



JAIPUR METRO

JAIPUR METRO RAIL CORPORATION LIMITED
NIB No.:02/JMRC/Project/2022-23

GENERAL:-

- (i) **Jaipur Metro Rail Corporation invites bid from interested and eligible agencies for** Detailed Topographical Hybrid Survey using Drone +Total Station + DGPS for Extension of E-W Corridor from Badi Chaupar to Transport Nagar (2.85Km) Phase-1C and Mansarovar to Ajmer Road (Chauraha) (1.35 km) Phase-1D” of JAIPUR METRO RAIL CORPORATION at Jaipur. This bid is invited under RTPP Act-2012, and RTPP Rules, 2013(**Compiled up to date**).
- (ii) The complete bid document can be downloaded from the state e-procurement website <https://eproc.rajasthan.gov.in> and interested bidders will have to submit their offer in electronic formats both for technical and financial proposal on this website with their digital signatures. The complete bid document can also be seen on Corporation's website <https://transport.rajasthan.gov.in/jmrc> and state procurement portal i.e., <https://sppp.rajasthan.gov.in>.
- (iii) Bidders who wish to participate in this bidding process must register on <https://eproc.rajasthan.gov.in>. To participate in online Bids, as per Information Technology Act, 2000, Bidders will have to obtain Digital Signature Certificate (DSC) from any agency approved by Controller of Certifying Authorities (CCA). Bidders who already have a Valid Digital Signature Certificate need not to obtain a new Digital Signature Certificate. This DSC will be used by the bidder to digitally sign the bids before its online submission on E-Proc Portal.

1.0 NOTICE INVITING BID (NIB) FOR OPEN ONLINE BID:- (KEY DETAILS)

(a)	Name & Address of the Procuring Entry	Office of General Manager (Project Coordination), Jaipur Metro Rail Corporation Ltd., 1 st Floor, A-Wing, Admin Building, Bhriku Path, Mansarovar Metro Depot, Jaipur-302020
(b)	Subject Matter of Procurement. (Name of Work)	Detailed Topographical Hybrid Survey using Drone +Total Station + DGPS for Extension of E-W Corridor from Badi Chaupar to Transport Nagar (2.85Km) Phase-1C and Mansarovar to Ajmer Road (Chauraha)(1.35 km) Phase-1D” of JAIPUR METRO RAIL CORPORATION at Jaipur.
(c)	Time Period	30 days from the date of LOA or as per the directions contained in the LOA.
(d)	Defect Liability Period	Not applicable.
(e)	Bid Procedure	Two Stage (Technical Bid & Financial Bid), Online Open Bid Procedure.
(f)	Bid Evaluation Criteria	Technically Qualified and Lowest Bidder (L-01)
(g)	Website for downloading Bidding Document, Corrigendum's, Addendums, etc.	https://eproc.rajasthan.gov.in ; https://sppp.rajasthan.gov.in ;

(h)	Cost of Bid Form (Non-Refundable)	For participating in the bid, the bidder has to pay cost of bid form as below: - (a) Cost of Bid Form: - Rs. 1000+ GST@18%= Rs 1180/- Rupees. (DD/BC of scheduled bank payable in favour of “Jaipur Metro Rail Corporation Limited”).
(i)	Estimated cost	INR 6,71,098.07/- (Inclusive of all taxes, other charges)
(j)	Bid Security Deposit (EMD) (Refundable to unsuccessful Bidder)	Amount (INR): 02% (Rs.13,422/-) of Estimated Procurement Cost. (DD/BC of scheduled bank payable in favour of Jaipur Metro Rail Corporation Limited or as per RTPPR-2013)
(k)	E-Bid Processing Fee (Non Refundable)	Rs.590/- (Including GST @ 18%) (Rs. Five Hundred Ninety Only) by Demand Draft / Bankers Cheque, payable in favour of (“Managing Director, RISL, Jaipur”)
(l)	Venue of Physical Submission of Cost of Bid Form, Bid Security and E-Bid Processing Fee and original hardcopy of Financial Instruments (Cost of Bid Form, EMD/Bid Security & E-Bidding Fee) as uploaded on E-Proc website by bidder.	Office of General Manager (Project Coordination), Jaipur Metro Rail Corporation Ltd., 1 st Floor, A-Wing, Admin Building, Bhriku Path, Mansarovar Metro Depot, Jaipur-302020 Up to:- Date:-15.03.2023 Time:15:00 Hrs
(m)	Publishing Date on E-Proc Portal, SPPP Portal and JMRC Website.	Date:-08.03.2023 Time:10:00 Hrs
(n)	Document Sale/ Download/ Cost of Bid Form deposition period.	From:- Date:-08.03.2023 Time:10:00 Hrs To:- Date:-15.03.2023 Time:15:00 Hrs
(o)	Online Bid Submission Period on E-Proc Portal of Rajasthan Government.	From:- Date:-08.03.2023 Time:10:00 Hrs To:- Date:-15.03.2023 Time:15:00 Hrs
(p)	Online Technical Bid Opening Date and Time	Date:-15.03.2023 Time:15:30 Hrs
(q)	Bid Validity	90 days from the bid submission dead line.
(r)	Bidders Eligibility: -	Documents required to be submitted: -
	(i) Cost of Bid Form, Bid Security Deposit and E-Bid Processing Fee	(i) As per Clause 1.0 (h), Clause 1.0 (j) and Clause 1.0 (k) in original to JMRC before the due date and time for the bid submission as per Clause 1.0 (l) & (o) of NIB of Bid Document.
	(ii) Similar work: The bidder firm should have experience of Execution of similar work in India for state/Central Government Bodies etc. Experience of having satisfactorily completed similar works during the period of last 05 Years reckoned from the date of last date of bid submission should be either of the following:	(ii) Self certified copies of Certificates for satisfactory completion of similar works (Completed during the period of last 05 Years reckoned from the date of last date of bid submission) issued by the authorized person of the department/institution not below the rank of Executive Engineer/Manager .

<p>Three “similar works”* completed works as mentioned below, each of value not less than the amount equal to Rs. 2.68 lakh (40% of the estimated cost Rs. 6.71 Lakh).</p> <p style="text-align: center;">Or</p> <p>Two “similar works”* completed works each of value not less than the amount equal to Rs. 3.36 lakh (50% of the estimated cost. Rs. 6.71 Lakh).</p> <p style="text-align: center;">Or</p> <p>One “similar work”* completed work each of value not less than the amount equal to Rs. 5.37 lakh (80% of the estimated cost. Rs. 6.71 Lakh).</p> <p>*Similar Work for this contract shall be of following categories:</p> <p>a. Topographical survey with use of total station,</p> <p style="text-align: center;">or</p> <p>b. Topographical survey with the use of drone,</p> <p style="text-align: center;">or</p> <p>c. Combination of both a & b above.</p> <p><i>In case, the bidder is able to substantiate the amount of similar work executed based on either of the similar work categories mentioned above, then the bidder or its JV/Consortium partner must have compulsorily executed at least one work of any of the similar work category, for a minimum value of 40% of estimated cost of Rs. 6.71 Lakh.</i></p>	
<p>(iii) The bidder firm maybe: - -Company registered under “Companies Act-1956/2013”; OR - Registered Sole proprietor; OR -Registered Partnership/Joint Venture Firm. And must be in existence for the execution of similar works for minimum period of 03 Years reckoned from the last day of previous month to the month in which NIB was called. Detailed conditions on participation of JV, please refer clause 1.1 of NIB</p>	<p>(iii) Self-attested copy of registration document as proof of registered firm. (<i>Copy of Registration certification of the firm / Partnership deed / Certificate of incorporation, Copy of Articles of Association & Memorandum of Association (if applicable) etc.</i>).</p>
<p>(iv)The bidder should have “Annual Turn Over” of Rs 5.37 Lakhs (80% of Estimated Cost of Work) in any</p>	<p>(iv) Self-Certified Certificate issued by Chartered Accountant (CA) for the “Annual Turn Over” of the Bidder. OR</p>

	<p>one of the last 03 Financial Years 2019-20 to 2021-22. If the statement for Year 2021-22 is not available then statement for the duration of Financial Year 2018-19 to 2020-21 may be submitted.</p> <p>The average annual turnover of JV will be based on percentage participation of each member.</p> <p>Example: let the member-1 has percentage participation = M and member-2 has = N. Let the average annual turnover of member-1 is "A" and member-2 is "B", then average annual turnover of JV will be:</p> <p>(AM+BN)/100</p>	<p>Self-certified Income Tax Return Documents (ITRs) & Audited Balance Sheets (Certified by Chartered Accountant (CA).</p>
	<p>(v) Mandatory Registrations of the bidder such as "Goods & Service Tax (GST)" and Income Tax Registration along with Statement of Bank Account of bidding firm.</p>	<p>(v) Self-Certified Copy of:-</p> <ul style="list-style-type: none"> -GST Registration mentioning GST number in name of Bidding Firm. -Copy of PAN Card. -Self certified copy of the statement of Bank Account for the Last Six Months in the name of bidding firm.
	<p>Note:-</p> <p>(a) For point no. (iii) above, in case of bidder is JV/consortium; the above documents shall be mandatorily submitted for all the constituent members. Only the value of contract as executed by the bidder in his own name should be indicated and shall be considered. Where a work is undertaken by a group (Joint Venture), only that portion of the work which is undertaken by the concerned bidder shall be considered and the remaining done by the other partners of the group shall be excluded. This is to be substantiated with a specific certificate from the Employer who have awarded this work. In case specific division of works undertaken by the group partners is not stated in the submitted documents, then the percentage participation of the bidder in the group as stated in the submitted documents (JV/ agreement or Client certificate) shall be considered as the value of the work done by the bidder/partner of JV.</p> <p>(b) The bidder is required to get its firm registered for EPF, ESI and Contract Labor license within 30 days of issuance of LOA. If the bidder does not get registered with these Statutory Authorities then its 1st Running Account (R/A) payment shall not be released till it get registered with these Authorities. Firm is required to submit an undertaking in this regard on its letter head.</p>	
<p>(s)</p>	<p>SUBMISSION OF BIDS:-</p> <p>Online bids will have to be digitally stamped and signed by the authorized signatory of bidder firm and submitted in a time stamped electronic sealed box on http://eproc.rajasthan.gov.in in the manner as below.</p> <p>The Bidder shall submit his signed and stamped bid online in two parts:-</p> <p>(i) First Part:- Technical Bid with all necessary documents in .pdf format (Self Certified/Signed by authorized Signatory of Firm) as per Clause 1.0 (r) of NIB, Scanned Copy of financial instruments such as Cost of Bid Form, E-Bid Processing Fee and Bid Security as per Clause 1.0 (h, j, k & l) of NIB, complete bid document as per Clause 1.1.1 of ITB of Bid Document (Except Schedule-G/Price Bid/BOQ) and;</p> <p>(ii) Second Part:-Financial Bid in electronic format. (.xls Format), Online through E-Proc Portal for Rajasthan Government to procuring entity of JMRC as per Clause 1.0 of NIB of Bid Document on or before the last date of bid submission.</p> <p>Note:-</p> <p>(i) Original Copy of DD/BC for Cost of Bid Form, E-bid Processing Fee & Bid Security as uploaded on E-Proc website to be submitted at the office of JMRC before the due date</p>	

	<p><i>of submission as per Clause-1.0 (I) of NIB Document.</i></p> <p>(ii) The bidders have to take utmost care that the Financial Bid is to be submitted separately in Second Part of Bid i.e Financial Bid on E-Proc website only. If any details of Financial Bid whether intentionally/ unintentionally/ by mistake are mentioned in First Part i.e Technical Bid by the bidder; then its bid shall not be considered by JMRC. No correspondence in such matter shall be entertained by JMRC.</p>
(t)	<p>POINTS TO BE NOTED:</p> <ul style="list-style-type: none"> (i) Bidder (authorized signatory) shall submit their Two Part Bid (First Part:-Technical Bid and Second Part:-Financial Bid) online on E-Proc website i.e. https://eproc.rajasthan.gov.in both for technical and financial proposals separately for each. (ii) In case, any of the bidders fails to pay the Cost of Bid form, E-Bid Processing Fee and Bid Security to JMRC, its Bid shall not be considered and shall be rejected. (iii) JMRC will not be responsible for delay in Bid submission due to any reason. (iv) The procuring entity reserves the complete right to cancel the bid process and reject any or all of the Bids. (v) Conditional Bid shall be summarily rejected by JMRC. (vi) No contractual obligation whatsoever shall arise from the bidding document/ bidding process unless and until formal contract is signed and executed between the procuring entity and the successful bidder. (vii) All Bidders are hereby cautioned that Bids containing any material deviation or reservation as described in Form-B and /or minor deviation without quoting the cost of withdrawal shall be considered as non responsive and shall be summarily rejected. (viii) Any Bid received with unattested cutting/ overwriting shall be rejected. (ix) 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 for the help the bidders to prepare a logical bid-proposal. (x) The provisions of RTPP Act 2012 and RTPPR-2013 Rules 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 RTPPR-2013 Rules thereto, the later shall prevail. (xi) Approved GCC & SHE Manual is uploaded and available on the JMRC website, by signing the Bid Document, firm agrees to accept the GCC &SHE Manual. While framing the contract with the successful Bidder, the bidder shall sign the complete GCC & SHE Manual document and submit it to the JMRC.

1.1 Eligible Applicants:

- i. The bid for this contract will be considered only from those bidders (proprietorship firms, partnerships firms, companies, corporations, consortia or joint ventures) who meet requisite eligibility criteria prescribed in the sub clauses of clause 1.0 (r) of NIB. In the case of a JV or Consortium, all members of the group shall be jointly and severally liable for the performance of whole contract.

Also each member shall be individually responsible for its duties as specified in MOU/JV agreement submitted by the Bidder in terms of clause 1.1 (v) d.

Performance of each JV/consortium shall also be judged on quarterly basis. In case, the performance of the partner(s) is not found satisfactory, actions as deemed appropriate by the employer may be taken including termination of contract or termination of any of JV/Consortium member(s) from the contract i.e. Part termination of the contract. In case of part termination of contract, the performance security(ies) submitted by the member(s) for their portion of work in contract as per their share in JV/Consortium shall be forfeited

and the scope of the work/ duties assigned to the defaulting JV/Consortium member(s) as per the MOU/agreement submitted, may be terminated, however, same may be done by the employer only if other member(s) of JV/Consortium are ready to complete the entire scope of work. In such a case remaining works pertaining to the scope of defaulting member of JV, may be completed by other member(s) of JV in the following manner:

- a. At their own, if they have adequate technical competence to the satisfaction of Employer.
- b. By subcontracting such scope of work of defaulting member(s) to technically competent agency with the consent of Employer & without any financial implication to the Employer. In such cases, the limit of subcontracting the works up to 50% of total scope of work shall not apply.
- c. By induction of new member having adequate technical competence and meeting the original bid eligibility conditions, acceptable to the Employer in JV/Consortium replacing the default members(s)& without any financial implication to the Employer. The new member(s) shall be jointly and severally liable for the performance of the whole contract and also shall submit the Performance Security from their bank account for an amount equivalent to the amount of forfeited amount of Performance Security of defaulting member.

In case of (a) and (b) above, forfeited amount of Performance Security (ies) of the defaulting member(s) shall be submitted by other member(s) of the JV/Consortium.

Further, the performance of each of JV/Consortium member may also be specifically stated in the Work experience Certificate / performance Certificates which may be issued to the bidder during or after execution of Work for their Business Development purposes(s).

In this regard, an undertaking by JV/Consortium members is required to be submitted as per the format Form E of Form of Bid.

- ii.
 - a) Only Indian bidder is permitted to bid, either individually as a bidder or as a partner of JV. Joint venture or consortium arrangement is permitted only with firms that are registered or incorporated in India having minimum participation interest of 20% in this bid.
 - b) A bidder shall submit only one bid in the same bidding process, either individually as a bidder or as a partner of a JV/Consortium. A bidder who submits or participates in, more than one bid will cause all of the proposals in which the bidder has participated to be disqualified. No bidder can be a subcontractor while submitting a bid individually or as a partner of a JV/Consortium in the same bidding process. A bidder, if acting in the capacity of subcontractor in any bid, may participate in more than one bid, but only in that capacity.
- iii. Conflict of Interest:
 - (1) A conflict of interest for procuring entity or its personnel and bidders 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.
 - (2) The situations in which a procuring entity or its personnel may be considered to be in conflict of interest includes, but not limited to, following:-

- (a) A conflict of interest occurs when procuring entity's personnel's private interests, such as outside professional or other relationships or personal financial assets, interfere or appear to interfere with the proper performance of its professional functions or obligations as a procurement official.
- (b) Within the procurement environment, a conflict of interest may arise in connection with such private interests as personal investments and assets, political or other outside activities and affiliations while in the service of the procuring entity, employment after retirement from the procuring entity's service or the receipt of a gift that may place the procuring entity's personnel in a position of obligation.
- (c) A conflict of interest also includes the use of procuring entity's assets, including human, financial and material assets, or the use of procuring entity's office or knowledge gained from official functions for private gain or to prejudice the position of someone procuring entity's personnel does not favour.
- (d) A conflict of interest may also arise in situations where procuring entity's personnel is seen to benefit, directly or indirectly, or allow a third party, including family, friends or someone they favour, to benefit from procuring entity's personnel's actions or decisions.
- (3) A Bidder may be considered to be in conflict of interest with one or more parties in a bidding process if, including but not limited to:-
 - (a) They have controlling partners in common;
 - (b) They receives or have received any direct or indirect subsidy from any of them;
 - (c) They have the same legal representative for purposes of the bid;
 - (d) They 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;
- (e) A bidder participates in more than one bid in the same bidding process. However, this does not limit the inclusion of the same sub-contractor, not otherwise participating as a bidder, in more than one bid; or
- (f) A bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the subject matter of procurement of the bidding process. All bidders shall provide in Qualification Criteria and Bidding Forms, a statement that the bidder is neither associated nor has been associated directly or indirectly, with the consultant or any other entity that has prepared the design, specifications and other documents for the subject matter of procurement or being proposed as Project Manager for the contract.
- iv If the Bidder or any of the constituent JV/Consortium member(s) does not meet the criteria stated as per Clause 1.1 of NIB, including the constituent JV/Consortium member(s) shall be considered ineligible for participation in bid process and they shall be considered ineligible applicants.
- v. **LEAD PARTNER/ NON SUBSTANTIAL PARTNERS/ CHANGE IN JV/ CONSORTIUM**
 - a) In case of JV/Consortium of Indian contractor:
Lead partner must be a substantial partner in the JV/Consortium i.e. having a minimum of 26% participation in the JV/Consortium. Each substantial partner in case of JV/Consortium shall have experience of executing at least one "similar work" of minimum 40% of NIB value in last 5 years.

- b) Each non-substantial partner should have a minimum of 20% participation in the JV/Consortium. Partners having less than 26% participation will be termed as non-substantial partner and will not be considered for evaluation which means that their financial soundness and work experience shall not be considered for evaluation of JV/Consortium. In the bid for similar/civil work, a joint venture/Consortium to qualify, each of its non-substantial partner must have experience of executing at least one similar/civil work of minimum 20% of NIB value in last 10 years.
- c) In case of JV/Consortium, change in constitution or percentage participation shall not be permitted at any stage after their submission of application otherwise the applicant shall be treated as non-responsive.
- d) The bidder, in case of JV/Consortium, shall clearly and unambiguously define the role and responsibilities for each substantial/ non-substantial partner particularly with reference to financial, technical and other obligations in the JV agreement/MOU acceptable to the Employer, providing clearly that any abrogation/subsequent reassignment of any responsibility by any substantive/non-substantive partner of JV/Consortium in favour of other JV/Consortium (without written approval of Employer) from the one given in JV agreement/ MOU at bid stage, will be treated, as breach of contract conditions and/or 'concealment of facts' (as the case may be), vide GCC clause 4.33.1 [a (ii) and (iii)] and acted accordingly.

Note: - The MOU may stipulate mandatory information to be provided. However, bidder can include additional details/arrangements finalized between the members in this MOU provided these additional details/arrangements should not be in contravention of Employer's interest as per terms and conditions of Contract. Bidder may further note that no separate MOU/JV agreement should be executed for the sake of working arrangement amongst the partners other than the MOU/JV agreement accepted by the employer. In case, it comes to the notice of JMRC either during or even after completion of Work that JV/ Consortium members have either altered / modified the MOU / JV agreement with respect to the MOU submitted at bidding stage or entered a separate MOU/ agreement or made any other arrangement akin to a contract without the specific approval of Employer in writing, it shall be treated as a fraudulent practice under GCC clause 4.33.1 (a) (ii) of this bid for which every constituent of the JV/Consortia is liable to be debarred for a period up to three years along with such other legal actions as may be permissible under the law.

The Employer in such cases, may in its discretion take action under clause 4.33.1 (b) and / or under clause 4.33.1 (c) of GCC against any member(s) for failure in bidder's obligation and declare that member(s) of JV/Consortium ineligible for award of any bid in JMRC or take action to terminate the contract in part or whole under clause 13 of GCC as the situation may demand and recover the cost/damages as provided in contract.

- (vi) A bidder debarred under section 46 of Rajasthan Transparency in Public Procurement Act, 2012 shall not be eligible to participate in any procurement process undertaken by JMRC,-
- (a) if debarred by the State Government; and
 - (b) if debarred by JMRC and by any other Metro Rail Organisation.

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SCOPE OF WORK**2.1 GENERAL**

The work mainly comprises of Detailed Topographical Hybrid Survey using Drone +Total Station + DGPS from Badi Chaupar to Transport Nagar (2.85Km) Phase 1C and Mansarovar to Ajmer Road (Chauraha) (1.35 km) Phase -D” of JAIPUR METRO RAIL CORPORATION at Jaipur.

Site Familiarization Certificate: The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the site of works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for execution of the works. The costs of visiting the site shall be at the Bidder's own expense. The bidders should visit the work site, acquaint themselves with site conditions, approach roads, availability of materials, lead of materials, etc.

The contractor is required to execute the work in stretches/areas as per alignment plan given in tender documents. Contractor shall have no claim if the stretches/area is not available for execution due to traffic constraints etc., Also no extra time shall be permitted on this account.

2.2 BRIEF SCOPE:-

The above work shall cover the following:

- i. The contractor shall submit Programmes and Progress Reports of works as per Clause-4.13 and Clause - 4.14 of General Conditions of Contract (GCC) available on JMRC's website for bidder's reference. The GCC Document shall also be a part of bid document and contract for this work.
- ii. Provision of all necessary labours, construction equipment, instruments and appliances in connection with all above mentioned work as specified or as directed by Employer/Engineer.
- iii. deleted.
- iv. Clearing site after completion of work and handing over of all the works, as specified and directed by Engineer-In-Charge.
- v. Damage caused to the properties, if any, during execution of above work shall be rectified by the bidder at his cost failing which the cost of rectification shall be recovered at market cost of such items from any R/A Bill / Final Bill of the bidder.
- vi. The work shall be carried out as and when required by Engineer/Employer. with all safety precautions. The bidder shall ensure all his workers shall have Personal Protective Equipment's (PPE's) at his own cost and ensure safety of site by providing Barricades (if required) for restricting movement of public to work area. The barricade arrangement (if required) shall be approved by Engineer-In-Charge keeping in view the overall circulating pattern of the commuters at the work site
- vii. Time Period as stipulated in NIB from the stipulated date of commencement/LOA of work as per clause 1.0 (c.) of NIB.
- viii. deleted
- ix. deleted
- x. deleted
- xi. deleted
- xii. The value of work shall be on items of rates accepted and/or percentages above/below/At-par on price bid document. Letter of acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the contract.
- xiii. The above mentioned work should be carried out with bidders own material, labour and tools /plants as per the specification and drawings, complete as required.

2.3 MATERIALS**Quality**

All materials used in the works shall be of the best quality of their respective kinds as specified herein, obtained from sources and suppliers approved by the Engineer and shall comply strictly with the tests prescribed in the Technical Specifications / Code of Practice(RPWD/CPWD/IRC/IS Codes etc) as per the directions of Engineer-In-Charge.

2.3.1 Rejection

Any materials that have been found not to conform to the specifications will be rejected forthwith and shall be removed from the site by the bidder at its own cost within 5 days

Any work not to the satisfaction of the engineer or his representative will be rejected and same shall be rectified, or removed and replaced with work of required standard of workmanship at no extra cost.

2.4 TIME SCHEDULE:

The contract period for execution of the above mentioned work is as mentioned in NIB from date of commencement/LOA of work. The works should start immediately for the different works after issuance of work orders by the competent authority time to time during contract period.

2.5 VARIATION IN QUANTITIES

Quantities provided in BOQ are tentative, variation shall be considered in accordance to clause 12 of GCC and as per the latest provisions of Rule-73 of RTPPR-2013.

2.6 CONTRACTOR'S PROJECT ORGANIZATION.

The Contractor shall have a competent team of Managers, Surveyors, and Technical staff etc so as to complete the work satisfactory as per various requirements of the contract.

2.7 ACTIVITIES TO BE PERFORMED ARE AS FOLLOWS:

- i. Topographical Survey (Aerial + DGPS+ Total Station) survey along the proposed alignment
- ii. Establish GPS Control points.
- iii. Traverse / Triangulation survey between established DGPS Point.
- iv. Marking & fixing of triangulation pillars & steel plate for triangulation pier control.
- v. Precise Levelling survey
- vi. Final Location Survey
- vii. Tree identification, co-ordinates with number, Girth and species
- viii. Pegging of alignment/center line marking.
- ix. Regular levelling of control points with High Accuracy Digital Level
- x. Designing of horizontal and vertical track alignment including submission of draft report and final report in 04 copy.
- xi. All the activities and works items as specified in Bill Of Quantity (Schedule-G)
- xii. Bore holes, hand pumps and wells and proposed ancillary building near underground station locations etc as per the directions of Engineer-In-Charge.

2.8 GENERAL INSTRUCTIONS

- I. All the survey work (barring levelling work) shall be carried out using Total Station of **One Second accuracy**. The levelling work shall be carried out by Digital Level of better than 1mm per km accuracy.
- II. All control points must be fixed in consultation with the Employer/Engineer-in-charge or its representative.
- III. The legends for surveying and preparation of plans shall conform to that of Survey of India.
- IV. Weekly progress report including planning for the next week shall be sent to Employer/Engineer-in-charge every week.

- V. All field books, note books, floppies, CDs, drawings and other documents containing field data gathered during Traverse survey shall be handed over to JMRC and contractor shall have no claim or use whatsoever. The contractor shall not reproduce any data collected from the work in any form.
- VI. The Employer/Engineer-in-charge or its representative will be visiting the site and the staff engaged in work shall extend co-operation and explain methodology adopted and satisfy them for accuracy of work.
- VII. The equipment shall be accessible to the Engineer-in-charge or its representative for inspection to ensure their suitability for the job.
- VIII. X, Y, Z co-ordinates of all triangulation points are to be carried forward with respect to the co-ordinates of control points at the end of Corridor.
- IX. It is the responsibility of the Survey Agency to obtain necessary permissions from the all concerned authorities. JMRC will provide necessary letters for the same, all the cost involve in obtaining such permission shall be borne by the Survey Agency.

2.9 WORK CONTENT

2.9.1 DGPS survey along the proposed alignment:

Establishing GPS stations at an interval not more than 1 Km with one pair at the interval of not more than 200-250 m. The GPS station shall be located on permanent structure or providing and fixing concrete pillar 300 mm x 300 mm x 400 mm or on building roof free from any displacement disturbance. 20 mm dia MS rod, 300 mm long, with cross anchoring by 10 mm dia MS rod shall be fixed in concrete. GPS instrument accuracy shall be minimum horizontal 5 mm \pm 0.5 ppm and vertical 10 mm \pm 0.5 ppm in static observation. The base line measurement shall be based on minimum 1 hr static observations and other observations shall be with minimum 0.30 hrs static observations. All the values/Data should be in UTM Coordinate system and WGS-84 Datum

2.9.2 Closed Traverse / Triangulation survey between established DGPS Points:

Closed Traversing shall be carried out storing in total station Angle and Distance from GPS to GPS with an accuracy of 1:50000 by observing minimum 3 sets of face right and 3 set of face left. Stations shall be established at an interval not more than 200 m. closing error shall be distributed with least square method in commercial software. Traverse pillar shall be established on permanent structure or providing and fixing concrete pillar 300mm x 300mm x 400mm along the alignment. Total station raw data, calculations shall be submitted to Engineer-In-charge along with before and after adjustment co-ordinates in tabular form.

2.9.3 Topographical Hybrid Survey/ mapping

- I. The work involves carrying out detailed engineering topographic survey using Total Station/ DGPS & Drone in X,Y,Z co-ordinates along the alignment on Extension of E-W Corridor from Badi Chaupar to Transport Nagar (2.85Km) Phase-1C and Mansarovar to Ajmer Road (Chauraha)(1.35 km) Phase-1D, Coridor-2 (4.2 km approx.) of Jaipur Metro Rail Project (115 Acre approx.) as required / directed by Employer/Engineer-in-charge or its representative. The survey to cover all visible utilities (i.e. All types of drains, H.T./L.T. Transmission Lines, CNG Pipelines, water and sewage pipelines if visible, distribution box for electricity and telephone, level crossing, traffic signal, fire and water hydrant etc), Bye lanes, roads, Fly-Over, Bridge, Culvert, Underpass, cycle-track, green belt, property lines, pedestrian way sudden change of levels and other distinct features etc as directed by the Engineer-in-charge or its representative.
- II. Preparation of survey drawing on 1:1000 scale and plotting of spot / ground levels at 25 m intervals (with grid) and at sudden changes in elevation and all features. Print-outs shall be taken on 75-micron thick double matt transparent sheet.

- III. List of trees (with girth greater than 0.3 m) to be prepared in tabular form showing serial no., identification, species, girth measured at **1.3 m** from ground level and location with respect to nearest prominent feature. The location along with identification number is to be shown in drawing and made on separate Autocad layer. The Identification number is also to be marked at site with paint as directed by Engineer-in-charge or its representative.
- IV. Marking outer dimension of all built-up areas with plot numbers and ownership and type within survey limits.
- V. All drawings shall be prepared on Auto-Cad, having layers as instructed by the Employer/Engineer-in-charge or its representative (e.g. road, spot/ground level, drain, building, boundary wall tree, control point, ROB/RUB etc). X, Y, Z co-ordinates of all control points shall be provided in ASCII file format as directed by Engineer-in-charge or its representative with point numbers and feature coding with all field books and other documents including all data recorded in Total Station on CD.
- VI. Drains and Nallahs and pipelines shall be shown with bed levels and HFLs
- VII. Type of building such as temporary/permanent, no. of stories, and basement details.
- VIII. Level crossings with their numbers, class, manned/unmanned, ROB, RUBs, FOBs and Railway bridges with their structural details, angle of crossing and road/rail level to be marked on drawings.
- IX. Religious structures such as Temples, Gurudwaras, Mosque, Church, Monuments, Tombs, Mazars etc to be provided in details with their brief description.
- X. Name of all the adjacent colonies including house no. jhuggies clusters with numbers along with the route of survey. Details of northern railway tracks near the proposed alignment including take off points, curves, transitions, crossings, switches, and other details including electrical structures with their distances from the existing tracks.
- XI. Vertical clearance to power lines or telephone/telegraph line at crossing of road/railway line.
- XII. Levels at important locations like road junction, or areas having sudden change of elevation.
- XIII. Bore holes, hand pumps and wells and proposed ancillary building near underground station locations etc as per the directions of Engineer-In-Charge.
- XIV. Topography survey with complete features for underground Station at Ram Ganj Chaupar (Complete Station Box area including Khandas/Entry-Exits of proposed station). A separate specific submission with detail of existing features is required.
- XV. Any other structure, utility or detail that may seem important or as advised by the Employer/Engineer-in-Charge or its representative.

2.9.4 PROCEDURE FOR DRONE SURVEY

- I. Drone image in the background using the Ground Control points established images should be taken using 18-20 Mega Pixel high resolution cameras suffice to get final resolution of 5 cm.
- II. The final Orthophoto should have 2 cm GSD (Ground Sample Distance i.e. distance measured on the ground between pixel centres in an image)
- III. 90 degree to the ground or Nadir angle to be used unless specified for specific purpose.
- IV. Image overlapping should be minimum 75% forward & 55% sideways and constant flying height (upto 60 m) to be maintained in each flight.
- V. The images must have XYZ co-ordinates & rotational information and should not be taken in zig-zag manner, which leads to gaps in the data.
- VI. Drone data shall be provided along with RAW & processed imagery.
- VII. All the above needs to be carried out with adjusted Traverse/DGPS co-ordinates.
- VIII. All surface features, ground levels and over-ground utilities shall be taken.
- IX. All building location, its shape, height within width of 50 m from centre line on either side along viaduct and at station location 100 m from centre line of viaduct on either side or up to built up line shall be taken.
- X. Details of Photogrammetric 3D mapping.

2.9.5 CLOSED LEVELLING SURVEY

- I. Closed levelling shall be carried out from Survey of India Bench Mark with accuracy of $6(\sqrt{K})$ mm, where K is the route length in km. Digital levelling instrument shall be used to establish bench mark. Raw data from digital level shall be submitted along with adjusted and unadjusted levels in tabular form. Digital levelling instrument to be used for the work shall have the minimum accuracy of the order of ± 0.3 mm per km double run with least count not more than 0.01 mm.
- II. All the pillars (300 mm x 300 mm x 400 mm deep) shall be first casted at site and then control points to be fixed in order to achieve better accuracy. 20 mm dia MS rod, 300 mm long with cross anchoring by 10 mm dia MS rod shall be fixed in the concrete. Engineer-in-charge or its representative can make changes in the arrangement to obtain better results. All details of pillars are to be done with prior approval from Engineer-in-charge.
- III. Levelling must be carried out by a precision digital level with accuracy of better than 1 mm per km.
- IV. Reduced level of all Traverse stations shall be taken by Double Territory Method.
- V. Each Traverse station will have to be connected by fly levelling with GTS benchmark. Levelling must be started from a GTS benchmark or benchmark given by Engineer-in-charge and must be closed at the same after carrying out levelling of Traverse stations.
- VI. All levelling calculations must be submitted in a register along with all field data book, and finally all calculations should be done in Excel format and the file be submitted to Engineer-In-charge.

2.10 FINAL LOCATION SURVEY

The pegging of the alignment should be done along the centre-line of the alignment (i.e. centre line of both up and down). The pegging to be done at an interval of 25 m c/c on straight profile and 15 m c/c on curved area, marking the tangent points, apexes, ST, TC, CC, CT and TS points on the corridor or as directed by the Employer/Engineer-in-charge or its representative.

2.11 PRECISE LEVELLING OF CONTROL POINTS

- I. The work involves carrying out levelling as mentioned in description of works. The survey should cover all the control points and connecting them to GTS benchmarks. Levelling should be carried out by double territory method to obtain precision in the job.
- II. Levelling must be carried out by a precision digital level with accuracy of better than 1 mm per km.
- III. Reduced level of all Traverse stations shall be taken by Double Territory Method.
- IV. Levelling must be started from a GTS benchmark or benchmark given by JMRC or Engineer-In-charge and must be closed at the same after carrying out levelling of Traverse stations.
- V. All levelling calculations must be submitted in a register along with all field data book and finally all calculations should be done in Excel format and the file be submitted to Engineer-In-charge.

2.12 COMMON GUIDELINE

- I. Any discrepancies with the topographical drawing and the proposed alignment as laid out on ground must be intimated to Engineer-in-charge and any modification/suggestion for modification to be carried out only after consulting Engineer-in-charge or its representative.
- II. All the pillars shall be first casted (as per Indian Railway Standard) at site and then alignment / Pier Points to be fixed in order to achieve better accuracy. While casting the reference pillars (300 mm x 300 mm x 400 mm), a Steel Plate of size 100 mm x 100 mm x 3 mm shall be fixed on top of pillar. Suitable arrangement should be made to ensure the plate is firmly held with pillar till the completion of construction. In case of pillars for triangulation control points a 300 mm long MS Rod (min.) of 20 mm dia shall be used in cast-in-situ pillar for marking survey point. The top end of rod shall

- be punched at the centre to mark the point and the bottom end should be welded with two cross 250 mm long MS Rod (10 mm dia). Engineer-in-charge can make changes in the arrangement to obtain better results.
- III. In order to fix alignment point on road, 3 mm thick steel plate of size 100 mm x 100 mm shall be used. The plate shall have a hole at centre to fix survey nail for alignment point and the nail shall be of minimum 150 mm long.
 - IV. Each alignment/pier points shall be established by taking mean out with respect to minimum three triangulation control points. These control points shall be fixed along the alignment in the triangulation form with the accuracy of +/- 2 mm. All the three co-ordinates (X, Y, Z) of each central point and each pier location shall be located.
 - V. Locations of all the alignment, boundary and reference points shall be marked correctly on drawings in AutoCAD.
 - VI. X, Y, Z co-ordinates of each triangulation control point should be written on the pillar by paint.
 - VII. Any deviation from the paper alignment found at site while handing over to the contractor or in any case, the alignment parameters (i.e. deflection angles, radius of curve, transition length etc.) shall be changed in consultation with the Engineer-in-charge keeping the obligatory points in view.
 - VIII. Two hard copies and one soft copy of detailed report containing following contents shall be submitted
 - (a) Introduction
 - (b) Detailed methodology
 - (c) List of curves with related parameters finally laid out at site
 - (d) Tables showing description of location, chainage, co-ordinates of all the alignment, boundary and reference points, Sketches showing distance and angles of triangulation points with respect to three prominent locations.
 - (e) Drawing showing all the alignment, boundary and reference points.
 - (f) List of trees.
 - (g) List of infringing/adjacent structures & utilities along with their identification number and owner details.
 - (h) Recommendations.

2.13 FINAL DELIVERABLE:

All basic as well as the processed data shall be delivered as under:

GPS control points, Alignment map, Arial map, Control point pillars etc should be submitted within 30 days after Issuing of Letter of Acceptance.

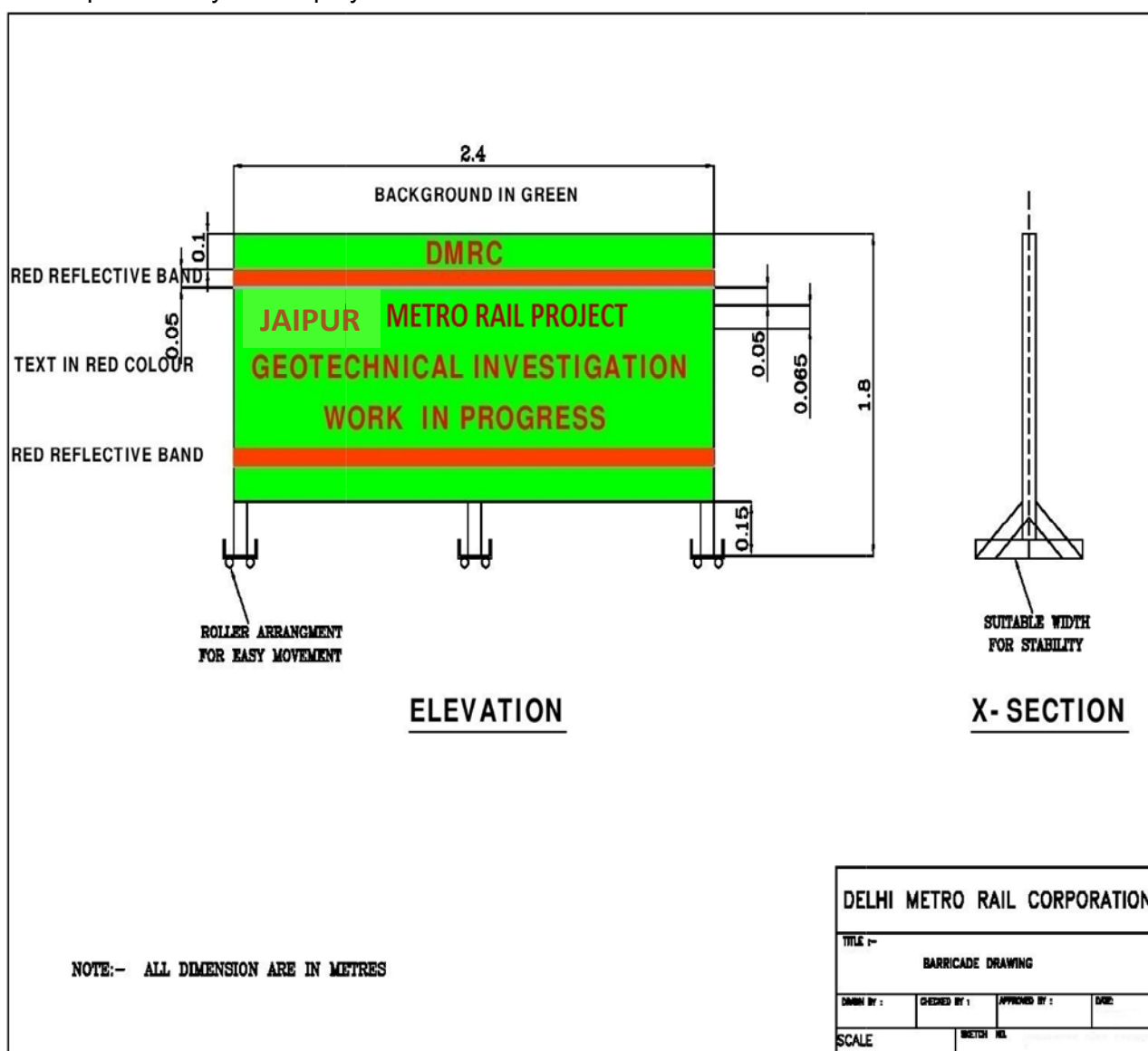
- I. Areal & DGPS Survey Report.
- II. Traverse & Triangulation correction sheets.
- III. Levelling survey Data and calculation sheet.
- IV. Regular levelling and drawing of L-section
- V. List of DGPS and Control Point Pillars in required format.
- VI. All Topographical Features in a Base map at 1:1 scale in DWG/DGN format.
- VII. Digital Terrain Model- DTM (DWG).
- VIII. Digital Elevation Model – DEM (DWG/Geotiff/CSV) at 1m/3m/5m Grid interval.
- IX. Orthophoto (Mosaic in ECW / JPEG2000 and Tiles in Tiff Format).
- X. Raw 4K quality Videos with Geo Tagged files.
- XI. Merged seamless Geo-tagged Video of 1920 x 1080 format (Full HD) resolution with all annotations.
- XII. Low resolution VIDEO for on-line viewing in 640×480 format (SD).
- XIII. Quality Control Report (for checking).
- XIV. Designing of horizontal and vertical track alignment including submission of draft report and final report in 04 copy
- XV. Topography survey with complete features for underground Station at Ram Ganj Chaupar (Complete Station Box area including Khandas/Entry-Exits of proposed station). A separate specific submission with detail of existing features is required.

2.14 PAYMENT SCHEDULE

- I. 90% of the amount upon completion of field work, submission and acceptance of draft report & final report by Engineer-In-charge.
- II. 10% of the amount upon handing over the site to the main civil works contractor.

2.15 WORK SITE

- i. The project site is located at Jaipur in the State of Rajasthan.
- ii. The area covered by this work falls between Extension of E-W Corridor from Badi Chaupar to Transport Nagar (2.85Km) Phase-1C and Mansarovar to Ajmer Road (Chauraha)(1.35 km) Phase-1D (4.2 km approx.) of Jaipur Metro Rail Project (115Acre approx.).
- iii. Contractor shall plan his works keeping in view restriction of approach and availability of space and time.
- iv. Approved alignment in the form of Google File (*.kml/*.kmz) or *.shp file shall be provided by the employer.



Words/Text to be replaced with:-

- (i) "DMRC" with "JMRC".
- (ii) "Delhi metro Rail Corporation" with "Jaipur Metro Rail Corporation"
- (iii) Logo of JMRC is to be incorporated on the visible face of barricade panel.

JAIPUR METRO RAIL CORPORATION LIMITED, JAIPUR
SCHEDULE AND SPECIFICATIONS

3.0 CONTENTS OF BID DOCUMENT:-

Documents as listed below (**Except SN-3.7; Schedule-G, Price Bid**) are to be attached separately with Notice Inviting Bid (NIB) in dully filled, stamped and signed form as applicable to the bidder with the **First Part of Online Bid i.e. Technical Bid**.

3.1 SCHEDULE –A:- NIB & SCOPE OF WORK:

The bidder should see the site and fully understand the conditions of the work site before bidding and include all lead, lifts etc. for the material in his item rate/ percentage to be quoted on the rates as given in the SCHEDULE –G/Price Bid/Second Part: Financial Bid. Then work shall be carried out to the entire satisfaction of the Engineer- In- Charge of the work. The brief scope of work is given in Clause-2.0 of NIB Document.

3.2 SCHEDULE-B:- INSTRUCTIONS TO BIDERS:- Attached Separately.

3.3 SCHEDULE-C- SPECIAL CONDITIONS OF CONTRACT:-Attached Separately.

3.4 SCHEDULE –D:- GENERAL CONDITIONS OF CONTRACT & SAFETY HEALTH AND ENVIRONMENT (SHE) MANUAL: Approved GCC & SHE MANUAL is uploaded and available on the JMRC website, by signing the Bid Document, firm agrees to accept the GCC & SHE MANUAL. While framing the contract with the successful Bidder, the bidder shall sign the complete GCC & SHE MANUAL document and submit it to the JMRC.

3.5 SCHEDULE-E:- ANNEXURE:

- (i) Annexure A1: Compliance with the code of Integrity and No Conflict of Interest.
- (ii) Annexure B1: Declaration by the Bidder regarding Qualifications.
- (iii) Annexure C1: Grievance Redressal during Procurement Process.
- (iv) Annexure D: Additional Conditions of Contract.
- (v) Annexure E: Initial filter criteria of applicant.
- (vi) Annexure F: Certificate by the Bidder to be appended with Annexure-E.
- (vii) Annexure G:- Undertaking by bidder regarding registration for EPF, ESIC and Contract Labour License etc. as per Clause-1.0 (r) Note (b) of NIB.
- (viii) Annexure X:- Certificate By Bidder with each Bill.

3.6 SCHEDULE-F:-FORMS:-

- (i) FORM-A:- Form of Bid with Appendix.
- (ii) FORM-B:- Performa for Statement of Deviations.
- (iii) FORM-C:- Form of Performance Security (Form of Bank Guarantee) by Bank.
- (iv) FORM-D:- Form of Agreement.
- (v) FORM-E:- General Information.
- (vi) FORM -F:- Bank Details.
- (vii) FORM-G:- Power of Attorney.
- (viii) FORM-H:-Indemnity certificate and obligation/ Compliance to be ensured by the Bidder.
- (ix) FORM-I:- Obligations/Compliances to be ensured by Bidder.

3.7 SCHEDULE-G:-PRICE BID/FINANCIAL BID (SECOND PART):-

Attached separately (Non Scheduled Items)

3.8 SCHEDULE-H:- Check list for bid Evaluation/Submission.

SIGNATURE OF CONTRACTOR
With full address & Mobile No.:

General Manager (Project Coordination)
Jaipur Metro Rail Corporation Ltd., Jaipur