc and the nearby residents .

2.2.2 Planning for layout of structures at site:

No new planning is required as such, as the task chiefly involves undertaking Conservation & restoration works of these traditional bazaars .However to accommodate the functional requirements, certain service facilities and improved infrastructure has been planned under Udaipur Smart City.

2.2.3 Shape of the structures:

No changes in the shape of the structures have been recommended. Only restoration work will done on the structures keeping their original shapes and footprints . Some changes will be made to the modern/recently developed structures to enhance their heritage and cultural look then that of their present modern impression developed in the course of time by its owners/stackholders etc.

2.2.4 Functional Considerations:

Various field visits and stakeholders consultations have led to the incorporation of functional consideration in the Proposed Conservation & restoration works of the bazaars. These include provision of paved surface, re-routing of electric cables , covering of sewer lines and drains ,doing repairs to damaged building parts highlighting the entries to the bazaars along with repair and conservation activities with traditional construction material and methods respectively as it is understood that they undergo major weathering effects due to changing climatic conditions.

2.2.5 Any Other Consideration:

As the traditional bazaars are located in the narrow and busy markets of the historic City of Udaipur , there is a prevalence of multi-modal movement largely comprising of pedestrians , two wheelers and four wheelers . Since these cannot be avoided till provisions for a design and planned transport movement is made as a part of the development plan of the Municipal Corporation . The proposals have been made keeping in view the volume of traffic that is existent .

2.2.6 Dead Load and Live Load Considerations :

As no structural constructions are being undertaken thus no such tests and interventions are felt necessary in the process of Conservation of these Heritage Buildings as of now .If any conditions prevail in the near future necessary tests will be done during the progress of the work.

2.2.7 Seismic Considerations:

This region falls in the Seismic Zone thus proposer consideration has been given by reinforcing and strengthening the structures under considerations .No new major civil additions /alterations have been made further in any of the projects in consideration. The area under consideration will be propped well during its work progress. The existing structural details will be followed as per the prevalent evidences.

2.2.8 Wind Load :

As no new major civil addition /alterations are being proposed thus no such tests are felt necessary in the conservation of these heritage buildings which fall in the bazaars as of now .

2.2.9 Standard of different structural components:

1. It has been observed that nearly most of the buildings to be restored have joists/beams/lintels/I-sections/Columns/Posts/Girders and other members of teak wood, Ashlar, metal etc..

2. Wide door frames in teak act as structural support to the superstructure i.e the part of the building above lintel level as well as the structural slab in lime concrete .

3. Slabs in traditional lime mix concrete are observed in all buildings supported the stepped pattern soffit in stone slabs at the main entrance foyer of the bazaars topped with lime concrete above .

4. At certain bazaars –pillars, domes etc. are made in Ashlar Slabs and traditional bricks with suitable proportion of traditional lime mortar.

5. The decorative brackets are in Ashlar and the Ornamental works are also in Ashlar topped with fine lime.

2.2.10 . Construction Materials:

Most of the traditional bazaars are in traditional bricks ,random rubble masonry and Ashlar Masonry with suitable proportion of traditional lime mortar and lime plastering finished with lime wash . Weather shades are in native stone like nimbada , chittor black ,Sajjangarh , red sandstone etc.

The traditional methods and materials of Construction have been recommended for the repair and restoration works . In the wooden doors, it is recommended to preserve as much with suitable anti-termite treatment and by replacing the damaged wooden sections / members which are beyond the state of repair in matching wood , colour and texture wherever necessary as per the guidance and observations of th related experts . Waterproofing treatment will be done to the terrace by removing the loose popped surface material and redoing the same with traditional lime mortar with specified admixtures with necessary base preparation .

2.3 Operation and Maintenance: Cost Recovery:

However it is felt that the collection will not be adequate for subsequent maintenance for which funds have to be provided by the authorities .For proper upkeep and maintenance of the traditionally rich bazaars under proposal etc. various other promotional activities shall be undertaken by Municipal Corporation like promoting awareness , conducting Heritage walks for the natives , the tourists and the students etc .The responsible offices, officer in-charge and their staff will be working in close co-ordination with their superiors and experience NGOs for the same adding to revenue generation under the Udaipur Smart City Project . Souvenirs, magazines, Post card, Calendar etc. will be sold at certain visitors/tourist friendly cells which will be developed under the tourism development project by the concerned tourism development department of the Udaipur Municipal Corporation along with the Rajasthan Tourism Development Coproration,(RTDC) which will be located at appropriate location of the Historical city.